Between drought and deluge: A history of water provision to Beaufort West, ca. 1858-1955

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Abstract

Beaufort West was the first rural town in South Africa to receive municipal status as early as 1837. Situated in the arid interior of the country, the town has struggled with water provision and sufficient water supplies since its inception to the present day. In addition, the town is flanked by two rivers, which, in times of high rainfall or cloudbursts in the catchment areas, have caused severe flood damage since earliest times. Therefore, throughout its history Beaufort West has been trapped periodically between drought and deluge. The municipal council was challenged in its efforts to provide water to the needs of its growing population. Two outstanding events in this regard were the extension of the colonial railways to the town in 1880 and the outbreak of the South African War in 1899. In this article the quest for water to Beaufort West's inhabitants is investigated since ca. 1858 until the completion of the Gamka Dam (1955) in the Nieuweveld Mountains some kilometres from Beaufort West. Besides the extraction of potable water from springs, weirs, boreholes, water mains, dams and reservoirs, the paper also highlights state involvement and the collision of national with local interests in the water procurement process. Although the centenary publication of WGH Vivier and S Vivier in 1969 on Beaufort West highlighted some aspects of the town's water infrastructure developments, this study focuses in more detail on its water vulnerability especially in time of drought and the constant search for adequate alternative water sources.

Keywords: Beaufort West; Water; Droughts; Floods; Springfontein Dam; Railways, South African War; Gamka Dam.

Introduction

This article focuses on water provision to the Karoo town of Beaufort West and the town's continuous struggle with forces of nature and competing authorities to procure sufficient water sources. Two jubilee works were published on the history of Beaufort West, one by AP Smit[1] and one by WGH Vivier and S Vivier.[2] Apart from

1 AP Smit, *Gedenkboek van Nederduitse Gereformeerde Gemeente Beaufort-Wes, 1820-1945* (Kaapstad, Nasionale Pers Beperk, c. 1945).
2 WGH Vivier en S Vivier, *Hooyvlakte. Die verhaal van Beaufort-Wes 1818-1968* (Kaapstad, Nasionale Boekhandel Bpk., 1969).

these references to its water sources and water infrastructure in these publications, no serious investigation has been done into the long "struggle" history of water provision to Beaufort West, the first town in South Africa to receive municipal status as early as 1837.[3] The article is based on a comprehensive research project into the history of water provision to rural towns in South Africa. Municipal minutes, reports and documents, dating from 1848[4] to 1955, were scrutinised in the Western Cape Archives and Records Service in Cape Town. The research was complemented with information derived from reports in the local paper, *The Courier*, established in 1869.[5] Through research into municipal archival sources the author endeavours to identify the natural forces as well as human agency at work that determined the viability of rural towns to eke out a living in the arid interior of South Africa. In order to logically unpack all the intertwining issues which affected the history of water provision to Beaufort West the contents of this article are presented in a thematic-chronological explanation.

Water history trends on regions: A concise historiography

The historiography of modern urban water has a relatively long record in South Africa. Most local histories of towns and cities, as well as regions in South Africa, have extensive sections dealing with water. To name but a few, one of the earliest publications on water provision to the Witwatersrand, by RJ Laburn, appeared as early as 1970, followed by Crosser's study on water supply and utilisation in Johannesburg in 1987.[6] TS Bodill published an article series on Port Elizabeth's water supply in 1982 in the bulletin of the Port Elizabeth Historical Society.[7] This water history series was complemented by David Raymer's 2008 publication on the history and development of Port Elizabeth's and Uitenhage's water supply.[8] In 1991, Duncan Grant completed an MA thesis on the history of Cape Town's water supply and in 1999 Kevin Wall wrote on the comparative history of water management in the Cape Peninsula.[9]

3 WGH Vivier en S Vivier, *Hooyvlakte...*, p. 10; AP Smit, *Gedenkboek van Nederduitse Gereformeerde Gemeente Beaufort-Wes...*, pp. 134, 138; Stellenbosch University Library (hereafter SUL), Africana Collection, Anon., *Beaufort West*, c. 1955; No. 12, c. 1955.

4 WGH Vivier en S Vivier, *Hooyvlakte…*, p. 10; AP Smit, *Gedenkboek van Nederduitse Gereformeerde Gemeente Beaufort-Wes...*, p. 134. These sources, as well as the municipal records inventory at the Western Cape Archives and Records Service, confirm that preserved archival documents on Beaufort West only date from 1848.

5 WGH Vivier en S Vivier, *Hooyvlakte…*, p. 116; AP Smit, *Gedenkboek van Nederduitse Gereformeerde Gemeente Beaufort-Wes...*, p. 139; SUL, Africana Collection, Anon., *Beaufort-Wes*, c. 1955, p. 1.

6 RJ Laburn, *'n Historiese oorsig oor watervoorsiening aan die Witwatersrand*, Voordrag, Johannesburg Historical Society, 26 Augustus 1970 (Walker & Snashall, c. 1970); EM Crosser, "Water supply and utilization in Johannesburg, 1886-1905" (MA, University of the Witwatersrand, 1987).

7 TS Bodill, "History of the Port Elizabeth water supply", *Looking Back, Historical Society of Port Elizabeth and Walmer*, 21(4), p. 128; 22(2), p. 43; 22(3), p. 79; 2(4), 1982, p. 117.

8 D Raymer, *Streams of life. The water supply of Port Elizabeth and Uitenhage* (Private Publisher, Port Elizabeth, 2008).

9 D Grant, "The politics of water supply: The history of Cape Town's water supply 1840-1920" (MA, UCT, 1991); K Wall, "Water, civil engineers and multipurpose metropolitan government for the old Cape Peninsula municipalities: Technical paper", *Journal of the South African Institution for Civil Engineers,* 40(3), 1998, pp. 1-8; K Wall, "Water – unifier of a city", JWN Tempelhoff (ed.), *African Water Histories. Transdisciplinary discourses* (Vanderbijlpark, North-West University, 2005), pp. 97-113.

Since the 2000s the literature on water provision to urban and rural areas increased rapidly. In 2004, Zangel's MA study on Johannesburg's water, with a unique accent on post-1994 policy objectives such as poverty, housing and proper sanitation, appeared.[10] Haarhoff and Tempelhoff in 2007 wrote an article on a century of water supply to Johannesburg,[11] while Harri Mäki's important comparative work on water, sanitation and health issues in four South African cities (Cape Town, Grahamstown, Durban and Johannesburg) was published in 2008.[12] In the same year Visser, Jacobs and Smit wrote on emergency water provision to Saldanha during the 1940 war years.[13] In 2009, a book was launched on Cape Town's rivers and wetlands, including updated information on the city's water provision infrastructure.[14] Lani van Vuuren addressed water provision to Graaff-Reinet in an article in 2010,[15] and in 2015, Haarhoff, Juuti and Mäki published research on a history of water supply by the Pretoria Municipality.[16] In the same year Wessel Visser investigated water supply contestations between irrigation and municipal authorities in Calitzdorp in the Little Karoo,[17] while Botes did a study in 2016 on water provision to the city of Bloemfontein during the 19th century.[18] In neighbouring Zimbabwe Musemwa did a study on the concept "hydropolitics" by exploring the abuse of the state's power in neighbouring Zimbabwe to prohibit political dissidents in Bulawayo access to potable water.[19] Lay historians have also ventured into publishing on municipal water provision to the town of Hermanus.[20] Three Stellenbosch University MA studies were identified that also pertain to rural town water provision: Kruger focused on Prince Albert and Williston,[21] and Klopper highlighted, among others, water provision to

10 VA Zangel, "'The seething masses' – housing and sanitation in the lives of Johannesburg's poor 1886-1906" (MA, NWU, 2004).

11 J Haarhoff and JWN Tempelhoff, "Water supply to the Witwatersrand (Gauteng) 1914-2003", *Journal for Contemporary History,* 32(2), Dec 2007, pp. 95-114; *100 years of excellence 1903-2003* (Glenvista, Rand Water, 2004).

12 H Mäki, *Water, Sanitation and health. The development of the environmental services in four South African cities, 1840-1920* (Tampere, Juvenes Print, 2008).

13 D Visser, A Jacobs and H Smit, "Water for Saldanha: War as an agent of change", *Historia*, 53(1), May 2008, pp. 130-161.

14 C Brown and R Magoba (eds.), *Rivers and wetlands of Cape Town. Caring for our rich aquatic heritage* (Water Research Commission, Cape Town, 2009).

15 L van Vuuren, "Ngweba Dam – supplying water to the thirsty Karoo", *Water Wheel*, 9(4), July 2010, pp. 22-27.

16 J Haarhoff, P Juuti and H Mäki, "A case for strong municipal governance: The water supply of Pretoria 1855-1935", *South African Historical Journal*, 64(4), Dec 2012, pp. 769-786.

17 W Visser, "Water contestations in the Little Karoo: Liaisons between the Calitzdorp Irrigation Board and the Calitzdorp (Kannaland) Municipality, 1912- 2013", *The Journal for Transdisciplinary Research in Southern Africa*, 11(3), Dec 2015, pp. 293-315.

18 SM Botes, "'Water pure and wholesome" – watervoorsiening in Bloemfontein gedurende die 19de eeu", *New Contree*, 76, Supplement Edition, Nov 2016, pp. 44-73.

19 M Musemwa, "'Disciplining a dissident city': Hydropolitics in the city of Bulawayo, Matabeleland, Zimbabwe, 1980-1994", *Journal of Southern African Studies*, 32(2), Jun 2006, pp. 239-254.

20 R Lee, "Water, water – from anywhere: The history of water supply in greater Hermanus", Hermanus History Society, Research Report 1, Oct 2015, pp. 1-13.

21 N Kruger, "A socio-environmental history of water in the Karoo c. 1762-2012, with specific focus on Prince Albert and Williston" (MA, SU, 2013).

Boesmanland towns such as Carnarvon and Loxton.[22] Rademan investigated the socio-economic impact of drought on the magisterial district of Vanrhynsdorp.[23]

It is clear that in the last fifty years the historiographical landscape was considerably augmented by studies from various scholars focussing on water supply and management, drought, health and sanitation issues, as well as water politics in rural and urban communities. Therefore, a clearer historical picture of South Africa's water procurement and water provision is beginning to emerge.

Besides periodic droughts and floods, the arrival of the railways, the South African War requirements and a subsequent floating population, as well as the growth of the town's permanent population, also influenced water provision to Beaufort West profoundly. The archival research for this article revealed that the Cape colonial railway administration (later South African Railways), and during the war, the British military authorities, were major external forces that exerted pressure on local water resources. These forces challenged and competed with the municipal council for a share of the town's scarce and at times precarious water resources, thus contributing to the dynamics of water provision to Beaufort West.[24] Although sanitary matters such as water pollution, sewage and water-borne diseases form an integral part of Beaufort West's water history as well, the archival information on this aspect is so rich that it warrants a separate article that will be dealt with in another publication, forthcoming.

Beaufort West in historical, geographical and demographic context

Beaufort West developed under Dutch East India Company rule on the loan-farm Hooyvlakte, granted to Jacob de Clercq and his son, Jacob, in 1760.[25] Originally, a gushing spring on the Gamka River ensured a perennial stream even during severe droughts. Four springs also fed the Kuils River, and De Clercq senior dug an irrigation furrow from the Gamka spring for his garden. To be able to establish a magistracy for the district, the British colonial authority bought plots on the eastern banks of the Gamka River. The name Hooyvlakte was eventually changed to Beaufort West, named after the family of the then governor at the Cape, Lord Charles Somerset, second son of the fifth Duke of Beaufort. Beaufort West was proclaimed a town in 1818,[26] and became the first municipality in South Africa.[27]

22 H Klopper, "The organised expansion and permanent settlement of people in Boesmanland in correlation with accessible water sources, 1760 – c.1960" (MA, SU, 2020).

23 DJR Rademan, "The socio-economic impact of drought in the period 1924-1934 on the magisterial district of Vanrhynsdorp" (MA, SU, 2020).

24 The pressure of these external forces on Beaufort West's water reserves will be discussed in more detail in the sub-section on case studies of water shortage and contestation to follow in this article.

25 WGH Vivier en S Vivier, *Hooyvlakte...*, p. 3.

26 WGH Vivier en S Vivier, *Hooyvlakte...*, pp. 3-7; SUL, Africana Collection, Anon., *Beaufort-Wes*, c. 1955, p. 1; No. 12, c. 1955, pp. 11, 16-17.

27 WGH Vivier en S Vivier, *Hooyvlakte…*, p. 10; AP Smit, *Gedenkboek van Nederduitse Gereformeerde Gemeente Beaufort-Wes...*, p. 134.

Situated in the semi-arid central Great Karoo, halfway between Cape Town and Bloemfontein, Beaufort West is the major administrative, agricultural and economic centre of the region. The town also serves as a major road, and rail transit and crossing to other towns in South Africa. It lies in a hollow between two hills and is flanked by the Gamka River in the west and the Kuils River in the east. Both rivers, which as a result of urbanisation became semi-perennial, flow in a generally north to south direction.[28] From the Springfontein irrigation dam (completed in 1869) at the northern end of the town's central neighbourhood to its southern end the gradient is about 1:150 m (0.67%).[29] The town's water supply is heavy reliant on rainfall and droughts are inevitable. Therefore groundwater, extracted from boreholes, played and increasingly important role in the development of Beaufort West. The average rainfall in the area is but 20,32 cm per year. Beaufort West is known for its so-called "dyke", a useful barrier against the southward migration of underground water because it effectively compartmentalise the groundwater flow. The "dyke" is an inclined sheet or sill of dolerite which dips to the north at an approximate 17°angle. This sheet outcrops in an approximately east-west direction. A certain amount of water penetrates to depth to the north of the sheet as is localised in the northern part of Beaufort West in what might be regarded as an underground reservoir and where the relative impenetrable dolerite sheet forces the water towards the surface. South of the dolerite sheet, the underground water supply is not sufficient to be extracted. Consequently, most springs are situated towards the northern parts of town and in periods of drought this was the area where the municipal council was prone to drill new boreholes in search of more water resources. Between 150 and 200 boreholes were drilled in this area by the late 1940s.[30] These geographical features would have a major impact on the history of water provision to the town.

28 SUL, Africana Collection, Anon., *Beaufort-Wes*, c. 1955, p. 2; "Drought ravages district", *The Courier*, 12 November 1947, p. 7; P Marais and F von Dürckheim, "Beaufort West Reclamation Plant", *Water and Sanitation in Africa*, 7(1), Jun 2012, p. 20. Beaufort West being a critical junction in the Karoo for north-south communication, as well as a seminal communications hub for road and rail transport to various other destinations in central South Africa implies that, apart from local residents and other water user entities, a floating population through the town would have been a definitive water-consuming factor as well. However, save for the impact of the British troops on the town's water resources during the South African War, which will be discussed in this article, no municipal, provincial or state statistics of such floating population could be located in the archives.

29 W Visser (Personal Collection), E-mail: J de Waal (Department of Geography, Stellenbosch University)/W Visser (Researcher), 27 Jan 2020.

30 WGH Vivier en S Vivier, *Hooyvlakte*…, p. 115; P Marais and F von Dürckheim, "Beaufort West Reclamation Plant", *Water and Sanitation in Africa*, 7(1), Jun 2012, p. 20; Y Xu, G Mahed, Y van Wyk, L Lin, X Sun, L Xiao and S Talma, "Towards a sampling and monitoring protocol of radioactive elements in fractured rock aquifers for groundwater resource security in Beaufort West", Water Research Commission Report 1694/1/12, Jun 2012 (available at https://www.researchgate.net/publication/272495076_Towards_a_Sampling_and_Monitoring_Protocol_of_Radioactive_Elements_in_Fractured_Rock..., as accessed on 27 Nov 2020), pp. 12, 35; Western Cape Archives and Records Service (hereafter WCARS), Archives of the Town Clerk Beaufort West 1848-1990 (hereafter 3/BFW), Vol. 1/1/2/2, Minutes of a Council Meeting, 3 Aug 1926; 3/BFW, Vol. 1/1/2/23, Minutes of a Council Meeting, 12 Feb 1948, p. 719; 13 Feb 1948, p. 730.

The available municipal demographic data on Beaufort West reveals an increasing trend in population growth which over time exerted more and more pressure on the sustainability of the town's water sources. By 1830 there were a mere 200 white inhabitants.[31] In 1898 the total population, including all black and white dwellers, was approximately 3000.[32] The total estimated civilian population stood at 9000 by 1902.[33] According to the 1936 census figures the total population slightly dropped to 8500,[34] but had risen to 12 500 by 1955.[35]

The impact of the forces of nature on the development of Beaufort West's water infrastructure and water provision, 1823-1949

Drought

Irrigation furrows were diverted from the Gamka spring to feed the first 53 "reservoir erven" (irrigation plots). Most inhabitants on these erven were self-sustaining dwellers growing fruit, vegetables and fodder and keeping animals such as pigs, sheep, goats, fowl, and cows as food source and horses as draught animals. This convention, as well as the provision of potable water via open furrows on both sides of the then earth streets[36] or through private potable water wells, was a very primitive sanitary system, and the gradient difference between the northern and southern ends of the town, would contribute for many years to a severe and gnawing problem of water-borne diseases.[37] As early as 1858, the Chief Constable brought to the attention of the municipal council the fact that the drain from the yard of one of the town's residents was carrying "impunities" into the potable water. Inhabitants were fined 10 shillings for contravening irrigation regulations and were warned regularly to keep garbage from the furrows running past their erven.[38]

Situated on the flood plain between two rivers, many Beaufort West homeowners dug potable water wells on their properties as the water table was very shallow. However, the continued growth of the town demanded a more secure system of water provision. In 1851, a small retention dam for potable water, into which water from the river was relayed, was constructed adjacent to the Kuils River. The droughts in 1823 and 1827 were eclipsed by that of the period 1856 to 1859, when many springs dried up. Water provision from existing springs was combined to strengthen the available irrigation supply.[39] A correspondent of the *Government Gazette* sombrely

31 WGH Vivier en S Vivier, *Hooyvlakte…*, p. 8.
32 WCARS, 3/BFW, Vol. 1/1/1/11, Minutes of a Council Meeting, 31 Jan 1898, pp. 160-161.
33 WCARS, 3/BFW, Vol. 1/1/1/12, Minutes of a Council Meeting, 14 Jul 1902, p. 186.
34 AP Smit, *Gedenkboek van Nederduitse Gereformeerde Gemeente Beaufort-Wes...*, p. 146.
35 SUL, Africana Collection, Anon., *Beaufort-Wes*, c. 1955, p. 2.
36 WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 7-8;14; 32-33.
37 This issue will be discussed in a separate forthcoming paper.
38 WCARS, 3/BFW, Vol. 1/1/1/3, Minutes of a Council Meeting, 21 September 1858; 16 Nov 1858; 18 Oct 1859.
39 AP Smit, *Gedenkboek van Nederduitse Gereformeerde Gemeente Beaufort-Wes…*, p.138; WGH Vivier en S Vivier, *Hooyvlakte...*, pp. 23-24; 37.

wrote: "Beaufort West is hard up and business is dead…For a dreary down-on-your-luck retreat try Beaufort West".[40] In 1865, owing to another lingering dry spell, the town council decided to construct a permanent irrigation dam, the Springfontein Dam, in the Kuils River at the northern end of the town.[41] A more severe drought lingered between 1876 and 1878.[42]

An additional holding dam for drinking water from the Gamka spring, Tinley's Dam, was completed in 1872. It was named after the local magistrate, T Tinley.[43] A potable water tax was introduced in 1878 and, although the council considered the installation of a piped water system as early as 1852, the first water reticulation system was introduced only in 1898. The system entailed a water tunnel constructed from a spring at the foot of the Nieuweveld Mountains on the outskirts of the town, and two retention wells – one 5,5 metre and the other 9,1 metre deep – to collect the spring's water. This potable water source was relayed to a "waterhouse" or reservoir on the outskirts of the town by means of gravitation. Water mains connected properties in town with the reservoir and standpipes were provided for town dwellers who did not have access to the mains. This potable water source delivered 14 400 gallons (65.5 m^3) per day.[44]

However, the water reticulation system did not bring permanent water security to Beaufort West. A serious drought in 1898 caused the Springfontein Dam run empty, so that water for the town inhabitants, and also their livestock, became a serious concern. Water mains at the southern end of the town were left open to provide animals with drinking water. The local cricket club was even granted permission to utilise the dry and hardened surface of the empty dam as a temporary extra cricket field. Because of the scarcity of water, all public standpipes were removed by April 1899.[45] More problems with water provision were soon to follow. The Nieuweveld Mountains or Kloof water tunnel collapsed so frequently that it had to be strengthened by a stone-mason wall. By 1902 the "waterhouse" (constructed in 1897) leaked so much that a large part of the town was without potable water (by 1912 it would be as much as 30 000 gallons or 136.4 m^3 daily). In the same year, the Springfontein Dam was reported to be silting up. The municipality unsuccessfully tried to remove the silt but abandoned the project in October 1902, after two weeks because of the high costs involved.[46]

40 AP Smit, *Gedenkboek van Nederduitse Gereformeerde Gemeente Beaufort-Wes…*, p. 138. The date of the report was not indicated.

41 WCARS, 3/BFW, Vol. 1/1/1/3, Minutes of a Council Meeting, 12 Sept 1865; WGH Vivier en S Vivier, *Hooyvlakte…*, p. 25.

42 WGH Vivier en S Vivier, *Hooyvlakte…*, p. 37.

43 WGH Vivier en S Vivier, *Hooyvlakte…*, p. 30.

44 WCARS, 3/BFW, Vol. 1/1/1/2, Minutes of a Council Meeting, 13 Sept 1852; 22 Aug1898, p. 250; WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 10; 32-33; SUL, Africana Collection, Anon., *Beaufort-Wes* (1955), p. 4.

45 WCARS, 3/BFW, Vol. 1/1/1/11, Minutes of a Council Meeting, 23 Jan 1899, p. 325; 12 Mar 1899, p. 505; WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 33-34.

46 WCARS, 3/BFW, Vol. 1/1/1/11, Minutes of a Council Meeting, 19 Sept 1899, pp. 437-438; Vol. 1/1/1/12, Minutes of a Council Meeting, 20 May 1902, p. 162; 29 Sept 1902, p. 216; 16 Oct 1902, p. 224; Vol. 1/1/1/14, Minutes of a Council Meeting, 22 Oct 1912, p. 494; WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 27; 34.

In 1905, another borehole, which yielded an extra 72 000 gallons (327.3 m^3) daily of potable water to the town supply, was drilled in the vicinity of the Kloof waterworks,[47] but by 1908, during another dry year, the Springfontein Dam became completely empty, once again.[48] The silting up and periodic drying up of its irrigation supply prompted the town council by 1913 to enlarge the Springfontein Dam.[49] However, with the outbreak of the First World War in 1914 and concomitant collapse of the ostrich feather industry South Africa was entering a period of widespread economic, political and environmental distress.[50] The Springfontein dam enlargement project was delayed due to financial quibbles among the municipal councillors regarding the securing of a loan and the allocation of tenders. In an unsavoury atmosphere of law-suits to challenge the procedures to grant a loan, a rejection of the initial construction plans and specifications, as well as the withdrawal and reissuing of tenders, no progress could be made.[51]

To top it all, Beaufort West experienced one of its worst droughts in 1915. The Springfontein Dam's water level was so low that it was deemed not advisable to allocate irrigation water in order to prevent illnesses from dying fish in the dam. In March 1915 the town experienced a serious shortage of water, and hardened pepper trees were beginning to die. As a result of the prevailing drought situation, many town dwellers were unable to pay reservoir lease rents because there was no water to irrigate cash crops. By September the situation became critical. It was reported to the municipal council that there was only one day's potable water supply left in the "waterhouse" and if the situation would continue, the town would run out of water. New boreholes would have to be sunk urgently as emergency measures, and existing boreholes were to be drilled deeper to increase supply. Consequently, the council requested the Cape Provincial Administrator to authorise an extra expenditure of £400 to the town's annual budget to sink a new borehole.[52] In fact, the Acting Secretary for the Interior referred the council to the 1914 health report by Dr GB Wilkinson, Beaufort West's medical officer of health at the time, motivating the need for a larger potable water storage tank. The council recognised the need for such an upgraded water storage facility but acknowledged that another scheme enjoyed priority at that stage – the enlargement of

47 WCARS, 3/BFW, Vol. 1/1/1/12, Minutes of a Council Meeting, 24 Jan 1905, pp. 606-607; 26 Jan 1905, p. 610.

48 WCARS, 3/BFW, Vol. 1/1/1/13, Minutes of a Council Meeting, 14 Jan 1908, p, 427; 5 May 1908, p. 476; WGH Vivier en S Vivier, *Hooyvlakte…*, p. 27.

49 WGH Vivier en S Vivier, *Hooyvlakte…*, p. 27.

50 P Buirsky, "Aspects of material life in Oudtshoorn 1860-1927, with particular reference to the labouring poor" (BA Honnours, UCT, 1983), pp. 38-41; 55; 59; 75-77; 105-106; W Beinart, *The rise of conservation in South Africa: Settlers, livestock and the environment 1770-1950* (Oxford, Oxford University Press, 2003), p. 187.

51 WGH Vivier en S Vivier, *Hooyvlakte…*, p. 27.

52 WCARS, 3/BFW, Vol. 1/1/1/15, Minutes of a Council Meeting, 26 Jan 1915, p. 222; 23 Mar 1915, p. 250; 8 Jun 1915, p. 279; 15 Jun 1915, pp. 282-283; 14 Sept 1915, pp. 315-316; 21 Sept 1915, p. 318; 14 Dec 1915, p. 357; 15 Feb1916, p. 385; WGH Vivier en S Vivier, *Hooyvlakte…*, p. 27; M Deas, "The Water Question", *The Courier*, 31 Mar 1915, p. 2.

the Springfontein Dam.[53] Work on the dam enlargement project finally began in May 1915 and was completed the next year.[54]

The issue of water shortage remained for decades a constant point of discussion on the municipal council's agenda. In November 1919, the council concurred with Councillor C Jackson's motion that "the time has arrived to make provision for a better water supply for the town". Mention was also made of the "scarcity of water"[55] but no concrete steps were taken to improve the situation. The issue was brought up again in 1924 when Councillor ED de Villiers moved that the council should seriously consider providing the town with a "more adequate" water supply as the water usage had increased over a number of years but not the storage capacity. To this end the council appointed a special committee to investigate the drilling of more boreholes so that "an adequate water supply for the town" could be continually attended to. In addition, the outlets of the Springfontein Dam were increased by 0,61 metre and fitted with sluice gates.[56]

Another disastrous drought hit South Africa in 1926 with devastating consequences for rural agricultural and town communities. Regions such as Vanrhynsdorp in the North-west Cape, Namaqualand and Beaufort West in the central Great Karoo were the worst hit.[57] A mere 6,3 cm of rain was measured in Beaufort West during that year, and it seems that the town's declining gradient had an adverse impact on underground water sources during periods of water duress. All boreholes in the lower end of town had weakened, and during the next two years many fruit trees and quince and pomegranate hedges in town parched completely. As the town's water situation worsened, councillors were contemplating the expansion of Beaufort West's water supply scheme to include a new reservoir in the Nieuweveld Mountains northwest of the town and a larger water storage capacity for domestic purposes. This drought threatened not only adequate water supply, but also loomed as a menace to the town's economic prosperity and caused widespread socio-economic misery. The mayor and correspondents of the local paper *The Courier*, as well as from *De Kerkbode*, the influential mouthpiece of the Dutch Reformed Church, noticed that a substantial number of unemployed Coloureds and Europeans urgently needed jobs because of the drought "as some of them are practically starving" and the economy slumped. Also, dwellers from the African township were

53 WCARS, 3/BFW, Vol. 1/1/1/15, Minutes of a Council Meeting, 31 Aug 1915, p.311; "Our water supply", *The Courier*, 31 Mar 1915, p. 3.

54 WCARS, 3/BFW, Vol. 1/1/1/15, Minutes of a Council Meeting, 4 Jul 1916, p. 449; WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 27, 29.

55 WCARS, 3/BFW, Vol. 1/1/1/16, Minutes of a Council Meeting, 11 Nov 1919, p. 265; 18 Nov 1919, p. 267.

56 WCARS, 3/BFW, Vol. 1/1/1/18, Minutes of a Council Meeting, 6 May 1924, p. 45; 9 Dec 1924, p. 150; 17 Feb 1925, p. 187.

57 DJR Rademan, "The socio-economic impact of drought in the period 1924-1934 on the magisterial district of Vanrhynsdorp" (MA, SU, 2020).

requesting relief jobs.[58] The municipal council responded by providing temporary relief work for poor whites at 2s. *per diem* and for poor blacks at 1.s 6d. *per diem*.[59]

Most of the 1940s were also serious drought-prone years. Between 1942 and 1947 the average rainfall for the town was 13,1 cm[60] leaving Beaufort West's domestic water supply in a "critical condition" by 1943. Springs and boreholes were drying up with reductions in yields, and the town reservoir was almost empty. At the beginning of December 1943 boreholes at the North End outspan were delivering 125 000 (568.3m^3) instead of 200 000 gallons (909.2 m^3) per day. A public meeting was convened for the purpose of discussing the water and food protection problems of the town. In the light of this prolonged drought, a new big water scheme including a new reservoir completed in 1944 at the cost of £26 000 proved insufficient to guarantee a secured water supply to the town.[61] In October 1945, with serious water shortages still lingering on, the municipal council decided to deepen an existing borehole to 60,96 metre and to investigate the feasibility of drilling more boreholes, even to a depth of 76,2 metre if necessary. The water supply designated for the irrigation of domestic fruit, vegetables and fodder was cut, arousing considerable dissatisfaction among ratepayers. By January 1946, Beaufort West's water situation became so critical that water provision to inhabitants was cut on certain days and hours, because the town's boreholes were giving in. The public's anxiety over the seriousness of the situation was also vividly reflected in *The Courier.*[62]

Between 1948 and 1949, the level in the water house became "extremely critical" again as the boreholes at North End gave in and called for a municipal state of emergency. Water from the mains could only be utilised for domestic purposes.[63] By October 1949, the water house was empty, which forced the municipal council

58 WCARS, 3/BFW, Vol. 1/1/1/18, Minutes of a Council Meeting, 20 Jul 1926, p. 391; 3 Aug 1926, p. 397; Minutes of a Special Meeting of the Council for the purpose of discussing the augmentation of the town's water supply, 18 Jan 1927, p. 448; Minutes of a Council Meeting, 25 Jan 1927, p. 451; Vol. 1/1/2/2, Minutes of a Council Meeting, 3 Aug 1916; WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 37-38; "Municipal Council", *The Courier*, 11 Aug 1926, p. 2; BB Burger, "Die droogte in Beaufort-West", *De Kerkbode*, 3 Jan 1927; BB Burger, "Die toestande in Beaufort-West", *De Kerkbode*, 1 Jun 1927, p. 195. As towns in South Africa have maintained various forms of racial segregation since colonial times this article will use words such as "Africans", "Coloureds" and "Europeans" only where racial categorisation is needed to contextualise such persons' positions and circumstances as they constitute part of the general municipal population of Beaufort West in the historical nomenclature.

59 WGH Vivier en S Vivier, *Hooyvlakte…*, p. 37.

60 "Town swelters in 105 degrees", *The Courier*, 14 Jan 1948, p. 5.

61 "Need for flood protection", *The Courier*, 11 Feb 1948, p. 5.

62 WCARS, 3/BFW, Vol. 1/1/1/23, Minutes of a Special Council Meeting, 26 Oct 1943, p. 113; 27 Feb 1945, pp. 278-279; 25 Oct 1945, p. 365; Minutes of a Council Meeting, 1 Nov 1945, pp. 367-369; 2 Jan 1946, Minutes of a Special Council Meeting pp. 401-402; "Water position serious", *The Courier*, 3 Feb 1943, p. 3; GJ Burger, "Geen water om tuine te besproei nie", *The Courier*, 24 Jan 1945, p. 5; GJ Burger, "Leiwater moet voorsien word", *The Courier*, 31 Jan 1945, p. 4; "Irrigation Water Emergency", *The Courier*, 31 Oct 1945, p. 5; "Drought drying up town", *The Courier*, 16 Jan 1946, p. 5; "Public Notice re Water Supply", *The Courier*, 23 Jan 1946, p. 2; "Drought continues", *The Courier*, 23 Jan 1946, p. 3.

63 WCARS, 3/BFW, Vol. 1/1/1/23, Minutes of a Council Meeting, 19 Jan 1948, p. 705; Minutes of a Special Council Meeting, 31 Jan 1948, p. 714.

to implement drastic measures to prevent the town from running out of water completely. Water rationing was immediately imposed and water was supplied for two hours daily, only for domestic use. It was announced over public loudspeakers that the use of water for irrigation, dust control of streets and the cleaning of buildings and other structures was completely prohibited, and that trespassers would be prosecuted. Unless it rained soon, the council would be obliged to truck water from as far away as Paarl, approximately 400 kilometres from Beaufort West. At the time the drilling of more emergency boreholes was considered but not immediately attended to.[64] However, by November 1949 the drought had been broken.[65] During the 1940's and especially since 1948, the quest for potable water sources was also influenced by political considerations as will be discussed under the lobby for the Gamka Dam.

Floods

Apart from droughts occasional floods, that inundate large areas, are also well-known climatological phenomena in many Karoo towns.[66] Beaufort West, with its vulnerable geographic location between the Gamka River and the Kuils River, was no exception. As early as 1837, newspapers reported about a terrible cloud-burst that unleashed on the town, and that flooded many homes. For about two hours, the water rose between 0,9 and 1,52 metre deep, causing a small girl to drown.[67] Although gardeners welcomed the prospect of a more secure source of irrigation water, many homeowners in the immediate vicinity of the Springfontein Dam under construction since 1865 were uneasy about its location a few metres above the town level. They warned the council by written notice about the possibility that heavy rains could break the dam wall and flood the whole town. Then the worst happened. Pouring rains fell in the Kuils River catchment northwest of Beaufort West. On 23 October 1869, 76.2 metres of the wall of the Springfontein Dam caved in and a deluge of 572 million gallons (2 600 363.48 m^3) of mud waters engulfed the town. Fortunately, there was no loss of life as most townspeople were watching the unfolding disaster from the remaining section of the wall. However, during the 2½ hours it took to drain the dam's contents, damage of approximately £20 000 was caused to town buildings. Among others, houses, shops, the hospital and the Dutch-Reformed Mission Church were swept away.[68]

64 WCARS, 3/BFW, Vol. 1/1/1/23, Minutes of a Special Council Meeting, 6 Oct1949, pp. 970-971; "Water restrictions imposed", *The Courier*, 24 Aug 1949, p. 5.

65 "Drought breaking", *The Courier*, 23 Nov 1949, p. 5.

66 H Klopper, "The organised expansion and permanent settlement of people in Boesmanland…", pp. 116-120.

67 AP Smit, *Gedenkboek van Nederduitse Gereformeerde Gemeente Beaufort-Wes...*, p. 133; WGH Vivier en S Vivier, *Hooyvlakte...*, p. 35; "Dreadful Storm", *The Graham's Town Journal*, 9 Mar 1837, p. 3.

68 WCARS, 3/BFW, Vol. 1/1/1/4, Minutes of a Special Council Meeting, 26 Oct 1869; WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 7; 9; 14; 25-26, 35; "Heavy rains at Beaufort", *The Courier*, 29 Oct 1869, p. 2; 31 Oct 1923, p. 5; A de Villiers, "When the B.W. dam burst", *The Courier*, 12 Apr 1939, p. 7. One imperial gallon = 0.00454609 m^3.

After years of quibbling over who should be held liable for the flood damage of 1869 the municipal council and the rate payers consented in 1874 to the rebuilding of the Springfontein Dam and enlarging of its spillways. They used local convict labour and other workers from Richmond, Graaff Reinet and Victoria West. A Scot named Bruce-Brand was the project engineer. The total cost of repairs to the dam wall and spillway enlargement amounted to £18 106. Construction was completed by 1877 and the dam reached overflow in 1879.[69] Apart from irrigation the dam was also used for recreational purposes. In 1877, the local baker, Peter Krummeck, got permission to launch a pleasure boat, the *Pride of Beaufort*; by 1881 the municipal council forbade all swimming within 365,76 metre from the dam wall between 7 am and 8 pm so that the town's "respectable ladies could enjoy the pleasures of the Beaufort Reservoir promenade".[70]

As in 1869, the town dwellers were again forced in 1918 to flee the town because of heavy flooding. According to the local newspaper, as quoted by WGH Vivier and S Vivier, it was a "night of anguish".[71] Although the wall of the Springfontein Dam held, this time the flood waters caused havoc in town as 30,48 cm of rain poured down within twelve hours in the vicinity. The tennis court was destroyed, as well as a substantial number of dwellings in the low-lying Coloured township. A large section of the water mains from the Kloof waterworks was washed away and a four-year-old child drowned.[72] After the flood of 1918, there was considerable public protest against the council's alleged neglect to enlarge the Springfontein Dam's two spillways for carrying off the overflow because some townspeople were of the opinion that the councillors delayed urgent attention to the matter. Eventually, by January 1919, the damaged spillways were repaired according to the recommendations of a Mr Patterson, a circuit hydraulic engineer from the Department of Irrigation.[73]

Despite the municipal council's continuous concerns about the town's domestic water supply still in February 1941,[74] one of the most severe floods in Beaufort West's history happened on 6 April 1941 after a cloudburst of more than 152 mm took place 22,5 km northwest of the town, and an unstoppable mass of water raged towards the village. Hotels, homes and businesses were flooded and some people had to be evacuated from the town centre when the flood waters reached 1.2 m at street level. Two men drowned, and many domestic sheep, goats, pigs and chickens were lost. The Weeber Bridge over the Gamka River at the railway station was severely

69 WCARS, 3/BFW, Vol. 1/1/1/6, Minutes of a Council Meeting, 7 Apr 1874; WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 26-27.

70 WCARS, 3/BFW, Vol. 1/1/1/8, Minutes of a Council Meeting, 15 Feb 1881; 22 Feb 1881; WGH Vivier en S Vivier, *Hooyvlakte…*, p. 26.

71 Quoted by WGH Vivier en S Vivier, *Hooyvlakte…*, p. 36.

72 WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 29, 34, 36-37..

73 WCARS, 3/BFW, Vol. 1/1/1/16, Minutes of an Urgent Special Council Meeting, 15 Mar 1918, p. 25; 19 Mar 1918, p. 26; 26 Mar 1918, p. 29; 14 Jan 1919, p.192; WGH Vivier en S Vivier, *Hooyvlakte…*, p. 29.

74 "Central Housing Board to be interviewed", *The Courier*, 12 Feb 1941, p. 3.

damaged. Four kilometres of the water pipeline from the Kloof waterworks to the town washed away. Until the damage was repaired, potable water could be provided temporarily from a few municipal boreholes. The town dwellers were fortunate that the Springfontein Dam was nearly dry in the period preceding the flood and could therefore absorb much of the force of the deluge. However, as much as the flood signs a relief of breaking the years of drought, it also brought distress, suffering and health problems. Especially among the poorer sections of both the European and Coloured communities many homes were destroyed and emergency shelter, food and clothing had to be provided by the Department of Welfare to such persons. At places where the Gamka River flowed through the town, the riverbanks had to be reconstructed. The total amount of flood damages in the town was estimated to be about £100 000.[75]

Case studies of water shortage and contestation between the Beaufort West municipality and external parties

The extension of the Cape colony railway network in the late nineteenth century and the British military presence in Beaufort West during the South African War, are poignant examples of changed relations by the superimposition of an external authority in terms of control over the town's water resources and assets.

The coming of the railways

The expansion of the Cape railway line to Beaufort West in February 1880 would become a major game-changer in terms of water provision. It was a milestone in the development of the town: not only did the station and railway depot provide a substantial financial injection to the town's economy and present new commercial opportunities, but the local populace also was extended significantly. Before the line was extended to Kimberley, Beaufort West became the railway terminal in the Karoo and experienced an influx of human traffic. Hillside, a new camp for railway employees, was erected on the western side of the town centre and by 1900 its populace grew to 400.[76]

On the other hand, especially during times of drought, the water demands of the railways would put considerable pressure on the water provision capacity of the municipal council. In the history of the town's recurring water crises the dynamics of a dormant but polite tension between the council and the railway authorities would develop. They would compete for the same scarce resource, while also becoming more and more dependent on each other for services and economic benefits. As early

75 WCARS, 3/BFW, Vol. 1/1/1/22, Minutes of an Extraordinary Council Meeting, 8 Apr 1941, pp. 265-267; 19 Apr 1941, pp. 267-269; WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 29, 37; "Flood Havoc", *The Courier*, 16 Apr 1941, p. 5; "Provinsiale ingenieur se rapport oor skade deur verspoeling", *The Courier*, 30 Apr 1941, p. 3.

76 AP Smit, *Gedenkboek van Nederduitse Gereformeerde Gemeente Beaufort-Wes…*, pp. 150-151; WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 16-18; 118-121.

as November 1878, the town council was informed of the colonial government's intention to construct a reservoir to the west of the town to provide water to the anticipated railway station and dwellings for railway employees. Originally, the railways would withdraw 4000 gallons (18.2 m^3) of water from the council's springs and the Springfontein Dam for its steam locomotives.[77] In 1888, a weir was built with convict labour in a tributary of the Gamka River to catch the runoff for railway purposes. It was to be called Walkers Dam after Tommy Walker, a railway foreman.[78]

Shortages, resulting from a dry spell in the early 1800s illustrate the critical importance of water and the competition between the municipal council and the railways for access to this resource. Council minutes of 1883 referred to a "diminished quality of water available for the erf holders and other inhabitants of the town" and the "empty state of the reservoir" owing to the prevailing drought. The council made it clear that in case of a choice between water for ratepayers, who were totally dependent on the town's springs for their survival, and the Railway Department, a limitation might be imposed on the latter. The railway's carts and mule wagons were also responsible for silting up the Gamka springs and the council demanded that it should be cleared properly. According to the council, the ratepayers were entitled to their "fair share" from the natural water flow of these springs.[79] The drought even threatened the survival of the railway plantation which supplied firewood for the steam locomotives. At the request from the general manager of the Railway Department, the council agreed to allow extra water pumping hours on Sundays "to save the trees" and "solely to meet the special exigencies of the case".[80]

Adequate water provision to the railways remained an issue during the South African War when extra pressure was brought to bear on railway stock to transport military equipment and troops. The only option for the Railway Department was to sink new boreholes on the commonage in 1902.[81] In 1904 the Railway Department and the municipal council reached an agreement: besides the 10 000 gallons (45.5 m^3) *per diem* to which the railways was entitled from the gravitation water supply, it would also be allowed to pump excess water, when available. This would be pumped from existing boreholes and wells or any additional boreholes the Railway Department might have considered proper, to a minimum quantity of 100 000 gallons (454.6 m^3) *per diem* at a rate of 6d. per 1 000 gallons. The municipality would not interfere with the pumping of aforesaid. In the case of a dearth of water, which would necessitate curtailing the supply to the town's inhabitants for domestic purposes, the council would not be required to supply railway water from the gravitation supply

77 WCARS, 3/BFW, Vol. 1/1/1/8, Minutes of a Council Meeting, 1 Dec 1879; 18 Oct 1881; WGH Vivier en S Vivier, *Hooyvlakte…*, p. 31.
78 WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 24; 31; 121.
79 WCARS, 3/BFW, Vol. 1/1/1/8, Minutes of a Council Meeting, 28 Aug 1883.
80 WCARS, 3/BFW, Vol. 1/1/1/8, Minutes of a Special Council Meeting, 15 Dec 1883.
81 WCARS, 3/BFW, Vol. 1/1/1/12, Minutes of a Council Meeting, 17 Feb 1902, p. 109; 24 Feb 1902, p. 113.

to the detriment of the town dwellers. The railway's water would also be metered and recorded.[82] During the drought of 1908, the water supply at the railway depot was low again. Although the council was unable to provide the agreed quota to the railways, it would endeavour to supply the quota of 10 000 gallons as long as possible.[83]

South Africa's economic growth and development since the First World War (1914-1918) and during the 1930s and the Second World War (1939-1945) had a direct impact on the South African Railways. It was a dominant role player in the country's economy. The expanding transportation network required more railway rolling stock and locomotives.[84] This in turn, impacted directly on Beaufort West's water supply as the railway water demands increased exponentially. Therefore, the availability of water supply became a critical factor in times of drought. A perusal of the municipal council minutes reveals an interplay of rising tension between the municipal council and the railway authorities when the national interests of the Railway Department and the local interests of Beaufort West's ratepayers were at stake. During the severe drought of 1915, and with no spare rolling stock available to transport water from elsewhere to Beaufort West, the general manager of the Railway Department pleaded with the municipal council to assist the railways with extra water supplies as far as possible. However, the town clerk replied that any excess water would be needed for the town's electrical scheme and the enlargement of the Springfontein Dam.[85]

In January 1917, the railways requested the purchase of 40 000 gallons (181.8m^3) from the Springfontein Dam for its steam locomotives. Serious delays appeared in the railway traffic as a result of the poor municipal water quality received, but the council regretted "being unable to comply with their request owing to the very small quality (*sic*) of water in the dam at present". However, by April the situation improved to the extent that excess water from the "waterhouse" could be supplied to the railways.[86] By October there was "plenty of water" in the Springfontein Dam and the council was in a position to provide 100 000 gallons *per diem* to the Railway Department at 9d. per 1 000 gallons.[87] Desperate situations sometimes invoked desperate solutions. In the light of an approximate 20% evaporation loss of the Springfontein Dam's contents, owing to its large surface, the district engineer of the Railway Department suggested that the council should experiment with pouring crude oil into the dam's

82 WCARS, 3/BFW, Vol. 1/1/1/12, Minutes of a Council Meeting, 20 Apr 1904, pp. 469-471; Beaufort West Municipal Agreement with Railway Department, 28 Feb 1905, p. 628.

83 WCARS, 3/BFW, Vol. 1/1/1/13, Minutes of a Council Meeting, 14 Jan 1908, p. 427.

84 BJ Liebenberg and SB Spies, *South Africa in the 20th century* (Pretoria, JL van Schaik Academic, 1993), p. 294; TRH Davenport, *South Africa. A modern history* (Johannesburg, Third Edition, Macmillan Publishers (Pty), Ltd, 1987), p. 524; F Pretorius (red.), *Geskiedenis van Suid-Afrika van voortye tot vandag* (Kaapstad, Tafelberg, 2012), pp. 461-463.

85 WCARS, 3/BFW, Vol. 1/1/1/15, Minutes of a Council Meeting, 7 Sept 1915, p. 313.

86 WCARS, 3/BFW, Vol. 1/1/1/15, Minutes of a Council Meeting, 16 Jan 1917, p. 512; 30 Jan 1917, p. 518; 17 Apr 1917, pp. 548-549.

87 WCARS, 3/BFW, Vol. 1/1/1/15, Minutes of a Council Meeting, 9 Oct 1917, p. 609.

water surface to lessen evaporation.[88]

The extreme drought of 1942 to 1943 once again forced the railways to appeal to the council to increase the allocation of 100 000 gallons (454.6 m^3) to 150 000 gallons (681.9 m^3) *per diem* of municipal water for "emergency purposes" in the light of a threatening water shortage. In this instance the council was able to provide water at 1/3d. per 1 000 gallons. But the continued exploitation of such large volumes of water would lead to a slow but steady depletion of its underground resources. Indications were that the levels of the railway's underground water resources had dropped from 18,3 metre previously to 45,72 metre by 1943. In addition, its emergency supply from the town's main reservoir would be discontinued until further notice. Therefore, the municipal council recommended that an extra borehole be sunk for railway purposes at the North End on the outskirts of the town, but water could only be pumped from this source if there was no more water left in the Walker Dam. It was also suggested that the Railway Department should cooperate with the council to increase and bolster Beaufort West's future water supply through investigating the possibility of constructing a dam in the Nieuweveld Mountains.[89] In expectation that the railways' water needs would increase to 4 million gallons (18 184.36 m^3) per annum, various permutations were presented: either the railways would secure premises to erect its own dam and retain all water rights to such reservoir; a dam could be constructed in a 50-50 partnership with the railways with the latter party carrying 50% of the costs involved; or the municipality would carry the construction costs exclusively and sell water to the railways at a fixed tariff.[90] Between 1913 and 1947, e.g., the railway's average water consumption had risen from 959 800 gallons (4363.3 m^3) to 4 635 000 gallons (21071.1 m^3) per annum.[91]

By 1948 the tension between the municipal and railway authorities on the ever-increasing and unrelenting demands for water supply, reached new heights. During a meeting of ratepayers in February of the same year, the mayor of Beaufort West, Dr JN Brummer, frustratingly complained that the railways "were drawing off the life blood from our town".[92] The municipal council minutes of this period also refer to a meeting between a council deputation and the Minister of Transport to discuss the increasing railway water demand in Beaufort West amidst a dwindling municipal water table. This was a manifestation of rising state involvement in the town's water assets where national interests interloped more and more with local interests.[93]

88 WCARS, 3/BFW, Vol. 1/1/1/19, Minutes of a Council Meeting, 16 Apr 1929, p. 30.
89 WCARS, 3/BFW, Vol. 1/1/1/22, Minutes of a Council Meeting, 16 Feb 1942, p. 373; 3/BFW, Vol. 1/1/1/23, Minutes of an Extraordinary Council Meeting, 1 Feb 1943, p. 13; Minutes of a Special Council Meeting, 26 Oct 1943, p. 113; 3 Nov 1943, p. 115; "Water position serious", *The Courier*, 3 Feb 1943, p. 3.
90 WCARS, 3/BFW, Vol. 1/1/1/23, Minutes of an Extraordinary Council Meeting, 16 Feb 1944, p. 135; "Buitengewone Raads-Vergadering", *The Courier*, 1 Mar 1944, p. 5.
91 WCARS, 3/BFW, Vol. 1/1/1/14 – WCARS, 3/BFW, Vol. 1/1/1/23.
92 "Need for flood protection", *The Courier*, 11 Feb 1948, p. 5.
93 WCARS, 3/BFW, Vol. 1/1/1/23, Minutes of a Council Meeting, 15 Aug 1949, p. 939.

By 1949, the railways were still struggling to obtain adequate water supplies to augment its acute shortages, and water had to be transported from Hutchinson, a railway station 210 kilometres north of Beaufort West.[94] This serious situation led to a dispute over pumping rights with the Beaufort West municipality. The acting district engineer of the Railway Department re-equipped two decommissioned railway boreholes at the Walker Dam "to avoid a total collapse of our locomotive supplies". At the time water was trucked to the locomotive tanks to supplement the supply at the rate of one train per day. On the one hand, the municipal council acknowledged that the railways were an important industry for the town's economic prosperity. On the other hand, however, the drawing of additional water north of the dolerite dyke would definitely endanger the domestic supply to such an extent that it might be necessary for railway transport to haul water from elsewhere to both entities, should no rain fall before the end of that year.[95] In the light of the municipal and railway water predicament, it became clear that a new water procurement scheme had to be devised for Beaufort West.

Beaufort West and the South African War

Beaufort West is a typical case study of an emergent water crisis in a Karoo town because of a temporary increased population, resulting from the South African War.

Amidst the serious drought at the turn of the century, Beaufort West also had to deal with the impact on its water resources of a few thousand British troops and horses that converged on the town since the outbreak of the South African War in 1899. On 7 November 1899, by request of the magistrate, the town council agreed to a daily consumption of 6,8 l of water per head free of charge for personnel in the military camp to the north of the town, on condition that the military authorities would provide weekly returns of troop numbers. The reason for this condition was that the council could subtract the quantity of water used from the railway's quota, and that "such grant [was] to be made so long as the town supply of water [did] not suffer".[96]

Although as loyal British subjects the Beaufort West municipal council was initially not indisposed towards the British military presence in town, problems and friction between civilian and military authorities soon developed over the exploitation of the town's water resources and other assets. The military occupation of public spaces, amenities and properties such as church property, the city hall, the market square, municipal horses and streets became daily nuisances and increased the level of civilian

94 WCARS, 3/BFW, Vol. 1/1/1/23, Minutes of a Council Meeting, 20 Jun 1949, p. 919; "Water restrictions imposed", *The Courier*, 24 Aug 1949, p. 5.

95 WCARS, 3/BFW, Vol. 1/1/1/23, Minutes of a Council Meeting, 19 Sept 1949, p. 96; Minutes of a Special Council Meeting, 29 Sept 1949, p. 969.

96 WCARS, 3/BFW, Vol. 1/1/1/11, Minutes of a Council Meeting, 14 Nov 1899, p. 460; WGH Vivier en S Vivier, *Hooyvlakte…*, p. 140.

frustrations.[97] The council complained to the magistrate about Imperial troops swimming in the Springfontein Dam, and they had misgivings about the advisability of erecting a military camp above Beaufort West's water supply. Consequently, any swimming in the dam by the military was prohibited.[98] More military camps were soon erected in and around Beaufort West, which brought more pressure on the town's limited water supply. The British garrison requested the digging of a well close to the weir in the Gamka River for drinking and domestic purposes. But these concessions were soon abused when soldiers started washing their clothes on the premises and polluting the town's water supply. In December 1900, the council's sanitary inspector discovered that the night soil from the military camp north of the town was buried in trenches on a hill above the Springfontein Dam. The camp was removed to the south of the hill and away from the dam only after complaints by the municipal council.[99]

Water consumption still increased at an alarming rate. Because of the military's large water usage and probable high spillage, the military authorities were informed that their consumption would be metered from 1 April 1902, and that they would have to pay the same rate for water as the railways did. By May the level in the "waterhouse" was only 45,72 cm. Horse troughs were eventually built for military horses at the Gamka spring, where surplus water was relayed to the Gamka weir. A small dam, adjacent to the Kuils River, supplied water to mortared washing troughs, but the military relayed a pipe from the dam to its camp so that no water was left for the town's washing. By September 1902, when Beaufort West was still under military administration, the town council nevertheless requested the military authorities "in a friendly manner" to remove the troops and horses as soon as possible. Under those circumstances it was impossible to provide water to them all without great inconvenience and losses to the civilian inhabitants.[100]

The lobby for the Gamka Dam

Against the background of the constant quest for more water resources and supply, suggestions for the construction of a large storage reservoir in the Nieuweveld Mountains, had been tabled during a town council meeting as early as 1899.[101] Similar suggestions came from the public and during council discussions in 1919,

97 WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 140-142.

98 WCARS, 3/BFW, Vol. 1/1/1/11, Minutes of a Council Meeting, 14 Nov 1899, p. 461; 21 Nov 1899, p. 465; WGH Vivier en S Vivier, *Hooyvlakte…*, p. 140.

99 WCARS, 3/BFW, Vol. 1/1/1/11, Minutes of a Council Meeting, 19 Nov 1900, p. 602; 26 Nov 1900, p. 606; 10 Dec 1900, p. 613; 21 Jan 1901, p. 625; Vol. 1/1/1/12, Minutes of a Council Meeting, 30 Sept 1901, p. 54; WGH Vivier en S Vivier, *Hooyvlakte…*, p. 141.

100 WCARS, 3/BFW, Vol. 1/1/1/12, Minutes of a Council Meeting, 2 Dec 1991, p. 78; 3 Mar 1902, p. 118; 17 Mar 1902, p. 122; 22 Sept 1902, p. 214; WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 141-142.

101 WCARS, 3/BFW, Vol. 1/1/1/11, Minutes of a Council Meeting, 19 Sept 1899, p. 440.

1927, 1933, 1934 and 1941.[102] However, the issue was forced by the desperate circumstances during the prolonged drought of the 1940s, so that efforts to obtain a large new storage dam for Beaufort West were increased. In the report of a government geological survey of Beaufort West, it was concluded that the amount of water extracted at the time considerably exceeded the amount which was entering the underground reservoir. The severe pressure on these dwindling water resources and the competition between the municipality and the railways to extract water in this period, demanded an urgent solution to the growing problem. And it was argued that a dam in the catchment of the Gamka River in the Nieuweveld Mountains, where silting was not such a large problem, would also protect the town from floods and strengthen its underground water supply. To build the proposed dam, the municipality would purchase the farm Donkergat.[103]

Political agency also seemed to have influenced the different and competitive water needs of the municipality and the railways. Until the 1990s South African elections for municipal councillors were conducted on a non-partisan base but this tradition did not deter the ratepayers' political sentiments on a national constituent base. After the general election of 1938, Eric Louw, a member of the opposition National Party (NP), became the MP for the Beaufort West constituency.[104] Louw's ardent and enthusiastic support for municipal council deputations during these years to lobby ministers of the United Party government for the Gamka Dam project, is striking, bearing in mind the fierce competition for voter support in Afrikaner politics of the time. Apparently both the government and the municipality had lacked the necessary funds to build a storage dam for Beaufort West since the outbreak of the Second World War.[105] Nevertheless, the lack of enthusiasm in government circles to provide financial aid for building water infrastructure in a secure opposition constituency did not go unnoticed. The minutes of the Beaufort West council meeting of July 1943 concluded that the chairperson of the wartime Civil Re-employment Board, Major Piet van der Bijl, "does not seem to be primarily concerned" with the municipality's proposed dam building scheme.

102 WCARS, 3/BFW, Vol. 1/1/1/16, Minutes of a Council Meeting, 30 Sept 1919, p. 249; Vol. 1/1/1/18, Minutes of a Special Council Meeting, 18 Jan 1927, p. 448; Vol. 1/1/1/20, Minutes of a Council Meeting, 7 Dec 1933, p. 156; 30 Jan 1934, p. 180; 19 Jun 1934, p. 239; Vol. 1/1/1/22, Minutes of a Special Meeting of the Council, 24 Nov 1941, p. 1; "Correspondence, "Drought" – Editor", *The Courier*, 2 Feb 1927, p. 2; "The gossip's diary", *The Courier*, 10 May 1933, p. 5.

103 WCARS, 3/BFW, Vol. 1/1/1/23, Minutes of a Council Meeting, 15 Mar 1943, p. 37; Minutes of a Special Meeting of the Council, 27 Feb 1945, pp. 278-279; Minutes of a Council Meeting, 23 Apr 1945, p. 293; Minutes of a Special Meeting of the Council, 13 Feb 1948, p. 730; GJ Burger, "Hoe om die dorp te bevry van oorstroming uit die Gamkarivier", *The Courier*, 15 Jul 1942, p. 2; "Municipal minutes", *The Courier*, 31 Mar 1943, p. 6; JE Pons, "Watervoorraad van die dorp", *The Courier*, 17 Jan 1945, p. 5; JE Pons, "Die dam", *The Courier*, 21 Feb 1945, p. 7; "£ 127, 000 to be raised", *The Courier*, 7 Mar 1945, p. 5; LM Verster, "Water", *The Courier*, 19 Sept 1945, p. 5.

104 CJ Beyers (red.), *Suid-Afrikaanse biografiese woordeboek*, Deel V (Pretoria, RGN, 1987), p. 498.

105 WCARS, 3/BFW, Vol. 1/1/1/23, Minutes of a Council Meeting, 19 Jul 1943, pp. 78-79; 15 Oct 1945, p. 362; 9 Dec 1946, p. 543; 20 Oct 1947, pp. 668-669; "Municipal minutes", *The Courier*, 18 Aug 1943, p. 6; "Minister of Railways sympathetic", *The Courier*, 19 Dec 1945, p. 5; "Stadsnotule", *The Courier*, 5 Nov 1947, p. 2; "Need for flood protection", *The Courier*, 11 Feb 1948, p. 5.

According to Van der Bijl, the council should rather approach the Social Planning Council in Pretoria for funds. Because of the prioritisation of government expenditure for immediate war needs the allocation of funds to civilian projects such as the construction of the Gamka Dam could drag on indefinitely. Therefore, the Beaufort West municipal council deemed it wise, and probably on insistence of Louw, to try expediting the approval of such funds through political means rather than approaching officials of the Department of Irrigation.[106] The municipal frustrations with the apparent lack of capital or interest in government circles even compelled the council to reconsider its water supply contract and fixed tariff with the railways.[107]

It is worth mentioning that after May 1948, when the NP came to power and Louw became the Minister for Mines and Economic Development, an influential position in the new Cabinet, wheels were set in motion to build a new storage dam for Beaufort West. Clearly the national interests of the Railway Department and the local interests of Beaufort West became aligned politically, which expedited the initiation of the project. Preparation of the dam site, at the confluence of the Gamka River and Donkergatspruit in the Nieuweveld Mountains 12,8km north of Beaufort West, began in July 1950. The dam, completed in 1955 at a cost of R770 000, was constructed by the Department of Irrigation, which sold dam water to the Beaufort West municipality. The Gamka Dam has a capacity of 540 000 000 gallons (2 454 888.6 m^3) of water, of which by 1969, the railways had consumed 31 million gallons (140 928.79 m^3) monthly.[108]

Conclusion

Perhaps the most salient feature of most Karoo towns such as Beaufort West is their extreme vulnerability to prolonged drought. The location in which Beaufort West originated – the arid environment and harsh climate, wedged between two unpredictable semi-perennial rivers and a sub-terranean water supply limited to certain areas due to dolerite formations – had a profound impact on water provision and water woes in its municipal history. The town's water infra-structure was disrupted or ruined a few times by ravaging floods over which the inhabitants had no control. Groundwater sources extracted through boreholes had a life-sustaining

106 WCARS, 3/BFW, Vol. 1/1/1/23, Minutes of a Council Meeting, 19 Jul 1943, pp. 78-79.

107 WCARS, 3/BFW, Vol. 1/1/1/23, Minutes of a Council Meeting, 15 Oct 1945, p. 360. Despite the municipal council's frustrations with the UP government to obtain dam building funds it does not seem as if the water supply contract with the Railway Department was altered.

108 WCARS, 3/BFW, Vol. 1/1/1/24, Minutes of a Special Meeting of the Council, 28 Jul 1950, p. 121; Minutes of a Council Meeting, 19 Mar 1952, p. 513; Minutes of a Special Meeting of the Council, 26 Mar 1952, pp. 524-526; Vol. 1/1/1/25, Minutes of an Extraordinary Council Meeting, 27 Oct 1954, p. 165; WGH Vivier en S Vivier, *Hooyvlakte…*, pp. 34-35; SUL, Africana Collection, Anon., *Beaufort-Wes*, No. 12, p. 4; "Money on estimates for dam", *The Courier*, 29 Sept 1948, p. 5; "Gamka dam to be started this year", *The Courier*, 12 Mei 1950, p. 5; "Dam construction coming", *The Courier*, 9 Jun 1950, p. 5; "£ 250, 000 dam started", *The Courier*, 21 Jul 1950, p. 5; "Steady progress on new dam", *The Courier*, 21 May 1954, p. 3.

impact on Beaufort West although the severe and prolonged periodical droughts kept the town in a state of water vulnerability and insecurity for many decades. The longevity of the Springfontein irrigation dam, which could not be sustained throughout the twentieth century, is a testimony to this water vulnerability.

The fragile and sometimes critical position in terms of water security was also aggravated by human agency as other more powerful politics were at stake in certain periods of the town's history. The added dynamics of military and political interventions in the water procurement efforts of Beaufort West as the central town in this region, is a fascinating narrative of South African water politics. Military needs during the South African War and national railway interests at times threatened to supersede the local municipal authority's ownership of the town's water supply. The war and the railway requirements set a scenario for what could be expected in terms of the water needs of people passing through the town. Even the completion of the Gamka Dam in 1955 only partially gave Beaufort West some reprieve until the early 2000s, because of the periodical droughts and the water demands of its growing population. Klopper observed that in many Karoo towns local authorities will have to face a growing hostility among inhabitants regarding the frequent unavailability of water. With aging infrastructure, prolonged droughts and increasing populations many of these towns do not enjoy a seamless, uninterrupted water supply anymore.[109] This lesson became true for Beaufort West during the drought of 2015-2018.

109 H Klopper, "The organised expansion and permanent settlement of people in Boesmanland…", pp. 121-122; 127.