

# OTWAY WATER BOOK 56

## **“Barwon Water’s Last and Final Gerangamete Groundwater Borefield Extraction Report, 2018-2019.”**



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July 2020.

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## Introduction.

During the drought of 1982-1983 Barwon Water extracted 50% of Geelong and District's water supply from the Gerangamete Borefield at Barwon Downs. This was the start of a series of large extractions to supplement Barwon Water's water supply. In the millennium drought of 2002 to 2010 70% of Geelong's supply came from groundwater extraction at Barwon Downs (see Appendix Eighteen, page 93).

Through the period from 1982 to 2004 there was a lengthy stress test pump (1986-1990) and several extraction licences were issued and used. As a result of the test pump a Permissible Annual Volume (PAV) was calculated and legislated to be 4,000 ML/year. This has never been implemented and at the time of the PAV determination an extraction licence had already been issued for 12,600 ML/year. This licence was allowed to continue until that current licence came up for review in 2000. It took until 2004 before the review of the licence was completed and the new extraction limit was set at 20,000 ML/year. The renewed licence period was for 15 years (see Appendix Nineteen, page 94).

One of the licence conditions stipulated that Barwon Water had to complete and submit a report to Southern Rural Water within 60 days after the end of each financial year (see Appendix Twelve, pages 58-70)

### *SECOND SCHEDULE*

#### *Point 1.3 Reporting.*

*"Barwon Water must provide to the Authority within 60 days of the end of each year a report..."*

Then 7 days later this report would be made available to the public.

### *Section 10. COMMUNITY ENGAGEMENT*

#### *10.1 Information*

*"Barwon Water must:*

- a. Within 7 days of submitting to the Authority a report required under sub-clauses 1.3, 3.5(a), 4.5, 5.5(a) or 6.4 make it available to the public;"* (see Appendix Twelve for a copy of the licence)

To my knowledge section 10.1 a., has never been complied within the 7 days during the 15 years of the licence.

### **Licence Lapses.**

Barwon Water withdrew its licence renewal application early in 2019. The licence lapsed in July 2019.

Gaining a copy of and scrutinising the last and final licence report (2018-2019) makes for interesting reading (see page 8).

## **CHAPTER ONE.**

### **HISTORICAL FACTS.**

#### **Reports Never Released on Time.**

At no stage has the Barwon Water Gerangamete Borefield report ever been provided 7 days after it had been submitted to Southern Rural Water. And, numerous requests for reports were made over the duration of this licence. For example it took over 300 days after Barwon Water had submitted the 2018-2019 report for it to be released to the public (see Appendix One, pages 33-34).

#### **A Licence Conditioned Morphed to an Understandable Change.**

This 7 days later release of the report to the community after Barwon Water had submitted it to Southern Rural Water morphed somewhat in a reasonable and understandable way. The intention appeared to be that the 60 day period limit, or when the report had to be handed in, gave both Southern Rural Water and Barwon Water a chance to get the report finalised and correct (see Appendix 16, pages 90-91). This would then mean the report would be ready by the 7<sup>th</sup> of September at the latest. Unfortunately, this has never happened. The licence condition 10.1 (see page 4 above) has blatantly been ignored on numerous occasions.

#### **Six Months to Gain the Licence.**

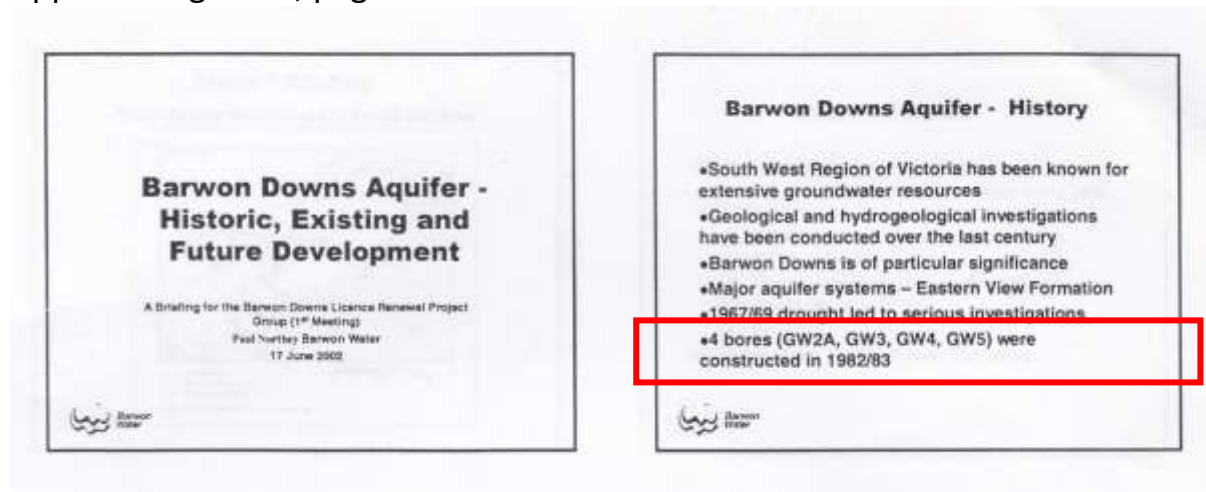
In 2006 gaining a copy of the 2004 Borefield Licence for the first time was extremely difficult. It took a 6 months effort of requests and discussion. Only after two Freedom of Information requests was the 2004 licence presented.<sup>(4)(5)</sup> Even then there were at least two versions of the licence circulating. One version held by Southern Rural Water and a different one held by Barwon Water that had been operating for two years. Two very different versions. Otway Water Book 1 deals with this episode in detail.

#### **An Intriguing Trail of Issues Surrounding Licence 893889/BEE032496.**

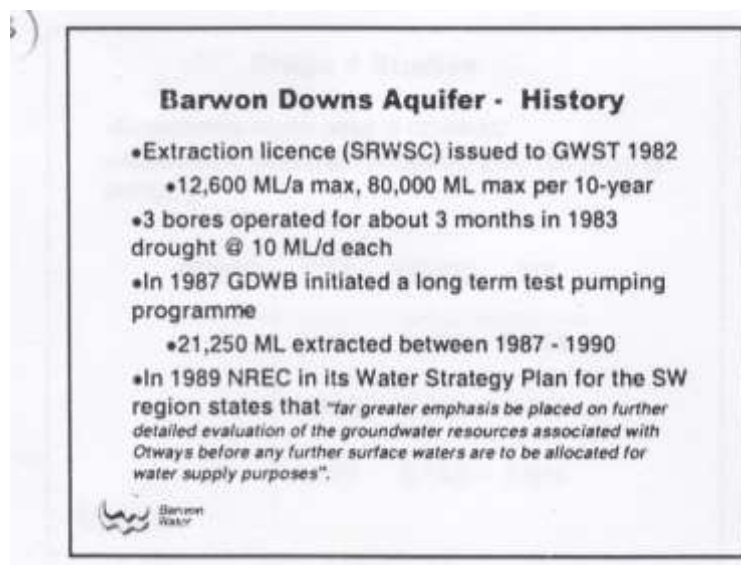
Apparently historical use of the Barwon Downs Borefield at Gerangamete has been taking place since the early 1970s (see Appendix Six, page 42). However, the first and significant extractions took place during the 1982- 1983 drought when 4 extraction bores were constructed. No groundwater extractions for



supply to Geelong took place prior to these 4 bores being constructed (see Appendix Eighteen, page 93).



An extensive stress test pump was conducted between 1987 and 1990.



It would appear that a detailed sequence of events regarding the various versions and facts around the 893889 licence started in 1982. Appendix Six (page 42) states that a 1995 extraction licence was issued and due for renewal in 2000.

Appendix Eight (page 44) to Appendix Fifteen follows the intriguing story of Licence 893889.

### Reports Full of Mistakes.

Once having gained a copy of the 2004 licence in 2006 the next step was to back track and gain copies of the 2004-05 and 2005-06 reports. Problems again.

Having obtained the licence document and understanding what it entailed prompted the request to Southern Rural Water for the 2004-2005 report. This was obtained under the Freedom of Information (FOI) process. Amazingly this 2004-05 copy of the report contained data that could only be collected from the 2005-2006 year. Of course, this was an impossibility. Later in the year another FOI letter was sent off requesting another copy of the 2004-2005 report. This resulted in a different copy to the one gained earlier from Southern Rural Water,

containing significant differences. Not only that, additional data was included. The more the two reports were compared the bigger the discrepancies with data found that could only be collected from the next financial year. Otway Water Book 8<sup>(17)</sup> deals with this in detail.

### **Gerangamete Borefield Reports Seldom released on Time.**

Report after report was seldomly released for public scrutiny anywhere close to the final dates as per the licence conditions. The very first report of licence 2004-2005 was not submitted to Southern Rural Water until 5 April 2006 (Appendix Two, page 35). See Appendixes One to Five and Appendix Ten (page 50) for more examples.

### **Reports Had to be Accessed through the Freedom of Information Process.**

In fact up until recent times it appeared that every effort was made by Barwon Water and Southern Rural Water to obstruct public access to reports in blatant disregard to the licence conditions (see page 24).

### **Ombudsman Department of Little Help.**

Over the following years there were a multitude of problems with the material presented in the yearly Gerangamete Borefield extraction reports (Licence Number 893889/BEE032496). The depiction of multiple cones of depression was one of the major concerns with the reports. An impossibility.<sup>(9)(11)</sup> There is only one Borefield, therefore there should be only one cone of depression. Multiple cones across the region would indicate multiple borefields (see Appendix 17, page 92).

Asking the Water Ombudsman for assistance lead to little satisfaction. All queries had to go through a Southern Rural Water process first. This was done and of the 60 queries most were excused by explanation of administrative error. The reply simply raised another batch of queries.<sup>(9)(18)(19)</sup> With so many other water issues being raised over this period and through years of “hassle” trying to have the standard of Borefield reports raised, lead to a decision that this line of pursuit was no longer worth pursuing. Other water issues were of more importance. The Ombudsman process was becoming far too lengthy and time consuming. Besides, it was felt I was doing what the Ombudsman should have been doing.

**NOTE:** Pleasingly, around 2014-2015 a dramatic change in the reports came about with Jared Scott being asked to prepare these reports.

**Ombudsman Helped Later.** Years later, and after 9 months trying to obtain a copy of the 2013-2014 report the Ombudsman was asked to assist once again. The report was immediately released (see Appendix Four, pages 40-41).



### **Accuracy Gained At Last.**

As noted above, fortunately once Jared Scott of Barwon Water took charge of the Gerangamete Borefield report writing around 2014-2015, the standard of the reports dramatically improved.

## **CHAPTER TWO.**

### **The 2018-2019 Gerangamete Borefield Report.**

The licence conditions were quite clear. Barwon Water was responsible for the maintenance of the Borefield operations to be kept in good order, for the collection of data and the reporting of yearly activities.

#### **Failure by Southern Rural Water to Conduct its Responsibilities.**

It is my understanding that Southern Rural Water is ultimately responsible for the overseeing and scrutiny of any groundwater extraction licence issues. This would include making sure that reports are accurate, up to date, and, of a very high standard. It is doubtful that over the 15 years of the Gerangamete Groundwater Licence that these things have ever been taken seriously by Southern Rural Water.

#### **300 Days to Process the 2018-2019 Report.**

Jared (Barwon Water) was asked on numerous occasions when the 2018-2019 Gerangamete Borefield report would be available. The answer was always the same, Southern Rural Water was still processing it. This prompted writing a letter to the editor of the Colac Herald (see Appendix One, page 33). This prompted an immediate return of the report to Barwon Water and a phone call apology to me from Southern Rural Water for the delay. An apology was made through an article to the editor of the Colac Herald (see page 34).

#### **2018-2019 Report Available to the Public.**

Jared posted the report on the Barwon Water web site and sent me a hard copy and an emailed pdf of the report. Immediately, no delay. Well done, as it should be.

#### **Comment on the 2018-2019 Gerangamete Borefield Report No. BEE032496.**

##### **1. Southern Rural Water Expertise.**

After having this report for 300 days Southern Rural Water was unable to notice the most basic of mistakes.

In Appendix F the headings for the Artificial Supplementary Flows released from the Otway to Colac Pipeline into the Boundary Creek system, were for the previous financial year. Also, the totals at the conclusion of each month were inconsistent and could well be regarded

as wrong. Differences of many, many litres over a month is significant in any terms.

I spoke to Jared (Barwon Water) and once these things had been pointed out, he made the necessary adjustments. Both mistakes were quickly, easily and corrected without any fuss. Mistakes like these were always possible and of little consequence once fixed. However, if Southern Rural Water was unable to notice the most basic of errors there can be no confidence that the Authority has the ability to recognise other and more important errors, omissions etc. if they occurred. The scrutiny was not there. Throughout the life of this licence Southern Rural Water's scrutiny of the licence reports has been wanting.

## **2. A Sound Report.**

The 2018-2019 report covers all of the conditions set down in the licence conditions. It is well presented, easy to read and is comprehensive. The following comments challenge aspects of the report that have been voiced at various meetings conducted by Barwon Water and Southern Rural Water and in this respect are not new issues, but they do need to be put on the record as points of difference.

## **3. Reasons for Withdrawal of the Licence Application.**

The Executive Summary states that *"On 14 March 2019, Barwon Water withdrew its licence renewal application for the Barwon Downs Borefield until remediation of historical impacts of groundwater pumping is complete under the section 78 Ministerial Notice."* Also, the Introduction contains this statement. *"The Barwon Downs licence came into operation on November 7, 2006, however on 14 March 2019, Barwon Water announced the withdrawal of the Barwon Downs Borefield licence renewal application, to focus on the remediation of historical impacts of groundwater pumping and to meet the requirements of a Ministerial Notice issued under section 78 of the Water Act."*

Both these statements give the impression that the licence was withdrawn because of the Ministerial Notice and because of a directive to focus on remediation. Despite both these things the licence renewal could have continued. The directive did not make reference to the licence application. A more realistic reason for withdrawing the application was the realisation that applying for a 12,000 ML/year extraction rate would never be accepted.

## **Ministerial Investigations Support the Veracity of the Communities' Case To Cease Extractions.**

When determining the Permissible Consumptive Volume for the Gellibrand and Gerangamete Groundwater Management Areas the investigations carried out by the Minister for Water's department, determined that previous groundwater extraction was unsustainable and termed it a mining operation. A 12,000 ML/year extraction licence would be 30 times above a sustainable level.<sup>(23)(24)</sup>

### **4. Date the Licence Was Issued.**

As best as can be determined Licence 893889 was first issued in 1995 and was due for renewal in 2000 (see Appendix Six, page 42). However, Barwon Water had not completed its renewal application and three extensions of the licence had to be granted by Southern Rural Water until the licence was finalised in 2004 (see Appendix Eighteen, page 93 & Appendix Eight, pages 44-48, for one of the extensions). The recently lapsed licence (2019) had been for 15 years. 2004 to 2019 (see Appendix 19, page 94).

However, there is some confusion in numerous reports over when the recently expired licence was issued. Through Freedom of Information I gained two completely different dates. Maybe even three. This confused things for some time. The 2004-2005 Gerangamete Borefield report stated that the licence went into operation on 29 April 2004.<sup>(2)</sup> Also, Southern Rural Water stated that the licence started in May 2005. This latest 2018-2019 licence report states that the licence started 7 November 2006. There was so much confusion at the time with differing licences; different reports; with the critically important Yeo 40 observation being re-sited in May 2005, and licence reports prepared late, it is little wonder confusion occurred. However, 2004 plus 15 years had the licence due for renewal in 2019. Which it was. It would appear that the latest licence was started in 2004 with modifications in 2006 and 2014 (see Appendix Twelve, page 54 and Appendix Thirteen, page 71) and expired in 2019. Records of temporary changes as mentioned in Appendix 16, page 90, cannot be found despite FOI requests for these.

### **5. Changes Made to Licence 893889.**

On 7 November 2006 a modified licence was issued. Changes were made to the first schedule to include two new extraction bores and extraction rates. All other sections of the licence remained unchanged (see Appendix Twelve). This could explain why the Introduction of the 2018-2019 Gerangamete report states that the “...*licence came into operation on*

*November 7, 2006...*” However, the 15 year licence that expired in 2019 puts the issue year back to 2004.

**6. Water Level Limits if Exceeded Require Additional Action.**

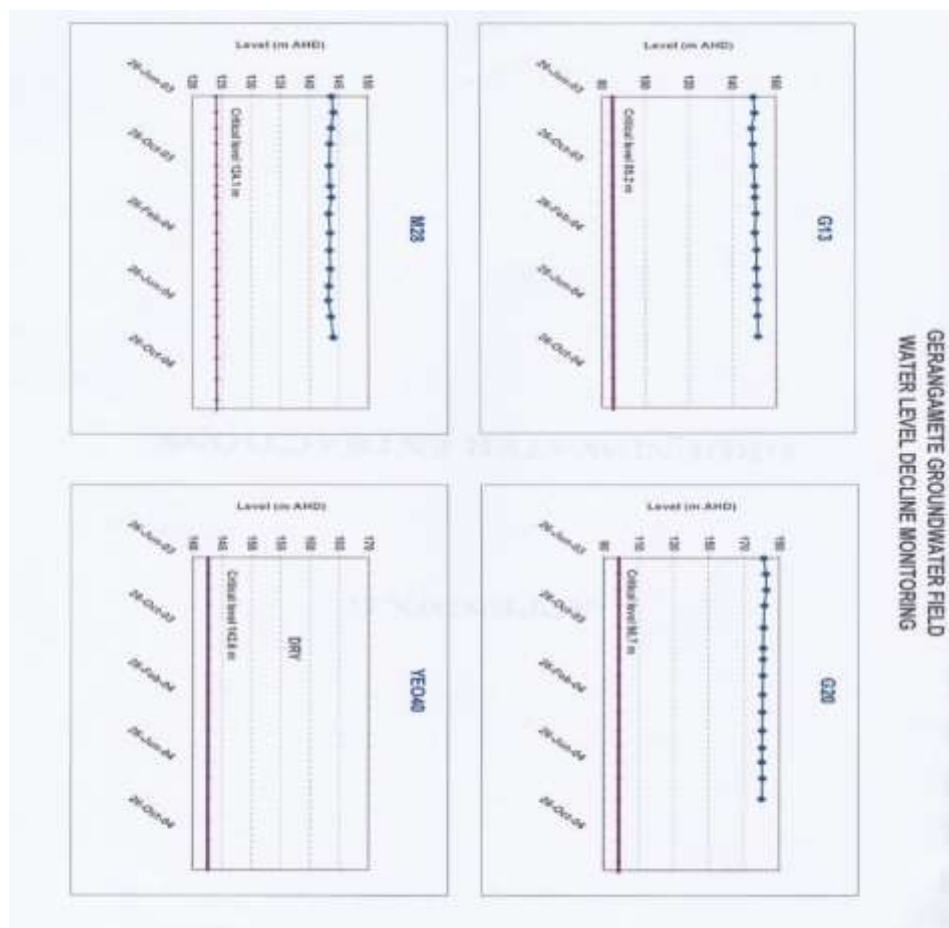
Part 6 of the 2018-2019 report discusses groundwater levels in 4 important bores as per licence condition 3.5a(i) (see Appendix Twelve, page 60).

**“Groundwater levels in critical bores (Clause 3.5A (i))**

*Groundwater levels trends of the critical bores as listed in the licence are shown below. The level in each bore has remained above the critical level for the entire reporting period.”* From the very earliest Barwon Water report these water levels have been defined and shown as a

“**Critical Level**”. However, no-where in Clause 3 of the licence is the word “**Critical**” mentioned. This has been adopted as a term of convenience. There are 4 of these bores and Yeo 40 observation bore is one of them.

Below is an extract from the 2004-05 report showing the “critical levels.”



Extract from the 2018-2019 Licence  
BEE0032496 report.

Groundwater Level – YEO40



Notes:

1. YEO40 bore has an extended period of missing data from October, 2000, to June, 2006. YEO40 was part of the DELWP State Observation Bore Network and was decommissioned in October, 2000. A new observation bore was constructed by Barwon Water in June, 2006, to replace YEO40.
2. Light blue shading depicts periods where groundwater extraction has occurred.

This is the Yeo 40 hydrograph showing the Clause 3 licence condition level not to be exceeded.

### Five Very Important Water Level, “Triggers.”

However, what is not made clear at any time during the 15 years of the licence is that Yeo 40 has **two** very important levels that must be taken into consideration when administering the running of the Barwon Downs Borefield. The second water level for the Yeo 40 observation bore is found in Clause 6 of the licence (see Appendix 12, page 63). This water level could be regarded as more important and especially so to the landholders relying on stock and domestic water from Boundary Creek. Flows in this creek have been closely linked in the past to the viability of farming enterprises. Not only were the flows critical for the landholders, the flows also maintained the health and vitality of the Big Swamp.

This second and a most important water level is the one set at 158.5 metres (AHD). To maintain this level is a critical level for farmers and the environment.

### Why Set The Yeo 40 With Two Important Water Levels?

Leading up to the finalising of the licence in 2004, it had been determined during the discussions, preparation, a report by Barnett<sup>(26)</sup> and writing up of the conditions, that if the water levels in Yeo 40 fell below the 158 m level, Boundary Creek would no longer receive discharge from a full and overflowing aquifer. The creek would dry up and the adjoining wetlands would follow suit. To stop this happening an extra tolerance safety margin or buffer of 0.5 of a metre, was added to this level so that action could be taken before it fell below the 158 m mark. Unfortunately, the Yeo 40 water level has been below this very important marker for decades. Recognition of the importance of this fifth water level marker has taken a very lowly “back seat,” barely being acknowledged or highlighted.

Perhaps it would have been appropriate to combine the reporting of Clause 3 and Clause 6 resulting in the Yeo 40 hydrograph looking like this.





**Flows in Boundary Creek Clause 6 licence condition** (see Appendix 12, page 63).

In this graph the 2018-2019 reporting on Clause 6 shows two Levels marked as “Trigger Levels”.

1. One for surface flows in Boundary Creek, and
2. one for the water levels in Yeo 40.

Flows in Boundary Creek fell below the “trigger” level in 1984, the year following the 1982-1983 extractions. This was the first time since 1912 that flows in Boundary Creek ceased and the periods of no flow have increased proportionately to the amount of extraction. There are times when there have been no flows for months on end.

**NOTE:** When McDonalds Dam was being constructed in the late 1970s Boundary Creek flows were disrupted and there was a period of no flows as the dam filled up.

Water levels in the Yeo 40 observation bore have been below the designated “trigger” level all year, every year for many, many years.

The graph on the page 15 below, shows that the water level in the Yeo 40 observation bore, even nine years after the Millennium Drought, is still way below the “trigger” level. It is worth noting that the water level pre groundwater extraction in the Yeo 40 bore was around the 160 m (AHD) mark.

Appendix Fifteen, pages 86 to 89, shows four more of these graphs taken from the 2006-2007, the 2008-2009, the 2011-2012 and the 2015-2016 yearly groundwater reports. Throughout this period up to 2020, the Yeo 40 water level has remained below the designated “trigger” level stipulated in the groundwater extraction licence.

## 9. Flow in Boundary Creek (Clause 6)

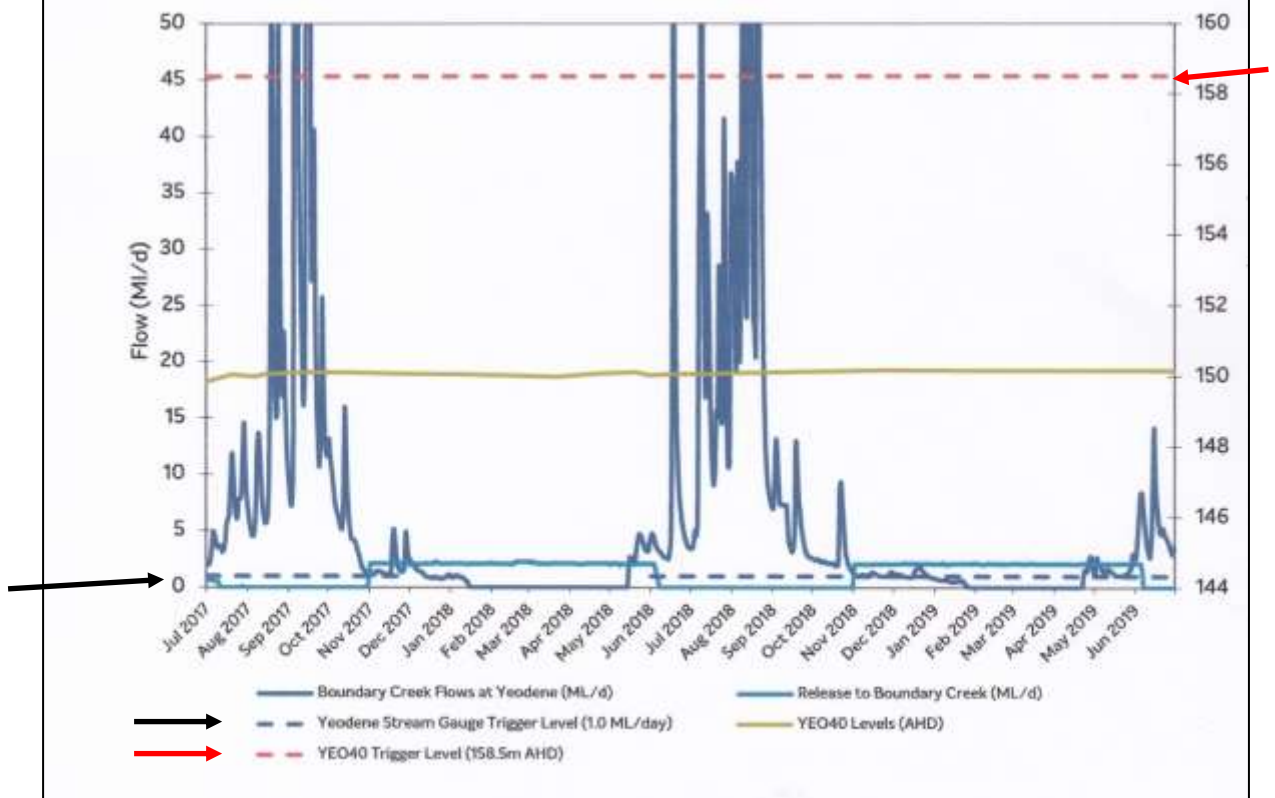
### 9.1 Discharge to Boundary Creek

Approximately 460 ML of water was released into Boundary Creek during the 2018–2019 year. The chart in figure 3 below shows the daily releases along with daily stream gauging on Boundary Creek (at the Yeodene gauge) and groundwater levels in bore YEO40. Under the Gerangamete groundwater licence Barwon Water must provide a flow of 2 ML/day to the headwaters of Boundary Creek until one of the following occurs:

1. the groundwater level in YEO40 recovers above the trigger level of 158.5m AHD or
2. the natural flow at the Yeodene stream gauge exceeds 1 ML/day any time between June 1 and November 30.

The raw flow data is included in Appendix F.

Figure 3: Flows and releases to Boundary Creek at Yeodene for 2017/18 and 2018/19



The water levels referred to in Clause 3 have been called “**Critical levels**” whereas the “critical” water levels in Clause 6 have been called “**Trigger levels**”. As mentioned earlier the word “critical” has been adopted as a means of convenience just as the word “trigger” has. No where in licence BEE0032496 does it mention trigger levels.

What is important here though, is to note, that important water levels have fallen below the levels set out in the licence conditions and as a result the following statement in the Executive summary of the 2018-2019 report cannot be substantiated.

*“Groundwater level decline and groundwater subsidence remain within licence trigger levels.”*

However, Southern Rural Water has accepted, passed and sanctioned this type of inaccuracy for one and a half decades.

### **Terminology of Convenience Accepted by Southern Rural Water.**

Not only had Southern Rural Water allowed numerous errors, mistakes and bad reporting of Licence 893889 to be accepted as appropriate,<sup>(18)</sup> SRW also accepted terms such as “trigger levels” and “critical levels” to be entrenched in Barwon Water’s yearly reports. By the time Jared Scott of Barwon Water, took over the report writing around 2014-2015, the format and terminology of reporting had something like 12 previously accepted reports as a blueprint that Jared could follow. Despite this it was a revelation to see that when Jared took over the writing of these yearly reports a dramatic improvement in the standard and accuracy of the reports took place.

## **7. Clause 6.1B Supplementary Water Releases into Boundary Creek.**

The 6.1B part of Clause 6 states that Barwon Water had to gain a permit from the Environment Protection Authority to discharge water into Boundary Creek. This licence condition was written into the very first 2004 licence.

As it turned out the source of the water came from the Otway Colac Pipeline and was discharged into Sandy Creek a tributary of Boundary Creek. Water from this source has been discharged into the Boundary Creek Catchment every year, 2004 to 2019.


It would appear that the licence condition under Clause 6.1B has never been complied with. Any compliance with this condition cannot be found within the Barwon Water systems, either in...

- The corporate databases and electronic systems, or
- Associated hard copy files,

after thorough and diligent searches (see FOI reply, page 17 below).

**This is worth noting:** The Artificial Supplementary Flows have been continuing as part of the Remediation Program of the Big Swamp, even

though the licence has lapsed. Is EPA compliance needed? Hopefully when Barwon Water asked for a licence to discharge water into Boundary Creek as part of the remediation process that the EPA closely examined the environmental suitability of such releases.



**Our Ref:** F084904  
**Enquiries To:** Paul Rawson

26/08/2016

Neil Longmore  
25 Raffertys Rd  
Gellibrand River 3239

Dear Mr Longmore

**Freedom of information request**

I refer to your letter dated 07/07/2016 in which you sought access under the *Freedom of Information Act 1982* ("Act") to:

*Take and use licence BEE032496 has an addendum LH893889. Clause 6 in the second schedule is termed "flow in Boundary Creek". There are two sub-clauses 6.1B. The second 6.1B states "Prior to extraction of groundwater under this licence, Barwon Water must obtain relevant approvals regarding the discharge of water to Boundary Creek from the Environment Protection Authority". Please provide copies of all such approvals.*

After a thorough and diligent search of the documents held by Barwon Region Water Corporation, I have determined that the document you seek does not exist or, if it existed, cannot be found. Accordingly, I have determined to refuse access on that basis.




In brief, the steps taken to identify and locate the documents were as follows:

- A thorough and diligent search within Barwon Water's corporate databases and electronic systems
- A thorough and diligent search in all associated hard copy files

These searches were conducted by officers from the records management, Strategy and Planning and Infrastructure Services teams.

If you are not satisfied with my decision, you may complain to the FOI Commissioner by writing to PO Box 24274, Melbourne, Victoria, 3001. Telephone: 1300 842 364. Email: [enquiries@foicommissioner.vic.gov.au](mailto:enquiries@foicommissioner.vic.gov.au). Web: [www.foicommissioner.vic.gov.au](http://www.foicommissioner.vic.gov.au)

**Barwon Region Water Corporation**  
ABN 86 348 316 514

 PO Box 659 Geelong VIC 3228  [barwonwater.vic.gov.au](http://barwonwater.vic.gov.au)  1300 656 007

## **8. Compliance With the Licence Conditions.**

In February 2008 Barwon Water distributed a 2006-2007 Sustainability Report. On page 24 it states that there was a 100% compliance with the groundwater extraction licence conditions. Not so. By itself, non compliance with point 7 above clearly shows this to be incorrect.

In a letter dated 19 September 2008, SRW Ref: DWS 606147, Southern Rural Water supports the notion of complete compliance.<sup>(17)</sup>

“They were dreaming.”

Despite these assertions from Southern Rural Water and Barwon Water, licence reports up to 2014 have been of sub standard. Jared Scott (Barwon Water) was handed a very difficult task compiling the last few annual Gerangamete Borefield reports considering the legacy of poor effort and second rate format he had handed to him. Jared’s licence reports have been compiled covering all of the required licence reporting conditions.

## **9. Residual Drawdown.**

Under the licence conditions Barwon Water’s responsibilities covered a certain and defined region. However, the residual drawdown extends in some areas beyond this region. The spread of impact influence extending out to its present area was discounted when the licence was being considered. This explains why the residual drawdown does not cover an area out to the point of zero influence.

## **10. Salinity Level Records.**

The last salinity level data presented in the 2018-2019 report was for the 2017-2018 period. This came as a bit of a shock as the salinity levels had been recorded and reported every year up to the last report. However, since 2009, Barwon Water only had to report every five years (see Appendix Twelve, page 59). Reporting yearly up to 2018 was a bonus.

### **A Query as Yet Unanswered.**

During Barwon Water’s lead up and preparation of its application for licence renewal in the 2013 to 2018 Community Reference Group deliberations, there was some concern with the salinity levels. Unfortunately, the Community Reference Group wound up before this was resolved. Any follow up to this query may have slipped under the “radar” due to the heavy work load of the licence renewal application.



The start of the remediation of the Big Swamp program was also in its infancy.

## 11. Accreditation of the Groundwater Model.

### 3.2 Groundwater modelling

Between 2016 and 2018, the model was expanded, re-built and re-calibrated to support the licence renewal application. The new model built on earlier model versions and was used to assess potential impacts associated with future groundwater extraction.

**Table 2: Model layers for the Barwon Downs Graben**

| Model layer | Hydrostratigraphic units | Function      |
|-------------|--------------------------|---------------|
| Layer 1     | Gellibrand Marl          | Aquitard      |
| Layer 2     | Clifton Formation        | Minor Aquifer |
| Layer 3     | Narrawatuk Marl          | Aquitard      |
| Layer 4     | Mepunga/Dilwyn Formation | Major Aquifer |
| Layer 5     | Pember Mudstone          | Aquitard      |
| Layer 6     | Pebble Point Formation   | Major Aquifer |
| Layer 7     | Basement                 | Minor Aquifer |

The revised groundwater model had a much broader focus than previous work that had concentrated primarily on undertaking a resource assessment to determine the availability of groundwater. The model is well calibrated at both a regional scale and local scale, and is now a more reliable representation of the hydrogeological setting and the rivers and creeks that interact with groundwater.

The groundwater model had attained the highest ranking in confidence level classification in accordance with the Australian Groundwater Modelling Guidelines (Barnett et al., 2012). It was considered to be fit-for-purpose to assess future groundwater behaviour and impacts that may have occurred from groundwater extraction.

The groundwater model used by Barwon Water's consultants may have been "...*re-built and re-calibrated to support the licence renewal application.*" between 2016 and 2018, but it failed as miserably as several previous models had.<sup>(27)</sup> This model was also described as being "...*built on earlier model versions...*".

The latest model was used to support the 2019 licence renewal application for 12,000 ML/year. To state that "...*the model is well calibrated at both a regional scale and local scale, and is now a more reliable representation of the hydrogeological setting and rivers and creeks that interact with groundwater.*", may be so, but it is somewhat of a stretch to assume the model is anywhere near perfect. For Barwon Water to apply for a renewal licence for 12,000 ML/year based on this modelling and maintain that this is a sustainable level is in direct contrast to the findings of the Minister for Water's department.



### The Minister's Advisers Determined<sup>(24)</sup>

- a. Recharge to the aquifers is between 1,100 and 1,200 ML/year.
- b. At an extraction rate at somewhere between 1,100 and 1,200 ML/year the water level would stabilise at the present level **but not recover**.  
Comment: Any extraction over the 1,200ML/year mark would see a continued decline in water levels and an increase in impact. Granting a licence ten times this 1,200 level would have been disastrous.
- c. *"if groundwater levels recover to the elevations prior to groundwater extraction and assist the remediation of Yeodene Swamp and surrounding area then it is estimated that groundwater extraction in the range of that 200 to 400/ML yr could be taken without adverse impacts on the waterways."*
- d. Up until the time of the licence renewal the groundwater extraction could be regarded as a mining operation. *"...has taken more water out of storage than has been recharged, essentially mining the resource."*

Considering during the Millennium Drought groundwater extraction averaged just over 11,000 ML/year, for the model results to support a licence application for 12,000 ML/year, was ludicrous. At this rate the very same level of extractions over the last 15 years that caused so much devastation, allowed the capacity for such impacts to continue.

The groundwater model or model program may have *"...attained the highest ranking in confidence level classification in accordance with the Australian Groundwater Modelling Guidelines (Barentt et al., 2012)."*, but if **input** into a *"...highest ranking..."* model is sub-standard then a sub-standard output is the result. Otway Water Book 43<sup>(27)</sup> deals in some detail with the level of input.

Just considering the model output recommendation of 12,000 ML/year as being appropriate, is enough to throw considerable doubt on the way the model has been used and the appropriateness of the results.

### 12.Reasons for Withdrawal.

It would have been enlightening to read in the Introduction that Barwon Water had withdrawn its 12,000 ML/year licence renewal application because it was the wrong thing to do. A licence of this magnitude would allow the same number of negative impacts to continue. The likelihood of additional impacts occurring in the future even despite the licence being cancelled, is extremely high.<sup>(28)</sup>

To state “...*however, on 14 March 2019, Barwon Water announced the withdrawal of the Barwon Downs Borefield licence renewal application, to focus on the remediation of historical impacts of groundwater pumping*...” is at best a half truth.

### **13. Subsidence Data tells only part of the story.**

Over the years I have not taken much notice of the subsidence calculations (see Clause 5 Appendix 12, page 62) and how it all works other than to note that the subsidence levels are reported as being well within levels set under the licence conditions. However, from personal experience wandering the Upper Barwon River valleys in the 1980s I know that subsidence levels were being collected many years previous to 2003. Comparing measurements of subsidence from 2003 to ground levels of 2019 have ignored early subsidence data.

The last page of Appendix Nine (see page 49) states... “*The subsidence monitoring network, originally established in 1983,*...” This clearly shows when subsidence monitoring started. The data collected from this date should be the data that should be used to compare against the 2019 levels, not a comparison from 2003.

**NOTE:** The above quote has been taken from a Barwon Water 2004 document.

The Barwon Water Community Reference Group (CRG)(2103-2018)) discussed this very topic early in its deliberations. What little I knew about the 1980s subsidence modelling was related to the members of the CRG.

### **Failure to Check Out Local Knowledge.**

It would appear that the Barwon Water officials and Barwon Water consultants at this meeting failed to follow this up. As noted above the Barwon Water officials should have been well aware of the starting date of the subsidence data collecting.

### **Southern Rural Water’s Failure to Regulate.**

Jared Scott came onto the CRG as a member much later than when this discussion took place and as a consequence was unaware of this mis-information. Jared’s background information for the reports he and his team went on to compile would have come from sources already accepted as fact by the Southern Rural Water regulators.

## 7. Metering (Clause 4)

The Barwon Downs borefield extracted 0 ML of groundwater in 2018–2019. The bore pumps were removed in 2017–18 and the borefield has remained offline. Daily, monthly and annual extraction totals are included in Appendix E.

The ten year extracted volume total is at 29,724 ML which is well below the licence limit of 80,000 ML.

## 8. Subsidence (Clause 5)

### 8.1 Land subsidence measurement (Clause 5.5 A)

Measurements were carried out and compared to 2003 readings for the subsidence-monitoring network specified in the fourth schedule of the Gerangamete groundwater licence. Surveying was conducted by Barwon Water's spatial services team and the results are presented below. Positive values indicate an increase in ground levels compared to the readings taken in 2003, while a negative value indicates subsidence. The results indicate a slight subsidence in ground levels up until May, 2010. After 2010, the ground levels at most observation points have shown a small recovery, while some levels have been observed to stabilise. All ground levels have shown a subsidence well within the maximum allowable limit of 200 mm stipulated in the licence.

Table 4: Land Subsidence Monitoring – Variation from 2003 Readings

| Ellipsoid Height Differences as compared to 2003 data (mm) |           |          |          |           |          |           |           |          |           |           |           |           |           |           |           |           |           |
|--|-----------|----------|----------|-----------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Primary Control Station ID                                 | June 2004 | May 2005 | May 2006 | June 2007 | Dec 2007 | June 2008 | July 2009 | May 2010 | July 2011 | June 2012 | June 2013 | June 2014 | June 2015 | June 2016 | June 2017 | June 2018 | July 2019 |
| 20790040   | 0         | 0        | 0        | 0         | 0        | 0         | 0         | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |
| 20880024   | -8        | -2       | -8       | -18       | -16      | -8        | -21       | -25      | -25       | -12       | -23       | -20       | -21       | -11       | -19       | -19       | -19       |
| 20590052   | -6        | 0        | +6       | -3        | -12      | +7        | +8        | +8       | +15       | +8        | +14       | +1        | +3        | +13       | +27       | 11        | 0         |
| 39780106   | -1        | 0        | +3       | -27       | -9       | -15       | -16       | -30      | -14       | -16       | -30       | -24       | -25       | -11       | -19       | -15       | -17       |
| Monitoring Station ID                                      |           |          |          |           |          |           |           |          |           |           |           |           |           |           |           |           |           |
| 32390045   | -6        | +1       | -11      | -42       | -42      | -36       | -66       | -75      | -47       | -42       | -54       | -42       | -42       | -47       | -35       | -39       | -30       |
| 32390046   | +3        | +1       | -8       | -20       | -19      | -20       | -47       | -50      | -32       | -25       | -46       | -32       | -28       | -37       | -25       | -27       | -10       |
| 26470027   | -6        | +2       | -2       | +6        | -11      | -22       | -37       | -45      | -36       | -39       | -43       | -42       | -35       | -32       | -37       | -36       | -21       |
| 26470032   | -5        | +5       | -1       | -43       | -30      | -36       | -63       | -63      | -35       | -40       | -45       | -42       | -37       | -42       | -39       | -40       | -15       |
| 26470033   | -8        | +3       | -13      | -40       | -35      | -36       | -65       | -76      | -38       | -39       | -44       | -38       | -35       | -46       | -39       | -36       | -21       |
| 26470036   | +5        | +10      | +1       | -32       | -23      | -30       | -48       | -63      | -42       | -38       | -39       | -33       | -23       | -33       | -33       | -24       | -12       |
| 39870025   | -1        | -4       | -5       | -15       | -11      | -17       | -23       | -34      | -37       | -31       | -25       | -29       | -33       | -27       | -27       | -21       | -17       |
| 39870026   | -3        | 0        | +2       | -9        | -6       | -15       | -22       | -38      | -37       | -33       | -31       | -31       | -35       | -21       | -28       | -23       | -10       |
| 38090024   | -4        | -3       | +12      | +8        | NA       | 0         | -26       | -25      | -18       | -30       | -15       | -36       | -36       | -45       | -38       | -53       | -65       |
| 38090025   | -5        | -5       | +9       | -12       | NA       | -5        | -30       | -33      | -28       | -48       | -23       | -33       | -35       | -27       | 0         | 0         | -18       |
| 38090026   | -5        | 0        | +6       | -15       | NA       | -6        | -33       | -31      | -30       | -41       | -30       | -33       | -28       | -31       | -31       | -33       | -19       |

#### 14. East Barwon River Levels (Clause 9.1)

Over the years I have taken very little notice of this clause of the licence and the yearly reports on this subject. However, being

- the last report,
- having some involvement in the East Barwon River back in the late 1980s with illegal hot water releases into the river,
- the occasional discussion with Keith Wigley regarding a lack of action to clear the choked river course through his property, and
- in recent times regarding no flows, I was drawn to the section of the 2018-2019 report on the East Barwon River.

The report correctly covers the conditions as set down in the licence but it is questionable of what value this data provides. The six month manual monitoring and data reported in the annual reports fails to give any indication that the East Branch of the Barwon River regularly dries up during summer.

The East Barwon River is in a deplorable state.



John Callahan & Nellie Shalley in the dry East Barwon River bed.



## Preface to the Appendixes.

Attempts to gain the Gerangamete Extraction Licence Number 893889 and the yearly reports created a tangled web of intrigue.

### Hampered Access to Information.

Accessing information in the early years from Southern Rural Water and Barwon Water required numerous Freedom of Information (FOI) requests. Each request was left to the very last days of the end of the regulation period before being answered.<sup>(17)</sup>

There was always the back and forth as to which authority had ownership and had the right to release information. This type of delaying tactic usually resulted in an FOI.

The 2009 letter on page 25 below typified the attitude of the authorities and included this statement...

*“I would request that any documents and information you seek from Barwon Water are sought from the Freedom of Information Officer and is accompanied with the required fee of \$22.70.”*

Not what one would call an open and transparent arm of government. The type of scrutiny being applied to Barwon Water may have been seen as becoming an intrusion to and hamper to operational procedures.

### However, It Must Be Said.

Things **DRAMATICALLY** changed when Managing Directorship of Barwon Water was handed over to Tracey Slatter.

Our Ref: 15/260/0007A(6)  
Your Ref:  
Enquiries To: Mr M Watson  
05 5226 2543

13 February 2009

Mr M Gardiner  
1805 Colac-Beech Forest Road  
KAWARREN VIC 3249

Dear Mr Gardiner,

**RE FOI REQUEST AND INFORMATION REQUESTS**

I acknowledge your Freedom of Information request for the following information:

1. Minutes of the Newlingbrook and Gellibrand investigations Regulatory Reference Group Meeting held on 10 August 2007
2. Natural service level of YEO 40 (109131) observation bore.

I am currently collating the information and will advise you of the outcome within the required timeframe.

It has come to my attention that you have also requested documents and information from a number of officers across Barwon Water.

I would request that any documents and information you seek from Barwon Water are sought from the Freedom of Information Officer and is accompanied with the required fee of \$22.70.

I have attached a standard Barwon Water Freedom of Information request form if you wish to submit a request with the appropriate details as to the documents to which you seek access.

Please contact me on ph.5226 2543 if I can be of further assistance in this matter.

Yours sincerely,



Michael Watson  
FOI MANAGER

Enc.



### **Why the Interest in the Barwon Downs Borefield?**

After the Natural Resources and Environment report of 1989 several attempts were made to set in motion the actions that would lead to the development of groundwater extraction in the Gellibrand Catchment; a borefield to supply water for Geelong. Local knowledge and experiences indicated that the Barwon Downs Borefield was causing surface water impacts in the Upper Barwon River Catchment. As a consequence, the development and use of the Barwon Downs Borefield became very relevant to any similar development in the Gellibrand River Catchment.

### **August 2006.**

In August 2006 the Southern Rural Water office in Colac was visited to gain a copy of the Gerangamete Groundwater Extraction Licence Number 893889. The document was retrieved out of the files. A very lengthy document. I was told that there appeared to be no reason why it could not be released other than it was like a private agreement between two bodies and access may not be allowed. After a phone call to Maffra head office I was told that a copy could not be given out. Try Barwon Water.

### **11-08-2006 Terry Mulder MP.**

I approached Terry Mulder, Member of State Parliament (in opposition), to see if he could help. Terry said he had to gain many things he wanted through the Freedom of Information process but would try to help with this request.

### **42 Days later 22-09-2006, Terry Had a Reply.**

Terry gained two pages from Barwon Water. I had actually seen the licence in the Southern Rural office and knew it was many more pages than the two that Terry had been given (see pages 27-28 below).

From Terry Mulder's Office

22/9/06

P1/2



**FIRST SCHEDULE**

1. Type of use for which water is to be taken **Urban Supply**
2. Groundwater Management Area from which water is to be taken **Gerangamete**
3. Maximum daily rate at which water may be taken **55 ML/day**
4. Maximum volume of water that may be taken in any year (ending 30 June) **20,000 ML**
5. Maximum volume of water that may be taken in any period of 10 years (ending 30 June) **80,000 ML**
6. Maximum volume of water that may be taken in any period of 100 years (ending 30 June) **400,000 ML**
7. The taking of water is to be in accordance with the assumptions of the REALM modeling of Barwon Water's supply system undertaken for the renewal of this Licence. When Barwon Water applies for renewal of this licence, it must submit a report demonstrating how the Barwon Downs wellfield has been operated in accordance with the intent of the REALM model. **4,000 ML/year**

8. Quantities of water that may be taken from each bore:

| Bore Number | Maximum daily rate at which water may be taken | Maximum volume of water that may be taken each day |
|-------------|--|--|
| 64245       | 11.0 ML/day                                    | 11.0 ML  |
| 64246       | 9.5 ML/day                                     | 9.5 ML   |
| 64247       | 11.0 ML/day                                    | 11.0 ML  |
| 64248       | 11.0 ML/day                                    | 11.0 ML  |
| S56301/01   | 9.5 ML/day                                     | 9.5 ML   |
| S56301/02   | 9.5 ML/day                                     | 9.5 ML   |

*Additional bores may be added during the period of this licence, subject to normal bore construction licensing requirements*

SECOND SCHEDULE  
CONDITIONS

From Terry Mulder's  
Office 22/09/2016

1. The Licensee shall not –
  - (a) where a meter is provided take any groundwater except through that meter.
  - (b) waste any groundwater.
  - (c) irrigate an aggregate area greater than authorised if the specified use includes irrigation and a meter is not provided.
  - (d) without the prior consent of the Authority interfere with, disconnect or remove any meter used for the purposes of the licence.
2. The Licensee shall –
  - (a) pay charges under the licence when requested by the Authority.
  - (b) maintain in efficient working order and to the satisfaction of the Authority all works and appliances required to use and take water under this licence.
  - (c) when required by the Authority, keep an accurate records of the quantity of water taken under this licence and allow the Authority to inspect this record at all reasonable times and to provide a copy of the record when requested.
  - (d) when required by the Authority provide a description of the area to be irrigated during any period.
  - (e) when required give three days notice of the intention to take groundwater.
3. (a) Whenever the Authority is of the opinion that the taking of groundwater under this licence may injure or adversely affect any other person, or an aquifer, or the environment, the Authority may give notice to the Licensee to –
  - (i) reduce the quantity of groundwater taken during such period or periods and to such extent as the Authority directs.
  - (ii) cease taking groundwater entirely or during such period or periods and to such extent the Authority directs.

(b) Any notice or direction given under this clause shall be sufficiently given if it is –

  - (i) forwarded by post to the Licensee at the address contained in this licence.
  - (ii) given verbally to the Licensee by an Authority Officer.
  - (iii) published in a newspaper circulating generally within the district of the bore specified the licence, or broadcast from a radio broadcasting station in the State.
4. (a) The Authority may require the Licensee to use an approved meter or meters for the purposes of this licence and any such meter with all fittings shall be installed under the supervision of the Authority. The Licensee may be required to meet the Authority's cost of metering.
- (b) All meters used for the purposes of this licence shall be the property of the Authority.
- (c) When the taking of groundwater is not measured by a meter, or when the Authority is satisfied that the taking of groundwater has not been accurately measured by the meter used, the quantity of water deemed to have been taken shall be that as from time to time fixed by the Authority in a schedule of deemed depth of watering over land irrigated.
5. The Licensee must not pollute any groundwater through the spillage of fuel or lubricant or any other matter used connection with works and appliances.

**Disclaimers:**

1. *Water taken under this licence may not be fit for human consumption, directly or indirectly, without first being properly treated. The Authority does not accept any liability for any suits or actions arising from health related injury or death from persons consuming water taken under the licence.*
2. *The Authority does not guarantee that any specific quantity or quality of water will be available. The Authority is not liable for any loss or damage suffered by the licensee as a result of the quantity of water being insufficient or the quality of the water being unsuitable for use by the licensee at any particular time or for any particular purpose.*
3. *This Licence is not to be interpreted as an endorsement of the design and/or construction of existing works. The Authority does not accept any responsibility or liability for any suits or actions arising from injury, loss, damage or death to person or property which may arise from the maintenance, existence or use of the works.*

\\naft5\licensing\forms\groundwater\second schedule conditions gw.doc



### **22-09-2006 FOI request for the Licence.**

Knowing there was a detailed and lengthy licence agreement between Southern Rural Water and Barwon Water, and as a result of all the back and forth “nonsense,” a Freedom of Information request and application fee was sent to Barwon Water asking for a copy of Licence 893889. This was the start of numerous FOI requests and fees.

### **9-11-2006 A Copy of Licence 893889 was Released.**

The licence agreement arrived – Barwon Water Ref:15/260/0003x(3). As with each following FOI every day that the reply could be delayed, these days were taken. Usually around 30 days before mailing the reply out. Once, not realised by me, when the application fee had increased by 50 cents it took 30 days for the application to be processed. The money shortfall had to be resolved before any further action on the FOI request could be taken. Barwon Water decided to waive the 50 cent. However, this resulted in Barwon Water having another 45 days before a reply had to be sent out.<sup>(17)</sup>

### **Licence Was Incomplete.**

The licence that came in the Barwon Water Ref:15/260/003x(3) document had some blank spaces where figures should have been present etc.<sup>(13)</sup>

Also, from this licence document it was obvious that by this date there should have been two annual reports already completed and available for public scrutiny.

### **8-12-2006 Freedom of Information Request to Southern Rural Water.**

A request was sent to Southern Rural Water asking for several things including the missing figures from the licence that Barwon Water had supplied, and the 2004-2005 Barwon Downs Borefield report (see pages 30-31 below). This FOI request prompted a phone call to me from Terry Flynn of Southern Rural Water regarding the request for the missing figures in the 893889 licence document that Barwon Water had supplied. No sense of it could be made until Terry worked out that the licence provided to me was not the same one Southern Rural Water was working from.

### **Southern Rural Water's reply Ref: 409667 arrived 25-01-2007.**

A copy of Licence 893889 that had been issued to Barwon Water on 6 May 2006, and a copy of the 2004-2005 report were included in the FOI reply (Southern Rural Water Ref: 409667).

A copy of the 2005-2006 licence report was also included.



05-06

Your Reference:  
Our Reference: 409667

23 January 2007

1/2

Malcolm Gardiner  
1805 Colac Beech Forest Road  
KAWARREN VIC 3249

Dear Mr Martin

### FREEDOM OF INFORMATION REQUEST

I refer to your Freedom of Information Request received at our office on 8 December 2006.

Your request included the following items in regard to groundwater licence 893889:

- (1) "The annual reports for 2004, 2005 and 2006 as provided under SCHEDULE (3) 3.5(a)"

Please find enclosed 2004-2005 and 2005-2006 Groundwater Reports prepared by Barwon Water for the Gerangamete groundwater management area which relate to licence number 893889.

- (2) "The 1<sup>st</sup> of September Reports for 2004, 2005 and 2006 as stated under SCHEDULE (3) 6.4"

Please find enclosed 2004-2005 and 2005-2006 Groundwater Reports prepared by Barwon Water for Gerangamete area which relate to licence number 893889. Please note that these are the same reports as detailed in (1) and have only been enclosed once.

- (3) Under SCHEDULE (3) 3.3 (c)(i) what is the ML/d limit of total groundwater extraction not to be exceeded?

Please find enclosed a copy of the groundwater licence issued to Barwon Region Water Authority on 6 May 2005. This Licence document details limit of total Groundwater extraction not to be exceeded.

- (4) Similarly what is the limit under SCHEDULE (3) 4.3(b)

Please note as discussed with Terry Flynn, question three and four refer to the same thing. Please see my response to question three.

2/2

I refer to your letter dated 15 January 2007 and your request for a copy of the Bulk Water Entitlement for the Colac and District System. Please find enclosed Bulk Entitlement (Colac) Amendment Order 2003, together with Bulk Entitlement (Colac) Amendment Order 2003 Explanatory Note to Accompany Order.

I hope that this information satisfies your request. If you have any further queries please do not hesitate to contact me on (03) 5139 3143 or email [belindag@srw.com.au](mailto:belindag@srw.com.au).

As part of the FOI process I am also required to draw your attention to Section 51 (1) of the Act, which gives you the right to have the decision reviewed. If you wish to do so, it will be necessary for you to write to the Chief Executive at this address asking for an internal review of my decision. You have 28 days from the date of this letter in which to ask for a review.

Yours sincerely



**BELINDA GREEN**  
FOI Officer

#### **4-01-2008 FOI Request for Another Copy of Report 2004-2005.**

It took some time to get around to scrutinising the 2004-2005 licence report supplied by Southern Rural Water. Amazingly it was found to contain data that could only be collected in the 2005-2006 year. By this stage I was getting a little paranoid and was concerned that I could be accused of changing the report, so another copy of the 2004-2005 was requested and opened under supervision. The mail duly arrived and was opened and each page initialled by Charlie Kohout.

#### **Two Different reports for 2004-2005.**

The report initialled (Southern Rural Water FOI reply, Ref: 559928) by Charlie was different to the first report and even contained more data that could only be collected in the 2005-2006 reporting year.<sup>(18)</sup> Unbelievable.



**Numerous Licence Conditions Not reported in the 2004-2005 Report.**

Licence Number 893889 clearly defined the conditions of the licence and what must be reported at the end of each financial year. The 2003-2004 report addressed very few of the licence conditions.

## APPENDIX ONE.

Efforts to gain overdue Financial Year 2018-2019 Licence Number BEE032496 report.

**LETTERS**

### Report delayed

Well Done Barwon Water.

Each financial year since 2004 Barwon Water has been sending Southern Rural Water a report on the Gerangamete Borefield groundwater operations.

Part of the licence conditions states Barwon Water must have each report finished 30 days after the end of the financial year.

The report is then checked by Southern Rural Water and is to be made available to the public on request seven days later. Sounds good and should be available early September of each year.

It is nearly a year later AND still no report for 2018-2019. What is going on.

Since Jared Scott of Barwon Water took over the task of completing the report he has religiously upheld Barwon Water's part of the regulation. For example, Jared sent the 2018-2019 report off to SRW on the 29th of August 2019.

Due to Southern Rural Water's tardiness as has happened in past years it is long into the next financial year and still no report publicly available.

It is over 274 days and Barwon Water have not been given the okay from Southern Rural Water to release the report.

As this happens year after year this type of tardiness does not instil a great deal of confidence in our water resource managers.

Malcolm Gardiner,  
Kawarren

*Colac Herald 17/06/2020*

This should read as 60 days.

This is not quite right as per the licence conditions. The condition as explained above in the Historical Facts, page 5, morphed into a much better workable way of releasing reports.

Unfortunately this seldom happened.

## Report published

Southern Rural Water would like to respond to the matters raised in the *Colac Herald*, Letter to the editor, June 17 2020, M Gardiner, Kewarren.

We confirm that Barwon Water submitted an annual report for its groundwater licence in the Gerangamete Groundwater Borefield for Southern Rural Water's review within the timeframe required under the licence conditions.

We have now confirmed with Barwon Water that the report met the requirements and it has been published. We acknowledge that there was an unacceptable delay in our feedback to Barwon Water.

Due to the expiry of that licence in 2019, the 2018-2019 annual report was the final report for the operation of the Barwon Downs Borefield licence.

From now on, Barwon Water will report quarterly to Southern Rural Water in accordance with the Boundary Creek, Big Swamp and

surrounding environment Remediation and Environmental Protection Plan.

Hugh Christie,  
Groundwater and Rivers Manager,  
Southern Rural Water

Colac Herald 29/06/2020

## APPENDIX TWO.

Year 2004-2005 Licence Number 893889 report submitted to Southern Rural Water months overdue.

Our Ref: 15/160/00232  
Your Ref: 00893889  
Enquiries To: Justin Franklin

April 5, 2006

Trevor McDevitt  
Manager Licensing Administration  
Southern Rural Water  
PO Box 153  
MAFFRA VIC 3860

Doc No:  
Disposal Code: P  
18 APR 2006  
Southern Rural Water

 **Barwon Water**  
BARWON REGION  
WATER AUTHORITY  
61-67 Ryrie Street,  
Geelong, Victoria,  
P.O. Box 659,  
Geelong, Victoria, 3220.  
D X 22061 (Geelong)  
Phone: 1300 656 007  
Fax: (03) 5221 8236  
ABN 86 348 316 514  
www.barwonwater.vic.gov.au

Dear Trevor,

**Re: GROUNDWATER LICENCE 893889 - 2004/05 REPORT**

Please find enclosed the Groundwater Licence Report for 2004/05. The report has been prepared in accordance with the requirements of the licence including groundwater level monitoring results and a description of works carried out during the year.

Barwon Water's storage levels did not reach the critical point in 2004/05 that triggers pumping in the Gerangamete bore field. However significant maintenance work was completed on the monitoring network and production bores.

If you have any queries relating to the 2004/05 Groundwater Licence Report, please contact Justin Franklin on 5226 9129.

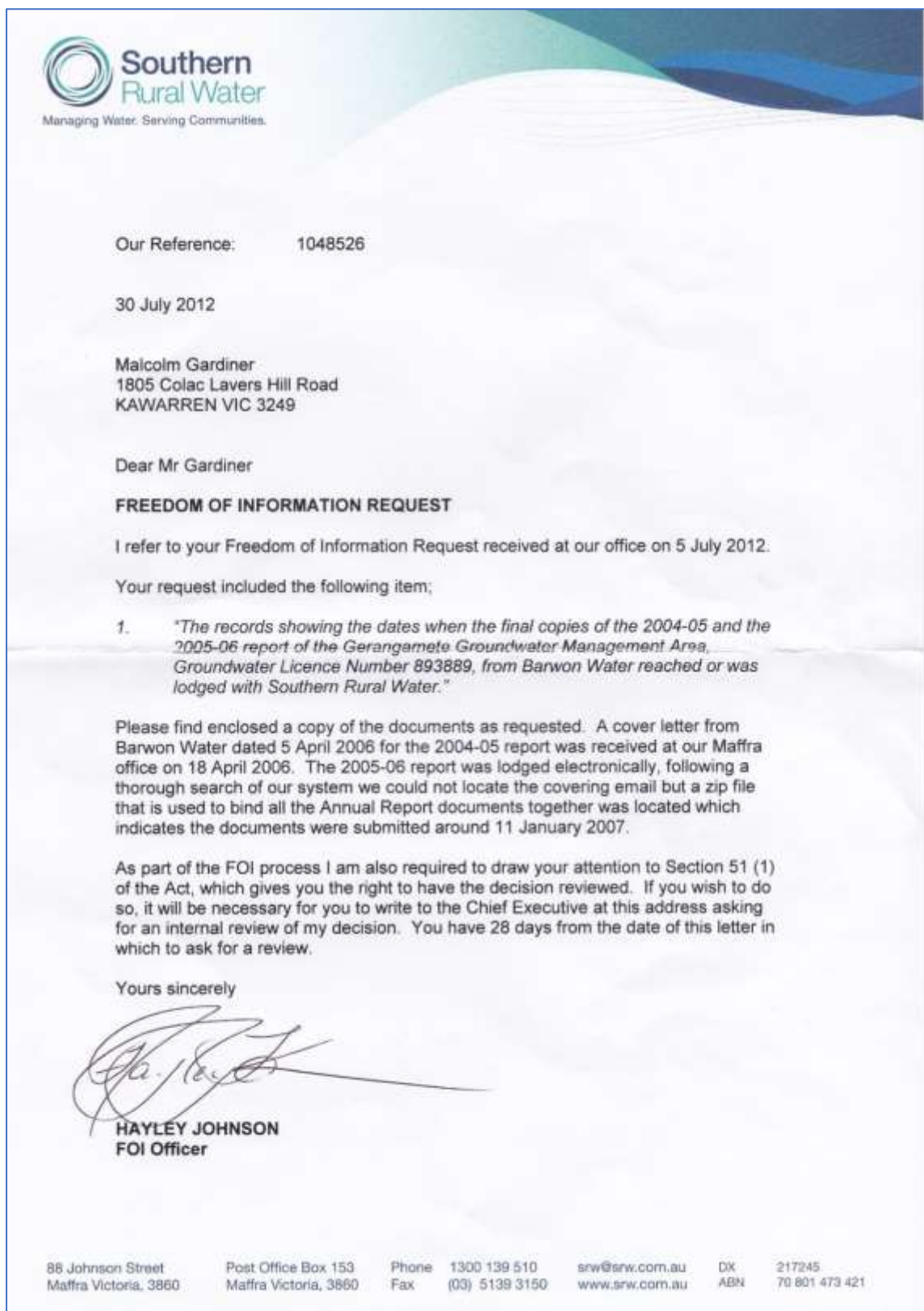
Yours sincerely,

  
Ian Davis  
Manager  
Water Supply

Encl: Barwon Water Groundwater Licence Report 2004/05

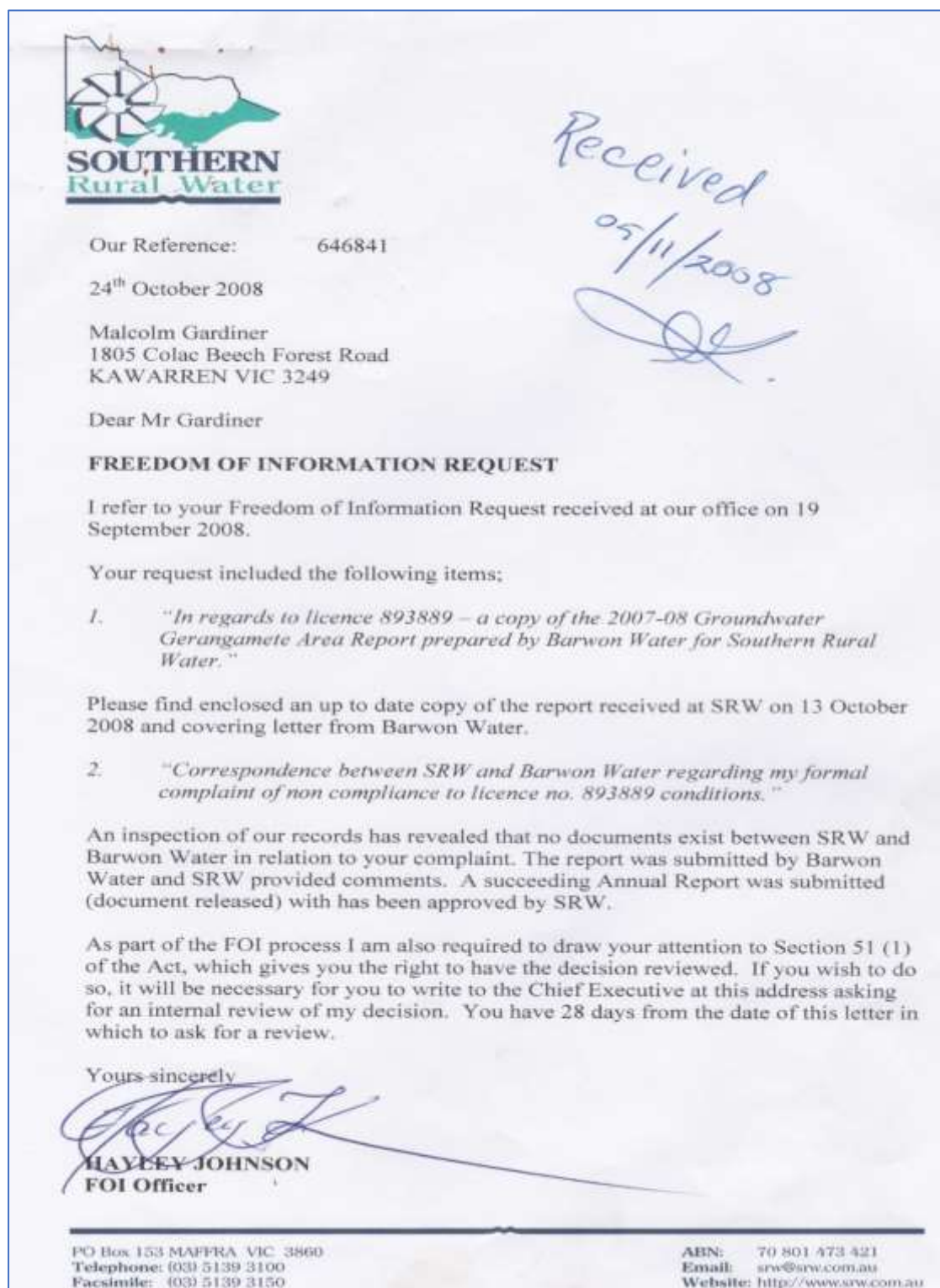
And, the 2005-2006 report was not much better.





### APPENDIX THREE.

Efforts to gain overdue Financial Year 2007-2008 Licence Number 893889 report. At least three months overdue.



**When the report was finally obtained much of it was unreadable.**

**From:** Mal Gardiner (otwaywater@yahoo.com.au)  
**To:** srw@srw.com.au  
**Date:** Saturday, 8 November, 2008 2:13:05 PM  
**Subject:** Attention Hayley Johnson

Dear Hayley,

Thanks for sending me the Licence 893889, 2007-08 annual report.

Unfortunately much of the material is useless as the copy sent to me is in black and white. The coloured graphs are impossible to decipher and other pages are extremely difficult to follow. Could you look into this for me?

Regards,  
Malcolm.

## APPENDIX FOUR.

Efforts to gain overdue Financial Year 2011-2012 Licence Number BEE032496 report. Still not available by 18 October 2012.

Subject: RE: Gerangamete Report?  
From: Tony Overman (Tony.Overman@barwonwater.vic.gov.au)  
To: otwaywater@yahoo.com.au;  
Cc: Justin.Franklin@barwonwater.vic.gov.au;  
Date: Thursday, 18 October 2012 8:55 AM

Malcolm,

I have been advised that the report is still a few away.

In relation to this matter and other matters in the future, I would ask that you direct your enquiries to Justin Franklin, Water Resources Coordinator.

Justin will from hereon be the primary point of contact for such matters.

Regards,

Tony

Tony Overman

Strategy & Sustainability Coordinator | Barwon Water

61-67 Ryrie Street | P.O. Box 659, Geelong, Victoria 3220

T: (03) 5226 2416 | F: (03) 5223 1716 | M: 0439 577 394 | W: [www.barwonwater.vic.gov.au](http://www.barwonwater.vic.gov.au)

Please think before you print

-----Original Message-----

From: Malcom Gardiner [<mailto:otwaywater@yahoo.com.au>]

Sent: Friday, 12 October 2012 7:17 PM

To: Tony Overman

Subject: Gerangamete Report?

Deer Tony,

I was wondering how long you think it might be before the Barwon Downs Gerangamete Groundwater Extraction Report may be before it is able to be released?

Regards,

Malcolm.

## APPENDIX FIVE.

Efforts to gain overdue Financial Year 2013-2014 Licence Number BEE032496 report. Justin was unable to speed the access process up any faster than Tony (see Appendix Four).

The Ombudsman had to be involved in obtaining a copy of this report.

From: **Malcolm Gardiner** otwaywater@yahoo.com.au  
Subject: Complaint against Barwon water and Southern Rural Water  
Date: 8 June 2015 15:02  
To: ombudvic@ombudsman.vic.gov.au  
Cc: kirsten.shelly@minstaff.vic.gov.au

Hello Ombudsman,

This complaint is in regard to Southern Rural Water's groundwater extraction licence Number 893889 given to Barwon Water.

I have been asking unsuccessfully for the 2013-2014 financial report Barwon Water sent to Southern Rural Water regarding the groundwater extraction conducted at the Barwon Downs Borefield, Gerangamete.

The Licence clearly states (Section 6.4 Reporting) that Barwon Water must furnish a report to Southern Rural Water within 60 days of the end of the financial year - i.e. the first of September or there abouts.

The Licence also states (Section 10.1 Information) that within 7 days of submitting this report to Southern Rural Water that it must be made available to the public. This would be at the very latest 10 September 2014.

The following attachment summarises, I believe, a reasonable and polite effort made to gain this report.

I would also like it noted that I believe this situation of not providing the report as requested, is a breach of the Licence conditions. I would like your comment on this and would also appreciate your assistance to gain a copy of this report.

Yours sincerely,  
Malcolm Gardiner.

Malcolm Gardiner  
1805 Colac Lavers Hill Road  
Kawarren  
Vic 3249  
ph (03) 52 358 325  
[www.otwaywater.com.au](http://www.otwaywater.com.au)

Summary of attempts to gain the 2013-14 report...

See next page.



**Summary of attempts to gain the 2013-2014 financial Gerangamete Groundwater Report, Licence 893889.**

The Barwon Water report on the Gerangamete Groundwater extraction at Barwon Downs for each financial year has to reach Southern Rural Water by 1 September each year.

A copy of the 2013-2014 report was requested at the October meeting of the Barwon Downs Groundwater Community reference Group meeting. The reply being Southern Rural Water(SRW) had not processed the report.

19-11-2014. At the Barwon Downs Ground Water Community Reference Group Meeting this report was requested verbally and in writing and was taken as an item to be dealt with on notice. The report was still not available.

19-12-2014. I decided to make a request directly to SRW. A request was sent by email to Southern Rural Water (SRW) requesting a copy of the report.

19-12-2014. By email, Rebekah Dawkins of SRW replies stating that the request has been passed on.

22-12-2014. Angus Ramsay of Southern Rural Water explains in an email that SRW has received a draft copy of the report but it had not been reviewed by SRW at that stage.

17-02-2015. At the Barwon Water Groundwater Community Reference Group meeting this report was requested once again. Still in the hands of SRW.

19-05-2015. At the Barwon Water Groundwater Community Reference Group meeting the Gerangamete report was once again requested. Still not available.

20-05-2015. An email including 12 items from the previous day's meeting was sent to Justin Franklin of Barwon Water. One of these items being a request that he follow up with SRW to facilitate the releasing of this report.

03-06-2015. Of the 12 items referred to one was answered. In Justin's reply he states... *"We'll look into other matters as we get time and in order of where they fit into priorities in the action list."* The Gerangamete report is one of the other matters.

08-06-2015. Still no report available.

Malcolm Gardiner



## APPENDIX SIX.

The start of 893889 licence - 1995.



23 July 1999

Mick Shalley  
RMB AB 240  
Shalley's Road  
Yeodene Vic 3249

Dear Mr Shalley

### **Boundary Creek, Yeodene**

I apologise for the delay in responding to you, however several emails forwarded to you have returned, not able to get through.

You have asked my licensing officer, Gary Wills, to investigate the basis on which the groundwater licence was issued to Barwon Water for the Barwon well field.

As you may be aware, Barwon Water has had historical usage for the groundwater from the Barwon well field. This usage dates back at least until the early 1970's in our current file. Until recently, there have been no problems associated with that usage, as, also historically, it is not used except in times of prolonged drought.

The State is now in the unfortunate position of being in prolonged drought conditions, and the well field is being used.

The current licence was issued for a period of 5 years in September 1995. This was prior to Permissible Annual Values (PAVs) being developed for Groundwater Management Areas (GMAs). The PAVs were not calculated until October 1997, at which time the current licence for Barwon Water had been in existence for slightly more than two years.

The licence is due for renewal in September 2000. Southern Rural Water will be working with Barwon Water to review the licence conditions in light of the current conditions and PAVs.

I hope this clarifies the matter for you. Please do not hesitate to contact me on (03)9742 6513 if I can be of further assistance.

Yours sincerely

Jo Donovan  
Licensing Supervisor West

Head Office: PO Box 153, Maffra Victoria 3860  
Telephone (03) 5139 3100 Facsimile (03) 5139 3150  
E-mail: [srw@srw.org.au](mailto:srw@srw.org.au)

## APPENDIX SEVEN.

The 1995 licence of 5 years had a limit extraction per year set at 12,600 ML.

Our Ref: 40/020/0003G  
Your Ref:  
Enquiries To: J Adamski

April 13, 1999

Mr & Mrs F Shalley  
RMB AB240  
Yeodene  
Vic. 3249

Dear Frank and Nellie,

**Re: Flows in Boundary Creek.**

On 8<sup>th</sup> April, 1999, the Hon. Ian Smith (MLA) convened a meeting concerning rural water supplies. Approximately 22 persons, including you, attended that meeting. Mr Graham Kemp attended on behalf of Barwon Water.

While the meeting was concerned with the farm supplies in general, an issue specific to your property (and your neighbours who also have frontages to Boundary Creek) is the potential impact that the operation of the Barwon Downs wellfield may be having on the flow in Boundary Creek. As you are aware, Barwon Water is presently conducting a trial to supplement the flow in Boundary Creek using discharge from the Colac pipeline. That trial is proceeding well, and the flow near your property is in the vicinity of 1.5 Megalitres/day. From discussions with Barwon Water Officer, Mr Les Barrow, that amount is more than adequate to meet your needs.


For your information, the licence conditions for the Barwon Downs wellfield are:


|  |                    |
|--|--------------------|
| Maximum extraction in one year         | 12,600 Megalitres. |
| Maximum extraction in a 10 year period | 80,000 Megalitres. |

In a 1995 report prepared by the Department of Natural Resources and Environment, the average recharge rate was estimated to be 40,000 Megalitres in a ten year period. Total extractions from the wellfield in the current 10 year period (April 1989 to the present) is approximately 25,500 Megalitres, and that is well under the ten year licence limit, and is also well under the 10 year recharge rate estimated by the Department.

I trust this update is of value to you, and request that you continue to advise my officers of any change of the conditions in Boundary Creek.



Yours sincerely,

  
Joe Adamski  
Executive Manager Strategy and Technology.



**Barwon Water**  
BARWON REGION  
WATER AUTHORITY  
61-67 Ryrie Street,  
Geelong, Victoria  
P.O. Box 658,  
Geelong, Victoria, 3220  
DX 22061 (Geelong)  
GEELONG:  
Phone: (03) 5226 2500  
Fax: (03) 5221 8236

**BRANCH OFFICES**  
40-44 Lonsdale Street, South Geelong, 3220 (03) 5226 2500 Fax: (03) 5229 3485  
42-48 Hesse Street, Colac, 3250 (03) 5233 5200 Fax: (03) 5231 4211



## APPENDIX EIGHT.

Between 2000 and 2004 when the 15 year licence was finally granted there must have been a couple of extensions to the 1995 licence. The following 4 pages outlines one of these extensions. Note the limited conditions.







**SOUTHERN RURAL WATER**  
**WATER ACT 1989**  
 Section 51 and 67

03/19548


**GROUNDWATER LICENCE No 893889**  
 (Licence to take and use groundwater from a bore and to operate works)

Gippsland and Southern Rural Water (The Authority) authorises:

**Barwon Region Water Authority**  
**P O Box 659**  
**GEE LONG 3220**

To take and use water from the bore or bores specified in the First Schedule and to operate works for that purpose and subject to the conditions in the Second Schedule.

The licence is valid until 31 August 2004.

  
**Trevor McDevitt**  
**AUTHORISING OFFICER**  
 Date: 18/08/2003

**FIRST SCHEDULE**

1. Type of Use\* **Urban Supply**
2. Total Annual Volume **12,600 megalitres maximum extraction in any one year**  
**Total amount to be extracted over a 12 year period from 1 September 1992 is 80,000 megalitres.**
3. Area to be Irrigated **Not Applicable-Urban Supply**
4. Land on which the water is to be used as outlined below. -As above
- Lot(s) Plan of Subdivision No. **Not Applicable**  
 Allotment(s) - Section **Not Applicable**  
 Parish **Gerangamete** Groundwater Management Area (GMA) **Gerangamete**
5. Annual fee at date of issue **\$90.00 licence fee + \$1.65 per megalitre of licensed volume based on an average of 8,000 megalitres per year.**
6. Quantities to be extracted from each bore:

| Bore No | Maximum rate of extraction (ML/day) | Maximum volume to be extracted per day (ML) | Maximum volume to be extracted per annum (ML) | Type of Use |
|---------|-------------------------------------|---|---|-------------|
| 64245   | 11.0                                | 11.0  | 12,600  | Urban       |
| 64246   | 9.5                                 | 9.5   |   |             |
| 64247   | 11.0                                | 11.0  |   |             |
| 64248   | 11.0                                | 11.0  |   |             |

**All communications should be addressed to: PO Box 153, MAFFRA VIC 3860**

d:\primary data\katherine\licensing\gw\gw renewals\barwon water\barwon water 893889 lic 2003.doc

## SECOND SCHEDULE CONDITIONS

1. The Licensee shall not -
    - (a) where a meter is provided take any groundwater except through that meter.
    - (b) waste any groundwater.
    - (c) irrigate an aggregate area greater than that authorised if the specified use includes irrigation and a meter is not provided.
    - (d) without the prior consent of the Authority interfere with, disconnect or remove any meter used for the purposes of the licence.
  2. The Licensee shall -
    - (a) pay charges under the licence when requested by the Authority.
    - (b) maintain in efficient working order and to the satisfaction of the Authority all works and appliances required to use and take water under this licence.
    - (c) when required by the Authority, keep an accurate records of the quantity of water taken under this licence and allow the Authority to inspect this record at all reasonable times and to provide a copy of the record when requested.
    - (d) when required by the Authority provide a description of the area to be irrigated during any period.
    - (e) when required give three days notice of the intention to take groundwater.
  3. (a) Whenever the Authority is of the opinion that the taking of groundwater under this licence may injure or adversely affect any other person, or an aquifer, or the environment, the Authority may give notice to the Licensee to -
    - (i) reduce the quantity of groundwater taken during such period or periods and to such extent as the Authority directs.
    - (ii) cease taking groundwater entirely or during such period or periods and to such extent the Authority directs.

(b) Any notice or direction given under this clause shall be sufficiently given if it is -

    - (i) forwarded by post to the Licensee at the address contained in this licence.
    - (ii) given verbally to the Licensee by an Authority Officer.
    - (ii) published in a newspaper circulating generally within the district of the bore specified the licence, or broadcast from a radio broadcasting station in the State.
  4. (a) The Authority may require the Licensee to use an approved meter or meters for the purposes of this licence and any such meter with all fittings shall be installed under the supervision of the Authority. The Licensee may be required to meet the Authority's cost of metering.
  - (b) All meters used for the purposes of this licence shall be the property of the Authority.
  - (c) When the taking of groundwater is not measured by a meter, or when the Authority is satisfied that the taking of groundwater has not been accurately measured by the meter used, the quantity of water deemed to have been taken shall be that as from time to time fixed by the Authority in a schedule of deemed depth of watering over land irrigated.
5. The Licensee must not pollute any groundwater through the spillage of fuel or lubricant or any other matter used connection with works and appliances.



Service Groundwater: 893889

| Attribute                      | Time Effective | Date Effective | Value     |
|--------------------------------|----------------|----------------|-----------|
| Status                         | 16:56          | 4-JAN-2000     | A         |
| Collection Status              | 00:00          |                |           |
| Entitlement (ML)               | 04:19          | 26-JUL-2000    | 8000.00   |
| Entitlement Remaining (ML)     | 23:30          | 15-AUG-2003    | 8000.00   |
| Stopped Indicator              | 17:24          | 13-AUG-1999    | N         |
| Annual Water Right (ML)        | 17:24          | 13-AUG-1999    | 8000.00   |
| Domestic & Stock (ML)          | 17:24          | 13-AUG-1999    | 0.00      |
| TWE Permanent Water Right (ML) | 17:24          | 13-AUG-1999    | 0.00      |
| TWE Temporary Water Right (ML) | 00:00          |                |           |
| TWE Temporary Sales (ML)       | 00:00          |                |           |
| Other Off Quota (ML)           | 00:00          |                |           |
| Other Allocation (ML)          | 00:00          |                |           |
| Period To Date Usage (ML)      | 23:30          | 15-AUG-2003    | 0.00      |
| EFFECTIVE WATER RIGHT (ML)     | 16:56          | 15-NOV-1999    | 8000.00   |
| Maximum Supply (ML)            | 17:24          | 13-AUG-1999    | 0.00      |
| Adjust Volume (ML)             | 17:24          | 13-AUG-1999    | 0.00      |
| Off Quota Supplies (ML)        | 00:00          |                |           |
| Product Group                  | 17:24          | 13-AUG-1999    | GR        |
| Area (Ha.)                     | 14:34          | 12-OCT-1999    | 0         |
| GTS Code                       | 17:24          | 13-AUG-1999    | GWLC      |
| Sales Vol Over (ML)            | 00:00          |                |           |
| Sales Volume (ML)              | 04:18          | 26-JUL-2000    | 0.00      |
| Purposes                       | 13:16          | 25-MAR-2002    | UR 8000.0 |
| LICENSE TERM (years)           | 09:00          | 1-SEP-2000     | 1         |
| Chargeable WR (ML)             | 12:43          | 12-OCT-2000    | 8000.0    |

Alter Close

Successfully updated attribute value

Authorisation on 893889

| Role   | Surname                  | Preferred Name |
|--------|--------------------------|----------------|
| OWNER: | BARWON REGION WATER AUTH |                |

Client/User Details

Customer No: 653046  
Surname: BARWON REGION WATER AUTHORITY  
Preferred Name:  
Given Name:  
Address: PO BOX 668  
GEELONG  
Contact Method:  
Post Code: 3220 Fax No: 03 5224 2760  
Phone No: 03 5226 2373 Alt Phone No: 1300 666 007

Save Close

## APPENDIX NINE.

The licence as set out in Appendix Eight was valid until the 31<sup>st</sup> of August 2004. There were only 4 extraction pumps with daily extraction limits for three pumps at 11ML and the fourth pump set at 9.5 ML.

The 2003-2004 Licence report did not include all of the reporting requirements as set down in the licence but did include:

1. The date the 2004 licence was issued, 29<sup>th</sup> April 2004.
2. The expiry date of the licence, 30<sup>th</sup> June 2019.

### 1. INTRODUCTION

Barwon Water operates the Gerangamete Groundwater Field to supplement surface water harvesting from the Barwon River and its tributaries. There are currently 6 production bores each licenced to deliver between 9.5 and 11.0 ML/day. The bores deliver water to the Gerangamete Water Treatment Plant where it is pre-treated prior to pumping to the main transfer channel and eventual storage and full treatment at Wurdee Boluc. The licence came into operation on the 29<sup>th</sup> April, 2004 and is valid until the 30<sup>th</sup> June, 2019.

Under the terms of the licence, Barwon Water is required to report at yearly intervals on groundwater extraction operations and provide information on the impacts on aquifer pressures. These are monitored through a network of observation bores which indicate groundwater levels and rate of change of levels during pumping and recharge periods. It is also a requirement to monitor and report on groundwater salinity, land subsidence and environmental impacts from groundwater extractions.

The purpose of this report is to provide details of regional groundwater and land surface monitoring activities for the period July 2003 to June 2004 to meet the requirements of Groundwater Licence No. 893889.

3. The change from 12600 ML/year extraction to 20,000 ML/year.
4. Two new bores were part way through commissioning – This would give a total of 6 extraction bores.

### EXECUTIVE SUMMARY

This report presents a summary of the works completed by Barwon Water for the monitoring of groundwater and land levels in the Gerangamete groundwater field for the period July 2003 to June 2004. The report has been prepared to meet the requirements of Groundwater Extraction Licence No. 893889 under which Barwon Water operates. The report provides information on the extracted groundwater volume, groundwater and land level data recorded, and an indication of any analysis completed based on the monitoring data.

Outcomes of the 2003/04 program are:

- Groundwater extractions are within the annual licenced volumes. Annual extraction for the period was 270.8 ML against a total licenced volume of 20,000 ML. The extraction was carried out to check the operation of Production Bores GW6 and GW8 in July 2003.
- Monthly monitoring of aquifer pressures has been undertaken over the period. This will be reduced to quarterly readings for 2004/05 in accordance with the new licence.
- Refurbishment of the pump columns for GW5 including sandblast preparation and internal/external re-coating.
- GPS survey of bores along with overlay onto corporate GIS to facilitate field investigations and production of borefield maps.
- Above-ground condition assessment of bores along with photographic record for future reference.

5.  
6.

5. Subsidence monitoring began in 1983.



Barwon Region Water Authority

### Spatial Information Services

File: LIU 1115

## Survey Report

Client: Strategic Planning  
Project ID: Gerangamete Groundwater  
Subsidence Monitoring Project – 2004 Observation Series  
Job Reference: 8082  
Date: 1/7/04

*Objective:*

1. Undertake the annual observations for determination of heights of surveillance monitoring stations over Gerangamete ground water basin.
2. Compare results to 2003 observation series.

## Introduction

The subsidence monitoring network, originally established in 1983, comprised eight monitoring bench marks located linearly between Barwon Downs and Yeo, with two clusters of 3 deep seated control stations at each end. In the past the network has been levelled using traditional spirit levelling techniques and more recently with a digital levelling system.

In 2002, the network was expanded to include a further five new monitoring bench marks along the longer axis of the graben, (in a line roughly between Forrest and Birregurra) and most of the original monitoring bench marks had had "sister" marks established nearby in locations where radio reception from satellites in the Global Positioning System (GPS) was possible.

The clusters of deep seated control stations at Dewings and Yeo were replaced by sites where GPS reception is possible. Two new clusters of deep seated marks were established at the ends of the longer axis of the graben at Bambra and Forrest. The site selection for these marks was heavily constrained to places where outcropping or shallow bedrock was available.

The expanded network was designed to support all future monitoring of height differences between the control and monitoring stations using GPS. For more information on the new network see LIU Report 7691.doc prepared 4/11/2002.

In 2002, due to lack of suitable GPS equipment and time constraints, not all base lines were observed and an interim result set only was prepared. Last year (2003), the full network, as shown in the diagram below, was observed and used to derive the final adopted heights for the four control station clusters. Last years observations have been recomputed along with this years observations using 0.002m point centering error and 0.002m height error. All heights are being measured within the reference framework of the GPS, which are heights measured above the ellipsoid, rather than the Australian Height Datum (AHD). By not using AHD heighting, more accuracy is achieved from the GPS method.

In Figure 1 below, the control framework is shown in black and the monitoring stations in blue. The line work represents all observed GPS baselines.



## APPENDIX TEN.

The 2006-2007 licence report had not even been submitted to Southern Rural Water by 21 September 2007. Requests for a copy was made ending in being told that... ***"You will need to request these documents under Freedom of Information."*** The FOI request is included in this Appendix.

The FOI finally arrived 2 November 2007, with the 2006-2007 report 4 months after the reporting period (see Appendix Twelve).

Print Page 1 of 2

*Start at the Bottom* ①

**From:** Belinda Green (BelindaG@SRW.com.au)  
**To:** 'Mal Gardiner'  
**Date:** Friday, 21 September 2007 8:32:46 AM  
**Subject:** RE: Barwon Water 06/07 Groundwater Report

*START OF FOI*  
*for amendments to L895889*  
*- latest 2006-07 Gnd report*  
*- reason for report late*

Hi Malcolm

You will need to request these documents under Freedom of Information. A form is attached for you to fill out and send back to Southern Rural Water with the application fee of \$22.00.

Thanks

Belinda Green  
Southern Rural Water  
PH: (03) 5139 3100

*Quite amazing!!!*

---

**From:** Mal Gardiner [mailto:otwaywater@yahoo.com.au]  
**Sent:** Wednesday, 19 September 2007 11:06 AM  
**To:** Belinda Green  
**Subject:** Re: Barwon Water 06/07 Groundwater Report

Thanks for your prompt reply, Belinda.  
I will contact you at the end of the month regarding the Barwon Water Groundwater 2006-07 Report. Would there be any reason why it is overdue?  
I was wondering if I could have a copy of all the amendments made to Licence 893889 since it was issued in 2004?  
Also can you tell me why there hasn't been any reporting in the Barwon Downs Groundwater reports of 2004-05 and 2005-06 in regard to points 6.4 a and 6.4 b?  
Regards,  
Malcolm.

*missing data from the reports as prescribe by the licence conditions - maybe an amendment ∴ the reason for*

----- Original Message -----  
**From:** Belinda Green <BelindaG@SRW.com.au>  
**To:** "otwaywater@yahoo.com.au" <otwaywater@yahoo.com.au>  
**Sent:** Tuesday, 18 September 2007 1:09:07 PM  
**Subject:** Barwon Water 06/07 Groundwater Report

Hi Malcolm

*NOTE* *I did not speak to her. - spoke to the desk secretary.*

I refer to our telephone conversation today and advise that we have not yet received the 06/07 Groundwater Report from Barwon Water.

I suggest you contact us again in around 2 weeks on (03) 5139 3100.

Thanks

Belinda Green  
Southern Rural Water  
PH (03) 5139 3100

*By the Licence conditions this report was due on the 1st Sep. 2007 at the latest. - unless an amendment has been made.*

**\*\* Any views or opinions expressed in this message or any attachments are solely those of the author and do not necessarily represent those of Southern Rural Water. Southern Rural Water accepts no liability for the contents of this e-mail or the consequences of any actions taken on the basis of information provided herein. This message and any attachments are confidential and are intended solely for the use of the addressee or someone authorised to receive the addressee's e-mail. If you have received this e-mail in error, please notify the sender by return. Thank you. \*\***

This email has been scanned by the MessageLabs Email Security System.



copy. (3)

**FREEDOM OF INFORMATION  
REQUEST FOR ACCESS TO DOCUMENTS**

**TO:**  
Freedom of Information Officer  
Southern Rural Water  
PO Box 153  
MAFFRA VIC 3860

28/09/2007

Under the Freedom of Information Act 1982, I wish to gain access to the following document(s):

- ① Barwon Water Groundwater 2006-07 Report.  
"Groundwater Licence No 893889 Gerangate Area  
2006/07 Report."
- ② Copies of all amendments made to Licence No  
893889 since 2004.
- ③ Reasons why the above mentioned report mentioned  
in point ① above was not submitted within the 60 day limit.

Form of Access: (tick ☐ where appropriate)

- ☒ I request copies of the document(s) to be forwarded by mail.
- ☐ I request an inspection of the original document(s).
- ☐ I am prepared to inspect copies of the document(s) where the provision of originals would interfere unreasonably with the operations of Southern Rural Water
- ☐ Other (Please Specify) \_\_\_\_\_

(Cheque No. 542650)  
I enclose an application fee of \$22.00 which is payable for this application and I understand that I will be supplied with a statement of further charges if appropriate.

NAME: MALCOLM GARDINER

ADDRESS: 1805 COLAC BEECH FOREST ROAD

KAWARRAN

STATE: VICTORIA Postcode: 3249

PHONE NO BUSINESS: \_\_\_\_\_ PHONE NO HOME: (03) 52 358 325

SIGNATURE: [Signature]

Date Applicant Fee Received:

Receipt No:





Your Reference:  
Our Reference: 525672

19<sup>th</sup> October 2007

Mr Malcolm Gardiner  
1805 Colac Beech Forest Road  
KAWARREN VIC 3249

*Cheque for \$10.80  
Mailed 9 a.m. 25/10/07  
Colac P.O.*

Dear Mr Gardiner

**FREEDOM OF INFORMATION REQUEST – LICENCE NO. 893889**

I refer to your Freedom of Information request received on 28<sup>th</sup> September 2007.

I have reviewed the correspondence held by Southern Rural Water and there are a total of five documents on our files relevant to your request. I am prepared to release all of these documents in full.

These documents will be released to you upon receipt of your remittance in the sum of ten dollars and eighty cents (\$10.80), calculated as follows;

Photocopying of 54 pages @ 20c per page \$10.80

These charges have been calculated in accordance with the provisions of the Freedom of Information (Access Charges) Regulations 1993.

I await receipt of your payment for this request. If you have any queries relating to this Freedom of Information request please contact me on (03) 5139 3143 or email [hayleyj@srw.com.au](mailto:hayleyj@srw.com.au).

Yours sincerely

  
**HAYLEY JOHNSON**  
FOI Officer

PO Box 153 MAFFRA VIC 3860  
Telephone: (03) 5139 3100  
Facsimile: (03) 5139 3150

ABN: 70 801 473 421  
Email: [srw@srw.com.au](mailto:srw@srw.com.au)  
Website: <http://www.srw.com.au>

## **APPENDIX ELEVEN.**

In the 2006-2007 report the transfer pump's capacity was increased from 33 ML/day to 55ML/day.

### **EXECUTIVE SUMMARY**

This report presents a summary of the work completed by Barwon Water for the monitoring of groundwater and land levels in the Gerangamete groundwater field for the period July 2006 to June 2007. The report has been prepared to meet the requirements of Groundwater Extraction Licence No. 893889 under which Barwon Water operates.

The report provides information on the extracted groundwater volume, groundwater and land level data recorded, an account of bore maintenance undertaken and an indication of any analysis completed based on the monitoring data.

The major outcomes of the 2006/07 program were:

- A total of 11,807 ML of groundwater extracted.
- Upgrade of pipework and transfer pump station to increase capacity of borefield from 33 ML/day to 55 ML/day.
- Re-calibration of groundwater model.
- Water level decline and subsidence within licence trigger levels.
- Groundwater salinity levels remain constant.
- No impact on Barwon River flows from groundwater pumping.

**The 2006-2007 report was the first report to include the 2004 licence condition 6.4 b.**

## **APPENDIX TWELVE.**

Changes made to the extraction Licence Number 893889, between the 18<sup>th</sup> of August 2003 licence and September 2007 were asked for under a Freedom of Information request. The Southern Rural Water reply Ref: 52672 provided the following document, pages 55-56.

The changes noted were:

1. Two new extraction bores had been added.
2. The daily rates of extraction from each bores was increased to 12 ML/day.
3. The maximum volume of water to be extracted in any year ending 30 June was changed from 12,600 ML to 20,000 ML.
4. The maximum daily rate at which water may be taken was changed from 55 ML/day to 72 ML/day.
5. The Second Schedule was changed.
6. Pages 3-14 were also added to the 18<sup>th</sup> August 2003 licence conditions.

**Page 57-70 below contain a complete copy of the licence as at 2007.**



Our Reference: 525672

2<sup>nd</sup> November 2007

Mr Malcolm Gardiner  
1805 Colac Beech Forest Road  
KAWARREN VIC 3249

Dear Mr Gardiner

**FREEDOM OF INFORMATION REQUEST – LICENCE NO. 893889**

I refer to your Freedom of Information Request received at our office on 28<sup>th</sup> September 2007.

Your request included the following items;

- 1) Barwon Water Groundwater 2006-07 Report for Groundwater Licence No. 893889 Gerangamete Area 2006/07 Report
- 2) Copies of all amendments made to Licence No. 893889 since 2004
- 3) Reasons why the above mentioned report mentioned in (1) above was not submitted within the 60 day limit

A search of our records has located five documents relating to your request.

Please find enclosed the Groundwater Licence No 893889 Gerangamete Area 2006/07 Report produced by Barwon Water, together with a covering letter from Barwon Water which explains why the report was not submitted within the required timeframe.

As you requested copies of all amendments made to Licence No 893889 since 2004, please find enclosed licence document dated 18<sup>th</sup> August 2003 together with the most recent and current licence document issued on 7<sup>th</sup> November 2006. Any amendments made between August 2003 and November 2007, are listed on the current licence document.

I hope that this information satisfies your request. If you have any further queries please do not hesitate to contact me on (03) 5139 3143 or email [hayleyj@srw.com.au](mailto:hayleyj@srw.com.au).

Mr Malcolm Gardner  
Freedom of Information Request

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As part of the FOI process I am also required to draw your attention to Section 51 (1) of the Act, which gives you the right to have the decision reviewed. If you wish to do so, it will be necessary for you to write to the Chief Executive at this address asking for an internal review of my decision. You have 28 days from the date of this letter in which to ask for a review.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Hayley Johnson', with a long horizontal flourish extending to the right.

**HAYLEY JOHNSON**  
FOI Officer





*This copy  
obtained  
under FOI  
process*

SOUTHERN RURAL WATER  
WATER ACT 1989  
Section 51 and 67

GROUNDWATER LICENCE No. 893889

(Licence to take and use groundwater from a bore and to operate works)

Gippsland and Southern Rural Water (the Authority) authorises:

**Barwon Region Water Authority**  
PO Box 659  
GEELONG VIC 3220

to take and use water from the bore or bores specified in the First Schedule and to operate works for that purpose and subject to the conditions in the Second Schedule.

The licence is valid until 30 June 2019.

Trevor McDevitt  
Authorising Officer  
Date: 7/11/2006

—oooOOOooo—

PREAMBLE

Barwon Water's Greater Geelong water supply system conjunctively uses surface water from the Barwon and Moorabool catchments together with groundwater from the Gerangamete Groundwater Management Area. The most efficient use of the resources dictates that Barwon Water only extracts groundwater during dry periods when surfacewater supplies are falling. This principle has been incorporated into Barwon Water's REALM model to determine the periods when the Barwon Downs wellfield should be operated.

*Changes made to the original licence 893889  
as @ 7/11/2006.*

*1/14*

\* Changes made since the 2003

FIRST SCHEDULE

licence

1. Type of use for which water is to be taken Urban Supply
2. Groundwater Management Area from which water is to be taken Gerangamete
3. Maximum daily rate at which water may be taken 72 ML/day \* 55 ML/day
4. Maximum volume of water that may be taken in any year (ending 30 June) 20,000 ML \* 12,600 ML/year
5. Maximum volume of water that may be taken in any period of 10 years (ending 30 June) 80,000 ML
6. Maximum volume of water that may be taken in any period of 100 years (ending 30 June) 400,000 ML
7. The taking of water is to be in accordance with the assumptions of the REALM modeling of Barwon Water's supply system undertaken for the renewal of this Licence. When Barwon Water applies for renewal of this licence, it must submit a report demonstrating how the Barwon Downs wellfield has been operated in accordance with the intent of the REALM model. 4,000 ML/year

8. Quantities of water that may be taken from each bore:

| Bore Number | Maximum daily rate at which water may be taken | Maximum volume of water that may be taken each day |
|-------------|--|--|
| 64245       | 12.0 ML/day 11.0 *                             | 12.0 ML 11.1 *                                     |
| 64246       | 12.0 ML/day 9.5                                | 12.0 ML 9.5  |
| 64247       | 12.0 ML/day 11.0                               | 12.0 ML 11.0                                       |
| 64248       | 12.0 ML/day 11.0                               | 12.0 ML 11.0                                       |
| S56301/01   | 12.0 ML/day                                    | 12.0 ML  |
| S56301/02   | 12.0 ML/day } New bores *                      | 12.0 ML  |

*Additional bores may be added during the period of this licence, subject to normal bore construction licensing requirements*

- Sometime between 2003 and 7/11/2006 two new bores were commissioned.
- No more changes made to this licence (No. 893889) in the rest of the document. P.P 3-14

## **SECOND SCHEDULE**

### **1. REGIONAL WATER LEVEL MONITORING**

#### **1.1 Water Level Monitoring**

Barwon Water must for each bore listed in the Third Schedule:

- a. read the potentiometric level quarterly, provided the bore is in working order; and
- b. record the potentiometric level on a database within 30 days of measurement.

#### **1.2 Maintenance**

Barwon Water must for each bore listed in the Third Schedule:

- a. inspect the headworks at least once each year for signs of bore failure;
- b. examine the water levels recorded under sub-clause 1.1(a) to determine whether abnormal readings indicate bore failure; and
- c. keep a database of all inspections and examinations under sub-clauses 1.1(a) and 1.1(b).

#### **1.3 Reporting**

Barwon Water must provide to the Authority within 60 days of the end of each year a report containing:

- a. all water levels recorded under sub-clause 1.1(a) for the year;
- b. a plot of bore hydrographs containing all recorded water levels for each bore listed in the Third Schedule;
- c. a map of residual drawdown for the year;
- d. details of any bore failure determined from the inspection of headwork condition under sub-clause 1.2(a) or assessment of abnormal water level readings under sub-clause 1.2(b) during the year; and
- e. details of any issues arising from the monitoring results, including significant variations to predicted trends, and associated recommendations, if any.

#### **1.4 Monitoring Network**

Barwon Water:

- a. may provide to the Authority a proposal, formulated after consultation with the Department of Sustainability and Environment and the Authority, to modify the list of bores in the Third Schedule in order to maintain the effectiveness and efficiency of regional water level monitoring; and
- b. must provide to the Authority a proposal, formulated after consultation with the Department of Sustainability and Environment and the Authority, to modify the list of bores in the Third Schedule in order to maintain the effectiveness and efficiency of regional water level monitoring within 90 days of:
  - i. Barwon Water concluding that there are significant gaps in the regional water level monitoring; or
  - ii. a material number of the bores listed in the Third Schedule are failing to provide valid data; or
  - iii. the Authority requesting a proposal following its receipt of a report under clause 1.3.

### **2. GROUNDWATER SALINITY**

#### **2.1 Salinity Monitoring**

Barwon Water must by 31 December 2004, and then at the end of each year for the next 5 years, and then at the end of every fifth year:

- a. obtain a water sample from Bore YEO 23 (Bore ID 109114), Bore W7 (Bore ID 107720), and Bore YYG221 (Bore ID 102868);
- b. determine the salinity of the sample; and
- c. record the result of the salinity determination on a database within 30 days of undertaking the determination.

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2.2 Reporting

Barwon Water must provide to the Authority within 90 days of undertaking the sampling under sub-clause 2.1(a) a report containing:

- a. the salinity for each bore;
- b. a comparison of the salinity under sub-clause 2.1(a), with any previous salinity data from the same bore;
- c. an assessment of the risk of groundwater salinity increase due to pumping under this Licence, based on the information obtained in sub-clause 2.2(b);
- d. an assessment of the suitability of each bore specified in sub-clause 2.1(a) above for the purpose of ongoing salinity monitoring; and
- e. details of any issues arising from the monitoring results, including significant variations to predicted trends, and associated recommendations, if any.

3. WATER LEVEL DECLINE

3.1 General

A. Barwon Water must by 31 December 2004 install a new monitoring bore at a site in the vicinity of bore YEO 40 (Bore ID 109131). This new bore is to be used for any purposes ascribed in this Licence to bore YEO 40 (Bore ID 109131)

B. Barwon Water must not cause groundwater levels in the bores listed below to decline below the respective levels listed, as expressed in metres relative to the Australian Height Datum (AHD):

- a. G 13 (Bore ID 64229) - 85.2m AHD;
- b. G 20 (Bore ID 64236) - 98.7m AHD;
- c. M 28 (Bore ID 83844) - 124.1m AHD; and
- d. YEO 40 (Bore ID 109131) - 142.6m AHD.

3.2 Monitoring

Barwon Water must:

- a. determine the potentiometric level from the bores listed in sub-clause 3.1:
  - i. monthly from the commencement of pumping until 18 months after the conclusion of pumping; and
  - ii. thereafter quarterly; and
- b. record the potentiometric levels obtained under sub-clause 3.2(a) on a database within 30 days of measurement.

3.3 Notification

If the potentiometric level of any bore in sub-clause 3.1 declines below the respective level specified in sub-clause 3.1, Barwon Water must:

- a. notify the Authority within 7 days of taking the measurement;
- b. limit total groundwater extraction to a daily rate of up to 34.4 ML/d, determined by Barwon Water after considering the state of Geelong's water supply and water restrictions
- c. initiate the following monitoring program:
  - i. immediately undertake subsidence level measurements as specified under sub-clause 5.2, and thereafter at 6 monthly intervals from the time of notification in sub-clause 3.3(a);
  - ii. increase the frequency of the monitoring as specified under sub-clause 1.1 to monthly; and
  - iii. within a period of 30 days of commencing the monitoring specified in sub-clause 3.3(c)(ii) and thereafter at monthly intervals provide to the Authority a report mapping depth to potentiometric surface and potentiometric surface relative to AHD;

- d. provide to the Authority within 90 days of any notification provided in sub-clause 3.3(a) a report that includes:
  - i. a review of predicted groundwater level decline and recovery;
  - ii. an assessment of the water supply situation for Geelong; and
  - iii. a plan, formulated after consultation with the Department of Sustainability & Environment, to manage further pumping under this Licence and water supply to Geelong whilst the potentiometric level remains below the respective level specified in sub-clause 3.1; and
- e. except as provided for in sub-clause 3.3(f), only vary the actions required under sub-clauses 3.3(b) and 3.3(c) to the extent necessary to implement the plan specified in sub-clause 3.3(d)(iii); and
- f. only cease the actions required under sub-clauses 3.3(b) and 3.3(c) when the potentiometric level of all bores in sub-clause 3.1 are above the respective level specified in sub-clause 3.1.

#### 3.4 Maintenance

Barwon Water must:

- a. maintain the bores referred to in sub-clause 3.1 in working order and replace or refurbish any bore as necessary;
- b. undertake an assessment of the remaining bore life of the bores referred to in sub-clause 3.1, at intervals not exceeding five years; and
- c. keep a database of all maintenance undertaken.

#### 3.5 Reporting

Barwon Water must provide to the Authority:

- a. within 60 days of the end of each year a report containing:
  - i. the potentiometric levels determined under sub-clause 3.2(a) for the year;
  - ii. a summary of all work done under sub-clause 3.4(a);
  - iii. details of any issues arising from the monitoring results, including significant variations to predicted trends, and associated recommendations, if any;
- b. within 90 days of undertaking each assessment under sub-clause 3.4(b) a report of the assessment including a bore maintenance and replacement plan.

### 4. METERING

#### 4.1 General

Barwon Water must meter the extraction of groundwater from all bores listed in the First Schedule.

#### 4.2 Metering

Barwon Water must:

- a. read the meters referred to in sub-clause 4.1 each week; and
- b. record the meter readings and the weekly metered extraction on a data base within 7 days of measurement.

#### 4.3 Notification

Barwon Water must:

- a. notify the Authority within 7 days if any metered extraction has exceeded the extraction rates and volumes specified in the First Schedule; and
- b. immediately reduce extraction to within the extraction rates and volumes specified in the First Schedule.



**4.4 Maintenance**

Barwon Water must, with respect to the meters referred to in sub-clause 4.1:

- a. inspect their condition whenever they are read;
- b. maintain them in good condition;
- c. recalibrate them periodically and whenever there is reason to believe that a reading may be inaccurate;
- d. replace them if damaged; and
- e. keep a database of all work done under sub-clauses 4.4(b), 4.4(c) and 4.4(d).

**4.5 Reporting**

Barwon Water must provide to the Authority within 60 days of the end of each year a report containing:

- a. weekly groundwater extractions for the year pursuant to sub-clause 4.2, in both graphical and tabular formats;
- b. a summary of all work done under sub-clauses 4.4(b), 4.4(c) and 4.4(d); and
- c. details of any issues arising from the monitoring results, including significant variations to predicted trends, and associated recommendations, if any.

**5. SUBSIDENCE**

**5.1 General**

Barwon Water must not extract groundwater to the extent that it causes subsidence to exceed 200mm, as measured at any measuring station in the subsidence monitoring network specified in the Fourth Schedule.

**5.2 Monitoring**

Barwon Water must:

- a. undertake annual subsidence level measurements in a manner consistent with its current methodology, unless more frequent levelling is required under 3.3(c)(i); and
- b. record the subsidence level measurements on a database within 30 days of measurement.

**5.3 Notification**

If the subsidence limit in sub-clause 5.1 is exceeded, Barwon Water must:

- a. notify the Authority within 7 days of taking the measurement;
- b. limit total groundwater extraction to a daily rate of up to 34.4 ML/d, determined by Barwon Water after considering the state of Geelong's water supply and water restrictions;
- c. initiate the following monitoring program:
  - i. immediately undertake subsidence level measurements as specified under sub-clause 5.2, and thereafter at 6 monthly intervals from the time of notification in sub-clause 5.3(a); and
  - ii. undertake within 30 days from the time of notification in sub-clause 5.3(a) a field assessment of potential impacts of subsidence, that will include but not be limited to the effects of subsidence on drainage, buildings, and infrastructure (roads, bridges, pipelines, dams);
- d. provide to the Authority within 90 days of any notification provided in sub-clause 5.3(a) a report that includes:
  - i. a report of the assessment undertaken under sub-clause 5.3(c)(ii);
  - ii. an assessment of the water supply situation for Geelong; and
  - iii. a plan, formulated after consultation with the Department of Sustainability & Environment, to manage further pumping under this Licence and water supply to Geelong; and

- e. except as provided for in sub-clause 5.3(f), only vary the actions required under sub-clauses 5.3(b) and 5.3(c) to the extent necessary to implement the plan specified in sub-clause 5.3(d)(iii); and
- f. only cease the actions required under sub-clauses 5.3(b) and 5.3(c) when the subsidence limit in sub-clause 5.1 is no longer exceeded.

**5.4 Maintenance**

Barwon Water must:

- a. maintain the subsidence monitoring network specified in the Fourth Schedule in working order;
- b. keep a database of all maintenance undertaken on the subsidence network; and
- c. notify the Authority within 7 days if the subsidence monitoring network is found to be defective.

**5.5 Reporting**

Barwon Water must provide to the Authority:

- a. within 60 days of the end of each year a report containing:
  - i. the measured subsidence under sub-clause 5.2 for the year;
  - ii. details of maintenance undertaken under sub-clause 5.5 during the year; and
  - iii. details of any issues arising from the monitoring results, including significant variations to predicted trends, and associated recommendations, if any; and
- b. when it applies for the renewal of this Licence, a report by an appropriately-qualified geotechnical consultant that reviews the subsidence monitoring program and includes:
  - i. a comparison of actual and predicted subsidence;
  - ii. an assessment of the accuracy and reliability of the subsidence measurements undertaken; and
  - iii. recommendations regarding amendments to the program to improve the adequacy, reliability or accuracy of monitoring.

**6. FLOW IN BOUNDARY CREEK**

**6.1 General**

A. Barwon Water must by 31 December 2004 install a new monitoring bore at a site in the vicinity of bore YEO (Bore ID 109131). This new bore is to be used for any purposes ascribed in this licence to bore YEO 40 (Bore ID 109131).

B. Barwon Water must provide a flow of 2 ML/d to the headwaters of Boundary Creek from any time that groundwater extraction commences under this Licence until:

- a. the groundwater level in bore YEO 40 (Bore ID 109131) recovers above a level of 158.5m AHD following the cessation of pumping; or
- b. at any time between 1 June and 30 November the natural flow at the Yeodene stream gauge exceeds 1 ML/d.

B. Prior to extraction of groundwater under this Licence, Barwon Water must obtain relevant approvals regarding the discharge of water to Boundary Creek from the Environment Protection Authority.

**6.2 Monitoring**

Barwon Water must:

- a. install a meter at the point of discharge to Boundary Creek referred to in sub-clause 6.1;
- b. read the meter each week; and
- c. record the weekly flow on a database within 7 days of measurement.

**6.3 Maintenance**

Barwon Water must, with respect to the meter referred to in sub-clause 6.2:

- a. inspect its condition whenever it is read;
- b. maintain it in good condition;
- c. recalibrate it whenever there is reason to believe that a reading may be inaccurate;
- d. replace it if damaged; and
- e. keep a database of all work done under sub-clauses 6.3(b), 6.3(c) and 6.3(d).

**6.4 Reporting**

Barwon Water must provide to the Authority within 60 days of the end of each year a report containing:

- a. weekly meter readings pursuant to sub-clause 6.2 (b), in both graphical and tabular formats;
- b. daily stream gauging data from the Yeodene gauge (233228), also graphed at weekly intervals;
- c. a summary of water discharged to Boundary Creek under sub-clause 6.1;
- d. a summary of all work done under sub-clauses 6.3(b), 6.3(c) and 6.3(d); and
- e. details of any issues arising from the monitoring results, including significant variations to predicted trends, and associated recommendations, if any.

**7. PROTECTION OF RIPARIAN VEGETATION**

**7.1 General**

A. Barwon Water must undertake a floral survey at the following sites within 5 years of the commencement of this Licence and thereafter at five-yearly intervals:

- a. Flora Site 25 on Boundary Creek (Grid Ref 341441, Mapsheet Gerangamete 7621-3-2);
- b. Site upstream of Site 25 (Grid Ref 330456, Mapsheet Gerangamete 7621-3-2);
- c. Control sites away from Boundary Creek:
  - c.1 (Grid Ref 267421, Mapsheet Barongarook 7621-3-3);
  - c.2 (Grid Ref 304377, Mapsheet Gerangamete 7621-3-2);
  - c.3 (Grid Ref 299360, Mapsheet Gerangamete 7621-3-2);
  - c.4 Survey Site No.22 (Grid Ref 303409, Mapsheet Gerangamete 7621-3-2); and
- d. Flood plain East Barwon River, EVC - Riparian Swamp Woodland:
  - d.1 (Grid Ref 392367, Mapsheet Gerangamete 7621-3-2);
  - d.2 (Grid Ref 390381, Mapsheet Gerangamete 7621-3-2).

B. Prior to engaging a consultant to undertake a floral survey, Barwon Water must:

- a. consult with the Department of Sustainability & Environment regarding suitable consultants; and
- b. then obtain the approval of the Authority for the consultant it proposes to use.

**7.2 Reporting**

Barwon Water must provide to the Authority:

- a. within 180 days of completing a floral survey under sub-clause 7.1, a report containing:
  - i. the results of the floral surveys; and
  - ii. a review of groundwater levels as determined from the bores listed in the Third Schedule that are adjacent to the flora sites; and
- b. when it applies for the renewal of this Licence, a report assessing the degree of dependence of riparian vegetation at the sites specified in sub-clause 7.1 on the regional groundwater system, and that includes recommendations for any further work necessary to ensure their protection.



## **8. PROTECTION OF DOMESTIC AND STOCK USE**

Barwon Water must comply with the guidelines contained in the Fifth Schedule to ensure access is maintained for Domestic & Stock use in the area of outcrop of the aquifer from which groundwater is extracted under this Licence.

## **9. PROTECTION OF FLOW IN BARWON RIVER AND TRIBUTARIES**

### **9.1 General**

Barwon Water must:

- a. by 31 December 2004, install a monitoring bore at a site in the vicinity of Boundary Road, Gerangamete, to the east of the West Barwon River;
- b. by 31 December 2004 propose to the Authority an in-situ gauging program at the following sites: at the existing monitoring station (233253), at approximately 1 km downstream from the existing station, and at a site immediately upstream of the King Creek junction.
- c. prior to installing the monitoring required under sub-clauses 9.1(a) and 9.1(b), seek the Authority's approval of the proposed locations.

### **9.2 Monitoring Bore**

Barwon Water must undertake water level monitoring, maintenance, and reporting for the bore referred to in sub-clause 9.1(a), in accordance with the requirements of clause 1.

### **9.3 Stream Flow Monitoring**

Prior to undertaking the in-situ gauging program referred to in sub-clause 9.1(b) Barwon Water must propose to, and gain approval of the Authority, arrangements for the program, including frequency and location of stream flow measurement, and reporting.

### **9.4 Assessment**

Barwon Water must provide to the Authority:

- a. by 30 June 2006, a report containing an assessment of the potential for groundwater to discharge to the West Barwon River based on the relative levels of river water and groundwater; and
- b. when it applies for the renewal of this Licence, a report containing an assessment of the loss of flow in the East Barwon River between the stream gauge referred to in sub-clause 9.1 and the aqueduct crossing on the East Barwon River east of Yaugher due to pumping under this Licence.

## **10. COMMUNITY ENGAGEMENT**

### **10.1 Information**

Barwon Water must:

- a. within 7 days of submitting to the Authority a report required under sub-clauses 1.3, 3.5(a), 4.5, 5.5(a) or 6.4 make it available to the public;
- b. make available to members of the public on request any information held in a database referred to in this Licence; and
- c. provide to the Authority, within 14 days of the Authority's request, any information held in a database referred to in this Licence.

### **10.2 Engagement**

Barwon Water will continue to engage with the local community and stakeholders regarding their operation of the Licence.

## OTHER

### 1. Definitions

In this Licence:

**"Authority"** means the Gippsland & Southern Rural Water Authority

**"Barwon Water"** means the Barwon Regional Water Authority

**"domestic and stock use"** has the same meaning as in Section 3 of the Water Act 1989

**"year"** means the 12 months next following 1 July.

### 2. Good Practice

A. Barwon Water must implement the requirements of this Licence in accordance with contemporary industry standards, protocols and regulatory requirements.

B. Where this Licence requires Barwon Water to undertake an action on an annual, quarterly, weekly or other periodic basis, it must program and undertake the action so that as far as reasonably possible a regular and evenly-spaced pattern is achieved.

### 3. Pollution

Barwon Water must not pollute any groundwater through the spillage of fuel or lubricant or any other matter used in connection with works and appliances.

### 4. Charges

Barwon Water must pay the following charges under this Licence when requested by the Authority:

- a. the standard fee, if any, set by the Authority for a licence under S.51 of the Water Act to take and use groundwater;
- b. the standard fee, if any, set by the Authority for a licence under S.67 of the Water Act to operate works to take and use groundwater; and
- c. the reasonable costs incurred by the Authority in reviewing, assessing and responding to reports prepared and data provided by Barwon Water under this Licence.

### 5. Notice of Pumping

If required by the Authority, Barwon Water must give three days notice of its intention to take groundwater under this Licence.



| BoreID | RuniD | Zone<br>AMG | Easting | Northing | Parish       | Locality     | Road Name                                    | Nearest Cross Road        | VicRoads<br>Ref | BoreType     |
|--------|-------|-------------|---------|----------|--------------|--------------|--|---------------------------|-----------------|--------------|
| 82841  | BD3M  | 54          | 742052  | 5743756  | MURROON      | MURROON      | Wire Lane                                    | Colac-Forrest Rd          | 92E8            | non artesian |
| 82842  | BD3M  | 54          | 746450  | 5743200  | MURROON      | MURROON      | Gannons Rd                                   | Murroon Rd                | 92F8            | non artesian |
| 82843  | BD3M  | 54          | 743660  | 5741770  | MURROON      | BARWON DOWNS | James Rd                                     | Division Rd               | 92E9            | artesian     |
| 82844  | BD3M  | 54          | 742250  | 5747100  | MURROON      | MURROON      | Colac-Murroon Rd                             | Birregurra-Forrest Rd     | 92E8            | artesian     |
| 82845  | BD3M  | 54          | 746060  | 5741270  | MURROON      | MURROON      | Wickhams Rd                                  | Division Rd               | 92F9            | non artesian |
| 82846  | BD3M  | 54          | 748700  | 5743050  | MURROON      | PENNYROYAL   | Pennyroyal-Wymbool Rd                        | Pennyroyal Station Rd     | 92F8            | non artesian |
| 82847  | BD3M  | 54          | 743750  | 5739600  | MURROON      | BARWON DOWNS | Creamery Rd                                  | McPaddens Rd              | 92E9            | non artesian |
| 102865 | BD3M  | 54          | 746662  | 5749707  | WHOOREL      | WHOOREL      | Whoorel Station Rd                           | Rifle Butts Rd            | 92F7            | non artesian |
| 102867 | BD3M  | 54          | 749134  | 5748032  | WHOOREL      | WHOOREL      | Birregurra-Deans Marsh Rd                    | Bushs Lane                | 92F8            | artesian     |
| 102868 | BD3M  | 54          | 745650  | 5751950  | WHOOREL      | BIRREGURRA   | Birregurra-Deans Marsh Rd                    | Cape Otway Rd             | 92E7            | artesian     |
| 102869 | BD3M  | 54          | 746140  | 5746540  | WHOOREL      | BIRREGURRA   | Deerpene Rd                                  | Birregurra-Deans Marsh Rd | 92F8            | artesian     |
| 107716 | BD3M  | 54          | 756450  | 5749850  | YAN YAN GURT | BAMBRA       | Brickmakers Rd                               | Bambra School Rd          | 92G7            | non artesian |
| 107717 | BD3M  | 54          | 756450  | 5749850  | YAN YAN GURT | BAMBRA       | Brickmakers Rd                               | Bambra School Rd          | 92G7            | non artesian |
| 107720 | BD3M  | 54          | 753950  | 5752000  | YAN YAN GURT | BIRREGURRA   | Fultons Lane                                 | Winchelsea-Deans Marsh Rd | 92G7            | artesian     |
| 106915 | BD3M  | 54          | 733610  | 5736050  | YAUGHER      | GERANGAMETE  | Boundary Rd                                  | Colac-Forrest Rd          | 92C9            | non artesian |
| 109108 | BD3M  | 54          | 734326  | 5744493  | YEO          | YEODENE      | track off McCallis Rd                        | McCallis Rd               | 92C8            | non artesian |
| 109110 | BD3M  | 54          | 734460  | 5745190  | YEO          | YEODENE      | McCallis Rd                                  | Bingami Rd                | 92C8            | non artesian |
| 109111 | BD3M  | 54          | 734460  | 5745190  | YEO          | YEODENE      | McCallis Rd                                  | Bingami Rd                | 92C8            | non artesian |
| 109112 | BD3M  | 54          | 736500  | 5743950  | YEO          | YEODENE      | Colac-Forrest Rd                             | Boundary Hill Rd          | 92D8            | artesian     |
| 109113 | BD3M  | 54          | 735950  | 5744350  | YEO          | YEODENE      | Possum Ridge Rd                              | Colac-Forrest Rd          | 92D8            | non artesian |
| 109114 | BD3M  | 54          | 737100  | 5751000  | YEO          | WARNCOORT    | Warncoort Cemetery Rd                        | Collyers Rd               | 92D7            | non artesian |
| 109128 | BD3M  | 54          | 734240  | 5744300  | YEO          | YEODENE      | Track on private property off<br>McCallis Rd | Bingami Rd                | 92C8            | non artesian |
| 109129 | BD3M  | 54          | 734310  | 5744310  | YEO          | YEODENE      | Track on private property off<br>McCallis Rd | Bingami Rd                | 92C8            | non artesian |
| 109130 | BD3M  | 54          | 734090  | 5745190  | YEO          | YEODENE      | McCallis Rd                                  | Bingami Rd                | 92C8            | non artesian |
| 109131 | BD3M  | 54          | 734370  | 5744490  | YEO          | YEODENE      | Track on private property off<br>McCallis Rd | Bingami Rd                | 92C8            | non artesian |
| 109133 | BD3M  | 54          | 734650  | 5746950  | YEO          | YEODENE      | Yeo-Yeodene Rd                               | McCallis Rd               | 92C8            | non artesian |
| 109134 | BD3M  | 54          | 735650  | 5746600  | YEO          | YEODENE      | Anundells Rd                                 | Colac-Forrest Rd          | 92D8            | non artesian |
| 109135 | BD3M  | 54          | 740300  | 5750900  | YEO          | BIRREGURRA   | Dunlops Rd                                   | Birregurra-Yeodene Rd     | 92E7            | non artesian |

### THIRD SCHEDULE

| BoreID | RuniD | Zone AMG | Easting | Northing | Parish       | Locality     | Road Name   | Nearest Cross Road        | VicRoads Ref | BoreType     |
|--------|-------|----------|---------|----------|--------------|--------------|---|---------------------------|--------------|--------------|
| 47771  | BD3M  | 54       | 750880  | 5744900  | BAMBRA       | DEANS MARSH  | Pennyroyal Valley Rd                              | Winchelsea-Deans Marsh Rd | 92F8         | non artesian |
| 47773  | BD3M  | 54       | 752700  | 5747000  | BAMBRA       | DEANS MARSH  | Smiths Lane                                       | Bambra Cemetery Rd        | 92G8         | non artesian |
| 47774  | BD3M  | 54       | 753850  | 5749150  | BAMBRA       | BAMBRA       | Winchelsea-Deans Marsh Rd                         | Fultons Lane              | 92G7         | non artesian |
| 47775  | BD3M  | 54       | 750000  | 5749000  | BAMBRA       | DEANS MARSH  | Salt Creek Lane                                   | Rifle Butts Rd            | 92F7         | non artesian |
| 48001  | BD3M  | 54       | 729350  | 5741750  | BARONGAROOK  | BARONGAROOK  | Barongarook-Gerangamete Rd                        | Westwards Track           | 92C9         | non artesian |
| 48249  | BD3M  | 54       | 740280  | 5737655  | BARWON DOWNS | BARWON DOWNS | Woodlands Rd                                      | Mahers Rd                 | 92E9         | non artesian |
| 62578  | BD3M  | 54       | 730605  | 5747505  | ELLIMINYT    | YEO          | Yeo-Yeodene Rd                                    | Old Yeo Rd                | 92C8         | non artesian |
| 64227  | BD3M  | 54       | 731089  | 5737164  | GERANGAMETE  | GERANGAMETE  | Pipeline Rd                                       | Boundary Rd               | 92C9         | non artesian |
| 64228  | BD3M  | 54       | 731155  | 5736982  | GERANGAMETE  | GERANGAMETE  | Pipeline Rd                                       | Boundary Rd               | 92C9         | non artesian |
| 64229  | BD3M  | 54       | 737615  | 5740832  | GERANGAMETE  | GERANGAMETE  | Dewings Bridge Rd                                 | Seven Bridges Rd          | 92D9         | artesian     |
| 64230  | BD3M  | 54       | 738700  | 5741387  | GERANGAMETE  | GERANGAMETE  | Dewings Bridge Rd                                 | Dewings Rd                | 92D9         | artesian     |
| 64233  | BD3M  | 54       | 734250  | 5741550  | GERANGAMETE  | GERANGAMETE  | Westwood Rd                                       | Westwood Track            | 92C9         | non artesian |
| 64234  | BD3M  | 54       | 738750  | 5741450  | GERANGAMETE  | GERANGAMETE  | Dewings Bridge Rd                                 | Dewings Rd                | 92D9         | artesian     |
| 64235  | BD3M  | 54       | 732400  | 5739150  | GERANGAMETE  | GERANGAMETE  | Meadwell Rd                                       | Gold Hole Rd              | 92C9         | non artesian |
| 64236  | BD3M  | 54       | 736300  | 5737800  | GERANGAMETE  | GERANGAMETE  | Seven Bridges Rd                                  | Dewings Bridge Rd         | 92D9         | non artesian |
| 64237  | BD3M  | 54       | 733800  | 5738100  | GERANGAMETE  | GERANGAMETE  | Seven Bridges Rd                                  | Coliac-Forrest Rd         | 92C9         | artesian     |
| 64238  | BD3M  | 54       | 733600  | 5742900  | GERANGAMETE  | GERANGAMETE  | Westwood Rd                                       | Thru Track                | 92C8         | non artesian |
| 64239  | BD3M  | 54       | 732150  | 5742000  | GERANGAMETE  | GERANGAMETE  | Thru Track  | Westwoods Rd              | 92C9         | non artesian |
| 64240  | BD3M  | 54       | 734200  | 5741500  | GERANGAMETE  | GERANGAMETE  | Westwoods Rd                                      | Westwoods Track           | 92C9         | non artesian |
| 64241  | BD3M  | 54       | 736900  | 5736550  | GERANGAMETE  | FORREST      | Track off Seven Bridges Rd<br>(thru State Forest) | Seven Bridges Rd          | 92D8         | non artesian |
| 64242  | BD3M  | 54       | 738850  | 5741375  | GERANGAMETE  | GERANGAMETE  | Dewings Bridge Rd                                 | Dewings Rd                | 92D9         | non artesian |
| 64244  | BD3M  | 54       | 731725  | 5739500  | GERANGAMETE  | GERANGAMETE  | Link Rd   | Gold Hole Rd              | 92C9         | non artesian |
| 64245  | BD3M  | 54       | 738288  | 5737858  | GERANGAMETE  | GERANGAMETE  | Dewings Bridge Rd                                 | Dewings Rd                | 92D9         | artesian     |
| 64246  | BD3M  | 54       | 738870  | 5741370  | GERANGAMETE  | GERANGAMETE  | Dewings Rd  | Dewings Bridge Rd         | 92D9         | artesian     |
| 64247  | BD3M  | 54       | 737557  | 5740323  | GERANGAMETE  | GERANGAMETE  | Dewings Bridge Rd                                 | Seven Bridges Rd          | 92D9         | non artesian |
| 64248  | BD3M  | 54       | 738779  | 5742075  | GERANGAMETE  | GERANGAMETE  | Track off Dewings Bridge Rd                       | Dewings Rd                | 92D9         | artesian     |
| 82838  | BD3M  | 54       | 742052  | 5743758  | MURROON      | MURROON      | Wire Lane   | Coliac-Forrest Rd         | 92E8         | non artesian |
| 82840  | BD3M  | 54       | 742052  | 5743758  | MURROON      | MURROON      | Wire Lane   | Coliac-Forrest Rd         | 92E8         | non artesian |



#### **FOURTH SCHEDULE**

The subsidence monitoring network shall consist of four deep seated bench marks control clusters (high stability marks), and eleven monitoring stations given in Table 1. It shall be levelled using GPS (accuracy of approximately 10 mm).

Table 1

|                            | Station ID | Easting | Northing |
|----------------------------|------------|---------|----------|
| <b>Control Clusters</b>    |            |         |          |
| Yeo                        | 20790040   | 730262  | 5745488  |
| Forrest                    | 39780106   | 734047  | 5731948  |
| Dewings                    | 20880024   | 742309  | 5736919  |
| Bambra                     | 20590052   | 752872  | 5741632  |
| <b>Monitoring Stations</b> |            |         |          |
|                            | 32390045   | 740327  | 5738869  |
|                            | 32390046   | 742196  | 5743862  |
|                            | 26470027   | 734015  | 5737951  |
|                            | 26470032   | 737430  | 5741001  |
|                            | 26470033   | 738685  | 5740722  |
|                            | 36470036   | 735959  | 5743011  |
|                            | 39870025   | 745547  | 5751969  |
|                            | 39870026   | 733833  | 5745378  |
|                            | 38090024   | 749124  | 5753920  |
|                            | 38090025   | 745547  | 5751969  |
|                            | 38090026   | 746148  | 5746544  |

#### **FIFTH SCHEDULE**

The owner of a domestic and stock bore within the recharge or outcrop areas of the groundwater aquifer from which groundwater is extracted under licence by Barwon Water, may request that the Authority determine whether the extraction by Barwon Water is adversely affecting the performance of that bore.

If the Authority forms a reasonable opinion that Barwon Water's licensed operations are the most likely cause of significant problems in respect to access to water from a well constructed and well maintained domestic and stock bore, then Barwon Water must:

- restore the access to normal water availability by undertaking to deepen or replace the bore, or
- provide alternative arrangements to restore access to water for stock and domestic use.

In forming a reasonable opinion, the Authority may (where it can be established) have regard to:

- the current condition of the bore (visual inspection);
- the historical maintenance of the bore (interview with current landowner);
- historical water levels within the bore;
- the location of the bore with respect to Barwon Water operations;
- the age of the bore (from Groundwater Management System or Bore Construction Licence records);
- the depth of bore (from Groundwater Management System or Bore Construction Licence records and visual inspection);
- the geological formation that the bore intercepts and the hydrogeological connection with the geological formation targeted by Barwon Water (from Bore Construction Licence records);
- climatic conditions;
- the decline in the regional water table.

Having reached its determination, the Authority shall document the reasons and basis of determination and supply its findings to the bore owner and Barwon Water.

Either party may appeal the Authority's determination and lodge a request for appeal with the Authority within 21 days of receipt of determination, whereby the Authority's determination and supporting documents are referred to the arbitrator for review and final determination within a further 60 days.

The appointment of an arbitrator will be made by the Authority having regard to appropriate expertise and independence to all parties. The cost of the arbitrator and associated process will be borne by the appellant.

14



## **APPENDIX THIRTEEN.**

### **Licence Number Change.**

The 2011-2012 licence report was the first report to be numbered BEE032496. Up until this year the reports were numbered Licence 893889.

### **Attempts in 2016 to gain changes made in 2014 to Licence BEE32496.**

Through involvement with Barwon Water's Community Reference Group (CRG) dealing with the renewal process for the 30 June 2019 groundwater extraction licence, the CRG became aware early in 2016 that the E0032496 licence had been modified to allow a change of the vegetation sites named in Section 7. As it turned out this change was done in 2014 around the same time that the CRG was informed that any licence change could not be considered until the licence was renewed in 2019. This answer was given in reply to the CRG suggestion of turning off the Supplementary Flow releases to stop these flows from buffering, masking and confusing how the aquifers in the area were reacting to groundwater extraction drawdown. The vegetation changes made to the 2014 licence were mooted, discussed and implemented without any CRG or community consultation. The first the CRG knew of this licence change and development was when the resulting 2015 vegetation report was tabled at a 2016 CRG meeting. Vegetation impact and monitoring were discussed at the CRG meetings on a regular basis But there was no discussion regarding the vegetation changes being made to the licence.

Otway Water Book 31 discusses in detail the vegetation changes and how it is arguable that the way the vegetation monitoring changes were conducted, was an attempt to mute the effectiveness of the vegetation monitoring as an indicator of drawdown impacts.

The following eight pages tell some of the story that unfolded when attempting to gain a copy of the 2014 changes made to Licence BEE032496.

2

From: Malcolm Gardiner [mailto:[otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)]  
Sent: Monday, 18 April 2016 3:55 PM  
To: Casey Tomkins  
Subject: Re: Request for licence BEE032496

Hello Casey,  
Have you had a chance to track this licence down?  
Cheers,  
Malcolm.

Malcolm Gardiner  
Email [otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)  
[www.otwaywater.com.au](http://www.otwaywater.com.au)  
Phone +61 3 52358325

On 5 Apr 2016, at 20:13, Malcolm Gardiner <[otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)> wrote:

Hello Casey,  
Hope things are well with you.

Could you organise a copy of Licence BEE032496 to be sent to me, please?

Kind regards,  
Malcolm.

Malcolm Gardiner  
Email [otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)  
[www.otwaywater.com.au](http://www.otwaywater.com.au)  
Phone +61 3 52358325

<Gerangamete - Barwon Downs - Groundwater Licence No. 893889 - 7  
November 2006 - Final.pdf>

} sent  
20 April.  
(see  
email 3)

Phone +61 3 52358325

4 { On 20 Apr 2016, at 16:19, Malcolm Gardiner <[otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)> wrote:

Hello Casey,

Thanks for the licence pdf but I think this is not the latest one. I believe Section 7 has been changed. If you could look into this for me I would appreciate that.

Thanks,  
Malcolm.

Malcolm Gardiner

Email [otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)

[www.otwaywater.com.au](http://www.otwaywater.com.au)

Phone +61 3 52358325

3 { On 20 Apr 2016, at 09:12, Casey Tomkins  
<[Casey.Tomkins@barwonwater.vic.gov.au](mailto:Casey.Tomkins@barwonwater.vic.gov.au)> wrote:

Hi Malcolm,

Please find attached a copy of the licence, as requested.

I received your email yesterday, and we are currently working on that request.

Kind regards,  
Casey

Casey Tomkins

Communications Officer | Barwon Water

155 Mercer Street (PO Box 659) Geelong VIC 3220 T (03) 5226 2301 |

M 0419 266 474 | F (03) 5221 8236 | W [www.barwonwater.vic.gov.au](http://www.barwonwater.vic.gov.au)

Please think before you print

-----Original Message-----

From: Casey Tomkins Casey.Tomkins@barwonwater.vic.gov.au  
Subject: RE: Request for licence BEE032496  
Date: 11 May 2016 at 09:59  
To: Malcolm Gardiner otwaywater@yahoo.com.au  
Cc: Kate Maddy Kate.Maddy@barwonwater.vic.gov.au

Hi Malcolm,

Kate will be in touch to get some further information from you, to help us answer your query.

Is it okay for her to give you a call to discuss?

Kind regards,  
Casey

7 { Kate rang on 17/5/16. (see ph. book.)  
(nothing by 26/05/2016)

Casey Tomkins  
Communications Officer | Barwon Water  
155 Mercer Street (PO Box 659) Geelong VIC 3220  
T (03) 5226 2301 | M 0419 266 474 | F (03) 5221 8236 | W  
[www.barwonwater.vic.gov.au](http://www.barwonwater.vic.gov.au)

Please think before you print

-----Original Message-----

From: Malcolm Gardiner [mailto:otwaywater@yahoo.com.au]  
Sent: Tuesday, 10 May 2016 5:38 PM  
To: Casey Tomkins  
Subject: Re: Request for licence BEE032496

5 { Hello Casey,  
Have you had luck tracking down the latest BEE032496 licence?  
Cheers,  
Malcolm.

Malcolm Gardiner  
Email [otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)  
[www.otwaywater.com.au](http://www.otwaywater.com.au)



Sent: Wednesday, 25 May 2016 11:00 PM

To: Angus Ramsay

Subject: Licence BEE032496

Hello Angus,

Could you send me a copy of the latest licence BEE032496 which replaces the Gerangamete Groundwater extraction licence 893889?

Also, can you tell me whether SRW has signed off on the 2015 vegetation report that Barwon Water has completed as outlined in Section 7 of the above mentioned licence?

Kind regards,

Malcolm.

Malcolm Gardiner

Email [otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)

[www.otwaywater.com.au](http://www.otwaywater.com.au)

Phone +61 3 52358325

Malcolm.

Malcolm Gardiner

Email [otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)

[www.otwaywater.com.au](http://www.otwaywater.com.au)

Phone +61 3 52358325

On 26 May 2016, at 09:56, Angus Ramsay <[AngusR@SRW.com.au](mailto:AngusR@SRW.com.au)> wrote:

Hi Malcolm,

We cant just give out licences under the privacy act.

I will enquire with BW and see if they don't mind me doing so. There shouldn't be an issue but I still have to ask.

You can always ask BW.

As for the 2015 Vegetation report, we have received it and had no immediate concerns. We also had discussions prior to the assessments being done with DELWP and the CCMA and recommended changes to the methodology in undertaking the assessment due to some sites being questioned or located. I am pretty sure that we had this peer reviewed as well. SRW doesn't have experts in this matter.

Again I will check on this.

Question? Are you not on the Community Reference Group? And if so, this would be an ideal method to obtain all relevant documents that you require without having to go through SRW that have to ask BW for the release of their documents.

Regards

**Angus Ramsay**

Field Supervisor West | Southern Rural Water

Managing Water. Serving Communities.

p: (03) 5564 1713 m: 0419 509 087 e: [angusr@srw.com.au](mailto:angusr@srw.com.au) w: [www.srw.com.au](http://www.srw.com.au)

-----Original Message-----

From: Malcolm Gardiner [<mailto:otwaywater@yahoo.com.au>]

From: **Angus Ramsay** [AngusR@SRW.com.au](mailto:AngusR@SRW.com.au)  
Subject: Re: Licence BEE032496  
Date: Today at 10:29  
To: Malcolm Gardiner [otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)

Hi Malcolm,

On the contrary, SRW have never owned the "license", we only issue them. The licence and it's release have always been under the control of the licence holder, hence FOI requests and privacy act issues arising out of releasing them. The state now controls licenses through the State Water Register and all licences are now stored and managed through it. SRW don't even store them nowadays. Ironically you can now go through this and get licence info just like title info from the titles office.

But again, I think I should be able to get the licence, which will be the same as previous just in a different format. No changes would have been made to any of the conditions.

Cheers

Angus.

Sent from my HTC OneXL

----- Reply message -----

From: "Malcolm Gardiner" <[otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)>

To: "Angus Ramsay" <[AngusR@SRW.com.au](mailto:AngusR@SRW.com.au)>

Subject: Licence BEE032496

Date: Thu, May 26, 2016 10:18 PM

Hello Angus,

Thanks for your prompt reply.

True, I am on the Community Reference Group and have asked for the licence from Barwon Water. After many weeks with no success I thought maybe SRW could help out.

Being the licensing body, and you may remember I had to go through FOI to get the licence years ago from SRW, I thought the licence is more the SRW's property than BW.

It would appear that FOI may be the way to go again.

I look forward to knowing who did the peer review of the 2015 vegetation report and thank you for tracking this down for me.

Kind regards,

Obfuscation??

Surely as issuer and administrator of the licence Southern Rural Water should have easy access to the licence. How can appropriate "policing" of the licence without the licence readily available? This is like making a cake without a recipe at hand. Perhaps this can explain why so many misadventures have been made along the way.

From: **Casey Tomkins** Casey.Tomkins@barwonwater.vic.gov.au  
Subject: RE: Request for licence BEE032496  
Date: 3 June 2016 at 16:33  
To: Malcolm Gardiner otwaywater@yahoo.com.au  
Cc: Kate Maddy Kate.Maddy@barwonwater.vic.gov.au

Hi Malcolm,

In 2014, Barwon Water submitted an application to Southern Rural Water to amend the monitored vegetation sites listed under Clause 7 of the Barwon Downs groundwater licence. Most of the original sites were replaced as previous flora surveys were inconclusive due to difficulties in separating out the influences of surface water, groundwater, land use change and the provision of supplementary flows. Of the eight original sites, only three were deemed hydrologically sensitive and likely to support groundwater dependent ecosystems. Further investigations identified an additional 11 sites for vegetation monitoring.

(12) The design of the revised vegetation monitoring program enables statistically robust comparisons to be made. This will enable detection and quantification of changes in the performance of groundwater dependent species over time, as well as between reference and impact sites based on the hydrogeology underlying the vegetation. Importantly, when comparing the impact and reference sites, no difference in the performance of species defined as groundwater dependent was detected, regardless of the underlying hydrogeology.

After due consideration from Southern Rural Water, the amendment to the groundwater licence was granted. Please see attached a copy of the addendum for changes to Clause 7.

I am about to start a week's leave, so if you have any queries before 14 June, please contact Kate.

Kind regards,  
Casey

**Casey Tomkins**

**Communications Officer | Barwon Water**

155 Mercer Street (PO Box 659) Geelong VIC 3220

T (03) 5226 2301 | M 0419 266 474 | W [www.barwonwater.vic.gov.au](http://www.barwonwater.vic.gov.au)

Please think before you print

-----Original Message-----

From: Malcolm Gardiner [<mailto:otwaywater@yahoo.com.au>]

Sent: Tuesday, 10 May 2016 5:38 PM

To: Casey Tomkins

Subject: Re: Request for licence BEE032496

Hello Casey,



## Emails to Casey Tomkins 4 July 2016

Hello Casey,

Have you had any luck tracking down the two documents asked for below?

Cheers,

Malcolm.

Malcolm Gardiner

Email [otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)

[www.otwaywater.com.au](http://www.otwaywater.com.au)

Phone +61 3 52358325

Hide original message

On 11 Jun 2016, at 22:51, Malcolm Gardiner <[otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)> wrote:

Hello again Casey,

Hope you enjoyed your break.

The pdf you sent through is great. Thanks.

It says to read it in conjunction with licence BEE 032496 and WLE041821. Could you send me a copy of these two documents please?

Kind regards,

Malcolm.

Malcolm Gardiner

Email [otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)

[www.otwaywater.com.au](http://www.otwaywater.com.au)

Phone +61 3 52358325

## Email from Angus Ramsay 20 June 2016

Hi Malcolm,

In the end we didn't get a peer review of the report as we had both DELWP and the CCMA assist us in the process.

The previous studies were reviewed and the determination highlighted that there was going to be issues in some of the older sites.

The latest study will give us a much better base set of data and sites to monitor change into the future, but was unable to give us a view of the past.

Regards

**Angus Ramsay**

**Field Supervisor West | Southern Rural Water**

Managing Water. Serving Communities.

## Emails, Amy Leith Corangamite Catchment Management Authority

Thanks so much, Amy.

Kind regards,

Malcolm.

Malcolm Gardiner

Email [otwaywater@yahoo.com.au](mailto:otwaywater@yahoo.com.au)

[www.otwaywater.com.au](http://www.otwaywater.com.au)

Phone +61 3 52358325

On 13 Jul 2016, at 15:48, Amy Leith <[Amy.Leith@ccma.vic.gov.au](mailto:Amy.Leith@ccma.vic.gov.au)> wrote:

Hi Malcolm,

Just following up from your query regarding the change in sites for the vegetation study, what I have been able to find out is that this was a Barwon Water lead project as part of their groundwater license requirements, and approval was given by Southern Rural Water.

The CCMA has had no role in the vegetation study or the selection of sites, to find out more about why the sites were moved and the process of approval you will need to follow up with Southern Rural Water as the approving authority.

Apologies that I am unable to answer your query in this instance.

Best regards, Amy

Amy Leith

Community Engagement Manager

Corangamite Catchment Management Authority

64 Dennis St, Colac, Victoria, 3249.

### **Peer Review and or Consultation for Clause 7 Licence Changes.**

In the emails above it was suggested that a peer review and consultation with the Corangamite Catchment Management Authority (CCMA) and the Department of Land, Water and Primary Production (DELWP) were undertaken when the changes to Clause 7 were being considered.

As it turned out:

- ***there was no community consultation,***
- ***there was no Community Reference Group consultation.***
- ***there was no peer review, and***
- ***there was no Corangamite Catchment Management Authority involvement.***

After knowing the facts regarding the four points above it was regarded as not worth the time or the effort, to approach DELWP asking whether they had any involvement.



## APPENDIX FOURTEEN.

Sections 7.1 and 9.3 appear to be the last and only changes made to Licence BEE0032496 since 2007.

See Appendix 12, page 64 for the earlier version of Section 7.

| <p>6.4 Reporting</p> <p>Barwon Water must provide to the Authority within 60 days of the end of each year a report containing:</p> <ol style="list-style-type: none"> <li>weekly meter readings pursuant to sub-clause 6.2 (b), in both graphical and tabular formats;</li> <li>daily stream gauging data from the Yeodene gauge (233228), also graphed at weekly intervals;</li> <li>a summary of water discharged to Boundary Creek under sub-clause 6.1;</li> <li>a summary of all work done under sub-clauses 6.3(b), 6.3(c) and 6.3(d); and</li> <li>details of any issues arising from the monitoring results, including significant variations to predicted trends, and associated recommendations, if any.</li> </ol> |                |                        |                      |                        |  |
|---|----------------|------------------------|----------------------|------------------------|--|
| <p>7. PROTECTION OF RIPARIAN VEGETATION</p>   |                |                        |                      |                        |  |
| <p>7.1 General</p> <p>A. Barwon Water must undertake a floral survey at the following sites within five years of the commencement of this Licence and thereafter at five-yearly intervals:</p>  |                |                        |                      |                        |  |
| Geology   | Impact/Control | EASKM 2013 site number | Coordinates          |                        | Location                                       |
| Lower Tertiary Aquifer  | Impact         | 1                      | East (255)<br>211489 | North (255)<br>5742028 | Boundary Creek                                 |
| Lower Tertiary Aquifer  | Impact         | 2                      | 210845               | 5742211                | Boundary Creek                                 |
| Lower Tertiary Aquifer  | Impact         | 3                      | 208468               | 5741556                | North of Westwood's track                      |
| Lower Tertiary Aquifer  | Impact         | 4                      | 209078               | 5742252                | Off Quarry track (off Westwood's track)        |
| Lower Tertiary Aquifer  | Control        | 5                      | 207083               | 5741970                | Field and Garne track (off Westwood's track)   |
| Lower Tertiary Aquifer  | Control        | 6                      | 205659               | 5741116                | Off Langdon's Road                             |
|   |                |                        |                      |                        | Swamp scrub                                    |
|   |                |                        |                      |                        | Regenerating burnt peat (formerly swamp scrub) |
|   |                |                        |                      |                        | Swamp scrub                                    |
|   |                |                        |                      |                        | Sedgey wetland                                 |
|   |                |                        |                      |                        | Swampy riparian woodland                       |
|   |                |                        |                      |                        | Swamp scrub                                    |
|   |                |                        |                      |                        | Swamp scrub                                    |

|                                 |         |    |        |         |   |  |
|---------------------------------|---------|----|--------|---------|---|--|
| Aquitard                        | Control | 7  | 203536 | 5740152 | Ten Mile Creek (off old beech rail trail)         | Swamp scrub                              |
| Aquitard (overlain by alluvium) | Impact  | 8  | 210529 | 5739834 | Westwood's track                                  | Swamp scrub                              |
| Aquitard                        | Impact  | 9  | 208623 | 5733450 | Porcupine creek                                   | Riparian forest                          |
| Aquitard (overlain by alluvium) | Impact  | 10 | 204885 | 5737764 | Dividing Creek and Ware's Lane                    | Swamp scrub                              |
| Aquitard (overlain by alluvium) | Control | 11 | 207176 | 5734830 | Porcupine Creek on Colac-Olangolah Pipeline Track | Swamp scrub and riparian forest          |
| Aquitard (overlain by alluvium) | Control | 12 | 207587 | 5738116 | Gold Hole Road                                    | Swamp scrub                              |
| Lower Tertiary Aquifer          | Control | 13 | 206405 | 5737024 | Pipeline track                                    | Swamp scrub and swampy riparian woodland |
| Lower Tertiary Aquifer          | Control | 14 | 202950 | 5737890 | Ten Mile Creek (corner Cashins and Robinson Road) | Riparian forest                          |

- B. Prior to engaging a consultant to undertake a floral survey, Barwon Water must:
- consult with the Department of Environment and Primary Industries regarding suitable consultants; and
  - then obtain the approval of the Authority for the consultant it proposes to use.

## 7.2

### Reporting

Barwon Water must provide to the Authority:

- within 180 days of completing a floral survey under sub-clause 7.1, a report containing:
  - the results of the floral surveys; and
  - a review of groundwater levels as determined from the bores listed in the Third Schedule that are adjacent to the flora sites; and
- when it applies for the renewal of this Licence, a report assessing the degree of dependence of riparian vegetation at the sites specified in sub-clause 7.1 on the regional groundwater system, and that includes recommendations for any further work necessary to ensure their protection.

## 8.

### PROTECTION OF DOMESTIC AND STOCK USE

Barwon Water must comply with the guidelines contained in the Fifth Schedule to ensure access is maintained for Domestic & Stock use in the area of outcrop of the aquifer from which groundwater is extracted under this Licence.

See Appendix 12, page 65 for the earlier version of Section 9.3.

## 9. PROTECTION OF FLOW IN BARWON RIVER AND TRIBUTARIES

### 9.1

#### General

- Barwon Water must:
- by 31 December 2004, install a monitoring bore at a site in the vicinity of Boundary Road, Gerangamete, to the east of the West Barwon River;
  - by 31 December 2004 propose to the Authority an in-situ gauging program at the following sites: at the existing station, and at a site immediately upstream of the King Creek junction.
  - prior to installing the monitoring required under sub-clauses 9.1(a) and 9.1(b), seek the Authority's approval of the proposed locations.

### 9.2

#### Monitoring Bore

Barwon Water must undertake water level monitoring, maintenance, and reporting for the bore referred to in sub-clause 9.1(a), in accordance with the requirements of clause 1.

### 9.3

#### Stream Gauge

Prior to installing the stream gauge referred to in sub-clause 9.1(b), Barwon Water must propose to, and gain the approval of, the Authority arrangements for its proposed operation, including the frequency of stream flow measurement, maintenance of the stream gauge, and data recording and reporting.

### 9.4

#### Assessment

- Barwon Water must provide to the Authority:
- by 30 June 2006, a report containing an assessment of the potential for groundwater to discharge to the West Barwon River based on the relative levels of river water and groundwater; and
  - when it applies for the renewal of this Licence, a report containing an assessment of the loss of flow in the East Barwon River between the stream gauge referred to in sub-clause 9.1 and the aqueduct crossing on the East Barwon River east of Yaugher due to pumping under this Licence.

## 10. COMMUNITY ENGAGEMENT

### 10.1

#### Information

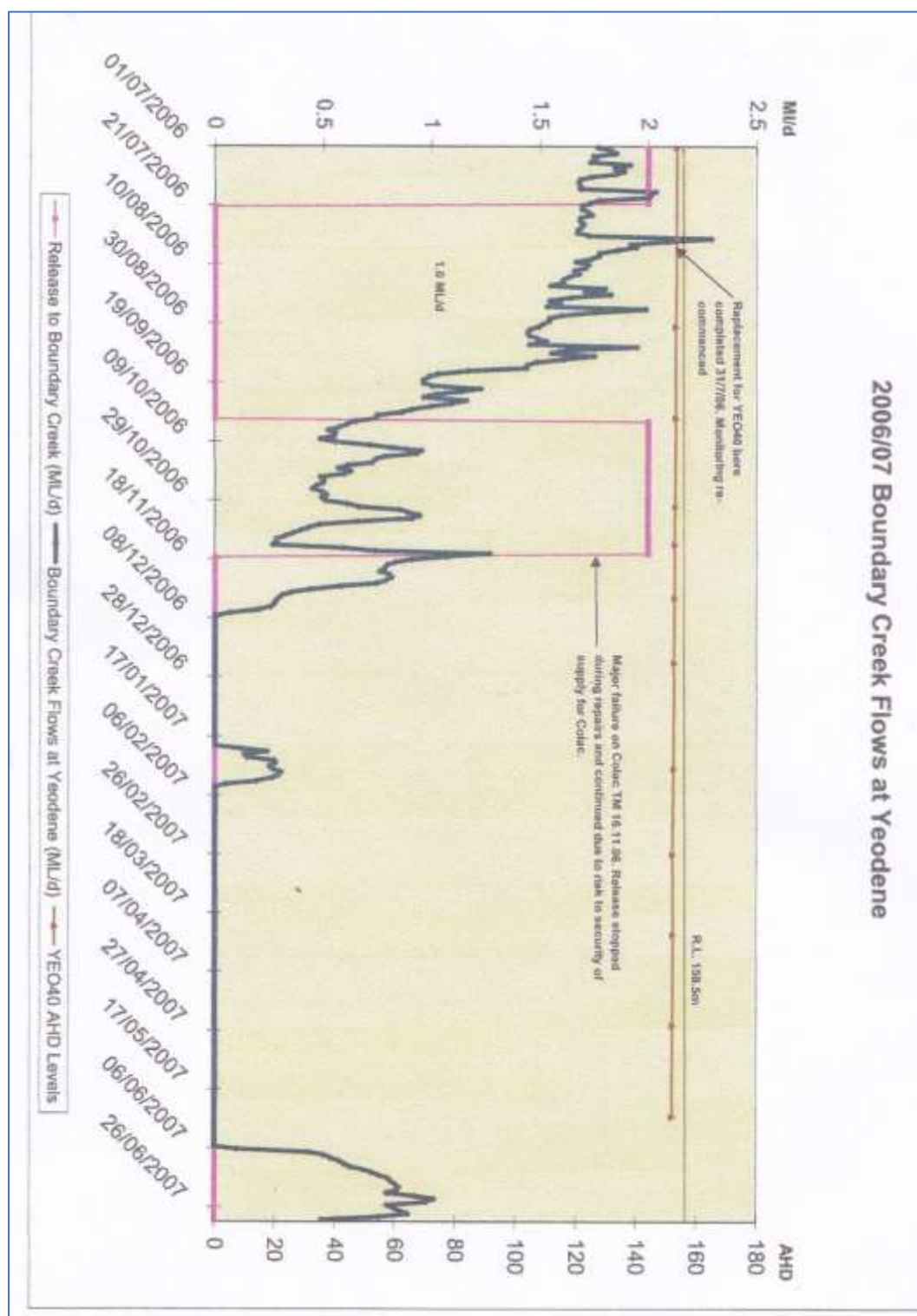
- Barwon Water must:
- within 7 days of submitting to the Authority a report required under sub-clauses 1.3, 3.5(a), 4.5, 5.5(a) or 6.4 make it available to the public;
  - make available to members of the public on request any information held in a database referred to in this Licence; and
  - provide to the Authority, within 14 days of the Authority's request, any information held in a database referred to in this Licence.



## APPENDIX FIFTEEN.

Although it was a condition of the licence to present this graph in every Licence report (see Appendix 12 page 64, Clause 6.4 b), this was the first time the graph was included. Three earlier reports did not include this graph.

This was one of the many “mistakes” queried over the life of the licence.<sup>(18)</sup>





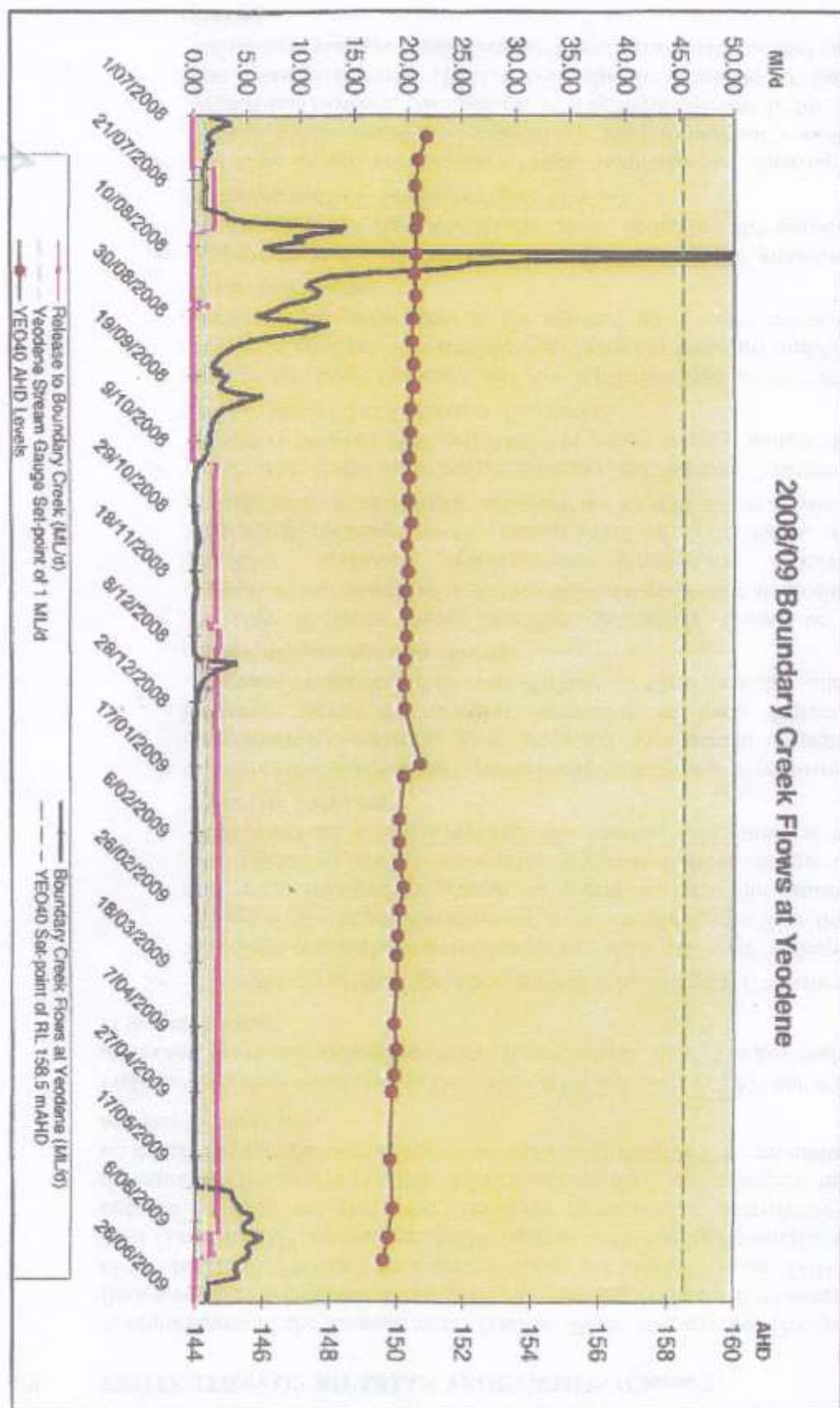
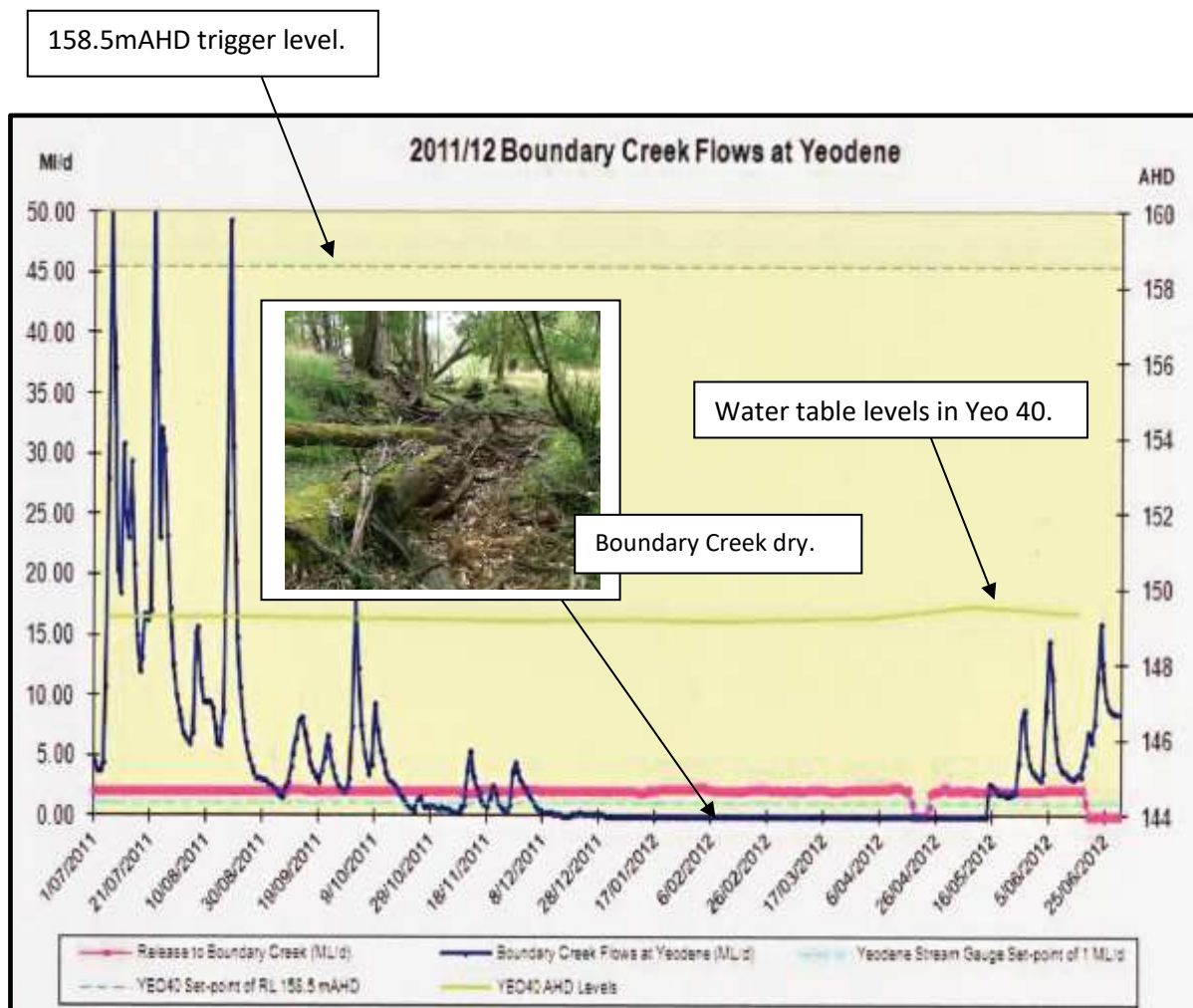


Figure 3. Flows in and Releases to Boundary Creek at Yeodene



**GRAPH SOURCE:** Barwon Water 2011-12 report on Gerangamete Borefield to SRW.

## 8. Flow in Boundary Creek (Clause 6)

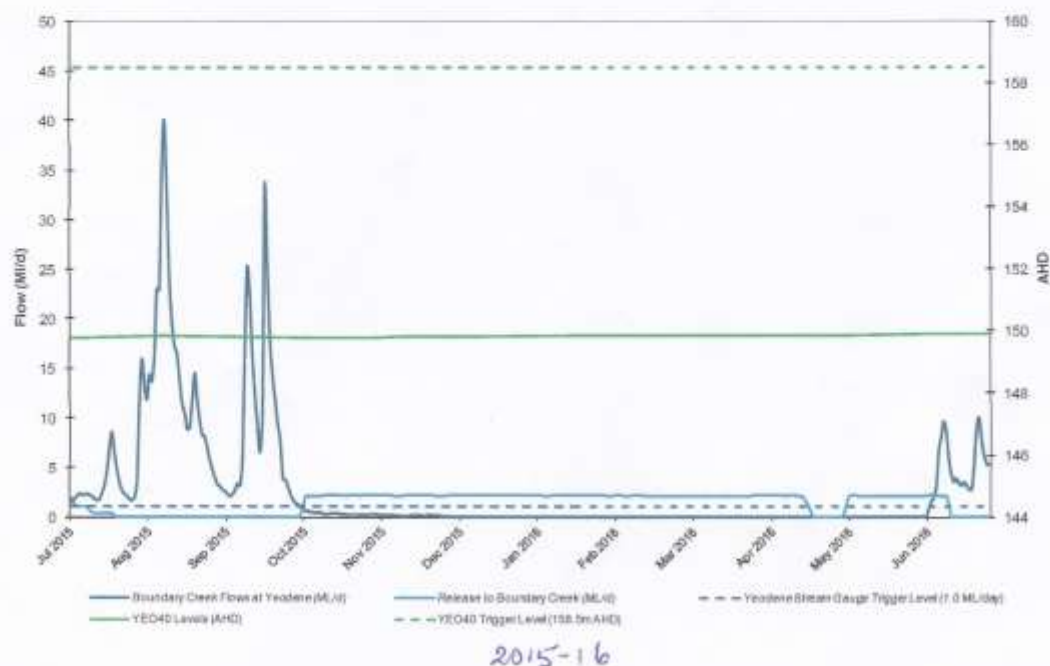
### 8.1 Discharge to Boundary Creek

Approximately 533 ML was discharged into Boundary Creek during the 2015-2016 year. The chart in figure 3 below shows the daily releases along with daily stream gauging on Boundary Creek (at the Yeodene gauge) and groundwater levels in bore YEO40. Barwon Water's Gerangamete groundwater licence states that Barwon Water must provide a flow of 2 ML/day to the headwaters of Boundary Creek until one of the following occurs:

1. the groundwater level in YEO40 recovers above the trigger level of 158.5m AHD or
2. the natural flow at the Yeodene stream gauge exceeds 1 ML/day any time between June 1 and November 30.

The raw flow data is included in appendix F.

Figure 3: Flows and releases to Boundary Creek at Yeodene



**Notes:**

Due to a sudden degradation of the water quality in West Cellibrand reservoir, Barwon Water ceased discharging to Boundary Creek from the 18th April, 2016 to 4th May, 2016. Barwon Water notified SRW as soon as the water quality issues arose and received approval from SRW, stating that at the time it was prudent to cease releasing.

## APPENDIX SIXTEEN.



19 September 2008

SRW reference: DWS 606147

Mr Malcolm Gardiner  
1805 Colac Beech Forest Road  
KAWARREN VIC 3249

Dear Mr Gardiner

### **BARWON WATER GROUNDWATER EXTRACTION LICENCE NO 893889**

I refer to your letter dated 15 May 2008 in relation to Barwon Regional Water Corporation (BRWC) Groundwater Extraction Licence No 893889.

In a letter dated 27 May 2008, it was stated that these matters were being investigated and a response once this investigation is completed would follow. I apologise that this has taken longer than anticipated, however in order to respond to your concerns we were awaiting receipt of BRWC's report for 2007/08, which was not due until 30 August 2008.

I would firstly like to assure you that SRW takes compliance with licence conditions very seriously. In instances where breaches warrant legal action we have no hesitation in prosecuting offenders and have a large number of cases before the courts in any given year. In less serious cases we may warn a licensee and require them to take corrective action to ensure any breach is not repeated.

SRW reviews the reports submitted by BRWC as they are submitted. If required we will seek additional information or clarification on specific issues, however the reports contain the necessary information and we have not identified any areas of confusion or contradiction.

In addition to the review of the annual report submitted by BRWC, we meet with them both formally and informally on a regular basis and our field officers conduct routine inspections of the bore field.

I can confirm that BRWC has, in the past, made application to SRW for temporary changes to conditions relating to Boundary Creek releases to avoid a severe water shortage. On this occasion, the application was assessed and referred to other bodies for comment on the potential impacts to other users and the environment prior to the final decision to temporarily modify the licence condition. These and other matters are then reported within the body of the annual report.

PO Box 153 MAFFRA VIC 3860  
Telephone: (03) 5139 3100  
Facsimile: (03) 5139 3150

ABN: 70 801 473 421  
Email: [srw@srw.com.au](mailto:srw@srw.com.au)  
Website: <http://www.srw.com.au>



When BRWC was permitted to reduce its flows into Boundary Creek to avoid a critical water shortage, specific conditions were imposed to ensure water users along Boundary Creek would be compensated and stringent monitoring conditions were also required under this approval to ensure appropriate protection of the environment. The reduction of flows into Boundary Creek has only been approved once since the groundwater licence was issued and it was for a period of 5 months. The reduction has now ceased.

Finally you refer to the reviewing process of licences issued by SRW, in particular why BRWC's licence for the Gerangamete Groundwater Management Area (Barwon Downs) hasn't been reviewed. Where we identify any matters of concern in the review of their annual report, these matters are then raised with BRWA to ensure that they have been addressed to our satisfaction. The evidence doesn't show an unexpected decline in groundwater levels or impact on the surfacewater resources. We believe that the current licence conditions are adequate for the responsible management of the resource and there isn't a need to review the licence or its conditions at this point in time.

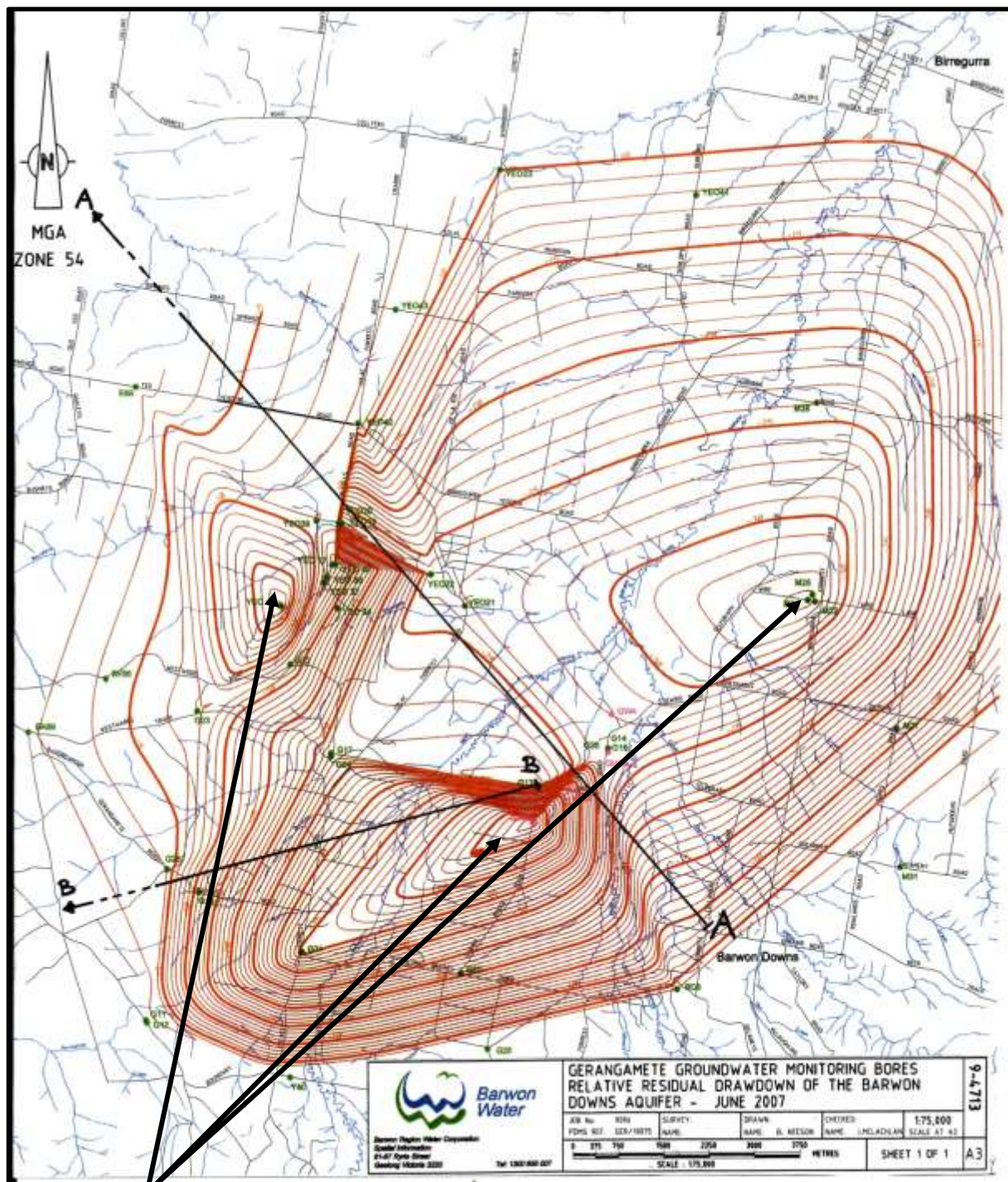
If you wish to discuss any aspect of the matter further, please contact Manager Field Operations & Compliance Chris Hughes on 0418 582 763.

Yours sincerely



**Clinton Rodda**  
Acting Chief Executive

## APPENDIX SEVENTEEN.

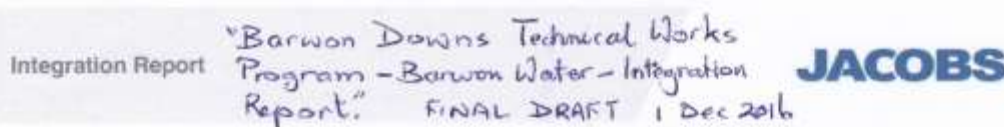


This Residual Drawdown Map of June 2007 shows three distinct cones of depression.



## APENDIX EIGHTEEN.

### Extraction licence history for the Barwon Downs Borefield.



#### 1.2.2 Groundwater extraction

Barwon Water operates the borefield in times of extended dry periods. This has occurred only five times in the last 30 years. The borefield is a critical back up source for Barwon Water because it is buffered from climate variability due to the depth and large storage capacity of the aquifer, whereas surface water catchments are susceptible to seasonal fill patterns mostly driven by rainfall.

Although extraction occurs infrequently, large amounts of groundwater are drawn when needed to supplement surface water storages during drought. This is completed in compliance with the groundwater licence (refer to Section 1.3). This operational philosophy of intermittent pumping has been an effective way to provide customers with security of supply, especially in times of prolonged dry conditions.

To date, Barwon Water has extracted the following volumes from the aquifer:

- ✱ • 3,652 ML from February to April in 1983 due to drought,
- 19,074 ML during a long term pump test in the late 1980s,
- 36,817 ML during the 1997 - 2001 drought,
- 52,684 ML during the 2006 – 2010 millennium drought, and
- 2,383 ML in 2016 to boost storages after a very dry summer.

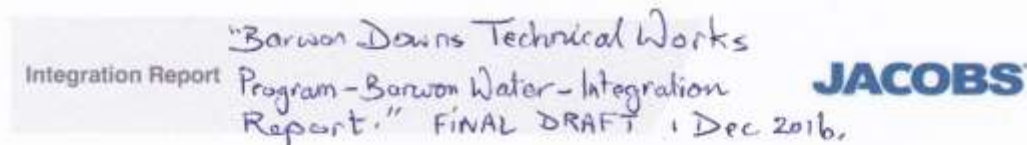
Groundwater extraction has supplemented surface water supply by a total of 114,610 ML, equating to approximately 10 per cent of total water consumed over a 30 year period.

#### 1.2.3 Licence history

- ✱ The first licence was issued in 1975 but did not come into effect until 1982, as the bores were not brought into operation until the 1982-83 drought. This was the first time the borefield was used to supply water to Geelong. The licence issued by the State Rivers and Water Supply Commission (now Southern Rural Water) was to allow Barwon Water to operate four production bores based on the following conditions:
  - Extraction for the purpose of urban water supply;
  - Maximum daily extraction rate of 42.5 ML;
  - Maximum annual extraction rate of 12,600 ML;
  - Maximum ten-year extraction rate of 80,000 ML; and
  - Periods of licence renewal of 15 years (1975 – 1990).
- ✱ The licence was subsequently renewed for two periods of five years up to 2000. From 2000, the licence was temporarily extended three times for a total of four years to allow the licence renewal to take place through to 31 August 2004.

## APPENDIX NINETEEN.

The 2004 licence was for 15 years.



### 1.3 Current groundwater licence

\* The Barwon Downs borefield is operated under licence from Southern Rural Water. This licence was granted in 2004 and is due for renewal by June, 2019.

This licence makes provision for extraction limits on a volumetric basis over a range of time scales. As part of the licence conditions, Barwon Water monitor groundwater levels and quality, subsidence, flow in Boundary Creek and Barwon River, as well as the protection of riparian vegetation, protection of stock and domestic use and the protection of flows in the Barwon River tributaries.

Reporting against these licence conditions is provided in an annual report to Southern Rural Water who administers and regulates groundwater licences on behalf of the Water Minister.

### 1.4 Strategic drivers for the Barwon Downs technical works monitoring program

Ahead of the upcoming 2019 licence renewal process, Barwon Water instigated a technical works monitoring program to improve the comprehensiveness of the current monitoring program to ensure the submission of a technically sound licence application.

Driving the need for this monitoring program is the reliance on the borefield to provide water security for Barwon Water customers, to address outstanding community issues particularly where the relationship between cause and effect is not yet fully understood, and to close out any known technical knowledge gaps.

#### 1.4.1 Water security

The Barwon Downs borefield provides water for the regional communities of Geelong, the Surf Coast, the Bellarine Peninsula and part of the Golden Plains Shire.

A prolonged period of unprecedented drought (known as the Millennium drought) saw a sustained dry climate average from 1997 to 2011. In 1997, many of the region's water storages were close to capacity, however by January 1998, after high consumption and low catchment inflows, water restrictions were necessary to balance supply and demand in the Geelong area. This clearly highlighted that even by having large storages the region was susceptible to rapid changes.

\* In 2001, strong catchment inflows from healthy rainfall refilled storages, ending water restrictions in Geelong. Five years later, after a very dry year, strict water restrictions were again required with climate extremes exceeding the historical record. At the height of the Millennium drought, Geelong's water storages dropped to 14 per cent when catchment inflows were severely reduced. To meet demand during this time 52,684 ML was extracted from the borefield providing up to 70 per cent of Geelong's drinking water.

In 2010, improved rainfall restored storages and restrictions were again slowly lifted in the Geelong area. This allowed the Barwon Downs borefield to be switched off and to begin recharging. Without the use of the borefield during this time, residents and industry in Geelong, Bellarine Peninsula, Surf Coast and southern parts of the Golden Plains Shire would have run out of water.

The township of Colac will soon be connected to the Geelong system through construction of a pipeline between Colac and Geelong. This interconnection will also allow the borefield to supply Colac residents and will provide additional water security for the water supply system which is currently susceptible to seasonal fill patterns.

#### 1.4.2 Community issues

Although Barwon Water is compliant with the monitoring program associated with the 2004 licence, it is accepted that this program is not comprehensive enough to address community interest about specific issues centered on potential environmental impacts in the local catchment.



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