

From: "[Michael Goff - Goff Groundwater Science Ltd.](mailto:michaeldgoffpg@gmail.com)" <michaeldgoffpg@gmail.com>

To: "[Steve Edgecombe](mailto:Steve.Edgecombe@bayvenues.co.nz)" <Steve.Edgecombe@bayvenues.co.nz>  
"[Mike Page](mailto:Mike.Page@bayvenues.co.nz)" <Mike.Page@bayvenues.co.nz>

Date: 11/29/2023 3:57:23 AM

Subject: Memorial Park Injection Bore

**External Email Alert:** This email originated from outside your organisation. Please take extra care when clicking on links or opening any attachments.

Hi Steve

Cameron Well Drilling ran an airline down to 75 meters below ground level (mgb) today and airlifted the bore for several hours at various depths. At the end of the day, no marked improvement was seen in the amount of discharge as would be expected if the bore was developing and capacity was improving. We hooked the bore back up to the pool heating system for injection and negligible improvement in back pressure during injection was seen.

Discussions with Vic Hurlok (Cameron Drilling) and Mike Page resulted in the possibilities that the injection bore was clogged with iron bacteria (from the production well) or had collapsed. Some options for getting the system back to operating capacity by increasing expected cost are as follows:

1. We agreed that the next step should be to sound the bottom of the bore with a line and weight. We do not have a bore log but suspect this bore may be similar in depth to the one that it replaced, cased to 183m and total depth of 404m. Sounding the bore should give an idea if the bore is collapsed at a shallow depth. Vic has volunteered his bore sounding line.
2. If the bore is clear then run steel airline in to a greater depth ~ 180m and resume airlifting. Greater depth of airlift will put more stress on the bore and may improve development. A chemical treatment of the production well and injection well using BoreClear is recommended to knock back the iron bacteria after development (Steve Miller RS (SMRS)). Vic has volunteered his steel airline if SMRS can hire a crane and run it into the bore. Vic will bring his compressor and develop the bore once the airline is installed. Pricing needed from Vic and SMRS.
3. If the bore has collapsed then a drill rig may be needed to attempt to clear the bore. If the open hole section is collapsed it can be drilled out, if the casing is collapsed a casing liner may be able to be installed. The bore will require airlift development after repair. A chemical treatment of the production well and injection well using BoreClear is recommended to knock back the iron bacteria after development - SMRS. Pricing needed from Vic and SMRS.
4. Replacing the bore. Pricing needed from Vic.

Other options are to request consent to discharge to the harbor for the next few years - typically the discharge cannot raise the receiving water by more than 3C - this process may take months but I will get started if you want. The system is operating now but the back pressure is a concern for the equipment and personnel - a review of maximum design pressure is advised.

I suggest pursuing option 1 while pricing is generated for the other options. Please let me know if you have any questions or wish to discuss - I am ready to assist as needed.

Ngā mihi,

Mike

Michael D. Goff, PG

Goff Groundwater Science Ltd.

Tauranga, NZ

[michaeldgoffpg@gmail.com](mailto:michaeldgoffpg@gmail.com)

028 426 6007

[Michael Goff - LinkedIn](#)

<https://goffgroundwaterscienceltd.co.nz>



Virus-free. [www.avg.com](http://www.avg.com)