

## **Appendix E – Emails from SWW in relation to Blasting**

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## O'Neill Jordan

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**From:** Developer Services Planning <DeveloperServicesPlanning@southwestwater.co.uk>  
**Sent:** 18 April 2018 09:50  
**To:** Bale James  
**Subject:** FW: HS WR 2934583 - Roche, St Austell, PL26 8HY - C3

Dear James

**C3 APPLICATION – C3-WR 2934583**  
**Roche, St Austell, PL26 8HY**

Please see response below regarding the above

Kind regards

Angie

**Angie Brown** Project Coordinator



D: 01392 443661

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*Please note that the Water Act 2014 has brought in changes that mean that all water companies are being asked to modify the way they [charge customers for Developer Services related activities from April 2018.](#)*



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**From:** Developer Services Water Reqs & Divs  
**Sent:** 18 April 2018 09:30  
**To:** Developer Services Planning  
**Subject:** RE: HS WR 2934583 - Roche, St Austell, PL26 8HY - C3

To avoid damage to the SR structure and adjacent pipe works SWW would look to minimise the Peak Particle Velocities to < 10mm/s.

The velocities so generated by blasting tend to be of extremely high energy and generating PPVs well in excess of 5 mm/s.

The PPV depends on many factors including;

1. Soil type and density

2. Location of the phreatic surface
3. Distance between source of vibration and structure
4. The energy (joules/cycle) = Power (kW)/ Operating Frequency (Hz)
5. Inter alia...

BS 6472-2: 2008 details a method of predicting vibration from blasting. The detonation of explosives within a confined borehole generates stress (seismic) waves causing localised vibration, distortion and cracking. The vibration will radiate from the source, attenuating as distance increases.

If blasting is seen as the only method available calculations must be submitted to SWW Ltd to show that vibration is of an acceptable magnitude.

Calculation of explosive charge and/or separation distance.

If the PPV limit is to be 10 mm.s<sup>-1</sup> for 90% of the blasts and the MIC (maximum instantaneous charge) is 1kg then from Figure 1 of BS 6472-2: 2008 it can be seen that the scaled distance value (S) on the 95% line at 10 mm.s<sup>-1</sup> is c. 53 m.kg<sup>-0.5</sup>

This means that the slant distance d can be deduced from the following equation;

$$S = d/C^{1/2} \text{ (Where S is the scaled distance and C is the MIC)}$$

$$\text{Therefore } d = S \cdot C^{1/2} = 53 \cdot 1^{1/2} = 53\text{m}$$

If the slant distance d = 10m the MIC (C) will be given by  $C = (d/S)^2 = (10/53)^2 = 0.0356\text{kg}$  i.e. 35g (not a lot of explosive!)

Nomenclature;

- MIC is the Maximum Instantaneous charge i.e. the maximum amount of explosive detonated on any one delay interval (kg)
- D is the slope distance i.e. separation between the charge and the structure (m)
- PPV is the Peak Particle Velocity (mm/s)

As the potential slant distance between the source of the explosion and the service reservoir is < 5m it would appear that blasting is not a realistic option in this scenario and that alternative methods of rock removal will need to be found.

As CC intend to work so close to this strategic asset SWW would insist that PPVs are recorded using velocity transducers.

I trust this assists

Regards

**Peter Hocking**

Principal Consultant

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**From:** Developer Services Planning

**Sent:** 12 April 2018 11:43

**To:** Developer Services Water Reqs & Divs  
**Subject:** FW: HS WR 2934583 - Roche, St Austell, PL26 8HY - C3

Suz

Can you elaborate on the blasting response in proximity to the reservoir

Many thanks

Angie

**Angie Brown** Project Coordinator



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**From:** Bale James [<mailto:James.Bale@cormacitd.co.uk>]  
**Sent:** 11 April 2018 17:24  
**To:** Developer Services Planning  
**Subject:** RE: HS WR 2934583 - Roche, St Austell, PL26 8HY - C3

Angie,

With regards to the blasting – as below (section from your C3) – would you be able to provide some detail on the SWW stance on blasting in proximity to the res / their apparatus?

**“Information provided by Water APM - In regard your email regarding blasting, we need to advise that we would not accept blasting in such close proximity to the reservoir and that they would need to investigate to see if this can be cut. RAMS would also be required.”**

We need to know what we can do and what we cannot and then we can design around it.

Many thanks,

James Bale

**From:** Developer Services Planning [<mailto:DeveloperServicesPlanning@southwestwater.co.uk>]

**Sent:** 11 April 2018 14:38

**To:** Bale James

**Subject:** RE: HS WR 2934583 - Roche, St Austell, PL26 8HY - C3

Dear James

#### WATER REQUISITIONS/SELF LAY/DIVERSION

Description	Unit	Value	Contestable/Non contestable
Administration Fee (Water Requisition/Water Diversion)	Per scheme	£1,950.00	Non-contestable
Design of mains connection where the connection is heightened risk to damage or existing water distribution systems or interrupting supplies to existing customer.	Per connection	£200.00	Non-contestable
Legal agreement	Per agreement	£450.00	Non-contestable
Design of scheme	Per scheme	£1,400.00	Contestable
Ecological/estates	Per scheme	£8,000.00	Contestable
Traffic Management	Per scheme	£8,000.00	Contestable
Connection of new main to existing main including excavation and reinstatement to the 150mm DI main and 6" UPVC , where the connection is heightened risk to damage or existing water distribution systems or interrupting supplies to existing customer. This is undertaken by Double line stop.	Per connection	£17,755.16	Non-contestable
Connection of new main to existing main including excavation and reinstatement to the 3"UPVC main, where the connection is heightened risk to damage or existing water distribution systems or interrupting supplies to existing customer. This is undertaken by a double linestop	Per connection	£11,865.01	Non-contestable
Pipelaying in Urban area, for new water main 63mm PE100	Per metre	£174.92	Contestable
Pipelaying in Urban area, for new water main 160mm PE100	Per metre	£199.83	Contestable
Pipelaying in Urban area, for new water main 150mm DI	Per metre	£193.14	Contestable

You will need to email into [developerserviceswatereqs&divs@southwestwater.co.uk](mailto:developerserviceswatereqs&divs@southwestwater.co.uk) as ask for a C4.

Takes 28 – 42 days for offer letter if engineering difficulties are found – part with being close to the reservoir

Receipt of signed agreement/money 6-8 week lead in time

Hope this helps

Angie

**Angie Brown** Project Coordinator



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