

MEMORANDUM

To: Liz Fancher, Hearings Officer – T3-2022-16220

Date: 5/19/2025

From: Jennifer Hart on behalf of the Cottrell CPO and Pleasant Home Community Association

RE: Rebuttal to Exhibit S.29, 'Response to Testimony Related to Stormwater and Groundwater'

The Portland Water Bureau's main designed method for containing and disbursing storm water to protect natural resources and water quality has failed. PWB admits this in their response to Comment 3: Ex. N.14 Hart comments dated 4/15/25 inc. 3 videos (2s,3a, and 3b). On Pg. 6 Ex. S.29 the PWB states: "The videos do show a short time where the flow spreader was not functioning as designed." and "The riprap¹ was improperly placed, resulting in a concentration of discharge." As stated in Ex. N.59 Sect. 2.1 *"Even flow distribution across the length of the flow spreader is important to avoid flow concentration on the slope that results in local areas of high flow velocity, leading to erosion or mobilization of sediment. The criteria used in the design of the flow spreader is to limit the difference between the area of lowest discharge and the area of highest discharge to no more than ten percent"*. Additionally, testimony by Zoe Powers during the Remand Hearing *"...together the integrated facility will provide energy dissipation and evenly distribute flows from the stormwater management system across the slope downstream of the flow spreader conveying the flow down to Johnson Creek without creating erosion, or scour or mobilizing sediment"*.

In all their calculations concerning flow rates and collection methods, etc. the PWB avoids addressing the fact that while the amount of water falling on the area remains the same pre- and post- development, the water previously fell on open fields, partially infiltrated into the ground. Surface water that did not infiltrate to recharge the groundwater source, flowed into Johnson Creek Headwaters², but it was distributed over a length of 1400-1500 feet of stream bed. This happened as sheet flow without any point sources. Ex. A.73 Att. A Fig. 1 incorrectly labels the hillside leading down to Johnson Creek as "Existing Point of Discharge #2. There is no "point of discharge" and the description is misleading.

After construction, all of the stormwater from the filtration facility improvements will be collected and discharged into three point sources as shown on the plan marked Ex. A.73 Att. A Fig. 3: (1) an outfall pipe into a small drainage ditch located on the west side of the property, (2)

¹ A quantity of broken stone for foundations, revetments of embankments, etc.

² Headwaters is defined as "a tributary stream of a river close to or forming part of its source"- Oxford English Dictionary

a small catch basin outfall bubbler located on the east side of the property and (3) a flow spreader located at the southwest corner of the property. The primary source of conveyance will occur through the flow spreader.

If performing correctly, the 'Flow Spreader' is intended to discharge the collected and concentrated stormwater over a length of the Johnson Creek Headwaters approximately 175-200 feet in length. Given the disparity in the previous and current discharge coverage lengths, the term 'Flow Spreader' appears to be misleading. Even in the event the 'Flow Spreader' operates at design standards, this hillside and 175-200ft of streambed have never been subjected to 500 gpm of flow. The Stantec engineering designs described in Exhibit I.100 (pg. 1) clearly states (emphasis added):

*#22. A dewatering plan will be prepared and submitted by the contractor for accumulated water from precipitation and uncontaminated groundwater seepage **in excavations.** ... Dewatering systems will be **required to limit discharge quantity to meet stormwater predevelopment rates.***

The Stormwater Control Plan assumes the 'Flow Spreader' performs as intended. As the video previously submitted clearly shows, it does not. The design parameter as stated in Ex. N 59 Section 2.1: "The criteria used in the design of the Flow Spreader is to limit the difference between the lowest discharge and the area of highest discharge to no more than ten percent".

There are 8 discharge 'channels' built into the lower end of the intended distribution field. The video clearly shows a concentration of flow at the southeastern most discharge channel of at minimum 80 percent of the total flow. A flow conservatively estimated at 1500+ gpm. (The lower 'river' shown in the video is estimated at 2 sf in cross section, moving at 2 fps, equals 4 cfs x 7.48 Gal/cf x 60 seconds = 1,792 gpm).

The PWB and its consultant's 'explanation' to the problem of the concentrated outfall from the one outlet is astounding to read. "The rip rap was improperly placed, resulting in concentration of discharge for a period of time." There is no explanation given for this explanation. No performance data reviewed, no technical examination or evidence of testing. Just the 'opinion' of 'experts'. The same experts who designed the system whose failure is under review.

Water flowing through random rocks will not concentrate flow as it is seen. Gravity and topography will. The southeastern most outlet is approximately 6-7 feet lower in elevation according to Fig. 1 Ex. N 59. The downward slope can also be seen in the attached photo.



Water always flows to the lowest point. The entire outfall area below the flow spreader slopes toward the southeastern outlet channel, with a noticeable topographical depression running south across the slope, effectively acting as a collection ditch.

No matter how perfectly riprap is placed, it cannot stop water from flowing downhill—so it's illogical to suggest that a random, accidental rock placement is somehow concentrating the flow. The real forces at work are gravity and topography.

PWB acknowledges this in their own statement: “The issue was identified and remedied with submersible pumps.” Submersible pumps are only needed in low areas where water collects—areas that shouldn't exist if the flow spreader design were functioning correctly. Yet PWB's own topographic maps show one end of the discharge area is significantly lower than the other. This is a basic topographical issue that cannot be solved with riprap or vegetation. Without major regrading of the outfall area and the adjacent SEC, water from this concentrated flow that is greater than the PWB engineers' assumed, more than the flow spreader will handle and far greater than the pre-development flows will continue to follow its natural path, inevitably leading to erosion and the formation of a channel.

The evidence submitted into the record in the form of written and video evidence from January 2025 (Exhibits N.43 and N.14) show that 1) PWB and its on-site contractors did not enforce the plans approved (maintaining predevelopment rates); 2) proposed BMPs were ineffective or were not implemented to prevent adverse impacts to the Johnson Creek watershed; and, 3) Stantec engineering plans miscalculated and wrongly anticipated the volume of groundwater seepage from excavations. Stantec's underestimation and PWB's lack of attention to the failing flow spreader brings the entirety of the Stantec's stormwater engineering and groundwater control plans into question.

In their response to issues raised concerning the failed performance of the flow spreader and other stormwater matters, the PWB and its consultants seem to believe that MCC 39.7515(B) only applies after construction is complete, and that during construction there is no limit to the Natural Resources that can be impacted or degraded, as long as it's done with "Construction Water Management". This is wrong because these "construction" only impacts – the increased sediment and turbidity has had permanent impacts and as the evidence shows, will not stop after construction as evidenced by the continued design failure.

Further evidence of the disingenuous nature of the response is the note on Page 3 of Ex. S.29. *"Note that this reach is sometimes referred to as the "headwaters" of Johnson Creek. The term "Headwaters" is somewhat misleading in this situation, as it does not refer to a ready source of water such as a spring."* I would call attention to the Emerio Design drawings attached to Ex. A73. Emerio multiple times applies the label "Johnson Creek Headwaters". Either the PWB and its paid consultants use "misleading" terms, or their response is an obvious attempt to minimize the significance of a valuable resource area they are negatively impacting. In either case, their actual lack of concern for the Natural Resources is plain to see. Furthermore, if PWB had taken effort to survey Johnson Creek, they would have found that multiple springs surface between the emergence of Johnson Creek 2000 ft away from the SW corner of the filtration property where the flow spreader is constructed. This portion of Johnson Creek is technically considered "headwaters³".

The design and operational failure shown in the video and the issues it illustrates concerning the performance and quality of the PWB plant design should raise serious questions as to whether this plant and its design will avoid damaging the Natural Area surrounding the plant, especially the fragile Johnson Creek Watershed. The disingenuous attitude PWB and its consultants have clearly shown toward protecting Natural Resources should cause concern related to the validity and honesty of their 'expert opinions' and assurances. Their dismissive attitude towards the rules, the Natural Resources under discussion, and the neighborhood I live in should greatly inform the decision of this hearings officer. I respectfully request the hearings officer deny the application and require PWB to seek an alternative site that does not destroy Natural Resources, and our rural community.

³ Headwaters is defined as "a tributary stream of a river close to or forming part of its source"- Oxford English Dictionary



LUP Hearings <lup-hearings@multco.us>

#T3-2022-16220: Response to S.29 (Hart)

Cottrell CPO <cottrellcpo@gmail.com>

Mon, May 19, 2025 at 10:23 AM

To: LUP Hearings <LUP-hearings@multco.us>



External Sender - Be Suspicious of Attachments, Links, and Requests for Payment or Login Information.

LUP,

With regards to the remand of T3-2022-16220, attached is an additional response to S.29.

Please acknowledge receipt of this email.

Thank you,
Cottrell CPO



Hart-CPO-PHCA Response to S.29.pdf

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