From:	THOMAS Wesley * DEQ
To:	DAUGHERTY Katie * DEQ
Cc:	LACEY David J * DEQ; LUTEY Amber * DEQ
Subject:	RE: Arkema September MPR
Date:	Friday, November 17, 2023 12:05:48 PM
Attachments:	image001.png image002.png image003.png

Katie –

This is an interesting monthly report. On the one hand, it looks like the 'average' Shallow and Intermediate water levels are lower (and closer to the river elevation) compared to September 2022.

That said, its not clear why some of the trenches are not producing while others are. It would be interesting for them to include the model predicted flow rates for each trench or recovery well on Table 1-3 for context. I'm not sure that the "operational pumping rate" on Table 1-3 is all that useful, except for highlight that some of the trenches arent producing a lot of water, even when they are operating. I'm wondering why that is. For example, its curious that trench 1 (EW-1 and EW-2) are producing such little flow considering their proximity to the treatment plant (short pumping distances) and the naturally occurring high pressure zone. I think that would be good to discuss in the future.

Also – they have stated that groundwater extraction is limited by a combination of groundwater elevation, back pressure in the trunk line, and fouling of the trench wells. Here are my thoughts:

- Why are groundwater elevations a problem? The trenches should have been designed to achieve inward gradients, so their design should have enabled pumping at groundwater elevations that are below current elevations. We may want more discussion about this issue in the next report.
- Challenges with back pressure in the trunk line is not surprising to me. Its notable that they are pumping water from Trench 7 via overland hoses to try to overcome that. We commented (refer to the RTC for Specific Comment #4 on the design report) about head loss in the conveyance lines and that it wasn't clear if there was going to be enough available head from the pumps to overcome head loss at the flow rates they would need to sustain to meet their capture zone objectives, especially if roughness coefficients of the pipes was increased to represent solids accumulation in the conveyance lines. I believe that their response to that comment in the design was that they would mobilize different pumps if head loss was an issue. It seems like that head loss issue is coming to bear.
- The fouling issue so soon after installing the trenches is concerning. We should ask for more information about the nature of the fouling and whether it has the potential to represent a long-term issue.

Wes

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From: Andrew Gardner <Andrew.Gardner@erm.com>
Sent: Wednesday, November 15, 2023 4:11 PM
To: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>; Todd SLATER

<todd.slater@totalenergies.com>
Cc: Brendan Robinson <Brendan.Robinson@erm.com>; Chase McLaughlin <chase.mclaughlin@erm.com>; Madison Rosen <madison.rosen@erm.com>; Josh Hancock <Josh.Hancock@erm.com>; THOMAS Wesley * DEQ <Wesley.THOMAS@deq.oregon.gov>; LACEY David J * DEQ <David.J.LACEY@deq.oregon.gov>; LUTEY Amber * DEQ <Amber.Lutey@deq.oregon.gov>
Subject: RE: Arkema September MPR

Hi Katie,

The September MPR is attached. Please confirm receipt of this email and let me know if you have any questions or comments.

Thank you,
Andrew

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From: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>
Sent: Wednesday, October 25, 2023 10:43 AM
To: Andrew Gardner <Andrew.Gardner@erm.com>; Todd SLATER <todd.slater@totalenergies.com>
Cc: Brendan Robinson <Brendan.Robinson@erm.com>; Chase McLaughlin <chase.mclaughlin@erm.com>; Madison Rosen <madison.rosen@erm.com>; Josh Hancock <Josh.Hancock@erm.com>; THOMAS Wesley * DEQ <Wesley.THOMAS@deq.oregon.gov>; LACEY David J * DEQ <David.J.LACEY@deq.oregon.gov>; LUTEY Amber * DEQ <Amber.Lutey@deq.oregon.gov>
Subject: RE: Arkema August MPR

EXTERNAL MESSAGE

Thanks for sending. That is so weird. I have no record of that coming in. I'll have to check to see if Wes, Dave, and Amber received it and it was just me or all of us. They implemented new email quarantine rules recently so maybe it fell afoul of that. I did receive the quarterly report form Avery on 10/18 but nothing back about the FS walk through request or from Josh on MPR question.

From: Andrew Gardner <Andrew.Gardner@erm.com>
Sent: Tuesday, October 17, 2023 10:44 AM
To: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>; Todd SLATER <todd.slater@totalenergies.com>
Cc: Brendan Robinson <Brendan.Robinson@erm.com>; Chase McLaughlin <chase.mclaughlin@erm.com>; Madison Rosen <madison.rosen@erm.com>; Josh Hancock <Josh.Hancock@erm.com>; THOMAS Wesley * DEQ <Wesley.THOMAS@deq.oregon.gov>; LACEY David J * DEQ <David.J.LACEY@deq.oregon.gov>; LUTEY Amber * DEQ <Amber.Lutey@deq.oregon.gov>
Subject: RE: Arkema August MPR

Hi Katie,

The August 2023 MPR is attached. This MPR incorporates your October 9th comments. A few additional notes:

- Figure 1-2 has been added to show Average Monthly Pumping Rate. Figure 1-1 continues to show Average Operational Pumping Rates.
- The rate in July was down from June due to low water levels on site as well as a few other factors discussed in section 3.3.2.

Please let me know if you have any questions.

Thanks,
Andrew Gardner

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From: DAUGHERTY Katie * DEQ <Katie.DAUGHERTY@deq.oregon.gov>
Sent: Monday, October 9, 2023 10:31
To: Todd SLATER <todd.slater@totalenergies.com>
Cc: Brendan Robinson <Brendan.Robinson@erm.com>; Andrew Gardner <Andrew.Gardner@erm.com>; Chase McLaughlin <chase.mclaughlin@erm.com>; Madison Rosen <madison.rosen@erm.com>; Josh Hancock <Josh.Hancock@erm.com>; THOMAS Wesley * DEQ <Wesley.THOMAS@deq.oregon.gov>; LACEY David J * DEQ <David.J.LACEY@deq.oregon.gov>; LUTEY Amber * DEQ <Amber.Lutey@deq.oregon.gov>
Subject: RE: Arkema July MPR - ODEQ Comments for next MPR

EXTERNAL MESSAGE

Hi Todd,

Below is some feedback on the July MPR that ODEQ is requesting be incorporated into future MPRs.

- Significant reduction due to "pressure filter fouling". Average extraction rate for July down to 28 gpm compared to 66 gpm in June. After the filter was repaired the flow rate went up to 48 gpm, which is still down from June. It is not clear to ODEQ why. Is it because some wells are still down or because water levels are down. Additional details on what is causing the reduction is needed.
- Note that Figure 1-1 Monthly Pumping Rate Contribution-Note that for July 23 they are graphing the "Operational Rate" of 49 gpm, instead of the "Average Pumping Rate" of 29 gpm. "Operational Rate" is a new term used this report. ODEQ is requesting that LSS/ERM graph the "Average Rate" so ODEQ can evaluate the impact of extraction rate on gw elevation.

Thanks,
Katie

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From: Josh Hancock <Josh.Hancock@erm.com>
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Cc: Todd SLATER <todd.slater@totalenergies.com>; Brendan Robinson <Brendan.Robinson@erm.com>; Andrew Gardner <Andrew.Gardner@erm.com>; Chase McLaughlin <chase.mclaughlin@erm.com>; Madison Rosen <madison.rosen@erm.com>
Subject: Arkema July MPR

Good morning Katie, hope you had a good weekend. Attached, please find the July 2023 MPR for the Arkema site. Let us know if you have any questions or comments.

Regards,

Joshua Hancock
Principal Consultant

he/him/his

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