

## Reeck, Amanda

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**From:** Garrett Benson <gcb@coredesigninc.com>  
**Sent:** Friday, February 8, 2019 12:35 PM  
**To:** Reeck, Amanda  
**Cc:** Araki and Priebe; Michael Moody  
**Subject:** Meeting Questions

Amanda,

I have listed some of the questions that are derived from the county comments below prior to our future meeting for you and staff to review. Let me know if you would like any further clarification of these questions prior to the meeting.

### 1.) Water Quality (Enhanced basic per CARA)

Section 1.2.1 in the 2009 KCSWDM lays out two pollutants for treatment removal.

- 80% removal of total suspended solids (TSS)
- 50% reduction of Zinc

There are three treatment options under section 6.1.2. These options include a sand filter, stormwater wetland or two facility treatment train where a sand filter is required in combination with other treatment options. For residential development sites with site constraints a sand filter is the most common option. Under these circumstances a residential development will only bring the filter online once the site has been stabilized. Per section 6.5.2 under applications and limitations "This facility should not be used in areas where heavy sediment loads are expected". Since the site will have ongoing soil disturbance we propose the following tiered approach. If the site shows pollutant levels above the enhanced basic levels the next tier will be applied.

- Tier 1: Surface Water Monitoring
- Tier 2: Ground Water Monitoring
- Tier 3: Implement additional BMP's or facilities to mitigate for the pollutant.

Would this approach for water quality be acceptable to King County DP&E?

### 2.) Target Surfaces for Flow Control and Water Quality

Based on the 2009 KCSWDM section 1.2.3 *"All proposed projects, including redevelopment projects, must provide onsite flow control facilities or flow control BMPs or both to mitigate the impacts of storm and surface water runoff generated by new impervious surface, new pervious surface and replaced impervious surface targeted for flow control mitigation as specified in the following sections"*.

Carmichael road was constructed for the initial quarry operations in 1930's. Since the initial construction the access road and associated bridge have been maintained during mining operations. Under the current permit, Carmichael road does not meet the definition of a target surface. However, the mining area above Carmichael road does meet the definitions of a target surface and will be mitigated accordingly.

It is our understanding that under the current permit, the access road not qualify as a target surface for flow control and water quality. Is this consistent with your understanding?

### 3.) Flow Control Modeling

The general outline for modeling the mine is as follows (note all of the modeling will be continuous simulation methodology per 2009 KCSWDM guidelines). As mining operations move through the permitted site, there will be a maximum open area envelope of "X" acres. The operation will reclaim previously mined area prior to removing it from the mine area envelope. Geotech stand pipe infiltration testing will be performed within the mine envelope and reclaimed areas. The intent of the testing is to provide support for the land cover modeling in the developed condition. The total mineable area not within the mine envelope will be modeled as till or

outwash grass depending on the Geotech testing. The open mining envelope modeling will be dependent on Geotech testing results.

Is the above modeling approach agreeable? Furthermore do you feel that stand pipe infiltration testing in the mine and reclaimed areas will provide appropriate site-specific support for land cover modeling types since we are in such a unique situation?

#### 4.) Survey Info

The project proposes to survey the pond and presettling pond volumes in the dry season to confirm the volumes being used.

Is there a specific way you would like to see the ponds modeled (ie stage storage vs 2:1 side slope)?

#### 5.) Pond Infiltration Testing

The comments stated that the infiltration testing by Riley Group was not to KCSWDM requirements. Our understanding is that the infiltration testing is in compliance with KCSWDM requirements. It would help us if you could provide additional information regarding your concern or specific areas/elements that you feel do not comply with the KCSWDM requirements so we can adjust the methodology or reporting accordingly.

#### 6.) Bridge Conveyance

It is our understanding that the bridge is not under the scope of the current project or permit. Also, the project activities and runoff will not affect conveyance under the existing bridge. In the case of a storm event greater than the 100-year, stormwater might overflow Pond H and sheet flow to the Raging river downstream of the existing bridge.

If there is additional background you can provide regarding to why a conveyance analysis of the raging river and existing bridge would be necessary we would appreciate it.

#### 7.) Setbacks

The northeast corner of the parcel 224079011 shows a 75' setback from the RA-10 zoned lot on civil sheet C1.02. Please clarify?

Since both parcel 224079011 and 224079033 are zoned for mineral extraction or material processing and owned by the quarry, why would a 10' setback be required?

#### 8.) High Use Site

Per page 1-3 in the 2009 KCSWDM "Subject to use, storage, or maintenance of a fleet of 25 or more diesel vehicles that are over 10 tons net weight". There are approximately 5 diesel vehicles used onsite and less than 20 diesel vehicles being used for transport of materials. Since the project uses fewer than a fleet of 25 diesel vehicles it is not considered a high use site. In our analysis a fleet of 25 vehicles is different than the amount of trips those vehicles take.

Would you agree that the site is not high use?

#### 9.) Access Road BMPS for TESC

The project installed additional TESC BMPs along the access road to mitigate stormwater runoff per the DOE's direction approximately 2 years ago. Since this time there has not been evidence or documented issues with the TESC BMPS. Recently the quarry retrofitted the existing bridge with a filter layer of soil and fabric due to concerns of runoff falling directly into the river below.

Following the discussion from question #2 above, if the access road is not considered a target surface are the existing TESC BMPs sufficient?

10.) Conveyance

A conveyance analysis will be completed for the conveyance systems outside of the mining envelope. Since the mining envelope is continually changing, so will the conveyance ditches and pipes within the mining envelope. Due to this unique circumstance, the quarry would propose to demonstrate conveyance capacity using manning equation for a typical swale geometry and pipe size. A minimum pipe and swale size will be calculated to convey the 100 year event. All new swales or pipes will meet or exceed the minimum sizing requirements.

Would a minimum conveyance sizing using manning's equation for the mining envelope conveyance ditches and pipes be acceptable?

Thanks,

**Garrett Benson, P.E.**

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