

TECHNICAL MEMORANDUM

April 19, 2018

To:	Mr. Jerry Martens, Marten Enterprises, LLC
From	Christopher W. Wright Principal / Soil and Wetland Scientist Raedeke Associates, Inc.
RE:	Marian Meadows – Response to County Comments (RAI Project No. 2006-087-004)

At your request, the purpose of this technical memorandum is to respond to Kittitas County comments on our Stream and Wildlife Habitat Assessment Update (Raedeke Associates, Inc. 2016) regarding the potential for snow melt to flow through the swale feature on the Marian Meadows property. Kittitas County requested this review because a portion of the swale may be used to convey stormwater from the proposed development.

SITE LOCATION

The project site is located in Sections 1 and 12, Township 20 North, Range 13 East, W.M. in Kittitas County, Washington. The property consists of 560 acres located north of Easton, on the southwest facing slopes of Easton Ridge. The swale is located in the south-central portion of the site as depicted on Figure 3 of the 2016 report.

BACKGROUND

We previously investigated the area identified as a Type N stream by the WDNR within the proposed development area of the Marian Meadows PUD property. This area contains a swale feature that is approximately 10 feet wide and the bottom of which is two feet below the surrounding ground surface. Vegetation in the swale consists of scattered lodgepole pine and Douglas fir trees, with a shrub understory of common snowberry. Western wheatgrass (*Agropyron smithii*) and diffuse knapweed are the most abundant herbaceous species observed in the swale. Soils in the swale are brown (10YR 4/3) sandy loams with no redoximorphic features. We did not observe hydrology within the swale to a depth of 16 inches during or 2016 site visit. No evidence of frequent or prolonged inundation was seen, nor was evidence of scour from flowing water observed.

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The swale contains no defined channel or bed and bank that would result from regular, or even seasonal water flow. We previously speculated that the swale may convey some water during spring snowmelt. We visited the site three times during the late winter and early spring of 2018 to determine if the swale conveys flow.

RESULTS

We visited the site on February 27, March 13, and March 20, 2018. During each field visit we observed the culvert at Sparks Road for evidence of flowing water, and we traversed the property through the swale to determine if surface water was present.

The February 27 site visit revealed that the entirety of the site was covered in approximately 1 foot of snow. The March 13 site visit revealed 9 to 10 inches of snow in scattered patches. The March 20 site visit revealed smaller patches of snow up to 5 inches in depth.

No flowing water was observed at the culvert under Sparks Road during any of the site visits. No flowing water was observed in the swale during any of the site visits. In contrast, flowing water was observed in the Type F stream located to the east of the property during each of the site visits.

CONCLUSIONS

The area identified as a Type N stream by the WDNR does not in fact exhibit the characteristics of a stream as we observed no evidence of flow and it lacks identifiable bed and banks. The swale should be able to be used to discharge stormwater without the need for wetland or stream permits.

LIMITATIONS

We have prepared this report for the exclusive use of Marten Enterprises, LLC, and their consultants. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from Marten Enterprises, LLC.

The determination of ecological system classifications, functions, values, and boundaries is an inexact science, and different individuals and agencies may reach different conclusions. With regard to wetlands, the final determination of their boundaries for regulatory purposes is the responsibility of the various agencies that regulate development activities in wetlands. We cannot guarantee the outcome of such determinations. Therefore, the conclusions of this report should be reviewed by the appropriate regulatory agencies.

We warrant that the work performed conforms to standards generally accepted in our field, and was prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the

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information provided by the project proponent and their consultants, together with information gathered in the course of the study. No other warranty, expressed or implied, is made.

LITERATURE CITED

Raedeke Associates, Inc. 2016. Stream and Wildlife Assessment Update. Marian Meadows Planned Unit Development, Kittitas County. October 20, 2016 report to Marten Enterprises, LLC.

Washington Department of Natural Resources. 2016. Forest Practice Activity Map for Township 20 North, Range 13 East, Section 1. Dated October 11, 2016.