

MEMORANDUM

DATE: November 8, 2013

TO: Joe Brogan, Foster Pepper, PLLC

FROM: Jon Houghton, Diane Hennessey, Hart Crowser, Inc.

RE: **Ordinary High Water at Runstad Property on Blakely Island**
17921-00

This memo describes the results of a site visit to the Runstad property on Blakely Island, Washington on September 10, 2013. The purpose of this visit was to examine the upper shoreline on the property and to use the guidance of the Washington Department of Ecology (Olson and Stockdale 2010) to determine if the toe of a newly constructed reach of bulkhead is above or below the ordinary high water (OHW) line. The visit was conducted between 1200 and 1330 when the predicted tide (based on Thatcher Pass) ranged between +5.2 and +4.3 relative to mean lower low water (MLLW). The preceding lower high tide had been +6.6 feet MLLW at 0940 am, and the preceding higher high tide had been +7.6 MLLW at 1953 on September 9.

Primary factors used in our OHW determination were:

- Presence and stability of drift wood below the wall;
- Wrack lines; and
- Nature of vegetation below the wall.

Definition of OHW

Per Olson and Stockdale (2010) the OHW mark, as used for administering the Shoreline Management Act: (SMA), taken from the SMA (RCW 90.58.030(2)(b) and WAC 173-22-030(11)) is as follows:

“Ordinary high water mark on all lakes, streams, and tidal water is that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on June 1,



1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by a local government or the department: PROVIDED, that in any area where the ordinary high water mark cannot be found, the ordinary high water mark adjoining salt water shall be the line of mean higher high tide and the ordinary high water mark adjoining fresh water shall be the line of mean high water.”

Olson and Stockdale note further that “the OHW [mark] on any particular site is not a static line or level, such as a surveyed mean tide elevation or mean high water elevation, but rather is the dynamic edge of the waterbody under legal jurisdiction of the [SMA]. As such, the OHW [mark] may change over time due to natural events or as a result of permitted actions.”

Field Results

Our field determination reflects the OHW line on the Runstad property as evidenced on the day of our visit and does not necessarily coincide with the spatial location of the line prior to construction of the new wall that is the subject of the present permitting action. Our field survey does, however, provide some evidence regarding the probable location of that pre-construction OHW line. Construction of the “new” wall was completed in early 2011 providing three growing seasons for vegetation to become established below the wall.

A perspective of the beach in question is provided in Photographs 1 and 2, taken from near the top and bottom, respectively, of a pathway that leads to the beach east of the new wall area. In the foreground is a sandy patch of beach below previously existing “old” riprap. From the base of the path (lower two steps in the lower right corner of Photograph 2), a number of drift logs are evident at the base of the old wall, with several patches of dune grass (*Leymus mollis*) visible both among and in front of the logs. Based on the vegetation indicator species in Appendix B of Olson and Stockdale (2010), this species is expected to be found at or above OHW. Other species in this area include common velvetgrass (*Holcus lanatus*), Siberian wheatgrass (*Agropyron fragile*), and reed canarygrass (*Phalaris arundinacea*). This vegetation distribution, coupled with the highest wrack line visible, clearly indicate the location of the OHW line at this point on the beach.

The new wall section in question begins just beyond (west) of the patch of cobble upper beach that is evident in both Photographs 1 and 2. That transition area is shown in Photograph 3 (just in front of first clump of alders [*Alnus rubra*] above the wall). Closer views of the eastern most section of the new wall (Photographs 4 and 5) show multiple lines of drift logs and herbaceous vegetation that has grown since the wall was installed. Plants that were interspersed within the logs at the base of the new wall include dune grass, bedstraw (*Gallium sp.*), European searocket (*Cakile maritima*), trailing blackberry (*Rubus ursinus*), common velvetgrass (*Holcus lanatus*), Siberian wheatgrass, and reed canarygrass (*Phalaris arundinacea*). While a few of these plants (e.g., European searocket) may



also be found below OHW, the assemblage is dominated by species found at or above OHW. A complete list of species found on the upper beach below the new wall section is provided in Table 1, along with their respective distributions with relation to OHW, as reported by Olson and Stockdale (2010). The highest line of old wrack is also coincident with the outer most drift wood pieces. Again, this indicates that the OHW line is well below the toe of the new wall in this area.

Photograph 5 illustrates that there is a near-continuous line of drift logs along the base of the new section of the wall stretching to the west. Although the line of logs is narrower in the central part of the new wall (Photographs 6 through 8), dune grass, trailing blackberry, and Siberian wheatgrass continue to be found on the beach below the wall. Photographs 7 and 9 show the blackberry vines descending down the wall and trailing along the upper sand at the base of the wall in this area. Photograph 9A is a closeup showing green leaves on the vine at beach level; in other places, the tips of this species were blackened where they had extended down the beach to OHW. Photograph 8 shows a reach of beach (approximately 20 linear feet) that lacked embedded logs at the time of the survey, however, the highest line of old wrack is shown to lie out from the toe of the wall. We therefore conclude that the OHW line is this area, while closer to the toe of the wall than it is in the adjacent areas, remains below the toe of the wall.

In the area immediately east (Photograph 10) and west (Photograph 11) of the bedrock outcrop the toe of the new wall is approximately 1 foot above OHW as indicated by the multiple lines of embedded drift logs and the variety of vegetation species found among those logs. Vegetation observed in this area included most species listed above, plus salt grass (*Distichlis spicata*), lance-leaved plantain (*Plantago lanceolata*), maritime plantain (*Plantago maritima*), hawkweed (*Hieraceum sp.*), curley dock (*Rumex crispus*), and field horsetail (*Equisetum arvense*).

Apparent Wall Construction Approach

Nothing in our field results reported above or in our general observations of the riparian condition behind the new wall section suggests that the wall was constructed below the pre-project OHW line. The slope of the present riparian zone extending from the top of the wall, if extended at a similar angle, as it might have existed before construction, would intersect the present beach line, several feet in front of the present wall location; this is illustrated in Photograph 5 and other photographs. This would tend to suggest that the wall was constructed by cutting into the existing bank slope so that the toe rocks could be placed behind the then extant OHW.

Additional Observations

We have compared photographs provided in the WDFW Case # WA-11-001018 (identified as being provided by the contractor Needham) with those taken on January 15 and September 10,



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2013. In several reaches of the central portion of the constructed wall, we can identify specific boulders incorporated into the wall in both photograph sets (compare Photograph 12 with Needham Photograph 2). In all such cases, the recent line of beach sediments is higher on the boulders in the more recent photographs. This again suggests that the wall was constructed behind the then extant OHW line and that ongoing natural processes have rebuilt the beach face and storm berm up to re-establish the OHW line in front of the wall.

Reference

Olson, P. and E. Stockdale, 2010. Determining the Ordinary High Water Mark on Streams in Washington State. Second Review Draft. Washington State Department of Ecology, Shorelands & Environmental Assistance Program, Lacey, WA. Ecology Publication # 08-06-001.

Attachments:

Table 1

Photographs 1 through 12

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Table 1 – Vegetation Species Observed on the Beach Below the New Wall and Typical Distribution As It Relates to the Ordinary High Water Mark

Plant Species – Common Name	Scientific Name	Below OHWM ¹	At/Straddle OHWM ¹	Above OHWM ¹
Bedstraw ²	<i>Gallium sp.</i>			
Bull thistle	<i>Cirsium vulgare</i>			X
Colonial bentgrass	<i>Agrostis capillaries</i>		X	X
Common velvetgrass	<i>Holcus lanatus</i>		X	X
Curley dock	<i>Rumex crispus</i>		X	X
Dune grass	<i>Elymus mollis</i>		X	X
European searocket ²	<i>Cakile maritime</i>			
Field horsetail	<i>Equisetum arvense</i>	X	X	X
Hawkweed ²	<i>Hieraceum sp.</i>			
Lance-leaved plantain	<i>Plantago lanceolata</i>		X	X
Maritime plantain	<i>Plantago maritima</i>	X	X	
Reed canarygrass	<i>Phalaris arundinacea</i>	X	X	X
Saltgrass	<i>Distichlis spicata</i>	X	X	
Siberian wheatgrass ²	<i>Agropyron fragile</i>			
Trailing blackberry	<i>Rubus ursinus</i>			X

¹Based on the vegetation indicator species in Olson and Stockdale (2010) *Determining the Ordinary High Water Mark on Streams in Washington State*, Appendix B.

²Not on the Olson and Stockdale (2010) report Appendix B list.



Photograph 1 – Runstad Beach overview



Photograph 2 – Runstad Beach shoreline



Photograph 3 – Transition from old to new wall (at base of alders)



Photograph 4 – New wall east end (1)



Photograph 5 – New wall east end (2)



Photograph 6 – New wall center to east



Photograph 7 – New wall center to west



Photograph 8 – New wall center; farther west



Photograph 9 – New wall blackberry shoot



Photograph 9A – Blackberry shoot closeup



Photograph 10 – Toward west end bedrock



Photograph 11 – From bedrock to west

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Photograph 12 – Center of new wall