

Memorandum

To: Carol Wiseman, The Weyerhaeuser Company

Copies: Ron Timm, Washington State Department of Ecology
Sandy Forman, M.A.P. #2, LLC

From: Layni Wachter and Lynn Grochala, Floyd|Snider

Date: May 30, 2018

Project No: Weyer-Mill E

Re: **Storm Drain Pipe Abandonment Associated with Outfall LLO-07 at the Former Mill E/Koppers Facility**

The purpose of this memorandum is to document the details of pipe abandonment activities for the storm drain pipe leading to Outfall LLO-07 on the Former Mill E/Koppers Facility property (the Site). The location of the Site is shown on Figure 1. The owner of the Site property, M.A.P. #2, LLC/Pacific Topsoils, Inc., completed the pipe abandonment activities in order to eliminate the inflow of stormwater into the storm drain pipe from an unknown, off-property upland source, and to prevent further discharge of stormwater from Outfall LLO-07. In addition, a junction box that was identified on the Site as part of pipe investigation activities in September 2017 was also abandoned at the same time.

These storm drain pipe abandonment activities were completed in consultation with the Port of Everett, who owns the upgradient property, and the Washington State Department of Ecology (Ecology). The Port of Everett indicated they were unaware of the location of storm drains on their property that would drain to Outfall LLO-07, but agreed to allow M.A.P. #2 to terminate the pipeline at the property boundary. The required work was completed by Pacific Topsoils personnel on April 17, 2018, with oversight by Floyd|Snider. A detailed description of the storm drain pipe abandonment activities is provided below.

STORM DRAIN PIPE ABANDONMENT ACTIVITIES

Three locations along the storm drain pipe alignment were selected to be plugged: (1) at the property boundary to eliminate inflow of stormwater onto the Site property, (2) at the junction box, and (3) near Outfall LLO-07 to eliminate discharge. Figure 2 depicts the storm drain pipe alignment and includes photographs of each location where the storm drain pipe was plugged. Work began at the western property boundary using a small excavator to expose the top of the 8-inch diameter concrete drain pipe, which was located at 6 feet below ground surface (bgs). A

small pit was excavated next to the pipe in order to control incoming groundwater and to access the pipe. The pipe was plugged in three spots at the property boundary by breaking the pipe open from the top, clearing away debris and mud from inside the pipe rim, and then pouring in one to two bags of bentonite chips at each location. A shovel was used to push bentonite chips as far into the pipe as possible prior to hydration. A three-foot section of the concrete pipe was also demolished between two of the bentonite plugs. After the bentonite had set, the excavated area was backfilled with the soil that had been removed.

In November 2017, a high-density polyethylene (HDPE) pipe was placed over the junction box for future access. Two bags of bentonite chips were poured inside of the junction box and pressed down with a shovel into the influent and effluent pipes prior to hydration to seal the box and all inlets and outlets to the junction box.

The excavator subsequently moved to the shoreline to expose the 12-inch diameter concrete storm drain pipe approximately 25 feet from Outfall LLO-07 (refer to Figure 2), which was located at 8 feet bgs. A pit was excavated to fully expose the concrete pipe which was then broken open and cleaned out as best as possible using a shovel. Three bags of bentonite chips were poured inside of the pipe and compacted around the outside prior to hydration. After the bentonite was set, the excavated area was backfilled with the soil that had been removed.

The corrugated pipe previously installed to access the junction box was subsequently removed by Pacific Topsoils personnel, and the area of the junction box was backfilled to restore the soil cap surface in this area. In addition, all disturbed areas were subsequently reseeded by Pacific Topsoils personnel to restore the soil cap surface.

LIST OF FIGURES

- Figure 1 Site Location
- Figure 2 Storm Drain Pipe Abandonment Details

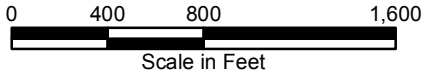
Figures

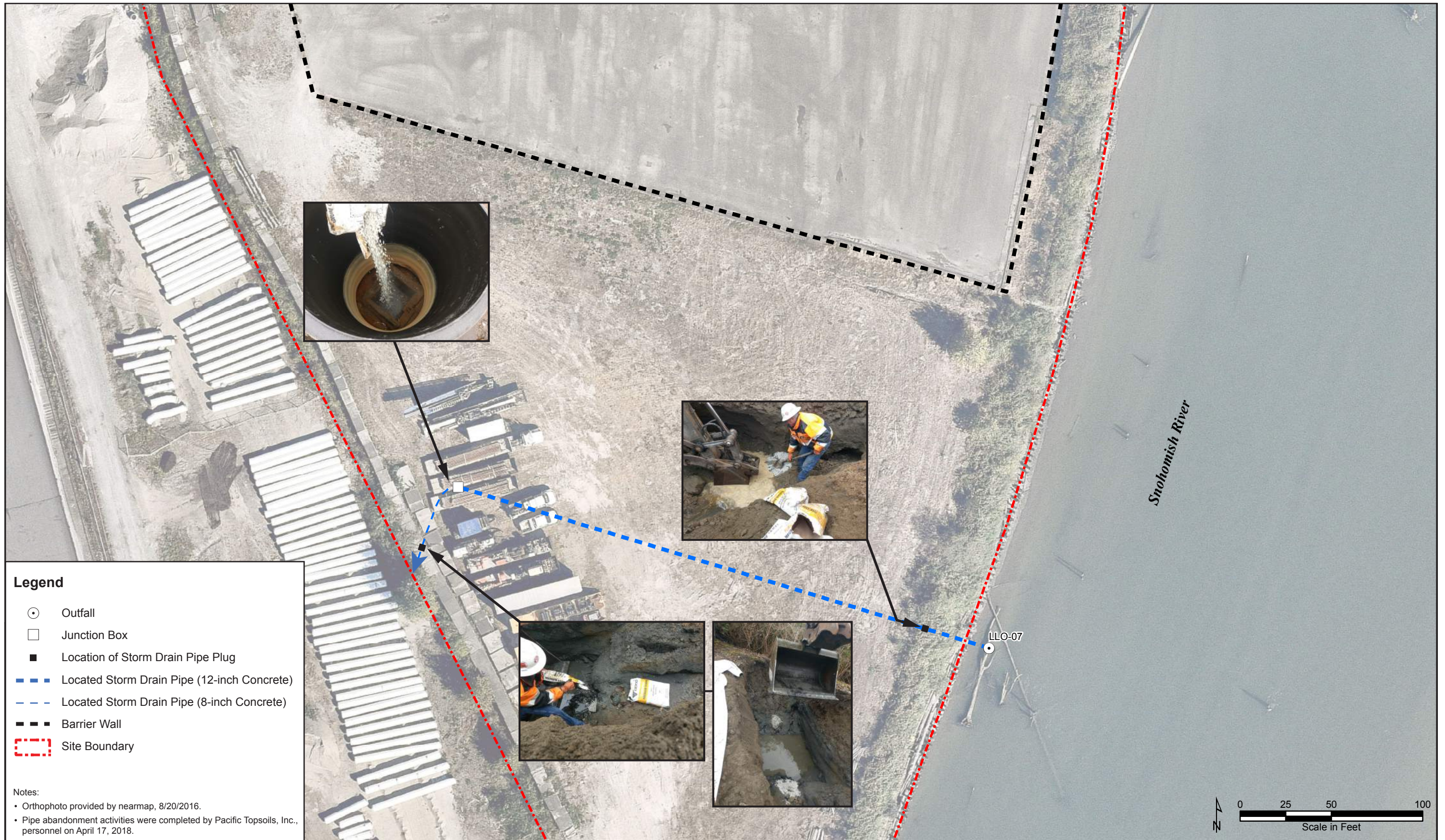
Legend

- Site Boundary
- Former Everett Smelter Facility Boundary
- Everett Smelter Lowland Area
- Everett Smelter Uplands Area

Notes:

· Orthoimage provided by nearmap, 8/20/2016.





Legend

- Outfall
- Junction Box
- Location of Storm Drain Pipe Plug
- — Located Storm Drain Pipe (12-inch Concrete)
- · - · Located Storm Drain Pipe (8-inch Concrete)
- - - Barrier Wall
- · - · Site Boundary

Notes:

- Orthophoto provided by nearmap, 8/20/2016.
- Pipe abandonment activities were completed by Pacific Topsoils, Inc., personnel on April 17, 2018.