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STAFF SUMMARY OF FORMER WEYERHAEUSER MILL SITE

REPORTED ENVIRONMENTAL ACTIVITY & REMEDIATION

SEPTEMBER 22, 2011

City of Snoqualmie staff reviewed several files provided by the EPA and property owner regarding the environmental impacts and remediation activities on the old Weyerhaeuser Snoqualmie Mill Site. Multiple locations on the site could have soil, surface water and groundwater impacts due to the presence of different fuels, chemicals and other fluids stored or used onsite. However, **six areas stand out for reported potential impacts and remediation activity: (1) the Former Under- and Above-ground Storage Tanks (UST/ASTs); (2) the Former Plywood Plant; (3) the "Morbark" Area; (4) the Powerhouse & Sawmill; (5) the Lumber Strapping Area; and (6) the PCP Dip Tanks.** This document summarizes the remediation guidance, contaminants and known status of the site.

The Washington state Department of Ecology (Ecology) regulates and guides needed site Cleanup Levels (CLs) via MTCA, the Washington State Model Toxics Control Act of 1989.¹ The presence of contaminants does not by itself indicate the need for remediation; it is only when contaminant concentrations reach certain thresholds that they trigger a need for monitoring or removal, usually when they may be of an environmental or human health concern. MTCA provides three methods to determine if cleanup is necessary, the default Method A with specific maximum concentration limits (MCL) per contaminant, and Method B/C, which sets alternate contaminant levels (ACLs) based on the associated risks of actual/future site activity.² MTCA is essentially the state counterpart to CERCLA,³ the federal Superfund law that also provides cleanup guidance. The old Weyerhaeuser Mill Site underwent a Preliminary Assessment (PA) in the Superfund data system CERCLIS in 1991, however it resulted in a "No Further Remedial Action Planned" (NFRAP) designation.⁴ As such, cleanup activities would likely move from the EPA to the Department of Ecology (Ecology). The site did not proceed to a Site Inspection, and did not enter the National Priorities List (NPL); NPL sites are what are typically referred to as "Superfunds" in the EPA.⁵ Overall, the site is essentially a brownfield, or an "Abandoned, idled or under-used real property where expansion or redevelopment is complicated by the presence **or potential presence** of environmental contamination" (emphasis added).⁶

When contamination is suspected or determined, a landowner may undertake voluntary remediation. Most cleanups within Washington State are Voluntary, without issuance of enforcement orders (for cleanup) from Ecology. This allows site owners more flexibility and often reduces cost, but does not provide binding agency assurance of a cleanup's adequacy.⁷ Ecology has various opinion letters it can issue for voluntary clean-ups; one commonly known as a "no further action" letter is often seen as the equivalent that a voluntary cleanup has met with Ecology approval, and that no further work is necessary. It appears that a "no further action" letter was *not* pursued/obtained for this site, reportedly due to associated legal costs.⁸ Under Ecology, sites undergo an initial investigation (II), receive a Site Hazard Assessment (SHA) and hazard ranking score under WARM (Washington Ranking Method), which ultimately determines whether a site will be listed on the State Hazardous Sites List (HSL). Ecology records show the Weyerhaeuser site has been awaiting a SHA for an indeterminate period.

¹ In some reports, TSCA or the federal Toxic Substances Control Act of 1976 also guided some cleanup levels.

² Delta Environmental Consultants, Inc., "Level II ESA Report," 2004, p.12.

³ The Comprehensive Environmental Response, Compensation and Liability Act

⁴ EPA Region 10 staff correspondence, 05/19/2011 letter

⁵ Phone conversation US EPA Region 10 staff representative.

⁶ U.S. Department of Housing and Urban Development, "Brownfield Definition", content last updated 7/30/09.

<http://www.hud.gov/offices/cpd/economicdevelopment/programs/bedi/bfieldsdefinition.cfm>. Cited 07/18/11.

⁷ Howard F. Jensen, HCMP Law Offices, "Frequently Asked Questions About the Washington State Model Toxics Control Act."

http://www.hcmp.com/index.php?p=1_114-Frequently-Asked-Questions-About-the-Model-Toxics-Control-Act. Cited 7/15/2011.

⁸ Phone conversation with Weyerhaeuser staff reported that a No Further Action Letter was not pursued due to projected costs.

The identified **Contaminants Of Concern (COC)** at each location of the old Weyerhaeuser Mill site vary depending on the associated activities. Those listed most include **BTEX** or the gasoline components Benzene, Toluene, Ethylbenzene and Xylene; **TPH/T(E)PH & DRO** or Total (Extractable) Petroleum Hydrocarbons and Diesel Range Organics; **PCP** or Pentachlorophenol; **T/TCBs** or tetra/tri-chlorinated benzenes; and **PCBs**, or polychlorinated biphenyls. Although not as emphasized in the reports, there is some evidence of heavy metals, including arsenic and lead and, to a lesser extent, copper, zinc and cadmium. Asbestos was also mentioned, but appeared addressed under a site-wide remediation program.⁹ Location-specific summaries are as follows:

(1) Former Under- and Above-ground Storage Tanks (UST/ASTs) areas were noted for contamination from BTEX (groundwater) and TPH & DRO (soil; groundwater). Between 1989 and 2005, about 8,387 cubic yards (CY) were processed and, at final testing, soils tested below Method B levels.¹⁰ The process was designed to remove groundwater impacts as well, though the reviewed reports do not indicate that a recommended¹¹ new S/SW downgradient monitoring well was installed to obtain final groundwater results.¹² The Level II ESA also noted that there were impacted soils under nearby roadways; it is unknown if final soil removal addressed these areas.¹³

(2) The Former Plywood Plant was the site of a 1989 fire, where falling debris damaged the secondary bushings of two transformers (T-17 & T-12) and led to TPH, TCB & PCB contamination.¹⁴ A former Press Pit area remediation achieved TPH soil cleanup targets though no groundwater analysis was conducted, and debris was buried.¹⁵ The PCBs at T-17 were remediated to federal TSCA guidelines by June 6, 1989, and investigations closed,¹⁶ though soils may have been remediated at the T-17 location only to federal levels at the time (50 ppm), which may not meet state standards.¹⁷ Official closure of the other transformer (T-12) site was not possible due to elevated PCB levels in the underlying clay layer.¹⁸ Site treatment included removing 60 CY of soil; excavation was halted so as to not breach the clay lens, whose presence prevented a PCB groundwater release. The site was capped with a geotextile in 1991¹⁹ and, following 1995 reports that PCBs had not migrated into groundwater at the T-12 area,²⁰ Weyerhaeuser notified EPA Region 10 that No Further Action (NFA) would be taken, though no known response was received from EPA.²¹ It is uncertain if the geotextile cap is large enough.²² It was advised to still pursue a NFA letter from the EPA for this area, and that analysis of PCB pyrolysis isomers may be appropriate, along with deed restrictions, legal area delineation and setting a MTCA B/C ACL.²³ Today the area remains fenced and is posted as a PCB spill area.²⁴

(3) The "Morbark" Area had machinery that leaked lube oil, leading to TPH & DRO soil and groundwater impacts.²⁵ From 1998 to 2004 approximately 2,600 CY of soil was excavated.²⁶ Tests in 1998 met MTCA A groundwater levels for TPH; MTCA B DRO levels were met in 2004²⁷ and MTCA B TPH levels were met in 2006.²⁸ No apparent issues remain at this location.

(4) The Powerhouse & Sawmill area contained the sawmill sash gang and log haul, the powerhouse T-7 transformer, a 50,000 gallon AST and a hog fuel ash area. For most locations, TPH & DRO were the main Contaminants of Concern (COC) in soil/groundwater. Between the log haul and sash gang areas, approximately 1,000 CY of soil were removed; final results showed soils below the MTCA B TPH CLS²⁹ and that groundwater samples under the sash gang were below MTCA Method A CLs.³⁰ It is unknown if groundwater under the log haul area is free of DRO as the groundwater sample yield was too low for analysis.³¹ The T-7 transformer was tested and found to be PCB free,³² and the AST area likewise tested free of contamination.³³ In 2003, a Boiler Ash Fill Area was identified west of the former sawmill building,³⁴ with several soil samples testing above benzo(a)pyrene MTCA A levels and Arsenic detected at 180 mg/kg, above the MTCA A cleanup level of 20 mg/kg.³⁵ In a later ESA, the ash volume was estimated at 6,000 CY;³⁶ it was

⁹ Shannon & Wilson Inc., "Level I EA (Environmental Assessment)," 1993, p. 10.

¹⁰ Pacific Environmental & Redevelopment Co., "Permit Closure Report: King County," 2006, p.2.

¹¹ Advised in the letter to Ms. Bariska of Weyerhaeuser accompanying the 2005 Supplemental ESA for the UST/AST Area, by Delta Environmental Consultants. July 19, 2005, p. 3.

¹² Pacific Environmental & Redevelopment Co., "Permit Closure Report: King County," 2006, p.8,9 (sections 4.4; 4.7.1; 5.0).

¹³ Delta Environmental Consultants, "Level II Environmental Site Assessment (ESA)," 2004, p. vi, 5.

¹⁴ Ecology & Environment, Inc., "Preliminary Assessment Report, Weyerhaeuser Co. Snoqualmie, WA," 1991, p. 5.

¹⁵ Shannon & Wilson Inc., "Level I EA," p. 4, 5. A CL of 200 ppm was set, below the MTCA A CL of 2000 ppm, as of 2005.

¹⁶ Shannon & Wilson Inc., "Level I EA," 1993, p. 2.

¹⁷ Shannon & Wilson Inc., "Level I EA," 1993, p. 2.

¹⁸ Shannon & Wilson Inc., "Level I EA," 1993, p. 2, 3.

¹⁹ Shannon & Wilson Inc., "Level I EA," 1993, p. 3.

²⁰ Dalton, Olmstead & Fuglevand, Inc. Environmental Consultants, "Additional Assessment of PCB Contamination T-12 Area, Weyerhaeuser Snoqualmie Mill Site," 1994, p.2, 3 & Executive Summary.

²¹ Delta Environmental Consultants, "Level II ESA," 2004, p.13.

²² Dalton et al., "Additional Assessment of PCB Contamination T-12 Area..." 1994, 3.

²³ Delta Environmental Consultants, "Level II ESA," 2004, p.13, 14.

²⁴ Delta Environmental Consultants, "Level II ESA," 2004, p. 5.

²⁵ Delta Environmental Consultants, "Level II ESA," 2004, p. 4.

²⁶ Delta Environmental Consultants, "Level III ESA," Dec. 2004, p.5. & Pacific et al "Permit Closure Report: King County," 2006, p.6.

²⁷ Delta Environmental Consultants, "Level III Environmental Site Assessment (ESA)," Dec. 2004, p. 21.

²⁸ Pacific Environmental & Redevelopment Co., "Permit Closure Report: King County," 2006, p.6.

²⁹ Pacific Environmental & Redevelopment Co., "Permit Closure Report: King County," 2006, p.5.

³⁰ Delta Environmental Consultants, "Level III ESA," Dec. 2004, p. ii, vi, 12.

³¹ Delta Environmental Consultants, "Level III ESA," Dec. 2004, p. 13

³² Delta Environmental Consultants, "Level III ESA," Dec. 2004, vi, vii

³³ Delta Environmental Consultants, "Level III ESA," Dec. 2004, p. ii, 14

³⁴ Delta Environmental Consultants, "Level III ESA," Dec. 2004, p. 7

³⁵ Delta Environmental Consultants, "Level II ESA," 2004, p. 9

recommended it be handled according to Ecology regulations.³⁷ In addition, a 1993 report stated that semi-volatile compounds were detected in the Sawmill/Powerhouse area; it is unknown if these last two items were addressed based on reviewed reports.³⁸

(5) The Lumber Strapping Area had a hydraulic oil spill at this location, leading to DRO and heavy oil hydrocarbons testing above MTCA A CLs in soil and TPH in groundwater.³⁹ In 2006, 751 CY of soil were excavated and most subsequent soil samples tested below MTCA B CLs, though one location still exceeded the MTCA B CL.⁴⁰ Earlier tests also showed TPH-D and TPH-O (-Diesel & Oil) groundwater impacts;⁴¹ it is unknown if these issues have been addressed.

(6) There were 2 PCP Dip Tank areas identified as potentially contaminated with PCP. While the PCP Dip Tank area 2 tested free of phenolic compounds,⁴² Dip Tank area 1 contained PCP groundwater concentrations that exceeded the MTCA Method B CL; results indicate that groundwater impacts were localized near the former dip tank and have not migrated downgradient.⁴³ It is unknown whether PCP contamination in this area has been addressed.

In addition to the above, the following areas may need further redress: groundwater DRO/TPH at the former vehicle wash pad;⁴⁴ T-18 DRO/TPH surficial soil impacts;⁴⁵ investigation of roadway surface oils, mill ditch system sedimentation,⁴⁶ and sampling of log pond sediments.⁴⁷

³⁶ Delta Environmental Consultants, "Level III ESA," Dec. 2004, p. v

³⁷ Delta Environmental Consultants, "Level II ESA," 2004, p. 13

³⁸ Shannon & Wilson Inc., "Level I EA," 1993, p. 14, 15

³⁹ Delta Environmental Consultants, "Level III ESA," Dec. 2004, p. iv, vi, 17, Table 11. Reports on groundwater contamination appear to conflict within ESA III, but tabular data results confirm TPH results exceeding MTCA A CLs

⁴⁰ Pacific Environmental & Redevelopment Co., "Permit Closure Report: King County," 2006, p.6, 8.

⁴¹ In the letter to Ms. Bariska, accompanying the 2005 Supplemental ESA for Former Lumber Strapping Area ... July 19, 2005, p. 3&4

⁴² Delta Environmental Consultants, "Level III ESA," Dec. 2004, p. v, 19

⁴³ In the letter to Ms. Bariska, accompanying the 2005 Supplemental ESA for Former Lumber Strapping Area ... July 19, 2005, p. 3.

⁴⁴ Delta Environmental Consultants, "Level II ESA," 2004, p.11 & Delta et al., "Level III ESA," Dec. 2004 p. iv-vii, 8, Table 13.

⁴⁵ Delta Environmental Consultants, "Level II ESA," 2004, p. iv, 7, 17

⁴⁶ Shannon & Wilson Inc., "Level I EA," 1993, p. 12, 13

⁴⁷ Shannon & Wilson Inc., "Level I EA," 1993, p. 12 & Dept. of Ecology, "Snoqualmie Facility Class II Inspection, 2/9/93," 1994, 22.