- Samples have shown that there is a light non-aqueous liquid plume which exists in varying thicknesses across the western side of ORC North. This LNAPL plume is considered a principal threat waste because it continues to be a source for contaminant migration to ground water. It is estimated that up to 80 acres of the site may have LNAPL on top of the shallow ground water table. The ground water contamination consists of a plume of light non-aqueous phase liquid (LNAPL) and a much larger dissolved phase plume that ultimately leaves the site via ground water discharge to Gladys Creek.

Relative thickness of the plume, extent of the plume, and mobility of the plume has been monitored historically. Results have shown that the LNAPL plume has been relatively stable for the past 15 years. Monitoring events conducted in 2006 and 2007 have shown LNAPL thickness exceeding PRGs in one off-site well. Monitoring well SBB-2, which is an off-site well located North of Highway 277, had a measurable LNAPL thickness during the October 2006 LNAPL Well Survey. After the 2007 LNAPL monitoring event, three new wells were drilled between residential houses and SBB-2 to delineate the LNAPL plume. These new wells were gauged to measure LNAPL thickness immediately after installation. There was no LNAPL detected in any of the new wells.

- Areas of surficial asphaltic waste have been visually identified on ORC North which comprise a total area of approximately 3.82 acres. Similar asphaltic waste was analyzed during the 1991 RI. Metals detected in this waste material included arsenic, barium, cadmium, chromium, copper, lead, nickel, mercury, zinc, and lead. Organic contaminants detected in the waste included 2-methylnaphthalene, phenanthrene, pyrene, and xylene.

These areas of surficial asphaltic waste will be sampled during the Remedial Design phase. If the RD sample results indicate constituents of concern above soil preliminary remediation goals, these areas will be included under the Soil and Sediment Alternative 7C.

Scope and Role of Response Action

A Record of Decision (ROD) was issued by the EPA in June 1992. The remedial action completed as a result of the 1992 ROD is referred to as Oklahoma Refining Company Operable Unit 1. Operable Unit 1 focused on the treatment of soils and removal of hazardous wastes from ORC South and limited areas of ORC North. EPA signed an Explanation of Significant Difference (ESD) to the ROD for the site in March 1996 that included postponement of the ground water remedy until after completion of the source remedy.

The DEQ performed the Remedial Action (RA) construction on the south side of the site and in limited areas, mostly waste pits and impoundments, on the north side of the site from 1997 to 2002. The action which will be described in the new ROD will be referred to as the Oklahoma Refining Company Remedial Action Operable Unit 2. Operable Unit 2 is an incremental step toward comprehensively addressing the problems at the Site. The Remedial Action Objectives (RAOs) for Operable Unit 2 for the Site are designed to prevent current and future exposure to contaminated media at the Site. This portion of the remedial response includes excavation and disposal of soil and sediment in the area of the Site referred to as ORC North that was not addressed in the original ROD, as well as the management or mitigation of releases or threatened releases from LNAPL beneath the Site.

The SFS report dated September 10, 2012, contained an evaluation of several different alternatives to address ground water at the site. While it appears that a Technical Impracticability (TI) Waiver is probably appropriate for the ground water at the site, there are issues related to ground water/surface water interaction that makes designation of the TI zone problematic at this time. While ground water on-site could be addressed through appropriate institutional controls, it is unclear whether monitoring of the ground water/surface water interface alone provides sufficient protection of the creek. Therefore, since additional information and /or evaluation is needed to develop an appropriate remedy concerning the specific area of ground water which discharges to the