# History of the Joslyn Manufacturing Superfund Site

The Joslyn site is located in the City of Brooklyn Center, northwest of the intersection of Azelia Avenue North and Lakebreeze Avenue North. The site is bounded on the west by Middle Twin Lake, on the north by the railroad tracks and open green space, on the south by a residential neighborhood, and on the east by France Avenue and Highway 100.


## Site history

From the 1920s until 1980, a succession of companies treated wooden poles and ties at the Joslyn site. Soil, sediment and groundwater at the site became contaminated with pentachlorophenol (PCP) and polynuclear aromatic hydrocarbons (PAHs), which are constituents of the wood preservatives used at the site. The site was listed on the Federal National Priorities List (NPL) and the State Superfund list or Permanent List of Priorities (PLP) in 1984. Subsequently, much of the site was successfully cleaned up so that it could be removed from the PLP and NPL. These portions of the site have been redeveloped. The westernmost portion of the site includes a wooded/wetland area known as the “West Area”, and two adjacent residential lots known as the “Southern Lots”. Collectively, the West Area and Southern Lots are referred to as Operable Unit 5 (OU5) and is private property owned by Joslyn. The proposed remediation of OU5 remains under the oversight of the Minnesota Pollution Control Agency (MPCA).

## Early remedial actions

After ceasing operations in 1980, Joslyn removed wood-treating solutions and properly disposed of them at a hazardous waste facility in 1981. In 1983, the MPCA named Joslyn as a responsible party for the site and requested that Joslyn investigate and remediate the site. The MPCA continues to oversee the site's remediation. Joslyn and the MPCA entered into a remediation agreement in 1985.

## Remedial actions for Operable Units (OUs) 1, 2, 3 and 4

In 1989, following public comment, MPCA issued a Record of Decision (ROD) for the site that documented the selected remedial actions. Distinct elements of the remedial actions are described using the term "operable unit" (OU). For groundwater (OU1 and OU2), the selected remedy includes groundwater pumpout and long-term groundwater monitoring. A recovery system was selected for collecting waste wood-treating solutions, which are present in the aquifer as dense non-aqueous phase liquid (DNAPL) (OU3). For the remaining contaminated soil (OU4), the remedial actions included on-site biological treatment.

## OU1 and OU2: Groundwater

Since 1989, groundwater pumpout wells have been removing contaminated groundwater from the upper aquifer (OU1 and OU2), thereby controlling lateral and vertical migration of contaminants. As verified by routine monitoring and data analysis, the remedial actions have successfully contained contaminated groundwater within the upper aquifer at the site's downgradient (eastern) boundary and have prevented downward migration of contaminants. As is typical for groundwater pumpout systems in the Twin Cities metropolitan area, the collected groundwater is discharged to the municipal wastewater treatment system. The continued operation of these pumpout systems is necessary to control contaminant migration.

## OU3: Dense non-aqueous phase liquid

To date, approximately 16,700 gallons of DNAPL have been recovered and sent off-site to a permitted facility and incinerated. This remedial action has been successful and will continue until the recoverable DNAPL has been removed from the aquifer.

## OU4: Contaminated soil

OU4 consisted of the visually contaminated soil remaining on site after the early remedial actions. The remedy for OU4 included the excavation and on-site treatment of these soils through biological degradation of contaminants. The ROD also allowed the off-site disposal of soils that could not be treated on-site. In 1988, after completing the remedial investigation, Joslyn excavated more contaminated soil and disposed of it in a hazardous waste landfill.

From 1989 through 1998, approximately 85,000 cubic yards of contaminated soil were remediated on-site. The redevelopment of the site provided the final elements of the OU4 remedy. Contaminated soil was capped by buildings, and in other areas, a clean soil layer. Restrictive covenants were placed on the Joslyn site to ensure the remedy remains effective.

## Site redevelopment

The site was redeveloped through the cooperative efforts of Joslyn, Real Estate Recycling (a redevelopment company specializing in previously contaminated land), the City of Brooklyn Center, and the MPCA. The France Avenue Business Park was created as a result of redevelopment at the site. Three large warehouse facilities comprise the France Avenue Business Park; two of the facilities were constructed on-site, and a third facility was constructed immediately adjacent to the site on additional parcels purchased by Real Estate Recycling.

The redeveloped portion of the site was removed from the state PLP in 1999 and from the NPL in 2002.

## OU5: West Area and Southern Lots

The West Area and Southern Lots (OU5) are located in the westernmost portion of the site, between the redeveloped area and Middle Twin Lake. The OU5 was not included in the delisting of the redeveloped areas. A site-wide investigation prior to redevelopment found concentrations of dioxins, common trace contaminants of PCP that were used for wood treating in OU5. With MPCA oversight, Joslyn has completed the investigation of OU5. These investigations revealed levels of dioxins in soil in some parts of OU5 that are higher than the

U.S. Environmental Protection Agency's (EPA's) recommended cleanup level and MPCA's soil screening level. Joslyn installed a fence around most of the West Area as an interim action to limit potential human exposure to contaminated soil.

Joslyn, with MPCA oversight, is currently evaluating remedial action alternatives in a report titled "Focused Feasibility Study – Revision 3 Operable Unit 5 West Area Soils," (FFS) prepared by Barr Engineering Co., in January 2017. A Proposed Plan report was completed by MPCA using the information from the FFS detailing the selected remedy. This Proposed Plan will be presented in a public meeting to provide an opportunity for the public to comment on the selected remedy.

### Middle Twin Lake

Investigations during the mid-1980s found that the site had not adversely impacted Middle Twin Lake. However, after dioxins had been found in the West Area, the MPCA asked Joslyn to reevaluate potential impacts at the Lake through an investigation of fish tissue and sediment in the Lake.

Dioxins are ubiquitous in the environment as a result of natural processes and human activities, such as trash burning, and are often found in background soils and sediment at concentrations in the low part-per-trillion (ppt) range. They are persistent, and fish have been shown to accumulate dioxins from water, sediments, and through the aquatic food chain. Since dioxins are found nearly everywhere, Joslyn's investigations of Middle Twin Lake included the collection and evaluation of samples from nearby lakes. These other lake samples allowed MPCA to determine whether the dioxin concentrations found in Middle Twin Lake differed from those found in other lakes in the area.

Fish tissue samples collected from Middle Twin Lake showed that, of the contaminants of concern at the site, only dioxins are present at potentially significant concentrations. However, the concentrations of dioxins in fish tissue from Middle Twin Lake do not differ significantly from concentrations found in fish samples from other lakes in Minnesota. Minnesota Department of Health (MDH) concluded that the existing fish consumption advisories at Middle Twin Lake are also protective of human health for dioxins (Minnesota Department of Health, "Health Consultation Middle Twin Lake Fish Tissue Study," June 2006).

In 2007, composite sediment samples were collected from two locations in Middle Twin Lake; one adjacent to the Joslyn site and the second adjacent to a public beach. Separate analysis of these samples by both Joslyn and the MPCA confirmed that the dioxin concentrations were 10 times lower than the conservative screening value established by the MDH for this study. Based upon the results of this sediment study and previous studies, the MDH and the MPCA find that these data support the conclusions that the site has not had an adverse impact on Middle Twin Lake and that further assessment of Middle Twin Lake is not warranted at this time. Additional information can be found at http://www.health.state.mn.us/divs/eh/hazardous/sites/hennepin/joslyn.html.

## Additional resources

For more information, about remediation work at the Joslyn Manufacturing and Supply Company Superfund site, contact the MPCA at 651-296-6300 or 1-800-657-3864.