

## Injection Request October 2020

Site Name: Ashland/Northern States Power Lakefront Superfund Site

Site Location: 303 Saint Claire Street  
Ashland, Wisconsin 54806

The Project Area is located in Ashland Wisconsin and is bounded to the north by the Chequamegon Bay shoreline and to the south by Lakeshore Drive/U.S. Highway 2, to the east and west by Prentice and Ellis Avenues.

EPA ID#: WISFN0507952

Process: Injection

Material to be Injected: Oxidant and Bioavailable Absorbent Media

Type of Contaminants: VOCs and SVOCs

Implementation Plan: Inject material through permanent injection wells and direct-push rods. More detail is provided in the contractor's project plan (attached).

Constraints: There are no necessary constraints.

Time Frame: The injection will be completed after approximately 1 week, however, a 1-week injection will likely be conducted every year. Therefore, a 5-year approval is being requested.

Monitoring Plan:

Baseline -

ORP, temperature, conductivity, and pH readings will be collected in the vicinity of the injection areas prior to injection. Measurements will also be taken for depth to water, depth to NAPL, and NAPL thickness. Groundwater samples will be collected from several wells in the vicinity of the injection areas for VOCs analyses, including naphthalene. The appearance of the NAPL will also be noted.

#### Monitor Change –

Pressure transducers will be installed in several of the adjacent wells, to monitor water table elevation, prior to, during, and after the injection. ORP, temperature, conductivity, and pH will be measured during the injection to determine effective radius of influence and subsequent to injection to monitor the degradation of the oxidant and a return to static conditions.

Depth to NAPL, and NAPL thickness will be measured subsequent to injection to assess NAPL removal. Any change in the NAPL appearance post-injection will be noted.

Groundwater sampling for VOCs, SVOCs and metals is scheduled for April, July, and October 2021.

### **Additional Information For Injection Materials**

Oxidants may include hydrogen peroxide, calcium peroxide, sodium persulfate, as well as related catalysts to activate the oxidants, such as pH adjustors and transitional metals.

**Expected persistence** of injectant in the groundwater (i.e. how long will it be effective)

Based on extensive experience at similar sites, and the experience of others, the oxidant persistence is highly variable, however is anticipated to be approximately 2 months.

**Description of the monitoring system** in place to assess the extent of the effective zone of influence.

See Monitoring Plan, above.

**Collection of analytical results** for groundwater

Baseline sampling for VOCs will be conducted from select wells prior to injection. In addition, VOCs, SVOCs, and Metals are laboratory analyzed 3 times per year. Laboratory analysis will be completed again in April, July, and October 2021.

**Use of sentinel wells** as part of the monitoring program to show that the injectant is confined to the area to be treated

Based on the Monitoring Plan above, changes particularly in ORP and water level increases (mounding) in sentinel wells will be used as an indication that the sentinel well is within the effective radius of influence. If the effective radius of influence is greater than desired, the injection will be suspended until the maximum design radius of influence (50 feet) is establish. ORP levels will be monitored periodically until readings return to pre-injection levels.