

FACT SHEET
For the Former Nebraska Solvents Company Site at
1200 Highway 30 East, Grand Island, Nebraska

The Nebraska Department of Environmental Quality (NDEQ) is providing Public Notice of its intent to approve the proposed Remedial Action Plan (RAP), and to hold a Public Hearing to receive comments from the public concerning the proposed remedial actions for the former Nebraska Solvents Company (NSC) Site located in eastern Grand Island, Nebraska. The proposed RAP was prepared by Union Pacific Railroad (UPRR), owner of the property, under the Nebraska Voluntary Cleanup Program (VCP) Guidance, and contains site investigation information as well as the proposed remedial actions. This fact sheet provides background information regarding the site, a summary of the nature and extent of contamination, a description of completed interim remedial actions, proposed remedial actions, and public participation procedures.

I. Background

The former NSC lease property consists of a 1.7 acre parcel of land and a metal building located at 1200 Highway 30 East, approximately ¼ mile west of the intersection of Stuhr Road and Highway 30 East near the eastern city boundary. The legal description of the former NSC lease property is the northeast quarter of Section 15, Township 11 North, Range 9 West of the 6th Principal Meridian, Hall County, Nebraska.

UPRR leased the land to NSC from approximately 1971 to 1988. Chemical storage and distribution operations began in approximately 1973. Available records indicate that the following chemicals were stored and distributed, including: toluene, xylene, isopropyl alcohol, methanol, tetrachloroethene (PCE), trichloroethene (TCE), 1,1,1-trichloroethane (1,1,1-TCA), methylene chloride, acetone, and methyl ethyl ketone (MEK). NSC housed chemicals in 20 above-ground storage tanks (ASTs), an unknown number of 55-gallon drums, and two underground storage tanks (USTs) that contained diesel fuel and gasoline.

The building is currently vacant but was most recently occupied by Palleton of Nebraska, whose operations included construction and rehabilitation of wooden pallets using mechanical fasteners. Current land use at and near the lease property is limited to commercial and industrial uses, pursuant to the City of Grand Island zoning code. No tanks are known to remain at the site.

The draft RAP was prepared by UPRR through Foth Infrastructure & Environment, LLC and was submitted on February 1, 2010. The draft RAP has been revised pursuant to NDEQ review and comments. The final proposed RAP includes information on the environmental investigations of soil, groundwater, and soil gas, remedial action objectives (RAOs), and proposed remedial actions intended to achieve the RAOs.

II. Nature and Extent of Contamination

Soil and groundwater at and around the former NSC lease property are contaminated with chlorinated solvents and aromatic hydrocarbons attributed to industrial activities at the former NSC lease property. In addition to the chemicals known to have been stored and distributed at the facility, a number of

breakdown or daughter products have been found in soil and groundwater that pose environmental and human health risks including cis-1,2-dichloroethene (cis-1,2-DCE) , vinyl chloride (VC), and 1,1-dichloroethane (1,1-DCA). A plume of contaminated groundwater extends 3.5 miles east/northeast of the former NSC lease property, to just past Beck Road in Merrick County. The former NSC lease property and the additional 3.5 miles of contaminated groundwater constitute the NSC Site. Approximately 74 private drinking water wells have been impacted. No existing or former municipal wells are located in the impacted area.

Soil Contamination: The extent of soil impact is within the area of the former NSC lease property. Chemicals detected in soil above the remediation goals (RGs) (see Section III below) include: PCE, cis-1,2-DCE, 1,1,1-TCA, ethylbenzene, toluene, xylenes (total), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,1-dichloroethene (1,1-DCE), benzene, TCE, and VC.

Within the former tank storage yard, impacted soil is generally between 3 to 7 feet below ground surface (bgs) with impacts potentially as deep as 11 feet.

Groundwater Contamination: Impacted groundwater is present at the former NSC lease property and off-site for a distance of approximately 3.5 miles to the east/northeast. No free product has been observed at the NSC Site. The impacted area has been divided into four main areas: source area, near-source area, mid-plume area, and downgradient area. Chemical concentrations and nature of impact vary between the four areas.

- **Source Area:** Groundwater impacts in this area occur up to 30 feet bgs. The following compounds exceeded RGs in this area: cis-1,2-DCE, VC, benzene, ethylbenzene, toluene, xylenes (total), 1,3,5-trimethylbenzene, PCE, and TCE.
- **Near-Source Area:** Groundwater impacts in the area generally from Willow Street to Stuhr Road range from approximately 10 to 30 feet bgs. Compounds which exceeded the RGs include: 1,1-DCA, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, chloroethane, cis-1,2-DCE, ethylbenzene, toluene, VC, xylenes (total), 1,1-DCE, and 1,1,1-TCA.
- **Mid-Plume Area:** Groundwater impacts in the area generally from Stuhr Road to Shady Bend Road range in depth from approximately 20 to 80 feet bgs. The following compounds exceeded the RGs in this area: 1,1-DCA, cis-1,2-DCE, and PCE.
- **Downgradient Area:** The area from Shady Bend Road to Beck Road indicates a progressive deepening of the groundwater contaminant plume, occurring at approximately 40 feet to 80 feet bgs. The direction of the groundwater plume turns from an easterly direction to a northeasterly direction around Shady Bend Road. PCE is the only compound which exceeded the RG in this area.

Contamination has impacted residential drinking water wells in an area generally between Gunbarrel Road to the west, Beck Road to the east, Fort Kearney Road to the south and East Capital Drive to the north; in addition to a small number of residences along Seedling Mile Road, just west of Gunbarrel Road.

Soil Gas Contamination: In the source and near-source areas, ethylbenzene was the only chemical that was found to exceed a site-specific industrial soil gas screening level for the vapor intrusion pathway.

III. Remediation Goals:

Table 1 lists RGs for soil and groundwater at the site. RGs for groundwater are based on either maximum contaminant levels (MCLs), which are established by Title 118 – Ground Water Quality Standards and Use Classification; or for compounds that do not have an MCL, a risk-based number is used. RGs for soil are based on a dilution attenuation factor (DAF) of one (1), and are taken from EPA's Regional Screening Levels Master Table.

Table 1. Soil and Groundwater VCP Remediation Goals (RGs)		
Chemical of Interest	Soil RGs (µg/kg)	Groundwater RGs (µg/L)
Tetrachloroethene (PCE)	2.3	5.0
Trichloroethene (TCE)	1.8	5.0
1,1 - Dichloroethene (1,1 - DCE)	2.5	7.0
cis - 1,2 - Dichloroethene (cDCE)	21	70
trans - 1,2 - Dichloroethene (tDCE)	29	100
Vinyl Chloride (VC)	0.69	2.0
1,1,1 - Trichloroethane (TCA)	70	200
1,1 - Dichloroethane (DCA)	0.69	2.4
Chloroethane (CA)	5,900	23
Benzene	2.6	5.0
Ethylbenzene	780	700
Toluene	690	1,000
Xylenes (total)	9,800	10,000
1,2,4 - Trimethylbenzene (1,2,4 - TMB)	21	3.1
1,3,5 - Trimethylbenzene (1,3,5 - TMB)	520	3.1

IV. Interim and Proposed Remedial Actions

Interim Remedial Actions: As an interim remedial action, bottled water was offered and provided to any resident whose private drinking water well had a detection of PCE or TCE. In addition, in-home whole-house water treatment systems using granular activated carbon (GAC) were offered as a substitute for bottled water. Quarterly monitoring of the treated water (for homes with GAC systems), untreated water (for homes with bottled water), and water from unimpacted private water wells near the contaminated groundwater plume began in 2008. Results are provided to residents and to NDEQ. Periodic water samples will continue to be collected from water treatment systems that were installed in private residences to evaluate treatment performance and from currently unimpacted nearby private wells, until the proposed Grand Island City waster line extension is completed (explained on next page).

Proposed Remedial Actions:

Soil Remediation: Impacted soil will be excavated and disposed off-site. The bottom of the excavation will be lined with a geo-membrane fabric and one foot of gravel to create a firm base and then backfilled with compacted, clean fill.

Groundwater Remediation: NDEQ assigns Remedial Action Classifications (RAC) Numbers to groundwater pollution events as a way of designating the importance of cleaning up groundwater. These numbers are used to prioritize groundwater contamination events, with 1 being the highest priority and 3 being the lowest priority. Groundwater at the NSC Site has been given a classification of RAC-1 due to the fact that private drinking water supplies have been polluted.

In the source and near-source areas, Fenton's reagent will be injected into saturated zones to break down the chlorinated and aromatic hydrocarbons. UPRR proposes to conduct up to two additional phases of groundwater treatment as needed.

After completion of the source and near source area soil removal and chemical injection program, UPRR will conduct a monitored natural attenuation (MNA) study to determine if MNA can achieve groundwater

RGs within a reasonable time frame throughout the entire length of the contaminated groundwater plume. “Monitored natural attenuation” refers to the observed reduction of concentrations of contaminants as they degrade, migrate, and dilute under the natural attenuation process. This process, under favorable conditions, acts without human intervention, although groundwater monitoring will continue until RGs are met.

Soil Gas Remediation: No remedial actions are proposed to specifically address soil gas. Removal of source area soil and chemical oxidation of impacted source and near-source area groundwater is expected to be sufficient to address the small zone within the source area that exhibited unacceptable soil gas contaminant concentrations.

Grand Island City Water Line Extension: UPRR proposes to offer water service line connections to residents on existing lots who have been impacted and to those who may reasonably be impacted in the future, which would include all current residential property owners generally within or immediately adjacent to the area bounded by Gunbarrel Road, Beck Road, Fort Kearney Road, and East Capital Avenue. This municipal water supply would replace the use of bottled water and GAC water treatment systems.

UPRR will pay for water line extension and connection to individual homes for participating residents; however, utility bills are the responsibility of the homeowner. Homeowners will have six (6) months to accept the offer to be connected to City water. If after six (6) months the homeowner declines the connection, homeowners may still connect to the City water line extension; however at their own cost. Homeowners may decline to be connected to City water, but thereafter, UPRR will not supply bottled water or maintain the whole-house GAC systems.

Each resident will have the choice of either having their existing well abandoned by a Nebraska licensed well driller, or having their well remain in place, but be disconnected from the home potable water supply if the resident wants to maintain the well for non-potable purposes. UPRR will continue to collect and analyze groundwater samples from monitoring wells within and adjacent to the area of groundwater impact until RGs are met.

Institutional Controls: If remedial actions (soil excavation and chemical injections) do not yield results leading to unrestricted land use for the former NSC lease property an institutional control will be placed on the former leased property prohibiting unrestricted land use. In addition, an institutional control in the form of a City ordinance will be implemented that will restrict the installation of potable water wells in the area of impacted groundwater.

V. Public Participation Procedures: You may receive additional information or submit written comments regarding the proposed remedial actions, in writing, on or before February 10, 2011. Comments and requests should be mailed to David Haldeman, Waste Management Division, Nebraska Department of Environmental Quality, PO Box 98922, Lincoln, NE 68509-8922, phone (402) 471-3388. In addition, the public is encouraged to attend and provide comments at the Public Hearing to be held at Grand Island City Hall on February 10, 2011.

Contact: The administrative record pertaining to the former Nebraska Solvents Company Site is available for inspection at the office of the Nebraska Department of Environmental Quality, 1200 “N” Street, Suite 400, The Atrium, PO Box 98922, Lincoln, NE 68509-8922 during regular business hours and at the Edith Abbott Memorial Library, 211 North Washington Street, Grand Island, NE 68801. A copy of the proposed RAP and other supporting documents are also posted on NDEQ’s website.

Please notify the Department of Environmental Quality if alternate formats of materials are needed by January 24, 2011. The NDEQ contact phone number is (402) 471-2186. TDD users please call 711 and ask the relay operator to call us at (402) 471-2186. Further information may be obtained from Mike Felix, Remediation Section, at (402) 471-3388.