

## November 2015

For more information or any questions concerning the former Nebraska Ordnance Plant project, please contact:

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or go to the project website at:

<http://www.nwk.usace.army.mil/Missions/Environmental/EnvironmentalProjects/NOP.aspx>

Information repository documents are available for review at:

### Mead Public Library

316 South Vine Street  
Mead, Nebraska 68041  
Phone: (402) 624-6605

### Hours

Tuesday: 10 a.m. - 1 p.m. and 2-6 p.m.  
Wednesday: 4-8 p.m.  
Thursday: 10-11 a.m., and 2-6 p.m.  
Saturday: 10 a.m. - 2 p.m.



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## 2014 Containment Evaluation

The U.S. Army Corps of Engineers conducts an annual assessment of the Operable Unit 2 hydraulic containment system which consists of a series of extraction wells that contain the groundwater contaminant plumes. This assessment is used by the Corps of Engineers, Nebraska Department of Environmental Quality, and the Environmental Protection Agency to determine whether the hydraulic containment system is containing Operable Unit 2 Record of Decision contaminants of concern that are above Final Target Groundwater Cleanup Goals. Additionally, this assessment is used to evaluate the effectiveness of the current groundwater extraction system. The Final Target Groundwater Cleanup Goals are listed below.

Contaminants of Concern	Final Target Groundwater Cleanup Goals (micrograms per liter)
methylene chloride	5
1,2-dichloropropane	5
TCE	5
1,3,5-trinitrobenzene	0.778
2,4-dinitrotoluene	1.24
RDX	2
2,4,6-trinitrotoluene	2

The 2014 Containment Evaluation is finalized and can be found in the Information Repository at the Mead Library.

Hydraulic containment is evaluated based on chemical data collected from a network of compliance monitoring wells located downgradient of the groundwater extraction system. If contaminants were to get past the containment system, they would be detected in the compliance monitoring wells. These compliance wells are sampled annually. During the evaluation period of 2014, no Record of Decision contaminants of concern were detected above Final Target Groundwater Cleanup Goals in the compliance wells and the perimeter wells. This provides evidence that the hydraulic containment system is operating successfully at the Site.

The Containment Evaluation also includes a review of the general performance of the hydraulic containment system. The hydraulic containment system consists of a series of extraction wells that function together to contain groundwater contaminant plumes that have contaminant levels greater than the Final Target Groundwater Cleanup Goals. An evaluation of how

these extraction wells function both alone and together is an important process in measuring the continuing effectiveness of the system. The Containment Evaluation includes collection of water levels and analyses of groundwater chemical data. This information is used to evaluate the area over which the extraction wells capture groundwater. A computer groundwater model is also used for this evaluation and uses various types of information including the 2014 sampling data from monitoring wells located throughout the Site and regional water level data measured from wells. Based on the 2014 Containment Evaluation report, the hydraulic containment system continues to capture groundwater and associated contamination.

Although the evaluation of the hydraulic containment system is an annual review, the compliance wells, along with a significant number of monitoring wells located throughout the Site and residential water supply wells within one mile of the contaminant plumes, are sampled throughout the year. This monitoring data is reviewed and evaluated following each sampling event. If an Operable Unit 2 Record of Decision contaminant of concern is detected above Final Target Groundwater Cleanup Goals in a residential water supply well or compliance well, immediate action by the Corps will be undertaken to evaluate and address the issue.

The figure on the inside of this newsletter shows the locations of perimeter, compliance, and extraction wells.

## New Extraction Well EW-18

During computer modeling activities associated with the 2012 Containment Evaluation, it was predicted that in the future a portion of the Load Line 2 plume with RDX concentrations greater than the Final Target Groundwater Cleanup Goals would move past existing extraction wells EW-7 and EW-9. As a result of this, the U.S. Army Corps of Engineers will be installing a new extraction well, EW-18, between extraction wells EW-7 and EW-9. EW-18 will be a supplementary containment well for the Load Line 2 plume. Contaminated groundwater from EW-18 will be treated with an ultraviolet treatment system in an adjacent pump house. The treated water will be discharged to Wahoo Creek. A test hole, observation well, and piezometer were installed near the location for EW-18 in March 2015 to obtain additional geologic and hydraulic data to aid in the design. Installation of EW-18 and construction of the pump house and UV treatment is anticipated to start in the next few months.

## Open House Meeting

The U.S. Army Corps of Engineers will host the Fall Open House on Wednesday, November 18, 2015 at the Veterans of Foreign Wars (VFW) Country Club in Yutan, Nebraska. The Yutan VFW Country Club is located south of Highway 92 at 1581 Yutan Road. The open house meeting is from 4:30 p.m. to 7:30 p.m. with technical staff in attendance to answer specific questions regarding the former Nebraska Ordnance Plant. Representatives from the U.S. Environmental Protection Agency and Nebraska Department of Environmental Quality are expected to attend as well. A variety of handouts and displays will be available along with refreshments. Additionally, a brief informational presentation will be given on the 2014 Containment Evaluation. The presentation will be given hourly at 5:00 p.m., 6:00 p.m., and 7:00 p.m. For further information regarding the meeting, contact the U.S. Army Corps of Engineers Project Manager at (816) 389-3563.



Solar Array at Main Plant  
Photo by HydroGeoLogic, Inc.

## Operation and Maintenance Summary

Operation of the Load Line 1, Advanced Oxidation Process, and Load Line 4 groundwater treatment plants, and the ultraviolet treatment systems have resulted in removal of the following amounts of contaminants of concern from groundwater as of September 30, 2015, since their respective startup:

TCE (trichloroethene) removed

- Load Line 1 groundwater treatment plant – 1,124 pounds
- Advanced Oxidation Process treatment plant – 30,471 pounds
- Load Line 4 groundwater treatment plant – 4,078 pounds

RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine) removed

- Ultraviolet treatment systems – 70 pounds

Gallons of water treated since startup:

- Load Line 1 groundwater treatment plant – 1,781,890,000 gallons
- Advanced Oxidation Process treatment plant – 1,789,990,000 gallons
- Load Line 4 groundwater treatment plant – 1,359,860,000 gallons
- Ultraviolet treatment systems – 960,721,000 gallons



Ultraviolet Treatment System  
Photo by HydroGeoLogic, Inc.

