

RED OAK LANDFILL
(Red Oak, Iowa)

GENERAL DESCRIPTION

The site was owned and operated by the city of Red Oak as a landfill from 1962 to 1974. It includes about 40 acres generally described as the NW 1/4 of the SW 1/4 of Section 17, T72N, R38W, in Montgomery County, Iowa. The site is located near the East Nishnabotna River, about 1.5 miles northwest of Red Oak, Iowa. The site was operated as a limestone quarry from 1947 to 1953-54 and was subsequently purchased by the city of Red Oak for use as a landfill. It was entered on the State Registry in December 1986 and the EPA placed it on the National Priorities List (NPL) in March 1989 and delisted from the NPL in September 2005.

SITE CLASSIFICATION

In 2001 the site was reclassified as “d” Site Properly Closed Requires Continued Management.

TYPE AND QUANTITY OF HAZADROUS WASTE

Waste delivered to this site included municipal refuse and industrial waste from several industries. Union Carbide-Battery Production Division, Uniroyal Hose Company, and Art Calender Company are considered the major contributors of industrial waste at the site. Waste containing hazardous materials including; lead, mercury, tetrachloroethylene (PCE), toluene, diacetone alcohol, and methyl isobutyl ketone (MIK) were disposed at this site. Union Carbide disposed at least 1,144 drums solvents including toluene, MIK, PCE, mineral spirits, and diacetone alcohol. The disposal also included laminated paper with high mercury levels. Uniroyal disposed of filter paper material with high lead levels. Art Calender Company disposed of ink wastes.

SUMMARY OF PUBLIC HEALTH AND ENVIRONMENTAL CONCENRS

During the Remedial Investigation (RI), elevated levels of volatile organic compounds (VOCs) were detected in subsurface soil and seeps in the southeast corner of the landfill near the river. Samples were collected from two seeps along the bank of the river. Local residences and small businesses get their drinking water from shallow wells within three miles of the site. The closest residential well was sampled. No organic contaminants were detected and metal concentrations were considered within normal range.

STATUS OF ASSESSMENT, MONITORING OR REMEDICAL ACTIONS

The EPA is the lead agency and conducted the initial site investigation in 1983.

In August 1987 the EPA conducted a site reconnaissance and completed a Remedial Investigation (RI) and Feasibility Study (FS) Work Plan.

In December 1989 the EPA and the responsible parties signed a Consent Order for an RI/FS. The RI was conducted with a Phase I part in 1990 and a Phase II part in 1991. The Remedial Investigation (RI) was completed in May 1991. A river-bank slope stability study was completed in 1992 and the Feasibility Study (FS) was completed in August 1992.

The EPA completed the Record of Decision (ROD) for the site in March 1993. The selected remedial alternatives included in the ROD were:

- Installation of a sanitary landfill cap in accordance with the state's solid waste regulations 567:IAC113.
- Land contouring and revegetation to stabilize the river bank slope.
- Construction of a security perimeter fence and placement of deed restrictions to prevent inappropriate uses of the site.
 - Implementation of a groundwater monitoring program with annual reporting.

In 1996, the EPA issued an Explanation of Significant Differences (ESD) for a cleanup action. The ESD included a reduction in the area and the depth of soil materials required for the landfill cap. The ESD also limited riverbank control measures to vegetation and landscaping to prevent erosion at the top of the landfill. The EPA also entered a consent decree with the Potential Responsible Parties to perform the Remedial Design/ Remedial Action (RD/RA) for the site. The remedial measures were commenced in August 1997 and completed in November 1997. The city of Red Oak and an industrial party are responsible for ongoing groundwater monitoring and maintenance of the landfill. The Superfund five-year review that was conducted in 2007 concluded that the remedy remained protective.

In 2008 the EPA prepared a draft re-use assessment report for the site. Slumping of the riverbank slope resulted from heavy rains in June of 2008. EPA and the responsible parties continue to address the riverbank slumping and the responsible parties continue to conduct annual groundwater sampling. A Superfund Five-Year review report was completed July 2013. The Five-Year review found that the site remedy continues to be protective.

The DNR assists EPA on oversight of the Red Oak Landfill site. Ongoing actions at the site include annual groundwater monitoring, inspection & maintenance of the landfill cap, security fencing and drainage structures, and the monitoring of the stability of the riverbank slope.

2016: The 2015 Annual Report and O&M report was completed and an addendum report submitted. The Five-Year Review was initiated July and a site visit for the Five-Year Review was in November.

2017: The following site activities were completed

- The 2016 Annual Report site status report and O&M reports were completed.
- The Fourth Five Year Review was completed and the remedy is deemed protective of human health and the environment

2019: The 2018 Monitoring and Operation & Maintenance report (MOMR) was completed. This MOMR covers eighteenth year of monitoring and inspection data collected under the Consent Decree. During the 2018 sampling event, water collected from seep/spring, surface water and groundwater was analyzed for Target Compound List (TCL) VOCs, total TCL inorganics (Short List) and dissolved TCL inorganics (Short List). The 2018 program also included the Spring Landfill Cap and Riverbank Slope Reconnaissance, Gauging of Inclinator INC-1, Annual Landfill Cap Maintenance, testing and inspection activities.

The 2018 sampling results do not indicate significant changes from previous trends observed for the analytes sampled. Two inspections of the riverbank were made in 2018. While some movement of soil was noted, no new areas of significant slope slumping or movement were identified and historic areas of slumping showed evidence of re-establishment of vegetation.

2020: Submission of 2019 monitoring and operation & maintenance report (MOMR). This report covers the nineteenth year of monitoring and inspection data collected under the Consent Decree and included the Spring Landfill Cap and Riverbank Slope Reconnaissance, Gauging of Inclinator INC-1, Annual Landfill Cap Maintenance, testing and inspection activities. The 2019 surface water sampling results indicate a slight increase in concentrations over 2018 results.

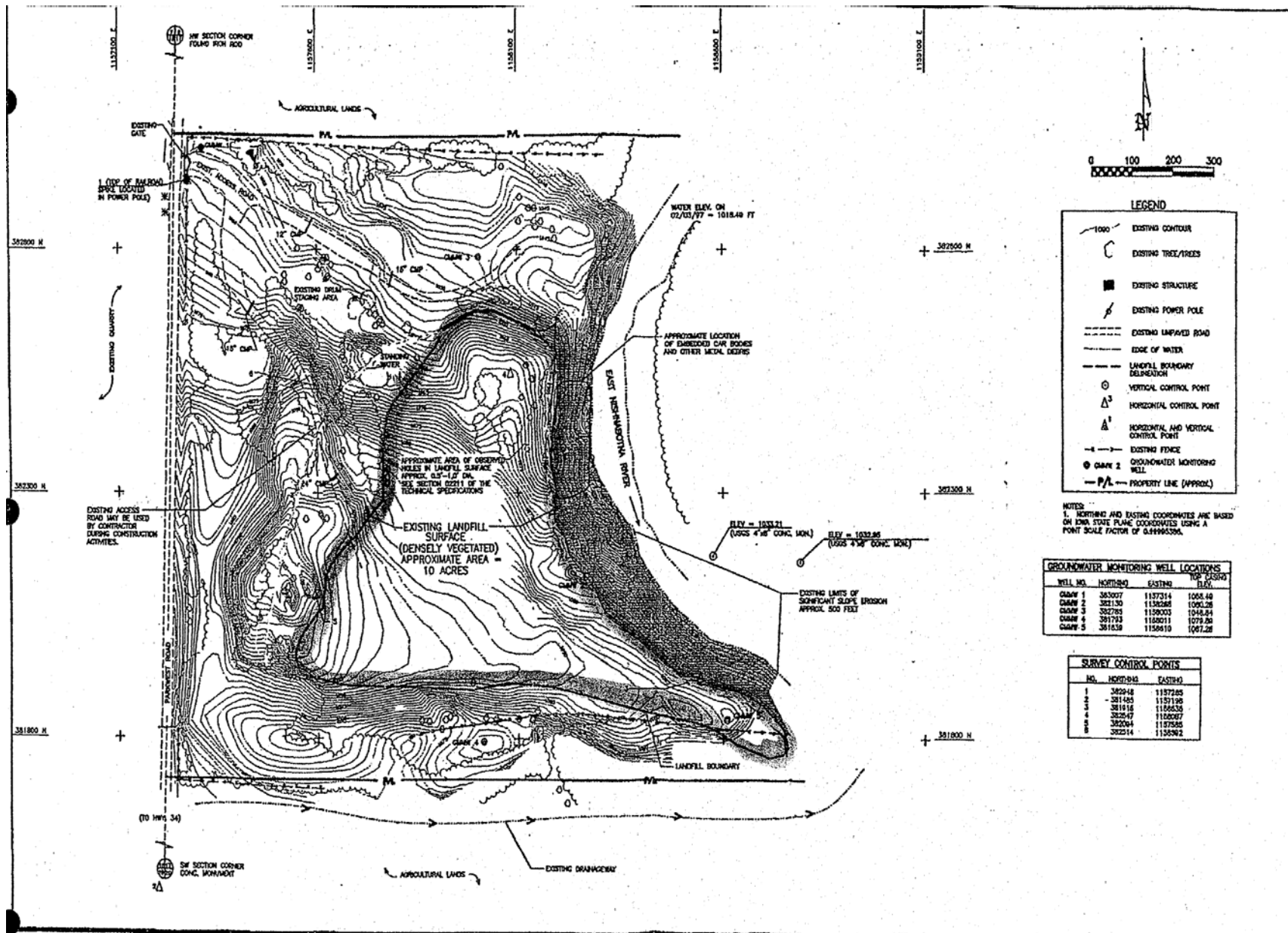
2021 Actions Completed: The 5th Five Year Review was initiated to determine if the remedy is protective

2022: Actions Completed: Completion of 5th Five year Review

2023: No activity

2024: 2023 Annual report received. No samples collected. Groundwater elevation monitored, and cap integrity assessed. River bank stability was also assessed.

2025: No activity



LEGEND

- 1000' EXISTING CONTOUR
- C EXISTING TREE/TREES
- EXISTING STRUCTURE
- EXISTING POWER POLE
- EXISTING UNPAVED ROAD
- EDGE OF WATER
- LANDFILL BOUNDARY DELINEATION
- VERTICAL CONTROL POINT
- HORIZONTAL CONTROL POINT
- HORIZONTAL AND VERTICAL CONTROL POINT
- EXISTING FENCE
- GROUNDWATER MONITORING WELL
- P.L. PROPERTY LINE (APPROX.)

NOTES:
1. HORIZONTAL AND EXISTING COORDINATES ARE BASED ON IOWA STATE PLANE COORDINATES USING A POINT SCALE FACTOR OF 0.99995396.

GROUNDWATER MONITORING WELL LOCATIONS

WELL NO.	NORTHING	EASTING	TOP ELEV.
GW-1	383077	1157314	1055.40
GW-2	382130	1158268	1090.28
GW-3	382785	1159003	1048.84
GW-4	381793	1158011	1079.80
GW-5	381838	1158610	1067.28

SURVEY CONTROL POINTS

NO.	NORTHING	EASTING
1	382948	1157285
2	381485	1157198
3	381616	1158535
4	382547	1158067
5	382064	1157585
6	382214	1158582

RSV ENGINEERING, INC.
ENGINEERS, PLANNERS, SURVEYORS,
CONSTRUCTION MANAGERS,
ENVIRONMENTAL SCIENTISTS
110 N. UNION DR., SUITE C, JEFFERSON, MO 63148 (417) 674-3411

INITIALS	DATE
DESIGN: RSV	8/7/97
DRAWN: JSE	
CHECKED: RSV	
APPROVED:	

RED OAK LANDFILL SITE
REMEDIAL ACTION
RED OAK, IOWA

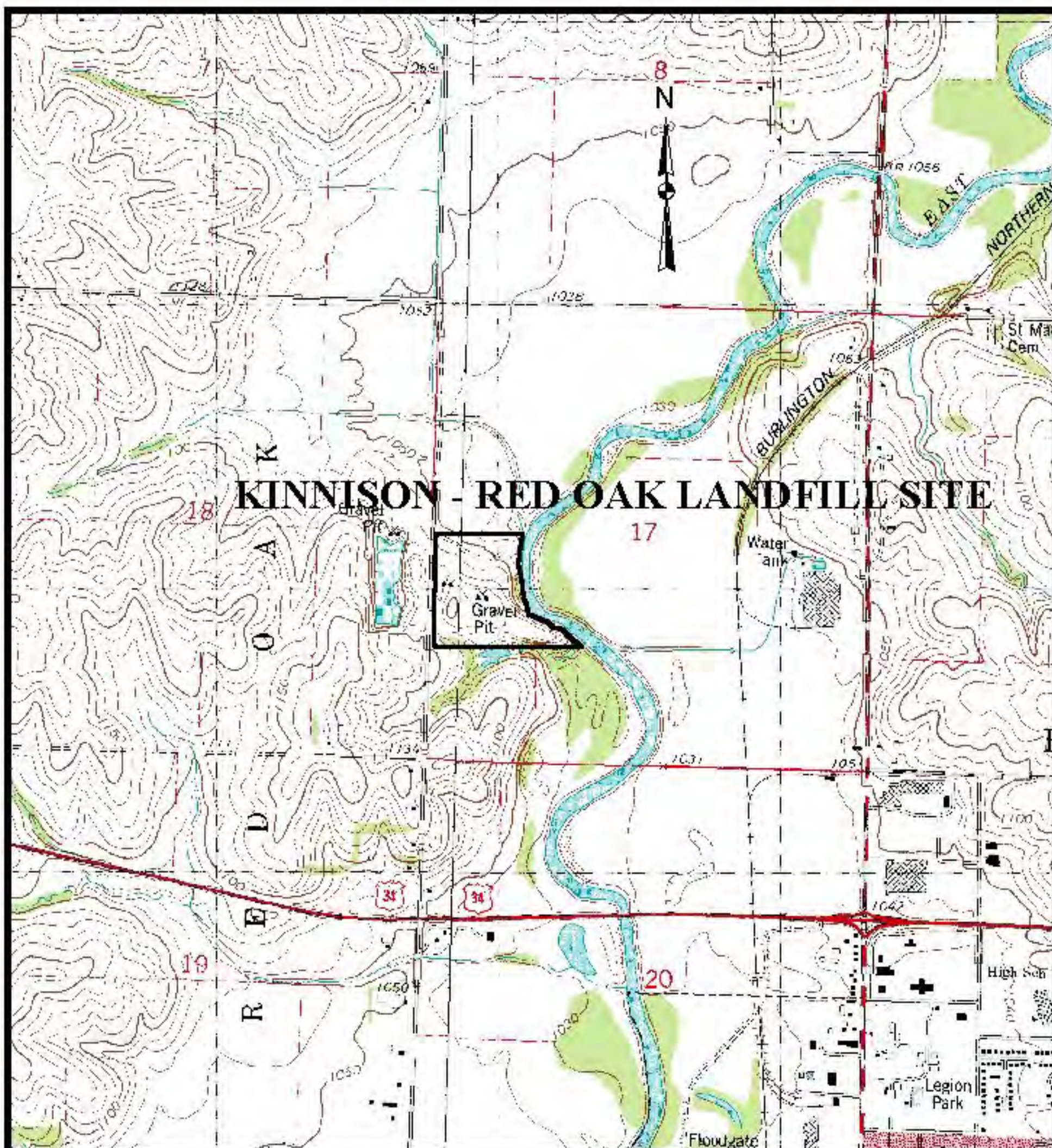
DRAWING CONFIDENTIAL:
THIS DRAWING AND ALL INFORMATION CONTAINED THEREON IS AND SHALL REMAIN THE PROPERTY OF RSV ENGINEERING, INC. AS AN INSTRUMENT OF PROFESSIONAL SERVICE. THE INFORMATION SHALL NOT BE USED IN WHOLE OR IN PART WITHOUT THE FULL KNOWLEDGE AND PRIOR WRITTEN CONSENT OF RSV ENGINEERING, INC.

**SITE PLAN
EXISTING CONDITIONS**

RSV PROJ. NO. 87005

SHEET NO.
1

(Kinnison, Lowell & Blanche - Red Oak Landfill)



Contour Interval 10 Feet

1000 0 1000 2000 3000 4000 5000 Feet