

### SCOPE OF PROJECT

**BARKER LEMAR** was retained by the Crawford County Solid Waste Agency to design and permit a 2.1 million cubic yard lateral expansion to their existing landfill. **BARKER LEMAR** worked closely with the landfill staff and the Iowa Department of Natural Resources (IDNR) throughout the stages of the project to meet the needs of the agency and IDNR requirements.

### IMPLEMENTATION

**BARKER LEMAR** designed eight Subtitle D cells east of the current fill area in the adjacent borrow area. The size of each expansion cell was designed to consider construction and operational costs.

A groundwater underdrain system was designed to maintain separation of groundwater from the liner system. In addition, the underdrain system was designed in sections that could be isolated for treatment if contamination was ever detected in the groundwater.

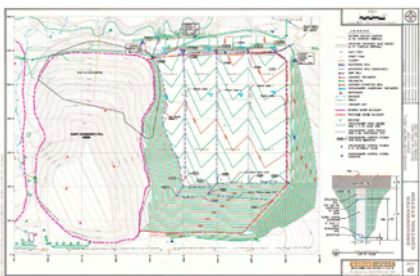
The leachate collection system was designed to be efficient, easy to maintain, and economical. The collection system also included provisions to allow for the future implementation of leachate recirculation to stabilize the waste.

Storm water control for the site was designed to meet current state requirements while allowing unimpeded daily operations, limit leachate generation, and be easily maintainable and expandable.

A soil balance was also calculated to determine available soil volumes (excess or deficient) for each phase. This will allow the agency to manage their soil use throughout the life of the expansion.

The hydrologic monitoring system plan, leachate control system plan, emergency response and remedial action plan, explosive gas control plan, and closure and post-closure plan were developed as part of the lateral expansion plan.

**BARKER LEMAR** also performed settlement and slope stability calculations to ensure the integrity of the expansion design.



**CONTINUED-**

**LATERAL EXPANSION PLAN -  
CRAWFORD COUNTY SANITARY LANDFILL -  
DENISON, IOWA**

The final draft of the lateral expansion plan was submitted to the IDNR for their review and approval.

**SERVICES**

Monitoring well installation; topographic surveying; development drawings and site maps using AutoCAD design software; engineering design including phasing; cell and cap design; groundwater and leachate system designs; storm water control; monitoring and closure/post-closure plan development; settlement and slope stability calculations.

**TIMELINE**

Project Start Date: March 2005

Project Completed: July 2006