

waste's constituents will leach and move out of the landfill. Since EPA has made a final decision to delist Bekaert's F006 waste, Bekaert must meet the delisting levels and dispose of the waste in a Subtitle D landfill, because EPA determined the delisting levels based on a landfill model.

3. Why Is the EPACMTP an Improvement Over the EPACML?

The EPACMTP includes three major categories of improvements over the EPACML. The improvements include:

- 1—Incorporation of additional fate and transport processes (e.g., degradation of chemical constituents; fate and transport of metals);
- 2—Use of enhanced flow and transport equations (e.g., for calculating transport in three dimensions); and
- 3—Revision of the Monte Carlo methodology (e.g., to allow use of site-specific, waste-specific data) (*EPACMTP Background Document and User's Guide*, Office of Solid Waste, U.S. EPA, Washington, DC, September 1996).

A summary of the key enhancements which have been implemented in the EPACMTP is presented here and the details are provided in the background documents to the proposed 1995 Hazardous Waste Identification Rule (HWIR) (60 FR 66344, December 21, 1995). The background documents are available through the RCRA HWIR **Federal Register** proposal docket (60 FR 66344, December 21, 1995). For more information, please contact David Langston, North Enforcement and Compliance Section, (Mail Code 4WD—RCRA), RCRA Enforcement and Compliance Branch, U.S. Environmental Protection Agency, Region 4, Sam Nunn Atlanta Federal Center, 61 Forsyth Street, SW., Atlanta, Georgia 30303, (404) 562-8588, or call, toll free, (800) 241-1754, and leave a message, with your name and phone number, for David Langston to return your call. You may also contact him by e-mail: langston.david@epa.gov.

The EPACML accounts for: one-dimensional steady and uniform advective flow; contaminant dispersion in the longitudinal, lateral, and vertical directions; and sorption. However, advances in groundwater fate and transport have been made in recent years and EPA proposes and requests public comment on the use of the EPACMTP, which is a more advanced groundwater fate and transport model, for this RCRA delisting.

The EPACML was limited to conditions of uniform groundwater flow. It could not handle accurately the

conditions of significant groundwater mounding and non-uniform groundwater flow due to a high rate of infiltration from the waste disposal units. These conditions increase the transverse horizontal, as well as the vertical, spreading of a contaminant plume.

The EPACMTP model overcomes the deficiencies of the EPACML in the following way: The subsurface as modeled with the EPACMTP consists of an unsaturated zone beneath a landfill and a saturated zone, the underlying water table aquifer. Contaminants move vertically downward through the unsaturated zone to the water table. The EPACMTP simulates one-dimensional, vertically downward flow and transport of contaminants in the unsaturated zone, as well as two-dimensional or three-dimensional groundwater flow and contaminant transport in the underlying saturated zone. The EPACML used a saturated zone module that was based on a Gaussian distribution of the concentration of a chemical constituent in the saturated zone. The module also used an approximation to account for the initial mixing of the contaminant entering at the water table (saturated zone) underneath the waste unit. The module accounting for initial mixing in the EPACML could lead to unrealistic groundwater concentrations. The enhanced EPACMTP model incorporates a direct linkage between the unsaturated zone and saturated zone modules which overcomes these limitations of the EPACML. The following mechanisms affecting contaminant migration are accounted for in the EPACMTP model: transport by advection and dispersion, retardation resulting from reversible linear or nonlinear equilibrium sorption on the soil and aquifer solid phase, and biochemical degradation processes. The EPACML did not account for biochemical degradation, and did not account for sorption as accurately as the EPACMTP.

The EPACMTP consists of four major components:

- 1—A module that performs one-dimensional analytical and numerical solutions for water flow and contaminant transport in the unsaturated zone beneath a waste management unit;
- 2—A numerical module for steady-state groundwater flow subject to recharge from the unsaturated zone;
- 3—A module of analytical and numerical solutions for contaminant transport in the saturated zone; and
- 4—A Monte Carlo module for assessing the effect of the uncertainty resulting

from variations in model parameters on predicted receptor well concentrations.

4. Where Can Technical Details on the EPACMTP Be Found?

For more information on DRAS and EPACMTP, please see 65 FR 75637–75651, December 4, 2000; 65 FR 58015–58031, September 27, 2000; and 66 FR 9781–9798, February 12, 2001. The December 4, 2000 **Federal Register** discusses the key enhancements of the EPACMTP and the details are provided in the background documents to the proposed 1995 Hazardous Waste Identification Rule (HWIR) (60 FR 66344, December 21, 1995). The background documents are available through the RCRA HWIR FR proposal docket (60 FR 66344, December 21, 1995). A summary of DRAS is presented in 66 FR 9781–9798, February 12, 2001. Footnote 2 in Preamble section I.B.2. above lists the URL addresses for Region 6 guidance on DRAS.

5. What Method Is EPA Proposing To Use To Determine Delisting Levels for This Petitioned Waste?

Bekaert submitted to the EPA analytical data from its Dyersburg, Tennessee plant and the Rogers, Arkansas plant. Samples of wastewater treatment sludge were collected from roll-off containers over a one-month period. A summary of analytical data is presented in Table 1 of section II below, with analytical details in the Table footnotes.

After reviewing the analytical data and information on processes and raw materials that Bekaert submitted in the delisting petition, EPA developed a list of constituents of concern and calculated delisting levels and risks using DRAS and EPACMTP DAFs as described above. EPA requests public comment on this proposed method of calculating delisting levels and risks for Bekaert's petitioned waste.

EPA considered two additional methods of evaluating Bekaert's delisting petition and determining delisting levels: (1) Setting limits on total concentrations of constituents in the waste that are more conservative than results obtained by DRAS for total concentrations; and (2) setting delisting levels at the Land Disposal Restrictions (LDR) Universal Treatment Standards (UTS) levels in 40 CFR 268.48. The UTS levels for Bekaert's constituents of concern are the following:

Arsenic: 5.0 mg/l TCLP; Barium: 21 mg/l TCLP; Cadmium: 0.11 mg/l TCLP; Chromium: 0.60 mg/l TCLP; Cyanide Total: 590 mg/kg; Cyanide Amenable: 30 mg/kg; Lead: 0.75 mg/l