Docket no:
0500201; POOM-032

Draft Agenda
West Valley Citizen Task Force Meeting

Ashford Office Complex
Tuesday, September 18, 2001
7:00 p.m. - 9:30 p.m.

Welcome and Administrative Announcements ..... **Tom Attridge**
NYSERDA
Melinda Holland
Holland and Associates

Report on Long-Term Stewardship Conference ..... **Eric Wohlers**
CTF

Report on CTF Future Site Use Work Group ..... **Mark Mitskovski**
CTF

Presentation on Local Geology ..... **Paul Bembia**
NYSERDA

Presentation on Status of Erosion Modeling Work ..... **Joe Price**
SAIC

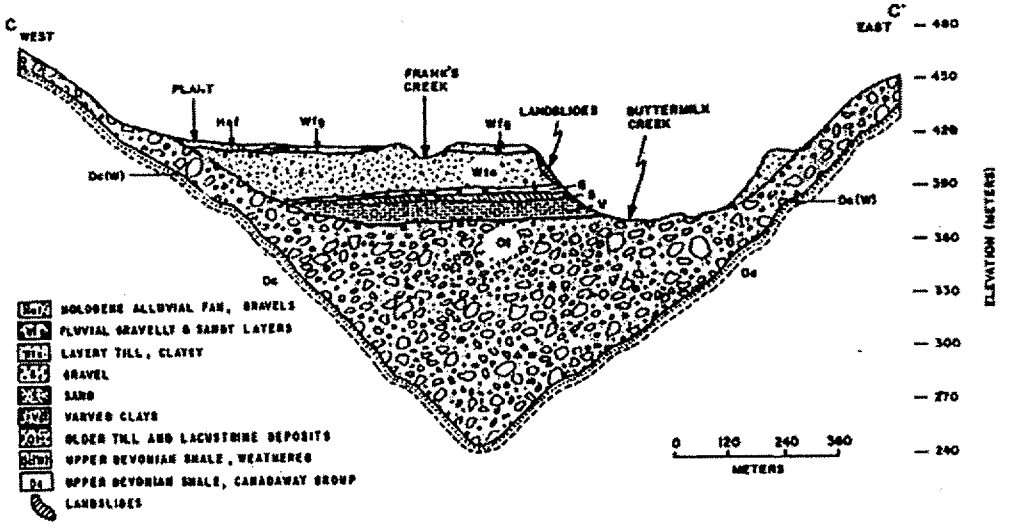
Next Steps

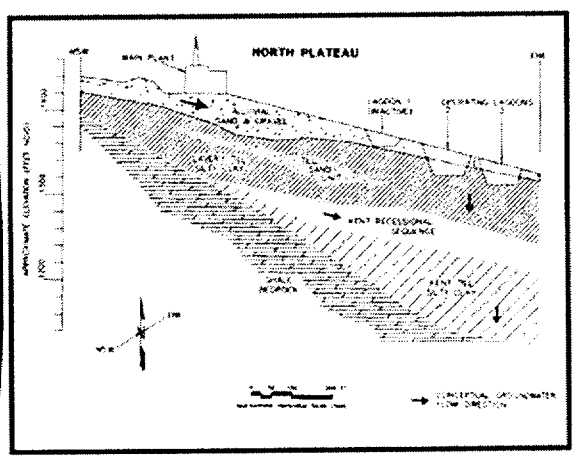
Observer Comments

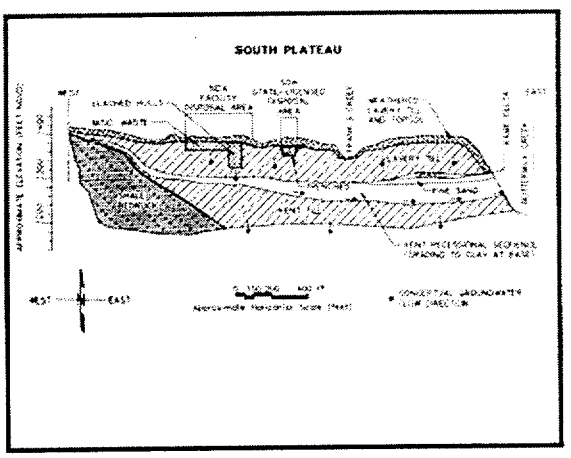
Adjourn

Site Geology

Generalized Geologic Cross Section







Update of Analysis of Long-Term, Unmitigated Erosion for the WV EIS

Joe Price
SAIC

September 18, 2001

Summary of Content

- Part 1: Background
- Part 2: Erosion Analysis in DEIS (CTF, April 1997)
- Part 3: Current Erosion Analysis (Landform Evolution Modeling, work in progress)
- Part 4: Plan for Completing Erosion Analysis

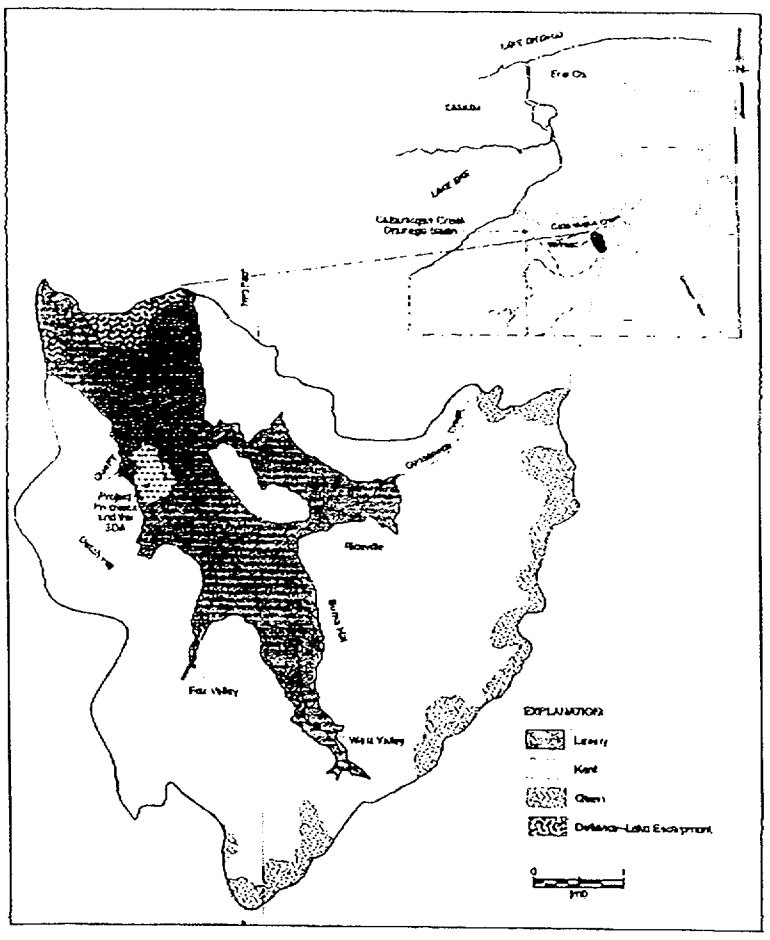
Part 1 Background

Purpose of Long-Term Erosion Analysis

- Understand role of erosion in contributing to environmental impacts of site management alternatives
- Support estimation of dose for long time periods for NRC review

Part 1 Background

Physical Setting



Part 1 Background

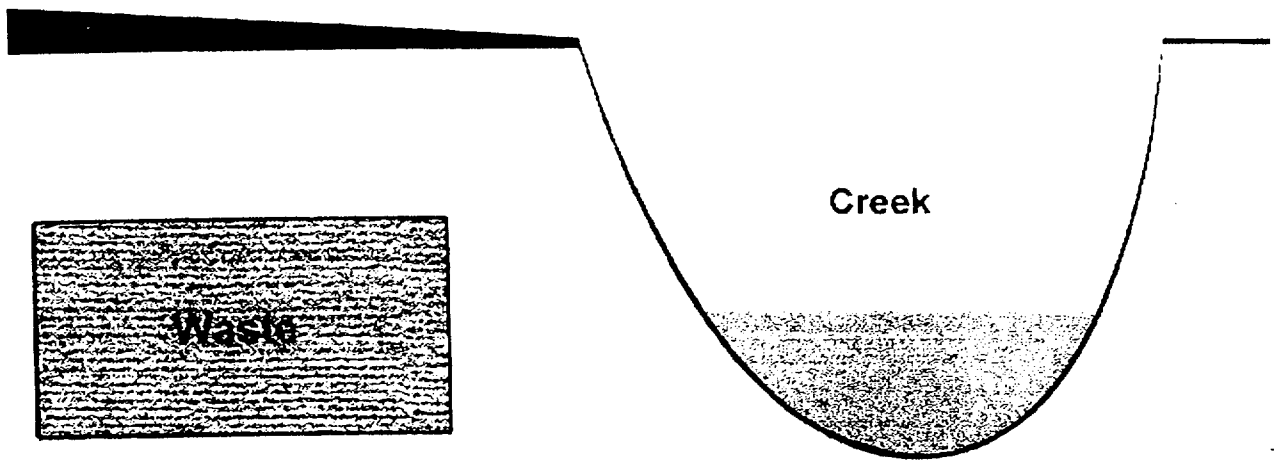
Upper Level Erosion Processes

- Sheet and rill erosion
- Stream downcutting and valley rim widening
- Gully formation and advance

Part 1 Background

Sheet and Rill Erosion

- **Sheet and Rill Erosion**
  - Top surface material is removed

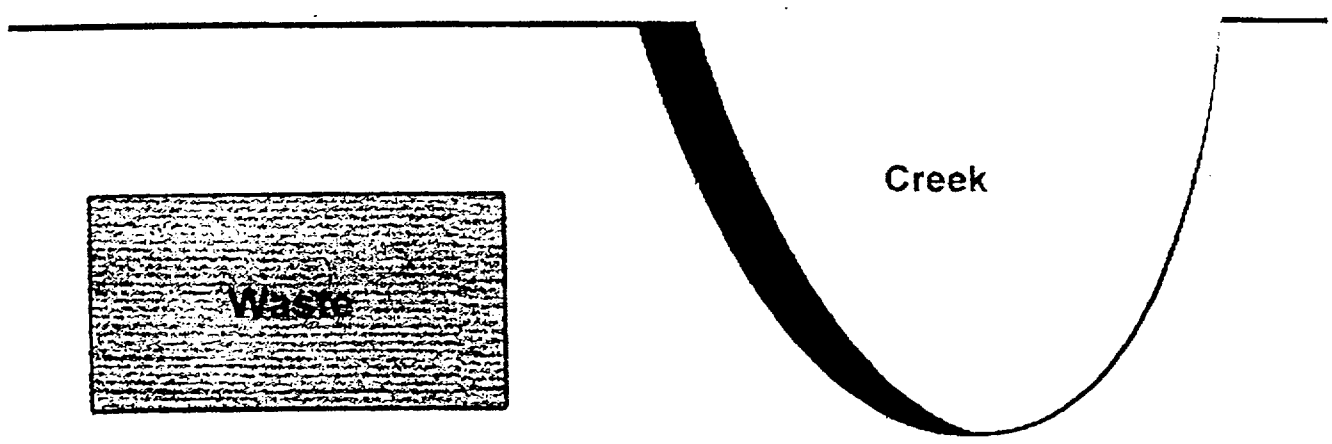


Cross Section View

Part 1 Background

Stream Downcutting and Valley Rim Widening

- **Rim Widening**
  - Creek bank material is removed

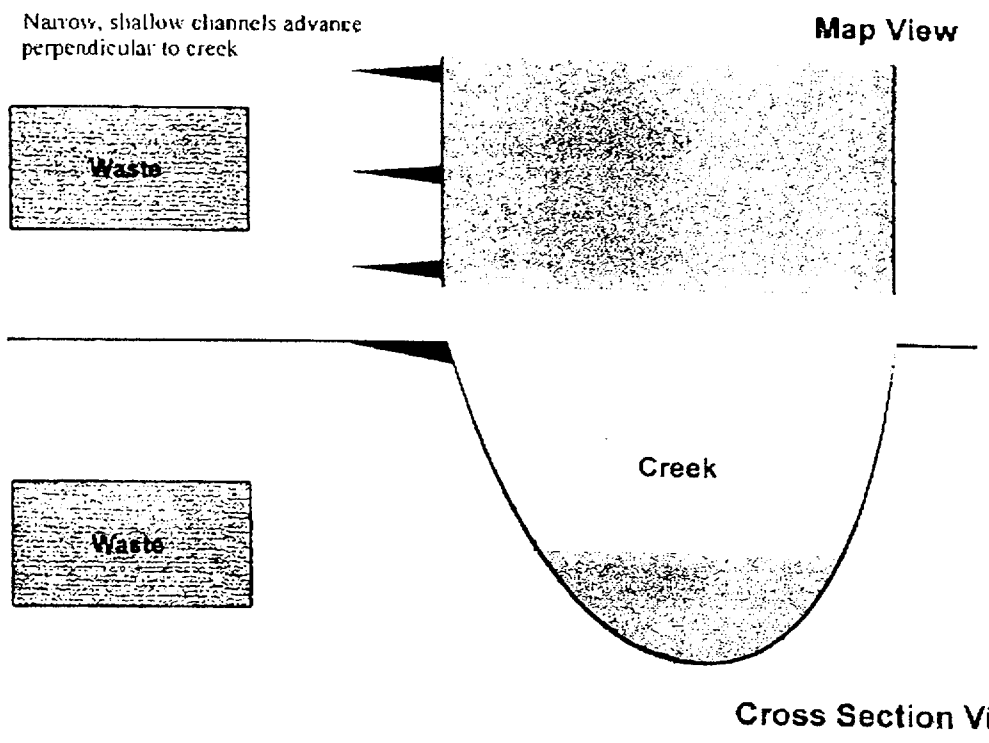


Cross Section View

Part 1 Background

Gully Formation and Advance

- **Gully Advance**
  - Narrow, shallow channels advance perpendicular to creek



Part 2 Draft EIS Analysis

Technical Approach

- Use U.S. Army Corps of Engineer models to predict stream downcutting for single storms of differing magnitudes
- Combine estimates of downcutting of single storms in a probabilistic manner to estimate average downcuttting for a long period of time

Part 2 Draft EIS Analysis
Results

- South Plateau facilities affected within 1,000 years
- North Plateau facilities not affected within 1,000 years

Part 2 Draft EIS Analysis

Results (Figure L-2)

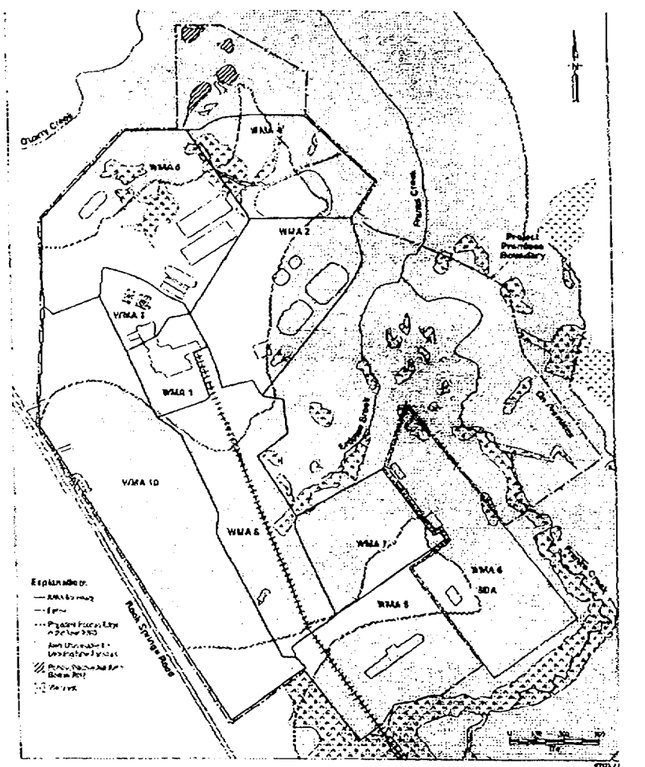


Figure L-2. Projected Shoreline Front After 1,000 Years at 90 Percent Quantile Rate.

Part 2 Draft EIS Analysis

Limitations

- Models do not consider gully growth
- Models do not explicitly address all underlying erosion processes
- Models consider only stream channels, not adjacent hillslopes
- Models intended for analysis of response to single storms were extended to analyze a sequence of storms

Part 3 Current Erosion Analysis

Landform Evolution Modeling
SIBERIA Characteristics

- Integrates hillslope and stream channel erosion processes
- Designed to simulate long periods of time
- Models gully growth
- Uses actual topography as initial condition
- Sediment transport limited model
- Uses time averaging of run-off to represent storms of all magnitudes
- Can be executed in sequential (start/stop) manner to explicitly model large storms

Part 3 Current Erosion Analysis

Landform Evolution Modeling Technical Approach

- Use state-of-the-art integrated system model (SIBERIA) for long-term projections
- Calibrate the SIBERIA model using a short-term, physical process-based model that considers hillslopes and streams (WEPP)
- Explicitly include stochastic average of storms of differing magnitude and 100-year storms in calibration model
- Establish boundary conditions for stream downcutting using WEPP predictions of sediment loss from channels
- Analyze sensitivity to the range of potential conditions

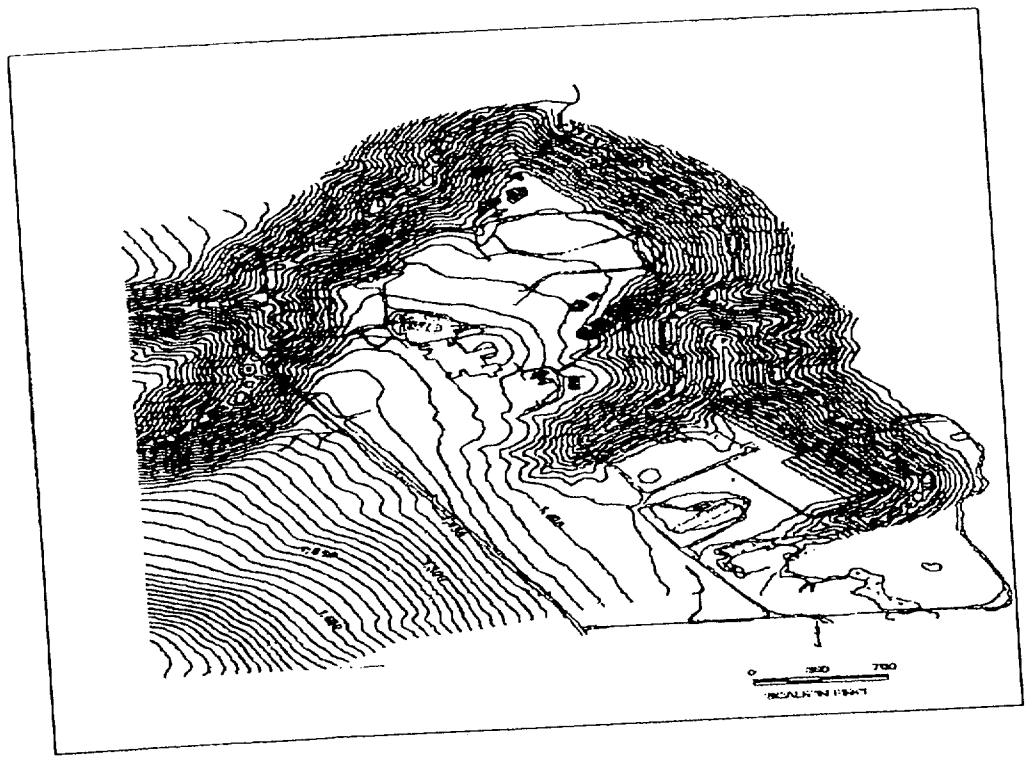
Part 3 Current Erosion Analysis

Landform Evolution Modeling Results

- South Plateau affected within 1,000 years
- North Plateau affected within 10,000 years

Part 3 Current Erosion Analysis

Results: Illustrative Topography at 1,000 years



Part 3 Current Erosion Analysis

Landform Evolution Modeling Limitations

- Model does not explicitly address all underlying erosion processes
- No model can reliably predict conditions for a 10,000 year period
- Range of possible conditions difficult to establish
- Grid size and time period of analysis impose computational constraints

Part 4 Plan for Completion of Erosion Analysis

- Completion of sensitivity analysis
- Internal review
- Integrate with dose model
- Review and discuss with NYSDEC and NRC
- Integrate into EIS