STATE OF NEW MEXICO
BEFORE THE WATER QUALITY CONTROL COMMISSION

In the Matter of:	)	
PROPOSED AMENDMENT TO 20.6.2 NMAC (Copper Rule)	)	**No. WQCC 12-01(R)**

EXHIBIT SCOTT – D-36

INVESTIGATION AND DESIGN OF MINE DUMPS

INTERIM GUIDELINES

Prepared for the:

British Columbia Mine Dump Committee with funding provided from the Provincial Sustainable Environment Fund

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MAY 1991

TABLE 6.4

INTERIM GUIDELINES FOR MINIMUM DESIGN FACTOR OF SAFETY [1]

STABILITY CONDITION	SUGGESTED MINIMUM DESIGN VALUES FOR FACTOR OF SAFETY	
	CASE A	CASE B
STABILITY OF DUMP SURFACE		
-Short Term (during construction)	1.0	1.0
-Long Term (reclamation – abandonment)	1.2	1.1
OVERALL STABILITY (DEEP SEATED STABILITY)		
-Short Term (static)	1.3 – 1.5	1.1 – 1.3
-Long Term (static)	1.5	1.3
-Pseudo-Static (earthquake) [2]	1.1 – 1.3	1.0

CASE A:
- -Low level of confidence in critical analysis parameters
- -Possibly unconservative interpretation of conditions, assumptions
- -Severe consequences of failure
- -Simplified stability analysis method (charts, simplified method of slices)
- -Stability analysis method poorly simulates physical conditions
- -Poor understanding of potential failure mechanism(s)

CASE B:
- -High level of confidence in critical analysis parameters
- -Conservative interpretation of conditions, assumptions
- -Minimal consequences of failure
- -Rigorous stability analysis method
- -Stability analysis method simulates physical conditions well
- -High level of confidence in critical failure mechanism(s)

NOTES: 1. A range of suggested minimum design values are given to reflect different levels of confidence in understanding site conditions, material parameters, consequences of instability, and other factors.

2. Where pseudo-static analyses, based on peak ground accelerations which have a 10% probability of exceedance in 50 years, yield F.O.S. < 1.0, dynamic analysis of stress-strain response, and comparison of results with stress-strain characteristics of dump materials is recommended.