

APPENDIX 7-21

UNDERGROUND WATER BUDGET - JANUARY 15, 1991

CRANDALL CANYON MINE: UNDERGROUND WATER BUDGET

Current mine water inflow: Total: approximately 100 gpm

Water volumes exiting mine and consumed in mine:

Coal: 27.5 gpm

coal moisture content = 5.5% by weight
current daily production = 3000 tons
- $0.055 \times (3000 \text{ tons/day}) \times (2000 \text{ lbs/ton}) \times (\text{gal}/8.3453 \text{ lbs})$
*(day/1440 mins) = 27.5 gpm

Evaporation due to mine ventilation: 50-60 gpm $\pm 10\%$ (a)

Infiltration (approx.) along mine floor and sump(s): 10 gpm(a)

Underground mine consumption: 7.6 gpm

continuous miner - $(15 \text{ gpm}) \times (4 \text{ hrs/shift}) \times (2 \text{ shifts/day})$
(240 days/yr)(yr/8760 hrs) = 3.3 gpm
roof bolter - $(13 \text{ gpm}) \times (5 \text{ hrs/shift}) \times (2 \text{ shift/day})$
(240 days/yr)(yr/8760 hrs) = 3.6 gpm
belt lines - $(0.25 \text{ gpm}) \times (3 \text{ locals}) \times (6 \text{ hrs/shift}) \times (2 \text{ shift/day})$
(240 days/yr)(yr/8760 hrs) = 0.2 gpm
bath house - $(1000 \text{ gal/day}) \times (240 \text{ days/yr})$
*(yr/525,600 mins) = 0.5 gpm

Total: approximately 100 gpm

(a) Estimate based on professional judgement and experience at other mines.