Note that CLOUDY (version 80.06) contains data only on the elements H, He, C, N, O, Ne, Mg, Al, Si, S, Ar, Ca, and Fe. We have approximated the Phosphorus fractional abundances by using the values for Sulphur. For the purpose of estimating line strengths, this approximation is negligible compared to the large uncertainty in relative abundances.

Three ionization parameters were selected by looking at the curves of fractional abundance versus log(U), see chapter 3. U=–2.2 corresponds to a level just below the Si^{+3} peak, U=–1.7 corresponds to a level just above the C^{+3} peak, and U=–1.2 corresponds to a level just above the N^{+4} peak. From our own studies, U for at least some BALRs is at least –1.7, and probably closer to –1.2. The results are shown in table 9-1. Columns 1 and 2 give the ion and rest, vacuum wavelengths of the transitions. These values should be used for precise wavelength values for the lines referred to throughout this thesis. Column 3 gives the log of the solar elemental abundances relative to hydrogen (log(H)=0). We use these abundances for convenient reference, but there are indications that metals may be enhanced in some BALRs (*cf.* Turnshek *et al.* 1987). Columns 4, 6, and 8 give the predicted ionic abundances as a percentage relative to neutral hydrogen (H^0=100), for the three values of U. Columns 5, 7, and 9 give the predicted percentage depth of the BAL trough, 100×(1 – *residual intensity*), scaled such that the C IV λ1549 (doublet) BAL trough has an optical depth (τ) of 3, or a residual intensity of ~0.05. The residual intensity is defined as the ratio between the flux at the bottom of the BAL trough and the flux level of the continuum, and we assume that *residual intensity* = $e^{-\tau}$. We have combined the metal doublets such the depth shows up as a single value calculated by adding the oscillator strengths. The reader should be cautioned that these values are very model dependent and are intended as a crude guess at what BALs might be present in the spectrum of BALQSOs.

Finally, we note that with *HST* it is possible to detect many more far UV lines including Ne VIII $\lambda\lambda$770,780, Ar VIII λ,λ700,713, and possibly Mg X λ,λ609,624, and He I λ584 (*cf.* Korista *et al.* 1992 and Junkkarinen *et al.* 1992). Observations of these