

## 2.0 TECHNICAL APPROACH

The technical approach for surface and groundwater resources consisted of three main components:

- Obtaining base year (2002) and historic water data for the CBNG and coal mining operations in the Wyoming PRB study area
- Defining the base year (2002) surface water and groundwater resources conditions based on existing regional reports
- Developing a calibrated numerical groundwater flow model for the eastern PRB for use in defining base year (2002) conditions (Task 1B) and for the assessment of potential impacts through year 2020 (Task 3B)

### 2.1 Data Collection

Data collection for water resources relied on existing published compilations of data for the PRB that were readily available to the public. The PRB Oil and Gas EIS (BLM 2003a), publications by Wyoming state agencies, data provided by the BLM, and water resource publications by the U.S. Geological Survey (USGS) were used.

#### 2.1.1 Groundwater

Data on groundwater levels and groundwater quality were obtained primarily from various water resources and geological publications prepared by the USGS. These publications are referenced in the appropriate sections of this report, where the data are presented. Additional data on groundwater levels came from the BLM monitoring well files and from the annual reports of the Gillette Area Groundwater Monitoring Organization (GAGMO), as well as Wyoming Department of Environmental Quality (WDEQ)/Land Quality Division (LQD) mine permit files for monitoring well data in the Wasatch Formation near the coal mines.

#### 2.1.2 Surface Water

Surface water data primarily came from the detailed basin studies available from the Wyoming Water Development Commission. Two principal studies included the Powder/Tongue River Basin Study (HKM Engineering et al. 2002a) and the Northeast Wyoming River Basins Study (HKM Engineering et al. 2002b).