SOUTH DAKOTA – 1995 Mineral Summary
Production, Exploration and Environmental Issues

Production: The gold mines in the northern Black Hills produced 559,055 ounces of gold in 1995, up about 0.5% from the previous year. Gold remained the leading mineral commodity in South Dakota in terms of value. The average price of gold in 1995 was $384.18, yielding a gross value of about $215 million. The table below lists production figures at the five active large scale operations. All mines are surface heap leach operations with the exception of Homestake.

	1995 (ounces)	**1994 (ounces)**
Homestake	402,867 (311,022 U) (91,845 OC)	393,936 (293,271 U) (100,665 OC)
Wharf Resources	96,608	105,282
Golden Reward	49,569	52,556
Brohm Mining	10,011	2,370
Richmond Hill	0	2,254
TOTAL	**559,055**	**556,398**

KEY: U - Homestake's Underground Operation
OC - Homestake's Open Cut Surface Operation

In early 1996, Homestake announced 1.4 million ounces in proven and probable reserves, largely in their underground mine located in Lead, South Dakota. This extends the mine life significantly. A 1995 study identified a stable production level of 400,000 ounces for ten years. In November 1995, Homestake reached another milestone. After over 120 years of mining at their flagship mine in Lead, Homestake poured its 38 millionth ounce of gold.

The future life of the Wharf Resources mine, located four miles west of Lead, also continues to look favorable. The state mine permit application for Wharf's proposed Clinton expansion project (16 million short tons of ore) is scheduled to be submitted in late 1996. Permitted reserves at Golden Reward's mine, located two miles southwest of Lead, are scheduled to be mined out in late 1996. There was no gold production at LAC Minerals' Richmond Hill Mine, located five miles northwest of Lead. The mine is in its closure period. LAC completed most of their acid mine drainage mitigation work in 1995, described below.

After about two years of preparation, Brohm Mining Corporation submitted their state mine permit application in 1995 to the South Dakota Department of Environment and Natural Resources (DENR) for the Anchor Hill project (8.4 million short tons of ore), located four miles southeast of Deadwood, South Dakota. The permit was conditionally approved in early 1996. The project underwent extensive geochemical characterization of ore and waste rock consisting of several hundred, state-of-the-art static and kinetic tests for predicting the potential for acid generation. The permit incorporates stringent requirements for characterizing the potential reactivity of sulfide rock encountered during mining and for managing those wastes. The project offers an added environmental benefit by taking advantage of superior construction materials available from mining non-reactive Anchor Hill waste rock and using it to mitigate acid mine drainage at the company's adjacent Gilt Edge Mine. The Anchor Hill project provides the company with needed financial capabilities to improve the previously permitted reclamation plan at the Gilt Edge site. The previous plan would have required expensive and questionable

amendments to acid generating rock to make it useable for reclamation purposes. A federal Environmental Impact Statement must be completed on Brohm's Anchor Hill project prior to mining the portions located on US Forest Service lands.

Exploration: Eight exploration permits were issued in 1995 to the following companies: Wharf Resources, Western Mining Corporation, Homestake Mining Company, Golden Reward Mining Company, Creek Gold Corporation, and Calumet Slag, Inc. Primary minerals explored were gold and silver. A total of 1,154 test holes, two bulk samples, and 43 miles of access road were permitted for exploration in Lawrence, Pennington, and Custer Counties. Diamond core drilling methods will be used for holes drilled up to 10,000 feet in depth. Reverse circulation, percussion, and rotary drilling methods will be used for shallow holes.

Environmental Issues: The most significant environmental issue of 1995 was the completion of the cap over the relocated, acid generating sulfide rock at LAC Minerals' Richmond Hill gold mine. The distinguishing feature of the Richmond Hill reclamation project is that it avoids the need for long term, active water treatment of acid mine drainage. With a limited amount of performance monitoring during the postclosure period, this approach toward reclamation promises the best chance of a walkaway situation, or as close to it as possible. A detailed paper on the specifics of the Richmond Hill project, including links to color photographs of the site before, during, and after reclamation activities, can be found on the Internet world wide web service devoted to mining-related environmental issues called ENVIROMINE. The paper is under the section titled "Case Histories of Mine Reclamation".

Brohm Mining Corporation completed the cleanup of the historic, acid generating Gilt Edge tailings along Strawberry Creek in 1995. This resulted in a significant improvement to the watershed. Previously acidic streams that were devoid of aquatic life are now near neutral and macroinvertebrates have begun recolonizing in areas where they were absent for decades. Details of this project, along with color photos, are also included in the above referenced paper.

A notice of violation was issued to Wharf Resources in the summer of 1995 for a discharge of improperly treated cyanide solution. The discharge caused a moderately sized fishkill in Annie Creek, a tributary of scenic Spearfish Canyon. A $150,000 civil penalty was collected as a result of the release.

The US Forest Service inventory of abandoned mined land (AML) sites on the Black Hills National Forest was completed in 1995. The DENR continued its inventory of AML sites on all lands in the Black Hills. The state's AML inventory links other inventory databases together, such as the US Forest Service database, within a standardized database manager to avoid duplication and develop a comprehensive package.