EXPLANATORY NOTES

INTRODUCTION

1 This publication, Mining Operations, Australia, 2005-06 (cat. no. 8415.0), presents estimates of the economic and financial performance of the mining industry and the production of mining commodities. These data are obtained from ABS surveys and, in the case of the commodity data, as statistics from state and Northern Territory government departments.

2 Mining, as specified in Division B of the 1993 edition of the Australian and New Zealand Standard Industrial Classification (ANZSIC) (cat. no. 1292.0), relates to the extraction of minerals occurring naturally as solids such as coal and ores, liquids such as crude petroleum, or gases such as natural gas, by such processes as underground mining, open-cut extraction methods, quarrying, operation of wells or evaporation pans, dredging or recovering from ore dumps or tailings. Activities such as briquetting, or dressing/beneficiating ores or other minerals (by crushing, milling, screening, washing, flotation, chemical beneficiation, etc.) are included, because they are generally carried out at or near mine sites as an integral part of mining operations. Natural gas absorption and purifying plants are also included. The division also includes exploration for minerals and the provision of a wide variety of services to mining and to mineral exploration, as well as mining units under development.

3 From 2006-07 reference year the Economic Activity Survey (EAS) results will be compiled using the 2006 edition of ANZSIC (an updated version of the industry classification) and new methodologies. As a result, a new series of these estimates will commence from 2006-07. When 2006-07 data are released, they will be accompanied by data for 2004-05 and 2005-06 on a comparable basis.
4 The mining collection is conducted annually as a component of the ABS’s Economic Activity Survey (EAS):

- A sample of 830 mining businesses were asked by the ABS to provide employment details and data obtained from their financial statements, mainly via mail out questionnaires. Businesses were also asked to supply key details of their operations by state and territory, enabling the production of the state/territory estimates contained in table 3.1.
- Key financial data for 2,474 mining businesses, which had been supplied by them to the Australian Taxation Office (ATO) on business income tax returns (BIT data), were then used to supplement the ABS’s directly collected information. Section 16(4)(ga) of the Income Tax Assessment Act 1936 provides for the ATO to pass information to the Australian Statistician for the purposes of the Census and Statistics Act 1905.

5 Commodity production data, as published in Chapter 4, are not collected as part of this annual mining collection (see Explanatory Notes paragraphs 40-43 for further detail).

STATISTICAL UNITS USED

6 Statistical units are those entities from which statistics are collected, or about which statistics are compiled. In ABS economic statistics, the statistical unit is generally the business. All businesses in the EAS are recorded on the ABS Business Register (ABSBR).

7 The ABS uses an economic statistics units model on the ABSBR to describe the characteristics of businesses, and the structural relationships between related businesses. Within large and diverse business groups, the units model is used also to define reporting units that can provide data to the ABS at suitable levels of detail.

8 This units model allocates businesses to one of two sub-populations:

- Most businesses and organisations in Australia need to obtain an Australian Business Number (ABN). The vast majority of these businesses are simple in structure and are allocated to the population which is
maintained by the ATO. These are termed (by the ABS) ABN units.
- The remaining businesses are in the ABS maintained population, and are
termintype of activity units, or TAUs.

9 Together, these two sub-populations (of ABN units and TAUs) make up the
ABSBR population, from which the EAS samples are taken.

10 For details about the ABSBR and how ABN units and TAUs contribute to the
industry statistics in this publication, see Technical Note 1.

SCOPE AND COVERAGE

11 The scope of the 2005-06 mining collection comprises all businesses
(including non-employing businesses) on the ABSBR at time of selection,
whose industry is classified to ANZSIC Division B Mining. This division
comprises the following subdivisions and their component groups and classes:

11 Coal mining
110 Coal mining
1101 Black coal mining
1102 Brown coal mining
12 Oil and gas extraction
120 Oil and gas extraction
1200 Oil and gas extraction
13 Metal ore mining
131 Metal ore mining
1311 Iron ore mining
1312 Bauxite mining
1313 Copper ore mining
1314 Gold ore mining
1315 Mineral sand mining
1316 Nickel ore mining
1317 Silver-lead-zinc ore mining
1319 Metal ore mining n.e.c.
14 Other mining
141 Construction material mining
1411 Gravel and sand quarrying
1419 Construction material mining n.e.c.
142 Mining n.e.c.
1420 Mining n.e.c.
15 Services to mining
151 Exploration
1511 Petroleum exploration (own account)
1512 Petroleum exploration services
1513 Mineral exploration (own account)
1514 Mineral exploration services
152 Other mining services
1520 Other mining services

12 Industry statistics in Chapters 1 and 2 of this publication (excluding table 1.2) are presented at the subdivision level for all subdivisions. ANZSIC Subdivision 13 Metal ore mining is also presented at the ANZSIC class level.

13 The ANZSIC-based industry statistics presented in this publication are compiled differently from activity statistics. Each ABN unit or TAU on the ABSBR has been classified (by the ATO and the ABS respectively) to a single industry irrespective of any diversity of activities undertaken. The industry class allocated is the one which relates to those activities that provide the main source of income. A mining business is one predominantly engaged in mining activities, but the data collected for it cover all activities of the business (including any non-mining activities). Conversely, there are some businesses predominantly engaged in non-mining activities which also undertake limited mining activities; these are excluded from the collection.

14 Businesses mainly engaged in refining or smelting minerals or ores (other than preliminary smelting of gold), or in manufacturing such products of mineral origin as coke, cement and fertilisers, are excluded, as they are engaged in activities classified to ANZSIC Division C Manufacturing.

15 Businesses engaged in providing contract mining services are not always within the scope of the annual mining collection. Under ANZSIC principles, only those contract mining organisations responsible for all facets of a mining operation are classified to Mining. Businesses which contract to provide selected services are classified to the (predominant) activity they are performing, rather than to the industry they are serving. For example, businesses contracted to perform tasks such as mine site preparation (and/or construction), and removal of overburden, are classified to ANZSIC Division E
Construction and are, therefore, outside the scope of the mining collection.

16 Some mining businesses engage, to a significant extent, in activities which are normally carried out by different industries. For example, a predominantly mining business may also undertake significant amounts of manufacturing. Similarly, a mining business may produce significant volumes of goods which are normally produced in different mining industries. Where a business makes a significant economic contribution to industries classified to different ANZSIC subdivisions, the ABS includes the business in the ABS maintained population and 'splits' the TAU's reported data between the industries involved. Significance is determined using total income.

17 A TAU's reported data will be split if the inclusion of data relating to the secondary activity in the statistics for the industry of the primary activity distorts (by overstating or understating) either the primary or secondary industry statistics at the ANZSIC subdivision level by:

- 3% or more, where the industries of the primary and secondary activities are in the same ANZSIC division
- 2% or more, where the industries of the primary and secondary activities are in different ANZSIC divisions.

18 Unincorporated joint ventures (UJVs) within the mining industry are arrangements which allow the sharing of expertise, resources and risk associated with the development of mineral deposits. This occurs through the participation of a number of organisations (by investment) in a mining operation. Some of these organisations may not otherwise be involved in the mining industry.

19 The mining collection includes mining businesses which are operators and/or participants in UJVs. Generally, each participant supplies data of its share of income, while the operator reports all expenses and employment.

20 The ABS attempts to maintain a current understanding of the structure of the large, complex and diverse business groups that form the ABS maintained population on the ABSBR, through direct contact with those businesses. Resultant changes in their structures on the ABSBR can affect:
The ABS attempts to obtain data for those businesses which ceased operation during the year, but it is not possible to obtain data for all of them.

REFERENCE PERIOD

The period covered by the collection is intended to be the 12 months ended 30 June. Where businesses are unable to supply information on this basis, an accounting period for which data can be provided is used for data other than that relating to employment. Such businesses make a substantial contribution to some of the estimates presented in this publication. As a result, the estimates can reflect trading conditions that prevailed in periods outside the twelve months ended June in the relevant year.

The following graph illustrates the contribution of businesses which reported for the year ended 31 December 2005 to estimates of key aggregates for Total mining in 2005-06. The contribution is much greater in the Coal mining, Oil and gas extraction and Metal ore mining industries than in the remaining mining industry subdivisions.

24 Although financial data estimates relate to the full twelve months, employment estimates relate to the last pay period ending in June of the given year. As such, estimates of wages and salaries per person employed can be
affected by any fluctuations in employment during the reference period.

25 Financial data presented incorporate all units in scope of the mining collection that were at the production stage at any time during the year. They also include any temporarily inactive units, i.e. those units which were in the development stage or which were not in production, but which still existed and held assets and liabilities and/or incurred some non-operating expenses (e.g. depreciation, administration costs).

RELIABILITY OF ESTIMATES

26 For information about this subject, see Technical Note 2.

INDUSTRY PERFORMANCE MEASURES

27 This publication presents a wide range of data that can be used to analyse business and industry performance.

28 Differences in accounting policy and practices across businesses and industries can lead to some inconsistencies in the data input to the statistics. Although much of the accounting process is subject to standards, there is still a great deal of flexibility left to managers and accountants in the accounting policy and practices that they adopt. For example, the way profit is measured is affected by management policy about such issues as depreciation rates, bad debt provisions and write off, and goodwill write off. The varying degree to which businesses consolidate their accounts may also affect any industry performance measures calculated.

29 A range of performance measures, usually expressed as ratios, can be produced from the data available from businesses' financial statements. Others, relating to labour inputs, can be derived by expressing financial or economic variables on a per person employed basis. The performance measures presented in this publication comprise:

- profitability ratios, which measure the rate of profit on sales
- debt ratios, which indicate the ability of businesses to meet the cost of debt
financing
- labour measures, which relate output, labour costs and employment
- capital expenditure ratios, which indicate the extent of business investment in capital assets.

30 A further explanation of each ratio can be found in the Glossary. Those ratios compiled from a combination of flow (whole period) and level (beginning or end of period) items need to be treated with additional caution. Ratios which include both level and flow items in their derivation may be volatile due to the timing differences involved. In particular, this should be taken into account when considering those measures expressed as values per person employed. It may, therefore, be preferable to base any analysis on a range of data presented rather than focusing on one variable.

31 Similarly, the extent of change in inventories is a component of several of the measures of industry output and earnings. Although the closing inventories held by businesses in an industry in one period should, in concept, equate to its opening inventories in the next period, differences will be observed in many cases. These differences can arise from re-selection of the sample between years and/or changes in the structure of businesses selected, as well as revaluations of inventories in businesses' accounts.

32 The above limitations are not meant to imply that analysis based on these data should be avoided, only that they should be borne in mind when interpreting the data presented in this publication.

INTERNATIONAL FINANCIAL REPORTING STANDARDS

33 The new Australian equivalents to International Financial Reporting Standards (AIFRS) began to be progressively implemented in Australia from 1 January 2005. As a result, a number of items in the financial accounts of Australian businesses have been affected by changed definitions, which have in turn affected both Income Statements and Balance Sheets. A range of ABS economic collections source data from financial accounts of businesses, and use those data to derive economic statistics. There have been no changes in the associated economic definitions.
After monitoring data items since March quarter 2005 it has been concluded that most affected published data series have been affected by data breaks, but that the magnitude of such breaks cannot be determined without imposing disproportionate load upon data providers to ABS surveys and other administratively collected data. Limited analysis of data from the Mining collection suggests that adoption of AIFRS has led to a decrease of at least $64m (or 0.2%) in the national estimates of operating profit before tax for the Mining industry between 2004-05 to 2005-06. Effects may be greater at lower levels of the industry classification and/or for other variables. ABS will continue to monitor developments and report any significant identified impacts or changes in methodology as a result of AIFRS.

STATE AND TERRITORY ESTIMATES

State and territory summary estimates for selected mining (i.e. Total mining excluding ANZSIC Subdivision 15 Services to mining) are presented in table 3.1. To enable the production of these estimates, businesses included in the mail out survey were asked to report data for employment, wages and salaries, and sales of goods and services, for each state and/or territory in which they operated, if more than one. The relevant data for all other businesses, including those whose contribution was sourced from BIT data, were allocated to their state/territory of operations as recorded on the ABSBR. Further statistical modelling enabled the production of state and territory estimates for industry value added.

The design of the mining collection does not take into account the state/territory in which businesses are based or in which they operate. As a result, these state and territory estimates are particularly subject to variation from year to year because of rotation of businesses into and out of the sample.

The Joint Petroleum Development Area (JPDA) is an area in the Timor Sea, about 500 km north west of Darwin. A Treaty between Australia and East Timor, which entered into force on 2 April 2003, provides the necessary framework arrangements for companies to exploit resources in the JPDA. Data relating to activity in the JPDA is included in estimates for the Northern Territory. Further, as a reflection of the joint Australia/East Timor administration of exploration and production activity in the JPDA, 50% of income and expenditure relating to the JPDA is excluded from the estimates.
State and Northern Territory commodity production statistics are presented in Chapter 4 (see Explanatory Notes paragraphs 40-43 for details).

NEW BUSINESSES

Data in this publication have been adjusted to allow for lags in processing new businesses to the ABSBR. The effect of these adjustments is an increase of 0.3% on the Australian estimate of sales and service income for total Mining.

COMMODITY PRODUCTION DATA

Chapter 4 of this publication presents details of the value of minerals produced during the year ended 30 June 2006.

These data are based on annual publications and other information supplied by the various state and Northern Territory departments responsible for the collection of these statistics, and are presented in accordance with a framework developed by the ABS for categorising the products of the mining industry. Table 4.1 shows values of production for the four broad categories within this framework: Fuel minerals, Metallic minerals, Industrial minerals, and Construction materials. The presentation of these data is designed to give an overview of the level of mining activity within each state and the Northern Territory.

Data at greater levels of detail, and including quantities produced, are available in a spreadsheet which accompanies the release of this publication. The spreadsheet has been footnoted to document conceptual differences relating to scope, coverage, valuation or any other aspect. To access the commodity data, go to the ABS home page <http://www.abs.gov.au>. Select 'Access to all ABS products & statistics' from the 'All Statistics' tab menu bar on the left hand side. On the 'Statistics' page, choose 'By Catalog Number' under 'All Statistics'. Find 8415.0 for 2005-06; the detailed commodity Excel spreadsheets are located under the 'Details' tab.

The commodity production data in each state and the Northern Territory
were originally produced by the respective departments' web sites and publications:


**Quantity and value of major mining products in New South Wales**


**Minerals and Petroleum Victoria, Statistical Review**

Queensland: Department of Natural Resources and Water, <http://www.nrw.qld.gov.au>

**Queensland Minerals and Energy Review**

South Australia: Department of Primary Industries and Resources, <http://www.pir.sa.gov.au>

**Resource Production Statistics**, biannual

Western Australia: Department of Industry and Resources, <http://www.doir.wa.gov.au>

**Western Australian Statistics Digest, Mineral and Petroleum Production**


**Mineral Resources Tasmania, Annual Review**

Northern Territory: Department of Primary Industry, Fisheries and Mines, <http://www.minerals.nt.gov.au>

**Annual Production Report**

**ACKNOWLEDGMENT**

**44** ABS publications draw extensively on information provided freely by individuals, businesses, governments and other organisations. Their continued cooperation is very much appreciated: without it, the wide range of statistics published by the ABS would not be available. Information received by the ABS is treated in strict confidence as required by the **Census and Statistics Act 1905**.

**RELATED PUBLICATIONS**

**45** The ABS produces industry estimates for a range of selected industries
(including mining) and these results are to be available in **Australian Industry, 2005-06** (cat. no. 8155.0), expected to be released in November 2007.

46 National estimates of income, expenditure and associated ratios will be available at the ANZSIC division level (with a greater range of data available via the ABS web site in spreadsheet form). Some data presenting greater detail are considered experimental at this stage, while the methodology used to produce them is reviewed and improved. These consist of national estimates of income, expenses, operating profit before tax (OPBT), and wages and salaries, at the ANZSIC class level, and state/territory estimates of these items at the ANZSIC division level.

47 The following publications and electronic releases also contain information about the mining industry:

- **Australian Industry, 2004-05**, cat. no. 8155.0, released on 21 December 2006 - Annual publication
- **Australian Labour Market Statistics**, cat. no. 6105.0 - Quarterly publication
- **Australian National Accounts: National Income, Expenditure and Product**, cat. no. 5206.0 - Quarterly publication
- **Australian National Accounts: State Accounts, 2005-06, Reissue**, cat. no. 5220.0, released on 13 November 2006 - Annual publication
- **Business Indicators, Australia**, cat. no. 5676.0 - Quarterly publication
- **Counts of Australian Businesses, including Entries and Exits, June 2003 to June 2006**, cat. no. 8165.0, released on 26 February 2007 - Irregular publication
- **Directory of Mining Statistics**, cat. no. 1144.0, released on 11 December 2002 - Irregular publication
- **International Trade in Goods and Services, Australia**, cat. no. 5368.0 - Monthly publication
- **International Trade Price Indexes, Australia**, cat. no. 6457.0 - Quarterly publication
- **Job Vacancies, Australia**, cat. no. 6354.0 - Quarterly publication
- **Labour Price Index**, cat. no. 6345 - Quarterly publication
- **Mineral and Petroleum Exploration, Australia**, cat. no. 8412.0 - Quarterly publication
- **Mining Indicators, Australia**, cat. no. 8417.0 - Quarterly electronic publication
- **Private New Capital Expenditure and Expected Expenditure**, cat. no. 8415.0 - Mining Operations, Australia, 2005-06...
Current publications and other products released by the ABS are available from the Statistics View on the ABS web site <http://www.abs.gov.au>. The ABS also issues a daily Release Advice on the web site which details products to be released in the week ahead.

Non-ABS data

The following organisations also publish mining and related statistics for Australia:
ABARE, web site <http://www.abareconomics.com> Australian Commodities (forecasts and issues) Australian Commodity Statistics Australian Mineral Statistics
Geoscience Australia, web site <http://www.ga.gov.au> Australia's Identified Mineral Resources Oil and Gas Resources of Australia

ABS DATA AVAILABLE ON REQUEST

As well as the statistics included in this and related publications, the ABS may have other relevant data available on request and for a charge. Inquiries should be made to the National Information and Referral Service on 1300 135 070.
ROUNDING

51 Where figures have been rounded, discrepancies may occur between totals and the sums of the component items. Due to data being adjusted for lags in processing new businesses to the ABS Business Register (see paragraph 39), this 'rounding rule' also applies to employment estimates.

52 Proportions, ratios and other calculated figures shown in this publication have been calculated using unrounded estimates and may be different from, but are more accurate than, calculations based on the rounded estimates.

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