INTRODUCTION

The Federal government owns the mineral rights to large amounts of fossil fuel, metallic, fertilizer, and chemical minerals. The Mineral Leasing Act of 1920 and other laws authorize the Secretary of the Interior to issue prospecting permits and leases for exploration, development, and production of these minerals. Federal laws and regulations also establish rentals, royalties, and other conditions to ensure competition, diligent development, the highest use of the land, and payment to the public. As part of its trust responsibilities, the Department of the Interior (DOI) also administers the leasing program for, and collects royalties on, Indian mineral resources.

For each type of mineral lease, Federal laws and regulations specify the maximum allowable acreage, lease term, and rental and royalty rates. Rent is the amount the leaseholder pays periodically for the right to use the land or resources. Royalties are payment (in money or kind) of a share of production to ensure a fair return to the Nation for the use of its mineral resources. Royalties may be an established minimum, or on a sliding or step scale.* Successful bidders for mineral leases also pay a bonus as consideration for the lease.

Royalty, rental, and bonus payments from oil and gas and other fuel and non-fuel minerals produced from public lands are a major source of income for the Federal government, States, and Indian Tribes.** In 1989, Federal miner-

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* A sliding-scale rate is based on average production and applies to all production. A step-scale rate increases by steps as the average production increases. Minerals Management Service(MMS), Mineral Revenues: The 1986 Report on Receipts from Federal and Indian Leases (Washington, DC: U.S. Department of the Interior 1987).

** Under the Minerals Leasing Act of 1920, States receive payments equal to one-half of the royalties for mineral resources produced on Federal lands within their borders (Alaska gets 90 percent). Indian tribes and allottees receive 100 percent of the royalties.

al revenue collections totalled $3.9 billion, including over $2.9 billion from offshore bonuses, rentals, and royalties, and almost $1.0 billion from onshore mineral leases and those on Indian lands (see table 1).[2] These receipts were disbursed to States, Indian Tribes and individual Indian allottees, the U.S. Treasury general fund, and designated Federal accounts (see table 2).

Table 1.--FY 1989 Mineral Revenue Collections
(thousands)

Offshore Federal Revenues:	
Royalties and minimum royalties	$2,061,666
Rents and bonuses	867,545
Subtotal	$2,929,211
Onshore Federal Revenues:	
Royalties and minimum royalties	$ 733,915
Rents and bonuses	127,285
Subtotal	$ 861,200
Indian and Tribal Land Revenues:	
Royalties and minimum royalties	$ 120,339
Rents and bonuses	1,615
Subtotal	$ 121,954
Total royalties and minimum royalties	$2,915,920
Total rents and bonuses	996,445
Total	$3,912,365

SOURCE: U.S. Department of the Interior, Minerals Management Service, "Monthly Activity.Report: September 1989"

[2] Data provided to OTA by MMS.

Table 2. --Mineral Lease Revenue Disbursements, FY 1989
(thousands)

Offshore Federal Revenues:	
Historic Preservation Fund	$ 150,000
Land & Water Conservation Fund	862,761
U.S. Treasury	1.917.898
Subtotal	$2,930,659
Onshore Federal Revenues:	
Reclamation Fund	$ 337,865
State Shares*	433,422
U.S. Treasury	89.913
Subtotal	$ 861,200
Indian Disbursements:	
Tribes and Allottees	$ 121,954
TOTAL	$3,913,813

SOURCE: U.S. Department of the Interior, Minerals Management Service, "Monthly Activity Report: September 1989."

Within DOI, the Minerals Management Service (MMS) is responsible for administering the Royalty Management Program (RMP) . The current RMP mission is:

> Ensure that all revenues from Federal and Indian mineral leases are efficiently, effectively, and accurately collected, accounted for, verified, and disbursed to the appropriate recipients in a timely manner and in accordance with existing laws, regulations, lease terms, orders, and notices; and provide support for technical lease management functions.[3]

[3]U.S. Department of the Interior Minerals Management Service, Management Action Plan for the Royalty Management Program (Washington, DC: U.S. Government Printing Offlce, April 1985).

* 29 States in 1989: Wyoming--37%; New Mexico-21%; Utah–8%; Colorado--8%; California-6%; Montana-5%; Louisiana-3%; Nevada-2%; Alaska-2%; Arkansas-2%; North Dakota-l%; and 18 other States sharing the remainder.

This mission is very complicated due to the number, size, type, and interrelationships of leases, and the sales arrangements involved. Calculating the royalty owed on the value of production from a lease involves computation of product quantity and quality (sometimes for multiple products), value, and processing and transportation allowances. A lease may have more than one owner and the products may be sold to more than one purchaser at a variety of prices. Production from a group of leases may be allocated to individual leases by agreement; these can involve combinations of Federal, Indian, State, and private lands.[4] In 1989, MMS had accounting responsibility for over 93,000 mineral leases (see table 3). There were around 19,000 Federal and 4,200 Indian leases producing; they involved about 80,000 different combinations of leases, products, and selling arrangements.

Table 3.--Mineral Leases as of September 30,1989

Lease category	Producing	Nonproducing	Total
Onshore	18,969	63,295	82,264
Indian	4,250	78	4,328
Offshore	1,567	5,018	6.585
Total	24,786	68,391	93,177

SOURCE: U.S. Department of the Interior, Minerals Management Service, “Monthly Activity Report: September, 1989.

4 Statement of William D. Bettenberg, Director Minerals Management Service, before the Senate Energy and Natural Resources Committee, Subcommittee on Mineral Resources Development and Production, May 23, 1988.

Another factor complicating royalties is that many payers must estimate the amount due because actual volumes and prices are unavailable by the reporting date. Transportation and processing allowances also are normally based on estimates. The royalties and allowances due must then be adjusted when actual volumes, prices, and allowances become available. Finally, a substantial portion of mineral production is sold at less than arms-length, and values placed on intra-company transfers may not reflect market values.[5]

The magnitude of the funds, the stewardship responsibilities, and the complexity of the task make royalty management highly visible. The resulting scrutiny has led to reports of problems--including mismanagement, undercollection, fraud, and theft.* Most recently, these led to a series of Audit Reports prepared by the DOI Inspector General's Office,[6] Concerns raised in those reports about the automated systems MMS uses to account for and disburse royalties led the Senate Committee on Energy- and Natural Resources to ask the Office of Technology Assessment (OTA) to undertake a study of the technological opportunities for improving royalty collection to ensure that revenues do not fall short.

This memo responds to that request. It begins with a brief history of royalty management within the Federal government, and the reported problems with it. It then describes the current RMP, including the automated systems

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[5] Ibid.

[6] U.S. Department of the Interior Office of Inspector General Audit Report: Mission Accomplishment. Valuation and Standards Division, E-LM-MMS-07-87A Report No.88-59, March 1988; Audit Report: Mission Accomplishment, Fiscal Accounting Division, E-LM-MMS-07-87B, Report No. 88-61, April 1988; Memorandum Audit Report: Mission Accomplishment, Production Accounting Division, E-LM-MMS-07-87C, Report No. 8842, April 1988; Audit Report: Mission Accomplishment, Royalty Compliance Division, E-LM-MMS-08-87E, Report No. 88-63.

* A partial listing of reports and articles about problems with royalty management may be found in the Bibliography to this memo.