Mission Area Two

Resource Use

Striking a balance between meeting our country's energy needs while ensuring responsible use of the land that contains these valuable resources is a worthy goal, especially in this time of heightened environmental consciousness. Our mission to manage America's natural resources includes promoting responsible development and use of energy, grazing land, forest products, and nonenergy mineral deposits.

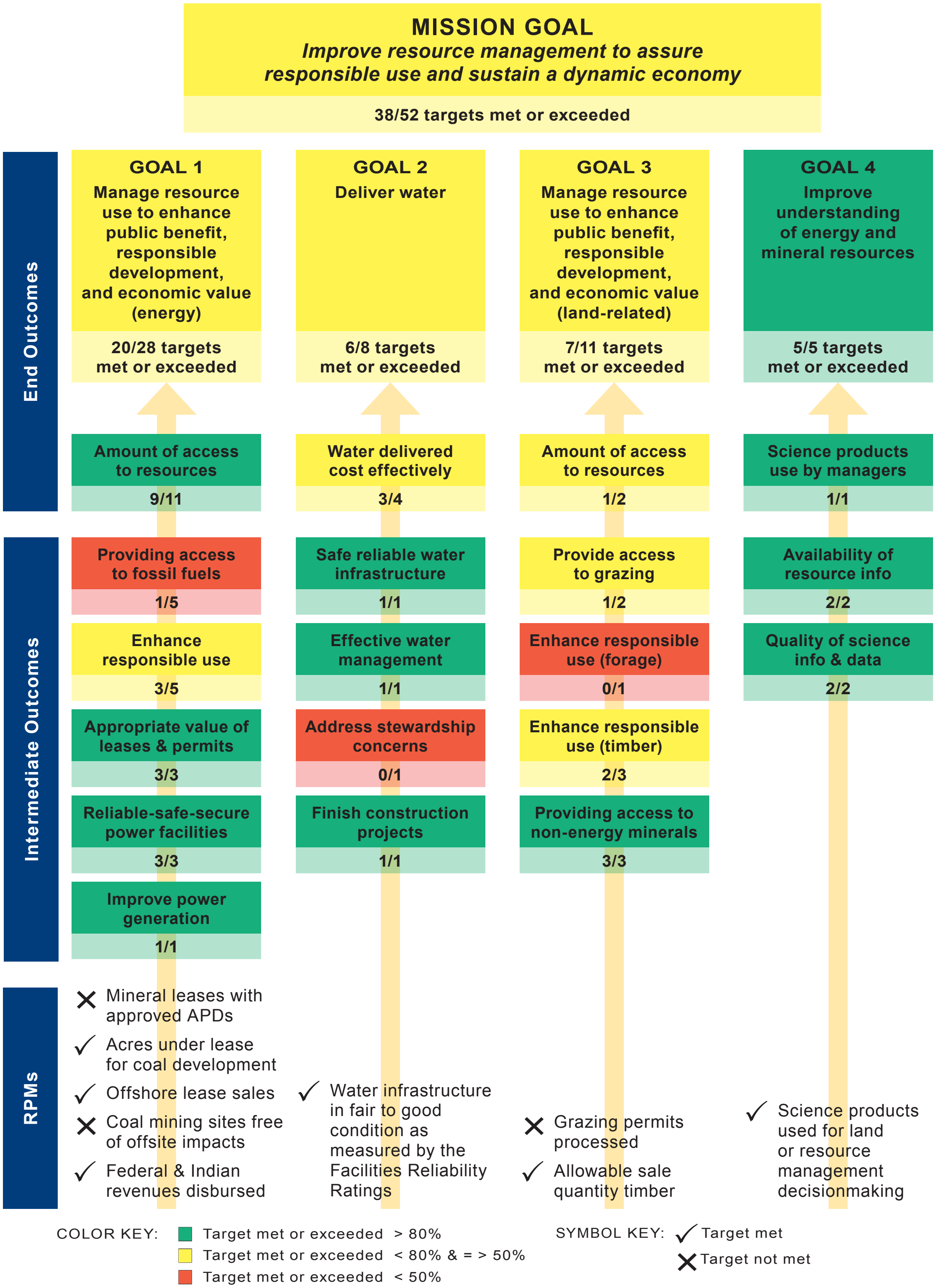
The quality of life that Americans enjoy today depends largely upon a stable and abundant supply of affordable energy. Energy heats and cools our homes. It fuels our ambulances, fire trucks, ships, and airplanes. It powers the companies that create jobs and the agricultural economy that feed our Nation and the world.

The Minerals Management Service (MMS) issues offshore leases to oil and gas companies for prospective development. The Bureau of Land Management (BLM) leases land that potentially holds coal, oil or gas onshore. Interior manages land and water that produces about 30 percent of America's energy supply. Typically Interior's role is to provide responsible access to energy producers, not to perform the actual production. However, in the case of Interior's Bureau of Reclamation (BOR), energy production via hydropower is a bureau function. Reclamation is the second largest producer of hydroelectric power in the western United States, with 58 power plants annually providing more than 40 million megawatt hours of hydroelectricity, enough to meet the needs of over 5 million households. Reclamation is also the largest wholesaler of water in the country. BOR brings water to more than 31 million people and provides 1 out of 5 Western farmers with irrigation water for 10 million acres of farmland that produce 60 percent of the Nation's vegetables and 25 percent of its fruits and nuts.

FIGURE 1-17

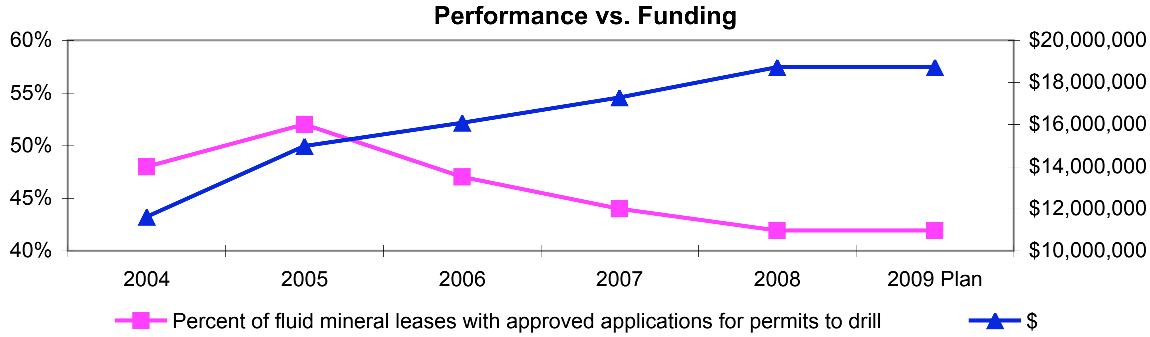
RESOURCE USE

How we manage our natural resources now directly affects the availability of those resources in the future. Interior manages America's natural resources through promoting responsible development and use of energy, grazing land, forest products, and nonenergy mineral deposits.



Percent of fluid mineral leases with approved applications for permits to drill

FIGURE 1-18



ID #1509	2004	2005	2006	2007	2008	2009 Plan
Target				47%	44%	42%
Performance	48%	52%	47%	44%	42%	
Leases in producing status	21,889	23,511	22,859	21,612	23,289	23,289
Leases in effect	45,836	45,479	48,423	49,152	55,546	55,546
$	11,613,771	14,965,737	16,084,959	17,275,476	18,737,261	18,737,261

APDs	2004	2005	2006	2007	2008	2009 Plan
APDs submitted	6,979	8,351	10,492	8,370	7,884	7,785
APDs processed*	7,351	7,736	8,854	8,964	7,846	8,319
* Includes pending APDs						

Snapshot: *Though the number of fluid mineral leases with approved Permits to Drill increased by 1,677 from 2007, overall performance declined to 42 percent due to a rise in the denominator with a higher than anticipated number of leases. Funding spent for the APD process increased slightly over FY 2007.*

Bottom Line: *The BLM delayed processing a large group of APD's while conducting a large-scale development impact analysis on sage grouse and elk habitats. Also, industry submitted fewer applications in 2008 and was slower to submit information required to process APDs, thus slowing down the approval process. The application process is customer driven.*

Status: *Challenged Performance, due to rising funding and declining performance.*

Public Benefit: *Responsible access to fluid mineral resources on Federal lands helps to provide energy independence through long-term availability of the resource, while minimizing environmental impact.*

The Department of the Interior's (DOI) role in the United States energy arena is not oil or gas production, but providing access to these energy resources located on Federal land. The oil and gas industry nominates onshore mineral estate acreage to be leased in blocks for a period of 10 years. The BLM offers these parcels competitively for oil and gas leasing. Once a parcel is leased, an approved APD is required to drill a well. The ultimate exercise of the APD is dependent on the oil/gas company's decision to drill, primarily based on economic feasibility.

The table above shows the total number of leases in effect for FY 2008 has increased from 2007 by 6,394 leases and those leases in producing status have also increased by 1,677 from last year. A single lease may have one to 1,000 APDs approved, but is counted only once. BLM processed 7,846 APDs in FY 2008.

Target: 44%
Actual: 42%
GOAL NOT MET

Programs Supporting This Measure

BLM Energy & Minerals Management
BLM Realty & Ownership Management
BLM Land Use Planning

Environmentally-Friendly Wooden Roads

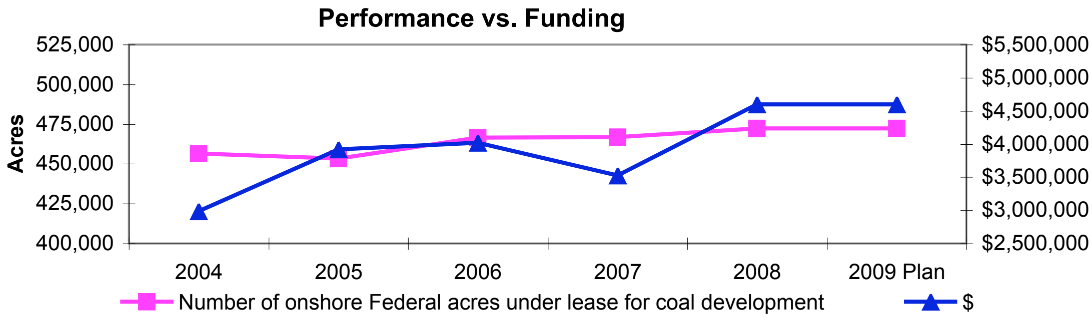
In the Jonah Field of Wyoming, operators lay down temporary wooden oak mats on well sites and access routes instead of stripping off native vegetation and topsoil to build permanent roads and well pads. This practice protects the ground, reduces erosion, and reduces the loss of wildlife habitat. The native vegetation root systems remain intact and recover much quicker compared to conventional methods of revegetation. In some cases, pretreatment takes place before laying the mats. Fertilizer, water, seed, or aeration may be used to augment vegetation after the mats are removed.

A typical 2.5-acre well pad requires about 1,000 mats. The mats are 8x14 feet and weigh 2,500 pounds each. The cost of protecting the environment is not cheap. Each mat costs about $500; however, they can be reused.

Oak mats providing access in winter

Number of onshore Federal acres under lease for coal development

FIGURE 1-19



ID #1510	2004	2005	2006	2007	2008	2009 Plan
Target				464,500	467,234	472,337
Performance	456,578	453,442	466,652	466,943	472,337	
$	2,982,176	3,921,020	4,019,503	3,522,116	4,595,031	4,595,031

Snapshot: *Performance has increased slightly, in conjunction with an increase in funding.*

Bottom Line: *Performance increased by 1 percent, resulting in an additional 5,394 acres under lease for coal development. The leasing program is implemented in a manner that ensures responsible use.*

Status: *Sustained Performance.*

Public Benefit: *Public lands produce 42 percent of our Nation's coal. Interior contributes to U.S. energy independence by managing dependable, affordable, and environmentally sound commercial energy development.*

The BLM's Coal Management Program issues authorizations which allow lessees to extract coal from Federal lands while meeting environmental and safety standards.

BLM has implemented new Lease by Application processing procedures, which should speed up lease processing in the Powder River Basin, located in Montana and Wyoming, where nearly 88 percent of Federal coal is produced. BLM is also developing a process to approve multiple leases at the same time. The new process will be ready to implement in 2012. Over the last 14 fiscal years, there has been an increasing share of the Nation's coal production from Federal leases.

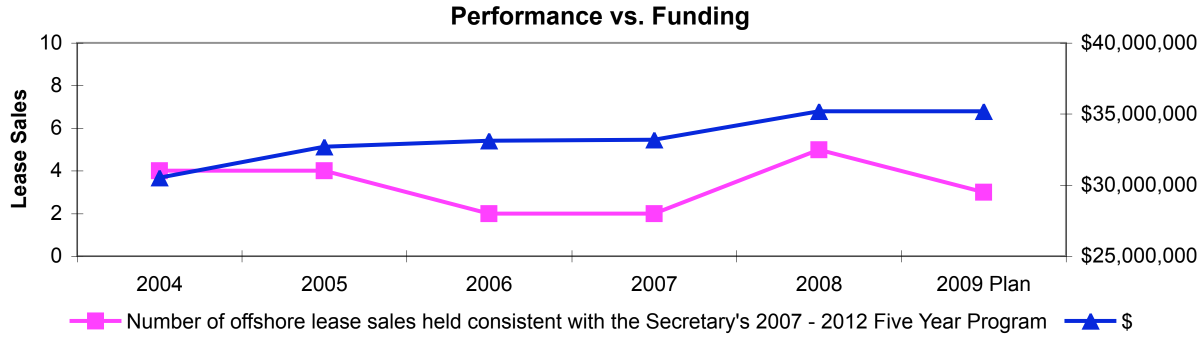
Programs Supporting This Measure

BLM Energy & Minerals Management
BLM Realty & Ownership Management
BLM Land Use Planning

Target: 467,234
Actual: 472,337
GOAL MET

Number of offshore lease sales held consistent with the Secretary's 2007–2012 Five-Year Program

FIGURE 1-20



ID #1588	2004	2005	2006	2007	2008	2009 Plan
Target				2	5	3
Performance	4	4	2	2	5	
$	30,500,000	32,700,000	33,100,000	33,200,000	35,200,000	35,200,000

Snapshot: *Performance is progressing as planned in the Secretary's 5-Year Offshore Oil and Gas Leasing Program. Funding rose the past few years to support the environmental studies and analyses, resource assessments and leasing consultations necessary to provide access to frontier leasing areas.*

Bottom Line: *The annual lease sales will proceed as planned to meet national energy needs through 2012. As new areas in the Outer Continental Shelf (OCS) are opened up for leasing consideration, increased funding is required to conduct analyses, some in areas where no concerted oil and gas related data gathering has occurred in over 15–20 years.*

Status: *Found demonstrated process efficiencies.*

Public Benefit: *Lease sales provide access to oil and natural gas in an environmentally responsible way and contribute to America's goal of energy security.*

As required by law, MMS provides an orderly and predictable schedule of lease sales by competitive bid through the 5-Year Offshore Leasing Program. The program makes promising offshore areas available to industry for leasing, exploration and potential development. It is estimated that the OCS contains about 60 percent of the oil and 40 percent of the natural gas that could potentially be produced in the U.S.

The current program, from 2007 to 2012, provides access to about 181 million acres of the 1.76 billion acres that make up the OCS. Leasing as a result of these sales could result in production of 10 billion barrels of oil and 45 trillion cubic feet of natural gas over 40 years. Offshore leases are issued with 5 to 10 year terms to allow adequate time for the extensive permitting, geological and geophysical exploration and analysis, arranging for financing, exploratory drilling, and construction of infrastructure necessary to begin production. Production could take another five years or more after a discovery. The five sales held in 2008 resulted in the leasing of approximately 11.7 million acres.

Target: 5
Actual: 5
GOAL MET

The costs associated with holding lease sales are incurred over multiple years. Planning activities span multiple years, and requirements can vary, based on many factors, particularly the leasing maturity of the sale location. Between FY 2006 and FY 2008, the number of sales actively being

Programs Supporting This Measure

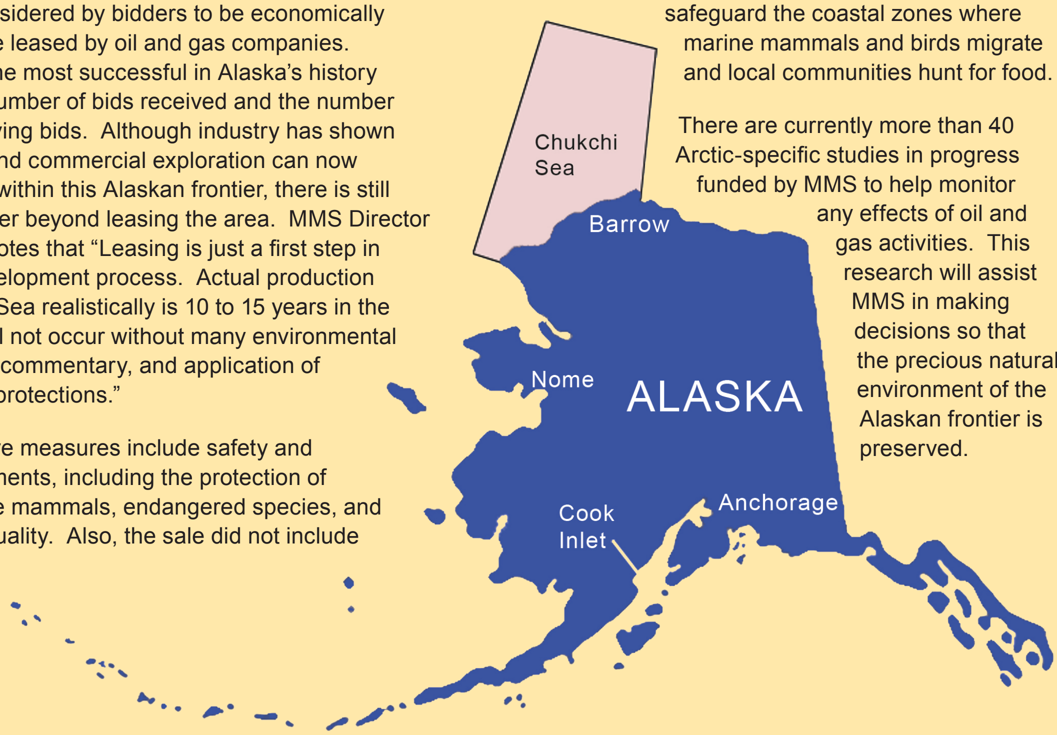
MMS	Outer Continental Shelf Minerals Evaluation & Leasing
MMS	OCS Environmental Studies

Uncovering Possibilities in the Chukchi Sea

The Chukchi sale, held in February 2008, offered 29.4 million acres for lease, of which approximately 2.8 million acres were considered by bidders to be economically viable and were leased by oil and gas companies. The sale was the most successful in Alaska's history based on the number of bids received and the number of blocks receiving bids. Although industry has shown great interest and commercial exploration can now officially begin within this Alaskan frontier, there is still much to consider beyond leasing the area. MMS Director Randall Luthi notes that "Leasing is just a first step in the energy development process. Actual production in the Chukchi Sea realistically is 10 to 15 years in the future—and will not occur without many environmental reviews, public commentary, and application of environmental protections."

Those protective measures include safety and drilling requirements, including the protection of Alaska's marine mammals, endangered species, and air and water quality. Also, the sale did not include nearshore coastal waters, and leased areas ranged from 25 to 50 miles from the coast. Excluding those areas will safeguard the coastal zones where marine mammals and birds migrate and local communities hunt for food.

There are currently more than 40 Arctic-specific studies in progress funded by MMS to help monitor any effects of oil and gas activities. This research will assist MMS in making decisions so that the precious natural environment of the Alaskan frontier is preserved.



A version of this map first appeared in MMS Ocean Science, Volume 5 Issue 1, and is reprinted with permission of the U.S. Department of the Interior's Minerals Management Service.

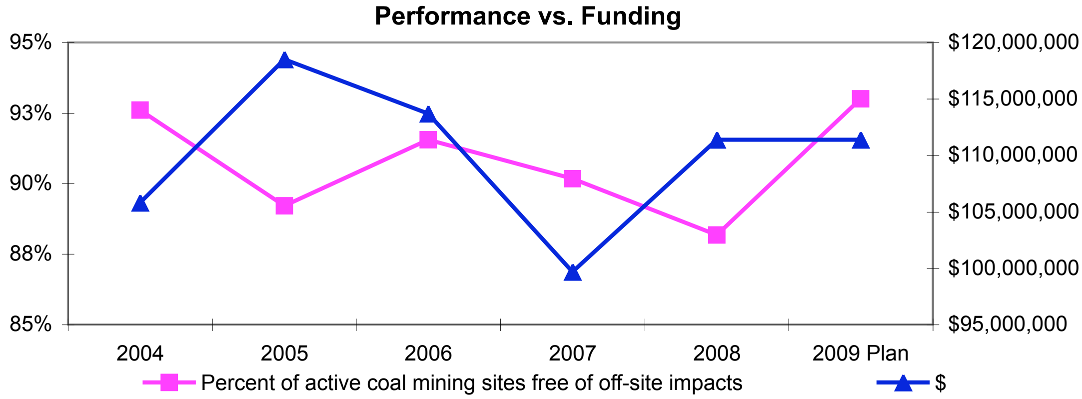
planned increased from 5 to 8 sales and the number of leases issued nearly doubled with no growth in the Offshore Program staff. MMS efficiently prioritized its work to accommodate the additional workload. In addition, MMS was able to reduce the average annual cost of pre-sale analysis (excluding environmental studies) and conduct-of-sale activities by 25 percent, freeing up funding for the additional workload.

Secretary Kempthorne, in response to the President removing the executive withdrawal and the dramatic change in the Nation's energy situation, initiated development of a new leasing program 2 years ahead of schedule to give the next administration additional options for expanding energy production.

The new 5-year plan will consider areas that are now open for development that were previously unavailable due to congressional moratoria and Presidential withdrawal. On July 14, 2008, the President removed the executive withdrawal, and on July 28, 2008, the President transmitted a budget amendment removing OCS areas previously withdrawn from oil and gas exploration. However, some areas of the Eastern Gulf of Mexico are off limits to development pursuant to the Gulf of Mexico Energy Security Act of 2006.

Percent of active coal mining sites that are free of off-site impacts

FIGURE 1-21



ID #455	2004	2005	2006	2007	2008	2009 Plan
Target				93%	93%	93%
Performance	93%	89%	92%	90%	88%	
Sites free of off-site impacts	6,364	7,436	7,454	7,103	6,864	7,239
Total number of mining sites	6,872	8,335	8,142	7,877	7,784	7,784
$	105,813,000	118,487,000	113,684,000	99,688,551	111,388,487	111,388,487

Snapshot: *Performance shows a slight decrease to 88 percent from last year's 90 percent of sites free of off-site impacts. Funding started to increase in 2008 as more funds became available to support State regulatory grants and increases in operations.*

Bottom Line*: FY 2008 performance at 88 percent translates to 6,864 sites out of 7,784 that are free of off-site impacts. The sustained performance is due to improved identification of off-site impact violations through the use of technology to verify permit boundaries, and better documentation of impacts. The above graph shows an approximate 1-year lag between funding and performance.*

Status: *Sustained Performance.*

Public Benefit: *Controlling off-site impacts protects both people and the environment.*

Off-site impacts are negative effects resulting from surface coal mining activities, such as blasting, water runoff or land stability that affects people, land, water or structures outside the permitted area of mining operations.

OSM oversees implementation of the 1977 SMCRA. There has been a shift in OSM's role from direct enforcement to oversight. OSM works closely with the States and Tribes in administering and maintaining their approved regulatory and reclamation programs. Under this approach, performance agreements are worked out by consensus with each State, and unique State-specific evaluation plans are developed. Current coal mining operations include over 4.4 million acres in 26 States and on the lands of 4 Indian Tribes.

Target: 93%
Actual: 88%
GOAL NOT MET

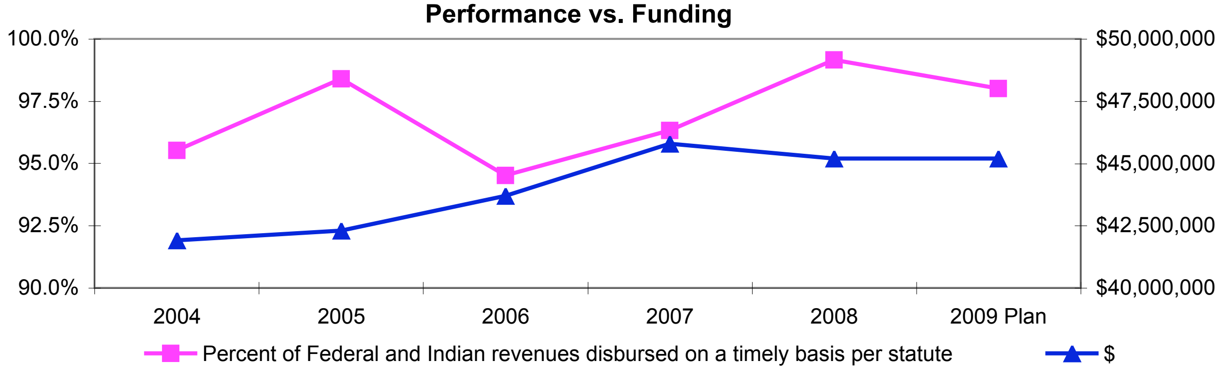
The target for FY09 remains at 93 percent, as increases in partnering between OSM and State agencies, as well as meetings with operators to discuss the nature of violations and actions needed, will reduce the number of off-site impacts in the future. Additionally, OSM anticipates a broader implementation of a pilot program to use Geographic Information System technology to verify permit boundaries and conduct automated field inspections that could result in increased efficiency and may reduce the cost in future years.

Programs Supporting This Measure

OSM	State Regulation of Surface Coal Mining
OSM	Federal Regulation of Surface Coal Mining & Abandoned Mine Reclamation

Percent of Federal and Indian revenues disbursed on a timely basis per statute

FIGURE 1-22



ID #493	2004	2005	2006	2007	2008	2009 Plan
Target				97.0%	98.0%	98.0%
Performance	95.5%	98.4%	94.5%	96.3%	99.2%	
Value disbursed on a timely basis	1,344,102,272	1,977,000,000	2,505,305,626	2,250,620,140	2,961,880,300	2,352,000,000
Total value of revenues disbursed	1,407,075,930	2,011,000,000	2,650,350,794	2,336,377,325	2,987,020,560	2,400,000,000
$	41,900,000	42,300,000	43,700,000	45,800,000	45,200,000	45,200,000

Snapshot: *Performance has increased over past years to reach 99 percent in FY 2008. Funding had been increasing, due to a rise in the number of disbursements, but now has leveled out.*

Bottom Line: *Performance remains in the upper 90th percentile, and is expected to stay at this level due to planned system enhancements.*

Status: *Sustained Performance.*

Public Benefit: *Timely distributions of revenue from mineral resources on Federal and Indian lands to the Land and Water Conservation Fund, the Historic Preservation Fund, and the Reclamation Fund help ensure America's natural resources, landscapes, and rich history are enjoyed by current and future generations. State distributions are used to fund large capital projects, such as schools, roads, and public buildings. Revenues collected from mineral leases on Indian lands work directly to benefit members of the American Indian community.*

MMS is in charge of collecting, accounting for, substantiating, and disbursing revenues from mineral production on Federal and Indian lands. The Federal Oil and Gas Royalty Management Act of 1982 requires monthly distribution and disbursement of payments to States and Indian Tribes for their share of mineral leasing revenues. When disbursements are not timely, the MMS must pay late-disbursement interest. This measure includes only the funds that are subject to late disbursement interest.

In FY 2006, Minerals Revenue Management focused on reducing accounts receivable and unapplied payments. Once those payments were cleared, timely disbursements increased in 2007. In FY 2008, MMS began implementation of a 2-year initiative for interactive payment and billing, which allows a more effective matching of payments of the appropriate receivables.

Programs Supporting This Measure

MMS Minerals Revenue Management

Target: 98.0%
Actual: 99.2%
GOAL MET

Mineral Revenues for Recreation

One of the recipients of revenues received by MMS from oil and gas companies drilling offshore is the Land and Water Conservation Fund (LWCF). MMS transfers nearly $900 million annually to LWCF, enacted in 1964 to create and maintain a nationwide legacy of high quality recreation areas for the benefit and use of all. The Fund provides opportunities for millions of American families to reconnect with the outdoors by funding Federal land acquisition, State grants and other conservation programs with funds made available through appropriations.

MMS has disbursed $23.5 billion to the LWCF since 1982. This past year a partial list of the areas managed by Interior's National Park Service that received funding for Federal acquisition includes:

Golden Gate National Recreation Area
California

Mesa Verde National Park
Colorado

Indiana Dunes National Lakeshore
Indiana

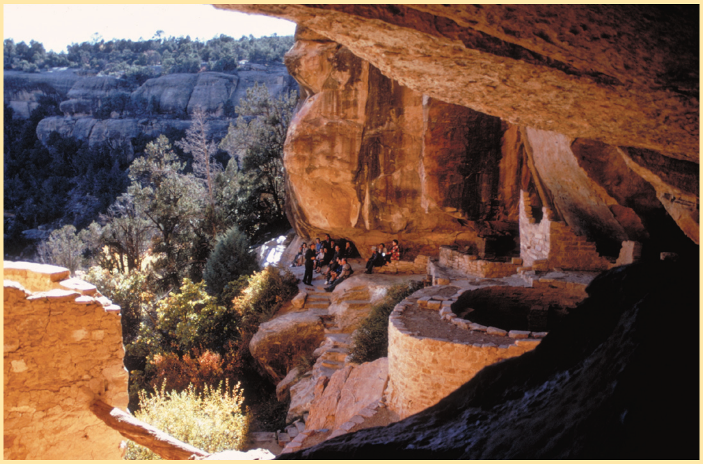
Cumberland Gap National Historic Park
Kentucky

Flight 93 National Memorial
Pennsylvania

Chickamauga-Chattanooga National Military Park
Tennessee

Big Thicket National Preserve
Texas

LWCF also provides a funding source for matching grants to help States and local governments acquire, develop, and improve public outdoor recreation areas and facilities. Communities receive funds for projects both large and small.



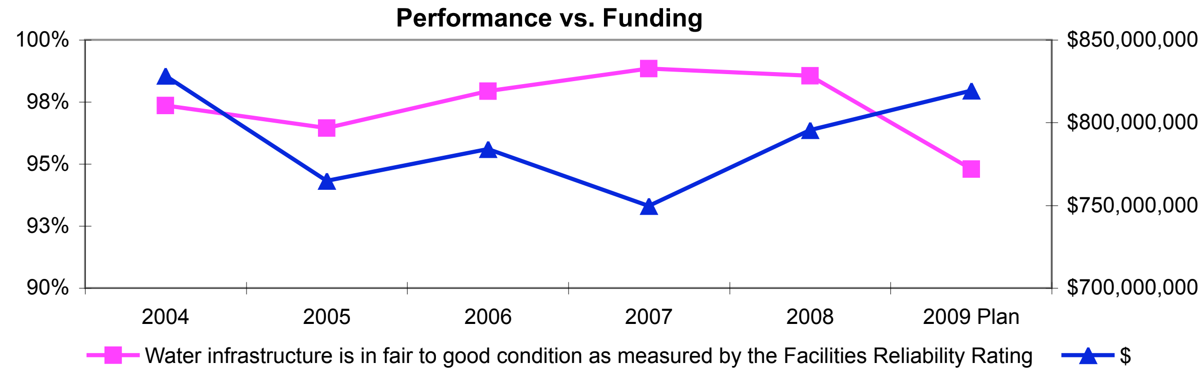
Mesa Verde NP, CO

Golden Gate NRA, CA

Big Thicket NP, TX

Water infrastructure is in fair to good condition as measured by the Facilities Reliability Rating

FIGURE 1-23



ID #909	2004	2005	2006	2007	2008	2009 Plan
Target		94%	93%	91%	92%	95%
Performance	97%	96%	98%	99%	99%	
Infrastructure in good condition	331	326	333	341	341	328
Total number of dams and facilities	340	338	340	345	346	346
$	828,165,354	764,708,017	783,874,681	749,680,635	795,417,595	819,280,122

Snapshot: *Performance remained constant, while funding increased to help with maintaining the aging infrastructure.*

Bottom Line: *Performance remains at 99 percent. Reclamation has implemented efficiencies to mitigate the increasing costs of maintenance and repair of aging structures and facilities, while still maintaining a high level of performance.*

Status: *Challenged Performance, due to costs increasing coupled with level performance.*

Public Benefit: *Reclamation delivers water to 1 in every 5 farmers in the West and to over 31 million people.*

In 2003, Reclamation established the Facility Reliability Rating (FRR) system to score and provide a general indication of Reclamation's ability to maintain the reliability of its facilities. This measure gauges the reliability of all high and significant hazard storage dams and buildings associated with the water infrastructure that are routinely reviewed with the dam facilities. The FRR score is not a direct indicator of potential facility failure, but more often the result of a recommendation. Once a recommendation is issued, a restriction may be imposed on a facility until an analysis and any necessary modifications are complete. With the FRR data, Reclamation is alerted to activities or areas needing attention and can focus on funding priority work.

Programs Supporting This Measure

BOR	Water Management Operations & Maintenance
BOR	Dam Safety
BOR	Site Security

Since 2005, at least 96 percent of Reclamation's FRR-related facilities have been rated Fair to Good. In FY 2008, 99 percent of Reclamation's water infrastructure was in fair to good condition as measured by the FRR. This reflects Reclamation's successful efforts to extend the design and service lives of aging facilities and avoid expensive breakdowns.

Approximately 50 percent of Reclamation's high and significant hazard dams were built between 1900 and 1950. The aging infrastructure and increasing cost for repairs

High Flow Into the Grand Canyon

On March 5, 2008, Secretary of the Interior Dirk Kempthorne opened the jet bypass tubes at Glen Canyon Dam to release about 41,500 cubic feet per second of Colorado River water into the Grand Canyon. The water for the experiment was released at a rate that would fill the Empire State Building within twenty minutes and transport enough sediment to cover a football field 100 feet deep with silt and sand.

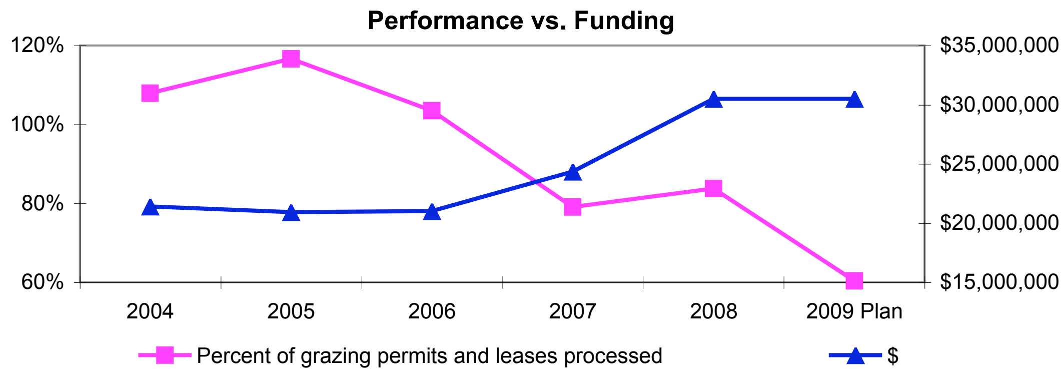
The 60-hour high flow experiment was conducted to take advantage of the highest sediment deposits along the bottom of the river's channel in a decade and push it into a series of sandbars and beaches along the river to provide habitat for endangered wildlife and campsites for thousands of Grand Canyon National Park tourists. The experiment was also intended to supply sand needed to protect archaeological sites and to create areas of low-velocity flow, or backwaters, used by young native fishes, particularly the endangered humpback chub. The results from the release will be incorporated into the long-term, science-based adaptive management process. Scientists hope to gain a better understanding about whether higher flows created by releasing water from the dam can be used to rebuild eroded beaches downstream.

T. Ross Reeve, Reclamation volunteer

and replacements are carefully considered when establishing performance targets and funding requests. Further analysis is under way to determine whether a different metric, such as the Comprehensive Condition Index, will prove to be a better measure for linking performance/condition of assets to changes in budget resources.

Percent of grazing permits and leases processed as planned consistent with applicable resource management plans

FIGURE 1-24



ID #1519	2004	2005	2006	2007	2008	2009 Plan
Target				100%	85%	60%
Performance	108%	117%	103%	79%	84%	
Permits/leases processed	2,512	2,730	2,565	2,058	2,177	2,177
Permits/leases received	2,329	2,342	2,479	2,600	2,600	3,606
$	21,405,348	20,917,613	21,019,714	24,352,483	30,510,762	30,510,762

Snapshot: *Performance improved by 5 percentage points over 2007, but was slightly below the 2008 target, with funding generally increasing.*

Bottom Line: *Funding is rising, due to dramatic increases in litigation, along with increasing workloads associated with issuing permits. The target was not met due to the increase in the number of permits being protested during the decision process, and the additional time needed to respond to each protest. There is no indication this trend will change.*

Status: *Challenged performance, due to increasing costs while performance has decreased.*

Public Benefit: *Livestock grazing can be used in certain areas to reduce hazardous fuels and minimize impact from catastrophic wildfires. Additionally, it contributes to food production and adds to local economic stability.*

The BLM authorizes livestock grazing by issuing 10-year permits and leases which establish the seasons of forage use and number and kind of livestock. About 18,000 permits are issued for grazing on nearly 158 million acres of BLM-managed public land in the West.

Over the past 10 years, the amount of time, effort, and cost devoted to issuing grazing permits has increased at a steady rate. The requirements for issuing a permit have also continued to increase. The baseline quantity for this measure is 2,600 permits, established in 2007. BLM continues to work to eliminate the grazing permit renewal backlog. There is still a backlog of fully processed grazing permits, due to the need to conduct environmental assessments and a growing workload caused by litigation associated with issuing permits. In FY 2008, a total of 2,177 permits and leases were issued.

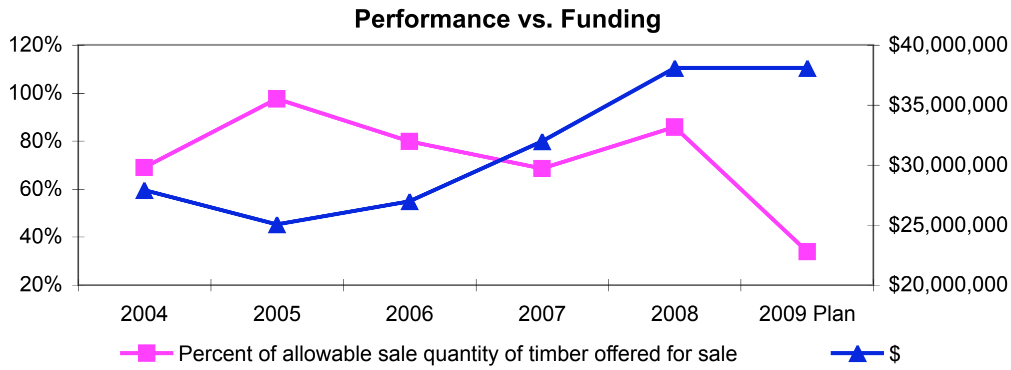
In 2009, BLM expects to process the same number of permits as in 2008 (see unchanged numerator in table above). However, a surge in expiring permits is expected to occur in 2009 and 2010, resulting in a significant increase in the 2009 denominator that would cause the overall performance for this measure to decline by 24 percentage points.

Programs Supporting This Measure

BLM Resource Management
BLM Land Use Planning

Percent of allowable sale quantity timber offered for sale consistent with applicable resource management plans

FIGURE 1-25



ID #1562	2004	2005	2006	2007	2008	2009 Plan
Target				82%	85%	34%
Performance	69%	98%	80%	68%	86%	
ASQ timber offered (MMBF)	140	198	162	139	174	170
Allowable sale quantity of timber (MMBF)	203	203	203	203	203	502
$	27,906,311	25,033,019	26,945,719	31,975,747	38,068,812	38,068,812

Snapshot: *Performance jumped by 18 percentage points over last year in conjunction with a substantial increase in funding.*

Bottom Line: *Performance has recovered from FY 2007, when increased litigation and loss of several biological opinions required the BLM to remove about 33 percent of the timber sale plan.*

Status: *Challenged performance, due to increased costs and declining performance.*

Public Benefit: *Timber sales contribute to the economic stability of local communities and industry.*

Some of the most productive forests in the world are managed by the BLM in western Oregon in compliance with the Northwest Forest Plan (NWFP). The NWFP was intended to preserve the health of forests, wildlife, and waterways while producing a predictable and sustainable level of timber. Continuing to impact performance are legal challenges stemming from both the National Environmental Policy Act and the ESA requirements. These lawsuits resulted in increased costs due to additional survey requirements, less volume offered than anticipated in the specified performance targets, sales needing to be redone, and delays in contract awards and operations. Performance is rebounding as the legal actions are being cleared, although total and unit costs are increasing due to litigation.

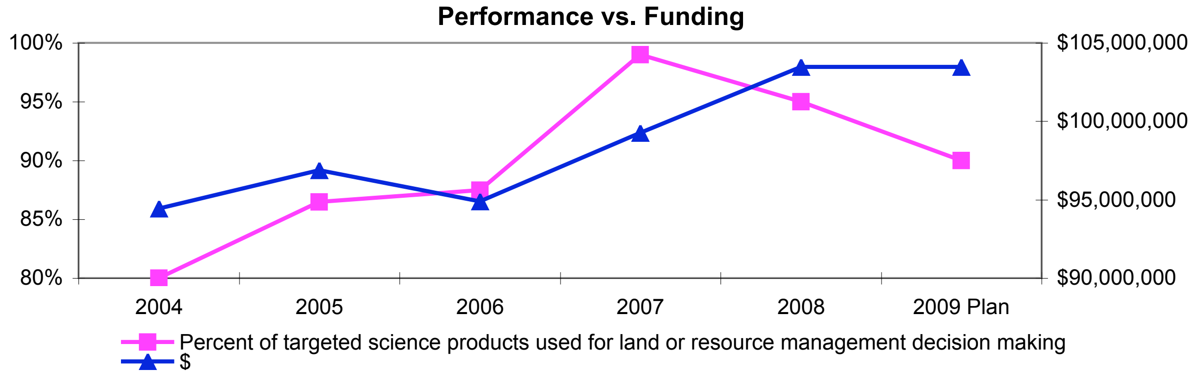
Under the most recently proposed management plan for Oregon & California (O&C), the timber harvest anticipated for 2009, the denominator for this measure, will increase dramatically to 502 million board feet per year. Although BLM will offer nearly the same amount of timber in 2009, the overall percent will decline to 34 because of the denominator increase.

Programs Supporting This Measure

BLM	Resource Management
BLM	Land Use Planning

Percent of targeted science products that are used by partners or customers for land or resource management decisionmaking

FIGURE 1-26



ID # 1527	2004	2005	2006	2007	2008	2009 Plan
Target				80%	90%	90%
Performance	80%	87%	88%	99%	95%	
$	94,429,073	96,883,040	94,898,465	99,256,515	103,482,332	103,482,332

Snapshot: *Science products used for decisionmaking continue to experience high rates of use from partners and customers; funding has increased commensurate with the growing focus on energy resource development.*

Bottom Line: *Performance remains relatively constant in the mid to upper 90 percent range. The Mineral Resources Program component of the target anticipated reduced funding, but the funds were restored by Congress, which also approved increased funding for energy in the areas of gas hydrates and data preservation.*

Status: *Sustained Performance.*

Public Benefit: *USGS science products are used to plan for a secure energy future and to allow for the strategic use and evaluation of resources.*

Performance on this measure is assessed through two USGS programs: the Mineral Resources Program and the Energy Resources Program. Together they provide reliable and impartial scientific information on geologically-based natural resources and the consequences of their development.

The USGS Energy Resources Program conducts national and global energy research dealing with conventional, renewable, and alternative energy sources such as geothermal, gas hydrates, oil shale, oil, gas, coal, uranium, heavy oil, and the like. Scientists are looking at the potential of gas hydrates as a critical new source of energy. Gas hydrates are a naturally occurring, ice-like combination of natural gas and water found under the world's oceans and polar regions. Its natural gas accumulations are estimated to greatly exceed the volume of all known conventional (commercial) gas resources. Currently, the technical challenges of realizing them as a resource are substantial, but research is being conducted to overcome these challenges.

In the United States, almost all of the gas-hydrate potential lies under Federally managed lands or waters. Future contributions from gas-hydrate to world energy supplies depend on availability, producibility, and cost of extracting methane from the hydrate phase. In 2008, the USGS completed a first-ever assessment of technically recoverable gas-hydrate resources. This work will provide the BLM and the Alaska Department of Natural Resources with the knowledge of where potential gas-hydrate development may take place.

In 2008, the USGS Energy Resources Program completed and released the first national

Programs Supporting This Measure

USGS Energy Resource Assessment
USGS Mineral Resource Assessment

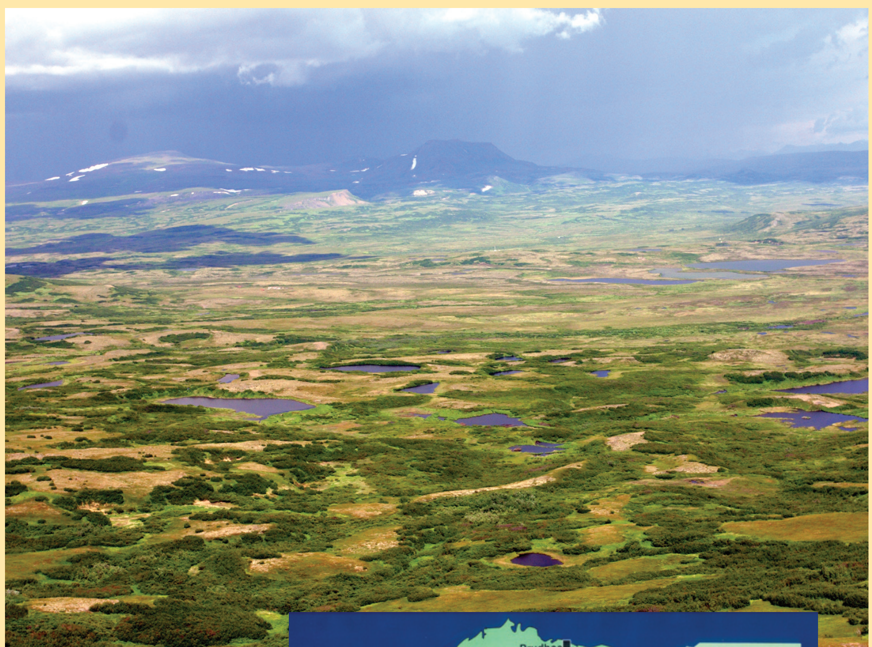
Target: 90%
Actual: 95%
GOAL MET

geothermal resource assessment in more than 30 years. The USGS evaluated all geothermal resources capable of producing electricity. Geothermal energy is an extremely important, but underutilized resource in the United States.

The USGS Mineral Resources Program conducts national and global research on 100 mineral commodities required to maintain a dynamic economy. Scientists have developed methods for predicting the amounts of these commodities available in the future. In FY 2008 USGS and partners published the first-ever assessment of undiscovered copper in South America—the first in a series of reports that will result in a global assessment by the end of FY 2010. In FY 2009, USGS will release reports updating the assessment methods and demonstrating their application.

Also in FY 2008, USGS initiated environmental baseline studies in and around the recently discovered Pebble copper-gold deposit in southwest Alaska. This study adds detail to work due to be completed in FY 2009 providing geologic information in support of economic development across rural southwest Alaska. The Pebble study will provide Federal and State land managers with premining background data against which to measure environmental compliance as the mine is developed.

Huge Copper-Gold System Discovered in Alaska



Discoveries of new, significant mineral deposits required to sustain our economy are rare events. Currently, the U.S. is not increasing copper production, but is relying heavily on imports from other countries. The Pebble project is a large copper-gold system located just north of Lake Iliamna, Alaska's largest lake, in an area renowned for its wildlife habitat. USGS has initiated environmental baseline studies so environmental compliance can be measured as the mine is developed.

A type of geochemistry that led to Pebble's discovery was measurements of metals in the sediments that are carried in the streams in the area. The Mineral Resources Program collects stream sediment samples and analyzes them for a suite of metals as a routine part of the geochemical information used to understand the geologic history and mineral deposit potential of an area. These samples and analyses are particularly helpful in remote areas like southwestern Alaska. Any mining company that wants to investigate an area uses these publically available data collected and published by the Mineral Resources Program as part of the basic information they use to decide where to focus their detailed exploration.

Providing these data for public use is a core mission of MRP and supports DOI's goal of managing natural resources to promote responsible use and sustain a dynamic economy.