

U.S. DEPARTMENT OF **ENERGY**

Strategic Petroleum Reserve Annual Report for Calendar Year 2010



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Report to Congress November 2011

Assistant Secretary for Fossil Energy
Office of Petroleum Reserves
U.S. Department of Energy
Washington, DC 20585

Strategic Petroleum Reserve: www.spr.doe.gov



U.S. Department of
ENERGY

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**Report to Congress
November 2011**

**United States Department of Energy
Washington, DC 20585**

Message from the Secretary

Section 165 of the Energy Policy and Conservation Act (42 U.S.C. 6245), as amended, requires the Secretary of Energy to report annually to the President and the Congress on the activities of the Strategic Petroleum Reserve. Highlights of the Department's accomplishments are included in the Executive Summary of this report, the *Strategic Petroleum Reserve Annual Report for Calendar Year 2010*.

Also included in this report are details concerning the physical capacity, type, and quantity of petroleum in the Strategic Petroleum Reserve as well as plans for upgrades or major maintenance. The Energy Policy and Conservation Act also requires information on the current withdrawal and distribution rates and capabilities, the history and costs of petroleum acquisitions, and the costs associated with operations, maintenance, management, and planned projects for the Strategic Petroleum Reserve.

Pursuant to statutory requirements, this report is being provided to the President and the following Members of Congress:

- **The Honorable Joseph R. Biden**
President of the Senate
- **The Honorable John Boehner**
Speaker of the House of Representatives
- **The Honorable Daniel K. Inouye**
Chairman, Senate Committee on Appropriations
- **The Honorable Thad Cochran**
Ranking Member, Senate Committee on Appropriations
- **The Honorable Kent Conrad**
Chairman, Senate Committee on Budget
- **The Honorable Jeff Sessions**
Ranking Member, Senate Committee on Budget
- **The Honorable Dianne Feinstein**
Chairwoman, Senate Subcommittee on Energy and Water Development
Committee on Appropriations

- **The Honorable Lamar Alexander**
Ranking Member, Senate Subcommittee on Energy and Water Development
Committee on Appropriations
- **The Honorable Jeff Bingaman**
Chairman, Senate Committee on Energy and Natural Resources
- **The Honorable Lisa Murkowski**
Ranking Member, Senate Committee on Energy and Natural Resources
- **The Honorable Harold Rogers**
Chairman, House Committee on Appropriations
- **The Honorable Norm Dicks**
Ranking Member, House Committee on Appropriations
- **The Honorable Rodney P. Frelinghuysen**
Chairman, House Subcommittee on Energy and Water Development
Committee on Appropriations
- **The Honorable Peter J. Visclosky**
Ranking Member, House Subcommittee on Energy and Water Development
Committee on Appropriations
- **The Honorable Paul D. Ryan**
Chairman, House Committee on the Budget
- **The Honorable Chris Van Hollen**
Ranking Member, House Committee on the Budget
- **The Honorable Fred Upton**
Chairman, House Committee on Energy and Commerce
- **The Honorable Henry A. Waxman**
Ranking Member, House Committee on Energy and Commerce
- **The Honorable Edward Whitfield**
Chairman, House Subcommittee on Energy and Power
Committee on Energy and Commerce
- **The Honorable Bobby L. Rush**
Ranking Member, Subcommittee on Energy and Power
House Committee on Energy and Commerce

If you have any questions or need additional information, please contact me or Mr. Jeff Lane, Assistant Secretary for Congressional and Intergovernmental Affairs, at (202) 586-5450.

Sincerely,

A handwritten signature in black ink, appearing to read "Steven Chu". The signature is written in a cursive style with a large initial "S" and "C".

Steven Chu

Executive Summary

Program Highlights and Status

The Strategic Petroleum Reserve program provides the United States with energy and economic security through its emergency stockpile of crude oil. The stocks are located at four facilities, Bryan Mound and Big Hill in Texas and Bayou Choctaw and West Hackberry in Louisiana. During 2010, the Reserve held a crude oil inventory of 726.5 million barrels, which was equal to 77 days of net U.S. petroleum imports, and maintained a drawdown capability of 4.4 million barrels per day.

Oil Acquisitions and Receipts

There were no acquisitions of crude oil for the Strategic Petroleum Reserve during 2010. The Reserve has completed fill to its 727 million barrel capacity.

Expansion to One Billion Barrels

The Energy Policy Act of 2005 (EPAAct 2005) (Pub L. 109-58), enacted on August 8, 2005, directed the Secretary of Energy to expand and fill the Strategic Petroleum Reserve to its authorized one billion barrel capacity, as expeditiously as practicable without incurring excessive costs or appreciably affecting the price of petroleum products to consumers. In response, the Department of Energy (DOE) completed an Environmental Impact Statement, selecting two existing sites (Bayou Choctaw and Big Hill) for expansion, and proposed development of a new site at Richton, Mississippi. An expansion plan was submitted to Congress in 2007.

During 2010, DOE completed environmental studies in support of a Supplemental Environmental Impact Statement (SEIS) that was initiated in March 2008 to address three major issues that had been identified through a public information process. The three issues addressed in the SEIS for the proposed Richton site development are: the source of water to leach the storage caverns; the location for the oil terminal in Pascagoula, Mississippi; and the location of the brine discharge pipeline in the Gulf of Mexico. The report was not finalized and DOE suspended its efforts to pursue development of a new site in Mississippi.

No billion barrel expansion activities have been taken at two of the selected existing sites noted above.

Geotechnical Concerns

Plans proceeded during 2010 for the purchase of an existing privately-owned 10 million barrel cavern adjacent to the Bayou Choctaw, Louisiana site. The new cavern will replace a cavern

on-site experiencing structural problems that pose an environmental risk. Completion of the purchase of the new cavern and development and integration of the cavern will add approximately 6 million barrels of net capacity to the Bayou Choctaw site.

Environment, Safety, and Health

The Strategic Petroleum Reserve program operates with an Environmental Management System (EMS) that is certified to the International Organization for Standardization (ISO) 14001 Standard (2004 version). Since 2000, the scope of the EMS recognized under certification included only the Management and Operations contractor. The scope of the EMS includes both the management and operating contractor, DynMcDermott Petroleum Operations Company (now DM Petroleum Operations Company), and the construction management contractor, Arctic Slope Regional Corporation Gulf States Constructors. DOE is involved in the EMS through the Strategic Petroleum Reserve Integrated Safety Management System (ISM), of which the EMS serves as the environmental leg.

Following the ISO 31000 and guidance IEC/ISO 31010, the Strategic Petroleum Reserve developed in 2010 a project-level risk assessment to identify internal/external factors that could hinder the Strategic Petroleum Reserve from carrying out its mission in a safe, secure, and environmentally sound manner. A cross-functional team was formed including DOE and their subcontractors which ultimately identified risks, projected consequences and controls, and “as is” risk levels. The Strategic Petroleum Reserve storage sites continue to operate under the Occupational Safety and Health Administration’s (OSHA) Voluntary Protection Program (VPP) certification with all four sites having maintained their Star status throughout 2010. The Big Hill and Bryan Mound sites successfully passed their OSHA on-site review in 2010. At both Big Hill and Bryan Mound sites OSHA validated the Strategic Petroleum Reserve’s Process Safety Management system. Process Safety Management is currently an OSHA National Emphasis Program. Additionally, all four sites won OSHA and Department of Energy VPP performance awards.

In addition to the awards associated with the VPP program, the Strategic Petroleum Reserve storage sites were recipients of several awards for management quality, environmental stewardship, and safety management systems. In 2010, the Strategic Petroleum Reserve received three awards from the National Safety Council for Occupational Excellence. These awards were presented during the 2010 National Safety Council Congress.



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I. Legislative Language

The Strategic Petroleum Reserve was authorized by the Energy Policy and Conservation Act (EPCA), as amended (42 U.S.C. 6201 *et seq.*), which was enacted on December 22, 1975 (Pub L. 94-163). The Strategic Petroleum Reserve has operated according to the policies and comprehensive energy plans of all Administrations since that time in recognition of the long-term dependence of the United States on imported crude oil and petroleum products.

Section 165 of EPCA requires the Secretary of Energy to submit an Annual Report to the President and the Congress on the activities of the Strategic Petroleum Reserve. As required by the Act, this *Strategic Petroleum Reserve Annual Report for Calendar Year 2010* includes information on:

- The status of the physical capacity of the Strategic Petroleum Reserve and the type and quantity of petroleum products stored;
- An estimate of the schedule and cost to complete planned equipment upgrade or capital investment in the Strategic Petroleum Reserve, including upgrades and investments carried out as part of operational maintenance or extension of life activities;
- Identification of any life-limiting conditions or operational problems at any Strategic Petroleum Reserve facility, and proposed remedial actions including an estimate of the schedule and cost of implementing those remedial actions;
- A description of current withdrawal and distribution rates and capabilities, and an identification of any operational or other limitations on those rates and capabilities;
- A listing of petroleum product acquisitions made in the preceding year and planned in the following year, including quantity, price, and type of petroleum;
- A summary of the actions taken to develop, operate, and maintain the Strategic Petroleum Reserve;
- A summary of the financial status and financial transactions of the Strategic Petroleum Reserve and the Strategic Petroleum Reserve Petroleum Accounts for the year;
- A summary of expenses for the year, and the number of federal and contractor employees;
- The status of contracts for development, operation, maintenance, distribution, and other activities of the Strategic Petroleum Reserve ;
- A summary of foreign oil storage agreements and their implementation status;
- Any recommendations for supplemental legislation or policy or operational changes the Secretary considers necessary to implement the requirements of the Act.

II. Ullage Management Remediation Program

Strategic Petroleum Reserve storage caverns are subject to continuous progressive “creep closure” due to naturally occurring geological forces. This closure continuously reduces the excess volume (ullage) of the caverns required to maintain their long-term storage capacity. Current projections indicate that required ullage will be depleted between 2012 and 2013. Studies of various strategies to solve this problem have been made. Due to their current ullage, creep rates, and workover program impacts, West Hackberry, Big Hill, and Bryan Mound sites pose the greatest concern to the Strategic Petroleum Reserve.

III. Cavern Well Casing Issues

During 2010, a sophisticated well-bore diagnostic program was initiated to assure the long-term integrity of the wells penetrating the 62 storage caverns in the Strategic Petroleum Reserve. The well-bore diagnostic program centers on the use of multi-sensor caliper surveys and down-hole video surveys to evaluate the condition of the wells. Based on the results of this program, a casing remediation workover program was initiated in 2010 to perform down-hole repairs necessary to assure longevity of the nine wells that were identified for the procedure during 2010. In addition, one well was found to be unacceptable for further use and was subsequently plugged and abandoned in December 2010, without diminishing the cavern drawdown capability.

Anomalous pressure responses were observed in Big Hill Caverns 105 and 109 during 2010. Subsequent diagnostic work on wells penetrating the two caverns showed evidence of casing damage at the cap-rock/salt dome interface. Workovers to isolate the wells from the caverns were successfully performed during the second half of 2010. Additional workovers were planned to repair the wells in the future.

IV. Hurricane Recovery Activities

During 2010, the Strategic Petroleum Reserve completed all remaining recovery activities associated with damage caused by Hurricane Gustav and Ike. Table 1 shows the final costs for hurricane repairs.

Table 1
Operational Impacts of Hurricanes

Site	Hurricane Gustav	Hurricane Ike	Recovery Costs**
Project Management Office, New Orleans, LA*	No Impact	No Impact	\$756,000
Bryan Mound, TX	No Impact	Recovery Time – 6 Days	\$2,426,000
Big Hill, TX	No Impact	Recovery Time – 17 Days	\$9,504,000
West Hackberry, LA	No Impact	Recovery Time – 5 Days	\$3,453,000
Bayou Choctaw, LA	Recovery Time – 5 Days	No Impact	\$136,000
Other operational expenses			\$4,867,000
Remaining Cost Plan			\$444,000
Total			\$21,586,000

* Contains New Orleans and multi-site charges captured in New Orleans

** Final recovery costs have been updated from prior year published estimates

V. Program Mission

Introduction

The Strategic Petroleum Reserve operates within the authority of the Energy Policy and Conservation Act (EPCA) (42 U.S.C. 6201 et seq.), as amended, and the policies and comprehensive energy plans of all Administrations since that time in recognition of the long-term dependence of the United States on imported crude oil and petroleum products.

As of December 31, 2010, the Strategic Petroleum Reserve contained 726.5 million barrels of crude oil. The inventory provided the equivalent of 77 days of net imports based on net petroleum imports of 9.57 million barrels per day. The United States relies on a combination of oil in the Strategic Petroleum Reserve and private stocks to meet its oil storage obligations under and consistent with the agreement with the International Energy Program.

Legislative History

EPCA authorized the establishment of the Strategic Petroleum Reserve to reduce the impact of a severe energy supply interruption, and to carry out the obligations of the United States under the International Energy Program.

EPCA was amended by Title VIII of the Energy Security Act (Pub L. 96-294), enacted on June 30, 1980. The Act established a minimum average daily fill rate of 100 thousand barrels and precluded sale of Naval Petroleum Reserve Numbered 1 (Elk Hills Oil Field, Kern County, California) crude oil except to fill the Strategic Petroleum Reserve unless the Strategic Petroleum Reserve was being filled at the minimum rate or had an inventory of 500 million barrels.

The Energy Policy and Conservation Amendments Act of 1985 (Pub L. 99-58), enacted on July 2, 1985, extended the provisions of Title I, Part B, of EPCA relating to the Strategic Petroleum Reserve until June 30, 1989, and directed the Secretary of Energy to conduct a sale or exchange of 1.1 million barrels of crude oil to test the drawdown and distribution capabilities of the Strategic Petroleum Reserve.

The Omnibus Budget Reconciliation Act of 1986 (Pub L. 99-509), enacted on October 18, 1986, amended EPCA to require that the Strategic Petroleum Reserve be filled at a minimum rate of 75 thousand barrels a day until at least 750 million barrels were in storage.

Public Law 101-46, enacted on June 30, 1989, extended Strategic Petroleum Reserve authorities contained in EPCA until April 1, 1990. The Act also required the Secretary of Energy to submit a report to Congress by February 1, 1990, on alternative means of financing oil acquisition for the Strategic Petroleum Reserve. Short-term extensions of the Strategic Petroleum Reserve

authorities contained in EPCA were enacted on March 31, 1990 (Pub L. 101-262), and August 10, 1990 (Pub L. 101-360).

On September 15, 1990, the President signed the Energy Policy and Conservation Act Amendments of 1990 (Pub L. 101-383), extending authorization for the Strategic Petroleum Reserve until September 30, 1994. This legislation also contained provisions to amend drawdown authorities, required a Strategic Petroleum Reserve Plan Amendment for completion of storage capacity for one billion barrels, authorized the drawdown and distribution tests, and provided for a refined petroleum product reserve test program.

On October 24, 1992, the President signed the Energy Policy Act of 1992 (Pub L. 102-486). The Act included provisions to (1) add new conditions for drawdown in emergency situations involving a supply reduction of significant scope and duration, coupled with a severe price increase likely to cause a major adverse impact on the Nation's economy, (2) allow the enlargement of the Reserve to one billion barrels, (3) permit the Secretary of Energy to make payment in advance for delivery of petroleum product either owned or not owned by the United States for storage in the Strategic Petroleum Reserve or non Strategic Petroleum Reserve facilities, (4) give the President discretionary authority to acquire domestic stripper well oil at competitive prices to fill the Reserve; (5) amend the eligibility criteria for a Regional Petroleum Reserve; and (6) establish a Defense Department petroleum account of approximately six million barrels to be stored in the Strategic Petroleum Reserve.

On October 22, 1994, the President signed into law the Energy Policy and Conservation Act Amendments Act of 1994 (Pub L. 103-406), extending authorization for the Reserve to June 30, 1996.

The Balanced Budget Downpayment Act (Pub L. 104-99), enacted on January 26, 1996, required the sale of up to \$100 million of Weeks Island oil to fund decommissioning activities.

The Omnibus Consolidated Rescissions and Appropriations Act of 1996 (Pub L. 104-134), enacted on April 26, 1996, required the sale of \$227 million of Weeks Island oil for deficit reduction.

The Omnibus Consolidated Appropriations Act (Pub L. 104-208), enacted on September 30, 1996, appropriated \$220 million for the Strategic Petroleum Reserve in fiscal year 1997 to be financed through the sale of Reserve oil. The Strategic Petroleum Reserve authorities expired on June 30, 1996. Authorization was renewed on October 14, 1996 with enactment of Pub L. 104-306, which extended the authorization for the Strategic Petroleum Reserve until September 30, 1997. After that date, the Reserve operated without authorizing legislation until June 1998 when Pub L. 105-177 was signed.

The Balanced Budget Act of 1997 (Pub L. 105-33), enacted on August 5, 1997, added a new section 168 to EPCA, authorizing the leasing of underutilized Strategic Petroleum Reserve facilities for the storage of oil owned by a foreign government or its representatives.

The Department of the Interior and Related Agencies Appropriations Act, 1998 (Pub L. 105-83), enacted on November 14, 1997, appropriated \$207.5 million for the Strategic Petroleum Reserve in fiscal year 1998 to be financed through the sale of Reserve oil.

The 1998 Supplemental Appropriations and Rescissions Act (Pub L. 105-174), enacted on May 1, 1998, included a provision which prohibited the drawdown and sale of Strategic Petroleum Reserve oil if the President determined that a sale would be imprudent in light of market conditions and designated the \$207.5 million in foregone revenue as an emergency requirement under the Balanced Budget Act of 1985. The President made the requisite determination and designation on May 8, 1998.

On June 1, 1998, the President signed Pub L. 105-177 to extend certain EPCA programs. The Act extended the authorization for the Strategic Petroleum Reserve and participation in the International Energy Program through September 30, 1999, and expanded the antitrust protection for U.S. companies participating in International Energy Agency activities. The Act also authorized the drawdown and distribution of crude oil from the Strategic Petroleum Reserve only for the purposes described in the Act, and required that the Secretary of Energy request funds for acquisition, transportation and injection of petroleum products for storage in the Reserve or provide a written explanation if no request for funds was made. The Omnibus Consolidated and Emergency Supplemental Appropriations Act, 1999 (Pub L. 105-277), enacted on October 21, 1998, included \$160.1 million for the Strategic Petroleum Reserve.

On November 13, 1998, the President signed Pub L. 105-388, an Act to extend energy conservation programs under EPCA and the Energy Conservation and Production Act, and for other purposes. The Act provided that, during a drawdown of the Strategic Petroleum Reserve, the State of Hawaii may submit a binding offer for Strategic Petroleum Reserve oil and be entitled to purchase the oil at a price equal to the weighted average price of the successful competitive bids for oil in the applicable category. Deliveries under the binding offer would receive priority scheduling during a Strategic Petroleum Reserve drawdown.

The Strategic Petroleum Reserve authorization expired on September 30, 1999. On October 5, 1999, the President signed Pub L. 106-64, extending the authorization for the Reserve and for the EPCA authorities for United States participation in the International Energy Program until March 31, 2000.

Appendix C of the Consolidated Appropriations Act, 2000 (Pub L. 106-113), enacted on November 29, 1999, included \$159 million for the Strategic Petroleum Reserve. The Act also allowed the Secretary to use other DOE funds to finance a drawdown from the Strategic Petroleum Reserve.

The Department of the Interior and Related Agencies Appropriations Act, 2001 (Pub L. 106-291), signed on October 11, 2000, included \$165 million for the development, operation and management activities of the Strategic Petroleum Reserve under EPCA,

\$4 million to be derived from the transfer of unobligated funds in the “SPR Petroleum Account.”

On November 9, 2000, the President signed the Energy Act of 2000 (Pub L. 106-469). Title I reauthorized titles I and II of EPCA through fiscal year 2003, and updated or deleted the EPCA title I Strategic Petroleum Reserve authorities. Title II amended title I of EPCA to insert a new part D authorizing the Secretary “to establish, maintain, and operate a Northeast Home Heating Oil Reserve,” containing no more than two million barrels of petroleum distillate and located in the Northeast. The new part D Reserve is not a component of the Strategic Petroleum Reserve established under part B of title I of EPCA. Title II also sets forth conditions for release of products from the new part D Reserve, requires transmittal to the President and Congress of a plan describing the Reserve, and upon establishment, requires the Secretary of the Treasury to establish a “Northeast Home Heating Oil Reserve” account at Treasury.

On November 5, 2001, the President signed Pub L. 107-63, the Department of the Interior and Related Agencies Appropriations Act for fiscal year 2002. The Act included \$171 million for Strategic Petroleum Reserve facilities.

On February 20, 2003, after a series of continuing resolutions, the President signed Pub L. 108-7, the Consolidated Appropriations Act, 2003. Pub L. 108-7 included \$171.7 million for Strategic Petroleum Reserve operations and program management activities and \$1.9 million for the SPR Petroleum Account. The law also extended EPCA authority for the Strategic Petroleum Reserve and United States’ participation in the International Energy Program through September 30, 2008.

On November 10, 2003, the President signed the Department of the Interior and Related Agencies Appropriations Act, 2004 (Pub L. 108-108). The Act provided \$171 million for the operations and program management activities of the Strategic Petroleum Reserve.

On December 8, 2004, the President signed the Consolidated Appropriations Act, 2005 (Pub L. 108-447). The Act provided \$172.1 million for the operations and program management activities of the Strategic Petroleum Reserve. After an across-the-board rescission of 0.594 percent and a second general reduction, the Strategic Petroleum Reserve budget authority was reduced to \$169.71 million.

On August 8, 2005, the President signed into law the Energy Policy Act of 2005 (Pub L. 109-58). The Act amended EPCA to provide permanent authorization for the Strategic Petroleum Reserve. The Act also required acquisition of petroleum to fill the Strategic Petroleum Reserve to its authorized one billion barrel capacity “as expeditiously as practicable without incurring excessive costs or appreciably affecting the price of petroleum products to consumers”, promulgation of procedures for the acquisition of petroleum for the Reserve, including procedures and criteria for the review of requests for the deferrals of scheduled deliveries, and selection of sites necessary to expand the storage capacity of the Strategic Petroleum Reserve to one billion barrels.

On November 19, 2005, the President signed the Energy and Water Development Appropriations Act, 2006 (Pub L. 109-103). The Act provided \$166 million for facility development and operations and program management activities of the Strategic Petroleum Reserve. After an across-the-board rescission of one percent, the Strategic Petroleum Reserve budget authority was reduced to \$164.34 million.

Congress passed a series of Continuing Resolutions to cover programs whose fiscal year 2007 appropriations, beginning October 1, 2006, had not yet been completed. The last Continuing Resolution signed during 2006 was signed by the President on December 9, 2006 (Pub L. 109-383), and provided funding through February 15, 2007. A final year-long Continuing Resolution (H.J. Res 20) was passed by Congress on February 14, 2007, and signed by the President on February 15, 2007. The Revised Continuing Appropriations Resolution, 2007 (Pub L. 110-5) provided appropriations equal to the 2006 amount plus a small escalation adjustment for employee pay and benefits. The final appropriation for the Strategic Petroleum Reserve was \$164.441 million.

Congress passed two Continuing Resolutions to cover fiscal year 2008 programs whose appropriations, beginning October 1, 2007, had not yet been enacted. On December 26, 2007, the President signed the Consolidated Appropriations Act, 2008 (Pub L. 110-161). The Act provided \$188.472 million for the Strategic Petroleum Reserve, of which \$25 million was to be used to carry out the new expansion site land acquisition activities consistent with the budget request. After an across-the-board general reduction, the Strategic Petroleum Reserve's budget authority totaled \$186.757 million, of which \$24.773 million was provided to carry out new site land activities.

On May 19, 2008, the President signed into law the Strategic Petroleum Reserve Fill Suspension and Consumer Protection Act of 2008 (Pub L. 110-232). The Act suspended acquisition of petroleum for the Strategic Petroleum Reserve beginning on the date of enactment and ending on December 31, 2008. Resumption of fill could resume under strictly defined conditions, i.e., if the President determined that the weighted average price of petroleum in the United States for the most recent 90-day period was \$75 or less per barrel. However, the Strategic Petroleum Reserve could not resume fill earlier than 30 days after the President notified Congress that the condition had been met. Pub L. 110-232 expired on December 31, 2008.

Funding for FY 2009 was completed in a series of three appropriations actions. On September 30, 2008, the President signed the Consolidated Security, Disaster Assistance, and Continuing Appropriations Act, 2009 (Pub L. 110-329) that provided funding for Government agencies through March 6, 2009. On March 6, 2009, Congress passed, and the President signed, H.J. Res. 38, a stopgap spending measure to keep the government in operation through March 11, 2009 (Pub L. 111-6). On March 11, 2009, the President signed the Omnibus Appropriations Act, 2009 (Pub L. 111-8) that completed funding through the fiscal year. Appropriations for the Strategic Petroleum Reserve totaled \$205 million, with \$31.507 million directed to carry out new site land acquisition activities as part of the proposed expansion of

the Strategic Petroleum Reserve to one billion barrels. However, the law included a caveat that none of the funds provided for new site expansion activities may be obligated or expended until after the Secretary of Energy submits a report to the Congress on the effects of expansion of the Strategic Petroleum Reserve on the domestic petroleum market. Research and preparation of the report continued through 2009.

Additional FY 2009 funds were authorized in the Supplemental Appropriations Act, 2009 (Pub L. 111-32), enacted June 24, 2009, by transfer of \$21.586 million from the Strategic Petroleum Reserve's Petroleum Account to Facilities Development and Operations for site maintenance activities. The funds were used for the required hurricane repairs and site restoration following Hurricanes Gustav and Ike in 2008.

Funding for FY 2010 began with a short-term continuing resolution contained in the FY 2010 Appropriations Act for the Legislative Branch and Continuing Resolution (Pub L. 111-68). On October 28, 2009, the Energy and Water Development and Related Agencies Appropriations Act, 2010 (Pub L. 111-85) was enacted. The Act provided \$243.823 million for the Strategic Petroleum Reserve, including \$25 million for expansion activities at the proposed Richton, Mississippi site. Report language accompanying the Act (House Rept. 111-278 and Senate Rept. 111-45) included guidance for the purchase of a commercial storage cavern to replace an existing Strategic Petroleum Reserve cavern due to environmental risk at the Bayou Choctaw, Louisiana site. Section 313 of the Act placed restrictions on the use of Strategic Petroleum Reserve funds regarding potential transactions with the Islamic Republic of Iran. The restrictions prohibited use of the funds to any person selling refined petroleum products valued at \$1 million or more to the Islamic Republic of Iran, or who is engaged in an activity valued at \$1 million or more that could contribute to enhancing the ability of the Islamic Republic of Iran to import refined petroleum products, or who is engaged in an activity that could expand the capacity of the Islamic Republic of Iran to produce refined petroleum products. The prohibition exempted any contract entered into by the United States Government before the date of the enactment of Pub L. 111-85.

Congress funded FY 2011 with a series of short-term Continuing Resolutions that continued until April 15, 2011, when the Department of Defense and Full-Year Continuing Appropriations Act, 2011 (Full-Year Continuing Appropriations Act) (Pub L. 112-10) was signed by the President. The Full-Year Continuing Appropriations Act provided funding of \$209,861,000. The first short-term Continuing Resolution (Pub L. 111-242) was passed September 30, 2010, and provided funding for all Federal agencies through December 3, 2010. A second Continuing Resolution (Pub L. 111-290) amended the first and extended funding through December 18, 2010. The third Continuing Resolution (Pub L. 111-322) provided funding through March 4, 2011, in order to allow the 111th Congress to adjourn and to provide time to convene the 112th Congress to complete FY 2011 funding. The 112th Congress passed three additional short-term funding measures (Pub L. 112-4, Pub L. 112-6, and Pub L. 112-8) before completing work on the Full-Year Continuing Appropriations Act, which included a rescission of \$86.3 million of prior year balances from the Strategic Petroleum Reserve. Of that total,

\$75.16 million had been appropriated for expansion of the Strategic Petroleum Reserve to one billion barrels.

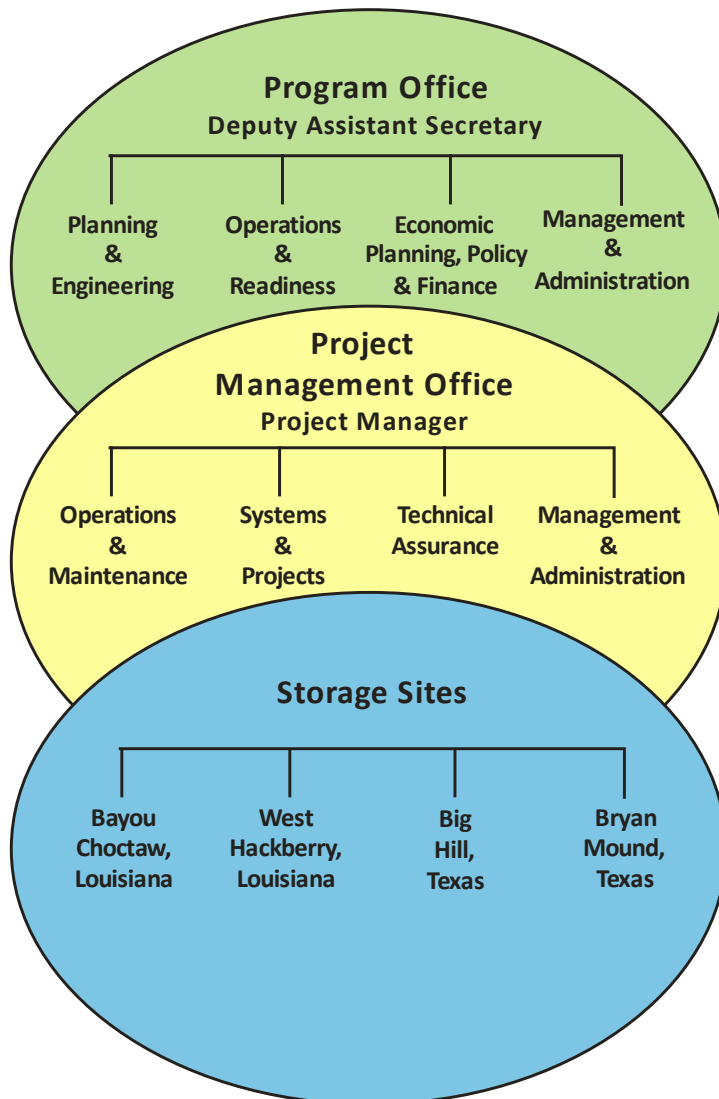
VI. Program Management

Organization

The Assistant Secretary for Fossil Energy at DOE in Washington, D.C. has overall program responsibility for achieving the goals and objectives of the Strategic Petroleum Reserve. This responsibility is delegated to the Deputy Assistant Secretary for Petroleum Reserves, and is exercised through the Program Office in Washington, D.C., and the Strategic Petroleum Reserve Project Management Office in New Orleans, Louisiana. Total staffing is 113 Federal full-time equivalent employees and 807 contractor employees as of December 31, 2010. Figure 1 depicts the Strategic Petroleum Reserve organizational structure.

Figure 1

Strategic Petroleum Reserve Organizational Structure



Contractual Support

The Project Management Office is responsible for the design, development, operation and maintenance of the Strategic Petroleum Reserve and during 2010 employed a Management and Operating contractor, DynMcDermott Petroleum Operations Company, to provide management and personnel to operate and maintain the Strategic Petroleum Reserve facilities and related systems. The contract with DynMcDermott (now DM Petroleum Operations Company) will expire on March 31, 2013.

S&B Infrastructure, an architectural and engineering firm, provides design services for the four storage facilities. The contract is for a three year initial period that ends May 31, 2012, with options for DOE to extend the contract with two additional one-year options.

Sandia National Laboratory provides geotechnical support that includes analysis of the salt dome, cavern integrity, vapor pressure, crude oil quality, and new cavern development.

Arctic Slope Regional Corporation Gulf States Constructors, a Native Alaskan 8(a) small disadvantaged business, provides construction and construction management services for the four storage facilities through August 31, 2011. The contract includes options for DOE to extend for two additional one-year periods.

Contractors in specific disciplines perform miscellaneous site modifications for major maintenance program activities. Most of these contracts are fixed-price and have terms of less than one year.

Several support services contracts exist for management, technical, and computer support. The largest support service contractor in 2010 was Deltha-Critique, an 8(a) small disadvantaged business, which provides management and technical support currently through October 31, 2010, with one additional one-year option remaining. Other support services contractors include PB Energy Storage Services, Inc., AOC Petroleum Support Services, LLC, and Cyborg, Inc.

Electrical power is provided to the four storage facilities by local utilities, Constellation New Energy, and Entergy.

The Strategic Petroleum Reserve holds contracts with three commercial facilities that provide terminal services for fill, drawdown, and storage of crude oil. The contract with the Sunoco Partners Marketing & Terminals, L.P. is in its second five-year option period, which commenced May 1, 2008. Unocal Corporation is in its third five-year option period, which expires April 23, 2012, and the period of performance for Seaway Crude Pipeline Company expires December 1, 2011.

VII. Crude Oil Storage Program

Strategic Petroleum Reserve Storage Facilities

The Strategic Petroleum Reserve currently operates and maintains four major oil storage facilities in the Gulf Coast region of the United States. The Strategic Petroleum Reserve has two sites in Texas, i.e., Bryan Mound and Big Hill, and two sites in Louisiana, i.e., West Hackberry and Bayou Choctaw. These four sites have a combined oil storage capacity of 727 million barrels and a drawdown capability of 4.4 million barrels per day. Table 2 shows the storage capacity and drawdown capability of each of the four storage sites as of December 31, 2010.

All oil stored in the Strategic Petroleum Reserve's oil storage facilities is in large underground storage caverns that have been created in salt dome formations. Salt dome storage technology provides maximum security and safety for the Nation's stockpile of crude oil.

Salt dome storage is by far the lowest cost technology for large-scale petroleum storage projects. The average operations cost for fiscal year 2010 was approximately \$0.21 per barrel for the management, staffing, operations & maintenance, and security. This cost is substantially less than industry storage costs and most foreign strategic oil reserves.

The Strategic Petroleum Reserve's oil storage facilities are grouped into three geographical distribution systems in the Gulf Coast: Seaway, Texoma and Capline. Each system has access to one or more major refining centers, interstate crude oil pipelines, and marine terminals for crude oil distribution. The locations of the Strategic Petroleum Reserve storage sites, and their respective distribution systems, are shown in Figure 2.

Table 2
Storage Capacity and Drawdown Capability
(As of December 31, 2010)

CURRENT SITE CAPABILITY			
Storage Facility	Storage Capacity** (MMB)	Crude Mix Sweet/Sour (MMB)	Drawdown Capability (MB/D)*
Bryan Mound	254	78/176	1,500
West Hackberry	228	120/108	1,300
Big Hill	171	73/98	1,100
Bayou Choctaw	74	22/52	515
Total Program	727	293/434 (40%/60%)	4,415

Sweet = Low sulfur crude ($S \leq 0.5\%$) Sour = Medium sulfur crude ($S \leq 1.99\%$)

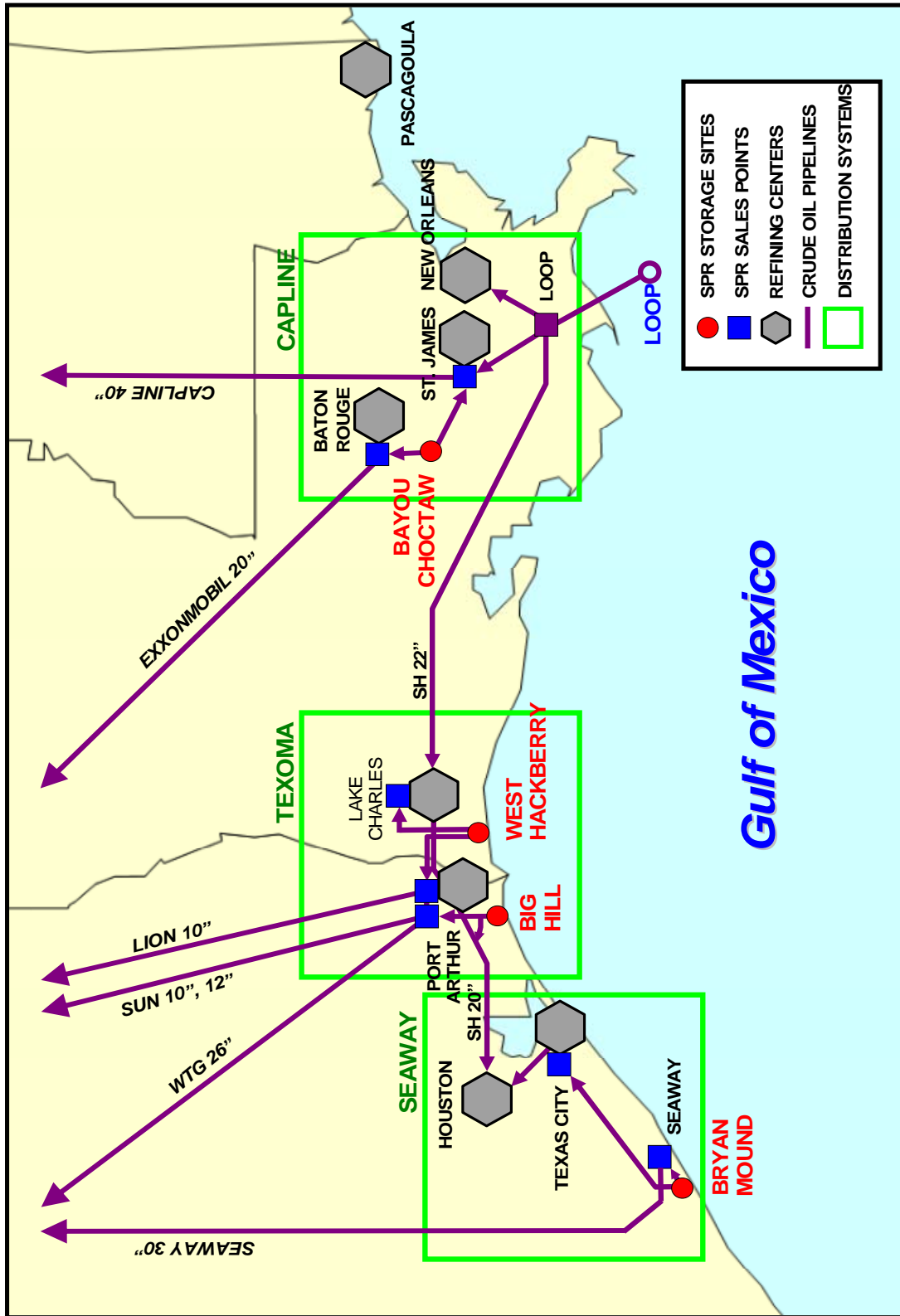
MMB = Million Barrels

MB/D = Thousand Barrels Per Day

* Initial 90-day capability

** Storage Capacities reflect Temporary Deviation (VA-D9-054) to minimize oil storage risks in BC Cavern 20. (i.e. West Hackberry +1.5 MMB, Big Hill +1.0 MMB, Bayou Choctaw -2.5MMB).

Figure 2
Storage Sites and Distribution System



Bryan Mound Site Status

The Bryan Mound storage site is located in Brazoria County, Texas, approximately three miles southwest of Freeport, Texas. The site has 20 storage caverns with a total storage capacity of 254 million barrels, and a cavern inventory of 253.9 million barrels.

The Bryan Mound site was completed in 1986 and has been fully operational since that time. The Strategic Petroleum Reserve annually performs a number of major maintenance projects to maintain the site's operational capabilities.

During 2010, construction was completed on the conversion of one of the 200 foot diameter crude oil storage tanks, BMT-3, from an internal floating roof to an external floating roof tank. An external floating roof design results in lower emissions from the tank and replaced the internal floating roof which was damaged and had sunk inside the tank.

Operation of the modular degasification plant continued at Bryan Mound during 2010. The plant treated approximately 41 million barrels of crude oil during 2010. The plant is scheduled to complete degasification of Bryan Mound caverns in early 2011.

West Hackberry Site Status

The West Hackberry storage site is located in Cameron Parish, Louisiana, approximately 25 miles southwest of Lake Charles, Louisiana. The site has 22 storage caverns with a combined storage capacity of 228 million barrels, and a cavern inventory of 227.8 million barrels.

The West Hackberry site was completed in 1988 and has been fully operational since that time. The Strategic Petroleum Reserve annually performs a number of major maintenance projects to maintain the site's operational capabilities.

During 2010, construction was started on the Site Modifications task that will facilitate moving the degasification plant from the Bryan Mound site to the West Hackberry site. This work includes all civil, mechanical, and electrical work that will be required for the site to accept the plant.

Construction was also started on the Site Security Upgrade task. Upgrades include replacement of the site Alarm Display and Annunciation System (ADAS), replacement of site security cameras, and the addition of enhanced security systems around site drawdown critical systems.

Big Hill Site Status

The Big Hill storage site is located in Jefferson County, Texas, approximately 26 miles southwest of Beaumont, Texas. The site has 14 storage caverns, a combined storage capacity of 171 million barrels, and a cavern inventory of 170.2 million barrels.

The Big Hill site was completed in 1991 and has been fully operational since that time. The Strategic Petroleum Reserve annually performs a number of major maintenance projects to maintain the site's operational capabilities.

During 2010, construction started on the Site Security Upgrade task. Upgrades include replacement of the site ADAS, replacement of site security cameras, and the addition of enhanced security systems around site drawdown critical systems.

Bayou Choctaw Site Status

The Bayou Choctaw storage site is located in Iberville Parish, Louisiana, approximately 12 miles southwest of Baton Rouge, Louisiana. The site has six storage caverns, an authorized storage capacity of 74 million barrels, and a cavern inventory of 73.6 million barrels. In October 2007 the authorized cavern capacity of Bayou Choctaw was temporarily decreased from 76 million barrels to 73.5 million barrels due to a net reduction of 2.5 million barrels of authorized capacity in Bayou Choctaw Cavern 20. This reduction was required since the bottom half of Bayou Choctaw 20 was determined to have a high environmental risk for storage of crude oil due to the proximity of the cavern boundary to the edge of the salt dome.

The Bayou Choctaw site was completed in 1987 and has been fully operational since that time. The Strategic Petroleum Reserve annually performs a number of major maintenance projects to maintain the site's operational capabilities.

During 2010, construction was completed on a comprehensive upgrade of the sites security systems. Upgrades include replacement of the ADAS, replacement of site security cameras, and the addition of enhanced security systems around site drawdown critical systems.

St. James Marine Terminal Status

The Strategic Petroleum Reserve constructed a marine terminal on the Mississippi River at St. James, Louisiana in the 1970s to support fill and drawdown of the Strategic Petroleum Reserve sites. The terminal has six above ground storage tanks with a total storage capacity of two million barrels. The St. James terminal is leased to Shell Oil Products US under a long-term lease agreement. Under the lease agreement, Shell provides for all normal operations and maintenance of the terminal and is required to support the Strategic Petroleum Reserve as a sales and distribution point in the event of a drawdown.

A connection between the St. James terminal and the adjacent LOCAP terminal enhances the Strategic Petroleum Reserve's emergency distribution capabilities by enabling unencumbered crude oil distribution to the LOCAP terminal, the ExxonMobil pipeline and the Plains terminal.

Expansion of the Strategic Petroleum Reserve to One Billion Barrels

EPAct 2005 directed the Secretary of Energy to expand and fill the Strategic Petroleum Reserve to its authorized one billion barrel capacity “as expeditiously as practicable without incurring excessive costs or appreciably affecting the price of petroleum products to consumers.”

After completing a process to prepare an Environmental Impact Statement for site selection to expand the capacity of the Reserve, a Record of Decision was signed by the Secretary of Energy on February 14, 2007, that identified the salt dome at Richton, Mississippi as the new Strategic Petroleum Reserve site. The selection of Richton was based on its large undeveloped salt dome, its enhanced distribution capabilities to serve Capline and Pascagoula, and its inland location which reduces potential hurricane impacts. Two existing Strategic Petroleum Reserve sites, Bayou Choctaw in Louisiana and Big Hill in Texas, were also selected to be expanded for storage of additional crude oil.

During 2010, DOE completed environmental studies in support of a Supplemental Environmental Impact Statement (SEIS) that was initiated in March 2008. The SEIS was conducted to address three major issues with the proposed Richton site that had been identified through a public information process; these are: the source of water to leach the storage caverns; the location for the oil terminal in Pascagoula; and the location of the brine discharge pipeline in the Gulf of Mexico. The studies were completed during 2010, but the SEIS was not finalized and DOE suspended its efforts to pursue development of a new site in Mississippi.

There have been no expansion activities conducted at the two existing sites that were selected as part of the billion barrel expansion.

VIII. Petroleum Acquisition and Exchange

Crude Oil Inventory Status

On December 31, 2010, the Strategic Petroleum Reserve's crude oil inventory was 726,544,856 barrels, a decrease of 71,389 barrels from the prior year. The net decrease in 2010 resulted primarily from an operational transfer of crude oil from the West Hackberry site to the Bayou Choctaw site and a small loss from the degasification process. The current mix of crude oil is 60 percent high sulfur (sour) and 40 percent low sulfur (sweet).

West Hackberry – Bayou Choctaw Operational Exchange

On August 10, 2010, the Secretary approved the repositioning of Strategic Petroleum Reserve oil for operational purposes from the West Hackberry site to the Bayou Choctaw site using a market-based crude oil exchange process. This transfer of oil was necessary to meet state cavern integrity requirements. The Strategic Petroleum Reserve awarded contracts on August 19, 2010 to exchange approximately 400,000 barrels from the West Hackberry site in return for approximately 380,000 delivered into the Bayou Choctaw site.

Oil Acquisition Market Assessments

The Procedures for the Acquisition of Petroleum for the Strategic Petroleum Reserve (10 CFR Part 626) establish the rules and procedures for acquiring Strategic Petroleum Reserve crude oil. These procedures require that a comprehensive market assessment be performed prior to initiation or continuation of any oil fill activities to ensure the Strategic Petroleum Reserve acquisition activities will not unduly affect the current market conditions. There were no market assessments completed in 2010 as the Strategic Petroleum Reserve is filled to capacity and no new acquisition activities were initiated.

Royalty-in-Kind Crude Oil Transfers

The contract closeout activities of the Royalty-in-Kind (RIK) program resulted in the addition of approximately 48,000 barrels to the Strategic Petroleum Reserve in March 2010. These actions concluded the Strategic Petroleum Reserve's RIK acquisition program conducted in cooperation with the Department of the Interior (DOI). Termination of the RIK program was announced by DOI on September 16, 2009, and a phased-in termination process began. From 1999 through 2010, the Strategic Petroleum Reserve received 162 million barrels of crude oil through the RIK program.

Detailed information about the Strategic Petroleum Reserve's fill program since 1977 can be found in the following:

- Table 3 lists year-end inventories and average daily fill rates for the years 1977 through 2010 (by fiscal and calendar year).
- Table 4 lists crude oil receipts by country of origin since 1977.
- Table 5 identifies the location of the inventory by storage site, and Figure 3 illustrates the cumulative oil fill by year.

Table 3
Year-End Inventories and Oil Fill History

	FISCAL YEAR		CALENDAR YEAR	
	Year-End Inventory (MMB)	Average Daily Fill Rate ¹ (MB/D)	Year-End Inventory (MMB)	Average Daily Fill Rate ¹ (MB/D)
1977	1.1	3	7.2	20
1978	49.1	131	68.5	168
1979	91.2	115	91.7	64
1980	92.8	4	107.8	44
1981	199.2	292	230.3	336
1982	277.9	215	293.8	174
1983	361.0	228	379.1	234
1984	431.1	191	450.5	195
1985	489.3	159	493.3	119
1986	506.4	47	511.6	51
1987	533.9	75	540.6	80
1988	554.7	57	559.5	52
1989	577.1	62	579.9	56
1990	589.6	34	585.7	27
1991	568.5	(58)	568.5	(47)
1992	571.4	8	574.7	17
1993	585.7	39	587.1	34
1994	591.7	16	591.7	13
1995	591.7	* ²	591.6	* ²
1996	573.6	(49)	565.8	(70)
1997	563.4	(28)	563.4	(7)
1998	563.4	* ²	561.1	(6) ³
1999	564.9	4	567.0	16
2000	570.3	15	540.7	(72) ⁴
2001	544.8	(70) ⁴	550.2	26
2002	587.2	116	599.1	134
2003	624.4	102	638.4	108
2004	670.3	126 ⁵	675.6	102 ⁵
2005	693.7	64 ⁶	684.5	25 ⁶
2006	687.8	(16) ⁷	688.6	11 ⁷
2007	692.8	14	696.9	23
2008	702.4	26 ⁸	701.8	13 ⁸
2009	725.1	62.2	726.6	67.9
2010	726.5	3.8	726.5	(0.2) ⁹

MMB = Million Barrels
MB/D = Thousands of Barrels per Day

1. Fill rates adjusted for oil sales
2. Fill suspended during this period
3. Decrease due to Maya exchange
4. Net decrease due to Exchange 2000
5. Net Hurricane Ivan deliveries and receipts

6. Net Hurricane Ivan receipts & Katrina deliveries and receipts
7. Net Hurricane Katrina exchange and drawdown sales
8. Net Hurricanes Gustav & Ike deliveries
9. WH/BC Exchange oil costs and degas loss

Table 4
Crude Oil Receipts
(As of December 31, 2010)

Source Country	2010 (MMB)	Cumulative (MMB)	Percent of Total (%)
Mexico		266.3	31.2
United Kingdom		193.9	22.7
United States*	0.4****	105.5	12.3
Saudi Arabia		28.3	3.3
Libya		27.5	3.2
Venezuela		25.3	3.0
Angola		25.1	2.9
Russia		25.1	2.9
Iran		20.0	2.3
United Arab Emirates		19.3	2.3
Nigeria		16.3	1.9
Algeria		15.7	1.8
Cameroon		15.1	1.8
Equatorial Guinea		15.1	1.8
Norway		14.0	1.6
Oman		12.9	1.5
Egypt		8.9	1.0
Ecuador		6.2	0.7
Iraq		3.4	0.4
Gabon		2.4	0.3
Qatar		2.3	0.3
Azerbaijan		2.1	0.2
Columbia		1.2	0.1
Argentina		0.4	≤0.1
Ivory Coast		0.4	≤0.1
Peru		0.4	≤0.1
Total**	0.4	853.1***	100.0

MMB = Million Barrels

* Included receipts from offshore Gulf of Mexico.

** Totals do not add due to rounding.

*** Cumulative total receipts unadjusted for sales and operational gains and losses.

**** West Hackberry/Bayou Choctaw oil exchange.

Table 5
Crude Oil Inventory
(As of December 31, 2010)

Storage Site	Inventory (MMB)			Inventory (Million Cubic Meters)
	Sweet*	Sour**	Total***	
Bryan Mound, Brazoria County, Texas	77.5	176.4	253.9	40.4
Big Hill, Jefferson County, Texas	72.8	97.4	170.2	27.0
West Hackberry, Cameron Parish, Louisiana	119.7	108.0	227.8	36.2
Bayou Choctaw, Iberville Parish, Louisiana	21.7	51.8	73.6	11.7
Subtotal Underground Inventory	291.8	433.5	725.4	115.3
Tanks and Pipelines	0.7	0.4	1.2	0.2
Total Inventory	292.6	434.0	726.5	115.5
Total Accounts Receivable	0.0	0.0	0.0	0.0
Total SPR Book Inventory	292.6	434.0	726.5	115.5

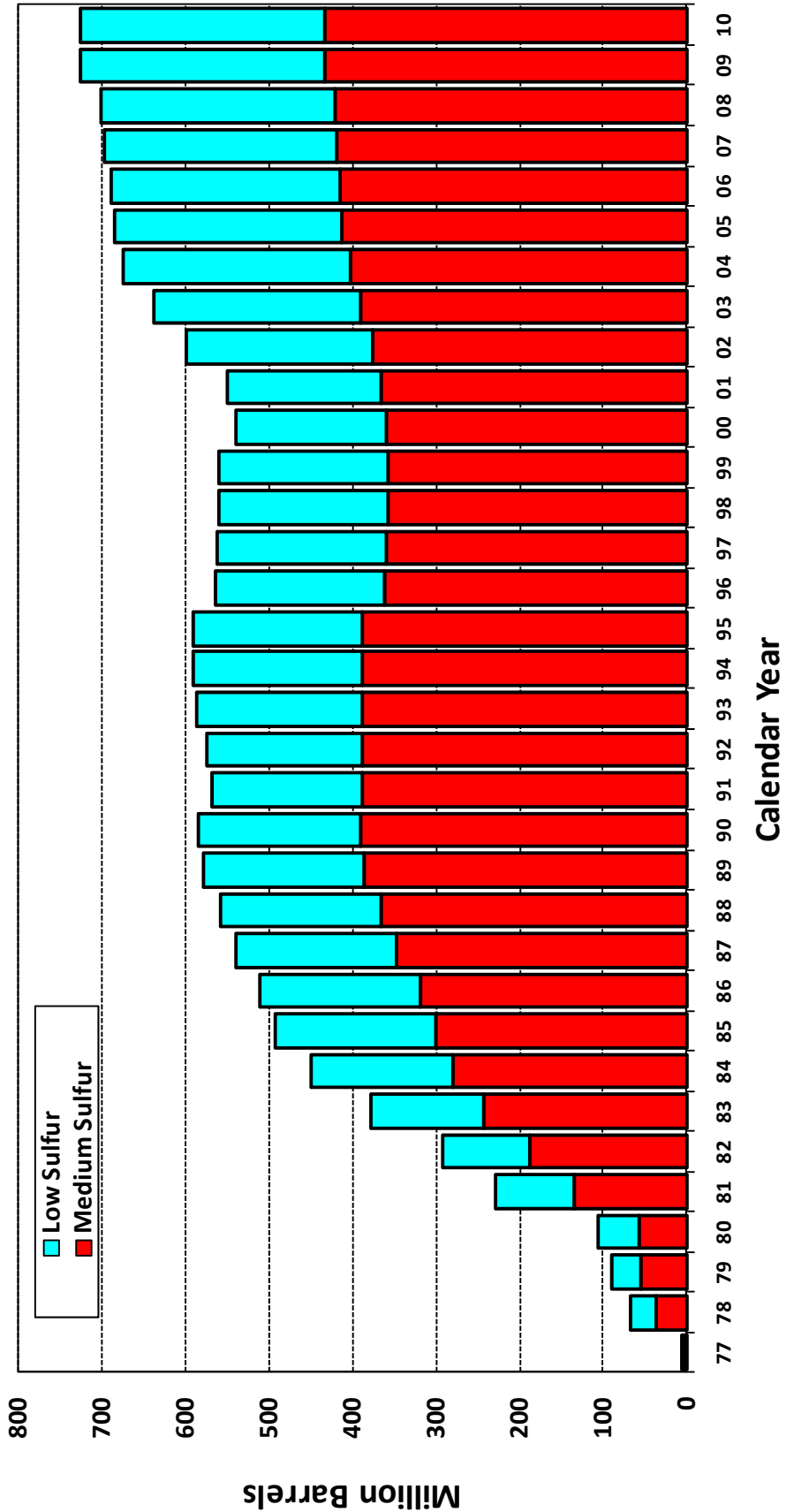
MMB = Million Barrels

* Sulfur content not exceeding 0.5 percent

** Sulfur content greater than 0.5 percent

*** Totals do not add due to rounding

Figure 3
Cumulative Oil Fill



IX. Emergency Response Capabilities

Sale of Oil

Under section 161 of EPCA, upon direction by the President, the Secretary of Energy is required to sell oil from the Strategic Petroleum Reserve at public sale to the highest qualified offerors. The Strategic Petroleum Reserve maintains a readiness posture to provide crude oil within 13 days under a competitive sale. No emergency sale was conducted during 2010.

Competitive Sales Procedures

DOE regulations in 10 CFR Part 625 govern the process for the price competitive sales from the Strategic Petroleum Reserve, including the establishment of Standard Sales Provisions that contain provisions to be utilized in the contracts for the sale of the Strategic Petroleum Reserve crude oil. The first step in the process is the issuance of a Notice of Sale identifying the volume, characteristics, and location of the petroleum for sale. The Notice of Sale also provides delivery dates and the requirements to successfully submit offers. Measures required for assuring performance and financial responsibilities are also described in the Notice of Sale.

During a drawdown, multiple Notices of Sale may be issued through the use of a web-based automated oil sales and evaluation system, which provides a triple redundant backup system. Each Notice of Sale covers a sales period of one to two months. Offerors may have five days or less from the date a Notice of Sale is issued until offers are due. Delivery of oil could commence as soon as thirteen days after the President calls for a drawdown of the Strategic Petroleum Reserve. Subsequent sales periods, if necessary, will coordinate with standard industry delivery periods. Because of the possible short initial lead-time, DOE maintains a registry of prospective offerors who will receive electronic notification of all Notices of Sale.

The second step in the sales process is for prospective purchasers to submit offers, as specified in the Notice of Sale. Offerors must unconditionally accept all terms and conditions in the Notice of Sale and submit an offer guarantee of five percent of the maximum potential contract amount, or \$10 million, whichever is less. The offer evaluation process is structured so that the offerors bidding the highest prices will determine the transportation methods, up to the limits of the distribution system. Specific delivery arrangements are negotiated later in the process.

Within five business days of being notified, all "apparently successful offerors" are required to provide a Letter of Credit equal to 100 percent of the contract amount as a guarantee of performance and payment of amounts due under the contract. Upon timely receipt of the financial guarantees, and a final determination by the Contracting Officer that offers are responsive and selected offerors are responsible, Notices of Award are issued. Deliveries to the purchasers may then begin, consistent with the purchasers' arrangements for commercial pipeline or marine vessel transportation.

Following delivery, the purchaser is invoiced for actual barrels received at a price that reflects the indexed contract award price, plus any adjustments for quality differentials, delivery mode, or location changes. Payment is due in the month following the delivery.

Drawdown Capabilities

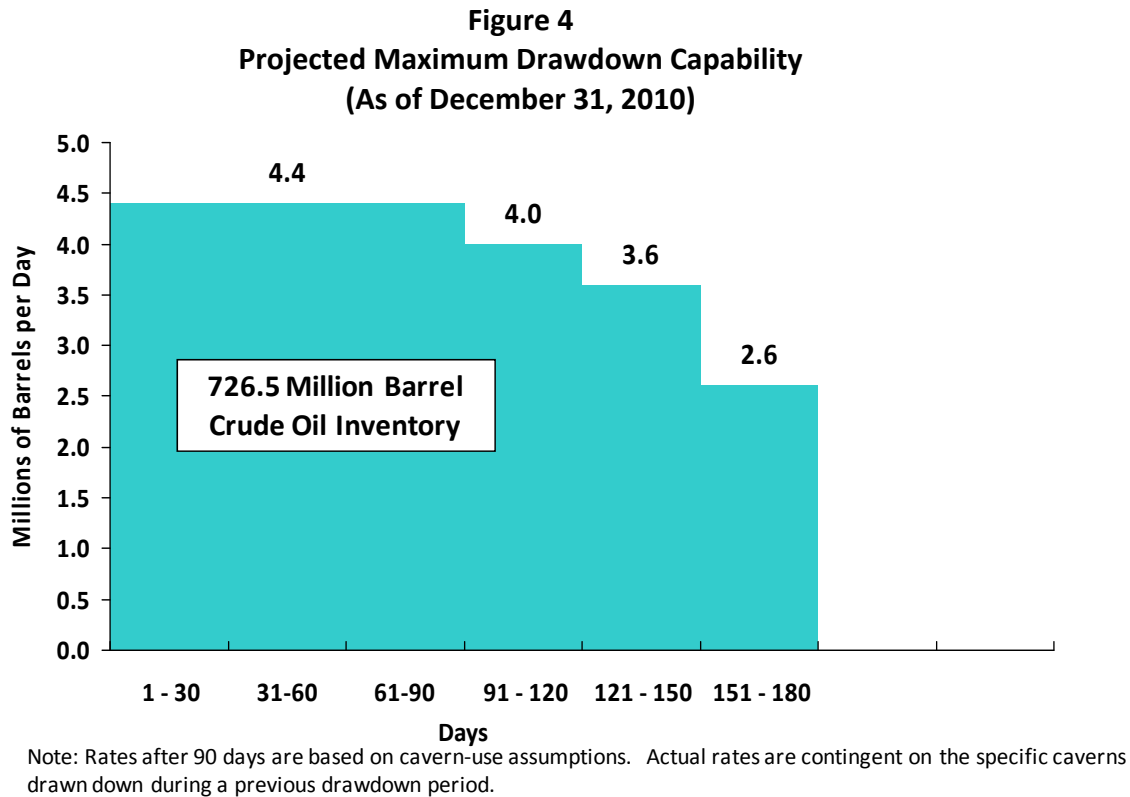
The crude oil acquired for the Strategic Petroleum Reserve is commingled in caverns at the storage sites, creating various distinct crude oil streams available for release. Table 6 identifies these crude oil streams, delivery modes and locations.

The Strategic Petroleum Reserve can draw down crude oil at a maximum initial sustainable rate of 4.4 million barrels per day for a period of 90 days. After this period, the drawdown rate will gradually decrease as site inventories are depleted and the declining number of caverns containing crude oil becomes a constraint.

Table 6
Crude Oil Streams
(As of December 31, 2010)

Crude Oil Stream	Gravity (°API)	Sulfur Content (Mass%)	Delivery Mode and Location
Seaway System			
Bryan Mound (Sweet)	36.4	0.37	Pipeline or tankship at Seaway (TEPPCO) Terminal, Freeport, Texas; or Seaway (TEPPCO) Terminal, Texas City, Texas
Bryan Mound (Sour)	33.2	1.42	
Texoma System			
West Hackberry (Sweet)	37.0	0.33	Pipeline, tankship or barge at Sun Partners Marketing & Terminals LP, Nederland, Texas; Pipeline at Shell-22"/DOE connection, Lake Charles, Louisiana
West Hackberry (Sour)	33.1	1.55	
Big Hill (Sweet)	35.4	0.41	Pipeline, tankship or barge at Sun Partners Marketing & Terminals LP, Nederland, Texas; Pipeline or tankship at Chevron Terminal Nederland, Texas; Pipeline at Shell-20"/DOE connection, Winnie, Texas
Big Hill (Sour)	30.8	1.44	
Capline System			
Bayou Choctaw (Sweet)	34.6	0.41	Pipeline at Capline, Plains Marketing or LOCAP Terminals, St. James, Louisiana; Tankship at Sugarland St. James Terminal, St. James, Louisiana 24-inch site connection to Red Stick Pipeline, Iberville Parish, Louisiana
Bayou Choctaw (Sour)	32.4	1.46	

Figure 4 illustrates the physical drawdown capability that provides for a maximum distribution of 396 million barrels in 90 days and 703 million barrels in 180 days. The initial sustainable rate is at the system design maximum.



Drawdown Readiness Activities

Drawdown Readiness Assurance activities during 2010 included:

- A modular exercise was conducted from May 15 through June 11, 2010 to employ the Crude Oil Valuation and Tracking System (COVATS) to invoice a drawdown based on award data generated from the 2009 “EAGLE V” test exercise. The exercise tested specific aspects of the drawdown process. The primary focus was validation for inventory and invoicing of cargos in a drawdown sales cycle. The exercise tested the level of effectiveness of the COVATS application and the performance of the participants. All observations and lessons learned from the exercise have been applied to the system.
- The Drawdown Readiness Review program requires and monitors quarterly drawdown readiness. Four reviews were conducted in 2010, confirming that all sites and systems were prepared for a crude oil exchange or drawdown of the Strategic Petroleum Reserve.

- The Systems Test Exercise program determines the drawdown readiness of a Strategic Petroleum Reserve site's equipment, procedures, systems, and personnel, and collects data to further ensure a readiness status.
- The Bayou Choctaw Advance Hurricane Equipment Mobilization project began on March 30, 2010 and was completed on April 22, 2010. Additional preparation (last tie-ins and fuel tanks) were completed on May 3, 2010 in order to enable the conduct of a Systems Test Exercise. The raw water portion of the Bayou Choctaw Systems Test Exercise was successfully completed on May 5, 2010. Four raw water intake pumps were operated along with four raw water injection pumps. These diesel pumps were operated in a recirculation mode and the rate of flow was ramped up in excess of 438 thousand barrels per day (18,240 barrels per hour) which is 85 percent of the Level 1 criteria maximum rate of 515 thousand barrels per day. This rate was held for over one hour. The crude oil portion of the System Test Exercise was successfully completed on June 15, 2010. The objective of collecting crude oil pressure and flow data is to determine if the pipeline between the Bayou Choctaw site and St. James Terminal could accommodate a potential rate increase to approximately 600 thousand barrels per day - a rate that was achieved. An analysis of the data was performed after the test and the increase in the flow rate was found to be acceptable.
- An administrative tabletop exercise was successfully conducted at Bryan Mound on May 18, 2010.

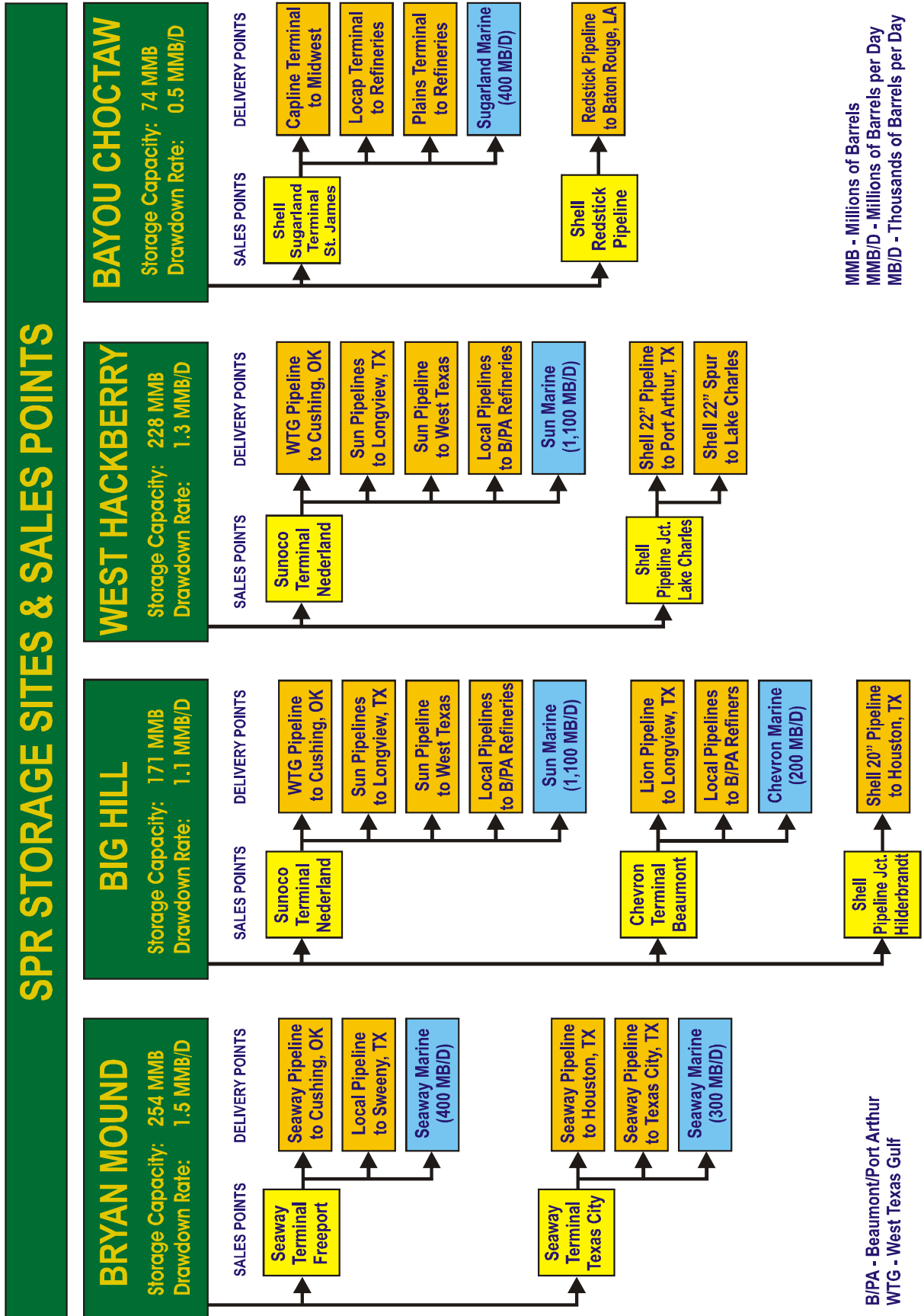
Distribution Plan and Capabilities

In the event of an emergency, the Strategic Petroleum Reserve has the capability to distribute its crude oil to refineries in the United States by local pipelines, interstate pipelines and marine distribution facilities.

The Strategic Petroleum Reserve is capable of delivering crude oil to 24 refineries in the Gulf Coast region via local commercial pipelines. The Strategic Petroleum Reserve is capable of delivering crude oil to 26 refineries in the Central and Midwest U.S. via three major interstate pipeline systems – Seaway Pipeline System to Cushing, OK; MidValley Pipeline System to mid Ohio; and Capline Pipeline System to Patoka, IL. In total, the Strategic Petroleum Reserve is connected by commercial pipeline systems to more than half of the refining capacity in the United States. That connection covers 50 refineries, which processed approximately 57 percent of crude oil imports to the United States during 2010.

The Strategic Petroleum Reserve is connected to five marine terminals that have a combined marine distribution capacity of approximately 2.5 million barrels per day. These are: Seaway Terminal (TEPPCO), Freeport, Texas; Seaway Terminal (TEPPCO), Texas City, Texas; Sunoco, Nederland, Texas; Chevron Terminal, Beaumont, Texas; and Shell Sugarland, St. James, Louisiana. Figure 5 illustrates the Strategic Petroleum Reserve's pipeline and marine distribution capabilities.

Figure 5
Pipeline and Marine Distribution Capabilities



Distribution Assessment

The Strategic Petroleum Reserve performs an annual assessment, based on its established technical and performance criteria, that evaluates the Strategic Petroleum Reserve's crude oil distribution system capabilities to (a) ensure that there are adequate connections to the commercial distribution systems and (b) identify the need for any remedial plans. The 2010 Distribution Assessment evaluated the Strategic Petroleum Reserve's capability, at its maximum drawdown rate, to replace oil imported in the base year (2009) and for future years 2010, 2015, 2020, and 2030.

Established Level I Technical and Performance Criteria for the Strategic Petroleum Reserve's distribution capabilities require that the physical distribution system infrastructure, both DOE-owned and commercial, shall be capable of meeting distribution rates exceeding 120 percent of the combined site drawdown rates in order to provide sufficient allowances for terminal operational delays and commercial demand variances.

Base Year Assessment

The base-year assessment confirms that the Strategic Petroleum Reserve storage sites have sufficient offsite pipeline and marine distribution capabilities exceeding 120 percent of their maximum drawdown rates in the event of a disruption in foreign crude imports. Table 7 provides the performance measures for the base year.

Future Year Assessments

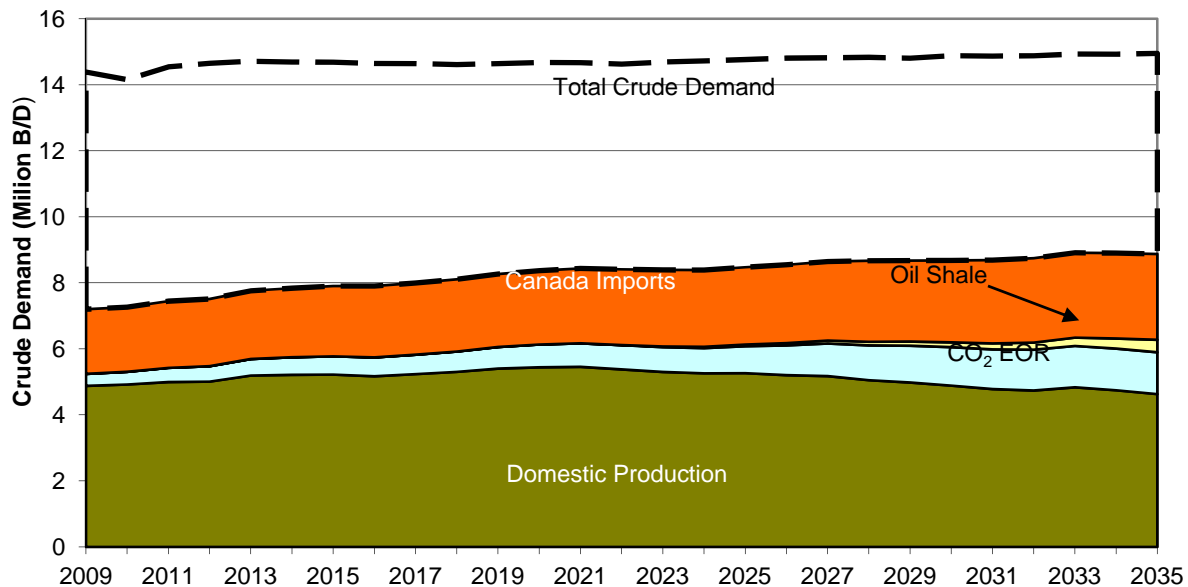
For the future years 2010, 2015, 2020, and 2030, the Strategic Petroleum Reserve performed assessments on three cases. The first was a "Reference Case" using the U.S. petroleum refining supply and demand projections from the Energy Information Administration's *Annual Energy Outlook 2010 (AEO)*. The second was a "Low CO₂ EOR Production Case" using the planning projections from the *AEO 2010*. The *AEO 2010* shows an increasing percentage of the total crude supply coming from CO₂ EOR projects (Figure 6). The "Low CO₂ EOR Production Case" examines the scenario where the new CO₂ EOR production happens at a reduced rate resulting in reduced regional projected production. The final was a "Low Biofuels Consumption Case" that incorporates the uncertainty about the size and production levels of liquids from biofuels. This case examines the scenario where the biofuels consumption happens at a reduced rate. An assessment of all three cases was necessary to establish the boundaries of performance projections. Each assessment assumes the maximum drawdown rate does not change from base year levels.

Table 7
Base Year Distribution Assessment

System	Max. Drawdown Rate (MB/D)	Distribution Capability (MB/D)	Performance Measure
Seaway	1,500	2,342	156%
Texoma	2,400	2,961	123%
Capline	515	1,296	252%
Total	4,415	6,698	149%

MB/D = Thousands of Barrels per Day

Figure 6
AEO 2010 Crude Sources
(Source: EIA AEO 2010)



Reference Case Assessment

Based on the *AEO 2010* projections for U.S. petroleum imports, the Distribution Assessment concluded that the distribution capability of the Strategic Petroleum Reserve exceeds its Level 1 Performance Criteria through 2030 and that there is no need for the Strategic Petroleum Reserve to develop a remedial plan to maintain sufficient connectivity to commercial distribution systems. Table 8 provides the performance measures by system for each forecast period. The Seaway system maintains performance measures above 155 percent throughout the forecast period.

The Texoma system maintains performance measures over 125 percent for all forecast periods. Finally, the Capline system maintains performance measures over 240 percent throughout forecast periods.

Table 8
Summary of Reference Case
Performance Measures

System	2010	2015	2020	2030
Seaway	157%	159%	158%	159%
Texoma	125%	126%	126%	126%
Capline	279%	245%	244%	245%

Low CO2 EOR Case Assessment

The Low CO2 EOR Case adjusts the base case for a 50 percent reduction on the *AEO 2010* forecast of the CO2 EOR crudes included within the domestic production. New CO2 EOR production is expected to become a significant component of domestic crude production. With production reaching 10 percent of supplied crude as early as 2013, new CO2 EOR production is expected to grow to reach over a million barrels per day by 2030.

Under the Low CO2 EOR Case, the Distribution Assessment concluded that the distribution capability of the Strategic Petroleum Reserve will meet Level 1 Performance Criteria through 2030 for all Strategic Petroleum Reserve systems.

Table 9
Summary of Low CO2 EOR Production
Case Performance Measures

System	2010	2015	2020	2030
Seaway	157%	159%	158%	159%
Texoma	125%	126%	126%	126%
Capline	288%	245%	244%	245%

Low Biofuels Consumption Case Assessment

The *AEO 2010* forecast incorporates the uncertainty about the size and production levels of liquids from biofuels. Biofuels consumption is expected to become a significant component of domestic liquids supply. With consumption doubling to 8 percent of consumed products by 2030, domestic biofuels production is expected to reach over 1.77 million barrels per day by 2030 with net imports of .25 million barrels per day.

For the Low Biofuels Consumption Case, biofuels consumption is reduced by 50 percent including ethanol, biodiesel, and other biomass-derived liquids.

Under the Low Biofuels Consumption Case, the Distribution Assessment concluded that the distribution capability of the Strategic Petroleum Reserve exceeds its Level 1 Performance Criteria through 2030 and that there is no need for the Strategic Petroleum Reserve to develop a remedial plan to maintain sufficient connectivity to commercial distribution systems. Table 10 provides the performance measures by system for each forecast period. The Seaway system maintains performance measures above 155 percent throughout the forecast period. The Texoma system maintains performance measures over 125 percent for all forecast periods. Finally, the Capline system maintains performance measures over 248 percent throughout the forecast periods.

Table 10
Summary of Low Biofuels Consumption
Case Performance Measures

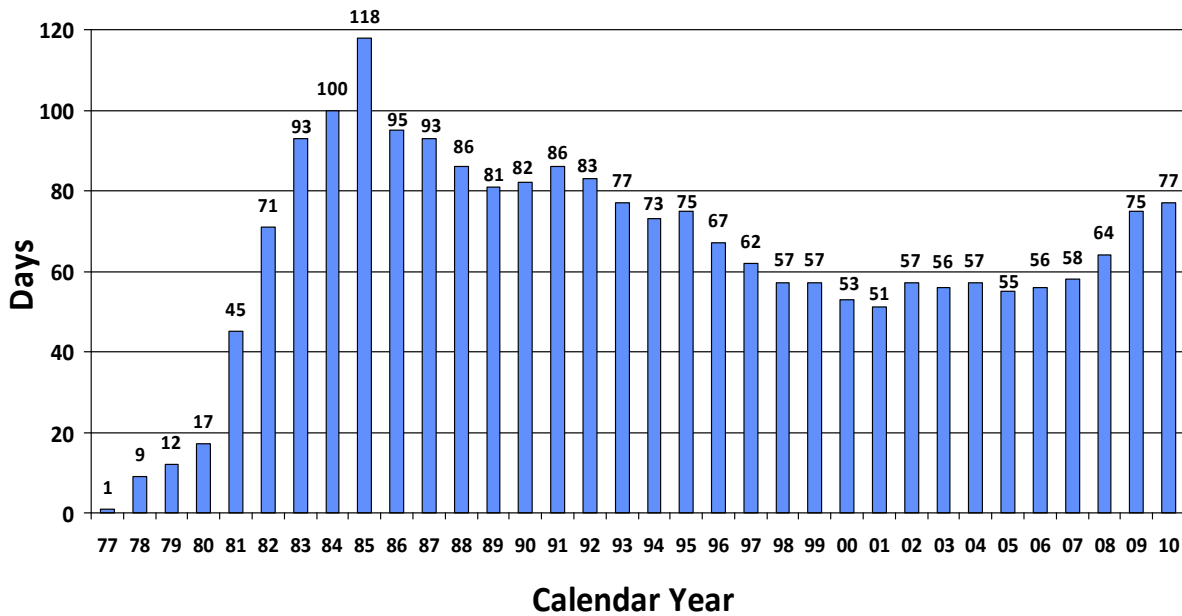
System	2010	2015	2020	2030
Seaway	157%	161%	161%	161%
Texoma	125%	128%	128%	128%
Capline	279%	248%	248%	248%

Import Protection Levels

Figure 7 shows the Strategic Petroleum Reserve inventory of 726.5 million barrels on December 31, 2010, which amounted to 77 days of net import protection (crude oil and refined products).

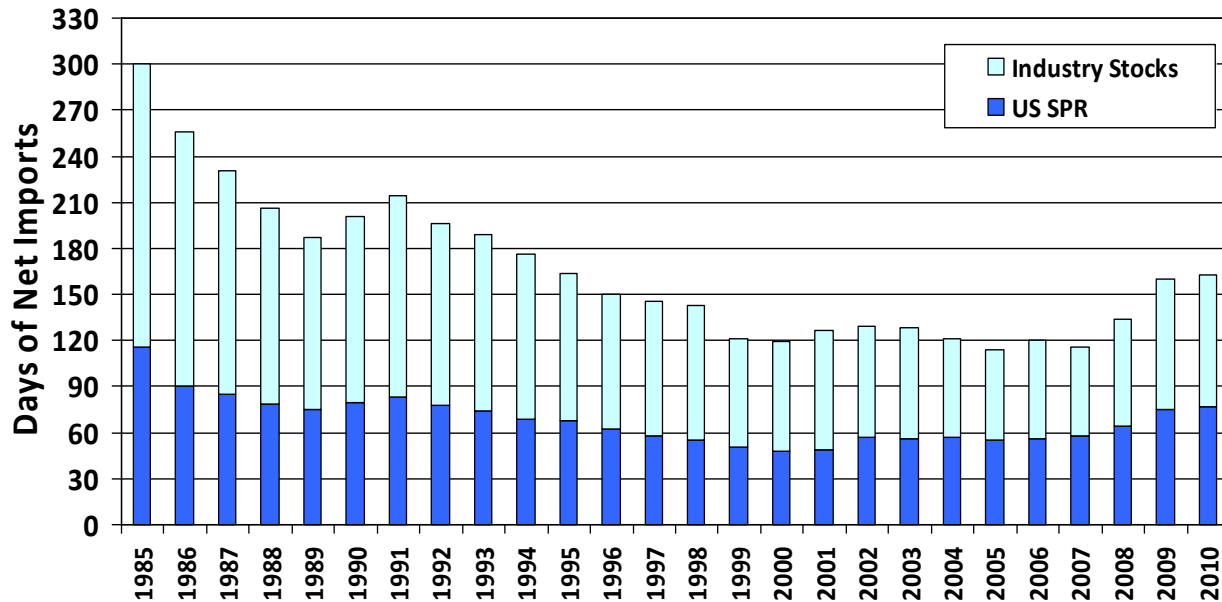
The United States, as a member of the International Energy Agency, is committed to maintaining stocks of crude oil and products in reserves that are equivalent to ninety days of net oil imports. Computations of member-nations' stockpile requirements are based on both public and privately held stocks, and net imports are defined as the average daily level in the previous year. The most recent International Energy Agency computation credits the United States with 163 days of emergency reserves, based on both the Strategic Petroleum Reserve and privately held stocks. Figure 8 provides end-of-year computations for the United States through 2010.

Figure 7
Strategic Petroleum Reserve Days of Net Import Protection*



* Days of Protection = Year End Inventory ÷ US Net Petroleum Imports/Day

Figure 8
International Energy Program
U.S. Emergency Stocks



X. Commercial Activities

Commercial Leases

Since 1995, the Strategic Petroleum Reserve has commercialized its under-utilized crude oil distribution facilities to be more cost-effective, and currently has leased three crude oil pipelines and a marine terminal to private industry. The contracts for these leases require that the facilities be maintained in good condition and, in the event of a Presidential call for an emergency drawdown, use of the leased facilities will be returned on 15 days notice. Receipts from these are returned to the U.S. Treasury.

Bayou Choctaw Pipeline: In 2010, lease revenues totaled \$169,541. This pipeline was leased to Shell Pipeline Company LP on May 1, 1997, on a revenue-sharing basis. In 1998, the lease was converted from an annual lease to a ten-year lease. Since 2008, the lease agreement has continued using annual extensions. The term of the current lease is through December 31, 2011.

Bryan Mound Pipelines: In 2010, lease revenues totaled \$1,091,494. Two of the three Bryan Mound pipelines were leased to ExxonMobil Pipeline Company on January 14, 1999. ExxonMobil began using the pipelines in June 2000 as part of its onshore distribution system for the Diana-Hoover production in the Gulf of Mexico. The first five-year option of the lease agreement was executed and began in June 2010.

St. James Terminal: In 2010, St. James Terminal lease revenues were \$1,700,000. The terminal was leased to Shell Pipeline Corporation (now Equilon Enterprises LLC, “doing business as” Shell Oil Products US) on January 31, 1997, on a revenue-sharing basis. On April 2, 2003, the contract was re-negotiated for a period of ten years in the amount of \$1.7 million per year, with a five-year option in the amount of \$2 million per year. Payments were retroactive to January 1, 2003.

Foreign Oil Storage

The Strategic Petroleum Reserve promotes the concept of storing foreign oil in its unused storage space as a strategy to increase world oil stockpiling, generate revenues for the United States Treasury, and/or add oil to the Strategic Petroleum Reserve (in lieu of a fee). The Balanced Budget Act of 1997 (Pub L. 105-33) provides specific authority to store petroleum products of another country, or its representatives, in the facilities of the Strategic Petroleum Reserve, provided that the United States is fully compensated for all related costs, and that the ability to draw down Strategic Petroleum Reserve oil is not impaired.

To enhance the Strategic Petroleum Reserve’s offer to store oil for foreign governments or their representatives, the Big Hill storage site was activated as a special purpose Foreign Trade Zone subzone on September 28, 1998. This designation permits customers to store oil without paying customs fees and certain taxes. The Big Hill storage site is the only storage site to receive this designation.

Although the authority exists, the Strategic Petroleum Reserve has never stored foreign oil and no commercial or foreign storage initiatives were considered during 2010 because no capacity currently exists to store additional crude oil.

Commercial Revenues

During calendar year 2010, receipts to the U.S. Treasury were \$2,961,035 from the commercial leases of the Strategic Petroleum Reserve’s distribution facilities and pipelines. Table 11 summarizes commercial revenues from 1996 to 2010.

Table 11
Summary of Commercial Revenues
(December 31, 2010)

Calendar Year	Bryan Mound Pipeline (Actual \$)	Big Hill Pipeline (Actual \$)	Bayou Choctaw Pipeline (Actual \$)	St. James Terminal Lease (Actual \$)	Total Revenue Generated (Actual \$)
1996	102,606	472,809	0	0	575,415
1997	0	429,824	0	133,300	563,124
1998	12,500	402,525	0	481,010	896,035
1999	679,393	400,000	163,030	546,125	1,788,548
2000	652,146	493,359	217,573	748,986	2,112,064
2001	1,054,297	33,104	212,738	1,227,021	2,527,160
2002	1,468,613	0	249,708	1,285,183	3,003,504
2003	1,647,828	0	168,718	1,863,060	3,679,606
2004	1,546,121	0	174,338	1,700,000	3,420,459
2005	1,132,668	0	730,542	1,700,000	3,563,210
2006	1,091,799	0	337,949	1,700,000	3,129,748
2007	1,128,340	0	218,912	1,700,000	3,047,252
2008	1,211,171	0	321,799	1,700,000	3,232,970
2009	1,141,228	0	232,374	1,700,000	3,073,602
2010	1,091,494	0	169,541	1,700,000	2,961,035

XI. Budget and Finance

With enactment of the Energy and Water Development and Related Agencies Appropriations Act, 2010 (Pub L. 111-85), final budget authority for the Strategic Petroleum Reserve was \$243,823,000, of which \$25,000,000 was provided to carry out new site land acquisition activities as part of the proposed expansion of the Strategic Petroleum Reserve.

Appropriations through Fiscal Year 2010

A total amount of \$23.3 billion, net of sales and transfers, has been appropriated for the Strategic Petroleum Reserve through fiscal year 2010. Comprising this total is the distribution of annual appropriations described in Table 12.

Strategic Petroleum Reserve Account

The Strategic Petroleum Reserve Account funds the development, operation, and maintenance of facilities; the salaries and expenses necessary to plan and manage the program, including the operation of the Project Management Office in New Orleans, Louisiana; and the activities pertinent to major issues concerning the development and use of the Strategic Petroleum Reserve. Beginning in FY 2008, the Strategic Petroleum Reserve Account included designated funding for new site land activities related to the expansion of the Strategic Petroleum Reserve to 1.0 billion barrels.

Obligations for the Strategic Petroleum Reserve in FY 2010 totaled approximately \$221.7 million. From this amount, \$20.9 million was obligated for Federal program management, \$200.8 million was obligated for contractual goods and services to operate and maintain the Strategic Petroleum Reserve or an emergency drawdown and sale.

Strategic Petroleum Reserve Petroleum Account

The SPR Petroleum Account funds the acquisition of oil for the Strategic Petroleum Reserve, the associated costs for transportation and terminaling, United States customs duties, Superfund and Oil Spill Liabilities Trust Fund taxes, and other miscellaneous costs.

During an emergency drawdown and sale, the SPR Petroleum Account is the source of funding for the incremental costs of withdrawing oil from the storage caverns and transporting it to the point where purchasers take title. Receipts realized as a result of the oil sale are deposited in the Department of Treasury and an equal amount of mandatory budget authority is created in the SPR Petroleum Account to be used for filling the Strategic Petroleum Reserve.

For FY 2010, the capitalized cost of the crude oil in the Strategic Petroleum Reserve was \$21.6 billion, for an average cost per barrel of approximately \$29.76 (excluding storage costs). Through use of a royalty-in-kind (RIK) program established by the Department of the Interior from April 1999 through December 2009, the cumulative dollar value of the exchange barrels received from contractors who took royalty oil from the Department of the Interior totaled \$6.1 billion.

The value of the RIK oil transferred from the Department of the Interior to DOE through 2009, the last year of the program, is shown by fiscal year in Table 13. The figures for FY 2010 reflect the completion of deliveries scheduled during 2009.

Table 12
Appropriations for Storage Facilities Operations and Management and Petroleum Account
(As of December 31, 2010)

Fiscal Year	Oil Account (\$000)	Facilities (\$000)	Management (\$000)	Expansion (\$000)	Total (\$000)	Defense SPR (\$000)
1976	0	300,000	13,975		313,975	
1977	440,000	0	7,824		447,824	
1978	2,703,469	463,933	14,704		3,182,106	
Total 1979 Appropriations*	2,356,456	632,504	18,111		3,007,071	
Total 1980 Appropriations*	(2,022,272)	0	22,272		(2,000,000)	
Total 1981 Appropriations*	3,205,094	108,168	19,391		3,332,653	
Total 1982 Appropriations*	3,679,700	175,656	20,076		3,875,432	
1983	2,074,060	222,528	19,590		2,316,178	
1984	650,000	142,357	16,413		808,770	
1985	2,049,550	441,300	17,890		2,508,740	
Total 1986*	(12,964)	106,979	13,518		107,533	
1987	0	134,021	13,412		147,433	
1988	438,744	151,886	12,276		602,906	
1989	242,000	160,021	13,400		415,421	
1990	371,916	179,530	12,953		564,399	
1991	566,318	187,728	12,846		766,892	
1992	88,413	171,678	13,384		273,475	
1993	(125,625)	161,940	14,227		50,542	
DOD Transfer (non add)	124,925	700	0		125,625	125,625
1994	0	191,035	15,775		206,810	
1995	(107,764)	226,938	16,780		135,954	
1996 transfer from SPR Petro Acct	(187,000)	170,173	16,827		0	
1996 Weeks Island Oil Sale	(97,114)	97,114	0		0	
1996 deficit reduction oil sale	(227,000)	0	0		(227,000)	
1996 Total	(511,114)	267,287	16,827		(227,000)	
1997 Total*	(220,000)	193,000	16,000		(11,000)	
1998	0	191,500	16,000		207,500	
1999	0	145,120	14,805		159,925	
2000	0	144,000	15,000		159,000	
2001	0	140,672	15,965		156,637	
2002	0	154,009	16,871		170,880	
2003	1,955	157,823	13,909		173,687	
2004	0	155,044	15,904		170,948	
2005*	43,000	109,946	16,764		169,710	
2006*	(43,000)	190,510**	16,830		207,340	
2007	0	146,950	17,491		164,441	
2008		143,980	18,004	24,773	186,757	
2009	(21,586)	176,255***	18,824	31,507	226,586	
2010	0	199,732	19,091	25,000	243,823	

Note: Fiscal year 1991 SPR Petroleum Account of \$566,318 includes proceeds of \$122,681 from the Test Sale recorded as additional budget authority, rather than reductions to obligations, costs, and outlays. It also includes \$315,424,985 in Desert Storm Drawdown proceeds from January 1991, and \$19,755,064 from fiscal year 1991 Naval Petroleum Reserve excess receipts. Thus, the cumulative budget authority is "gross" and not related directly to the inventory of oil on hand.

* Includes reprogramming and rescission actions.

** Includes the return of \$43,000,000 from the SPR Petroleum Account.

*** The Supplemental Appropriations Act, 2009 (Pub L. 111-32), provided \$21,585,723 for the Strategic Petroleum Reserve by transfer from the SPR Petroleum Account for site maintenance activities.

Table 13
Value of Royalty-in-Kind Transferred by the Department of the Interior

Fiscal Year	Royalty-in-Kind Transfer * Total Barrels (Source: DOE)	Reconciled Royalty-in-Kind Transfer Total Barrels* (Source: DOE)	Department of the Interior** Forgone Receipts - (\$000) (Source: DOI)
1999	11,928,981	8,135,603	***
2000	15,105,558	18,898,937	560,521
2001	1,568,220	1,568,220	61,654
2002	10,575,379	10,575,378	262,752
2003	34,742,046	34,852,185	1,044,350
2004	35,506,135	35,599,310	1,191,284
2005	25,185,527	25,184,519	1,194,618
2006	0	0	0
2007	8,742,829	4,425,911	306,191
2008	15,943,421	15,943,421	1,600,027
2009	4,493,099	6,798,713	268,537
Total	163,791,195	161,982,197	6,489,934

* In coordination with Minerals Management Service, the DOE completed a total DOE-RIK program reconciliation (1999 – 2009) in CY 2009, requiring net figure adjustments to prior years.

** Net figures that include Department of Interior preliminary volumes and adjustments to prior years.

*** Department of Interior data not available.

Performance Measurement

In FY 2010, the Strategic Petroleum Reserve tracked 20 measures that are considered indicative of how the strategic goals and objectives of the Strategic Petroleum Reserve will be pursued. They are consistent with the Strategic Petroleum Reserve Strategic Plan, which provides a framework for implementing the program’s mission by setting a course for the program and guiding decisions about the effective use of resources. All of the 20 measured targets were either exceeded or met during this period.

The financial measure of “Operating Cost per Barrel of Storage Capacity” was \$0.21 versus a target of \$0.220. This is a measure of operational cost-effectiveness and indicates an efficient use of financial resources. This measure is used to promote the efficient use of taxpayer resources provided to operate the Reserve.

A complete accounting of the program’s measures is reflected in Table 14. Details of these program goals and objectives and the progress made toward achieving them are contained in the Strategic Petroleum Reserve’s Annual Performance Report.

In FY 2010, the critical few performance measures were again incorporated into the Strategic Petroleum Reserve Annual Operating Plan, in accordance with the Under Secretary for Science’s direction. This ensures integration of these critical few measures into the planning process and enables tracking of their performance.

Table 14
Performance Measures

Performance Measures	FY 2009 Actual Performance	FY 2010 Target Output	FY 2010 Actual Performance
Public Confidence: Oil Inventory, Drawdown Readiness and Distribution			
Number of Barrels of Crude Oil Inventory in Storage	725.1 MMB	726.5 MMB	726.5 MMB
90-Day Sustainable Drawdown Rate	4.40 MMB/Day	4.40 MMB/Day	4.40 MMB/Day
Number of Days to Commence Crude Oil Drawdown	13 Days	13 Days	13 Days
Distribution Capability as a Percentage of Drawdown Rate	151% of Drawdown Rate	≥ 120% of Drawdown Rate	149% of Drawdown Rate
Calculated Site Availability	97.5%	≥ 95%	97.5%
Calculated MPAR Rating	98.25% Cum. Avg	≥ 95% of Possible Points	98.50% Cum. Avg
Percent of Site Security Ratings that are Satisfactory	100%	100%	100%
Number of Barrels of Crude Oil Processed	39.5 MMB	33 MMB	43.48 MMB
Excellent Customer Service: Customer Knowledge and Focus			
Percentage of Key Customers Visited	41%	33%	38%
Responsible Stewardship: Operational Effectiveness, Efficiency and Knowledge Management/Fiscal Responsibility and Budgetary Control			
Network and Business Application Availability	>99.8%	≥ 98%	99.9%
Operating Cost per Barrel of Storage Capacity	\$0.207	≤ \$0.220	\$0.210
Dynamic Teamwork: Continuous Improvement			
ISO 9001-2000 Certification	12/22/08	03/31/10	11/10/09
Partnerships			
Number of Partnership Arrangements with Federal, State and Local Agencies	25	12	12
Social Responsibility and Citizenship: Local Community Support/Environment, Safety and Health			
Complete Annual Self-Evaluation of OSHA VPP Star Status at Four Sites	02/12/09	2/15/10	2/12/10
Number of Cited Environmental Violations Received	0	0	0
Number of Days with No Reportable/Recordable	365 Days	361 Days	365 Days
Number of Reportable Releases to the Environment Annually	0	≤ 8	1
Complete 2 ISO 14001 Surveillance Audits	05/03/09	09/30/10	05/14/10
Employee Development and Diversity: Employee Development and Quality of Life			
Measure Progress Against the Departments 45-Day Hiring Model	100%	≥ 80%	100%
Percent of DOE Approved FY 2009 Executive Order 13423 Initiatives Completed in FY 2009	100%	100%	100%

MMB = Million Barrels N/A = Not Applicable

XII. Other Activities

Quality and Performance Assurance

The Strategic Petroleum Reserve conducted oversight activities as required by DOE procedures. Some of these activities included on-site management appraisals and security surveys at each of the storage sites, as well as a quarterly review of the management and operating contractor's Contractor Assurance System (CAS). The CAS covers six oversight areas mandated by DOE O226.1A—Environmental, Safety & Health; Quality Assurance; Security; Emergency Management; and Cyber Security. Discrepancies noted during the assessments are tracked in the Action Tracking System to ensure corrective action plans are developed and implemented and that the principle of continuous improvement is practiced.

In addition, the Strategic Petroleum Reserve's Quality Council monitored the activities of seven process improvement teams. Those teams recommended improvements in the planning and scheduling systems of field sites, restructured the Strategic Petroleum Reserve's Lessons Learned program, streamlined the new hire in-processing function, and validated program-wide training requirements. Other teams focused their attention on more long-term projects, such as creating a priority based matrix and budget module for the site security program, and implementing Executive Orders 13423 and 13514.

Security and Emergency Operations

The Strategic Petroleum Reserve has the capability to effectively respond to any emergency during severe conditions. The Continuity of Operations Plan (COOP), Emergency Command Vehicle, communication vehicles and the Emergency Communications Network are the cornerstones for continuing essential work functions under catastrophic conditions.

The Strategic Petroleum Reserve continues to execute HSPD-12 requirements by conducting background checks through the Office of Personnel Management and improving the physical systems that process the new smart card badge.

During 2010, the Strategic Petroleum Reserve worked on the Site Security Plan (SSP), which is based on the DOE Graded Security Protection Policy and local FBI threat analysis. In addition to working on the SSP, the Strategic Petroleum Reserve submitted the response for the National Defense Authorization Act for Fiscal Year 2011 – Section 3131 report on the Graded Security Protection Policy (GSP) defining the Strategic Petroleum Reserve's execution of the GSP plan.

The Strategic Petroleum Reserve security posture couples physical security systems with armed protection force officers at each site to ensure mission capability to conduct a drawdown and to protect personnel and resources

Environment, Safety, and Health

The Strategic Petroleum Reserve is accountable to the public for the safe delivery of crude oil during a national energy emergency and is a good steward of the environment. During 2010, all Strategic Petroleum Reserve sites recertified their participation in occupational safety and health programs. For the first time, an across-the-board risk assessment was conducted to evaluate the risk to the total Strategic Petroleum Reserve operation, taking into consideration the existing hazard controls.

Vapor Pressure Mitigation

Long-term storage of crude oil in underground solution-mined salt caverns results in elevated oil temperatures and increased crude vapor pressure due to gradual geothermal heating and possible methane gas intrusion from the salt formation. Consequently, under certain draw-down conditions, increased vapor pressure results in gas being released in amounts that may be unacceptable, posing environmental, safety, and health risks.

To assure that the environmental and public safety concerns of drawdown operations are properly addressed, the Strategic Petroleum Reserve has established a crude oil degasification program to lower vapor pressure and minimize downstream hydrocarbon and toxic emissions from customer facilities.

During 2010, the degasification program continued its operation using a modular degasification plant that can be disassembled and moved from site to site. The plant treated approximately 41 million barrels of crude oil at Bryan Mound during 2010. Eleven caverns total will have been treated at Bryan Mound through April 2011.

The degasification plant innovation produces tremendous lifecycle benefits to the environment. For each pound of emissions this innovation generates over its lifecycle, 1,900 pounds of emissions could be avoided in a single future drawdown, with 97 percent of that benefit extending directly to the customer.

Executive Orders 13423 and 13514

In October 2009, the President issued Executive Order 13514, Leadership in Environmental, Energy, and Economic Performance. The order has similar goals to those of Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management, that was issued in 2008. The primary difference is the addition of greenhouse gas reductions goals in the 2009 Executive Order.

The Strategic Petroleum Reserve's Designated Energy Official and Transformational Energy Action Management Implementation Committee of Federal and contractor subject matter

experts have developed a strategy to implement the two Executive Orders and recommend projects to attain compliance. These projects include activities such as:

- Training and education to foster behavioral change in the office environment.
- Assessing the carbon footprint of the SPR.
- Researching means for reducing GHG and waste.
- Continued purchase of wind credits as available.
- Continued optimization and right sizing of SPR vehicle fleet.

Additional activities to support a strong environmental program were:

- Qualified Products list.
- Buy It Green Program to reduce waste and toxic chemicals and promote electronic stewardship.
- Use of "greened" construction specifications for future building projects.
- Efforts to disposition electronics through reuse, either in whole or in part.
- Continued use of the National Environmental Policy Act (NEPA) process.

These activities are integrated as objectives and targets in the SPR ISO 14001 certified environmental management system.

In 2010, 100 percent of all scheduled executive order-related milestones were completed including transportation, data services, energy management, and environmental.

Environmental Improvement Measures

Strategic Petroleum Reserve personnel participated for the 12th year in the annual Lake Pontchartrain Basin Foundation Beach Sweep. The local New Orleans activity is part of a worldwide event promoted by the Oceans Conservancy. Twenty-five employees, their families, and concerned citizens contributed time and effort by cleaning debris at various locations around Lake Pontchartrain.

Strategic Petroleum Reserve sites continued to maintain set-aside acreage for habitat enhancement for the benefit of both native wildlife and resident and migratory birds.

The Strategic Petroleum Reserve recognized the 40th anniversary of Earth Day in 2010 as an opportunity for everyone to join together and make commitments to environmental sustainability and a global green economy. With "sustainable living" as the theme, Strategic Petroleum Reserve personnel were provided with information on renewable resources, using

bamboo as an example. All personnel were offered sample bamboo eating utensils and towels. Employees were also provided with “Recycling Do’s and Don’ts” to acknowledge America Recycles Day in November. All employees were offered and urged to use reusable insulated drinking mugs with the special bonus of being made in the USA of recycled plastic. Throughout the year, employees are kept informed of recycling opportunities for household items in their communities.

Occupational Safety and Health Administration’s Voluntary Protection Program

The Strategic Petroleum Reserve participates in the Occupational Safety and Health Administration’s (OSHA) and DOE’s Voluntary Protection Plans (VPP). OSHA and DOE perform an on-site reappraisal of their VPP sites every three to five years. All four sites maintained their Star status throughout 2010. The Big Hill and Bryan Mound sites were recertified for the second time in 2010. In addition, the Strategic Petroleum Reserve security contractor successfully passed an OSHA on-site audit towards future Star status.

In 2010, OSHA Region VI awarded Bryan Mound and Big Hill the designations Star among Stars, and Bayou Choctaw and West Hackberry each received Stars of Excellence. These awards recognize accident rates that range from 50 percent to 90 percent below the average accident rates of their industry. The South Louisiana office of the National Safety Council awarded the three Louisiana sites Occupational Excellence Achievement Awards for their low accident rates.

Accident Rates

During CY 2010, the Strategic Petroleum Reserve’s Total Recordable Case Rate (TRC) was 0.9 cases per 200,000 worker hours, which met the Strategic Petroleum Reserve’s goal of less than 1.40. The Days Away/Restricted/Transferred Case (DART) rate was 0.5 per 200,000 worker hours, which met the Strategic Petroleum Reserve’s goal of less than 0.9. The Vehicle accident rate was 2.43 cases per 1,000,000 miles driven, which met the Strategic Petroleum Reserve’s goal of less than three vehicular accidents per million miles driven.

Integrated Safety Management

The Strategic Petroleum Reserve completed its annual Integrated Safety Management (ISM) validation and documented its performance in the ISM Annual Review and Update Report which summarizes the results of all audits and assessments conducted during the fiscal year. The report provides senior management with qualitative and quantitative data verifying that ISM is performing effectively and is used to judge annual ISM performance. The Project Management Office issued their first ISM system description and annual validation letter in 2007.

To date, the Strategic Petroleum Reserve is operating a successful ISM system with no significant systemic weaknesses and has generated and implemented several recommendations for continuous improvement, which are tracked to closure. One core function was identified for improvement, Core Function 4, Perform Work within Hazard Controls, which failed during one contractor's work. Recommendations have been implemented to correct the identified problems. This was found to be a one-time occurrence, not a systemic failure. In response, management has planned and scheduled a Strategic Petroleum Reserve wide review of ISM implementation during calendar year 2011.

Annual Safety Summit and Tripartite Safety Council

In February 2010 the Strategic Petroleum Reserve held its seventh annual Management Safety Summit to promote safety goals and focus senior management attention on safety related issues. The meetings included briefings by the management and operations contractor and the security and construction management contractors. Current safety issues were briefed and discussed in the open forum. The Strategic Petroleum Reserve also conducted two Tripartite Safety Councils. The purpose of the council is to give Strategic Petroleum Reserve contractors an opportunity to address safety issues directly with the Project Manager that have not been resolved through normal channels. Actions from the council are tracked to closure.

Human Performance Improvement

The Strategic Petroleum Reserve continued to move forward in integrating Human Performance Improvement (HPI) into its management systems. Human Performance interventions and techniques were used in accident/incident and close call investigations, Human Resources, and the Behavioral Safety process. The Strategic Petroleum Reserve continues to expand its use of HPI into its business and operating systems.

Business Process Re-Engineering

The Strategic Petroleum Reserve Information Technology function is a national leader in the execution and implementation of re-engineering business process utilizing a combination of Microsoft SharePoint 2010, InfoPath Forms, and K2 workflow engine. System changes include consolidation of several systems into one large data management SharePoint farm.

Data Security, Accessibility, and Resiliency

The Strategic Petroleum Reserve Project Management Office expanded the functionality of its Alternate Data Center, the program's emergency backup information technology system. The enhanced recovery capabilities allows for remotely accessible infrastructure with secure two factor identification, a significant number of portable computers and Blackberries, and robust

backup communications to provide reliable performance in an emergency so that essential work can be performed remotely. The Strategic Petroleum Reserve Project Management Office has maintained cyber security success.

Awards and Certifications

The Strategic Petroleum Reserve received the following awards and certifications for 2010:

- DOE Best Practices for the Strategic Petroleum Reserve’s “Voluntary Process Change to Reduce VOC Emissions from the SPR Workover Operations.” This project was selected as a best practice for inclusion in DOE's P2 Best Practices Database.
- “Office of the Federal Environmental Executive, 2010 Federal Electronics Challenge Award, Silver Award.” This award was presented in recognition of success in reducing the environmental impacts of electronics in two life-cycle phases, and for ongoing participation in the Federal Electronics Challenge.
- DOE “EStar Award” for Strategic Petroleum Reserve Storm Recovery - Debris Management. This award was presented for the management of debris at Big Hill during the aftermath of Hurricane Ike.
- Texas Commission on Environmental Quality Success Story. The Strategic Petroleum Reserve’s “Reduced SPR Workover Emissions” success story was selected by TCEQ for inclusion in the Zero Waste Network Database.

International Organization for Standardization 9001 Quality Management System

During 2010, the Strategic Petroleum Reserve maintained the recertification to International Organization for Standardization (ISO) 9001:2000 after on-site assessments in 2009 of the New Orleans/Stennis, Big Hill, and West Hackberry facilities.

Integration of the ISO 14001 into the Environmental Management System

In May 2000, the Strategic Petroleum Reserve became the first bulk petroleum storage organization, public or private, to receive an ISO 14001 certification for its environmental management system. This certification was renewed for its fourth three-year cycle in May 2009, and is viable through May 2012.

The ISO 14001 Registrar (the certifying body) conducted surveillance audits during 2010. All facilities were evaluated through the two audits. The successful outcome resulted in the recommendation to maintain recertification against the ISO 14001 standard for the four storage sites, the New Orleans headquarters, and the warehouse building.

Figure 9 shows the Strategic Petroleum Reserve's performance for recordable environmental incidents for the years 1987-2010. The Strategic Petroleum Reserve continued its excellent record with two reportable events in 2010.

Pollution Prevention

Hazardous Waste

The Strategic Petroleum Reserve exceeded the FY 2010 goal of no more than 475 lbs of hazardous waste generated. During FY 2010, only 249 lbs of hazardous waste was generated. Although there is no calendar year (CY) hazardous waste generation goal, the CY 2010 actual amount generated was 252 lbs. The majority of the hazardous waste consisted of laboratory waste and the remaining amount was spent fluorescent lamps and other chemicals.

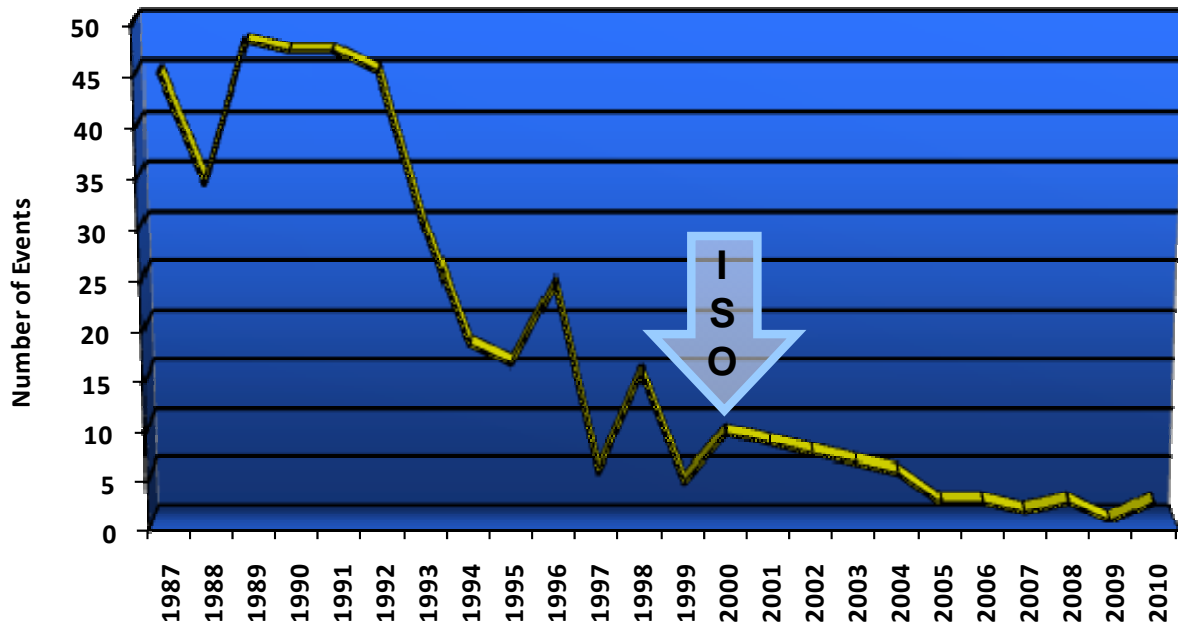
Recycling

Although there are no FY or CY goals for Exploration and Production (E&P) waste generation or recycling, the Strategic Petroleum Reserve continued with its effort to recycle whenever possible. During FY 2010, 97 percent (688,875 lbs) of E&P waste was recycled. This performance continued through the calendar year and 97 percent (731,773 lbs) of E&P waste was recycled. The type of E&P waste generated included brine contaminated soil, brine disposal well solids, crude oil contaminated absorbent, and off-specification crude.

The Strategic Petroleum Reserve exceeded the established FY 2010 recycling goal of 52 percent, by achieving a recycle rate of 83 percent. Although there is no CY recycling goal, the CY 2010 rate achieved was 86 percent which represents 1,987,562 lbs of non-E&P recycled waste. The majority of recycled waste consisted of spent blast media abrasives, scrap metal concrete, and paper.

The SPR met the established FY 2010 sanitary waste goal of 800,000 lbs, and only generated 372,168 lbs of sanitary waste which was significantly below the target. Although there is no CY goal, the SPR continued its performance through CY 2010 and only generated 342,428 lbs of sanitary waste.

**Figure 9
Reportable Environmental Events**



Customer Service

The Strategic Petroleum Reserve’s Customer Service Team met with several refiners, traders, pipeline companies, and other customers during the 2010 National Petrochemical and Refiners Association annual meeting in Phoenix, Arizona during the third week of March. Additional meetings were held at the Strategic Petroleum Reserve offices in Washington, DC and at some of the customers’ corporate offices. Meetings with customers always have two primary functions: to gather customer information and to update those customers on Strategic Petroleum Reserve activities.

Each customer was asked to review the contact information that they provide to the Strategic Petroleum Reserve and to provide information on changes such as expansion plans and any planned or actual changes to their crude oil inputs. Customers were also encouraged to discuss any operational or administrative issues they have encountered when dealing with the Strategic Petroleum Reserve so that the issues may be addressed.

The Customer Service Team provided updates to the customers on the completion of fill to 727 million barrels and the end of the royalty-in-kind program. The team also answered questions from the customers. Customers provided the team with updates on refinery closings, shutdowns, and hurricane upgrades.

Real Estate Actions

During 2010 the Strategic Petroleum Reserve:

- Executed a Pipeline Right-of-Way Deed on April 30, 2010, allowing the Strategic Petroleum Reserve to install the Bayou Choctaw Potable Waterline.
- Executed the ExxonMobil Amendment to Easement and Right-of-Way Agreement on June 25, 2010. This agreement continues the use of the pig trap area on the Bryan Mound Site by ExxonMobil for an additional 5 years. A one-time payment of \$14,200 was received as consideration.
- Temporary Access Easements were obtained from the Port of Freeport and the State of Texas on August 6, 2010, in connection with the lowering of the Bryan Mound Brine Pipeline.

Appendix

Strategic Petroleum Reserve Site Information

Bryan Mound

Location

Brazoria County, Texas (3 miles southwest of Freeport, Texas).

Site Description

254 million barrel storage facility consisting of 20 caverns.

24 inch diameter, 6 mile brine disposal pipeline extending 4 miles offshore in the Gulf of Mexico.

Oil, brine and raw water piping distribution system connecting caverns with central plant and water intake structure located on Brazos River. Twenty-one (21) pumps totaling approximately 45,000 horsepower.

System Parameters

Drawdown Rate:	1,500,000 bbl/d
Raw Water Pumping Rate:	1,626,000 bbl/d
Oil Fill Rate:	225,000 bbl/d
Brine Disposal Rate:	260,000 bbl/d

Distribution Facilities

DOE 3.9 mile, 30-inch pipeline to Seaway Freeport Marine Terminal, DOE 4.0 mile, 30-inch pipeline to Seaway Jones Creek Tank Farm and Pipeline and DOE 46 mile, 40-inch pipeline to Seaway Texas City Terminal and Docks.

Acquisition

Acquired 499.47 acres fee simple, by condemnation, April 1977, from Freeport Mineral Company and other owners. Dow Chemical Company was the previous operator.

West Hackberry

Location

Cameron Parish, Louisiana (25 miles southwest of Lake Charles, Louisiana).

Site Description

228 million barrel storage facility consisting of 22 caverns.

Oil, brine, and raw water piping distribution system connecting caverns with central plant, water intake structure located on Intra-coastal waterway and nine brine disposal wells. Thirty-three (33) pumps totaling over 41,680 horsepower.

System Parameters

Drawdown rate:	1,300,000 bbl/d
Raw Water Pumping Rate:	1,632,000 bbl/d
Oil Fill Rate:	225,000 bbl/d
Brine Disposal Rate:	225,000 bbl/d

Distribution Facilities

DOE 42.8 mile, 42-inch pipeline to Sunoco Nederland Terminal.

DOE 13.6mile, 36-inch pipeline to Shell Pipeline common carrier pipeline system at Carlyss.

Acquisition

Acquired 405.36 acres fee simple by condemnation, April 1977, from numerous private landowners. Olin Corporation was the previous site operator. Acquired 160.0 additional acres fee simple by condemnation in two actions, July 1979 and March 1980.

Big Hill

Location

Jefferson County, Texas (26 miles southwest of Beaumont, Texas).

Site Description

171 million barrel storage facility consisting of 14 caverns.

Oil, brine, and raw water systems connecting caverns with central plant, water intake structure located on the Intracoastal Waterway, and a 48-inch diameter, 14-mile brine disposal pipeline extending four miles offshore in the Gulf of Mexico. Forty-eight (48) pumps totaling 46,000 horsepower.

System Parameters

Drawdown Rate:	(Sour)	1,100,000 bbl/d
	(Sweet)	1,000,000 bbl/d
Raw Water Pumping Rate:		1,400,000 bbl/d
Oil Fill Rate:		225,000 bbl/d
Brine Disposal Rate:		432,000 bbl/d

Distribution Facilities

DOE 24.5 mile, 36-inch pipeline to Sunoco Nederland Terminal, Chevron 2 mile, 24 inch pipeline to Chevron Docks, Shell 20-inch pipeline system to East Houston.

Acquisition

Acquired 271 acres fee simple, by condemnation, November 1982 and July 1983, from three landowners, i.e., 238.48 acres from Amoco, 27.06 acres from the Pipkin estate, and 5.46 acres from the Patrick Henry Phelan estate.

Bayou Choctaw

Location

Iberville Parish, Louisiana (12 miles southwest of Baton Rouge, Louisiana).

Site Description

74 million barrel storage facility consisting of six caverns (see Table 2, page 12).

Oil, brine, and raw water piping distribution system connecting caverns with central plant, a water intake structure, 12 brine disposal wells, and a pipeline for disposing of brine to PetroLogistics Olefins, LLC. Eighteen (18) pumps totaling over 18,000 horsepower.

System Parameters

Drawdown Rate:	(Sour)	515,000 bbl/d
	(Sweet)	300,000 bbl/d
Raw Water Pumping Rate:		515,000 bbl/d
Oil Fill Rate:		110,000 bbl/d
Brine Disposal Rate:		110,000 bbl/d

Distribution Facilities

DOE-owned 37.2 mile, 36-inch pipeline to Shell's Sugarland Terminal and Capline Pipeline.
Shell-owned 16 mile, 24-inch pipeline to Baton Rouge.

Acquisition

Acquired 355.95 acres fee simple, by condemnation, April 1977, from numerous private owners. Union Texas Petroleum (a subsidiary of Allied Corporation) was the previous operator.

In 1985, DOE acquired an additional existing cavern through a cavern exchange agreement with Union Texas Petroleum. The transaction involved a 3.5-acre exchange with no net change in Government owned acreage.

