II. THE U.S. STRATEGIC PETROLEUM RESERVE

"To maximize long-term protection against oil supply disruptions, I am directing today the Secretary of Energy to fill the SPR up to its 700 million barrel capacity. The SPR will be filled in a deliberate and cost-effective manner."

-- President George W. Bush, November 13, 2001

A. Introduction

The purpose of the United States Strategic Petroleum Reserve (SPR) is to store petroleum to reduce the adverse economic impact of a major petroleum supply interruption to the United States. [1] In 1975, following the disruption to the U.S. economy resulting from the 1973 Arab oil embargo and the doubling of crude oil prices by the Organization of the Petroleum Exporting Countries (OPEC), Congress passed and President Ford signed the Energy Policy and Conservation Act (EPCA), which, among other energy-conserving measures, established a national policy to create a one-billion barrel reserve for the storage of crude oil that could be used in the event of a disruption in the supply of crude oil. The SPR program, which is operated by the U.S. Department of Energy (DOE), through its SPR program office, is designed to help stabilize domestic crude oil prices by allowing the withdrawal of oil from the reserve when either supplies are disrupted or prices are unusually high.

The SPR consists of four large underground caverns hollowed out from naturally occurring salt domes near the U.S. Gulf Coast in Texas and Louisiana.[2] The Gulf Coast sites were chosen because of their proximity to the extensive port facilities, pipelines, and refineries in the region, and because using the natural salt caverns was less expensive than building new tanks for the storage of the crude oil.[3] Currently, the SPR holds 600 million barrels and has a physical capacity of 700 million barrels.[4] Two basic types of crude oil streams are deposited and stored in separate caverns in the SPR: sweet crude oil (with a sulfur content of not greater than 0.5 percent) and sour crude oil (with a sulfur content greater than 0.5 percent). As of late 2002, approximately two-thirds of the current inventory is sour crude, and one-third is sweet crude oil.

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[1] U.S. Department of Energy Strategic Petroleum Reserve, Strategic Plan, October 2001, page 3.

[2] For security reasons, the DOE has removed additional information about these locations from its website.

[3] Storage costs in the SPR are approximately $1.50 per barrel, whereas storage in above-ground tanks costs a total of about $15 to $18 per barrel, nearly ten times the SPR cost. Additionally, the geologic pressure in the caverns at 2,000-4,000 feet below the surface should seal any cracks that may appear in the salt, and thereby prevent any leaks of oil out of the caverns. The temperature differential between the top and the bottom of the caverns keeps the crude oil circulating within the cavern, thereby maintaining a consistent quality of oil in each individual cavern. See DOE SPR website, at SPR - Quick Facts, at http://www.fe.doe.gov/spr/spr_facts.shtml.

[4] *Id.* Congress has authorized the SPR to hold a capacity of one billion barrels. If the SPR were to be filled to its 1 billion barrel capacity, more physical storage capacity would have to be built or acquired.

Crude oil has been withdrawn from the reserve on several occasions. Currently, the SPR is being filled in two ways: (1) adding oil through the Royalty-in-Kind program; and (2) replacing oil that was previously swapped out in 2000.

B. Withdrawals From The SPR

DOE is authorized to withdraw crude oil from the SPR for several purposes. Foremost among these is the authority to withdraw crude oil to alleviate disruptions and shortages in the supply of crude oil. Additionally, DOE may conduct operational exchanges, sales, and swaps for a variety of purposes, and has been authorized to withdraw crude oil from the SPR in order to establish a home heating oil reserve.

1. Emergency Drawdown

As the primary mission of the SPR is to provide a source of crude oil in the event of a severe disruption in the supply of crude oil, the EPCA authorizes what is called a "drawdown" upon a finding by the President that there is a "severe energy supply interruption." Under the EPCA, a "severe energy supply interruption" occurs when: (a) an emergency situation exists and there is a significant reduction in supply which is of significant scope and duration; (b) a severe increase in the price of petroleum products has resulted from such emergency situation; and (c) such price increase is likely to cause a major adverse impact on the national economy.[5]

In 1990, after the Exxon Valdez oil spill interrupted the supply of Alaskan crude oil, leading to spot shortages and price increases, Congress provided DOE with additional drawdown authority. This authority allows more limited withdrawals from the SPR in the event of a "domestic or international energy supply disruption of significant scope or duration," and where the drawdown would significantly reduce the impact of such a disruption. In these circumstances a Presidential declaration of a "severe energy supply interruption" is not required.

The first and only emergency drawdown of the SPR occurred at the outset of the Gulf War in 1991, following Iraq's invasion of Kuwait. On January 16, 1991, immediately after launching air strikes against Iraq, President George H.W. Bush declared that an emergency situation existed regarding the supply of crude oil, and the DOE began to implement a plan to sell nearly 34 million barrels of crude oil from the SPR. Because world crude oil prices stabilized before the full amount of oil was released, only about half that volume --17.3 million barrels -- were sold. This is the only time a drawdown has been ordered by the President pursuant to a declaration of an emergency under the EPCA.[6]

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[5] 42 U.S.C.A. ' 6241 (d) (1995 & Supp. 2002).

[6] http://www.fe.doe.gov/spr/spr_facts.shtml, U.S. Dept. of Energy website.

2. Exchanges

The EPCA also authorizes DOE to exchange oil in the SPR for operational or other purposes. This general authority has been used three times. In 1996, DOE delivered approximately 900,000 barrels of crude oil from the SPR to the ARCO Pipe Line Company after ARCO's Seaway Pipeline from the Gulf Coast to Cushing, Oklahoma was blocked by waxy crude oil. DOE took this action to provide a continuous flow of crude oil to Midwestern refineries. In return for the crude oil from the reserve, ARCO paid the government a fee and replaced the crude oil withdrawn within six months.

In 1988, the Department exchanged 11 million barrels of heavy Mexican Maya crude oil for a lesser volume of lighter, higher quality Mexican Olmeca and Isthmus crudes. In June, 2000, the Department agreed to withdraw 500,000 barrels from the SPR to supply crude oil to CITGO and Conoco refineries along the Gulf Coast whose shipping lanes had been blocked by the collapse of a commercial dry dock into the shipping channel leading to the refineries. After the shipping lanes were restored, CITGO and Conoco replenished the Reserve for the amounts of crude oil withdrawn.

In the FY 2001 Interior Appropriations Act,[7] Congress formally authorized the creation of a home heating oil reserve for the northeastern region of the United States, with a capacity up to two million barrels. To establish the heating oil reserve, Congress authorized the DOE to obtain storage capacity and the refined product through purchase, contract, lease, or exchange with crude oil from the SPR. In 2000, DOE swapped 2.8 million barrels of crude oil from the SPR in return for 2 million barrels of heating oil for the home heating oil reserve.

3. Non-Emergency Sales

On three separate occasions in 1996, Congress authorized the sale of oil from the SPR to raise revenues for the federal government.[8] In February and March, 1996, the Defense Fuel Supply Center sold a total of 5.1 million barrels of oil, through competitive bids, to four oil companies for a total of $97.1 million, to pay for the unexpected decommissioning of the Weeks Island SPR site, which had fractured and was in imminent danger of collapse.

In late April 1996, the Congress authorized further sales of Weeks Island crude that had been transferred to other SPR storage sites, for the explicit purpose of reducing the federal deficit. From May through August 1996, the Defense Fuel Supply Center sold 12.8 million barrels to nine oil companies, through competitive bids, at an average sale price of $17.81 per barrel, for a total of $227.6 million.

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[7] H.R. Rept. No 348-69, P.L. 106-291 (2000).

[8] DOE SPR website, at http://www.fe.doe.gov/spr/spr_rik.shtml.

The same year, Congress authorized the further sale of $220 million worth of crude oil to offset fiscal year 1997 appropriations. Between October and December the Defense Fuel Supply Center issued contracts for the sale of about 10.2 million barrels, which provided $220 million in revenue for the U.S. Treasury.

4. The 2000 Swap: Release of 30 Million Barrels

In late September 2000, with crude oil prices nearing historical highs, stocks of home heating oil at historically low levels, and winter just around the corner, President Clinton issued an executive order, pursuant to the limited drawdown authority under the EPCA, authorizing a "swap" of 30 million barrels from the SPR to alleviate a potential heating oil crisis.

Under the swap, 30 million barrels of SPR oil were released for bid. Interested parties bid to borrow quantities of not less than 1 million barrels of oil, and contracts were awarded based on how much oil bidders offered to return to the SPR between August 1 and November 30, 2001. "[B]idders based their offers on their best models of what it would cost them to acquire replacement crude, weighed against the benefit to them of having additional supply at the beginning of the winter."[9]

After the release, according to the Congressional Research Service (CRS), "it may have been that U.S. willingness to use the SPR temporarily took the wind out of the speculative element in the futures market," and spot prices fell from about $37 to $31 per barrel.[10] It is unclear, however, whether other political and economic factors also contributed to the price decrease.

Figure II-1 shows the price of crude oil before and after the two major releases of oil from the SPR, the 2000 swap and the 1991 emergency drawdown.

[9] Robert Bamberger, CRS Report, *Strategic Petroleum Reserve*, June 26, 2002.

[10] Robert Bamberger, CRS Report, *Strategic Petroleum Reserve*, June 26, 2002.

Figure II-1
Crude Oil Prices and Strategic Petroleum Reserve Releases

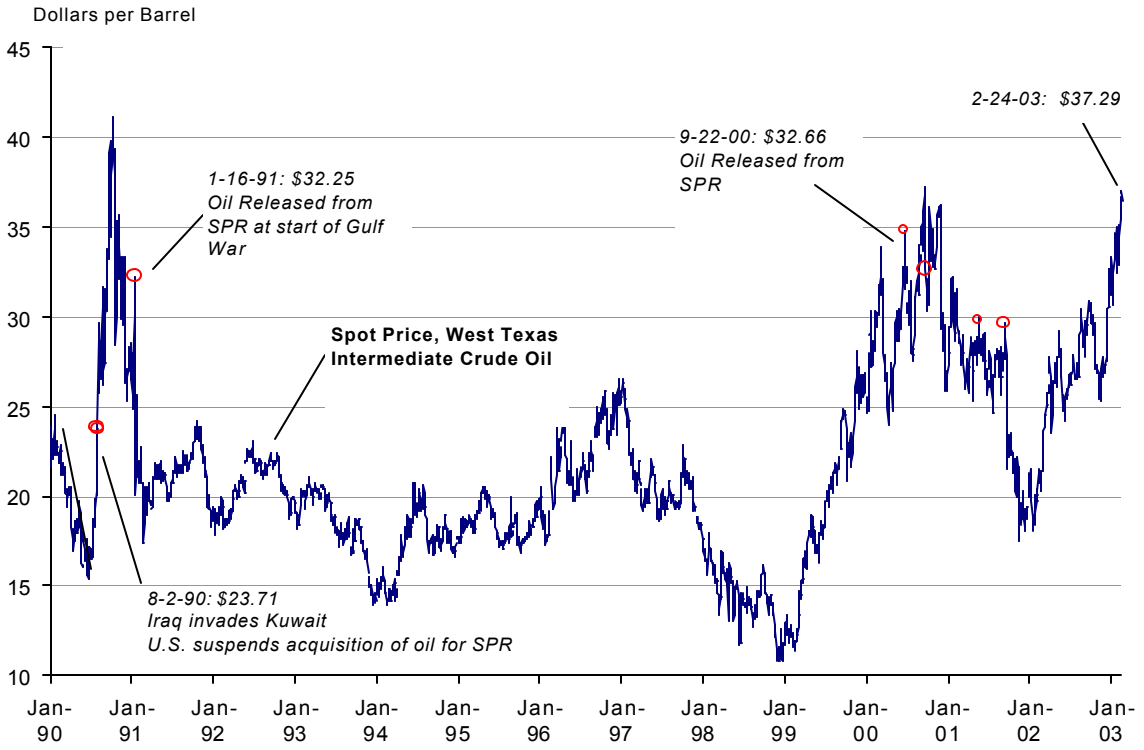

Fig. II-1. Major releases from the Strategic Petroleum Reserve occurred in 1991 and 2000. Price data obtained from EIA; release dates from Congressional Research Service.

C. Filling The SPR

1. Initial Fill of the SPR

From the mid-1970s until 1995, when the initial fill of the SPR was completed, 592 million barrels of crude oil were placed in the SPR. As of the end of FY 1997, the cumulative cost of the crude oil purchased to supply the SPR was nearly $16 billion. Table II-1 shows the sources of oil deposited into the SPR through 2001:

Table II-1

Sources of Crude Oil Deposited into the SPR Through 2001

Source	Quantity (millions of barrels)	Percent of Total
Mexico	266.2	41.2
North Sea (U.K.)	154.7	23.9
United States	52.4	8.1
Saudi Arabia	28.1	4.3
Libya	23.8	3.7
Iran	20.0	3.1
UAE	18.4	2.8
Nigeria	15.8	2.4
Norway	11.9	1.8
Venezuela	10.2	1.6
Oman	9.0	1.4
Egypt	8.9	1.4
Other*	26.9	4.2
Total Receipts	**646.3**	**100**

* Contributions of 1% or less of the total from the following countries: Ecuador, Algeria, Cameroon, Iraq, Gabon, Qatar, Angola, Colombia, Peru, and Argentina.

Source: Department of Energy.

From 1995 through 1998, the total inventory of crude oil in the SPR declined due to the sale of crude oil from the SPR and, with a ballooning federal deficit and relatively stable crude oil supplies, new expenditures were postponed and alternative methods of adding crude oil to the SPR were explored.

2. Recent and Current Programs to Fill the SPR

Recently, DOE has been depositing crude oil into the SPR under three programs: (1) contracts to replace the 30-million barrels released in the fall of 2000; (2) contracts under the 1999 royalty-in-kind (RIK) program designed to replace the 28 million barrels withdrawn in the 1996 sales; and (3) contracts to deliver additional crude oil under the RIK program pursuant to the President's November 2001 announcement to fill the SPR to 700 million barrels. These programs are listed in Table II-2 and described below.

Table II-2

Current Programs to Fill the SPR

Program	Total Quantity to be Deposited (millions of barrels)	Initial Duration	Current Completion Date
1999 RIK	30.7	2Q 99 – 1/03	1/2004
2000 Exchange Contracts (BP, Koch, Marathon, Vitol, Shell, Hess, Burhany, Elf)	34.5	12/01 – 1/03	1/2004
2002 RIK (Shell)	18.6	4/02-4/03	1/2004
2002 RIK (Koch)	8	10/02-4/03	1/2004
2003 RIK (Chevron/Texaco, Shell, ExxonMobil)	21	5/03-10/03	10/03
2003 Direct Fill (Texas offshore producers)	3.6	4/03-12/03	12/03

Source of SPR information: DOE SPR website.

a. 2000 Swap Refill

Under the original schedule for returning the 30 million barrels of crude oil taken from the SPR in the September 2000 swap, these barrels were to be returned between August 1 and November 30, 2001. In late March 2001, DOE renegotiated the schedule for the return of 24 million of these barrels. Under the new schedule, the return of these 24 million barrels would occur between December 2001 and January 2003, and the companies returning the oil would provide a total of 3.5 million additional barrels to compensate the SPR for the schedule extension. As of February 2003, about 28 million of these barrels have been returned. An additional 6 million barrels are scheduled to be returned in 2003.

b. 1999 Royalty-In-Kind (RIK) Program

In order to avoid additional federal outlays for the purchase of crude oil to fill the SPR, in 1999, the Clinton Administration initiated the royalty-in-kind (RIK) program.[11] Traditionally, the federal government, through a program managed by the Department of Interior's Minerals Management Service (MMS), has collected royalty fees, in cash, for crude oil produced from offshore crude oil and gas wells operating under leases on the federally-owned Outer Continental Shelf. Under the RIK program, the federal government obtains crude oil for the SPR as "in-kind" royalties – rather than financial payments – from these oil leases. This allows the federal government to fill the SPR without having to appropriate funds to purchase the oil.

To begin the RIK process, the MMS announces a bidding competition for the transportation of royalty oil that will be due to the federal government from the crude oil produced on tracts leased by the federal government in the Gulf of Mexico.[12] This competition is essentially a bidding contest for the transportation of the royalty oil from the company's wellhead in the Gulf to the "market center" designated by the MMS. Generally, the successful bidder will be the company offering the MMS the largest portion of the oil delivered to the market center, and taking the least amount of the oil itself as payment for the transportation of the oil to the center.

Because the royalty oil from the Gulf of Mexico leases is not of sufficient quality to be deposited in the SPR, DOE runs an additional, separate competition for contracts to exchange the royalty oil in the market centers for crude oil to be delivered to the SPR. The competition calls for bidders to take the royalty oil at the market center, swap it for oil suitable for the SPR, and then transport the SPR-suitable oil to the SPR. Generally, the successful bidder will be the company that promises to deliver the most barrels into the SPR in exchange for the royalty barrels taken from the market center.

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[11] The RIK program is described in the DOE's Office of Fossil Energy website at http://www.fe.doe.gov/spr/spr_rik.shtml.

[12] The sale is based on a competitive bidding process. If the minimum bid price is not met, MMS will have the option to negotiate prices with the highest bidder. http://www.mrm.mms.gov/RIKweb/PDFDocs/51626.pdf.

Because a variety of crude oils are acceptable to place in the SPR, the DOE may also consider the quality of the crude oil offered to be placed into the SPR as a factor in determining which bid to select.[13] The quality of the oil to be deposited may be of particular significance when the leading bidders are offering approximately the same volumes to be deposited.

In 1999, the RIK program was adopted as a means to refill the SPR for the 28.1 million barrels withdrawn during the 1996 sales, without additional federal outlays. The refills under this program began in the spring of 1999, and were to continue through January 2003, by which time the SPR was to have received a total of 30.7 million barrels.

Although the RIK program enables the SPR to be filled without federal outlays, using RIK oil for the SPR program nonetheless significantly affects the federal budget. The exchange of royalty oil for SPR oil deprives the federal Treasury of revenues that otherwise would have accrued had the MMS sold the royalty oil on the open market. Exchanging royalty oil for SPR oil when oil prices are high, therefore, results in a greater loss to the Treasury than exchanging royalty oil for SPR oil when oil prices are low. Hence, to the extent that the SPR program uses RIK oil when prices are high rather than low, taxpayers pay higher costs for the SPR, just as if the crude oil placed in the SPR had been bought on the open market at those high prices.

c. 2001 RIK Program to Fill the SPR to 700 Million Barrels

The increased national security concerns and falling crude oil prices that followed the terrorist attacks on the United States in September 2001, led both the Congress and the Administration to support filling the SPR to capacity. In October 2001, the House of Representatives passed a resolution supporting the filling of the SPR to its maximum authorized level of 1 billion barrels.[14] In April 2002, the Senate passed an energy bill that included language to permanently authorize the SPR and require fill to its current capacity of approximately 700 million barrels.[15]

In November 2001, President Bush announced the Administration's intent to fill the SPR to its current 700 million barrel capacity.[16] In the announcement, the President directed the Secretary of Energy to fill the SPR "in a deliberate and cost-effective manner."[17] In a contemporaneous DOE press release, DOE stated, "The President's decision will expand an ongoing 'royalty-in-kind' program,

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[13] Interview with DOE officials by Subcommittee staff on June 12, 2002.

[14] H.Res. 250, 107th Cong., 1st Sess., A Resolution Urging the Secretary of Energy to Fill the Strategic Petroleum Reserve.

[15] The Senate passed the energy bill, H.R. 4, on April 25, 2002, but it was never enacted into law.

[16] http://www.fe.doe.gov/spr/spr_rik.shtml.

[17] President Orders Strategic Petroleum Reserve Filled, Statement by the President, at http://www.whitehouse.gov/news/releases/2001/11/20011113.html.

adding oil to the Reserve in a deliberate and cost-effective manner at rates of up to 130,000 barrels per day beginning [in 2002]."[18]

On January 22, 2002, DOE announced a solicitation for bids to exchange up to 22 million barrels of royalty oil for oil to fill the SPR.[19] "Because Strategic Reserve crude oil typically exceeds the quality of most offshore crudes," DOE stated, "companies will likely deliver somewhat less than the 22 million barrels of royalty oil to the Reserve after adjusting for the quality differences. The companies can also make adjustments to account for their costs to deliver oil to the Reserve sites. The Energy Department will negotiate contracts with the companies that offer the ratios most favorable for the U.S. government."[20]

On February 6, 2002, DOE awarded the RIK contract to Equiva Trading Company, which has since become part of Shell. Under this contract, Equiva agreed to deliver 18.6 million barrels of sweet crude oil to the SPR through the RIK program between April 1, 2002, and May 1, 2003.[21] This contract translates to a fill rate of approximately 60,000 barrels per day. Publicly announcing the award five days later, on February 11, 2002, the Secretary of Energy stated, "Today's announcement is another step forward in the President's efforts to strengthen the nation's energy security. . . . The Strategic Petroleum Reserve is one of our most important strategic assets, and today's action ensures that we will be prepared for potential supply disruptions in the future."[22] Shell began delivery of oil to the SPR under this contract in April 2002.

In late July 2002, DOE announced a new contract solicitation to increase the fill rate under this RIK program by about 40,000 barrels per day. "More oil in the Reserve is more energy insurance for American consumers," the Secretary of Energy stated. "And the faster we can add oil to the Reserve, the more energy security we can provide for all Americans."[23] On August 11, 2002, DOE announced that Koch Supply and Trading had won the bidding for this contract. Under the contract, Koch agreed to supply approximately 8 million barrels of crude to the SPR, with deliveries beginning October 1, 2002, and running through April 30, 2003.[24]

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[18] DOE Press Release, *President Directs Energy Secretary to Increase Strategic Reserve*, November 13, 2001.

[19] DOE Press Release, *Energy Department Opens Bid Process to Begin Filling Strategic Oil Reserve*, January 22, 2002.

[20] *Id.*

[21] DOE anticipates that after this contract terminates in 2003, subsequent RIK contracts will specify that two-thirds of the oil deposited under the contract be sour crude and one-third be sweet crude. DOE interview with Subcommittee staff.

[22] http://www.fe.doe.gov/techline/tl_sprrik2002_equiva.shtml.

[23] Fossil.Energy.gov Techline, *Administration to Increase Fill Rate of Strategic Petroleum Reserve*, July 26, 2002, at http://www.fe.doe.gov/techline/tl_spr_rik2002_phase2.shtml.

[24] Office of Fossil Energy website, at http://www.fe.doe.gov/spr/spr_rik.shtml.

On February 10, 2003, DOE announced the award of three new contracts to place, on average, another 116,000 barrels per day into the SPR over a six-month period beginning in May 2003. On the same date DOE also announced that in April it would begin pumping about 15,000 barrels per day of crude from producers off the Texas coast into the SPR. According to DOE, "The combined shipments will boost the Strategic Petroleum Reserve's fill rate to approximately 131,000 barrels per day – the fastest since President Bush announced plans in November 2001 to fill the Reserve to its full 700-million barrel capacity . . . . "[25] The contracts announced in February will add another 24 million barrels to the SPR between April and October, 2003.

As of the writing of this Report in March 2003, the total volume of oil stored in the SPR is about 600 million barrels. As shown in Figure II-2, this total includes the steady addition of over 40 million barrels of oil from November 2001 through September 2002.

[25] DOE, New Contracts Awarded for Planned Spring Acceleration of Oil Fill for Strategic Petroleum Reserve, February 10, 2003, at http://www.fe.doe.gov/techline/tl_spr_rik2003_sel.shtml.

Figure II-2
Cumulative Amount of Oil in the SPR
October 2001 - September 2002

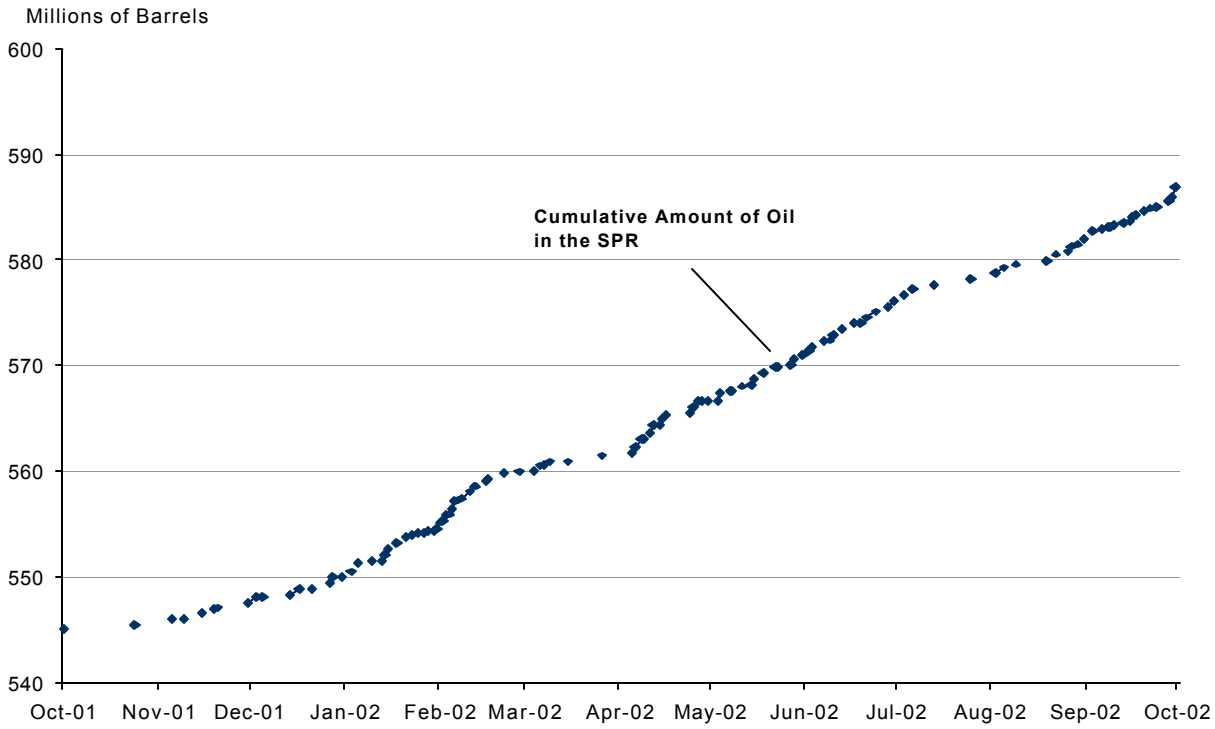

Fig. II-2. Beginning in November 2001, and continuing through late 2002, DOE deposited oil into the SPR at a steady rate. SPR data provided by DOE.

Current SPR contracts call for depositing an additional 43 million barrels in 2003, at a steady rate of over 130,000 barrels per day. Table II-3 provides the current monthly schedule for future SPR deliveries.

Table II-3

2003 SPR Delivery Schedule

Month	Scheduled Deposits (millions of barrels)
April	3934
May	4622
June	5304
July	6029
August	5473
September	7181
October	5772
November	1500
December	2758
January 2004	1582

Source: DOE SPR website, Current Inventory, SPR Delivery Schedule as of March 03, 2003, Last Updated 3/3/2003

3. Strategy for Filling the SPR

a. Different Types of Crude Oil May Be Placed in the SPR

For each of the two basic types of crude oil stored in the SPR – sweet and sour crudes – DOE allows SPR contractors to deposit a variety of crude into the reserve, as long as they meet DOE's minimum standards for that specific type of crude oil. Providing contractors with flexibility in the types

of crude oil that can be delivered to the SPR is one measure taken by the SPR program to minimize costs and market disruptions. Table II-4 shows the thirteen different types of oil that meet DOE's specifications for sweet crude oil:

Table II-4

Sweet Crude Oils That Meet SPR Specifications

Crude Type	Country	API Gravity*	Percent Sulfur (by weight)
Saharan Blend	Algeria	39	0.30
Forties	U.K.	39	0.35
Brass River	Nigeria	38	0.35
Bonny Light	Nigeria	37	0.35
Ekofisk	Norway	36	0.35
Escravos	Nigeria	36	0.35
Oseberg	Norway	32	0.35
Cusiana	Colombia	36	0.40
Brent	U.K.	36	0.42
LLS	U.S.	35	0.42
HLS	U.S.	33	0.42
Qua Iboe	Nigeria	32	0.42
Kole	Cameroon		

* A lower API gravity number indicates a heavier crude oil. Generally, heavier crudes with more sulfur are less expensive than lighter crudes with less sulfur.

Source: DOE

Although DOE provided its SPR contracts with the option to deposit a variety of sweet crudes into the SPR, from the fourth quarter of 2001 through the first half of 2002, oil companies chose to deposit into the SPR large amounts of Brent crude oil, a crude oil dwindling in supply and the price of which serves as a benchmark for the price of other crude oils.

Figure II-3 shows the breakdown between Brent and other sweet crudes deposited into the SPR from April 1999, when the filling of the SPR recommenced under the 1999 RIK program, through September 2002. This investigation's findings regarding the significant consequences arising from these recent large deposits of Brent crude oil into the SPR, including the effect upon global crude oil markets and crude oil prices in the United States, are explained in Section IV.

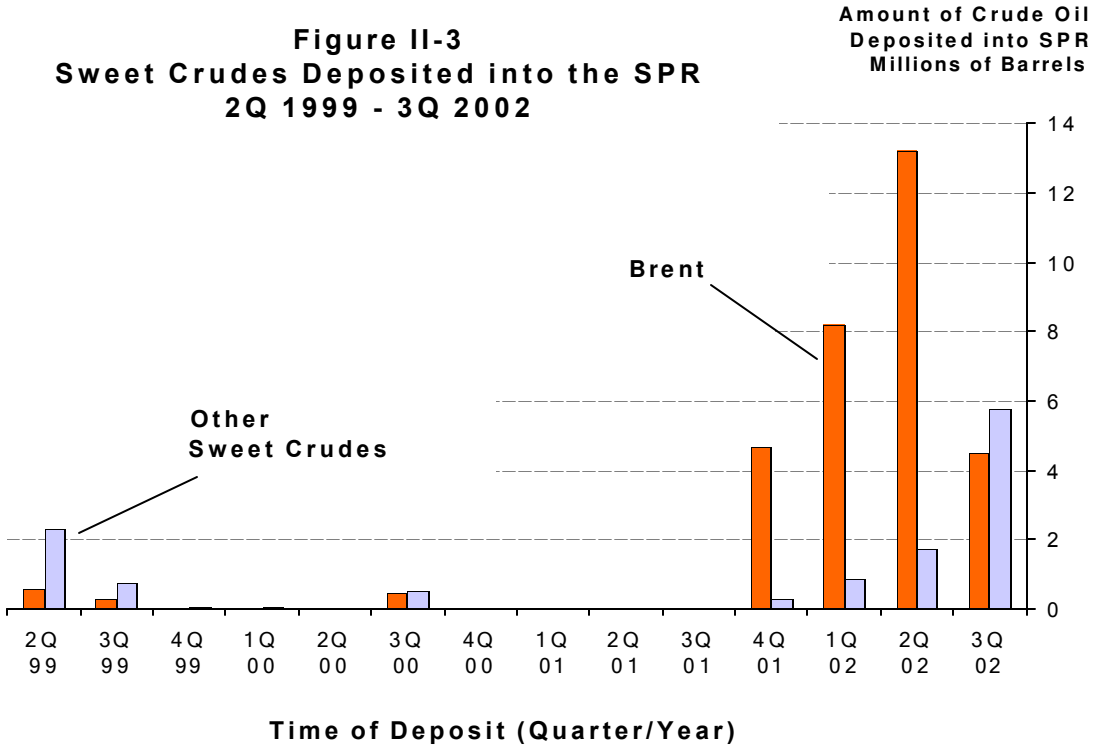

Fig. II-3. From the fourth quarter of 2001 through the second quarter of 2002, large amounts of Brent were used to fill the SPR. SPR data provided by DOE.

b. Market-Based Acquisition Strategy and Fill Schedules

DOE solicitations for oil to be deposited into the SPR provide a general time period for the delivery of the oil to the SPR. After a solicitation is awarded, the contractor proposes a more specific schedule of deliveries. DOE and the contractor then establish a mutually acceptable schedule.[26]

The SPR program's "Business Procedures," Exhibit II-1, most recently issued in January 2002, provide DOE and SPR contractors flexibility to modify delivery schedules, either by deferring or accelerating deliveries, depending on market conditions.[27] DOE has publicly stated that it used these business procedures to deposit more oil into the SPR when crude oil markets are "weak," and delay deliveries when the markets are "strong," both to minimize SPR program costs and to help stabilize crude oil markets.

If a contractor asks to defer or advance a shipment, DOE will require the contractor to compensate DOE for any loss in value from the change in schedule. The SPR Business Procedures state:

> During contract performance there may be situations when due to programmatic requirements or through contractor request the schedule for the delivery of exchange oil to the SPR sites are proposed to be deferred to a later date or accelerated to an earlier date. An evaluation is performed incorporating a formula that encompasses market conditions including crude oil prices from contracted delivery period to the revised delivery period, time value of money, and crude type differentials. Based on this evaluation negotiations are conducted with the contractor [and DOE personnel]. Based on the negotiated agreement a bilateral modification is executed [by DOE] and the contractor incorporating the revised delivery schedule; [and] any additional premium barrels owed by the contractor as a result of the agreement . . . .[28]

According to a September 2001 presentation, Exhibit II-2, prepared by the SPR Office for other countries considering establishing a similar crude oil reserve program, "the key to a successful strategic reserve is cost control."[29] Because "the number and extent of future disruptions is unknown," and "measuring the degree of damage from a disruption, and the consequent benefits of a petroleum reserve, to an individual economy is an uncertain science," DOE states that "cost is the easiest aspect to

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[26] Typically, after a SPR fill contract is awarded, DOE will delay for several days the public announcement of the winning bidder in order to allow the winning bidder to prepare to implement the contract prior to the market learning of the general requirements of the contract. Even after publicly announcing the award of a contract, DOE withholds significant information from the market to ensure that persons other than the contract participants do not obtain advance knowledge of SPR purchase and shipping schedules. DOE also withholds details about the various bids received, why a certain bidder won, and the specific delivery schedule under the contract. DOE reveals only who the winning bidder is, and how much oil will be delivered into the SPR on a monthly basis. DOE withholds this contract, delivery, and bid information in part to prevent actions by crude oil market participants that could increase a contractor's transportation costs or "squeeze" the contractor by bidding up the price of oil suitable for the SPR.

[27] Strategic Petroleum Reserve, Business Procedures, Crude Oil Exchanges, January 2002; Exhibit II-1.

[28] *Id.*, at page 6.

[29] Presentation by John Shages, DOE Office of Strategic Petroleum Reserve, Asia-Pacific Economic Cooperation Energy Working Group, Workshop on Energy Security Policy, Sept. 14-15, 2001; Exhibit II-2.

control and has the highest probability of making the Reserve cost beneficial." According to the presentation, the major costs for the SPR program are the capital costs to construct the facility, the costs to operate and maintain the Reserve, and the costs of acquiring the oil for the Reserve.

According to the same presentation, DOE follows four market-based principles when filling the SPR. In a chart entitled, "Lessons Learned to Control Oil Acquisition Costs," DOE describes these principles as follows::

- Let the markets determine your buying pattern.
- Buy in weak markets.
- Delay deliveries during strong markets.
- Use your acquisition strategy to stabilize markets.[30]

By calling them "Lessons Learned," DOE indicates that these principles were developed as a result of previous program experience. Essentially, they direct DOE to buy more oil when current market prices are low, and less when oil prices are high.[31]

In 2000 and 2001, DOE regularly followed these market-based principles. For example, in March 2001, DOE postponed the delivery of 24 million barrels of crude oil then scheduled to be delivered between August and November 2001, until sometime between December 2001 and January 2003. In return for the delay, DOE obtained an additional 3.5 million barrels. According to the Congressional Research Service, "It is believed that the schedule was renegotiated to keep pressure off crude markets, and to keep this volume of oil in the private sector where it can be tallied in industry stocks going into the winter of 2001-2002."[32] The available futures market data indicates that at the time of DOE's decision, crude oil futures markets were backwardated, meaning near-term prices were greater than longer-term prices.

Similarly, the original schedule for the 1999 royalty-in-kind program called for delivery of just over 27 million barrels to the SPR throughout the year 2000. DOE obtained an additional 3.6 million barrels in return for extending the delivery schedule to run through 2002.

In total, these two extensions resulted in an additional 7 million barrels for the SPR, at no additional taxpayer cost. Based on the average spot price of crude oil in 2002 at $26 per barrel, these deferrals reduced SPR costs by over $175 million.[33]

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[30] *Id.*

[31] More precisely, the terms "weak" and "strong" market appear to refer to when the market is in contango (near-term prices lower than longer-term prices) or in backwardation (near-term prices higher than longer-term prices), respectively. See also internal SPR memorandum, Exhibit V-4.

[32] Robert Bamberger, CRS Report, *Strategic Petroleum Reserve*, June 26, 2002.

[33] See Exhibit V-4. DOE's calculation of savings are based upon an average price of $25 per barrel. This is a slight

c. SPR Market-Based Procedures Abandoned

In February 2002, DOE abandoned its market-based business procedures, and instituted a policy of denying all requests for deferrals of scheduled SPR deposits, regardless of market conditions. The decision to stop granting requests for deferrals, regardless of the price of oil, was announced by the Secretary of Energy after consulting with White House and other high-ranking Administration officials. SPR career officials warned that this change in strategy would lead to lower commercial crude oil inventories and higher prices, and unsuccessfully recommended a return to a market-based program.

Sections IV and V of this Report detail the consequences of the no-deferral policy that was adopted in 2002. Section IV explains how the refusal to grant deferrals in early 2002 led to a squeeze in the market for Brent crude oil, which in turn led to price spikes in the U.S. crude oil market, costing American consumers and businesses between $500 million and $1 billion in one month alone. Section V describes the concerns of the SPR career officials regarding the new no-deferral policy, and how the Administration's market-blind policy also led to higher crude prices and lower commercial inventories, resulting in no net increase in national oil supplies.

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underestimation, since the average spot price for WTI in 2002 was just over $26 per barrel, which means taxpayer savings were actually closer to $180 million.