



Petroleum Industry Research Foundation, Inc.

1 2 2 E A S T 4 2 n d S T R E E T

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THE U.S. WEAPON CLOSEST TO HOME: THE STRATEGIC PETROLEUM RESERVE

It is now two weeks since Iraq's invasion of Kuwait and the near total disruption of those countries' oil exports. Prices of crude oil rose as much as 50% in the early days, and are now about \$5, or 25%, above pre-invasion levels, and no near term solution of what is beginning to be called the third world oil crisis is in sight. This focuses increasing attention on whether the U.S. should utilize its Strategic Petroleum Reserve (SPR), the 600 million barrel inventory which has been put aside for just this purpose. The International Energy Agency (IEA), the multinational organization established after the Arab oil embargo to manage future oil shortages, met on August 9 and decided at that time not to draw on their strategic oil stocks collectively. The question will be discussed again in two weeks. This memorandum will look at the pros and cons of using the SPR volumes in the current situation. Our conclusion is that the best interests of the U.S. will be served by beginning a small drawdown of our SPR *now*.

■ *The invasion has created a shortage which will worsen as the winter demand approaches.* The gross shortfall in world exports is approximately 4 million B/D. We estimate that while more than 3.5 million B/D *could* be replaced by increased production from OPEC producers with excess capacity, it is not prudent from a policy prospective to assume that all countries will increase production to full capacity. Furthermore, while indications that Saudi Arabia, the nation with the largest excess productive capacity, will increase production immediately calmed jittery oil markets last week, it is not clear how much or how soon. Venezuela had apparently increased production briefly, and then returned to quota levels, so the question still remains: how much and how soon. OPEC's President Boussena has stated publicly that OPEC nations should hold the quota line. Hence, the issue of replacements for volumes lost because of the so far highly successful embargo is not yet settled.

The fourth quarter is a time of high demand, and before Iraq's invasion, the market's call on supplies from either OPEC or commercial inventories was expected to be at least 24 million B/D during the fourth quarter. (OPEC's quota is currently 22.5 million B/D, a volume which includes the 4.6 million B/D combined quota of Iraq and Kuwait.) With strict adherence to quotas, markets were expected to tighten by year end. With the war losses, the expected tightness will occur sooner and could translate into a deepening shortfall in international markets.

Upward pressure on prices is therefore not over. Assuming that the embargo successfully continues, prices will move up even in the absence of the kind of market panic we saw right after the invasion.

■ *The SPR was established to respond to just this kind of international crisis.* The Energy Policy and Conservation Act of 1975 established the SPR to "diminish the vulnerability of the United States to the effects of a severe energy supply interruption, and provide limited protection from the short-term consequences of interruptions in supplies of petroleum products." Although the severity of the interruption, on a net basis, cannot yet be quantified, there is no doubt that the loss of supplies from two major OPEC members is a "severe" interruption. Further, the military involvement of the world's largest exporter, Saudi Arabia, adds significantly to the gravity of the situation.

Some claim that because Kuwait's and Iraq's contributions to U.S. supply, less than 750 thousand B/D or less than 10% of U.S. imports, are quite small, interdiction of their supplies, in particular when the majority of the lost oil may be replaced, is not "severe." The counterargument, however, is that U.S. prices are set in world markets. Even if the U.S. had been importing little or no Iraqi or Kuwaiti oil, prices in the U.S. would have risen by about the same amount; a shortfall anywhere is a price increase everywhere.

■ *The SPR volume drawn down will not approach the SPR's maximum withdrawal capacity, and could continue for years if necessary.* The nearly 600 million barrels of crude oil in the SPR can be drawn down at a maximum rate of 3.5 million B/D for 90 days, with the rate tapering down after that, averaging about 2 million B/D over the next 4 months, and, after 210 days of maximum withdrawals, the SPR can be drawn at only 100 thousand B/D for the remainder of a year. The declining maximum rates are a result of facilities logistics. The oil is stored in 6 different complexes, consisting of leached salt caverns (one complex utilizes a converted salt mine) onshore, but deep underground, in Texas and Louisiana. As a cavern or facility is drained, maximum feasible withdrawal rate for the system declines.

With crude runs averaging more than 14 million B/D, U.S. refinery utilization is 94%, already stretching the sustainable maximum rate. Physically, at this moment, therefore, U.S. refineries could only accommodate an SPR volume equal to the net loss in supplies destined for the U.S., that is, some volume lower than the 750 thousand B/D. As world markets realign, U.S. losses could grow as remaining world supplies are bid away by those more dependent on the interdicted supplies. And while the SPR volume will not immediately result in a net increase in product supplied (because refineries are currently maximizing input and output), it will help calm world crude oil markets, and hence dampen price increases. Hence, this unilateral and limited U.S. action would have a global benefit.

Additional volumes drawn out of the SPR will back out crude oil imports, putting further supplies on world markets by displacement. Thus, if the world supply situation becomes critically constricted--incremental production is not made available, for instance, or some Saudi supplies are interdicted--the U.S. may wish to use this displacement function more aggressively. It should be noted, however, that in the event of a deepening or extreme shortfall, other countries would likely be using their strategic oil stocks. The IEA

sharing mechanism requires that participants reduce their call on world supplies either by a drawdown in strategic stocks or demand reduction measures.

The argument that using the SPR now will limit our response capability later seems to lose sight of the scale of drawdown which is likely. If the Administration made an announcement that it would auction a modest amount, little of the power of the SPR would be lost, and the calming effect on nervous markets will provide time to reassess the supply/demand balance as well as prop up the economy. A drawdown of 750,000 B/D for 30 days, for instance, would use 22.5 million barrels, less than 4% of the Reserve inventory.

Under the Energy Policy and Conservation Act and the Department of Energy's procedures, the drawdown would begin with a Presidential decision to use the SPR because a "severe energy interruption" exists. As specified in 10 CFR Part 625, DOE would then issue a "Notice of Sale" specifying volumes, qualities, quantities, locations and other terms of sale. Companies would submit bids, DOE would notify successful bidders, and deliveries would be scheduled. DOE's established procedures include financial performance guarantees and penalties for non-performance. DOE has estimated that it will take approximately two weeks from the decision to withdraw until the first deliveries to successful bidders. Refining and distribution of products take additional time of course, so SPR-based product would be available three to four weeks, at a minimum, after the President's decision. The market benefit, however, will precede the physical deliveries.

Since the SPR oil will be sold at auction, the government will realize market prices. At the present prices, for instance, the federal government will take in about \$20 million per day for a 750 thousand B/D withdrawal.

■ *Because the economy is particularly vulnerable to shocks, and since the menu of counter-measures is limited by the federal deficit and budget pressures, the SPR may be the best defense the economy has.* Economists have warned that the economy was on the brink of recession for some months. Leading indicators have been consistently sluggish nationwide, and some regions, like the Northeast, have suffered severe downturns. Higher oil prices will affect inflation rates both directly and indirectly as higher transportation charges, for instance, and then higher material costs, filter through the economy. More money spent for oil and oil-related products of course means less money spent on other consumer goods as well. This would translate into lower economic activity and higher unemployment. The SPR drawdown will help to minimize the economic damage, just as it was designed to do.

It would therefore appear to be in the national interest to start drawing down the Strategic Petroleum Reserve. Although its very existence may be providing a backstop for the market even before it's used, its benefit will be most clearly felt if it's put to the use for which it was designed.

August 16, 1990

STRATEGIC PETROLEUM RESERVE

FACT SHEET

Volume: 586.7 million barrels as of 8/10/90

FACILITIES AND INVENTORY SUMMARY

Storage Site/Delivery Complex	Location	Total to End 1989				Drawdown Rate MB/D
		Sweet ---Million barrels---	Sour	Total	% Sweet	
Seaway Group						
Bryan Mound	Brazoria County, TX	64.4	156.0	220.4	29	1100
Texoma Group						
Big Hill	Jefferson County, TX	0.0	0.6	0.6	0	1350
Sulphur Mines	Calcasieu Parish, LA	0.0	25.0	25.0	0	
West Hackberry	Cameron Parish, LA	109.3	96.5	205.8	53	
Capline Group						
Weeks Island	Iberia Parish, LA	0.0	72.6	72.6	0	1050
Bayou Choctaw	Iberville Parish, LA	18.4	34.0	52.4	35	
System Total		192.1	384.7	576.8	33	3500

Note: Big Hill site under construction; volume shown is for cavern development purposes.
Sulphur Mines site being decommissioned. Sweet crude has sulphur content not exceeding 0.5%.
Drawdown rates are maximums, sustainable for 90 days.

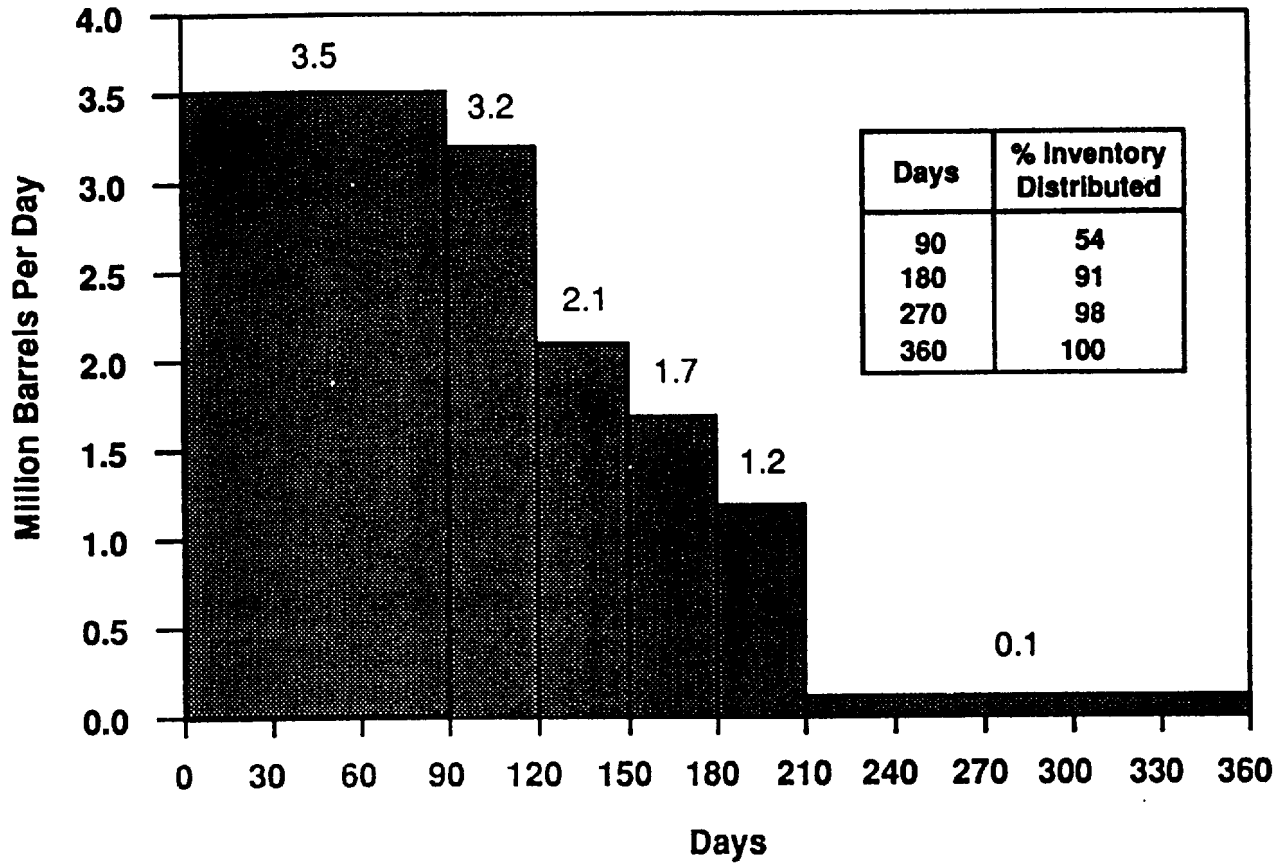
SOURCES OF CRUDE OIL RECEIVED THROUGH 1989

	MMBbls	%
Mexico	255	44
United Kingdom	136	23
United States	38	7
Saudi Arabia	27	5
Libya	24	4
Iran	20	3
United Arab Emirates	18	3
Nigeria	15	3
Other*	47	8
Total	581	100

*No country larger than 10 million barrels or 2%

Source for all data: U.S. Department of Energy

**STRATEGIC PETROLEUM RESERVE
DRAWDOWN CAPABILITY AS OF 12/31/89**



Source: U.S. Department of Energy