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WSPA Comment Letter Appendix 03 - Historical Record of 2002-2003 Strategic Fuel Reserve Assessment

Appendix 03: WSPA is submitting the entire available record of the CEC's 2002-2003 Strategic Fuel Reserve Assessment because it is no longer available on the CEC's website. The record contains significant and detailed information that should be helpful to the public in understanding the breadth and complexity of the issues. We believe the public deserves to know about and to be able to review in detail the diverse and technically sophisticated analyses that were conducted in order to support the conclusions that the Commissioners reached at the time, i.e., that a SFR would not serve the interests of the consumers of the State of California.

Additional submitted attachment is included below.

Government Use of the California Gasoline Forward Market

Jeffrey Williams and Gregg Haggquist April 24, 2003 Two propositions motivated our study:

- An illiquid, seller-dominated forward market for gasoline in California discourages storage within California and imports into California
- The State of California, by consolidating and restructuring its gasoline purchases, could participate in the forward market, thereby increasing its liquidity
- Two areas received our attention in stakeholder interviews:
- The current condition of the forward market
- The feasibility of state participants

Price Formation Sequence

- Pipeline trade creates spot market
- Pipeline leads rack pricing
- Rack price leads the street
- Street pricing = New market
- Pipeline scheduling as leading indicator

Backwardation & Contango

- Rewards and punishments
- OPIS forward pricing
- Liquidity of forward market
- Transparency and paper markets
- Downstream storage

Scheduling & Operations

- S & D -- Refining Marketing
- Monthly pipeline forecasts
- Kinder Morgan (KM) policies
- Longs and shorts
- Disruptions and quasi-disruptions

The Players

- Integrated multinationals
- Merchant refiners
- Jobbers/distributors
- Cargo and pipeline traders
- Brokers and price service providers

Comparison of Forward Markets

	California Gasoline	California Almonds to Germany	U.S. Corn to Japan
Delivery points	Pipeline	Containers F.O.B. Long Beach	C.I.F. Japan C.I.F. NOLA
Extent forward	1 month	8 – 10 months	3 – 4 months
Lot size	25,000 barrels (@ \$1M)	30,000 pounds (@ \$75,000)	7,000 tonnes (@ \$1.4M)
Quality/grade	Uniform	Much disputed	Government graded
Number of trades	3 – 5 per day	2 – 3 per week	4 – 5 per day

	California Gasoline	California Almonds to Germany	U.S. Corn to Japan
Market participants	15 – 20	40 – 50	15 – 20
Brokers	Yes	Yes	Yes
Pricing style	Flat	Flat	Basis CBOT
Price transparency	Good	Poor	Good
Paper trading	A little	None	Some
Defaults	Rare	Common	Very rare

Price Constellations: Los Angeles CARB (OPIS) September 5, 2000 - September 13, 2000



Price Constellations: NYMEX Crude Oil, NYMEX Gasoline, and Los Angeles CARB Gasoline (OPIS) September 7, 2000



Los Angeles (OPIS) - Gulf Coast (EIA) Spreads August 1, 2000 - September 29, 2000



Los Angeles CARB One-Month Forward - Spot (OPIS) January 4, 1999 - December 31, 2002



- Backwardations coincide with price spikes, as would be hoped
- California spot and forward prices express differences from other market centers' prices, as would be hoped
- California prices attenuate to other market centers' prices in about one month, consistent with logistical constraints
- California forward prices, not spot prices, signal imports, as would be expected

Government Contracts

- Agencies and jurisdictions
- Suppliers and service providers
- Current pricing methods
- Relationship to spot market
- Size of market

Forward Pricing Pros & Cons

- Contractual issues
- Business culture and operations
- Aggregation and price hedging
- Gains and losses
- Will it serve the purpose?

Conclusions

- California gasoline forward market, while not especially deep, operates much as other forward markets
- California forward prices appear reasonable in comparison to NYMEX gasoline and crude futures markets
- California forward prices appear to be reasonable signals for storage and import decisions
- The state does not naturally deal in the large lot size of the forward market
- The state would add one trade per week to a market with 15 – 20 trades per week



Permit Streamlining for Petroleum Product Storage

California Energy Commission April 24, 2003



Overview

- Introduction
- Study Methodology
- Typical Permitting Process
- Two Important Acts
- Critical Path Permits
- Interview Responses
- Recommendations



Introduction

- Claims have been made that the permitting process for petroleum product storage facilities is contributing to a shortage of storage capacity
- The objectives of this study are to:
 - Identify bottlenecks and redundancies in regulatory processes
 - Develop recommendations to reduce bottlenecks and redundancies in permitting processes



Overview

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Study Methodology

- The analysis was conducted in three phases
 - Phase I: Interviews with permit applicants and representatives of permitting agencies
 - Phase II: Regulatory research and analysis
 - Phase III: Final report, conclusions and recommendations







Permit Applicants and Permitting Agencies Contacted

- Permit Applicants
 - BP

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- Cenco Refining Company
- Chevron
- Coast Energy Group
- Equilon/Shell
- ExxonMobil
- Getty Terminals Corporation
- IMTT
- Kinder Morgan
- Kern Oil & Refining Company
- Oiltanking Houston Terminal
- ST Services/Shore Terminals LLC
- Valero (Ultramar)
- Tesoro Refining & Marketing Company
- Vopak

• Permitting Agencies

- Bay Area Air Quality Management District
- California Air Resources Board
- California Department of Fish & Game
- California Office of Permit Assistance
- City of Martinez
- City of Richmond City
- Port of Long Beach
- Port of Los Angeles
- San Diego Air Pollution Control District
- South Coast Air Quality Management District
- Texas Commission on Environmental Quality

Permit Applicant Questions

- Total time required for permitting process
- Permitting bottlenecks
- Critical path permitting processes
- Permitting costs relative to total project cost
- Timing of costs incurred
- Historical trends in the permitting process
- Comparison with permitting outside California
- Specific problems identified by applicant

Permitting Agency Questions

- Types of permits needed
- Permitting process and timeline
- Permit fees and costs
- Factors influencing duration and outcome
- Complaints received by permitting agencies
- Permitting agency staffing
- Permit process streamlining suggestions



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Permitting Entities



- Air Quality Management District or Air Pollution Control District
- City Planning Commission
- City Building Commission
- City or County Fire Department
- State Water Resources Control Board
- California Coastal Commission
- California Department of Transportation
- California Environmental Protection Agency, Department of Toxic Substance Control
- S.F. Bay Conservation and Development Committee
- City Bureau of Sanitation or County Sanitation Districts, City Bureau of Public Works
- California Occupational Safety & Health Administration
- California Department of Transportation
- Federal Aviation Administration

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Typical Permitting Process

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Typical Permitting Process

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CONSULTING





Application "Completeness" Determination

- Permitting agency receives a permit application
- Within 30 days agency must determine whether or not the permit application is complete
- If no written determination is made within 30 days, the application is deemed complete
- Same procedure applies for first and second resubmittals of permit application



Completeness Determination Appeals Process

- Rejection of second resubmitted application may be appealed by applicant
- A decision on the written appeal must be made by the agency within 60 days or the application is deemed complete





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The California Environmental Quality Act of 1970

- CEQA ensures that state and local agencies consider environmental impacts prior to approving a proposed public or private project
- Every project that is not exempt from CEQA must be analyzed by the lead agency to determine the potential environmental effects of the project
- Conditional use permits and Authority to Construct air permits are actions subject to CEQA



Who Can Act as CEQA Lead Agency?

- Lead agency is determined by the types of permits required for the proposed project
- Local Permitting Agency
 - If a conditional use permit is required, a local planning commission normally serves as CEQA lead agency
- Regional Air District
 - Where conditional use permit is not required and air permit is required, the air district normally assumes lead agency role



CEQA Lead Agency Review

- The lead agency is required to prepare either:
 - a Notice of Exemption (NOE)
 - a Negative Declaration (ND) or
 - an Environmental Impact Report (EIR)
- After the NOE, ND or EIR have been completed, they are subject to public hearings and appeals
- Appeals of lead agency CEQA decisions may be made both by the applicant and by stakeholders
California Permit Streamlining Act of 1977

- The PSA sets time limits for issuance of permits and approvals by public agencies.
- The PSA sets strict timelines for CEQA lead agencies to issue all necessary permits.



The Permit Streamlining Act

- Applies to permits where local agency discretion is involved:
 - variances, conditional use permits, tentative subdivision plans, and building permits
- Does not apply to administrative appeals within a state or local agency
- Does not establish a time frame for appeals process





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Critical Path Permits

- Permits identified by permit applicants to be the principal causes of permit delays:
 - Conditional use permits, primarily in the Bay Area
 - Building permits, primarily in the Bay Area
 - Air Permit or Authority to Construct from the regional air district mostly in the Los Angeles Area (SCAQMD)







Land Use Permits

Conditional Use Permits

- Are needed when proposed site for a new petroleum product storage facility is not zoned for industrial use
- Are increasingly required where light industrial development has encroached upon areas formerly zoned for heavy industrial use
- Are often opposed by neighboring residential communities



Building Permits

- Building permits can be a significant source of delay in the permitting process:
 - Building, zoning, fire safety and other codes and regulations
- Lack of training of local agencies contributes to significant extension of permitting timeline:
 - Petroleum product storage facility issues
 - Applicability of local codes to proposed projects



Air Permits

- Authority to Construct permits are required for petroleum product storage facility projects
- Each air district determines which emission sources and levels have an significant impact on air quality
 - BACT
 - NSR
 - ERCs







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Land Use Permits Applicant Responses

- Lack of understanding of CEQA applicability
- Local agency planning commissions assume that all petroleum storage projects need an EIR
- Agency staff inexperienced on petroleum issues
- Duplication of environmental studies
- Multiple appeals by stakeholders





Land Use Permits Agency Responses

- Lack of understanding of CEQA applicability
- A new storage facility will need complete EIR depending on the area in which it is being built
- Applicants do not submit complete applications







Building Permits Applicant Responses

- Lack of agreement on applicability and interpretation of building and municipal codes
- Redundancy among local agency departments in building permit application review process
- Building permits often involve complex negotiations
 - Building, fire safety, zoning, and other codes



Building Permits Agency Responses

- Lack of agreement on applicability and interpretation of building and municipal codes
- Applicants should contact local agency prior to start of permitting process to avoid surprises along the way







Air Permits Applicant Responses

- Agency staffing and training
 - Agencies do not have enough staff to review permits
 - Air districts send permit applications out to be reviewed by contractors
 - Agency inspectors required training by applicant to inspect work completion
- Air district NSR rule is written poorly with no clear *de minimis* trigger for emission offsetting



Air Permits Applicant Comments

• BACT Issues

- BACT is "moving target"
- New air emission control issues came up four months after application was submitted
- Applicant legal fees increased because their BACT was not approved at the beginning of permitting process
- Agency was not able to produce supporting documentation to back up their BACT requirements



Air Permits Agency Responses

- Agency staffing and training
 - No funding to increase staff
 - Trained and experienced staff leaves for better jobs
- SCAQMD implemented Permit Streamlining Task Force in 1999 to improve air permitting process
- SCAQMD implemented 37 of 41 recommendations and improved air permitting process timeline
- Recommendations do not affect CEQA process



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Recommendations Agency Actions

- Staff training and technical assistance
 - Provide training and technical assistance to local agency staff to facilitate permit reviews and field inspections
- Reduce discretionary decisions by individual permit writers, especially at local level, to establish consistency in permitting process
- Review practice of applicant and agency preparing duplicate environmental studies



Recommendations Agency Actions

- Establish with applicant timeline and milestones for each permitting project
 - Track whether timeline and milestones are being met
- Investigate appeals process to address issue of multiple appeals of agency decisions
 - Judicial issue may be out of scope of agencies
- Establish heavy industrially-zoned property to eliminate need for conditional use permits



Recommendations Applicant Actions

- Involve stakeholders early in permitting process
- Request preapplication conferences or "scoping" meetings with agencies to discuss how agencies' specific rules will apply to their proposed projects
 - Establish with agency clear criteria for determining the "completeness" of permit applications
 - Establish with agency timeline and milestones for each permitting project
 - Track whether timeline and milestones are being met



Recommendations Applicant Actions

- Establish communication processes with agencies to ensure established "completeness" criteria are met for permit application submittals
- Establish process with air district to establish and approve BACT early in permitting process
- Conduct siting studies for proposed facilities to identify potential sites zoned heavy industrial, and to identify potential stakeholder issues



Recommendations Permit Streamlining Act

- Provide statewide authority for implementing and enforcing the Permit Streamlining Act
 - The PSA requires state and local agencies to list the information and the criteria they will use in evaluating a permit application and determining completeness
 - The PSA establishes strict timelines for agencies to conduct permit application reviews and issue decisions
- Investigate expanding Unified Permit Program to include air and water districts and local agencies permitting petroleum product storage facilities



Conclusions

- Early and regular communication among agencies applicants, and stakeholders is critical to streamlining permitting timelines
- Timelines and milestones should be established early and tracked throughout permitting process
- CEQA process is critical path process for both proposed facilities and existing facility expansions
- PSA needs to be implemented and enforced

California Marine Petroleum Infrastructure

Public Workshop April 24, 2003 California Energy Commission

Agenda

- Background
- San Francisco Bay Area
- Los Angeles Basin
- Future Infrastructure Demand
- Current trends
- Conclusions and Recommendations

Background

- > SFR Study identified problems related to marine infrastructure
 - Lack of well-connected tankage on the water
 - Lack of access to storage by independent importers
 - Uncertainty to be able to offload cargoes plays significant role in import decisions
- Infrastructure issues important in the light of increasing import dependency
- Findings were primarily based on market information and stakeholder meetings
- Separate study was launched to quantify the issues

Methodology

- Meetings with industry stakeholders
 - Terminal and pipeline operators
 - Port Authorities
 - Selected refiners
- Quantitative Analysis
 - Database of State Land's Commission on vessel movements
 - US Army Corps of Engineers database
- Restraint identification
 - Hard restraints: dock dimensions, draft restrictions, pipeline capacity often require major capital to resolve
 - Soft restraints: tank throughput ("turns"), berth occupancy limits can be pushed but translate into additional operating costs
- Main report not public due to security and confidentiality concerns

California's Marine Petroleum Infrastructure

Stillwater Associates

California Petroleum Infrastructure

- 11 major refineries, 8 small refineries
- 32 bulk storage terminals
- 156 distribution terminals
- 4259 end user storage facilities, including 34 military depots
- Two major clean products pipeline systems (Kinder Morgan)
- Extensive pipeline systems interconnect the local refineries
- Crude oil production and pipeline systems
- Marine Infrastructure
 - All 11 major refineries, even when not directly on the water
 - 22 marine bulk storage terminals
 - 5 inland bulk storage terminals connected to docks
 - Many smaller facilities in secondary ports

Focus of study on main centers: SF Bay, LA Basin

Agenda

Stillwater Associates

Background

- San Francisco Bay Area
- Los Angeles Basin
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SF Bay Area – General Overview

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- ➤ 5 Refineries
- > 750 TBD crude, 57% waterborne
- Main channel draft 55 feet, restrictions apply to vessels over 45 feet draft
- Pinole shoals, entrance to San Pablo Bay currently less than maintenance draft of 39 feet
- Only emergency dredging was done in April 2001
- All refineries except Chevron affected by dredging problems
- Federal funding approved in February 2003 to dredge
- Problem is short season for disposal of sludge

Draft restriction = smaller vessels, higher costs, berth congestion

SF Bay Area – Waterborne Volumes



- Crude oil is over half of all petroleum product moved
- Clean products movements
 - In: blending components, jet fuel
 - Out: CARBOB to LA, non-CARB gasoline to Oregon
- Black Oil
 - Volumes exceed clean products
 - Same products moving in and out (residual fuels, cutter stock)
 - Volumes vary significantly month-by-month

SF Bay Area – Berth Occupancy



- General guidance
 - Less than 40%: underutilized
 - 40 to 60%: normal operating range
 - 60 to 80%: some scheduling conflicts and waiting times
 - More than 80%: queues form
- Over 85% of volumes is brought in over docks with occupancies in less than 50%
- 6 docks are underutilized
- One dock is utilized in peak months to an extent where scheduling problems and holding cost (demurrage) may occur

SF Bay – Clean Product Gathering System

Stillwater Associates



- Kinder Morgan's Concord terminal is start point for long distance pipelines
- Problem for most terminals and refiners is how to get products to Concord
- Capacity problems widespread
 - Line diameters too small
 - Pump and meter limitations
 - Suction problems
 - Scheduling conflicts
 - Product compatibility
- No easy solution, upgrades costly

Things will have to get worse before they get better

SF Bay – Black Oil & Crude Oil Systems

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- No capacity problems reported
- Over 9 MM bbl of idle tankage still available at Mirant (ex PG&E) power plants in Pittsburg and Antioch
- Idle black oil pipeline system
 still connects to most refineries
 and terminals

Potential capacity for Crude Oil Reserve in idle tankage

SF Bay Area – Storage

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- All refiners and terminals are at the water
- Total tankage*
 - Refiners 41 MM bbl
 - Terminals 9 MM bbl
- At commercial terminals, throughputs average around 1 tank turn per month
- At refineries, operational tanks and crude oil storage are worked hard
- Not all refiners are equal
 - Two refineries have estimated average inventories of 6 7 days
 - Three have estimated average inventories of 10 12 days

* Data from CA Water Board Permit Registry and State Lands Commission
Agenda

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LA Basin – General Layout



- 6 Major refineries,4 small refineries
- 1020 TBD crude, 51% waterborne
- One berth with 72 feet draft, capable of receiving VLCC
- Land is at a premium
- Most refineries, some terminals located some distance inland
- Two separate Ports, LA & LB
- Ports favor cars, containers over bulk liquids

LA Basin – Dock Access for Refineries

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Refinery	Crude Oil	Clean Products	Black Oil
BP	LB 121 direct*	LB 76 direct	LB 76 direct
	LB 121 to EPTC	LB 76 through T2	LB 84 via Shell, EPTC
	LB 76 direct		
	LB 84 via Shell, EPTC		
ChevronTexaco	Mooring	Mooring	LA 171 via KM
			LB 84 via EPTC, Shell
ExxonMobil	LB 84 via EPTC	LA 238 via SW Terminal	LA 238 via SW Term.
		LA 119 via KM	LA 171 via KM
ConocoPhillips	LB 121 direct	LA 148 direct	LA 148 direct
	LB 121 to EPTC	LA 119 via KM	LA 171 via KM
	LB 76 direct	LA 167 via Shell	LA 167 via Shell
	LB 84 via Shell, EPTC		LB 84 via EPTC, Shell
Valero	LB 121 direct	LA 164 direct	LB 84 via Shell, EPTC
	LB 121 to EPTC	LA 119 via KM	
	LB 76 direct	LA 167 via Shell	
	LB 84 via Shell, EPTC	LB 84 via Shell	
Shell	LB 84 direct	LA 167 via Carson	LB 84 direct
	LB 84 via EPTC	LB 84 direct	LB 84 via EPTC
		LB 84 via terminal	LA 167 via Carson

"Direct" means a transfer to or from the berth directly to refinery tankage without using quayside storage

LA Basin – Waterborne Volumes



- Crude oil is over half of all petroleum product moved
- Significant clean product imports
 - In: blending components, jet fuel
 - Out: Low grade gasoline, petrochemical feedstocks
- Black Oil
 - Bunker market
 - Same products moving in and out (residual fuels, Light Cycle Oil)
 - Volumes vary significantly month-by-month

LA Basin – Berth Occupancy



- General guidance
 - Less than 40%: underutilized
 - 40 to 60%: normal operating range
 - 60 to 80%: some scheduling conflicts and waiting times
 - More than 80%: queues form
- Almost all docks in busy months are at the high end of the normal operating range
- Few docks are underutilized
- Two terminals are operating at capacity

LA Basin – Storage

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- Total tankage*
 - Refiners 61 MM bbl
 - Terminals 28 MM bbl
 - Only 8 MM bbl directly at the water
- > At commercial terminals, throughputs average around 1 tank turn per month
- > At refineries, operational tanks and crude oil storage are worked very, very hard
- Average on site inventories of crude and products of refiners are between 4 and 12 days
- Estimated current use of terminal capacity (total black oil, crude, clean)
 - 11.4 MM bbl (41%) is owned by local refiners
 - 12.0 MM bbl (43%) is leased by local refiners under term agreements
 - 2.6 MM bbl (9%) is owned or leased by independents
 - 2.1 MM bbl (7%) idle
- SCAQMD Rule 1178 will cause up to 15% of gasoline tankage to be out of service at any point in time over next 6 years

* Data from CA Water Board Permit Registry and State Lands Commission

LA Basin – Gathering Pipeline Systems

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Company A



Company B



Pipeline systems

- Most refiners and large terminal operators have proprietary pipeline systems
- Some of these systems are of extraordinary complexity
- Still, some terminals and refineries are not well connected
- Delivery point for most refiners into Kinder Morgan system is Watson
- Only 2 facilities can meet the flow rate requirement for direct transfer into the long distance system (15,000 bbl/hr)
- Some real bottlenecks are in transfers of docks to inland terminals

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Future Infrastructure Demand – Crude Oil

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California Crude Oil Sources > California production

- Mature fields
- Holding up well with enhanced recovery techniques
- Expected to continue to decline
- Alaska decline 8% per year
- Foreign imports
 - Make up shortfall, now exceed ANS
 - Half of foreign imports is from Middle East, arrives in VLCCs

VLCC supplies likely to reach 40% of total waterborne by 2010

Crude Oil – Impact of Increased VLCC Supplies

- Current Operations
 - Around 1 VLCC/week, equivalent of 250 TBD, 25% of waterborne crude
 - BP's berth 121 in Long Beach is only berth capable of handling a VLCC, serving BP, ConocoPhillips and Valero's LA refineries
 - VLCCs are lightered (cargo transferred to smaller tankers while at anchor offshore) for Chevron
- Long term infrastructure need for 2 VLCCs/week
 - Berth 123 with 3 MM bbl of storage at the water
 - Tie-ins to Chevron El Segundo, Mobil Torrance
 - Increased VLCC receipts in LA could leave more smaller cargoes for Bay Area
 - Discharge at berth instead of lightering and mooring reduces risk of spills

Future Infrastructure Demand - Gasoline

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Scenario

- Refinery production increase 0.6% per year + known projects
- Demand increase base case 1.6% per year, low 1.1%, high 2.1%
- Current growth is 2 to 3% per year
- Half of ethanol by rail
- Results
 - Imports increase by 100 TBD by 2010
 - Almost all of increase in LA Basin
 - At one tank turn per month would require 3 MM bbl
 - One additional ship every 2.5 days
 - Equivalent to one berth fully occupied

LA Basin Clean Products infrastructure faces major challenge

Agenda

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Storage Capacity Additions

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Capacity	Product*	Location	Ву	For	Status	Complete
300,000	Clean	SF Bay	Terminal Co	Trading Co	Under existing permit	2003
200,000	Clean	LA	Terminal Co	Refiner	Under existing permit	2003
50,000	Clean	LA	Trading Co	Self	Permit June 2003	2003
600,000	Clean	LA	Refiner	Various	Upgrade of older tankage	2003
240,000	Clean	LA	Refiner	Self	Upgrade of older tankage	2004
500,000	TBD	LA	Small Refiner	Various	Upgrade of older tankage	2004 (?)
TBD	Clean	LA	Terminal Co	Trading Co	New construction	2007 (?)
2,000,000	Crude	LA	Terminal Co	Various	New construction	2007 (?)
TBD	Clean	LA	Terminal Co	Various	New construction	2008 (?)

* Clean products include gasoline, blending components, ethanol, jet, diesel

1.4 MM bbl in firm additions + up to 4 MM bbl potential

Recent Trends

- Industry has responded to opportunities
- Changes from earlier reported positions
 - Refiner's terminal has reactivated idled tankage
 - Trading Companies signing term contracts for new capacity
 - Master Limited Partnerships willing to build new capacity on short to medium term contracts
- Caveat
 - All current projects under existing permits
 - New permitting expected to take 2 to 3 years
 - Port policies in LA may continue to lead to closure of terminals
- Commercial terminal operators are also studying debottlenecks of local docks and pipelines to get products into new tankage from the water

Agenda

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Conclusions

- SF Bay
 - Overall handling capacity adequate
 - Concerns
 - Lack of dredging funds, shoaling of East Bay
 - Widespread constraints in gathering pipeline system
- LA Basin
 - Overall handling capacity marginal
 - Concerns
 - General tightness of clean product storage
 - Limited access to tankage by independent importers
 - Lack of tankage on the water and constraints for docks without tankage to move product inland
 - Jetty capacity reaching upper end of normal operating range
 - Port policies aiming to remove tankage from the waterfront

Conclusions (Continued)

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General Concerns

- Crude Oil
 - Growing import dependency
 - Lack of facilities capable of receiving Very Large Crude Carriers
 - Higher risk associated with offshore crude oil transfers ("lightering")
 - Higher risk of spills at Multi-point Moorings
 - General lack of storage and low operational inventories
 - Uncertainty for additional tankage associated with new deepwater crude oil berth in the Port of Long Beach
- Permitting Environment
- Impact of SCAQMD Rule 1178
- Positives
 - New capacity additions under existing permits
 - Industry's capability to do more with less

Recommendations

- Active role for State to support infrastructure projects
 - One stop shopping permitting
 - Coordinate State and local interest in Ports of LA, LB and the Bay
 - Help resolve dredging issues in the Bay (funding, disposal, timing)
 - Support crude oil infrastructure projects to reduce exposure to the State's energy security in case of major spill
- Consider support, i.e., loan guarantees as proposed by SFR study, to facilitate private industry projects
- Collect and analyze data pertaining to waterborne movements of petroleum product on a regular basis



California Strategic Fuel Reserve

Public Workshop April 24, 2003 California Energy Commission

Agenda

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Background

- General Issues
- Inventory Availability and Usage
- California Refinery Capacity Increase
- Forward Market
- Cost Benefit Analysis
- > Summary

Background

- ➢ SFR Study initiated in 2001 after AG investigated 1999 price volatility
- Stillwater conclusions presented March 2002, final report July 2002
 - Comprehensive market study
 - In depth analysis of other reserve initiatives
 - Identified physical and commercial barriers to supply
 - Proposed building of new storage under government guarantees for short term use
 - Proposed rolling inventory under forward time swap mechanism to facilitate imports
 - Showed order of magnitude difference between benefits and costs
- Further study required into several aspects of proposal

SFR Conclusions

- Barriers to supply exist due to distance, product specifications
- Refinery expansion has not kept pace with gasoline demand growth
- Product imports will supply most of the forecast demand increase
- The infrastructure required for imports is strained
- Imports are more likely to come from foreign refineries due to shortfall in US Flag shipping
- > The lack of a forward market creates risk for importers
- Unocal's gasoline patents reduce gasoline supply
- Unplanned supply disruptions are likely to be more severe

What lead to proposal to do something

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US Gulf to CA Spot Gasoline Price Differential





- Increasing volatility
 - Unique specifications
 - Geographical isolation
 - Physical and commercial barriers to entry
 - Significant risk of refinery disruptions
 - Highly inelastic price/demand behavior
- Criteria for solution
 - Use only new tankage
 - No stagnant supply overhang
 - Integrated in the refining centers
 - Open access
 - Mitigate physical and commercial risk for importers

SFR Recommendations

- Create fast track one-stop shopping permitting procedure for petroleum infrastructure projects similar to that for power projects
- State to issue a tender for the construction of 5 MM bbl of tankage
 - With deepwater access and connected to the distribution system
 - 3 MM bbl in LA, 2 MM bbl in the Bay Area
 - Half the volume to be subleased to market participants
- State to purchase 2.5 MM bbl of summer grade CARBOB for the Gasoline Bank
 - Tenders issued over time during winter season to prevent price spike
 - Qualified participants can withdraw and repay volumes for a fee
 - The fee to be determined by electronic auction
- Recommended to conduct next stage more detailed design of SFR first
 - Evaluate various operating alternatives and auction mechanisms
 - Design oversight functions

What was Proposed

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Key Features

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- Initial fill 2.5 MM bbl to be purchased as Phase III CARBOB gradually and over time so as to not upset the market
- Cost are estimated at \$25 MM per year or 0.2 cpg, not including potential offsets for cost of initial fill under federal Energy Policy and Conservation Act or fees from auctions
- Conduct periodic or on demand electronic auctions for prompt lifting of product, with redelivery within six weeks
- > Any qualified participant can participate
- Trading around the lifting rights and replenishment obligations will create a satellite market that will likely improve liquidity

Create The Gasoline Bank of California

Controversial Issues

- Government Interference
- Lack of detail in design
- Inventory availability and usage
- Marine infrastructure capabilities and access
- Capacity expansion of in-state refineries
- Development of forward markets by other means
- Cost/Benefit Analysis

Agenda

Stillwater Associates

Background

General Issues

- Inventory Availability and Usage
- California Refinery Capacity Increase
- Forward Market
- Cost Benefit Analysis
- Summary

Government Interference

- Government has legitimate task to ensure competition and security of supply of key commodities
- Concept as proposed aims to minimize government role
 - Storage built and operated by private service sector on tenders
 - Auction function can also be tendered to private sector
 - Government role limited to oversight
 - Making inventories available to private industry and underwriting guarantees to build storage is similar to investment subsidies and stimulus packages
- Much of the criticism in this area was based on principle rather than against the actual proposal

Lack of Detail

- Charter for the Stillwater study was to conduct a general feasibility study into the cost and benefits of a reserve
- Study focused on barriers of supply and underlying causes for price volatility
- Concept of Gasoline Bank was born out of analysis of commercial and physical supply barriers and problems identified with traditional reserves
- Cost/benefit analysis showed consumer savings that were in the order of ten to twenty times greater than expenses (\$200 - \$500 MM vs. \$15 -\$25 MM cost)
- Recommendation was to expand conceptual early stage feasibility study into actual detailed design
 - Issue tenders for storage and auction function
 - Select best alternative for forward time swap mechanism
 - Design government oversight role

Agenda

Stillwater Associates

- Background
- General Issues

Inventory Availability and Usage

- California Refinery Capacity Increase
- Forward Market
- Cost Benefit Analysis
- Summary

Inventory Issues

- Arguments against SFR and state-sponsored private tankage
 - "Crowding Out" of private inventories: refiners would no longer maintain inventories because they know that they can borrow from the reserve
 - Existing tankage adequate, California has never run dry
 - Sponsoring facilities for independent importers is unfair to those deeply invested in the California market
 - Inventories in US as a whole not much better
 - Private industry will fill the need if there is one
- > Of these arguments, only the latter was found to have merit
 - Significant additions have been announced
 - Some of the commercial barriers to building new tankage have been overcome
- Situation however remains critical
 - Storage still incredibly tight
 - All current additions make use of existing permits, no test for truly new tankage yet

Petroleum Storage in California¹

Stillwater Associates

	Large Refineries	Small Refineries	Bulk Terminals	Small Terminals ³	Military Depots	End User Storage
Entities (#)	11	9	32	158	34	4,484
Storage Tanks (#)	1,637	510	811	1,663	281	19,426
Capacity (MM bbl)	103.8	7.0	38.0	39.9	3.3	4.3
Average Size (bbl/tank)	63,400	13,700	46,900	24,000	11,700	220
Crude Service ² (MM bbl)	28	2	8	8	-	-
Process Tankage ² (MM bbl)	26	2	-	14	-	-
Black Oil ² (MM bbl)	18	2	6	-	-	-
Gasoline & Comp ² (MM bbl)	24	NA	18	13	NA	3
Other Products ² (MM bbl)	8	NA	6	4	NA	1

1) Source of Data: CA Water Board permit registry

2) Stillwater estimates based on various data sources

3) Small terminals include distribution terminals, truck racks, pipeline pump station tankage and crude oil production tankage

Basic Principles of Storage

Stillwater Associates

Typical Gasoline Tank



- Gasoline tanks are usually equipped with floating roofs to limit vapor emissions
- Often tanks will also have a fixed roof or dome to keep out rainwater or for further emission control
- The floating roof needs to stay afloat at minimum liquid levels, causing 8 to 10% of the tank capacity to be trapped
- At the top, tank internals such as fire foam nozzles prevent the floating roof of going all the way up to the edge, resulting in 4 – 6% empty space
- As much as 15% of gross capacity may not be usable
- Modern "drain-dry" tank designs reduce these inefficiencies considerably

Basic Principles of Storage

Stillwater Associates



Typical Refinery Tank Usage

- Refineries need to be able to segregate many different types of crude oil, intermediate products, blending components and finished products
- Typically, a barrel of gasoline may have seen at least 4 to 5 storage tanks before it leaves the refinery
- Overall, the need to produce and store many different grades of gasoline and diesel decreases the efficiency of tank usage
- The increasing complexity of California's gasoline specifications requires more blending components and makes final blends harder to make

A refinery can be short on CARBOB with most tanks half full

Refiner Inventory Management

- The Supply Department of a refiner is charged with inventory management
 - Planning, scheduling, trading functions
 - Crude, Products, and LPG
- Routinely work with the refinery to forecast production
 - Must keep refinery from overfilling
- Routinely work with their Marketing Dept. to forecast demand
 - Must meet demand and prevent stock-outs
- Buy/sell or exchange volumes to balance supply & demand
 - Buy when refinery production falls short of marketing demand
 - Sell when refinery production exceeds marketing demand
 - Exchanges are used for short term problems or supply of distant locations
Refiner Inventory Planning

- Refinery turnarounds are significant inventory planning events
 - Refinery production will be reduced for 2-5 weeks, depending on the type of maintenance required
 - Maintenance work can impact all or some of the production
- The Supply Dept. must determine how to meet Marketing Dept. sales forecasts
- Increase inventory in owned or leased tankage before the turnaround starts by
 - Increasing imports or purchases from other local refiners
 - Decreasing discretionary sales
- Increase supply during the turnaround via the same means
 - Build in a cushion of supply in case the turnaround goes long

Basic Principles of Storage

Stillwater Associates

Operational tanks

- Batched tanks: continuously cycle between full and empty (production rundown tanks, pipeline tanks)
- Process Buffer tanks: compensate for process upsets and ideally are kept at 50 to 60% inventory to provide room for both upside and downside swings
- Shipping tanks: cycle full to empty depends on delivery/receipt volumes
- Strategic Storage
 - Build up of inventories for planned outages
 - Maintaining inventory in anticipation of market movements

Expected inventory behavior: Narrow fluctuations between 50 and 60% (heel + 50% of range; average total inventory for a large number of tanks that cycle randomly between full and empty)



Expected inventory behavior: build-up in Q4, draw down in Q1

Expected inventory behavior:

build-up when prices expected to go up, draw down when prices are high

Observed Inventory Behavior

Stillwater Associates



1) CEC Data; Also includes inventories held in Bay Area bulk liquid terminals

- Some evidence of strategic stock building to cover turnarounds in Q4 1997, Q4 1998
- No evidence of stock retention until prices spike
 - Q4 1996, Q1 1997 stocks down before price went up
 - Q2 1997 stocks up while price up
 - Q4 1998 stocks up while price still high
 - 1999 outages caused high prices at low inventories
 - 2000 prices stayed high, no stock movements
 - 2001 stock build while prices still high, sold during price drop
 - 2002 prices recover while inventories stay high
- Inventories move randomly in a narrow band around 50%, consistent with operational considerations

Refinery inventories are largely operational

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Reconciliation of Reported Gasoline Inventory Numbers

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Reported Gasoline + Blendstock Inventory Ranges in MB over the Period 1996 – 2002

- > EIA reports monthly PADD V inventories by grade for Refineries, Bulk Terminals and Pipelines
- > EIA reports monthly CA inventories by grade for Refineries, Bulk terminals and Pipelines
- CEC reports on a weekly basis inventories for CA refineries + Bay Area bulk terminals
- Total EIA reported CA bulk inventories match with weekly CEC numbers when scaling up for total tank capacity, 26 MM bbl for CEC versus 42 MM bbl for EIA reported tankage

Breakdown of Gasoline Inventories

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Reported Gasoline + Blendstock Inventory Ranges in MB over the Period 1996 – 2002

Most of the blendstock inventories are at refineries

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CA Gasoline Inventories vs. US

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Finished Gasoline at Refineries & Terminals (Net of Pipeline Volumes) Minimum, Maximum and Average Values of EIA weekly data 1996 - 2002

	Min MM bbl	Ave MM bbl	Max MM bbl	Min Days	Ave Days	Max Days
California ¹	9.5	11.5	14.3	9.5	11.5	14.3
US total	103.8	117.8	134.1	12.8	14.5	16.6
US - California	94.3	106.3	119.8	13.3	15.0	16.9

1) Includes inventories of all grades and formulations of gasoline

- Inventories of gasoline in the US have dropped while supply has increased: stocks now 13 to 17 days versus 25+ in mid eighties
- Gasoline storage in the US as a whole is now also tight, but still substantially better than California: on average 3 days of supply (30%) more than CA
- Rest of US has more robust infrastructure to deal with refinery disruptions: vast pipeline network, shorter import routes, fungible product specifications

California inventories should be higher, not lower than US

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California Storage Market Recent Changes

- 1999 through 2002 shortage of clean product tanks for spot rental
 - Refiners had stopped renting out tanks to 3rd parties in their proprietary terminals
 - Storage companies were bought out by Master Limited Partnerships (MLPs) who enjoy preferential tax treatment but need "qualified income" under long term contracts with major companies
 - Commercial tankage increasingly booked up under long term agreements with refiners
 - Independent importers were unable to land cargoes in LA
- Recent changes
 - Trading companies are willing to sign term contracts (i.e., 3 years)
 - MLPs are willing to build new tankage for traders at those terms
 - Some high cost tankage brought back into service for ethanol

Product Storage Capacity Additions

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Capacity	Product*	Location	Ву	For	Status	Complete
300,000	Clean	SF Bay	Terminal Co	Trading Co	Under existing permit	2003
200,000	Clean	LA	Terminal Co	Refiner	Under existing permit	2003
50,000	Clean	LA	Trading Co	Self	Permit June 2003	2003
600,000	Clean	LA	Refiner	Various	Upgrade of older tankage	2003
240,000	Clean	LA	Refiner	Self	Upgrade of older tankage	2004
500,000	TBD	LA	Small Refiner	Various	Upgrade of older tankage	2004 (?)
TBD	Clean	LA	Terminal Co	Trading Co	New construction	2007 (?)
2,000,000	Crude	LA	Terminal Co	Various	New construction	2007 (?)
TBD	Clean	LA	Terminal Co	Various	New construction	2008 (?)

* Clean products include gasoline, blending components, ethanol, jet, diesel

Clean Products: 1.4 MM bbl firm additions + 1.1 MM bbl potential

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Crowding Out

- Discretionary inventories are stocks held above operational requirements
- Crowding out applies to discretionary inventories
- Operational inventories will not be impacted by crowding out
- Estimate of discretionary inventories is 0.5 MM bbl, 15 to 20% of the operating range
- Even if all current discretionary inventory is crowded out, it still results in 2 MM bbl net, a four-fold increase
- The 0.5 MM bbl displaced discretionary inventory is in tankage that given the tight overall storage is going to be used for operational purposes

California Gasoline Inventories – Summary

- Total CA bulk inventories of gasoline and blendstocks move in a narrow band around 50% of capacity, ranging from 15 to 25 MM bbl in 42 MM bbl tankage
- Total finished gasoline inventories at refineries and bulk terminals are between 10 and 14 days of consumption, versus 13 to 17 days for the US as a whole
- The minimum of around 10 MM bbl is what it takes to keep the system wet (even at times of acute shortage inventories never fell below this level)
- > The effective finished gasoline operating range is 4 to 5 days of consumption
- LA Refiners are on record testifying to extreme shortage of tankage in Dec 2001 SCAQMD hearings
- Clean product tank rental rates are at historic high, industry initiatives to add new or reactivate idle tankage amount to 1.4 MM bbl
- > The argument for "crowding out" private inventories is not credible
- There is significant exposure for the State in terms of supply security in addition to price volatility

Agenda

- Background
- General Issues
- Inventory Availability and Usage
- California Refinery Capacity Increase
- Forward Market
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Refinery Capacity

- In-state capacity is the preferred mode of supply, should be lower cost than imports
- Over past decade, demand growth has outstripped capacity additions
- Increase in capacity can be achieved through
 - Discrete projects
 - Small improvements in operating procedures (capacity creep)
- Obstacles to capacity increase
 - Title V Operating Permits often have rate restrictions
 - Even a small increase in one area may require re-permitting of the entire refinery
 - Diminishing returns when reaching the end of the learning curve
 - Capital cost in uncertain industry environment

California Refineries Capacity Increase





- Reported production of gasoline includes imports of blending components by refiners
- Real increase in production capacity must be evaluated from
 - Increase in crude runs
 - Increase in conversion
- Increase in crude runs over 1992 through 2002 was 0.3% per year, or 63 TBD total
- Increase in conversion = decrease in production of residual fuel, was 96 TBD
- Estimated increase in gasoline production from 1992 to 2002 is 50% of increase in runs + conversion, or 80 TBD
- Effective capacity creep is 0.6%
- Fast approaching bottom of the barrel

- Recent track record for refinery expansion projects in CA
 - Tesoro conversion of 20 TBD conventional gasoline was a condition of the refinery purchase
 - Valero Wilmington had to abandon project in face of opposition from NGO's
 - CENCO failed to raise financing, could not overcome local interest litigation
- ConocoPhillips new FCC/alkylation plant at Ferndale, WA should provide additional supply for California
- Tesoro adds to CARB capability in WA
- Global refiners (BP, ConocoPhillips, ExxonMobil, Shell, ChevronTexaco) will evaluate all options including increased imports from within their systems

- Potential for capacity creep is limited
 - Approaching bottom of the barrel
 - Operating permit constraints
- Capital projects for major expansions
 - Unlikely to make economic sense for integrated global majors
 - Well organized opposition from special interest groups

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- Supply chain for imports is long, typically at least 4 weeks
- The risk specific to the California market cannot be adequately hedged (how long will the price spike last?)
- The absence of risk reduction tools means that rewards have to be bigger to attract supplies
 - Decisions to import are delayed
 - Price spike has to be significant
- Importance of hedging price risk is greater for independent importers than for integrated refiners

Principle of Hedging

- In a forward trade, a buyer and seller agree on a future delivery date at a certain price
- Both buyer and seller incur risk that the price fixed now for future delivery will be out of line with the then prevailing market price
- The risk can be offset by doing a parallel but opposite paper trade in a commodity that exhibits the same price behavior
- > A central clearing house collects all paper trades
- Overall, buy and sell risks of paper trades will cancel out to a large degree
- Paper trades become instruments for knowledge based trading in a Futures Market
- > At the heart of the paper market still lies the physical delivery

Requirements for Forward and Futures Markets

- A Futures Market requires a large number of transactions against standardized terms (Liquidity)
 - Required to achieve offsetting risks
 - Required to spread overheads and minimize cost of hedging
- Liquidity requires
 - A large number of market participants
 - Diversity of market participants
 - A physical trading hub
- Standardized terms require
 - Readily fungible product specifications
 - Well defined delivery terms in physical hubs where there is little or no risk that products cannot be delivered, against standardized handling cost

Creating Forward Liquidity in CA Gasoline Market

- Major obstacles to liquidity
 - CARBOB is not readily fungible unique specifications, difficult to make
 - Physical delivery hub with standardized terms difficult to land product in LA Basin
 - Diversity of market participants handful of traders and local refiners
- Chicken & Egg conundrum:
 - Without liquidity in a physical forward market, a paper derivatives market is not possible
 - Without paper derivative hedging tools, forward deals too risky for many participants
- ➢ Forward and Futures Markets are means to an end, not a goal in itself
- Physical forward volume swap is an alternative means to do forward deals with known costs
- No aggregation of forward buyers ("natural longs")

Current Status of CA Forward/Futures Market

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- Current forward market is illiquid: many days no trades, highly traded days 4 to 5 deals
- NYMEX does not provide futures contracts for California gasoline
- Outlook for creating more liquidity on its own
 - Slow process
 - May evolve when rest of world catches up with California in gasoline quality
 - No current means to bridge the time/distance factor

Forward time swap mechanism is alternative route to liquidity

Agenda

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Cost Benefit Analysis

- Cost for the SFR were based on
 - Tender of storage contract with major service providers at prevailing market rates for newly built tankage
 - Debt service cost for initial fill
 - Administrative cost
 - Total annual cost \$25 million, potentially as low as \$15 million if partially funded with offsets under EPCA and auction fees
- Consumer Benefits
 - Derived from statistical analysis of past 6 years price spike history
 - Based on cutting off tops of worst spikes because imports would start flowing immediately rather than after initial delay
 - Savings to consumers were evaluated in order of \$250 million and more
- Controversial Issues
 - "Hundred Year Storm"
 - Federal offsets

Hundred Year Storm



- 1999 was year with exceptional outages, the equivalent of the 100 year storm (so we hope)
- Confusion arose over use of 1999 price spike to test adequacy of proposed reserves
- To test physical adequacy, 100 year storm is most severe case
- Consumer benefit calculations were based on a statistical evaluation of 6 year's worth of data
- Cases were run that excluded 1999 and still showed consumer benefits far outweighing cost

Benefit Analysis

- Based on detailed statistical analysis of refinery disruptions by Dr Tony Finizza
- Base case benefits \$0.4 BN per year based on historical average capacity loss and duration, \$1.50/gln gas, - 0.15 price elasticity, 10 cpg cost to replenish SFR
- Benefits were calculated for a wide range of scenarios
 - Price elasticities 0.10 and 0.20
 - Starting retail price \$1.00 to \$2.00
 - Excluding 1999 disruptions
 - Replenishing costs 5 cpg to 15 cpg
- Benefits range from low case of \$169 MM/year to high of \$600

Agenda

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Summary – Unchanged Conclusions from 2002

- Insular market with non-fungible product
- Local industry not able to keep up with demand growth
- Physical and commercial barriers to entry
- Imports need to double by 2010
- Import infrastructure limited
- Industry inventories critically low
- Highly inelastic demand
- Refinery disruptions create severe price spikes
- Gasoline Bank concept savings to consumers far outweigh cost

New Insights

- Storage project activity in LA Basin has increased significantly in recent months
 - One terminal (owned by refiner) is rebuilding idled tankage previously deemed too expensive by the market
 - Trading companies have committed to term agreements
 - MLPs are building new tankage under short term agreements
- Marine Infrastructure bottlenecks
 - SF Bay dredging issue
 - SF Bay gathering system
 - LA Basin dock usage
 - LA Basin limitations to move product inland
 - Key elements of crude oil infrastructure vulnerable
- Refinery reliability has held up well in 2002 (although March 2003 supply issues created a large price spike)

Recommendations

- Proceed to next step for SFR
 - Evaluate various operating alternatives and auction mechanisms
 - Design oversight functions
 - Issue tenders and confirm costs
- Shift focus to support for announced projects
 - SF Bay dredging
 - Various storage and pipeline projects in both refining centers
- State to increase market transparency
 - Improve monitoring, data collection and reporting systems
 - Track infrastructure project progress
 - Analyze price spikes and root causes

Issues Related to the Strategic Fuel Reserve

Presented at the Committee Workshop on Strategic Fuel reserve and Alternatives to Dampen Price Volatility

Tony Finizza April 24-25, 2003

AJF Consulting

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April 24-25, 2003

Contents

- Price Volatility
- Refinery Disruptions
- Role of Inventories
- Price Impact of Disruptions
- Economic Evaluation of the SFR
- Optimal Size of the Strategic Fuel Reserve

All data contained herein were obtained from public sources. The accuracy of the analysis is only as accurate as the data permit.

Price Volatility

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California Gasoline Price Volatility Factors

- Refinery capacity is tight with limited ability to expand capacity
- The demand for gasoline is highly inelastic, such that a disruption in supply from refinery outages creates scarcity, causing prices to rise sharply to clear the market
- Refining costs are high to produce CARB RFG
- It is costly to import compliant gasoline or components from outside California
- Future regulations suggest the premium will grow and become even more volatile.

CA Gasoline Prices are higher and more volatile than rest of US

Historical Volatility

Average Per Month Volatility of Spot Gasoline Prices

	NY RFG	USGC RFG	LA RFG
1996	5	5	8
1997	6	5	9
1998	6	6	7
1999	7	8	15
2000	8	10	10
2001	12	12	14
2002	6	8	7
1996-2002	8	8	11

(%)

Historical Volatility

Average Per Month Volatility of Retail Gasoline Prices

(%)

	US RFG	LA RFG
1996	5	11
1997	4	7
1998	4	8
1999	9	18
2000	10	12
2001	15	14
2002	9	10
1996-2002	9	13

California's Gasoline Price

Los Angeles Spot Reformuated Regular Gasoline



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Price Volatility of Products



Spot Prices - LA RFG, Diesel, and Jet 91-day Standard Deviation of Logarithm of Price Change

California Gasoline More Volatile than other petroleum products

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California Spot Price Spikes (corrected for crude price costs)



Los Angeles Spot less US Gulf Coast Spot Gasoline Prices

Price Spikes Recently are less Dramatic than Prior to 2002

California Retail Price Spikes

Retail Reformulated Gasoline Prices California less Other US



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Price Volatility Conclusions

- Gasoline prices are higher and more volatile in California than in the rest of the country.
- Price volatility increased from 1996-2001, then decreased.
- Price volatility In California has increased relative to the Gulf Coast and NY.
- Price Volatility In California Is usually higher than in the Gulf Coast and in NY.
- Price spikes at wholesale (spot prices) not as dramatic as in 1999-2001
- Price spikes at retail as dramatic as in 1999.

Refinery Disruptions

The underlying data for the disruption section have been provided to me by the US DOE and derived from third party sources and should not be quoted without my knowledge. The data have not been corroborated by the companies involved. Some, but not all, of the incidents have been verified in the public press. I updated the material after March 2001.

Occurrence of Refinery Disruptions

Weekly Disruptions



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Characteristics of Refinery Disruptions

	Chance of Occurrence	Average Size MBD		Average Length Weeks	
Case	Probability	Mean	Std. Dev	Mean	Std. Dev
Base Assumptions Disruptions occur at historical frequency, size, duration	.017	21	15	2.7	3.9
Disruptions occur at historical frequency, size, duration excluding the year 1999	.014	19	14	1.8	1.9

Refinery Disruption Findings

- Refinery disruptions have occurred once a month on average since 1996
- Refinery disruptions average 20 MBD with several larger disruptions
- Refinery disruptions average 3 weeks with several longer episodes
- Size and Duration of Refinery Disruptions Are Not Correlated
- Disruption effect is generally short-lived; some last 6-8 weeks
- Multiple refinery disruptions can be ongoing simultaneously
- Refinery disruptions have an immediate impact on spot prices
- Not all disruptions lead to price spikes
- Planned turnarounds do not affect prices unless coincident with a disruption
- Refinery disruption in either part of California affects all of California
- Price spikes are not transmitted to other areas outside of PADD V.
- Refiners respond quickly to a disruption, but distance is a barrier

Economic Evaluation of the SFR

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Assumptions Underlying Analysis

- The SFR can truncate price spikes in a timely manner
- Auction mechanism is non-discriminatory
- The SFR does not crowd out private inventories
- The SFR does not discourage forward liquidity



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Schematic of a Stylized Price Path and Benefits Calculated



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Approaches to Calculating Price Impacts

- Lack of full demand/supply model and noisy weekly data at industry level does not permit detailed econometric modeling
- Approaches used to gauge impacts

(1) Demand and supply elasticities from literature(2) Verification of elasticities from actual episodes(3) Simulation impacts model

Gasoline Demand Price Elasticities

Surveys of Studies	Mean	Median	Range
Dahl (1995)	19	10	+. 03 to –2.13
Dahl and Sterner (1991)	19	18	08 to41***
Dahl (1986) **	15*	125*	01 to52
Post-1995 Individual Studies	Mean	Median	Range
Verleger (2002) Senate Testimony	1		
FTC (2001) Midwest Gasoline Investigation	2		1 to4
Perry (2001)	05		
WSPA (2001) (PIRINC study)	05		
Borenstein (2000)	15		
Kayser (2000)	23		
API (Porter) (1996)	19		
Haughton & Sarkar (1996)	15		12 to17
8 Individual Studies	14	15	
Std. Deviation of 8 Individual Studies	.07		

*Calculated by this author.

** Estimate is for monthly and quarterly models. Dahl cited -.29 for yearly models.

***Range of means.

The Literature suggests a Wide Range of Demand Price Elasticities.

Outages	Size (mbd)	Inventory Character	Implied Elasticity
01/24/97	25	High (Winter)	200
08/08/1997	21	Low	108
04/17/1998	28	Normal	137
07/23/1999	31/51/49	Low	125
		Average	143

Economic Benefits

Lower Consumer Gasoline Bill with SFR versus Without SFR				
Assumed Combined Elasticity:	- 0.10	- 0.15 (Best Estimate)	- 0.20	
Base Case Assumptions Historical disruption frequency, size, duration \$1.50 retail price before disruptions 10 cpg incremental spot price to replenish SFR No price rise during period of high inventories	\$687 MM/yr	\$398 MM/yr	\$261 MM/y	
Sensitivities - Base Case Assumptions Except:				
\$1.00 retail price		\$220 MM/yr		
\$2.00 retail price		\$607 MM/yr		
15 cpg incremental spot price		\$339 MM/yr		
5 cpg incremental spot price		\$498 MM/yr		
Disruptions excluding the year 1999		\$169 MM/yr		
Rumored disruptions included		\$255 MM/yr		

Economic Benefits

Increase in Consumer Surplus with SFR versus Without SFR				
Assumed Elasticity:	- 0.10	- 0.15 (Best Estimate)	- 0.20	
Base Case Assumptions Historical disruption frequency, size, duration \$1.50 retail price before disruptions 10 cpg incremental spot price to replenish SFR No price rise during period of high inventories	\$745 MM/yr	\$401 MM/yr	\$269 MM/y	
Sensitivities - Base Case Assumptions Except:				
\$1.00 retail price		\$200 MM/yr		
\$2.00 retail price		\$632 MM/yr		
15 cpg incremental spot price		\$310 MM/yr		
5 cpg incremental spot price		\$535 MM/yr		
Disruptions excluding the year 1999		\$166 MM/yr		
Rumored disruptions included		\$250 MM/yr		

Total Economic Benefits (Millions of Dollars per year)

- Truncation of Large Price Spikes:
- Lower average gasoline prices: \$150-250 (includes reduction of chronic shortage and small spikes cited in Stillwater Report)
- Total

\$320-650 (Roughly 1-3% of the annual California consumer gasoline bill)

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\$170-400

Components of the California Consumer Gasoline Bill (2002)

Federal Excise Tax	\$2.7 Billion
State Excise Tax	2.6 Billion
State Sales Tax	1.6 Billion
Crude Cost	8.1 Billion
Refiners costs and margin	5.9 Billion
Dealer costs and margin	.8 Billion
Total Consumer Cost	\$21.8 Billion

Note: Average California retail price in 2002 was \$1.56

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Recent Rise in California Gasoline Bill (relative to the rest of the US)

Retail Reformulated Gasoline Prices California less Other US



cpg

Lagged Response of Retail Prices to Spot Price Fall

Los Angeles Retail vs Spot Gasoline Prices



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First Quarter 2003 Inventory Behavior



Spot Price Comparison



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30

Economic Benefits



 Independent modeling by Andy Ford has found

> •Large benefits from prevention of price spikes from prolonged outages

•Possible negative benefits from short, small outages

•Overall effect confirms order of magnitude benefits from earlier study

•Model does not include benefits from establishing global arbitrage

Source: Andy Ford

"Optimal" Size of the SFR

AJF Consulting

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April 24-25, 2003

How To Size The Strategic Fuel Reserve?

- Legislative Prescription = ~ 2300 mb
- Assume one refinery suffers a 20 disruption (average) for 2.7 weeks (19 days) = 380 mb
- Cover maximum disruption in 1999 = ? mb
- Use Monte Carlo solution \Rightarrow

Expected Size of a Disruption (Impact x Length)



Distribution of Size of Disruption - MB

Expected Value (mean)	385
80 ^{⊤н} percentile	525
90 th percentile	870
95 th -percentile	1380

Disrupted Barrels During A Six-Week Period



Percentile	M Barrels
Mean (expected value)	431
80 th	737
90 th	1,114

AJF Consulting

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Conclusions

- For measuring short-term price impacts, a reasonable range of price elasticities (combining both demand and supply effects) is –.10 to -.20 with the best estimate at -.15.
- The potential economic benefit, if measured by the avoidance of increased consumer costs or increased consumer surplus, is about \$400 Million per year under average disruption conditions (about 1.5-2% of the consumer gasoline bill). The calculated benefits range from \$250 to \$700 million under various alternative assumptions.
- The economic benefits are an order of magnitude larger than the costs determined in the Stillwater report.
- The "optimal" size of the SFR, given the average disruption conditions that existed in the 1996-2001 period, is significantly less that that prescribed by the Legislature.





"California is an Island" Peter Heylen, Cartographer, 1703 "California is an Island"

Greg Haggquist, Stillwater Associates, 2002

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April 24-25, 2003

Selected Issues Related to Storage

Jeffrey Williams April 25, 2003 Implicit assumptions are common to any analysis

- Better to make them explicit
- If explicit, the determination of their importance is easier
- If explicit, easier to determine whether they favor the conclusions of the analysis

Let's look for implicit assumptions in four areas, and, if we find any, what they mean in terms of direction and magnitude for the proposal for the SFR:

- Implications of California's Status as an "Island"
- Influence of Crude Oil Price Relationships
- Interplay between a SFR and Private Inventories
- Measurement of Consumers' Gains from Stabilization

1. Implications of California's Status as an "Island"

What should be the effect of identified trends on

- Relative price volatility in California
- Average inventories in California
- Frequency of low inventories in California

Consider the sensible (idealized) responses

Storage tanks become relatively more expensive in California (because of environmental rules, permitting, etc.)

- Price volatility: higher
- Average inventories: lower
- Low inventories: more often

California moves from an occasional exporter to an occasional importer (because of no new refineries)

- Price volatility: higher
- Average inventories: lower
- Low inventories: more often
Potential imports into California must come from farther away (because California specifications are more difficult to meet)

- Price volatility: higher
- Average inventories: higher
- Low inventories: probably less often, but longer sequences

Also, spot price in California becomes less reliable as the indication of the incentive for imports

Risk of refining disruptions increases in California (because of frequent changes in specifications)

Mean production held constant

- Price volatility: higher
- Average inventories: higher
- Low inventories: probably less often, but longer sequences

Effect on California of the changes combined

- Price volatility: unambiguously higher
- Average inventories: ambiguous
- Low inventories: ambiguous

Price volatility and inventory practices both reflect underlying circumstances

- Often sensible to have low inventories at particular locations
- Higher price volatility need not imply higher average inventories (Economics 101 does not say higher average inventories with higher price volatility)
- Proposal for SFR implicitly assumes higher price volatility should have induced much more private inventory

2. Influence of Crude Oil Prices

Crude oil inventory practices ought to have some bearing on gasoline inventories in California

Price relationships for crude oil ought to have some bearing too

The effective storage cost of an input is generally less than that for an output, because of the interest expense on the value added

Nature provides inexpensive tanks for the storage of crude oil

- Crude oil prices are persistently in backwardation
- The typical backwardation in crude is 1-2% per month
- This backwardation in crude oil amounts to gasoline for the next month being 1-2 cents per gallon cheaper, a large disincentive against inventories
- This backwardation in crude oil is the same magnitude as more obvious storage costs for gasoline
- This effect is felt everywhere, and for all products, not just gasoline in California

NYMEX Crude Oil Futures: Two-Months Ahead - One-Month Ahead January 3, 1995 - April 21, 2003



The proposal for the SFR implicitly assumes that the intertemporal price relationships in crude oil are zero, neither in contango nor in backwardation

3. Interplay between a SFR and Private Inventories

Sensible (idealized) inventory practices:

- Responsive to intertemporal price signals
 - Considerable storage during contagoes
 - Minimal storage during backwardations
- Adjust smoothly as a function of prices
- Store less on average if storage costs higher
- Flexible to changing conditions
- Place facilities to have access to pipelines

Among sensible inventory holders, what would be the effect of a player

- Who builds and fills many tanks in a distant location (Chico)
- Who announces gasoline not released unless retail price reaches \$4.00 / gallon?
- Minimal effect on tank lease rates elsewhere
- Minimal effect on average inventories elsewhere
- Minimal effect on range of inventories elsewhere

Among sensible inventory holders, what would be the effect of a player

- Who builds many tanks in plausible but imperfect location (Sacramento)
- Who has plausible but bureaucratic acquisition and release rules
- Who considers the flat price more than price relationships?
- Substantial displacement of others' inventories
- Displacement quite different depending on conditions, most likely highest when others' inventories would have been large
- Depresses lease rates for tanks over wide area

Among sensible inventory holders, what would be the effect of a player

- Who has a small operating cost advantage
- Who follows sensible inventory practices
- Who builds or leases tanks according to cost effectiveness in a prime location (Martinez)?
- Displacement of all others virtually one-for-one
- No effect on average inventories
- No effect on lease rates

The more sensible are the tankage amounts, the tankage placement, and operating rules of a SFR, the more it would displace private activity

If private parties are not now holding inventory, because of backwardations, either the SFR

- If sensibly operated, will usually be empty
- If frequently full, will not have been sensibly operated

Proposal for the SFR implicitly assumes that six weeks following the release of gasoline, during a backwardation, the price relationships will be in contango, justifying a refilling of the reserve

4. Measurement of Consumers' Gains from Stabilization

- Some simplifications are unavoidable
- Analogies are natural (e.g., a SFR would be comparable to complete stabilization)
- Bounding arguments are natural
- The implied counterfactual may be questionable, nonetheless
- Gains from stabilization are usually second-order effects (Big numbers should be viewed with suspicion)



Finizza, page 66

"Assume a \$1.50 retail price, consumption of 40 million gallons of gasoline per day (14.5 billion gallons per year), and a combined price elasticity of -0.15. With an average size disruption (2%), the gasoline price increases to \$1.70 in accordance with the assumed elasticity. The daily change in the consumer gasoline bill and in consumer surplus is given in Table 6.4. These values show how much is at stake if the disruptions can be mitigated. Since the average disruption is 19 days (2.7 weeks) and there are about ten disruptions per year, the figures in Table 6.4 would have to be multiplied by 200 to express them on an annual basis."

Table 6.4 – Changes in Welfare after a Sample Disruption

	Before Disruption	After Disruption	Change
Elasticity = -0.15	\$ MM/day	\$ MM/day	\$ MM/day
Consumer Surplus			-7.92
Consumer Gasoline Bill	60	66.64	+6.64

Finizza says the gains from stabilization are (200 / 365) * (A + B + C + D + E)

Full calculation of gains from stabilization

	Probability	Price \$/gallon	Quantity M/day	Consumer Surplus Change \$ M / day
Average		160.96	39.56	
Disruption	200/365	1.70	39.20	+ 4.34
No Disruption	165/365	1.50	40.00	- 4.36
Weighted Average				- 0.02

Schematic of a Stylized Price Path and Benefits Calculated



(c) AJF Consulting - Private and Confidential April 24-

The proposal for the SFR implicitly assumes that the SFR eliminates the refinery outages, not just stabilizes the market given those outages

Conclusions

- The proposal for the SFR rests on some implicit assumptions
- Four implicit assumptions matter considerably to the proposal
- These four implicit assumptions are all in the direction of favoring the SFR (especially the cost/benefit analysis)
- Thus, the case for the SFR has not been demonstrated
- The lack of market incentives does not indicate a "market failure"
- Not obvious why a policy of storage in the face of backwardation is obvious

The Economic Context for the Strategic Fuels Reserve

Philip K. Verleger, Jr. PKVerleger LLC April 25, 2003



Disclaimer

The author is President of PKVerleger LLC and BP Senior Fellow at the Council on Foreign Relations. The research summarized here was funded by the Western States Petroleum Association. However, the findings and conclusions are those of the author and do not necessarily reflect the views of the Council on Foreign Relations or the Western States Petroleum Association.



Personal Background

- Private consultant
- > Work with energy consumers and processors
- Member of the National Petroleum Council
 - ✓ Appointed by the Secretary of Energy
- Former member of the board of directors of Valero
- >Author of numerous studies on the process by which oil prices are discovered





- Not a new idea!
- > Likely to increase, not decrease price volatility.
- > Will not make market more efficient.
- May raise costs to consumers over the long term.
- Gasoline futures markets are not very successful.



Background

Concepts similar to the strategic fuels reserve have been proposed over the years.

- ✓ Common name is "buffer stock."
- ✓ Originally proposed by Keynes.
- ✓ Keynes believed governments would draw stocks during periods when markets were stressed.

- Experience with buffer stocks has not been positive. Effect has been counterproductive.
 - Efforts to support agricultural prices have depressed price levels.
 - ✓ Efforts to dampen prices have raised price levels.
- Buffer stocks have also substituted for private stocks rather than increasing total inventory levels.



Analysis of stabilization programs has led theorists to conclude that "benefits" are overestimated while costs of these programs are underestimated.*

David Newbery and Joseph Stiglitz, <u>The Theory of Commodity Price Stabilization</u>, Oxford University Press 1981.



Creation of buffer stocks also alters long term market dynamics.

- ✓ Supplies of agricultural products protected by floor prices have increased, necessitating passage of production limitations.
- Productive capacity for goods subject to price ceilings generally declines.



Mismanagement of buffer stocks often contributes to even greater price volatility.

- ✓ Most buffer stock managers have sold either too early or too late, doing a worse job than the market.
- ✓ Buffer stock managers historically have failed to take account of their actions on private inventories.

Consumers have paid for mismanagement in higher prices.



> Petroleum reserves have had this effect:

- Strategic petroleum reserves in OECD countries have replaced private inventories.
- ✓ Total stocks have increased by roughly twenty percent since 1980.
- ✓ But private stocks have declined by twenty percent.



Figure 1 Total Stocks in OECD Regions — 1975 to 2001

Billion Barrels





»Private companies are aggressive in cutting inventories.

»NPC studies on inventories have determined minimum operating levels at least three times.

- ➤ "Min-op" levels fall despite increasing use.
- Divestitures and tight money accelerate the effect.
- ≻The pattern is worldwide.



Usable Commercial Petroleum Stocks in OECD Countries



Source: EIG; PKVerleger LLC.



The SFR would be identical to a Buffer Stock

Public stocks probably would replace private stocks (substitution).

Supply of gasoline from California refineries would likely be reduced to the extent that the buffer stock moderates margins.

Refiners are also less likely to expand refining capacity.

✓ Refinery "creep" will slow.

✓ California will become more dependent on imports.



The SFR would be identical to a Buffer Stock

Calling the gasoline reserve a "gasoline bank" does not change the program's nature.

To quote the television add for Charles Schwab, changing the name just

"Puts Lipstick on the Pig."


SFR will not make California gasoline markets more efficient

Efficient (complete) markets are the key to reducing price volatility

- ✓ Cash and forward markets required.
- ✓ The two markets allow the transfer of the commodity from the present to the future.
- Forward or futures markets cannot be mandated into existence. Sellers and buyers are required.
- Efficient markets promote storage when they are fully developed.



SFR will not make California gasoline markets more efficient

Is this a "Field of Dreams?"

California needs to ask, "If a forward market is created, will anyone show up to play?"

The quick answer is no.



The missing element from many markets is the long.

- The number of longs must equal the number of shorts.
 - ✓ Refiners are natural shorts.
 - ✓ Jobbers are natural shorts.
 - ✓ There are rarely natural longs in petroleum markets.



Missing longs.....

- The distillate market offers one example of natural longs.
 - ✓ Airlines and parcel deliverers have become large hedgers.
 - ✓ Home heating oil consumers also hedge purchases by signing fixed price contracts with suppliers at the start of winter.
- ➤ There are few natural longs for gasoline. The potential is limited by the structure of gasoline marketing.



Missing longs.....

➢ It is very difficult to create a forward market for gasoline.

- ✓ Points of purchase randomly distributed.
- ✓ Petroleum Marketing Practices Act (PMPA).
- \checkmark Variation in state tax and local tax rates.
- ✓ Modest share in consumer budget.



The absence of longs will prevent forward markets from developing

- Stillwater asserts that the creation of the SFR will lead to the emergence of a futures market. They are wrong. They have conjured up a *Field of Dreams*.
 - ✓ Inventories do not create futures markets buyers and sellers create futures markets.
 - \checkmark Without longs there will be no market.
 - ✓ Inventories are unlikely to increase without markets.
 - ✓ But companies would likely redouble efforts to cut stocks.



California can improve market efficiency by creating longs

Governments are natural longs.

✓ Purchase large volumes of gasoline and diesel.

 \checkmark Use a few suppliers who compete by bids.

➢ By putting out supply contracts for future product at a fixed price, governments create the forward demand required to make the market more complete.



State purchases in forward market at fixed prices could start futures market.

- Winning bidders would need to line up supplies. They could
 - 1. Contract with local refiners,
 - 2. Contract with foreign refiners, or
 - 3. Buy from traders who themselves repeat steps 1 and 2.
- Over time trading volume will increase. California will follow the experience of other commodity markets.



State purchases in forward market at fixed prices could start futures market.

➢ Study by Professor Williams reveals state's market is small. However, demand by school districts, cities and counties could expand it.

> If the market is not there and if other consumers cannot be enticed into forward purchases – then there will be no economic incentive to build stocks.



Gasoline is the least successful of all energy futures markets

The gasoline futures contract has been the least successful hydrocarbon energy futures contract.

- ✓ Open interest is a fraction of heating oil, crude or natural gas despite high level of consumption.
- ✓ Volume of trade is also relatively low.

➢ Relative lack of success due to problems of hedging, consumer unwillingness to hedge, and structural problems such as PMPA.



Gasoline Futures Contracts as a Percentage of Total Petroleum Futures Contracts



Source: NYMEX.



CEC's Consultants have conjured up a "free lunch" for Californians.

- Economic benefits of \$320 to \$650 million per year.
- Economic costs of the reserve around \$120 million?
 - Purchase of 2.5 million barrels of gasoline, \$90 million?
 - ✓ Annual storage costs 31.5 million?



Economic Security: Priceless



There are no free lunches in the real world.

➢ If CEC's consultants have correctly calculated the economic benefits, refiners will see profits drop. Lower profits will lead to either

- ✓ Reduced investment and lower supplies,
- ✓ Sales of refineries to undercapitalized firms, or
- ✓ Exit and closure.

In all events, California will be more dependent on imports and Californians will pay more for gasoline.



There are no free lunches in the real world.

Alternatively, the SFR will be a boondoggle which will cost the tax payers money, have no effect on the price of gasoline, and line the pockets of a few traders.

- California can not have it both ways.
- The lesson of electricity deregulation should be a clear warning to us all.



Conclusion: Markets First

Buffer stocks such as the SFR have a terrible history. They don't work.

Buffer stocks do not cause inventories to increase. Thus they do not moderate price volatility. However, they can depress supply.

Markets, can promote stock building. Forward purchases contribute to more complete markets, higher inventories and less price volatility, without government stockpiles.



The State's Real Exposure Is to A Disruption of Crude Supplies

California imports one of three barrels of crude refined.

➢ All 620 million barrels of the U.S. Strategic Reserves are located in the U.S. Gulf Coast.

A disruption of crude oil exports would leave the the West Coast in a dire situation. This is the real problem

➢ West Coast governors should call on the Federal Government to relocated one quarter of the SPR to the west.



Comments on Strategic Fuels Reserve

Robert A. Hermes April 25, 2003



Agenda

- Are California inventory practices atypical?
- What caused market spikes in 1999-2001?
- Has the industry profited unjustly from spikes?
- What is the best long term program for preventing spikes?
- Will the SFR work as postulated?



EIA/DOE data shows PADDV stocks are about the same as for overall U.S.

U.S. AND PADD V INVENTORY COMPARISON		
	Total U.S.	PADD V
Stocks - Million Barrels - as of December 31, 2001		
MTBE and Fuel Ethanol	12.0	2.9
Gasoline Blending Components	48.1	10.6
Finished Gasoline	161.3	21.3
Total	221.4	34.7
Refinery	94.3	20.4
Bulk Terminal	74.6	10.6
Pipeline	52.6	3.7
Total	221.4	34.7
Gasoline Supplied in 2001 - Thousand Barrels per Day	8,586	1,489
Stocks - Days of Supply		
Refinery	11.0	13.7
Bulk Terminal	8.7	7.1
Pipeline	6.1	2.5
Total	25.8	23.3
Total Excluding Pipeline	19.7	20.8

Source: Petroleum Supply Monthly, February 2002



California gasoline price spikes



PURVIN GERTZ

USGC spikes corresponded to CA spikes in 2000-01





New York Harbor market had similar price spikes





R&M Return on Investment





Refinery expansion—the best option

- Import parity is expensive—10 cpg is ~ \$1.5 billion per year
- Permitting and historical profitability have restrained expansion
- Adequate capacity makes crude oil inventory available
- Only modest expansion rate needed



Operational risks and uncertainties

- Untested concept
- Permitting
- Building and leasing of "extra" storage
- Storage turnover
- Refiners must be integral part



California prices often below import parity











Strategic Fuel Reserve:

The Right Strategy?



Historically, have there been

severe impediments to non-refiner

volumes coming to California?





No severe impediment to importation of non-local-refiner volumes.

- Gasoline, near-BOBs, alkylate, iso-octane, CARB diesel
- Large blended volumes

THE "AFTER-EFFECT"

When examining the cost to the consumer of California price spikes, was adequate consideration given to the beneficial effect after the spike, when supply increases result in LOWER THAN AVERAGE prices?



The private sector is building the Reserve right now!




In the San Francisco Area

- Traders have converted 255,000 barrels of storage from fuel oil service to gasoline service in the last 14 months
- When Martinez construction complete July 7, traders will have approx. 1.2 million barrels of storage in San Francisco area
- About 60% probability another 200,000 barrels import gasoline storage to be built at Martinez by mid-2004

ECON 101











Government attempt to manage this process would likely:

- Discourage increasing supply of storage from private sector
- Discourage current strong traders who have overcome the importation hurdles from continuing their innovation.
- May eliminate some of price spike, but would also eliminate the beneficial After-Effect of the oversupply a spike encourages

Let the private sector handle storage requirements so the supply of storage tanks will grow along with demand changes driven by the demographic and regulatory environment.



COMMITTEE WORKSHOP

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:)
Strategic Fuel Reserve and)
Alternatives to Dampen Price)
Volatility)

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET

HEARING ROOM A

SACRAMENTO, CALIFORNIA

THURSDAY, APRIL 24, 2003

9:18 A.M.

Reported by: Peter Petty Contract No. 150-01-005

COMMISSIONERS PRESENT

James Boyd, Presiding Member

John Geesman, Commissioner

ADVISORS

Susan Bakker, Advisor

Melissa Jones, Advisor

STAFF PRESENT

Scott Matthews

Brian Covi

Pat Perez

Chris Kavalec

Seymour Goldstone

Daryl Metz

Leigh Stamets

ALSO PRESENT

Jeffrey C. Williams, Professor University of California

Gregg Haggquist, President & CEO MGE Company, LTD.

Robert Lanza, Principal Chemical Engineer ICF Consulting

Mariella Cacho, Associate ICF Consulting

ALSO PRESENT

David Hackett, President Stillwater Associates

Thomas Gieskes, Vice President Stillwater Associates

Drew Laughlin, Consultant

Anthony Finizza AJF Consulting

PUBLIC COMMENT

Dwight D. Stevenson, Advisor, Clean Products TESORO

Philip K. Verleger, Jr. PK Verleger LLC

Joe Sparano, President Western States Petroleum Association

Tony Hoff, Vice President-Operations & Marketing ST Services

James S. White, Principal White Environmental Associates

INDEX

	Page
Proceedings	1
Opening Remarks	1
Presiding Member Boyd	1
Commissioner John Geesman	7
Contract Reports	
Government Use of the California Gasoline Forward Market	7
Presentation	7
Discussion	47
Permit Streamlining for Petroleum Product Storage	56
Presentation	56
Discussion	105
Afternoon Session	132
California Marine Petroleum Infrasturcture	132
Presentation	132
Discussion	165
California Strategic Fuels Reserve	192
Presentation	192
Discussion	266
Public Comments	320
Closing Remarks	333
Adjournment	335
Certificate of Reporter	336

1 PROCEEDINGS 2 9:18 a.m. PRESIDING MEMBER BOYD: I think we're 3 finally ready. As you've noticed here, we 4 5 commissioners have no power and the people wiring the room have been in charge the last fifteen 6 7 minutes. Pardon the delay while they rewire the microphone system for whatever reasons, but I 8 9 think we are ready to finally get underway. 10 I want to welcome you to this workshop. First, I want to take care of a few housekeeping 11 12 items, and then I and Commissioner Geesman have a 13 few introductory words before we get into the

15 Housekeeping items. This workshop is 16 meant to be fairly informal, we've tried to level 17 the playing field and sit down here on one level 18 with the rest of you. This is a workshop, not a formal committee hearing, it is a committee 19 workshop on this very important topic. Throughout 20 21 the day we encourage questions and dialogue and 22 what have you at the end of a presentation.

14

agenda.

23This is being audio cast on the24Commission's website, so there are people out25there listening to this. At least I hope they

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1 are. We went to a lot of trouble to accommodate 2 them. To those listening in and for everyone else's information, the notice, the lengthy notice 3 we put out on this workshop went to great lengths 4 5 to explain the various website locations of the б materials that were produced for this workshop. I am told that some of the power point 7 presentations that we will be seeing here today 8 9 are being posted to the website literally as we 10 speak. I was just given a box score of two are up 11 and three to go, but anyone listening and 12 monitoring the website, in short order, the 13 presentations that many of us have yet to see will 14 be posted on the website. 15 I would like to request speakers to 16 identify themselves, their name, their 17 organization when they do speak, and I would ask that anyone who does speak throughout the course 18 of the day provide a business card to our recorder 19 20 down here just for information in compiling the record. Any folks from the media that are here, 21 there are media representatives from our 22 23 organization in the back, and they ask you to please sign in with them so you all get to know 24 each other. With that, I think I have covered all 25

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the housekeeping items.

2	My name is Jim Boyd, I'm a Commissioner,
3	in spite of the anonymity here in front of me, and
4	I don't deserve a nameplate apparently. I'm
5	joined by Commissioner Geesman, who is the other
б	member of our Transportation Committee.

7 I'd just like to make a few remarks to try to set the stage for this. This is certainly 8 9 not a new topic, and I would like to say we have a 10 period of time at the end of the day for public comments, and anyone who wants to comment in that 11 12 time slot per our agenda. I ask you to find one 13 of these blue cards around on the work table in 14 the back of the room and fill it out, and see that 15 it gets up to the table so we know to call on you. 16 Although, frankly, I'll just throw the floor open 17 eventually, but we would still like to know --18 have an idea of how many speakers we might have.

With that, as indicated in our workshop notice that obviously all of you have had access to, the purpose of today's workshop is to talk about the strategic fuel reserve and alternatives there to.

24The workshop is in response to the25Commission's responsibilities under Chapter 936

1 Statutes of 2000, more popularly known as AB2076 2 by then Assemblyman Shelly, which requires this Commission to examine the feasibility of operating 3 a strategic fuel reserve to dampen fuel price 4 5 volatility, seen as the culprit in the 1999 price б spikes which led to an Attorney General's 7 investigation and ultimately to the legislation that we are talking about today. 8 9 Well, deja vu all over again, as 10 indicated by a famous pundit once. Fuel price 11 volatility and price spikes are of much concern 12 once again to Californians, and although gasoline 13 prices are starting to decline now, we've had a 14 substantial fuel price increase in this state in 15 the last several months, if not in the nation, but 16 certainly in this state. 17 As noted in our March 28 report to the

18 governor, the statewide average retail price of 19 regular gasoline jumped 36 percent, climbing from 20 \$1.58 a gallon average on January 1 to a record 21 setting \$2.15 a gallon on March 17. Frankly, I 22 saw prices hire than that, but in any event, an 23 increase of some \$.57.

24This committee held a workshop on March2513, 2002 a little more than a year ago to discuss

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1 the initial results of a study performed for us by 2 Stillwater Associates on the subject of the feasibility of operating a strategic fuel reserve. 3 Following that workshop, this committee 4 5 concluded that additional information was needed б on SFR alternatives, and with the permission of 7 the author of the legislation, we were granted more time to more thoroughly dig into the subject. 8 9 The Commission then initiated three 10 additional studies to examine alternatives to 11 reduce gasoline price volatility, enhance forward 12 markets, storage construction and permitting, and 13 the marine terminal infrastructure. 14 Today we are going to hear the results 15 of these three studies from the contractors. 16 We're going to take additional information on the 17 SFR analysis that was originally undertaken, and then we are going to hear from any and all of you 18 of the interested and affected public with your 19 20 comments on what we've been presented today. Tomorrow this workshop continues. We'll 21 have special presentations on items. We'll have 22 23 what I look forward to, a very meaningful panel discussion by experts in all areas on all the 24 subjects, and more public comments on alternative 25

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views on strategic fuel reserves.

We, the staff, did provide questions 2 that we would kind of like to get answered over 3 the course of the next couple of days. They were 4 5 provided to everyone, and I think they are б available on the back table, discussion questions 7 for workshop panel on critical issues related to the SFR. We are seeking information around those 8 9 three general areas in the document to help us 10 make our final decision and move this issue forward. 11

12 Before turning the microphone over to 13 Commissioner Geesman, and then moving into the 14 agenda, I would like to acknowledge all the good 15 and hard work of the staff of this organization 16 who really put a huge effort into preparing for 17 all of these subjects and these workshops. Leigh Stamets, in particular put a lot of effort into 18 arranging and facilitating this. Brian Covi, 19 20 Ramesh Gameriwal, and Chris Kavalec, Daryl Metz, 21 Gordon Schremp, Jennifer Thompson, all of them put a lot of effort into this, and we thank them very 22 23 much for that. With that, Commissioner Geesman, I'll turn it over to you and then we can move to 24 the agenda. 25

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COMMISSIONER GEESMAN: Thank you, Jim.
 I think I'll pass on the opening remarks and
 reserve my time for perhaps foolish questions
 later in the day.

5 PRESIDING MEMBER BOYD: Thank you, б wisely said. I guess I get to be the moderator or 7 referee here according to the agenda here, so right now the agenda calls for a presentation on 8 9 the Government Use of the California Gasoline 10 Forward Market. That's a presentation by Jeffrey Williams of UC Davis and Greg Haggquist. 11 12 Gentlemen, are you ready? 13 DR. WILLIAMS: While all these talks are 14 somewhat separate, they connect in many ways of 15 course, and what we would like to tell you about 16 the forward market surely has some relevance for 17 this strategic fuel reserves idea, so I hope a number of things will emerge in our presentation. 18 We were charged with studying the 19

forward market as it existed, but let's sort of view these as two propositions that we needed to investigate. The first one, I'm not saying these are true with that they are just propositions, is that an illiquids seller dominated forward market for gasoline here in California, perhaps in

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1 contrast to other places in the world, will 2 discourage storage. There is no incentive to keep inventories and consequently price spikes might be 3 higher. It will also discourage imports from 4 5 coming in and so on. б If that's true, perhaps the State of 7 California by consolidating its own purchasing approaches, which are fairly fragmented now, could 8 9 participate in the forward market and increase 10 that markets liquidity. Forward markets have a feature that the 11 12 more liquid they are, the more traders trade in 13 them, the more liquid they become. It is a 14 virtuous circle that way or cycle, and perhaps the 15 State of California, by changing the way it 16 operates, could set in motion this process to a 17 general good. This is a separate issue from whether it 18 makes sense for the State of California in and of 19 itself to think about forward purchases of 20 21 gasoline. We are thinking in this instance of what it will do more broadly. 22 23 We went out and conducted something like twenty stakeholder meetings, many of them had been 24 interviewed previously about the strategic fuel 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1 reserves, but we asked slightly different
2 questions and tried to concentrate on what is the
3 current operating condition of the forward market.
4 It is no formal institution, people have different
5 impressions about it, and we would like to report
6 on that.

7 We also asked a lot of questions about 8 people dealing with state contracts, both some of 9 the purchasing agents within state agencies, but 10 even more the contractors dealing directly with 11 them. I'd like to show you what we got about 12 that.

To anticipate a bit, a lot of this is going to be in this gray zone of how markets work, what could be done. There aren't going to be definitive answers and there may be some disagreement about the implications of some of this material, but nevertheless, it is worth emphasizing what we've found.

20 We'll be splitting our talk. Greg 21 Haggquist here is going to talk first awhile about 22 what we've seen in the forward market, and then 23 I'm going to draw some implications. He's going 24 to come back and talk about what is the state of 25 contracting within the current system and how that

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might change if the state went to forward markets
 more, and then I will draw some conclusions.

MR. HAGGQUIST: Thank you, Dr. Williams, 3 I'm Gregg Haggquist. In this presentation, I'm 4 5 Monterey Global Energy. This introductory presentation is, in fact, just that. It's like б 7 the crane shot at the beginning of a movie, the beginning of West Side Story, that old great 8 9 movie, looking over the market from a high point. 10 I always try to find a quote from a philosopher or poet to start things off, and T. S. Elliot comes 11 12 to mind because I've been trading this market for 13 thirty years. He said, "Old men should be 14 explorers, and the point of all their exploration 15 should be to arrive at their starting point, but 16 to recognize it for the first time."

17 You know, a lot of us will do that when we really look at this market we all trade and do 18 business in, and we say what is the price 19 20 formation sequence? How are prices even formed, what is the sequence? Our stakeholder meetings 21 that Dr. Williams mentioned pointed out again and 22 23 again that the pipeline trade is what creates the spot market in California. The OPIS price posted 24 every day reflects pieces, as they call them, 25

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25,000 barrels, 50,000 barrels a piece of gasoline
 traded on the pipeline, and that is by definition,
 today's market.

The pipeline price then weeds the rack 4 5 prices. The rack is where the trucks come, pick б it up, and bring it out to the street, for people 7 listening in who might not have ever really thought about the logistics. The pipeline price 8 9 causes the rack price to go up or down, and then 10 that price is usually the basis by which the truck and trailer delivers to the service station sets, 11 12 to some degree, what the street price will be. 13 Once the price gets to the street, it 14 becomes sort of a new market, you know, new 15 dynamics take over, and the retail end of the 16 business competes with each other, often blind to 17 what is going in Iraq, the Middle East, New York Harbor, crude oil, and so forth, but rather what 18 19 is going on in the competing gas station across 20 the street or the hyper market down the block. The street part pricing is a new market 21 22 in sympathy with the pipeline and rack markets, 23 but dynamics are not one to one. In all of this,

how do we know where the market might be going.We don't have a futures market as we have in New

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1 York Harbor or the IEP in London, so what we do 2 have, as leading indicators of the direction of the market, is the OPIS pricing for the prompt, 3 today's price and the forward price, and we have 4 5 the dynamics of the pipeline scheduling. We call 6 it as a leading indicator. 7 Anyone listening in or in here in the room who has worked in scheduling a pipeline knows 8 9 that pressure's built up either to move barrels 10 when you are long and there's no one to buy them, 11 or to buy barrels if you have to cover a schedule 12 that you are short of covering, and then you have 13 to go into the market and buy. When that happens, 14 you may get squeezed. 15 You may have to pay five, ten, fifteen 16 cents higher than the price was yesterday. That, 17 by definition, sets the new price for tomorrow. The famous terms in all forward markets 18 are backwardation and contango. Contango always 19 20 sounds like a dance, doesn't it? 21 Backwardation contango set up their rewards and their punishments for holding 22 23 inventory. This is a drastic way to say, but in fact, if the market is in contango, which means 24 the price next month or next week will be higher 25

1 than it is today, then you will be rewarded. Ιf 2 you squirrel away a little inventory, put something into a tank and hold it because you are 3 going to get more for it next month, if you can 4 5 cover the cost of your storage and the cost of money. That is just common sense. б 7 Backwardation is a situation which is the opposite when you know the market is going 8 9 down. When that happens, you don't want to hold 10 inventory. Inventory is a hot potato, you want to 11 get rid of it as quickly as you can, sell it now 12 because it is going to be worth less tomorrow. 13 These are the rewards and punishments. 14 The forward pricing, Dr. Williams 15 mentioned, is sort of the horizon that we are 16 trying to understand and see whether there are 17 ways to stimulate, and all we have so far in California, based on our stakeholder meetings, is 18 the OPIS numbers that people look at, which record 19 the one or two deal, three deals a day that might 20 be done. It is sometimes no deals that are done. 21 For next month, for example, the forward 22 23 market today being the end of April, maybe the June contract because we are going into May, but 24 25 that's a very thinly traded market, the liquidity

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1 of the forward market, as I said, is very thin, 2 people don't know what direction it's going to go, it is growing. Some stakeholders -- the 3 stakeholders are of different opinions depending 4 5 where they sit and what they do in the market. That is to say whether it is expanding by what 6 rate it is expanding. Right now, it is certainly 7 a thinly traded market. 8 9 Paper markets are contiguous too and 10 parallel to the physical flow of the product. If 11 you want to sort of hedge a position, you can take 12 out a paper contract at a fixed price linked to 13 what the price is on the day that you pump your 14 pipeline tender a month from now or three weeks 15 from now. 16 Paper markets are growing in popularity 17 here in gasoline, but still, not very deep. They are transparent enough, they are picked up by 18 OPIS, so there's not really a lack of transparency 19 20 in pipeline, it's a lack of liquidity and depth. 21 Downstream storage, Dr. Williams has done a lot of work in this area in other markets, 22 23 and we've found again and again that it is very difficult if not impossible to hold inventory, you 24 25 know, in outlying terminals in Sacramento, San

1 Jose, and down in San Diego. The terminals are 2 operational inventory moving top to the bottom of the tanks with each pipeline cycle that comes in. 3 Who are the players? Who are the 4 5 players in this market, who makes up this market and forms these prices? The integrated б 7 multinationals, that term sounds over blown, but more and more that is the case in a global 8 9 economy. The integrated multinationals look at 10 the local market both in the same way and also in 11 a different way because they have different ways 12 to bring product into this market from other 13 supply centers and refinery centers. 14 The merchant refineries, you know who 15 they are, are not fully integrated downstream. 16 They don't have enough gas stations to take over, 17 enough customers to buy all of their productions, so they sell at the rack, which once again is 18 linked to the pipe. It is all connected. 19 20 The jobbers and distributors sort of work the arbitrage between the rack price and the 21 street price and the wholesale price. They work 22 23 in a back to back mode, they don't usually take any risks. They try to avoid taking risks, they 24 25 pass on the price increases and try to pocket the

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drops when they can, but try to stay in a back to
 back line up with the street.

The cargo and the pipeline traders, you 3 can say what do you need them for if they are not 4 5 in a refinery. Well, each refinery center has 6 enough trouble trying to balance its own system, 7 and then the system as a whole comes out of balance. In a way, the pipeline and cargo traders 8 9 are the supply department of the entire industry. 10 They sort of balance the total system as far as we 11 can bring it into line with other markets. 12 Holding it all together are the brokers, 13 the phone brokers mostly here in California, and 14 the price service providers, Platzz and OPIS who 15 tell us what is going on all the time because we 16 are not -- we don't have a clearing house and we 17 are not a futures market. At that stage, I think we will turn it 18 19 back over to Dr. Williams. 20 DR. WILLIAMS: How deep is this 21 particular forward market, and so I thought we ought really to compare it to some other markets. 22 23 These markets don't exist in and of themselves, and we need some sense of whether is unusual or 24 25 extreme.

1	I have happened to have studied a couple
2	of other forward markets, and I thought quickly to
3	make some comparison with them that might help us
4	understand why different people can have different
5	views about the current forward market for
6	gasoline in California.
7	California is a major world producer of
8	almonds, and how does it trade forward? There are
9	a fair amount of forward trading with importers in
10	Germany, marzipan is a major German activity.
11	This is about a billion dollar a year market, and
12	it is quite important to California.
13	The U.S. ships a lot of corn to Japan,
14	maybe three or four billion dollars worth a year
15	on very large Panamax vessels. It is an important
16	market for our exports, but it's also a well
17	developed forward market, and I have interviewed a
18	number of corn traders in Japan about how they do
19	business there. I thought this might provide a
20	setting in which we can deduce what is the state
21	of the forward market in gasoline.
22	Just to go down some characteristics of
23	these markets, California gasoline is a pipeline
24	market as we have been hearing about. If there
25	were a lot of imports into California of gasoline,

it might well have been a Long Beach Harbor
 delivery point or something like that because that
 is very similar to what is going on in the forward
 market for corn in Japan.

5 It is CIF, cost and insurance and б freight, paid on a Panamax vessel in Tokyo Harbor is the typical pricing point. It also works at, I 7 think, the NOLA, and I bet unless you are a grain 8 9 trader you don't know that's New Orleans, 10 Louisiana. They just talk about NOLA all the time, and CIF -- NOLA is the Mississippi barges 11 12 that are coming in that then are loaded onto these 13 vessels that go CIF Japan. You get these two 14 prices quoted a lot. 15 In contrast, in California, most of it 16 FOB Long Beach, that is somebody's committing as a 17 almond merchant here in the Central Valley to load container vessels, containers to ship to Germany. 18

19 It is usually the commitment is to load in Long 20 Beach and the almond importer's responsible for 21 the transportation. Each one of these operates

22 differently, in large part because of the

23 logistics of the particular system. It is

24 important that it is a pipeline logistical system

25 for California for gasoline.

1 My next row talks about the extent 2 forward. Actually, almonds tries to go out the 3 farthest. It is an annual crop, almond exporters sign contracts with importers that go out for the 4 5 rest of the crop year, whether these are honored 6 is an issue I will come to in a moment. 7 In California gasoline, it is about one month, and in U.S. corn it is three to four 8 9 months. Again, this is primarily out of 10 logistical reasons, the most time it would really take to get more gasoline into California or move 11 12 it through the pipeline system is about a month. 13 Not surprisingly, it's only one month forward. 14 California almonds are grown annually, 15 and so you would worry about forward pricing a 16 farther period. U.S. corn to Japan takes about 17 two and a half to three months. Often there are deals done that bring CIF into barges in NOLA a 18 month or two ahead and then commit to or three 19 months across the Pacific, so that the most common 20 pricing of corn in Japan is actually a three month 21 forward. They have a very limited spot market. 22 23 Let's compare the lot sizes, 25,000 barrels are on a pipeline a piece, as Gregg was 24 talking to us about it, is the common lot, and 25

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1 that is about a million dollars. Right there that 2 can't be a lot of small time players because a 3 million dollars is a lot of money.

You could be a smaller time player in 4 5 the almond market because the container which is the typical lot size, about \$75.000, but the U.S. б corn market is also for big players, and it is 7 really the unit is a hatch, one seventh of one of 8 9 these big vessels, and that is 7,000 metric tons 10 of corn, which is a lot, although so is 25,000 barrels. That is actually a bigger lot size than 11 12 the typical value. Sometimes they trade the whole 13 vessel, so there are seven hatches. They are 14 talking \$10 M at a pop, so there can't be very 15 many players.

16 There are differences in the grades too, 17 and often this determines whether or not a forward market is functioning. Gasoline happens because 18 mostly regulation, at this point, seems to be 19 20 extremely uniform, so there are disputes over the qualities. In almonds, they are always disputing 21 whether it was a good shipment or not, and that's 22 23 one reason this forward market in almonds doesn't 24 work very well.

25 The U.S. corn is government graded, but

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actually they are using grades that probably were
 the best idea about seventy or eighty years ago,
 and the Japanese are constantly complaining about
 how the U.S. does the grading, but that is another
 issue for us.

Fortunately, gasoline doesn't have this б 7 problem, but this is all to lead to the major issues before us. How many trades occur in these 8 9 markets? California gasoline, our best guess now, 10 seems to be a little different. A few years ago, 11 it was maybe three to five trades, including some 12 roll overs. That is actually comparable to the 13 amount of trading that goes on in the quite 14 advanced forward market, U.S. corn to Japan, four 15 to five trades a day, and is far more active than 16 California almonds, where there is maybe one or 17 two trades a day.

How many market participants are in 18 this? California gasoline, maybe at the outside 19 20 fifteen or twenty, something like that, some big cargo traders. That's probably as many, if not 21 more, than the number participating in the U.S. 22 23 corn market. There's some big U.S. exporting firms and eight of the big importing firms into 24 Japan like Mitsubishi, there are only eight of 25

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them. You might even argue that there are only ten or twelve players in the corn market, a few more in California gasoline. Almonds has more, but has one big player, Blue Diamond, and a lot of small ones, so in some respects, the almond market is even more concentrated than the California gasoline market.

8 There are brokers in all three markets, 9 often it's used as a source of trading information 10 in all three. There are differences in pricing 11 style reflecting in a way how advanced our market 12 surround them.

13 The California gasoline forward market 14 prices flat, that is in cents per gallon, just so 15 much paid for that. So does almonds, so many 16 dollars a pound. U.S. corn delivered to Tokyo 17 Harbor is given in cents per bushel against the Chicago Board of Trade. They trade a price 18 differential, a bases, they don't even convert to 19 20 yen, they use U.S. dollars, and the Chicago Board of Trade bases -- it is called bases because it is 21 based on the Chicago Board of Trade, and is 22 23 actually a price differential then against the Illinois River which is where Chicago Board of 24 Trade contracts. 25

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1	You can talk to anybody in Japan, this
2	is the price they know, and it seems to bit odd to
3	us that they are not using the Tokyo Grain
4	Exchange futures market for corn, Chicago
5	dominates there.
6	Pricing transparency in this forward
7	market, not in corn markets in general, is fairly
8	good. You can call a broker up and get a
9	quotation any day. California gasoline through
10	OPIS is reasonably good too, none are great, but
11	they are good. In almonds, you can't get
12	quotations for almonds forward. They are traded,
13	but no one will say what the contracts were, so it
14	is a much less transparent market than we see in
15	gasoline.

16 Paper trading, by which I mean somebody 17 who doesn't really want the physical commodity, 18 could go in and buy it and then resale it or go 19 short first of all and sell it and then rebuy it. 20 You don't attempt that at all in almonds. Some of it is done in Japan, and, in fact, there is a 21 particular market among the big importers when 22 23 vessels are on the water in the Pacific, they redirect the boats for different uses. They have 24 a swap market in the hatches, and that is a form 25

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of paper trading that's quite common in that
 market.

There is some paper trading in California gasoline, and that often has the form of a role, that is someone postpones shipment on the pipeline, and that is in many ways a form of paper trading.

Last of all, is a characteristic that I 8 9 call defaults, that is somebody signs the forward 10 contract or makes a deal and doesn't go through 11 with it. In U.S. corn, it is very rare that there 12 is any dispute about the performance of contracts. 13 What we found out about California gasoline is 14 that this is rare, but happens. This is mostly a 15 credit risk issue or dispute over delivery terms. 16 That doesn't seem to happen very much.

17 I want to emphasize that other markets are much worse in this feature, and that is -- a 18 good example is the California almond forward 19 20 market. There is a phenomenon called "market 21 rot". Almonds don't rot of course, but when the price has fallen, the importers in Germany all 22 23 say, you know, there's something wrong with this shipment. Traders who are exporting have gotten 24 to call this market "rot" because it only happens 25

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when the prices have fallen, so there is some
 strange renegotiation that goes on.

In almonds, they go through this ritual signing these ten month forward contracts, but never honor them. I don't quite know why they do that, but that's how they operate in that business.

8 To summarize from this chart, California 9 forward market for gasoline doesn't look all that 10 bad compared to some other forward markets, and 11 indeed it looks reasonably good. It is comparable 12 I would say to the U.S. corn forward market in 13 Japan.

14 Reasonable people can differ, it's not 15 the ideal perfect market with no transaction, 16 cost, and great depth, but compared to some other 17 markets, it is working reasonably well. It doesn't look to me like it is a crisis, at least 18 19 compared to some other markets I've known. 20 Another way to look at forward markets 21 is to think about the prices that are in them. We

22 care about markets because they provide price
23 signals, and so I thought we could look at the
24 prices that have emerged in the forward market for
25 California gasoline, and see what signals they are

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1

doing, and do they make sense.

2	I thought to show a particular example
3	here, which is from early September, the year
4	2000. It is a major price spike in California
5	gasoline, a lot of it having to do with the
6	uncertainty about electricity supplies and whether
7	the pipelines would be functioning. In any plot
8	of California gasoline prices, this particular
9	incident looms as one of the higher price spikes.
10	I thought we could look at this in a
11	little more detail and see what signals the
12	forward market is giving us. Maybe this graph is
13	a little hard to explain, but it is showing on
14	several days, and that is the code at the bottom.
15	Let's see if I can get let's find what's
16	happening on the 5th of September, it's the little
17	dots. Let's see if we can find dots here, there's
18	a dot, there's a dot, and there's a dot.
19	According to OPIS, there were three trades being
20	done commonly in the market that day. One was for
21	the second cycle of the pipeline in September, so
22	the second week of September. Other deals were
23	the 3rd and 4th cycle in September and the one was
24	sort of a month out. This is what we mean by the
25	one month forward market.

1 Potentially, there could have been 2 trading four cycles, September, first cycle, October. In all this period no one seems to have 3 traded specifically first cycle, October. A 4 5 really deep forward market would have trading in 6 all of these cycles all of the time, that doesn't 7 seem to happen, but there was trading one month out. 8

9 I want to now ask are these prices 10 sensible, and the quick answer is, it sure looks 11 that way. Here's a big disruption to the pipeline 12 system and some refinery outages, so the price of 13 wholesale gasoline here, the prompt price, we 14 would call it, has gone up to \$1.60 a gallon, very 15 high. For delivery just two weeks later, it's 16 merely \$1.50, and for a month later, it's \$1.30. 17 To put it another way, there's a thirty cent premium for immediate delivery for prompt 18 delivery, and that's what we mean by a 19 20 backwardation, but more important it is a signal 21 that is very valuable now, do something with it, and it won't be as valuable later. 22 23 I would say that anything that is signaling that, these markets are making the right 24 25 signal, it is a temporary outage on the pipeline

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1 system, temporary disruptions, there ought to be a 2 premium for immediate delivery over later 3 delivery. That is, indeed, what this system is showing us, so the price signals make sense. 4 5 Can we say that this price on September 6 5 for a month out should be \$1.30 or \$1.27, I don't think any of us could say that then or now, 7 but we can reasonably expect that it would have 8 9 been lower, and that is the price signal that was 10 happening. 11 MS. JONES: Excuse me, do you know what 12 volumes are associated with those prices? 13 DR. WILLIAMS: Two or three trades. 14 PRESIDING MEMBER BOYD: Jeffrey? 15 DR. WILLIAMS: Yes. 16 PRESIDING MEMBER BOYD: You are kind of 17 exhibiting what some people have indicated that in 18 this commodity market, gasoline, when prices are high, it's advantageous to everybody to try to 19 20 move, to have product and move product to take 21 advantage of that high price. I think you are 22 saying there is not merit in holding back stock or not having product available because the forward 23 market is telling you it's not going to be as 24 25 valuable anyway.

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1 DR. WILLIAMS: Yes, and that's -- the 2 forward market is telling us that, and that seems to me to be a very sensible signal. Let's put it 3 this way, the higher the price gets today, and if 4 5 it is a temporary disruption, it ought to be used today and not save it. If the pipeline system 6 7 broke down forever, I expect all these prices to go up, but that is not what is happening. 8 9 The market signal, it makes sense to me, 10 in the sense that it's demonstrating a temporary 11 disruption. It could get worse, but a reasonable 12 expectation is that it gets better, and that is 13 consistent with the price signal that is going on. 14 PRESIDING MEMBER BOYD: A refiner who 15 has a breakdown, an outage, is being disadvantaged 16 because he can't take advantage of the current 17 market condition? 18 DR. WILLIAMS: Yes. By way of 19 comparison, let's look at some of the other 20 markets in this same period, September 7 is a good 21 day to look at. Here's where we are observing the California forward market for gasoline. This is a 22 23 New York Harbor price for gasoline, it goes out farther, there is more futures trading, and indeed 24 25 it goes way out to here.

1 This is crude oil on NYMEX, which is 2 Cushing, Oklahoma, and it goes out five years, so 3 way out there, and it stays pretty flat. All three markets are showing what we are calling a 4 5 backwardation, that is the nearby prices are higher than the more distant ones with this 6 7 exception, this is sort of the same price. In New York Harbor, there was a premium 8 9 for gasoline immediately delivered versus a month 10 later. Nothing like the premium seen in

11 California, but still a premium, so there was a 12 market signal in New York Harbor, minimize 13 inventories, move product as quickly as possible. 14 That was partly because that's the same signal in 15 crude, crude's getting cheaper in prospect all the 16 time. Crude may be more expensive later, as it 17 happens, but the market signal says crude is getting cheaper. The market signal visible to 18 19 participants at this moment.

20 Of course, there's this big price spike 21 in California, this versus this price is very 22 high, but the market signal says this is temporary 23 and going away. I would ask us here to make a 24 proposition had three month forward gasoline 25 traded in California, what would that price had

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been. I think would have extrapolated out here to
 about a price like that, wouldn't we have? That's
 probably the more normal relationship. See about
 where I am.

5 That says these are reasonable market б signals about temporary disruptions specific to 7 California, and a very important market signal to indicate that, but one reason why we don't see 8 9 much trading forward in California gasoline is 10 that this market signal here is in a way redundant 11 with these. Given that New York Harbor gasoline 12 trades quite liquid in a quite deep market, I 13 would not expect California in three months to 14 trade very much because it is basically the same 15 price signal.

16 These are different price signals, and 17 why California gasoline can have different price 18 signals on these short dates is precisely because 19 of the logistical restraints and disruptions 20 specific to California. In other words, I find 21 this a perfectly natural phenomenon.

We may not like these disruptions for sure, but the prices that result from them seem to me to be perfectly explainable.

25 PRESIDING MEMBER BOYD: While many of us PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1 understand that the California public has a tough 2 time understanding why we're stranded way up 3 there. DR. WILLIAMS: Well, I think it has to 4 5 do with logistics systems more than with the б pricing system. 7 PRESIDING MEMBER BOYD: That's why we are all here today. 8 9 DR. WILLIAMS: Yes, indeed, but I want 10 to concentrate -- it's not because there is not a forward market I don't think. 11 12 COMMISSIONER GEESMAN: There's not a 13 forward market beyond about thirty days out. 14 DR. WILLIAMS: That's because that's 15 where the logistics make California no longer 16 separate from the rest of the country. Here in 17 this extreme example, let's say it's more normal times you sort of expect California like about 18 that higher, that is another thing that is 19 unfortunate about California, but that's the way 20 21 life is. It would probably be like that, this time it goes way up, but it's going to converge. 22 23 Look at gasoline like this, if we plotted many different years, every September, we 24 would see gasoline in a relationship to crude. 25

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1 The variabilities on the near buys, there's a need 2 for gasoline now or refineries are constrained in 3 New York Harbor, but the long run is to get back 4 to an average. 5 COMMISSIONER GEESMAN: Can I get a bid б twelve weeks out? Let's say I want to lock in 7 my --DR. WILLIAMS: No, you can't, but you 8 9 can get an extremely close substitute to that, 10 which is New York Harbor gasoline --COMMISSIONER GEESMAN: Is there an arb 11 12 trade somewhere that --13 DR. WILLIAMS: There's going to be an 14 arb trade when you get to about a one month out, 15 and so --16 COMMISSIONER GEESMAN: Is that commonly 17 used? 18 DR. WILLIAMS: It seems so, it seems so, 19 but that gets into the private trading strategies 20 and not many stakeholders said that. I'm 21 basically arguing here that we would not expect a forward market in California gasoline to go much 22 23 beyond the logistic system anyway. Given that we have a very active forward 24 25 market already in New York Harbor gasoline, the

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world would be different -- we could have a very
 active California gasoline market twelve months
 out, but that would make superfluous the distance
 New York Harbor gasoline market.

5 COMMISSIONER GEESMAN: But I could
6 satisfy it in my hedging needs in the NYMEX
7 market?

DR. WILLIAMS: Yes. up to about one or 8 9 two months when the logistical constraints on 10 California make the distinction, and that's a very 11 important point. Indeed, that same idea applies 12 to the corn market in Japan, they don't hedge on 13 those cargos more than three months out because 14 that is the logistical reasons. If you wanted a 15 hedge as a importer of corn in Japan, you use the 16 Chicago Board of Trade twelve months out. It 17 seems to me this is a perfectly natural system.

I want to make a final point with these 18 forward prices from this same period. This is 19 20 another way of looking at these price spikes, this 21 is along this same dates I've shown here, August through early October. This is a crucial price 22 23 spike where I've now looked at Los Angeles prices versus U.S. Gulf. This is what we mean by a price 24 25 spike, the spot price went way up, but is that the

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1 2 relevant price for comparing California prices to U.S. Gulf prices? Yes and no.

The no part is you can't get U.S. Gulf 3 gasoline, yes it's not exactly the same grade, but 4 5 that is not quite the issue here, to California 6 immediately. It takes three weeks to four weeks, 7 so the relevant price to somebody selling gasoline into California from someplace else, is that one 8 9 month forward price, which I have plotted here. 10 That spread, while higher in this period, isn't 11 anywhere like this, and it is this spread that is 12 this spacial arbitrage spread. While this looks 13 like something was a little funny that day, most 14 days this is a reasonable spacial and one month 15 price differential.

16 An arbitrager, an importer, sees this 17 price, not this price. He'd love to get gasoline here in one day because he could take advantage of 18 that price, but he can't, it's this forward 19 market. It looks like to me that this forward 20 price is providing a reasonable spacial signal 21 too, if we take this as the price as importer is 22 23 seeing. If this were at fifty cents, I'd wonder about that because the tanker rates and so forth 24 would seem to be much smaller, but twenty to 25

1

thirty cents, is plausible.

2	I can't conclude that it should have
3	been twenty instead of twenty-two, but I can
4	conclude that this sixty isn't the relevant price
5	differential for an import. It's this forward
б	market, and that seems to be in line.
7	All of this is really just saying that
8	typically in the California market, the spot price
9	is higher than the forward, that there is a
10	backwardation in these markets, and that most of
11	the price spikes coincide with the spot rising far
12	above the forward, and that is a reasonable price
13	signal.
14	It is typical in this market to have a
15	backwardation, there are, however, contangos,
16	which is the forward is higher than the spot, and
17	those seem to coincide primarily with the build up
18	to the summer driving season and probably have
19	something to do with the spec changes. There
20	seems to be storage at this period.
21	In our stakeholder interviews, it was
22	clear that market participants noticed this
23	intertemporal price difference. Not all of them
24	had a lot of inventories that they could play with
25	or capacity, but they were all aware of these

prices, and some of them were adjusting their inventories. If they might have held three day average inventories, some days they held four, and sometimes two, and the two were when it was a backwardation, and the four was when it was a contango.

7 This price signal seems to have some affect, although we might have imagined it went 8 9 from zero to ten, it does go at least from two to 10 four. Put all these pieces together, it seems 11 like this forward market is having desirable price 12 signals to a pretty close approximation, at least 13 I conclude that. Other people may say, no, it is 14 off by a little bit, but the magnitude is what's 15 really important. It is not the existence of this 16 market, that is happening regardless.

Now, let's turn to the second phase, so even though I conclude for one that this forward market isn't obviously broken, it's still relevant to ask what would happen if the California Stage Agencies consolidated their purchases and perhaps made this a better functioning forward market.

23 I'll let Gregg say a little bit about24 that now.

25 MR. HAGGQUIST: I have a slide with all

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1 my conclusions, but I won't repeat them here.

2 Thank you, Dr. Williams.

In keeping with quoting the 3 philosophers, Wickenstein, the father of modern 4 5 semantics, said the job of a philosopher, in this 6 case the CEC, is to show the fly the way out of 7 the fly bottle. Having said everything we've just heard, we still look back and we have trade of 8 9 fifty cents a gallon above the rest of the country 10 for over a month, and that is \$600 M or \$700 M, so the fly is still in the bottle one could say. 11

12 One way to lead the fly out is to try to 13 stimulate this forward market, and what tool do we 14 have available. It was suggested that perhaps the 15 government purchase power that is already out 16 there might be used to, you know, jump start that 17 forward market if there was enough critical mass and if it could be done. That was sort of the 18 19 focus.

Having said that, in keeping with Dr. Wiliams' presentation, these stakeholder meetings were sort of geared from the refinery down to the street rather than the international side of things. It was a different focus, so we will hear more about those other things later, the real

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relationship to NYMEX and so forth outside of California.

2	The government contracts we discovered
3	are spread over about twenty different agencies in
4	California and different jurisdictions and
5	municipalities, so it is not one monolithic system
6	at all.

7 The service providers and the suppliers have drifted in the direction of small 8 9 independents rather than major oil companies. We 10 asked these service providers why they did it and why the other bigger companies did not do it, and 11 it is the nature of the business. It is the fact 12 13 that this business of servicing government 14 contracts is labor intensive, small lots 15 geographically dispersed over the state might 16 deliver to CHP, California Highway Patrol, in the 17 central urban areas or to Lake Arrowhead or Lake 18 Tahoe in small bobtail trucks to the forest agency on another delivery. It is pretty much a 19 scattered market and labor intensive market. 20

The current pricing system is really and contract system is led by the regional authorities about ten regions across the state, and the contracts tend to be three years in duration. Once you win it, you have it for three years, and

the pricing is linked to OPIS daily price, so if the CHP needs a delivery, they are going to pick it up on a contract basis, have it delivered to them on an OPIS related price for today, Monday, Tuesday, Wednesday, each day, depending on what day they lift.

7 The relationship to the spot market is quite important here because I said earlier the 8 9 spot market is formed by pipeline trades, and spot 10 market pops up or jumps or spikes when there is 11 disruption in the pipeline trade. A supplier 12 can't cover his obligations, has to go out and 13 buy, this pushes that pipeline market up 14 significantly, and with it goes the unbranded rack 15 price, the unbranded rack price, the merchant 16 refiners, from whom all of this government supply 17 is sourced. The government contracts are links to the spot market by way of the unbranded rack 18 19 prices.

They don't use the DTW, the Dealer Tank Wagon prices, they don't use the branded, the Exxons, the BP's, and the Chevrons, it is the unbranded market that governs what they pay. Important to whether we can get the fly out of the fly bottle is the size of this market.

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1 Is there enough critical mass to make a 2 difference? We discovered that it tends, I believe, it is maybe about less than \$5,000 3 barrels a day. It is less than one percent, it is 4 5 a very small volume, one tender a week perhaps, 6 one piece we say on the pipeline, 25,000 barrels. If we were to shift all the demand of all the 7 government agencies and aggregate it, that's what 8 9 we would have to work with. 10 Forward pricing pros and cons, we 11 wrestled with this because we said, well, can it 12 be done by simply changing the structure of the 13 contracts piecemeal, one by one, CHP, 14 municipalities, hospitals. Clearly, that would be 15 a bureaucratic nightmare, so we kind of abandoned 16 that concept, and also we considered the business 17 culture and he present operations of it. The nature of the companies that are servicing these 18 contracts, their business culture is get it to the 19 20 customer at today's price. They are not 21 speculating on the market, they are not looking at incoming cargos or forward markets. To tell them 22 23 or ask them to shift their horizon to the future, calls into play a whole new orientation that they 24 25 are not accustomed to.

1	We said okay, that being the case, what
2	if we aggregate all of the demand and do it on
3	behalf of the entire state as on the pipeline or
4	in some other form because this is the way big
5	companies in the private sector do things. These
6	headquarters will often aggregate at the risk for
7	the entire system, so to speak, and put on an
8	offsetting position as they call it. If we were
9	to aggregate the total government demand and go
10	out there and buy thirty days forward on a rolling
11	basis, so that it would sort of mirror what is
12	being picked up day to day, it should be a zero
13	sum game. It should be a zero sum game.
14	The purpose of it would not be to really
15	hedge the price, but rather to stimulate that
16	forward market. Would it serve the purpose and
17	what would you do with the gains and the losses
18	because against that forward price, some days you
19	would win and some days you would lose. Once
20	again, you've got questions of government
21	procedures and bureaucracy, you have to work that
22	out.
23	Would it serve the purpose? You know, I
24	think we reached the conclusion that it probably
25	isn't robust enough in volume. If it were a

1 bigger volume, then it may be a different story. 2 You could aggregate if it was 25,000 barrels a day or 50,000 barrels a day. What percentage is that 3 of what is already traded on the forward market. 4 5 If we say we are doing three, four, or five deals a day as a maximum, then we would bring in, б introduce into 25 percent, but that is not the 7 case. It's not that big of a volume. 8 9 At this point in time, it appears that 10 the fly is still in the bottle. If we are going to be looking at ways of stimulating the forward 11 12 market, we have to look in other directions. 13 Okay, Dr. Williams. 14 DR. WILLIAMS: When I started this 15 project with Gregg last fall, I rather hoped to be 16 standing here and making some statement, there is 17 some small technical detail about the forward market the way the logistics work that the players 18 19 all understand that there's some constraint on 20 this market as an institution, but they just can't seem to get together to solve some trading rule 21 that would only make it if the state could get in 22 23 with this example about redefining a contract, get everything started, and everything would be happy. 24 That would be a quite nice conclusion to present. 25

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1 We can't make that conclusion. We have 2 found instead that the California gasoline market 3 isn't broken in an obvious way. I guess that is good news, but it doesn't make for a strong 4 5 proposal, so instead it seems that while it is not б especially deep, it operates much as other forward markets do of a similar logistical issues. 7 The California forward prices appear to 8 9 be reasonable in comparison to NYMEX and other 10 crude markets, although sometimes they seem unreasonably volatile, they are still making 11 12 reasonable pricing signals. Most important, they 13 seem to be reasonable signals for storage and 14 input decisions, so it is not that anything is 15 broken.

Also, it doesn't seem that the state deals in a large lot size that will fundamentally transform this market, even though it is buying a lot of gasoline, so is everybody else in the state, and so the percentage ends up being quite small.

If the state would be adding about one trade per week, that would surely improve the liquidity but not very much, and it's unlikely to go on this virtuous circle. This assumes we could

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aggregate the state's trading. It might be wise for the state to be using some hedging instruments and buying forward and so forth, but if it did so, it would still have to convert all those trades to the small lot sizes of the individual deliveries, and shortly you would have to use paper trading on the forward market.

If there were a paper market already, 8 9 that might be wise, but we are not in a position 10 where the state can do that it seems to me. 11 There we conclude. Any questions? 12 PRESIDING MEMBER BOYD: Thank you, 13 gentlemen. In reading your report, I kind of 14 concluded that, well, I, too, entered this phase 15 thinking that we didn't have as much of a forward 16 market as you seemed to have discovered we do 17 have, and secondly, that gee maybe the state would make a difference, but the market's bigger and the 18 state is a tiny little ripple on the pond 19 20 apparently, and you're presentation here today 21 kind of reinforces that. I appreciate --DR. WILLIAMS: It would be nice if there 22 23 were a simpler solution, but there doesn't seem to be one, at least in this dimension. 24

25 PRESIDING MEMBER BOYD: As a long time

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1	member of the bureaucracy, I agree with you that
2	it would be difficult at best. Although I think I
3	would I will forward this to my friends in
4	General Services Department, we got to know them
5	well in the natural gas and electricity crisis,
б	the state does actually participate in the natural
7	gas market a little more. It might find some
8	little opportunities here, but not too much.
9	DR. WILLIAMS: It might make sense for
10	them just from a budgetary reason to be
11	participating in the gasoline futures market or
12	something, but that's a very different topic.
13	PRESIDING MEMBER BOYD: Its kind of
14	tough when you're broke too.
15	DR. WILLIAMS: Yes.
16	PRESIDING MEMBER BOYD: I appreciate
17	that very much what you've done here. I'd like to
18	throw the floor open for questions from anybody in
19	the audience and I neglected something in my
20	housekeeping chores at the beginning of this
21	meeting. Those of you listening in on the
22	webcast, if you have a question, you may e-mail
23	your questions to the following e-mail address,
24	lstamets, that's l-s-t-a-m-e-t-s@energy.state.caws
25	and Leigh Stamets will sometime during the day

1 read the question and put it to the forum, so a 2 little late start for this panel, but hopefully 3 people took note of that for the future. Anyway, questions from the folks here or listening in? 4 5 Well, you convinced everybody. Oh, here we go. MR. GEISKES: Thomas Geiskes with б 7 Stillwater. Dr. Williams, I heard you say that a trader would love to get the gasoline here in one 8 9 day. Would you think that's a role that the SFR 10 as proposed could fulfill? 11 DR. WILLIAMS: That gets into the 12 acquisition and dispersal rules of the SFR, why don't we hold that off to discussion this 13 14 afternoon, and I'll turn around for some questions 15 for you about that. 16 It is very clear that if there is 17 gasoline here, it's worth a lot, but it's not 18 clear whether it is to be made with a refinery or it's in a stockpile, or it could be imported 19 20 quickly, is worth more. It can't be imported 21 quickly or made quickly is probably why that price is so high, right? 22 23 MR. GEISKES: Then I had a forward question, which really is linked to these other 24 forward markets that you drew the comparison with. 25

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1 I think maybe the agricultural markets are natural 2 markets for forward trades because of the crop cycles. If almonds, for instance, had been 3 produced on a continued basis and shipped on a 4 5 continued basis, like gasoline, would there even have been a forward market such as similarly 6 7 traded commodity? DR. WILLIAMS: Probably not. Yes, it is 8

9 very much the crop cycle that is doing a lot of 10 this, and in a way that is a broader principal 11 about the logistics systems, right, broadly 12 defined. You can't grow more almonds this year, 13 that's a logistical constraint in some sense. The 14 reason we trade corn a year out has a lot to do 15 with that crop cycle, but in the broader category 16 of logistical constraints. 17 MR. STEVENSON: Dwight Stevenson, Tesoro. Question for Jeffrey Williams, would your 18 conclusions be any different if the size of the 19 trade were 5,000 barrels instead of 25,000 20 barrels? It is my understanding that the minimum 21 lot size on the pipeline is 5,000 barrels. 22 23 DR. WILLIAMS: The minimum lot size is, but the typical trade seems to be 25,000 barrels. 24 25 MR. STEVENSON: I'm not aware of any

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1 reason why a 5,000 barrel --

2	DR. WILLIAMS: There's not a particular
3	reason it couldn't, right, so
4	MR. STEVENSON: Okay. Do you have any
5	statistics on the new trading that is happening on
6	New York Mercantile access market?
7	DR. WILLIAMS: No, but I've been
8	following a little bit, there's this swap market
9	with California gasoline you are referring to,
10	right?
11	MR. STEVENSON: Yeah, based off the New
12	York Mercantile price, yeah.
13	DR. WILLIAMS: There's been no trade
14	yet.
15	MR. STEVENSON: There hasn't, okay.
16	PRESIDING MEMBER BOYD: Dr. Williams, I
17	guess one nagging question from me oh, you have
18	another question?
19	MR. STEVENSON: I'm sorry.
20	PRESIDING MEMBER BOYD: Go right ahead.
21	MR. STEVENSON: Yeah, they are showing a
22	price, but there's just no trades on it?
23	DR. WILLIAMS: Yeah, there's no open
24	interest, so I don't quite where they got a price
25	from.

1 MS. JONES: Could you clarify what that 2 product is?

3	DR. WILLIAMS: The New York Mercantile
4	Exchange has designed specific swap markets so you
5	can trade a differential California gasoline
6	versus other. In a way what they are selling the
7	product of their clearing system and their credit
8	constraints, so potentially traders in California
9	could enter that market and be quoted on NYMEX.
10	Since they have an electronic platform they can
11	offer a lot of these different specific, location
12	specific, swaps.
13	MS. JONES: What's the time?
14	DR. WILLIAMS: I think they can go out
15	four or five months, but there is no limit on
16	that, nobody has traded it yet, and that may be if
17	it is started traded a lot, more people would
18	trade it. It is that virtuous circle about these
19	markets, but it may also be that there are other
20	instruments out there that make that one
21	redundant. It's hard to tell those two reasons a
22	part. The fact is, no one has traded it, and
23	that's true of a lot of the other specific
24	products that they have offered like that.
25	PRESIDING MEMBER BOYD: The fact that

1 there's a little more of a market than we thought, 2 it there any correlation between the recent entry 3 of the Costco's and Safeways and larger organizations like that in the retail gasoline 4 5 business? Has that had any affect -б DR. WILLIAMS: From our stakeholder 7 meetings, there's no direct influence from them. They don't seem to be trading in this market 8 9 directly, but maybe there's an indirect affect. I 10 would perhaps pause it, but this is going to be 11 very hard to prove one way or the other that the 12 price spikes themselves has caused more forward 13 trading. 14 There is a certain circularity in that 15 reasoning that I am aware of, but I think it is 16 entirely possible. 17 COMMISSIONER GEESMAN: Have you seen an 18 increase in trades in the NYMEX? DR. WILLIAMS: Let's see, I have to put 19 20 statistics of open interest in my head, and I hope I remember them correctly. Somewhat, I think 21 NYMEX has had in gasoline increasing open interest 22 23 over the last few years, but it sure moves a lot. COMMISSIONER GEESMAN: Would you 24 25 correlate that to increased price volatility?

DR. WILLIAMS: Probably, it seems they are trading farther out which is a symptom of that too.

PRESIDING MEMBER BOYD: Dr. Verleger.
DR. VERLEGER: Yes, my name is Philip
Verleger, I'm BP Senior Counsel, Foreign
Relations. Jeff, excellent presentation, I can
see your book.

9 DR. WILLIAMS: Both of us had a part 10 here.

11 DR. VERLEGER: I can see your book on 12 the rational number of futures market. A couple 13 of points and then a question. Gasoline futures 14 trading is declining right now because the NYMEX 15 has refused to list a futures contract for after 16 December 2003. The reason they won't list it is 17 because there's now uncertainty between New York and New Jersey as to the oxygenated content and 18 whether it is ethanol or whether it is MTBE. 19

Just like California, this is a problem that the NYMEX has had in the past. I have testified as an extra for the NYMEX a couple of times. Open interest in volume in the NYMEX gasoline futures declined dramatically in 1995 to about 60,000 contracts from 150,000 when they were

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switching from conventional to a formulated
 gasoline while there was a significant debate over
 the deliverable futures contract.

That gets into a point when you talked about hedging, you had the wonderful graph, and you also had not just gasoline but crude oil, which goes out until 2008, which a firm could also use as a means of hedging because the margins are relatively steady going out.

DR. WILLIAMS: One reason I hesitated when you asked what is happening to NYMEX open interest, we talked about it as "a market", but in fact it is near buy contracts, medium term contracts, and the composition of trading in those changes a lot, and it is hard to generalize.

16 DR. VERLEGER: It's always seasonal peak 17 in the summer months and 100,000 contract roughly 18 right now, and it goes up and down. There's not 19 so many for October and November because there are 20 less likely to be spikes.

The questions I have, two. One, did you look at the size of the potential market for counties and school districts and so on because as I read your report, it is just looking at state agency forward demand, and if you look at hedging

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1 the IMF recommendations and so on, on hedging by 2 governments, it would seem that the counties have 3 as much incentive to hedge their demand and their 4 fairly substantial school bus demand. I have no 5 idea what that size of that market is.

6 DR. WILLIAMS: We looked a little bit at 7 that, enough to see that it is probably about the 8 same order of magnitude or individual police 9 departments versus the state police. There is 10 some there. If you aggregate it all, it matters 11 maybe 4 or 5 percent of the state gasoline demand.

12 DR. VERLEGER: It's another portion of 13 the market which might. The second question is 14 that we heard that we have small jobbers that have 15 trouble hedging. What I am trying to realize is 16 before I move back to California, I lived in New 17 England for three years, and in New England, any homeowner -- most homeowners use heating oil, and 18 19 any homeowner can buy a fixed price contract from 20 a relatively small jobber and they are buying smaller lots than the California Highway Patrol 21 was buying, and the majors moved out in 1980, and 22 23 it's all relatively small people. It's all linked by the NYMEX, with much greater basis risk, and I 24 25 am wondering why we don't see that development in

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1 California with the jobbers and so on doing that 2 here, whereas one sees a very robust and largely developed market. Interestingly where the number 3 of jobbers decreases because the economy is a 4 5 scale and the capital required to do these trades б grows, but, I mean, it is working there. What's the difference? 7 DR. WILLIAMS: I think there are two --8 9 DR. VERLEGER: Do you have any speculation? 10 DR. WILLIAMS: I think there are two 11 affects, Phil. One is that there were customers, 12 individual homeowners, wanting fuel oil, they 13 wanted a fixed price contract, and that would be 14 equivalent if various state agencies here decided 15 that for budgetary purposes, they would like that, 16 and they did the bidding contracts that way. They 17 haven't done that, so there isn't the backwards movement and all that. 18 The other part is that the typical fuel 19 20 oil dealers holding some inventories, so --21 DR. VERLEGER: Not any more. DR. WILLIAMS: He's doing something. 22 Well, none of these --23 DR. VERLEGER: No, it's moved to the 24 25 major terminals, sorry to correct you.

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1	DR. WILLIAMS: They still have the
2	potential to have an inventory, right? None of
3	these contractors with the state seem to ever be
4	particular inventory players. I don't know why
5	not, they are just not, but I think it is mostly
6	that the state if the state said we want to
7	sign a contract for this school year or something
8	like this or for a whole year a flat price, that
9	probably would cause different hedging instruments
10	to be used I feel. They don't do that.
11	Any questions for Gregg here please? I
12	guess we are finished.
13	PRESIDING MEMBER BOYD: Thank you very
14	much. Leigh, you had no questions? Okay. All
15	right, our next subject is going to be Permit
16	Streamlining for Petroleum Product Storage, Robert
17	Lanza and Mariella Cacho, sorry if I am butchering
18	the names. I've not met these people. Cacho, ICF
19	Consulting.
20	MR. LANZA: Good morning, I'm Robert
21	Lanza from ICF Consulting. My colleague is
22	Mariella Cacho, and we prepared this report on
23	Permit Streamlining for Petroleum Product Storage
24	Facilities.
25	What we are going to talk about is the

1	introduction to why we prepared the report, we
2	will go over the study methodology, the
3	description of a typical permitting process for
4	petroleum product storage facility, we'll go over
5	the CEQA process, and the California Permit
6	Streamlining Act.
7	We will talk about what we identified as
8	the critical path permits for permitting petroleum
9	product storage facilities. We will talk about
10	the responses to the interviews we conducted over
11	the course of the project, and we will also
12	conclude with some recommendations.
13	The way we started this is that we
14	identified that there were claims that the
15	permitting process for petroleum product storage
16	facilities was contributing to a shortage of
17	storage capacity in the state, and the California
18	Energy Commission requested that we look into the
19	permitting process and interview permit applicants
20	and permitting agencies to identify whether the
21	claims that the permitting was affecting the
22	storage capacity, were in fact the case.
23	What we did is we attempted in
24	interviewing the applicants and interviewing the
25	permitting agencies, and investigating the

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1	permitting process, to identify bottlenecks in the
2	process and also to develop recommendations as to
3	how some of those bottlenecks could be removed and
4	how some of the redundancies in the permitting
5	process could be addressed.
б	The study methodology was conducted in
7	three phases. The first phase is that we
8	interviewed permit applicants and representatives
9	of permitting agencies. These were applicants and
10	agencies that were either recently in or currently
11	involved in permitting petroleum product storage
12	facilities.
13	Based on the interviews, we also
14	researched the regulatory process and the
15	permitting process, both at the regional level for
16	air permits and at the local level for building
17	permits, and other local permits that are issued
18	for construction and expansion in storage
19	facilities.
20	The third part of the process is the
21	final report that we prepared with our conclusions
22	and recommendations.
23	We contacted a large number of
24	applicants in terms of people that were operating
25	petroleum product storage facilities. We also
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1 contacted a number of regulatory agencies that 2 issue permits. Not all of the people here listed 3 actually got back to us with information, most of the people that we talked to wanted to remain 4 5 confidential, most of them are in the permitting б process or recently concluded the permitting 7 process, so they wanted to not be identified, so we haven't identified, particularly in the report, 8 9 who we talked to in most cases.

10 In most cases, two or three people told 11 us the same thing, in any case, so we came to the 12 point where we didn't have to identify individuals 13 in the report.

14 The interviewees were self selected, 15 anybody who got back to us with information got 16 themselves into the report. The people that we 17 contacted that didn't provide information chose 18 not to do so.

What we did was we put together a couple of questionnaires, one for permit applicants and one for permitting agencies, and we asked them about the process, to identify bottlenecks, to identify what they thought were the critical paths to getting the permit for new facilities for expansion. We asked them about the timing of the

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1 permitting process.

2 We asked them also about the cost of the permitting process, we did not get a lot of 3 information from applicants concerning the cost of 4 5 the process. A lot of the cost information they said was proprietary, they told us that they would 6 7 talk about cost in terms of the percentage of the overall project cost, but that was the extent of 8 9 the information that we could get concerning the 10 cost of the permitting process. 11 Most of the permitting cost was in the 12 form of consultant fees in terms of internal cost 13 for preparing applications. We found that the 14 permit fees paid the agencies for air permits, 15 local building permits, etc. were not a 16 significant percentage of the overall cost to the 17 applicant of getting a permit. 18 We also asked similar questions to the 19 permitting agency in terms of the types of permits 20 that are issued for petroleum product storage 21 facilities, we asked them about the permitting 22 process in time line, we talked to them

concerning, you know, the factors that influenced
the duration of the permitting process and the
outcome of the permitting process.

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1	Several of the agencies provided very
2	detailed information to us concerning what they do
3	in terms of reviewing a permit application at the
4	local government level for permitting and
5	expansion or permitting a new facility.
6	We also talked about permit agency
7	staffing with respect to do the permit agencies
8	have enough staff to review the applications that
9	they get. We found that is was a problem at the
10	local government level with respect to the
11	application for petroleum product storage facility
12	being a very large and detailed engineering
13	document.
14	At the local level for building permits
15	and conditional use permits for zoning, we found

16 that the agencies did not necessarily have the 17 staff they needed to review the applications in a 18 timely manner.

19We talked to a number of the agencies20concerning the typical permitting process and we21also did some research into the regulations that22drive the permitting process for storage23facilities, and we identified a large number of24permitting entities that can be involved in25writing permits for existing facility expansions

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1 and for new facilities.

2	The major ones are the local government
3	organizations that issue building permits, that
4	issue conditional use permits for zoning, that
5	issue hazardous materials permits, and other
б	permits at the local government level. The other
7	significant permitting agencies, of course, are
8	the air permitting districts within the state
9	which issue air permits for the facilities.
10	Depending upon where the facility is
11	located, there can be a large number of permitting
12	agencies involved. There are, as you are aware, a
13	lot of local government entities and also state
14	government entities that can deal with coastal
15	zoning issues, that can deal with land use issues,
16	etc. Some of them are listed here.
17	This is a depiction of the typical
18	permitting process at the local government level.
19	We identified some typical timelines for preparing
20	local application, and this slide depicts the
21	process for coming to the point where you have a
22	completed permit application, and you can see the
23	steps here that are kind of complicated.
24	You have the preapplication process,
25	which is where the applicant and the local

permitting agency, at least theoretically, have a
 preapplication meeting to discuss the nature of
 the project and to identify the ground rules and
 regulatory requirements for the project.

5 What we've found is this doesn't happen in every case, that the communications process 6 7 between the local governments and the permit agents and the permit applicant is not always 8 9 occurring at an early enough point in the process. 10 The applicants going and doing things with respect 11 to preparing the proposed facility without 12 necessarily knowing what the permit agency is 13 going to want or what the permit agency expects to 14 get in the form of a permit application.

15 One of the things we concluded is that 16 this preapplication process needs to occur very 17 early in the process, almost at the inception of when the permit applicant decides we need to do 18 19 something with respect to an expansion or with 20 respect to a new facility. That communication 21 process with the permitting agency should occur almost immediately at that point. 22

23 We also identified a similar situation 24 with respect to stakeholder communications, that 25 the initial part of the process is very critical

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to get everybody on the same page.

2 Here you have the remainder of the process, a local planning commission is going to 3 review the application with respect to land use 4 5 permits with respect to building permits, with 6 respect to conditional use permits. A conditional 7 use permit is where the land that the proposed facility would be situated on is not zoned for 8 9 heavy industrial use, and we found that also to be 10 the situation where land that is zoned for heavy 11 industrial use, which is what you would want to 12 put a petroleum product storage facility on is, 13 not necessarily available. 14 Even with respect to expansions of 15 existing facilities, the existing facilities may 16 not be surrounded by land that is appropriately 17 zoned for the expansion, and that leads to the 18 requirement for a conditional use permit.

A conditional use permit doesn't change the zoning of the property, it just allows the facility to be built on a piece of property that isn't zoned for heavy industry. We found that the conditional use permit is one of the critical path permits that is causing bottlenecks with respect to the permitting process.
1	The second part of the process, after
2	you get to the completeness determination where
3	you have a complete permit, is you enter into the
4	CEQA process. You have three things that you can
5	have in the CEQA process. You can have a negative
6	declaration, a notice of exemption, or an
7	environmental impact report.
8	Potentially, some of the expansions of
9	existing facilities would potentially be exempt
10	from CEQA, and you can have a notice of exemption
11	issued for those types of processes.
12	You can also have a negative declaration
13	where you have potential impact, but that impact
14	can be mitigated. Most facilities, however,
15	especially existing facilities especially new
16	facilities, are going to be subject to the full
17	environmental impact report process.
18	You will see that there are timelines
19	here, these timelines are typically timelines that
20	we identified for the process. These timelines do
21	not necessarily conform with the California Permit
22	Streamlining Act, which covers the CEQA process.
23	We'll talk about that in the next couple of
24	slides.
25	With respect to the application

1 completeness determination, the process for 2 determining completeness of an application is the 3 agency receives a permit application, within 30 days the agency should decide whether the permit 4 5 application is complete, and what we found is that 6 there isn't necessarily an understanding between the permitting agency and the applicant as to what 7 constitutes a complete application. 8 9 That is one of the reasons why the 10 preapplication discussions are very important so 11 that the ground rules are set between the 12 applicant and the agency as to what the applicant 13 should provide in the application. 14 Theoretically, if no written 15 determination is made concerning whether the 16 application is complete, the application is deemed 17 complete. We found that this isn't happening in practice, but at least theoretically, this is what 18 is supposed to occur. 19 20 The applicant, if the application is 21 determined to be incomplete, the applicant can resubmit the application and the same time periods 22 23 apply to the first and second submittals. If the application is still rejected 24 after the second resubmittal, the completeness 25

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1 determination rejection can be appealed by the 2 applicant. At that point, a written decision should be made by the agency within 60 days as to 3 whether or not the application is complete. 4 5 Again, this is an area where the California Permit 6 Streamlining Acts sets timelines that should be 7 applied to the determination of the completeness of an application. 8 9 We found that two important acts that 10 govern the permitting process are, of course, the 11 CEQA process and the California Permit 12 Streamlining Act. The CEQA process is supposed to 13 insure that state and local agencies consider 14 environmental impacts of projects. Projects that 15 are not exempt are -- excuse me, projects that are 16 not exempt, should be analyzed by a lead agency to 17 determine the environmental impacts. The CEQA process applies to the air 18 19 permit, the authority to construct process, and 20 also to the conditional use permit process. Those are the two processes that we found to be the 21 critical paths with respect to permitting 22 23 petroleum product storage facilities. A lead agency is determined in part by 24 25 what types of permits are required for the

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1 facility. In the event that a local permit needs 2 to be issued such as a conditional use permit, the 3 local agency issuing the conditional use permit, will become the lead agency with respect to the 4 5 sequel process. If the local process is not 6 needed then the local air district with become the 7 lead agency with respect to the CEQA process. A lead agency is the agency that has 8 9 principal responsibility for the entire process. 10 There are also responsible agencies, they are 11 responsible for issuing specific permits for the 12 facility. 13 Under the CEQA process, the lead agency 14 is required to prepare either a notice of 15 exemption, if the project is exempt from CEQA, the 16 negative declaration or an environmental report. 17 After each one of these has been 18 completed, they are subject to public review, process public hearings, and appeals. We found 19 20 that the appeals process is another area of 21 bottleneck with respect to getting a permit for a storage facility. What we've found is that the 22 23 appeals process is not covered by any existing timelines. The appeals process can theoretically 24 go on indefinitely. What we have also found is 25

1 that local agencies can get appeals from a 2 stakeholder for a particular issue. They go 3 through the appeals process. The stakeholder can then come back with a second issue to start 4 5 appeals process over again. What we have found is 6 that there is no controls, necessarily, on how 7 long the appeals process can last. The other act that controls the 8 9 permitting process, at least theoretically, is the 10 Permit Streamlining Act. The Permit Streamlining 11 Act sets timelines for approvals of permits by 12 public agencies. This includes the CEQA process, 13 includes air permits, and it includes local 14 permits that are issued. 15 When the California Permit Streamlining 16 Act was initiated, there was also initiated an 17 Office of Permit Assistance within the state which was supposed to coordinate the implementation of 18 the act. What we have found is that he Office of 19 20 Permit Assistance formerly had 14 locations 21 throughout the state, but currently is down to only one location, and that agency is apparently 22 23 being closed. We see that there is a particular agency 24 within the state that is designated to implement 25

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1 the Permit Streamlining Act. What we have found, 2 in terms of doing the interviews, is that many of the people that we have interviewed are unfamiliar 3 with the act, and several people that we have 4 5 interviewed believed that the act contained б guidelines within the statutory requirements for 7 timelines for permits. What we have found is that the Permit 8 9 Streamlining Act is not necessarily being 10 implemented thoroughly throughout the state. That 11 is one of the things that constitutes one of our 12 recommendations. With respect to establishing the 13 Permit Streamlining Act is an act that does, in 14 fact, control how the permit process is conducted. 15 The Permit Streamlining Act applies to 16 permits where local agency discretion is involved. 17 These include variances, the conditional use permit that we talked about, subdivision plans, 18 19 and other things relating to land use. 20 Actions by local agencies where agency discretion is not involved, such as zoning 21 ordinances, are not covered by the Permit 22 23 Streamlining Act. The Permit Streamlining Act also as we discussed does not apply to the appeals 24 process which is something, you know, that can 25

extend the permit timeline far beyond what the
 Permit Streamlining Act anticipates will occur.

Under the Permit Streamlining Act, this 3 is what the CEQA timeline looks like. When you 4 5 have a complete application, the first thing that 6 is prepared is an initial study which determines 7 the applicability of CEQA. Either you determine notice of exemption of an exempt project, a 8 9 negative declaration for a project with which the 10 environmental impacts can be mitigated, or a full 11 environmental impact report. These timelines that 12 you see are the timelines that are established by 13 the Permit Streamlining Act for the CEQA process. 14 As I said, these timelines don't 15 necessarily correspond to what the applicant's 16 informed us as to what they are experiencing with 17 respect to going through the CEQA process for petroleum product storage facility. 18 MS. JONES: Is there a timeline 19 20 associated with the initial study? 21 MS.CACHO: Thirty days. MR. LANZA: Yes, the timeline for the 22 23 initial study is ten days. I'm sorry, thirty 24 days. Thank you. 25 Based on our interviews and based upon

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researching the regulatory process, we found that there were several critical paths to permitting of petroleum product storage facility. These include the air permit process, the land use permit process, and the conditional use permit for siting and expanding facilities on land that is not zoned for heavy industrial use.

8 What we have found is that there is a 9 geographic distribution of which critical path 10 most affects the process. In Southern California, 11 the air permit process is the process that most 12 affects how long it takes to get all the permits 13 in place for a facility.

14 In the Bay Area, it's not the air permit 15 process that is the controlling factor, it is more 16 the of the building permit and land use permit 17 process. That is partially a function of the regulations, the South Coast air regulations are 18 more stringent in the Bay Area, and the Bay Area 19 20 land use regulations appear to be more stringent than the land use regulations in Southern 21 California. 22

23 We found, depending on the geographic 24 location of the applicant, they were telling us 25 different things concerning what permits they were

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1 having the most difficult time procuring.

2 There are a lot of other permits that 3 are needed for petroleum product storage facility. We found that most of those do not represent a 4 5 critical path permit, that those permits are б relatively routine, those include the construction 7 related permits, fire code permits, etc. Those are things that the permit applicants said were 8 9 relatively routine permits to get, and that the 10 air permits and the conditional use permits really 11 control the process.

12 With respect to land use permits, the 13 conditional use permit was the permit that most of 14 the applicants that we talked to said was the most 15 significant problem with respect to going through 16 the entire process.

17 One of the things that we found is that land was zoned heavy industrial when existing 18 facilities were sited, may have been down zoned 19 20 over time, and when the existing facility wants to expand, and they are no longer surrounded by heavy 21 industrial use zoned property. Therefore, they 22 23 have to go through the conditional use permit process. If the land around the facility had not 24 been rezoned to light industrial or elsewhere, 25

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1	then a conditional use permit would not be
2	required, and the number of local permits that
3	would be needed would not be significant.
4	One of the other things about
5	conditional use permits, being that they happen at
6	the local level, they are more subject to
7	neighborhood opposition than an air permit might
8	be, which happens at the district level.
9	One of the things that we concluded is
10	that to the extent possible, conditional use
11	permits, if you can avoid having to get a
12	conditional use permit, you can speed up the
13	permit process pretty significantly.
14	The other thing applicants told us with
15	respect to the local permitting process is that
16	building permits can be a significant source of
17	delay in the process. These include zoning
18	permits, safety permits, and other things that
19	have to do with local ordinances and regulations.
20	A lot of the applicants told us, 30
21	percent of them told us that they had a problem
22	with the process for issuing building permits
23	because they would be submitting building permit
24	applications to local agencies, and local agencies
25	would come back after a significant amount of

1 time, indicate to them that a certain part of the 2 application that they needed was no longer --3 could no longer be found.

Now the permitting agencies conversely 4 5 told us that in a lot of cases, the applicants б aren't submitting complete applications, so we 7 identified as part of the process, that the agencies and the permit applicants are not 8 9 necessarily communicating with one another 10 concerning what is needed for a complete 11 application on the local permit side, and also the 12 applicants, at least, identified that the agencies 13 are not necessarily managing the permit process in 14 an efficient manner with respect to having to come 15 back to them, you know, two or three months after 16 the process begins and ask for another particular 17 piece of information that the applicant believes has already been submitted. 18 The other thing that the applicants 19 20 identified is that with respect to local agencies, they are getting a very large engineering 21 application. The applicants identified the need 22 23 for training of local agencies with respect to how to review these applications from a technical 24 25 standpoint with respect to petroleum product

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1 issues.

2 The other things that the applicants identified was a lack of understanding on the part 3 of the local agencies in terms of what codes and 4 5 ordinances apply to petroleum product storage 6 facilities. The permitting agencies also told us 7 the same thing, that the applicants don't understand the applicability of local codes and 8 9 regulations. 10 We identified a communications problem 11 with respect to both the applicants and agencies, 12 not necessarily understanding the process. 13 With respect to air permits, air permits 14 were another permit that represented a critical 15 path with respect to getting all the permits in 16 place for a petroleum product storage facility. 17 In general, any expansion of an existing 18 facility or siting of a new facility will require an air permit. The three principal parts of the 19 20 process with respect to permitting timeline we 21 found were the best available control technology 22 requirements, new source review requirements, and 23 also emission reduction credits. We found the applicants indicated that 24 the best available control technology is what they 25

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1 described as a moving target that they could enter 2 the process with some understanding of best available control technology, and that could 3 change as the permit process progresses. That is 4 5 something where when you are applying best б available control technology, you are basically 7 applying an engineering design. Two or three months into the process, that engineering design 8 9 target changes, that can create a lot of delays 10 with respect to having to redesign part of the 11 facility.

12 The other thing applicants mentioned to 13 us is that the new source review definitions of 14 deminimus levels are not necessarily clearly 15 defined and clearly understood, so they would go 16 into the process with some understanding of what 17 the new source deminimus level would be, and that would be redefined or reinterpreted as the process 18 19 progressed.

20 Based upon interviews with the 21 applicants, this is the information they provided 22 to us concerning their actual experiences with 23 respect to how long it takes to get each of these 24 critical path permits. The darker lines indicate 25 the minimums that the applicants indicated to us,

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and the lighter lines indicate the maximum time
 that the applicants indicated was required to
 obtain a permit.

Part of the variability here is the type 4 5 of facility that is being permitted, whether it is б an existing facility or an expansion, but you can also see there is quite a bit of variability here. 7 One of the things we identified is that 8 9 the extent to which there is uncertainty with 10 respect to the permitting process, the applicants 11 are somewhat less likely to take actions with 12 respect to siting facilities and expanding 13 facilities. The more uncertainty there is with 14 respect to how long the permitting process will 15 take, you know, from a financial standpoint there, 16 trying to plan when they are going to get the 17 facility on line, they can't necessarily put a series of error bars around that because of the 18 19 fact that large parts of the process are 20 uncertain.

21 COMMISSIONER GEESMAN: If I look at your 22 chart there, it would seem that despite the other 23 things that you have said about the air permits, 24 the timing uncertainty seems to be less as it 25 relates to the authority to construct, than with

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respect to permits that may largely be subject to local government decision making.

MR. LANZA: That's certainly one of our 3 findings, but again, there is some geographic 4 5 differences here with respect to how things occur 6 in Southern California versus how things occur in 7 the Bay Area and Northern California, but, yes, the local permits do have an extended timeline. 8 9 That is in the applicant's information, largely 10 because of the way the appeal process is operated 11 rather than just how long it takes to get a 12 complete application and an initial determination. 13 Once they enter in the appeals process, 14 the level of uncertainty increases pretty 15 dramatically. 16 COMMISSIONER GEESMAN: Is there the same 17 concern about staffing levels or staffing capabilities at the air districts compared to 18 19 local governments? 20 MR. LANZA: There's some what less concern about capabilities, there's a similar but 21 not as serious concern about staffing levels. 22 23 What we have found with respect to the applicants, is that the air districts have more of a 24 25 background in petroleum issues because they do

petroleum issues more routinely than a local
 government will.

A local government might only see one of 3 these or two of these where the district see them 4 5 more frequently, so the capabilities we didn't б have as much input with respect to the air 7 district, but certainly staffing levels are a universal problem. 8 9 COMMISSIONER GEESMAN: In general, what 10 number of project applications are we talking 11 about, say per year? 12 MR. LANZA: We didn't look into the 13 total number of applications, what we did here was 14 a survey, and not everyone we talked to got back 15 to us. Most of the people we talked to from the 16 applicant side had gone through one or two of 17 these processes recently, and that is the information they provided with respect to the one 18 19 or two permit processes that they had gone 20 through. 21 We found in some cases for some of the local agencies that they had only gone through 22 this once. 23 COMMISSIONER GEESMAN: Thank you. 24 25 MS. BAKER: What are the two different

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1 grades there in the -- you've got two different --

2 MR. LANZA: The darker color is the 3 minimum timelines that the applicants described to 4 us with respect to how long the process takes, and 5 the lighter lines are the maximum timelines that 6 the applicants experience in getting the various 7 applications completed and permits issued.

8 We interviewed both applicants and 9 permitting agencies and we used slightly different 10 questions as we described previously as to what 11 kind of information we were trying to get from 12 them, and with respect to the applicants, the 13 applicants had quite a bit to say concerning the 14 land use permitting process.

15 They identified on the part of the 16 agency's lack of understanding of CEQA 17 applicability. One of the things they said is that in their view, the local agencies always come 18 out of the gate assuming that every project, 19 20 whether it be an expansion or new facility 21 requires a full EIR, and that is not necessarily the case. 22

23 We also found some of the applicants 24 told us that the agencies were indicating that we 25 know your particular project might not require a

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1 full EIR, but if we make a negative determination, 2 then that could be appealed, so if you just go 3 into the full EIR process, then you could perhaps avoid one round of appeals. What they are doing 4 5 is kind of leap frogging over the negative б declaration or recommending that process occur to try to avoid one round of the appeals process, and 7 again, the appeals process is a very uncertain 8 9 thing.

10 We are finding that the applicants in 11 some cases are indicating that EIR's are being 12 suggested for projects that they might not be 13 required for.

Again, the applicants also mentioned to us, particularly at the local level, that agency staff are not experienced in dealing with applications that have large amounts of engineering drawings that involved petroleum storage issues.

The other thing that the applicants pointed to is a duplication of effort with respect tot he environmental studies. One of the things that we found is that the local agencies will contract with a contractor to prepare an EIR, and in order to influence the schedule and influence

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the permitting process, the applicant is also contracting with a different consultant to prepare an EIR. In some cases we are seeing that two EIR's are being prepared for one particular project by two different consulting firms, both ultimately funded by the applicant.

7 An EIR for a full scale new facility could cost \$250,000, so we are finding a large 8 9 duplication of effort in some cases with respect 10 to preparation of EIR's. That is something that we recommend that be looked into with respect to 11 12 how to streamline the process so that in all 13 cases, one EIR rather than two EIR's be prepared 14 for a particular project.

The other thing that we found the 15 16 applicants told us is that, you know, they have 17 had to change the scope of their project pretty far down in the permitting process with respect to 18 the agencies coming back to them and asking for 19 20 things that the applicant says they didn't ask for at the beginning of the process. Again, we are 21 back again to the communication issue with the 22 23 applicant and the agency are not sitting down at the beginning of the process and setting out the 24 25 ground rules as to what is it that is going to be

1 2 required with respect to getting a complete application and getting a permit.

3 The Permit Streamlining Act actually addresses this issue, and says that the permitting 4 5 agencies are supposed to develop check lists as to what goes into an application and how the б application will be reviewed. We are finding that 7 this is not necessarily being done with respect 8 9 to, you know, the agencies communicating with the 10 applicants with respect to setting up what goes 11 into an application, what are the criteria for 12 completeness, and what are the criteria for 13 getting a permit.

14 On the part of the agencies, the 15 agencies also commented that they did not think 16 that the applicants had a full understanding of 17 CEQA applicability. The agencies seem to be 18 defaulting toward requiring an EIR for projects even when an EIR may not be needed. Some of their 19 comments in the interviews indicated that was the 20 21 case.

They also indicated, you know, fairly universally that one of the problems with the process is that applicants don't submit complete applications, and that they have to go back and

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continually ask for additional pieces of
 information in order to get what the agency
 considers to be a complete application.

With respect to building permits, again, a similar comment from the applicants concerning a lack of understanding concerning the applicability and interpretation of local codes. They also indicated that there was redundancy with respect to how the review process is conducted.

10 In general, what we found is that local 11 agencies are supposed to form a design review 12 committee, which involves all of the appropriate 13 departments within the local government to review 14 the application. What the applicants are telling 15 us is that design review committee is not 16 necessarily all encompassing. Where at some point 17 in the process, one agency department that was not part of the process originally, is entering the 18 process and saying well, okay, we have these 19 20 issues concerning the application where they were 21 not part of the initial design review committee. The applicants also told us that at 22 23 times they have gotten into complex negotiations with the local governments concerning 24 applicability of codes. Again, you know, part of 25

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the process here is that there seems to be a lack
 of understanding on the part of the agency and on
 the part of the applicant concerning how the codes
 apply to petroleum product storage facilities.

5 The reason for this might be that the 6 codes involved are not necessarily written for a 7 petroleum products storage facility, they might be 8 general regulations that the agency is trying to 9 apply to petroleum product storage facility. That 10 creates some gray areas that need to be 11 negotiated.

12 The applicants also indicated that in 13 some cases, agencies do set timelines for how the 14 permit process is going to occur and then they 15 don't follow them, which again, if you are 16 planning a project, and the agency indicates 17 there's a timeline for permitting, and then that timeline is allowed to slip, that makes the 18 19 planning process for purposes of constructing a 20 facility that much more difficult.

21 With respect to the agencies, the 22 agencies came back with the same comment on the 23 part of the applicant with respect to 24 understanding of the process. The agencies also 25 indicated that, in their view, the early contact

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between the applicant and the agency is critical
 with respect to avoiding issues coming up, you
 know, during the permitting process.

With the respect to air permits, there were comments concerning agency staffing and training more in with respect to the number of staff that the agency has to review the applications.

9 One of the things that the applicants 10 commented on with respect to air permits is that in some cases the air district is sending the 11 12 applications out to contractors for review. The 13 contractors in some cases, according to the 14 applicants, are coming back with comments that are 15 outside the scope of the project and comments that 16 the air district themselves would not necessarily 17 have come back with.

18 The applicants think that the consultant 19 reviews, in some cases, expands the scope of the 20 project.

21 COMMISSIONER GEESMAN: That comment
22 applies either to the Bay Area District or the
23 South Coast District or both?
24 MR. LANZA: I think that comment applies
25 to both.

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1 MS. CACHO: Mostly the South Coast. 2 MR. LANZA: Mostly to the South Coast. COMMISSIONER GEESMAN: Any other 3 districts included in that comment, San Joaquin, 4 5 or --MS. CACHO: San Diego. б 7 COMMISSIONER GEESMAN: San Diego. MR. LANZA: San Diego, yes. 8 9 COMMISSIONER GEESMAN: Thank you. 10 MR. LANZA: The other comment that the applicants had concerning air permits is that they 11 12 indicated some uncertainty with respect to 13 interpretation of the new source review deminimus 14 rules. Again, that is something that affects the 15 permit process when the interpretation changes 16 over time and is not fully set out early in the 17 process. 18 The applicants also had the same comment

19 concerning BACT issues. In a number of cases, the 20 applicants told us that they did not have full 21 approval of their BACT, and they are going through 22 the permitting process, and in some cases the 23 applicants had to initiate legal action with the 24 agency to get their BACT reviewed and approved as 25 the process was going on, rather than the

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situation that you would like to have where BACT
 is approved at the beginning of the process
 because BACT is a design issue.

When you have a question concerning 4 5 interpretation of BACT, after you have gone through your first round of your permit 6 application, that didn't necessarily involve 7 design changes in your facility. That is 8 9 something you don't necessarily want to have with 10 respect to having a permitting timeline that 11 everybody agrees to. 12 With respect to air permits, they are 13 seeing in some cases that companies are applying 14 technologies, specifically to their facilities, in 15 order to create an emission reduction credits. 16 Those extensively voluntary technologies that are 17 being applied for the purposes of generating 18 emission reduction credits, are becoming BACT for everyone, even though they are being applied on a 19 voluntary basis. That is something that can also 20 21 affect the permitting process. Those sorts of interpretations change as the permit process is 22 23 going on.

24The other thing the agencies comment25that the applicants commented on is that the

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agencies could not necessarily provide
 documentation of why they thought BACT was what it
 was.

Again, the worse case scenario here, is 4 5 that the agency and the applicant get into б litigation concerning the definition of BACT 7 during the permitting process because there is no firm documentation on the part of the agency with 8 9 respect to what BACT actually is. 10 On the agency side, the agencies also commented with respect to staffing issues that 11 12 they don't have the staff they need and don't have 13 funding to increase the amount of staff they have. 14 They also commented that they have 15 trained and experienced staff, but they cannot 16 necessarily keep them within the agency. That 17 they sometimes go elsewhere, and that's a funding 18 problem also. The South Coast District also gave us 19 20 information concerning their permit streamlining 21 task they issued in 1999 with respect to improving the permitting process. They developed a number 22 23 of recommendations, a lot of which were

24 implemented. These include standardizing the 25 permit applications, improving interaction with

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1	the air district permitting entities, and the
2	other departments within the district.
3	They also established a permit by rule
4	for certain types of permits, which also
5	streamline the process. They also initiated a
6	prioritization of permits for review, so that they
7	examine all the permits and prioritize them with
8	respect to which ones get reviewed first.
9	They also established a permit ombudsman
10	with respect to addressing issues with the
11	permitting process as they arise.
12	MS. JONES: Excuse me, it says that
13	timelines were improved. Do you know the
14	magnitude of that?
15	MR. LANZA: We don't. We don't have any
16	information from them concerning the numbers.
17	They told us that permitting timelines were
18	improved, but they weren't able to give us any
19	quantitative information concerning that.
20	We developed a number of recommendations
21	concerning the interview process and concerning
22	our research process. Our first recommendation,
23	which is kind of a universal one, is concerning
24	staff training and technical assistance at the
25	local level and also at the air district level.

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1	Primarily at the local level, the
2	applicants identified the need for training with
3	respect to petroleum product storage facility
4	issues with respect to local agencies reviewing
5	permit applications.
6	Further recommendation that we had was
7	with respect to discretionary decision making on
8	the part of local jurisdictions. One of the
9	things we found was that interpretations of codes
10	and ordinances varied quite a bit between local
11	jurisdictions and that's not necessarily because
12	the ordinances and codes themselves differ. It
13	has much to do with the people that are
14	interpreting them.
15	One of the things that we are
16	recommending is that some guidelines be developed
17	concerning how local governments interpret codes
18	and ordinances with respect to discretionary
19	decisions, so that there is some boundaries in
20	which the local governments can function.
21	The other recommendation we had with
22	respect to the environmental review process under
23	CEQA is that there should be an investigation as
24	to methods to eliminate the practice of having two
25	EIR's or two other environmental reviews being

prepared for the same project, both funded by the
 applicant involving two different consultants.

With respect to that process, there are methods of doing so where one environmental impact report or other document could be prepared under the jurisdiction of the agency funded by the applicant, and all parties are involved in that process rather than having two parallel processes going on at the same time.

10 Our view here is not to limit, you know, 11 the amount of public input with respect to the 12 CEQA process, but to streamline the process such 13 that only one set of reviews are occurring rather 14 than two.

15 The other series of recommendations we 16 have is concerning, you know, establishing 17 timelines and ground rules for the permitting 18 process early in the process with respect to 19 communications between the applicant and the 20 permitting agencies.

This would involve all the permitting agencies under the preview of the lead agency, so that ground rules for what constitutes a complete application, what is the anticipated timeline for the completeness determination, and the

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1 anticipated timeline for issuance of a permit are 2 understood in advance by both parties. Also, the amount of information that is required by the 3 applicant and the types of information are also 4 5 understood as the process starts, rather than 6 additional interpretations and additional 7 questions concerning the process as they arise as the process goes forward. 8

9 The other thing we are recommending, and 10 this may be out of scope because it is a judicial 11 process, is how the appeals process works, 12 particularly the instances that the applicants 13 provided to us concerning multiple appeals where 14 stakeholders are entering the appeals process for 15 a particular issue, the appeal process concludes, 16 then they come back into the process with a 17 different issue, actually going back into the appeal process more than once. That is something 18 19 that may need to be addressed at the judicial 20 level, but, you know, enough of the applicants 21 indicated that this was a situation that is something that may need to be addressed. 22

23 Another thing that we are recommending 24 with respect to permit streamlining is to create 25 situations where conditional use permits can be

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1 voided, and the way to do that is to create 2 additional heavy industrially zoned property that new facilities can be constructed on or existing 3 facilities can be expanded. If you are going from 4 5 heavy industrial zoned land to land that isn't zoned heavy industrial, you need a conditional use 6 7 permit. That is something that the applicant pretty universally, who had been involved in the 8 9 process, said that was something that was very 10 time consuming and had a lot of uncertainties 11 associated with is. In the event that those types 12 of permits can be avoided, that would streamline 13 the process to some great extent. 14 Another recommendation we had with 15 respect to ordinances is that the ordinances at 16 the local level do not necessarily explicitly 17 refer to petroleum product storage facilities or how local ordinances apply to them. That is a 18 comment that we had from both the applicants and 19 20 the agencies concerning a lack of understanding of the applicability of local codes and ordinances to 21 petroleum product storage facilities. 22 23 If some effort can be made to

24 standardize how those codes and ordinances apply 25 and to better define how they apply at the local

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1	level, then you can eliminate some of the
2	uncertainties when the applicant comes into the
3	agency and says we want to do "X" and "X" is not
4	necessarily explicitly identified with respect to
5	the codes and ordinances.
6	With respect to applicants,
7	recommendations for the applicants include
8	involvement early on in the process with
9	stakeholders, including identification of who the
10	stakeholders are and getting the stakeholders
11	information early on in the process is to affect
12	that the applicant is intending on applying for a
13	permit to do an expansion or to construct a new
14	facility.
15	One of the things that occurs, is that
16	applicants with applicants, is that if
17	stakeholders start entering the process as the
18	process is going on, that can create uncertainties
19	and extend the process rather than to follow the
20	stakeholders or identified and be apprised of the
21	nature of the project early on in the process.
22	The other recommendation we had with
23	respect to permitting was more universal
24	preapplication meetings between applicants and
25	agencies where the applicant doesn't decide to

1 permit a facility or expand a facility, do a lot 2 of work, and then come to the agency and say, here's our idea because the agency does not 3 necessarily have the same idea concerning the idea 4 5 as the applicant does, so rather than the 6 applicant getting fairly far down the road with 7 respect to designing their project, a preapplication meeting can save a lot of time with 8 9 respect to the applicant having to go back and do 10 things they have done once already. 11 Another thing that we are recommending 12 is that agencies and applicants do develop a 13 timeline for permitting early on in the process 14 and that timeline be tracked as the permit process 15 goes forward. 16 What we are recommending more is that 17 permit processes be managed as projects so they 18 have a timeline, they have a schedule, they have a scope of work, so that there is more of an 19 20 understanding up front in the process as to what's 21 going to happen to eliminate some of the 22 uncertainties that lead to these extended 23 permitting times. Part of that involves a definition of 24 what constitutes a complete application. That is 25

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1 one of the things that applicants commented on 2 pretty universally is that, you know, there is an understanding going into the process as to what 3 constitutes a complete application and what the 4 5 criteria the agency is going to use with respect to deciding when an application is complete. б 7 A similar comment for BACT to establish early on in the process what constitutes BACT is 8 9 that the interpretation doesn't change as the 10 process goes forward. 11 We are also recommending with respect to 12 siting of new facilities that detailed siting 13 studies be conducted with respect to where these 14 facilities should be placed rather than having 15 applicants decide to put them in places where they 16 may not necessarily be the best place. That 17 includes zoning issues, that includes air permitting issues, it includes stakeholder issues. 18 They actually go through a more formal process as 19 20 to where these facilities might be constructed. 21 We have a few recommendations concerning the Permit Streamlining Act, one of which is the 22 23 fact that there doesn't seem to be a statewide authority with respect to implementing the act, 24 and we think that implementation of the act can 25

affect the permitting timelines in a significant
 manner.

3	The Permitting Streamlining Act requires
4	that agencies set out timelines with respect to
5	the permit process, and applicants and agencies
6	both told us that those timelines are not
7	necessarily being followed. If there was a
8	particular entity within the state that was
9	mandated to track this process, that would
10	certainly be helpful with respect to reducing the
11	permitting time.
12	There is also a unified permit program
13	that applies to hazardous waste facilities among
14	others, and it might be useful to investigate
15	whether that type of process can be applied to
16	petroleum product storage facilities as well.
17	In conclusion, with respect to
18	permitting, the most significant conclusion is
19	with respect to the communications process between
20	agencies and applicants throughout the process and
21	particularly at the beginning of the process, to
22	establish a timeline, and to the extent possible,
23	keep to the timeline throughout the process.
24	Again, more of a project management approach to
25	permitting.

1 The other conclusions is that the CEQA 2 process is the really critical path process with 3 respect to permitting these facilities, more so even than the local permitting process. 4 5 Finally, the Permit Streamlining Act should be implemented with a particular entity and б 7 agency within the state. PRESIDING MEMBER BOYD: Thank you very 8 9 much for that presentation, and we are about ready 10 to open it up to questions. I would like just to make a few comments and observations. 11 12 First I want to commend you on what I 13 think is an excellent piece of work, your chart 14 with the petroleum product storage issues, and I 15 appreciate you. That was our responsibility, that 16 was the task that we gave you, but your findings I 17 think, those of us who have been around a while, would see that your findings are kind of relevant 18 19 to a much larger spectrum of projects than just 20 petroleum project storage issues. 21 I think your work makes a contribution to this issue getting reviewed yet again, I'm 22 23 afraid, for people like me who have been around

for a while, this is another case of deja vu all over again.
1	I can't tell you the number of years
2	I've heard these kinds of issues laid out, and it
3	is almost embarrassing to me as a long term member
4	of government that they can't get fixed. That
5	seems to be the case, and I think we will
6	certainly direct this study in the direction of
7	other agencies for their information.
8	With regard to our specific charge here,
9	I'm anxious to hear comments from the petroleum
10	industry as to whether if we fixed all these
11	issues, if we swept aside all the issues, whether
12	they would build more petroleum products storage
13	facilities. I think that is a key question to
14	what we are interested in, but that's a separate
15	question.
16	With regard to your work, I see my
17	friend Harold Holmes sitting in the audience from
18	the Air Board, and some people know I have a
19	little bit of experience in that area, and I'm
20	confident when faced with an issue, the air

20 confident when faced with an issue, the air
21 community can kind of pull it together and work on
22 these things. I hope and trust Harold will take
23 this back to the Air Board, and they will work
24 with CAPCOA and other air districts and what have
25 you and maybe see that this is an arena that needs

1 to be addressed much broader than just petroleum 2 product storage issues.

In a sense, it is so much broader, it is 3 an area where there can be a public private effort 4 5 undertaken to maybe address this. There are other б state agencies who need this brought to their 7 attention, perhaps the administration, it's a terrible time to bring issues like this up in 8 9 terms of the status of the state budget, but I 10 also happen to know the legislature has never been 11 anxious and has slowly defunded the attempts that 12 state government has had in creating permit 13 streamlining efforts and offices and what have 14 you. I won't comment on their success or failure, 15 but there has been attempts to address this, and 16 maybe it needs to be addressed again.

17 In any event, should product petroleum storage facilities be an issue that needs to be 18 19 addressed, I know this agency and the Air Board and the network of people involved, CAL EPA and 20 what have you, will jump to address the issue as 21 they have in the past. I can recount the many 22 23 many card one, card two, etc. etc. where these kinds of issues have been addressed. 24

25

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The thing that I have seen throughout my

1 long career and then recently when, you know, the 2 state did power plants siting, and thank God this 3 agency has a more streamlined process to address that, but power plants under 49 -- under 50 Mw, 4 5 they fell into the local permitting process. A б state green team was formulated to help address 7 this which I served, and once again, I was reminded of the incredibly long field of hurdles 8 9 that people have to go over. A big part of that 10 is the local government, a lot of state agencies can kind of get their stuff together once in a 11 12 while and work this out. 13 Trying to wrestle with the huge number 14 of local government agencies that deal with this 15 is a major task that is probably beyond our 16 ability to solve, but maybe not our ability to 17 address. Anyway, this took me down a long historical road of having been there. You have 18 done a good piece of work for us, and probably for 19 20 the whole issue. 21 MR. LANZA: Thank you. 22 PRESIDING MEMBER BOYD: Now, maybe Mr. 23 Geesman has some comments and we can get, hopefully, some comments and questions from the 24

25 audience.

1 COMMISSIONER GEESMAN: I went through a 2 bit of a Rip Van Winkle experience, not so much 3 deja vu all over again, but I was out of the process for about twenty years, having been at the 4 5 Energy Commission in the late '70's and early 6 '80's and some familiarity with our siting process 7 then, and then having come back last summer, and have been immersed in the power plant siting 8 9 process since and recognizing a fairly significant 10 transformation of that process. 11 I guess I would question the realism of 12 most of the recommendations directed toward 13 improving the local government process in the 14 context of budgetary retrenchments that are now 15 truly unprecedented and that I think will 16 invariably ripple down to local governments that 17 are responsible for reviewing these applications. I don't want to willingly jump into the 18 briar patch, but I would certainly challenge the 19 20 industry trade associations that may not have 21 quite the personalized nature of good neighbor concerns that the individual companies do. 22 23 To question whether it makes any sense to have the existing focus on these permit 24 decisions be made at the local level, if these are 25

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facilities that truly do have statewide impacts.
 Do they lend themselves to the type of coordinated
 permit process that power plants above 50 Mw
 currently have.

5 I'm not advocating that there be any 6 change in the status quo, but given the number of 7 problems that this study identified, I would be 8 curious as to whether the trade associations feel 9 that such a change would be merited.

PRESIDING MEMBER BOYD: I'm glad you brought that up, I think some local air districts know where I live and would string me up if I brought it up.

14 (Laughter.)

15 PRESIDING MEMBER BOYD: It is a valid 16 question, and I appreciate you bringing that up. 17 Now, please, audience, comments, questions. Some 18 of you a challenge has been thrown out, is this an 19 issue worth pursuing.

20 MR. SPARANO: Yeah, I guess there was a 21 challenge, and I think I am wearing the target. 22 My name is Joe Sparano, I'm President of the 23 Western States Petroleum Association, which is one 24 of those associations that Commissioner Geesman 25 was referring to.

1 From my perspective as a thirty-four 2 year petroleum industry, I guess, veteran would be a decent word. The permitting process in 3 California has been the most difficult mechanism 4 5 to work through in order for private industry to 6 reinvest or just to invest in the State of 7 California and to create jobs. The process is broken from my 8 9 perspective. Can it be fixed by eliminating or 10 moderating the local level, I don't know. If it is fixed, I'm not even sure that I could assure 11 12 that individual companies would invest. What they 13 do need is some assurance from the state in the 14 form of, I think, severe permitting process 15 modifications that would streamline the process in 16 order to even contemplate reinvesting in California. 17 We are here to talk, in part, about 18 strategic fuel reserve, about price spikes, which 19 is of concern to all of us. One of the real 20 21 difficulties in addressing a price spike is having capacity to make up a difference when there is a disruption. 22 23 I've worked through fifteen years in California and personally been involved in the 24 permit process to the extent that I would like to 25

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share something that is anecdotal, but sadly very
 true.

3	I was CEO of a small company from 1990
4	to 1995, that company was headquartered in Long
5	Beach and had a refinery in Hercules in the Bay
6	Area. The refinery admittedly had a poor
7	operating record, there is no question about that.
8	We changed it, but it was poor for a long time.
9	We wanted to build simply the facilities that
10	would allow us make carb gasoline and diesel on
11	time.
12	For the partners that owned the company,
13	it was a stay in business decision because as
14	everyone knows who has been through those years,
15	if you couldn't make those products you couldn't
16	stay and play.
17	We spent millions of dollars, I
18	personally spent five years of my life traveling
19	back and forth to the Bay Area to integrate myself
20	to the CEQA process. We met more lawyers and
21	consultants, people helping us prepare the EIR,
22	which as the presenter said, often has some
23	multiplicity to it. We had local communities
24	justifiably concerned about additional facilities
25	next door to them when the prior facilities they

1 felt were a detriment to their quality of life. 2 We worked through all that to make a very long story shorter. We worked through all 3 that, we made concessions, worked hard with the 4 5 adjoining neighborhood, the county, the city in which the refinery was located, the labor unions, 6 7 the air districts, some state groups, the water quality control district. We had agreements with 8 9 everyone, and at the end of the day, our lead 10 agency, the BAAQMD granted us a permit. 11 We got our conditional use permit, 12 permit to construct from the city, building 13 permits, and then one of our two partners decided 14 that it had been too much and they no longer 15 wanted to stay and play. 210 people lost their 16 jobs, the refinery is now a site for upscale 17 homes, which I suppose is a positive redevelopment outcome, and maybe so in the eyes of the people 18 who had to live next door to it for a long time. 19 I think that illustrates the kind of 20 21 experience that each of the companies that we at WSPA represent go through and what they have to 22 23 keep in mind. That was not the only company to go down in that time frame, I think we lost several 24 hundred thousand barrels per day of refining 25

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capacity. If you want ask yourself why are there
 price spikes, why might we need a bit different
 infrastructure, why don't we have enough product
 all the time, keep that story in mind. I think it
 is electritive.

б I like your idea of trying to moderate 7 local permit interaction because the key to that is you get multiple venues and each one of those 8 9 venues has a cadre of people and personalities 10 that want to get involved in the process. They can and they should, that is why we have public 11 12 hearings. The whole purpose is to make sure the 13 projects are environmentally sound and safe for 14 the neighbors.

15 All of us who have ever operated a plant 16 believe in that because we breathe the air and 17 oftentimes, our families live nearby, so it is not a simplistic issue to work through, but I do think 18 action at the local level combined with 19 20 streamlining at the agency level and at the state 21 level might give the industry pause to think about investing what ranges from 100, 200, 300 million 22 23 to one or two billion dollars to build a new 24 plant.

Twenty-seven years since the last time a

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1 plant was built in the United States, no 2 refineries in twenty-seven years. California has lost capacity, even with what is called "Capacity 3 Creep" where refiners can add a little capacity 4 5 when the opportunity arises and they can get the permits and go through the new source review 6 7 required to build a little amount, a small amount 8 of new equipment. 9 It is a difficult process in any 10 streamline that you commissioners can help put in place, I think would make the playing field down 11 12 the road a lot more favorable for all of us. 13 I thank you for giving me the time to 14 say that, and if you have questions, I would be 15 happy to answer them. 16 PRESIDING MEMBER BOYD: Joe, if I may 17 call you that, you did set yourself up here for a question. The bottom line today is petroleum 18 product storage facilities, and I appreciate your 19 message and bodies bigger than just ours have to 20

address this, but when it comes down product storage facilities, and if we were able to sweep all of these issues away, would the industry see it in their economic interest to build additional product storage facilities, or does that fit in

1 today's equation of products in California,

2	economics, and what have you.
3	MR. SPARANO: Jim, if I may call you
4	Jim, I guess both our moms call us Joe and Jim, so

5 it is probably okay.

(Laughter.)

б

7 MR. SPARANO: You know I can't answer that for the companies, but what I can tell you is 8 9 that up till now, you have probably seen a 10 reluctance, even a dearth of any of that storage capacity being built because the economics you 11 12 spoke of are near and dear to these publicly 13 traded companies that have shareholder's interest 14 to protect.

15 If it doesn't make sense, it doesn't 16 pencil out, it doesn't cover the cost of capital, 17 then that investment is not going to be forth 18 coming. If there is a change that would allow the opportunity to be greater, the risk to be lower, 19 then one might enter into the process of 20 21 investment and find at the end of two, three, 22 four, five years that you still can't build, even 23 after you've spent millions of dollars, then there might be an opportunity. Again, I can't speak for 24 25 the companies, that's my experience speaking, and

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if I was the head of a company, that would mean
 something to me.

COMMISSIONER GEESMAN: Are there other 3 states where you feel there is a more efficient 4 5 permitting process and a more efficient relationship between state level authorities and б 7 local permitting authorities? MR. SPARANO: I have personally worked 8 9 at manufacturing facilities and managed them in 10 four states, New Jersey, Texas, California, and Washington. I think only one of those stands out 11 12 in my mind as having perhaps a bit better 13 approach, perhaps a more moderate approach, and 14 that is Texas. 15 If there is a model there you can work 16 with, it might be advantageous to look at that, 17 and maybe you have already. I know the CEC has been very active in trying to promote efficient 18 energy use and better things for the state, but 19 20 Texas, John, comes to mind as a place that really 21 has its act together, a bit better than some of the other places that I've worked. 22 23 PRESIDING MEMBER BOYD: You don't mean Houston, do you Joe? 24

25 (Laughter.)

1 MR. SPARANO: I had the --2 COMMISSIONER GEESMAN: Which is a neck and neck race with LA to be the worst air quality 3 place on the planet all the times. 4 5 MR. SPARANO: No, I had the good fortune 6 not to have to work in Houston, there are other spots, but it is just one of them where a lot of 7 activity, a lot of heavy industry takes place. 8 9 PRESIDING MEMBER BOYD: Thank you. 10 MR. SPARANO: Thank you. 11 MR. HOFF: Hi, my name is Tony Hoff, I 12 work with ST Services, it's an independent bulk 13 liquids terminal company. We have large terminals 14 in the Bay Area, a small one in LA, other 15 terminals all over the country. 16 I can give you a real life example just 17 recently of how the permit affected a project we have going on right now at our Martinez terminal. 18 We are right now about half way through building a 19 300,000 barrels of additional storage for gasoline 20 21 at our Martinez terminal. When that project was first envisioned, 22 23 it was planned with plenty of time to be completed by about now or actually earlier, about March of 24 this year. The design, the plan, the idea was to 25

have it completed before the transition from
 winter to summer grade gasoline when the prices
 tend to spike, and the whole project plan was to
 be completed by then.

5 The local permit process delayed it by б about five months beyond our even conservative 7 expectation of when we thought we would be able to You could see the blood drain get it completed. 8 9 from the faces of the people involved in this 10 project when we realized it was going to be 11 delayed beyond the point that the gasoline would 12 be able to come in time to take advantage of the 13 seasonal change.

I can tell you that if we had been able to complete it in time, the recent price spike that we just came through would have been lower. It is hard to say how much lower, but it would have been lower if the project had been completed in time.

The result that was the whole economics of the project changed, it is still working, we are still going to complete the tanks and get it done, but it's a whole different economic outcome. To answer your question earlier, we would be interested in building tanks, we would

1	like to build tanks in the Los Angeles area. We
2	have a small terminal in that market, but for
3	years we have been wanting to break into that
4	market and have found it difficult to find an area
5	and a way to do that.
б	MS. JONES: I have a question about the
7	particular case you are talking about, the
8	terminal in Martinez. How long did the total
9	permitting process take for that project?
10	MR. HOFF: It took about a year.
11	MS. JONES: It involved an EIR?
12	MR. HOFF: In that case, we were able to
13	use an old EIR, so we didn't have to go through
14	the CEQA process for that project.
15	MS. JONES: Thank you.
16	PRESIDING MEMBER BOYD: Thank you.
17	MR. WHITE: Jim White with White
18	Environmental Associates. I, too, would like to
19	echo Commissioner Boyd's compliments to the
20	contractor, very very good report.
21	I would like to observe from my
22	experience with permitting, that conditional use
23	permits, local agencies are very creative, many
24	times what they are applying on a conditional use
25	permit to has nothing to do with zoning, and it

1

further complicates the situation.

2	My main point here was that although I
3	hear your recommendations, and I can't
4	disapprove can't find any fault with them, I
5	think there ought to be greater emphasis placed on
6	the greater need for consistency out there.
7	Consistency is key. When you go out and
8	try to start a project, you've got to have as many
9	knowns as you can get, and in the permitting
10	process here in California, it's just full of a
11	lot of unknowns.
12	I might point out that this problem has
13	been handled in a well, it is being handled in,
14	so to speak here in California, on a lower scale
15	with regard to underground tanks and other local
16	permitted facilities, smaller facilities through a
17	process called Certified Unified Permitting
18	Agencies. CUPA.
19	There has been efforts to bring a little
20	bit more consistency into the permitting processes
21	that are taking place out there here in California
22	through the hundreds, literally, hundreds of
23	agencies that are handling these permitting
24	activities.
25	It might be something worth looking at

1 on a bigger scale. I just don't see how we can 2 get away from all these local agencies, they are established, they're not going to give up the 3 authority for permitting, but if we can work --4 5 "we" being the industry and the governments to 6 bring a little bit more consistency to the 7 permitting process, I think that would be a step in the right direction. 8 9 PRESIDING MEMBER BOYD: Thank you. 10 Could I ask you a question? As a an experienced 11 veteran in the permitting arena, the earlier 12 reference to the fact that all previous attempts 13 to have any kind of state assistance in the Permit 14 Streamlining Act, implementation, etc., the old 15 offices of permit assistance, I believe they were 16 called -- I hate to put you on the spot like this, 17 but were they of value. I mean, did that help at all, it has withered upon the vine --18 MR. WHITE: Yes, I think they were well 19 20 intended, but as you point out, it's kind of 21 withered on the vine. I was a member of a task force back in the early '90's that looked at 22 23 issues regarding permitting and other matters related to retail gasoline stations and trying to 24 25 streamline the regulatory process for those

1 facilities. I can remember that was one of the 2 issues, why isn't there better application of this 3 streamlining act, and we ran into a brick wall. A lot of these issues have been 4 5 discussed on various levels, and I think one good attempt that has been made so far, is the 6 development of this CUPA process, and it is no 7 where near completion, and it started like three 8 9 or four years ago, maybe even longer than that, 10 but they are making steady progress and bringing 11 greater consistency to the permitting process and 12 the regulatory process as well. Thank you. 13 PRESIDING MEMBER BOYD: Thank you. 14 Anyone else? Tony. 15 MR. FINIZZA: Tony Finizza, consultant. 16 I also want to congratulate Bob and Mariella on 17 their report. I have a question of the authors 18 that might help explore whether this is actually 19 worse than you have portrayed. 20 I want to call your attention to Exhibit 21 9 in your report where you have an array of permitting agencies by time it takes to get a 22 23 permit and delays, and I note that the state agencies have fairly small time window and no 24 delays are indicated there. 25

1 Since you didn't list any of those state 2 agencies as one that you talked to, but this must 3 certainly be from permit applicants. My limited 4 experience in a development project that's not 5 related to petroleum says that you can't get the 6 California Energy Commission entries to bear 7 witness with that kind of material.

8 My questions to you is, what's unique 9 about construction of petroleum product storage 10 that makes the state agency array here seem so 11 benign?

12 MR. LANZA: I think what you are looking 13 at here is a comparison between state agencies and 14 local agencies. That the permitting of petroleum product storage facilities is not unique with 15 16 respect to the state agencies, but the information 17 that we received with respect to the local permitting process indicated that might be what is 18 19 unique, not with respect to how the state agencies 20 function with respect to permitting a petroleum 21 product storage facility versus any other kind of air emission source. 22

I think what you are seeing here is that
it's the local process that we are finding more
of our findings on rather than the state process.

1	We did talk to several jurisdictions,
2	cities, with respect to how they manage their
3	permit process, including the City of Martinez, I
4	know that was one that was just mentioned. We
5	also talked to permit applicants concerning how
б	the process worked. Our findings with respect to
7	what the applicants were describing versus what
8	the agencies were describing were not
9	fundamentally different. We are seeing a
10	situation where there is a lot of uncertainty with
11	respect to the local process, and not necessarily
12	as much uncertainty with respect to the district
13	or state process.
14	MS. CACHO: Hi, Mariella Cacho from ICF,
15	I just want to emphasize a little more. The
16	difference between the state and local agencies is
17	the community will live with a tank next door, the
18	community will have all the ordinances and
19	revelations stating you need to paint it this
20	color, you need to put landscaping all around.
21	They are more involved because the tank will be
22	built in their community. Normally, the local
23	agencies are the ones who think to stay in the
24	period longer.
25	Everybody tells us that all the state

1 permits were straightforward, two to four months, 2 there was not a big delay. Thank you. PRESIDING MEMBER BOYD: We accept, as 3 our last -- as Tony indicated and with respect to 4 5 power plants, and since Commissioner Geesman lived 6 through them, the color of the plant, the 7 landscaping of the plant, etc. etc. etc. are all very highly emotional local issues which just 8 9 causes us to have hearings in local agencies at 10 nauseam to address those issues. The question is on the timeline, which 11 12 process ends up taking less time from start to 13 finish. It's an interesting comparison. 14 MR. GIESKES: Yeah, Robert and Mariella, 15 I fully agree, it's an excellent report, very informative. I had one question. In all 16 17 stakeholder meetings, frequently people made mention of lawsuits, either against the permitting 18 agency or against the applicant. Those lawsuits 19 20 are getting better organized. The (inaudible) 21 like Citizens for a Better Environment are very well organized and those lawsuits, even if you 22 23 were to streamline the permitting process, would still, like you said, the appeal process has no 24 deadline. Was any of that brought forward in your 25



3 MR. LANZA: Yes, we did get quite a few comments from applicants and agencies concerning 4 5 what we refer to as the appeals process, meaning 6 that after the permit process ends, and the permit process is what is controlled by the CEQA 7 timelines and what is controlled by the Permit 8 9 Streamlining Act timelines. Once you leave that 10 process and go into the appeals process, there are no timelines. That's a fundamental part of your 11 12 problem with respect to the level of uncertainty 13 in getting all your permits and approvals.

We couldn't really address the judicial process head on, it really wasn't as much a part of our scope, our scope was more in terms of the regulatory process, but certainly the appeals process, the judicial process is pretty key to solving the uncertainty with respect to permitting.

21 Now, how you do that, I mean, the 22 fundamental way you do that is you have boundaries 23 as to what people can raise as issues, and what 24 people can't raise as issues. With respect to the 25 NEPA process, in general terms, there are

1	boundaries as to what stakeholders can bring in as
2	issues and what stakeholders can't. That would be
3	one thing that I think would at least, in some
4	cases, you know, shorten the amount of appeals, or
5	shorten the number of appeals.
6	We did find a situation where
7	stakeholders were coming back into the process
8	with multiple appeals on different issues versus
9	coming in to the process with one appeal that
10	encompassed all the issues they might be concerned
11	with.
12	The applicants thought that was an
13	intentional delaying tactic, and that is something
14	we think there is a possibility of being
15	addressed.
16	MR. GIESKES: Okay, thanks.
17	COMMISSIONER GEESMAN: I would add there
18	that in the power plant area, permitting decisions
19	by the Energy Commission are subject to direct
20	appeal to the State Supreme Court, and that has
21	served to focus both the nature of the appeal and
22	the time allowed for such an appeal.
23	PRESIDING MEMBER BOYD: Dr. Williams.
24	DR. WILLIAMS: Jeffrey Williams. If you
25	had to pick one number as the total cost of all

1 the delays, the consulting fees, and all that, and 2 the final project is it 5 percent, 25 percent? 3 MR. LANZA: One of things that --DR. WILLIAMS: Just pick a number. 4 5 MR. LANZA: -- one of things that we б weren't able to do is get a lot of cost 7 information because the applicants wouldn't give us hard numbers because a lot of that information 8 9 is proprietary. 10 You are talking about a situation where 11 you may be talking about 10 percent of your total 12 project cost by the time you are said and done 13 with everything. An EIR for a large facility

15 some cases, the applicant's paying for two of 16 them, so you've got a significant chunk of 17 expenditure right there.

could cost a quarter of a million dollars. In

14

The thing that we weren't able to get 18 information on from the applicants is what is the 19 20 cost of starting the project six months later than you would have. I mean, the whole idea of getting 21 your project on line before the seasonal change, 22 23 we couldn't really qualify that with respect to the applicants that we talked to, but certainly if 24 25 you wanted to point to one thing in terms of

1	what's the cost, what's the internal cost to the
2	applicant of getting on line six months late, that
3	is not a small number.

4 MS. JONES: You mentioned again the 5 duplicate EIR's, and do those come about because 6 you want to have dueling experts to address issues 7 or is there some other reason? MR. LANZA: I think that the real 8 9 rationale for it is an attempt by the applicant to 10 speed the process up, not attempt by the applicant to influence the answer. I think they are just 11 12 trying to get out of the gate with something that 13 is completed in a more timely manner than the 14 parallel process that is going on. Mariella, 15 would you like to -- thank you. 16 MR. MATTHEWS: I'm Scott Matthews, I'm 17 with the Energy Commission. I've actually worked 18 in both our power plant siting process and with

20 issues over my thirty whatever it is years.

19

our building standards, so I have run into permit

21 Can you prioritize your recommendations 22 in any way? There are a lot of different issues, 23 some of which are relatively easy to solve, for 24 example, training, which we do a lot of for 25 building standards.

1 Other things are more difficult, like 2 substantive structural changes in the permit 3 process. You had some ideas for the applicants, 4 which having been through the power plant siting 5 process, different applicants are more successful 6 than others because of the way they react with the 7 community.

MR. LANZA: Part of what we are looking 8 9 at here is easy to do, hard to do, and the hard to 10 do is the whole idea of establishing consistency 11 in the local permitting process. You are in a 12 situation with your conditional use permits, where 13 your local agency is your lead agency in a lot of 14 cases. As you go around the state, and try to 15 establish consistency between the 400 some odd 16 local governments in California with respect to 17 applications of codes and ordinances to a petroleum product storage facility, that's hard to 18 19 do, but it is pretty critically important with 20 respect to establishing some standards as to, you now, do you have to "paint the tanks blue or 21 22 green".

The other thing that I would point to is the staffing and the training of local government entities to review and process these applications

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1 and manage the process. Assuming you are going 2 to, you know, pursue having local agencies as lead 3 agencies with respect to reviewing these engineering documents, you need to establish some 4 5 framework for those applications to be reviewed. б We are seeing the applicants telling us 7 that we are providing these pretty large technical documents to local planning commissions that are 8 9 used to dealing with land use and zoning issues, 10 and they can't process them. From that 11 standpoint, that's a pretty important thing to do. 12 Now one of the things that we talked 13 about in the report that didn't get into my 14 presentation is the funding issue. One of the 15 things we found was that certain agencies within 16 the state are on an hourly funding basis, where 17 they actually bill the applicant with the number of hours they spend reviewing the application 18 19 versus other agencies which are a flat fee where 20 they are charging agencies \$500 -- charging 21 applicants \$500 or what have you to review an application where that is far from covering the 22 23 entire cost of, you know, what the agencies are actually expending in processing the application. 24 25 Considering the economic climate, one of

the things that we put into the report was an examination of whether this hourly funding process that certain agencies in the state are using, should be expanded, so that agencies would be bringing in more money with respect to staffing and training so they can process the applications more efficiently.

The third thing that we discussed which 8 9 I think is critical, but hard to address, and even 10 outside the scope of what we are doing is the 11 judicial process. We are focusing on the 12 regulatory side of the permitting process versus 13 what happens when you get into court, what lawsuit 14 with stakeholders, etc. That's pretty critical. 15 The idea of having a direct line as in the power 16 plant program to a higher court certainly avoids 17 having to go through multiple courts to get to that point, and that is something that ought to be 18 considered as well. 19

20 PRESIDING MEMBER BOYD: I think today we 21 were trying desperately to deal with only that 22 piece of the iceberg that you can see above the 23 water line, the issue as it relates to petroleum 24 storage, but this is the kind of issue you can't 25 deal with unless you pull the whole bloody thing

out of the water and look at it. Poor John and I
 have taken on, and the Commission, is taking on a
 huge task here, but I thank everybody.

I would reiterate what Commissioner 4 5 Geesman said earlier, and I would just throw out б to those of you here who are industry associations 7 to think of what your role might be in all of us addressing this issue and what the role probably 8 9 some sister organizations that aren't here today 10 would be in approaching and addressing this issue. This is a big issue, it would take a 11 12 very united front. It is, as I said earlier, 13 something a public private consortium of people

14 would have to take on if we were to really make 15 significant changes in the process in this state, 16 which many people seem to feel are needed.

17 With regard to our narrower issue of dealing with price volatility and petroleum 18 19 product prices and what have you, we'll continue to work with all of you here in this room and 20 anyone listening, but you really lit two fuses, 21 one on kind of a narrow issue that we want to deal 22 23 with, and one the great big issue that affects perhaps the economy of the State of California, 24 that a much broader contingent of people are going 25

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1 to need to address.

2 I guess by virtue of this process, we get to throw it back on the table, but it will 3 take a big group of you. I can rattle, but I 4 5 won't here, rattle off the associations in this 6 state who have dealt with this issue in the past. 7 It can be dealt with as changes in process and procedure, not with -- my one caution just out and 8 9 out attack on one piece of legislation versus 10 another.

I am remembering CARB Phase II gasoline, 11 12 the same kinds of issues that Mr. Sparano brought 13 up and many peoples attempt that it's to CEQA 14 because it's too big a problem. If we work on the 15 processes and procedures and try to improve them, 16 which we were able to do in a very narrow focused 17 surgical sense for that one issue, I think the process gets handled quickly, but it would take a 18 huge effort to train so many people across the 19 20 spectrum. It would take an awful lot of people to 21 help do it, but it keeps coming up, and for those present and who follow me in this task, it's a big 22 23 one that needs to be taken on and solved. With that, any other comments, 24 questions. We will take a one hour break for 25

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1
         lunch and see you back here, according to the
 2
        clock on the back wall, at 1:15.
 3
                   (Whereupon, at 12:15 p.m., the workshop
                   was adjourned, to reconvene at 1:15
 4
 5
                  p.m., this same day.)
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                         AFTERNOON SESSION 1:25 p.m.
                   PRESIDING MEMBER BOYD: We are ready, we
24
        can reconvene after lunch. I just want to say one
25
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1	more time to anybody out there listening on the
2	webcast, that you may e-mail questions to us here,
3	and we will see that those questions get asked and
4	answered. The e-mail address is lstamets, l-s-t-
5	a-m-e-t-s@energy.state.ca.us.
6	Our next topic of discussion is going to
7	be the California Marine Petroleum Infrastructure,
8	and David Hackett and Thomas Gieskes of Stillwater
9	are up for this one.
10	MR. HACKETT: Good afternoon
11	Commissioners and staff, ladies and gentleman.
12	I'm Dave Hackett, I'm with Stillwater Associates,
13	and we're here in this hour to talk about marine
14	infrastructure here in California.
15	The agenda for this talk today will
16	cover some background. We're going to look at the
17	two refining centers here in California, talk
18	about future infrastructure demand, and what we
19	see as current trends, and then talk about
20	conclusions and recommendations.
21	As background, the Strategic Fuel
22	Reserves Study, which Stillwater Associates did in
23	2002, identified a number of problems related to
24	marine infrastructure. Those include a lack of
25	well connected tankage on the water, a lack of

access to storage by independent importers, and
 the uncertainty about the ability of market
 participants to unload cargos.

I think probably one of the most interesting aspects of the Strategic Fuel Reserve Study, certainly from my perspective, was the realization that California has switched from an export market for hydro carbons to an import market.

10 This happened in '99 as we talked about, '99 was a bad year for refiners, imports stepped 11 12 up in large measure in place of the lost 13 production, and then they have continued ever 14 since. While to some degree or the other, 15 facilities that will work for exports will work 16 for imports, that's not necessarily always true, 17 certainly given the changing fuel specifications here in California. 18

How do we find out these problems. We did a series of stakeholder meetings, I think we did 65 or so, and then we got a lot of push back from stakeholders that you can't get a tank, you certainly can't get a tank in LA, and so the Energy Commission asked us to come back and take a loot at that and put some quantification around it.

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1 As far as this study is concerned, our 2 methodology was, again, we had meetings with 3 stakeholders and those include terminal operators and pipeline operators, port authorities Los 4 5 Angeles, Long Beach, and with some of the б refiners. 7 In addition to talking to the stakeholders, we actually did some quantitative 8 9 analysis using the State Land Commission's data 10 base, which contains all the information about 11 tank movements in the ports here in California as 12 well as looking at the Army Corp of Engineers 13 data. 14 We identified a number of restraints 15 around hard restraints, which is essentially 16 physical things, that is to say the length of the 17 dock or the draft restrictions, pipeline capacity and the like, as well as soft restraints which are 18 19 generally things that can be improved through 20 minor expenditures and better operating 21 procedures. The report that you have that the 22 23 Commission put out today, is essentially an

24 executive summary and is not the main report. We
25 haven't published the main report for a couple of

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1 reasons, one is confidentiality issues,

2 information that is specific to companies, but I
3 think from our perspective, and more importantly,
4 there are security issues. We chose not to make
5 this public because of the infrastructure issue,
6 the implications of it all. The Energy Commission
7 has got the report, though.

As far as infrastructure is concerned, 8 9 there are a number of larger refineries and some 10 small ones, bulk storage terminals, distribution 11 terminals, certainly there are a large number of 12 end user storage facilities. There are two major 13 pipelines owned by the same company, one of them 14 is the North System out of the Bay and one in the 15 South System out of Los Angeles, and there are 16 extensive pipeline networks that interconnect the 17 refineries, and this is especially true in Los Angeles. Of course, there are crude oil 18 19 production and pipeline systems to go with all 20 that.

As far as the marine infrastructure is concerned, just to sort of separate them, the major refineries are certainly included in this, not included are the refineries, for example, in Bakersfield. 22 marine bulk storage facilities,

1 and then 5 inland terminals that connect to the 2 water, and then some smaller facilities as well. The focus of this whole study that we 3 are on the main centers in the Bay and in LA. 4 5 MR. GIESKES: Commissioners, ladies and б gentlemen, I'm Thomas Gieskes with Stillwater 7 Associates. I shall walk you through some of the details in this setting beginning with the Bay 8 9 area.

10 The Bay Area is a large expanse of 11 water, has a very extensive shoreline, and in 12 fact, all the petroleum infrastructure in the Bay 13 Area is part of the marine infrastructure. All 14 terminals and all refineries are located on the 15 waterfront or very close to it and have their own 16 docks and interconnected.

17 What sets the Bay Area a part is it's generally very shallow. There are some deeper 18 19 parts, but right at the entrance of the bay, there are a number of banks -- let me find it for a 20 moment -- through which a channel is cut that is 21 about 55 feet draft. That means that inland, this 22 23 is the Richmond Refinery, has a fairly deep dock, but further inland into the bay, this is the San 24 Pablo Bay, there is a series of shallows here, 25
1	which are called the Pinole Shoals, and those
2	Pinole Shoals are one of the major bottlenecks.
3	One of the restraints that we found in
4	talking to the people in the bay, is that these
5	shoals which require regular maintenance,
б	dredging, have not been dredged for a while,
7	except for some emergency dredging.
8	Very recently some funds were approved
9	by the Feds to allow to use U.S. Army Corp of
10	Engineers to continue the dredging program. In
11	actual fact, it's more difficult than just setting
12	the funds aside because you have to dispose of the
13	dredge material, you can only do that in certain
14	areas in the bay and certain very restricted
15	seasons in order not to damage the marine life and
16	otherwise you have to take this dredge material
17	and bring it all the way out to the ocean, and
18	that requires different type of dredging materials
19	and is much more expensive.
20	The long and the short of the story, is
21	that all the marine facilities with the exception
22	of those in Richmond, are affected by draft
23	restrictions. Draft restrictions mean small
24	vessels which translates into more portals, more

25 dredging congestion, and higher cost.

1	With that, let me move on to the
2	waterborne volumes. All in all, a very
3	significant part of the volumes coming into the
4	Bay area consists of crude oil, it is well over
5	half of all the marine transportation. Typically,
6	that comes in vessels that are of a size that can
7	just barely make it over the Pinole Shoals, can
8	just barely clear the overhead clearance under the
9	bridges, which is also fairly restrictive. Some
10	of these tankers actually have to take their mast
11	down when they come in. There is a fairly
12	significant movement of clean products, both in
13	and out going.
14	Overall, the San Francisco Bay Area is
14 15	Overall, the San Francisco Bay Area is alone is a net exporter, it exports clean products
14 15 16	Overall, the San Francisco Bay Area is alone is a net exporter, it exports clean products to Portland and San Francisco by barge, so clean
14 15 16 17	Overall, the San Francisco Bay Area is alone is a net exporter, it exports clean products to Portland and San Francisco by barge, so clean products go both in and out, and then there is a
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14 15 16 17 18 19 20 21 22 23 24	Overall, the San Francisco Bay Area is alone is a net exporter, it exports clean products to Portland and San Francisco by barge, so clean products go both in and out, and then there is a significant volume of black oil. Some of those are intermediate products, things like life cycle oil and cutter stock, a lot of those movements are also in the refinery within the Bay. It is a fairly significant volume. That leads us to what does this particular volume that handles crude oil, clean

1 What you see here, each block represents a certain 2 volume in millions of barrels. For instance this about 120 million barrels. We looked at using 3 data from the State Land Commission on when 4 5 vessels come in and when they go out at the hour б spent and total numbers of vessels coming in at the off loading grades and calculated a sort of 7 lowest observed berth occupancy in any given month 8 9 and the highest. This was for the year 2001. 10 This means that for this particular 11 refinery, a really busy month, so the jet fuels 12 being occupied about 55 percent, and a slow month 13 was 35. 14 The five major refineries in the Bay, so 15 what you see here, is on average all these 16 refineries operate and arrange between 40 and 50 17 percent with one exception going up to 60. What is the best to do. In general 18 19 terms, as long as you are in the range of 50 to 60 20 percent, you will see no major scheduling 21 conflicts, no major demurrage. Demurrage is the money that you have to pay if you keep a ship 22 23 waiting while you hadn't agreed, late end period, and the vessel shows up at the agreed date, but 24 the dock is occupied. 25

1 The cost for keeping a vessel waiting 2 can easily run about \$30,000 a day, so once you 3 have about the 60 percent, that is where you can 4 frequently expect scheduling conflicts in the 5 range of 80 to 100 percent, you see some serious 6 queuing.

7 What this tells us is that overall, this 8 is the same for the terminals in the Bay, what 9 this tells us is that overall, 85 percent of all 10 the volumes in the Bay is brought in over docks 11 that see good usage but still well within the 12 operable range. Like I said, there is one dock 13 that is sort of at the upper end of that range.

Let's take a look at the clean products gathering system. There is a network in the Bay Area that is looped to a certain extent in which interconnects the refineries and the major terminals with the send off point for the pipeline of Kinder Morgan at Concord.

Each of these terminals and refineries when they want to send product into the market into the truck rack terminals and up to Reno or Sacramento, has to pass through Concord. In talking to the stakeholders, we heard a very consistent story in that this system is very

congested. In general, the transfer rates are
 very low, they are typically less than 20 percent
 of the speed of transfers in the LA Basin, so of
 those are as low as 1,500 bales per hour which is
 really low.

There are frequent scheduling conflicts,
so it is difficult for people to meet the pipeline
schedule, the weekly pipeline schedule in Concord.

9 The bottlenecks that were described to 10 us are very structural, line diameters being too 11 small, yes, you could put a bigger pump in, but 12 then the suction system to the tank is too small, 13 so there are no easy upgrades here, no small 14 improvements that you could make. All the low 15 hanging fruit has been picked long ago.

16 What happens here is until you really 17 get sufficient economic justification to do a 18 complete overhaul, the system has to get by as is, 19 and if all else fails, you can put product on the 20 barge and ship it around.

This is one of the more fundamental bottlenecks that we identified in the Bay Area. There is a black oil system in the Bay as well, largely an obsolete system, it was used at the time to transfer black oils generated in the

refineries to the local power stations when these
 power stations stopped burning black oil and
 switched to natural gas, these systems became
 obsolete.

5 There is substantial idle storage б associated with that. There is about 9 million or 8 to 9 million barrels of idle tankage all 7 maintained at rate payer's expense. It is in 8 9 great shape, I've seen it, and it is sitting there 10 idle. It's large tankage that could not be used 11 for clean product easily. 12 There is idle pipeline which could be 13 used for other purposes as well. In black oil, 14 and crude oil, there are no reported problems 15 there. 16 PRESIDING MEMBER BOYD: Gregg, you said 17 they couldn't be used for clean product? MR. GIESKES: Not easily, these are 18 large half million barrel tanks, they are not 19 permitted for light products in the case of the 20 21 Pittsburgh terminal, a lot of the tanks are really close to housing. Antioch is a slightly different 22 23 picture, what these tanks would be very good for is if indeed the State of California, we need to 24 do something with crude oil, that would be a 25

different story, but for clean products, it's not
 entirely impossible, but it would be a difficult
 conversion.

Storage in the Bay Area. The total 4 5 tankage, and this is based on the Water Board б Permit Registry on above ground petroleum tanks is 7 about 41 million barrels of tankage at the refinery, there's about 9 million at the 8 9 terminals, the major terminals. 10 Information received from the 11 stakeholders that on average, tankage in the 12 commercial terminals does about one, what is 13 called, a tank turn per month, the throughputs is 14 roughly equal to the volume of the tank ones per 15 month. That is a normal commercial rate, it's on 16 the lower side. You could do two terminal 17 operators would like to see two which means additional throughput over and above the contract. 18 At the refineries, the operational tanks 19 20 work really hard, we did not have the same level of detailed information in the Bay Area as we had 21 in Los Angeles unfortunately, so we were not able 22 23 to pin that down as exact as we would have liked, but what we can say is from what we can estimate 24 25 looking at total tankage, the refinery operations,

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143

etc. is that the tankage at the refineries work
 really hard.

Not all refineries are equal, the smaller ones seem to have six to seven days then there are people that have on average ten to twelve days of operating inventories at the refinery.

8 Let's take a look at Los Angeles Basin. 9 The LA Basin is fundamentally different from the 10 Bay Area. First of all, the shoreline is really 11 at the premium here, it is a very compact area, 12 although, when you drive through it, it is much 13 larger than you think than looking at a map.

14 It compares to the Bay Area, shoreline 15 is at the premium, land is extremely difficult and 16 extremely (inaudible), but 40 percent of all U.S. 17 imports and exports pass through these two ports. This is an area of great importance, and the 18 marine infrastructure here has to compete with 19 20 cars and containers which are much higher added value products. It's a tough competition. 21

22 What is concentrated on the water here 23 are mainly terminals. These terminals have good 24 docks, some of them a little less so and small 25 storage. The bulk of the larger storage is

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144

located inland, a distance of about 8 to 10 miles,
 and this poses some particular problems that we
 will talk to you later about.

Any number of refineries, the one 4 5 exception really that it is still part of the LA б Basin marine infrastructure, is the Chevron El 7 Segundo Refinery which does not or hardly uses the facilities of the port. There is a little bit of 8 9 black oil that gets sent down and handled through 10 the LA Basin proper, but this refinery has two 11 multi-point moorings in the Santa Monica Bay that 12 are used to off load crude oil and products.

13 With these refineries being inland or 14 some distance inland, how do they move their 15 products and crude oil? There's a very complex 16 network of pipeline that links most of these 17 refineries to at least two or three docks, so they have multiple options, some over at their own 18 facilities, some of those through third party 19 20 facilities, but it's not as simple a picture here to say which dock is congested and how will it 21 impact certain refineries. 22

23 Volumes handled in the bay, once again,
24 the majority of petroleum products coming in is
25 crude oil, well over half, very significant

1 imports of clean products in the LA Basin. This 2 is where most of the California shortfall occurs and you can clearly see that in the products. 3 There is very little going out except for black 4 5 oil, so there is a lively bunker business in the 6 LA Harbor and there is some residual fuel and 7 other intermediates that are shipped out, but for the most part, business in imports is harbor and 8 9 it's importing crude oil and products. 10 MR. SPARANO: Thomas? 11 MR. GIESKES: Yes. 12 MR. SPARANO: On these products, when 13 you use the term import, do you mean literally 14 from outside the shores of California or would 15 that include San Francisco as well. 16 MR. GIESKES: Thanks for bringing it up. 17 When I talk about imports here, it is everything, so this is barges and these are total volumes 18 19 because for the usage of marine infrastructure, it doesn't really make any difference whether it's a 20 domestic vessel coming in from the Bay or from the 21 U.S. Gulf Coast. 22 23 Once again, the same picture here, but since most of -- don't make the distinction here 24 between refineries and terminal docks because the 25

1 refineries use terminal docks for the most part. 2 Jet fuel occupancy, if we look at the volume spread once again, each block represents a certain 3 volume in millions of barrels a year, and the 4 5 lowest and highest jet fuel occupancy in a given 6 month. You will see that on average, there is 7 a -- the vast bulk of the terminals is really well used. 8

9 In actual fact, these figures may be 10 conservative, these were 2001, there were some 11 very recent incidents that we picked up in our 12 stakeholder meeting where people were not able to 13 bring in a cargo and were told that at a certain 14 terminal, their first opportunity to off load 15 would be in mid May. This was at the height of 16 the gasoline crisis, and this was much needed 17 cargo of gasoline.

Even though on the average basis and for 2001, there were only two terminals that sort of tipped the range of the jet fuel occupancy where you can expect some serious problems. I suspect that on more recent data, and then certainly in peak months, you will see more of this volume in this range.

25 That picture is important to remember PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

147

1 when we will discuss in the next slides or so of 2 the future infrastructure requirements and import volumes doubling, so keep that in mind that you 3 are at the upper end of the operable range here. 4 5 Total tankage, once again, from Permit б Registry, there is about 61 million barrels of refinery storage, 28 million barrels of terminals, 7 and only 8 million of that are directly at the 8 9 water, so that is a major, major difference 10 between the LA Basin and the Bay. 11 In the Bay, everything sits on the 12 water, plenty of shoreline in LA, most of those 13 are 8 to 10 miles inland, and have to rely on 14 pipelines to get the product from the dock into 15 the tankage. 16 The throughput, once again, at 17 commercial terminals are well within the operable range. At the refineries and at some of the key 18 19 tankage at some of the commercial terminals 20 receive high throughput sweep. We had more 21 detailed information available here, we've seen some tanks that would turn, as they say, every 22 23 three days or every two days, so this tankage is worked really really hard. 24

25 Average on site inventories of crude and

1 product storage are between four and twelve days. 2 The usage -- this is an interesting element, and 3 these figures, of course represent a moving target, we are probably as close as we can get at 4 5 any point in time, but they are based on estimates 6 of discussions at stakeholder meetings. 7 We think that about 41 percent of the storage is actually owned by the local refiners. 8 9 That an equal proportion is leased by the major 10 refiners in the commercial terminals and the long 11 time contracts. Then there is a much smaller 12 portion that is about 9 percent that is owned or 13 leased by independents, and 7 percent of the

14 available shell barrels are idle mainly old and 15 obsolete tankage and some of that is the subject 16 of current renovation projects to bring that 17 tankage back on line.

Last, but not least, there is an 18 19 initiative in the LA Basin by the South Coast 20 Quality Management District, which is an off shoot of settlement that was reached whereby emissions 21 from major sources have to be reduced by a certain 22 23 quantities over certain periods of time. As part of that, there was a Rule 1178, which was approved 24 in January of 2002, which will require major 25

1 tunnels that are linked to certain level of 2 emissions per year, and the refineries to put 3 domes on the tanks that contain volatile 4 materials, such as gasoline and blended 5 components.

б These domes will reduce the emissions 7 that you get by the wind blowing over the tanks and lifting materials at the seals. In order to 8 9 dome these tanks, the estimate is that is 10 somewhere between 10 and 20 percent of all this tankage, this really hard working tankage in the 11 12 LA Basin will be out of service at any given point 13 in time in the next seven years when the refiners 14 and terminal operators have to comply with this 15 rule.

16 Remember that the over view of the Bay 17 Area where you had sort of one central gathering system owned by Kinder Morgan largely by the 18 refiners and ST Services. In comparison, the LA 19 Basin is a plate of spaghetti. There is a great 20 21 amount of steel in the ground, and to put a picture together that shows everything, you really 22 need a wall chart. On a small scale just to 23 illustrate the complexity of the system this would 24 25 be one company's proprietary pipeline system

running from docks and terminals and refineries
 and distribution terminals in the L A Basin.

3 The same for another company, and if you overlay all these various proprietary pipeline 4 5 systems on top of each other, you get to a very б very complex picture. Nevertheless, there are some serious constraints. You will still find a 7 couple of terminals in the LA Basin that aren't 8 9 well connected, that have connections only to 10 their own dock and then maybe to the rest of the 11 system through a connection with a competing 12 terminal company, or a terminal that has only one 13 pipeline for in and out, and those terminals are 14 referred to as sort of like Hotel California, you 15 can check out any time you want, but you can never 16 leave. There are constraints.

17 The most serious constraint that we found in the L A Basin, is really the capability 18 of the marine terminals, the terminals right at 19 the water to bridge half the small storage, that 20 is only 8 million barrels. To transfer cargos 21 inland to the major refineries and the major 22 23 tunnels, so it is no good having a tunnel with three berths, if you have only one pipeline for 24 clean products going inland. You can receive the 25

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151

vessel at the dock, but you can't start pumping
 until the other vessel is empty. Bottlenecks of
 this nature are very expensive to address.

Moving on to the future demand for
infrastructure, beginning with crude oil, which as
we've seen is the over 50 percent of all volumes
moved.

Consultants always love to see a graph 8 9 like this, this is such a clear -- this is the 10 decline of Alaska, and the decline of Alaska is 11 mainly felt in California. This is a decline of 12 about 8 percent for year. Then you have the 13 inland crude production, and although it has been 14 holding up fairly well, if you look at this trend 15 over the long run, in recent years, this decline 16 here is about 3 percent per year, and the 17 expectation is that because these fuels are very very mature, that even with the best of tertiary 18 recovery techniques, and despite some recent 19 20 successes such as the Elk Hills programs now, which after they have been privatized yield a lot 21 22 more product, but the writing is on the wall, and 23 the production in California will decline probably at a rate of 3 percent or 4 percent a year. 24 What that means, is that the dependency 25

1 on foreign imports, which was very very small as 2 recent as 1990, is currently well over a quarter of the total California crude oil consumption. 3 About half of the import segments are about 25 4 5 percent of waterborne crude comes in from the б Arabian gulf. To do so economically, you have to ship that in very large crude carriers, VLCC's, 7 vessels that carry typically between one and a 8 9 half and two and a half million barrels, so these 10 are very big slugs of crude oil coming in at one 11 time and impacts the storage system entirely 12 different from what pipeline receives or imports 13 in smaller ships. 14 You have to think of this as a pipeline 15 which could be continued in and out of tankage 16 where the level hardly moves. If you get a 17 regular supply of small vessels, you see small soft throughs, if you get a lot of VLCC's, you see 18 19 huge inventory swings. 20 Since the total inventory of 21 California's crude on average at the refineries is something like 15 million barrels, a 2 million 22 23 barrel sludge is a big impact on your inventory. It has some other consequences as well. 24 25 In terms of current operations, there is

about one VLCC, about 250,000 barrels a day, 25
 percent of waterborne crude coming in on these
 vessels.

In all of California, there's one berth 4 5 capable of handling such vessels currently, which б is BP's Berth 121 in Long Beach. There is a project currently, we will come back to that. 7 The other VLCC's that come in are lightered, as it is 8 9 called. There is a Water Board transferred 10 anchor off shore, usually in the lees of sediment. Product is transferred into a smaller vessel that 11 12 then off loads cargos in LA, and then goes up to 13 the Bay Area, drops off cargo there, and all in 14 all, this can take a week to off load one of these 15 big VLCC's.

16 That, of course, is a costly way of 17 doing it. It also increases the risk of a spill. 18 Anytime you transfer cargos off shore, any time 19 you have to move two ships in close proximity in 20 unsheltered waters, it does incur additional risk.

21 The long term infrastructure needs, and 22 long term here means, and I don't pretend to look 23 any further out than 2010, long term

infrastructure needs, we see this doubling toabout two VLCC's, about 500,000 barrels a day off

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154

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very large crude carriers coming in.

2 There is a project currently in the Port of Long Beach to use Berth 123. There was a 3 tender last year in August, several companies bid 4 5 on that. There is one company who is currently in 6 its second round negotiations with the Port of 7 Long Beach to make this happen. The requirements really to make this a successful product would be 8 9 to get tie ins into El Segundo and Mobile 10 Torrence. That is a difficult proposition given 11 the pipeline route you would have to take through 12 the heart of some very expensive real estate in 13 Los Angeles. 14 There is no certainty at this point yet 15 that there will be any additional storage 16 associated with this project. Certainly if this 17 were to be realized, it would go a long way into providing the infrastructure needed for California 18 19 for the next ten years or so in terms of where its 20 crude receipts seem to be heading. 21 Looking at the future infrastructure

demand for clean products, the key product is gasoline. This is a busy graph, but let me show you. What this purple area is, is the local refineries production, MTBE imports phasing out as

1 we speak, and there was always a certain volume of 2 imports of clean stocks and finished gasoline. With the advent of ethanol, which comes 3 in largely by rail, and the make of volumes that 4 5 will be required in terms of meeting overall 6 demand, there are three growth lines here. One is 7 for the 1.6 percent is the base case, and the high case is 2.1, and the low is 1.1, but you can see 8 9 that the gap between what the local refinery 10 production can do and what ethanol would add to 11 that is steeply growing. 12 Incidentally this refinery production, 13 we will discuss this when we talk about as so far 14 as in a later presentation, but we have assumed a 15 .6 percent in net capacity creep a year in this 16 particular scenario. 17 What all this does is that imports, the total imports of blend stocks and this includes 18 MTBE and blending components and finished 19

20 gasoline, are expected to roughly double, at least 21 a 70 percent increase over the next six years. 22 This was off a base case growth of 1.6 percent. 23 Actual growth has been much higher, these 24 percentages still represent the energy outlook 25 scenario, the last official energy outlook

scenario presented by the CEC, but they seem to be
 conservative compared with to what is actually
 happening out there.

Another percent growth out here could add another 10,000 barrels a day easily. All that does is, and I'll turn it over here to Dave again to sum it up.

8 MR. HACKETT: Let me talk about trends 9 quickly. We, in doing the stakeholder rounds, we 10 went looking for projects, who is building what, 11 what's happening out there in the storage market.

12 What we discovered was since we started 13 this strategic fuel reserve project, which was 14 eighteen or nineteen months ago, when nobody was 15 building any tanks, actually tanks were coming 16 down, the whole tank infrastructure was headed 17 south.

We have actually seen and observed some turn around in that, where there are projects that are getting done, some in LA and some in the Bay Area. You heard Tony Hoff of ST Services talking about the three tanks that he is building in Martinez.

24 What we see here is the projects that 25 have been committed are primarily entirely

1 projects that have gotten some kind of permitting 2 already done. As Tony said, he had an old EIR 3 that went with the construction of his tanks. In Los Angeles, what we have seen is a refiner who 4 5 owns a terminal and has converted or restored 6 about 600,000 barrels of formerly idle tankage into working services different than when we 7 talked to them in the fall of 2001. They hadn't 8 9 made that commitment yet.

10 Let's see, what else. We have see an 11 independent terminal operator that has been able 12 to do a deal -- let's see, I'm going to change 13 screens here. Probably the big project here is 14 the 2 million one, that is the crude oil, and that 15 is at Berth 123. There is a half million barrels 16 there to be determined, a small refiner does 17 various upgrade of old tankage, that is a potential project, don't know if that is going to 18 19 go anywhere or not.

20 What we can see is what appears to be 21 1.4 million barrels of firm commitment to bring 22 old tankage back on line or to construct some new 23 capacity.

24 As I was talking about, we were 25 responding to opportunities, and this is

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158

1	different. We have seen a change in direction
2	here. One refiner's terminal has upgraded old
3	tankage, we see that several trading companies
4	have signed term agreements with terminal
5	companies, this was different than what we were
6	told eighteen months ago.
7	We also observe the master lender
8	partnerships, these are the entities that own some
9	of these terminal companies. They are willing to
10	build capacity on contracts that are shorter
11	termed than they had initially reported to us.
12	Of course there is a caveat with all
13	this. The current projects, the 1.4 million that
14	we see, is all under is in the same category as
15	Tony's stuff, they are under current permits.
16	Where the new permitting is expected to take two
17	to three years, and two to three years, that is
18	the time that stakeholders reported to us that
19	they thought it would take o get these tanks
20	built.
21	The Port of Los Angeles continues to
22	look at bulk liquid storage capacity that is
23	currently built in order to consider transitioning
24	that to containers or to car imports.
25	We have noted that commercial term

operators are studying deep bottlenecking projects
 at their local docks, sort of responding to this
 concern of, you know, I've got a tanker, but I
 can't unload it for six weeks.

5 All right, now. Conclusions. San б Francisco Bay, we see that the overall handling capacity for bulk liquids is adequate, but there 7 is a growing concern about the ability to bring 8 9 ships in, especially in the East Bay over Pinole 10 Shoals, where the water now is down to 31 1/2 feet as opposed to 38 or 39, which is the -- Tony, help 11 12 me with that, what is that supposed to be? Pinole 13 Shoals is supposed to be at what depth? 14 MR. HOFF: 35.

MR. HACKETT: At 35? Okay. Of course, in the Bay there is wide spread constraints around the gathering system that is getting the barrels from the terminals and the refineries into Concord is a concern with what looks like a tough nut to crack.

In LA Basin, it is our opinion that the
handling capacity continues to be marginally.
There is general tightness in storage -- there is
limited access to tankage by independent
importers.

1 Now, what we did do is we were able to 2 determine that independent importers, that is to say, companies, not the local refiners, have 3 succeeded in getting storage capacity in Los 4 5 Angeles, although they report to us that none of them have enough tanks in to bring in their cargo. б 7 We see that the lack of tankage on the water and/or constraints of moving the product 8 9 from the docks inland is a problem. Some of these 10 berths will be more and more congested, and we 11 remain concerned about the issue of tankage on the 12 water. 13 Turning to crude oil, imports are going 14 to continue to increase, likely that increase is 15 going to be on crude carriers coming from the 16 Middle East. The balance of the crude comes from 17 the Pacific Rim, a lot from South America, Peru, Ecuador, some from Venezuela, and Mexico, 18 19 Indonesia, and some from Australia, but the next increment, frankly for the whole world, is going 20 to be coming out of the Persian Gulf. 21 There is, you know, additional risk with 22 23 lightering and we think with moorings as opposed to bringing ships to docks. The crude oil 24 25 inventories have been low, have always been low,

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    although I will note we have no stories of anybody
    running out of crude in all this.
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3	There are some uncertainties about
4	whether this new deep water dock in the Port of
5	Long Beach is going to go or not. The permitting
б	environment, you guys heard the permitting story
7	and thanks very much for that because that
8	really I have heard people whine about the
9	permit process for years, but I never really
10	understood it, and now you have given us sort of a
11	guide for understanding how that works.
12	There is this impact of this Air Quality
13	Management Rule 1178, which is going to take
14	storage out of the market as the operators put
15	domes on all these tanks.
16	Positives, though, we do see capacity
17	additions under existing permits and frankly the
18	people running these places work hard to figure
19	out how to get product ashore and the like, and
20	they will continue to run the system as hard as
21	they can.
22	Did I get to the end? I got to the end.
23	No, recommendations. This thing is more sensitive

24 than the keyboard.

25 All right, what should the state do

1	about this? Well, you come back to the permitting
2	issues, I don't have a solution for that, I'll
3	just, you know, we picked it up in the SFR Study
4	and we continue to say you all need to figure this
5	out. If we can help we will, but we are certainly
6	not the experts there.
7	The second point, coordinate state and
8	local interests in the Ports of LA, Long Beach,
9	and the Bay, especially with L A Long Beach.
10	They've got their own drives which may not
11	necessarily be consistent with the overall good.
12	Certainly one thing that we have been concerned
13	about is that the Ports of LA Long Beach are
14	regional suppliers of petroleum products, not just
15	suppliers to California. Regional means Phoenix
16	and Tucson, Arizona and Las Vegas. When Phoenix
17	has a problem with gasoline supply and you will
18	see this in a map a little bit later because their
19	normal supplier is out of Texas and Mexico are
20	having problems, they could look to LA for that
21	supply. Along that, frankly these days, it's
22	probably going to come in on a tanker. This is a
23	regional issue as well.
24	We see helping to resolve the dredging
25	issues, that is important. Dredging issues are

1	big in the Bay, the Pinole Shoals thing is a big
2	issue, and not just for the oil industry but for,
3	I think, the general cargo people, container ships
4	can't get to Stockton and the like.
5	In addition, there are dredging issues
6	in, I guess, the Port of Long Beach, and that
7	comes back to where some of these berths do need
8	dredging, and what to do with the spoils is always
9	a tough nut, so that one is out there and we
10	recognize it. Continuing to support
11	infrastructure project.
12	The next big bullet, street fuel
13	reserves said that we thought that one of the
14	reasons that the industry was not building
15	capacity was that these projects seem to be risky.
16	They are risky because they take a long time.
17	They take a long time because of this permitting
18	time takes two or three years, and then a year or
19	so to construct. You are talking about a three or
20	four year project to build a tank. What we had
21	been told was that many of the people who might be
22	interested in those tanks, didn't have the
23	patience or weren't willing to take on the risk of
24	committing to a project that long in advance.
25	That is why we thought some sort of support for

1 these infrastructure projects might be useful. 2 Finally, and this clearly is right in the center of the Energy Commission's bailiwick, 3 and that is collect and analyze the data 4 5 pertaining to waterborne movements. What we discovered was this States Land Commission's data 6 7 base where they can see what all the movements are, so we believe the analysis of that data base 8 9 would go along way to creating transparency about 10 what's really happening in the market. It might 11 very well help to explain how hard, for example, 12 the oil industry is working to bring cargos in and 13 their constraints are. That is the conclusion. 14 PRESIDING MEMBER BOYD: Thank you. 15 Questions or comments from folks in the audience 16 and Melissa? 17 MS. JONES: I have a question about the reduction in the storage capacity associated with 18 the SCAQMD Rule. You said 15 percent reduction. 19 20 Is that 15 percent being coordinated in some fashion? MR. HACKETT: The companies that have to 21 22 do this are primarily the refiners and Kinder 23 Morgan, that is because they're the ones that are the large admitters, and I'm not sure if that is 24 the right term. At any rate, they've got the big 25

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165

1 tanks and the floating roofs, and my expectation 2 is that what each company is going to be doing is looking at their inventory of tanks and trying to 3 figure out how they are going to get this 4 5 maintenance done in what is now a six year period. б I think we started out with seven last year, and 7 it's now six. Each one of those companies, 8 9 individually, is going to have sort through that. 10 I defer to WSPA about whether the industry is 11 going to coordinates those, that doesn't seem 12 likely. 13 MS. JONES: In terms of your 15 percent 14 estimate, how did you come up with that? 15 MR. HACKETT: 100 percent of the tanks 16 have to be done in seven years. 17 MS. JONES: You just evenly spread it 18 over time? MR. GIESKES: Actually, we did, on 19 behalf on WSPA --20 MR. HACKETT: Come on up here. 21 MR. GIESKES: -- a fairly detailed 22 evaluation at the time where we compared 23 schedules. The original South Coast program 24 called for this whole thing to be done in four 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1 years, and we could see that four years was 2 clearly not feasible. The 10 to 15, a lot depends on how these tanks are actually going to be domed, 3 whether they can do it with products in the tank 4 5 or whether they have to empty the tanks first. 6 There are different techniques for doing this. 7 I think it will be coordinated almost naturally because there is only limited number of 8 9 contractors that can do this work, so they can't 10 be doing too many tanks at the same time because there is just not the qualified work force, so it 11 12 will be a natural coordination from the point of 13 view from the contractors. 14 MS. JONES: Thank you. 15 PRESIDING MEMBER BOYD: Brian. 16 MR. COVI: Yes. This is a closely 17 related question. Brian Covi. What is the typical down time for a typical tank in terms of 18 19 turn around to get this maintenance work done? MR. GIESKES: The schedules that we saw 20 21 at the time from the refiners were all over the place, and if they can combine it with the regular 22 23 schedules, API 64, to programs, or if they have to do maintenance work at the same time. 24 25 Some refiners estimated three months per

1 tank, others were much faster, but I doubt you 2 could do it in less than four weeks. There were some really long estimates, but that might have 3 been tanks that knew that once they opened it up, 4 5 there would be a problem and they might have to do б some other repairs at the same time. 7 COMMISSIONER GEESMAN: I wonder if you could elaborate a little bit more on the reference 8 9 to loan guarantees there. I'm having a difficult 10 time understanding what problem that is designed to fix. 11 12 MR. GIESKES: This went back to the 13 original SFR recommendation where --14 COMMISSIONER GEESMAN: I'm sorry, that 15 predates me, so --16 MR. GIESKES: Oh, one of the commercial 17 barriers that we saw, why doesn't more tankage get built, is that most of the tank farms are now 18 owned by Master Limited Partnerships. Master 19 20 Limited Partnerships have certain preferential, 21 enjoy preferential tax treatment, but they can only do so from what is called qualified income. 22 23 Qualified income requires long term contracts with a major credit worthy company and 24 25 it has to be in the twelve year or more or some

1

other qualified commodity.

2	These companies cannot build tankage on
3	spec as it is called, speculation. Ten years ago
4	you had companies that were normal c corps, active
5	in commercial storage, the markets got tight, it
6	is like ship building and tank building was in
7	their blood. They would say we would go out and
8	build ten tanks, you no longer see that, no
9	tankage gets built on speculations. MLP's are
10	simply not capable to do that, their shareholders
11	or their holders of the unit would be up in arms
12	if it did so.
13	On the other hand, the commercial tank,
14	the spot tankage market dried up, most of the
15	tankage got tighter and tighter, most of the
16	refiners wanted to secure their operational tank
17	requirements, and sign long term deals with the
18	commercial operators, so the squeeze, who got
19	squeezed out in all this, was the independent
20	importer, the trader who is looking for a short
21	spot tank rental. I need to park some barrels
22	here for three months, or four months. Ten years
23	ago or five years ago, you could have found
24	easily, you paid a little premium, but you could
25	easily have found tankage.

1	In order to break through that conundrum
2	of MLP's require long term contracts, the market
3	requirement is really for short term tankage. How
4	can you get through that, even though you can see
5	that overall the requirement is there.
6	It might be by providing a loan
7	guarantee. Now the terminal builder, the tank
8	builder, can build tanks justified to its
9	shareholders because it is underwritten and now he
10	can rent out this tankage in a short term market,
11	and that was the underlying idea.
12	State monies for infrastructure are
13	quite common, I mean roads and all these other
14	things, and what we figured since the market
15	requirement is so real, what you do with this type
16	of investment support, it's not costing the State
17	a great deal, but you remove a risk element.
18	Rather than commercially, the
19	industry will take care of itself, but it only
20	does so after the problem has become sufficiently
21	big for there to be any kind of justification.
22	If you want the State point of view and
23	the energy security point of view, is you want to
24	sort of prevent the problem rather than see it
25	yield after time. These types of investment

1 guarantees could be an instrument. That was the 2 reasoning.

3 PRESIDING MEMBER BOYD: Questions,
4 comments from folks out there.

5 MR. LANZA: Yes, I'm Robert Lanza from 6 ICF Consulting. I had a follow up question to the implementation of the tank domes for the South 7 Coast district with respect to the current six 8 9 year time frame. Did you find any actual timeline 10 for people who have estimated how much time the 11 permitting part of that process would take versus 12 the engineering process, and do you have any 13 indication that six years is a sufficient amount 14 of time to conduct all the necessary conversions? 15 MR. HACKETT: We were brought into the 16 project in November or December of 2001, fifteen 17 or sixteen months ago, and we did our analysis. I think at the time the air district wanted all this 18 work done in four years. When we did our 19 20 analysis, that was not feasible, and our 21 perspective was really the one, from the plumber's perspective. You know, how fast can you fill the 22 23 tank and how quickly can you put the hats on them and the rest of that sort of thing. 24 25 We didn't get into the permitting -- I

1 know that the association looked at that pretty
2 closely, and I bet they've got -- here we are a
3 year later, and I'm sure they've got an update on
4 that.

5 MR. LANZA: Thank you. Another part of my question was with respect to the idle tank б 7 conversions. You mentioned that there was idle product tankage that could be converted to product 8 9 storage, and I wanted to know if you had done any 10 analysis concerning how much of the barrier is an 11 engineering versus how much the barrier was a 12 permitting barrier since those tanks are not 13 currently permitted for light products.

14 MR. HACKETT I think that in most of the 15 tanks we looked out were primarily old large 16 residual fuel oil tanks that were associated with 17 power plants. Power plants here in California burn the bottom of the barrel for years and years 18 and years, but in the late '80's and early '90's 19 20 we switched to burning natural gas for air quality 21 The tanks are still there. reasons.

In at least two cases, those tanks have been converted to petroleum service, and they are mostly done with intermediate oils called black oils or with crude oil, but there is still some,
1 though, of these big old power plant tanks 2 scattered around in like inconvenient places. Ιt is hard to get into and hard to get out of. I 3 think we looked at them, again, we were looking at 4 5 them from of plumbing standpoint as opposed to a permitting standpoint. I don't know about the б 7 permitting end, although there is one tank farm we know in the Bay Area that is next to a housing 8 9 development and an elementary school. We drove by 10 that one and said, "No, this one ain't going to 11 work."

12 MR. LANZA: That one is not going to 13 happen. The final question, you also mentioned 14 the policies of the Los Angeles Port towards 15 conversion to container and cars, and i wanted to 16 know what was driving that policy with respect to 17 the current situation of product tank shortages? MR. GIESKES: I think we had meetings 18 19 with, very open meetings, with the Port of Long Beach and the Port of LA, and from their point of 20 21 view I can understand their predicament. The predictions are that container traffic will double 22 23 from its current 8 million TEU's to 16, and they are desperately looking for land to do that. 24

25 These new mega terminals require at

least 500 acres each, and there are not many
 places where you can put 500 acres all in one
 piece in Long Beach and LA.

The revenues generated from containers 4 5 and cars on a simple gross revenue basis are about б ten times higher than from boat towing products. I think what the ports tend to forget is that the 7 infrastructure for containers and cars, the 8 9 investments that the ports or the community has to 10 make are very very high. The Alameda Corridor Project in LA was 11 12 \$2.2 billion, so if you start working all this 13 investment into each container terminal, it is 14 very expensive to build with shore compacting and 15 two feet of concrete. These are very very capital 16 sensitive projects for the general public. 17 When we look at this, we think that petroleum is actually only in that revenue basis, is pretty 18

19 attractive to the ports, but the ports also 20 believe that all you need for a petroleum tunnel 21 is a dock and then you can pump it inland. It is 22 very difficult to pump a container inland, I give 23 you that.

24 What we've seen is that actually it is 25 not quite that simple. If you have only a dock at

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the water with very little storage attached to it, which is the case for almost all the marine berths in LA and Long Beach, you get to see some serious bottlenecks. Either in that case if you go that route, that would have to be miles and miles of additional high capacity pipeline to be laid to the inland tunnels.

8 MR. HACKETT: Having said that, they've 9 got a good example, and that's BP's Berth 121 in 10 Long Beach, it is the super tanker berth there 11 where they've got a big pipe and they've got big 12 pumps, and they've got a lot of storage inland, 13 and they can take that crude oil off the vessels 14 and blow it up to the refineries in the north.

15 It is workable, but, you know, the 16 infrastructure's got to be there to support it.

MR. LANZA: Otherwise you have a robbing
Peter to pay Paul process going on with respect to
the land requirements.

20 MR. HACKETT: Right, there are trade 21 offs. Our opinion is that the port doesn't do 22 their economics the way we would normally.

23 MR. LANZA: I understand that, thank24 you.

25 MR. SCHREMP: This is Gordon Schremp

1 with the staff of the Energy Commission. Dave, I 2 had a associated question about the ports of Long Beach and Los Angeles. On slide 26 in your recent 3 trends, if you could go back to that just for a 4 5 second please. You have a reference under the б caveats about the port policies in LA may 7 continually lead to closure of terminals. Is Long Beach left off that list because 8 9 their behavior has changed recently, or should 10 they have also been included on that list? MR. HACKETT: It is sort of, in all 11 12 fairness, a lot of the tankage on the water was 13 over on the Long Beach side. I'm sorry, I said 14 that wrong. In all fairness, a lot of the tankage 15 was on the Los Angeles side, but Los Angeles is 16 trying to close the West Way Terminal which is 17 primarily a chemical terminal. They are pressuring Kinder Morgan Berth 118, and the Vopak 18 Terminal, what is it, 186? 19 20 MR. GIESKES: That's 188 through 190, and there is the tankage off the LA -- let me 21 look. There is the tankage off the LADWP at there 22 23 are two terminals, 500,000 barrels that were going to be converted to black oil for Vallejo and those 24 25 will be closed down. In return, Vallejo may get

1 to keep the old tankage and Long Island, but there 2 is considerable pressure, continued public pressure to remove the tankage in Wilmington 3 because they are unsightly, there is a local 4 5 community center, they are trying to gentify the port there, and terminals are ugly. It is a б 7 public perception issue rather than anything else, and that pressure is currently quite strong. It 8 9 has high level public support to close these 10 terminals.

There are actually two idle berths on 11 12 that same point close to Vopak that would make 13 excellent additional marine berths, and people 14 have been trying to get access to those and 15 mobilize them as new marine docks. All that is 16 hung up while the port is still trying to decide 17 if it wants or doesn't want marine bulk petroleum terminals. I think there is a role there for the 18 19 Energy Commission to step in and represent the 20 state and in fact the region with Arizona and Nevada also, represent their interest because 21 right now, it doesn't go any further than some 22 23 locals in evidence of Wilmington would like to see 24 parks and walkways where these terminals are. 25 MR. HACKETT: At the same time, relative

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1 to Long Beach, I think we have actually observed 2 that Long Reach has made some moves that are positive versus when we talked to them eighteen 3 months ago. One small terminal company there is 4 5 going to be able to build a small tank, and then I 6 think that the port had some conversations with 7 another terminal operator that sounded positive. The issue of tankage at the Berth 123, 8 9 in order to take in crude oil, in the past I think 10 Port Long Beach said no way, and while I don't 11 think they have agreed to it, at least they are 12 listening to the conversation about building the 13 storage there. 14 PRESIDING MEMBER BOYD: Mr. Sparano. 15 MR. SPARANO: Thank you, Jim. Joe 16 Sparano with WSPA. A thought occurred to me as I 17 was listening to Dave and Thomas describe Rule 1178 in particular. Here we are all gathered 18 19 trying to figure out solutions to a difficulty 20 that is perceived as not enough storage, whether storage can help mitigate price spikes. 21 22 We have a countervening rule 1178, that 23 is conceived in a manner that forces tankage out of service, and it does so potentially with great 24 25 expense and maybe even some question as to how

long it will take to put the tanks back in
 service.

Even though, I understand, there is a 3 six year schedule, there could be some very 4 5 inopportune times when the schedule is being 6 carried out where disruptions occur. It occurred 7 to me, the point of this is that perhaps there are ways that we can work both as an industry and CEC 8 9 to do things that might affectively get 1178 10 repealed.

11 By that I do not mean don't take care of 12 emissions. What I mean is use alternative means 13 to take care of emissions in a more cost effective 14 manner in a way that doesn't take supply of 15 storage off the market.

16 That is just a fundamental that we may 17 not have the means to address successfully, but we 18 certainly have the will with all these people 19 gathered here, and all the good work that's gone 20 on to address the point in that manner.

I think it is just an absolutely classic example of one part of our hierarchy addressing an issue one way, and the consequences, perhaps unintended, of that could be something that none of us like when we look at market volatility.

1	PRESIDING MEMBER BOYD: I need to ask
2	I know the CEC did intervene originally, but was
3	the question of alternative means of solving the
4	problem, i.e. reducing emissions addressed in that
5	context or is this a new thought.
6	MR. SPARANO: I don't know the answer to
7	that, Jim, I wasn't involved in that process, but
8	we certainly look back on it. I would like to
9	offer to give the Commissioners an update as was
10	mentioned. I don't have it available today, but
11	we would be happy to update you on where we are as
12	an industry.
13	PRESIDING MEMBER BOYD: Let me look at
14	my own staff here and see if Gordon or Pat have a
15	thought on that or a response to that.
16	MR. SCHREMP: Yes, Commissioner Boyd,
17	there were alternative approaches discussed at
18	several of the working group meetings that were
19	held over a number of months. Those having to do
20	with changing the time period by which compliance
21	would be eventually achieved to mate more up with
22	a standard maintenance practice of examining one's
23	tanks on a periodic basis every ten, twelve,
24	fifteen years.
25	The meaning is, when the tank was out of

service, normally not being used, then put the
 dome on and not interfere with the tank
 utilization.

That was a period of time that was too 4 5 long to achieve compliance with a negotiated б settlement to achieve reductions in that air base 7 and firm those sources, but in a very specific period of time. It fell outside of that 8 9 negotiated settlement if you would. 10 MS. BAKKER: That was a court case, right? 11 12 MR. SCHREMP: That's correct. 13 MS. BAKKER: So, it wasn't within --14 MR. SCHREMP: Right. Now, can the 15 parties, and I'm not sure if all the parties 16 involved, specifically, but can all those parties 17 reconvene, have more dialogue, and end up in the 18 same place with emission reductions through other matters? I don't know the answer to that 19 20 question. 21 PRESIDING MEMBER BOYD: Anyway, it's a good question. Any other questions, comments, 22 23 thoughts? MR. MATTHEWS: I have a question for 24 Dave. You mentioned, and this is my own lack of 25

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1 knowledge about a part of the industry, seeing I 2 had it, maybe others did as well. You mentioned limited access to tankage by independent importers 3 is one of the things on your conclusions. Could 4 5 you explain about who the independent importers б are, and is there an opportunity there to expand a 7 piece of the market here we haven't looked at. MR. HACKETT: Sure. There are half a 8 9 dozen, I think, trading companies who make some or 10 all their living by importing products into California and other markets, they are 11 12 arbitragers. 13 They can buy cheap off shore and in some 14 other part of the world, and arrange shipping in 15 order to get products into the California market, 16 into LA, or into San Francisco Bay. I think half 17 a dozen is sort of typical number. In general, these are not vertically --18 they are trading companies, they don't have gas 19 20 stations. Some have refineries, but none of them

have refineries that are any where close to here, and they don't have crude oil In general, they make their living by buying low and selling high to make a profit.

25 We see them as one more element in the PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1 market, I mean, as far as on shore today, there 2 are half a dozen very large firms that are refiners. Most of them have a lot of gas 3 stations, at least some, some have crude oil 4 5 production and the likelihood that those are б generally pretty vertically integrated firms, and 7 os these trading firms, in our view, fill a market nitch. 8

9 They are able to bring in supplies 10 frequently at costs that perhaps their competitor 11 refiners cannot obtain at the time they need them. 12 We seem them, frankly, as almost a lubricant, we 13 believe that these companies help to provide 14 additional product for the market, and that helps 15 to keep the market more efficient.

16 MR. MATTHEWS: The reason their storage 17 is limited?

MR. HACKETT: The reason their storage 18 is limited? Thomas covered that in a slide where 19 he had a breakout of who has what for tanks in LA 20 where he showed roughly 40 percent of the capacity 21 is owned by the refiners and the refineries, and 22 23 then roughly another 40 percent, we based our assumptions on what we heard and our calculations, 24 we think that the refiners probably at least 25

another 40 percent from the folks outside. That
 leaves less, I think, less than ten percent of the
 capacity in the hands of the independent trading
 companies to operate in.

5 When we talked to them, they said, yeah, we've been able -- since you were here eighteen б 7 months ago, we have been able to get a tank here and a tank there, although none of them said that 8 9 they had enough capacity to bring in a cargo of 10 cargo, 300,000 barrels, and these guys have got 80 or 150, and that sort of thing. They don't have 11 12 anything efficient. We are talking about Los 13 Angeles.

14 In the Bay Area, I think the situation 15 is different. Frankly, my hat is off to ST 16 Services, you know, not only are they building 17 tanks, but they've been able to figure out how to 18 come up with more capacity over the years and so 19 they are able to do some things that competitors 20 down in LA can't do.

21 MR. LAUGHLIN: Mr. Laughlin, can you22 hear me?

23 MR. HACKETT: Yeah, go ahead Drew.
24 MR. LAUGHLIN: I also want to say there
25 is also a large (inaudible) traders that you

1	mentioned the off shore, or non California
2	refiners. Will they be getting a different bigger
3	plate in the California market? We've got the
4	Citgo, Hovensa, Buena Vesa, European refineries,
5	in particular Neste, Vitol, and Canada, and Irving
6	in Canada, just a name a few.
7	There is quite a large group, but they
8	are not consistent players in California, but they
9	are suppliers now, especially of high quality
10	barrels, or can be suppliers, but they are not a
11	day to day participant in the market and don't
12	want to bring cargos out there unless they know
13	they have a home for those cargos.
14	MR. HACKETT: Drew, when you say I
15	don't know if we announced that we have Drew
16	Laughlin on the line. Drew is an independent
17	consultant, made his living as a trader back East,
18	was part of our team with some of this AB2076
19	effort. Drew looked at Gulf Coast supply and
20	demand and looked at U.S. Flag shipping. It was
21	his analysis in all that. He has been hanging out
22	on the phone, at least this afternoon.
23	MS. JONES: Could you do you have an
24	idea of how much volume or what percentage of the
25	market is represented by these half dozen

1 marketers? Less than one percent, one percent? 2 MR. HACKETT; I would say less than 5. MS. JONES: Less than 5, thanks. 3 MR. LAUGHLIN: Except during times when 4 5 you've got a crisis, and then it becomes large б because they are your safety valve. They are the 7 group of people, along with the other participants in California that have off shore trading 8 9 facilities and off shore refinery facilities that 10 will bring in product in California when you have 11 a shortage. 12 MS. JONES: How high would that range? 13 MR. LAUGHLIN: It would be whatever it 14 takes to fill the gap over whatever period of 15 time. We have seen that in the past in '99 that 16 ranged up well over 100,000 barrels a day if I 17 remember, Thomas, you may have the numbers. MR. GIESKES: That's about correct, 18 19 yeah, but Drew not all of that was actually -- it came from those off site refineries, but was not 20 21 necessarily imported by them. In most cases, in '99, it was actually the local refiners that 22 23 stepped up to the plate and bought these supplies and brought them in through their systems. 24 25 MR. LAUGHLIN: Which is still going to

have to be the way things will be done in the
 future because the outside refiners pretty much
 have to sell to California refiners in order to
 move this product into your system.

5 MR. GIESKES: What might be of interest in terms of infrastructure development is if, in б deed, there was more readily available independent 7 tankage in the LA Basin that one of these external 8 9 refiners would say, I want to be a continuous 10 player there, I can make this stuff, I can make 11 money on it if I can rent a tank. Rather than 12 sell it to the local refiners, I want to become a 13 local player.

14 That is a possibility. Currently that 15 doesn't exist, and this plays into your question, 16 Scott. What has changed? Why are the local 17 traders, at least, squeezed out of the market and why, or at least were at one point in time, and 18 19 why can't independent importers, outsider 20 refiners, easily rent tankage here? 21 I think it has to do with a situation where in the early '90's, a lot of commercial 22 23 tankage came on the market, there was an over capacity. It was very easy to find tankage, and 24 25 then as the imports stepped up, and the

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requirements grew, and gasoline, the amount took
 off, etc. etc. For all those reasons that we
 pointed out, the tankage market tightened up.

In that situation, the refiners, for a 4 5 very good reason, decided to no longer contract б out their own tankage to the third parties, and 7 also locked up tankage outside in the long term leases. If you are a commercial tank operator, 8 9 and you can do a long term deal with a major local 10 refiner, of course, you do that rather than rely 11 on spot tank rentals and that's what has happened. 12 The spot tank rental element got dried 13 up because the market tightened up. 14 PRESIDING MEMBER BOYD: As you said 15 earlier, what's missing are the tanks built on 16 spec, and you are suggesting the loan guarantee 17 approach to maybe facilitate those. MR. GIESKES: As usual, supply and 18 demand do their destructive work. If the demand 19 20 is strong enough, industry will step up to the plate, so we've seen some really recent 21 developments where we had meetings with a local 22 23 MLP six weeks ago where they said, yeah, we know. We have been looking at this project, we can't do 24 25 the deal, we have customers asking us, but it is

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1 too difficult. Now, low and behold, a couple of 2 weeks ago, they said, yeah, we've got the 3 clearance, we're going to do it. We are going to build tankage under a short term, say, typically 4 5 three to five year deal, where as previously they would have had required a fifteen year contract. б 7 Things are changing, but whether it is enough, and this is new tankage, so that would 8 9 come under the two or three year type permitting 10 delay. There are some changes in the commercial landscape. Whether there is more that could be 11 12 done, sure. I mean, always. 13 MR. PEREZ: I've got one question. This 14 is Pat Perez of the Energy Commission staff. Ιt 15 goes back to the infrastructure challenges 16 associated with the Long Beach Berth. In 17 particular, you noted in there that for that very large crude carrier that would be coming in there 18 that at some point in the future, there is going 19 20 to be a need to bring in perhaps two of those ships a week. 21 22 I was wondering as part of a two point 23 question or two part question, I may add. One,

how far out into the future do you see that need unfolding, and secondly, in the event that those

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1 infrastructure improvements do not come about, how 2 will industry respond, and what might be the 3 associated cost of responding with an alternative 4 approach to not being able to bring in two of 5 those ships?

б MR. GIESKES: That's a very good 7 question. I think what would happen if Berth 123 doesn't go ahead, is that you would see increasing 8 9 -- it is almost like a series of dominoes, Berth 10 121 has already been bottlenecked, and shore pumps have been installed, so if you had to bring in 11 12 more fees on one to one, which you could do, it 13 would push back some smaller crude carriers.

Those crude carriers would probably end up at the shell dock at Long Beach, was it that, 86, 82, or 84. That would push out clean products that would have to end up somewhere else. That is why crude and clean products, etc., it is all part of the same product. The whole system would become more congested if you do that.

21 Crude lightering would probably have to 22 increase, and the risk with lightering and the 23 risk with off shore moorings, I know that the 24 companies that do this, take every possible 25 precaution, etc., but it only takes one incident

1	in the Santa Monica Bay, like the incident that
2	was in Huntington Beach in 1992, to shut down an
3	operation like that. That represents very serious
4	exposure to the energy infrastructure of the State
5	of California.
6	It is like the incident with the Exxon
7	Valdez had a great impact on crude supplies. The
8	same thing could happen with one of those
9	operations. If nothing happens, if infrastructure
10	doesn't improve, it just means that the whole
11	system gets tighter, and the risk of these
12	temporary or sort of make do with the current type
13	of operation increases.
14	MR. PEREZ: Thank you.
15	PRESIDING MEMBER BOYD: No one else?
16	Okay, gentlemen, thank you very much.
17	Now, we are going to revisit the
18	California Strategic Fuel Reserve and Dave and Tom
19	will add to the cast of characters, I guess.
20	Dave, I guess we will look to you to be
21	MR. HACKETT: I'll start it off, and we
22	will continue the tag team match, although Gregg
23	Haggquist is coming up, and he will be talking,
24	and Thomas, Gregg, and I will talk about strategic
25	fuel reserve from the perspective of, you know,
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1 what we presented a little over a year ago, that 2 had a tune up in July, and a bit more of a tune up 3 in preparation for this. Dr. Tony Finizza will come on and he 4 5 will talk about his end of this program as well. б PRESIDING MEMBER BOYD: You will tell us 7 what the strategic fuel reserves is and what it isn't? 8 9 MR. HACKETT: I'll certainly try. 10 The Strategic Fuel Reserve Study was 11 initiated in 2001, essentially as a result of all 12 the volatility in the gasoline in California in 13 1999. There were an extended series of refinery 14 problems, some very large ones, and then some 15 smaller ones, but, you know, fundamentally, the 16 refining industry had a very bad year as far as 17 reliability was concerned here in California and in some degree or other on the West Coast as well. 18 The Energy Commission contracted with 19 Stillwater Associates to look into the issues 20 around the strategic fuel reserve. We started 21 that in August of '98, did a comprehensive market 22 23 study, we've talked to 65 different stakeholders, we looked at other reserve initiatives, we looked 24 at the -- let me back up a second and say, when 25

the Energy Commission came to us and said, we want you to do this strategic fuel reserve. I said, well, I'm not all that interested in the strategic fuel reserve, these things don't work very well. There are sort of a whole host of problems that go with them.

7 What I would really like to look at are the barriers to supply in this market. If the 8 9 market is obviously volatile as all get out, and 10 so what are the things that get in the way of the 11 oil industry doing its job and what are the things 12 that contribute to this volatility, and is there 13 something that we can do that government can do to 14 deal with and sort of resolve some of those 15 barriers.

We looked at physical, commercial
barriers, and we've got a laundry list of it, of
barriers.

We made a number of proposals, a lot of this is, you know, what is it the government can do to help increase the storage capacity. That is where this loan guarantee idea came from. We also said we are taking the state's money to do a strategic fuel reserve study, let's see if we can figure one out.

1 What we think we did, is we came up with 2 something makes some sense. The reason that there is a room full of people here is that a lot folks 3 don't agree with that particular point of view, 4 5 and that will be the fight in a little while. б Essentially what that strategic fuel 7 reserve is, is a rolling inventory, it is essentially a forward time swap. In order to 8 9 provide some liquidity in the market so when a 10 refinery goes down, there's barrels to pump into the market. Those get replaced on a guaranteed 11 12 schedule. 13 When we did all that, we looked at the 14 cost, did a cost benefit analysis, and we said as 15 near as we can tell, this ought to be good for 16 consumers. We also said this is the first cut. 17 In order to get into a lot of the details, you are going to have to study this some more. 18 19 Okay. As far as the barrier to supplies 20 are concerned, the obvious ones are distance. California is a long way from alternative markets 21 from the Gulf Coast, which has been the 22 23 traditional source of the next barrels to come to California as well as refineries around the world. 24 25 Currently, we California consumers, are buying

1	gasoline that is made in Dubai in Eastern Canada
2	and in Finland. We are just a long way away.
3	Product specifications here are tough,
4	we have tough air quality rules, the reformatted
5	gasoline program in California is arguably been a
6	huge success when it come to where air quality is
7	concerned. I really like that I can't see the air
8	that I am breathing, that is good, but that does
9	create a barrier to supply.
10	We noted that refinery expansions have
11	not kept pace with gasoline demand growth, and
12	starting in '99, this became an import market, so
13	what will happen is likely, the bulk of the demand
14	growth in gasoline is going to have to come from
15	imports.
16	We noted this had always been an export

17 market. What does that mean, how does that 18 translate? The refiners were the exporters, I 19 used to be, at one time, Mobile's trading 20 distribution manager, and we had for a while a big export program where we made more gasoline than we 21 22 could sell in California, and we tankered it out 23 of our Southwest Terminal on Terminal Island to haul around the world, Mexico, the Far East, the 24 East Coast, and the U.S. and the like. It doesn't 25

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1 happen anymore.

2	The export infrastructure can be used
3	for imports, but those imports pretty much go into
4	the refineries, and so what you don't see is a
5	comprehensive system of import capable facilities.
6	There is one in the Bay, there's one in LA,
7	although the one in LA is in large measure full of
8	long term leased gas.
9	We also noted that imports are likely to
10	come from foreign sources as opposed to domestic.
11	As much as anything because of U.S. Flag shipping
12	concerns. We see that the U.S. tanker fleet
13	continuing to decline, and a lack of capability to
14	support large levels of imports from the Texas
15	Gulf Coast into California.
16	We think that the lack of a forward
17	market creates risk for importers, and I know Dr.
18	Williams will want to talk about what we mean
19	about that, I suppose. We will get into that.
20	An interesting one here, is we think
21	that Unocal's gasoline paths reduce gasoline
22	supply. For those of you that have been paying
23	attention, you know, that the FTC now wants to
24	talk to Unocal about exactly how they put all this
25	together, and hopefully the patent office is

1

looking at their activity as well.

2	We said that because of the changing
3	product specs and the overall tightness in the
4	market and the rest of that, that unplanned supply
5	disruptions are likely to be more severe.
6	Our objective here was to do something,
7	and we are concerned about the increasing
8	volatility, I think we have sort of talked about
9	that quite a lot. I know everyone in this room
10	has been paying attention to that. We came up
11	with a criteria for a solution.
12	One thing that was clear to us is that
13	there was a lack of storage capacity in
14	California, so that needs to be fixed. When we
15	were thinking actually, what we did, was we
16	looked at all the strategic fuel reserve, or the
17	fuel reserves, the heating oil reserve in New
18	England, crude oil reserve in caverns in Texas,
19	and Louisiana and others around the world. We
20	looked at those and said what are the problems
21	with these things, and then how can we work around
22	them. We are not talking about something that's
23	got a supply overhang. We think the product is
24	likely to flow through it rather than being
25	stagnant. It will have to be integrated to the

1 refine centers.

2	The Energy Commission did a strategic
3	fuel reserve study, let's call it, ten years ago,
4	at that point, they said well, let's build 5
5	million barrels and let's put it in Stockton and
б	let's connect it to the water with an 8 inch pipe.
7	If you could get it filled up, you could never get
8	anything back out of it.
9	We are talking about here is system that
10	is integrated with the rest of the market and has
11	open access, that is to say any qualified
12	participant can be involved. Frankly, what we are
13	looking to do here is mitigate the physical and
14	commercial risk for people bringing barrels into
15	the market.
16	As far as recommendations are concerned,
17	for those of you who tried to follow this on the
18	internet, we are now on slide six. Permitting
19	if you can rationalize the permitting process is

20 so that these facilities can get constructed in an 21 appropriate amount of time, we think that will 22 help.

As far as the reserve itself is concerned, what we said was that the State ought to issued a tender to build 5 million barrels of

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1 capacity, 2 million barrels in the Bay and 3 2 million barrels in Los Angeles. The reason for 3 the split, that's roughly the size of the market percentages between the Bay and LA. 4 5 Those facilities have to have deep water б access, and they have to be connected to the distribution system, and that half that volume 7 would be subleased to market participants. 8 Essentially, we would build 2 1/2 9 10 million barrels, we would subsidize the construction of 2 1/2 billion barrels in order to 11 12 attract volume in, and then the state has the 13 ability to fill up the other 2 1/2. They do that 14 with summer grade CARBOB. California reformulated blend stock for 15 16 Auction 8 blending. That's the kind of gasoline 17 the majority of the refineries in California are making a day, that is to say it is a ultra clean 18 gasoline with very low volatility that's been 19 reformulated to be blended with ethanol at the 20 21 truck distribution terminals. In this process, that volume would be 22 23 acquired in an appropriate manner, for example, during the winter when normally demand is low and 24 in general production -- the ability to produce 25

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1 gasoline is higher in California or it could be 2 brought in with imports. 3 Qualified participants can withdraw and repay the volumes for a fee and we will give you a 4 5 little demonstration of that in a moment. The fee б is going to be determined by an electronic 7 auction. 8 We recommended to conduct a next stage, 9 more detailed design to look at the various 10 offering alternatives, and auction mechanisms, and to design the oversight functions. 11 12 We took this recommendation down to the 13 level to where we thought -- we didn't see any 14 killer concerns as far as our analysis and at that 15 point, we stopped the analysis, and wrote the 16 report. 17 MR. GIESKES: You skipped one. 18 MR. HACKETT: I skipped one. MR. GIESKES: Two at a time. There you 19 20 go. 21 MR. HACKETT: I have fat fingers. What was proposed? Here in this diagram, you see two 22 23 ships on the left, a block that represents tankage in the center, and then the infrastructure 24 25 distribution system on the right.

1	What we see here is that the gasoline
2	bank will be co-located with other tankage,
3	private tankage. One of the complications that we
4	observed when we were doing our studies last year
5	was that because the new grade of gasoline,
6	CARBOB, is so difficult to make, there are very
7	few refineries, off shore, or the West Coast that
8	express the interest in making it.
9	At the time, we identified two,
10	subsequently a third one has come on board.
11	Probably over time, there will be more and more.
12	What we expected would happen was that much of the
13	imported material required to make gasoline in
14	California, instead of being finished CARBOB,
15	would in fact be blend stocks. Those blend stocks
16	would be things like raffinate, isooctane, and the
17	like.
18	What we saw was that importers, whether
19	they were independent traders or potentially
20	refiners and maybe refiners from other parts of
21	the world, would put these blend stocks into the
22	least side of the petroleum reserve and probably

Alternatively they could put it in there and hold it, and then sell it to the refiners when

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23 their blend, the CARBOB.

1 the refiners had a need. That is one of the 2 reasons this needs to be interconnected to the refiner system and so there would be a free flow 3 of blend stock and gasolines back and forth. 4 5 We also did see CARBOB being imported or otherwise stored in the gasoline bank, and the 6 stuff that wasn't imported would likely be 7 purchased from local refiners. 8 9 There is a private side and a public 10 side to all this, and then you know how would it 11 work. Let me go to the next one. The initial 12 fill would be purchased gradually, and over time, 13 not to offset the market, we thought the cost 14 would be about \$25 M a year, but that doesn't 15 include any offsets for the initial fill under 16 Federal Energy Policy and Conservation Act or fees 17 from auctions. What that Energy Policy and Conservation 18 Act means is that there have been provisions in 19 20 federal statues to have addition petroleum reserves, sort of local petroleum reserves. 21 Alternatively, you could say that, you 22 23 know, the Feds could sell crude out of the SPR in Texas and use the money to buy gasoline in 24 California. You could argue that we taxpayers 25

1 already paid for this stuff. At any rate, we 2 thought the cost would be relatively low. How does it work? We see that 3 participants would withdraw the product as a 4 5 result of an auction. Let's say there was some sort of refinery upset. Market participants could 6 7 then go decide how they wanted to do their business, one of their opportunities might very be 8 9 to come to what we call the gasoline Bank of 10 California, and initiate an auction. The auction 11 would be held electronically and then the winner 12 determined fairly quickly. 13 That winner would then be able to lift 14 the gasoline out of the bank on a prompt basis, 15 but it would have an obligation to return it 16 within a fixed period of time, let's say six 17 weeks, which is roughly the time it can take to arrange a shipment from the Texas Gulf Coast. 18 19 We thought it was appropriate that any 20 qualified participant could be in this. Qualified 21 participants likely are people that currently trade the spot market, who are refiners, the 22 23 people who have got the credit worthiness to play in this market as Dr. Williams said to you, you 24 know, buy a million dollars worth of gasoline. 25

1 We thought that the trading rental 2 lifting rights and replenish obligations would 3 create a satellite market that would likely improve liquidity. 4 5 Those are the features at the high б level, and did I skip another one? This aspect of the study is the one that is the most 7 controversial. I don't think we get a lot of push 8 9 back from industry on permitting and marine 10 infrastructure and the rest of that. 11 Some of the push back, you know, is 12 contained in this list. It's the government 13 interfering with industry. There were complaints 14 that the design lacked detail. There was some 15 discussion around the inventory availability and 16 usage. Marine infrastructure, we just went 17 through, I didn't get any push back, at least at this point, on that. 18 We did talk about capacity expansion of 19 in state refineries. I think some of our 20 21 colleagues here said, you know, that's the smartest way to go as far as increasing supply to 22 23 the state, we absolutely agree with that, but there is no argument that I think that at least to 24 some degree, that's part of the permitting 25

1 discussion.

2	We said that we thought that the
3	development of forward markets was useful, but
4	there were some other ideas about how that could
5	be done, and then I think there was some push back
6	on the cost benefit analysis. We are going to get
7	into those.
8	MR. GIESKES: Thomas Gieskes. Once
9	again, it is my duty to bore you with the details.
10	Hang on, no, there's still some interesting slides
11	here.
12	(Laughter.)
13	MR. GIESKES: No government interference
14	which has been cited, indeed, as one of the
15	controversial issues on our original proposal.
16	We say the government does have a
17	legitimate role to insure competition, and also,
18	there is a role for the state government in
19	particular to safeguard the security of supply of
20	essential commodities.
21	The concept, as we proposed it, aimed to
22	do, would limit the government role to facilitate
23	the building of storage, which would actually be
24	under the private sector. Not to try and be
25	smarter than the commercial industry, I mean, you

1	can do this on state tenders. You can also farm
2	out the actual auction process to commercial
3	parties. There are several parties who would be
4	extremely interested in doing this, NYMEX being
5	one of them.

б The government role would be, 7 essentially, limited to oversight. It is making inventories available to private industry by 8 9 underwriting bank loans on new storage capacity. 10 That is similar to other roles that the government occasionally has, especially for infrastructure, 11 12 where it does provide that type of economic 13 stimulus package.

We feel that much of the criticism in this area was actually unleashed upon us, even before the report came out, and much of that is because strategic fuel reserve reserves, that was a misgiving that we had ourselves going into this study is the charge word, and historically those haven't worked very well.

The other controversial issue that we faced after the initial presentations and after -in July last year, when we presented the final draft report was that there was a certain lack of detail. We hadn't really presented all the

1	details yet of how is this thing going to be
2	built, how is it going to be operated, etc., so
3	what we said is, in all fairness, this is a
4	feasibility study. That was the charter of
5	Stillwater was to conduct an early stage
6	feasibility study.
7	That was, essentially, an analysis of
8	the commercial and physical supply barriers. When
9	we found there was a consumer savings to be had,
10	that there were orders of magnitude higher than
11	what we predicted as cost, all we said is hey,
12	here are sufficient grounds to go into the next
13	phase of a design of such a reserve.
14	In projects of this magnitude, you go
15	through several design stages, the early
16	feasibility study is usually followed by something
17	that is called (inaudible) Engineering Design
18	Feed, where you go into a level of design that
19	then allows you to pull the trigger on actual
20	execution, then you go and build and do.
21	These successive design steps we felt
22	that we were in a way unfairly criticized, we were
23	told we don't want to go ahead with this project
24	because the design isn't there, and all we were
25	asking for is more we have to go into the next

1

phase and develop these details.

2	Enough about that, let's move on to some
3	of the details that I now need to bore you with.
4	One of the essential issues with the adding
5	storage in the hands of the state providing what
б	we saw was not really storage, but sort of
7	pipeline fill for imports. To what extent might
8	it crowd out private inventories currently held.
9	In other words, if you add 2 million
10	barrels of additional discretionary inventory,
11	which this would be, is that going to mean that
12	other parties are not going to hold equivalent
13	volumes, so you spent the \$25 M per year of
14	precious state finances. You don't see any real
15	benefits.

What this would require for us, and 16 17 other arguments all had to do with storage, there 18 were sounds being heard like existing tankages 19 being adequate, California has never run dry. An 20 argument that I can certainly feel some sympathy for, if you sponsor tankage that will be benefit 21 22 independent importers, you actually damaged those 23 deeply invested in the California market.

24Another argument was inventories in the25U.S. in general are not much better than
1 California. Finally, private industry will fill 2 the need if there is one. What we have seen in this sort of rerun 3 of the study in the more recent meetings that we 4 5 had, in particular, in the work that we did for 6 the marine infrastructure, is that of all these 7 arguments, only the latter was to have found to 8 have real merit. 9 Private industry is, indeed, stepping up 10 to the plate and tankage is being built. Some of 11 it is very expensive, and some of it between 12 parties that we thought would be commercially 13 incompatible, but it is taking place. Is it sufficient, and this argument of 14 15 crowding out, to what extent do we have to fear 16 it? We think the situation still remains 17 critical, and that there is still a lot of work to 18 be done. With that, let me take a very broad 19 outlook, and we are on slide 15 now, Petroleum 20 21 Storage in California. There is an awful lot o tankage out there. In total in the large 22 23 refineries there is over 1,600 storage tanks, 103 million barrels of capacity. There is a lot of 24 tankage out there. A lot of it is in crude 25

1 service.

2	We have compiled this breakdown, I won't
3	run through all the numbers. We have compiled
4	this breakdown on the Permit Registry for
5	Aboveground Storage Tanks, and then going through
6	these one by one, and especially in the category
7	of the small terminals, what is this.
8	Oh, that is a small terminal in
9	Bakersfield, I know that is a crude production
10	related tankage, or this is a truck rack terminal,
11	or this is etc. Based on that breakdown, we were
12	able to compile a fairly accurate picture, but it
13	will always remain a moving target of all the
14	petroleum built products in California.
15	Before I go any further, the question
16	always remains that even in a very very tight
17	storage market, there is 9 or 10 million barrels
18	of gasoline that doesn't move. Why isn't that
19	moving? There is a certain minimum amount of
20	barrels that will sit in tankage that is held in
21	refineries, that are simply products in transfer
22	or tanks that you can't use.
23	Let me back up a little and do a sort of
24	Petroleum Storage 101, and for those of you who
25	are very familiar with this, I apologize. A

1 typical gasoline tank will have a floating roof, 2 the floating roof has legs. When you empty the tank, you cannot land -- normally speaking, under 3 most typical permit conditions, you cannot land 4 5 the roof on its legs on the bottom and then draw б the tank completely empty because that would 7 create a vapor space underneath the floating roof. Once you fill it up again, you would displace 8 9 those vapors, those vapors would cause emissions, 10 and also there is a certain exposure risk when you 11 do that. Plus, you can damage the coating on the 12 bottom, etc. etc. etc. 13 Landing a roof is only done in special 14 circumstance, for maintenance, unless you have 15 very special provisions. That heel in the 16 floating roof storage tanks can be as much as 8 to 17 10 percent, so that is a lot of volume, that is 3 or 4 million barrels in California sits in the 18 tank heels, which you will not be able to touch. 19 20 Then of course, on the top, if you talk gross barrels, there's also some empty space at the top 21 that you can't really go into. 22 23 That is the unusable space in a given storage tank. I'm on slide 17 now, if you look at 24

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the use of tankage in refinery, the refinery, of

1 course, is true tankage at the input and the other 2 feedstocks, then there are some other feed product 3 tankage, and then there is a lot of tankage that is associated with gasoline, blending components, 4 5 and blending of gasoline, different grades of б gasoline for Arizona, premium gasoline versus 7 regular gasoline, etc. All these different tanks in their different service, could be half full, 8 9 and yet you are not able to put the barrels on the 10 pipeline for tomorrow's delivery schedule. There is a lot of volume in California 11 12 that is just sort of a minimum inventory required 13 to keep what we call the system wet. If you are 14 pumping from say a refinery to distribution 15 tankage and you own your own pipeline, there could 16 be a tank at the one end that is half full, and 17 there is a tank on the other that's half full, and both are being transferred into inventory that's 18 19 not readily available yet at that stage. 20 There is a lot of inventory in California that is simply tied up, and we'll talk 21 later -- this is not good. Sorry about that, I 22 23 hit the wrong button here. Here we go. Let's talk about how refineries actual 24 25 manage their inventories. Old refiners have

1 scheduling and planning departments, a lot of very 2 very smart people working there, these are the people that get the Friday, 5:00 phone call and 3 the midnight crisis and carry beepers. It is a 4 5 very hectic world. б They work with the marketing people, 7 based on forecasts, plan for certain inventories and routinely work with the traders inside the 8 9 market to make sure that everybody on the staff 10 knows how much inventory is available at any point in time, 11 12 The major element of refinery inventory 13 planning has to do with annual turn arounds. 14 Major refinery units have to be shut down 15 periodically for inspection and maintenance, and 16 refiners plan around that. 17 Those major turn arounds require 18 substantial inventory planning, that is planned typically a year and a half, two years in advance, 19 20 this sort of planning process starts, where shall 21 we get the volume from, where are we going to store them, do we have sufficient tankage to 22 23 bridge it, how can we bring in the additional barrels. 24 25 That is a very complicated planning

process, and in that, some margin for error is usually built in, but as you have seen this very spring, where a major refiner over ran their turn around period by about two weeks, that causes serious problems.

6 Let's talk about the types of different inventories here for a second. Operational 7 tankage has three types of operational tankage, 8 9 you can have a tank that is sort of set aside for 10 upsets, for process upsets, normally the inventory would be around 50 or 60 percent. If you have an 11 12 upset with the upstream unit, you can draw down 13 and keep the downstream unit operating. If on the 14 other hand, you have an upset in a downstream 15 unit, you can fill up the tank and keep the 16 process alive.

17 There are process buffer tanks, typically for instance, gasoline is produced, it 18 is run down in the batched tank. When that tank 19 20 is full, you take a sample, it's analyzed, it's 21 cleared, and then it gets transferred. Those tanks cycle between full and empty on a continuous 22 23 basis on the average inventory level would, once again, would be around 50 percent. That is what 24 you would expect to see. 25

1	You have tanks that are reserved for
2	loading or off loading of ships or rail cars and
3	trucks. Those tanks also cycle between full and
4	empty, but on irregular schedules. It would be
5	timed to the arrival of the ship.
6	On all three types of operational
7	tankage, if you look at the aggregate inventory
8	curve for a large number of tanks, you would
9	expect to see a little zig zag line around the 50
10	percent mark.
11	There is strategic storage, which
12	includes the build up for turn arounds, the stock
13	that is carefully built up and then used over time
14	to maintain sales while certain key units are out
15	of service.
16	There is finally discretionary inventory
17	that is used for marketing purposes. We expect
18	the price to go up, we will sit on some barrels.
19	These barrels should be worth more next week than
20	this week. This is when markets are in contango,
21	and has been explained this morning. Those are
22	discretionary barrels held specifically for
23	marketing purposes. It is those barrels that
24	people say would be displaced when a strategic
25	reserve would be available.

1	Let's take a look now at now at the
2	observed inventory behavior, and this is a busy
3	graph. The red line represents the retail price
4	in dollars per gallon, and down at the bottom it
5	says finished gasoline with on top of it the
6	blended components.
7	This is California refinery inventories,
8	which is CEC data, includes the Bay Area
9	terminals, but not the bulk terminals in the Bay,
10	and later on, I'll do a reconciliation of all
11	California inventories with this particular
12	reporting system. These are reported on a weekly
13	basis by the CEC.
14	What you see first of all at the bottom
15	here, is that the finished gasoline line is a line
16	which is actually very closely between 40 percent
17	and 60 percent of tank capacity. I'll come back
18	to that later. This is typical inventory behavior
19	for operational tankage.
20	There is very if you look at how this
21	moves, with the price and this is retail price,
22	and we could have plotted spot price in here as
23	well, it would have shown the same behavior.
24	There is very little evidence in this inventory
25	behavior that the sizeable quantity of stocks

1 is held, and then sold off when the price is 2 right. We can't see any. What seems to happen is yes, there is inventory build up in the fourth 3 quarter for turn around coverage, you see the same 4 5 inventory spike here, which is then drawn down over the end of the winter period as turn arounds 6 7 are wrapped up and people switch over to summer 8 where blending. 9 What seems to be the case is that for 10 most of the rest of the year, inventories just 11 happen. Once you get out of this summer grade, 12 people are at the low inventory, that is when the 13 market takes off, and from there on, it is really 14 off to the races. 15 If there is an upset at the low 16 inventory level and the market gets very sensitive 17 to bad news when inventories are low, traders will watch that inventory number very closely. If 18 there is even a rumor of outage when inventories 19 20 are low already, the prices will take off. 21 Moving on, let's try to reconcile the 22 reported inventory numbers. UNIDENTIFIED SPEAKER: Quickly. 23 MR. GIESKES: Quickly, yeah, oh sorry. 24

25 Over all, reported inventories in California, this

1	is the number that most people are familiar with.
2	Maximum reserve is about 35 million and minimum is
3	25. When the market falls below 27, the market is
4	said to be very very tight. This is overall PADD
5	V, which includes all the western states.
6	EIA also reports the inventory, this is
7	including pipeline terminals. If you take the
8	pipelines out, numbers drop, it's about 3 million
9	average held up in pipelines.
10	The EIA also reports total California
11	numbers for refineries and bulk terminals on a
12	monthly basis. This range is from 14 almost 15 to
13	23, and then finally this is the range that was
14	just shown, this is the CEC report, refinery
15	inventories, plus the Bay Area terminals.
16	The difference here if you scale this up
17	from 26 to 42, is in very good agreement with this
18	range, so it is still all these inventories, sort
19	of move in a narrow range between 40 and 60
20	percent, which corresponds to what you would
21	expect to see in operational inventories rather
22	than indiscretionary inventories for marketing reasons.
23	The breakdown of these inventories into
24	gasoline and blending components in the refinery,
25	as you would expect, in the refinery and the

1	weekly California numbers, which is refinery and
2	Bay Area terminals where gasoline blending takes
3	place, there is a substantial inventory of
4	blendstocks. In fact, blendstocks are on average
5	more than finished gasoline.
б	The refinery overall, this includes bulk
7	terminals and the large distribution terminals,
8	the split is more than two thirds off finished
9	gasoline and one third of land sludge.
10	What we see is, on average the U.S. has
11	about three days more of inventories in finished
12	gasoline than California has. Three days doesn't
13	sound like a lot, but if you have nine days only,
14	then it is 30 percent more. Also, really the U.S.
15	has a much more robust distribution system for
16	gasoline.
17	There's a vast network of long distance
18	pipelines. There's a lot of inventory in those
19	pipeline. There is about 30 to 40 million barrels
20	of gasoline in the pipeline systems east of the
21	Rockies. There is some flexibility in there. You
22	can use those there a little bit and get some
23	pipeline gasoline out, by putting pipeline diesel
24	in.

25 Essentially, California inventory should PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

219

have been higher. We have this special grade of gasoline, we are isolated, long supply routes. If you have a refinery upset of say even the 250,000 barrels a day large refinery outage in the Gulf, it isn't really that much of an impact on the 7 million barrels a day total refining capacity in that part of the U.S.

8 In California, you have a 200,000 barrel 9 a day refinery outage, you're talking about a 10 quarter of the operational capacity. A lot less 11 robust system here or inventories are 30 percent 12 lower in terms of days off storage.

13 The recent changes, and we talked about 14 this in the introductory parts, this is redundant. 15 I can skip this pretty quickly. I mean, the 16 recent changes are that 20 companies are willing 17 to sign term contracts, and a few are willing to step up to the plate and build you tankage and 18 there is more tankage under way now. This has 19 been shown before as well in terms of clean 20 21 products alone, there is 1.4 million barrels of firm additions. 22

Let's come back to this crowding out
argument. If we look at it, what crowding out
might mean in terms of what the proposed SFR

1 volumes might do if they were stationary 2 inventories sitting there hanging off the market, 3 then they would do nothing to operational inventories. 4 5 Operational inventories are very very б tight, and nothing will change that in refineries, not even in terms of planning for turn arounds. 7 How much discretionary inventory is 8 9 currently held? Looking at the market, it is 10 interesting to see this morning that similar figures were mentioned that about 25 percent of 11 12 the storage was discretionary. 13 We, indeed, believe it is about 0.5 14 million barrels, 15 to 25 percent of the effective 15 4 million barrel operating range. 16 Even if all current discretionary 17 inventory was crowded out by the event of 2 1/218 million of barrels of state owned reserve, then you would have a 2 million barrel net addition, 19 which is a four fold increase. 20 21 That is a very effective increase because the discretionary inventories, the barrels 22 23 that people have on hand and can immediately release in the market, is what was discussed this 24 morning by Dr. Williams, that is the effective 25

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inventory to quell a price increase.

2	In the current market of tankage, what
3	would happen indeed if that discretionary barrels
4	sit in tankage in terminals, etc, or at
5	refineries, it would be reused. The operational
б	tankage is so tight, especially in the LA Basin,
7	that tankage would not sit idle, not in an
8	environment where people are willing to pay twice
9	of the market price used to be to get barrels back
10	on stream as is currently the case.
11	In summary, the California gasoline
12	inventories move in a narrow range of about 40 to
13	60 percent capacity, 15 to 25 million barrels and
14	42 million barrels of total bulk tankage. The
15	finished gasoline inventories in that total
16	inventory are between 10 and 14 days of
17	consumption or 9.6240.3 if you want to be precise
18	versus 13 to 17 days for the U.S. as a whole. A
19	minimum of around 10 million barrels is really
20	what it takes to keep the system wet, that's tank
21	heels of 3 and another 4, and also it's
22	inventories that you can't really touch.
23	If those inventories, if that 10 million
24	barrels was really usable, and at times when
25	gasoline trades at one point were \$5 per barrel,

1 could have made a fortune by selling it -- those 2 barrels are really tied up, really really tied up, which gives you an effective finished gasoline 3 operating range of 4 to 5 days of consumption. 4 5 That is not a lot, it really is not a lot. In actual fact, it's a compliment to the skills of б 7 the planners and schedulers that the California system functions as well as it does. 8

9 In all that tight tankage, we still have 10 to deal for the next six years with Rule 1178, and 11 clean product tank rental rates are at a historic 12 height, I mean, it is what, \$.50 to \$.60 a barrel, 13 tankage is not committed at \$.80 a barrel. At the 14 U.S. Gulf Coast, you pay \$.25 a barrel. That's as 15 good a measure of the tightness of the tank market 16 as any.

17 We believe that the argument of crowding out is not a credible counter argument, not to do 18 this. You might not want to do this for other 19 20 reasons, but the crowding argument is pretty weak. 21 There is a significant exposure for the state in terms of this very tight storage in an 22 23 essential commodity. Which brings us to capacity increase, 24

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which was another argument, a very valuable

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1	argument, brought forward by the refining industry
2	and the consultant they hired to look at our work.
3	We also believe that state refinery
4	capacity is indeed to be the preferred mode of
5	supply, it should always be cheaper than imports
б	of very rare blending components coming in from
7	half way across the world.
8	When we looked at how refinery capacity
9	has developed over the past decade, we don't
10	really believe that you could easily bring
11	additional capacity on stream.
12	There are two ways of doing it, one is
13	in discrete projects, discrete additions, new
14	units, etc. etc., and the other is what was
15	mentioned this morning is small improvements in
16	operating procedures or small additions and
17	equipment, and that is usually referred to
18	capacity creep, although that it is a charged
19	word.
20	The obstacles to those small
21	improvements are that the Title V Operating
22	Permits very often have capacity limits. If you
23	are right up to the limit, even a very small
24	percent increase can cause you to have to re-
25	permit the entire facility, and there is a

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diminishing return once you reach the end of the learning curve.

Most of the low hanging fruit, the easy 3 improvements, have long since been made, and right 4 5 now it's difficult to find additional 6 improvements. As was pointed out by Mr. Sparano 7 this morning, it's not easy to justify any form of capital investment in refineries in the current 8 9 unsettled climate. 10 What is the history of capacity 11 improvement? These two graphs, and I'm on 31 now,

12 show development in crude runs. The two ways to 13 increase capacity is either you run more crude 14 through your unit, and you have to go deeper into 15 the barrels that you process.

16 What we saw over a twelve year period is 17 that, on that ridge, being about .3 percent per 18 year or 63,000 barrels a day total improvement in 19 crude run capacity in the state's refineries.

20 More significant is what the refiners 21 have actually achieved in terms of how deep they 22 can dig into the barrels, so this bottom graph 23 shows the California production of residual fuels, 24 and right now that is down from around 150 ten 25 years ago to less than 50,000 barrels a day on

1 average today.

2 That is a very significant achievement, however, you are rapidly approaching here the 3 theoretical minimum, which is really the bottom of 4 5 the barrel. There's not much room left there. What we have taken into account in our forecast of 6 production capacity was sort of a .6 percent real 7 net, effective capacity creep, inside the refinery 8 9 fence.

What you see in terms of output increase from the refiners is more like 1.6 or 1.7 percent, but that includes increased imports of blending components.

14 The recent track record of refinery 15 projects is not good and this comes under the 16 heading of permitting rules, and there's a lot of 17 people in this room that have the scars to show 18 for it.

19The 20,000 barrel a day increase in20Tesoro's Golden Eagle Refinery, actually, is not21really economical, it had to be forced in through22the permitting conditions as far as we understand23for our discussions in the shareholder meetings.24The Valejo Wilmington several years ago25had a project to add crude capacity and would have

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226

resulted in many additional gasoline barrels,
 their project died in flames largely through
 lawsuits brought by CBE.

4	CENCO, another failure to bring
5	additional refining capacity on stream for a
6	number of reasons, plummeting difficulties not
7	being the least of them.

8 There is, however, new capacity on the 9 horizon, not exactly in California, but within the 10 easy shipping distance elsewhere on the West 11 Coast, so there is projects in Washington by 12 ConocoPhillips and Tesoro which would add some 13 barrels.

Of course, then the global refiners can bring in barrels, they can optimize their refining systems all around the world and California prices would tend to walk away from world gasoline prices, you would see an increase in that type of supply.

In summary, refinery capacity increased the potential for capacity creep is limited. We are approaching the bottom of the barrel, and there are all these operating permit constraints that were discussed in detail this morning. Capital projects for major expansions,

1 we would like to see those, and we are fully 2 supportive of (indiscernible) in that sense, but 3 it's not going to be easy to do that. With that, I would like to turn it over 4 5 to Gregg, who will extol a little bit further on б the forward market. 7 MR. HAGGQUIST: Thank you, Thomas. It's okay, it's time for a natural break, or is it okay 8 9 to keep going. What do you think? PRESIDING MEMBER BOYD: Would the 10 audience like a ten minute break. 11 MR. HAGGQUIST: We've been sitting 12 13 through it for a long time. 14 PRESIDING MEMBER BOYD: I think it's a 15 good idea. 16 MR. HAGGQUIST: Yeah, let's shift gears. 17 Okay. I have to think what to say. 18 (Off the record.) MR. HAGGQUIST: Stop milling around back 19 there. Well, that was on the record. 20 21 We are back at the question of forward markets, and as you know, this morning we talked 22 23 about the forward markets and the futures market with Dr. Williams. 24 25 The perspective here is a little bit

different because the orientation, let's say the
 visual orientation of the geographical orientation
 that we were looking at this morning was pretty
 much downstream of the refineries.

5 This particular proposal, Strategic Fuel Reserve, looks at California as an island that б 7 physically, literally, as a geographic island and remote from resupply, and the question that we are 8 9 trying to explore here is the interrelationship 10 between price arbitrage, physical inventories, and 11 paper and forward markets and physical markets. 12 In fact, Dr. Verleger, who is here 13 today, wrote a nice paper about this a couple of

14 years ago, the conversion of physical and paper 15 markets and what arbitrage is.

Arbitrage is the buying of a commodity
in one market and selling it on another
simultaneously to capitalize on a price
differential between them.

20 We know here in California that the 21 supply chain is a long one, the resupply when we 22 need it has to come from three weeks to one month 23 away. This is a problem. Thomas Gieskes 24 mentioned, and I think it is important, to think 25 about this almost visually again, that this

1	strategic reserve concept, this rolling inventory
2	concept, is not a stagnant concept. It is not a
3	stagnant inventory, it's like line fill in a
4	pipeline, like the line fill in colonial pipeline
5	from Houston to New York.
6	If Colonial Pipeline were empty like we
7	are now when we run out of gasoline here, you
8	would have to put the barrel into Colonial
9	Pipeline in Houston and wait for the three weeks
10	for it to arrive in New York before you could sell
11	it. You wouldn't have that continuity of the
12	physical flow and at a price in the forward
13	markets. The momentum of the forward markets
14	follows a physical flow as Dr. Verleger's paper
15	pointed out.
16	The rolling inventory, the strategic
17	reserve, as we see it, would stimulate this
18	process, connect us as a pipeline does, connect us
19	to the international markets.
20	The risk of the California market is
21	difficult to hedge today because of the thinness.
22	Now this morning we said the forward market is
23	adequate. It is adequate for what is the
24	question? It is adequate for that market that we
25	were talking about this morning, the downstream

jobbers and distributors, but is it adequate for
 "California itself as an island in the global
 matrix of supply flow", is it or is it not?

The problem in the global system is that 4 5 the absence of risk reduction tools means that the б rewards have to be higher before you will put a 7 ship on the water. Having done this like other traders in here for many years, I know how it 8 9 feels to put a ship on the water and not know what 10 the price is going to be at the other end three 11 weeks from now, four weeks from now, so you need a 12 pretty high incentive to take on that risk because 13 the market could collapse.

14 Nobody is there to guarantee that for 15 you, you have to decide whether to assume that 16 risk. The problem here tends to be, in 17 California, that these decisions are delayed by the lack of a forward market at all, lack of 18 transparency in one. The price spike has to be 19 20 significant, it has to be pretty high in order to flow these cargos into California. 21

The note here that says the importance of hedging price risk is greater for the independent importers than for integrated refiners is I would say maybe controversial and we will

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231

probably have push back on that, but the way -- if you look at an integrated multinational, and you're going to the street price in Colton, California or San Diego and a supply is coming in from Australia or from Rotterdam, there is a continuity of flow. There is an internal transfer pricing system.

Each integrated company looks after its 8 9 own downstream needs, so there is no one in the 10 market to look for the aggregated needs of the 11 market. If each of the integrated companies is 12 looking after its own system, let's say they are 13 five systems, it is a problem between the systems 14 that causes the price spikes when supply doesn't 15 meet demand at the aggregated level.

16 What is the principle of hedging? We 17 all know what it is, I don't think we need to dwell on it too much here because I think every 18 thing we say here will be ultimately debated, but 19 20 hedging means you lock in some known margin to 21 protect your downside risk with a futures contract of some kind, a forward contract of some kind. 22 23 The buyer and the seller incur risk, the price we fixed now for future delivery will be out 24

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of line with the then prevailing market rate.

232

1 What that really means is that if we load a cargo 2 in the Caribbean, if a Caribbean supplier loads a cargo and sends it here, he wants some offsetting 3 risk, he wants to know that he is going to be able 4 5 to sell it. By the way, is Drew Laughlin still on line? б 7 MR. LAUGHLIN: Yeah. MR. HAGGQUIST: What do you think about 8 9 that? Do those suppliers need to have a backstop 10 here before they send cargos here? 11 MR. LAUGHLIN: Yes, especially knowing 12 that they may have to sell it to other refiners or 13 to competitors. They need to understand a couple 14 of things, they want to make sure that can get it 15 off loaded, but they want to make sure they get a 16 reasonable -- as you said they want to get a 17 return on their investment or not send it. They don't need to send the material out 18 19 there unless there is basically an economic incentive to do it. They would prefer to have a 20 locked in deal. Right now, that mechanism is 21 trying to sell the refiners that they exist out 22 23 there, and let them purchase it in the forward market. 24 25 MR. HAGGQUIST: Right, okay. Now we

1 have a note here that the central clearing house 2 collects paper trades. This is true in sophisticated very liquid markets. We don't have 3 such a clearing house here. We may have some 4 5 comments later by NYMEX on how such a clearing house could be established, but a market the size 6 7 of California gasoline, a million barrels a day, arguably ought to have some means of hedging or 8 9 clearing risk, more efficient than we have today. 10 When we are trading at, you know. \$.50 a 11 gallon above the rest of the country for a month and more, you say, is there something wrong with 12 13 this picture, or isn't there? Overall, the paper 14 market and the physical market has to match up. 15 The physical flow has to be deliverable against 16 the paper. In other words, if someone in the 17 market buys gasoline a month from now in the paper market, they have to know that in some way, there 18 is a physical barrel underneath that. 19 20 It is like the gold standard. Paper money without a gold standard under it, is 21 worthless. A paper market without a physical flow 22 23 under it, is worthless. As Dr. Verleger also pointed out that 24 25 once you have a physical flow in a sophisticated

market in a transparent market -- once you have this physical flow, this connection to the forward price, the difference between them becomes meaningless, and he can speak for himself later on this.

At the heart of the paper market is б 7 still the physical delivery. What I am trying to emphasize here, at this phase here, is that the 8 9 forward market and the future market we talked 10 about this morning is within California per say, 11 but stepping back from it. The strategic fuel 12 reserve, operating as a dynamic reserve as a 13 gasoline bank, not as a stagnant sitting 14 inventory, but as a rolling inventory, is similar 15 to what they call EFP's in the NYMEX. EFP means 16 exchange for physical. In other words, if you 17 hold a long position in the NYMEX in New York Harbor for a contract, 10,000 barrels one contract 18 for next month, 1,000 barrels, whatever it is, you 19 can demand physical delivery by the power of 20 21 holding that long contract.

The reason you can do that is there are means of getting physical supply into that market through terminals, with supply coming from Venezuela, from Rotterdam, from elsewhere in the

1 Atlantic Rim.

Liquidity requires a large number of market players, diversity of participants, and a physical trading hub. We are not saying if the strategic fuel reserve is a panacea, it's going to solve all problems, but it takes a step in the direction of creating this situation.

A larger number of players could be 8 9 involved, there would be more diverse market 10 participants, and it would be a physical trading hub. Now you would have to have fungible product 11 12 specification, we address that by saying only 13 CARBOB would be stored in the strategic fuel 14 reserve, the auxiliary tanks around it. The 15 private sector tanks could put alkylates or blend 16 stocks of any kind and position themselves to help 17 the market when it's needed and take on that risk. 18 Those stocks would at least be sitting in California rather than sitting in Houston 19 20 waiting for something to happen in California, and

21 it would still be three weeks away or four weeks22 away.

23 We are not yet to the point where we are 24 going to be drawing up standardized terms and the 25 kind of detail that David Hackett explained at the

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236

beginning.

1

2 Our assignment has been at the 3 feasibility level, and so far, we really haven't heard compelling arguments against this. We have 4 5 heard arguments against some model that we never 6 proposed in the first place, such as stagnant 7 reserve. We are against that too. This idea seems to still have merit, so 8 9 I hope someone can shoot it down on the basis of 10 the way it has been proposed and not by a false 11 definition of what has been proposed. 12 What are the major obstacles to 13 liquidity in California that contributes to price 14 spikes? We know that California is not fungible, 15 but we also know that there are refiners elsewhere 16 who can make the specification if they could only 17 get it here on time. 18 There are no physical delivery hubs or standardized terminals. We think that this 19 proposal might help that. There is not such a 20 21 diversity of market participation, we think this would help that also. The chicken and the egg 22 23 conundrum, how do we get to where California maybe arguably ought to be from where we are now, \$.50 24 about the rest of the country. 25

1	How do we get there? Is it the chicken
2	or the egg. I tell my Japanese friends, you have
3	to choose one of those, choose the egg, make a
4	decision, it's the egg, and then go from there.
5	We want to stimulate liquidity in this market. We
6	think that might be a good idea.
7	We are saying here that the forward
8	market, the future markets are not an end in
9	themselves. What they are in the context of this
10	dynamic gasoline reserve is this gasoline bank or
11	strategic reserve, these are means by which
12	this is a means by which California becomes
13	connected to the global arbitrage of high quality
14	gasoline. It is a plug in, we're connected, it's
15	line fill, it is not a stagnant reserve. It's a
16	rollable.
17	One other argument has been, of
18	course I don't mean these arguments, this is
19	not a debate, it is really just exploration for
20	all of us, and I certainly yield to the more
21	rational point of view, if there is one.
22	This question of not enough long
23	positions, in other words, there is no one to buy
24	this gasoline downstream in the future in a
25	forward market.

1	You have to point out that California
2	itself is that natural long in relationship to
3	other supply points in the world, just as in the
4	Pacific Rim, just as New York Harbor is the
5	natural long to Venezuela and to Rotterdam and to
б	Finland. Anywhere as long as it is the highest
7	price in the region, after shipping costs have
8	been considered, that becomes the destination
9	market. California itself becomes a destination
10	market, after you bring bulk.
11	After you bring the cargo in, like we
12	have now, a spot market of \$.93, the spot market
13	is \$.93, the street is \$2.00. Once the cargo
14	comes in here and the market organizes around that
15	fact, that we are always competing with import
16	parity, then maybe what will happen in California
17	is the same thing as we saw happening in Japan and
18	Hawaii.
19	In both cases, the island refiners there
20	for years were the only had control of the
21	access, the terminals, and the means to go from

the outside markets in Singapore and Tawain in the case of Japan, and in the case of Hawaii from other supply sources, such as Australia and West Coast Canada.

1	Once terminals were there and you could,
2	in fact, go into those markets and arbitrage the
3	refinery efficiencies so to speak in the region,
4	then street prices came down, and the competition
5	was more at the input parity level.
6	The real question here is, will this
7	proposal help California reach import parity
8	level, and that will be the debate, I suppose,
9	when it happens.
10	The cost benefit, I think, Thomas, do
11	you want to say a few words on that?
12	MR. GIESKES: Thank you, Gregg.
13	Cost benefit analysis was another point
14	of contention where some criticism was directed at
15	the way we have calculated both cost and benefits.
16	I think, in part, some of those may have
17	been due to misunderstandings or maybe we were not
18	sufficiently clear in the text of our report, or
19	maybe it was hidden somewhere in the 170 plus
20	pages.
21	What the cost for the SFR was based on,
22	in our proposal, was tender of storage contracts,
23	and we had assumed then prevailing commercial
24	prices of about \$.50 per barrel. That is still a
25	valid assumption. As a matter of fact, in the

stakeholder meetings that we had held right there and then, there were current commercial storage providers that said, yeah, we would be very much interested in lending our barrels to the state or building new tankage against those prices under a long term contract. That was the basis for the storage cost estimates.

8 We had assumed a debt service cost for 9 the initial fill. The initial fill is not a cash 10 expenditure. You can use the fill as a collateral 11 to secure debt and the cost of debt, that service 12 was the basis for the cost of the initial fill.

Administrative cost that was at the time a rough order of magnitude, cost estimate of what it would take to administer, and that brought total annual cost up to \$25 M.

17 Now there was some criticism because as we mentioned there as an opportunity that you 18 could lower that cost by applying to the federal 19 reserve as was done for the Northeast heating oil 20 reserve. The Northeast heating oil reserve was 21 partially funded by the EPCA, what does it stand 22 23 for again, the Energy and Policy and Conservation Act provides for the creation of regional 24 25 reserves. Anything you store in the regional

1	reserve doesn't have to be kept in the federal
2	reserve. The idea is that you could do an
3	offsetting trade of crude oil for an equivalent
4	amount of barrels, and at least get a partial
5	offset for the cost of purchasing the initial
б	fill. That was not part of the base case
7	assumption, that was just an upside case.
8	Finally, the reserve, the auction fees
9	will generate some revenues, since we couldn't
10	quantify those as that time, we also did not take
11	any of that into account.
12	That is the cost for the SFR, so once
13	again, it did not assume in the base case any
14	offsets, although those offsets are contained in
15	current law and have been used in a precedent, and
16	it did not include any offsets from auction fees.
17	On the consumer benefit side, these were
18	derived in a separate analysis, Dr. Tony Finizza
19	will explain those in more detail. For a wide
20	range of scenarios and all we did in our analysis
21	was we looked at physical adequacy of the reserves
22	of a small reserve because after all, 2 million
23	barrels is only two days supply. You could
24	legitimately ask yourselves a question, is that
25	sufficient to deal with a major refinery upset, or

1 with something of the like we saw in 1999?

2 The controversial issues, the hundred 3 year storm and the federal offsets, those were the 4 things that we felt we had to deal with here today 5 in order to provide a rebuttal to some of the 6 critique.

7 The hundred year storm affect, one of 8 the things that we think may have led to some 9 confusion is that we used this graph in our 10 previous study to show the impacts of the '99 11 major refinery outages in terms of inventory 12 drawdown and production lost.

In this graph, what's shown? Let me go through it again, this is the inventory drawdowns, inventory was already low, there was a major loss of production capacity from levels here to levels much lower here. What happens is, you saw prices go up during that period.

What we did in our analysis to establish not the economic benefit, but the physical adequacy of the 2 million barrel reserve, is say, okay, what if you had at this rate of inventory drawdown and at this rate of inventory drawdown? What if you had 2 million barrels, how long would that have lasted and what would it have done to

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243

1 offset price increases?

2	What we found was that the 2 million
3	barrels would have been adequate to cover these
4	outages. That was purely from a physical adequacy
5	point of view is the 2 million barrels sufficient
6	to deal with the hundred year storm.
7	We thought, although from an economic
8	benefit analysis, it's not correct to derive your
9	benefits from the hundred year storm, it was
10	certainly the right thing to do to evaluate the
11	physical adequacy.
12	By the way, I think the hundred year
13	storm is not the correct words because if you
14	think of it, not much more than ten years back
15	there was a similar major refinery outage when
16	Mobil at the time, lost its Elco unit in an
17	explosion and there were fatalities. That
18	particular unit was shut down for a long time.
19	Major refinery upsets happen with a
20	certain frequency. We did not go into the extent
21	of providing full details, statistical analysis of
22	refinery outages and the probabilities of failure
23	of major units, but what we can say from personal
24	experience, it is more like the ten year winter
25	than the hundred year storm.
1 In any case, this sort of was an answer 2 to some of the points that were raised with 3 regards to proposed benefit analysis, and as I said, Tony Finizza will got into much more detail, 4 5 but the actual benefits were calculated based on б statistical analysis of six years worth of data and included a wide range of price analysis. 7 Starting price levels for regular gasoline, 8 9 we looked at, if you exclude the '99 disruptions, 10 what if your replenishing costs are not \$.10, it was your base case, \$.05 to \$.15. All that did is 11 12 that we could come up with benefits at the low end 13 of the range of \$169 through the high end of the 14 range of \$600 M a year. 15 In any case, many many times the gross 16 cost of the reserve, which were predicted at \$25M, 17 so that is where I would like to leave that, and then turn it over to Dave to summarize it. 18 MR. HACKETT: Hey Drew, I'm turning into 19 20 the home stretch here on the summary page. Before I get started, do you have anything else you want 21 22 to say? 23 MR. LAUGHLIN: No, I don't want to push it any longer. 24 25 MR. HACKETT: Good. All right. There

245

1	are a number of conclusions that we came up with
2	last year, we haven't changed. It is an import
3	market, and imports can continue to grow. The
4	capacity to bring in those imports are
5	constrained. There are no two ways about it.
б	Industry inventories are low, I think
7	Thomas looked at that stuff six ways from Sunday,
8	and basically what we think is that they are too
9	low, and they are two low because there is just
10	not enough capacity to hold inventory given the
11	fact that refinery production isn't keeping up
12	with the demand.
13	Demand is highly inelastic, anytime
14	there is a stumble and prices are going to do
15	unfortunate things, we just saw that in March, and
16	we think that the concept of the gasoline bank
17	will generate savings for consumers.
18	We did learn some new things, we can see
19	a turn around in the trend on storage, we talked
20	about that extensively. We have identified marine
21	infrastructure bottlenecks, I think we were sort
22	of aware of that, but we got a better beat on
23	that. One thing that we do want to note is that
24	the refinery reliability of 2002 is certainly
25	quite good, although first quarter 2003 was not.
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1	Okay, recommendations. Go to the next
2	step on the SFR, evaluate the options, you know,
3	look at the oversight functions, and issue tenders
4	and confirm cost. When I saw that, I want to make
5	sure that, Jim, you understand that we want you to
б	select the best company to do that. That doesn't
7	have to be us. As taxpayers, we want to make sure
8	that California gets their monies worth, and
9	whoever you choose to do that, we'll support.
10	PRESIDING MEMBER BOYD: John and I were
11	thinking of quitting shortly and going into
12	business again.
13	(Laughter.)
14	MR. HACKETT: Don't go work for the CEC
15	because from time to time it is remarkable how
16	hard it is to get paid.
17	(Laughter.)
18	MR. HACKETT: Oh, yeah, on the record.
19	There are a number of projects, but all this
20	infrastructure stuff, I think you all need to
21	support. I'm not exactly sure how you do that,
22	but some of it is locally driven and the like, but
23	you need to support infrastructure.
24	Finally, there's the issue of the market
25	transparency. We touched on this a bit, certainly
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with marine stuff there was specifics, and we see
 that state land data, but more than that, I think
 that the data monitoring collection reporting
 needs to be improved.

5 More importantly, the analysis. If you 6 are taking in all these numbers, what do they 7 mean, and I know that you are working on that, and 8 I want to support your continued improvement in 9 that area, and then continually look at these 10 price spikes and the route causes of them.

11 Those are our recommendations. We are 12 going to shift now to Dr. Tony Finizza, who's 13 going to conclude the presentation or will have 14 the concluding presentation.

DR. FINIZZA: My name is Tony finizza.
I'm an economist, and I needed an engineer to turn
this on as usual.

After the first draft of the Stillwater 18 report last year, I was asked by the staff of the 19 20 Commission to do an analysis of the proposal. I 21 presented the report in written form last July, and since then, what I've done is updated some of 22 23 the disruption data and added a little extra data on increased volatility or decreased volatility I 24 should say. That is what I will present today. 25

1 I'm going to skip a number of slides. 2 Don't think I'm hiding anything from you, I think 3 in the interest of time, it won't alter my 4 message. 5 What I am showing here is a measure of б historical volatility for prices, spot gasoline prices. 7 MR. MATTHEWS: It would help if you would tell them what slide you are on. 8 9 DR. FINIZZA: Okay, I'm sorry. It is 10 slide number five of my package. I've defined 11 volatility here as the wild change of, log price 12 changes, put on a per month average basis on an 13 annual average. 14 This would mean that if you look at the 15 right hand column here, the volatility of 16 reformulated gasoline in Los Angeles in the year 17 2001 has roughly a 14 percent average volatility and price for a given month. 18 What this table will show indicates that 19 20 on average, Los Angeles gasoline, and I chose that as a symptom of California prices, would show 21 higher volatility than other reformulated gasoline 22 23 markets. In fact, in the year 2002, not surprisingly, I guess, we had a fairly good year 24 here. We were on par with the other three 25

1 markets.

2	The next slide six, is done on the basis
3	of retail gasoline prices and roughly the same
4	message, the holes there, that gasoline prices in
5	California are more volatile than the other
6	market. That volatility has, so to speak,
7	improved since the bad hundred year storm year of
8	1999. I remind you that this data goes to the end
9	of 2002.
10	For those who like pictures, that is a
11	picture of spot price of gasoline in Los Angeles.
12	You will notice the spikes that have occurred in
13	post 2001 are less spikey thank in the past.
14	This one here on slide nine shows
15	California spot prices minus U.S. Gulf Coast
16	prices, that is, I've tried to take out the fact
17	of crude movement. Again, since that vertical
18	line, the 2002 period has shown less volatility up
19	until the last three months.
20	On the next slide number ten, I have
21	graphed retail prices in California as compared to
22	retail prices for gasoline in the other parts of
23	the U.S. subtracting out California.
24	Historically, that averages roughly \$.16 per
25	gallon. That recent retail price spike, that is

the difference between California prices and all
 other retail prices in the country is on par with
 the retail prices we saw during the 1999 bad
 season.

5 My conclusions on price volatility would б be that prices are more volatile here, volatility increased in 2001 then decreased 7 It's increase relative to the Gulf Coast and New York, is 8 9 generally higher than New York, and the spot 10 prices that we have had in the last couple of years are not as dramatic on a wholesale basis as 11 12 we have had in the past, but the retail has been 13 as dramatic.

14 In terms of my analysis, the first step 15 was to try to understand something about refinery 16 disruptions. I had the good fortune to have 17 substantial data help from the Department of Energy for data through March of 2001. I updated 18 that data to the present, at least to the end of 19 March of 2003, and that is what I will show you 20 21 here.

I am not privy to company data, so this has to stand on the basis of what you can learn without being inside a company. The use of OPIS weekly reports is the main source. They do often

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report rumors, those are not included. They do
 not include -- these data do not include planned
 maintenance.

4 If there is a planned turn around that 5 is not considered a disruption. If a planned turn 6 around turns out to be lengthier than planned or 7 they can't get whatever they were turning around 8 turned around, it becomes a disruption.

9 I placed this graph and updated the one 10 on the website report to dictate the occurrence of 11 refinery disruptions. Each vertical bar indicates 12 the thousands of barrels a day that would be, in a 13 sense, disrupted. It can be because of one 14 refinery out, two refineries out, three refineries 15 out, or four. There are two occasions in this 16 eight year period that four refineries were out at 17 the same moment.

I put blue versus red so you can get a 18 19 feel for what happened since the earlier report I wrote. These indicate the disruptions that 20 occurred in 2001 and 2002, and 2002 was a fairly 21 good year. I think we were all kind of resting on 22 23 our laurels, and I suspect a lot of the disinterest in the earlier report may have been 24 25 the fact that we were in a nice benign year.

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1	Of course, these things don't always
2	continue, so we now have four disruptions in the
3	first quarter of 2003, and that of course is over,
4	and we are in the second quarter. Hopefully, we
5	will end up with some other benign pattern.
6	Historically, not including the red
7	numbers, the average size of a disruption was
8	21,000 barrels a day, lasted for almost three
9	weeks, the chance of a refinery being out in a
10	given week was .017. Those are going to be
11	important because I'm going to use that in my
12	expectation of what savings we might get if we
13	could mitigate these price spikes or at least part
14	of the price spikes.
15	I'm not going to I'm on page 15 for
16	anyone who is following on the web, I have a
17	number of findings on the disruptions, and I'm
18	going to go over them very quickly. They roughly
19	are 20,000 barrels a day, average three weeks,
20	some are very long, much longer than that. The
21	size and duration I've not correlated directly.
22	The affective disruption lasts six to
23	eight weeks in terms of retail prices. You can
24	have more than one refinery disruption at a time.
25	They have an immediate impact on spot prices. Not

1 all of them will lead to spot price increases, 2 sometimes there's a lot of inventory around, usually in the winter months. 3 If there is a planned turn around, 4 5 prices aren't affected by spikes because refiners б have planned for that and built inventories in advance of that. 7 A refinery in Southern California 8 9 affects prices in the North and vice versa. When 10 you have a price spike here, you usually don't see it going outside of our island. 11 12 Refiners respond very quickly to a 13 disruption, but if they are bringing in product, 14 the distance is, of course, a barrier. 15 Let me tell you what I did here to count 16 the benefits of an SFR. I decided that the 17 important thing was to use weekly data and that precluded use of any real substantial models. I 18 wasn't able to build one of an econometric type. 19 I decided to do the following. 20 21 I examined characteristics of refiners, and I said let me simulate over time under various 22 23 assumptions about how frequent a refinery disruption happens, the distribution of how 24 likely, what size of refineries to be disruptive, 25

1 and how long it might be disruptive, examine using 2 some empirical estimates of price elasticities, what would be the price impact of clearing the 3 market if you had a SFR versus one where you did 4 5 not have a SFR, and then examine the change in all these three criteria. б 7 I report all three in the paper, but I'm only going to speak about the change in the 8 9 consumer gasoline bill today, that is the benefit 10 that would be if you could mitigate or truncate a 11 big spike, how much would the consumer's gasoline 12 after that truncation compared to before the 13 truncation. 14 I also calculated the change in consumer 15 surplus which is roughly the same order as the 16 consumer gasoline bill and the change in total 17 welfare. Most people seem to be most concerned 18 19 about this metric change in consumer bills, all 30 million of us. 20 21 I stylized three price spikes, and if a price spike did not, would not reach above a point 22 23 that is pre-priced plus some kind of replenish import parity number like this one or this one, I 24 did not take credit for those, only those that 25

were of large, and I only took credit for the red
 part.

3	I'm now on page 19 turning to 20. I
4	estimated the demand of elasticities, I think this
5	was a very important part. I did an exhausting
6	and an exhaustive study of this. I forced myself
7	to read all of these papers, and I found out a
8	number of them are in error, and that people who
9	read them don't always pick them up.
10	I was proud of the fact that I caught
11	those errors, I thought that my econometrics
12	knowledge disappeared when I turned 40, and maybe
13	it did, but I made the delusion.
14	I decided that let's see, I decided
15	that I would separate elasticities into the man
16	side effective and the supply side effect, and my
17	conclusion was that the combined the best
18	estimate of the combined effect was15. I
19	decided not to just base all of my analysis on a
20	point estimate. I was going to use sensitivities.
21	I was comforted by the fact that for
22	four pure unadulterated disruptions in which there
23	were no other refinery disruptions around that I
24	could empirically get an estimate that was on
25	average about15, so I felt comfortable about

1 that.

2	I did the following, I would estimate
3	assuming the same kind of probability
4	distributions that we saw over the five year
5	period of refineries. I would get the
6	estimated I would trace out price spikes. I
7	would check to see if the price spike was large
8	enough to truncate. If it wasn't, I ignored it.
9	If it was large enough, depending on replenishment
10	cost, I took value for that peak.
11	I did under base assumptions saying that
12	we had a historical disruption frequency size and
13	duration, that the price of gasoline was \$1.50,
14	which was about what it was for 2002, it turns
15	out. It took \$.10 to replenish the SFR, once
16	drawn from it, and I also, in all of my cases,
17	assumed that there's not going to be a price rise
18	in the case of high inventories, and basically
19	stylized to be periods of contango.
20	If a refinery occurred I traced out
21	all 52 weeks of the year. If a refinery was
22	disruptive in the winter, which is defined by
23	refinery people as November through February, I
24	assumed it was no disruption, that there was
25	enough inventories around to cover it.

1	I only calculated to credit for
2	refineries that were large excuse me,
3	disruptions that were large and that occurred from
4	March through September.

5 Under those assumptions and with this 6 best guess of the elasticity, I calculated on an 7 average annual basis, you would -- if you could do 8 this, you could in other words get the oil out of 9 the SFR, there's no crowding out, that there was 10 an auction that was non discriminatory, etc., you 11 could count on saving \$400 M.

12 If you said, well, forget the hundred 13 year war guy, so if you said the disruptions would 14 have the same probabilities of every year except 15 1999, the cost would more than half. You would be 16 at \$169. These assumptions are very important.

17 If you assume the refineries are not going to
18 be disruptive as they were in the past, of course,
19 this SFR is not going to be as valuable obviously,
20 but that is the lowest number I got for this price
21 elasticity.

If you think the price of elasticity -if you think we are in a position of being more elastic in a sense that we can find alternatives and stop our buying behavior, of course, it's not

as valuable either.

2 There is my range. When people ask me 3 what do you say for truncating spikes if you could 4 do it, \$150 to \$400 M sounds like a reasonable 5 number.

б Now, also, if you had more inventory in 7 the system and less volatility, I would assume you would also have lower average prices, so with a 8 9 version of a model developed by Pendike, I 10 calculated that we would have something like \$150 11 to \$250 M lower consumer gasoline prices, gasoline 12 bill, and that number roughly is equivalent to the 13 two points that are cited in the Stillwater report 14 that said, with a SFR you get fewer chronic 15 shortages and smaller spikes.

I would add these up and somewhere I would add these up and somewhere between \$300 M and \$600 M. Jim, before you get excited about this, this is 1 to 3 percent of the consumer gasoline bill. It may seem a lot to you, but it doesn't seem a lot to the whole state.

I was quite impressed with the new things that appear on the California Energy Commission website and in the governor's report. There is one graphic that shows the components of a price of gasoline broken into taxes and margins

and crude costs. I think it is a very affective way of illustrating to the consumer.

Actually, I think a better way is doing 3 it this way. Now, this is, I think, understated, 4 5 I don't know if I used enough volume here. The 6 total consumer cost of gasoline in California is 7 at least \$22 billion a year. You get some of it back, you know, we've got state excise tax is 8 9 probably \$2.6 billion, \$.18 a gallon, \$1.6 in 10 state sales tax, some of it goes to the counties, federal excise tax of \$2.7, crude cost was roughly 11 12 \$8 billion, refiners cost and margin \$6 billion, 13 \$1 billion for dealer cost and margin. 14 Backing up, you decide for yourself if 15 whether it is worth reducing a large bill by 1 to 16 3 percent, but that is certainly, in dollar terms, 17 well above in my opinion the cost of doing a SFR. I also wanted to look at some rough and 18 19 ready dirty analysis, so to speak. This is a plot, this is a little different presentation of 20 21 gasoline pricing that you have probably seen. This is, of course, what I used earlier. The 22 23 price of gasoline in California, now, minus the gasoline in the rest of the country, and it goes 24 around \$.16, \$.17 a gallon, and this only goes 25

1 back to the year 2002. I am now on page 27.

Since the disruption, and the disruption here is characterized as a turn around that didn't turn around right, we've had West Coast, California gasoline prices, in fact, at one point reached \$.50 a gallon higher than all the other reformulated gasoline prices on average in the country.

9 This near obscene graph shows that area 10 under there represents \$715 M not per year, but 11 accumulative over that six week period. I also 12 noticed that in the recent phenomenon, we all know 13 whenever there's a disruption or a spot price 14 increase, it gets transmitted to the retail price 15 very quickly, and then on the way down, the spot 16 price, and I'm on page 28, the spot price falls 17 fairly dramatically.

Retail prices hang on for reasons that a 18 19 lot of us like to think we know about. None of us 20 can prove, we all have our favorite theories, but it seemed like this time it is lagging a lot 21 faster, it is lagging more than it did in the 22 23 past. At least from my earlier calculations which also appeared in my July 4, 2002 report. 24 25 What happened in the first quarter is

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1	anyone's real guess, this is what I think you can
2	surmise from the data, and I came to this
3	conclusion, and then I noticed and was told that
4	this appears in the governor's report, which you
5	produced, so I thought I would steal it since we
6	are not getting paid a lot, we might as well use
7	what we can.
8	(Laughter.)
9	I don't know, someone who knows what the
10	refinery is and could probably follow this
11	through, but going into the first quarter of this
12	year, this refinery built inventories knowing that
13	it was going through a maintenance period. That
14	is a typical refinery behaving, and it makes a lot
15	of sense.
16	MR. SCHREMP: Hey Tony, this is Gordon.
17	That is basically all the refineries combined.
18	DR. FINIZZA: Yes, I know.
19	MR. SCHREMP: Not just one.
20	DR. FINIZZA: I know this is all
21	refineries, but yes, this is the whole market. As
22	many of the refineries completed their
23	maintenance, this was worked off of course. One
24	refinery in particular ran a little bit longer,
25	ordered or brought in supply, I assume, right out
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here with a lag that is, of course, couldn't allow
 them to replenish their inventories faster. That
 manifests itself right in that spike that I showed
 you earlier.

5 My next look was at a work also 6 commissioned by the Energy Commission. I did not 7 do this, so I feel comfortable reporting on it. 8 Actually, this was from Andy Ford's work. I won't 9 dwell on it because I didn't do it. I won't dwell 10 on it too much.

He also traced out some cost savings, and his dynamic model shows this red line is a price spike, a stylized price spike in the absence of a SFR with a disruption causing it. This pattern here is his spot price after he tries to mitigate it.

The interesting thing about his work is that he actually notices that when you replenish, which is an expectation, when you replenish through the SFR, you actually increase the supply of gasoline, so you actually over shoot.

His conclusion, and I again can't give you all the details, but I did learn this from his paper, that he finds large benefits from the prevention of price spikes, but he does find

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negative benefits from short small outages. If
 you don't know it's going to be a big spike, and
 you act on it, you actually do not get the benefit
 of it, and you have added all that cost.

5 I did one other thing, I call this the 6 "Optimal Size of the SFR". I think that is a misnomer. This should be -- if you had to guess 7 how much more inventory you would like to see in 8 9 the precautionary inventory categories to prevent 10 spikes, in other words, have enough inventory on hand to avert some of these large spikes. I did 11 12 the analysis to see what would be the size of an 13 incremental precautionary inventory to avoid 14 having a disruption of large spikes with 90 15 percent confidence, about a million barrels. A 16 little less than one if you wanted to avoid the 17 expected to make sure you didn't have an expected high spike anywhere in the process. 18

My conclusion would be with all this that the potential economic benefit avoiding the large spikes or truncating the large spikes and also taking credit for some of the lower prices, that you would have to be somewhere in the \$250 to \$700 M range per year, which turns out as I said earlier to be somewhere between 1 and 3 percent of

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the total consumer gasoline bill.

2	I think that if you had to size the SFR,
3	you would probably be able to get by with a
4	smaller amount subject to the amount you have to
5	add back in to compensate for the crowding out
б	that will probably be some of that I am sure that
7	precautionary and speculative levels of
8	inventories.
9	That is my report. Thank you.
10	PRESIDING MEMBER BOYD: Thank you,
11	gentlemen. Will the staff lock the door now and
12	hand out the test.
13	(Laughter.)
14	All right. the floor is open, comments
15	and questions, any and all, or do you have some
16	concluding remarks, Dave?
17	MR. HACKETT: Jim, I do not, I stand
18	here with a target on.
19	PRESIDING MEMBER BOYD: Okay.
20	MR. LANZA: I'm Robert Lanza from ICF
21	Consulting. I'd like to go back to the previous
22	presentation concerning some of the controversial
23	issues that you identified. One of the issues
24	that you identified was the need for the SFR to
25	have deep water access.

1 In the prior presentation this morning, 2 we had discussed that deep water access is a scarce commodity, and I had a two part question 3 concerning the need for deep water access with 4 5 respect to the facility. One of which is what are б the implications of deep water access being a 7 scarce commodity with respect to the Port of Los Angeles, for example, discussing whether to 8 9 eliminate storage capacity with respect to adding 10 capacity for containers, cars, etc. 11 The other part of the question, what are

12 the implications with respect to the flexibility 13 in siting such facility in terms of the number of 14 areas where you could potentially site this 15 facility in practice.

16 MR. HACKETT: Let me take the second 17 one first because I think it is a bit easier. The intention here -- our thought was that we go out 18 19 with a tender to the logistic service providers. 20 We would go to ST Services, Kinder Morgan, Vopak, Shell Pipeline, Arco Terminal and Services Corp. 21 and the other firms that do this. You know, that 22 23 run tanks and pipelines and understand the business. 24

25 When you examine their facilities, I

think that many of them have spare land. There is
 physically enough dirt to put tanks on in most of
 their locations.

As far as the deep water access, what we 4 5 observed was that several terminals, especially in б LA, are constrained by their ability to move the 7 product away from the dock. Ships can come in, but they can't complete discharge in a quick 8 9 fashion and therefore, there's a fair amount of 10 queuing that goes on. This is especially true as 11 reported to us at the major independent dock.

12 I think that what we saw with ports was 13 that they would support docks, but they don't 14 support tanks immediately on the shore, and the 15 way those are good is when the ship can come in, 16 immediately discharge into that storage, and leave 17 and then the pipeline could move it inland, as opposed to having the ship pushing it inland 18 itself. 19

There are some efficiencies associated with that depending on the pipeline capacity. I think the docks kind of -- pardon me, the ports see good economics in operating docks because frankly, they are a sure side foot print is pretty small. If you look at Berth 121 in LA when there

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1 isn't a tanker there, it's hard to tell if there 2 is some kind of facility because really it's an acre or so, as opposed to ones that have tank 3 farms sitting on them. 4 5 I think the ports would be supportive of providing dock capacity as long as there doesn't б 7 have to be a tank sitting next to it. MR. LANZA: Now, to follow up, what is 8 9 the relationship between the feasibility of 10 existing storage facilities expanding their 11 tankage with respect to the land that they have 12 versus getting a facility further inland where the 13 ship comes and pipelines the product into a more 14 inland storage facility. 15 MR. HACKETT: I think maybe I wasn't 16 clear with my first answer. The land that these 17 companies have, the folks down in LA for the moment, is primarily inland. There really isn't 18 any extra space in the ports for additional 19 20 capacity. If you look hard, you can squeeze something in, but in general, the kind of capacity 21 we are talking about, which is on the order, we 22 23 said 5 million barrels, but you know, millions of barrels of capacity, you can't do at the water. 24 25 MR. LANZA: You would potentially be

1	doing this at a number of different locations
2	rather than have specific facility dedicated to
3	this in one location?

4 MR. HACKETT: We would probably discover 5 in the tender process what the logistic service 6 providers would be willing to do, and so I think 7 we would probably look to the industry to figure 8 out and come back to us with their recommendations 9 on how they would do the dock, do the pipelines, 10 do the tankage.

11

MR. LANZA: Thank you.

12 MR. LAUGHLIN: Dave, can I answer 13 further, that it is the economy, the scale of 14 building a facility in the North, possibly one in 15 the South and one in the North. The problem with 16 building single tanks that the storage companies 17 are coming up against right now, is that once one 18 or two more tanks might constrain their lines, so they have to build another line. They can't 19 justify that with one or two tanks, but they build 20 21 the line, and then they have to build bigger pumps. They can't justify that with one or two 22 tanks, they need a bigger system. 23 What the SFR could do is prompt a tender 24 or one of these other inland facilities to be able 25

1 to justify the infrastructure they need to have to 2 do the construction of additional lines, pumps, and docks, you know, to move the product 3 inland. I think you said this was never 4 5 really thought to be a stand alone grass roots strategic reserve. It's really always contemplated б 7 to be a reserve within an existing facility some where in the state. 8 9 MR. LANZA: Thank you. 10 MR. GIESKES: Yes, thank you. Bob, I would like to add one additional element to this. 11 12 When we look at the available infrastructure and 13 the potential for additions, for instance, there 14 are two really good berths in the Port of LA, 192 15 and 193, which are currently idle, which are not 16 utilized which could have 51 feet of draft. 17 They are hung up in this political indecision process of land policy, etc. We 18 thought if the State of California came out and 19 20 was the prime mover behind a strategic project, that might just be the sort of push that makes 21 these projects come to shop. The land is there, 22 23 the port access is there, pipeline can be built, but for some reason, when we looked at it, nothing 24 25 was happening.

1 MR KAVALEC: Chris Kavalec from the CEC. 2 I want to go back to this idea of crowding out for 3 a minute, and I have a comment and a question for Thomas. 4 5 I'm looking at this, going back to the slide number 21 that shows the inventories versus б 7 prices. MR. GIESKES: In the marine 8 9 infrastructure presentation or in the --10 MR. KAVALEC: SFR, yeah. 11 MR. GIESKES: There we go. 12 MR. KAVALEC: This is the comment. To 13 me this doesn't seem to show really anything 14 because it doesn't factor in all the other 15 variables that go into the inventory decision, 16 does it? 17 MR. GIESKES: No, and you are quite 18 right. This is more an illustrative slide than a regular statistical analysis. A statistical 19 20 analysis was done in great deal around individual 21 price spikes to see what inventory behavior was. 22 One of the problems that we had was the 23 (indiscernible) of the inventory data and price data. Ideally, what you would like to see is 24 daily data, but those were not available. The EIA 25

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data, which had the total refinery inventories are
 monthly which doesn't allow you to do any analysis
 around these things at all.

What we had was the refinery data 4 5 including the CEC data, including the Bay Area б bulk terminals. I think the one indisputable 7 facts is the narrow band in which these volumes move, and I would almost like to turn the burden 8 9 of evidence around. I mean, what you would really 10 like to see, if you believe that there are substantial volumes of discretionary inventory 11 12 that I used to play into price spikes, is an 13 inventory pattern that sees a build up of 14 inventory at times when prices are low and then a 15 sell off when prices are high.

16 That clearly is not the case. If you 17 do, indeed, do a regular slot like we did around 18 some of the price spikes, you see that there is a 19 completely inverse relationship between inventory 20 and prices.

21 Prices go up when inventories are low, 22 and there is very little -- let's put it the other 23 way, there is very little evidence of any 24 significant inventory play, where people lay in 25 inventories in anticipation of a price increase

1 and then sell it off when prices were high.

2 Those plays, when they are made, are largely made by the trading community and the 3 trading community includes certain refiners that 4 5 have active trading groups within their corporate 6 structure. We estimated that within the 4 million 7 barrel of total range that you have, that would be about a half million dollar effective range. That 8 9 means there was about a million barrels of storage 10 capacity allocated to that type of behavior. That 11 seems reasonable.

12 I think, I don't know what -- Dr. 13 Williams this morning had a similar number on 14 which I don't know what he uses, the basis of 15 this, but I agree with you, this graph doesn't 16 quite show it, but there is a lot more that we 17 could have gone into, a half hour at least analysis on inventory behavior around individual 18 19 price spikes.

20 MR. KAVALEC: Okay, my question is then, 21 let's assume that discretionary inventories are 22 insignificant. Given that all our econ text books 23 tell us that the more volatile prices are, the 24 higher are going to be discretionary inventories. 25 How would one explain why refiners keep such low

levels of discretionary inventories?

2 MR. HACKETT: You know, that's a really 3 good question, and I think our conclusion is that 4 they are keeping the gasoline tanks about as full 5 as they can.

6 The behavior here is that it runs right at about half full, 40 to 60 percent. You see 7 that there are times of the year when inventories 8 9 are built. You saw Tony's graph on inventories 10 for the February/March period, looking at this 11 last price spike and how inventory performed there. 12 The inventory peaked at 14.3 million. 13 That's the CEC California inventory, which is 14 frankly exactly what we expected them to do. They 15 filled up the tank ahead of the late winter early 16 spring turn around season and ahead of the start 17 of ECARB, making CARBOB. 18 We review the refiners behavior as 19 completely consistent in that they want to protect against turn around issues, and they wanted as 20 21 much coverage as they could get ahead of blending this new gasoline because they knew they were 22 23 going to have -- I think they suspected they would have learning curve problems with that. 24

25 What was interesting to me, at any rate,

is that as a practical matter, and I hadn't been
 focusing on California in terms of watching PADD V
 inventories, the bottom of the inventories were 28
 million barrels.

5 It started about 33 1/2 and at the 6 bottom at 28. The 28 is the low side of average 7 on inventory, and so to some degree, either we 8 think that sort of represents the relative 9 difficulty in blending CARBOB.

10 Folks have a lot of components in their 11 tanks that get counted as gasoline inventory, but 12 they couldn't blend into CARBOB even though the 13 price has got to above 55.

14 MR. HAGGQUIST: Chris, what strikes my 15 mind in answering that question is, I've seen in 16 the past in other markets, I'm not saying this is 17 actually the way this works here in California, that is refiners in a circumscribe market will 18 remain balanced to short. You don't want to be 19 20 long, you want to be balanced to short. It's good 21 to be short to your downstream needs.

If you are 5 percent short or 10 percent short, the 10 percent that you buy in the market pushes up the 90 percent that you make. It's a strategy to stay. You don't want to be long, you

1 want to be short. Oftentimes, that can be an 2 overriding situation, it dwarfs everything else. MR. GIESKES: I would like to make one 3 additional remark as well, Chris. As I think of 4 5 what has been happening in refinery inventories, and this is nation wide, a number of refineries in б 7 the state has been halved since the early '80's when there were 300, there are about 150 today. 8 9 What happened in the case of refinery 10 closures, in some instances, the tankage remains. 11 Usually what happens is the refinery gets simply 12 closed up. What we have seen in California as 13 well as a number of these small refineries were 14 closed down, the overall production level of 15 California gasoline has increased over the years. 16 The number of tanks in actual operation has 17 decreased.

If you look at the states as a whole, 18 19 there was about on average in the '80's about 200 million barrels of gasoline on hand, finished 20 product gasoline. Today that number is down to 21 about 150, while the amount has gone up 22 23 considerably. Now that 150, of course, 35 is pipeline hold up, if you look at what happened in 24 25 the United States as a whole, and what is

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happening in California is that gasoline
 production has crept up, but refinery storage has
 actually come down.

It is very difficult for a refinery to 4 5 justify spending capital on tankage. I mean, I б have been in a position where you try to justify 7 tankage and you are shot down in flames, they say you want money for what, and if inventory is 8 9 holding its capital and it's just hard for 10 refineries to build and hold inventory despite the obvious argument that you might want to play into 11 12 trading opportunities. 13 MR. COVI: I have a question. 14 PRESIDING MEMBER BOYD: All right. 15 MR. COVI: Brian Covi, CEC, for Tony. 16 Just some clarification on your calculation of 17 historical volatility. You are using monthly 18 data? MR. FINIZZA: I am using daily data. 19 20 MR. COVI: Daily data? 21 MR. FINIZZA: I wasn't clear, I'm sorry Brian. I used daily data to the daily change in 22 23 price log, the percentage change in price log of the ratio. I averaged it for thirty days, and 24 then so there are a lot of those periods in the 25

1 year and then upscaled for an annual percentage. 2 It is kind of traditional statistical way of showing historical --3 MR. COVI: It's not something different 4 5 from the standard deviation or --MR. FINIZZA: It's akin to that, but -б 7 yeah, it is very similar to that. MR. COVI: For the sake of simplicity 8 9 calling it a standard deviation, in the second 10 slide where you have USRG down the middle there, is that an average of regional standard deviations 11 12 or is the state --13 MR. FINIZZA: It's the average, yes. 14 MR. COVI: Thank you. 15 MR. METZ: Daryl Metz of the CEC. I had 16 a follow up on the same issue, so my question is 17 related to did you have the opportunity to compare California to any other regions within not the 18 U.S. as a whole, but California to let's say the 19 midwestern volatility or the Southeastern U.S. 20 21 volatility? MR. FINIZZA: Actually, I compared it in 22 23 the report to the Midwest. I didn't update it, I probably should have. I think there were periods 24

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of time when the Midwest was as volatile as the

1 California, but I think that was the only region 2 that had that feature. 3 MR. METZ: Why was the Midwest as volatile as California? 4 5 MR. FINIZZA: I think when the Midwest б spiked, they had a number of refinery outages in the Midwest, 199 -- I guess it was 2001. 7 MR. GIESKES: April of 2001. 8 9 MR. LAUGHLIN: There's some similarities 10 between California and the Midwest with the inability to get product there quickly, and so 11 12 only a limited amount of pipeline to a limited 13 amount of refiners. If one or two goes down, the 14 pipeline can't supply it, and at that particular 15 time, one of the refineries went down and then the 16 pipeline went down too. 17 MR. HACKETT: Drew, what would you -got any comments about the quality of the 18 gasoline, the --19 20 MR. LAUGHLIN: Yeah, that was their 21 first year, it was a major shift for them on a quality change on (indiscernible) and that was a 22 23 large learning curve problem, but I think California is still going through right now on 24 learning to make summer CARBOB, they were learning 25

to make summer ethanol RFG. It was quite

2 difficult for the first few months.

3	MR. HAGGQUIST: This is Gregg Haggquist
4	here again. Just one other comment. You have to
5	keep in mind that volatility in its own sense
б	doesn't tell you the whole story. If you have
7	double the volatility at \$1.00 a gallon average
8	compared to flush of volatility at \$2.00 a gallon
9	average, you pick the \$1.00 with the high
10	volatility. That is just a point to consider.
11	We are trading in a range higher than the rest of
12	the country irrespect of the volatility.
13	PRESIDING MEMBER BOYD: Other questions,
14	comments.
15	MR. MATTHEWS: Yeah I have
16	PRESIDING MEMBER BOYD: Keep trolling,
17	keep getting one out there.
18	MR. MATTHEWS: Sorry. I'm just thinking
19	about this, I am relatively new to this area.
20	PRESIDING MEMBER BOYD: Don't let him
21	fool you.
22	MR. MATTHEWS: Sort of being new, you
23	sort of walk into a situation and sort of think
24	that things have been the way that they are for
25	some period of time and have not been totally
1 focused on the fact that we've been importing only 2 since 1999, and I'm wondering if the market is 3 just now beginning to change to reflect that 4 circumstance.

5 I'm worried about the crowding out issue 6 and wondering if the crowding out issue is a non-7 issue as long as the amount of discretionary 8 storage doesn't change, but if you are seeing more 9 storage being built this year, if let's say three 10 years from now, it would be quite a bit more.

We may not be crowding out existing discretionary inventories, we may be crowding out future discretionary inventories.

14 MR. HACKETT: Sort of the first step in 15 this whole logic process is I think it comes back 16 to where Chris was going is why don't they hold --17 I think I heard Chris say why don't they hold more inventory? My answer is that I think it's because 18 they hold as much as they can. They are short on 19 20 capacity. Given that we believe that there's very little discretionary -- from time to time maybe 21 you can see some discretionary inventory, but in 22 23 general, it is not there. I think some of that probably is a 24

25 reflection, you might see it in Dr. Williams

1 forward market stuff where the amount of contango 2 is pretty small. This market is normally backward, ain't it, which I think helps to 3 indicate that it tends to be fairly tight. 4 5 If you've got a barrel that you want to б sell today because the market says it will be lower tomorrow, and then you get to tomorrow, and 7 it is still tight. 8 9 I think the issue here is an increase in 10 capacity is required to get to the point where the discretionary inventory debate gets to be 11 12 relevant. 13 MR. LAUGHLIN: Dave, I want to say one 14 thing, too, the big difference between the West 15 Coast and the Gulf and the East Coast in 16 inventory, especially on strategic level, the West 17 Coast seems to be available barely get by with the inventory they have. As you said, it is almost 18 all operational. 19 20 On the Gulf Coast and on the East Coast, 21 there's tremendous amounts of strategic inventory where refiners, blenders, traders, whatever you 22 23 might want would have the ability to come in and take substantial storage, and even if not here 24 then down in Stasia or Aruba or Bahamas or in the 25

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hemisphere, and take substantial storage at
 reasonable prices and put in huge volumes if they
 choose to of summer fill, or summer inventories or
 blend stocks.

5 That doesn't exist in California. That б ability to put those barrels in storage and sit on 7 them, you don't have the storage. That really is the difference is the strategic inventory storage 8 9 that exists in most of the United States, and when 10 we switch from winter to summer, there are lots of blend stocks and there is considerable amounts of 11 12 summer grade gasoline pre-made and pre-stored 13 waiting in anticipating a price spike.

14 In fact, in a lot of ways, it takes what 15 they made in the winter and hedge it in the out 16 months with significant carry, although it hasn't 17 been there the last couple of years because of the market, but the ability to actually put in storage 18 19 and hold it till the summer and carry, you just don't have that kind of flexibility on the West 20 21 Coast.

22 MR. MATTHEWS: We don't have that kind 23 of flexibility, Drew, because we don't have the 24 storage built, but you don't have a need for 25 strategic fuel reserve in the areas you were

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talking about because you saw it was in there
 economic interest to build that storage at some
 point and play in the market.

MR. LAUGHLIN: No. 4 5 MR. GIESKES: If I may add. Suddenly б the facts that right now there is a million four in announced projects if all that would get built. 7 Certainly that would alleviate the need for the 2 8 9 1/2 million barrels of peripheral storage that we 10 saw, that you needed around or integrated with the 11 strategic reserve. 12 MR. HACKETT: I don't know that our 13 analysis --14 MR. GIESKES: Let me continue. If we 15 look at the amount growth of import volume, and 16 you wanted to keep inventories at sort of the 17 current ratio of turns, then you would really have to need another 3 million barrels between now and 18 2010. It comes along way, it is certainly very 19 20 good to see that some new capacity is on the 21 books, but it's not anywhere near solving the problem as we see it. 22

23 MR. HACKETT: It was reported to us that 24 there is one facility where they had an upgraded 25 or refurbished 600,000 barrels of old tankage and

1	brought it back on line. All that is booked up at
2	this point. There is ethanol in some of it, and
3	their existing customer base took the rest.
4	Evidently with this stuff, as soon as it came on
5	line, it got leased out or filled out.
6	MR. GOLDSTONE: Sy Goldstone, Energy
7	Commission. I was just following up on Scott's
8	point. I think what you said was in other parts
9	of the country, people are building the storage,
10	but in California we are tight on storage
11	presumably because we have all these permitting
12	problems, which we heard about earlier.
13	I think you are saying if we I'm not
14	saying we can solving the permitting problems, but
15	if we made a significant headway in solving the
16	permitting problems, would we still need a
17	strategic petroleum reserve or not in your view?
18	MR. HACKETT: Our internal debate about
19	this all along I mean, it is quite clear to us
20	that there is a shortage of capacity, there is no
21	two ways about that. We are convinced that is the
22	case.
23	There are a hosts of reasons why there
24	is a shortage and hopefully we've hit all those.
25	All right, let's say that the state supports the

1	construction of additional capacity through loan
2	guarantees or fixes the permitting process, or
3	whatever it takes to reduce the risk that the
4	market participants have in constructing
5	additional storage.
6	Let's say that happens. All right, and
7	additional capacity is constructed. At that
8	point, where you've got let's says 2.5 or 5
9	million barrels, whatever the number is, at that
10	point, does the industry fill up that gas tank
11	themselves, in which case you don't need a reserve
12	at all. That is entirely possible. We don't know
13	the answer to that yet.
14	MR. LAUGHLIN: Sy, I want to clear up a
15	point too. It isn't that tanks are being built on
16	the Gulf Coast because of permitting problems or
17	we don't have the permitting problems here. What
18	has happened here is that as refineries have shut
19	down, as facilities have changed hands, the
20	terminals where the tankage of these facilities
21	becomes available as a terminal. In fact, one of
22	the ways not to clean up an old refinery is to
23	basically make sure it stays as a terminal.
24	What has happened isn't that there's
25	much building of new tankage on the Gulf Coast or

1	the East Coast, but the tankage is being changed
2	over from different gasoline and refineries and
3	just becoming terminals.

We have had this happen in numerous 4 5 places in the Gulf and East Coast as refineries б have shut down over the last twenty years. 7 MR. SCHREMP: Drew, this is Gordon. Besides that behavior, do you see any changes in 8 9 the tank rates as a result of people now having 10 more capacity and willing to lease it out to somebody else? 11 MR. LAUGHLIN: Yeah, tank rates have 12 13 consistently inched up on the Gulf Coast and the 14 East Coast, but by far the West Coast numbers are 15 by far and away, whether it is just because of the 16 cost of the tankage or the permits or just the 17 lack of tankage, your numbers are significantly 18 higher than the rest of the United States on 19 storage rates.

20 PRESIDING MEMBER BOYD: Drew answered 21 the question that has been rattling around in my 22 mind ever since Scott asked his question about the 23 economic and culture differences between the East 24 Coast and the West Coast and whether that is old 25 storage that is just being utilized versus having

1

built new storage, and I guess Drew answered that.

2 MR. LAUGHLIN: There is very little -- I 3 would really like to know the answer to that 4 myself, but I really believe that the amount of 5 storage that is being built, new storage that is 6 being built is minimal, very minimal.

7 PRESIDING MEMBER BOYD: We're a state 8 who has gone from 18 to 20 million people back 9 there in the good old days to 35 million people 10 with fewer refiners, twice as many cars driving 11 twice the distance they used to, etc. etc., so we 12 have really compounded our problems significantly.

MR. LANZA: Robert Lanza from ICF
Consulting here. I would like to follow up on the
previous commenter's questions with respect to
permitting.

17 With respect to the State incentivising private entities to build more storage capacity or 18 19 private entities taking this upon themselves, the 20 permitting issues are more or less the same. You 21 are going to see permitting barriers that exist now whether you pursue the additional storage 22 23 through strategic fuel reserve or through other 24 private sector means.

25 If you're in the position where you are

1 taking bids from private entities to expand 2 existing facilities, you potentially have the same 3 problem you would have with expanding tankage at a refinery where they would potentially have to 4 5 reopen their Title V permits and other permits to 6 add this additional capacity. They might not want 7 to do that to add one or two tanks if there is not an incentive to do so. 8 9 The permitting barriers will need to be 10 addressed regardless of whether there is a private 11 sector or public sector approach to solving the 12 problem of storage capacity. 13 PRESIDING MEMBER BOYD: I see your 14 point. I agree, there is 35 million of us, and 15 there is no middle of nowhere, nobody wants 16 anything in their back yard these days. 17 MR. LANZA: There's a fundamental 18 difference between siting a free standing new storage facility and soliciting existing storage 19 20 facilities to expand in terms of how that 21 permitting works. The more facilities you have involved in 22 23 this, the more permits you are reopening. There are down sides to siting a whole green field new 24 facility, and there are down sides to expanding 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1 six different facilities in various regions 2 throughout the state. Those downsides and upsides 3 have to be analyzed and balanced. COMMISSIONER GEESMAN: I would think a 4 5 common theme of most of the comments today would б be that all paths seem to be leading toward 7 reevaluating a dysfunctional permitting 8 environment. 9 MR. LANZA: That's certainly true, that 10 permitting process does need to be reevaluated 11 with respect to how the process functions, the 12 redundancies, etc. What I am saying is there are differences in how that evaluation would be 13 14 conducted if the objective is to solicit existing 15 facilities to expand versus siting a new facility with the same capacity. 16 17 COMMISSIONER GEESMAN: Yeah, and I 18 think --MR. LANZA: You would look at it a 19 20 little bit differently depending upon how you were 21 going about doing this. 22 MR. GEESMAN: I think that question may 23 be independent of whether the state wants to take on additional financial risk by venturing into the 24 energy markets. That is an area that we have not 25

1 exactly covered ourselves with glory in before. 2 (Laughter.) MR. LANZA: That is certainly true, 3 whether the state is taking on financial risk 4 5 versus whether private sector entities are going б to jump into the expansion of capacity because of 7 other private sector incentives. Yes, you are right, there is no difference there. 8 9 The difference is whether the State 10 wants to take the financial risk, or whether the 11 incentives can be provided in some other manner. 12 The permitting issues are what they are. 13 MR. STEVENSON: Okay, I think I've been 14 pulled into a fight here. It never seems to work 15 well, but just thinking about this from the simple 16 persons standpoint who runs some inventory. 17 PRESIDING MEMBER BOYD: Excuse me, could you just, for the recording, give us your name 18 19 again. 20 MR. STEVENSON: Dwight Stevenson, 21 Tesoro. In managing inventory levels, if I know someone else has got some inventory out there, if 22 23 I'm out, I can call and have that inventory tomorrow, I'm going to go to lower inventories. 24 25 There is a lot of incentive to reduce inventories, PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

reducing cash, you know, being out there in
 gasoline, and having more cash in your pocket is a
 good thing.

I think if there is 2.5 million barrels 4 5 of gasoline out there that I can call on and get б next week or tomorrow, you know, we are going to 7 be going down in inventories, and how do you consider that impact? 8 9 It appeared to be that you were layering 10 that 2.5 million barrels on top of the current inventory, and I would think if you put that 2.5 11 12 million barrels into the system, it would drop out 13 a significant amount of inventory out of current 14 tankage. 15 MR. HACKETT: I think that's worth 16 talking about, and certainly the CEC guys have 17 concerned about this. From my perspective as a 18 guy who used to manage inventory, and Dwight is out at Tesoro and he's -- you're the gasoline 19 blender still? 20 21 MR. STEVENSON: I work in the area, 22 yeah. 23 MR. HACKETT: Yeah. From our perspective or from the perspective -- I had 24 twenty years at Mobil doing this sort of thing, in 25

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1	thinking about inventories, in general, what we
2	did is we figured out how much inventory it took
3	to run our business. We called that a minimum
4	operating inventory, and that was sort of the sum
5	of all the tank bottoms and line fills and all of
6	the fixed kind of number.
7	We sort of backed into the rest of it,
8	essentially, by experimenting. We experimented
9	down we figured out what our minimum inventory
10	was, and that was essentially defined as the point
11	at which the people involved with us could sleep
12	at night. They didn't get called in the middle of
13	the night to say, hey, we missed a blend and what
14	are we going to do and the rest? We experimented
15	and we found that inventory.
16	In order for the operators to be able to
17	sleep at night, we added some to that, and that is
18	where we ran our business. In general, while we
19	had some additional inventory capacity, we
20	typically used that additional inventory capacity
21	ahead of known problems. We knew we were going to
22	have a turn around, for example. We would, in
23	general, probably fill up the tank, it depends on
24	the extent and duration of turn around and the
25	rest of the stuff you know very well.

We even went to the extent where we had
 to hire outside storage from time to time if we
 knew that the refinery was going to be able to
 hold it.

5 MR. STEVENSON: I'm just talking about б the normal business that you're at, you don't have 7 any turn arounds coming up, you've got pretty smooth sailing as far as planning is concerned, 8 9 where is that inventory. You know, obviously, you 10 are not going to be able to get at the tank 11 bottoms, you can't get into that, but where are 12 you -- you are going to go down some, though. If 13 I've got -- if the call is hey, the blend didn't 14 pass, what are we going to do. Hey, call up SFR 15 and have them deliver the 100,000 barrels. That 16 will allow you to go to lower inventory.

17 MR. HACKETT: Your inventory decision, 18 though, is an economic one. That is to say, what 19 does it cost to keep that inventory. What do we 20 expect with this SFR, there will be transaction 21 costs. Is it going to cost you something to go 22 get it?

23Today, for example, you might be able to24run at a lower inventory because you know that25refinery next door is there to back you up. You

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miss a blend, you can call one of your colleagues
 and they will pump your tender today because you
 will give it back to them tomorrow.

4 MR. STEVENSON: That's used too, yeah,
5 I'm sure.

б MR. HACKETT: The fact of the matter is, 7 the strategic fuel reserve concept, I believe, is going to have transaction costs. There are going 8 9 to be economic consequences for using it. You are 10 going to have to pay some kind of transaction fee, 11 and because in our concept it's an auction, there 12 is no guarantee that you're going to be the winner 13 or that you are going to necessarily like the 14 price that you have to pay in order to take the 15 gasoline out and return out.

16 MR. STEVENSON: Presumably it is going17 to be a market price.

18 MR. HACKETT: Right. Presumably it would be a market price, and likely the 19 20 transaction costs, there would be some sort of a 21 fee plus, you know, whatever you bid in the auction. Whatever you bid in the auction is 22 23 likely the slope of the backwardation. That would probably describe what the value of the oil when 24 25 you return it later.

1 MR. STEVENSON: Okay, it might be 2 backwardated or it might be contango, but either 3 way, refiners are going to drive toward lower 4 inventories, that is just the nature of the 5 business.

6 It appears to me that with this safety 7 net that there is going to be, you know, the 8 refiners are going to be pulling down their 9 inventories and the benefit of having -- the 10 claimed benefit of having this 2 million barrels 11 of insurance is going to be reduced possibly, 12 mostly eliminated.

MR. GIESKES: Dwight, a couple of things here. What is added is about 5 percent of the total currently available gross storage capacity, 42 million barrels of tank capacity between the refineries and the bulk terminals.

Adding 5 percent to that capacity is not 18 that big a deal in terms of that capacity being 19 largely used operationally currently. What is 20 21 more that half of the inventory is like Gregg said, it is pipeline fill. It is on the water, on 22 23 the way to -- once you set up this rolling inventory principle, I mean, it's actually about a 24 million barrels. Like Dave said, it is a matter 25

1 of cost.

2 I think if you were a refinery inventory manager, for instance, for turn around coverage or 3 for that sort of thing, you were to indeed reduce 4 5 your operational inventories, we never really 6 looked at it. We looked at discretionary 7 inventories for trading purposes. 8 Reducing your operational inventories, 9 to me, given the current tightness of the situation -- think about Rule 1178, Rule 1178 10 would take out 10 or 15 percent of the operational 11 12 inventories, and refiners all said, there is no 13 way we can do this. All refiners are on record in 14 this public hearing saying that. 15 Adding 5 percent, I don't know, maybe 16 you would see some reaction upgrades for 17 inventories, but I honestly doubt it. 18 MR. STEVENSON: I guarantee it. MR. GIESKES: I also recognize that not 19 20 all refiners are created equal, and some have much 21 more ample inventories than others. There are 22 refiners that have more tankage than some of your 23 colleagues and are tighter than you are. There may be some cutting down on 24 operational inventories, although, given the 25

1 current tightness and the narrow range in which 2 those inventories currently move, that is, from our perspective, not all that likely. 3 MR. HACKETT: Dave, you are talking 4 5 about the fees to utilize it, and this is one of the problems that I've got with this process is б 7 that has never been anything specific to say, this is how it is going to work. 8 9 There has been some generalized -- the 10 rules are kind of, it's dynamic, it's got some, 11 you know, and I can understand that maybe a little 12 bit, but if there is a continuous in and out 13 process, and I've heard it described that way 14 where there's continually replenishing of 15 inventory and maintaining aesthetic seemingly 16 inventory would be consistent with that. 17 There seems to be a difference there, but without knowing what the costs were -- I would 18 19 think you would want to have those costs low if 20 you want to use it. You don't want to create a huge penalty for people to use it. If it cost 21 \$.15 to use it, then no one is going to use it in 22 23 the first place. MR. HAGGQUIST: Dwight, these are good 24 questions and serious ones, this is the type of 25

1 exploration that needs to be done. I'd like to 2 ask if your refinery were situated in the Gulf Coast or the East Coast whether it was a NYMEX, 3 and if you can grab those NYMEX barrels, you could 4 reduce your inventory. Sunoco or ConocoPhillips 5 6 in Philadelphia can reduce their inventories by the fact that there is a NYMEX next door, and they 7 have the right to draw a physical inventory from 8 9 the NYMEX next door anytime.

10 In a sense, this is what is being imagined here, and the second point about how has 11 12 this been described. It has been described in the 13 addendum to what is on the internet now, the 14 addendum attachment B gives a words eye view of 15 how this would, in fact, operate, and it also 16 gives views from different perspectives. How 17 would it be seen from Australia, from Caribbean, from a local refinery here. You get a panoramic 18 view of how this would operate the mechanism by 19 which you would operate. Certainly not in detail, 20 21 but enough to get the picture.

22 MR. STEVENSON: Those details are 23 important. How much would it cost if it is a 24 quarter of a cent, the kind of normal exchange 25 differential that you might see borrowing it from

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refinery A next door, then --

2	MR. HACKETT: I think we thought that
3	order of magnitude was probably going to be around
4	two cents, something more expensive than borrowing
5	from the guy next door, but not so much as to make
б	it impossible to use.
7	MR. GIESKES: Dwight, one of the reasons
8	that we thought that the operational inventories
9	were really hard limits is that 9.5 to 10 million
10	barrels, that seems to be the bottom of the
11	operational range, and we are all summer long,
12	California is struggling along in that range.
13	The reason that we thought refiners
14	cannot reduce that inventory is that if they
15	actually could, they would have. The incentive,
16	if you can sell gasoline at (indiscernible) at
17	twenty bucks a barrel, you are sitting on 2
18	million barrels as an industry, you can actually
19	sell those, those are not hard limits, why don't
20	you currently?
21	MR. STEVENSON: Is that a question?
22	MR. GIESKES: That's a question, yes.
23	MR. STEVENSON: Okay. The answer is the
24	issue of failed blends, and having the gasoline
25	blended ahead of the pipeline in enough time so

1 that you don't miss the pipeline cycles. If there 2 are no consequences of having the blends fail, and you just call up and have that 3 cents is 3 obviously a pretty high price, but --4 5 MR. HACKETT: Dwight, would you walk -for everyone's education, would you walk through б for us how the process, you have a failed blend, 7 and then what happens from there? What's the 8 9 timing and who do you call and that sort of thing? 10 MR. STEVENSON: I think that would take a little too much time. I probably --11 12 MR. HACKETT: It is my impression, 13 though, that's something that if you have a failed 14 blend, you realize it is failed now, you don't 15 have time to correct it before the batch pumps, 16 your trader calls one of his colleagues at a 17 different company and says, hey, can you pump this. He calls his refinery and it goes out 18 tonight. That is not the kind of thing -- that's 19 20 a prompt immediate reaction, got to have it right now in order to keep customers satisfied. 21 It is not the kind of thing where we 22 23 envision this SFR as it will pump the next pipeline cycle, it won't pump tonight, so maybe 24 that is a bit of difference. 25

1 MR. STEVENSON: Okay, so you are putting 2 limits on it. First of all, you are putting three 3 cents a gallon on the cost, so that would reduce its utility. You are saying it can't pump tonight 4 5 or tomorrow. These pipeline -- these refinery outages, there's going to be less utility there б 7 too. Again, without knowing the specifics and 8 9 the rules, it is hard to say how it would be used. 10 MR. HACKETT: Let me ask you a question. Is there sufficient inventory capacity in 11 12 California for products now, in your opinion? 13 MR. STEVENSON: I'm no expert, I'm not 14 even going to say. I won't even try to answer 15 that one. I'm getting bated. 16 (Laughter.) 17 PRESIDING MEMBER BOYD: It happens when you stand up here. 18 MR. STEVENSON: I can't answer that, I 19 20 don't know, it appears to be, it appears to be. 21 Cars don't run out of gas on the side of the road, 22 so I guess there must be. 23 MR. HACKETT: With gas being \$.45 or \$.50 a gallon over the rest of the country, that 24 doesn't have anything to do with inventory 25

1 capacity or refinery performance or anything like 2 that? 3 MR. STEVENSON: Oh, yeah, let's take two days and talk about that one. 4 5 PRESIDING MEMBER BOYD: We probably will б all day tomorrow. 7 MR. STEVENSON: No, just as a guess, I would say most of that is not due to not having 8 9 2.5 million barrels of inventory. PRESIDING MEMBER BOYD: I hope tomorrow 10 we do discover what it is due to because the 11 12 California public is getting pissed. 13 MR. STEVENSON: I just see that as a 14 concern. The claimed benefits of having this 15 extra 2.5 million barrels, you know, it seems 16 tenuous on a couple of counts. 17 One of them is I'm not sure that 2.5 million barrels would really exist as an 18 additional 2.5 million barrels. The other big 19 point I think I would like to make and then step 20 21 out of the firing range would be how would you know when to draw this inventory down? 22 23 Presumably if you are saying "dynamic" you are talking about actually using the inventory 24 up. Drawing it down from 2.5 million barrels to 25

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1 minimum. Without doing that, it seems like there 2 is very little utility to the inventory. 3 MR. HACKETT: It would be done on a time slot basis, people would come in and bid to lift. 4 5 MR. STEVENSON: Somebody could do it whenever they wanted to, in other words. б 7 MR. HACKETT: There will be a set of rules that go with that, but yeah. 8 9 MR. STEVENSON: If you pay your three 10 cents a gallon or whatever. 11 MR. HACKETT: Or whatever it is, I said 12 two. 13 MR. STEVENSON: Oh, okay, two was it? 14 All right. 15 MR. HACKETT: That is what we sort of 16 thought as we were thinking about this. 17 MR. STEVENSON: Okay. My point on that 18 would be, you know, what constitutes a big enough emergency. If someone says, hey two cents a 19 20 gallon, it is worth it, I'm going to pull it out 21 of there, and then there is a real big outage. You know, if somebody's 25,000 barrel a day 22 23 reformer goes down and they pull down that inventory because it is worth it for two cents. 24 25 MR. HACKETT: That's right.

1 MR. STEVENSON: Then that inventory is 2 gone, and it is not available for the big --3 MR. HACKETT: When is it going to be -your question is when is it going to be replaced, 4 5 I think. б MR. STEVENSON: It sounded like six 7 weeks. MR. HACKETT: Yeah, so the first tender 8 9 pumps in the next cycle, and then six weeks after 10 that, you know, gasoline starts showing up -- six 11 weeks or less gasoline starts showing up. 12 MR. STEVENSON: If your reformer outage, 13 you know, small reformer outage, and someone said 14 it's two cents, I'm going to pull down a million 15 barrels for that. 16 MR. HACKETT: Right. 17 MR. STEVENSON: You have directly 18 following that a real outage, then --MR. HACKETT: Of course, that million 19 barrels of gasoline has gotten into the 20 21 distribution system at that point. 22 MR. STEVENSON: My point is that the 23 other means that company would have had would have been to pull in a million barrels from off shore, 24 but why do that. Why bring in the gasoline 25

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because I've got it right here.

2	MR. GIESKES: Dwight, we looked at it in
3	some careful detail, and we used the '99 series of
4	outages that was that one graph that I showed.
5	That graph assumed that half of the inventory
6	would be on the water on the way in various
7	stages, so 1.3 million barrels would still be
8	sitting in the tanks.
9	That 1.3 million barrels, and actually
10	only 900,000 barrels out of that would have been
11	sufficient to counteract the inventory degradation
12	over the two worst outages.
13	We have looked into that, we've
14	quantified it
15	MR. STEVENSON: Thomas, it seems real
16	squishy to me. If you've got a dynamic system,
17	that means that inventory is going to be coming
18	down, and you may not have any inventory on the
19	water. If you are not utilizing it
20	MR. GIESKES: No, that is why there is a
21	limitation on the total draw. This auction is
22	limited, and that is why it is an auction. There
23	is a limited volume available on a given day or in
24	a week or whatever
25	MR. STEVENSON: Right, but if no one has

1

bought any, and there is no --

2	MR. GIESKES: If no one has bought any,
3	then the tank is sitting full. If everybody has
4	bought something, then half the inventory is in
5	the tank, and half the inventory is on the water
6	coming in. That is the basic premise of this
7	rolling inventory.
8	It is a pipeline filled with imports.
9	Whatever you do, if you have currently, if you
10	have an outage, you have to start from scratch,
11	that is when you start filling the pipeline.
12	Gregg's analogy was very ample, it is the
13	equivalent of the Colonial.
14	If the Colonial was sitting empty
15	waiting for an outage to occur in New York, you
16	would have to start pumping when the outage
17	occurs. You would be in much deeper doo doo than
18	you are when there is a continued filling
19	pipeline. The whole incentive of this, say, for
20	traders is currently that they have to wait and
21	see and sort of try to guess how long is this
22	outage going to last. It takes a while for the
23	pump to prompt, it takes a while for these imports
24	
	to be mobilized as was the case in '99.

1 before the first cargo started showing up, and it 2 started showing up in great numbers. The idea is 3 that you have at any point in time no more than half the tank filled on the water, but that tank 4 5 fill is on its way, so you don't have to wait б until the pump prompts, there is a big big 7 difference here. MR. STEVENSON: You can only use half? 8 9 MR. GIESKES: We've looked at this in 10 great detail, I can assure you. It's not just hand waving or -- the commercial principles are 11 12 not worked out, but the physical side of it is 13 much easier to calculate. MR. STEVENSON: I'm going to let the 14 15 professionals take care of this tomorrow. 16 (Laughter.) 17 PRESIDING MEMBER BOYD: All right. 18 Anyone else have any comments, questions? DR. VERLEGER: Two quick questions. 19 20 One, I just heard somebody there say something 21 about Sunoco or something have a --22 UNIDENTIFIED SPEAKER: Can you identify 23 yourself? DR. VERLEGER: Philip Verleger, I did 24 this before. Sunoco having a right if it had a 25

1 position on NYMEX to do something anytime. Could 2 you explain that point again, please? MR. HAGGQUIST: Yeah. Dr. Verleger, 3 this is Gregg Haggquist. It is in his response to 4 5 the probability that the refiners would reduce 6 their inventory, operational inventory because this existing rolling stock in the strategic 7 reserve is available. Therefore, they can count 8 9 on that and go get that instead of keeping the 10 inventory that they need. It triggered in my mind the association 11 12 of refiners on the East Coast, such as Sunoco, any 13 refiner east of the Rockies who can draw on, who 14 can buy or do a time swap on the NYMEX. Once they 15 have done a time swap on the NYMEX, they can 16 convert that to an EFP, and they can require 17 physical delivery from the NYMEX, so they too can reach to this huge tank, which is a NYMEX in New 18 19 York Harbor.

To what degree, I ask, does that 21 influence their decisions on minimum inventories? DR. VERLEGER: Okay. How quickly can 22 23 they reach into that tank on the NYMEX? MR. HACKETT: The prompt delivery month. 24 25 Right now we are at the end of April, so they

20

would be able to do that in June. June would be
 the prompt month by now.

3 DR. VERLEGER: Let me -- I've been an expert witness in two delivery manipulation 4 5 lawsuits, so let me put some facts on the table б because you've got them wrong. 7 Delivery on the NYMEX is what's called a buyer's call, that is, the buyer can specify the 8 9 delivery window in the next month. The contract 10 stops trading on the NYMEX for the products on the

11 last trading day of the month. The May contract 12 will stop trading on April 30. A company can call 13 for a delivery starting the first Monday in May or 14 something like that, presuming they take a 15 position.

16 On an EFP, an EFP is a negotiated 17 contract. The term is "exchange of futures for physicals", you said something else earlier. Let 18 me get the language correct. That is a 19 transaction which is willingly entered into by two 20 21 parties, so you have to find a supplier who would agree to provide it, provide the product, and it 22 23 would have to be negotiated, a premium, and it would be posted because what's going to happen is 24 a short and a long position is going to be taken 25

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1 off.

2 It is not something you can -- Sunoco can't just go in and say, okay, I'm going to do an 3 EFP and get the gasoline. The delivery location 4 5 on the NYMEX is a seller's call. That is, the б seller can designate where it's going to occur. 7 This matters in future's markets as Jeff 8 can tell you because prices can go -- locations 9 can differ, so that the description that you have 10 made there is seriously at variance with the way the market works. 11 12 I know of no company, having worked with 13 these companies, that would rely on that in the 14 way you've described. It's just hellacious. 15 MR. HAGGQUIST: Just a moment. At that 16 point. These are all acceptable, I've done many 17 of these EFP's, I know how they work, hundreds of 18 them. The point I am making is, since you also 19 have said that they would never rely on those 20 21 EFP's, the question is, would this system, if it existed in California, encourage refiners to rely 22 23 on these uncertainties. Are they going to win the auction? That's really the question. Will they 24 reduce their inventory because of that. 25

1	MR. LAUGHLIN: In the East Coast, I
2	don't know of any refiner who counts on the
3	delivery of a merced barrel and reduces their
4	inventory at all. That is a as you said, if
5	somebody has a problem he can basically force
б	delivery sometime in the next month. I agree with
7	you, I think we have all said the same thing here
8	just now, is that basically the refiner would not
9	count on the merc or in this case on the SFR, and
10	then reduce his inventories. Not consistently.
11	DR. VERLEGER: I'll discuss that
12	tomorrow. I think the evidence, world wide, is
13	something at variance with that.
14	A question for Tony on slide 27.
15	MR. GIESKES: Can I come back on this
16	dispute. I think we are all in agreement here,
17	actually. We both say that this can be done. It
18	was not that Gregg said that refiners would do
19	that, he said that refiners will not do that.
20	DR. VERLEGER: I heard him say it would,
21	that is why I wanted to get the record correct in
22	terms of what.
23	Number 27 of your presentation.
24	DR. FINIZZA: I need three engineers on
25	this will.

1	DR. VERLEGER: There you go, you went by
2	it. You went by it, past, there. The red area
3	you show there, \$750 M, as I recall, a good
4	portion of that got caused by some off spec
5	gasoline that had to be pumped out of tanks in San
6	Diego and taken back to the refineries. It was
7	actually your former employer's tanks, I think.
8	The question is, how is the SFR going to fix
9	that? I mean, if the off spec goes down, it's a
10	logistical thing, they have to get the trucks and
11	bring it out. Isn't most of that \$750 M due to
12	something that even with an EFP and SFR would have
13	happened anyway?
14	MR. SCHREMP: Dr. Verleger, this is
15	Gordon Schremp, I can shed some light on that.
16	Since these gentlemen were not involved in the
17	investigation of that price spike.
18	The Arco or the AM/PM issue had to do
19	with off spec gasoline in terms of not having
20	adequate amount of ethanol in the fuel delivered
21	to a number of service stations. That, in our
22	opinion, its staff had no impact at all on the
23	recent price increase in the spring of this year.
24	It was a situation where Arco was unable
25	to dispense regular gasoline for a period of less
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1 than five days at some of their service stations. 2 The gasoline was returned, brought back to spec in short order, and resupplied to the stations. 3 It did not affect the output of the 4 5 refinery nor output their service stations except б in this one instance. 7 DR. VERLEGER: As I understand it, there were some retail prices of \$4.00 a gallon. What 8 9 you are saying, the retail price of \$4.00 a gallon 10 in San Diego had nothing to do with this. MR. SCHREMP: Yes, that is correct. 11 In 12 fact, we did look into that specific example side 13 by both Governor Davis and extensively in the 14 press there is an individual at a station who did 15 set a very high price for his gasoline. That was

16 unrelated to what happened to the Arco service 17 stations.

18 It had to do with a dispute he had with 19 the prime supplier, totally unrelated, and in 20 fact, his prices actually went up later on. It 21 was totally unconnected with what was going on 22 with the Arco situation as well as the overall 23 price spike.

24 DR. VELEGER: What you are saying is the 25 disruption of Arco's distribution had nothing to

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1 do with the rise in price of gasoline? MR. SCHREMP: Yes, Sir, that is correct. 2 MR. HAGGQUIST: I think it should be 3 added, by the way, Dr. Veleger, is that the 4 5 question is if the SFR, as we've described it, had 6 been in place, and let us say that San Diego had everything to do with it, you could see the 7 backwardation at the time. The market jumped up, 8 9 the wholesale spot market went up by \$.25, it went 10 to \$1.50 plus, right. At that point in time, OPIS is printing the next forward price at \$1.30, \$.20 11 12 lower. 13 You trigger the auction, somebody is 14 going to win that auction, going to take the 15 barrels out of the SFR and are going to replace 16 them at that \$1.20 within -- that \$1.30 within six 17 weeks. They are going to bid something, they are going to bid some portion of that \$.20 18 differential in order to win the auction. They are 19 never going to bid the price. The beauty of this 20 21 is that nobody ever buys any barrels, the

government never sells anything, nobody regulates any markets. What you simply do is connect the arbitrage, the backwardation of the market is pulled in the front and you smooth it out, right.

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1 If that refinery needed 100,000 barrels, 2 they go in and bid 100,000 barrels, boy, we can 3 replace this, we'll fix this San Diego problem, we will replace these barrels in a month. Okay, 4 5 we'll bid \$.10 because we can replace it as \$.20 6 cheaper. They give \$.20 to the SFR for 100,000 7 barrels, they get the 100, not a ripple in the market, and you define at exactly what the month 8 9 forward price really is, it's prompt plus \$.10. 10 COMMISSIONER GEESMAN: If I could shed 11 this job and go back to being an investment 12 banker, couldn't you and I capitalize this 13 business and we wouldn't have to capture very much 14 of that consumer benefit to make out pretty well? MR. HACKETT: Yeah, you know, that has 15 16 been part of our debate all along. If this is 17 such a good idea, why don't we go do it. The issue gets to be you've got to have the physical 18 facilities to pull it off. Could this be a bank, 19 could this be a real bank, I don't understand 20 21 finance well enough to be able to tell that or not, but until you get the tanks, it is sort of an 22 23 academic debate. COMMISSIONER GEESMAN: I'd encourage you 24 to talk to the bankers, you could probably find 25
1 the tanks.

2 MR. HACKETT: You know what's interesting is they have started to circle around. 3 We have seen a few of them show up, call up and 4 5 say, now, tell me what it is you guys are doing б with this. Maybe we ought to have more 7 conversation. MS. STAMETS: Leigh Stamets with the 8 9 staff. I noticed that you were talking about 10 starting this summer grade gasoline. How do you 11 envision that going through the year, summer, then 12 winter? 13 MR. HACKETT: Thanks for asking that, 14 Leigh. In Southern California, the winter is 15 three and a half months long about, call it the 16 first of November to the middle of February or, 17 you know, I'm not sure when the Air Board is going to change the definition. It had been the middle 18 February, this year it was sort of the middle of 19 20 March. 21 When you look at the disruptions and 22 inventories and the rest of the sort of thing, you 23 quickly discover the winter time is no big deal, and in general, gasoline is easy to make. 24 Refiners can put butane in it, raise the REP, that 25

1 improves their distillation, helps them with their 2 octane, and so if there are refining problems, in general, you don't tend to see those in the market 3 place. I think probably when you look at the 4 5 charts on backwardation contango, you see the contango tends to be in the winter time. б 7 This tends to be the price spikes and the shortages in inventories and the rest, that 8 9 tends to be a summer problem, that is why there is 10 summer CARBOB. 11 If it turns out that somebody -- you get 12 to the point where someone actually has the 13 economics to go knock on the door, the teller 14 window of the bank, the Gasoline Bank of 15 California in the winter time, then that is an 16 issue. 17 I think, likely what would happen there is that the volume in the SFR had to be traded 18 around with a refiner, where would the blender, if 19 there is one who will tickle it up to the proper 20 21 REP. Then the whole issue is revapor based on the volatility of the gasoline. 22 23 MR. STAMETS: To anticipate, you just carry it through the winter then with no 24 25 exchange?

1	MR. HACKETT: That's right. There is
2	issues of shelf life. Any time you look at this
3	stuff, you have to think about the shelf life
4	issues. It is our guesstimate, we haven't run or
5	done any tests or the rest of that sort of thing,
б	but it is our guesstimate that CARBOB is likely a
7	much more stable product than other gasolines
8	because it is so highly refined. It is low in
9	sulfur, low in aromatics, and the like, and
10	therefore, ought to have pretty reasonable shelf
11	life.
12	Again, that is one of those details, one
13	of those critical details that you need to look
14	into in the next phase.
15	MR. SCHREMP: In fact, Dave, this is
16	Gordon again, the Air Resourcing Board is on
17	record of stating on their opinion the gasoline
18	shelf life for the Phase II gasoline, both non-oxy
19	and with MTBE does have a shelf life of at least
20	six months. That also carries through, as you
21	say, to Phase III CARBOB, then that should
22	certainly get you through a winter period.
23	PRESIDING MEMBER BOYD: This is getting
24	good. Who is next?
25	UNINDENTIFIED SPEAKER: Is this the

1 public comment period?

2	PRESIDING MEMBER BOYD: We haven't quite
3	got there yet. I just want to make sure everybody
4	got their discussions and questions out of their
5	system. Dr. Wiliams is leaning forward
6	DR. WILLIAMS: I have my list tomorrow.
7	PRESIDING MEMBER BOYD: Okay, you're
8	just uncomfortable like the rest of us. Okay. I
9	can thank these gentlemen for their presentation,
10	and the interesting discussion and question period
11	and turn to that part of the agenda that says
12	public comments. Are there publics out there?
13	Mr. Sparano sent in a card early this
14	morning, the only one who did that and said he
15	wanted to talk during the public comment period.
16	It has been a long day, Joe.
17	MR. SPARANO: Yes, I'll try to remember
18	that. Joe Sparano. Commissioners, thank you for
19	giving me this opportunity to share some
20	information with you.
21	As you know, I'm Joe Sparano, I'm the
22	newly appointed president of the Western States
23	Petroleum Association or WSPA.
24	WSPA is a non profit trade organization
25	which represents over 30 natural gas and petroleum
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exploration production refining transportation and
marketing companies that operate in six western
states, here in California, Arizona, Nevada,
Oregon, Washington, and Hawaii.
I've been President of WSPA for a grand
total of four weeks, but have spent thirty-four
years in the petroleum industry working and
learning about it.
For more than fifteen of those years,
since 1987, I've had leadership positions in
California companies in this industry, both in
operations and finance. I am pleased to be here
today to represent that industry.
First, WSPA would like to acknowledge
the amount of effort the Commission, its staff,
the consultants have invested in understanding our
industry and the complexity of the gasoline
market.
We also recognize the administration's
concern about the state's recent gasoline price
volatility. However, we do not believe that
California fuel markets are broken. WSPA opposed
government mandates or subsidies that can
interfere with free markets in a way that is
detrimental to moderating price spikes.

1 I guess just a quick observation, price 2 spikes are called that for a reason. It's not a price balloon, or a price rock, it is a price 3 spike indicative of a sharp movement upward or 4 5 downward. In this case, it's been upward. My б hope is that all of us can understand in a free 7 market economy that might not be that bad a thing, but let me continue and maybe I will get that 8 9 point across.

We believe firmly that the free market works, this is illustrated in one way by the fact that even in the circumstances experience in 1999, and we heard a lot about that earlier, and again this spring, there were no gasoline market failures.

16 As Dwight mentioned, our stations still 17 had fuel to sell all the time. Unfortunately the term volatility has been characterized as a 18 negative term, but economic theory teaches that 19 20 price volatility is a normal part of any free 21 market. In fact, it sends a signal that the market is operating efficiently and the mechanism 22 23 by which an efficient market tells participants about its condition. 24

25 We believe the gasoline market is

1 healthy and the proof is the price the consumers 2 have paid for that product over many years. Over the past twenty years, there have been several 3 major changes in the composition of California 4 5 Gasoline as mandated by the state and federal laws б and regulations. 7 These changed benefit both the environment and the consumer, but they also come 8 9 at a cost. The improvements in fuel quality 10 started with removing lead from gasoline some time 11 ago followed by requiring additives, then 12 oxygenates, and several reformulations of gasoline 13 and diesel, including the change to Phase II 14 gasoline or California cleaner burning gasoline. 15 Our industry has already invested more 16 than 5 billion dollars in California to produce 17 cleaner fuels for California's driving public. The next mandate is the elimination of 18 the oxygenate MTBE by the end of this year. 19 20 According to material I've read from CEC's consultant in the same twenty period per capita 21 income increased in California by about 45 22 23 percent. I believe I heard Commissioner Boyd 24 mention the number of extra people we have in this 25

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1 state and the number of cars that drive and the 2 number of miles they drive and all that, I think is additive in terms of the pressure on the 3 gasoline market for supplies. 4 5 Over the same time frame, the real б constant dollar cost of gasoline has fallen by 30 7 percent. The take home message here is that our industry operating in a free market place has been 8 9 able to meet the environmental challenge of 10 producing cleaner burning fuels or be it at an increasingly higher production cost while the cost 11 12 of these fuels to consumers has remained low 13 relative to other products and services. 14 Now why would I say that? The U.S. Bureau of Labor Statistics reporting the consumer 15 16 price index or CPI indicates that gasoline prices 17 have risen less than many other products we use every day, energy, electricity, food, housing, 18 medical care, to name a few. 19 20 Specifically, gasoline prices increased 21 less than 20 percent between 1982 and 2002 while housing costs, in particular, are up about 100 22 23 percent, and the cost of medical care is up almost 200 percent in the same period. 24 25 On to the SFR proposal. WSPA would like

1 to respond to the SFR concept by focusing first on 2 some basic principles and beliefs. The U.S. free market is a model of economic success and a 3 fundamental principle of capitalism, and I'm sure 4 5 everybody in this room is aware of that. б It is also the framework for our 7 successful history of economic activity and growth in California. The petroleum industry is opposed 8 9 to market intervention by government as suggested 10 in this proposal. I know there have been some 11 comments to moderate that and talk about ways in 12 which the SFR might be managed. 13 It is still an artificial presence in 14 the market place. Prices of transportation and 15 fuels are set by market conditions, and history 16 has shown over time this produces quality products 17 at competitive prices. We believe that it is unlikely that a California gasoline reserve would 18 19 eliminate price spikes. 20 Other markets such as New York Harbor and the Gulf Coast have a history of volatility as 21 well, even though as we've been told in some of 22 23 the work of the consultants that these are ideal markets, or perhaps more ideal than California's. 24 25 Historical attempts to control markets

1	in the U.S. have failed. I think we also heard
2	that earlier today, and there is a high likelihood
3	that the SFR will not materialize the way it is
4	planned. You certainly heard some serious
5	questions about it earlier.
б	Observations by knowledgeable experts
7	suggest that establishing a state fuel reserve
8	will wind up costing tax payers and consumers
9	potentially hundreds of millions of dollars. Now,
10	I am not sure I understand fully how the mechanism
11	of getting all this started would take place with
12	tenders and bids, but somebody is going to have to
13	pay to build tankage. Somebody is going to have
14	to pay to build control equipment. Somebody is
15	going to have to pay for land. Somebody will have
16	to allocate it even if they own it now. At the
17	end of the day, maybe or maybe they won't get a
18	permit.
19	All those factors, I think, can inject a
20	rather large cost component to this strategic fuel
21	reserve.
22	All this comes at a time when California

has a staggering budget deficit that, again,
everybody in the room is aware of. The prospect
of job loss is an economic down turn continue.

1	The SFR concept is poorly conceived
2	because it would likely disrupt free market
3	gasoline supply and storage, increase reliance on
4	imports and higher costs, perhaps those costs
5	being subsidized as we heard earlier, and further
6	add to price volatility, not reduce it.
7	Finally, expansion of refinery
8	production capacity may be the lowest net cost
9	option for meeting product demand, growth, with
10	additional supplies, even though as we've heard
11	it's quite difficult to make that happen, but
12	those projects, generally speaking, will cause an
13	increase in jobs through the construction phase
14	and then a complimentary increase in longer term
15	jobs at the facility where the new equipment has
16	been installed.

A few observations about refining and 17 18 storage capacity expansion. WSPA believes that 19 the existing fuel supply infrastructure can meet 20 current demand barring a severe disruption. We also acknowledge that supply and demand is tightly 21 22 balanced, but demand for petroleum products here 23 in California is growing each year. This balance is due to a variety of 24 25 factors, some are outside the state's control,

like world crude oil prices and economic
 conditions. However, some are within the State's
 control.

Specific uncertainties in California 4 5 concerning the impacts of our boutique fuels, 6 renewable fuels mandates eliminate, elimination of 7 the oxygenate requirements and the legal challenge to the Unocal patent, all of which we have heard 8 9 about in some form or another today. 10 Each of those adds another layer of complexity in making decisions about the future 11 12 use of our industry's limited capital. 13 There are many complex and real 14 regulatory physical and logistical constraints 15 that exist to expanding California's petroleum 16 infrastructure. The answer should not be to 17 propose and mandated SFR that potentially will 18 face some of the same constraints. Efforts should focus instead on helping 19 20 to mitigate or eliminate these challenges that 21 I've mentioned in order to facilitate new private sector capital investment, which should produce 22 23 more jobs and a stronger economy. WSPA does not agree with the SFR 24 proposal before the Commission, however, we 25

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believe there are some alternative constructive
 steps that can be taken that will allow the State
 of California to assist with meeting future
 marketplace challenges.

5 These steps, some of which are already 6 supported by state agencies, will remove barriers 7 to increasing supplies that will enable us to meet 8 future demand.

9 As a group, our objective should be to 10 streamline state and local permitting, including 11 the CEQA process. For example, we understand 12 permits for deepening the channels in LA and Long 13 Beach Ports to accept larger vessels is being held 14 up right now due to an issue of where the dredge 15 materials and spoils are to be disposed.

16 State agencies that adopt rules, should 17 be required to include an evaluation of the rules 18 permitting needs in concert with local agencies. 19 Someone raised that very good point this morning 20 about the impact of many local agencies on the 21 permit process.

The responsibilities of each level of government in the permit process should be expedited so that hopefully we can improve the permitting process over all.

We should also add a provision requiring
 state and local agencies to evaluate the impact on
 the supply of energy and fuels before adopting any
 more rules.

5 The agencies would also be required to 6 consult with the CEC on this aspect of their rule 7 making and to identify ways to minimize the 8 impact. The cost of any impact should be included 9 in the rule.

10 The State should obtain a federal 11 oxygenate waiver for California. I think we all 12 know how important that is and how hard people 13 have tried. It may be worth trying again. 14 Providing Title V operating permits relief would 15 be helpful.

16 The State should also limit the 17 frequency of fuel specification changes and 18 uniqueness of formulations relative to other 19 markets.

20 We are an island, and we are in some 21 isolation because of the uniqueness of our fuel 22 blend.

23 We should expand the availability of NLX 24 credits. Our agencies need to produce consistent, 25 environmental justice guidelines and an equitable

implementation process, and finally the CEC should
 continue its role in monitoring the supply and
 price of California petroleum products to help the
 governor and legislature with accurate
 information.

б I have one brief request of the 7 Commission, and that is, results from several of the studies that our subject to written comment 8 9 have come in just the last week, the last three 10 days for several of them, and at WSPA we would like to ask if you could extend that deadline 11 12 beyond May 5, which is I believe the current 13 deadline. It has just been impossible to read the 14 hundreds of pages and provide you with effective 15 comment in such a short period of time.

16 Some final thoughts, the State 17 Government of California has reviewed gasoline 18 reserve concepts three times in the past, as I 19 understand it, and has found each time that a 20 reserve was economically unjustified, inefficient, 21 and not in the best interest of consumers.

22 We believe the current proposal is a bad 23 idea, it will not improve a fundamental market 24 constraint, which is insufficient production 25 capacity, supply to meet ever growing demand.

1	I think when you look at the totality of
2	the problem, that is a free market. It is a
3	fundamental free market situation. We have an
4	ever growing supply, and we have a system that
5	continues to constrain an every growing demand in
6	a system that continues to constrain ways in which
7	we can create supply from private industry to meet
8	that demand.
9	At the end of the day, I think that
10	spells a difficulty that we are all going to have
11	to deal with. Thank you for your time.
12	PRESIDING MEMBER BOYD: Thank you. I
13	know you know, Joe, so I won't say too much. A
14	couple of reactions, though, this is the first
15	time in any public hearing meeting or what have
16	you that I've been present at that your industry
17	has finally said you need more capacity. I just
18	want you to know that because you are the new guy
19	on the block.
20	Two years ago in WSPA's own issues
21	conference, I threw the challenge out to the
22	entire industry that if you think there is a
23	pending crisis and you think refining capacity has
24	anything to do with it, please come and talk to us
25	about it.

1	I mean, we were just then addressing an
2	electricity crisis and we had designed all kinds
3	of streamlined processes to deal with it, and the
4	silence has been deafening. I'm glad there is
5	finally a public admission that maybe there is
6	something to do with that.
7	MR. SPARANO: The admission was, I think
8	I said, in an ever growing demand scenario, where
9	there are lots of constraints against increasing
10	supply, we ought to do something about that.
11	Whether or not the individual members elect to
12	invest based on their perception of what the risk
13	may be is a whole different issue, as we both
14	know, just to clarify.
15	PRESIDING MEMBER BOYD: I guess another
16	just an observation, I think we all, at least
17	speaking for myself, we all recognize markets and
18	price spikes and the public has a tough time
19	comprehending that, and you know, we have talked a
20	little bit with the association informally about
21	if there are ways at least to dampen the peaks,
22	the valleys will get cut too, so they won't see it
23	perhaps as cheap, but my earlier comment about the
24	public's reaction, I've been through this too many
25	times, and we all spend an awful lot of time

1 trying to explain and trying to investigate and 2 analyze, and it would be better to move the ball down the field, but the public does have a little 3 bit of difficulty right now understanding the 4 5 roughly \$.50 incremental difference between, you know, what the rest of the nation has done and б 7 what has happened here in California. It is up to us to try to explain that to the governor and the 8 9 governor to the public, and we look forward to you 10 helping us do that.

11 Lastly, I appreciate your offer about 12 data because our two organizations are having lots 13 of discussions about what kind of data you need 14 and when you need it in order to do just as you 15 said, explain to the executive and legislative 16 branches what is going on in order to quell the 17 concerns and the concerns of their constituents, so we look forward to continuing that work which I 18 19 think started out a couple of weeks ago on a very 20 good foot.

As for the rest of it, join us tomorrow for a continuing discussion and then the ball is in our court to try to make some tough decisions and recommendations. Thank you.

25 (Whereupon, at 6:04 p.m., the workshop

was adjourned, to reconvene at 10:00 a.m., Friday, April 25, 2003, at this same location.) --000--б

CERTIFICATE OF REPORTER

I, PETER PETTY, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy commission Workshop; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said workshop, nor in any way interested in outcome of said workshop.

IN WITNESS WHEREOF, I have hereunto set my hand this 29th day of April, 2003.

COMMITTEE WORKSHOP

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:) Strategic Fuel Reserve) and Alternatives to Dampen) Price Volatility)

CALIFORNIA ENERGY COMMISSION

)

1516 NINTH STREET

HEARING ROOM A

SACRAMENTO, CALIFORNIA

FRIDAY, APRIL 25, 2003

9:10 A.M.

Reported by: Peter Petty Contract No. 150-01-005

COMMISSIONERS PRESENT

James Boyd, Presiding Member John L. Geesman, Associate Member STAFF PRESENT: Susan Bakker, Advisor to Boyd Brian Covi, Contract Manager Transportation Energy Division Melissa Jones, Advisor to Geesman Scott Matthews, Deputy Director Transportation Energy Division Pat Perez, Manager Transportation Fuel Supply & Demand Office Gordon Schremp, TED Leigh Stamets, TED Chris Kavalec, TED Seymour Goldstone, TED ALSO PRESENT Dan Brusstar, NYMEX, via telephone Tony Finizza, AJF Consulting Thomas Gieskes, Stillwater Associates David Hackett, Stillwater Associates Gregg Haggquist, Stillwater Associates Robert Hermes, Pervin & Gertz Tony Hoff, ST Services Drew Laughlin, Consultant, via telephone Philip Verleger, PK Verleger, LLC

ALSO PRESENT

JEFFREY WILLIAMS, UC Davis

PUBLIC COMMENTS

Robert Lanza, ICF Consulting Dwight Stevenson, Tesoro

Joe Sparano, WSPA

INDEX

	Page
Proceedings	
Opening Remarks	1
Presiding Member Boyd	1
Presentation	
Afternoon Session	179
Closing Remarks	269
Adjournment	
Certificate of Reporter 2	

1	PROCEEDINGS
2	9:10 a.m.
3	PRESIDING MEMBER BOYD: I think we can
4	get settled now and begin day two of our workshop
5	on California Strategic Fuel Reserve and all the
6	related options and alternatives. Being a Friday,
7	and many of you have travel plans, we'll try to
8	stick a little closer to the agenda today and
9	really get done by 5:00, rather than drifting on
10	so long, or maybe get done a tad earlier. We'll
11	see.
12	On the other hand, it could really get
13	interesting. It could go longer. But it's
14	already interesting. It could get more
15	interesting. At any event, our first item this
16	morning is to be a presentation on some selected
17	issues that Dr. Jeffrey Williams was asked to
18	address. And with no further ado I will turn it
19	over to Dr. Williams.
20	DR. WILLIAMS: Thank you. Sitting here
21	yesterday I, again, appreciated the fact that
22	often people talk past one another in large part

1

23 because they're imagining some different

24 situation, which is to say they have some implicit 25 assumption about something, perhaps in the

1 analysis.

2 Implicit assumptions are quite common. We all make them. But in general, it's better to 3 try to make them explicit. It helps the 4 5 communication. We also can see whether certain 6 features of our analysis hinge a lot on the 7 particular assumption we make. Implicit assumptions are inevitable. Sometimes they can be 8 9 very small. They sometimes they can be so huge 10 that they affect the major conclusions of particular analysis. 11 12 And we want to make sure that's not 13 happening, especially in this instance. So I have 14 been looking for implicit assumptions in the 15 general analysis of the Strategic Fuel Reserves, 16 and thought of four areas where I think that 17 implicit assumptions is dampening our ability to 18 communicate, but also may have a significant effect on the conclusions we draw about the 19 advisability of Strategic Fuel Reserve. 20 21 I'd like to go in order of these four 22 and talk about them, almost a stand alone commentary all having to do with storage. And the 23 first is California's status as an island, which 24 we talked about a lot yesterday. And then one we 25

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didn't talk about yesterday, and that would be my
 point, the influence of crude oil price
 relationships on the advisability of the Strategic
 Fuel Reserve.

5 And then what we did talk a bit about б yesterday, the interaction between a Strategic 7 Fuel Reserve and private inventories, and finally the measurement of the consumer gains from 8 9 stabilization. We've heard that the Strategic 10 Fuel Reserve should be in order of magnitude, great benefits than cost. And a lot flows from 11 12 that particular conclusion.

And if that turned out to have a hidden assumption that makes that number very large, then we perhaps should rethink the other details of the Strategic Fuel Reserve. So I will cover these four in sequence, but I think you'll see that they interact in some ways too. Let's go first to the implication of California Status as an island.

And more, I really want to ask about, we've been hearing discussions of the trends in California production and so forth, something about the storage cost, the permitting process and so forth. Let's make sure we understand what those issues will imply about three areas, the

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relative price volatility in California, relative
 to other places in the country, average
 inventories in California, and frequency of low
 inventories in California.

5 There were several assertions yesterday б about what these changes mean. And I'd like us to 7 be a little more systematic thinking through that, because I think we've jumped to some conclusions. 8 9 I have in mind some idealized world so that we can 10 think this through, and we're going to make one 11 change at a time. The impulse everybody will have 12 is to make a number of changes at once. That's a 13 little dangerous for thinking through this 14 clearly.

15 And if you want to call it California 16 and the rest of the United States, so forth, or 17 just island A and island B. And let's start off by saying this is fairly symmetric, the 18 distribution of production shocks is the same on 19 20 each island. And they can trade fairly quickly 21 between one another. And there's perhaps island A, or California is shipping mostly to the other 22 23 island. But it's intermittent.

And then let's go through some changes through this and see what it implies about these

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1 three things. Let's also keep in mind something 2 about the intrinsic storage cost for crude -excuse me, for gasoline. At a lease rate of 50 3 cents per barrel per month, that's what, about 1.2 4 5 cents per gallon. б And so we have to judge things relative 7 to that standard. Let's not forget that there's interest costs too. A month's interest has to be 8 9 spent I think for the storage. To keep things in 10 perspective, the permitting cost we heard yesterday were about a tenth of a cent, maybe .2 11 12 cents on that scale. A significant cost, but 13 perhaps not as important as some other things. 14 I want us to discipline ourselves to 15 think about what these costs will do. So let's 16 first ask, suppose in one of these islands storage 17 costs are a lot higher than in the other island. Well, California if you want, because of 18 environmental rules of permitting is doubled. All 19 20 right. Where will storage be done? It's going to 21 be done where it's mostly cheaper. It's not going to be done in an 22 23 expensive place where the storage tanks cost a lot more. There could be some storage there, but the 24 25 economic forces are very strong to put storage

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where it's cheaper. We heard yesterday a
 statement by the gentleman on the teleconference
 that there's a lot of discretionary storage in the
 US Gulf Area, Atlantic Coast because it's cheaper.

5 Well, I'm not surprised at that. But if б that's true, what should be the effects on the 7 more expensive island, California here? The price volatility, given the same production shocks and 8 9 risks, and all that, should be higher on the place 10 that has the more expensive storage cost because 11 trade can't be a perfect buffer. That's just a 12 fact of life.

13 But also average inventories, on that 14 island where it's more expensive, should be a lot 15 lower. And probably, to be very low, quite frequently. So we had zero inventories. Why 16 17 store where it's expensive? The price volatility is a result of those storage costs for sure. It 18 doesn't necessarily indicate then that's there's 19 20 something wrong with the low inventories.

That's just a sensible market response to the fact that having it more expensive to do something some place or another. Let's ask this one, which we've heard a lot about that California has moved from being an occasional exporter to an

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б

1 occasional importer because of no new refineries, 2 or whatever reason. I'll just accept that this is a fact. What does that mean for storage? What 3 does that mean for price volatility? 4 5 Let's ask what should be the average б price then if California is usually an exporter versus usually an importer? Let's say it's our 15 7 cents would be the cost from going from an 8 9 exporter to an importer. Well, California has 10 flipped. And so it should be sort of double that price difference, about 30 cents, right? 11 12 Well, that means every gallon of 13 gasoline that's put into storage is 30 cents 14 higher, and the interest on 30 cents per month, 15 let's say it's about ten percent interest a year 16 or something like that, the interest for one month 17 would be one twelfth of ten percent. Shall I call it one percent to make the math easier? 18 What's one percent interest on 30 cents? .3 cents, three 19 times the cost of permitting. 20 21 That fact alone says there should be

less storage in California. It's not that the
import dependence causes the additional storage.
It works the opposite way. Prices will be more
volatile because of this. But average inventories

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ought to be lower, and we should see more frequent
 periods of no inventories. That is the rational
 economic response to this fact.

Okay. How about another one we've heard 4 5 about that the potential imports from California б now have to come from a lot farther away. So from 7 my idealized world of two islands that can trade quickly, now it's going to take a lot longer. I 8 9 think we all can see that in that world, on both 10 islands probably, prices are going to be a lot 11 higher, especially this imported one.

12 And a rational response on both islands 13 is to have average inventories higher because 14 trade is a less effective buffering mechanism. We 15 also probably will see lower inventories that is 16 zero inventories or down to only operational 17 inventories, if you want to think about it that way, less often. But I bet there will more long 18 19 strings as the market takes time to recover from shocks because the trade can't buffer as much. 20

I say in passing, because this is important too, when we have now a lot longer time necessary for trade that the spot price in California, or this importing island, becomes less and less reliable as the indication of the

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incentive for imports. It's a forward price out
 the time that it takes to get something there.

And so a feature of California's 3 specifications is that you can't look at the spot 4 5 price differentials anymore. You've got to look at something farther out, a necessary implication 6 7 of this fact, which I'm not questioning at all. Here's another one that we've heard about, that 8 9 the risk of refining disruptions has increased in 10 California, frequent specifications changes and so 11 forth.

12 We've got to be really careful here. 13 What's happening to mean production? We're just 14 increasing the variance of this production or has 15 the mean production changed? I suggest we just 16 think about risks happen greater, disruptions 17 suggest some standard operating amount, and then you have a disruption. You're also changing the 18 19 mean when you change that thought of a disruption.

I want us to just think about increased variability, but no change in mean. You would imagine in this idealized world I'm talking about, prices are going to be more volatile. If there's no disruptions at all it would be zero. So it has to be going with more variance. You would expect

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a rational response to hold more inventories
 typically.

And, again, you'd probably see that low 3 inventories occur less frequently. You don't get 4 5 down to operational inventories as often, but when 6 you do they tend to be in streaks. What if you put all these together, which is in fact what 7 seems to be the reality in California. We get 8 9 these following predictions from this analysis, 10 which is that price volatility in California is 11 unambiguously higher. 12 It's not necessarily a bad thing. It's 13 just an unpleasant fact of life. But here we have 14 the average inventories are ambiguous with these 15 changes. There were several forces making for 16 lower inventories on average, and other forces 17 making for higher inventories on average. 18 Similarly for the frequency of almost no inventories, that is just operational inventories, 19 20 again, that could occur more or less. 21 So what have we concluded from this, that price volatility and inventory practices both 22 23 reflect underlying circumstances about the change in trade cost or the change in storage cost. It's 24 often sensible to have low inventories at a 25

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particular location. And most important, I want
 to say, is the higher price volatility need not
 imply that average inventories be higher.

An economics 101 does not say higher 4 5 average inventories with higher price volatility. б That was an assertion yesterday. That is not necessarily true. And so I think that the 7 proposal for the Strategic Fuel Reserve has 8 9 implicitly assumed that if they can document 10 higher price volatility, about which there is no ambiguity, that it should necessarily have induced 11 12 more private inventory.

13 And that, I'm afraid, does not follow as 14 a logical argument. Let me turn to my second 15 area, which is the influence of crude prices. 16 We've been talking about gasoline, but crude is, 17 after all, the input into gasoline. And we would expect that crude oil inventory practices ought to 18 have some interaction with inventory practices and 19 20 gasoline just seems to follow.

And I'll go a little further, there should be some effect of the price relationships we commonly see in crude oil. That is it ought to matter whether crude oil is consistently in backwardation or consistently in contango, to use

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those technical terms, to what is happening in
 gasoline. Let's think this through with the same
 kind of logic trying to quantify storage costs.

In general, the effective cost of an input for storage is less than that for an output. Perhaps the input is more difficult to store because of its physical quantities, but it has a significant advantage over storage of an output in that it doesn't have the additional processing margin, refining margin, whatever you call it.

The import margin, similar logic, has 11 12 made the output more expensive. Interest on more 13 expensive things is more expensive than on less 14 expensive things. There's a strong economic 15 force, not an overwhelming one, but a strong one, 16 to store the cheaper form of something. And that 17 means store crude and not gasoline. But I might say in passing about where we store the crude. We 18 can store gasoline and very expensive above-ground 19 20 tanks, right?

21 Nature has provided a very inexpensive 22 way to store crude. It's called not pumping it 23 yet. It's in the ground. It's free there in 24 terms of storage costs. So the very fact of where 25 we get crude suggests that that storage of that

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input will be inexpensive. And so we would not
 expect very many inventories of gasoline made from
 crude.

Think in contrast of wheat and flour, 4 5 nature does not store wheat very well. And it's б more natural than to have storage of flour 7 perhaps. You're probably saying but where do the disruptions come from? Is it in the production of 8 9 crude or is it in the refining, or the shocks or 10 demand? The relative importance of those shocks will determine whether the input or the output is 11 12 stored, or the goods in process for that matter. 13 But there's still an economic force that 14 is working towards storage of the input. And 15 that's especially true because of the physical 16 cost of storing crude. And now let me talk about 17 the price relationships in crude. Crude oil prices are persistently in backwardation. Let me 18 use this plot of NYMEX crude prices. This is two 19 months ahead. Mine is one month ahead. 20 21 I had one on the screen yesterday for

22 one moment in September of 2000, but these are for 23 every day for this period in 1995. But if we went 24 back 15 years before, it's a very similar diagram. 25 All these points below the zero line is a

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backwardation, and that's saying, this is an
 extreme example perhaps here in 1996, crude one
 month later is at a \$3 lower price than crude one
 month before.

5 Most often crude is about \$1 a month б cheaper for one month later delivery. There's this one exception here where crude was more 7 expensive later. But in general, crude is cheaper 8 9 the longer you wait. Why is this happening? 10 Because we have a gorilla in the room called OPEC 11 that nobody is mentioning. OPEC, by restricting 12 short run production, is consistently raising the 13 price of crude for nearby delivering over later 14 delivery.

15 I don't think anyone will argue that's 16 what OPEC is trying to do. But now let's ask what 17 does that mean for the storage of gasoline? Crude 18 oil, say \$30 a barrel, \$1 a barrel a month cheaper if you wait a month. That means the raw material 19 20 for gasoline is getting about, let's see, one on 21 33 percent cheaper in one month. That's a three percent storage cost. That would be equivalent to 22 23 about 2.53 cents a gallon storage. It's getting cheaper. 24

25 That effect, is what, an order of

1	magnitude bigger than permitting costs and so
2	forth. One reason we don't have storage of
3	gasoline is that the backwardation accrued creates
4	a very strong disincentive to store any of the
5	outputs from crude. It also creates a
6	disincentive to store crude above ground.
7	So I'm trying to say here that this
8	backwardation in crude is the same magnitude,
9	perhaps greater magnitude, than obvious storage
10	costs of gasoline, which we've been talking a lot
11	about. This effect is felt everywhere, not just
12	in California, not just in gasoline.
13	And so I think there's an implicit
14	assumption in the proposal for the Strategic Fuel
15	Reserve that I might state this way, they have
16	implicitly not mentioned crude oil. They've
17	talked about how crude oil prices are volatile,
18	yes. But they haven't said what is a price
19	relationship for crude.
20	I am implicitly assuming that it's flat.
21	If it were always in contango, that is an
22	incentive to store more gasoline. But the fact is
23	it's in backwardation. And so by assuming it's
24	flat, they have concluded that she should be
25	storing more gasoline than if this assumption were
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made explicit and we took a pound of the effects
 of the crude.

Let me now talk about the interplay 3 between the Strategic Fuel Reserve and private 4 5 inventories, again, trying to find out if there's б some implicit assumption that's driving the results a lot. Let me review what we've agreed 7 are sensible, perhaps idealizing inventory 8 9 practices. I would say that they are responsive 10 to inter-temporal price signals.

11 So we should expect considerable storage 12 during contangos, and minimal storage during 13 backwardation. I would say that we should also 14 expect inventories adjust relatively smoothly to 15 those inter-temporal prices, but maybe that's a 16 little bit more of an argument when things come in 17 tank sizes and so forth.

But for a large area that ought to be 18 19 somewhat true. And we would expect, and this is 20 just what I've been arguing for the last two 21 points, that we would store less on average if store costs are higher. We would expect there's 22 23 some flexibility of change in conditions, and you'd sort of suspect facilities in access to 24 25 pipelines.

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I'm trying to define that as sensible.
 Now I'd like us to go through and ask, suppose
 there is some other player that decides to get
 into the storage business and does something. I'm
 not saying wishes of this is of Strategic Fuel
 Reserves.

7 I want us to think systematically what the presence of that other player does on these 8 9 sensible players. So when I say this is sensible 10 inventory, imagine a number of firms doing this, 11 or a number of agencies doing this. Let's first 12 consider when among these sensible inventory 13 holders what would be the effective player who 14 builds and fills many tanks in a distant location.

15 Let's use Chico as a shorthand here. 16 Where nobody would want, really, to have these 17 tanks or this storage. And announces that that's going to stay in store until the gasoline price 18 reaches \$4 a gallon retail, which has never been 19 seen. What is the affect of this player? I would 20 have said who this player is please? I've got 21 some representative from WSPA imagining that I'm 22 23 contrasting the sensible private traders with the big public trader, but it could be the other way 24 25 around.

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1 The sensible ones are the procurement 2 departments of a lot of small cities around the 3 San Francisco Bay Area. And the not very sensible inventory player here is the CEO of a large 4 5 publicly traded company that, having milked his shareholders for a huge pay package, decides to 6 7 put gasoline storage at his ranch in the foothills or something. I'm not making any judgment about 8 9 who's doing this.

I'm trying to contrast sensible and nonsensicle storage. So there's somebody that's really storing in a nonsensicle way. What effect does it have it on the sensible people. I think they'd ignore him. That stuff is out there in Chico. It's going to stay there forever. It shouldn't affect anybody else's behavior at all.

17 So there's a minimal effect on tank lease rates elsewhere, minimal effect on average 18 inventory, minimal effect on range of inventories 19 elsewhere, I would say, because they ignore him 20 21 because he's doing something so foolish. Let's think about in an immediate case where this player 22 23 that plops into this otherwise sensible industry is reasonably sensible, but no perfectly sensible. 24 25 If you want to think about it, he builds

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1 a number of tanks right here in Sacramento, which 2 is probably not the best place to put a lot of 3 extra tanks. He has plausible rules for procuring 4 gasoline and releasing it, but it's a highly 5 bureaucratic set of rules, moves very slowly. You 6 can imagine any agency or you want, I think, could 7 fit this, right.

And he considers flat price more than 8 9 price relationships. That is he has a release 10 rule about what the absent of price gasoline is, 11 rather than the inter-temporal price 12 relationships. This particular style of storage I 13 would argue would substantially displace other 14 inventories, especially those around the 15 Sacramento region. The displacement would be 16 quite different, however, depending on the 17 conditions.

If nobody has very many inventories 18 19 anyway, this player doesn't change it very much. If they have a lot of inventories, I bet it 20 21 changes it a lot. So displacement has to be some concept of not some absolute average displacement, 22 23 but displacement under different conditions. I would expect also that the lease rates for tanks 24 over a wide area be displaced because there are a 25

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lot of new tanks built that really weren't needed,
 but they could still be used.

3	Finally, let's consider that this player
4	is quite sensible about inventories, fairly large
5	though, enough to make a noticeable effect on
6	who's storing, but the behavior is still sensible.
7	Let's also imagine that this player has a small
8	operating cost advantage for some reason. But he
9	still follows sensible inventory practices and
10	he's thinking about tankage in sensible places.
11	This party almost surely displaces all
12	the others virtually one for one, because he's the
13	same as they are. He just has a small cost
14	advantage. He'll replace them, but the total
15	storage will probably be very similar. So I don't
16	see that there would be much effect on average
17	inventories from this player, but who'd doing the
18	storing will be quite different, right?
19	Because he's made sensible decisions
20	about where tanks are and how many tanks to have,
21	I doubt there's much effect on the lease rates for
22	tanks. But who nominally owns the inventory will
23	be very different. So what does this analysis
24	tell us about the Strategic Fuel Reserve? I would
25	argue that the more sensible are the tangent

1 2

amounts, the tangent placement and the operating rules of the Strategic Fuel Reserve.

3 And an argument has been made it would operate like a sensible bank instead of one of 4 5 those monolithic government storage reserves. So we'll concede that point and say it's more б sensible. If that's true, the more sensible it 7 gets the more it will displace the private 8 9 activity of holding inventories. It's a necessary 10 result of the argument that it's being sensible. 11 I'd also argue, and I think this is 12 probably the most important point here, if private 13 parties are not now holding inventory, it's not 14 sensible because of backwardation primarily I 15 would argue, either the Strategic Fuel Reserves, 16 if sensibly operated, will be empty almost all the 17 time. And if frequently full, will not have been sensibly operated. 18

Let me expand a little bit on that, and it's a crucial thing to what I think is the implicit assumption. We've heard yesterday about rules that said the draw down could be only so much in a six-week period, and then it would come in the Strategic Fuel Reserve. If I'm capturing your basic concept correctly, right? Suppose

1 2 there's an extreme backwardation, 40 cents per gallon for those six weeks.

There's a huge outage now, but the thing 3 will be repaired in six weeks. Imagine those 4 5 conditions. And incredibly strong signal to have gasoline available now and then replace it later. б If there's a rule that says the Strategic Fuel 7 Reserve can only be half emptied, the rest of the 8 9 gasoline staying there, I would say that's not 10 very sensible.

11 The market signal says use it all now. 12 How about if some of it used, maybe all of it 13 used, and now it's to be refueled. Suppose, 14 again, we see a backwardation after six weeks. 15 What should happen to those gallons of gasoline 16 that are coming back in the Strategic Fuel 17 Reserve? They ought to be let out again because there's a market signal that says they need to be 18 19 used now rather than the next six weeks.

And I'd argue that they never get in the Strategic Fuel Reserve because it sure isn't going to make any sense to pump them into those tanks and pump them right back out again. There's going to be some tendering process that says put them straight into the pipeline as they're coming in

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from some other place. Out they go. And that's
 sensible. I'm not saying of course that the
 original quantity wasn't useful. It got used.
 And now it doesn't get replaced.

5 If gasoline prices typically are in 6 backwardation, and that is a fact of particularly 7 the summer in California, it says don't hold 8 inventories. If the Strategic Fuel Reserve is 9 operated sensibly, call the bank, it will be empty 10 most of the time. It can't displacing private 11 inventories when it's empty of course.

12 So I think that operating rule proposed, 13 a sensible one, except for keeping something in it 14 when there's a huge backwardation, is implicitly 15 assuming that this six weeks after the release of 16 the gasoline, that was a release triggered by a 17 backwardation, that's why the private traders came in and paid a fee to get the gasoline out, that 18 when it's refilled prices will be in a Contango 19 20 and it justifies the storage.

21 We can argue with whether this applies. 22 I'm trying to make clear that this is the implicit 23 assumption behind this particular operating rule. 24 I don't think it applies, but I want to make clear 25 we all understand that if this is true then the

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bank will operate as it's being described. Let me
 go to the fourth one now, my last one, which is
 the measurement of consumer gains from
 stabilization.

5 I've spent a lot of years now writing б obscure papers on how to measure consumer gains from stabilization and so forth. This is one of 7 my academic specialties, and I don't recommend it 8 9 to anyone. But I can make some conclusions about 10 this area. When you're analyzing these complex 11 situations, some simplifications are unavoidable. 12 So I'm not going to say we shouldn't have 13 simplifications in the type of the analysis here. 14 I think analogies are natural so that a

15 Strategic Fuel Reserve would be seen as comparable 16 to something like completely stabilizing the 17 market, or partially stabilizing it. Perfectly 18 fine to do that. It's also possible to making 19 bounding arguments to the gains are at least 20 something, and I'll make an assumption that helps 21 me say a maximum, or I'll make an assumption that helps me say a minimum. Perfectly natural to do 22 23 that in this kind of an analysis.

24 But I want us to be very careful about 25 thinking how the factual, what you are implicitly

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1	assuming the world would look like otherwise, very
2	dangerous. I also can say, based on doing a lot
3	of numerical modeling in this area, that almost
4	always the gains from stabilization are relatively
5	small positive or negative.
6	This is one of these facts of life about
7	this. And so if you get a really big number you
8	have to wonder about whether there was an implied
9	assumption that's driving it. Now, I think that's
10	the case here. I want to talk about this a bit in
11	the abstract so we get some principles down here.
12	Gasoline is an emotional subject for everybody
13	here, but I doubt corn is.
14	So let's imagine it's corn. And I want
15	us to think about the situation where there's a
16	good harvest of corn because of nice weather, or a
17	bad harvest of corn because of bad weather. And
18	that gives average harvest. And I've marked here
19	what will be the price of corn if it's a bad
20	harvest, \$125 a metric ton, and if it's a good
21	harvest \$75 a metric ton. And I've made this so
22	that we can do the percentages very easily.
23	If you don't like corn make it two talks
24	by the same speaker, one went over and one went
25	under. The average is something that we're

1

talking about a very general concept here.

2 PRESIDING MEMBER BOYD: I'm glad you
3 made that differential because some of us are very
4 sensitive to corn these days.

5 DR. WILLIAMS: Yes, yes.

6 PRESIDING MEMBER BOYD: The release of 7 ethanol.

DR. WILLIAMS: The release of ethanol. 8 9 And no one will say the corn market works exactly 10 as this. What I want us to see though is how we 11 measure gains from stabilization. And it's a 12 thought experiment here of stabilizing something. 13 All right. So there's two worlds we want to 14 contrast. The one where you can have a good 15 harvest or bad harvest, or a world where you just 16 have an average harvest. 17 What is the gain from stabilizing 18 things, right? Well, there are two comparisons to 19 make, and you've got to make both of them. If

20 it's a bad harvest relative to the average

21 harvest, the consumer loses the regions here

22 called A and B. That's the loss and consumer

23 surplus from having to pay that higher price and

24 getting a smaller quantity.

25 But there's sometimes when life works

out for the best, which is when there's a good harvest, and I've got it here that that's about a 50/50 chance. And so on those times when there's a good harvest the consumer has gained C plus D plus E. We've got to give some credit for those nice opportunities.

7 So the proper measurement of the gains from stabilization going to the average is to multiply 8 9 the probability of the good times C plus D plus E, 10 minus the probability of the bad time A plus B. 11 Take the weighted average of their differences. 12 And you can almost see from my diagram here that 13 if you take the average of the differences of 14 those two trapezoids, it's going to be a 15 relatively small number compared to the size of 16 either trapezoid.

17Is everybody lost in my mathematics, in18my mathematical terms? All right. And so the19thought experiment I'm suggesting about20stabilization is around an average harvest. But21there are other questions we might ask with a22simple diagram like this that are equally valid as23long as they apply.

24What is the gain from an irrigation25project that ensures that there's never a bad

1 harvest. It's always a good one. That will be A 2 plus B, plus C, plus D, plus E times a half 3 because that's what's lost by having the bad harvest occasionally. All right. 4 5 And that's going to be a much bigger б number than the gain from stabilizing at the average harvest. Clearly, there's a huge gains of 7 consumers from moving average harvest to good 8 9 harvest. Did everybody follow me there? Okay. 10 So I want to emphasize that if we see an analysis 11 of stabilization we ought to see sometimes when 12 things work out well for the consumer, as well as 13 times when it works out poorly. 14 We want to take the average of those. 15 All right. So I look at Dr. Finizza's report 16 where he's made -- this is a simplified version of

17 his model. Hold on, I'm going to show something 18 that we showed yesterday. And I look at this 19 final table. You can read the assumptions he's 20 made.

I'm quoting from his page 66. And he's done consumer surplus here, similar to what I was trying to calculate. And he says this is before disruption and after disruption, and the change. Why isn't there another row that says when things

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are really good? There ought to be a
 countervailing row that talks when you have
 unusually good times.

4 If you accepted my principle that was 5 ought to see these two calculations, we only see 6 one, which makes me suspicious that there's an 7 implicit assumption here. I say that he's 8 implicitly assuming that the Strategic Fuel 9 Reserve eliminates the disruption when it can do 10 that.

And that he says that it's 200 days of 11 12 the 365 days a year. We don't have the effective 13 disruption. And he's doing 200, over 365 of my 14 areas on that other diagram of A plus B, plus C, 15 plus D, plus E. He has implicitly assumed that 16 the Strategic Fuel Reserve acts as if it stops 17 disruptions. He's implicitly assumed that 18 stabilization of that corn market is equal to 19 irrigation that stops the bad harvest.

If one does, and I've done it here, look at the average versus the disruption and no disruption cases, and then computed the gains and losses, the good times are credited against the bad times if we think about the gains from stabilization. I find that the weighted average,

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using everything else of his analysis, is in fact
 zero point two million dollars per day per year,
 and it's minus.

So that there are no six hundred million 4 5 dollars gains from stabilization here if it's б stabilization. And so the crucial assumption is 7 about what is the Strategic Fuel Reserve doing? And I've borrowed a diagram from his yesterday, 8 9 and he says the Strategic Fuel Reserve and his 10 model is able to truncate that price spike. Fine. Let's say that it does that. 11 12 Where did it have the good times though? There 13 ought have been another color blue that's taken 14 away from this, right? I don't see that. And if 15 there's no blue compensating for the red, the red 16 is going to look like a very big number. 17 I'm not saying the computation of the red is done incorrectly, or the model on that is 18 wrong, not at all. But I'm saying that this 19 20 implicit assumption is that the strategic fuel 21 reserve is effectively eliminating the disruptions, and not just stabilizing around the 22 23 mean production with the disruptions. It seems like a small difference in the 24 way we think about it, but it's the huge effect of 25

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1	those calculations. Okay. We all can agree
2	Californians would be better off if there were no
3	disruptions. That's probably a very big number.
4	But stabilizing around the mean production with
5	the disruptions is unlikely to be much of a gain,
б	a much smaller number.
7	The losses from the disruptions are in
8	order of magnitude, lower the cost of the
9	Strategic Fuel Reserves, but that's not the gains
10	that we'll get from the Strategic Fuel Reserves
11	because we haven't actually stopped the
12	disruptions. If there were analysis of say some
13	state rules that closed down refineries for two
14	months after a small disruption, this would be a
15	very good analysis of the cost of that state rule.
16	I don't think that's the problem. Those
17	disruptions happen. And unless we're able to
18	anticipate why the disruptions happen and catch
19	them before they do, we're still going to suffer
20	those losses of production. The Strategic Fuel
21	Reserve can't change those facts.
22	So what I do I conclude from all of
23	this? That the proposal for the Strategic Fuel
24	Reserve rests on some implicit assumptions.
25	Almost any analysis has to, and I'm not

1 criticizing them for that. But four of the 2 implicit assumptions matter considerably to the 3 proposal.

That, too, isn't necessarily bad, except 4 5 that these four implicit assumptions are all under б the direction of favoring the Strategic Fuel Reserve, especially the cost benefit analysis. 7 And so thus, I would have to conclude that the 8 9 case for the Strategic Fuel Reserve has not been 10 demonstrated. I'm being careful with my language 11 here. 12 I haven't said it's been disproved. 13 It's just that with these big assumptions we know 14 that they have big effect on the conclusion. I 15 think we have to go back and to the sensitivity 16 analysis with those assumptions changed 17 differently. And it's possible there still will 18 be an argument for the Strategic Fuel Reserve. I haven't done that analysis, and so I 19 don't want to say that the Strategic Fuel Reserve 20 21 has been disproven. But I can say that these assumptions have an effect on the results that are 22 23 so large that the Strategic Fuel Reserve has not been demonstrated. 24 25

I'd also like to step back from the

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1	particular proposals and say that a lot of our
2	discussion, perhaps original impetus for even
3	investigation price hikes and so forth, is a
4	confusion, again let's call it implicit
5	assumption, that a lack of market incentives is
б	equal to a market failure.
7	And that doesn't necessarily follow. If
8	it doesn't make sense for a lot of people to build
9	new tanks, that's not a failure of the market
10	system. That just means it didn't make sense to
11	build new tanks. It doesn't make sense to store
12	necessarily. I'm not arguing that just because
13	people don't do it, it proves that it's a good
14	outcome.
15	I'm just asking that we be very careful

that we don't equate lack of market incentive with market failure. And so I conclude my conclusion with this fundamental question, it is not obvious to me why a policy of storage, in face of backwardation, is an obvious suggestion for the State of California.

22 We hear repeatedly that the gasoline 23 market in California is in backwardation. I think 24 any proposal for a Strategic Fuel Reserve has to 25 explain why the state should be storing in face of

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that backwardation. It's possible to make some
 arguments in that direction, but I think those are
 the essential issues.

The backwardation seems to be a real phenomena, not an artificial one. It seems to coincide with price conditions elsewhere in the country. So why should anybody be holding large inventories of gasoline in California? It's unfortunate that all these forces make for price volatility.

But it does not follow that there is a 11 12 logical policy that says store in the face of the 13 market signal that says don't store. I'll 14 conclude there. And how did I do for time? I did 15 better than yesterday. And so both of my random 16 outcomes are more than what you were expecting. 17 So I've clearly gained you all a lot of consumer 18 surplus.

19PRESIDING MEMBER BOYD: Thank you,20Dr. Williams. Well, it's been extremely21interesting. And now it's now time for questions22and discussion in your own points. And I invite23questions from the table, from the audience, from24anybody, everybody, including those listening in25if anyone is. We got no questions yesterday. I

1 lost faith in the webcast, maybe there's somebody 2 out there. DR. WILLIAMS: I told my mother she 3 could because she says she hasn't heard from me 4 5 enough. So if there's a voice that says why б haven't you call, that's my mother. 7 PRESIDING MEMBER GEESMAN: I think I'll 8 respond. You suggested that there were some 9 arguments that could be made on behalf of storage 10 in the face of backwardation. Would you summarize a couple of those. 11 12 DR. WILLIAMS: Well, I might say that, 13 well, suppose we see some fairly small 14 backwardation, and the way we measure these 15 backwardation was in a forward market that 16 appeared to have a biased hour price because of 17 the market imbalance, too many sellers versus 18 buyers. Then probably the real price 19 20 differential is not a backwardation, and the state 21 not worrying about those prices could logically be 22 trades. 23 PRESIDING MEMBER GEESMAN: And by small backwardation, do you mean beyond the 30 days 24

25 where we actually --

1 DR. WILLIAMS: No, I mean the end of six 2 weeks. So let's say that we consistently saw two or three sent backwardation, it's possible that 3 that really isn't there. That we see ten or 15 4 5 cents makes me think that it's really there. But there's an example where an argument might be б 7 made. If there's a substantial cost to 8 9 operating inventories and in some instance that 10 the state wouldn't bear, its storage costs are in fact guite different, the effective price break to 11 12 the state would be different and it should store 13 it. 14 PRESIDING MEMBER GEESMAN: Okay. 15 MR. HAGGQUIST: Gregg Haggquist, 16 Stillwater. Dr. Williams, once again, we 17 introduce the profit. The teacher, if he is truly wise, bid you not into the house of his wisdom, 18 but rather lead you to the threshold of your own 19 mind. And I think that's what you've done here. 20 21 It's good that you've caused --22 DR. WILLIAMS: Can you put that a course 23 evaluation. MR. HAGGQUIST: And you're causing the 24 people to think, and this is what we wanted from 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1 day one to cause all of us to think and to explore 2 and debate these issues. The question, emptying of the reserve and the replacement, the emptying 3 and the replacement, it does with this kind of 4 5 backwardation in other markets internationally. б Backwardation is not equal everything. 7 A potential supplier into California who would love to bring some supply here and help this 8 9 market out, if he could get in, maybe be facing 10 steeper backwardation than we are, you know. We 11 may have a ten cent backwardation. The refiner in 12 the Caribbean may be looking at a 20 cent 13 backwardation. 14 DR. WILLIAMS: But his prices are a lot 15 lower. 16 MR. HAGGQUIST: His prices are a lot 17 lower. And the refinery in Australia might just want to get rid of some supply. The supplier in 18 East Coast Canada would have a different set of 19 20 assumptions. For that reason, you know, when we started looking at this, that's why I looked at 21 this in terms of equilibrium internationally. 22 23 It's not a zero sum gain. And it is not just supply demand in the 24 unseen hand of the market. It's a system of 25

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cooperative games, and each market that wants to
 come here with supply, wants to bring supply here.
 Now, crude oil has certainly been taken into
 account throughout the study. There's chart after
 chart. The backwardation of crude certainly is
 agreed.

7 DR. WILLIAMS: The analysis doesn't 8 account for the backwardation accrued, however. 9 It counts for price volatility accrued, and those 10 are related issues. But let's finish the in and 11 out every six weeks issues.

12 MR. HAGGQUIST: Yeah. Well, I certainly 13 do agree that it makes sense that you would, if 14 you were going to store anything, you would store 15 the cheaper raw material rather than the finished 16 product, yes. That would be true. But of course 17 we've already demonstrated that there's a refinery 18 manufacturing shortage here.

19 So even if you had infinite supply of 20 crude oil, you still can't turn it into gasoline 21 at a moment's notice either. Anyway, the storage 22 of gasoline in this dynamic reserve links 23 California to the other supply centers in the 24 world by means of the emptying and the 25 replacement. Just like New York Harbor is linked

to Rotterdam and South America, and other supply
 centers.

DR. WILLIAMS: I'm not arguing at all 3 that there aren't linkages. And, in fact, the 4 5 more that California becomes an importer the more 6 regular we should see those linkages. The issue 7 is what happens to the gasoline once it's gotten here. And if the price relationships, this is six 8 9 weeks after it was sent, now what happens if the 10 price relationships are then a contango, it's 11 sensible to put that gasoline, or equivalent, into 12 store.

13 Surely, when it arrives the price 14 relationship is still a backwardation. It says 15 use it then. Don't put it into store. The 16 sensible thing is to be happy that it's come in. 17 All right. It's clear that everybody is better off that that import arrived. Let's not confuse 18 that the import was a good idea with what you do 19 20 with it once it's gotten there.

And it won't be, in this circumstances, be sensible to refill the Strategic Fuel Reserve. It says put it out on the pipeline system. It's worth ten cents more a gallon used immediately than it will be in six weeks. Fine. And so the

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Strategic Fuel Reserve was useful in first
 starting this cycle that brought in the imports
 and so forth.

But is isn't full again until the 4 5 pricing conditions have changed such that it makes б sense to put it into storage. 7 MR. HAGGQUIST: Dr. Williams, doesn't that call into question how the EFP, the exchange 8 9 for physicals, and the forward market, future 10 market, and New York Harbor and Rotterdam work? The first time the empty, the tanks, they'd fill 11 12 up again and sometimes they don't, you know, the 13 contango and the backwardation is a very healthy 14 signal system as you correctly pointed out. 15 And the market will tell us when there's 16 a contango, you store, and there are times you 17 don't store, but you release immediately. So you 18 could see a ship coming into the SFR just like you do in New York Harbor and going right back out 19 20 again, just passing to the tank is just a conduit. 21 It's a pipeline. That could certainly happen. 22 DR. WILLIAMS: Sure. 23 MR. HAGGQUIST: It's a dynamic process like cargos into any liquid market, Singapore, 24 Tokyo. 25

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1 DR. WILLIAMS. I agree. It happens that 2 their Contango is more often in New York Harbor 3 than there are in California. And so there's a market signal to store much less often in 4 5 California than in New York Harbor. Let's put the б issue this way, if there was Strategic Fuel Reserve in New York Harbor it would be refilled 7 more often because of the price relationships 8 9 there. 10 But I go on to say, because of that very 11 fact, because it is then likely to displace the 12 private industry inventories, because they, too, 13 would have been refilling tanks more often in New 14 York Harbor. So the argument about the Strategic 15 Fuel Reserve and displacement of private 16 inventories cuts several ways here. 17 That the more that the Strategic Fuel Reserve acts as sensible private inventories, 18

20 a bank transported to New York Harbor, I think,

21 will have much more displacement precisely because

inevitably the more it will displace them. And so

22 more often than not in New York Harbor it's

23 sensible to store gasoline.

19

24 MR. HAGGQUIST: Well, I wonder if, once 25 again, the words that we're using, the Strategic

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1 Fuel Reserve of gas why in the written things I 2 never used that word because it elicits the wrong kind of responses. You can call it the dynamic 3 reserve or you can call it NYMEX. 4 5 DR. WILLIAMS: I'm using both of these б in the sense of a dynamic preserve. 7 MR. HAGGQUIST: So once it's in action it's no longer sitting there. It's a pipeline, a 8 9 moving pipeline. If a car doesn't come in, 10 they're going out. It's constant. So it's like line field. 11 12 MR. WILLIAMS: We can take pictures of 13 it and ask how much gasoline is in it at certain 14 points of time, right? 15 MR. HAGGQUIST: As you could in any tank 16 in New York Harbor the services the NYMEX. 17 DR. WILLIAMS: Perhaps, as I say, always it's implicit assumptions that make the 18 conversation difficult. I'll try to make mine 19 explicit. I'm explicitly imagining now that when 20 21 a barge arrives in say San Francisco it is pumped directly into the pipeline system, and doesn't sit 22 23 in the Strategic Fuel Reserve tanks, which are off to the side. 24 25 And the reason of that is there's a

1	backwardation that says make it used immediately.
2	There could have been an auction even for those
3	supplies coming in. The fact is they're not held
4	in the tanks.
5	PRESIDING MEMBER BOYD: Gentleman I
6	need
7	MR. HAGGQUIST: It's a continuous
8	process. That's a long time.
9	PRESIDING MEMBER BOYD: I need some help
10	here while both are you standing there. And I
11	understand, you know, that the market
12	backwardation or Contango would dictate the
13	academic logic of whether or not this barge or
14	tanker load of fuel would go into the market, into
15	the reserve.
16	But don't I understand that one of the
17	conditions bank is that if somebody took something
18	out their obliged, no matter what the conditions
19	or the market are, to put it back? So if it
20	comes, you know, if that is the load that is to
21	refill the reserve because somebody a withdrawal,
22	it's going to go there even though it academically
23	would be better market wise because of
24	backwardation to get it flowing?
25	DR. WILLIAMS: Here's where I think

where the confusion is, somebody is obligated to
 bring it back. This is the barge that has arrived
 from outside California is we're paying that
 Strategic Fuel Reserve drawn out six weeks
 previously.

б Now what happens to it? Presumably 7 there's an auction that day, and if it's in backwardation a lot of people come forward and say 8 9 we want that gasoline that just happens to have 10 arrived. And it immediately goes out into the system again. It never will have been held in the 11 12 Strategic Fuel Reserve. Somebody has to bring it 13 again in six weeks for sure. But what happens to 14 it after that?

15 MR. HAGGQUIST: Well, that's the 16 constant flow. I think I've held the mike long 17 enough and other people might want it. That's a constant flow. That happens all the time in every 18 liquid market. And you could say that this is a 19 20 kick start of a more liquid market in California. 21 Maybe someone else would like to take the mike. But thank you very much. You know, 22 23 it's very insightful ways to look at this problem. Thank you very much. 24 MR. GIESKES: Thomas Gieskes with 25

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1 Stillwater. And I also really appreciated your 2 very lucid exposure of the reasons, all the 3 various reasons, why indeed (indiscernible) are 4 not kept in California, the liquidation of the 5 markets, the high storage costs, all the 6 commercial reasons that prevent storage being 7 built and inventories being kept.

And I thought it was a very, very good 8 9 summary of some of the same things that we tried 10 to put forth in our report. You very rightfully asked the question why should anybody, any 11 12 sensible inventory, keep stocks in the face of 13 liquidation. The whole principle of the stocks is 14 that the state would not have the same profit 15 argument that a sensible keeper of stocks would 16 have.

17 So in providing these barrels, the initial fill for free, as it were, it provides an 18 essential role yesterday. You very rightfully 19 20 pointed out that the inventory is needed right 21 there and then, and that a trader would jump at the occasion of being able to pull inventory in a 22 23 liquidated market to pull the inventory out right then in the face of a price hike. 24

25 And what happens next had nothing to do

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with the market meeting and Contango for a refill.
 What happens next, as Commissioner Boyd pointed
 out, it's the deal gets done on the front base and
 then there is a refill as a matter of obligation.
 That cargo coming in doesn't have a price.

6 DR. WILLIAMS: It's a return. It's not 7 a refill. I think that this is the thing to be 8 careful about here. It's not going to sit there 9 again.

10 MR. GIESKES: But it comes back to the 11 question of indeed why would anybody keep 12 inventories in the face of liquidation. Private 13 industry is not going to do that, rightfully so. 14 I mean there's no argument. And whey would they 15 indeed try to play into that price early if they 16 had inventory.

17 So the premise is that by providing a pipeline from where people where could withdraw on 18 the basis, it will diminish the price. So I have 19 20 a couple of questions for you. Would you agree 21 that having inventories on hand in the face of backwardation would help to get a price back? 22 23 DR. WILLIAMS: How about if we can say this, imagine a world where there's no inventories 24 and there's a big shock, and prices are going to 25

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1	go up very high for a spot delivery, and also
2	fairly high for six week and on it goes. Suppose
3	that there is a lot of inventories on hand. I
4	think what we will see is that the price back
5	isn't as high and this decline is less.
6	That's a feature of holding inventories.
7	And that sensible inventory practice will lead to
8	occasion like that. But that doesn't mean that
9	the Strategic Fuel Reserves will do that any more
10	than sensible private inventories will do that.
11	That's a feature of sensible inventory.
12	MR. GIESKES: I fully agree. But we
13	just, but we just agreed that private industry,
14	according to you, will not keep inventories in the
15	fact of backwardation.
16	DR. WILLIAMS: And why not? Because the
17	market incentive says rarely do that.
18	MR. GIESKES: Yeah. And so we're in
19	full agreement then. And the next question I have
20	is that I heard you say that the volatility is an
21	unfortunate fact of life. It comes from all those
22	factors, the island, the lack of supplies, the
23	long import change, the lack of inventories,
24	etcetera. And that, unfortunately, that's just a
25	fact of life.

1	I think the way (indiscernible) was
2	written is to look at these and then say what can
3	be done about. He actually went one step beyond
4	just explaining what drives this volatility and
5	just lots of natural analogies. It's to go one
б	step beyond that and to think what can be done
7	about volatile.

And even if the effect of the SFR, as 8 9 you said, if indeed the market was as symmetric as a (indiscernible) corn harvest, which I don't 10 think is the case, the (indiscernible). But even 11 12 if were the case, and even if the only effects of 13 the SFR were to neutralize the volatility, I think 14 we would see a lot happier California gasoline 15 consumers, and a lot few questions for the 16 Governor to answer, and that sort of thin.

So from the perspective of is volatility
good or bad, I think the extreme volatility that
we see in California is not desirable.

20 DR. WILLIAMS: I have to point out the 21 calculations I did by Dr. Finizza's methodology 22 that if you just try to average out the peaks of 23 the troughs, and in this they're going to be some 24 big peaks not too often, and some troughs, I did 25 that calculation. And it says that consumers are

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hurt in California. That may seem counter
 intuitive to everybody, but that comes from some
 other assumptions in the analysis that I haven't
 talked about.

5 If we take his analysis as is given and 6 try to look at whether the gains from 7 stabilization, that analysis implies consumers are 8 hurt.

9 MR. GIESKES: And, well, Tony will deal 10 with that himself. But I just had a question, 11 would you consider a stable even market even at 12 the neutral or starting negative consumer benefits 13 a better situation for the California market?

DR. WILLIAMS: Not particularly. But stability in and of itself is obviously of more advantage than not. But I have to look at it against some cost of that stabilization. If the order of magnitude calculation that you propose, benefits over cost, yes, more stabilization might be better.

21 But if there's a small positive benefit 22 and a large cost, I would say, no, that would 23 never be sensible. All right. So, again, it's a 24 measure of cost versus benefits.

25 MR. GIESKES: The third question that I

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had for you is really how do you see the filling of the trough based on the mechanism that we proposed for the SFR? Really, it is an import company. How would you see it's not only, say, the cutting of the (indiscernible), and the mechanism we propose would help to fill the trough.

DR. WILLIAMS: That's a good question, 8 9 and it's another example where we can talk about 10 implicit assumptions. You're implicitly assuming 11 that those imports would not have come in unless 12 there was this obligation to refill the Strategic 13 Fuel Reserve. I would say that market conditions, 14 when they're price hikes, as we saw yesterday in 15 that period in 2000, September 2000, that the 16 nearby forward market in California provided a 17 very strong incentive to bring in cargos from abroad. 18

19 So any that are coming to replace the 20 Strategic Fuel Reserve are a direct displacement 21 of those that would have come in for other reasons 22 done by private parties. And so when we talk 23 about displacement of the Strategic Fuel Reserve, 24 it's not just of inventories, but it's imports. 25 And I bet that the displacement of imports is one

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1 for one.

2	MR. GIESKES: How could it be? Could
3	you elaborate a little bit on that?
4	DR. WILLIAMS: The signal for the
5	imports is a six-week forward price say, because
6	that's the time we're imagining. And if that's
7	higher than the price say in Singapore, someone
8	will bring it in, right? That's the same
9	MR. GIESKES: That's not the case,
10	because we're talking about
11	DR. WILLIAMS: That's not the case.
12	Well, it is factually the case in 2000 there, that
13	there was and there were imports.
14	MR. GIESKES: Yeah.
15	DR. WILLIAMS: And so if you have a
16	Strategic Fuel Reserve think how much greater,
17	imagine this, I can buy this gasoline in this tank
18	here in California now. I have to replace it.
19	Where am I going to replace it from? Singapore.
20	When is that sensible? When I cover my costs for
21	doing that. And how much will I pay for the
22	gasoline today?
23	My fee will be equal to the
24	backwardation of the spot, the prop over the three
25	months. I replace it at a sensible cost. I would

1

have done that shipment anyway.

2	MR. GIESKES: Yeah, but that's not what
3	we're talking about. What you're talking about is
4	arbitrage that's opened right now because
5	California has a price hike. That is open. Now
6	it's not opened against backwardation in six
7	weeks.
8	DR. WILLIAMS: No, I will say for not
9	the last time, where is it
10	MR. GIESKES: The problem is that
11	traders look
12	DR. WILLIAMS: When you have longer to
13	go the relevance arbitrage is not the California
14	spot price. It is in California how long it takes
15	to get their price. And so there aren't
16	arbitrage's.
17	MR. GIESKES: Yeah, but that's exactly
18	the point. That is a very small percentage of the
19	total import potential that's out there. There's
20	a much larger import potential against the pump
21	market. The pump market is this much higher, and
22	backwardation against the backwardation there's a
23	much smaller percentage of the international
24	market.
25	DR. WILLIAMS: Then I think we can agree

1 to disagree here. My implicit assumption, 2 explicit I'll make it now, is that gasoline takes six weeks or a month to get to California. And 3 yours is if it only could get there right now it 4 5 would be of great value. I'll agree with you. But I'll point out physically it can't there right 6 now. And so this is not a relevant comparison. 7 MR. GIESKES: I'm afraid that's the 8 9 point that you're missing is that that's the whole 10 premise of the SFR. The barrel cannot get there physically in six weeks, but if you could do a 11 12 prompt deal now, lift it now, do a time 12, then 13 you can make a current transaction today. And all 14 you have to do is bring back that volume. And you 15 know that you're locked in at a much higher today 16 than you could physically in six-week shipments. 17 DR. WILLIAMS: You've had to pay the 18 fee. So what fee will you pay is exactly for the backwardation. 19 20 MR. GIESKES: Not necessarily. You 21 think there will be a bidding process, then it will be lower than what is currently the case. 22 23 DR. WILLIAMS: Also, so there's an implicit assumption that the managers are going to 24 give away this prime gasoline at less than the 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1

value, which is measured by the backwardation.

2	MR. GIESKES: Exactly.
3	DR. WILLIAMS: Okay. I go back to a
4	slide that says when non-sensible players get in
5	the market they will have an effect on sensible
б	ones. I thought you were arguing that the
7	Strategic Fuel Reserve would be made sensibly. In
8	which case the fee ought to be the backwardation.
9	MR. GIESKES: No, the difference is
10	really the release issue and the volume promptly
11	that the price is not going up that high. So what
12	is happening, if you bring an additional 100,000
13	barrels in the market is that just over your bid
14	on the backwardation.
15	DR. WILLIAMS: Unquestionably. And
16	whether it was a Strategic Fuel Reserve or in
17	prime inventory, if those inventories were there,
18	and then the disruption action, this price won't
19	be as high. From that fact, it does not follow
20	that the Strategic Fuel Reserve is mitigating
21	those price volatility, because you still want to
22	run the inventory sensibly.
23	How did it get there? Well, because
24	there was a Contango. And if it just got there
25	because it was there, that's not very sensible.

1	MR. GIESKES: No, and that's why it's
2	the role of the state because no private party
3	would indeed put that freely as a disposition.
4	The initial field based indeed on non-sensible in
5	a commercial market, a non-sensible decision.
6	DR. WILLIAMS: Okay.
7	MR. GIESKES: And that's why no private
8	party would do that.
9	DR. WILLIAMS: That's very worthwhile
10	making that there's no sensible reason to have
11	done the initial fill.
12	MR. GIESKES: Yeah.
13	DR. WILLIAMS: And that's what we're
14	going to argue about afterwards. I think right
15	there that makes this question. I'll go on to say
16	you might reasonably say if the State of
17	California can hoodwink the federal government
18	into giving it that amount of gasoline for free by
19	some swap with the Strategic Fuel Reserve, I'm all
20	in favor of us doing that.
21	And then we'll use it up right away.
22	We've got that money. And since probably the
23	Strategic Petroleum Reserve is the prime example
24	of non-sensible storage the whole country is
25	better off, even though California got most of
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1	that money. But the issue then will be why would
2	you ever fill let's go back to the original
3	fill of the Strategic Fuel Reserve.
4	There's a persistent backwardation. Why
5	is the Strategic Fuel Reserve being filled? It's
6	always cheaper to wait.
7	MR. GIESKES: Yeah. That's why no
8	private person.
9	DR. WILLIAMS: No private person, but is
10	it sensible for anyone?
11	MR. GIESKES: And if no private
12	inventors are on hand you get this price
13	volatility. So the only reason why you would do
14	that, and this is the premise of the explicit
15	assumption of the SFR, is if the state makes
16	available these events where you mitigate price
17	hikes, it will impact the (indiscernible).
18	DR. WILLIAMS: Agreed. But now let's
19	look at what's sensible for the state to do, fill
20	it now or wait a little while. It's going to the
21	backwardation, always getting cheaper to wait a
22	little while. So isn't it sensible for the state
23	to wait. Well, that's like never filling it.
24	Okay.
25	And in these are the crucial issues

1	about how an inventory management policy can
2	operate. And I might say by way of comparison,
3	the Strategic Petroleum Reserve, if we can
4	characterize that, was a police by the United
5	States Government of fly high and hold forever.
6	And if anybody can explain why that's
7	particularly (indiscernible) perhaps then we can
8	deduce why it's sensible for the State of
9	California to buy at a premium to put into the
10	Strategic Fuel Reserves.
11	MR. FINIZZA: Tony Finizza.
12	PRESIDING MEMBER BOYD: I'm going to try
13	to limit this to the State of California.
14	DR. WILLIAMS: Yeah.
15	PRESIDING MEMBER BOYD: Not the United
16	States. No one can predict what they're going to
17	do half the time.
18	MR. FINIZZA : Tony Finizza. I'd like
19	to comment on the comments on consumer surplus,
20	etcetera. Can I turn you back to a page that's
21	not numbered, but I imagine it's around five or
22	six. It's called Finizza page 66.
23	DR. WILLIAMS: Yes.
24	MR. FINIZZA: I don't know if I can my
25	name on top of a page. But it's a table that

1 actually came out of the report. And the internet 2 is wonderful, you can go and grab things from it. I have to make a point about this. This was in 3 part of a paper where I was trying to express the 4 5 potential one might have. Of course you can never б reach that potential. 7 In fact, if you would multiply the consumer's surplus here by 200 you get 1.6 billion 8 9 dollars, 1,600, which is not possible, which I 10 would have to agree with you. In fact, I did not use that analysis in the calculations I made. And 11 12 I did a variation of what you said. 13 I kind of wish you had picked chart -- I 14 don't know what page it would be in my report, but 15 I know it's yesterday, which of course you could 16 get at. I actually calculate the consumer surplus 17 to be --DR. WILLIAMS: You had this one up 18 yesterday, right? 19 20 MR. FINIZZA: Yes, yes. Let me get to that. Could you go back. That's okay. We don't 21 need that. I calculate the consumer surplus to 22 23 range from 160 to 400 million, which is ten percent to 25 percent of the number that the other 24 one implied, because I did what you suggested. 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

Now, you might still have a complaint there
 because I did not assume a symmetry in price ups
 and price downs, which is implied by that chart
 that precedes the other one you showed there.

5 Also, you warned not to worry about -not to be suspicious when gains of stabilization б are large. And I think the right way to think 7 about that is relative to the size of the market. 8 9 And the gains that I implied by my analysis here, 10 160 to 400 million in consumer surplus is somewhat 11 between .5 percent to two percent of the market, 12 which I would not really consider to be too large 13 in a relative sense.

14 It certainly is large in dollars. If we 15 made it in yen we might even get a higher number, 16 or italian leer, which no longer exist. But as a 17 percentage I didn't see it as giving me cause for 18 suspicion since we have a 22 billion to 30 billion 19 dollar market.

And I think the thing you still might be able to quibble with honestly is that I did not assume symmetry in terms of, you know, prices going up and prices going down. But the spikes are more likely to be higher from a base than the --

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DR. WILLIAMS: I'm not saying it's a 50/50 chance. And so if that's what you mean by symmetry, I'm not saying that that's relevant to this.

5 MR. FINIZZA: No, I was examining the 6 supply and demand chart you had. I was thinking 7 of that one where you showed --

8 DR. WILLIAMS: At times it doesn't go 9 down. And so if there are good times or good 10 harvest, the price doesn't go down.

MR. FINIZZA: I was measuring from what I would say is the normal market where they're on a refinery disruptions, which we --

14 DR. WILLIAMS: And I agree that you're 15 doing that, and that's saying that the Strategic 16 Fuel Reserve stabilizes at the known disruption. 17 And that's equivalent to assuming that the 18 Strategic Fuel Reserve gets back that production. And I don't think that's what you want to assume. 19 MR. FINIZZA: But I don't think it would 20 21 be fair to say that I chose a number of 1,600 million as the economic benefit, which that first 22 23 chart implied. It's one tenth of that to one 24 quarter then. Thank you. 25 DR. WILLIAMS: I would like to say two

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1 more things on this because it is a very crucial 2 area. Rarely does economic theory tell us anything definitively. 3 MR. FINIZZA: Yes. 4 5 DR. WILLIAMS: This is an unfortunate б fact of life. 7 MR. FINIZZA: You're not supposed to admit that, you know. 8 9 DR. WILLIAMS: Yeah, I know I'm not 10 supposed to admit that, but there's one place, it's more the mathematics, not from the economic 11 12 theory. If one assumes a linear demand curve, not 13 the spasticity of that, not the slope, but the 14 shape of that demand curve, which is what you've 15 assumed, by property of the mathematics, the 16 stabilization of that demand curve has to lead to 17 negative gain to consumers. 18 This seems counter to the people, but this is a whole series of published papers back to 19 the 1940s. This is a fact, not a thing. You 20 21 assume a linear demand curve, and that's what made me suspicious that there had to be some other 22 23 implicit assumption. I'll quickly say, I don't think the demand curve in California is linear. I 24 25 bet it gets more non-linear.

1 And so if it were redone you might up 2 with a positive consumer gain. So that you come 3 up with a positive consumer gains means to me there's some other hidden assumption that we need 4 5 to get at. All right. And I'd also like to --6 and maybe this will be the whole place to end with 7 a thought experiment. You say that three percent is of total 8 9 budget on the gasoline doesn't seem that great. 10 But let's try to do a little introspection here. On average we might in a six-week period as 11 12 consumers we spend, what, \$150 on gasoline. Let's 13 say in another six months it's \$200. We have a 14 variability like that. 15 And so our total bill for the year, 16 what, about \$1,400 or something, something like 17 that, right? So think as introspection here how much would you pay if those expenditures were 18 stabilized from \$150 to \$200, to \$175 a month. 19 20 Now, I personally, fortunately, have more than a 21 couple hundred dollars in my bank account. I will pay nothing to stabilize it at 22 23 \$175, because I'm going to pay the same thing on 24 average for the year. Suppose I was a graduate student who's borrowing money on a credit card, 25

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1 and so forth like that, maybe that's the majority 2 of people in California, paying money on their credit cards, I sometimes have to borrow \$25 in 3 order to wait for the other \$25 to come in, right. 4 5 On interest rates on my credit card б about three times a year I'm going to have to 7 borrow \$25. I'm going to pay a couple percent interest on that. That's going to work out to the 8 9 whole year maybe a charge of \$2.50 say, something 10 like that. So the most any one person would pay, 11 because they're trying to smooth out their income 12 like this for this amount of variability, is about 13 \$2.50.

14 If you multiply that by all the people 15 driving in California, about 20 million, you get a 16 number in the order of magnitude of 50 million 17 dollars, not 500 million dollars. I want to say that back of the envelope calculation is sort of 18 19 the essence of what consumers would pay. And 20 unless you're -- and you're saying it's ten times 21 more than that.

And that just doesn't fit with how I think people would react to stabilizing at 175 versus 200 or 150. And that's why I think there's some implicit assumption in the analysis that's

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changing the average price to, and I'd pay a lot
 for that, and so would everybody else. If we
 could get it at 175, \$5 each, we're going to pay a
 lot of money for that.

5 And so there's a treble here about what 6 is counter factual. And I'm not really arguing 7 with the methodology here, but with what is 8 explicit counter factual. And I think we have to 9 be careful to say is a Strategic Fuel Reserve 10 equivalent of no disruptions, or is equivalent of 11 stabilization.

12 I'm not trying to argue that it's one or 13 other. I'm trying to make it clear how we have to 14 think about that. So maybe we can end on that 15 point.

16 PRESIDING MEMBER BOYD: We've got a hit? 17 We've got a webcast question. MR. STAMETS: The question is from Al 18 Jessel, senior fuel policy advisor, fuel 19 20 regulation admission technology, Chevron. And the 21 question to -- so Commissioner Boyd does lose total faith in webcast. Can you comment on the --22 23 and this to Mr. Williams. Can you comment on the validity of analyzing retail price impact of a 24 25 mechanism such as the SFR, which would primarily

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impact the wholesale market?

2 DR. WILLIAMS: I'm being asked how are wholesale prices transmitted to retail prices? 3 MR. STAMETS: I'll read it again. 4 5 DR. WILLIAMS: I think I would prefer to express no opinion on that subject. б 7 MR. STAMETS: Okay. Do you want me to 8 repeat it? 9 DR. WILLIAMS: No, I heard the question. MR. STAMETS: I don't know that that's 10 really within our scope today. 11 12 PRESIDING MEMBER BOYD: Nice try Al. MR. MATTHEWS: I'd like to make an 13 14 observation. My economics degree is some 30 plus 15 years old, so you're running some old tapes for 16 me. 17 PRESIDING MEMBER BOYD: Is it subject to 18 backwardation? MR. MATTHEWS: It's backward anyway for 19 sure. And so I was struck by this whole 20 21 discussion that the volatility problem we're 22 trying to deal with is not the result of a market 23 failure, unlike looking at some of the things we do in energy efficiency at least positive market 24 failure, but actually is a political problem, 25

1 right?

2 And so the question is, you know, how would we spend 25 million dollars if we had 25 3 million dollars, which we don't? The degree is 4 5 still fresh enough I can still make assumptions. 6 So assume we have 25 million dollars to spend, and 7 do we do something like this, or do we spend the same 25 million dollars getting people to inflate 8 9 their tires, change their oil, and change their 10 air filters, which gets us about one to three percent of reduction in demand? 11 12 DR. WILLIAMS: It's certainly the case 13 that there's a political impact to the price 14 volatility. Now, I fully don't understand that, 15 but I guess I think prices ought to be volatile. 16 And it's sort of fun to watch that. That's the 17 only one that's interesting. 18 PRESIDING MEMBER BOYD: We're outnumbered about 34 point seven million to 100 19 20 here. 21 DR. WILLIAMS: But, you know, there has to be somebody that finds everything interesting. 22 23 But I think part of it, it almost surely has to be that if we want to dampen price volatility it can 24 be inventoried. But I get the impression that 25 25

1	million dollars ought to probably be spent on
2	import facilities as a good way of damping things.
3	And maybe this is surely heresy, but did
4	anybody do a cost benefit analysis of the Air
5	Resources Board cost benefit analysis about
б	whether it did price volatility? And so some of
7	these specs may be our fundamental problems.
8	If there is a political impact of the
9	price volatility, it's really due to the
10	California specific specks it seems to me. Maybe
11	that's the place to revisit.
12	PRESIDING MEMBER BOYD: Well, I would
13	invite you to look at all of the public cost
14	benefit analysis.
15	DR. WILLIAMS: I bet they haven't shown
16	the price volatility. I've had the misfortune, I
17	guess I should say the honor of being a public
18	commissioner on the IMRC inspection maintenance
19	and review committee. That is the agency, the
20	group, that oversees the smog check program. And,
21	oh, dear.
22	PRESIDING MEMBER BOYD: My sympathy
23	is
24	DR. WILLIAMS: I'll take it. And so one
25	part that I've learned from that is that there is
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1 parts of this state government I'm particularly 2 looking together to do a cost benefit analysis of 3 the whole set of rules, which is certainly something we were hearing about the permit process 4 5 yesterday. My instinct, I say it's only and б instinct here, it's really not a result of an analysis, is that we're better off looking at 7 getting rid of those impediments. 8

9 I think a really good way to understand 10 price volatility is that impediments cause it, the 11 length of time of the imports, constraints on the 12 pipeline system or whatever. If you don't have 13 impediments you don't have price volatility. So 14 flip it around that way and look for the main 15 impediment.

And I'm willing to believe here that a
major impediment is the ease in which imports can
be brought in.

19 MR. MATTHEWS: So is it just one step 20 further I suppose, thinking how we've done other 21 things in other markets, is it rational to provide 22 incentives for people to build storage or people 23 to expand import, for the state to subsidize those 24 kinds of activities as opposed to buying gasoline 25 and storing it, those kinds of things?

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1 DR. WILLIAMS: I'm relying more on my 2 instinct as an economist and a specialist in 3 commodity markets here. And so as long as you understand that I'm going off an area that I don't 4 5 know as much about, my instinct would be that б private decision regarding tanks are probably sensible and don't need much public intervention. 7 Or I could easily believe that big 8 9 investments in port facilities and so forth being 10 run by public agencies, that maybe those aren't the most sensible. And those involved with port 11 12 facilities are probably ones where the state 13 intervention would have the most logic. 14 PRESIDING MEMBER BOYD: Okay. Any other 15 comments, questions? I'm going to declare a 16 roughly ten minute break here so we can ready for 17 our next presentation. And we're going to hear the following three individuals in this order, 18 Robert Hermes of Pervin & Gertz, Tony Hoff of ST 19 Services, and then Phil Verleger of Phil Verleger 20 21 Productions I think. Anyway, how about a ten minute break. 22 23 (Thereupon, a short recess was held off the record.) 24 25 PRESIDING MEMBER BOYD: Okay. Thank

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1 you, everyone. We can resume now. We're prepared 2 to hear presentations from the representative of Pervin Gertz, Mr. Robert Hermes. 3 MR. HERMES: Thank you, Commissioner 4 5 Boyd. PRESIDING MEMBER BOYD: If I'm saying б 7 your name right, I hope. MR. HERMES: You did. You pronounced it 8 9 correctly. We're going to get a brief rest from 10 economic theory now for 20 minutes or so. Just a word, Pervin and Gertz is a consulting firm that 11 12 specializes in the downstream part of the 13 petroleum industry planning and analysis type work 14 based out of our home office in Houston, and 15 chairman of the company. 16 We also have an office in Long Beach, 17 and then international offices in Calvary, 18 Singapore, London and Buenos Aires. We are appearing here on behalf of WSPA. That is I am 19 20 hoping that WSPA is going to pay our bill for 21 this. But I want to point out that the comments and statements that I'm making are my own comments 22 23 and statements, and are not necessarily the official position of WSPA or any of its members. 24 25 What I'm going to cover this morning is

addressing several questions from a fairly broad
 base point of view. First is our California
 industry inventory practices, a typical of the
 industry as a whole. I want to make a few
 comments about the market spikes that generated
 the studies that we're talking about at this
 session.

And has the industry profited unjustly 8 9 from these spikes, what we kind of look at there 10 is the upside and downside. What is the best 11 long-term program for preventing spikes. And will 12 SFR work as postulated. We started out on this 13 review in this initial report there was a chart in 14 it that showed gasoline inventories in the rest of 15 the US being approximately 40 days, and those in 16 California being about seven days.

17 That seemed to me to be fundamentally wrong based on my experience. So I took a look at 18 19 inventories and prepared this chart, which was 20 submitted previously in some material. Since then we've had multiple iterations on this seemingly 21 simple subject. And as of yesterday, I think, the 22 23 chart presented, which I believe is only finished gasoline inventories. 24

25 And that showed California being I think

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1 a day or two less in the US. I haven't gone 2 through and tried to do this for every week and 3 every month for a number of years. I did look at 4 this, which is to the year end 2001. The year end 5 is a fairly stable time to look at the numbers. I 6 also spot checked it for 2000 and 2002 and found 7 more or less the same thing.

I don't know if pointers work very well 8 9 since we have multiple screens here. But these 10 just give the numbers in barrels and how they're broken out by the DOEEIA, and incidently these 11 12 are pad five numbers. Of course California is the 13 major portion of that. And then the products 14 applied being the annual demand for gasoline 15 during that year.

16 And then this converts it down to days 17 of supply. I've included MTBE and fuel ethanol, as well as gasoline blending components, rather 18 than just finish gasoline, since these components 19 20 are there to make gasoline and are a day or two away from being gasoline. The numbers I came up 21 with was at pad five inventories for this 22 23 particular time were about 21 days and about 20 days in the rest of the US. 24 25 And I excluded pipeline inventories,

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1 which I think we all agree are dead inventory. 2 And also to adjust for the fact that we have more long distance pipelines east of the Rockies, and 3 therefore more inventory held that way. So I 4 5 guess in general, my inclusion is that there's б really not any material difference in stocking practices by the industry here as elsewhere. 7 I think as far as there was some 8 9 discussion yesterday about discretionary stocks 10 and how refiners treat them. Of course 11 inventories are not just inventories held by 12 refiners, although that's quite a bit of it. 13 Other people, particularly I think in parts of the 14 US, traders and speculators, and financial 15 institutions, and other people own inventories. 16 But I think the general observations on 17 refiners for the reasons that have been discussed for economic theory generally try to maintain what 18 we call minimal efficient operating inventories. 19 20 And there's times, I suppose when crude price is at 98, got down to \$12 a barrel that there may 21 have been discretionary inventories accumulated by 22 23 refiners for a price speculation, if you like. And maybe when prices get extremely high 24 25 there's some trimming of the inventories. But I

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1 think over a general range, most, but not
2 necessarily all, are finding companies are
3 generally big price speculators as far as building
4 and holding inventories concern. However, they do
5 hold discretionary inventories to supply their
6 customers immediately with a perceived reasonable
7 potential disruption.

So there is a cushion and flexibility 8 9 there, and flexibility is always a very important 10 part of anything to do with refinery economics. I can't tell you what those are. I think the number 11 12 thrown out yesterday was 500,000 barrels in 13 California, which if I divide that by the number 14 of refineries in California it would mean each 15 refinery would only have about 40,000 barrels of 16 discretionary stocks.

17That seems extremely low to me, perhaps18even in order of magnitude. For the next subject19I would like to talk about is the price spikes.20And I know you've seen these charts 100 times.21I'm not going to belabor them too much. I just22wanted to make a couple of comments on them.23PRESIDING MEMBER BOYD: Let me interrupt

and say those of you that hear the siren thistells us it's 11:00 and the last Friday of the

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month. And they've been testing air raid sirens.
 So don't let it worry you. It's not the building
 on fire.

MR. HERMES: Okay. Thank you. And what 4 5 I would like to talk about is the spikes in 1999 I think were largely attributable to one event that б 7 I would like to put into some perspective. And then as I think was discussed at some of the 8 9 presentations yesterday that the 2000 and 2001 10 that the spiking is so that the market in California was not that different than in other 11 12 world markets.

13 The Avon refinery in my experience in 14 talking to others in the company that's been 15 around a long time I think is unprecedented 16 outage. It was a 160,000 barrel refinery out of 17 service for five months. And the reason it was out of service that long was not due just to the 18 accident that happened. There was a safety audit 19 20 that occurred on it.

It was supervised by the local authorities and the company decided to shut down the refinery for this extended period of time. It doesn't mean that it didn't have an impact on the market. But I think it is -- I don't know if it's

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a 100 year storm, or 200 or 500, or what it is.
 But I think it's very unusual. And I can't recall
 of another incident even close to that.

It's certainly not that unusual I think, 4 5 as an example was mentioned yesterday, for a processing unit at a refinery to be out for an б extended period of time. Several years ago the 7 refinery had the crude unit taken out of service. 8 9 But typically what happens is the refinery gets 10 back on stream again and is producing product, maybe not as efficiently and probably not at full 11 12 capacity, but they're not completely out.

Typically one two months might be a maximum time in my opinion that a refinery would be completely out of service. And they do this by change crude slates, buying and selling intermediates, running it at a reduced capacity, you know, a lot of other kind of mechanisms to get back on stream again.

I think this was also aggravated by the fact that that wasn't known at the time. There was a belief that it was going to be back on in a reasonable period. And then at the last minute it turned out it was not. And that had a role in generating this second one. Moving on to the next

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period in 2000 and 2001, the events here were
 somewhat different.

But I looked at standard deviation of 3 the price series. I think Tony, yesterday, used a 4 5 slightly different method of measures of б volatility. But I think basically it came to the same conclusion that the volatility here was about 7 the same as it was elsewhere, this being a look at 8 New York, US Gulf Coast, and this being New York 9 10 Harbor.

The next question is, well, how did 11 12 particularly the incidence of 1999, how did those 13 translate into refinery profitability? And I 14 think this kind of speaks to the point that 15 Mr. Sparano was making yesterday concerning that 16 understandably, from a public point of view, a lot 17 of attention is paid to the 25 days, or whatever it is, of price spikes, and not too much to the 18 other 330 days of the years. 19

But those add up, even though it may be only a few cents a gallon, not 20 or 30 cents a gallon. This is information compiled, so called SFR survey, that the US Department of Energy does each year. And in 1999, actually because of these disruptions in California, they did a special

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study. It broke pad five out from the rest of the
 country. It calculated the return on investment
 in refining and marketing for pad five refiners.

4 Unfortunately, this hasn't been updated 5 since, and probably with the ownership changes in 6 the methodology they use, I think it might be 7 difficult for them to do it in the same manner. 8 But what this shows is that on average for the 9 1990's the return on investment for pad five 10 refiners was about five percent.

11 In 1999 it was about ten percent. Ten 12 percent being the approximate cost of capital to 13 the oil and gas industry. So I think what this 14 shows is even though the margins might have been 15 very high for short periods of time, they were low 16 during other times. So that effect was not that 17 great. And I think what happens is that when prices get high, and I didn't bring the charts of 18 imports along, but you can see large surges of 19 20 imports coming in following these price spikes.

And when those come in refineries get back on line, the market is over-supplied and the prices then go back down again. As I mentioned, there's not data available for the last three years. We track various indicators and it's

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difficult to translate those to exactly the same
 basis as these accounting records that the DOE
 keeps track of.

But 2000 and 2001, not surprisingly, 4 5 were good years for the refining industry, both б here and elsewhere. 2002 though, things slipped 7 back quite a bit, and I would estimate it to being more like the average of the historical 8 9 performance. The one thing I guess people seem to 10 agree on in this is that refinery expansion is a 11 good option.

12 And I wanted to focus on it because I 13 think it is the day in and day out five or ten 14 cents a gallon that's costing California consumers 15 as opposed to the more dramatic short term 16 effects. Import parity is expensive. That's an 17 expensive strategy because of the high transportation cost of bringing products to these 18 19 markets.

20 Crude oil cost to California refiners is 21 about the same as it is to Gulf Coast refiners. 22 So all that transportation cost is added to that. 23 And we could debate exactly what this number is, 24 but just as a for instance, ten cents a gallon 25 translates to a billion and a half dollars a

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    years. What is inhibited it, we've heard
    discussion of permitting.
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3	That certainly has historical
4	probability, probably has too, both here and
5	California and elsewhere, since many of the
6	companies have diverse operations. In the case of
7	the merchant refiners, they have options of
8	investing here versus any other refineries.
9	For the large diversified companies they
10	have the option in investing in refining versus
11	oil and gas production. With oil and gas prices
12	quite high the last few years that's been a pretty
13	attractive option. And it is probably (inaudible)
14	as well. But one way of thinking about adequate
15	capacity is that it basically makes crude oil
16	inventory available also because it can be
17	translated quickly into refined products if the
18	capacity is there.

19Pad five can hold something like 18 days20of crude oil in storage. What happens is that21when you run out of refining capacity, really any22market becomes an island, even the Gulf Coast,23which is the largest most flexible market in the24world. In 2000 and parts of 2001 the reason that25market was spiky is because refining capacity was

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1 running full out.

2 And beneath that, there were hundreds of examples of this pipeline was out for a day or a 3 terminal did this, or a refinery had an outage of 4 5 this, or on, and on, and on. But the bottom line 6 is basically you're out of refining capacity. And 7 once that occurs, help is a long ways away no matter whether you're on the Gulf Coast, pad two, 8 9 pad five, or wherever.

10 Really, only modest expansion rates are needed to keep up with it. It's been difficult to 11 12 maintain those rates. I think the latest forecast 13 is something like a percent and a half a year, 14 which typically is -- which can be achieved 15 through expansion of existing facilities. Once we 16 get to two plus percent a year, normally some 17 fairly major type of expansions or duplications 18 are needed.

But typically up to one and a half percent expansions are not quite as expensive. The half a percent a year, so quoted by Stillwater yesterday, I think is about what you'd get just by technological improvements. Now, those don't happen exactly five tenths percent per year. But over time that happens. And that's things like

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better control systems, better catalyst, all that
 type of thing that are simulation of processes.

All those type of those type of things help efficiency, and helping efficiency ultimately translates into more work capacity. What I'm not suggesting here I guess by analogue is that the proper role for the state is to make these investments in refining or guarantee loans to them.

10 I believe with the incentives in place, and barriers removed, that the industry will make 11 12 investments in refining, as I believe they will in 13 storage facilities. Okay. Moving to make just a 14 few comments on the SFR, and I recognize that the 15 consultants were asked basically to test the 16 concept and not work out all the detail, although 17 I think they've gone, you know, quite a ways towards looking at some of the more detailed 18 19 aspects.

But what concerns me from an operational point of view is the devil is likely to be in the details of this. It's an untested concept, so we have no model to go by of how a reserve operated in this way is going to work, what the bids are going to be for withdrawing it, and how this whole

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1

process plays out in the market.

2 I know my general experience is that 3 those over the years that have attempted to put rather simply concepts, or even complex concepts, 4 5 to regulate markets have generally been humbled 6 quite a bit by the process. It's a complicated 7 market. A lot happens. I think it's very difficult to know precisely what all these price 8 9 responses are.

I certainly believe that the industry players, including the refiners, the traders and everyone else, are immediately going to look at ways of exploiting the system. It reminds me of the price controls that were put on in the 1970s. I guess most people in here besides me don't remember.

17 But it certainly succeeded in making a 18 lot of personal fortunes for traders if nothing else. The first layer of regulations looked 19 fairly straightforward, but immediately all kinds 20 21 of ways were found around them. And by the time the program self-destructed there were layers on 22 23 top of layers, on top of layers of regulations, and still a lot of circumvention of it. 24 25 I don't know that that will happen here.

1	But I also don't know that this is all going to
2	work according to theory, not according to theory
3	maybe, but according to the method put forward
4	that price spikes are chopped off at the roots and
5	everything proceeds real smoothly.
6	I just think of the process, if an
7	outage occurs and there's a need for the inventory
8	of, assuming after Professor Williams talk, that
9	there's any inventory there, we don't know what
10	the bids are going to be to take that out. Is it
11	going to be two cents, five cents, 20 cents?
12	What's that going to be? It's going to take a few
13	days to get the bidding process organized.
14	Then the bid has to be awarded. It's
15	got to be scheduled into the pipeline. Somebody's
16	got to take the risk of ultimately selling that to
17	a consumer, because that's going to take a while.
18	In the meantime, the person who won the bid has
19	got to go store its products some place. The fact
20	that all this is occurring, of course, is known in
21	the market.

22 So I would expect that the rather unique 23 components required for California gasoline will 24 immediately be increasing in price. Refiners 25 elsewhere typically would not have that sitting in
storage waiting. So they have to schedule it and
 make it -- that all has to be chartered. Only
 50,000 barrels can be drawn out in one go as I
 understand it.

5 A typical tanker is probably 250,000 б barrels. So 80 percent of the cargo is still unhedged, unless you win five straight days of the 7 bidding process. I don't know how all this plays 8 9 out. I'm not smart enough to figure it out. I'm 10 not too sure anybody else is either until it's 11 tried and done. But I'm not in a position to try 12 to refute the figures that were calculated 13 yesterday.

14 But I can say this, I think if the cost 15 is 25 million a year, and the benefit is 250 16 million a year, we'd have SFR's springing up all 17 over the place if that were the economics. It seems like it would be a very attractive venture. 18 The third area, permitting of course comes into 19 this. And I think my point here is that it's 20 going to take quite a while to get this done, even 21 if it's decided tomorrow to go ahead on it. 22 23 So the process of getting approvals of studies in engineering and further work that's 24 25 needed to develop the concept, the permitting

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process, and the actual construction of it, seems
 to me that this is at least three or four years
 into the future. And so at best it's helped a
 long way down the road.

5 And of course on of the problems with 6 that is there's a lot of uncertainties between 7 what happens now and three or four years now. 8 Storage can be built, refineries can be expanded, 9 almost anything can happen during that time 10 period.

As far as building the extra storage is 11 12 concerned for the industry and the need for the 13 state to intervene and the market process to make 14 sure it happens, I guess I would point out that 15 over the years, probably following was Mr. Sparano 16 said yesterday, the industry has managed to 17 install two million barrels a day approximately of a refining capacity in California. 18 19 The infrastructure, a pretty short

notice to import 100,000 barrels a day of MTBE.
Now up to a 100,000 barrels a day of other
components to shift largely, again, on pretty
short notice to backing out MTBE and bringing in
50,000 barrels a day, or thereabouts, of ethanol
for blending.

1	So the industry, I believe, has
2	demonstrated an ability to meet the needs of the
3	market. Now, as to whether these investments are
4	considered too risky for the industry, and I think
5	in maybe some ways they are. Certainly my
6	experience in an advisory capacity, as well as a
7	decision making capacity, is it's very difficult
8	for management or board of directors to basically
9	approve projects based on forecast of future
10	happening and commit large sums of capital.
11	In other words, it's difficult to
12	justify large investments based on the build and
13	they will come concept. Instead, most managements
14	and boards want to see the people coming first.
15	And so I think there probably is a belief that
16	industry may see it as too risky to make major
17	investments based on long-term developments.
18	But as the need for it is proven, these
19	investments are made, and I think the proof is in
20	the last year we have seen an increase in storage
21	capacity as has been pointed out. It seems to be
22	a warning that if companies deem this to be too
23	risky, as I think we were told yesterday, then
24	it's hard for me to believe that the government is
25	not taking any risk by doing it.

1 Another issues I want to talk about is 2 storage turnover, and this probably into some of 3 the details of the operation of it. But I think it is a concern because in spite of the spikes in 4 5 the market in California, we have had fairly 6 sustained period where the arbitrage for imports 7 is not on, that is the capacity is at capacity, plus what I would call integrated movements by 8 9 companies bringing their own supplies in, do not 10 generate spot opportunities.

And in fact, for most of 2002 this was 11 12 the case. There was one day here and I think four 13 days here with the next major arbitrage being when 14 the spec change over and the carbo gasoline came 15 in in March. That's a period of over a year. No 16 one seems to know, I think it was mentioned 17 yesterday, six months storage life. Of course 18 industry practice is to turn it over in a few 19 weeks.

20 And so it's using up that much of an 21 issue. But it seems to me that companies 22 importing product are generally going to want to 23 bring refining companies importing products. And 24 I think their general agreement that most of the 25 material coming in would go through refiners for

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final blending, the refineries get a lot more
 options to the blending process, not that it's
 impossible the blend determinable.

But the manufacturing facilities give 4 5 more options to it. They prefer to bring in their б own components and take them to their refineries, 7 blend them and ship them out from there. And so I don't see how that refreshes the petroleum 8 9 reserve. Maybe there's something I'm missing on 10 it. But I don't see how that refreshes it. And if it only gets refreshed, if it's 11

11 And II It only gets felleshed, If it's 12 withdrawn and it's not withdrawn for a long period 13 of time, I think there are issues on storage life. 14 So I think in order for it to work refiners have 15 to be an integral part of the of the process. And 16 what I heard yesterday is they are not very 17 supportive of it.

18 So it seems to me that for the system to 19 work it's going to have to be an integral part of 20 the supply system and work with the refiners on 21 doing it. And that's all of my comments.

PRESIDING MEMBER GEESMAN: I wonder if you would elaborate on two things that you just briefly mentioned in your presentation, one being the ten percent cost of capital. What portion of

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1	the industry are you talking about when you say
2	that, and is that a leverage cost?
3	MR. HERMES: Yeah, that's probably
4	getting into economics here that I said I wouldn't
5	do. But it's a so called weighted average cost of
б	capital. And the numbers would be I don't
7	think you'd get a lot of different numbers if you
8	used either the integrated companies or
9	independent refiners.
10	I think you would find that number for
11	that period of time to be approximately that today
12	is probably a little lower than that, like eight
13	percent probably because interest rates are down.
14	But it's a weighted average of getting equity.
15	PRESIDING MEMBER GEESMAN: And that
16	rate, which frankly seems a bit attractive from a
17	borrowing standpoint, I would presume that you're
18	talking about companies that enjoy a pretty strong
19	investment grade credit rating, don't they?
20	MR. HERMES: Yeah, I think that's true.
21	I think that's true. Yeah.
22	PRESIDING MEMBER GEESMAN: I'm just
23	trying to search for what
24	MR. HERMES: Generally that's calculated
25	from publicly traded companies on the stock

1	exchange. So, yes, it would apply to I think
2	probably most of the major refiners in California.
3	PRESIDING MEMBER GEESMAN: I'm just
4	trying to search for what possible role a state
5	loan guarantee would play in a market environment
6	dominated by companies with what would appear to
7	be fairly attractive cost of capital and good
8	credit worthiness qualifications. The other
9	thing
10	MR. HERMES: I don't have an answer for
11	that.
12	PRESIDING MEMBER GEESMAN: Well, I think
13	you did, but it was between the lines as they say.
14	The other thing that I wanted you to elaborate on
15	is storage life of either gasoline product or
16	crude.
17	MR. HERMES: Well, I think crude is more
18	less forever. I'm not a geologist either, but I
19	understand it's been in the ground for millions of
20	years just waiting for us to find it. So it can
21	be stored either in tanks or in the ground
22	indefinitely. And among other reasons for that is
23	it goes through the refining process that's going
24	to clean up anything that may have
25	deterioration that may have happened to it.

1	Product is a little trickier because
2	frankly it's just not usually that much of an
3	issue because you turn it over fast. My colleague
4	pointed out to me, and I don't know how he
5	happened to know this, but evidently one place
6	this is an issue is with antique car collectors
7	because they only get the car out of the garage
8	maybe a couple of times a year and take it out.
9	And generally, I don't know what their
10	expertise is in this area, but they recommend
11	draining the tank if it's more than six months. I
12	always read the instructions on my lawn mower, it
13	says drain the tank over the winter. I never do
14	it. Usually after taking it to the repair shop it
15	will store it.
16	PRESIDING MEMBER GEESMAN: Any general
17	safety requirements or other protocols followed by
18	the industry in terms of setting a maximum storage
19	life on product?
20	MR. HERMES: Not that I'm aware of.
21	There are tests that are done that are sort of so
22	called accelerated stability tests that are
23	specifications of it, more for diesel fuel than
24	for gasoline. I think this has to do with
25	potential clogging problems. Usually the main

problem is (indiscernible) or reactions that take
 place in the constituents that cause these things
 to happen.

And those could be generated just by 4 5 being slow reactions that occur over a long period б of time. It can be generated by even contact with 7 light and then, you know, a number of other things can general those type of reactions. But usually 8 9 what you're worried about is solids appearing in 10 the gum formation as it's called in the product. 11 PRESIDING MEMBER GEESMAN: Thank you. 12 PRESIDING MEMBER BOYD: Okay. Thank 13 you. I think next we're going to hear from Tony 14 Hoff. 15 MR. SCHREMP: Excuse me, Commissioner 16 Boyd. 17 PRESIDING MEMBER BOYD: Sure. 18 MR. SCHREMP: I had a couple of questions for Mr. Hermes concerning the refinery 19 20 capacity. 21 PRESIDING MEMBER BOYD: Go for it, since we're the ones the have to ultimately search this 22 23 all out. MR. SCHREMP: Mr. Hermes, in your 24 refinery capacity discussion I had a question 25

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1 concerning how refinery outages out price breaks 2 have a relationship in terms of loss of supply to the market on a temporary basis. You went over 3 and gave good discussion about the Avon example. 4 5 And so my first question to you, sir, is that if you had two refineries of different output б 7 of gasoline capabilities, one was ten percent of the supply, one was seven percent of the supply, 8 9 if the ten percent refinery went out of service 10 temporarily, there would be a reaction in the 11 market versus the refinery that had seven percent 12 supply went out of service temporarily. 13 Would there be a different reaction in 14 the market for both of those examples? MR. HERMES: Well, I suppose the 15 16 degree -- the problem is basically the same. Ι 17 guess the degree would be greater and it would be more involved in making up the supply if the ten 18 19 percent went out. And the short answer to your question is I don't know. And one of the hardest 20 things to do in any analyzing of pricing, I've 21 found it real difficult to be even 50 percent 22 23 right on the direction of price movements. But to try to know the magnitude of them 24 25 is almost impossible because so many different

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1 circumstances apply to it other than just physical 2 variables involved, the psychological, I guess you 3 would call it, factors in the market. So I really 4 don't know the answer to your question 5 unfortunately.

6 MR. SCHREMP: Yes, sir, I was not asking 7 exactly how you would translate into the ultimate 8 potential price break. I was just asking if there 9 would be a difference in the two, between those 10 two examples.

MR. HERMES: Well, I guess there would 11 12 be a scenario of -- those are both of course 13 fairly major supply points, and I suppose there 14 could be a theoretical situation that there was --15 you were running enough under capacity at other 16 refineries that you could make up a seven percent 17 shortfall fairly quickly by other refineries cranking up, in which case that would have less 18 19 impact than if you didn't have ten percent spare 20 capacity, which would be a lot, even seven percent 21 is a lot of spare capacity of course. And ten percent is -- there's been times we've had that 22 23 happen. It's been a long time ago. MR. SCHREMP: And my final question, 24 sir, is looking forward with regard to the 25

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1 refinery capacity question, if one has a situation 2 where we continue with just capacity created, and 3 we've already seen the demand is at a rate greater than that, and more imports are coming to 4 5 California now than they were in 1999, we expect б more imports, if nothing else changes with this 7 trend to be greater in terms of a percentage of 8 supply.

9 So say at some future time, maybe ten 10 years out, those refineries that were ten and 11 seven percent of supply respectively, are nine and 12 six percent of supply when they do have an outage 13 the impact in the market would have the same 14 analogy. It would not, therefore, be as great. 15 MR. HERMES: Right, because they're less 16 of the total supply. Yeah. I think one of the 17 aspects of it is the on and off nature of when 18 inputs are small, kind of the on and off nature of them also presents some issues if they are regular 19

20 because of the supply coming in that may make 21 things a more stable pattern, because then you 22 have regular suppliers and it's more a matter of 23 topping up supplies that goes to finding it. 24 MR. SCHREMP: Thank you, very much.

25 MR. GIESKES: Is there time for one

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small question?

2 PRESIDING MEMBER BOYD: Sure, not for 3 long.

MR. GIESKES: No. I'd just like to -- I 4 5 fully agree that local production would be a much б preferred solution over continued imports. But 7 I'd like to have the benefit from your perspective on double refinery capacity. If you look at the 8 9 specific rim there is massive oil capacity in 10 refineries in places like Singapore, and Taiwan and Korea. 11

And some of the local refineries are 12 13 actually players in that market. So when we did 14 our marine petroleum structure study, one of the 15 considerations that imports are likely to be the 16 solution of choice within the global refineries 17 network is that over capacity is there. If I, for 18 instance, look at, and I can't speak for Chevron or Texaco for instance. 19

20 But they participate in South East very 21 large export oriental refineries. It should be 22 very difficult to justify any significant 23 capacitation in California from that perspective 24 alone. What's your opinion of that? 25 MR. HERMES: Yeah. I guess as far as

1 the Far East capacity I think it currently is 2 operating at about 88 percent of nine point 3 capacity. Our belief, the cause of the nature of the capacity, and particularly some of the 4 5 capacity in China and Japan, that we think 6 probably like 91 percent of the capacity is 7 probably an effective maximum rate for a region of that size. 8

9 So I certainly don't disagree with you 10 that at the moment there's some extra capacity 11 there. But I think it may be tighter than you 12 allude to. A lot depends wants happen with Asian 13 demand. We keep forecasting it's going up, and it 14 hasn't been cooperating too much. The SARS thing 15 now has put another big question mark on it.

16 But generally, our projections would 17 have said that that capacity is going to fill up in say about 2005 or so. I think in general the 18 efficient capacity in the world is operating 19 20 fairly tightly everywhere. I'm thinking of 21 markets these days, it doesn't take much over capacity to influence things, not much under 22 capacity either to influence them 23 MR. GIESKES: I would agree with you 24 right there, and it's a small differences between 25

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1 the big numbers. That still would bear the 2 question that in those refineries there's a lot of 3 unexplored capacity in terms of going into deeper 4 into the barrel, the demise of the heavy market in 5 the future.

6 So if you are a global refinery, and you 7 could add a (inaudible) in the refinery in Korea, 8 that might be a much cheaper solution to create 9 additional capacity than try to build something in 10 a very expensive capital environment like 11 California.

12 MR. HERMES: Yeah. I hear what you're 13 saying. I think there's some degree of logic to 14 it. I think the history suggest, though, that 15 people are very weary of making export refinery 16 capacity investments. And part of that is part of 17 the changing environment. I guess they think they 18 know their local environment and their competition is all in the same boat. 19

20 But you make a big investment for 21 California RFG and then you suddenly find now 22 you've got to make carbo instead of RFG. And 23 those are the kind of reasons I think people I 24 think don't make large investments to serve export 25 markets. There's been a pretty bloody history in

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doing that, as I'm sure you're aware.

2		MR. GIESKES: Okay. Thank you.
3		MR. HERMES: Thank you.
4		MR. COVI: One more question.
5		PRESIDING MEMBER BOYD: One more
6	question.	

7 MR. COVI: I have a question about your -- I'm sorry, Brian Covi with the Energy 8 9 Commission. The magnitude you assigned to import 10 parody, I'm thinking of two things, one is jet fuel, which we've been importing in California for 11 12 about the last eight years. And jet fuel prices 13 in California seem to be very competitive with the 14 rest of the US.

15 The second thing I'm thinking of East 16 Coast, US imports a lot more, mostly from Europe. 17 I think about ten percent more gasoline than we 18 do. Yet I don't see a big disparity in price 19 series between the Gulf Coast and New York Harbor 20 let's say.

21 MR. HERMES: Well, I think there's a 22 difference about the transportation cost between 23 the Gulf Coast and New York Harbor, a couple 24 cents a gallon. As far as Europe is concerned, 25 Europe has an advantage of lower priced crude oil

than the US does because crude moves from
 Northwest Europe to the East Coast and Gulf Coast,
 from the North Sea and now from Russia.

So it's really kind of a trade off of 4 5 product freight versus crude freight. Crude б freight typically being less than product freight. 7 I think on the import parody there's a couple of issues on it, one there is of course a quality 8 9 difference between California and the Gulf Coast, 10 which I think is a nickel or a gallon or more. 11 On jet fuel there is no quality 12 difference. Jet fuel is the same basically 13 everywhere. There's also market pressures on jet 14 fuel because an airplane has some flexibility in 15 whether they refuel in Dallas or Houston, or LA. 16 So you'd have to remain somewhat competitive here 17 while a motorist really doesn't have that option available to them. 18

19Also, the jet fuel can come out of the20Caribbean that's otherwise destined for the US.21And so your freight economics are a little bit22different. As far an the import parody is23concerned, I think if you're an ongoing operation24and have, you know, your vessels, and particularly25you're bringing it through your own refining

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1 system, then you're getting the components you 2 exactly need, probably the effective barrier is 3 quite a bit less than the 20 cent number. The 20 cent number is more what I think 4 5 would be applicable if you were withdrawing from б the SFR, paying your two or three cents, and then 7 replacing that on a spot basis. MR. COVI: So can I infer from your 8 9 discussion that if we had no new refining capacity 10 in California, and we become more and more steady net importers of gasoline, that those importation 11 12 costs would be expecting to decline? 13 MR. HERMES: Some I think, yes. 14 MR. COVI: Thank you. 15 PRESIDING MEMBER BOYD: Okay. And we're 16 going to hear from Tony Hoff. 17 MR. HOFF: Thank you, Commissioner Boyd. 18 My name is Tony Hoff. I'm with ST Services. PRESIDING MEMBER BOYD: You're the 19 20 gentleman that wants to build those storage tanks 21 for us, right? MR. HOFF: We are building storage 22 23 tanks. Thank you for the opportunity to make a presentation this morning. I only have a handful 24 of slides, so this should go pretty quickly. I'm 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

going to focus on the Bay Area because that's my
 area of expertise. And my goal is to give you an
 idea from the (inaudible) industry perspective.

Our concerns about how a Strategic Fuel 4 5 Reserve would disrupt the free market forces that б are already at work in the industry, and the fact 7 that the private sector is already responding. And that's the efficient way for the market to 8 9 correct itself. I'll be covering some of the same 10 topics that Dr. Williams covered this morning. 11 He did it in a very elegant and 12 organized manner, coming from a Ph.D. perspective. 13 And now you'll get some of it from a perspective 14 of a rusty old tank guy. The fundamental question 15 that we've been addressing the last couple of 16 days, historically have there been severe 17 impediments to non-refinery volumes coming into 18 California.

We've heard a lot of commentary both ways on this issue. And hopefully we're coming down the end of the graphs here. This is one that we've been looking at for the last couple of days. But I've added some information here that I think might help. This graph on the bottom is Bay Area carb gasoline minus Gulf Coast RFG. So it's the

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1 spread between California and Gulf Coast gasoline. 2 So these spikes that you see here are corrected for crude. So it's California specific 3 spikes. And the time period runs from April of 4 5 '97 through April of '03. What I've added up here б is some information, some general information, on availability of tanks over this period of time. 7 So looking here from about April of '97 through 8 9 October of '99, tanks are readily available. 10 It was easy to bring spot cargos in. From October of '99 through about April of '01, 11 12 tanks were starting to tighten up a little bit. 13 Spot tankage is available only rarely. But at the 14 same time we're starting to see more trader 15 activity, more traders holding tanks. In that 16 area we've got -- during that time frame we've got 17 about 500,000 barrels in the Bay Area held by

19And these are gasoline traders,20specifically out there looking for cargos to bring21in that meet California's spec. From the period22about April '01 onward, tank space becomes very23tight. There's virtually no spot tank space24available. Any spot cargos on the way have to25rely on deal making if the person who owns the

traders.

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1 cargo doesn't have a tank to come into.

2 But also during that time frame, from about April of '01 up here through April of '02, 3 tank space held by traders is about 700,000 4 5 barrels and it increases to about 900,000 barrels 6 starting in April of '02 and running through the 7 present time. The interesting thing about this information, there's really two things to take 8 9 away.

10 We do have price spikes here at a time 11 when tank space is available. And we do have 12 relative lessening of price spikes at a time when 13 tanks are getting tighter. So that's one 14 important point. And the other important point 15 obviously is the large size and the increase in 16 tankage being held by traders. And that will 17 continue to increase, and we'll get to that in a 18 little bit.

We think that this information indicates that there has been no severe impediment to importation of local refiner volumes. We're not saying that it's been easy to get import volumes into the market, but we don't think there have been any severe impediments to that importation. And these volumes that we've seen are gasoline,

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1 2 nearbobs, alkaline, isoloctayne, car diesel, and we've seen large blended volumes.

On my fifth slide, this covers a topic 3 that Dr. Williams covered in a lot more detail 4 5 this morning, and something that I'm calling the б after effect. By examining the cost to the 7 consumer of the California price spikes was adequate consideration given to the beneficial 8 9 effect after the spike when supply increases 10 resulted in lower than average prices? 11 Dr. Williams went into a lot of detail 12 on this. But here's a couple of graphs that 13 illustrate this from this recent price spike. 14 This upper graph is API inventories of gasoline 15 and pad five. And the period is from February 16 9th, through April 13th. And the blue line here 17 is 2003, and I've also got 2002 and 2001 on there for comparison. 18

19 So here we are coming down in inventory 20 levels through about early to mid March. And this 21 is where the graph stopped yesterday. And you can 22 see what happened here over the next three to four 23 weeks we had increase in inventories and then a 24 big, big increase in inventories after that three 25 and a half to four week period that we've been

1

talking about for getting cargos in here.

This lower graph shows a California, San Francisco, the blue line of San Francisco carb, unleaded and regular gasoline prices. And the red line is US Gulf Coast. Here we are at the \$1.50 spike that they were highlighting yesterday. And, again, that's where it stopped yesterday.

If you look further out you can see 8 9 where that price tapers off way down here to a 10 differential that's well below the mean, the mean 11 differential going back about three years between 12 these two prices as 12 cents, and it came all the 13 way down to a nickel here somewhere around April 14 10th. So that's the beneficial after effect, an 15 actual example of the beneficial after effect.

16 This characteristic happens in most of 17 the price spikes that I've looked at over the last two or three years. And I think if you take this 18 into consideration it lowers significantly the 19 20 cost that we've been hearing to the consumer that this spike in prices generates. The other 21 interesting thing to look at on these two, this 22 23 lower graph runs from about February 10th, to April 14th also. 24

25 So it's about the time frame. So these

behaviors kind of line up. And i t's interesting to note that inventories, that the price dropped rapidly before the inventories really dealt very much. Inventories were still hovering around here in the average category as prices came down rapidly.

7 A lot of that is due of course to the 8 refinery coming back on line and being able to 9 produce more, and getting it out into the market. 10 But I think that a lot of that is also caused by 11 the expectation that these cargos are coming in. 12 So people are expecting these cargos to come and 13 bidding the price down.

14 I guess another interesting thing to 15 note about is that if this characteristic happens 16 with a lot of the price spikes, as I believe it 17 does, this three to four week delay in getting the cargo in had an earlier effect. The price drops 18 earlier. So the downside to the consumer doesn't 19 last for that three to four weeks that it takes to 20 get the cargos in. 21

And the only other thing I want to say about this graph is I'm one of the 36.4 million people that will agree with Dr. Williams, so you've got one ali, that this price spike is a

good thing. And the reason that's a good thing is
 that it motivates this tank construction. The
 private sector is already building the Strategic
 Fuel Reserve.

5 This picture was taken about two weeks 6 in our Martinez terminal. My next slide number 7 eight has a couple more pictures of this 8 construction. This was taken -- the top photo up 9 here was taken about three weeks ago. This one 10 was taken three days ago. You can see the tanks 11 are a little higher than they are in this photo.

12 These tanks are built specifically for 13 importation of gasoline and components. They're 14 designed to be drain dry so that they can change 15 product service very rapidly. They have an 16 innovative design. They have an internal floating 17 roof with an innovative design where it's sort of a belt and suspenders method of vapor recovery so 18 that the roofs can be landed regularly, and the 19 20 product level drop down below the floating room.

There will be vapor recovery in the space below the floating roof so that we can recover the vapors as we fill back up to the floating roof level and not be emitting. And that makes the air quality management district a lot

happier. So in the San Francisco Bay Area, on my
 next slide, number nine, traders have converted
 about 255,000 barrels of storage from fuel oil
 service to gasoline service over the last 14
 months.

б And when the Martinez project is 7 complete somewhere in mid summer, traders will have about 1.2 million barrels of storage in the 8 9 San Francisco area. And we're also working on 10 another project that I was giving about a 60 11 percent probability when I put this slide 12 together. But after a call I took this morning 13 I'm giving it about a 70 percent probability that 14 we're going to be building another 200,000 barrels 15 at Martinez, perhaps by mid 2004.

16 Okay. Slide ten is Econ 101. There's 17 a little bit of irony here. Yesterday we had the economist giving us storage tank 101, and today 18 you've got the tank guy giving you Econ 101. This 19 is pretty simple stuff. The price spike motivates 20 tank construction, pays for tank construction. 21 And it motivates cargos coming in, which increases 22 23 the inventory levels, which lowers the price. Very simple stuff, but very important. 24 The message is the free market is at work. It's 25

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1 working now. Does it make sense to have the 2 government come in and manage this process? We 3 don't think so. We think government intervention in the form of a Strategic Fuel Reserve would 4 5 discourage increasing a supply of storage from the б private sector. 7 We also think it would discourage the 8 current strong traders who overcome the 9 importation hurdles from continuing their 10 innovation. This is a pretty interesting one. 11 First of all, if you're a trader and you're out 12 there working the globe trying to find California 13 products to bring in, if you had a Strategic Fuel 14 Reserve tank that was full you probably wouldn't 15 be motivated to float a cargo towards California

16 at that time.

17 So we think there's going to be a 18 degradation of innovation in trying to find products to come into California. And that's 19 20 counter to what we want right now. The other 21 interesting thing is, thing about the poor trader who wins the bid on the Strategic Fuel Reserve. 22 23 If a refiner wins the bid, he can make more gasoline and fill the reserve back up again in a 24 six-week time frame. 25

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1	If a trader wins the bid, he gets it out
2	into the market. Now he's got to go out, the
3	whole world knows that within six weeks he's got
4	to cover that. We've been talking about thinly
5	traded the market is. So all the parties that
б	he's dealing with are probably going to know that
7	he's got a time frame of six weeks to get that
8	resupplied.
9	Think of what his price is going to be

10 like and how hard he's -- the difficulty he's 11 going to have negotiating a good price to bring in 12 that resupply. And that's liable to discourage 13 trading activity. So even though the Strategic 14 Fuel Reserve may eliminate some of the price 15 spikes, it would also eliminate the beneficial 16 after effect of the oversupply.

17 And I think if you take that into 18 consideration that the cost of the Strategic Fuel Reserve far outweigh the benefits. In the end, we 19 20 believe you should let the private sector handle 21 storage requirements so that the supply of storage 22 tanks will grow along with the demand change 23 driven by the demographic and regulatory environment. Thank you very much. 24 25 PRESIDING MEMBER BOYD: Thank you. A

1	very encouraging presentation, but let me ask you,
2	how are you or, if not you, your peers doing in
3	the Southern California region with regard to
4	responding to the price spike through the
5	provision of additional storage?
б	MR. HUFF: Yeah, I'm a little less
7	familiar. And maybe some of the folks from WSPA
8	can speak to that better than I can. But we did
9	see some information yesterday that showed
10	projects underway down there, both at two large
11	terminals down there that have had old storage
12	tanks that have been out of service that are being
13	refurbished. And some new projects that are
14	starting to come on line down there too.
15	They seem to have a little bit more
16	severe permitting issues down there. So their
17	time frames are a little bit stretched out. But
18	they do seem to be responding.
19	PRESIDING MEMBER BOYD: Okay. Thank
20	you. Does anybody else have questions? Does
21	anybody out there want to ask a question? Okay.
22	MR. HAGGQUIST: Thank you very much,
23	Tony. A very good presentation. And I just
24	thought I'd just inject a little of history in
25	here, how we ended up concluding. When we did the

study that there was a real need for storage and
 other ways into the California market. And it
 came from over stake holder meetings, sometimes
 two or three times with the same companies.

5 And these are all on record in CDCs 6 hands. And time and time again we were told that 7 you couldn't get into California. Now, this was 8 16 months ago and things are starting to improve. 9 And we've also discovered that there was nobody 10 doing this, this being nobody looking at the total 11 supply and demand situation in the state before.

12 And the Energy Commission did Commission 13 to study that allowed us to identify the problem. 14 And then going back again, we didn't see any 15 significant activity in Southern California until 16 just recently, just recently, and that tended to 17 be where the problem was. Well, we had seen another island economies, and we worked another 18 island economy, Hawaii, Japan, where the refining 19 20 system is what controlled the access to the downstream market 100 percent. 21

In those markets, as long as that prevailed, and it prevailed for years in these other island economies, as long as that prevailed, those islands we significantly higher than

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1 everywhere else in global arbitrage where the 2 product come to in referencing Singapore. So they 3 paid a high price for that insularity, for the lack of access from the outside. Okay. 4 5 So if the market is healing itself 6 that's a good thing. I think that we ought to 7 point out that nothing in the proposal can be put on the table from our work has anything to do with 8 stabilizing the price, as we've heard in the 9 10 previous presentation. No, just connecting the price to the rest of the world. 11 12 Mr. Hermes did a good illustration in 13 global volatility in California. If we involve in 14 global volatility, okay, we can live with that. 15 But we've got to connect to it before we can live 16 with it. And until we can connect to it like all 17 the other island economies controlled by 18 manufacturers we'll trade and arrange much higher than the other markets that could otherwise get 19 20 into it. 21 That's just the overall comment. Otherwise a very good presentation. Thank you 22 23 very much. MR. HOFF: Thank you. Just one thing to 24 one of your comments, that the anecdotal evidence 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1	about the difficulty in getting cargos in doesn't
2	seem to jive quite accurately with actuality. And
3	I think what happens in the interview process is
4	all the people that can't bring cargos in are
5	speaking very loudly.
б	And the folks that are getting cargos in
7	are sitting there quietly. And so in the
8	interview process, for the anecdotal prospective,
9	you're going to weighted towards the side of folks
10	that can't get cargos in.
11	MR. HAGGQUIST: That's a legitimate
12	point to some degree. One more point and they
13	step up here. I first got involved in this by
14	being employed by, or brought in by, the
15	independent sector of downstream markets in
16	California, the biggest independent retailers of
17	(inaudible) people, with the task of being cargos
18	here. That was during the last price spike two
19	years ago.
20	And what I discovered in that process,
21	and I've been away from the market a bit, was it
22	couldn't it be done. It couldn't be done. You
23	could have a cargo that's 50 cents a gallon lower
24	than this price, and you just physically couldn't
25	get it in here, unless you went through the

1 gatekeepers so to speak. That's changing. I'm 2 not saying it's not changing. But that was the 3 problem. MR. HERMES: And over time we've seen 4 5 it's changing some, but we've seen that on a б temporary basis. But long-term, I don't think 7 that's the case. 8 MR. HAGGQUIST: Okay. Thank you very 9 much, Tony. 10 MR. HOFF: Okay. 11 MR. LANZA: Robert Lanza, with ICF 12 consulting. I had a question concerning the 13 capacity additions that you're describing. Are 14 they all taking place at the same physical 15 facility in under the same of departments, or are 16 you describing multiple facilities in multiple 17 locations? 18 MR. HOFF: Now, this project at the Bay Area is all at the Martinez facility, including 19 the one I was giving a 70 percent chance to. It's 20 21 all at the same facility. Our other two facilities in the Bay Area don't have enough land 22 23 space to expand. The Martinez terminal has a lot of land 24 space, and we're lucky that that terminal is 25

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1 located with good water access, and also good 2 pipeline access. It has better pipeline access 3 than a couple of our other terminals. So it's a good spot to expand. 4 5 MR. LANZA: Are your other terminals б surrounded by the types of facilities that would 7 prevent you from acquiring additional land to 8 expand? 9 MR. HOFF: One of them, the one in 10 Crockett, we probably would not be able to acquire additional land. The one in Richmond is an 11 investor harbor area, and that one could 12 13 conceivably be expanded. 14 MR. LANZA: Thank you. 15 MR. HACKETT: Good morning. David 16 Hackett with Stillwater Associates. Tony, 17 congratulations. You know, when we started this process 18 months ago we came up to Martinez and 18 sat down with you and your management. And you 19 20 couldn't see this expansion on the table. And so 21 at that time, you gave us some encourage about that. As I recall what you said was, you know, 22 23 you send us a tender and we'd be happy to bid on it. 24 25 So now here we are a year and a half

1 later and what ST has been able to do is figure 2 out how to do this commercialing. I think that's 3 terrific. Can you do me a favor and pop up the 4 graph with the price spike on it. I just want to 5 say --

б

MR. HOFF: This one?

7 MR. HACKETT: Yes, sir, that one. I think that, and I'm changing focus, you brought up 8 9 the graph and I want to just make a comment about 10 this price spike thing. I think the issue is not so much is volatility a good thing or a bad thing. 11 12 I think I agree that it's a good thing because it 13 sends the proper singles to the market. The issue 14 gets to be the magnitude of these things. Okay.

15 And so why did these prices go from --16 and you've properly have it spread here with the 17 Gulf Coast. It takes out the impact crew. Why did this thing go from, at least in this thing, 18 you know, from a buck 11 to a buck 50, you know, 19 20 up 40 cents. And I've seen more like 50 cents in the rest. What's contributed to that sort of 21 22 extreme volatility?

23 Some of it was refineries had some start 24 up problems and operating problems. There was 25 reportedly some difficulty in creating the new

blend the gassing of the carbo. And so that contributed to some of it as well. But we've got evidence, and we can discuss that, that some of this was that there ships coming in and couldn't unload. This is an LA problem. And as you know, we've said that, you know, most of this is in LA anyway.

Cruise ships couldn't unload because of 8 9 congestion. So that, in our opinion, contributed 10 to that additional volatility. Well, I don't know 11 if that's going to build any tanks or not, but it 12 certainly winds up in the retail price. And so 13 that's where the consumers get to be pretty upset 14 and where your boss is asking you guys for 15 answers. And so it's the extreme volatility that 16 gets to be the issue.

17 And some of that question is there. And the other piece is on the inventory, prices were 18 19 not 50 cents a gallon versus the Gulf Coast. But 20 inventories got to on Tony's graph here a bit more than 28 million for pad five. That's kind of the 21 low side of average for inventories for pad five. 22 23 The industry did what everybody expected them to do, went into the turnaround period with a lot of 24 (inaudible), 33 million barrels or 33 and a half, 25

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1 something like that.

2	The normal high, certainly in
3	California, we saw the normal of 14 and a half,
4	the bottom of 28. And we got a 50 cent spike.
5	There's some intrinsic problems going on with
6	that. And it all comes back to (inaudible), you
7	know. I'm trying to figure out how this stuff
8	flows.

9 So there are hardware constraints built 10 in here, as well as, you know, part of the reason it didn't go below 28 is I think that a lot of 11 12 folks had purchased components, that we talked 13 about, and then discovered couldn't make it into 14 carbo. They didn't have the right mix in order to 15 shuffle all that cocktail together in order to 16 make that work. So I'm sort of off the subject, 17 but thanks for putting up with that. Again, 18 congratulations.

MR. HOFF: Thank you. It's interesting that you talk about magnitude, because if you looked at the differential without even taking into account the after effect, and I'm calling it the beneficial, the five cent a gallon when you come out of the price spike, if you take the numbers that you guys used yesterday, 150 million

to 300 million cost to the California driver for
 all of these spikes, divide that by 25 million
 automobiles, and it's between \$6 and \$12 per
 automobile per year.

5 So that gives you some magnitude. What б that's paying for is the tank construction is an 7 innovation in finding commodities and bringing them in. And that's a fairly efficient way to do 8 9 it. Now, if you start figuring in this after 10 effect, that \$6 to \$12 could fall significantly. 11 And that brings the question, is anything 12 required? 13 PRESIDING MEMBER BOYD: Thank you. 14 Thank you very much. Dr. Verleger. 15 DR. VERLEGER: Thank you, Commissioner 16 Boyd. It's a pleasure to be here. It was a true 17 pleasure to listen to Jeff Williams this morning. 18 When he got done I told somebody I can go home now. Jeff and I go way back. And, well, if you 19 read the paper I originally submitted you found 20 21 his frequent citations of his work and his work on commodity markets are really governed what I've 22 23 done.

24Like Jeff, I love volatility. I think25volatility is important. It provides investment

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1	incentives for the economy, and it's essential to
2	make the economy work. Let me start by saying
3	that what I'm going to present is my work. I am
4	presently in my own little form and just
5	completing at the BP Senior Council in Foreign
6	Relations. The Western States Petroleum
7	Association funded the paper I wrote.
8	But the findings and conclusion are
9	mind, and do not necessarily reflect the views of
10	the Council of Foreign Relations or those of the
11	Western State Petroleum Association. A quick
12	personal background, I'm going to consult, and I'm
13	an economist, and I plead guilty to all those
14	things. I work both with energy consumers like
15	airlines and railroads trying to help them
16	minimize energy costs and (inaudible) and
17	producers.
18	I'm also a member of the National
19	Petroleum Council, which is a body that's
20	appointed by the secretary of energy. It was
21	created by President Truman following World War II
22	to mobilize the people of expertise in the
23	business. Most of the members of CEOs of company,
24	they have a few cooks like me. I was on the board
25	of directors of Vallejo, and that's going to come

1	back because I think one of the questions we have
2	is if this policy goes through, and if one does
3	change the behavior of prices, what happens to the
4	behavior of investment?

5 And I think we lose in investment. I'm б also the author or numerous studies on the process of which oil prices are discovered. Here's what 7 I'm going to talk about, one, this is not a new 8 9 idea. I think as you've head from Jeff many 10 times, it's not a great -- it's newly plata territory. I'm afraid it's like the increase, not 11 12 decrease volatility, but that's speculation. 13 It will not make the market more 14 efficient. It may raise costs to consumers over 15 the long-term. I'm going to note, because we 16 spent a lot of time at this last point, the 17 gasoline futures are not a very successful futures market. Futures market is gasoline, heating oil, 18 and crude. Heating oil and crude are very 19 successful in terms of futures activity relative 20 21 to consumption, gasoline is not. 22 Then I'm going to -- two points I didn't 23 put on here, but you'll find slides on, one I want to address the (inaudible), and that is 24

25 everybody -- if the benefits are there, as

Dr. Finizza suggests they are, then what are the
 implications? And I think they use some serious
 costs in terms of investment. And if they're not,
 what's the alternative?

5 Lastly, I think you do need to go back б to the Governor and to the state and say we need to do something. And I'm going to suggest a few 7 things, one has to do with affirmity. You've 8 9 heard before, so I'll say that quickly. One has 10 to do with crude oil reserves. And let me lay that out in the beginning. Strategic Reserves are 11 12 in Louisiana and Texas.

13 They were created in the '70s, and they 14 now amount to 600 million barrels. When they were 15 created, those of us of the Ford Administration 16 and the Carter Administration, looked at it and 17 said California and the west coast doesn't need a reserve because you're exporting to the rest of 18 the country. Today, the west coast imports from 19 abroad, one barrel out of three barrels refined, 20 we have no reserve. 21

22 So the western part of the United States 23 is literally as vulnerable now as the United 24 States was in 1973. That's a serious problem. 25 And one policy that I think you should pursue is

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1 getting the federal government to move some of 2 those reserves, particularly adding reserves right not to the west coast instead of the gulf coast. 3 And I think that's an important policy. 4

5 But let me start with the Strategic Fuel б Reserve, or gasoline factor, it's similar to the 7 reserve have been proposed over the years. The common name is a buffer stock. The original work 8 9 was proposed by John Maynard Keynes in a memo to 10 the British Treasury and a pay per prior to World 11 War II to try to even the fluctuations of 12 commodity prices, particularly for exporting 13 countries.

14 Keynes believes government would draw 15 stocks during periods when markets were stressed, 16 build them when stock prices were low. 17 Unfortunately, our experience with buffer stocks have not been positive. We've tried it coffee. 18 We've tried it in tin. We've tried it in several 19 20 other commodities. And as they go to the Newberry note in their finding book, commodity market 21 stabilization, they tended to price agriculture 22 23 prices usually. And where we attempted to dampen price, 24 the price levels have been raised. One of the

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1	more recent episodes I think was with the rubber,
2	International Rubber Organization. The producers
3	like high prices, and others like lower prices.
4	Buffer stocks also have an effect. Jeff pointed
5	it out earlier to substitute private stocks,
6	public stocks or private stocks.
7	And so the analysis of the stabilization
8	programs has led theorists to conclude that the
9	benefits are over estimated while the cost of
10	these programs are under estimated. And this is a
11	line that you can find many times. I borrow it
12	from Joe Stiglitz. Creation of buffer stock also
13	alters long-term market dynamics. Supplies of
14	agriculture products protected by floor prices
15	have increased in the passage of production
16	limitations.
17	We can look through the long history in
18	agriculture here. Productive capacity for good
19	subject to price ceilings generally declines.
20	That's why we don't like price controls. And the
21	mismanagement of buffer stocks often contributes

22 to even greater price volatility. Most buffer 23 stock managers have even sold too early or too 24 late during worst jobs than the market would have 25 done.

1 And they have often failed to account --2 that they accounted their actions on private 3 inventories. Now, consumers have paid for this mismanagement. And Petroleum Reserves have 4 5 precisely this effect. Strategic Petroleum Reserves, crude oil reserves have replace private 6 reserves in the OECD countries. Over the last 20 7 years stocks have gone up by roughly 20 percent, 8 9 but private stocks have declined by 20 percent. 10 Here's a graph. It shows total stocks 11 in OECD regions. The source is the International 12 Energy Agency. The black area is public. The 13 grey area is white. The grey area is private. 14 Now, Jeff Williams and I -- Jeff will love this 15 graph because in 1980 we had a program when I was 16 visiting a fellow at Yale, what replaces the 17 Emergency Petroleum Allocation Act, all those regulations that were mentioned earlier? 18 And Brian Wright and Jeff wrote a paper, 19 20 which is published in the Bell Journal, looking at what the effect of the Strategic Reserves would 21 be. I think that paper suggested that there would 22 23 be roughly a two thirds of a barrel replaced. Private inventories would go down by two thirds of 24 a barrel for every barrel that went into public 25

1 stocks.

2	And that forecast is amazingly accurate.
3	That is despite the fact consumption has gone up,
4	the stocks have gone down. Now, as I said, this
5	leads to an issue of consumer price volatility.
б	And one area where one might argue for buffer
7	stocks is if you can show there's serious problems
8	in terms of the competitive environment.
9	And you can show OPEC is the elephant in
10	this room that nobody has talked about except
11	Jeff. All the studies show that if we had a
12	competitive crude oil market the oil price would
13	be about \$20 a barrel, \$18, \$17. That's kind of
14	where it goes. It might be a little more
15	volatile, but that's the price you'd be at.
16	Economic studies by Green and Leaby and
17	Professor Hamilton down in San Diego also say that
18	there's substantial macro losses because of
19	asymmetries. That is we lose more when crude
20	prices go up and they go down. So according to
21	Green and Leaby we transfer roughly one year's GDP
22	unnecessarily to oil producers every 20 years
23	because of the monopoly power of OPEC.
24	And so you can come back and say, well,
25	due to OPEC you might want to do something. And
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1 if you particularly if you have a problem in crude 2 markets, and you built this buffer stock, and you 3 mismanage it, you can see much higher prices. And we saw such mismanagement this last December and 4 5 January. The Venezuela workers went on strike. б Crude exports/imports in the United States 7 dropped. Crude inventories went down. As the models of inventories predicted, 8 9 buyers were paying higher and higher premiums for 10 prompt supplies of crude oil and the oil wasn't 11 released. And so what happened is the consumers 12 got stuck with a higher price, mismanagement. 13 Well, you come back to the question on private 14 stocks. Private companies see these. The 15 National Petroleum Council has done studies on 16 minimum operating levels for the companies for at 17 least three times. I have participated in two of those 18 19 studies. Each time we determine the minimum 20 operating uses are declining. The you see type

21 money come along, and companies achieve even lower 22 levels of inventories. And there seems to be some 23 relationship with the speed of adjustment and 24 getting stocks down. And, you know, the financial 25 situation, as well as the possible return on those

1 stocks.

2	One company publicly said last year that
3	they have cut their stocks from 65 million barrels
4	to 60 million barrels to 54 million barrels
5	between the middle of last year and the end of
6	last year, just to try and keep their credit
7	rating and because they're worried so much about
8	the money. That is worldwide. And you can see it
9	on data on usable commercial days of supply.
10	This is a chart I use regularly. The
11	data collected by Energy Intelligence Group, and
12	what it shows right now we have roughly three days
13	of usable commercial supplies of crude and product
14	in the OECD. And a lot of this has to do with
15	economics, the potential returns from holding
16	stocks and the like. And another statement made
17	by a company was why should we hold stocks right
18	now when we expect crude oil prices to go down?
19	But I think my conclusion is that a
20	Strategic Fuel Reserve would be identical to a
21	buffer stock. Public stocks are probably replace,
22	private stock, substitution. We heard And I
23	was glad production was coming today. Supply of
24	gasoline from California refineries would be to
25	reduce the extent of the buffer stock moderates

margins.

1

2 We can't get away from the fact that 3 production and output depends on profitable margins. And if this stock is successful in 4 5 reducing margins, you'd expect lower output. 6 Refiners are also less likely to expand refinery 7 capacity. The (inaudible) by Bob Hermes will slow. The California will become more dependent 8 9 on imports of gasoline whether from the Gulf 10 Coast, from Canada, the Caribbean or wherever. Yeah, I will tell you I've heard company 11 12 after company, executives say it, one was said 13 yesterday that they look at projected returns in 14 making the decisions on investments. And the 15 refinery in California right now they may not 16 continue making an investment if their fee would 17 be passed. Well, I listened yesterday to people 18 talking about this an energy bank. And finally I just had to say this, that 19 20 calling the gasoline reserve a gasoline bank does 21 not change the program's nature. And a borrow from Charles Schwab changing the name may just put 22 23 lipstick on the page. The SFR will not make California gasoline markets more efficient. 24 Deficient complete markets are the key to reducing 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

volatility.

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2 What we need is cash and forward markets, and we need the two markets to transfer 3 the commodity from the present to the future. And 4 5 the concept of storage is transferring from 6 present to the future. I didn't understand this 7 until I read Jeff's book more than once on the economic function of futures markets. Now, 8 9 futures markets to promote them into our building 10 can't be mandated. You need sellers and buyers. And 11 12 efficient markets, if you get them, will promote 13 storage when they are fully developed. I don't 14 think the SFR will make the market more efficient. 15 It's not going to create the market. So I raise 16 the question is this a field of dreams? Well, if 17 you use the field of dreams analogy what you think 18 of is a baseball team. And what you need is 19 longs. 20 You need two teams to play baseball. 21 You needs shorts and longs in a commodity market. Refiners are natural shorts. Jobbers are natural 22

23 shorts. Jobbers don't go out and buy gasoline
24 months ahead of time. They can't afford it. The
25 banks won't lend them the money. They don't take

the risk. Unfortunately, there's not many natural
 longs in petroleum markets.

3	This market is one where there is.
4	Airline of parcel deliverers have become large
5	hedgers. In fact, the reason we have such a
б	robust jet market in Southern California is the
7	airlines did not like dealing with the refiners.
8	The airlines hired oil company personnel. They
9	built their own oil companies, and they
10	essentially pride open the hydrant system at all
11	the world's major airports.
12	They buy the products. They ship it.
13	They buy terminals. They buy pipeline facilities,
14	and essentially they work the price down. Why?
15	Because they sell tickets forward. They made
16	sales to consumers and they want to hedge their
17	fuel cost. One airline that didn't hedge, the
18	United, is in desperate financial shape as
19	compared to Southwest, which is fully covered.
20	Home heating oil also hedged their
21	purchases. Your hearing oil dealer comes around
22	and you can sign a contract with him to buy oil.
23	You have some enforceability problems that dealers
24	are now dealing with because the prices go down
25	some. Consumers will try to get out of their

contract. But this is a robust market, and I'll
 tell you as one who has lived in New England, a
 lot of people do this.

Unfortunately, there's not many longs 4 5 for gasoline. The potential is limited by the б structure of the market. One, the points of 7 purchase are randomly distributed. You buy one day in North Sacramento, one day in South 8 9 Sacramento. If you're in Orange County you buy at 10 Newport Beach, you buy in Downtown LA. It's different stations. It's a convenience thing. 11 12 It's only \$30 or \$40, \$20, depending on 13 your car. Now, I could get around that, and for 14 years we've tried to. When something like the 15 AT&T card, one of these cards you buy at the 16 hotel, which gives you prepaid calling. Prepaid 17 gasoline, great idea. PMPA, Petroleum Marketing 18 Practices Act makes it almost impossible to do 19 that because a company cannot instruct a jobber or 20 somebody else to accept it, because it's 21 effectively setting the price the jobber has to 22 take.

You can get the jobber to agree to it,
but what you have is a situation, well, I sold you
a card with XYZ oil and it's good at ten percent

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1 of XYZ oil stations, but not at the other 90 2 percent. You have variation of state and local taxes, so it has to be good only in California. 3 Now, I'm not sure, I think there was a point that 4 5 was made earlier, I'm not sure it would really 6 cause the consumer to do much because energy is 7 not a big share of the consumer's budget. On the PCE data, personal consumption 8 9 expenditure data at the Department of Commerce 10 it's four percent. And that's electricity, 11 natural gas, heating and gasoline. So it's a 12 little hard to get it. An airline or something 13 like that at 16 or 17 percent, trucking companies 14 will do it. Now, Stillwater suggested the creation of putting together and SFR would lead to 15 16 the emerge of the futures market. 17 I just don't think so. I think they have conjured up a field of dreams. Inventories 18 do not create futures markets. Buyers and 19 20 sellers, desire of the seller to lock in long-term prices. Without the long there will be no market. 21 The best example of what happens if you don't long 22 23 market is electricity where you had all these electricity traders that were using one another 24

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and eventually somebody discovers like Wile Coyote

1 that's he's run over the error at fault.

2 And all the companies that got into electricity trading now, including Duke Power, are 3 gone. Inventories are not likely to increase 4 5 without these markets. But companies would 6 redouble their efforts to cut stocks. Now, 7 California, as I originally talked about this last year, can improve the market, a market deficiency 8 9 by creating longs.

10 Government are a natural long. You also 11 have a budgetary problem. So it would be great if 12 they could purchase large volumes of gasoline and 13 diesel, use a few suppliers as competitive bids by 14 putting out for supply for futures of fixed price, 15 create the forward demand, make the market more 16 complete. The trouble is, and then the wing 17 bidders would have to line up the supplies. 18 They could contract with refiners,

19 contract refiners or buy from traders who would 20 repeat step one and two where they could buy 21 crude. Over time volume would increase and 22 California could follow the experience of other 23 markets. Ben Franklin said there's nothing ugly 24 aside then a brilliant theory mugged by a gang of 25 brutal facts.

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1 And yesterday Jeff Williams mugged that 2 theory hard. If the market is not there and 3 consumers cannot be enticed into forward purchases, no economic incentive to build stocks. 4 5 You can't make it happen. Now, let me go back, 6 the only question I have is whether this other 7 school districts, and cities and counties, if you added them up, maybe you could find more, but I'm 8 9 dubious.

10 The other problem we face with Strategic 11 Fuel Reserve is gasoline is least accessible to 12 all the futures markets. It's a fraction of the 13 hearing oil, crude oil or natural gas despite the 14 high level of consumption. Gasoline consumption 15 is nine million barrels a day, heating oil 16 consumption nationwide is two million barrels a 17 day. Yet there's more open interest, more volume 18 in heating oil.

19Relative lack of success is due the20problems of hedging and the consumers21unwillingness to hedge, and the structural22problems such as PMPA. It's just not something23where there's a big natural forward market. Now,24I did this chart. This chart just shows open25interest in gasoline futures, which is commitments

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by consumers, or buy buyers, either the longs or
 the shorts, on the NYMEX as a percentage of total
 petroleum futures.

Since gasoline is important you'd expect 4 5 to see it something like 50 or 60 percent. It's б 15 percent. And people will tell you it's harder 7 to trade gasoline. Let me then move to a question of the free lunch. We have conjured up a program 8 9 with economic benefits. I pulled this off the 10 slide last night, and maybe I made a mistake of 320 or 650 million per year. 11 12 I couldn't find cost so I made a guess, 13 120 million dollars, purchase of 2.5 million 14 barrels of gasoline, 90 million annual storage 15 costs of 31 million or something like this. This 16 is just using the numbers I heard around here, 17 strictly conjecture. Now, I know Stillwater suggests maybe we can get money out of EPCA. I'm 18 19 not sure.

20 Now, just as you think about this, the 21 free lunch, following the mastercard economic 22 security and the implication is priceless. The 23 trouble is, as we teach in economics, there aren't 24 any free lunches. I'm not sure that there aren't 25 benefits. I'm not sure. Tony and I have known

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each other for 30 years. I'm not sure that Tony, if you use a nonlinear demand model, and the gasoline lucidities, Professor Houghtakker and I estimated 30 years of .017 to .15 are remarkably close to his.

б They were the first ones and they were a 7 bust. And they're also long linear, which means you have a long linear demand curve, which means 8 9 you do get benefits. I'm not sure there aren't 10 some benefits. But that means refiners will seek profit. Lower profits will lead to either reduced 11 12 investment or lower supplies, sales of refineries 13 to undercapitalized firms, or exit enclosures.

And, you know, let me pick on the second point for a second, for a minute. The Federal Trade Commission, under its merger's policy, is mandated the sale of refineries starting with BP AMACO and then Exxon Mobile and then the BP AMACO, Arco.

At the invitation of Tim Burroughs, who's chairman of the FTC, I prepared a paper a year and a half ago arguing that the FTC should use a different policy on refineries, which is a demand of merchant parties agreed to expand capacity by ten percent come hell or high water,

overcome all the other hurdles, because this is
 what we need.

3 And my concern is that this is a capital intensive business. And as we've seen in capital 4 5 intensive business like airlines and other б businesses, you go through many years of very low 7 profits. And if you don't have large capital basis, you have great difficulties funding 8 9 investments to make clean gasoline, funding 10 investments to expand. 11 And right now we're seeing that in much 12 of the United States where some smaller refiners 13 will probably be closed. As Bob Hermes and I have 14 talked many times in the past, the refining is not 15 a huge money making business. And if the 16 integrated companies have it, to a certain extent 17 they make some investments that their boards might 18 not want them to make. With the sales and the shift, I worry 19 that in the next ten years we're going to less 20 investment. We may even see one or two of the big 21 companies decide they just don't want to stay. So 22 23 I worry that if those benefits, if in fact it worked, and that's an if, then you'd see 24 California becoming more dependent on imports, and 25

Californians paying probably a higher price of
 gasoline.

But like I said, there are no free 3 lunches. Alternatively, the SFR will become a 4 5 boondoggle, which will cost the taxpayers money, have no effect on the price of gasoline, and line 6 7 the pockets of a few traders. And that's what I fear happens. California can't have it both ways. 8 9 A lesson of electricity deregulation, which was 10 designed by good economist, good lawyers, working 11 around a tough problem, should send a clear 12 warning to everybody to be careful. 13 So let me conclude comments that buffer 14 stocks, such as the SFR, have a terrible history. 15 They don't work. Even the buffer stock that 16 should, the Strategic Petroleum Reserve, hasn't 17 worked. Stocks do not cause inventories to increase because they don't monitor any price 18 volatility. However, they can depress supply. 19 20 That the history.

21 Markets can promote stock building if we 22 can create forward markets, forward purchases. 23 They contribute to more complete markets, higher 24 inventories and less price volatility. And they 25 do that by bidding up that forward price, and so

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reducing the backwardation. They do without
 government stockpiles. Well, I've been a
 government policy maker. And I know when I get an
 assignment I've got to go back.

5 You can't go back and just say it's a 6 bad idea, boss. You can do it a few times, but you've been in that role a long time and you just 7 can't do it. And I think there is, you know --8 9 we've talked about the permitting. I think one 10 element, and another element, that you haven't talked about is the Professor Boinstein proposal 11 12 to come up with some sort of mechanism to allow 13 the sale of gasoline more easily if there's a 14 blending problem.

15 And I'm just not sure how often there 16 are blending problems. But I think the big issue 17 is what happens if there's ever a real disruption 18 of crude oil supplies. We looked at this last January. What happens if Iraq had Kuwait? What 19 20 happens if Osama Bin Laden tomorrow we wake up and 21 he's take over Saudi Arabia and he cuts Saudi exports, or (inaudible) get blown up? 22 23 Well, California is real exposed and

your phones are going to ring off the hook. Andthe west is real exposed. All 620 million barrels

1 of the Strategic Petroleum Reserve are located in 2 the US Gulf Coast. And there's no way to get that 3 oil to the west coast, none. You would have to go 4 through the Panama Canal on a Jones Act crude 5 tanker, and there aren't any Jones Act crude 6 tankers.

7 So I think capable. So suddenly we're 8 sitting here with one third of our crude oil 9 coming from abroad, no strategic stock out here, 10 and the nation's strategic stock is on the east 11 coast. You know, what we would have to do is wind 12 up trading. I spent a good deal of time in Japan 13 working with METI and now it's METI,

Administrative Economics Industry and Trade. And
the Japanese National Oil Company, which manages
their Strategic Petroleum Reserve.

17 And maybe we can work in exchange with them for something because they have a large 18 19 reserve, but we have a problem. So I think that 20 my recommendation, if I were going to go back and say, look, all the, you know, the studies 21 Professor Williams in particular said, you know, 22 23 this is not a big issue. But one thing where we are exposed is if there really is a disruption we 24 25 don't have any crude.

1 And we ought to try to lobby the federal 2 government to locate some of the crude out to the west. And you can lean on people, like Secretary 3 Snow, who was in the Ford Administration, and Vice 4 5 President Cheney, who was Ford's assistant, and 6 others. We made the decision at the time, and I 7 was a little staff person there, but to put all of the SPR on the east coast because the west 8 9 surplus.

We were going to be exporting Alaska oil down to the Gulf Coast. The pipeline was built across the Gulf Coast. So in 1975 when the whole program was designed that wasn't a problem, and it's become a problem now. That's the big issue. That's the elephant in the room. Thank you.

PRESIDING MEMBER BOYD: Thank you. Any
questions, staff folks, anyone in the audience?
Commissioner.

19PRESIDING MEMBER GEESMAN: Yeah, my20recollection from the '70s was that part of the21snake oil that the Ford Administration sold us was22that we had Alkalis as well. And I think some23successor republic administration chose to24privatize that.

25 MR. VERLEGER: I worked at the both the

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Ford Administration and the Carter Administration.
And even the Carter Administration tried to sell
it, but it later got sold. But, you know, the
snake oil of Alkalis was never very good because
the one problem with oil in the ground, I'll
differ with Jeff, is that you can't get it out
very fast.

And Alkalis oil, you know, you tested it 8 9 and there weren't enough wells in there and 10 everything. It's California heavy crude. So in the first place, it doesn't flow very well. 11 12 Really, what you want is a mine, not a well to get 13 the oil out. And whereas the Strategic Reserve we 14 can produce our reserves out of the US, plus 15 Japan, plus Europe at ten million barrels a day 16 for 90 days.

17 So we can take a huge disruption. It's just not located in the right place. Alkalis was 18 kind of puny, and it was -- I don't think they 19 20 knew -- I certainly know much about it at the 21 time. In the Carter Administration we looked at it. We tried to sell it and somebody said that 22 23 was a bad idea. It never got anyplace. I think Jim Schlesinger didn't like it. 24

25 PRESIDING MEMBER GEESMAN: Where would

1 you store 150 million barrels in the western
2 states?

MR. VERLEGER: Since it's going to take 3 a long time to get 150 million barrels here I 4 5 would respectfully take a look at, you know --6 leave that to some authorities. I mean we've got 7 right now -- I mean right now the government is adding to the Strategic Petroleum Reserve. One of 8 9 the points by the way was that I meant to raise is 10 we did a lend program in 2000 to lend oil out of 11 the Strategic Petroleum Reserve. 12 30 million barrels were released when 13 OPEC pushed prices to \$35 a barrel. And the 14 parties agreed to -- the auction was done where 15 parties agreed to return more oil than they took 16 out. They were given a year to do that. And then 17 the return dates have been progressively put back. Until a year and a half and two years this market 18 stayed tight confirming the point that Professor 19 20 Williams made that, you know, if you've got an 21 empty tank you don't want to refill it. You want to keep the market. 22

23 We started refilling it heavily last 24 springtime, and Senator Levin's committee -- or 25 the Senate Operations Committee, the minority

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1	side, has issued a terribly detailed and excellent
2	report on the mistakes that have been made.
3	Because we started refilling it when crude prices
4	were low following 911. And then when prices went
5	up we kept filling it.
6	But there is a program to fill it. And
7	what I do is try to say, okay, we identified the
8	facilities which can hold crude right now for a
9	couple million barrels. Move them there, and then
10	go a step further.
11	MR. KAVALEC: I'm Chris Kavalec from
12	CEC. Thank you, Dr. Verleger for an outstanding
13	presentation. I had a point I think just of
14	clarification. Is your position that if we have
15	an SFR and it works, and does stabilize prices,
16	that will then reduce production and reduce
17	refinery creek in the future?
18	MR. VERLEGER: I think it would really
19	successful stabilize prices and probably lead to a
20	refinery project. And so we wind up importing
21	more, and you'd be stabilizing at a higher price
22	because you'd be importing more.
23	MR. KAVALEC: Okay. So my question is
24	then why would we want to do anything to stabilize
25	prices, including for example promoting futures
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markets or forward markets?

2 MR. VERLEGER: I don't think government should be promoting stabilization. I think that 3 futures market are created by willing buyers and 4 5 willing sellers. And the government function in 6 creating futures markets is strictly to make sure that the markets are provide a regulated fair 7 mechanism so they don't get manipulated. And if 8 9 willing buyers and willing sellers want to engage 10 in trade, they should be able to.

11 Now, I will say that governments, the 12 Indian Government, has frustrated futures markets 13 because sometimes a lot will happen and sometimes 14 they don't. And other countries have prohibited 15 agriculture futures market. But economic research 16 shows that that's a good way to achieve market 17 stabilization.

18 Let me put it, for parties wanting to stabilize their prices to achieve stabilization. 19 20 I think if you want to, you should be able to 21 stabilize your gasoline pricing. If I don't want to, I should be able not to. 22 23 MR. KAVALEC: Okay. Thank you. MR. GIESKES: Thomas Gieskes, with 24 Stillwater. That's very good. I have here a 25

1 recent article in the Petroleum Economic Monthly. 2 MR. VERLEGER: Sir, can I ask you how 3 you got it? MR. GIESKES: From the Petroleum 4 5 Economic Monthly. б MR. VERLEGER: No, how you obtained it. 7 MR. GIESKES: By reading the economic --MR. VERLEGER: No, how did you get it? 8 9 I mean the reason I'm asking you this question is 10 we have a copyright on it. I have a copyright 11 attorneys. It's a very expensive publication. 12 And you in fact have in your hand stolen property. 13 And I will not entertain a question on it. 14 MR. GIESKES: It would have been an 15 interesting question. 16 MR. VERLEGER: My lawyers have 17 instructed me that protecting copyrights, after all this is how I make my income, and I charge a 18 significant price and, you know, what you have 19 20 done -- what you are right now is in the same 21 situation as the person who goes to the gasoline station, fills his gasoline tank and then drives 22 23 off without paying. You're standing there right now as that person who's driven off in a gasoline 24 25 station.

1 MR. GIESKES: I'm not sure if that's the 2 case. MR. VERLEGER: US copyright law says it 3 is. And you're being televised so I could take 4 5 you to court on this. MR. GIESKES: Well, it's unfortunate it б 7 doesn't have the original article in here then. And, indeed, the (indiscernible) copy. 8 9 MR. VERLEGER: I have a photocopy of the 10 copyrighted materials illegal. My lawyers tell me 11 to protect my copyright. MR. GIESKES: Okay. And in that case --12 MR. VERLEGER: I will not entertain the 13 14 question. I'm sorry. 15 MR. GIESKES: Maybe you would like to 16 comment on it, nevertheless, because it's a very 17 interesting point that you've raised there. 18 MR. VERLEGER: I said my attorneys instruct me to protect my copyright, not to do 19 20 things like that. 21 MR. GIESKES: Okay. Very good. Thank 22 you. 23 MR. FINIZZA: Tony Finizza. And, yes, I've been your friend for 33 years. And so I'm 24 only going to ask one point per decade. 25

1

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MR. VERLEGER: You also just turned 60, so happy birthday.

3 MR. FINIZZA: Thank you. I'm also not the source of that document because you know you 4 5 kind of cut me off several years ago because I wasn't paying, which makes economic sense. I had б a couple of questions, one is -- well, actually 7 first is a point. Yes, I'm sure we can probably 8 9 refine the analysis and get the benefits perhaps a 10 little bit more to some people's liking, maybe smaller. But I don't think you're going to go to 11 12 zero quite frankly. 13 But I did calculate, but didn't publish, 14 but I just wanted to let you know I calculated the 15 loss about over 200 million dollar a years, which 16 if you think of a capital base of roughly 20 17 billion in California would be ten percent rate of a return investment that Hermes showed. It would 18 be about -- profits would be 200 million less a 19 20 So anyway, that's for information. year profit. 21 MR. VERLEGER: And let me comment. That's an excellent approach. The thing is that 22 23 refiners do a calculation, as you know from your experience at Arco, project by project. And you 24 have an array of projects. And so if one project 25

1 is -- if you've reduced the return on that 2 project, or the return on that market, that 3 project may drop down in terms of the priorities and lose out to other projects because there's 4 5 competition within a corporation. So the question б just isn't the average, the average returns are 7 important. MR. FINIZZA: No, I'm just trying --8 9 MR. VERLEGER: Yeah. 10 MR. FINIZZA: -- to help you quantify 11 what you said. 12 MR. VERLEGER: Right. Sure. 13 MR. FINIZZA: And I would say many of 14 the creep projects probably have high rates of 15 return because they're not large investments. But 16 I would agree with you, they probably would 17 expect, if I were to go out in this environment. 18 I think it's quite possible. On your point about the Strategic Petroleum Reserve in the past, I've 19 always wondered that correlation that you show 20 21 that as soon as the SPI came in, it's a slide, again, I don't know what number it is, it's three 22 23 maybe, it always seems correlated with the institution of the SPR. 24 25 And that's, you know, that's a good

1 correlation, but I'm wondering if there are other 2 things going on at the time. For example, we had 3 a lot of refinery closures, so the working capital of inventory may have been less. You have fuel 4 5 refineries. Second, would it also be likely that б when you enter the high price area to a lower 7 price area you might have had a runoff? And then finally, this is actually not 8 9 that pertinent to the gasoline, but when you see 10 your refining industry and you see this big 11 gorilla out there, the Strategic Petroleum 12 Reserve, as far as I can tell the only time it's 13 ever really been used in any large volume was when 14 he took oil out to put it in the heating oil 15 reserve. 16 There are at least two incidence where 17 there were attempts made as a bid of three million barrels at one point. 18 MR. VERLEGER: There was the 30 million 19 20 barrel withdrawal in September of 2000. 21 MR. FINIZZA: And wasn't that going to the heating oil reserve? 22 23 MR. VERLEGER: No. MR. FINIZZA: It was something else. 24 25 Okay.

1	MR. VERLEGER: That was a release. And
2	there was also a January 17th, 18th or 19th, 1991
3	announcement, which they said we would open it up
4	for unlimited amounts.
5	MR. FINIZZA: But there's no actual
6	shipment, was there?
7	MR. VERLEGER: No, but it caused prices
8	to drop overnight by, traders can tell you, \$10,
9	\$12 a barrel.
10	MR. FINIZZA: I'm wondering, my basic
11	question is, after using more like in rational
12	expectations, if you don't see this thing being
13	used that often, don't you kind of start ignoring
14	part of it? Is that a possibility?
15	MR. VERLEGER: That's an excellent
16	question. And I think part of the answer was that
17	you could see this year that if you took a company
18	in January that was considering buying incremental
19	crude, take a refiner that has below B minus
20	credit rating or something like that, wanted to
21	buy incremental crude, the banks would require it
22	to hedge.
23	So the firm would be buying its crude
24	oil at \$35 a barrel at the time, and if you
25	couldn't sell futures they probably couldn't

because it wasn't credit worthy enough. And so it would have to buy put, paying ten cents a gallon to hedge for a month or something like that. Now, those companies, you talk to them, they weren't buying crude. They were worried about cost. But they were also worried about buying crude because they though the SPR might be used.

I mean Valero said publicly to the 8 9 Washington Post that why should we go out and buy 10 crude right now because we know prices are going to fall dramatically. And so, you know, whether 11 12 it was thinking of OPEC or thinking about the SPR. 13 And I what they thought was there was an expectation of use of the SPR if prices got too 14 15 high.

16 MR. FINIZZA: My final question, this is 17 really I didn't expect to have to ask this one to 18 you, but do you think you could reinstate me on 19 your mailing list at a historical rate?

20 MR. VERLEGER: Let's have lunch. We're 21 not that far apart. We haven't talked to each 22 other for a year.

23 MR. FINIZZA: But seriously, if a month 24 from now you hear that an economist stood up at 25 the California Energy Commission and proposed that
1 a buffer stock be instituted in California, and 2 you learn later it was the Strategic Petroleum 3 Reserve, would you believe that -- what would be your thought on that? 4 5 MR. VERLEGER: The Strategic Petroleum 6 crude oil? 7 MR. FINIZZA: The one you just proposed, 8 the crude oil one, yeah. 9 MR. VERLEGER: I'd be stunned, but I 10 think I mean what I'm saying is the federal 11 government ought to locate part of the reserve out 12 here because we have no way of getting the federal 13 strategic oil out here. And the western economy 14 is now in precisely the same situation that our 15 economy was in 1973 when the oil market was 16 disrupted. 17 MR. FINIZZA: Would it dissuade possible shipments if there were a disruption? We know the 18 trigger mechanism for that, as I recall from your 19 20 writings, wasn't very swift. 21 MR. VERLEGER: You know, the --MR. FINIZZA: You need the president to 22 23 say something. MR. VERLEGER: You need to say the 24 president to say something. The question, yeah, 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1 why do we have right now Strategic Petroleum 2 Reserve? We can argue that it ought to be used --3 MR. FINIZZA: God if I know. MR. VERLEGER: -- to confront OPEC. 4 But 5 we're not using it to confront OPEC. б MR. FINIZZA: Yeah. I mean I agree. 7 You've said that for 30 years. MR. VERLEGER: The question really is if 8 9 you have a Strategic Petroleum Reserve, and 10 there's a serious blow off in the Middle East, which could happen. The situation in Saudi 11 12 Arabia, they're continuing to read the recent 13 Atlantic articles. And so oil flow out of the 14 Middle East would cut for some reason. It's a 15 problem. 16 MR. FINIZZA: Would part of your 17 recommendation be a different trigger mechanism 18 for this ? MR. VERLEGER: For the SPR? 19 20 MR. FINIZZA: Yeah. 21 MR. VERLEGER: The one I've recommended for a long time, which is to use the forward 22 23 price, that is let people borrow it at any time, but agree to return to more oil. That I think is 24 what International Economics has on their website. 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1 MR. FINIZZA: Thank you. 2 MR. HAGGQUIST: Yeah, Greg Haggquist 3 I think here the review of things that was again. interesting kind of trigger mechanism you just 4 5 described. That's kind of what we described for 6 this gasoline reserve. My concern is --7 MR. VERLEGER: I saw a similarity. MR. HAGGQUIST: Yes, similar. And, you 8 9 know, similarities is part of the problems, these 10 criticisms, you know, they say that all generalizations are false including this one. 11 So 12 my concern is response to the proposal you put on 13 the table, buffer stocks. The way if you put 14 everything in the same category it's kind of like 15 right racial profiling, you know. 16 You look like this, therefore, you must 17 this type of an entity. And I think it's not just 18 putting lipstick on the pig in trying to draw attention to what is in fact unique about this 19 proposal. To say that it's been tried many times. 20 21 I would say it's never been tried, this proposal, 22 because there's never been a place like 23 California.

24And there's never been a liquid25commodity like gasoline is so important to a

1 nation state such as California. And there's 2 never been a proposal in which it serves, not so 3 much as buffer stock, and landfill. Once it's there, there's a conduit for which, you know, you 4 5 can draw in supplies from the outside and know 6 what your cost is going to be when you put the 7 ship on the water. So I would just, you know MR. VERLEGER: I think Jeff Williams 8 9 laid it out very nicely and clearly this morning. 10 If it's going to -- if it's bought for whatever you're calling it, I feel like I'm watching a game 11 12 of three card Monty, one day it's the -- I'm 13 trying to find the P under the thing. I'm never 14 going to find it. 15 You know, in a dynamic analysis, and you 16 have to use dynamic analysis on something like 17 this, if the cargos are purchased to go into the 18 Strategic Reserve other cargos are not going to be purchased for California. There is going to be a 19 substitution of cargos. And I think Jeff's 20 21 presentation was crystal on this. You're just not 22 going to get more gasoline here. 23 What I'm trying to say is to get more gasoline here you need to get people to buy in the 24

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forward market. And what that forward buying does

1 is life the forward price, encourage inventory 2 building. And where Professor Williams comes out 3 is that he doesn't see much of that there. And I'm afraid he's right. 4

5 But, you know, I have pleaded with б Costco and I've pleaded with Walmart at times to offer deals at Walmarts where they essentially say 7 in the springtime you go in and you're selling 8 9 spring gardening furniture, buy your summer 10 gasoline now. You know, the Walmarts are going 11 into the gasoline business. They achieve 12 economies of scale and scope, which kind of is 13 like.

14 And just essentially forward buy it 15 because then they forward buy the crude oil and 16 they can do a deal for the consumer. They won't 17 try it. But you need that forward market to get more inventories. And you need more inventories 18 19 to get what you're seeking.

20 MR. HAGGQUIST: We certainly agree on 21 all that, Phil, definitely. You're absolutely right. 22

23 MR. VERLEGER: And you're not going to get it your way. 24 25

MR. HAGGQUIST: Well, you know, the

1 Costcos and the Walmarts, you know, they report 2 that they would in fact do what you're describing. 3 They're very interested in those forward fix prices if there could be a flow where they 4 5 identify, you know, their forward cost. So if the б cargos could come in, it doesn't even have to be a 7 cargo, it just has to be role, a more rational role. 8

9 That is to say that if the barrels are 10 borrowed today it doesn't have to be replaced with 11 a cargo. It can be replaced vocally six weeks 12 later.

13 MR. VERLEGER: The problem they have is 14 if you sit down with them and say, okay, if you're 15 going to go this way you really have to do what 16 United Airlines did. You really have to do what 17 American Airlines did, which is create an internal oil company. That is you have to have buyers. 18 You have to start scheduling of the pipelines. 19 20 You have to get terminal space. And you actually 21 have -- when you sit down and lay this thing out the logistics of the thing turn out to be more 22 23 than they have been willing to take right now. Walmart has a much better solution, much 24 more efficient solution, they invite Murphy Oil, 25

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1	or Tesoro in to open stations, or Sunoco, on their
2	properties, and they move a lot of gasoline and
3	lower prices. You know, it's the cost of running
4	it, you know. I've beat my head against that wall
5	with a couple people that way.

MR. HAGGQUIST: There's just one final б 7 thing and, you know, these areas I certainly agree with. The forward markets are important, and the 8 9 private sector can do it. What we've been bumping 10 into, as we said at the beginning of this whole project, it's a logistics, stupid. You couldn't 11 12 get in. There wasn't any way to get from where we 13 wanted to be, from where we are. So we think this 14 a way to create some liquidity.

15 So who is the natural long in this 16 gasoline? Once again, the natural long is the 17 State of California itself, external supply. Just 18 as New York Harbor is the natural long, South 19 American supply and European supply. But I think 20 this overall is good debates.

21 MR. VERLEGER: Well, no, let me say, New 22 York Harbor is the natural long, and the State of 23 California -- New York Harbor is an intermediary. 24 Somebody has to be on the other side or the market 25 fails like the electricity market fails.

1	MR. HAGGQUIST: Well, the Costcos, the
2	Walmarts, the independence are non-branded.
3	MR. VERLEGER: Well, no, let me tell you
4	who's the natural long in New York Harbor, it's
5	all the heating oil consumers. It's some of the
6	power generators that substitute heating oil for
7	natural gas. I mean there are a whole lot of end
8	users who actually take positions. It's not the
9	state. And the gasoline market there are Hertz,
10	there's Avis and there's some other commercial
11	uses of gasoline.
12	But if you look at it I think you look
13	at the CFDC data in terms of the long side. It's
14	not huge. This is why that market is much
15	smaller. And you say the State of California. We
16	have to you have to be more precise. Is this
17	person driving to work on the LA Freeway or Santa
18	Ana Freeway, or here in Sacramento, is he going to
19	buy forward? Is it the State Highway Patrol? Of
20	course Williams said it ain't there.

21 So I mean just saying, well, it's the 22 State of California (inaudible) you've got to find 23 your longs, and you haven't found them.

24 MR. HAGGQUIST: Well, the same principle 25 applies in New York State and New Jersey. Where

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1	are you going to find your longs if you're the
2	cargo seller from Rotterdam selling the cargo.
3	MR. VERLEGER: As you know, markets work
4	I have a couple of heating oil clients, small
5	guys who distribute a lot of heating oil up and
6	down the Hudson River. They do fixed price deals.
7	Brian was talking about being in Main. He was
8	dealing Dead River, sells heating oil to people.
9	Now, because they go, people write out a check
10	ahead of time, lock in their price.
11	And they do aggregation, you know, and
12	they aggregate this in. This is the agricultural
13	system. The farmer doesn't use (inaudible). It
14	can happen. You've got find your long.
15	MR. HAGGQUIST: Yes, I agree. I just
16	agree, and I think that part I agree with you. I
17	just wanted the dialogue to be brought to this
18	level rather than all buffer stocks are bad, and
19	some generic rejection without looking at the real
20	proposal. And I think you're looking at a copy.
21	MR. VERLEGER: If you get the long you
22	don't need your buffer stock, because as we just
23	heard the market, the private storage creates it.
24	MR. HAGGQUIST: Certainly. NYMEX would
25	come here, and ICE would come here if you could

1 have a centralized gathering point, if there was a 2 place to do that. Yeah. MR. VERLEGER: I think the Kinder Morgan 3 market is probably good enough right now because 4 5 then you just go down a step. б MR. HAGGQUIST: Thank you very much. 7 MR. VERLEGER: Thank you. PRESIDING MEMBER BOYD: Real quick. 8 9 MR. GOLDSTONE: I'm a little late, 10 Commissioner Geesman. I was sitting here and I thought of a good opportunity. 11 12 PRESIDING MEMBER GEESMAN: Name for the 13 record. 14 MR. GOLDSTONE: But I want to check 15 effect. Earlier this morning --16 PRESIDING MEMBER GEESMAN: Say your name 17 Sy. 18 MR. GOLDSTONE: Sy Goldstone. Earlier this morning I was listening to you, the 19 backwardation on the average is 15 cents a gallon. 20 21 And I'm thinking about the schools and the state. 22 Why can't we save a little money by buying 23 forward. There must be something wrong with this idea. What is it? 24 25 MR. VERLEGER: There's nothing wrong

1 with this idea. I mean for years I guess it was 2 the World Bank had a commodity division and they worked hard on countries to essentially hedge. 3 And they worked on countries that are producing 4 5 commodities to hedge their sales. And they worked on countries to hedge purchases. That's a great б 7 idea. MR. GOLDSTONE: Well, I'm not hedging. 8 9 I want to save money because on the average this 10 like almost a free lunch. That's the question. 11 MR. VERLEGER: Sy. 12 MR. GOLDSTONE: Yes. 13 MR. VERLEGER: The only problem is I 14 suspect more of my share of my career working for 15 the lawyers from Mattel Gazel Shout, which is a 16 company that decided that that was such a great 17 thing they would offer everybody essentially 62 cent coil and free options on it. And they became 18 so large they converted the market from 19 20 backwardation to Contango. 21 MR. GOLDSTONE: The problem is we would influence the market. 22 MR. VERLEGER: No, I don't think you 23 would. I think it's a good idea, but I think the 24 school districts should do it because it solves a 25

1 budget problem.

2	MR. GOLDSTONE: That's my business. I'm
3	going to go around the school district
4	MR. VERLEGER: That's right. And you
5	can take the profits.
б	MR. BRUSSTAR: One more quick one,
7	Commissioner Boyd?
8	PRESIDING MEMBER BOYD: Real quick
9	because we're going to break for one hour only.
10	MR. BRUSSTAR: Okay. It will just take
11	second, but you talked about Brian Covi Energy
12	Commissions. You talked about the impact that
13	just talking about release of the SPR and having
14	the market in the price of oil. We don't track
15	heating oil out here as much as you probably do.
16	But the Northeast Heating Oil Reserve has some
17	very precise trigger mechanisms about it.
18	But I read in the paper that there was a
19	lot of politicians talking about releasing from
20	the heating oil reserve anyway. Could you talk
21	about what impact that might have had on private
22	sector inventory and prices?
23	MR. VERLEGER: Well, two things about, I
24	don't know the details on the release. They
25	didn't release it. It occurred to me today that
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1 what we really want to do is do a graph of retail 2 heating oil prices by week and compare that to retail gasoline prices. You turn out heating oil 3 prices are more volatile that gasoline prices. 4 5 That heating oil is held in commercial б storage, which means that, again, that commercial storage is not available for private storage. And 7 so not only is it oil we don't use, it's going 8 9 into the commercial storage facilities, so it's 10 crowded out other oil. So it makes us even less 11 prepared on a commercial basis to meet cold 12 weather. I mean it's, you know, it's three 13 strikes and you're out. And that much really out. 14 PRESIDING MEMBER BOYD: Dr. Verleger, 15 I'm going to take advantage of this rare 16 opportunity to ask you a question. The recent 17 price spike we've had, if they had announced they were going to release from the Strategic Petroleum 18 Reserve, would that have helped mitigate what 19 20 California saw? 21 MR. VERLEGER: I think so. I think that 22 -- and let me give you a short answer and a technical footnote. I think if we kept the price 23 to \$30 a barrel, and released it with the strife, 24 the price would have stayed down. The crude cost 25

1	would have stayed down. The other refining
2	margins, which would have been as high, maybe a
3	little larger, but California would have saved ten
4	or 15 cents a gallon because the world price of
5	crude oil would have been lower.
6	The technical problem is that having not
7	done that, they created a huge exposure. They've
8	made it very difficult to release with the start
9	of the war, because what happened is, while prices
10	were high, a number of producing countries went to
11	London and bought put to essentially hedge their
12	production.
13	Mexico did this in November of 1990. I
14	wrote about it in the book I did for the Institute
15	for International Economics. They saved five
16	billion dollars. Well, what that does is leave
17	the financial institutions that have written those
18	puts exposed if then the governments release
19	Strategic Reserves and prices start to fall
20	dramatically. We saw this in copper when Sumitomo
21	failed. Copper prices dropped about 35 or 40
22	percent because the banks had to rush to hedge.
23	The way you hedge a put is you sell
24	futures. And this is why Warren Buffett calls
25	derivative weapons of mass destruction. And in

1 this case it is a problem. And I know that the 2 banks that have written this, which we're looking 3 at liabilities of one or two billion dollars a 4 month, if prices really drop, made a plea both to 5 Saudi Arabia and some others to kind of keep this 6 thing quiet.

7 So I think because we didn't release oil in December and January, we created a situation 8 9 where our hands were tied when the war started. 10 Fortunately, everything went well. And so prices 11 didn't spike up high. But we had a problem. And, 12 yes. The answer is every Governor should have 13 called the president and said, look, this is 14 adding to our cost. This is adding to the budget 15 deficits in our states and making problems. Thank 16 you.

You've indicated my advice. All right. One hour.
(Thereupon, at 1:01 p.m., the workshop
was adjourned, to reconvene at 2:00
p.m., this same day.)
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24

PRESIDING MEMBER BOYD: Thank you.

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AFTERNOON	SESSION
AL THRUOON	DEDDEDI

2	2:00 p m
2	
3	PRESIDING MEMBER BOYD: This has been so
4	fascinating, at least to some of us that the time
5	has been worth it. But we're going to start
6	losing people just because the day is getting old
7	and it is a Friday. So that puts a strain on some
8	people. I intend to do the following: One, I
9	intend to offer each of the Panel members up an
10	opportunity to make a few opening remarks or what
11	have you, or just remarks before we get to the
12	propanel discussion.
13	It's our desire, as the Commission,
14	putting this two-day symposium on, to me it's gone
15	from a workshop to a symposium, to have people
16	address the questions that we've provided to the
17	extent that we can to help us make our decisions.
18	But as I said, I want to afford everybody to say
19	whatever it is they might want to say.
20	And as a courtesy to the folks on the
21	phone, and let me tell you who's there, Drew
22	Laughlin, who was on the phone yesterday, and who
23	has been introduced is one individual. The other
24	is a Mr. Dan Brusstar of NYMEX who is joining us.
25	And you've heard NYMEX referred to quite a bit in
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1 the in the least two day, or at least several 2 times. 3 And as a courtesy to Mr. Brusstar, if he's prepared I'm going to offer you the first 4 5 opportunity to make any remarks or any 6 presentation you might want to make before we get down to our panel discussion. So if you're there, 7 Mr. Brusstar, the floor is yours. 8 9 MR. BRUSSTAR: Okay. Great. Yeah. I'm 10 sorry that, you know, I couldn't be there in 11 person. But, you know, we did want to 12 participate, you know, in your hearings, and to, 13 you know, maybe, you know, give you some 14 alternatives that might help you to, you know, 15 encourage a forward market there in gasoline, and 16 potentially other products in the California 17 market. 18 And, you know, an alternative that, you know, is available is certainly NYMEX would be

19 know, is available is certainly NYMEX would be 20 happy to try and, you know, promote a forward 21 market trading through possibly listing a gasoline 22 contract and possibly even a jet fuel contract for 23 trading in the LA area.

And I think a couple of things that, you know, that I've noticed in California that is a

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1	little bit different than New York Harbor, which,
2	you know, in New York Harbor we have a futures
3	contract for gasoline and heating oil, which have
4	become, you know, bench marks worldwide for both
5	gasoline and heating oil.
6	And the reason that I think New York
7	Harbor works so well as far as the forward market
8	goes is that, you know, there are a number of
9	different types of companies that are, you know,
10	operating in New York Harbor that include
11	refiners, then importers, and a fair amount of,
12	you know, speculators, or traders that also add
13	liquidity to the market.
14	And I think, you know, one of the things
15	in California that I think, you know, is a
16	challenge as far as trying to get any liquidity in
17	the forward market is that, you know, there
18	probably as many participants in the oil markets
19	that are trading on a daily basis. And I think,
20	you know, there are ways that maybe, you know,
21	California could look to encourage more forward
22	market trading.
23	And, you know, the key to that is going
24	to be trying to get more participants who can, you
25	know, compete in the California market. And in

1 one of the things in New York Harbor, as far as 2 the NYMEX deliveries of gasoline and heating oil, is that most of them occur at storage terminals 3 that are owned by independent companies that lease 4 5 their tankage out, you know, companies such as, б you know, Kinder Morgan, and IMTT who, you know, 7 lease tankage to third parties so that, you know, European and Asian refiners can run tankage and 8 9 bring an import product.

You have a number of blenders who can
rent tankage as well. You have a number of
refiners who also rent tankage and participate in
the New York Harbor market. So I think, you know,
one of the key things is going to be getting, you
know, some tankage available for third party
participation.

17 And certainly I think, you know, there are other types of incentives that could be given 18 to the oil industry to encourage hedging in the 19 20 forward market, you know, such as certain -certainly with the NYMEX when we open a new 21 contract for trading, we normally offer incentives 22 23 to market participants incentives, such as, you know, lowered fees for trading. 24 25 And sometimes we'll even pay companies,

1 you know, a payment for each trade that they put 2 in to encourage them to trade and start to, you 3 know, put on positions, you know, in the forward market so that, you know, each trade that's done 4 5 in the futures contract in the forward market is 6 basically a contract to buy yourself in the 7 future. And it's setting prices for future 8 delivery.

9 And one of the things that, you know, 10 could maybe encourage, you know, some forward 11 pricing in California would be, you know, fairly 12 active futures contract. It could, you know, 13 start to set prices for the future and allow 14 companies to lock in prices for imports and allow 15 perhaps some speculators to come in and 16 participate as well.

17 So I think there's, you know, a number of factors that would have to kind of all work 18 together. But certainly, you know, we at NYMEX 19 20 would be, you know, very willing to try and help 21 out. And certainly, you know, we've designed futures contracts already, and we have some 22 23 experience there. And I think, you know, some of the factors that we don't have control over is 24 things like, you know, third party tankage that's 25

1 available, you know, in the LA area for instance.

2 And that may be an area where, you know, California might be able to try and find a remedy 3 to, you know, share a certain amount of tankage 4 that would be available. But other than that, I 5 б mean, we're, you know, willing to try and, you 7 know, work with you to, you know, encourage forward trading and hedging, you know, in the 8 9 California market.

10 PRESIDING MEMBER BOYD: Okay. Well, I 11 thank you for those remarks. You are somewhat of 12 a disadvantage of, A, being here and possibly -- I 13 don't know how much, if any, of the last two days 14 you've been able to hear. But it does put you at 15 a disadvantage in terms of catching up with where 16 we are.

17But there's been a lot of discussion of18the very points that you've raised. So I19appreciate you reinforcing them from the20standpoint of folks at the NYMEX. I'm going to as21now, Drew, are you there?22MR. LAUGHLIN: Yes.

23 PRESIDING MEMBER BOYD: Would you like
24 to make some remarks? And then what I'm going to
25 do is, since we really did you an injustice of

putting you this way instead of mixing you together, I'm just going to go back and forth and ask individuals at one end of the table to the other and work my way forward. And then we'll turn to the panel discussion that we're going to attempt to have for the rest of the afternoon. So, Drew.

8 MR. LAUGHLIN: First of all, I wanted to 9 basically give you a gasoline supplier or trader's 10 viewpoint of what I've heard of in the last two 11 days. And also, the quality of the webcast has 12 been exceptional. I've been able to hear very 13 well what everybody said, even people in the back 14 row.

15 PRESIDING MEMBER BOYD: Well, we'll take 16 credit for it, but we probably owe it to the 17 electrons out there somewhere.

18 MR. LAUGHLIN: I want to give a little background on myself. I've been in the gasoline 19 20 trading business and blending business for about 21 28 years, background at Valero and I own one of the largest trading companies here in the US, 22 23 privately held companies in the US until a few years ago. So I've got quite an extensive 24 background in trading and gasoline supply. 25

1 And I've gone back and forth to 2 California, as you know, over the last two or 3 three years in helping quite a few clients try to figure out the supply situation in California with 4 5 the MTBE phase out and supply situations over the 6 last couple of years. I'd like to first comment on the speaker. The quality of the information 7 today was exception. I've learned a lot. And I 8 9 really have, in this particular process, and 10 independent.

I'm not in on the Strategic Petroleum 11 12 Reserve study or the SFR study. I have been 13 involved with the participants in trying to give 14 an independent view as what each side might see on 15 some of these proposals. And I've learned a lot 16 more today listening to the participants today. I 17 believe the goal of this workshop and everything 18 is basically not to do and SFR, but to debate the merits of an SFR. 19

And I think that's gone very well. I have learned a lot in this debate that's gone on over the last two days. And quite a few of the things that have come out, I've learned over, as I've said, from the participants today, the different point of view. And I want you to hear

maybe a point of view with the Gulf Coast
 suppliers or what non California suppliers look
 at, and how they look at California.

As we've gone through the debate over the last couple of years regarding MTBE we have basically brought attention to California over the last couple of years, and it has done a world of good. I don't know if you've seen over the last year or two, but things have changed.

10 The amount of material that is now coming to California from foreign sources that we 11 12 didn't see a year ago, this was brought to their 13 attention by the debate that has happened over the 14 last two years regarding MTBE. But we now have 15 (indiscernible) coming from the Far East, Alclip 16 from the Far East, from Central and South America, 17 products and suppliers that we hadn't seen in the 18 past.

And this has all been caused by the information flow that's gone back and forth on a lot of these meetings. I agree very strongly with Dr. Verleger in his report this morning on a couple of issues, specifically that strategic supplies of crude oil need to be positioned in the west coast. I'd take it a little step further

1 though, and that is that I would like to see a
2 mix, not just a crude oil, but of finished
3 products on the west coast.

And the reason I say that is the west coast has a very unique problem in much that's a refinery capacity problem. And it's not just refinery capacity, but it's the quality of the complexity of your refineries that are so unique to the rest of the United States, as a matter of fact to the rest of the word.

The rest of the world has products with 11 12 in their refiners that came to California. We 13 call it cherry picking. We can go through the 14 blend stock pool in a refinery, and in some cases 15 find product that can come to California. And 16 that has been what has happened over the last year 17 or so. And I think quite a few of the participants have concluded that over a period of 18 time that the market in California would be 19 20 supplied if it is an import market.

It would not be supplied predominantly from the Gulf Coast, but it would be from foreign sources. We're seeing that develop as we speak right now. And it is those foreign sources that I think in the long run will come into the market

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there and supply those particular products.

2 But it's that uniqueness to your market 3 that also causes a problem. We have seen over the last couple of months that you came right to the 4 5 brink I think. You were able to -- you know, б prices are still high. But had there been a 7 problem greater than what you had on the problem with BP and a couple others at the end of March, 8 9 another refinery problem I think would have taken 10 us into what we've been calling super spikes. 11 And this particular spike would have 12 been the bigger problem we've ever seen. We've 13 talked about shipping, and I can tell you right 14 now that the shipping problems we envisioned on US 15 flag ships was so much worse, and is so much 16 worse, over the last six, eight weeks, that had 17 there been an additional problem in California you would not have received any more ships. 18

We had jumped the freight price, which prices are freight from the Gulf Coast to the west coast already get 18 cents a gallon. And we thought that might have been the peak. That was just the beginning. But no one envisioned that we would have lost ships to military sea lift command during a war. These are the problems I guess you

never envision what really does happen in the
 future.

But what we envisioned was an 18 cent 3 price spike on freight. That might have been the 4 5 bottom. It could have gone to 25 or 30 cents a б gallon. That's something people need to realize. That we've talked about if the time and distance 7 is a problem, the freight price can be a problem. 8 9 But realistically, we were running out of American 10 flag tankers.

11 And that's a point that I cannot stress 12 enough because if you're relying on the Gulf 13 Coast, you know, you were getting to the max on 14 shipping. We have always said that one or the 15 other would be short whether it be the quality 16 product or the US flag shipping. In this 17 particular case the product was available, but the 18 shipping was not.

And we got right to the max. And then at that point California was able to pick up and supply their own. And what had been moved out from foreign sources, and from the Gulf to fill the void, and those prices will hopefully come down here in the future. A couple of things, the uniqueness of California is something else we want

1 to talk about.

2 Not just uniqueness with your refineries, but your infrastructure. And this is 3 the difference I think that Dan was talking about 4 5 the way of the NYMEX, the infrastructure, for good 6 or bad, this not a critical comment, but the 7 infrastructure owned, particular the refiners, own quite a bit, or control quite a bit, of the 8 9 infrastructure.

10 This makes it quite a bit different from the NYMEX, or from the New York Harbor market I 11 12 should say. It makes it less liquid and less able to trade forward prices. You need to understand 13 14 that a non California player is reluctant to sell 15 or to move anything to California that is not 16 committed to a refinery. He doesn't want to 17 speculate on moving to something to California.

This is different than on the east coast 18 19 where a player in South America or Europe, they 20 will definitely move cargos to the New York Harbor 21 without having a home for it. They can sometimes depend on even selling it or committing it in the 22 23 market. But they will take and they will speculate, and they will take the chance. 24 25 Very few people will do that same thing.

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1 There are few traders that will take that risk and 2 move product to the west coast, because it isn't 3 just that they have to find a home for it, they 4 need to find a home for it with the California 5 market, with the players that are in the 6 California market. And there's some problems with 7 that.

Quite a few of the traders, refiners 8 9 don't want to divulge their sources or product. 10 They like to protect sources, and that's very 11 difficult to do when you sell product into a 12 refiner. They're going to find out where it came 13 from, how you got it and how you came about it. A 14 lot of the players don't like this. Traders don't 15 like that.

16 It's part of the business to not give up 17 your secrets. There's a loss of margin when you have to sell to a California refinery. And of 18 course there's also the Unocal patent, which comes 19 20 into play. All of these particular things make the California market unique. And sometimes cause 21 -- and this I guess is the point that these 22 23 extreme gasoline price spikes are what I think 24 causes the most consternation in this. 25 I think from what I see most of the

1 price spikes that are related to crude oil, I 2 don't think that the California consumer sees it They don't like the price going up, 3 that much. but at least it's explainable that the rest of the 4 5 United States is paying a high price. It's that differential between California and the rest of 6 7 the United States that seems to cause the most 8 problems.

9 And even the California refiners, even 10 though the California consumer gets hurt by a mega 11 price spike, the California refiners get hurt 12 also. They may make -- the ones that are having 13 the problems will make short term problems. But 14 in this new world, and this is very different in 15 Houston now, corporate responsibility or negative 16 public opinions matter. Negative stockholders' 17 opinion really matters.

And you can look at the dead bodies in 18 19 Houston streets on some of the corporates that 20 have -- they have disregarded for stockholders and what they felt about certain things, and see what 21 has happened to them. And this is important I 22 23 think, even the refiners are not happy to see 24 these mega price spikes. And that's why, you 25 know, I strongly support -- and I don't want to

get lost in the details, but the concept of having
 reserves, whether it's crude or products, or crude
 and products on the west coast can stop these
 spikes possibly.

5 And I believe also that it could, and I б think it should, increase liquidity. And that's where I think that it may be able to bring other 7 parties into play. And I think that would lead to 8 9 the creation of a forward market as Dan was 10 talking about also. And in making more liquidity and more tanks available on the west coast, I 11 12 think can help the market. That's it. 13 PRESIDING MEMBER BOYD: Okay. Thank 14 you, Drew. I'll come to Tony, anything more you'd 15 like to say, any comments on what's happened to 16 date? You've got a free shot at it. 17 MR. HOFF: No other comments at this 18 time. PRESIDING MEMBER BOYD: Tony? 19 20 MR. FINIZZA: This Tony? 21 PRESIDING MEMBER BOYD: Yeah, this Tony. I just realized how many --22 23 MR. FINIZZA: I know in the next few weeks or months I guess you have to write a report 24 25 on this, and you're going to get the help of the

California Energy Commission staff, and everything
 you can read that we wrote. But you're probably
 not going to get our individual help because we're
 kind of done with the process.

5 So I just wanted to clarify one possible б thing in how some of the calculation was done, 7 whether it really is going to help or not, I leave that to you. And that is when I did the economic 8 9 benefits, the assumption was that we would 10 literally be able to take some of the price spike 11 away without a reciprocal, giving it back in a 12 sense. There was no symmetry to it.

I guess part of the thinking was that it didn't look like the behavior that we empirically could envision. And also, we recognize that refiners couldn't in fact produce below their variable cost. And they probably operated close to variable cost a lot of times anyway. And so there is an una symmetric price spike as well.

Also, we note that the retail price does rise faster than the -- I'm sorry, rises roughly the same rate as the spot pricing, but much slower on the way down. And there's an additional, I would call it, present value that is not taken into account. So of course you could add that

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back in. So that basically is just a minor point.
 And we can debate it later or the same time.

3 PRESIDING MEMBER BOYD: Okay. Thank4 you.

5	MR. HERMES: I have just one comment
6	following up Bruce said. And I'm thinking when
7	you compare New York or the east cost or
8	California you have to keep in mind the history of
9	the situation, the east coast to the US. It's
10	been a major import or products. In fact I think
11	about 70 percent of the products are not supplied
12	by local refining.

13 And it goes all the way back to the 14 imports program when east coast terminal operators 15 were allocated special allocations of import 16 rights. So there's a history there that's been 17 going on for a long time, and the infrastructure 18 reflects it. California, up until a few years ago, almost all the supply was about local 19 refineries. So I don't think it means there's 20 21 something wrong with the market that was in a 22 three year period.

California hasn't developed the same
structure of market that New York has developed
over 50 years. That's all I had comment, other

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than what I said this morning.

2 PRESIDING MEMBER BOYD: Okay. Thank3 you. Thomas?

4	MR. GIESKES: Yeah. First of all I'd
5	like to extend an apology to Dr. Verleger, the
б	original author of the article (inaudible). I've
7	never been very good at memorizing a passage, so
8	the quick thing to do is take a photocopy. And
9	indeed (inaudible). Having said that, when we
10	started on this study we knew it was going to be a
11	very controversial issue. We came up that we
12	thought was an original idea, which we knew was
13	going to trigger an awful lot of discussion.
14	And tin the critiques that we've heard
15	of these past couple of days, they are somewhat
16	inconsistent sometimes. I mean we've heard the
17	critique of Bob Hermes that this type of reserve
18	has not been tried before. Dr. Verleger saying,
19	well, this has been done all over the place and
20	it's never worked, and there will be no savings.
21	The price spikes and the price troughs are
22	symmetrical and, therefore, if you just leverage
23	it out there will be no savings.
24	We've heard from others that there will
25	be likely be refinery closures because you take

1	away all this money. We've heard that the market
2	is responding fortunately to the shortage of
3	tankage, and we've heard from others that there is
4	no shortage of tankage, and inventories here are
5	equal to the rest of the United States.
б	So buying these highly complex and
7	controversial issues, and we knew we were heading
8	for some serious critiquing. And I'd like to
9	focus on the points of agreement. And I think
10	where we all agree is that the markets are
11	structurally backwadated. That backwardation
12	leads to lower of entries. And the lower of
13	entries are aggravated by fundamentally both
14	storage capacity (inaudible).
15	The low storage can add to volatility.
16	There are other factors that contribute to
17	volatility in a market, but lower storage is
18	certainly one of them. I think are all in
19	agreement that local supply lacks the development
20	and the appetite of California for gasoline. So
21	the nation state becomes increasingly import
22	dependent.
23	And going down the list, we are very
24	glad to see commercial storage operators stepping
25	up to the plate. See changes in the commercial
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landscape in both storage where they are able to
 build storage on shelter term contracts. We wish
 (inaudible) in LA as well as in the Bay. Maybe
 that will happen sometime in the future. So what
 else is required for stability becomes now the
 issue.

7 And that is of course if we lack stability, and some of us maybe don't like that. 8 9 But what to do against that extreme price 10 volatility, the really severe prolonged price 11 spikes, the vulnerability to others is etcetera. 12 And quite frankly, the reserve, as we propose it, still have a lot of work to do on this. We 13 14 realize that. A lot of, like you said, Bob, 15 detail.

16 But quite frankly I think there's more 17 work to be done here. We've heard some suggestions from the NYMEX speaker on how they 18 might after all be ways to create that of 19 20 liquidity that is needed. But I think that 21 regardless of where we go, my personal opinion, is still that something needs to be done, or 22 23 something needs to change, either my market forces or by stimulation. 24 25 There is a significant role for the CEC
1 in helping to address some of the infrastructure 2 problems in the reports. And if nothing else came out of this study then to trigger this discussion, 3 I've always stated that the best prophecy is a 4 5 self-unfulfilling prophecy where sort of being the б messenger of doom triggers the necessary action, and the industry steps in and things get done. So 7 that is my sincere hope. Thank you. 8 9 PRESIDING MEMBER BOYD: Thank you. 10 Professor Williams? DR. WILLIAMS: I would like to add a 11 12 general point. I think it's been helpful in all 13 of this to try to quantify some of the 14 impediments. What does that mean in cents per 15 gallon on a typical transaction. And that would 16 be the helpful way to prioritize some things. Of 17 course some can't be changed at all, even if they're good one. 18 But it's a good way to think of some of 19 20 these impediments. How much does it really cost extra to take a cargo into LA versus San 21 Francisco, and what is that doing to the relative 22 23 balance of those two markets. I think we ought to be able to quantify that. And that would help us 24 get through some of the discussion of what best to 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

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do.

2 PRESIDING MEMBER BOYD: Okay. Greg? MR. HAGGQUIST: Yes, sir. Gregg 3 Haggquist. I thought that we do have to quantify 4 5 it, but we also have to change the interior image 6 in our minds, the visual image of what this really 7 is, the flow of the oil and the flow of the price. And the frustration I was confronting was all of 8 9 the rebuttals were talking about something other 10 what we had proposed. And it reminded me of this famous most 11 best selling art book, Drawing from the Left Side 12 13 of Brain. You might have seen that book out 14 there. What it told you, it teaches you, is that 15 you ask any average adult to draw a picture or a 16 fire truck, or a tree, or a dog. Here she will 17 draw the fire truck, tree or a dog that he drew 18 when he was 12, or she was 12 years old. That imagine takes over and you stop 19 20 looking at the world. You stop looking with fresh 21 eyes. So if someone says dog that's what you 22 draw. Someone says Strategic Fuel Reserve 23 government intervention, that's what enters your mind. So to undo that you have to go through 24 certain exercises. You have to turn things upside 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1 down and draw them. You have to look at spaces 2 between objects. 3 So all I wanted to do here, and we want to do, is make sure that what we were really 4 5 presenting was nothing like anything is ever б presented before. California does not represent -7 - is not similar to the other markets that Dr. Verleger has pointed to. This false equivalency 8 9 needs to be replaced by actual visualization of 10 what the real situation is. 11 And I think we've gone a long way in 12 that direction. So that's all I need to say right 13 now. 14 PRESIDING MEMBER BOYD: Dr. Verleger. 15 MR. VERLEGER: I'll stay silent. PRESIDING MEMBER BOYD: You're going to 16 17 stay silent. Okay. Dave? 18 MR. HACKETT: I think that it's important to us, it's important to this team, that 19 out of this exercise comes forward progress on 20 21 these issues. Frankly, we reject a notion that the market is not broken. I don't believe that. 22 23 I don't believe that it's an issue of competition or some hidden kind of thing. 24 25 I think it wholly comes back at

plumbing, that it's hard to get into the market.
Refiners don't make enough and the like. And so
to me the most important issue here is how do we,
you know, unblock the pipes?

5 PRESIDING MEMBER BOYD: Okay. For the б agenda, the next thing we were going to do is 7 address the questions that everybody was provided earlier, even before we started this two day 8 9 session. The problem I'm having is I look at the 10 questions and I'm going to rely somewhat on the 11 staff to prod me where I might be deficient. But 12 it does seem to me that a lot of what we've done 13 in the last two days is in effect addressed these 14 questions.

15 But I'm going to leave it to each and 16 every one of you to jump in grab any one of these 17 questions that you think maybe we haven't touched enough and help us with what many of you said is 18 our problem with the long run is dealing with all 19 20 that we've heard over the last two days and try to 21 make recommendations to the policy makers of the 22 state.

23 But in light of that, I'm going to 24 inject a couple of additional questions that 25 people like Commissioner Geesman, and policy

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makers here are constantly assaulted with that I don't feel like I'm going to walk away from this extremely interesting couple of days with the ability to answer.

5 And the first question is, and this is б the typical question the media will ask, and that is why the big difference in this last situation 7 here in California between the prices in 8 9 California and the rest of the country? And that 10 was put on the screen in one of the early 11 presentations yesterday. There was a big delta 12 between.

13 And we've talked about all the problems 14 of California, and this agency has analyzed the 15 daylights out of the last incident at the request 16 of the Governor in a very short period of time 17 admittedly and said, you know, we can't find -honestly we can't find any conspiracy in price 18 fixing and criminal activity. It is the 19 20 complications of what's gone on in the world, and 21 the complications of the California market. But even we are stressed to try to 22 understand this big delta. The second phenomenon 23 of this last price spike, and you've got to 24

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remember the context for this panel discussion

1	these past two days are the 1999 price spikes.
2	We're trying to still deal with them, deal with
3	what just happened recently.

4	But I have none of the expertise that
5	you have, but I have been associated with
6	transportation fuels for more than 25 years
7	wearing that regulatory hat for those many years,
8	and being implicated carb I and II and clean
9	diesel, and what have you. And, you know, I've
10	developed a little favorite saying that I saw
11	almost parroted back to me in the press recently
12	is when prices do rocket up, they come down by
13	parachutes.

14	Somebody here said like a feather. And
15	this time some of us observed, and one of you
16	said, that this has been a little atypical. To me
17	they went up a lot quicker, the prices that the 34
18	plus million people see, went up a lot quicker
19	than historically we saw. And we don't
20	understand, I don't understand that. And they are
21	coming down, and I think this was plugged
22	yesterday, a lot slower.
23	And some of us would like some help with
24	that in order to deal with the public presses
25	large while we deal with the bigger question also

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1 that was the whole thrust of the last two days. 2 So I'll add that to the list of questions and just 3 throw the floor open and ask anybody to jump in at anytime with any kind of comments they might want 4 5 to make on the questions we've left here, and 6 anything that's not been answered. And any other 7 comments you might want to add. So the floor is 8 open.

9 MR. VERLEGER: Can I start with the 10 question you had there? And I think perhaps one 11 of the answers is is that it sounds odd, but our 12 regulators have been too flexible. You've not 13 heard that for a long time.

14 PRESIDING MEMBER BOYD: I don't think15 I've ever heard it.

16 MR. VERLEGER: But we have two kinds of 17 gasoline being sold in California right now, 18 ethanol type gasoline and MTBE gasoline. And this happened once before in Michigan or in the 19 midwest, and the FTC did a very long study on what 20 21 caused the price increase in the midwest gasoline survey. I forget. You find it on out website. 22 23 But the analogy I always tell, and perhaps Jeff Williams can -- I know he can do the math. 24 25 I've never been able to do it. But if

1 you think of an ice cream parlor, if they're just 2 selling one variety of ice cream you've lots of --3 and you got one for six tubs, you're much less likely to run out because you're selling six types 4 5 of gasoline and you can't replace one for another. б I know there's a mathematical problem. 7 But right now we are running a state where we don't have one kind of gasoline. We have 8 9 a -- this year some of refineries are selling 10 gasoline with MTBE and some of the gas refineries 11 are selling gas with ethanol. And as I recall, 12 it's been years since I've taught the subject. It 13 means for the same study state, you need actually 14 a higher level of inventory because you have two -15 - and I suspect it has something to do with the 16 (indiscernible) than if you had just a single kind 17 of gasoline. And I think -- and I haven't heard 18 anybody explain that, but I think that is 19 20 complicating the logistics. And that is one 21 explanation why we're seeing a slower responding market this time. Now, that says it won't happen 22

23 next year because supposedly everybody is on24 ethanol.

25 MR. HACKETT: And let me chime in, and

1 we've been concerned about two kinds of California 2 gasoline all along. But it's compounded because, 3 you know, of course this is a regional supply area, not just a state supply area. And 4 5 refineries not only supply California, but Arizona 6 and Nevada. And I think that you can look to the 7 Phoenix gasoline price situation in the March time frame to learn some interesting things about 8 9 having (inaudible) supply from Texas and New 10 Mexico was constrained to refinery problems. 11 And the refineries in Los Angeles had a 12 very hard time picking up the slack because, in 13 our opinion, they had their systems lined out to 14 supply the normal amount and not the extra amount 15 that Phoenix suddenly required because of a 16 problem on the other side. 17 MR. FINIZZA: I was just thinking that what Phil said is a good idea, but I think it has 18 19 to -- and I don't know the answer to be honest 20 with you. I think it has to a little further, and 21 that is much of the difference that you're complaining about is in the retail end, not in the 22 23 wholesale end, is that correct? It's a fact that the retail has stayed up higher. 24 25 And does the two types of gasoline

argument work once you've passed the wholesale
 level? I suppose it could. Well, but I think
 you need a more complete answer. I think you're
 on the right track.

5 MR. HAGGQUIST: And I agree with both of 6 you, what Dr. Verleger is saying, two doctors, 7 that we explain the wholesale. The retail maybe 8 comparable to what happened when I first came into 9 this movie a couple of years ago, trying to bring 10 cargos in here. At that time we had another 11 spike, 2001, was it, the price spike?

12 And the complaint we were hearing then 13 was from the independent retailers because they 14 were getting caught in an inversion. The 15 independent retailers could not pay this rapidly 16 escalating wholesale price because the street 17 price, the mandated street price, was not rising fast enough. And they either had to put yellow 18 tape and close down, or sell out their gas 19 20 stations.

And we're on record on all of that. Of course Tom O'Malley came out and said the heck with this, I'm raising the street and it went directly to \$2. And when you have a leader people follow. And the others in the streets followed.

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That maybe have set a paradigm perhaps, perhaps.
 Because this time around we've had a year and
 we've seen it.

Mr. Hermes has shown us, this was last 4 5 year, has not been very profitable, has not been a б good year for the refineries. And one of the Chairmans stood up in the public forum in the IPE 7 and said our downstream profits are totally 8 9 unacceptable. So maybe here's the opportunity, 10 here it goes. It goes up. Why should it come 11 down? Why not float down once it has flown up? 12 We can give an anatomy of why it went up 13 at wholesale. It has to do with the two kinds of 14 gasoline, the tightness of the pipeline market, 15 and the trouble covering pipeline tenders, and the 16 lack of imports. But once it gets to the street, 17 as I said, starting off yesterday morning, that's a whole new market out there. 18 They watch each other. They don't care 19

what's going on in Saudi Arabia or the NYMEX so much. They're only going to come down when the guy next door comes down, down the street. So it floats down. Okay.

24 MR. LAUGHLIN: This is Drew Laughlin. I 25 want to add to that. This is a unique spike in

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1 that the spot price this time is not the culprit. 2 In fact, the arbitrage window between the Gulf 3 Coast and the west coast is closed by probably over a dime. In other words, to understand that 4 5 if you transported material from the Gulf Coast to б the west coast today you would lose a dime. 7 And, you know, you wouldn't do that. So we don't have -- you have an excess supply 8 9 actually of product out there. As a matter of 10 fact, one piece of blend stock even this morning were sold to stress at an unbelievable price in 11 12 LA. I hadn't seen it before, 50,000 barrels just dumped in the market because there was nowhere to 13 14 qo. 15 So you have a unique situation this time 16 where this is not really a refinery supply 17 problem. This is not a, you know, there's no way you can really say this even the gasoline having 18 two different grades. I think that the grades --19 they follow the leader. There is no leader. 20 There is no reason. If the guy across the street 21 doesn't drop his price you don't either. 22 23 I mean that's how it works in the market. And in this particular case it's going to 24 25 be very slow to come down because you have last

1 year was not a great year. So I think they feel 2 that since the prices in crude are up, there's 3 problems in the world, and the consuming public somewhat understand they can keep the prices 4 5 higher longer. б PRESIDING MEMBER BOYD: Each of those 7 helps a little bit. MR. HACKETT: Jim, I think that, from my 8 9 perspective -- this is Dave Hackett. The market 10 got jerked up really high for a combination of 11 things. We talked about it before. Big refinery 12 went in and turned around, and couldn't come back. 13 Some of the smaller refineries had problems. 14 There were at least some friction caused by trying 15 to blend the new gasoline and the like. 16 And then as participants were bringing 17 in cargos to try to alleviate this situation drawn in by the volatility, and properly so, or actually 18 because of their arrival time it probably had been 19 20 scheduled way in advance. But when they showed up 21 we were given reports that there was congested, and so ships couldn't unload. But what had 22 23 happened is that the cargo had been sold. The cargo had been sold. It had the 24 pump. But the ship didn't get unloaded. Then the 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1	guy, the trader, or whoever it was, had sold those
2	barrels, all of a sudden was short in the pump
3	market. It got squeezed. That's called a short
4	squeeze. And, you know, Haggquist can describe
5	that better than I can.
6	But you can see, if you look at the
7	daily price rises, you can see as much as 17 cent
8	jump in one day. And so that certainly describes
9	the extent of the pain for whoever was that short
10	just had to spend an awful lot of money to cover
11	it. And I think in this particular is because
12	ships couldn't get unloaded. Maybe that was an
13	operating problem.
14	Maybe it was just, you know, the
15	physical constraints. But that's how it got so
16	high is getting the barrels in the market, and
17	then the short squeezes that result of it. And
18	that takes retail up and retail floats down
19	because, you know, people don't lower price until
20	the guy across the street does.
21	MR. HERMES: I just wanted to comment
22	that major changeover and specifications have
23	occurred in the past it's not been that unusual,
24	as I recall, when carb gasoline was first
25	introduced it was a pretty big spike in the

market. And this is a pretty big change of
 phasing out. Everybody didn't phase out, and that
 probably compounded the problem.

But switching from bringing in ethanol 4 5 from plants in the US Mid West from importing MTBE and all the infrastructure tankages goes with 6 that, plus refiners that are making the ethanol 7 blend, had to adjust their operations. I think 8 9 you were into turnarounds. That was probably one 10 of the things they were doing because some high vapor pressure components had to be rejected out 11 12 of the gasoline pool.

And I don't know the particulars of why turnarounds don't get finished, don't schedule the fact that they were adjusting operations for that, as well as doing the normal things you do, and turnaround could be a factor in it, until you get some specifics on it of course.

19PRESIDING MEMBER BOYD: I appreciate all20that. It just makes the long list called the21little things even longer than it's ever been22probably in history here in California. The MTBE23ethanol switch, I mean a lot of people voluntarily24started a lot earlier, which scared us a little25bit then after a while. It didn't seem to me be

probably a positive, not a negative, rather than
 having them all do it at once.

3	I think more than 80 percent of the gas
4	was ethanol blended before we even hit turnaround
5	time. Obviously the difference between winter and
б	summer gas caused some people some problems.
7	We've heard all the stories of multiple
8	reblendings, and the San Diego story. I walked
9	out on the explanation of it yesterday to tend to
10	changing another appointment.
11	So I don't know if it got explained or
12	not, but my understanding of it wasn't that big of
13	deal. It was for Arco who had to pump it out.
14	They fixed it right on the spot, and they also
15	offered their premium at regular price, etcetera.
16	So it's just this laundry list of issues I've ever
17	seen. And I guess we can attribute to that. But
18	boy that's really tough to explain to the public.
19	MR. FINIZZA: You haven't blamed the
20	consumer too. You can always add that one in
21	there. We've met the enemy and they are us,
22	because, you know, as long as we I don't know
23	the search cost are too high, or what have you, we
24	continue to consume gasoline at those high prices.
25	We only complain about it. We don't stop pumping.

PRESIDING MEMBER BOYD: There was little
 hiccup in the SUV market here, I noticed, but
 that's true.

MR. WILLIAMS: Can I add yet another --4 5 PRESIDING MEMBER BOYD: Please. б MR. WILLIAMS: -- to the list. The 7 points made are likely, but you don't seem to be thinking about inventories all of a sudden, and 8 9 that was a relevant thing to look at here. 10 Imagine there's a shock, inventories get pulled 11 down a lot, prices go up to balance the market, 12 and to be crude about it, you've got to build up 13 those inventories again. 14 Isn't that going to mean that prices 15 sort of only slowly fall back to some long run 16 average? In fact, in inventory markets you might 17 naturally see this type of asymmetry and speed. 18 I'm not saying it's not all the other reasons. PRESIDING MEMBER BOYD: It's an implicit 19 20 assumption you're telling me is a direct analog 21 with the natural gas situation we're experiencing right now, storage and price? 22 23 MR. GIESKES: And of course in the case the asymmetry was only refill rather than on the 24 wholesale. So I think the inventory element of 25

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wholesale, but you raise a very valid point there,
 is that the crisis this time occurred at inventory
 levels, which were well above the previously
 observed minimum.

5 This time was also two million barrels more б than inventory when things began to get really 7 tight, which is indicative of what the six barrels of ice cream that Dr. Verleger mentioned. All 8 9 these different components suddenly do make it 10 difficult for refiners to manage (inaudible). 11 MR. STEVENSON: Dwight Stevenson. I'd 12 like to come back to the six barrels and just say 13 that there really are two. And the barrel --14 well, I'll lose the analogy anyway. But the MTBE 15 gas has continued to be a higher spot price. And 16 that apparently is a shortage, and when you look 17 at who's selling what kind of gas, independent, Rotten Robbie's, etcetera, or sell the MTBE gas, 18 and if they don't have enough gas to push out of 19

20 the market, it pushes the price down, which they
21 like to do, then the guy across isn't going to
22 follow.

23 So, yeah, we're making both kinds and 24 we try to respond the best we can. But I think 25 I'm going to agree for the first time with Dave on

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this and it's some plumbing issue.

2 PRESIDING MEMBER BOYD: He's just going3 along with all of us.

4	MR. STEVENSON: But, yeah, there is, at
5	the risk of adding some more work to us, that I
6	might ask, direct you and the staff, to look at
7	that issue of, you know, is there enough MTBE gas
8	getting in the hands of those independent
9	retailers. We're doing our best at our refinery
10	to try to get as much gasoline down to Los Angeles
11	that we can, but, you know, plumbing, that
12	includes ships and that, is someone of a limit.
13	MR. HACKETT: Thanks, Dwight. And the
14	marketers aren't here. I called them and said you
15	guys need to come, and clearly they were busy with
16	something more important. But one of the
17	concerns, and I'll say something for them, because
18	a concern that they've had that I've shared, and
19	that is that retailers can't switch back and forth
20	between the two grades. And that's because air
21	quality regulators calculate that that will create
22	more pollution.

I'm not sure that that's true, but I
think to the extent that these folks could switch
back and forth, that that would help to bring

1

prices down quicker.

2 PRESIDING MEMBER BOYD: I see ARB has3 left the room too.

MR. HAGGQUIST: There's also another 4 5 matter of optics here. Who's keeping this margin? б As Drew Laughlin said, there's distress cargos out 7 there, there's cheap gasoline, 93 cents, you know, 8 but yet we're just rifting on down. You know, 9 there's the independent retailer, and then there's 10 the dealers that are branded. And this whole business of branded prices, tank prices, are much 11 12 higher.

13 So the branded dealers are telling us 14 that they're making any more margin than they ever 15 do, and that's the way their contracts read. 16 Whether the market is up or down, they're pretty 17 consistent. So this differential between the MTBE gasoline independent refiners that we know about, 18 and the branded and integrated companies is quite 19 different. 20

And I'm sure that's going to be focused on. That wasn't the purpose of our study. We've been looking at the wholesale market, how to get supply here. The same thing happened in Hawaii. Even you get supply there, it doesn't mean it's

1 going to get to the street at those prices.

2 PRESIDING MEMBER BOYD: Well, I want to just indicate to the credit of the staff here, I 3 know they've been very closely following the 4 5 shrinking MTBE gasoline supply situation, and have 6 recognized, not that we can do anything about it, 7 as an agency. But at least we recognize that as one of the many, many factors that have been 8 9 keeping some of them and some of us awake at night 10 as we slowly merge down this path.

11 This is a California workshop, not an 12 Arizona workshop. But I can only observe. I 13 wouldn't want to be living in Arizona here pretty 14 soon. But that's just a side comment, unless they 15 quickly adopt California gas.

16 MR. HACKETT: Get Leigh to check his
17 e-mail.

18 PRESIDING MEMBER BOYD: Okay. I invite people in the audience to ask questions of these 19 folks. I particular solicit the staff of the CDC 20 to ask any questions. You're not going to have 21 this opportunity offered you much more. And we 22 23 all are going to have to write this all up one of these times. So this is a workshop, have at it. 24 Thank you, Scott. You know, you've got a big 25

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responsibility, a big stake.

2	MR. MATTHEWS: I just can't resist,
3	because I know where the assignment comes. So I
4	would like to hear everyone's individual
5	recommendation about what the Sate of California
б	to do about volatility. That's the problem. And
7	even though, you know, my old economics say a
8	small utility has a lot of benefits from it, from
9	a politicians point of view, and from the people
10	who we report to, and of course we get all the
11	e-mails that we have to respond to, they want to
12	see volatility reduced, even if that means that
13	there might be a higher average price.
14	Even if that means we have to spend some
15	money in a very desperate time, although we want
16	to be very wise about spending money, and
17	certainly try to convince them. So I'd like to
18	hear what you think our report ought to be saying
19	about what the recommendation is to reduce price
20	volatility gasoline in California.
21	MR. WILLIAMS: I'd first of all say I
22	don't think they're riding you to say that just
23	want the average at a very high price. I think

24 what they want to say that they want it always at 25 a low price, and why now and then they have to pay

for a very high price. And if you make that point
 clear, maybe they won't be quite political impetus
 to do something about this problem.

PRESIDING MEMBER BOYD: Are you saying 4 5 that it's somebody's obligation to explain to the б public, maybe the industries, how the industry works? The only trouble is, and I mean this is 7 kind of a light moment, I hope, a light moment, 8 9 and this is not meant to be a criticism of the 10 industry, but I have commented to them through the 11 years and more than once, they aren't making their 12 case very well.

13 They make it tougher on us to try to 14 explain it. Number two, I don't know, I mean just 15 like mother nature and murphy always combine 16 together at the times when some of these 17 turnarounds or changeovers are occurring to make it really bad for us, usually at the height of 18 these spikes their quarterly earnings show up in 19 20 the financial pages.

And for some people they're pretty good, you know, seemingly, relatively. The public doesn't understand, well, gee, we only made five percent or two or three percent. They see this gross amount of money there. And while these

people are making money hand over fist, this is
 all -- nor do they understand the lack of total
 vertical integration and etcetera, etcetera.

But it's really hard to convince the
electric to public, and they beat all of us up
over situations like this.

MR. HACKETT: Gentlemen, let me throw 7 one out that Scott asked about real quick. And 8 9 this is several have discussed. But from my 10 prospective this has all been a matter of supply, 11 how to supply this market adequately so you don't 12 get 17 cent short squeezes that drive up retail, 13 or take a long time to float down. Okay. One is 14 why not blend ten percent ethanol.

15 Now, I'm on record as saying that I 16 think that blending gas with ethanol in the summer 17 time in a place like California is a risky policy, because what it does is it dramatically shortens 18 supply. That's why it's risky. So the reason 19 20 refiners don't blend ten percent ethanol is because predictive model won't permit it. You 21 can't make gasoline that matches a particular 22 23 volatile at ten percent ethyl. It doesn't work. You'd have to have the minus 24 25 (inaudible). So what that means is the predictive

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1	model has to go get relooked at. Now, and
2	predictive model has been around a while, ten
3	years or something like that. And so if the
4	predictive models is relooked at perhaps, based on
5	new assumptions.
6	And I'm not sure how much money that
7	will cost. But that's a weight increase supply.
8	You know, there's a supply in here that based on
9	predictive model that's one way to increase it.
10	PRESIDING MEMBER BOYD: Why stop at ten?
11	There's 150,000 FFE's running around out there
12	that get CAFE credits that burn straight gasoline.
13	And I'm getting to far afield here. Joe.
14	MR. SPARANO: I believe you challenge
15	the industry once again. You've been very good at
16	that over the last two days. One thing I might
17	PRESIDING MEMBER BOYD: More like 25
18	years, Joe.
19	MR. SPARANO: I can't go reinvent
20	history. I can only go forward from this moment,
21	which I intend to do
22	PRESIDING MEMBER BOYD: Just ask Gina.
23	MR. SPARANO: as a representative.
24	Pardon me?
25	PRESIDING MEMBER BOYD: Just ask Gina.
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1 MR. SPARANO: As a representative of a 2 foreign industry I do intend to go forward. But 3 one of the things that was revealing and of interest to me was a phrase one of the presenters 4 5 used this morning, and you can't have it both 6 ways. I think we'd all like it both ways. And 7 you can pick your topic, but you can't have it both ways. 8

9 I'm going to join the I love everybody 10 club too, because one of the things Dave just said 11 is very pertinent. We have certain rules and 12 regulations that require changes that sometimes 13 work against the normal good of the public. When 14 you extract material from the gasoline pool 15 purposely to meet another objective, you're not 16 going to help the gasoline pool.

17 And in that case you don't help the 18 supply situation. We had some commentary yesterday about rule 1178. When you force 19 20 refiners to put domes on tanks as opposed to 21 perhaps coming up with a more creative way that doesn't cost as much, and more importantly take 22 23 that equipment out of service when it can least afford to be out of service. 24

25 Then I think maybe the objectives are

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1	mixed, which she had going in the wrong direction.
2	So I empathize with the public when people get
3	upset that the price goes up quickly, that they
4	perceive it goes down slower than it goes up. I
5	don't know that the statistics would bear that out
6	in either every case or of many cases. What we're
7	seeing now is I don't know if we're seeing the
8	same data, but you've certainly had opportunity to
9	present yours.
10	MR. VERLEGER: There's good literature.
11	MR. FINIZZA: Yeah. It's not a
12	conspiracy.
13	MR. SPARANO: There's no conspiracy, but
14	there's good academic literature.
15	MR. FINIZZA: No, we just wanted to put
16	you at ease.
17	MR. SPARANO: You're never in a good
18	spot when you're arguing with a economist. I'm
19	not going to do that. I'm just a poor dumb old
20	engineer. Sorry. And the point I'm trying to
21	make, Jim and John, is that, as we talked about
22	yesterday, there are lots of things we can try to
23	jointly bring to those parties that make the laws.
24	Legislature has a responsibility, the regulatory
25	bodies have a responsibility to look not only at

1	the cause of the day, but also the perhaps
2	unintended consequences of solving the cause or
3	the problem of the day.

5I've already offered, the Governor's staff to sit6down and explain the business. I can probably do7that. I may not be able to explain economics 101,8but I could probably explain the business. So I9think what you find is perhaps an industry10response, as you said yesterday, you might not11have been accustomed to.12But I think we understand it's in our13best interest to make sure that the public has at14least some understanding. And we're talking about15even going back into the school system to the16extent we're allowed to help educate people so17that at least there's some common understanding.18I think one of the weakest spots that19we're all looking at is that there's a conflict of20objectives. And that conflict is part of what21leaves to some of the problems that we've been22talking about over these last two days.23MR. VERLEGER: Commissioner Boyd, can I24talk for a second?25PRESIDING MEMBER BOYD: Sure.	4	And I think I'm perfectly happy, and
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1 MR. VERLEGER: I was invited to testify 2 before Senator Levin last year on why the gasoline 3 spikes. And I got a voice mail today from somebody who wanted me to come back to Washington 4 5 again, and I erased it. And I have the temerity to tell Senator Levin, he's still been very nice 6 to me, that, look, if you look at economics, if 7 you push -- if you creative incentives for demand 8 9 increase rapidly, and you restrain supply as 10 demand gets close to capacity, especially since 11 (indiscernible), you're much more likely to get 12 price spikes for the growing demand. 13 And what we have done in this society 14 nationwide, is allow loopholes in the CAFE 15 standards. So we've got all SUVs. This is not a 16 judgment on it. It's just a fact. And so the 17 fuel economy is going down, a number of cars are going up. And nationwide, not just in California, 18 we have limited the growth, the expansion of 19 20 funding capacity. 21 Now, if you contrast this to Europe, and Europe had a tax incentive for diesels so that if 22

23 you go to France or almost any country, diesel
24 fuel is a lot less expensive. So suddenly there
25 are a lot fewer good cars that use gasoline, and

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1 there's more a surplus of gasoline. And by golly, 2 now the price is also higher, but I have yet to see in following all the European Press what 3 example recently of price spike in gasoline. 4 5 I think I've seen a couple in diesel. 6 But in some sense, and this is more than your purview, but it is the fact that we are -- Detroit 7 is pushing on the demand side with all of the SUVs 8 9 and the economic growth. And as Joe -- most 10 people will say, but this is nationwide, we just haven't had the ability to expand capacity very 11 12 much. And it's a natural consequence. 13 MR. FINIZZA: Jim, could I respond to 14 his last point or do we want to --15 PRESIDING MEMBER BOYD: Sure. 16 MR. FINIZZA: I think your idea of 17 education is the way to go. But, you know, we've all been in the business for 30 years, can hardly 18 understand ourselves. 19 20 MR. SPARANO: It's generational Tony, and that's the problem. 21 MR. FINIZZA: Yeah. 22 23 Mr. SPARANO: It doesn't take a month to fix what's been wrong for 30 years. 24 25 MR. FINIZZA: The point I want to make

is that thanks to an organization that at one
 point I was president of, the California Council
 on Economic Education, every high school student
 in this state, as a condition of graduating, has
 to learn not only about government, but about
 economics.

7 I wonder if an objective, little lesson plan, for what makes gasoline prices go up and 8 9 down so that our high school students can 10 understand it, I think would be welcomed. I don't 11 know if could be done. But it would certainly be 12 worth a try. I've seen some of the curriculum for 13 the high school students. Unfortunately, the 14 teachers are not trained in economics because many 15 of them didn't know about this mandate in time. 16 So they forgot to take economics when

10 be they forget to take economics when 17 they were in college. So anything would help 18 them. And if it's a lesson plan, I know the 19 Commission has some literature, but I feel it may 20 not be appropriate for high school students.

21 MR. SPARANO: We have a program, I guess 22 I'd call it a pilot program, and maybe some of my 23 fellow WSPA members could comment on this, but I 24 understand we have a program in the valley area 25 that actually invites teachers to a several day

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seminar, trains them in petroleum, takes them to
 refineries in the valley to production and fields,
 and gives them tours so that there's at least an
 elemental understanding of what is going on.

5 And my commentary told me about getting б out to the schools while it would attempt to attack it at the high school level where there's 7 perhaps an ability to understand those economics. 8 9 I'd like to go further back. This society has so 10 many complexities to deal with that the earlier we 11 help children get more knowledge, I think the 12 better off we'll be. And I mean that's really 13 philosophical.

14 But the point I think should not be 15 missed. There are a lot of things that we can 16 help teach. And there are a lot of areas where if 17 we had just a minimum amount of teaching go forward, there might be less tendency for the 18 19 public to be as upset in certain circumstances. 20 And everybody may always be upset if the price of 21 gasoline goes to X cents a gallon. I don't know. But I think there are ways that we can 22 23 help limit that, and limit the damage it does when you all get 400 e-mails and calls from various 24 other governmental bodies about explaining to them 25

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1 why the prices has gone up when you don't know. 2 And plus I want to reiterate my willingness to 3 help in that regard. I think industry has the tools and I'm prepared to bring them to you. 4 5 PRESIDING MEMBER BOYD: Thank you. б Commissioner Geesman, I think you were trying to 7 get --PRESIDING MEMBER GEESMAN: Well, I was 8 9 going to say that my perception is that the public 10 puts a lot of pressure on government, and at 11 least, you know, the terms of the elected 12 officials that are in Sacramento now. I don't 13 think there's much pressure to roll back or relax 14 environment standards. I think if anything, the 15 pressure is to tighten those up and error on the 16 side of being too tight, and figuring out that the 17 forces of economic growth will figure out a rational way to proceed, even in the fact of a 18 19 tighter environment requirement.

The area though that I think that you've got the attention of the executive branch, and I can't really speak for legislative branch at all, but the public I believe is pretty intolerant of circular, stupid, redundant permit processes that do not yield rational results, or do not take into

1 account macro considerations.

2	And if there is an opportunity here I
3	think that is that we figure out a way in which to
4	streamline the way in which society goes about
5	trying to fix the plumbing to provide for the
6	future plumbing. Because I think from the
7	standpoint of state government, there's a very
8	strong interest in trying to provide an
9	environment where the risk is you guys will all
10	over invest in surplus capacity.
11	I think that would be beneficial for the
12	consumer in the long run. Dr. Verleger might
13	disagree with that, but I think as a state policy
14	we'd like to see a more rational permit process.
15	MR. SPARANO: I think, please, if you
16	for one moment thought that the comments meant
17	that we should not be as aggressive on the
18	environmental side then I have been misunderstood.
19	That's hardly the case. What I mean is while we
20	go forward with those types of mandates and this
21	industry has responded to the tune of billions of
22	dollars to meet those requirements, that we at
23	least educate the public so they understand that
24	there is in fact there has been a tradeoff.
25	The luxury of going out and getting any

1 kind of gasoline you want, anywhere you want, at 2 any vapor pressure doesn't exist. And for you to 3 respond to that situation requires certain tightening of supply. That's what has occurred. 4 5 And I think if we can help push the education more in that direction we will have done everyone a 6 7 service without taking one inch backward on 8 environment.

9 PRESIDING MEMBER BOYD: I would say 10 there's precedent for that. It's certainly a good 11 suggestion, when carb II, I mean the most 12 monumental of all changes occurred there was huge 13 cooperation, education. The publicly has 14 consistently said in one of its highest ranking 15 needs is a clean environment, air quality, youth 16 is at the top of the list. And they've exhibit 17 for years in purchasing cars from Detroit that they pay more for a clean car for California, 18 etcetera, etcetera. 19

And it was pretty well explained to them one the two sides of the issue narrowed the price cap from 50 cents a gallon to maybe less than ten cents a gallon that it was going to cost maybe that much to have clean gasoline, and they accepted that. I think this latest spike is the

product of so many weird things that people don't
 understand it.

I mean the MTBE ethanol change is not a 3 regulatory change that anybody wanted. You know, 4 5 we all fell into that pool together. The state б didn't mandate MTBE. It said -- and the federal 7 government clubbed us into saying you had to have so much oxygenate, and the oxygenate of choice was 8 9 MTBE. And let me assure you everybody in the 10 world told it was safe and good stuff, everybody.

And it hit everybody on the outside and we're all having to suffer through that. Frankly, I've always said if my friends in the water board business had gotten all this underground storage tanks fixed long before they did, this may have never occurred. So this is just the public rises up and smites down many a good thing on occasion.

And we're all stuck with that one. But, 18 19 you know, in California it's been predicated, I 20 guess the fourth generation in me is coming out 21 here, a proud Californian. I mean the golden state and I want to keep trying from becoming the 22 23 late crepe golden state. Predicated, you know, a lot of it is success on being at the cutting edge, 24 25 investing in infrastructure, providing an
extraordinary quality of life to encourage all the
 workers to work hard and do all that we've gained
 here.

And we're still trying to do that. So
we will keep pushing the envelope in all areas.
But I think we've heard here in the last couple of
days there's a lot of things that we can correct
if we work together on. I think Commissioner
Geesman has really nailed one that tends to
frustrate people a lot. And there's others I'm
sure we can agree to work on while we disagree on
a host of other things.
MR. VERLEGER: I have a question.
Didn't in the case of power plant siding, when
that became a bottleneck, didn't you accelerate
that so that essentially
PRESIDING MEMBER BOYD: Yes, we did.
And yesterday you may recall that when Mr. Sparano
reported refinery capacity is a problem and we
need to grow refinery capacity, I took the
opportunity not to be hard on him, but to point
out that that was the first time I've heard in
public revelation by the industry that here in
California, that that really was a major issue.
Because they've been invited on more one

1 occasion to make a big enough issue of it such 2 that it could be addressed on that kind of scale. 3 I was able to say that government is capable of responding to emergencies. Unfortunately, we wait 4 5 for emergencies, etcetera, etcetera. And for 6 whatever reason, it's not criticism, the industry 7 has not chosen until just now to say that that really is a major thing we'd like to address. 8 9 I just presumed lack of responsement 10 that at that point in time everybody was 11 comfortable with the market, tight as it was 12 everybody was comfortable with it, with refinery 13 expansion, or so exasperated by the lack of 14 success that people have had, they didn't want to 15 ask anymore. I don't know. 16 But that's on the laundry list of things 17 that I think we need -- there's a joint understanding we need to address. 18 MR. LANZA: Yes, I'm Robert Lanza with 19 20 ICF Consulting. I wanted to follow up with some of your comments concerning the permitting process 21 and permit barriers with respect to environment 22 23 standards. I wanted to point out that our recommendations in our report with respect to 24 25 permitting do not in anyway address the underlying

1

environment standards themselves.

2 What we did is we looked at the process by which you achieve the same result that you 3 would achieve with a more efficient process, not 4 5 to the extent that any of those environment standards would be changed while the process 6 getting to those standards would change. So 7 barriers to expansion and storage capacity, and 8 9 barriers to expansion of a refinery capacity on 10 the permitting side are not that much different. And if the refiners are talking about 11 12 the need for capacity, and on the other side we're 13 talking about the need for storage capacity, those 14 permitting issues with respect to efficiency would 15 need to be addressed in either case in order to 16 facilitate those kind of changes. 17 PRESIDING MEMBER BOYD: I appreciate 18 that. And never took -- your preside person never took from your presentation any questioning of the 19 20 environment standard. 21 PRESIDING MEMBER GEESMAN: Nor did I. MR. LANZA: No, we explicitly went 22 23 towards the process. The other thing that was mentioned on a couple of occasions on the panel 24 was the power plant program and how those 25

permitting processes differ in some sense from
 what you would use for a storage facility or for a
 refinery.

The application of a uniformed permit program for storage facilities and for refinery expansions, of the refinery capacity, would also help the process of getting some of those on line in a more timely manner.

9 MR. HACKETT: Robert, when I listen to 10 your report I think I heard you say that you looked at the regulatory process and how all that 11 12 flowed. But you didn't get into -- you didn't 13 report to us in great deal about the appeals 14 process, other than to note that there seem to be 15 a higher degree of uncertainty and risk associated 16 with the total appeals process, but even above the 17 regulatory flow, is that correct?

MR. LANZA: Yes. That's certainly true. 18 19 Our mandate in putting the report together was to 20 look at the whole process. The problem on the 21 judicial side is that we can't necessarily come in with recommendations that are within the scope of 22 23 what the Commission can do, or within the scope of what the regulators can do. That is more a 24 25 judicial process that perhaps needs to be

1

addressed in another venue.

2 Meaning the Air Resources Board and local governments, etcetera cannot necessarily 3 effect the appeals process to the same extent that 4 5 they could effect the process for determining when б a permit application is complete, or determining 7 what the process is for issuing a condition of use 8 permit for example. 9 MR. HACKETT: So, Robert, is your firm 10 going to recommend to Scott when he's writing his report that somebody that understands this stuff 11 12 ought to be looking at the appeals end of it as 13 well? 14 MR. LANZA: Yes. We put that as a 15 conclusion in our report that the appeals process 16 certainly needs to be looked at, both with respect 17 to the fact in some cases applicants have told us 18 that the stake holders are coming in with multiple appeals. Where they come in, they appeal with 19 20 respect to one issue. That round of appeals goes

21 forward. And then at the end of that they'll come
22 back in with another issue.

In order to streamline that process
maybe you want a situation where all the stake
holders get together, come in, do the appeals

process with all the issues that are within the
 scope so that you don't have a whole appeals
 process going forward, and then after that appeals
 process ends another appeals process begins.

5 The other thing that is potentially 6 useful is to set boundaries with respect to the appeals process of what is and is not within the 7 scope of what can be brought in, meaning the 8 9 federal side on the NEPA process for environmental 10 impact statements. You can't bring things into 11 the appeals process that are speculative because 12 you have to have some basis for saying that we'll 13 have this particular effect or that particular 14 effect.

15 If you're just speculating that 16 something may occur, there are boundaries as to 17 what you can put into the appeals process and what 18 you cannot. So that would certainly be something 19 that could be investigated. Thank you.

20 PRESIDING MEMBER BOYD: Anybody else out 21 there have any comments, questions, want to take 22 this unique opportunity to direct to the group? 23 MR. GIESKES: Well maybe just one more 24 suggestion for Scott when the Commission report is 25 prepared. Originally there was the pipeline

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1	projects as well. When we looked at the
2	construction we, unfortunately, could not add on
3	to the sort inland infrastructure projects that
4	are out there. The Longhorn pipeline project is
5	still struggling, can't find financing.
б	Could be an additional supply at least
7	of (indiscernible), is not readily available in
8	the Gulf. That would address the issuing of Jones
9	Act vessels. It still is, in my opinion, a
10	pipeline project. But they just can't get the
11	commercial traction and the financing to literally
12	complete those last models.
13	MR. HACKETT: Thank you for that.
14	Kinder Morgan is and FERC for an expansion from El
15	Paso to Phoenix and Tucson. I don't know, I think
16	we had recommended that California support that
17	expansion, but I don't know that the FERC has
18	heard California do that, provide that support.
19	MR. GIESKES: Yeah.
20	MR. HACKETT: I haven't asked anybody
21	in California, but I asked Arizona and I asked
22	Kinder Morgan, or maybe it was Longhorn. And they
23	all said, gee, no, California has been kind of
24	quiet on that.
25	MR. GIESKES: Yeah. Similarly, there is

1 the disconnection. 2 PRESIDING MEMBER BOYD: I thought we 3 wrote a letter. MS. BAKKER: Yeah. 4 5 MR. HACKETT: Did they? Okay. Good, б good. 7 PRESIDING MEMBER BOYD: We took your recommendation seriously right away. 8 9 MR. HACKETT: I was kind of surprised when a couple of stake holders out there said they 10 hadn't heard from us. 11 12 MS. BAKKER: They may not have liked our 13 letter because we said we supported pipeline 14 capacity, not the specific pipeline. But I should 15 think they would appreciate that. 16 MR. HACKETT: I guess in the current 17 round they just didn't hear it I suppose. 18 PRESIDING MEMBER BOYD: Scott needs more help. 19 MR. MATTHEWS: I need more help. 20 21 PRESIDING MEMBER BOYD: If Scott needs 22 help it means we need help. 23 MS. BAKKER: Thank you. DR. WILLIAMS: i was thinking a lot 24 about my colleague, not his idea to make a lot of 25

money selling this. So in gasoline in schools,
but we were talking about infrastructure issue.
And in sort of thinking about it from the ports
perspective, if you have a limited amount of land
and you're trying to judge between containers and
oil, there's some options with oil.

7 Containers you're going to have to sell the land to put them on. There's just no other 8 9 choice. You can't ship it inland. I mean it's 10 got to get off the boat and on with the dock. But 11 oil of course has the advantage that you can build 12 a pipeline out further off the coast. There's 13 certain facilities out there, those islands out 14 there, right? They pump directly inland.

15 And wondered about the regulatory and 16 economic barriers. If there's enough income to be 17 made from the ports' perspective, or from somebody else's perspective, you know, is it impossible to 18 build the new facility off the coast? And if not 19 20 in California, what about in Mexico? And what's the plumbing like between here and Mexico? 21 MR. GIESKES: I think that's a valid 22 23 point you raise, and we don't pretend to be experts in handling. But I think it's a matter of 24

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25

push back and the voice of the petroleum industry

1 not being sufficiently hurt. I mean the ports 2 say, well, we propose this (indiscernible) project. The industry did not respond. 3 And now you guys, now it's too late. 4 5 We're giving this land away to the 6 (indiscernible). And there is a lot that can be 7 done because in places like Singapore or Hong Kong, I'd rather them to handle twice the 8 9 containers on half the land. And it's a matter of 10 union conditions and work conditions, etcetera. 11 It's not as bleak a picture as being painted. 12 But I think it's just a matter of the 13 container companies are very well organized, 14 represent their interest very well. The oil 15 industry doesn't do that. 16 MR. HACKETT: It's interesting to hear 17 an economist perceptive on that whole issue. MR. WILLIAMS: I'm a little frightened 18 to think that some report here is that the price 19 20 volatility is due to the Longshoreman's Union in 21 Long Beach. Maybe that's what it is. PRESIDING MEMBER BOYD: Well, I'm 22 23 recommend to recommend, you know, building things in other states or countries because we get 24 accused of exporting our pollution for one, 25

1	although they could build them as clean. But
2	also, it doesn't do as much for the California
3	economy as doing things inside California would
4	do. And the economy is kind of sour right now.
5	And you can't do a lot of positive
6	economic things, or environment things, when the
7	economy is down. So if we want to do more quality
8	of life and positive environmental things, we need
9	to have a health economy. And you do that by
10	providing jobs and things in California. But
11	we're torn here all the time about, you know,
12	where to build facilities and what have you.
13	And it's hard to take advantage of
14	existing infrastructures that could be put to
15	other uses when people want to see them gone. So
16	we all struggle with that.
17	MR. VERLEGER: I have two thoughts, one,
18	I keep hearing people say the petroleum industry,
19	and yet we have quite often what you're talking
20	is decisions of individuals companies. And each
21	individual company ought to the shipping
22	company makes their decisions. Certainly,
23	shipping companies are exempted from antitrust
24	laws, international antitrust laws, more than oil
25	companies.

1	Probably we want to encourage companies,
2	you know, to join together and decide things about
3	this. In that context, listening to Tony's
4	presentation this morning about how individual
5	entrepreneurs have come in and seized the
б	opportunity to essentially acquire land in
7	Martinez and, you know, where there were
8	refineries and so on. You know, it would suggest
9	to me that it's going to happen.
10	That if doesn't happen necessarily in
11	Los Angeles, I was a witness of a lawsuit not too
12	long ago and I learned there were a couple of
13	petroleum tanks in San Diego Harbor that were
14	accessible by sea, but you couldn't take gasoline
15	there now. Well, why doesn't somebody you
16	know, sooner or later somebody will go in and fix
17	them up, put the right investment in so the
18	emissions will be less, and everybody will be
19	happier, and they'll ship them from jet fuel to
20	gasoline or jet fuel and gasoline, drain dry
21	tanks.

And, you know, over time the market will address these, you know, as long as the Port of Long Beach or some authority doesn't have a higher threshold or something, a penalty, for being a

1 petroleum tank facility. And presumably, the 2 court understands that gasoline is sort of necessary to make for a successful operation of 3 the whole economy. 4 5 PRESIDING MEMBER BOYD: It give the б latter points a question mark. 7 MR. VERLEGER: Well, I don't know. MR. GIESKES: If you take a really long 8 9 term view at the petroleum logistics for 10 California, you could imagine a situation where it 11 becomes an input center for petroleum products 12 because that's a shallow port that has lots of 13 land for tankage, and you would interconnect to 14 (indiscernible) come in through the bay. And 15 alternatively then the LA basin, with it's 16 (indiscernible), and potentially some petroleum 17 reserves created tankage from the power stations would become the major crude oil import center. 18 And that sort of picture, if you 19 20 visualize it, requires work to get there. And meanwhile, opportunities are being lost. I mean 21 once the land, one, two, three it's gone, it's 22 23 gone. And there some active role that I think he needs to fulfill now and in the next coming years 24 to have a sustainable petroleum infrastructure ten 25 PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

1 to 20 years from now.

2	MR. VERLEGER: The other thing is always
3	there's the Longhorn Pipeline, and I'm not quite
4	sure what it is, but it's always been
5	MR. GIESKES: We just brought it up.
6	MR. VERLEGER: I was out of the room.
7	Coming up to Texas and then finally coming over
8	towards, you know.
9	PRESIDING MEMBER BOYD: Brian.
10	MR. COVI: Brian Covi. I've got a
11	question I guess for Bob Hermes, because he's so
12	much more knowledgeable about the rest of the
13	United States. We tend to focus a lot on talking
14	about California. Speaking a couple minutes ago,
15	talking about new refinery capacity, what do you
16	think about the relative costs or likelihood of
17	building a new refinery in California versus say
18	Arizona?
19	MR. HERMES: A new refinery, I doubt any
20	new refinery is going to be built anywhere in the
21	US, because the economics of expanding existing
22	facilities, as difficult as it may be, they're
23	just overwhelming because you have so much
24	infrastructure involved. That, you know, the
25	first million dollars you spend on a new refinery

1 basically earns no return. It's only the second 2 day in that you start making any money off of. So it's a lot better just to concentrate 3 the investment in the portions that make money. I 4 5 doubt that any refinery in Arizona will be built б for that reason among others. 7 MR. COVI: And the same logic would apply to California as well? 8 9 MR. HERMES: Yes. 10 MR. COVI: Thank you. 11 PRESIDING MEMBER BOYD: Here comes a 12 question. 13 MR. KAVALEC: Chris Kavalec from CEC. 14 We've been talking a lot about the impact of a 15 deeper forward market on price volatility. And I 16 guess my question for the Panel is, what sense do 17 you have of the relationship between the depth of the forward market and the severity of price 18 spikes? In other words, if we had twice as many 19 20 trades taking place, or ten times as many forward 21 trades taking place, what impact would that have on volatility in California? 22 23 DR. WILLIAMS: That was a question I tried to answer yesterday morning. And I would 24 say it will have minimal effect, because the 25

1	prices are pretty much sensible, and only if the
2	prices are very different will there be a
3	different price signal. If every consumer started
4	to buy gasoline forward, or on some average cost
5	pricing system, that could be very different.
б	But that's not we're not talking about
7	here. It's whether marketers are buying forward
8	or not. I don't see the depth of the forward
9	market is changing any signals particularly to
10	them. And so I don't think it will matter that
11	much. It will matter a little, but it won't
12	matter very much.
13	MR. VERLEGER: I would add that if you
14	compare energy markets my hope was to find a
15	way, quoting Ben Franklin, it's a beautiful
16	theory, mugged by a gang of brutal facts. But to
17	find someway to mobilize enough demands so that
18	you could really create a forward of some size.
19	Natural gas provides you an example of what can
20	happen if you do have that. We went into this
21	last winter with record high inventories, and we
22	had a price spike because it was so cold.
23	But if you look at open interest on the
24	NYMEX, both for the NYMEX futures contracts and
25	the NYMEX change a swap, which is one fourth of a

1	futures contract, and you add the two together,
2	there was a very large build up and there was a
3	huge contango in the market, which provided the
4	incentive that Professor Williams has been
5	teaching, is what you need to hold it.
6	And what happened is those people built
7	storage facilities without the help of the state
8	or anything, and they stored the gas. And then
9	that gas was then sold into the market and
10	mitigated the price spike. But there was a
11	market, they were in user buyers. There were
12	utilities. There were power plants and so on.
13	So that market was much more, what I
14	call, efficient, an opportunity market. That's
15	what you need. And, unfortunately, that doesn't
16	look like what we're going to get.
17	PRESIDING MEMBER BOYD: Now I'm going to
18	slightly modify something Phil just said, and that
19	is in California you said not without the help of
20	the state. But in reality, in looking at the gas
21	prices of 2000, the state did put a lot of effort
22	into studying the situation. A lot of us managed
23	to convince the administration not to do for gas
24	what had been done for electricity.
25	But what we did do is actively support

1 in front of any and every regulatory body the 2 construction of storage facilities, etcetera, and 3 all the infrastructure. And we actually did accelerate by going to FERC and going to local 4 5 districts and everything else. The construction 6 of pipelines and gas facility, etcetera, etcetera. 7 And, you know, that can be done in this arena as well. 8

9 MR. VERLEGER: If you go back, I filed 10 with FERC and objection to their proposed remedy 11 on just ignoring the potential gas prices paid. If you go back and you look at the inventory data 12 13 on natural gas, and the price spreads were 14 observed in California during the crisis in 2000, 15 versus prior, you precisely the relationships 16 you'd expect, very low inventories and very high 17 spreads for prompt supplies of natural gas or forward supplies. 18

Now, does that say that the market was working efficiently globally? No. It just says that what was happening in California was consistent with low inventories and high prices. It does not get back to the question of whether somebody restricted the flow of natural gas into California, or whether there's an adequate source

1 capacity.

2	One of the key solutions to that is just
3	what you did. That was exactly the right thing.
4	Fill the storage capacity as fast as possible and
5	hope it gets filled.
6	PRESIDING MEMBER BOYD: We didn't blow
7	our horn, and we didn't take on FERC, but maybe we
8	deserve more credit that we didn't get. Well,
9	people in the Bay Area were hogging all the press.
10	MR. HAGGQUIST: I just want to agree
11	with Dr. Williams on this one because of the
12	physical nature of this business in trying to
13	bring cargos in. Maybe that's true, maybe all you
14	need is the storage and then the cargos will come
15	earlier. But forward market signals are something
16	we've heard over and over from stake holder after
17	stake holder that there's no way to hedge cargo
18	coming into California.
19	So if you leave from the economist point
20	of view and sit yourself down inside a company, an
21	oil company, you almost have to leave all that
22	theory outside because you're going to get that
23	cargo from down there in Australia up to here.
24	And you've got to be able to hedge that position
25	and create more competition in the market place.

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We don't have the same view on this overall.

2 DR. WILLIAMS: I'm going to object. We were at the same interviews. All traders said if 3 only they could have some more trading 4 5 opportunities they would enjoy it. But I think a 6 number at times said that they could hedge cargo. 7 The market was not that illiquid. And they could certainly hedge partial cargos, which can come in. 8 9 So we get back to where we started yesterday 10 morning, is the cup half full or half empty? I guess in this case it's still good 11 12 news if there's a reason they function in forward 13 market in California. And that does not appear to 14 be the major impediment to cargos not coming in. 15 MR. HAGGQUIST: One last thing on that, 16 I'm old enough to have been around when the NYMEX 17 came on stream, and they were talking about this great idea of creating a forward market in heating 18 oil in New York Harbor back in the early '80s. 19 20 What's a futures market? What does that mean? I 21 didn't know what a futures market was. I said you can sell diesel today, or next month, or two 22 23 months from now, or three months from now? They said, yeah. Well, that's great, 24 you know. But I just come from the west coast and 25

1	I bring diesel around and sell it three months
2	later and lock it in. It's a great idea. But
3	step one, you had to have some tanks, you see.
4	And NYMEX is probably Mr. Laughlin, you're not
5	still there are you?
6	MR. LAUGHLIN: Yes, I am.
7	MR. HAGGQUIST: You are still there.
8	PRESIDING MEMBER BOYD: I think I heard
9	him just attempt to get in there.
10	MR. HAGGQUIST: Yeah. That's what I
11	wanted, can you talk a little about that
12	interrelationship, the flow of the commodity and
13	the forward market, futures market?
14	MR. LAUGHLIN: Yeah. I think that, you
15	know, having a more active futures market really
16	adds to the efficiency of the system. And in the
17	long run I think that's really what California is
18	going to have to look to as well, is to create
19	some type of more of a, you know, active forward
20	market so that, you know, companies can make plans
21	on a three to six months basis rather than a one
22	month basis.
23	And I think that, you know, the price
24	spikes can be mitigated through, you know, the
05	
25	ability to trade in a three to six, to nine month

1 time frame, as opposed to in the spot market, or 2 what limited forward liquidity is available 3 currently in California, which is maybe only one to two months forward. And I think that, you 4 5 know, certainly for companies that might want to б participate in California and start to perhaps, 7 you know, the European or Asian refineries that are able to make the California spec gasoline, if 8 9 they don't have the price that they can lock in, 10 say three months forward, they probably in the 11 long run aren't going to be able to participate in 12 California on a regular basis. 13 And it becomes more of just an ad hock 14 type of participation in the California market, 15 you know. When the price spikes they might 16 participate as opposed to a longer term commitment 17 to supply in California, you know, year in and year out. I think that, you know, certainly it 18 would be worth exploring. And, you know, NYMEX 19 20 might be able to help as well to try and get more future liquidity in the gasoline market in 21 California. 22 23 MR. HAGGQUIST: And along that line, I mean it's not so much to make it easy for traders 24

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so to speak. Everybody in the market is a trader

1 in some way or another, but they name themselves. 2 It's just a matter of how much of an incentive do you need to put that ship on the water if it's 3 going to be an input? How much of an incentive? 4 5 Does the price go up ten cents before you get the б guts to float it? 7 Well, in New York Harbor it only needs to be half a cent, because you know you can lock 8 9 it in. You know what you freight rate is, you 10 know what your FOB cost is in Rotterdam. Half a 11 cent, throw that \$75,000 in the bank, you know, on 12 a cargo. So one penny on a cargo, on a 300,000 13 barrel coming to California is, what, over 14 \$125,000 profit. It's not bad. 15 So if you could take you barrels right 16 now and sell them into this market now, and know 17 what your revenue side is going to be, you could lock in a penny or two pennies known. You don't 18 have to wait the ten, 20 cents spike. So the 19 20 advantage of this thing is it reaches out as a vacuum cleaner and sucks up all the components in 21 the world at known values. That's what it does. 22 23 DR. WILLIAMS: I think you're both underestimating what's already out there. And 24 25 what's already out there, say for three or four

months, is an NYMEX gasoline contract New York
Harbor, and it's price relationships will be very
similar to a three or four month California. And
we've already got a very good product there. It's
called NYMEX.

б And if anybody wants to hedge three or 7 four months out, they can use that existing market as it gets to one month, then they go into the 8 9 California pipeline market. And that's going to 10 beat anything else because it's already got the 11 liquidity. And NYMEX, they're a part of that. 12 MR. COVI: I have a question for 13 Mr. Brusstar. Your swap contracts for LA have 14 been on the market now for about five months. And 15 it's my understanding there hasn't been a single 16 contact sold. I know a lot of the contracts that 17 NYMEX were in the markets, NYMEX (inaudible) wasn't too successful. Do you have any intuition 18 19 or thoughts as to why that's been the case? MR. BRUSSTAR: Well, part of the problem 20 is that, you know, California swaps markets that 21 exist is not very liquid and, therefore, you know, 22 23 the current market that exists, you know, has not, you know, chosen to use the NYMEX for clearing 24 those swaps. And right now, you know, to the 25

current market I guess is being satisfied by the
 existing network of cash market brokers in
 California.

But certainly, you know, the liquidity 4 5 that we've seen so far, you know, it doesn't б really indicate, you know that in the future something more couldn't be done to kind of 7 encourage, you know, west coast participants to 8 9 start, you know, using a futures contract. 10 MR. COVI: Did you do an analysis before the fact as to the current volume of swaps that 11 12 take place in California before you decided to 13 venture into those contract? 14 MR. BRUSSTAR: I mean as far as 15 measuring the liquidity in the existing swaps 16 market, it's very hard to get good estimates. And 17 many of the brokers, you know, don't want to disclose their proprietary information. But you 18 can get anecdotal sense by talking to a number of 19 the traders that try and buy and sell those swaps. 20 21 And according the traders that we've spoken to, there's not a lot of liquidity in the swaps market 22 23 in California. And I think that's in contrast to the 24

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swaps market in the Gulf Coast where, you know,

25

1	there	seems	to	be mu	uch more	liqu	idity	for	trading
2	swaps	on Gu	lf C	loast	gasolin	e for	insta	ance.	

3 MR. HAGGQUIST: Dan, could you imagine 4 if you didn't have your storage in New York 5 Harbor, if NYMEX did not have its storage in New York Harbor, but in lieu of that you had sort of 6 7 the NYMEX that you have out here, a swaps market, devoid of storage and devoid of the guarantee 8 9 physical delivery. If that were the case, would 10 you lose much liquidity in NYMEX?

11 MR. BRUSSTAR: Yeah. I mean, you know, 12 that's what makes the New York Harbor, you know, a 13 successful, you know, hub for trading gasoline and 14 other petroleum products is you have, you know, a 15 very competitive, you know, tankage system. And 16 you have a lot of your multiple participants in 17 the market, you know, on a daily basis who are 18 participating both on the NYMEX and in the physical market of buying and selling oil. 19

And, you know, we have probably, you know, in the New York Harbor there may be on any given day, you know, 25 to 50 participants in the market. Whereas, you know, on the California market the numbers may be in the area of ten market participants. So I mean you have a big

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1 divergence there.

2 And I think, you know, in order spur some more competition in California it might, you 3 know, help to try and encourage, you know, more 4 5 tankage and more infrastructure there that would allow for more, you know, more competition. б 7 MR. HAGGQUIST: One final one, how would you respond to this notion that there's also 8 9 hedging mechanism, which NYMEX gasoline? Can you 10 say a few words about basis relationship and basis 11 risk? 12 MR. BRUSSTAR: Yeah. I mean the problem 13 with California is its market is not highly 14 correlated to New York Harbor, mainly because the 15 gasoline specifications are quite a bit different. 16 And the crude supply network is totally separate 17 and different from the New York Harbor and the Gulf Coast. And there is a pretty high 18 19 correlation between the New York Harbor and the 20 Gulf Coast because there's a pipeline that links 21 the two.

And as far as ships, it's a fairly short trip from Houston up to New York if they want to supply, you know, directly between, you know, the Gulf Coast and New York Harbor. So I mean the

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correlation there is pretty high. So, you know,
 it's a viable alternative to hedge using NYMEX
 gasoline for most of the Gulf Coast.

But in California, you know, the price spikes that you've been talking about, if you look at those charts, you know, those spikes get way out of hand. And the NYMEX price spikes don't, you know, match those. And sometimes, you know, those markets can be disjointed.

DR. WILLIAMS: That's why I was saying that you need a one month forward market in California, but it's a three month that's probably highly correlated with NYMEX. So it's the combination that makes an effective forward market for California.

16 MR. COVI: I have a different question. 17 Although I much enjoy talking about forward markets, it seems like when the fuel alternatives 18 that's left on the table for us, Mr. Sparano 19 20 talked about and, Bob, you recommended it. We're not talking about new refinery capacity now. But 21 I guess we're talking about capacity creep. So 22 23 we've talked a lot about this here. I think Tom has talked about this in his 24

25 presentation that it's very plausible to me that

1	there's the low hang that you go after first.
2	And, you know, you go after bottleneck,
3	bottleneck, bottleneck, every time you're down for
4	major maintenance. And we've seen over the last
5	seven or eight years of pretty steady about a one
6	and a half percent per year increase in the
7	refinery, some of which I'm sure is due to the
8	blend stocks coming through.
9	Alternatively, it seems like when
10	profits were very low in the mid '90s, and
11	refineries weren't operating at capacity in
12	California, these modifications were being done.
13	Now that we're at full capacity and margins are
14	higher, it seems like the incentive would be
15	higher to do more refinery expansion.
16	So my question is, is there a limit to
17	this? Can this go on indefinitely? Is it
18	increasing cost curve?
19	MR. HERMES: And I guess theoretically
20	it is. But if you look at historically, you
21	wonder if that's true. I mean I've heard this
22	supply to the Gulf Coast for a long time as well.
23	In the last ten years there's been a million
24	barrels a day of capacity on the Gulf Coast. So
25	it's a whole combination of things. Most of it's

not just literally going and finding a pipe that's
 too small and replacing it, as the bottle necking
 suggests.

It's expansions that occur often when 4 5 there's changes in specifications, for example б with the diesel specifications coming, a lot of 7 refiners now are putting in the facilities to put in low sulphur diesel. And often it's convenient 8 9 while you're doing that to also increase crude 10 capacity and overall capabilities of the refinery. 11 So we see quite a few of those coming on. 12 A million barrels a day has been added 13 on the Gulf Coast. And I think in the last ten 14 years, I don't have the number readily available, 15 but 200 something thousand barrels a day has been 16 added in the east coast, which is also a very 17 difficult permitting environment. And percentage wise actually about the same as the percentage 18 increase on the Gulf Coast. 19 20 So I suppose theoretically there's a limit to it. And if you trying to grow it at five 21 percent a year or something, I'd say you couldn't 22 23 do it. But the Gulf Coast growth has been a percent and a half or so. And that's in spite of 24

25 the fact that quite a few refineries are being

shut down as well. There's close to a million
 barrels down has been shut down. This is a net
 increase of a million barrels a day.

MR. GIESKES: Brian, if you a take a 4 5 really long term look, in 1981 there were still 6 310 or so refineries in the US. Today there are 150 and it does look still the same. So what has 7 happened is -- and that equates to about a six 8 9 percent a year in capacity improvement on 10 remaining refineries. And you're absolutely right every time, here in California for instance, one 11 12 of these mandatory major changes, the CAFE II and 13 now with CAFE III, many refiners have to make 14 significant changes to equipment.

And they look at it and say, oh, if I have to go out for new permitting in any case I might well do this, and that and that. But you get up to, in individual refineries, you get up to certain hard limits, and certain constraints in certain units where now you've done everything you need to do.

And then even then for instance it will last maybe 20, 25 years and then it needs to be replaced simply because it's no longer safe, or you're finally down to where pitting and corrosion

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have taken the toll. And at the moment you have
 to replace capital equipment anyway, especially if
 that's what happened.

MR. HACKETT: And just to be clear, if 4 5 it's true that there were high refinery capital б spending in the early to mid '90s, but the 7 capacity wasn't maximized, if that's true then I would guess a lot of that though comes back to 8 9 Joe's five billion for carb phase II in that time 10 frame, which was introduced in '96. MR. COVI: Yeah, that's true. Also, as 11 12 in the Gulf, a lot of refiners shut down in 13 California, or at least stopped making gasoline, 14 and I'm talking about gasoline production right 15 now. So the changes to make carb II were also 16 compensated for a lot of those smaller refineries 17 that stopped making gasoline altogether. MR. HACKETT: Carb phase II shut down 18 gasoline making refineries, and the rest of them 19 20 spent a lot of money to be able to make it. Okay. 21 MR. COVI: A closely related question is we're almost -- looking at the data, it almost 22 23 seems like refinery capacity doesn't matter to the extent that refiners can seemingly increase their 24 capacity behind capacity by bringing blend stocks 25

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and processing those, and pumping it into the pipeline. I talked with Drew Laughlin a little bit about this a while back, and if he's still listening, you know, I couldn't get a -- I wasn't expecting a good answer from him off the spot from Drew.

7 But is there a limit to the extent that refineries can effectively increase their gasoline 8 9 producing capacity sort of on the side? I don't 10 know enough about the engineering of refineries. MR. HERMES: Well, I guess the limit in 11 12 case you're just more or less importing gasoline 13 and pushing it through, maybe doing minor 14 operations to it. There's also different kind of feed stock imports that are pretty common on the 15 16 Gulf Coast, and not so common here.

17 And those are ways that if you have a little bit of extra capacity in one unit that you 18 can get more put through the system by bring in 19 20 feed stocks as opposed to blend stocks applies. 21 No processing will be done to it. It will just be put in a tank and blended to a product. Feed 22 23 stock means it will be processed in a refining unit. Like vacuum gas oil for example is a feed 24 stock. 25

You have excess capacity, we don't have
 crude capacity. You could import that and produce
 gasoline from it.

MR. SPARANO: May I make a comment to 4 5 add to that to try to respond to the question? б Refiners are confronted with another issue, even 7 when trying to make this smaller incremental changes, and that is in some cases even what one 8 9 might think are minor changes will trigger either 10 a Title V issue or a review issue. And those are not insignificant problems for a refiner to face 11 12 in terms of what occurs in the refinery's permits 13 to operate.

14 Just another observation. I think my 15 numbers are right. In 1980 there was about 18 16 million barrels a day capacity on refineries, all 17 310 of them. And now it's about 15. And the manner in which a refiner might take advantage of 18 an intermediate feed stock throughout the country 19 is, as Bob described it, if you have a larger cat 20 21 cracker, which used to be the piece of equipment of choice to make gasoline. It's really good at 22 23 that.

24 But with the advent of both RFG on a 25 federal level, and our better cleaner gasolines

1 here, the value of the cat cracker and the 2 material it makes, has diminished in exchange for material like alkylate, and for its air quality 3 benefits, MTBE. Because each of those have a very 4 5 minimal amount of all of the contaminants that make up the contaminates, all of the materials 6 7 that make up carb specs, and each of which has been lowered to make the gasoline cleaner. 8 9 So the flexibility of California 10 refiners in particular to bring in an intermediate 11 that will serve the purpose has been narrowed. 12 I'm not saying it's nothing. That's not fair. 13 But it has been narrowed versus what it used to 14 be. And that's one of those consequences I was 15 trying to talk about before, I'm sure completely unintended. Nobody even probably thought of it. 16 17 But that's one of the things that occurs, and one of the prices we have to deal with 18 19 when we make and use clear gasoline and bring cleaner air. I'm all for it. But I think we can 20 do a better job of educating folks as to what's 21 involved in that. 22 23 MR. COVI: Yeah. I brought that up because there's a lot of discussion about how 24 25 nobody can make carb gasoline, or very few people

1 can make carb. But there's lots of so called near 2 bob floating around that you can tweak up a little bit and make it for spec for California. A 3 related question, again, to this related question, 4 5 I'm much less concerned about competition in the industry if it what Tony Hoff tells me is true 6 7 that independence can blend up in the tanks the same way that refiners can. 8 9 So I pass that as a question to the 10 panel or some folks out here as well. If that's indeed the case, because it seems to contradict 11 12 what Stillwater has told us. 13 MR. HOFF: Yeah. I think importers can 14 blend the finished gasoline with components, but 15 they're certainly not going to do it with as much 16 ease as a refinery is. They've got to find the 17 components, figure out which components are going to work together. It's complicated. And then 18 they've got to locate everything and get it in, 19 20 and get into the tank. 21 So whereas a refiner has got their system all set and it's pretty much a conveyer 22 23 belt. So it can be done, but it's much more difficult. 24 25 MR. LAUGHLIN: Can I also say that the

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independence, or at least small blenders, at least on the west coast, the Unocal patent scares blenders to death. Most of the refiners do try to blend around the patent. When you're a small blender, if you're in the harbor for instance, you don't have that problem. At least you're not worried about that problem.

8 And since the patent could hit you for 9 quite a few cents per gallon, which a lot greater 10 than your typical profit, you really have to worry 11 about it. So it's so difficult to blend around 12 the patent on the west coast today. And 13 independent would have a very, very tough time to 14 do it.

15 The refiners, you know, have a tough 16 enough time to do it making California carb spec, 17 and trying to blend around the patent at the same time is, you know, makes a very narrow window in 18 specifications that you need to meet. An 19 20 independent would have a very tough time doing it. 21 PRESIDING MEMBER BOYD: Drew asked, or his comment, raises an opportunity for me to ask 22 23 the question that I wanted to ask for a while here, and was saving some appropriate time. And 24 25 that is if any of you can venture an opinion on

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what is the Unocal patent costing us?

2 MR. HACKETT: Yeah. I've got an opinion on that. I think the answer to that is something 3 less than a penny a gallon, but it's on every 4 5 gallon in California. So on 15 billion gallons, 6 it could be a lot of money. It's less than a 7 penny, maybe less than half. And the reason for that, it's not easy to qualify. 8 9 I sort of thought about this for a long 10 time. What we do know is the refiners who defends 11 the lawsuit are blending around the patent 12 probably to 100 percent, or as much as they can. They testified at the time that their cost to

13 They testified at the time that their cost to 14 blend around would be relatively minor, somewhere 15 between .1 and .5 cent a gallon.

16 So there's that quantification that we 17 heard out there. And then what we also heard was, and we continue to hear this, is that people who 18 19 are potentially importers won't even both to 20 participate in the California market. There's 21 this whole host of issues out there, not in the least which is this Unocal patent, which if you 22 23 found to be willfully infringing upon, the damages would be troubled. 24

25 And that troubled damage at this point

1	looks like about 17 and a half cents a gallon. So
2	there's another data to point out. How that 17
3	and a half cents translates to what, you know,
4	we're paying the gas, I'm not sure. But that's
5	how I get to an answer that's less than a penny.
6	MR. LAUGHLIN: But I think that the
7	supply issue is hard to determine how much volume
8	might come to California and how many new players
9	you might have, whether it be Pacific Rim players
10	or other Gulf Coast or Western Hemisphere players
11	that might come to California. The Unocal patent
12	is definitely a restrictive issue when it comes to
13	moving the (indiscernible).
14	And I think that the storage facilities
15	out there would find new customers and new
16	traders. I think that you would find a much
17	greater push to find new players to move into the
18	market without that patent. It really is a
19	barrier of entry to the market.
20	MR. GIESKES: And, Jim, I think that's,
21	from your perspective of your former profession.
22	PRESIDING MEMBER BOYD: I think we posed
23	to death on this answer.
24	MR. GIESKES: Yeah. But going around
25	the Unocal patent that you make an optimal grade
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1	of gasoline in terms of emission control
2	properties. So in actual fact, there's a lot of
3	tons of unnecessary carbon and other initiative up
4	in the air in California because people blend
5	around these patents. Where otherwise they would
6	blend right into (inaudible).
7	MR. STEVENSON: Commissioner, I'm sorry,
8	I'm not going to answer your question. I don't
9	have an answer.
10	PRESIDING MEMBER BOYD: We've got the
11	voice of experience here.
12	MR. STEVENSON: But I will say to the
13	panelist that I'm not aware my understanding of
14	the five patents and molecules that we have to
15	work is that I don't think anybody is blending
16	around Unocal patents.
17	MR. HACKETT: Okay. And so you think
18	they're at risk of infringing on the patent?
19	MR. STEVENSON: I'm not a lawyer. I've
20	asked that question and I've not gotten a good
21	answer.
22	PRESIDING MEMBER BOYD: Okay. Any other
23	comments anyone wants to make? We're beginning to
24	lose some of our folks. The hour is actually
25	going to fill up the day. Was there any doubt of
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1	that? Well, having panel discussions is always an
2	asking pre-asked questions ahead of time that get
3	asked during the course of things. These things
4	kind of opened. But I should have known better.
5	We could fill the time. No takers?
6	MR. STAMETS: No luck.
7	PRESIDING MEMBER BOYD: Does anybody
8	want to make any closing remarks before I do? I
9	guess not. So I guess I will try anyway. First,
10	I want to thank, I mean I really want to thank
11	everybody who's here, who's come, who spent their
12	time, who's made a contribution. And everybody in
13	the room in one way or another has made a
14	contribution.
15	I know there's a lot of folks who work
16	for a lot of folks who have been participants in
17	the events here. This has been extremely
18	interesting to me. It's very rare, I don't know
19	about Commissioner Geesman, but it's very rare for
20	us to get time to attend something that I have
21	found, you know, so extremely interesting and
22	helpful.
23	And hopefully Scott has gotten lots of
24	help on the report he's going to have to draft up
25	for us. Let me in closing though provide a little
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context, maybe revisit why we're here, the '99
price spikes, the public outrage, be that right or
wrong, political intervention, Attorney General
investigations and findings, and result in
legislation that actually said to do several
things, one, look at a product from the Gulf,
which wasn't the subject of today.

But although I meant to ask that 8 9 question at the end of the day here. Does that 10 offer anything here before we gotten off? Look at 11 that SFR, and that got so interesting based on the 12 work. But still, why don't we ask the author if 13 we can more time and broaden the scope, which we 14 were provided in that. That has resulted in these 15 days of discussions of a wide variety of things.

And then the third thing we haven't finished with yet, and that's yet to come, is recommend ways -- the legislature wanted us to recommend to them way to reduce California's dependence on petroleum as another way of getting all of this spikiness and the stress and strain on the California economy.

23 So, the past two days, as I've said, has 24 been redirected at the one subject, SFR, but it 25 really is, you know, this all a system, and so you

1 can't help but talk about many of the connecting 2 points, and ultimately start connecting all the dots. And that's been extremely helpful to us. 3 We have to digest what's been presented here for 4 5 the last two days. And we have to ultimately provide б 7 recommendations, advice, counsel, to both the executive and legislative branches. And we still 8 9 have to give opinions, advice and counsel to the 10 public who's looking at us and expecting us to protect their welfare, and looking for leadership, 11 12 encourage, etcetera, etcetera. And so we still 13 have to finish all three of these issues. 14 And we intend to do that in the next 15 couple of months and get back to both the Governor 16 and the legislature, and try to provide more 17 answers to a lot of these questions. The advance of the last 18 months and the process that's been 18 underway here in the last 18 months, I think have 19 20 contributed to already making some changes. There's been some talk, there's been a 21 lot of talk, about them in the past two days. 22 23 There's been changes and there's been progress in

addressing California's, quote, problems regardingprice spikes and all that lies behind price

spikes. And as Drew said, some of us have been
 concerned about also the potential for super
 spikes, as this whole situation gets tighter, and
 tighter, and tighter.

5 Because of all the world events, and the population of California, and mother nature, and б 7 murphy, etcetera, etcetera, just continue to play a bigger and bigger role. And it's now a world 8 9 economy. And I see no end to the huge increase in 10 worldwide demand for mobility. That's means 11 transportation ultimately gets translated in Third 12 World Countries become Second World Countries, and 13 then vie for more to somebody having an automobile 14 on their own.

And so the demand on transportation fuels is just accelerating at incredible paces. They're little glitches as the world economy goes through adjustments every now and then. But overall, in my 25 plus years at looking at this, it just grows, and grows, and grows. And it's just going to continue to be a problem.

And the other thing, I'm not trying to blow California's horn, but as goes California, often go other states, other countries and what have you. So California's unique form of

gasoline, I refuse to use the B word, eventually spreads to other places. Other people want quality of life and protecting their health and what have you.

5 So we have to tough it out and be on the б cutting edge, but maybe the market will change as 7 others states and of the nation and dis-nation maybe move towards cleaner burning gasoline. 8 9 Maybe there will be some standardization that will 10 help. But we can't count on that, just like I 11 can't count on my lifetime on the pathway to 12 hydrogen solving problem we're wrestling with 13 here.

14 The things we've heard over the last two 15 days repeatedly were in the general category of 16 infrastructure, tank storage, refinery capacity, 17 and marine infrastructure, all of which have roles to play in helping address, not solve, but at 18 least address some of the issues that face 19 20 California. Permitting in California, always a major task, remains a major task, and effects all 21 of these areas of infrastructure development. 22 23 And it's something we've obviously identified big time. That's something that needs 24 to be looked at. And it's something we obviously 25

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273

will pursue. The Unocal patent is unique onto
 itself, and we're dependent upon another federal
 agency to address that problem. And I better not
 go too far before I get myself in legal trouble,
 because I know I'll be before the FTC. They
 promise that.

7 And so we get to the bottom line question in my mind, is the cup half full or is 8 9 the cup half empty? I really think the cup is 10 half full. I really think that Stillwater, for 11 all the slings and arrows they've seemingly 12 suffered, has done a very significant service to 13 us and to California by providing us a proposal 14 and document that have given rise to 18 months of 15 debate and discussion, culminating in these two 16 days.

17 That have frankly helped move the ball a 18 little bit further down the court, have brought some attention to the issue. And I think they can 19 20 take some comfort, as they lick their wounds, in 21 the fact that things are happening. And the way things happen sometimes is just by focusing 22 23 attention on them. Government can get things done by just threatening to do something, but not doing 24 25 it.

1	And the trouble, and I can say this as a
2	40 year veteran of government, the trouble is
3	sometimes they actually go then and do it. And
4	the target long since passed and they shoot
5	innocent victims when they fire, pull the trigger.
б	But nonetheless, we try out best. And we're going
7	to try to digest all of this and work it into the
8	system that we're working with.
9	And we will try to work within the
10	system of government, which is difficult in and of
11	itself, and work with out sister agencies to move
12	some of these issues. I'm grateful for the fact
13	that some of them dropped in on these hearings,
14	but none of them seemed to tough it out. And it
15	just makes our job a little harder in terms of
16	time spent explaining.

But with one of them I had some entree, 17 18 so it will make that a little bit easier. I get 19 the feeling that the Energy Commission is going to 20 have to act like the Trade in Commerce Department or Agency a little bit as we really look at the 21 22 whole system involved here. But that's something 23 that Commissioner Geesman and I are paid to deal with, and we'll do the best that we can. 24 25 So all I can say is I see this as an

1 extremely positive experience. I thank everybody 2 for the contributions that have been made. And I look forward to us continuing to work on this 3 issue. Now, if any of you are board and want to 4 5 come back Monday in this very room, we're going to host a world oil supply conference as part of yet б 7 another project this agency has, a charge from the legislature, which is seemingly beginning to 8 9 respect this place again, which wants an 10 Integrated Energy Policy Report from us by next November. 11

12 And so that means electricity and 13 natural gas and transportation fuel. So we are 14 going to open that subject and I'm going to have 15 to sit here. John gets relieved from that. I'll 16 be joined by Chairman Keese, but that's just part 17 of the continuing emphasis and interest in a subject of petroleum and transportation fuel that 18 seemed to have captured us here, and it's not 19 20 going to let go for quite some time.

And I guess that's part of the reason I'm here, based on that other experience with transportation fuel. This agency is deep into the subject, and as it will be for a long, long time, because all three areas work together. Energy is

1 a major issue. The financing of energy in my 2 opinion is huge problem for this county, not the 3 financing any one of the but, you know, the Enron 4 did a terrible disservice to the country. 5 MR. GIESKES: And to Anderson. б PRESIDING MEMBER BOYD: And to our 7 accountants. And so financing is withdraw from energy in general. And it's a very slippery 8 9 slope, and a very steep slope. And so I think 10 energy is a major problem for this country's economy. And the system has to be plugged 11 12 together, and people are going to have to work on 13 it. We just started turning rocks over really. 14 So I thank you and I appreciate this 15 very much, and look forward to continued 16 collaboration and success. Thank you. 17 (Thereupon, at 4:30 p.m., the workshop 18 was adjourned) --000--19 20 21 22 23 24 25

CERTIFICATE OF REPORTER

I, Peter Petty, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Workshop; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said workshop, nor in any way interested in outcome of said workshop.

IN WITNESS WHEREOF, I have hereunto set my hand this 29th day of April 2003.

FEASIBILITY OF A STRATEGIC FUEL RESERVE IN CALIFORNIA

DRAFT COMMITTEE REPORT

JULY 2003 P600-03-010D



Gray Davis, Governor

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Disclaimer

This report was prepared by the California Energy Commission's Transportation Committee to be consistent with the objectives of Assembly Bill 2076 (Shelley, Chapter 936, Statutes of 2000). The report is scheduled for adoption on July 23, 2003. The views and recommendations contained in this document are not the official policy of the Energy Commission until the report is formally adopted.

Summary and Overview

In the last few years, California motorists have experienced significant short-term increases, or "spikes" in the price of gasoline. The state's gasoline refineries are operating at near maximum production, and when an unplanned refinery outage occurs, especially when gasoline inventories are low, the price of gasoline can spike. Outages drive the price higher because of the temporary imbalance between supply and demand. The price increase required to restore this balance can be significant due to a very low demand response—California motorists have little alternative to gasoline use in the short run.

Gasoline sold in California requires a unique, less-polluting formulation. This means that sources of supply outside the state are limited. Since California is not connected by pipeline to major refinery centers elsewhere in the country, imported gasoline must be brought in by marine tanker. In the event of an in-state supply disruption, locating and importing replacement gasoline can take from two to six weeks. Prices often remain at high levels until shortly before these additional supplies arrive.ⁱ

California's gasoline price volatility,ⁱⁱ of which price spikes are the most obvious feature to motorists, can result in prices much higher than in the rest of the country. The difference in retail prices between California and other regions, typically 5 to 20 cents per gallon, can increase to 50 cents or more per gallon as a result of in-state supply disruptions. During the latest price spike episode in early 2003, average retail prices in California increased by 57 cents per gallon and reached levels 40 cents higher than average prices elsewhere in the U.S.

In response to continuing periods of gasoline price volatility and their impact on consumers, the Attorney General formed the Gasoline Price Task Force to examine the causes of price spikes. The results of the Task Force study are described in *Report on Gasoline Pricing in California*, issued in May of 2000.

The report recommends that the state investigate the possibility of a "strategic fuel reserve," consisting of gasoline kept in public storage tanks that would be available to private suppliers through a daily auction. The intent behind such a reserve is to make additional gasoline available to the California gasoline market during supply disruptions, and thereby reduce, or "dampen," price spikes. This recommendation led to the passage of Assembly Bill 2076.

Assembly Bill 2076 (Shelley, Chapter 936, Statutes of 2000) directs the California Energy Commission (Commission) to assess the feasibility of operating a state strategic fuel reserve (SFR) to insulate consumers and businesses from the substantial shortterm price increases arising from refinery outages and other in-state supply disruptions. The Legislation includes detail on the nature and preliminary mode of operation of an SFR, and is consistent with the concept given in *Report on Gasoline Pricing in California*. The Commission's Transportation Committee (Committee), which oversees all transportation-related activities at the Commission, incorporated this detail into the

specific reserve concept which is described in this report through numerous consultations with stakeholders and contracts with experts in California's petroleum refining and marketing sector.

The statute also directs the Commission and the California Air Resources Board (CARB) to develop and adopt recommendations for a California strategy to reduce petroleum dependence in California. This latter directive has been undertaken as a separate proceeding by the two agencies.^{III}

What Does the Transportation Committee Recommend?

Based on its evaluation of a strategic fuel reserve and the causes of California's gasoline price volatility, the Commission's Transportation Committee recommends the following actions.

First, the Governor and Legislature <u>should not</u> proceed with the strategic fuel reserve concept evaluated by the Committee. The Committee found that a strategic fuel reserve could have several unintended consequences, which could limit its effectiveness as a tool to moderate gasoline price spikes and could reduce the total supply of gasoline in the state. In addition, the Committee has determined that investment in private storage capacity is increasing, which reduces the need for SFR public storage.

Second, the Commission should undertake a comprehensive evaluation of California's future petroleum product import needs, in consultation with the following agencies:

- The State Lands Commission,
- The Ports of Los Angeles and Long Beach,
- The Coastal Commission, and
- The San Francisco Bay Conservation and Development Commission.

This evaluation should identify steps that the state can take to ensure that marine infrastructure and port facilities will be adequate to accommodate the unconstrained movement of petroleum products during the next twenty years.

Third, the Governor and Legislature should identify a state licensing authority for petroleum storage infrastructure and related facilities. A state licensing authority would help ensure statewide and regional cooperation among permitting agencies, eliminate duplication of efforts, provide a time-certain process, and reduce costs borne by applicants and agencies.

What is the Strategic Fuel Reserve Concept?

As noted above, the Committee evaluated an SFR concept that includes the features described in the Attorney General's *Report on Gasoline Pricing in California*. Suppliers could withdraw California Phase 3 reformulated gasoline from the reserve through a daily auction, with replacement required within a specified period of time. With this "time-swap" mechanism, gasoline from the SFR could be released daily to the highest bidder.

A period of rising prices and/or an expectation of a drop in prices in the near future would create an incentive to bid on reserve fuel: refiners and traders could sell SFR gasoline in the market at a relatively high price and, at least ideally, purchase replacement supply at a lower price. The release of gasoline from the SFR could in turn dampen a price increase, to the benefit of consumers.

Unlike the Federal Strategic Petroleum Reserve, where supplies are released only by order of the U.S. government, the SFR would be designed to be fully integrated into the California gasoline market, and would be operated by a private firm. This means that supply from the SFR would be released in response to market signals rather than through a political decision. For this reason, the SFR might serve to bring additional supply to the market efficiently as well as quickly in the event of a refinery outage. In addition, the reserve could ease access into the market for smaller, independent suppliers, increasing the level of competition in the state.

The Committee, based on a contractor study,^{iv} examined a specific SFR concept and structure. This study analyzed the number and size of unplanned refinery outages over the last seven years, and indicated that a sufficient capacity for the SFR would be around 2.5 million barrels (one barrel is equivalent to 42 gallons).^v

California uses two formulations of gasoline: a winter blend and a cleaner, summer blend. Because of the high costs that would be involved in switching seasonal gasoline blends, the study recommended that the SFR hold only the summer blend of fuel. The summer blend can be used all year, but air quality regulations do not allow the winter blend to be sold in the summer months. The study estimated that the total annual costs to the state for an SFR, including lease, oversight, and interest costs, would be between \$15 and \$25 million.

In addition to the features included in the SFR concept examined by the Committee, the AB 2076 legislation calls for a reserve that could be replenished by imported cargos only. However, throughout the review process, most stakeholders argued that the refill of an SFR should not be restricted to imports. Smaller companies particularly were against the import restriction, since they would not have access to international cargos. As a result, the Committee evaluated an SFR concept that allows supplies to be replaced from in-state production. However, even with an import restriction, the Committee would still recommend against a reserve.

What are the Benefits of Reduced Gasoline Price Volatility?

The Committee sponsored a study to measure the potential benefits to California consumers from reduced expenditures on gasoline *if* a strategic fuel reserve could dampen price volatility.^{vi} The study, which assumed that the SFR would work as envisioned, analyzed the probability of refinery outages to estimate the costs of price spikes to consumers in a typical year.

Assuming that a reserve would eliminate spikes above 10 cents per gallon, the study estimated a "base case" annual benefit to consumers of \$400 million. With different assumptions from the base case, including omitting an unusually large price spike such as in 1999, the study yielded a range of potential benefits from \$140 to \$607 million per year.

This range of estimates, for the benefits of reducing the "peak" or spike portion of gasoline price volatility, appears to be plausible. However, price volatility includes both peaks and "valleys," periods where the price falls below some long-run average.^{vii} In the case of a gasoline supply disruption in California, a valley could occur after a period of high prices if imported cargos arrive after the refinery is repaired.

If the peaks and valleys occur so that the average price of the good is not affected, price volatility is said to be "symmetrical." In this case, eliminating volatility can actually cost consumers money. In other words, the costs to consumers of eliminating periods of lower-than-average prices can outweigh the benefits from removing the periods of higher-than-average prices. The reason for this is that consumers can reduce consumption in high-price periods and increase it during low-price periods. If this were true for California gasoline prices, then dampening or eliminating volatility would be less likely to yield significant consumer benefits.

However, California's gasoline price volatility in recent years does not appear to have been symmetrical; the costs to consumers of the peaks appear to have outweighed the benefits of the valleys.^{viii} This seems logical since an unscheduled refinery outage that leads to a price spike is by definition unplanned, while the scheduling of imports to replenish supply is not. It is in the best interest of suppliers to bring in cargos before prices can drop below average (before other cargos have already arrived and/or the refinery problem has been repaired). Therefore, the Committee believes that reducing gasoline price volatility would offer net benefits to consumers, considering both peaks and valleys.

The Committee includes these results in the report to emphasize the potential benefits to consumers from reducing gasoline price volatility. These potential benefits serve as rationale for the Committee recommendations regarding marine infrastructure and permit streamlining. The next section explains the potential unintended consequences that could limit the effectiveness of an SFR in reducing price volatility. These potential

consequences form the foundation of the Committee's recommendation against implementing an SFR.

What are the Potential Unintended Consequences of a Strategic Fuel Reserve?

To provide benefits to California consumers, an SFR must significantly increase the amount of gasoline available in the market during a refinery outage or other event that leads to a price spike. In addition, an SFR must not lead to market impacts that could harm California consumers.

Many well-intended government market actions have had unintended consequences which were ultimately harmful to consumers and, in some cases, subverted the goal that the action was designed to achieve. Typically, this has occurred due to a failure to assess the reaction of market participants properly.

An SFR would introduce a new dynamic into the California gasoline market that would affect the profit-maximizing decisions of market participants. A new dynamic is not necessarily bad; all markets change over time, often to the benefit of consumers; however, an SFR is not a change brought on by natural market forces and, as a consequence, its impact would be very difficult to predict.

Refiners and gasoline traders already face a complex decision process; if an SFR were implemented, they would incorporate it into their market strategy and could react in a variety of ways. The Committee is concerned that unintended consequences as a result of this market response could reduce significantly the availability of SFR gasoline to dampen price spikes, and could adversely impact California consumers. Potential unintended consequences include the following:

- A reserve could displace private inventories,
- A reserve could offer profit-making opportunities that reduce its effectiveness, and
- A reserve could reduce the total supply of gasoline in California.

A Reserve Could Displace Private Inventories

Private gasoline storage includes a minimum level of inventory required for the distribution system to function^{ix} and other inventories, referred to here as "stocks." The SFR is intended to increase total gasoline stocks in the marketplace above the level provided by private industry alone, so that additional gasoline would be available to the market during a supply disruption. However, public storage can often displace, or "crowd out," existing and/or future private inventory. This criticism has frequently been leveled at the U.S. Strategic Petroleum Reserve.^x The Committee is concerned that

crowding out could significantly reduce the effectiveness of an SFR in reducing price volatility.

Stocks provide benefits to private holders by smoothing production fluctuations, easing adjustment to seasonal changes in demand, and reducing the likelihood of product outages. Public storage leads to crowding out when private holders perceive lower benefits to keeping stocks and adjust their level of inventories downward accordingly. The amount of crowding out depends on how well public holdings substitute for private stocks, which is a function of the rules established for release of public inventory as well as other factors such as transportation costs.

Because the SFR would be integrated into the California gasoline market, with supply available daily to the highest bidder, the amount of crowding out could be significant. Gasoline suppliers could potentially rely on the SFR for a sizeable portion of their inventory needs, since gasoline from this reserve would be easily accessible. Crowding out would almost certainly be more significant than in the case of the Federal Strategic Petroleum Reserve, where release rules are much more arbitrary.

To understand how crowding out could make the SFR less effective, suppose that all private stocks were displaced, and the entire SFR supply served simply as a substitute for these inventories. In this case, the reserve would have virtually no impact on gasoline price volatility, since additional stocks would not be available during a supply disruption. Total displacement is not likely since it would still be convenient for gasoline suppliers to keep some stocks on hand and there would be a cost associated with acquiring SFR gasoline. However, the degree of crowding out could be high enough to reduce significantly the effectiveness of the SFR in dampening price spikes.

If the SFR were much larger than private stock levels, displacement would become less of a concern. In this case, even if a significant amount of crowding out occurred over time, the market would end up with a higher level of inventory. Therefore, determining the approximate magnitude of private stocks becomes important.

The most recent data available from the Energy Information Administration (EIA) were used to estimate a range for private stocks.^{xi} The EIA reports that between 1997 and 2002, total reformulated gasoline product inventories in California varied between 7.9 and 12.5 million barrels. To estimate private stocks, the amount of inventory required for the distribution system must be subtracted out. Under the conservative assumption that the lowest level of total inventories reported by EIA in this period corresponded to the distribution inventory requirement,^{xii} private stock levels were estimated to range from 0 to 4.6 million barrels.

Some portion of private stocks would not likely be displaced by SFR gasoline. However, since the maximum proposed size of the SFR is 2.5 million barrels, the Committee believes that crowding out is a critical concern. Put another way, the Committee is concerned that implementing the SFR would transfer much of the costs of

maintaining private inventories to the state, without significantly dampening price volatility.

In addition, new construction of private storage could be displaced. A public storage program reduces incentives for new firms to enter the storage market, or for existing firms to expand, due to reduced need in the market; this is entry that would have occurred in the absence of the public program.

A Reserve Could Offer Profit-Making Opportunities

Although the SFR could displace significant amounts of private stocks in general, these stocks fluctuate and have sometimes been at levels below the proposed size of the reserve. Therefore, even if the reserve completely displaced private stocks during such periods, it is conceivable that additional inventory would be available in the reserve.

The most severe gasoline price spikes occur when private stocks are at very low levels, so the SFR could potentially offer benefits at these critical times. However, low private stocks do not occur randomly, but rather as a consequence of market conditions. The Committee is concerned that these conditions would also affect the availability of SFR gasoline as market participants take advantage of profit-making opportunities, described below, limiting its effectiveness in mitigating price spikes.

Gasoline in California, like many other commodities, is bought and sold in a wholesale, or "spot," market and in a forward market.^{xiii} The forward market for gasoline allows traders to hedge the risk associated with bringing in a cargo of gasoline—the risk that gasoline prices will drop before the cargo arrives. A trader bringing in a cargo could *sell a forward contract*, which would guarantee the sale of the gasoline at a certain price when it is delivered. The other party in this arrangement is *buying a forward contract*.

The difference, or "spread" between the current spot price and the forward price, the negotiated price for future delivery of gasoline, is a key driver of the level of private stocks.^{xiv} When the forward price is below the spot price, the market is referred to as being in "backwardation."^{xv} If the market enters a period of backwardation, this signals the market that prices are expected to fall in the near future. As a result, rational inventory holders will reduce their stocks, selling gasoline out of inventory. Holding on to too much inventory at such times means lower profits if prices fall as expected.

Figure 1 plots the daily one-month forward price minus the spot price for 2002^{xvi}, while Figure 2 shows average weekly inventory holdings^{xvii} for the same year. As the points labeled 1, 2, and 3 on each graph indicate, inventories are drawn down sharply when the market is in severe backwardation (when the forward price is much lower than the spot price).

Figure 1



California One Month Forward Price Minus Spot Price January 2002 - December 2002







A period of backwardation, which leads to low levels of private stocks, should also affect the inventories in the SFR. Consider a case where the spot price of gasoline exceeds the one-month forward price by ten cents per gallon. A trader or refiner could bid up to nine cents per gallon for SFR gasoline, which would then be sold on the spot market, and purchase a forward contract, a guarantee that he can purchase gasoline in the future at the current forward price, to replenish the reserve supply one month later. This would net the trader a profit of one cent per gallon, which would not be trivial with trades in the thousands and hundreds of thousands of barrels. As long as backwardation continues, the rational response in the market would be to continue to draw gasoline from the SFR. Such profit-making, or "arbitrage," activity could lead to very low reserve supply at a time when a refinery outage occurs, reducing the effectiveness of the SFR in dampening any price spike.

The most obvious periods of backwardation occur after supply disruptions. Prices are expected to remain high for a short period of time and then fall when the refinery is repaired and/or imported cargos arrive, and the spread between spot and forward prices will reflect these expectations. In these cases, the rational response described above would serve to mute any gasoline price spike, assuming supply is available in the SFR. In this case, arbitrage opportunities lead to a desirable result for California consumers.

However, the California gasoline market may be in backwardation for long intervals for reasons unrelated to refinery disruptions.^{xviii} Crude oil prices often exhibit backwardation (as do most extractive resources), which affects the spread between spot and forward or futures prices for refined petroleum products.

As an example, oil prices were in backwardation for virtually all of the year 2000. As a consequence, California gasoline spot prices remained above forward prices for almost the entire year, aside from the periods in which backwardations occurred as a result of two major refinery outages. This example points out the potential problem: had the SFR been in existence in 2000, arbitrage opportunities in the early part of the year could have left the reserve with little supply when the refinery problems occurred later in the year.

Additional rules could be put in place to avoid the potential effects of such profit-seeking behavior, such as daily limits on SFR withdrawal, but in this case an SFR would no longer be as well integrated into the gasoline market. This is a critical point: if the SFR were seamlessly merged into the California gasoline market, arbitrage opportunities could leave little or no supply in the SFR; if it were not as well integrated, the reserve would lose its potential effectiveness in dampening price spikes.

It is worth noting that the release of gasoline from the SFR could conceivably work to eliminate backwardation. Drawdown from the reserve could reduce the spot price by increasing supply to the market, and this would also reduce the spread between spot and forward price. If this were the case, it is possible that any backwardation could be eliminated well before the SFR were empty, removing the profit-making opportunities.

However, if crowding out were significant and the reserve served mainly as a substitute for private inventories before the market entered a period of backwardation, the situation would be similar to that without a reserve. Backwardation could continue for an extended period, as in 2000, since the SFR would not contribute significantly to the total amount of stocks. SFR supply would reach a very low level, just as private stocks would without the reserve (as shown in Figure 2).

Even without significant crowding out, arbitrage opportunities may not be eliminated before SFR supply is greatly reduced. For example, supply could be drawn from the reserve and regular imported cargos, cargos that would arrive without any refinery disruption, could be scheduled in such a way as to take advantage of backwardation. In this case, SFR gasoline would simply displace imports^{xix} and total supply and therefore spot price and arbitrage opportunities would not be affected.

A Reserve Could Reduce the Total Supply of Gasoline

If in-state production could be used to replenish SFR gasoline, total supply to the market could, in some plausible circumstances, actually diminish (relative to a no-SFR world). The Committee is concerned that this could occur, and that higher average gasoline prices in the state would result.

Consider a refiner undergoing an outage. In many instances, the refiner would bring in cargos from outside the state to cover the outage. If an SFR were available, the refiner could instead draw from the reserve and replenish the supply with his own future production.^{xx} Since the cargos no longer arrive, total gasoline available to the market would be reduced.

More precisely, in the case with no SFR, the market loses the amount of disrupted barrels minus the imported cargos; in the case with an SFR, it loses the entire disrupted amount, since the refiner must replace the gasoline drawn from the reserve during the outage. With an SFR in place, consumers might have benefited from a dampened price spike immediately after the refinery problem but might then have faced a higher *average* price due to the loss in total supply.

What are the Alternatives to a Strategic Fuel Reserve?

Severe price volatility is likely to continue in California, at least for the next few years. Therefore, to reduce price volatility, the Committee considered the following alternatives to an SFR:

- Stimulate the California gasoline forward market through state participation,
- Identify the steps necessary to enhance the state's marine infrastructure, and
- Streamline the storage infrastructure permitting process.

The intent in the first alternative is to increase liquidity (the number of trades) in the gasoline forward market through state purchases of forward contracts. If more buyers of forward contracts were available, importers, who sell forward contracts, might find it easier to hedge the risk that gasoline prices could fall while the cargo is in transit. Importers might then be willing to bring more cargos into California, which could increase available supply during a disruption.

A study sponsored by the Committee compared the California forward market for gasoline with other forward markets.^{xxi} The study found that neither the number of trades nor the number of participants in the state gasoline forward market appears to be especially low in comparison with other forward markets. In addition, the study found little evidence that a lack of liquidity in the forward market impairs prospective importers.

The Committee believes that the second and third options are more promising. These are described below.

Identify the Steps Necessary to Enhance Marine Infrastructure

The Committee sponsored a study of California's marine infrastructure to assess its ability to accommodate imported petroleum products.^{xxii} The study identified the current and future constraints within the system of wharves, storage tanks, and pipelines that could impair the ability of importers to deliver cargos to the state. The Committee believes that these constraints do impact imports of gasoline, and that this may reduce the supply of gasoline available during a disruption.

California imports both crude oil and petroleum products to meet state demand for fuels. Over the next five to ten years, demand for gasoline is expected to grow at a rate of almost two percent per year, while the capacity of California refineries to produce gasoline is not expected to keep pace. Consequently, imports of gasoline as well as crude oil will need to increase.

The study for the Committee indicated that the state marine infrastructure for petroleum products is at or near the limits of throughput capacity, and unless the infrastructure is expanded, additional imports will increase marine congestion in California. The potential problems are most serious in Southern California, where the bulk of the increased quantities of imported crude oil and refined petroleum products will be received. (The appendix provides more details from the study on import constraints and bottlenecks.)

Marine vessels require storage tanks of sufficient capacity to be able to offload their cargos in a timely manner, avoiding costly demurrage fees and reducing the risk of creating additional scheduling conflicts for other vessels. Access to storage tanks is especially constrained in Southern California. In particular, two of the three facilities

used to receive gasoline and gasoline blending for gasoline are highly utilized and constrained by bottlenecks that prevent increased imports.

If these constraints and bottlenecks can be alleviated to some degree, imported gasoline supply could reach the California market more quickly during a refinery outage, helping to dampen price volatility. On the other hand, if marine infrastructure capacity does not expand, volatility could become even more severe.

The Committee recommends that the Commission conduct a comprehensive evaluation of California's future petroleum product import needs to identify steps that can be taken to ensure that marine infrastructure and port facilities will be adequate to accommodate the unconstrained movement of petroleum products during the next twenty years. This evaluation should be conducted in consultation with the following agencies:

- The State Lands Commission,
- The Ports of Los Angeles and Long Beach,
- The Coastal Commission, and
- The San Francisco Bay Conservation and Development Commission.

Streamline the Storage Infrastructure Permitting Process

The Committee is aware of 1.4 million barrels of private storage capacity that are either under construction or where construction is planned in the next several months.^{xxiii} Thus, conditions in the California gasoline market may improve slightly in the near future. Increased private storage could result in more gasoline inventories available to the market during a supply disruption. The Committee believes that ongoing development of private storage capacity reduces the need for an SFR.

However, all of these storage projects have been undertaken with the use of existing permits. Future projects to construct additional storage tanks could require more extensive environmental assessment and a lengthier approval process. Based on a Commission survey of the petroleum industry, the Committee concluded that the state's petroleum product storage infrastructure is still inadequate, even with these new projects, and that the permitting process may unduly burden applicants and agencies.^{xxiv} The Committee believes that a streamlined permitting process would further increase investments in private storage, which should increase the supply of gasoline available during a disruption.

The high costs of the permitting process result in a shortage of storage capacity. These costs lead to higher lease and rental rates for tanks, so gasoline suppliers hold lower inventories than they might otherwise choose. This results in lower inventory available during a refinery outage and therefore more gasoline price volatility. In addition, higher lease and rental rates raise the operating costs to suppliers, resulting in higher average market prices.

The Committee sponsored a detailed study on the permitting of petroleum product storage facilities.^{xxv} The study examined the process by which petroleum industry participants obtain the permits required for the construction or acquisition of petroleum product storage facilities. In addition, the study identified bottlenecks, redundancies, and unnecessarily burdensome regulatory processes, and recommended improvements in the permitting process. The study did not examine or make any recommendations regarding existing environmental or safety standards, and the Committee is not considering any change to these standards.

Table 1 lists the process change recommendations found in the study report. The recommendations are grouped into three categories: agencies, applicants, and legislation. The Committee believes that the third category is the most critical, as discussed below.

	Table 1: Streamlining for Petroleum Product Storage			
•	Reco	mmendations for Agencies		
	—	Provide training and technical assistance to local agency staff		
	—	Reduce discretionary decisions by individual permit writers to		
		establish consistency in the permitting process		
	_	Avoid duplication of environmental studies		
	_	Establish applicant timeline and milestones for each permitting		
		project and track progress		
	_	Address the issue of multiple appeals of agency decisions		
	_	Establish heavy industry-zoned property to eliminate the need for		
		conditional use permits		
•	Reco	mmendations for Applicants		
	_	Involve stakeholders early in permitting process		
	_	Request pre-application conferences or "scoping" meetings with		
		agencies to discuss how agencies' specific rules will apply to their		
		proposed projects		
	_	Establish communication with agencies to ensure established		
		"completeness" criteria are met for permit application submittals		
	_	Establish a process with the relevant air district to establish and		
		approve Best Available Control Technology standards early in the		
		permitting process		
	—	Conduct siting studies for proposed facilities to identify potential		
		sites that could be zoned as heavy industrial, and identify		
		potential stakeholder issues		
•	Reco	mmendations for Legislation		
	—	Provide statewide authority for implementing and enforcing the		
		Permit Streamlining Act		
	—	Consider expanding the Unified Permit Program to include air		
		and water districts as well as local agencies involved in permitting		
		petroleum product storage facilities		

The Permit Streamlining Act (PSA or Act) establishes strict timelines for agencies to conduct permit application reviews and issue decisions. The PSA requires state and local agencies to list the information and criteria that they will use in evaluating a permit application. These timelines are frequently not met, without penalty to the permitting agency. Little effort appears to be made to comply with the PSA, since the Act is not very well known among stakeholders in the permitting process. No agency within California is responsible to implement the PSA, and this appears to be a fundamental problem. The Committee believes that the requirements of the PSA could be promoted and enforced by a single agency so that applicants and permitting agencies become familiar (and compliant) with the Act.

The Committee believes, however, that beyond the issues addressed by the PSA, the state needs to coordinate the different agencies responsible for permitting petroleum storage infrastructure in California. This issue is very complex, but a coordinated strategy could yield significant benefits by eliminating duplicative efforts on the part of agencies and applicants and providing a time-certain process with decision-making authority.

The state has dealt with similar problems in the past. In response to concerns about the power plant siting process, the Legislature passed the Warren-Alquist Act in 1974, establishing a state permitting agency for power plants. The legislation gave the Energy Commission exclusive authority over thermal electric generating power plants 50 megawatts or larger as well as related facilities such as transmission lines. As a result, the Energy Commission developed a 12-month process for certification of applications.

As the lead agency under the California Environmental Quality Act (CEQA), the Energy Commission is required to consult with responsible local, state, and federal agencies as part of its review process. The Energy Commission's power plant licensing process has proved to be very effective in assuring the timely review and approval of new generating capacity in California because it: 1) consolidates all state and local agencies into a single permitting process, 2) has the ability to override other state and local agency decisions, 3) involves extensive public participation, and 4) has a certified CEQA equivalent review process.

The Committee recommends that the Governor and the Legislature establish a state licensing authority for petroleum storage infrastructure and related facilities, modeled on the Energy Commission's power plant licensing process. A licensing authority would help ensure statewide and regional coordination among permitting agencies, eliminate duplication of efforts, provide a time-certain process, and reduce costs borne by applicants and agencies. This state licensing authority would incorporate the following elements:

• The establishment of a single permitting process that consolidates all state and local agency reviews, has a CEQA equivalent review process, and involves extensive public participation.

- The ability to review and determine whether a proposal will comply with applicable laws, ordinances, regulations, or standards; and whether it will result in potentially significant adverse environmental or public health and safety impacts.
- The establishment of conditions, based on its review and the input of responsible agencies and the public, governing the construction and operation of the facility, which will ensure compliance and avoid or mitigate identified significant impacts.
- The ability to license a proposal that results in significant environmental impacts based on a finding that there are no feasible mitigation measures or project alternatives that would avoid or lessen the impacts, and that the benefits of the project outweigh the unavoidable significant environmental impacts,
- The authority to override local, regional, or state regulations based on a finding that the project is needed for public convenience and necessity and there are no more prudent and feasible means of achieving such convenience and necessity.
- The requirement that licensing decisions can only be appealed directly to the California Supreme Court.

- Price volatility includes both "peaks" (spikes) and "valleys", as discussed later in this report.
- Reports are available on the Energy Commission's website
- (www.energy.ca.gov/fuels/petroleum_dependence/index.html).

¹ The impact of imported cargos on price can occur before the cargos actually arrive, if the gasoline market is generally aware that they are enroute.

^{iv} California Strategic Fuels Reserve, Revised Contractor Report, Publication P600-02-017D, California Energy Commission, July, 2002.

^v The study recommends a total construction of 5 million barrels of storage capacity, of which half could be subleased to market participants.

^{vi} Economic Benefits of Mitigating Refinery Disruptions: A Suggested Framework and Analysis of a Strategic Fuel Reserve, by Anthony Finizza, Ph.D. Publication P600-02-018D, California Energy Commission, July 2002.

^{vii} Such volatility is typical in the market for various crops, where rainy years can be followed by arid ones. ^{viii} This conclusion comes from examination of California retail price data before, during, and after supply disruptions.

^K For example, for a refiner to provide gasoline to a supplier through a pipeline, the pipeline must already be full of product.

^x See, for example, pp. 438-45 of *Storage and Commodity Markets*, by Jeffrey C. Williams and Brian D. Wright (Cambridge University Press, 1991)

^{xi} EIA's Petroleum Product Stocks for California. Energy Information Administration, June, 2003.

^{xii} Required levels of distribution inventory are likely lower than 7.9 million barrels since refiners always keep at least a small amount of stocks. In addition, EIA reports holdings on the last day of each month. Therefore, the actual minimum value is almost certainly smaller than 7.9 million barrels and the maximum larger than 12.5 million barrels. Finally, EIA reports only inventories from major refiners and bulk terminals with storage tanks sized 50,000 barrels or larger. For these reasons, estimates of stocks reported here are likely to be underestimated.

xⁱⁱⁱ Forward markets operate like futures markets (e.g., pork futures) but less formally. Futures markets provide some features that forward markets do not, including standardized contracts and formal clearinghouses.

xiv There are of course other reasons why stocks fluctuate. For example, levels tend to be low just before refinery "turnaround", when refiners switch from one seasonal blend to another.

^{xv} More specifically, a market is said to be in backwardation when the spot price plus storage costs and interest charges is greater than the forward price. This more precise definition is not important for the discussion here.

^{xvi} Source: Oil Price Information Service

^{xvii} Source: California Energy Commission PIIRA inventory data. Inventory levels shown in Figure 4 are smaller than those reported by EIA since the PIIRA data includes only data from refiners.

^{xviii} From January 1999 through December 2002, the spot price was above the one-month forward price for almost two thirds of the time (source: Oil Price Information Service).

^{xix} Suppose a refiner were planning to bring in a cargo in July. With an SFR (and with prices in backwardation), the refiner could instead purchase reserve supply in July and bring in the cargo in August to replenish the reserve.

^{xx} This assumes that the refiner is still able to meet his contractual obligations.

^{xxi} Government Use of the California Gasoline Forward Market, Contractor Report P600-03007D, California Energy Commission, April, 2003.

^{xxii} *California Marine Petroleum Infrastructure*, Contractor Report P300-03-008D, California Energy Commission, April, 2003.

xxiii Source: Stillwater Associates, California Energy Commission Workshop, April 24, 2003.

^{xxiv} California Strategic Fuels Reserve, Revised Contractor Report, Page 82. Publication P600-02-017D, California Energy Commission, July, 2002

^{xvv} Permit Streamlining for Petroleum Product Storage, Contractor Report P300-03-006D, California Energy Commission, April, 2003.

APPENDIX

Outlook for Marine Infrastructure in California

Crude Oil Imports and Outlook

California refiners obtain crude oil from in-state production, Alaska and foreign sources. Waterborne receipts of crude oil for 2001 amounted to an average of 425 thousand barrels per day for the San Francisco Bay Area and over 520 thousand barrels per day for the Ports of Los Angeles and Long Beach. Both California and Alaska crude oil production continue to decline, while the nearly 2 million barrels per day of crude oil used by California's 21 refineries is forecast to increase by less than 1 percent per year. Refiners are therefore expected to increase their imports of crude oil from foreign sources. These additional imports will be brought to the state in marine tankers.

Current capacity to receive crude oil is sufficient for both Northern and Southern California. The outlook for the next several years is that Very Large Crude Carrier (transporting 1 to 2 million barrels) use will need to double from an average of one to two ships per week due to greater reliance on foreign sources of crude oil. For this reason, additional infrastructure improvements for berthing facilities as well as crude oil storage tanks will need to be constructed. This should not create a major problem if industry can undertake the work within the next 5 to 10 years. However, this outlook assumes that existing infrastructure assets for receiving crude oil are not diminished over the next several years by new operational restrictions imposed by port authorities or other governing bodies.

Refined Product Imports and Outlook

Imports of gasoline, blending components, diesel and jet fuel have continued to grow along with demand for these products. As is the case with crude oil, imported refined products arrive by marine vessel. Refined products accounted for 11 percent of all waterborne receipts for the Bay Area and 30 percent for Southern California during 2001. Imports of gasoline and blending components are expected to increase from 150 to 300 thousand barrels per day by 2010. Forecasted imports for both diesel and jet fuel are increasing at similar rates. By 2010, the number of marine vessel movements is expected to double and an additional storage tank capacity of between 0.5 and 1 million barrels per year would have to be constructed to keep up with the forecast demand.

Specific Findings

The Commission-sponsored study of marine infrastructure concluded that the marine petroleum infrastructure in the San Francisco Bay Area and the Los Angeles Basin (California's main refining centers) is constrained in certain key areas. Under current commercial and public policy conditions, staff believes that it is likely that future

infrastructure demand will outstrip capacity. The areas of concern are separated into three categories: wharves, storage tanks, and the gathering lines used to gain access to the petroleum pipeline infrastructure.

Wharves

The utilization rate for wharves is high enough to cause scheduling problems at 20 percent of the berths in Southern California. Additional receipts of petroleum products at these locations could be problematic. On the other hand, 30 percent of the berths are underutilized and can accommodate additional imports, but these facilities are generally for proprietary use and are not available to independent importers. Northern California wharves are generally less constrained and have more underutilized capacity, but movement of petroleum products face other limiting factors related to dredging.

The depth of the channels and marine berths is a factor that can constrain the ability to receive and offload marine vessels. In Northern California, silt flows from the Sacramento Delta are deposited as water flows toward San Francisco Bay. The accumulation of silt can result in draft restrictions for marine vessels at wharves and certain points along the shipping channels. One of these locations in the greater Bay Area is located near Richmond (Pinole Shoals). The times at which dredging can be conducted in this area is limited due to environmental protection for certain migratory fish species. Other issues have arisen with regard to disposal of the dredging spoils (in the Bay, out at sea, and land disposal) and adequate federal funding to pay for the work.

The impact of increased silt levels is that the water becomes too shallow for marine vessels of certain size to safely operate. Companies are forced to moor these vessels in San Francisco Bay and use smaller vessels (like barges) to partially offload the ships so that they sit higher in the water. Delayed offloading of these vessels increases costs for consumers and increases the risk of spills due to the increased number of transfers.

Storage Tanks

Marine vessels require storage tanks of sufficient capacity to be able to offload their cargoes in a timely manner, avoid costly demurrage fees, and reduce the risk of creating additional scheduling conflicts for other vessels. Access to storage tanks is somewhat constrained in Southern California at this time, but is less of a problem in the Bay Area.

A number of projects are underway to construct additional storage tank capacity that will provide some potential relief. These planned additions, however, are not expected to keep up with forecasted import demand. Existing constraints could therefore become more serious unless additional projects are undertaken and completed within the next couple of years. It is important to note that all of the recent projects have been undertaken with the use of already existing permits. Future projects to construct

additional storage tanks will require new permits and therefore will undergo a lengthier approval process.

Petroleum Product Pipelines

Cargos offloaded from marine vessels into storage tanks are routinely transferred to other refineries and terminals located throughout the state by the use of a network of interconnected petroleum product pipelines. The segments of pipelines that lead away from the wharves can be operating at or near maximum capacity during certain periods of the year, such as the summer months when gasoline demand is highest and the need for imports is greatest.

Pipeline constraints are greatest for the segments connecting the wharf storage tanks with the petroleum product pipeline system operated by Kinder Morgan. Bottlenecks in this network of pipelines have resulted in increased movements of gasoline and diesel fuel by tanker truck. Plans for the expansion of marine infrastructure to accommodate increased quantities of imports will have to consider expansion of these gathering systems. Expansion of existing pipelines or construction of new pipeline segments can be a complex process, and could significantly increase the time required to obtain the necessary permits—pipelines usually cross several different jurisdictions and can require modifications to existing tariff rates for those projects that involve common carrier companies such as Kinder Morgan.

Other Areas of Concern

Other issues were raised during the investigation of California's marine infrastructure, issues which staff believes merit additional attention.

Third Party Storage Tanks

Lack of access to third-party tankage in Southern California is a type of "barrier to entry" for independent market participants who wish to import gasoline and other refined products on a speculative basis. These importers provide a valuable function by providing additional supplies of gasoline and other petroleum products during temporary supply disruptions. However, access to non-proprietary storage tanks and marine facilities to offload the vessels is limited. Expansion of storage tank and associated infrastructure could increase the ability to move supplies of gasoline and other petroleum products to California.

Port Policies

Port commercial development plans can be at odds with continuation or expansion of petroleum imports. The majority of the commercial operations conducted within the Ports of Los Angeles and Long Beach involve the receipt and offloading of cargo container vessels. The movement of these containers through both ports is expected to double over the next 10 years. To accommodate this additional growth, both ports have plans to expand development of cargo container business. Access to water and
sufficient land space is necessary. This demand can place additional pressure on operators of petroleum product import facilities when they try to renew leases or expand operations to properly handle the increased quantities of petroleum imports.

State Transportation Fuel Needs Versus Local Decisions

Local decisions can also impact petroleum infrastructure projects. Amendments to existing leases and applications for new petroleum projects are normally overseen by a lead agency composed of local boards or councils. Pressures exerted by local constituents can increase the difficulty associated with obtaining the compromises needed to allow commerce related to the import and export of petroleum products to continue or expand. In addition, local concerns may result in decisions that adversely impact petroleum-related commerce.

CALIFORNIA ENERGY COMMISSION

FEASIBILITY OF A STRATEGIC FUEL RESERVE IN CALIFORNIA

COMMISSION REPORT

JULY 2003 P600-03-013CR



Gray Davis, Governor

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Disclaimer

This report was prepared by the California Energy Commission's Transportation Committee to be consistent with the objectives of Assembly Bill 2076 (Shelley, Chapter 936, Statutes of 2000). The report was adopted by the Energy Commission on July 23, 2003.

Summary and Overview

In the last few years, California motorists have experienced significant short-term increases, or "spikes" in the price of gasoline. The state's gasoline refineries are operating at near maximum production, and when an unplanned refinery outage occurs, especially when gasoline inventories are low, the price of gasoline can spike. Outages drive the price higher because of the temporary imbalance between supply and demand. The price increase required to restore this balance can be significant due to a very low demand response—California motorists have little alternative to gasoline use in the short run.

Gasoline sold in California requires a unique, less-polluting formulation. This means that sources of supply outside the state are limited. Since California is not connected by pipeline to major refinery centers elsewhere in the country, imported gasoline must be brought in by marine tanker. In the event of an in-state supply disruption, locating and importing replacement gasoline can take from two to six weeks. Prices often remain at high levels until shortly before these additional supplies arrive.¹

California's gasoline price volatility,² of which price spikes are the most obvious feature to motorists, can result in prices much higher than in the rest of the country. The difference in retail prices between California and other regions, typically 5 to 20 cents per gallon, can increase to 50 cents or more per gallon as a result of in-state supply disruptions. During the latest price spike episode in early 2003, average retail prices in California increased by 57 cents per gallon and reached levels 40 cents higher than average prices elsewhere in the U.S.

In response to continuing periods of gasoline price volatility and their impact on consumers, the Attorney General formed the Gasoline Price Task Force to examine the causes of price spikes. The results of the Task Force study are described in *Report on Gasoline Pricing in California*, issued in May of 2000.

The report recommends that the state investigate the possibility of a "strategic fuel reserve," consisting of gasoline kept in public storage tanks that would be available to private suppliers through a daily auction. The intent behind such a reserve is to make additional gasoline available to the California gasoline market during supply disruptions, and thereby reduce, or "dampen," price spikes. This recommendation led to the passage of Assembly Bill 2076.

Assembly Bill 2076 (Shelley, Chapter 936, Statutes of 2000) directs the California Energy Commission (Commission) to assess the feasibility of operating a state strategic fuel reserve (SFR) to insulate consumers and businesses from the substantial shortterm price increases arising from refinery outages and other in-state supply disruptions. The Legislation includes detail on the nature and preliminary mode of operation of an SFR, and is consistent with the concept given in *Report on Gasoline Pricing in California*. The Commission incorporated this detail into the specific reserve concept which is described in this report through numerous consultations with stakeholders and contracts with experts in California's petroleum refining and marketing sector.

The statute also directs the Commission and the California Air Resources Board (CARB) to develop and adopt recommendations for a California strategy to reduce petroleum dependence in California. This latter directive has been undertaken as a separate proceeding by the two agencies.³

What Does the Commission Recommend?

Based on its evaluation of a strategic fuel reserve and the causes of California's gasoline price volatility, the Commission recommends the following actions.

First, the Governor and Legislature <u>should not</u> proceed with the strategic fuel reserve concept evaluated by the Commission. The Commission found that a strategic fuel reserve could have several unintended consequences, which could limit its effectiveness as a tool to moderate gasoline price spikes and could reduce the total supply of gasoline in the state. In addition, the Commission has determined that investment in private storage capacity is increasing, which reduces the need for SFR public storage.

Second, the Commission should undertake a comprehensive evaluation of California's future petroleum product import needs, in consultation with the following agencies:

- The State Lands Commission,
- The Ports of Los Angeles and Long Beach,
- The Coastal Commission, and
- The San Francisco Bay Conservation and Development Commission.

This evaluation should identify steps that the state can take to ensure that marine infrastructure and port facilities will be adequate to accommodate the unconstrained movement of petroleum products during the next twenty years.

Third, the Governor and Legislature should identify a state licensing authority for petroleum storage infrastructure and related facilities. A state licensing authority would help ensure statewide and regional cooperation among permitting agencies, eliminate duplication of efforts, provide a time-certain process, and reduce costs borne by applicants and agencies.

What is the Strategic Fuel Reserve Concept?

As noted above, the Commission evaluated an SFR concept that includes the features described in the Attorney General's *Report on Gasoline Pricing in California*. Suppliers could withdraw California Phase 3 reformulated gasoline from the reserve through a

daily auction, with replacement required within a specified period of time. With this "time-swap" mechanism, gasoline from the SFR could be released daily to the highest bidder.

A period of rising prices and/or an expectation of a drop in prices in the near future would create an incentive to bid on reserve fuel: refiners and traders could sell SFR gasoline in the market at a relatively high price and, at least ideally, purchase replacement supply at a lower price. The release of gasoline from the SFR could in turn dampen a price increase, to the benefit of consumers.

Unlike the Federal Strategic Petroleum Reserve, where supplies are released only by order of the U.S. government, the SFR would be designed to be fully integrated into the California gasoline market, and would be operated by a private firm. This means that supply from the SFR would be released in response to market signals rather than through a political decision. For this reason, the SFR might serve to bring additional supply to the market efficiently as well as quickly in the event of a refinery outage. In addition, the reserve could ease access into the market for smaller, independent suppliers, increasing the level of competition in the state.

The Commission, based on a contractor study,⁴ examined a specific SFR concept and structure. This study a nalyzed the number and size of unplanned refinery outages over the last seven years, and indicated that a sufficient capacity for the SFR would be around 2.5 million barrels (one barrel is equivalent to 42 gallons).⁵

California uses two formulations of gasoline: a winter blend and a cleaner, summer blend. Because of the high costs that would be involved in switching seasonal gasoline blends, the study recommended that the SFR hold only the summer blend of fuel. The summer blend can be used all year, but air quality regulations do not allow the winter blend to be sold in the summer months. The study estimated that the total annual costs to the state for an SFR, including lease, oversight, and interest costs, would be between \$15 and \$25 million.

In addition to the features included in the SFR concept examined by the Commission, the AB 2076 legislation calls for a reserve that could be replenished by imported cargos only. However, throughout the review process, most stakeholders argued that the refill of an SFR should not be restricted to imports. Smaller companies particularly were against the import restriction, since they would not have access to international cargos. As a result, the Commission evaluated an SFR concept that allows supplies to be replaced from in-state production. However, even with an import restriction, the Commission would still recommend against a reserve.

What are the Benefits of Reduced Gasoline Price Volatility?

The Commission sponsored a study to measure the potential benefits to California consumers from reduced expenditures on gasoline *if* a strategic fuel reserve could dampen price volatility.⁶ The study, which assumed that the SFR would work as envisioned, analyzed the probability of refinery outages to estimate the costs of price spikes to consumers in a typical year.

Assuming that a reserve would eliminate spikes above 10 cents per gallon, the study estimated a "base case" annual benefit to consumers of \$400 million. With different assumptions from the base case, including omitting an unusually large price spike such as in 1999, the study yielded a range of potential benefits from \$140 to \$607 million per year.

This range of estimates, for the benefits of reducing the "peak" or spike portion of gasoline price volatility, appears to be plausible. However, price volatility includes both peaks and "valleys," periods where the price falls below some long-run average.⁷ In the case of a gasoline supply disruption in California, a valley could occur after a period of high prices if imported cargos arrive after the refinery is repaired.

If the peaks and valleys occur so that the average price of the good is not affected, price volatility is said to be "symmetrical." In this case, eliminating volatility can actually cost consumers money. In other words, the costs to consumers of eliminating periods of lower-than-average prices can outweigh the benefits from removing the periods of higher-than-average prices. The reason for this is that consumers can reduce consumption in high-price periods and increase it during low-price periods. If this were true for California gasoline prices, then dampening or eliminating volatility would be less likely to yield significant consumer benefits.

However, California's gasoline price volatility in recent years does not appear to have been symmetrical; the costs to consumers of the peaks appear to have outweighed the benefits of the valleys.⁸ This seems logical since an unscheduled refinery outage that leads to a price spike is by definition unplanned, while the scheduling of imports to replenish supply is not. It is in the best interest of suppliers to bring in cargos before prices can drop below average (before other cargos have already arrived and/or the refinery problem has been repaired). Therefore, the Commission believes that reducing gasoline price volatility would offer net benefits to consumers, considering both peaks and valleys.

The Commission includes these results in the report to emphasize the potential benefits to consumers from reducing gasoline price volatility. These potential benefits serve as rationale for the Commission recommendations regarding marine infrastructure and permit streamlining. The next section explains the potential unintended consequences that could limit the effectiveness of an SFR in reducing price volatility. These potential

consequences form the foundation of the Commission's recommendation against implementing an SFR.

What are the Potential Unintended Consequences of a Strategic Fuel Reserve?

To provide benefits to California consumers, an SFR must significantly increase the amount of gasoline available in the market during a refinery outage or other event that leads to a price spike. In addition, an SFR must not lead to market impacts that could harm California consumers.

Many well-intended government market actions have had unintended consequences which were ultimately harmful to consumers and, in some cases, subverted the goal that the action was designed to achieve. Typically, this has occurred due to a failure to assess the reaction of market participants properly.

An SFR would introduce a new dynamic into the California gasoline market that would affect the profit-maximizing decisions of market participants. A new dynamic is not necessarily bad; all markets change over time, often to the benefit of consumers; however, an SFR is not a change brought on by natural market forces and, as a consequence, its impact would be very difficult to predict.

Refiners and gasoline traders already face a complex decision process; if an SFR were implemented, they would incorporate it into their market strategy and could react in a variety of ways. The Commission is concerned that unintended consequences as a result of this market response could reduce significantly the availability of SFR gasoline to dampen price spikes, and could adversely impact California consumers. Potential unintended consequences include the following:

- A reserve could displace private inventories,
- A reserve could offer profit-making opportunities that reduce its effectiveness, and
- A reserve could reduce the total supply of gasoline in California.

A Reserve Could Displace Private Inventories

Private gasoline storage includes a minimum level of inventory required for the distribution system to function⁹ and other inventories, referred to here as "stocks." The SFR is intended to increase total gasoline stocks in the marketplace above the level provided by private industry alone, so that additional gasoline would be available to the market during a supply disruption. However, public storage can often displace, or "crowd out," existing and/or future private inventory. This criticism has frequently been leveled at the U.S. Strategic Petroleum Reserve.¹⁰ The Commission is concerned that

crowding out could significantly reduce the effectiveness of an SFR in reducing price volatility.

Stocks provide benefits to private holders by smoothing production fluctuations, easing adjustment to seasonal changes in demand, and reducing the likelihood of product outages. Public storage leads to crowding out when private holders perceive lower benefits to keeping stocks and adjust their level of inventories downward accordingly. The amount of crowding out depends on how well public holdings substitute for private stocks, which is a function of the rules established for release of public inventory as well as other factors such as transportation costs.

Because the SFR would be integrated into the California gasoline market, with supply available daily to the highest bidder, the amount of crowding out could be significant. Gasoline suppliers could potentially rely on the SFR for a sizeable portion of their inventory needs, since gasoline from this reserve would be easily accessible. Crowding out would almost certainly be more significant than in the case of the Federal Strategic Petroleum Reserve, where release rules are much more arbitrary.

To understand how crowding out could make the SFR less effective, suppose that all private stocks were displaced, and the entire SFR supply served simply as a substitute for these inventories. In this case, the reserve would have virtually no impact on gasoline price volatility, since additional stocks would not be available during a supply disruption. Total displacement is not likely since it would still be convenient for gasoline suppliers to keep some stocks on hand and there would be a cost associated with acquiring SFR gasoline. However, the degree of crowding out could be high enough to reduce significantly the effectiveness of the SFR in dampening price spikes.

If the SFR were much larger than private stock levels, displacement would become less of a concern. In this case, even if a significant amount of crowding out occurred over time, the market would end up with a higher level of inventory. Therefore, determining the approximate magnitude of private stocks becomes important.

The most recent data available from the Energy Information Administration (EIA) were used to estimate a range for private stocks.¹¹ The EIA reports that between 1997 and 2002, total reformulated gasoline product inventories in California varied between 7.9 and 12.5 million barrels. To estimate private stocks, the amount of inventory required for the distribution system must be subtracted out. Under the conservative assumption that the lowest level of total inventories reported by EIA in this period corresponded to the distribution inventory requirement,¹² private stock levels were estimated to range from 0 to 4.6 million barrels.

Some portion of private stocks would not likely be displaced by SFR gasoline. However, since the maximum proposed size of the SFR is 2.5 million barrels, the Commission believes that crowding out is a critical concern. Put another way, the Commission is concerned that implementing the SFR would transfer much of the costs of maintaining private inventories to the state, without significantly dampening price volatility.

In addition, new construction of private storage could be displaced. A public storage program reduces incentives for new firms to enter the storage market, or for existing firms to expand, due to reduced need in the market; this is entry that would have occurred in the absence of the public program.

A Reserve Could Offer Profit-Making Opportunities

Although the SFR could displace significant amounts of private stocks in general, these stocks fluctuate and have sometimes been at levels below the proposed size of the reserve. Therefore, even if the reserve completely displaced private stocks during such periods, it is conceivable that additional inventory would be available in the reserve.

The most severe gasoline price spikes occur when private stocks are at very low levels, so the SFR could potentially offer benefits at these critical times. However, low private stocks do not occur randomly, but rather as a consequence of market conditions. The Commission is concerned that these conditions would also affect the availability of SFR gasoline as market participants take advantage of profit-making opportunities, described below, limiting its effectiveness in mitigating price spikes.

Gasoline in California, like many other commodities, is bought and sold in a wholesale, or "spot," market and in a forward market.¹³ The forward market for gasoline allows traders to hedge the risk associated with bringing in a cargo of gasoline—the risk that gasoline prices will drop before the cargo arrives. A trader bringing in a cargo could *sell a forward contract*, which would guarantee the sale of the gasoline at a certain price when it is delivered. The other party in this arrangement is *buying a forward contract*.

The difference, or "spread" between the current spot price and the forward price, the negotiated price for future delivery of gasoline, is a key driver of the level of private stocks.¹⁴ When the forward price is below the spot price, the market is referred to as being in "backwardation."¹⁵ If the market enters a period of backwardation, this signals the market that prices are expected to fall in the near future. As a result, rational inventory holders will reduce their stocks, selling gasoline out of inventory. Holding on to too much inventory at such times means lower profits if prices fall as expected.

Figure 1 plots the daily one-month forward price minus the spot price for 2002¹⁶, while Figure 2 shows average weekly inventory holdings¹⁷ for the same year. As the points labeled 1, 2, and 3 on each graph indicate, inventories are drawn down sharply when the market is in severe backwardation (when the forward price is much lower than the spot price).

Figure 1



Figure 2





A period of backwardation, which leads to low levels of private stocks, should also affect the inventories in the SFR. Consider a case where the spot price of gasoline exceeds the one-month forward price by ten cents per gallon. A trader or refiner could bid up to nine cents per gallon for SFR gasoline, which would then be sold on the spot market, and purchase a forward contract, a guarantee that he can purchase gasoline in the future at the current forward price, to replenish the reserve supply one month later. This would net the trader a profit of one cent per gallon, which would not be trivial with trades in the thousands and hundreds of tho usands of barrels. As long as backwardation continues, the rational response in the market would be to continue to draw gasoline from the SFR. Such profit-making, or "arbitrage," activity could lead to very low reserve supply at a time when a refinery outage occurs, reducing the effectiveness of the SFR in dampening any price spike.

The most obvious periods of backwardation occur after supply disruptions. Prices are expected to remain high for a short period of time and then fall when the refinery is repaired and/or imported cargos arrive, and the spread between spot and forward prices will reflect these expectations. In these cases, the rational response described above would serve to mute any gasoline price spike, assuming supply is available in the SFR. In this case, arbitrage opportunities lead to a desirable result for California consumers.

However, the California gasoline market may be in backwardation for long intervals for reasons unrelated to refinery disruptions.¹⁸ Crude oil prices often exhibit backwardation (as do most extractive resources), which affects the spread between spot and forward or futures prices for refined petroleum products.

As an example, oil prices were in backwardation for virtually all of the year 2000. As a consequence, California gasoline spot prices remained above forward prices for almost the entire year, aside from the periods in which backwardations occurred as a result of two major refinery outages. This example points out the potential problem: had the SFR been in existence in 2000, arbitrage opportunities in the early part of the year could have left the reserve with little supply when the refinery problems occurred later in the year.

Additional rules could be put in place to avoid the potential effects of such profit-seeking behavior, such as daily limits on SFR withdrawal, but in this case an SFR would no longer be as well integrated into the gasoline market. This is a critical point: if the SFR were seamlessly merged into the California gasoline market, arbitrage opportunities could leave little or no supply in the SFR; if it were not as well integrated, the reserve would lose its potential effectiveness in dampening price spikes.

It is worth noting that the release of gasoline from the SFR could conceivably work to eliminate backwardation. Drawdown from the reserve could reduce the spot price by increasing supply to the market, and this would also reduce the spread between spot and forward price. If this were the case, it is possible that any backwardation could be eliminated well before the SFR were empty, removing the profit-making opportunities.

However, if crowding out were significant and the reserve served mainly as a substitute for private inventories before the market entered a period of backwardation, the situation would be similar to that without a reserve. Backwardation could continue for an extended period, as in 2000, since the SFR would not contribute significantly to the total amount of stocks. SFR supply would reach a very low level, just as private stocks would without the reserve (as shown in Figure 2).

Even without significant crowding out, arbitrage opportunities may not be eliminated before SFR supply is greatly reduced. For example, supply could be drawn from the reserve and regular imported cargos, cargos that would arrive without any refinery disruption, could be scheduled in such a way as to take advantage of backwardation. In this case, SFR gasoline would simply displace imports¹⁹ and total supply and therefore spot price and arbitrage opportunities would not be affected.

A Reserve Could Reduce the Total Supply of Gasoline

If in-state production could be used to replenish SFR gasoline, total supply to the market could, in some plausible circumstances, actually diminish (relative to a no-SFR world). The Commission is concerned that this could occur, and that higher average gasoline prices in the state would result.

Consider a refiner undergoing an outage. In many instances, the refiner would bring in cargos from outside the state to cover the outage. If an SFR were available, the refiner could instead draw from the reserve and replenish the supply with his own future production.²⁰ Since the cargos no longer arrive, total gasoline available to the market would be reduced.

More precisely, in the case with no SFR, the market loses the amount of disrupted barrels minus the imported cargos; in the case with an SFR, it loses the entire disrupted amount, since the refiner must replace the gasoline drawn from the reserve during the outage. With an SFR in place, consumers might have benefited from a dampened price spike immediately after the refinery problem but might then have faced a higher *average* price due to the loss in total supply.

What are the Alternatives to a Strategic Fuel Reserve?

Severe price volatility is likely to continue in California, at least for the next few years. Therefore, to reduce price volatility, the Commission considered the following alternatives to an SFR:

- Stimulate the California gasoline forward market through state participation,
- Identify the steps necessary to enhance the state's marine infrastructure, and
- Streamline the storage infrastructure permitting process.

The intent in the first alternative is to increase liquidity (the number of trades) in the gasoline forward market through state purchases of forward contracts. If more buyers of forward contracts were available, importers, who sell forward contracts, might find it easier to hedge the risk that gasoline prices could fall while the cargo is in transit. Importers might then be willing to bring more cargos into California, which could increase available supply during a disruption.

A study sponsored by the Commission compared the California forward market for gasoline with other forward markets.²¹ The study found that neither the number of trades nor the number of participants in the state gasoline forward market appears to be especially low in comparison with other forward markets. In addition, the study found little evidence that a lack of liquidity in the forward market impairs prospective importers.

The Commission believes that the second and third options are more promising. These are described below.

Identify the Steps Necessary to Enhance Marine Infrastructure

The Commission sponsored a study of California's marine infrastructure to assess its ability to accommodate imported petroleum products.²² The study identified the current and future constraints within the system of wharves, storage tanks, and pipelines that could impair the ability of importers to deliver cargos to the state. The Commission believes that these constraints do impact imports of gasoline, and that this may reduce the supply of gasoline available during a disruption.

California imports both crude oil and petroleum products to meet state demand for fuels. Over the next five to ten years, demand for gasoline is expected to grow at a rate of almost two percent per year, while the capacity of California refineries to produce gasoline is not expected to keep pace. Consequently, imports of gasoline as well as crude oil will need to increase.

The study for the Commission indicated that the state marine infrastructure for petroleum products is at or near the limits of throughput capacity, and unless the infrastructure is expanded, additional imports will increase marine congestion in California. The potential problems are most serious in Southern California, where the bulk of the increased quantities of imported crude oil and refined petroleum products will be received. (The appendix provides more details from the study on import constraints and bottlenecks.)

Marine vessels require storage tanks of sufficient capacity to be able to offload their cargos in a timely manner, avoiding costly demurrage fees and reducing the risk of creating additional scheduling conflicts for other vessels. Access to storage tanks is especially constrained in Southern California. In particular, two of the three facilities

used to receive gasoline and gasoline blending for gasoline are highly utilized and constrained by bottlenecks that prevent increased imports.

If these constraints and bottlenecks can be alleviated to some degree, imported gasoline supply could reach the California market more quickly during a refinery outage, helping to dampen price volatility. On the other hand, if marine infrastructure capacity does not expand, volatility could become even more severe.

The Commission recommends a comprehensive evaluation of California's future petroleum product import needs to identify steps that can be taken to ensure that marine infrastructure and port facilities will be adequate to accommodate the unconstrained movement of petroleum products during the next twenty years. This evaluation should be conducted in consultation with the following agencies:

- The State Lands Commission,
- The Ports of Los Angeles and Long Beach,
- The Coastal Commission, and
- The San Francisco Bay Conservation and Development Commission.

Streamline the Storage Infrastructure Permitting Process

The Commission is aware of 1.4 million barrels of private storage capacity that are either under construction or where construction is planned in the next several months.²³ Thus, conditions in the California gasoline market may improve slightly in the near future. Increased private storage could result in more gasoline inventories available to the market during a supply disruption. The Commission believes that ongoing development of private storage capacity reduces the need for an SFR.

However, all of these storage projects have been undertaken with the use of existing permits. Future projects to construct additional storage tanks could require more extensive environmental assessment and a lengthier approval process. Based on a Commission survey of the petroleum industry, the Commission concluded that the state's petroleum product storage infrastructure is still inadequate, even with these new projects, and that the permitting process may unduly burden applicants and agencies.²⁴ The Commission believes that a streamlined permitting process would further increase investments in private storage, which should increase the supply of gasoline available during a disruption.

The high costs of the permitting process result in a shortage of storage capacity. These costs lead to higher lease and rental rates for tanks, so gasoline suppliers hold lower inventories than they might otherwise choose. This results in lower inventory available during a refinery outage and therefore more gasoline price volatility. In addition, higher lease and rental rates raise the operating costs to suppliers, resulting in higher average market prices.

The Commission sponsored a detailed study on the permitting of petroleum product storage facilities.²⁵ The study examined the process by which petroleum industry participants obtain the permits required for the construction or acquisition of petroleum product storage facilities. In addition, the study identified bottlenecks, redundancies, and unnecessarily burdensome regulatory processes, and recommended improvements in the permitting process. The study did not examine or make any recommendations regarding existing environmental or safety standards, and the Commission is not considering any change to these standards.

Table 1 lists the process change recommendations found in the study report. The recommendations are grouped into three categories: agencies, applicants, and legislation. The Commission believes that the third category is the most critical, as discussed below.

Table 1: Streamlining for Petroleum Product Storage		
Recommendations for Agencies		
	_	Provide training and technical assistance to local agency staff
	_	Reduce discretionary decisions by individual permit writers to
		establish consistency in the permitting process
	-	Avoid duplication of environmental studies
	_	Establish applicant timeline and milestones for each permitting
		project and track progress
	_	Address the issue of multiple appeals of agency decisions
	_	Establish heavy industry-zoned property to eliminate the need for
		conditional use permits
•	Recommendations for Applicants	
	_	Involve stakeholders early in permitting process
	_	Request pre-application conferences or "scoping" meetings with
		agencies to discuss how agencies' specific rules will apply to their
		proposed projects
	_	Establish communication with agencies to ensure established
		"completeness" criteria are met for permit application submittals
	_	Establish a process with the relevant air district to establish and
		approve Best Available Control Technology standards early in the
		permitting process
	_	Conduct siting studies for proposed facilities to identify potential
		sites that could be zoned as neavy industrial, and identity
	Paca	mondations for Logislation
•	Reco	Drevide statewide sutherity for implementing and enforcing the
	-	Provide statewide authority for implementing and enforcing the Permit Streamlining Act
	_	Consider expanding the Unified Permit Program to include air
		and water districts as well as local agencies involved in permitting
		petroleum product storage facilities

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The Permit Streamlining Act (PSA or Act) establishes strict timelines for agencies to conduct permit application reviews and issue decisions. The PSA requires state and local agencies to list the information and criteria that they will use in evaluating a permit application. These timelines are frequently not met, without penalty to the permitting agency. Little effort appears to be made to comply with the PSA, since the Act is not very well known among stakeholders in the permitting process. No agency within California is responsible to implement the PSA, and this appears to be a fundamental problem. The Commission believes that the requirements of the PSA could be promoted and enforced by a single agency so that applicants and permitting agencies become familiar (and compliant) with the Act.

The Commission believes, however, that beyond the issues addressed by the PSA, the state needs to coordinate the different agencies responsible for permitting petroleum storage infrastructure in California. This issue is very complex, but a coordinated strategy could yield significant benefits by eliminating duplicative efforts on the part of agencies and applicants and providing a time-certain process with decision-making authority.

The state has dealt with similar problems in the past. In response to concerns about the power plant siting process, the Legislature passed the Warren-Alquist Act in 1974, establishing a state permitting agency for power plants. The legislation gave the Energy Commission exclusive authority over thermal electric generating power plants 50 megawatts or larger as well as related facilities such as transmission lines. As a result, the Commission developed a 12-month process for certification of applications.

As the lead agency under the California Environmental Quality Act (CEQA), the Commission is required to consult with responsible local, state, and federal agencies as part of its review process. The Commission's power plant licensing process has proved to be very effective in assuring the timely review and approval of new generating capacity in California because it: 1) consolidates all state and local agencies into a single permitting process, 2) has the ability to override other state and local agency decisions, 3) involves extensive public participation, and 4) has a certified CEQA equivalent review process.

The Commission recommends that the Governor and the Legislature establish a state licensing authority for petroleum storage infrastructure and related facilities, modeled on the Energy Commission's power plant licensing process. A licensing authority would help ensure statewide and regional coordination among permitting agencies, eliminate duplication of efforts, provide a time-certain process, and reduce costs borne by applicants and agencies. This state licensing authority would incorporate the following elements:

• The establishment of a single permitting process that consolidates all state and local agency reviews, has a CEQA equivalent review process, and involves extensive public participation.

- The ability to review and determine whether a proposal will comply with applicable laws, ordinances, regulations, or standards; and whether it will result in potentially significant adverse environmental or public health and safety impacts.
- The establishment of conditions, based on its review and the input of responsible agencies and the public, governing the construction and operation of the facility, which will ensure compliance and avoid or mitigate identified significant impacts.
- The ability to license a proposal that results in significant environmental impacts based on a finding that there are no feasible mitigation measures or project alternatives that would avoid or lessen the impacts, and that the benefits of the project outweigh the unavoidable significant environmental impacts,
- The authority to override local, regional, or state regulations based on a finding that the project is needed for public convenience and necessity and there are no more prudent and feasible means of achieving such convenience and necessity.
- The requirement that licensing decisions can only be appealed directly to the California Supreme Court.

- ² Price volatility includes both "peaks" (spikes) and "valleys", as discussed later in this report.
- ³ Reports are available on the Energy Commission's website
- (www.energy.ca.gov/fuels/petroleum_dependence/index.html).

¹ The impact of imported cargos on price can occur before the cargos actually arrive, if the gasoline market is generally aware that they are enroute.

⁴ *California Strategic Fuels Reserve, Revised Contractor Report*, Publication P600-02-017D, California Energy Commission, July, 2002. ⁵ The study recommender a total server of 5 and 5 an

⁵ The study recommends a total construction of 5 million barrels of storage capacity, of which half could be subleased to market participants.

⁶ Economic Benefits of Mitigating Refinery Disruptions: A Suggested Framework and Analysis of a Strategic Fuel Reserve, by Anthony Finizza, Ph.D. Publication P600-02-018D, California Energy Commission, July 2002.

⁷ Such volatility is typical in the market for various crops, where rainy years can be followed by arid ones. ⁸ This conclusion comes from examination of California retail price data before, during, and after supply disruptions.

⁹ For example, for a refiner to provide gasoline to a supplier through a pipeline, the pipeline must already be full of product.

¹⁰ See, for example, pp. 438-45 of *Storage and Commodity Markets*, by Jeffrey C. Williams and Brian D. Wright (Cambridge University Press, 1991)

¹¹ EIA's Petroleum Product Stocks for California. Energy Information Administration, June, 2003.

¹² Required levels of distribution inventory are likely lower than 7.9 million barrels since refiners always keep at least a small amount of stocks. In addition, EIA reports holdings on the last day of each month. Therefore, the actual minimum value is almost certainly smaller than 7.9 million barrels and the maximum larger than 12.5 million barrels. Finally, EIA reports only inventories from major refiners and bulk terminals with storage tanks sized 50,000 barrels or larger. For these reasons, estimates of stocks reported here are likely to be underestimated.

¹³ Forward markets operate like futures markets (e.g., pork futures) but less formally. Futures markets provide some features that forward markets do not, including standardized contracts and formal clearinghouses.

¹⁴ There are of course other reasons why stocks fluctuate. For example, levels tend to be low just before refinery "turnaround", when refiners switch from one seasonal blend to another.

More specifically, a market is said to be in backwardation when the spot price plus storage costs and interest charges is greater than the forward price. This more precise definition is not important for the discussion here.

Source: Oil Price Information Service

¹⁷ Source: California Energy Commission PIIRA inventory data. Inventory levels shown in Figure 4 are smaller than those reported by EIA since the PIIRA data includes only data from refiners. ¹⁸ From January 1999 through December 2002, the spot price was above the one-month forward price for

almost two thirds of the time (source: Oil Price Information Service). ¹⁹ Suppose a refiner were planning to bring in a cargo in July. With an SFR (and with prices in

backwardation), the refiner could instead purchase reserve supply in July and bring in the cargo in August to replenish the reserve.²⁰ This assumes that the refiner is still able to meet his contractual obligations.

²¹ Government Use of the California Gasoline Forward Market, Contractor Report P600-03007D, California Energy Commission, April, 2003.

California Marine Petroleum Infrastructure, Contractor Report P300-03-008D, California Energy Commission, April, 2003.

 ²³ Source: Stillwater Associates, California Energy Commission Workshop, April 24, 2003.
²⁴ California Strategic Fuels Reserve, Revised Contractor Report, Page 82. Publication P600-02-017D, California Energy Commission, July, 2002

Permit Streamlining for Petroleum Product Storage, Contractor Report P300-03-006D, California Energy Commission, April, 2003.

APPENDIX

Outlook for Marine Infrastructure in California

Crude Oil Imports and Outlook

California refiners obtain crude oil from in-state production, Alaska and foreign sources. Waterborne receipts of crude oil for 2001 amounted to an average of 425 thousand barrels per day for the San Francisco Bay Area and over 520 thousand barrels per day for the Ports of Los Angeles and Long Beach. Both California and Alaska crude oil production continue to decline, while the nearly 2 million barrels per day of crude oil used by California's 21 refineries is forecast to increase by less than 1 percent per year. Refiners are therefore expected to increase their imports of crude oil from foreign sources. These additional imports will be brought to the state in marine tankers.

Current capacity to receive crude oil is sufficient for both Northern and Southern California. The outlook for the next several years is that Very Large Crude Carrier (transporting 1 to 2 million barrels) use will need to double from an average of one to two ships per week due to greater reliance on foreign sources of crude oil. For this reason, additional infrastructure improvements for berthing facilities as well as crude oil storage tanks will need to be constructed. This should not create a major problem if industry can undertake the work within the next 5 to 10 years. However, this outlook assumes that existing infrastructure assets for receiving crude oil are not diminished over the next several years by new operational restrictions imposed by port authorities or other governing bodies.

Refined Product Imports and Outlook

Imports of gasoline, blending components, diesel and jet fuel have continued to grow along with demand for these products. As is the case with crude oil, imported refined products arrive by marine vessel. Refined products accounted for 11 percent of all waterborne receipts for the Bay Area and 30 percent for Southern California during 2001. Imports of gasoline and blending components are expected to increase from 150 to 300 thousand barrels per day by 2010. Forecasted imports for both diesel and jet fuel are increasing at similar rates. By 2010, the number of marine vessel movements is expected to double and an additional storage tank capacity of between 0.5 and 1 million barrels per year would have to be constructed to keep up with the forecast demand.

Specific Findings

The Commission-sponsored study of marine infrastructure concluded that the marine petroleum infrastructure in the San Francisco Bay Area and the Los Angeles Basin (California's main refining centers) is constrained in certain key areas. Under current commercial and public policy conditions, staff believes that

it is likely that future infrastructure demand will outstrip capacity. The areas of concern are separated into three categories: wharves, storage tanks, and the gathering lines used to gain access to the petroleum pipeline infrastructure.

Wharves

The utilization rate for wharves is high enough to cause scheduling problems at 20 percent of the berths in Southern California. Additional receipts of petroleum products at these locations could be problematic. On the other hand, 30 percent of the berths are underutilized and can accommodate additional imports, but these facilities are generally for proprietary use and are not available to independent importers. Northern California wharves are generally less constrained and have more underutilized capacity, but movement of petroleum products face other limiting factors related to dredging.

The depth of the channels and marine berths is a factor that can constrain the ability to receive and offload marine vessels. In Northern California, silt flows from the Sacramento Delta are deposited as water flows toward San Francisco Bay. The accumulation of silt can result in draft restrictions for marine vessels at wharves and certain points along the shipping channels. One of these locations in the greater Bay Area is located near Richmond (Pinole Shoals). The times at which dredging can be conducted in this area is limited due to environmental protection for certain migratory fish species. Other issues have arisen with regard to disposal of the dredging spoils (in the Bay, out at sea, and land disposal) and adequate federal funding to pay for the work.

The impact of increased silt levels is that the water becomes too shallow for marine vessels of certain size to safely operate. Companies are forced to moor these vessels in San Francisco Bay and use smaller vessels (like barges) to partially offload the ships so that they sit higher in the water. Delayed offloading of these vessels increases costs for consumers and increases the risk of spills due to the increased number of transfers.

Storage Tanks

Marine vessels require storage tanks of sufficient capacity to be able to offload their cargoes in a timely manner, avoid costly demurrage fees, and reduce the risk of creating additional scheduling conflicts for other vessels. Access to storage tanks is somewhat constrained in Southern California at this time, but is less of a problem in the Bay Area.

A number of projects are underway to construct additional storage tank capacity that will provide some potential relief. These planned additions, however, are not expected to keep up with forecasted import demand. Existing constraints could therefore become more serious unless additional projects are undertaken and completed within the next couple of years. It is important to note that all of the recent projects have been undertaken with the use of already existing permits. Future projects to construct additional storage tanks will require new permits and therefore will undergo a lengthier approval process.

Petroleum Product Pipelines

Cargos offloaded from marine vessels into storage tanks are routinely transferred to other refineries and terminals located throughout the state by the use of a network of interconnected petroleum product pipelines. The segments of pipelines that lead away from the wharves can be operating at or near maximum capacity during certain periods of the year, such as the summer months when gasoline demand is highest and the need for imports is greatest.

Pipeline constraints are greatest for the segments connecting the wharf storage tanks with the petroleum product pipeline system operated by Kinder Morgan. Bottlenecks in this network of pipelines have resulted in increased movements of gasoline and diesel fuel by tanker truck. Plans for the expansion of marine infrastructure to accommodate increased quantities of imports will have to consider expansion of these gathering systems. Expansion of existing pipelines or construction of new pipeline segments can be a complex process, and could significantly increase the time required to obtain the necessary permits—pipelines usually cross several different jurisdictions and can require modifications to existing tariff rates for those projects that involve common carrier companies such as Kinder Morgan.

Other Areas of Concern

Other issues were raised during the investigation of California's marine infrastructure, issues which staff believes merit additional attention.

Third Party Storage Tanks

Lack of access to third-party tankage in Southern California is a type of "barrier to entry" for independent market participants who wish to import gasoline and other refined products on a speculative basis. These importers provide a valuable function by providing additional supplies of gasoline and other petroleum products during temporary supply disruptions. However, access to nonproprietary storage tanks and marine facilities to offload the vessels is limited. Expansion of storage tank and associated infrastructure could increase the ability to move supplies of gasoline and other petroleum products to California.

Port Policies

Port commercial development plans can be at odds with continuation or expansion of petroleum imports. The majority of the commercial operations conducted within the Ports of Los Angeles and Long Beach involve the receipt and offloading of cargo container vessels. The movement of these containers through both ports is expected to double over the next 10 years. To accommodate this additional growth, both ports have plans to expand development of cargo container business. Access to water and sufficient land space is necessary. This demand can place additional pressure on operators of petroleum product import facilities when they try to renew leases or expand operations to properly handle the increased quantities of petroleum imports.

State Transportation Fuel Needs Versus Local Decisions

Local decisions can also impact petroleum infrastructure projects. Amendments to existing leases and applications for new petroleum projects are normally overseen by a lead agency composed of local boards or councils. Pressures exerted by local constituents can increase the difficulty associated with obtaining the compromises needed to allow commerce related to the import and export of petroleum products to continue or expand. In addition, local concerns may result in decisions that adversely impact petroleum-related commerce.