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ADMINISTRATOR JACKSON

Jul. 12, 2010
Vegas Review-Journal
DOUG ELFMAN:

Oil spill, politics upset Maher (*Las Vegas Review-Journal*)

Bill Maher would "bet the house" Mitt Romney will win the Republican presidential nomination in 2012.

More surprising, Maher -- one of liberal Americans' beacons -- thinks Romney has a "50-50" shot at beating President Barack Obama.

Maher thinks Romney is a dumb "bimbo." So why him?

"They've got nobody else. He looks like a president. He ran last time, and Republicans are big on giving the nomination to the guy who has stood in line. They gave it to (Bob) Dole. They gave it to (John) McCain.

"And who's going to beat him? I don't think (Mike) Huckabee. I don't think Sarah Palin. Even Republicans know she's a joke," says Maher, who performs Friday and Saturday at The Orleans.

Obama seems beatable now because:

"The country is very unhappy, and people are very dumb, and Obama has been a disappointment in a number of different ways," Maher, HBO's "Real Time" host, tells me.

Maher credits Obama for signing three laws: health care reform, financial reform and economic stimulus.

"He did stave off a depression this country was heading straight towards. Those are three pretty big accomplishments," Maher says.

"If he could get some kind of climate bill passed, and move us in that direction, I would have to say it's a pretty successful first term."

On the other hand, Obama (as Arianna Huffington puts her finger on it) trusts everyone from banks to BP to do the right thing. He seems to have zero skepticism of authority figures.

Plus, various Obama policies mirror Republican policies.

"It amazes me the press is always obsessed with this idea of: 'There's too much partisanship, and we're too polarized.' Too polarized? Quite the opposite! We're too alike.

"If both parties are for oil drilling, if both parties are for using the army to fight terrorism in Afghanistan and Iraq, then we're not polarized. We have one party."

This oil spill has depressed Maher "more than any story I've ever covered," he says.

"It's not only the destruction of nature, but also the futility -- this constant reminder that we can't solve problems -- I just find so depressing.

"I don't see this giant tragedy changing peoples' minds enough. People are still for drilling," he says.

One of those people, Sen. David Vitter, R-La., keeps saying it could be devastating if we stop drilling, even though the oil spill is, actually, already devastating.

"Only a Republican can look at a dead ocean and say, 'Boy, I hope the government doesn't turn this into something bad,'" Maher says.

Yet, it's not like Democrats in office are coalescing behind a replacement energy plan. No major politician in either party will say: Maybe it's time to focus heavily on other resources and phase out oil-drilling jobs.

"If your job is in some industry that's killing things -- maybe you're in the wrong line of work! Maybe we shouldn't have those jobs," Maher says.

"They'll never say that because oil is macho and windmills are 'gay.' Better to die in a manly fashion than to live by getting your power from wind," Maher mocks.

Maher wishes Obama would clean his environmental house and fire Secretary of the Interior Ken Salazar and EPA chief Lisa Jackson, for starters.

But he's not hopeful.

"Since BP turned the Gulf of Mexico into the pit at Jiffy Lube, I'm a little cranky."

Doug Elfman's column appears on Mondays, Tuesdays and Fridays. Contact him at 383-0391 or e-mail him at delfman@reviewjournal.com. He also blogs at reviewjournal.com/elfman.

EDITORIAL / OP-ED / COMMENTARY / LETTERS

Texas energy industry under fire from administration (*Fort Worth Business Press*)

BY ALEX MILLS

July 12, 2010

The current administration and environmental extremists have declared that they intend to end the “tyranny of oil,” as President Obama has proclaimed.

The attacks come from the administration’s Justice Department, Environmental Protection Agency (EPA), Interior Department, Treasury Department and Department of Energy. They are using the legislative process, the federal budget, the courts and regulatory agencies to attack the domestic oil and natural gas industry.

Obama recommended in his 2010 and 2011 budgets that the tax law be changed, which would result in an increase in taxes by an estimated \$35 billion for domestic oil and gas industry. Most of the tax increase would come from small independent producers, who drilled 96 percent of the wells in Texas in 2008 and produced 88 percent of the oil and natural gas.

The Justice Department has appealed a U.S. District Court ruling against the Obama administration’s moratorium on drilling in the Gulf of Mexico because of the blowout. The moratorium would cause serious economic damage to the offshore exploration industry in Louisiana and Texas. The district judge noted that the airline industry is not shut down following an airplane crash, and the offshore exploration industry should not be shut down because of one incident in the last 40 years.

On the environmental front, EPA has proclaimed carbon dioxide a “pollutant” and wants to bypass Congress because it cannot pass a cap-and-trade bill.

In Texas, EPA Region 6 Director Al Armendariz has decided that EPA can regulate air emissions from the petroleum industry better than Texas regulators, and he has declared that Texas refineries must obtain a federal permit. States have the authority to issue air permits under the Clean Air Act, and EPA has approved Texas’ permitting process for more than 15 years until last week.

EPA also has decided to conduct another “study” of hydraulic fracturing even though there has never been a confirmed instance where groundwater has been contaminated by the fracturing process. EPA held a hearing in Fort Worth on July 8 and learned that hydraulic fracturing occurs thousands of feet below fresh water zones. For example, the average well in the Barnett Shale is more than 8,000 feet below the fresh water table. That’s more than a mile and a half of solid rock between the fractured zone and the fresh water zone. Put another way, you could stack the five tallest buildings in North America – the CN Tower in Toronto, the Sears Tower in Chicago, the Trump Tower in Chicago, the John Hancock Building in Chicago and the Empire State Building in New York, which total 7,797 feet in height – and still not equal the distance between the fresh water zone and most fractured zones.

Additionally, during the past 25 years, the Congress, federal regulatory agencies, state regulatory agencies, state legislatures, and the courts have examined hydraulic fracturing extensively. Yet, not one case of contamination by hydraulic fracturing has been proven.

In 1995, EPA Administrator Carol Browner, who currently serves as Obama's energy and environmental czar, wrote that hydraulic fracturing was closely regulated by the states and, "EPA is not legally required to regulate hydraulic fracturing." Most importantly, she further wrote that there was "no evidence that hydraulic fracturing resulted in any drinking water contamination" in the litigation involved. Also, two EPA officials testified just a few months ago that they did not know of any contamination caused by hydraulic fracturing.

All of these actions against the number one industry in Texas have made some wonder if the results of EPA's "study" have been pre-determined even though state regulators still have not found a case where hydraulic fracturing has contaminated ground water.

Additionally, many Texans are concerned that the actions of the federal government will send the oil and gas industry into a tailspin and damage the entire economy of Texas.

Alex Mills is president of the Texas Alliance of Energy Producers. The opinions expressed are solely of the author

Note to EPA: 'Coal' isn't a dirty word (*POLITICO*)

By: Rep. Shelley Moore Capito
July 12, 2010 04:44 AM EDT

Through the Environmental Protection Agency, Washington continues to push an anti-coal agenda. It amounts to an assault on an industry that employs more than 500,000 hardworking Americans and supplies nearly half of America's electricity.

The EPA's attempts to control climate change through regulation and stall the approval of mining permits can only lead to coal states like West Virginia bearing the brunt of poorly thought-out policies that translate into greater job loss and higher energy costs.

President Barack Obama is intent on passing legislation to cap greenhouse gas emissions. Should Congress fail to act, the EPA will exert its regulatory authority in an unprecedented manner that will have far-reaching effects on nearly every sector of the U.S. economy — from higher prices at the gas pump to skyrocketing utility bills.

The EPA cannot unilaterally set an agenda without the buy in of the American people. Decisions made by the EPA must take into account the real cost to families, their livelihoods and plans for the future.

West Virginia already is feeling the burden of excessive regulation with no consideration of our future.

In an effort to punish the coal industry, the EPA has essentially halted the review and approval of mining permits across the Appalachian region. Consequently, tens of thousands of jobs in my state and across the country are at risk because the EPA has been purposefully slow to act.

According to a recent study by the Senate Environment and Public Works Committee's minority staff, the Appalachian region could lose one-fourth of its coal-mining jobs if the EPA continues its delay tactics. Workers in the transportation, equipment manufacturing and utility industries will also see a reduction in demand if the coal industry is dismantled.

With national unemployment still hovering around 10 percent, and no relief in sight, families can ill afford to lose these good-paying jobs.

We absolutely cannot afford a scenario where delayed policy decisions lead to a slow bleed of jobs and planned investment throughout America's coal country. Energy producers expect and deserve certainty and clarity to conduct their business, but the current administration continues to turn a blind eye and a deaf ear to their concerns.

We all agree that we must pass an energy policy that respects our environment and produces energy in an environmentally friendly way. But we also must encourage job growth, economic prosperity and innovation in energy technology.

The out-of-control regulation authority will cost American jobs, increase energy prices and threaten our national security. We must all work to end our dependence on foreign oil and expand our energy sources, and that starts with taking advantage of resources that are affordable and abundant right here in America.

Rep. Shelley Moore Capito (R-W.Va.) is co-founder of the Congressional Coal Caucus.

July 12, 2010

Why N.Y. needs drilling moratorium (*Ithaca Journal*)

By Christine Applegate

Two bills in the state Legislature propose moratoriums on gas drilling until the industry can be better studied. The oil and gas industry is not pleased. Some landowner coalitions are also pushing to drill here and drill now.

Many area landowners, recognizing that they were deceived by the gas companies, now regret their decision to lease their property. The moratorium gives them a chance to start over.

In 2006, we were offered a \$25 per-acre sign-on bonus, 12.5 percent royalty and the standard two-page lease with virtually no built-in protections. The landman didn't let on that we could get more.

He didn't tell us that our land would be disrupted for decades and our lease would be never-ending. He didn't tell us that banks would be leery of granting a mortgage on our property if we decided to sell. The gas companies swooped in under the radar and got Walmart prices around here and few restrictions.

Meanwhile, landowners coalitions are negotiating for \$5,000 per acre, 20 percent royalties and the deluxe 38-page lease (with much more protection). If we had signed four years ago, our lease period would be up in 2011. We might decide to renegotiate with the gas company for what our land is really worth — \$220,000 for our property at today's prices — not to mention the increased royalties and the peace of mind. In light of all that we have learned about the potential dangers of gas drilling, we might decide that leasing doesn't work for us after all.

That's why a one- or two-year moratorium would be great for landowners. Many of the terrible current leases will expire in the next two years. Meanwhile, the natural gas underground will only increase in value.

The EPA will complete its two-year study on the safety of hydro-fracking, and we can finally get some unbiased facts. Adequate, up-to-date regulations will be developed so that New Yorkers can avoid the mistakes that have been made in other states.

Our towns and counties can lobby for more say over zoning, roads, and environmental protections. Citizens can also lobby the state to repeal the unjust seizure of our private property by Compulsory Integration.

Indeed, the landowner coalitions should come out in support of their friends and neighbors by supporting the moratorium, so that all landowners can benefit from better leases, more income for local and state coffers and better protection for central New York.

A moratorium also gives the 90 percent of the area's population not involved in leasing a voice in decisions that will affect the whole community. Heck, gas companies should support the moratorium - a great marketing strategy to differentiate themselves from BP. We have watched the nightmare unfold in the Gulf. Let's not let the oil and gas industry — the only ones who really benefit from low, low prices and insufficient regulation — play the tune.

AIR

Monday, July 12, 2010

Cap and No More Trade (*Wall Street Journal*)

Market-based environmental programs can work well. But as the acid-rain market shows, they need clear rules set by the government.

By MARK PETERS

After more than a decade of slashing air pollution from power plants, the original U.S. cap-and-trade market has ground to a halt. The final blow likely was delivered by new federal pollution rules announced last week.

Effects of acid rain in Great Smoky Mountains National Park

The acid-rain market has been in a state of disarray for the past two years as utilities, states and investors waited for the Environmental Protection Agency to issue new rules. Now those rules are out, and they set strict new limits on emissions. But they also reduce utilities' ability to trade allowances to meet those tighter standards. As a result, the value of the allowances already on the market are expected to fall to zero, causing a complete collapse of trading.

Hopes are few that the market will recover. And that holds a warning for policy makers hoping to establish a similar market-based approach to curb emissions of carbon, which scientists have linked to global warming. Though they've worked well for years, market-based approaches to reducing air pollution are extremely vulnerable to government actions. And just like in markets in general, investors—and utilities in this case—hate uncertainty.

The cap-and-trade approach was first used to curb pollutants causing acid rain. European carbon markets followed, modeled in part on the acid-rain market's early success. But a federal court in 2008 rejected a complex 2005 plan by the EPA to expand U.S. environmental markets. In response, prices for the pollution allowances that drive emission reductions plunged. Utilities held off on projects to clean up their plants.

Limiting Trading

Now, the rules just issued will restrict trading by utilities further. The changes aren't a signal that the EPA has soured on market-based programs to combat pollution, according to an agency official. But because of the court ruling, the new regulations will require utilities in upwind states to cut their pollution outright in order to ensure that downwind states meet federal air-quality standards. Limited trading will be allowed by utilities to comply as well, but the new rules are far more restrictive than they were in the Bush administration plan. Under the new rules, only a slice of required emission reductions can come from buying allowances, with the rest coming from changes at the plants themselves. And millions of allowances that utilities now hold can't be used under the new program, which will issue its own allowances.

"It is tragic," says Gary Hart, an analyst at ICAP Energy LLC based in Birmingham, Ala., who has worked on environmental markets for two decades. "It is something that worked so well."

The U.S. acid-rain trading program is often cited as the first, large-scale effort by a country to combine environmental goals with a market system. Starting in 1995, the U.S. government put a limit on sulfur-dioxide emissions—essentially the cap in cap and trade. That limit affects mostly coal-fired power plants.

Then officials created a market by handing out a set number of emission allowances to utilities. Plants surrendered one allowance for each ton of sulfur dioxide they emitted into the atmosphere. If utilities cut emissions by switching to low-sulfur coals, increasing efficiency or adding emission-control technology, they could capture new revenue by selling any leftover allowances or avoiding the cost of buying new ones. That's the trade in cap and trade.

An EPA study shows sulfur-dioxide emissions in 2008 were 52% below 1990 levels. Similar reductions came from a regional program the agency later started to cut emissions of nitrogen oxide, a major contributor to smog.

But in 2005 the EPA, with the backing of many utilities and environmental groups, announced changes that sought major new reductions in smog-forming and soot-producing emissions, and expanded the reach of the cap-and-trade system in more than two dozen, mostly Eastern, states.

The new EPA orders, known as the Clean Air Interstate Rule, sought to achieve bigger cuts in part by slashing the future value of allowances handed out to utilities. Under the new rules, starting in 2010 utilities would have to use two allowances instead of one to emit a ton of pollutants.

This was basically an attempt by the Bush administration to tighten the cap on pollutants—by cutting the supply of allowances—without having to write new legislation. Democrats in Congress were pushing for much tighter caps. The utilities knew they were going have to accept something, and they approved of the market-based approach. So, the industry for the most part threw its support behind the rule changes.

Promising Start

Prices of sulfur-dioxide allowances more than doubled soon after the changes were announced, hitting \$1,600 a ton in late 2005. State programs to control pollution and other factors such as growing electricity demand also helped to drive emission-allowance prices up. At the same time, the utilities increased investment in pollution controls to prepare for the start of the new rules in 2009 and 2010.

But in 2008, in response to lawsuits filed by a handful of utilities and North Carolina, the U.S. Court of Appeals for the District of Columbia Circuit ruled that the EPA had overstepped its authority in expanding the markets and that parts of the new rules were in conflict with existing Clean Air Act regulations. The court allowed the expansion of the market to take place, but it ordered the EPA to rewrite its rules to comply with existing law. Prices of allowances fell in response, and trading dwindled.

With the release of those revisions last week, curbing trading and enacting strict new state caps, the acid-rain market isn't likely to recover. Requiring utilities to take new steps to cut sulfur-dioxide emissions will cause an already large surplus of allowances to balloon further. Using those allowances from the acid-rain market to meet the limits won't be allowed under the new rules.

"It really feels like prices are going to zero quickly," says Peter Zaborowsky, a managing director of Evolution Markets Inc., a White Plains, N.Y.-based provider of environmental brokerage services for utilities and investors.

U.S. Sen. Thomas Carper, a Democrat from Delaware, has proposed new legislation that would use the existing markets to achieve similar reductions, but the bill faces a Congress focused on broader energy legislation.

Keeping Faith

Utilities and environmental groups generally haven't lost faith in a market-based approach to the problem of air pollution. John Walke, clean air director at the Natural Resources Defense Council, says that the 2008 appeals court decision remained silent on the larger question of the effectiveness of environmental markets, and that the new EPA rules shouldn't be viewed as an abandonment of cap-and-trade.

"The acid-rain market continues to be relevant to the debate over CO2 because it is a successful model," he says.

Mr. Peters is a reporter for Dow Jones Newswires in New York. He can be reached at mark.peters@dowjones.com.

We want clean air (*Fredericksburg.com*)

July 12, 2010 12:35 am

We want clean air

We all value our health. But in the coming weeks, utility industry lobbyists will be pushing the U.S. Senate to weaken the Clean Air Act as negotiations heat up to pass a comprehensive clean energy and climate bill.

For years, the Clean Air Act has helped protect Americans from toxic pollutants like mercury, lead, and arsenic.

Along the way, the electric utility industry has fought tooth and nail to delay the installation of modern pollution controls on coal-fired power plants and other pollution sources.

Even as the BP Gulf disaster has given new urgency to transition to a clean energy economy, the utility industry is working to block the EPA from cutting global warming

pollution from power plants, and is even pushing for weaker standards for smog, soot, and mercury.

Coal-fired power plants create pollution that sickens and kills thousands of Americans with lung and heart disease. We can't afford to be taking steps backwards in the fight to clean up this pollution.

Sens. Webb and Warner recently stood up for clean air and public health, and we urge them to continue their leadership by protecting the Clean Air Act as they work to pass a comprehensive clean energy and climate bill this summer.

Sophie Fried
Richmond
The writer is field associate, Environment Virginia.

7/12/2010

Cummins Plans to Expand Seymour Plant, Engine Production (*Truckinginfo*)

Cummins Inc. is expanding its High-Horsepower Technical Center and high-horsepower engine product line at its manufacturing plant in Seymour, Ind. The \$100 million investment in the plant's expansion will open the door for Cummins to produce high-horsepower clean diesel and natural gas engines in the future.

With the new investment, Cummins expects to add about 200 engineering and manufacturing jobs over the next five years. The plant currently employs nearly 450 people.

Cummins has also changed the name of the facility to the Seymour Engine Plant from the Cummins Industrial Center, to reflect the company's practice at many of its other engine manufacturing locations.

The company is working on a new, larger-displacement engine. The product investment will increase the plant's capacity and manufacturing capability, including a new assembly line, paint area and production test cells.

The expansion will almost double the current engineering footprint in the facility and increase Cummins high-horsepower mechanical development capability. Other capital expenditures will include additional equipment, test cells and other facility upgrades.

Preparations for the technical center expansion are scheduled to start immediately, and construction is expected to be complete by mid-2011.

"This is an exciting expansion and announcement," said Mark Levett, vice president and general manager of the high-horsepower business. "Cummins was first to market with our EPA Tier 2 high-horsepower engines, meeting both emissions requirements and our customers' needs for reliability, durability and performance."

The Seymour Engine Plant opened in 1976 and is currently manufacturing V903, K19, QSK19 and QST30 diesel and natural gas engines.

Council praising clean air proposal (*Watertown Daily Times*)

ADIRONDACKS: Group says acid rain damage would be reduced if law is put in effect
By MARC HELLER

TIMES WASHINGTON CORRESPONDENT

MONDAY, JULY 12, 2010

WASHINGTON — The Adirondack Council is praising a renewed proposal from the Obama administration to cut pollution that causes acid rain in the Northeast.

The proposed cuts in sulfur and nitrogen oxides are deep enough to stop most of the damage acid rain inflicts on the Adirondacks, the Council said in a news release.

Still, the group urged Congress to put the proposed cuts in law, rather than rely on regulations that could face coal industry lawsuits.

The federal Environmental Protection Agency proposed the Clean Air Interstate Rule last week, including a 71 percent cut in sulfur dioxide emissions and a 52 percent cut in nitrogen oxide emissions when combined with other agency actions.

The proposal is open for public comment for 60 days.

A prior Clean Air Interstate Rule proposed by the Bush administration was rescinded by a federal court that demanded better evidence of how the regulations would benefit public health, then reinstated while the EPA revised it.

The new rule, with more strict emissions limits, would cost business about \$2.8 billion in 2014, when limits fully take effect. But the EPA said savings in public health would far outweigh the cost to power plant operators.

"The Adirondack Council is pleased with this new rule and congratulates the Obama administration for advancing it," the group said. Any similar law passed by Congress should be "at least as protective" as the new EPA rule, the group said.

Efforts to pass legislation have been complicated by the debate on climate change and carbon dioxide. Democratic leaders have been pushing for legislation to reduce carbon emissions, possibly adding acid rain reduction. But that initiative has been held up in the

Senate, largely because of Republican opposition and concerns about the cost to industry of ordering cuts in carbon emissions.

Aquatic life has been harmed by acid rain in more than 700 Adirondack lakes and ponds, the Adirondack Council reported.

ARSENIC

Arsenic collects in top soil, contaminating rice, reducing yield (*Environmental Health News*)

Jul 12, 2010

Asaduzzaman Khan, M, M Rafiqul Islam, GM Panaullah, JM Duxbury, M Jahiruddin and RH Loeppert. 2010. Accumulation of arsenic in soil and rice under wetland condition in Bangladesh. Plant and Soil <http://dx.doi.org/10.1007/s11104-010-0340-3>.

Synopsis by Thea Edwards

Arsenic carried to rice fields by contaminated irrigation water tends to accumulate in top soil layers where the rice takes it up, contaminating the grain, lowering its nutritional value and exposing large populations who depend on it for food.

Arsenic in irrigation water or soil congregates in the top layers of soil where rice roots grow, allowing the plants to incorporate the toxic metal into the grain. The arsenic tends to stay in the top soil regardless of growing season, type of rice or other farming factors, according to a two-year study comparing water and soil sources of the metal.

While it is known that arsenic accumulates in soil and contaminates rice, this study corroborates others that document how far and under what conditions arsenic moves through the soil. A better understanding of arsenic's absorption and movements through soil and water could improve rice farming techniques in ways that would lessen the toxic metal's accumulation in the food over time.

People are exposed to arsenic primarily through diet and drinking water. Rice is one of the largest sources of arsenic exposure for people in Bangladesh and India. It represents about half the total intake of arsenic, according to the authors, who note that rising arsenic contamination in water and food supplies threatens food security, food safety and quality, and long-term agricultural sustainability of rice crops.

In the United States, drinking water levels of arsenic are regulated at 10 parts per billion (ppb) by the U.S. Environmental Protection Agency (EPA). However, data collected by the EPA from 1980-1998 shows that arsenic concentrations in public water systems can exceed 200 ppb in some states, including California and Alaska.

In Bangladesh, where the rice study was conducted, drinking water arsenic concentrations range from 1 to 450 ppb.

Other sources of arsenic include treated lumber, fertilizers and pesticides, and some medications. Until 2004, arsenic was widely used to preserve wood against pests. Playsets, decks and other home and community projects were built from the lumber, which exposed children and contaminated the underlying soils. Like lead, arsenic creates a legacy of contamination, even if additional arsenic applications are stopped.

Arsenic exposure can cause stomach pain, nausea, nerve damage and blindness. It is linked to several forms of cancer. Arsenic is also associated with poor cognitive development in children, and low birth weights related to poor fetal muscle development.

The World Health Organization recommends that daily arsenic intake be limited to 2.1 µg/kg body weight, equivalent to approximately 1 µg/pound. So a person who weighs 160 pounds should not exceed 160 µg of arsenic per day, or 13 grams, which is about one serving of the most contaminated rice from this study.

In the two-year study, researchers grew two varieties of rice in PVC tubes under five separate treatments: irrigation water spiked with arsenic at 1 or 2 parts per million (ppm), top soil with arsenic added at 10 or 20 ppm or control plots with no arsenic. For comparison, the irrigation water in this study had arsenic concentrations that were 2 to 10 times higher than some drinking water sources in the United States and Bangladesh.

The two-year, two-crop farming cycle used in the study mimicked Bangladesh's rice farming rotations during the annual rainy and dry seasons, when crops are irrigated. After harvesting, the rice was dried and analyzed for nutrients. Soil samples were collected after the second year and analyzed for arsenic in 5-centimeter increments to a depth of 40 centimeters.

Arsenic – whether mixed with the soil or applied through irrigation water – concentrated in the top soil layers above 20 centimeters. Amounts measured were seven times higher than control levels. Between 51 and 57 percent of the arsenic was retained in this level, regardless of treatment type.

This is the depth that is plowed and where the rice roots grow. Indeed, arsenic levels measured in the roots varied with depth and treatment: more was measured at higher treatments and in the roots at the lower levels of 5-10 centimeters than the 0- to 5-centimeter depth. Less than 16 percent of the applied arsenic was detected in the 20- to 40-centimeter layers.

The applied arsenic also made its way into the rice grains, husks and straw. Arsenic was measured at concentrations between 0.2–12.5 micrograms per gram (µg/g).

Yield was reduced by up to 80 percent and nutritional value was lowered. Yield drops depended on the type of rice, the season in which it was grown and the arsenic treatment.

BP SPILL

In the gulf, burn teams send oil up in smoke (*Los Angeles Times*)

July 12, 2010 Monday

Home Edition

MAIN NEWS; National Desk; Part A; Pg. 1

ByBob Drogin

THE GULF OF MEXICO

Wearing purple fireproof gloves, George Ross leaned over the side of a small boat and gingerly placed his igniter package -- essentially a modified Molotov cocktail -- into a syrupy pool of black oil that had bubbled up from the BP spill site a few miles away.

The fuse sputtered, then a marine flare spit flames between two half-gallon plastic jugs filled with diesel gel and lashed together with foam and tape. In seconds, a blaze roared up, black smoke poured skyward and the air sizzled with the sound of burning oil.

"Accch, she's got the fire now," said Ross, a grizzled Scotsman who works on oil spills around the world. "Listen to her snarling and spitting and crackling."

It was the 13th burn of the day Saturday for the teams doing arguably the most dangerous and controversial work in the cleanup. In the three months since the Deepwater Horizon rig exploded and sank, killing 11 people, they have lit 329 fires at sea and burned more than 10.3 million gallons of oil.

No one has ever burned oil in U.S. waters after a spill, so government agencies, oil companies and environmental groups are watching closely.

"We've burned more oil than the Exxon Valdez spilled" off Alaska in 1989, said Ross, who helped clean up that disaster too. "No one can deny this is a success."

Coast officials and oil spill experts describe the offshore burns as a crucial tool to destroy oil before it can reach shore. The burning is likely to increase now that BP has lifted a containment cap from the wellhead, allowing oil to gush without hindrance, with the goal of installing a tighter seal by Sunday. Officials say they may be able to permanently close the well by early August.

But confusion and delays still plague the oil-burn program, and may hinder its utility in the weeks ahead.

The burns resumed last Friday after a break that began June 21, when environmental groups filed a federal lawsuit charging that young sea turtles may have been burned alive between the fireproof booms used to corral the oil.

The reptiles, most of them endangered species, forage and hide in beds of sargassum seaweed, which float on the currents that aggregate the oil. No one could confirm that any turtles had been incinerated, but the issue led to a public outcry.

BP and the Coast Guard agreed to place wildlife biologists with long-handled nets aboard the igniter boats to grab any turtles before a burn. Then rough weather forced more delays.

Coast Guard Senior Chief Andrew Jaeger led the first boat back out last Monday to resume the oil infernos. But another storm moved in before the 30-boat burn fleet torched any oil, forcing it to return to port.

Jaeger said the oil must lie at least blanket-thick on the surface, and that only a super-hot igniter can set it ablaze. The thicker the oil, the more efficient the burn.

"It's impossible to light with a match or fireworks," he said. "Is it possible to light the oil by accident? No, it is not. This absolutely can be done safely."

Fire-resistant boom has been rushed to Louisiana from Algeria, Brazil and elsewhere. "We've nearly depleted the world's supply of fire boom," Jaeger said. "We're destroying them at a faster rate than they're designed for in tests."

Jaeger led the mission back to the burn zone Saturday, four hours by boat from the nearest port, Venice, La. When the continental shelf dropped away, the gulf appeared royal blue, but reddish streaks of oil sometimes stained the waves.

More than 50 miles from shore, ground zero for the BP spill, a frenzy of activity was visible in every direction.

Some 28 shrimp boats worked in pairs, towing both ends of 500 feet of fire-resistant boom to corral oil in U shapes, called burn boxes. The igniter boats, smaller aluminum-hulled craft and speedy red Zodiac inflatables, darted about to set the blazes.

Small spotter planes circled overhead to radio new sightings of oil patches. Dozens of skimmers and other cleanup or repair vessels, as well as oil rigs and tankers, dotted the horizon.

Wildlife observers hired from a Virginia company, East Coast Observers, rode in the igniter boats, closest to the burn boxes. No one had reported spotting any turtles since the fires resumed.

The morning saw a giant sludge burn that shot flames high in the sky and lasted more than two hours. A dozen smaller fires followed.

"We're rewriting the book here," said Donnie Wilson, president of Elastec/American Marine, which makes oil spill equipment, as he monitored the operation from a command ship. "We can take a few boats and boom and burn more oil in a day than all the skimmer boats out here can collect."

Wilson's son recently visited and produced a short video of successful burns to the tune of "Ring of Fire," the country classic by Johnny Cash.

"It's become our theme song," Wilson said.

But the igniter crews struggled as an afternoon breeze kicked up foot-high waves. The surface oil became more emulsified, and thus frothy and difficult to light.

The fire lit by Ross, the Scotsman, fizzled out after a few minutes. He tried several times, but the pool of oil refused to catch fire. Even moving a 200-foot command boat to block the wind didn't help.

"It's been a rough day," Dino Bertrando, the captain, said later. "This operation needs glassy water."

Others were also frustrated. Two scientists from the **Environmental Protection Agency** rode to the burn site with plans to launch two helium balloons, each 15 feet in diameter, to take air samples directly from the smoke plumes.

A package of sensors attached to each balloon is designed to help determine if burning oil on salt water produces more hazardous byproducts than burning oil on land, as some scientists fear.

But after the **EPA** scientists left port, the project was postponed for at least two days amid confusion about the mission, whether it was safe, and who had approved it.

So far, air monitoring stations along the Gulf Coast have detected no toxic pollution blowing ashore.

Jaeger, a 20-year Coast Guard veteran, postponed deploying 10 more shrimp boats that were supposed to help with the burns. It wasn't clear how many of the captains, all Vietnamese, speak English, he said.

"It's already seen as a bit of a wild card, burning oil at sea," Jaeger said. "We don't want anyone to think we're out here on a joyride. Because we're not."

bob.drogin@latimes.com

Digging deep after the oil spill (*Washington Post*)

Monday, July 12, 2010; A06

The April 20 explosion on the Deepwater Horizon rig and the massive oil spill that has stemmed from the accident have prompted nine formal investigations, and more could be coming.

Probe National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, a [bipartisan](#) team created by executive order of the president.

Who's in charge: Seven-member team co-chaired by former Florida governor and former U.S. senator Bob Graham, and former Environmental Protection Agency administrator William K. Reilly.

Focus: Commission is tasked with providing recommendations on how to prevent -- and mitigate the impact of -- any future spills that result from offshore drilling.

Status: Initial hearings being held Monday and Tuesday.

Marine Board of Investigation.

Who's in charge: Coast Guard and Bureau of Ocean Energy Management, Regulation and Enforcement (formerly known as the Minerals Management Service).

Focus: To identify the factors leading to the explosion of the Deepwater Horizon rig.

Status of investigation: Two sessions of hearings in May. A third session is scheduled for later this month. First session investigated the circumstances surrounding the fire, explosion, pollution and sinking of the rig. Second session focused on gathering information on the rig's material condition, crew qualifications, emergency preparedness and casualty timeline. The third session of hearings will focus on the "how" and the "why."

Highlights: Documents and testimony showed that work on the well was behind schedule and over budget, that the well plan was changed several times shortly before the accident, and that BP decided not to perform a test on the mud at the bottom of the well before starting to place the final cement lining, which experts think was a likely source of the gas that eventually blew out the well.

House Energy and Commerce Committee.

Who's in charge: The panel's chairman, [Henry A. Waxman](#) (D-Calif.), along with two subcommittee chairmen, [Bart Stupak](#) (D-Mich.) and [Edward J. Markey](#) (D-Mass.).

Focus: The cause of the accident, the extent and impact of the oil spill, and the response to it.

Status of investigation: The panel held eight hearings in May and June.

Highlights: Panel found that the blowout preventer that failed to stop the oil spill had a dead battery in its control pod, leaks in its hydraulic system, a "useless" test version of a key component and a cutting tool that wasn't strong enough to shear through steel joints in the well pipe and stop the flow of oil. In a scathing letter to BP, Waxman and Stupak accused the company of taking shortcuts to speed up finishing the well, which may have led to the explosion.

House Natural Resources Committee.

Who's in charge: The committee's chairman, [Nick J. Rahall](#) (D-W.Va.).

Focus: Problems in how the MMS exercised oversight over offshore oil drilling.

Status of investigation: Held seven hearings in May and June.

Highlights: Panel is first investigative committee to produce legislation. It is scheduled to mark up the Carbon Limits and Energy for America's Renewal (CLEAR) Act on Wednesday.

House Oversight and Government Reform Committee.

Who's in charge: The committee's chairman, [Edolphus Towns](#) (D-N.Y.).

Focus: Potential lapses in oversight by the MMS in the years leading up to the Deepwater Horizon explosion and what Towns has called "'revolving door' issues, conflicts of interest within MMS, and its apparent lack of oversight of offshore oil rigs."

Status of investigation: The panel is gathering information.

Interior Department Outer Continental Shelf Safety Oversight Board.

Who's in charge: Assistant Secretary for Land and Minerals Management Wilma Lewis, Interior Department Inspector General Mary Kendall and Assistant Secretary for Policy, Management and Budget Rhea Suh.

Focus: Safety rules and oversight for offshore drilling.

Status of investigation: The board issued a report May 27.

Highlights: The board is recommending several measures aimed at ensuring redundancy in blowout preventers, promoting the integrity of wells, enhancing well control and fostering a "culture of safety" in offshore drilling operations. It proposed requiring mandatory inspection of each preventer to be used on floating drilling operations, requiring that these have two sets of blind shear rams spaced at least four feet apart to prevent failure. New design, installation, testing, operations and training

requirements relating to casing, cement or other elements that make up an exploratory well.

Internal BP investigation.

Who's in charge: BP head of safety and operations Mark Bly, who runs a unit that is independent from the business lines and reports directly to BP chief executive Tony Hayward.

Focus: The cause of the explosion at Deepwater Horizon and the failure of the blowout preventer.

Status of investigation: Release of preliminary report anticipated in August.

National Academy of Engineering.

Who's in charge: An independently appointed group of unpaid academy members from around the world.

Focus: Analysis and technical assessment of the cause of the accident.

Status of investigation: Study is underway, and preliminary report is expected no later than Oct. 31, with a final report due by June 1.

The White House Council of Environmental Quality and the Interior Department.

Who's in charge: Council chairwoman [Nancy Sutley](#).

Focus: Review of how the MMS conducted its procedures under the National Environmental Policy Act.

Status of investigation: The report has been completed and is undergoing internal administrative review. It should be released in a matter of weeks.

Legislative action:

-- Senate Energy and Natural Resources Committee passed a measure that would raise the civil and criminal penalties for a spill, require more safety equipment redundancies, boost the number of federal safety inspectors and demand additional precautions for deep-water drilling.

-- Senate Environment and Public Works Committee passed a measure that would remove oil companies' \$75 million liability limit and retroactively remove the liability cap for BP and the Deepwater Horizon explosion.

Both measures are pending full Senate approval.

-- Juliet Eilperin and Madonna Lebling

Presidential commission to meet on oil disaster (CNN)

By Shelby Lin Erdman, CNN Radio

(CNN) -- The presidential commission tasked with investigating the Gulf oil gusher and making recommendations about the future of offshore drilling will hold its first public meeting Monday.

The National Oil Spill Commission has six months to determine what happened when the Deepwater Horizon oil rig exploded April 20, leading to the worst environmental disaster in U.S. history -- and how to prevent something similar from ever happening again.

Committee co-chairman, William K. Reilly, said it was hard to believe that more progress has not been made in responding to oil spills.

"The oil industry has developed breathtaking technology in terms of what it can do: go down 5,000 feet, go out in all directions from below the sea sub-surface," he said. "And one has to ask the question, "Why this big difference? Why haven't we done better in putting resources into response? ... We ought to have been better equipped to deal with oil on the surface of the ocean than we are. And that's my principal reaction to the response."

Reilly, a former Environmental Protection Agency administrator, said he was disappointed in the response, but withholding judgment.

"Given the resources that were around, which as I say I think were wholly inadequate to the challenge, I'll wait and form my judgment after I do a little more homework," he said.

But he said the same problems that occurred during the clean-up of the Exxon Valdez disaster 20 years ago are still happening now: "The skimmers that don't work in the open ocean, the booms that break up readily for the same reason after they're laid, the arguments about the dispersants and whether they're toxic or whether it would be better for the fish to let the oil come to the surface."

His remarks came as BP said Sunday that it was pleased with how the operation to place a new cap on its ruptured undersea well was proceeding.

Officials hope the containment cap will stop oil from gushing into the Gulf of Mexico. But while robots replace the old cap, crude is flowing freely.

The procedure -- expected to take four to seven days -- continued to progress Sunday as crews worked to position a transition spool over the gushing well to prepare for the new connection, BP Senior Vice President Kent Wells said.

Officials have said the new containment cap would be a temporary fix, and the permanent solution would still be completion of a relief well. There are two relief wells under construction -- one of which could intercept the ruptured well as early as the end of July, Wells said.

BP said Monday that the cost of its response to date amounts to about \$3.5 billion.

Over the next two to three weeks, 60,000 to 80,000 barrels (2.52 million to 3.36 million gallons) a day should be collected as part of the containment process, Wells said. Scientists estimate that 35,000 to 60,000 barrels of oil are spewing daily from BP's breached well.

Two more oil skimmers were added to the Gulf on Sunday, bringing the total to 48 collecting an oil and water mix from the surface, BP officials said. And 15 more burns were conducted in calm seas.

"It was a good day in trying to contain the oil that made it out to the surface," Wells said.

While crews worked to recover oil, the seven-member National Oil Spill Commission spent the weekend touring different areas of the Gulf Coast impacted by the oil disaster, ahead of their first two meetings in New Orleans on Monday and Tuesday. Reilly visited Gulfport, Mississippi, to talk with disaster victims and inspect recovery efforts.

Reilly said he went on an aerial tour, talked with fishermen and had lunch with a large group of people from the seafood and tourism industry to learn how residents have been personally impacted by the massive oil disaster, and what they think of the recovery efforts so far.

The visits and meetings will help the commission "begin to lay the groundwork for our efforts going forward, to determine what really to concentrate on and where to put our priorities and, very importantly, what the people most affected by all of this think about how effective the response has been," Reilly said.

But even as the commission holds its first meeting Monday, a group of protesters plans to picket outside, demanding a quicker response to the disaster and more openness from government and BP officials.

The advocacy group Emergency Committee to Stop Gulf Oil Disaster said it would protest the opening of the public hearings.

"We call on people everywhere to question the government and BP's response, and to demand transparency," committee member and New Orleans resident Elizabeth Cook said in a statement released early Monday.

President Obama established the bipartisan commission last month to investigate the oil catastrophe in the Gulf of Mexico.

Its members will listen to public comments and official testimony from BP, the U.S. Coast Guard and the National Oceanic and Atmospheric Administration on the recovery efforts.

Despite the limited timeframe, Reilly said he was not worried.

"I think we can meet the president's expectations, and I hope those of the American people, to get to the bottom of this in some kind of definitive way that is reassuring about the future," he said.

CNN Radio's John Lisk contributed to this report.

Article published July 12, 2010

Gains made in capping Gulf oil leak (*Toledo Blade*)

Crude will flow freely until new seal is in place

BLADE NEWS SERVICES

WASHINGTON - In a complicated undersea dance involving robots and hardware, BP made progress Sunday in its effort to install a new, secure cap on the gushing oil well at the bottom of the Gulf of Mexico.

"We're pleased with our progress," BP senior vice president Kent Wells said.

Company officials said it is early in the project and the oil is spewing as skimmers try to capture the newly vigorous flow of crude.

BP engineers hope that by week's end they will have placed a perfect seal over the well, which began pouring oil into the gulf after an April 20 explosion on the Deepwater Horizon rig, in which 11 workers died.

"We did an extensive amount of preparation work in terms of planning and installation, and we're pleased at this point on how it's going," Mr. Wells said.

He was referring to the removal early Sunday of the top flange on the leaking well and the installation of a device that will connect the new cap to the well.

Officials won't be satisfied the new cap is working until they've run tests on whether it can withstand the tremendous pressure of oil pushing up from below the seafloor, Mr. Wells said.

"We've tried to work out as many of the bugs as we can. The challenge will come with something unexpected," he said.

The British energy giant, which is also drilling two relief wells to try to permanently plug the leak, hopes the new containment system will funnel as much as 80,000 barrels per day of oil to vessels on the surface - more than three times the current amount.

BP officials expect the first relief well to be complete by the end of July, a first step in plugging the well by early to mid-August.

David Axelrod, a senior adviser for the Obama Administration, was asked on Fox News Sunday about hopes the spill will be contained by the end of July.

He said officials are "reasonably confident but obviously this thing is uncharted waters."

On Day 83 of the disaster, U.S. Attorney General Eric Holder said the Justice Department has started interviewing witnesses as part of a criminal and civil investigation into the worst oil spill in U.S. history.

Mr. Holder said the U.S. investigation could apply to other companies involved in the drilling of the damaged well.

"We are in the process of accumulating documents, talking to witnesses on both the criminal side as well as the civil side," he said on CBS' Face the Nation.

The investigation is aimed at ensuring no tax dollars pay for the cleanup "and to make sure that we hold accountable anybody who was responsible for the spill," Mr. Holder said.

If the Justice Department finds violations, penalties could be in the billions of dollars.

Meanwhile, a presidential commission appointed to study the causes of the spill and to recommend improvements for offshore drilling will hold its first hearings Monday and tomorrow in New Orleans.

Created by President Obama in a May 22 executive order, the commission already faces questions about whether it has the expertise and objectivity to deliver credible recommendations.

The New Orleans sessions start a six-month clock for delivering a final report to the President.

Members will tour communities in Louisiana, Mississippi, Alabama, and Florida, which commission co-chairman William Reilly said will "give voice to the region."

The closing hours of each session will be devoted to testimony from local people and state officials affected by the spill.

Mr. Reilly was administrator of the Environmental Protection Agency under President George H.W. Bush during the 1989 Exxon Valdez oil spill. He sits on the board of directors of ConocoPhillips, from which he has taken a temporary leave.

His co-chairman is Bob Graham, the former governor and later senator from Florida who led efforts against offshore drilling on that state's coasts.

The commission begins work without its own budget, without subpoena power, and while it is still filling its expected 35 full-time staff slots.

Mr. Obama asked Congress to approve \$15 million for the commission, which was cut to \$12 million by the House and is under debate in the Senate.

For now, the commission is relying on \$4 million that came through the Energy Department.

In London, the Sunday Times reported that BP is in talks to sell about \$10 billion in assets, including a share of its Alaska oil production, to Apache, a large U.S. independent oil company.

A sale that size would cover about half the amount of money BP has promised to put in an escrow fund to cover claims related to the spill.

BP owns 26 percent of the Prudhoe Bay field, the biggest in the United States, and five other fields on Alaska's North Slope. But the field is past its prime.

In Gulf Shores, Ala., tens of thousands of people sang and danced at a free Jimmy Buffett concert meant to help the region through the oil spill crisis.

Pulse of The People: Better off with Groucho(*Troy Record*)

Monday, July 12, 2010

The phrase "dead in the water" has a lot of meaning when it comes to Barack Obama's presidency. His chances for re-election sank like a tar ball in the Gulf. Not that he wasn't floundering already.

When someone is elected president in the United States, he should at least have some experience and background. Obama has none. You don't "learn on the job" without

some background.

It was bad enough when he buddied up to Hugo Chavez, kissed the King of Saudi Arabia's hand, and later publicly and rudely snubbed the president of Israel in the White House but now his inactions are damaging 40 percent of America's fisheries.

BP's chief executive is mainly responsible for the debacle in the Gulf. His policies in ignoring BP's long standing safety practices. However, the federal government has a huge responsibility here also. Where was the oversight and inspection?

Nonetheless, after it happened when didn't they burn the oil off? They could have. EPA said no. So wildlife and fisheries are being ruined.

They dropped dispersants. The EPA stopped that too. The reason? They didn't know what happened to the oil after it broke up and fell to the floor of the Gulf. The wildlife and fisheries are being ruined. Now they're botching the clean up.

Just wait. After most of the fisheries in the Gulf are ruined, and everyone is blamed for the chaos, the federal government will burn the floating oil and spray dispersants.

I have a question. Are the incompetent foul balls in the White House out to ruin the country? We haven't seen more slapstick comedy routine since Vaudeville died. Obama makes Jimmy Carter look like Jimmy was only just below average.

First they took over General Motors and Chrysler. Chrysler was bought by Fiat. The United Auto Workers were forced to take a pay cut to merely \$55 per hour, except for Ford who must pay \$75 per hour (the cost of success). As a reward, the UAW's 'Cadillac' Health Care Plan is exempt from the taxes all other Cadillac plans have to pay, as are all government workers exempt.

Then they went after the banks, even though it was the feds who were responsible for the mortgage crisis.

They had already attacked tobacco, but just enough to make sure they kept getting their \$13 billion per year in taxes.

They tried to get the gun industry. That didn't work.

Agriculture has been in their pocket since the depression.

Now they're after Wall Street. If they screw up Wall Street, the engine that runs the world may stall. Disaster.

The insurance industry will be bankrupt once the government health care plan goes into effect.

Marxists reign supreme in Washington, D.C. Actually, we would be better off if the Marx we were referring to was Groucho Marx instead of Karl Marx.

Well, anyway, we've still got the U.S. Constitution, democracy, capitalism, and Christianity. God Bless America.

Philip R. McNamara
Troy

Oil spill may influence climate bill (*Politico*)

Samuelsohn
July 12, 2010 04:43 AM EDT

The 40th anniversary of Earth Day will go down in history as the start of perhaps the country's worst environmental disaster. But will the BP oil spill — now on Day 84 — actually change any environmental laws or lead to new ones?

If history is any guide, the answer is probably yes. Major catastrophes and large-scale events involving air, water and waste pollution swayed Congress significantly in the late 1960s and throughout the 1970s to enact the bulk of the nation's environmental laws, including the Clean Water Act, Clean Air Act and Superfund, which created a waste-management program during that period.

Lawmakers responded because Americans saw images in their newspapers and on nightly newscasts of oil spills, rivers on fire, deadly air pollution and toxic waste buried underneath a suburban neighborhood.

"It's been a pattern in much of the environmental legislative history that there were things the media could seize on and highlight," said Thomas Jorling, a former Environmental Protection Agency assistant administrator during the Carter administration. "They pop a balloon. They cause a different kind of reaction than the reasoning and data."

The list of major environmental catastrophes is well-documented, as is the relatively fast response from Congress.

Major oil spills off the coasts of Santa Barbara, Calif.; Puerto Rico; and Tampa Bay, Fla. (home to then-Rep. William Cramer, a holdout GOP opponent and ranking member of the House Public Works Committee) helped drive the passage of the Water Quality Improvement Act of 1970, which established strict liability for companies responsible for oil spills.

About the same time, fires on the Cuyahoga River near Cleveland and heavy pollution in Lake Erie prompted the creation of the EPA by executive order, as well as the passage of the National Environmental Policy Act of 1969 and the Clean Water Act of 1972.

In 1978, local activists and the media discovered 21,000 tons of hazardous waste buried beneath Love Canal, a neighborhood in Niagara Falls, N.Y. Two years later, in December 1980, lame-duck President Jimmy Carter signed the Comprehensive Environmental Response, Compensation and Liability Act, commonly known as Superfund, a law that holds polluters responsible for their damages.

Similarly, after the 1984 toxic industrial explosion in Bhopal, India, which killed more than 3,000 people, several states and U.S. lawmakers responded with a series of public disclosure laws.

Congress also addressed the Exxon Valdez oil spill of March 1989 with the Oil Pollution Act, signed in August 1990, which set new restrictions for ships operating in Prince William Sound, Alaska, and imposed the \$75 million liability cap for cleanup and damages now being re-examined in the wake of the Gulf disaster.

Fast-forward to 2010, as some Senate Democratic lawmakers and their environmental allies try to link the BP oil spill with the long-fought bid to cap greenhouse gas emissions — a controversial leap that has generated heated debate on and off Capitol Hill.

“I think it is a reason,” said Michigan Sen. Debbie Stabenow. “I absolutely think this bill is why America needs a comprehensive energy strategy that’s focused on more renewables, more use of natural gas and on more use of a number of different forms of energy. It’s absolutely a reason to pass an energy and climate bill.”

Sen. Ben Cardin (D-Md.) said he expects to build support for climate legislation as constituents see more and more images of the oil-saturated Gulf. “It’s getting pretty visual as to what’s happening,” he said.

Former EPA Administrator Russell Train said there are clear parallels between recent events in the Gulf and the environmental laws he helped implement during his time in the federal government from 1973 to 1977 under Presidents Richard Nixon and Gerald Ford.

“When you focus on an oil spill, what are you going to do?” Train said. “I think there’s got to be fundamental change in demand of all kinds to address both climate and energy.”

With early environmental laws, experts said that Congress often battled less over whether they should pass and more over the details, like mandatory deadlines or a specific definition.

“The challenges came in the context of the legislation, not the fundamental basis for the legislation,” said Leon G. Billings, a top Democratic aide on the Senate Environment and Public Works Committee from 1966 to 1978.

Opponents of climate legislation are now taking issue as advocates of the legislation try to draw parallels to help them get it passed.

“Forget about being a senator; as a resident of the state where this stuff is washing up, I think that’s pretty callous, quite frankly, when there’s an ongoing flow and an ongoing crisis,” said Sen. David Vitter (R-La.). “I think it’s pretty reasonable to say, let’s solve that problem first. Let’s not just politicize it for whatever gain in whatever direction you can.”

“They’re searching for anything because they know cap and trade is dead; any way to resurrect it,” said Sen. Jim Inhofe (R-Okla.), the ranking member of the Environment and Public Works Committee and an outspoken skeptic on the science linking humans to global warming. “Some of them — I hate to say this, but I know they’re out there — are really glad it happened. The same thing was true with the Exxon Valdez. I remember they were rejoicing up there.”

Even some traditional environmental allies are split on Congress’s response to the spill. Sen. Frank Lautenberg (D-N.J.) told reporters before the July 4 recess that he thinks the Senate needs to focus on the Gulf of Mexico and related offshore-drilling safety issues and then address climate later.

“It’s a stand-alone problem that needs to be solved,” Lautenberg said. “Let us get through this. The climate bill deserves its time, but it’s, frankly, at the moment, a separate issue.”

Billings, who also served in the Maryland state Legislature for a dozen years, said that the push to pass climate legislation because of the oil spill won’t work because it “evokes a whole separate set of political reactions” from the public.

“If you asked me, ‘Do I think that the oil disaster in the Gulf would be a basis for passing major energy conservation and modernization legislation?’ I’d say yes,” he said. “But I don’t think it’s a basis for passing legislation on climate change.”

CHILDREN HEALTH

Kids learning how great green can be (*Dayton Daily News*)

Families are using creative ideas and fun activities to teach young ones to take care of the planet.

By Meredith Moss, Staff Writer
Updated 3:08 AM Monday, July 12, 2010

Imagine turning over the keys to your house to the next generation, but leaving the whole house dirty and trashy, with water that doesn't work, and air that smells bad.

In effect, that's what we'll be doing, warns Tom Hissong, if adults don't teach kids to care about the environment.

Hissong, education coordinator for Aullwood Audubon Center and Farm in Butler Twp., believes its an apt analogy if you consider the planet "our real and only home."

"It's important for parents to instill that idea in their children and to teach them that they'll need to take care of it so that when they pass it along to their own children, they'll be turning over a clean house," he says.

Families are being confronted every day with the devastating effects of the recent oil spill — from water contamination to the destruction of wildlife and their habitats.

Many are getting the message.

While the amount of solid waste generated between 1980 and 2008 has increased from 3.66 to 4.50 pounds per person per day in the U.S., the recycling rate has also increased — from less than 10 percent in 1980 to over 33 percent in 2008 according to the Environmental Protection Agency. Disposal of waste to a landfill has decreased from 89 percent of the amount generated in 1980 to 54 percent in 2008.

Locally young people are taking environmental matters into their own hands. Kyle Kissock, 19, grew up in a green house and is now teaching preschoolers at Aullwood many of the important environmental lessons he learned as a child. He says his parents, Gretchen and Kelly Kissock, have always done a lot to "go green."

"We turn out the lights, we don't waste water, we compost and use that compost on our own organic garden and we don't use fertilizer," says Kissock, who grew up walking to school and riding his bike. Now he drives a Prius to work.

His dad, who teaches mechanical engineering at the University of Dayton, specializes in energy efficiency, working with companies and factories to find ways to conserve energy. Last fall, Kissock helped his dad weatherize their Oakwood home.

"He brought home a heat sensing camera from work that looked like something they might use on the show 'Ghost Hunters,'" he explains. "When we pointed it at a wall or window, it showed where the heat was, and consequently where it was escaping. We used caulk and weather stripping to seal the spaces between doors and windows where air could escape."

Like his parents Kissock says he grew up outdoors and is committed to being a good steward of the planet ---- a message he is trying to pass on to the next generation.

“It’s important that we don’t overwhelm kids with facts and give them a sense of gloom and doom about global warming,” he advises. “Instead we try to instill a sense of wonder about the outdoors and show them how much fun it can be to go outside and explore nature instead of sitting in front of the TV and playing video games.”

“Going green,” insists Kyle, “ doesn’t have to be boring.”

Grandparents are also finding that to be true. When she learned that her granddaughter, Madison and three of her friends were trying to start a recycling program at Southdale Elementary School in Kettering, Judy Hayes of Dayton View found a creative way to be supportive.

The result is “Randolph, the Green-Nosed Reindeer,” a CD and ebook published by Hayes and associate Tim Hall. The two are now working on an animated version of the story (www.randolphsays.com).

Another grandma, Helen Deffenbacher of Omaha, has co-authored and published a book with her two grandchildren– “Green Philanthropy for Families: 160 Simple Earth Honoring Gifts, Actions, Activities and Projects.” The trio has collected all kinds of green-friendly ideas and is now working on a second book (www.greenphilanthropyforfamilies.org).

“My husband and I wanted to pass on the free-range spirit of joy and wonder that we experienced in our youth to our grandkids,” says Deffembacher. “We know how important this is, we’ve read studies that show the one factor people most often credit for having had the greatest influence on their attitude toward the environment and conservation was their direct experience with nature while growing up.”

Tips in their book range from conserving birds in your own backyard to having a simplicity day.

Sue Sackhouse of Clay Township, near Phillipsburg, can relate. She says her family’s whole life “has been about living green and living simply.”

For the past 30 years, she and her husband and their four children have grown much of their own food on a three-acre farm, canning and freezing produce. They heat with wood, they compost and use public transportation.

“We live without air conditioning, cook from scratch, use a clothes line and buy second-hand,” Sackhouse says. “We’ve never been to Disneyland or Las Vegas, instead we go camping. Perhaps most would think our life too extreme, but I have some pretty special kids who have some pretty unique skills, and we love it.”

Tom Hissong thinks it would be great if every family displayed a poster in their home of the earth, the kind of beautiful photograph the astronauts take from space.

“People just don’t think about this planet as having limited resources but I compare us to fish in an aquarium or an astronaut in a space station — they have limited amount of air, water, food resources — and that’s the same way with planet Earth.”

Contact this reporter at (937) 225-2440 or MMoss@DaytonDailyNews.com.

CLIMATE CHANGE

July 12, 2010

Tri-County Electric holds annual meeting (*Mt. Vernon Register News*)

Effect of climate change legislation on rates discussed; patronage checks dispersed
By TESA CULLI
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MT. VERNON — Members of Tri-County Electric Cooperative who had been on the system in 1979 or 1980 received patronage credit checks during the annual cooperative meeting on Saturday.

“Because we are a cooperative, any margins made in those years, the amounts are returned to the customers,” Tri-County Electric Cooperative Director Marcia Scott explained. “This year we returned \$533,000 to cooperative members.”

Scott said last year, about 7,324 patronage checks were issued to Cooperative members. Those who did not attend the business meeting on Saturday but are eligible to receive a check, will receive it in the mail next week, Scott said.

About 2,000 people attended the 2010 Annual Tri-County Electric Cooperative meeting, receiving updates on business matters with the Coop and voting for representatives. Scott said no rate increases are expected in the next year, however, those in the industry are watching climate change legislation and efforts on the part of the U.S. Environmental Protection Agency to regulate greenhouse gases. Scott said proposals for regulation change on a regular basis, but most of the plans presented at this time would increase rates for electric customers.

All who attended the meeting received a postcard to send to legislators, which stated those sending the card, “believe that Congress, and not EPA, should be the body that determines greenhouse gas policy that is fair and affordable for all Americans. In that regard, I respectfully request that you support current legislation that would prevent EPA

from using the Clean Air Act (which I understand was never intended or designed to deal with climate change) as a tool for reducing greenhouse gas emissions.”

In addition to the business meeting, a free breakfast and lunch, children’s area and demonstrations were held during the event. Tri-County Electric linemen Brad Ahlers and Dan Paschal presented a live line demonstration, which emphasizes safety when dealing with electrical lines.

“It’s mainly a safety demonstration,” explained Brad Grubb, Tri-County Electric superintendent of operations. “It shows people what can happen when things come into contact with a line and teaches people what to do.”

The main thing to do — stay away and call the electric cooperative.

“Call us, and keep other people away until we get there,” Grubb said. “Our typical distribution lines are 12,470 volts. That’s not very forgiving.”

Grubb said the demonstration is also done for school children, contractors, building workers and others in the community to raise awareness of electrical safety issues.

PESTICIDES

Grower guide error costs Monsanto (*Ecotextile News*)

ST LOUIS – [12.07.10] Monsanto has been hit with a fine of US\$2.5 million for failing to inform US cotton farmers about restrictions imposed by the Environmental Protection Agency on its genetically-modified Bt cotton.

The Reuters news agency reports that Monsanto, the world’s largest seed company, violated the US Insecticide, Fungicide and Rodenticide Act when it sold and distributed some cotton seed products in a way that violated restrictions Monsanto had told the US Environmental Protection Agency it would adhere to.

The EPA limits the planting and selling of this GM cotton seed to protect the environment from the ‘potential harm associated with the uncontrolled spread of the genetically engineered component of these pesticides, *Bacillus thuringiensis* (BT).’

It is reported that over a five year period to 2007, Monsanto distributed or sold Bollgard and Bollgard II cotton seed, which contained genetically engineered pesticides without the planting restrictions required by the EPA to protect against pest resistance, more than 1,700 times nationwide.

“People who manufacture and distribute pesticide products must follow the federal

registration requirements,” said Steve Owens, assistant administrator for EPA’s Office of Chemical Safety and Pollution Prevention. “These requirements are critical to preventing the development and spread of insect resistance.”

Monsanto said the problems stemmed from an oversight in issuing a grower guide that was supposed to contain a statement prohibiting planting the cotton in 10 specific counties in Texas where insect resistance management was a concern and Monsanto’s biotech cotton was not allowed. The grower guide did not contain the required language. Monsanto said it discovered the error in 2006 and reported it to EPA.

“As a result of this matter, we have implemented new internal review processes to prevent such errors in the future,” said Rob Nixon, head of Monsanto’s stewardship program.

St. Louis-based Monsanto said subsequent evaluation determined that no resistance had occurred in the counties in question, and in 2008 the EPA lifted the restriction and authorised the planting of Bollgard II in those counties.

Elsewhere, a recent report suggests that GM cotton grown in China, designed to resist insect attack, has had an unintended consequence: reduced insecticide use has allowed outbreaks of non-target organisms to infest crops across the agricultural landscape and emerge as new pests.

TOXICS

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July 12, 2010

State, federal lawmakers look to toughen chemical pollution standards (*Louisville Courier-Journal*)

By James Bruggers

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Legislation in Washington, D.C., and Frankfort, seeks to reduce pollution by pharmaceuticals and other chemicals.

Kentucky state Rep. Joni Jenkins, D-Louisville, introduced a bill earlier this year banning health care facilities from flushing drugs into toilets. It died in committee. But she said she will be back with a different approach to keeping drugs out of the environment next year.

"I am looking at an unwanted drug collection program," she said, adding that legislation might also require pharmaceutical companies to take back unused drugs. "It's time for us to at least be aware of what we are putting in the water and the implications."

Brad Hall, executive director of the Kentucky Pharmacists Association, said hospitals aren't flushing drugs down toilets. He said most work with "reverse distributors" that either return the drugs to the manufacturer for disposal or have them incinerated.

But he said his group wants to work with Jenkins on a system that allows patients to safely get rid of their unwanted medicines - and to develop an incinerator in Kentucky to encourage proper disposal.

In Washington, there's a push to bring federal Toxic Substances Control Act of 1976 up to date.

That law offers very little control over the 83,000 chemicals used in industry and consumer goods, many of which are also making it into our bodies, according to the General Accountability Office, the investigative arm of Congress.

In the 34 years since Congress passed the toxic substances law, the U.S. Environmental Protection Agency has only been able to use it to control just five. One reason is that the law requires EPA to prove a chemical is unsafe.

But that could change under legislation introduced this year in Congress by Sen. Frank Lautenberg, D-New Jersey. A draft of similar legislation in the House by Rep. Bobby L. Rush, D-Ill.

"EPA does not have the tools to act on dangerous chemicals and the chemical industry has asked for stronger laws so that their customers are assured their products are safe," Lautenberg said last April, when he introduced the Safe Chemicals Act of 2010.

The nation's chemical industry is ready for what it calls modernization of the toxic chemicals law, said Sarah Brozena, senior director of regulatory and technical affairs for the American Chemistry County, a national lobby group. But she said it will be important to get it right because chemistry permeates the nation's economy.

Lautenberg's bill would shift the burden to the chemical manufacturers by requiring them to demonstrate to the EPA why they believe a chemical is safe.

Reporter James Bruggers can be reached at (502) 582-4645.

EPA investigating leaking chemicals (*Spokesman Review*)

REXBURG, Idaho – Investigators with the Environmental Protection Agency are examining an eastern Idaho property that's been designated a crime scene by local authorities who say they found hundreds of drums leaking chemicals.

The Standard Journal reported that the federal officials arrived Saturday to examine the property that contains 1-gallon, 5-gallon and 55-gallon drums.

Officials are concerned the chemicals could make it into well water or a nearby canal. Two wetlands are also nearby. Owner Max Spatig contends there is no spill and is disputing the crime scene designation that prevents him from living on the residence.

Builders to sue EPA over lead-paint rule (*Inman News*)

Change would add to cost of work, builders say

By Inman News, Monday, July 12, 2010.

Inman News

The National Association of Home Builders will sue the federal Environmental Protection Agency (EPA) for removing an "opt-out" provision in its lead paint regulations, the group announced.

In April 2008, the EPA issued a Lead Renovation, Repair and Painting rule, which required "lead-safe" work practices in homes built before 1978 -- the year the federal government officially banned lead paint.

A provision to the rule had allowed owner-occupants of such homes to have their contractors forgo certain work practices required by the rule if they certified there were no children under 6 or pregnant women in the home. The EPA removed that provision in April and the amended rule went into effect July 6.

"Removing the opt-out provision more than doubles the number of homes subject to the regulation," said Bob Jones, NAHB chairman, in a statement.

"About 79 million homes are affected, even though (the) EPA estimates that only 38 million homes contain lead-based paint. Removing the opt-out provision extends the rule to consumers who need no protection."

Builders estimate the average cost of additional lead-safe practices will amount to about \$2,400 per job, depending on the size and type of job. The association fears the additional cost will deter homeowners from renovating their homes to make them more energy efficient, or that homeowners will resort to cheaper, uncertified contractors.

Other housing industry groups -- the Hearth, Patio and Barbecue Association, the National Lumber and Building Material Dealers Association, and the Window and Door Manufacturers Association -- will join NAHB in filing the suit.

According to NAHB, the regulation was amended "without any new scientific data" and "provides no additional protection to the people who are most vulnerable to lead-based paint hazards."

According to the EPA, the rule will now require all renovation, repair, and painting work on pre-1978 homes to follow certain work and record-keeping practices, including dust control, site clean up, and work area containment.

"At present, almost a million children have elevated blood lead levels as a result of exposure to lead hazards, which can lead to lower intelligence, learning disabilities, and behavior issues. Adults exposed to lead hazards can suffer from high blood pressure and headaches," the agency said in a press release announcing the rule change.

"EPA has eliminated the so-called opt-out provision because improper renovations in older homes can create lead hazards resulting in harmful health effects for residents and visitors in these homes, regardless of age. The result will better protect children and adult occupants during and after renovation, repair and painting projects."

NEWS UPDATE:

GCC offers EPA certification workshop for renovators (*Pacific Daily News*)

Pacific Daily News • news@guampdn.com • July 12, 2010

In partnership with National Econ Corporation, the Guam Community College is offering classes for construction firms to certify their workers as U.S. Environmental Protection Agency-certified renovators. The workshop will be on Aug. 7 and 14.

Quantcast

The certification classes are being offered in order to provide contractors and companies with the opportunity to comply with a new federal regulation.

As of April 22, 2010, the U.S. EPA federal regulation 40 CFR Part 745 requires anyone who disturbs lead based paint in homes or child care facilities built prior to 1978 to be certified.

The certification also requires the use of lead-safe work practices, and non-compliance could mean harsh civil or criminal penalties.

The EPA Certified Renovator courses will run from 8:30 am to 12:30 pm on Aug. 7 and 14, in the GCC Technology Center, Room 1107.

The instructor will be Bruce Concepcion, a certified federal lead inspector and instructor with National Econ Corp. who has been accredited by the U.S. Environmental Protection Agency to provide the required Renovation, Repair and Painting certification training under a new federal regulation. The cost for initial certification is \$410; recertification is \$285.

To register for the EPA Certified Renovators course on either Aug. 7 or 14, contact the GCC Continuing Education Department at 735-5574.

For more information about the new regulation, go to www.epa.gov.

Feinstein's call to ban chemical riles lobbies (*San Francisco Chronicle*)

(California)

July 12, 2010 Monday

FINAL Edition

Main News; Pg. A1

Feinstein's call to ban chemical riles lobbies;

FOOD SAFETY

BYCarolyn Lochhead, Chronicle Washington Bureau

DATELINE: Washington

Sen. Dianne Feinstein's insistence that a sweeping food safety bill include a ban on bisphenol A, a chemical widely used to line food cans, threatens a top White House priority.

The California Democrat contends that any legislation aimed at protecting food safety should include limits on the compound, known as BPA.

If she succeeds, the food and chemical industries have promised to defeat the food safety bill, which would expand the powers of the Food and Drug Administration over food processing and production to prevent food contamination, trace outbreaks and enforce recalls.

The California Assembly recently passed a ban on the chemical similar to the one Feinstein wants nationwide.

"No chemical should be used in food products until it is proved safe," Feinstein said.

BPA is integral to the epoxy resins used to line metal food cans and lids of glass jars, as well as reusable clear plastic water and baby bottles.

Feinstein cites studies claiming a link between BPA, which can mimic the effects of the female hormone estrogen, to "precocious puberty" in American girls, who are developing breasts at about age 9 1/2 - about a year earlier than prior generations.

She and other advocates of a ban also contend that low-dose animal studies, including some on monkeys, have linked the chemical to conditions from reduced sperm counts and neurological problems to diabetes and heart disease. Feinstein said the chemical is so ubiquitous that it can be detected in the bodies of 93 percent of Americans.

Feinstein has support from major consumer and environmental groups. The White House has not taken a position. A White House aide, who declined to be identified, said the administration is "working with the Senate on various provisions."

FDA has 'some concern'

The Food and Drug Administration has not declared BPA a risk to public health at

current levels. The agency said studies using standard toxicity tests "have thus far supported the safety of current low levels of human exposure to BPA." It said new tests using "novel approaches to test for subtle effects" raise "some concern" and called for more studies.

"Some concern" is a regulatory term falling midway between "negligible concern" and "serious concern." It represents something of a retreat by the Obama administration from the FDA's 2008 declaration that BPA is safe.

Still, the agency has not warned consumers of any risks. On the contrary, Dr. Joshua Sharfstein, the FDA's second-in-command, said at a news conference in January: "If we thought it was unsafe, we would be taking strong regulatory action."

The Natural Resources Defense Council, an environmental group, filed a lawsuit against the administration on June 29, alleging that the FDA has refused to take proper action to ban the chemical.

With no viable alternative for can liners, an immediate ban would be equivalent to banning canned foods.

But Feinstein's legislation would put pressure on the industry to find an alternative by granting companies a renewable one-year waiver while they try to find a substitute and requiring in the meantime that they label their products as containing the chemical.

Thirty major chemical and food manufacturing industry groups have banded together to defeat Feinstein's efforts.

They point to findings by the World Health Organization and food safety agencies in Europe and Japan that have found the chemical safe.

Industry minimizes risk

Dr. Steven Hentges, a chemist and executive director of the polycarbonate/BPA group at the American Chemistry Council, said BPA is one of the most studied chemical compounds in existence and that banning it would make food less safe because there is no viable alternative to line cans and jars.

The industry contends the substance is the only thing standing between canned food and the toxic metal and bacterial contamination that would occur if food came in contact with metal cans and lids.

An average adult consumer would have to eat more than 500 pounds of canned food every day for a lifetime to exceed the limits of what the **Environmental Protection Agency** has deemed a safe amount, the industry claims.

Feinstein is not the only one holding up the legislation. Major push-back is also coming

from small farmers and their advocates in the sustainable food movement who fear that the Senate and House versions of the food safety legislation would bring small farms under the FDA's purview for the first time.

The bills have stirred fierce grass-roots opposition among small-farm advocates who have labeled both bills a "totalitarian" attack on small farms.

President Obama has made an overhaul of food safety rules a priority, forming a Food Safety Working Group headed by Health and Human Services Secretary Kathleen Sebelius and Agriculture Secretary Tom Vilsack within three months of taking office to address outbreaks of e. coli, salmonella and other food-borne illnesses. The group called for an overhaul of food safety laws a year ago.

With time for action in this Congress fast running out, Obama last week issued a statement urging the Senate to pass its bill.

"No chemical should be used in food products until it is proved safe." "

Sen. Dianne Feinstein

WATER

For The Record (*Los Angeles Times*)

July 12, 2010 Monday

Home Edition

MAIN NEWS; News Desk; Part A; Pg. 4

FOR THE RECORD

Los Angeles River designation: An article in Thursday's LATEXtra section about the U.S. EPA designation of the Los Angeles River as "traditional navigable waters" said that a 4-acre soft-bottom section of Compton Creek was acquired with \$1.5 million of Proposition 8 funds and that it is controlled by a joint powers entity of the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy. The section was acquired with \$1.5 million of Proposition A funds and is controlled by the joint powers entity Mountains Recreation and Conservation Authority.

July 12, 2010

Dash for Gas Raises Environmental Worries (*New York Times*)

By KATE GALBRAITH

FORT WORTH, TEXAS — American politicians often extol natural gas as abundant, cleaner-burning than other fossil fuels, and domestically produced, unlike Middle Eastern oil. But the process of extracting it is raising concerns among people with wells in their backyards.

Anger and fear were on display last week at a public meeting convened by the U.S. Environmental Protection Agency in Fort Worth, a gas-drilling hub. Dozens of local residents took turns at the microphone to voice concerns about potential contamination of drinking water.

A film called “Gasland,” released last month on the cable channel HBO, showed people in drilling areas lighting their tap water on fire, as gas found its way into their water supply.

“I am frustrated and angry,” said State Representative Lon Burnam, Democrat of Fort Worth, who spoke at the meeting and decried the “inadequacies” of state regulators.

At issue is a procedure known as hydraulic fracturing, or fracking, which has been adopted widely in the United States over the past 10 years to extract gas trapped in shale formations. It is just starting to spread to other parts of the world, including Europe, China and Australia.

Fracking involves shooting a mixture of water, sand and chemicals deep underground, to break up rock and release the gas. The technique has vastly expanded access to shale-gas reserves in the United States, including deposits in Pennsylvania, New York, Texas and Louisiana.

More than 20,000 wells of this nature have been drilled in the past 10 years, according to a study of natural gas released last month by the Massachusetts Institute of Technology. (Natural gas accounts for 23 percent of U.S. electricity generation, and a number of politicians are calling for increased use of the fuel in vehicles.)

In Europe and Asia, large-scale recovery of shale gas is likely to happen within 10 years, according to Amy M. Jaffe, the director of the Baker Institute Energy Forum at Rice University in Houston.

Poland, for example, is “already tendering for exploration of shale gas,” she said. Canada is also speeding up its shale development, Ms. Jaffe said.

The industry said it operated far below aquifer levels, so fracking would do no harm to water. Hydraulic fracturing is a “safe, proven technology that has been used over one million times over 60 years,” Angie Burckhalter, the vice president of regulatory affairs for the Oklahoma Independent Petroleum Association, said at the Fort Worth meeting.

But people with homes in the gas fields increasingly dispute that.

Tim Ruggiero, a Texas resident who also spoke at the meeting, said that after drilling began near his home, a test on his water turned up an unknown substance that resembled MTBE, a gasoline additive.

In New York, state officials are moving aggressively to protect the watershed supplying New York City with drinking water from potential contamination from hydraulic fracturing.

Part of the problem, according to environmentalists, is that gas companies do not disclose at the wellheads what chemicals they are using. They also argue that regulations, which in the United States are mostly the responsibility of state governments rather than the national government, tend to be weak — especially in drilling-friendly places like Texas.

On the national level, the industry obtained an explicit exemption for hydraulic fracturing from a key provision of the Safe Drinking Water Act, as part of 2005 energy legislation.

Hydraulic fracturing requires an immense amount of water, another concern in water-constrained regions.

The experience of the United States may foreshadow that of other parts of the world. Europe, for example, would love to reduce its dependence on natural gas from Russia, and discussions about exploring for shale-gas reserves are taking place in Germany, Hungary and Romania, as well as Poland.

There is a lot of talk about a “dash for gas” in Europe, said Mark Walker, a London-based energy partner in the law firm Allen & Overy. New sources of generation are needed to meet growing demand for electricity, he said, especially as old coal or nuclear plants reach the end of their life or get shut down because of European environmental legislation, particularly in the case of coal.

Companies like Exxon Mobil, ConocoPhillips, Marathon Oil and Chevron have already signed or negotiated for deals in Poland to explore shale deposits.

The U.S. government is encouraging their efforts, through research partnerships with other countries. Last November, President Barack Obama and President Hu Jintao of China announced a U.S.-China Shale Gas Resource Initiative, aimed at promoting “environmentally sustainable development of shale gas resources” and doing joint technical studies.

A similar initiative was just formed with Poland.

As American companies begin scouting for shale-gas overseas, the regulatory environment for hydraulic fracturing at home seems poised to tighten, especially in the wake of the BP oil spill in the Gulf of Mexico, which has increased public skepticism about the oil and gas industry’s safety assurances.

The Environmental Protection Agency, at the request of Congress, is about to start studying the effects of fracking on groundwater; initial findings should be ready by late 2012.

The purpose of the meeting in Fort Worth last week was to hear feedback from the public about the study; a similar meeting is to be held Tuesday in Denver, followed by two more, in Pennsylvania and New York.

Ms. Jaffe of the Baker Institute said that gas companies were developing nontoxic drilling fluids. She suggested the adoption of policies that would take away drilling licenses from companies shown to have “negligent disposal procedures” for water used in the drilling process.

Last week, Timothy Wirth, the president of the United Nations Foundation and a former senator from Colorado, told the Colorado Oil and Gas Association that while natural gas remained a crucial fuel, the regulatory status quo must change.

“Responsible regulation rewards the good performers and weeds out the bad — and that is a good thing for any industry,” Mr. Wirth said.

More regulation cannot come soon enough for some Texans.

“When is E.P.A. going to quit with these meetings and roll up its sleeves and get to work?” asked Robert Snoke, the head of a neighborhood association in Fort Worth, at the meeting last week.

July 12, 2010

Ohio River study finds drugs, chemicals that slip through waste treatment (*Louisville Courier Journal*)

By James Bruggers
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Dozens of chemicals and pharmaceuticals -- antidepressants, veterinary hormones, even cocaine -- have been detected in the Ohio River upstream and downstream from Louisville.

Researchers who conducted the study downplayed the potential effects for the 5 million people along the 981-mile river who use it for drinking water. The contaminants, they said, are in extremely low concentrations.

But outside scientists who reviewed the data noted that some of the pollutants have been tied to feminization of male fish, effects that should serve as a warning to people.

"When we see something this basic being altered in fish, we should be concerned about what it's doing to our own health," said biologist Peter DeFur, a research associate professor at Virginia Commonwealth University who specializes in chemical contaminants in the environment and was not involved in the study.

The drugs and chemicals were found in a survey by the eight-state Ohio River Valley Water Sanitation Commission even though sewage treatment efforts screen out a significant percentage of the contaminants.

The sampling at 22 locations from Pittsburgh to Paducah is the first to determine such a widespread presence in the Ohio of what are called "contaminants of emerging concern" and are a new focus of the U.S. Environmental Protection Agency.

The sanitation commission, which was established by Congress and Ohio River states in 1948, and its partner in the study, the EPA, say there's little information available regarding human health risks of what they found.

Outside scientists said there are legitimate concerns that the contaminants, including medications that pass through people and into the sewage system, may pose health risks to people.

Several drugs were detected at trace levels in Louisville Water Co. tap water in 2004 as part of a separate national survey. Experts said it's likely that at least some drugs and chemicals in the river are still routinely passing through treatment systems into drinking water.

"I don't like the idea of taking somebody else's medication through my water supply," said Leonard Buckner, a Louisville Water Co. customer. "It seems like we need to understand this better."

Some home filter systems claim to remove many of the pharmaceuticals. But those claims have not yet been verified, said Tom Bruursema, who manages a water treatment certification program for NSF International, a nonprofit public health and safety agency that tests and sets standards for water treatment systems.

'The big unknown'

"Just because you find it doesn't mean it's a problem," said Erich Emery, a biologist and research manager working on the study for the commission, commonly known as ORSANCO. "We have the ability to detect (almost) anything we want now."

ORSANCO's 279-page screening survey is almost entirely made up of raw data. ORSANCO staff and the EPA are working on a final report to be completed early next year.

The Cincinnati-based commission this spring gave the data to its member states. It also provided a copy to The Courier-Journal, which reviewed it with several outside environmental health experts, including Theo Colborn, who said some of the detected chemicals are considered endocrine disrupters. They can mimic or interfere with hormones in the body, possibly affecting tissues and organs.

The 1996 book Colborn co-authored, "Our Stolen Future," brought international attention to the issue, and she said research has suggested potential links between endocrine disrupters and such medical conditions as attention deficit hyperactivity disorder, obesity, early puberty and infertility.

"The big unknown is the mixture of these things being taken together," said DeFur, the Virginia Commonwealth biologist. "We have no idea how to even think about what that means."

DeFur said the sampling results are a confirmation of what has previously been found in states such as Delaware, Minnesota and California, and nationally by the U.S. Geological Survey.

He and others spoke of the need for a precautionary approach.

"When you are faced with an unknown and you believe there is potential for harm, you err on the side of human health," said Dr. David Tollerud, chairman of the department of environmental and occupational health sciences at the University of Louisville's School of Public Health.

Nearly indestructible

The \$85,000 study was designed to look for 158 contaminants, including 118 pharmaceuticals, hormones and personal care products. It also looked for perfluorinated compounds, which have been widely used in nonstick coatings for pots and pans and in stain- and grease-proof coatings for food packaging and fabric.

All are essentially unregulated in the nation's waterways and drinking water supplies and are among thousands of chemicals made by humans that are of potential concern.

Terry Collins, who leads Carnegie Mellon University's Institute for Green Science in Pittsburgh and reviewed the ORSANCO data for the newspaper, called it "a very good study" that sheds light "on a large number of compounds."

"... Some of them are coming back in our drinking water," he said.

He said the perfluorinated compounds, or PFCs, are nearly indestructible, and they build up in humans and animals.

The federal Centers for Disease Control and Prevention, which has found as many as 12 PFCs in a national survey of human blood serum, says people are likely exposed by consuming them in food or water or by using products that contain them.

Some PFCs have been linked to liver toxicity in fish and liver cancer in rodents, Collins said.

The drugs that were detected in the river water include some of the most commonly prescribed medications, said Dr. George Bosse, medical director of the Kentucky Regional Poison Center in Louisville. The study found medications used to fight depression, anxiety, high blood pressure, diabetes, heart disease and infection.

Also frequently detected was caffeine, as well as evidence of cocaine and nicotine from tobacco products.

Our bodies don't use all the medication we take, and some gets excreted in human waste. Drugs also enter the environment when people flush unwanted medication down toilets. Of those two sources, the Food and Drug Administration says human excretion produces more drug contaminants.

Other sources of drugs in the environment include runoff from farms and water that passes through landfills.

The drugs found in the Ohio River include three prescriptions in the medicine cabinet of St. Matthews resident and longtime water quality advocate Winnie Hepler. The 82-year-old is battling chronic obstructive pulmonary disease and high blood pressure.

The medications, she said, allow her to go on daily walks and attend public events.

"I think I'd be confined to crawling around in my apartment otherwise," she said.

But she also said she hopes the research leads to efforts to reduce the contaminants in the water.

"We really need to know what we are doing," she said. "We don't want to do harm."

Plant discharges

Many of the samples were taken above and below the wastewater treatment plants of cities along the river. In most cases, including Louisville, the concentrations were higher in the effluent.

For example, concentrations of the anti-convulsive and mood stabilizer carbamazepine, sold under brand names including Tegretol, increased 31 percent just below Louisville's Morris Forman treatment plant on the Ohio River. The concentration of the PFC known

as PFPeA was 58 percent higher; and the concentration of atenolol, a blood pressure drug, was 25 percent higher.

The study also found the concentration of benzoylecgonine, the urinary breakdown product of cocaine, was 117 percent higher in the Morris Forman effluent plume, while caffeine was 59 percent higher, and the level of DEET, the insect repellent, was 81 percent higher. The increase in the cocaine indicator in effluent plumes of Cincinnati and Pittsburgh was even bigger -- in the 200 percent range.

Wastewater treatment plants are not designed to remove all contaminants, said Collins, the Carnegie Mellon chemist.

"The fact that you are seeing spikes and you can trace them to a treatment plant is a promising thing," he said. "We can do better. We can lower those concentrations."

Future filtering

For their part, ORSANCO officials say they are not sure that the levels of what they found in the river need to come down.

"It would be nice if we had a better sense of which chemicals to worry about," said Peter Tennant, deputy director of the commission.

The regulatory system is not set up to deal with such a large inventory of potential threats, Tennant said, adding that the EPA typically issues just three or four new water quality standards per year.

"That kind of pace just isn't going to cut it for the thousands of chemicals that are of emerging concern," Tennant said.

EPA officials declined to be interviewed. But in a statement from EPA spokeswoman Enesta Jones, they said they are studying a list of 104 contaminants -- including, for the first time, pharmaceuticals -- for potential drinking water limits.

In August, the EPA said it will launch a survey looking for some 200 drugs and other chemicals in the source and tap waters of about 50 drinking water utilities across the United States, with the results anticipated by late 2011.

At both the Louisville Water Co. and the Metropolitan Sewer District, officials said their current treatment already removes some contaminants identified by ORSANCO.

Water company officials say what comes out the taps of its customers meets all current water quality standards, and officials at MSD say they are meeting current discharge standards.

Representatives from both said the contaminants could be reduced further as they upgrade their plants to meet new standards for unrelated pollutants.

For example, the Louisville Water Co.'s new, \$50million riverbank-filtration system that is scheduled to come fully online at its Payne Treatment Plant near Prospect should be able to remove 90 percent of drugs and other chemical compounds, said Rengao Song, manager of water quality and research for the city-owned company. Payne supplies about 30 percent of the city's water.

He said the company is studying additional treatment options at its main Crescent Hill plant. It has budgeted up \$200 million toward that work, which would be done over the next decade, said Vince Guenthner, a company spokesman.

And MSD just started to look into potential designs and cost of a third layer of treatment at Morris Forman, its largest plant, that would meet potential new effluent limits for chemical elements such as nitrogen and phosphorus.

MSD Operations Director Alex Novak said he will see whether any of the designs might also be effective with drugs and other unregulated chemicals. "If there's a solution that can also incorporate these endocrine disrupters, then that's the way to go," Novak said.

"The anticipation is that we will (eventually) have to do something," he said.

Reporter James Bruggers can be reached at (502) 582-4645.

Hidden Water in Your Products (*Earth 911.com*)

by [Libuse Binder](#)

Published on July 12th, 2010

According to the EPA, water used to irrigate farm crops, for livestock, dairies, feedlots, fish farms, and other farm needs. Agricultural irrigation accounts for more than 142 billion gallons of fresh water per day. Photo: Flickr/[Julien Harneis](#)

By now, most of us are familiar with the usual water-saving tips: don't leave water running unnecessarily, time your showers, install low-flow shower heads and resist the urge to unnecessarily water the lawn or wash the car.

You can also reuse greywater when appropriate (water from rinsing veggies can be used to water plants, for example), landscape with indigenous plants that don't require more water than the location can provide and run the dishwasher with a full load.

But what about all of the water "hidden" in just about every product we buy? Hidden or virtual water is a relatively new term, developed by Professor John Anthony Allen, which

explores the concept of the water needed to grow/feed, manufacture, and process the products we buy, as well as water used in industry in general.

Some everyday products, such as coffee and cotton, have an especially high hidden water content. By being mindful of your virtual water use, you can greatly reduce the total amount of water you use.

Calculate your waterprint

As with your carbon footprint, the first step toward reduction is finding out how much water you are using and becoming more aware of the amount of water necessary to create the products you consume. Check out the water footprint calculator at the [Water Footprint Network](#) in order to calculate your number.

If your footprint is high, you are in line with the national trend – the United States uses almost twice as much water as the United Kingdom – but there is plenty you can easily do to gain a new approach about how you use one of our most precious commodities.

Once you know your number, it is easy to reduce your waterprint by using only what you need, reusing and buying secondhand, reducing packaging, composting and recycling and striving to buy products with the lowest waterprint.

Reuse, reduce, recycle

Everyday products like cotton and paper have a significant water footprint. It takes about 2.5 gallons of water to produce one sheet of paper and about 713 gallons for a single cotton shirt.

While the amount of water embedded in most manufactured products is more difficult to calculate because industrial processes vary widely, it is important to keep in mind that all industrial products have a water footprint.

So when shopping, try to buy products only when necessary and look for those that have gone through the least processing in order to create the finished product. For necessities like clothing, start your search at clothing swaps and secondhand stores. Not only will you save water, you will probably save a significant amount of money too!

4 items you can recycle to save water

Recycling actually saves water, because the extraction and manufacturing of virgin raw materials into single-use packaging uses quite a bit of water. Recycling reduces the need for materials from virgin sources and therefore reduces water use. Here are some hard numbers on just how much water is used to make fresh stuff.

1. Paper

1,321 gallons for 500 sheets (Bonus: 7,000 gallons of water are saved when you recycle 1 ton)

Seattle's price tag for clean water: \$500 million (*Seattle Post Intelligencer*)

Fixes must be made which will require rate hikes

Monday, July 12, 2010

Last updated 12:02 a.m. PT

By CHRIS GRYGIEL

SEATTLEPI.COM STAFF

Keeping the water around Seattle clean is going to cost the city half a billion dollars over the next fifteen years.

[Seattle Public Utilities](#) will soon begin a federally-mandated, \$500 million city-wide infrastructure improvement program designed to reduce storm and wastewater pollution. This will mean higher sewer and drainage bills for people, beginning next year, and for years afterwards.

City officials acknowledge that the Great Recession is not the best time to be raising customers' rates, but say the expensive work is needed to make sure Seattle complies with U.S. Environmental Protection Agency and state Department of Ecology standards under the Clean Water Act. Other cities face similar requirements.

Between now and 2025, about 15 construction projects will occur with the aim of preventing storm water from entering the water system, increasing capacity at treatment plants and creating more environmentally friendly infrastructure. Affected neighborhoods include Ballard, Wallingford and Montlake.

Currently a typical Seattle family's monthly wastewater bill is \$48.57 and the tab for drainage is \$19.37. The drainage rate could increase about 10 percent next year, while sewage rates will go up as well, but not by as much, SPU officials say. The City Council will have to approve any rate increases.

The Council's Public Utilities and Neighborhoods committee will begin discussing the infrastructure program on Tuesday. Chairman Mike O'Brien said final decisions about next year's rate increases will be made in the fall, but customers will be looking at gradual bumps for about the next 10 years.

Seattle is farther along in improving its infrastructure than many cities, said O'Brien, who recognized that asking people to pay more money won't be popular. However most people in Seattle support the ultimate goal of the improvements, he said, which is protecting the environment and water resources.

"We want Puget Sound and Lake Washington as clean as possible, and we want to be a leader," O'Brien said.

The problem

One third of Seattle's sewer system, much of which was built in the late 19th century, transports wastewater and storm water in one pipe - known as a combined system. During heavy storms combined systems can overflow into rivers and ocean waterways like Elliott Bay, a situation known as a combined sewer overflow. Seattle Public Utilities has 90 permitted CSO pipes - 37 of which don't meet federal requirements, officials say. Currently there are about 200 times a year when untreated sewage and storm water discharges into local waterways - about 100 million gallons annually.

To comply with regulations, SPU has to bring the number of untreated discharges down to about 90 a year and about 40 million gallons of annual discharge. Things are much better than they were in the 1960s, said Andrew Lee, manager of System and Planning operations for SPU. Back then, Seattle and King County discharged between 20 billion and 30 billion gallons of wastewater and storm water annually. Now, that combined figure is about 1 billion, Lee said. The county operates larger CSO outflows, which is why it discharges more each year than the City.

The poor economy has produced benefits for taxpayers, city officials say. Bids are coming in up to 30 percent lower than expected and about 500 jobs will be supported by the infrastructure projects over the next five years. And because Seattle has been making improvements over the decades, it's price tag to meet new requirements, while hefty, is not nearly as large as other cities, officials say. Pittsburgh and St. Louis will have to spend more than \$2 billion each to make similar improvements, SPU says.

"Compared to other cities, our costs are going to be considerably less because we've already come so far," said SPU spokesman Andy Ryan.

Chris Grygiel can be reached at 206-448-8363 or chrisgrygiel@seattlepi.com. Follow Chris on Twitter at twitter.com/seattlepolitics.

Senate Bill Would Fund R&D for Natural Processes against Stormwater (*Environmental Protection Magazine*)

Jul 12, 2010

U.S. Sens. Tom Udall (D-N.M.) and Sheldon Whitehouse (D-R.I.) have introduced legislation to help address water quality challenges by encouraging the research, development and promotion of new technologies and designs that use natural processes to combat polluted stormwater runoff.

The Green Infrastructure for Clean Water Act would establish up to five regional centers of excellence that would spearhead the research and development of new stormwater management techniques, which use soil and plant life to filter stormwater polluted by sediments and chemicals on the surface before it reaches nearby waterbodies. The

legislation would also establish a green infrastructure program within the EPA's Office of Water to coordinate and promote the use of new stormwater techniques. EPA's regional offices would complete similar efforts.

The legislation further authorizes technical assistance and project grants to local wastewater utilities for green infrastructure projects that take advantage of these alternative techniques to stormwater management. The legislation does not alter the Clean Water Act's regulatory requirements but rather seeks to expand the options for communities to achieve clean water standards.

The legislation defines "green infrastructure" as stormwater management techniques that preserve, restore, enhance, or mimic natural hydrology, such as green roofs, porous pavements and ground cover, or vegetated channels and detention areas that reduce the burden of stormwater on wastewater infrastructure and the environment.

The bill is supported by the National Association of Clean Water Agencies; Natural Resources Defense Council; American Rivers; American Public Works Association; Water Environment Federation; Center for Neighborhood Technology; Clean Water Action; and the Association of State and Interstate Water Pollution Control Administrators.

Companion legislation has been introduced in the House by Reps. Donna Edwards (D-Md.), Russ Carnahan (D-Mo.), and Steve Driehaus (D-Ohio).

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EPA Administrator to Hancock: 'I know you have to be scared'

BY DWAYNE BREMER
Staff Writer

A group of about 300 members of the seafood industry voiced their growing concerns to EPA Secretary Lisa Jackson Friday afternoon at the Leo Seal Community Center in Waveland.

Jackson is the first member of the Obama Administration to visit Hancock County since the Deepwater Horizon oil spill last week.

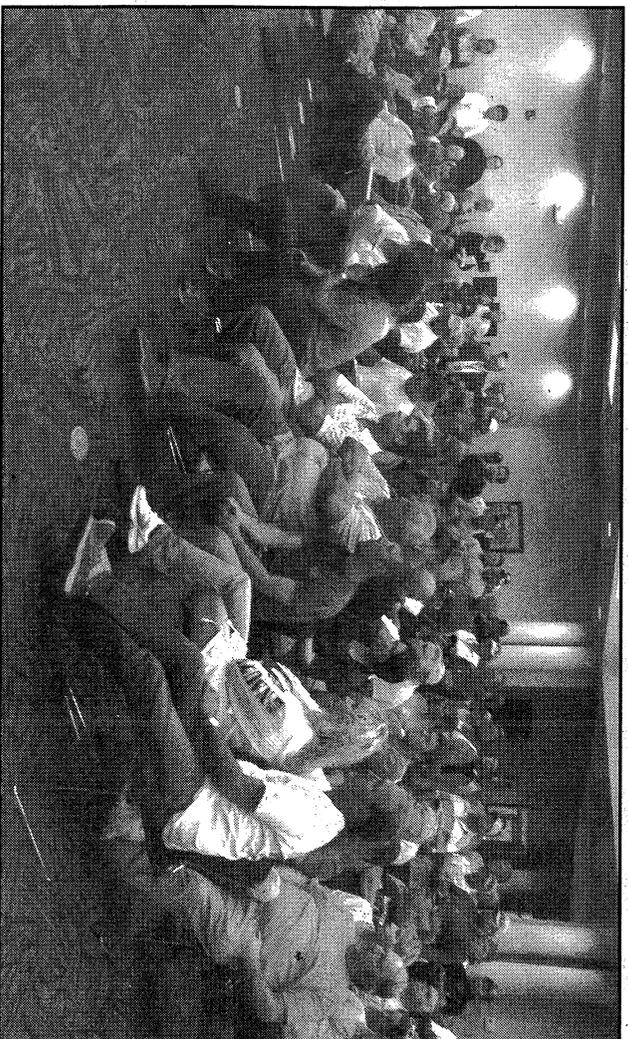
Jackson told the crowd that EPA wants to hear local concerns and that the government will hold BP accountable for the mess it created.

"I know you have to be scared," Jackson said. "The good news is, everyone is getting on board."

EPA official Sam Coleman said the agency is working with other federal agencies to identify when the slick will hit and how much damage it will do.

He said EPA will be deploying mobile laboratories to the area this weekend to take air and ground samples. Jackson said she is very concerned about the potential harm the oil slick may do and asked for opinions from the audience.

"There is not a boom that we should trust," she said. "The folks who know these marshes are the ones who are here. The best service



EPA Administrator Lisa Jackson tells the anxious audience that EPA is seeking local ideas to help with the pending disaster.

we can do is to be one big set of ears."

Jackson encouraged everyone in the room to begin calling and registering with a national claim number set up by the Coast Guard.

"We need you guys to call that number," she said. One resident said the government should let locals help in the cleanup.

"We have an armada of boats and we can catch anything," he said. "Them oil guys don't know how to catch anything."

Another fisherman said those in attendance wanted to know what the government was going to do to help people who will soon

be unemployed.

"We have families to feed," he said.

Coleman and Jackson both said that EPA intends to hold BP accountable.

"I don't want it to be said that BP is not responsible for affecting your business," Coleman said.

"This is all about funding," Jackson said. "BP needs to keep writing checks."

Coleman said that the EPA is committed to ensuring the least effects on the environment and it will continue to assess the situation.

Joe Jewel of the Mississippi Department of Marine Resources said he

would collect a list of people who were interested in assisting in the clean-up efforts and pass that along to BP.

"They are not hiring right now because the event has not happened," he said. "They will be looking to bring in people for shoreline response."

Jackson said everyone should prepare for the worst but hope for the best.

"It's not like anything we have ever seen before," she said. "We are going to pray for the absolute best."

L



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF INSPECTOR GENERAL
OFFICE OF PROGRAM EVALUATION
WASHINGTON, DC 20004

April 8, 2010

MEMORANDUM

TO: Gina McCarthy
Assistant Administrator for Air and Radiation

FROM: Wade T. Najjum /s/
Assistant Inspector General for Program Evaluation

SUBJECT: Evaluation of the Development of EPA's Endangerment and Cause or Contribute Findings for Greenhouse Gases
Assignment Number 2010-OPE-0007

The Office of Inspector General (OIG) plans to begin an evaluation of the *Development of EPA's Endangerment and Cause or Contribute Findings for Greenhouse Gases*. We are initiating this assignment based on a request from Senator James M. Inhofe, Ranking Member, Senate Committee on Environment and Public Works (attachment). Our objective is to determine whether EPA followed key federal and Agency regulations and policies in developing and reviewing the technical data used to support and make its endangerment finding.

We will contact you or your staff in the near future to arrange a mutually agreeable time for an entrance conference to discuss the assignment plans. We will also answer any questions you or your staff may have about the evaluation process and reporting procedures. If you or your staff have any questions, please contact Rick Beusse at (919)541-5747 or beusse.rick@epa.gov, or Jim Hatfield at (919)541-1030 or hatfield.jim@epa.gov.

attachment

cc: Brian McClean, Director, Office of Atmospheric Programs, OAR
Dave LaRouche, Audit Follow-up Coordinator, OAR
Bill Roderick, Acting Inspector General
Mark Bialek, Counsel, OIG
Eileen McMahon, Assistant Inspector General for Congressional, Public Affairs, and Management, OIG
Elizabeth Grossman, Deputy Assistant Inspector General for Program Evaluation, OIG
Rick Beusse, Director for Program Evaluation, Air & Research Issues, OIG
Jim Hatfield, Project Manager, OIG

CIVIL COVER SHEET

The JS 44 civil cover sheet and the information contained herein neither replace nor supplement the filing and service of pleadings or other papers as required by law, except as provided by local rules of court. This form, approved by the Judicial Conference of the United States in September 1974, is required for the use of the Clerk of Court for the purpose of initiating the civil docket sheet. (SEE INSTRUCTIONS ON THE REVERSE OF THE FORM)

I. (a) PLAINTIFFS

Gorman Company, LLC, Kycoga Company, LLC, Black Gold Sales, Inc., Kentucky Union Company and Hazard Coal Corporation

(b) County of Residence of First Listed Plaintiff Perry County
(EXCEPT IN U S PLAINTIFF CASES)

(c) Attorney's (Firm Name, Address, and Telephone Number)

F. William Hardt, Frost Brown Todd, LLC, 250 W. Main St., Suite 2800 Lexington, KY 40507 (859) 231-0000

DEFENDANTS

Lisa Jackson, US Environmental Protection Agency, John McHugh, Lt. General Robert L. Van Antwerp, and US Army Corps of Engineer

County of Residence of First Listed Defendant Washington, DC
(IN U S PLAINTIFF CASES ONLY)

NOTE: IN LAND CONDEMNATION CASES, USE THE LOCATION OF THE LAND INVOLVED

Attorneys (If Known)

II. BASIS OF JURISDICTION (Place an "X" in One Box Only)

- 1 U S Government Plaintiff
- 3 Federal Question (U S Government Not a Party)
- 2 U S Government Defendant
- 4 Diversity (Indicate Citizenship of Parties in Item III)

III. CITIZENSHIP OF PRINCIPAL PARTIES (Place an "X" in One Box for Plaintiff and One Box for Defendant)

	PTF	DEF		PTF	DEF
Citizen of This State	<input type="checkbox"/> 1	<input type="checkbox"/> 1	Incorporated <i>or</i> Principal Place of Business In This State	<input type="checkbox"/> 4	<input type="checkbox"/> 4
Citizen of Another State	<input type="checkbox"/> 2	<input type="checkbox"/> 2	Incorporated <i>and</i> Principal Place of Business In Another State	<input type="checkbox"/> 5	<input type="checkbox"/> 5
Citizen or Subject of a Foreign Country	<input type="checkbox"/> 3	<input type="checkbox"/> 3	Foreign Nation	<input type="checkbox"/> 6	<input type="checkbox"/> 6

IV. NATURE OF SUIT (Place an "X" in One Box Only)

CONTRACT	TORTS	FORFEITURE/PENALTY	BANKRUPTCY	OTHER STATUTES
<input type="checkbox"/> 110 Insurance <input type="checkbox"/> 120 Marine <input type="checkbox"/> 130 Miller Act <input type="checkbox"/> 140 Negotiable Instrument <input type="checkbox"/> 150 Recovery of Overpayment & Enforcement of Judgment <input type="checkbox"/> 151 Medicare Act <input type="checkbox"/> 152 Recovery of Defaulted Student Loans (Excl Veterans) <input type="checkbox"/> 153 Recovery of Overpayment of Veteran's Benefits <input type="checkbox"/> 160 Stockholders' Suits <input type="checkbox"/> 190 Other Contract <input type="checkbox"/> 195 Contract Product Liability <input type="checkbox"/> 196 Franchise	PERSONAL INJURY <input type="checkbox"/> 310 Airplane <input type="checkbox"/> 315 Airplane Product Liability <input type="checkbox"/> 320 Assault, Libel & Slander <input type="checkbox"/> 330 Federal Employers' Liability <input type="checkbox"/> 340 Marine <input type="checkbox"/> 345 Marine Product Liability <input type="checkbox"/> 350 Motor Vehicle <input type="checkbox"/> 355 Motor Vehicle Product Liability <input type="checkbox"/> 360 Other Personal Injury	PERSONAL INJURY <input type="checkbox"/> 362 Personal Injury - Med Malpractice <input type="checkbox"/> 365 Personal Injury - Product Liability <input type="checkbox"/> 368 Asbestos Personal Injury Product Liability PERSONAL PROPERTY <input type="checkbox"/> 370 Other Fraud <input type="checkbox"/> 371 Truth in Lending <input type="checkbox"/> 380 Other Personal Property Damage <input type="checkbox"/> 385 Property Damage Product Liability	<input type="checkbox"/> 422 Appeal 28 USC 158 <input type="checkbox"/> 423 Withdrawal 28 USC 157 PROPERTY RIGHTS <input type="checkbox"/> 820 Copyrights <input type="checkbox"/> 830 Patent <input type="checkbox"/> 840 Trademark SOCIAL SECURITY <input type="checkbox"/> 861 HIA (1395ff) <input type="checkbox"/> 862 Black Lung (923) <input type="checkbox"/> 863 DIWC/DIWW (405(g)) <input type="checkbox"/> 864 SSID Title XVI <input type="checkbox"/> 865 RSI (405(g)) FEDERAL TAX SUITS <input type="checkbox"/> 870 Taxes (U S Plaintiff or Defendant) <input type="checkbox"/> 871 IRS—Third Party 26 USC 7609	<input type="checkbox"/> 400 State Reapportionment <input type="checkbox"/> 410 Antitrust <input type="checkbox"/> 430 Banks and Banking <input type="checkbox"/> 450 Commerce <input type="checkbox"/> 460 Deportation <input type="checkbox"/> 470 Racketeer Influenced and Corrupt Organizations <input type="checkbox"/> 480 Consumer Credit <input type="checkbox"/> 490 Cable/Sat TV <input type="checkbox"/> 810 Selective Service <input type="checkbox"/> 850 Securities/Commodities/Exchange <input type="checkbox"/> 875 Customer Challenge 12 USC 3410 <input type="checkbox"/> 890 Other Statutory Actions <input type="checkbox"/> 891 Agricultural Acts <input type="checkbox"/> 892 Economic Stabilization Act <input checked="" type="checkbox"/> 893 Environmental Matters <input type="checkbox"/> 894 Energy Allocation Act <input type="checkbox"/> 895 Freedom of Information Act <input type="checkbox"/> 900 Appeal of Fee Determination Under Equal Access to Justice <input type="checkbox"/> 950 Constitutionality of State Statutes
REAL PROPERTY <input type="checkbox"/> 210 Land Condemnation <input type="checkbox"/> 220 Foreclosure <input type="checkbox"/> 230 Rent Lease & Ejectment <input type="checkbox"/> 240 Torts to Land <input type="checkbox"/> 245 Tort Product Liability <input type="checkbox"/> 290 All Other Real Property	CIVIL RIGHTS <input type="checkbox"/> 441 Voting <input type="checkbox"/> 442 Employment <input type="checkbox"/> 443 Housing/Accommodations <input type="checkbox"/> 444 Welfare <input type="checkbox"/> 445 Amer w/Disabilities - Employment <input type="checkbox"/> 446 Amer w/Disabilities - Other <input type="checkbox"/> 440 Other Civil Rights	PRISONER PETITIONS <input type="checkbox"/> 510 Motions to Vacate Sentence Habeas Corpus: <input type="checkbox"/> 530 General <input type="checkbox"/> 535 Death Penalty <input type="checkbox"/> 540 Mandamus & Other <input type="checkbox"/> 550 Civil Rights <input type="checkbox"/> 555 Prison Condition	LABOR <input type="checkbox"/> 710 Fair Labor Standards Act <input type="checkbox"/> 720 Labor/Mgmt Relations <input type="checkbox"/> 730 Labor/Mgmt Reporting & Disclosure Act <input type="checkbox"/> 740 Railway Labor Act <input type="checkbox"/> 790 Other Labor Litigation <input type="checkbox"/> 791 Empl Ret Inc Security Act IMMIGRATION <input type="checkbox"/> 462 Naturalization Application <input type="checkbox"/> 463 Habeas Corpus - Alien Detainee <input type="checkbox"/> 465 Other Immigration Actions	

V. ORIGIN (Place an "X" in One Box Only)

- 1 Original Proceeding
- 2 Removed from State Court
- 3 Remanded from Appellate Court
- 4 Reinstated or Reopened
- 5 Transferred from another district (specify)
- 6 Multidistrict Litigation
- 7 Appeal to District Judge from Magistrate Judgment

VI. CAUSE OF ACTION

Cite the U.S. Civil Statute under which you are filing (Do not cite jurisdictional statutes unless diversity):

28 U.S.C. § 1331, 5 U.S.C. § 702

Brief description of cause:

Action for declaratory and injunctive relief against defendants for unlawfully-enacted environmental regulations.

VII. REQUESTED IN COMPLAINT:

CHECK IF THIS IS A CLASS ACTION UNDER F.R.C.P. 23

DEMAND \$ _____ CHECK YES only if demanded in complaint:
JURY DEMAND: Yes No

VIII. RELATED CASE(S) IF ANY

(See instructions):

JUDGE _____

DOCKET NUMBER _____

DATE

SIGNATURE OF ATTORNEY OF RECORD

08/10/2010

FOR OFFICE USE ONLY

RECEIPT # _____ AMOUNT _____ APPLYING IFP _____ JUDGE _____ MAG JUDGE _____

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF KENTUCKY
SOUTHERN DIVISION AT LONDON**

GORMAN COMPANY, LLC , KYCOGA)
COMPANY, LLC, BLACK GOLD SALES, INC.,)
KENTUCKY UNION COMPANY AND)
HAZARD COAL CORPORATION)

PLAINTIFFS,)

v.)

LISA JACKSON, UNITED STATES)
ENVIRONMENTAL PROTECTION AGENCY,)
JOHN MCHUGH, LT. GENERAL ROBERT L.)
VAN ANTWERP, and UNITED STATES)
ARMY CORPS OF ENGINEER)

DEFENDANTS.)

CIVIL ACTION NO. _____

COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF

INTRODUCTION

1. This case concerns the April 1 Guidance Memorandum issued by the U.S. Environmental Protection Agency (“EPA”), entitled “Detailed Guidance: Improving EPA Review of Appalachian Surface Coal Mining Operations under the Clean Water Act, National Environmental Policy Act, and the Environmental Justice Executive Order” (the “Detailed Guidance”). Plaintiffs Gorman Company, LLC, Kycoga Company, LLC, Black Gold Sales, Inc., Kentucky Union Company, and Hazard Coal Corporation, (collectively, “Plaintiffs”) own land containing significant coal reserves that they lease to mining operators, and thus, have incurred, and stand to further incur, significant and irreversible harm as a result of the implementation and enforcement of the Detailed Guidance. Specifically, the implementation and enforcement of the

requirements contained in that document have imposed insurmountable technical and economic burdens on the coal mining industry, effectively shutting down surface coal mining (and possibly significant underground coal mining) throughout much of Central Appalachia, including the areas in which Plaintiffs own mineral interests. This action constitutes an unlawful regulatory action that is inconsistent with EPA's statutory authorities, and imposes an unconstitutional taking of the property of Plaintiffs. Indeed, to date, Plaintiffs have suffered damages of three billion dollars (\$3,000,000,000.00) in the diminution in value of their property as a result of being singled out by Defendants through an unconstitutional regulatory taking.

2. This civil action seeks declaratory and injunctive relief against Defendants EPA, Lisa Jackson, in her official capacity as Administrator of the United States Environmental Protection Agency, John McHugh, in his official capacity as Secretary of the Army, Lieutenant General Robert L. Van Antwerp, in his official capacity as Chief of Engineers and Commanding General of the U.S. Army Corps of Engineers, and the United States Army Corps of Engineers ("Corps") (collectively, "Defendants") and challenges a series of EPA and Corps actions that have unlawfully obstructed Clean Water Act permitting processes for coal mining. Plaintiffs bring this action under Section 702 of the Administrative Procedure Act ("APA"), 5 U.S.C. § 702, seeking review of the June 11, 2009 Enhanced Coordination Process ("EC Process") memoranda http://www.epa.gov/owow/wetlands/pdf/Final_MTM_Permit_Coordination_Procedures_6-11-09.pdf; and [http://www.epa.gov/owow/wetlands/pdf/Final EPA MTM letter to Army 6-11-09.pdf](http://www.epa.gov/owow/wetlands/pdf/Final_EPA_MTM_letter_to_Army_6-11-09.pdf) and the April 1, 2010 Detailed Guidance Memorandum ("Detailed Guidance") (75 Fed. Reg. 18500, http://www.epa.gov/owow/wetlands/guidance/pdf/appalachian_mtntop_mining_detailed.pdf) as contrary to the APA, the Clean Water Act ("CWA"), 33 U.S.C. § 1251 *et seq.*, the Surface Mining Control and Reclamation Act ("SMCRA"), 30 U.S.C. § 1201 *et seq.*, and other

federal law. As explained in the Factual Background section, *infra*, these memoranda substantially and illegally amend the statutory and regulatory permitting processes for coal mining that form the backbone of coal companies' expectations in planning to extract coal for our nation's power supply, particularly for those companies that require "valley fills" for their coal mining operations. By dramatically altering timelines and imposing new requirements in complete disregard of existing federal law and procedure, EPA and the Corps have launched a moving target in coal mining permitting that is substantially and irreparably harming Plaintiffs.

3. In addition, through these actions, EPA has radically altered the statutory delegation of regulatory authority over coal mining to rob the Corps, the Office of Surface Mining Reclamation and Enforcement within the U.S. Department of the Interior ("OSM"), and states of their respective statutory roles as permitting authorities and regulators of the environmental effects of coal mining, and to arrogate primary authority to itself. Taken together, these notions also amount to a *de facto* moratorium on permitting for coal mining, particularly in Central Appalachia. Administrator Jackson explained the effects of EPA's actions during the press conference releasing the Detailed Guidance, stating that, "You're talking about no, or very few, valley fills that are going to meet this [new] standard." <http://www.washingtonpost.com/wpdyn/content/article/2010/04/01/AR2010040102312.html>, "Jackson said the EPA will now instruct its local offices not to approve new CWA valley-fill permits that are likely to produce a certain level of pollution in waters downstream," *id.*, even though that "certain level" of water quality set by the Detailed Guidance has never been promulgated under the APA and CWA.

4. Plaintiffs seek an order from this Court holding unlawful, enjoining implementation of, and vacating both the EC Process and the Detailed Guidance as arbitrary,

capricious, an abuse of discretion, and contrary to law in numerous respects, including:

(i) failing to comply with the APA's notice and comment rulemaking requirements;

(ii) violating the delegation of authority between the Corps and EPA in CWA Section 404;

(iii) violating the delegation of authority to the states for development of water quality standards set forth in CWA Section 303, 33 U.S.C. § 1313, and unlawfully promulgating a water quality standard;

(iv) creating illegal presumptions in the development and implementation of a conductivity water quality standard;

(v) creating an illegal presumption in the application of National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4331, *et seq.*, to coal mines; and

(vi) invading the exclusive regulatory authority Congress granted to OSM and the primacy states in SMCRA, 30 U.S.C. § 1201, *et seq.* Plaintiffs ask this Court to order the Corps to reinstate and adhere to the codified Section 404 permit review process and order EPA to perform, and not exceed, the role Congress crafted for it in the Section 404 permitting process.

5. The EC Process and Detailed Guidance are having immediate adverse effects on coal mining through the implementation of an illegal permit review process that seeks to impose prohibitive conditions on mining. Should the EC Process and Detailed Guidance be left to stand and their implementation continues on its current course, Plaintiffs will be unable to provide coal for our nation's energy supply, despite Congressional directives to the contrary. See, *e.g.*, 30 U.S.C. § 1202(f).

JURISDICTION AND VENUE

6. Jurisdiction is proper in this Court pursuant to 28 U.S.C. § 1331 (Federal question jurisdiction); and the APA, 5 U.S.C. § 702 (judicial review of final agency action). This Court can grant declaratory and injunctive relief under 28 U.S.C. § 2201 (declaratory judgment), 28 U.S.C. § 2202 (injunctive relief), and 5 U.S.C. §§ 701-706, for violations of, *inter alia*, the APA, 5 U.S.C. § 706, CWA, 33 U.S.C. § 1251, *et seq.*, SMCRA, 30 U.S.C. § 1201, *et seq.*, and NEPA, *et seq.*, 42 U.S.C. § 4331, *et seq.*

7. Venue is proper in this Court under 28 U.S.C. § 1391 in that the real property at issue in this action which has been affected by Defendants' actions is located here and Plaintiffs reside herein.

PARTIES

8. Plaintiff Gorman Company, LLC is a Kentucky limited liability company with its principal place of business located in Hazard, Kentucky.

9. Plaintiff Kycoga Company, LLC is a Kentucky limited liability company with its principal place of business located in Hazard, Kentucky.

10. Plaintiff Black Gold Sales, Inc. is a Kentucky corporation with its principal place of business located in Hazard, Kentucky.

11. Plaintiff Kentucky Union Company is a Kentucky corporation with its principal place of business located in Hazard, Kentucky.

12. Plaintiff Hazard Coal Corporation is a Kentucky corporation with its principal place of business located in Hazard, Kentucky.

13. Defendant United States Environmental Protection Agency is the federal agency charged with the administration and enforcement of many of the federal environmental laws,

pursuant to specific delegations of authority from Congress. With respect to the CWA Section 404 permitting program, Congress instructed EPA to develop guidelines related to environmental protection that would be applied by the Corps, the permitting authority, in evaluating Section 404 permit applications. Congress also granted EPA specifically defined authority to object to certain decisions by the Corps in issuing Section 404 permits. Such authority can only be exercised following notice and an opportunity for public hearings, consultation with the Corps, and publication of written findings and reasons for such objection. EPA is headquartered in Washington, D.C.

14. Defendant Lisa Jackson is the Administrator of EPA and is being sued in her official capacity. Administrator Jackson has ultimate responsibility for EPA's actions pursuant to CWA Section 404, and is the signatory to several of the EPA letters and memoranda being challenged in this action. The Administrator's office is located within EPA's headquarters in Washington, D.C.

15. Defendant United State Army Corps of Engineers is the federal agency charged with issuing permits for the discharge of dredged or fill material into the waters of the United States pursuant to Section 404 of the CWA, including permits for the discharge of fill material associated with coal mining operations. The Corps is headquartered in Washington, D.C.

16. Defendant John McHugh is the Secretary of the Army and is being sued in his official capacity. The Secretary of the Army, acting through the Corps, has ultimate responsibility for the issuance of Section 404 permits by the Corps. The Department of the Army's headquarters is located in Washington, D.C.

17. Defendant Lieutenant General Robert L. Van Antwerp is the Chief of Engineers and Commanding General of the U.S. Army Corps of Engineers. The Office of the Chief of

Engineers is located in the Corps's headquarters in Washington, D.C. Defendant Van Antwerp is charged with the supervision and management of all Corps decisions and actions, and is being sued in his official capacity.

LEGAL FRAMEWORK

18. Coal mining operations are subject to complex and myriad statutory and regulatory requirements, including permitting under SMCRA and the CWA (with two categories of CWA permits under Sections 402 and 404), and NEPA review of permits issued by the Corps under CWA Section 404. The paragraphs below outline some of the key provisions governing this permitting process that are implicated by the EC Process and the Detailed Guidance.

A. Clean Water Act

19. Coal mining operations generally require two types of CWA permits for operation: (i) Section 404 permits, issued by the Corps, for the discharge of dredged and fill material; and (ii) Section 402 permits, ordinarily issued by states with delegated permitting programs, for the discharge of all other pollutants. Section 402 permits govern pollutants that are assimilated by receiving waters, while Section 404 permits authorize the discharge of material that fills or displaces receiving waters.

1. Section 404 and the Codified Regulatory Permitting Process

a. The Corps' Role

20. Section 404 of the CWA, 33 U.S.C. § 1344(a), gives the Secretary of the Army sole authority to issue Section 404 permits for discharge of "dredged or fill" material into navigable waterways at specified disposal sites. Under 30 C.F.R. § 325.2(a), the Secretary of the Army has delegated its authority to the Corps, which may issue Section 404 permits after undertaking a public interest analysis.

21. The Corps' procedures for issuing a Section 404 permit are codified at 33 C.F.R. Part 325.

22. The Corps' regulations, 33 C.F.R. § 325.1(d) and (e), include requirements regarding what must be contained in a Section 404 permit application and give the district engineer sole authority to request additional information deemed essential to make a public interest determination, including environmental data and a determination of compliance with the guidelines developed pursuant to Section 404(b)(1).

23. Those regulations also specify that the district engineer must review the Section 404 permit application for completeness and, within 15 days of receiving a Section 404 permit application, the district engineer must determine whether the application is complete and issue a public notice pursuant to the regulations. 33 C.F.R. § 325.2(a)(2). 33 C.F.R. § 325.2(a)(3) authorizes the district engineer to delay processing of an application only if an applicant makes a request for a reasonable delay, and the delay normally would not exceed 30 days.

24. The Corps' regulations, 33 C.F.R. § 325.2(a)(4), make clear that the district engineer is responsible for following environmental procedures and documentation required by NEPA and evaluating the need for a public hearing.

25. Finally, 33 C.F.R. § 325.2(a)(6) expressly provides that the district engineer will determine, based on the record and applicable regulations, whether or not a Section 404 permit should be issued.

26. Pursuant to 33 C.F.R. § 325.3, public notice of the permit serves the purposes of advising all interested parties of the proposed activity for which a permit is sought and soliciting comments and information necessary to evaluate the probable impact on the public interest,

interested parties that may offer comments include federal agencies such as EPA. The regulations specify that the comment period shall extend for a reasonable period of time within which interested parties may express their views, but generally should not be more than 30 days.

27. District engineers generally must decide on all applications no later than 60 days after receipt of a complete application, unless (i) precluded as a matter of law or by procedures required by law, (ii) the case must be referred to a higher authority, (iii) the comment period is extended, (iv) the applicant does not provide timely submittal of information or comments, (v) processing is suspended at the request of the applicant, or (vi) information needed to process the application cannot reasonably be obtained within the 60-day period. 33 C.F.R. § 325.2(d)(3).

28. District engineers have authority to add conditions to permits when such conditions are necessary to satisfy legal requirements or to otherwise satisfy the public interest requirement. Permit conditions must be directly related to the impacts of the proposal, appropriate to the scope and degree of those impacts, and reasonably enforceable. 33 C.F.R. § 325.4(a).

b. EPA's Role

29. The CWA allocates two primary responsibilities to EPA in the Section 404 process. First, EPA has statutory authority to develop environmental guidelines (*i.e.*, the “404(b)(1) Guidelines”) in conjunction with the Corps. *See* 33 U.S.C. § 1344(b)(1). Second, the CWA confers EPA authority, under specified procedures, to prevent the Corps from authorizing certain disposal sites under limited circumstances. *See* 33 U.S.C. § 1344(c).

30. As required by the CWA, EPA has promulgated 404(b)(1) Guidelines, which are codified at 40 C.F.R. Part 230 and guide the Corps’ review of the environmental effects of the proposed disposal sites. For example, pursuant to 40 C.F.R. § 230.10(a), no Section 404 permit

shall be issued if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences. In addition, under 40 C.F.R. § 230.10(b), no permit shall be issued if it (i) causes or contributes to any water quality standard violations, (ii) violates any applicable toxic effluent standard or prohibition under Section 307 of the CWA, (iii) jeopardizes the continued existence of a listed species, or (iv) violates any requirement necessary to protect a marine sanctuary pursuant to law. Furthermore, pursuant to 40 C.F.R. § 230.10(e), no permit shall be issued which will cause or contribute to significant degradation of the waters of the United States, and pursuant to 40 C.F.R. § 230.10(d), no permit shall be issued unless appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem.

31. The 404(b)(1) Guidelines also provide that “[g]uidance on interpreting and implementing these Guidelines may be prepared jointly by the EPA and the Corps at the national or regional level from time to time. No modifications to the basic application, meaning, or intent of these Guidelines will be made without rulemaking by the Administrator under the Administrative Procedure Act (5 U.S.C. § 551 *et seq.*)” 40 C.F.R. § 230.2(c) (emphasis added).

32. As described above, the authority to apply the 404(b)(1) Guidelines to specific disposal sites for the dredged or fill material rests solely with the Corps. 33 U.S.C. § 1344(a), (b). EPA has the ability to comment on the Corps’ application of the 404(b)(1) Guidelines to particular permit applications during the interagency review period required for each permit.

33. In addition to requiring 404(b)(1) Guidelines development, under Section 404(c), Congress granted EPA limited authority to prevent the Corps from authorizing certain disposal sites in limited circumstances, if the EPA Administrator determines, after notice and an

opportunity for public hearing, that certain unacceptable environmental effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreation areas would result. *See* 33 U.S.C. § 1344(c).

34. Section 404(c) does not grant EPA authority to exercise unlimited enforcement of compliance with the 404(b)(1) Guidelines. As reflected in EPA's own regulations, "[t]he Administrator is authorized to prohibit or otherwise restrict a [dredged or fill material] site whenever he determines that the discharge of dredged or fill material is having or will have an 'unacceptable adverse impact' on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas." 40 C.F.R. § 230.1(a). "In evaluating the unacceptability of such impacts, consideration should be given to the relevant portions of the 404(b)(1) Guidelines," *e.g.* those portions that relate to impacts to municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas. 40 C.F.R. § 231.2(e) (emphasis added). Yet, EPA construes Section 404(e) to mean that EPA can unilaterally, at any time, withdraw a Section 404 permit that has been or will be issued by the Corps. EPA invokes this flawed interpretation to impose its policy preferences in proposed Section 404 permits while avoiding the strictures and publicity of the Section 404(c) process.

35. The Section 404(c) process occurs subsequent to an agency coordination and dispute resolution process set forth in detailed interagency agreements executed pursuant to Section 404(q). *See* <http://www.epa.gov/owow/wetlands/regs/dispmoa.html>.

2. Section 303 Water Quality Standards Development

36. The CWA explicitly acknowledges the Congressional policy to "recognize, preserve, and protect *the primary responsibilities and rights of States* to prevent, reduce and eliminate pollution." CWA Section 101(b), 33 U.S.C. § 1251(b). This policy is effectuated, in

part, in Section 303 of the CWA, which allocates primary authority for development of water quality standards to the states.

37. Under Section 303(c), states perform the function of establishing, reviewing, and revising water quality standards. 33 U.S.C. § 1313(e). EPA echoes this statutory provision in its regulations, prescribing that, “[s]tates are responsible for reviewing, establishing, and revising water quality standards.” 40 C.F.R. § 131.4.

38. A water quality standard defines the water quality goals of a water body by designating uses for a particular body of water and setting criteria necessary to protect those uses. *See* 40 C.F.R. § 131.2. Such standards can be expressed as specific numeric limitations or as general narrative statements. For narrative statements, states must develop a mechanism for translating or interpreting them into numeric permit limits. *See* 40 C.F.R. § 122.44(d)(1)(vi). Any competing federal interpretation does not defeat the state’s interpretation, assuming the state’s interpretation is supported by substantial evidence.

39. Similar to Section 404, Congress specifically delineated a limited role for EPA in the water quality standard process. First, EPA may develop and publish criteria for water quality that accurately reflect “the latest scientific knowledge.” 33 U.S.C. § 1314(a). Such criteria are not binding on the states nor are they independently enforceable. States are free to adopt, modify, or reject EPA’s published criteria, provided they have a sound scientific rationale. Second, when states establish, review, or revise their water quality standards, EPA’s role is to review and approve or disapprove of state-adopted water quality standards. *See* 33 U.S.C. § 1313(e); 40 C.F.R. § 131.5. If EPA determines that a state’s standards are not consistent with the CWA, then EPA must inform the state within 90 days of the state’s submission of the standard to EPA. If the state does not adequately respond to EPA’s notice and

implement necessary changes within 90 days of EPA's notice, EPA must promulgate federal standards. *See* 33 U.S.C. § 1313(c)(3)-(4); 40 C.F.R. §§ 131.5, 131.21. Water quality standards are applicable (*e.g.* can be used in permitting decisions) only when EPA has either approved the state's standards or disapproved the state's standards and promulgated, through formal notice and comment, federal standards. *See* 40 C.F.R. § 131.21.

40. EPA may also promulgate water quality standards on its own only for particular waters, *i.e.*, "for the navigable waters involved," and only where the Administrator makes a determination "that a revised or new standard is necessary to meet the requirements of [the CWA]." EPA can act unilaterally only if it "prepare[s] and publishe[s] proposed regulations" and "promulgate[s]" the particular standard. *See* 33 U.S.C. § 1313(c)(4).

3. Section 402 Permitting and Water Quality Standards.

41. Congress established the second CWA permitting program at Section 402, known as the National Pollutant Discharge Elimination System ("NPDES"). *See* 33 U.S.C. § 1342. The NPDES permitting system focuses on wastewater discharges to receiving waters, and governs such discharges through the establishment of technology-based limits placed on the constituent makeup of a wastewater discharge. 33 U.S.C. § 1311(b)(2).

42. Conforming to the statute's goal of allocating the "primary responsibilities" for water pollution control to the states, 33 U.S.C. § 1251(b), the CWA establishes a system of cooperative federalism, whereby states assume primary administration and enforcement of the NPDES permitting program. *See* 33 U.S.C. § 1342(b). Once EPA approves a proposed state permitting program, EPA must suspend its own program. *See* 33 U.S.C. § 1342(c)(1). Under such delegated permitting programs, states have exclusive authority to implement the NPDES program within their boundaries, and again, EPA has only limited authority to review state

action. Specifically, EPA retains authority, in specified circumstances, to object to a particular NPDES permit that authorizes discharges to waters within the statute's jurisdiction. *See* 33 U.S.C. § 1342(d); 40 C.F.R. § 123.44. If the state does not respond adequately to EPA's objection within specified timeframes, EPA may assume the authority to issue the permit. *See* 33 U.S.C. § 1342(d)(4). If EPA does not object to a permit based on statutory or regulatory grounds and within the specified procedures and timeframes, the state may proceed in accordance with its delegated authority and issue the permit.

43. When application of a technology-based limit to a particular discharge will not assure compliance with any applicable water quality standards established for the particular receiving stream, the permitting authority must develop permit limitations that would work to maintain such water quality. *See* 33 U.S.C. § 1312; 40 C.F.R. § 122.44(d). The permitting authority, usually a state agency, determines whether the proposed discharge will cause, or have the reasonable potential to cause, or contribute to an in-stream excursion above a numeric or narrative criteria within an applicable water quality standard. *See* 40 C.F.R. § 122.44(d).

4. Section 401 Certification

44. For federally permitted activities, Section 401 of the CWA requires certification from the state that proposed discharges are in compliance with applicable state water quality standards. *See* 33 U.S.C. § 1341(a). In states with delegated NPDES programs, this state water quality certification process is built in to the permit issuance process. States issue such certifications for Section 404 permits issued by the Corps. EPA lacks authority under the CWA to review or overturn a state Section 401 certification for state-issued NPDES permits or Section 404 permits from the Corps. EPA may review and comment on a state Section 401 certification or seek judicial review.

B. National Environmental Policy Act

45. Congress enacted NEPA to establish a process by which federal agencies must consider the potential environmental consequences of their actions. *See* 42 U.S.C. § 4231 *et seq.* NEPA is a procedural, not substantive, statute, and therefore agency actions with adverse environmental consequences can be compliant with NEPA so long as the agency properly considered those effects.

46. NEPA requires federal agencies to prepare an Environmental Impact Statement (“EIS”) for “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(2)(C). Where it is not readily determined that an EIS is required, an agency may prepare an Environmental Assessment (“EA”) that documents the findings and analysis of environmental impacts. The agency may choose either to proceed with the preparation of an EIS or, alternatively, to make a Finding of No Significant Impact (“FONSI”). *See* 40 C.F.R. §§ 1501.4, 1508.9.

47. Even where an EA determines that a proposed action would ordinarily have a significant effect on the environment, an agency can, in lieu of preparing an EIS, require mitigating measures to reduce the environmental impact of the proposed action below the level of significance that would otherwise trigger an EIS.

48. In general, NEPA applies to the issuance of permits pursuant to Section 404 of the CWA. In evaluating CWA Section 404 permit applications, the Corps must “address the impacts of the specific activity requiring a [404] permit and those portions of the entire project over which the [Corps] district engineer has sufficient control and responsibility to warrant Federal review.” 33 C.F.R. pt. 325, App. B, § 7(b)(1).

C. Surface Mining Control and Reclamation Act of 1977

49. SMCRA was enacted on August 3, 1977, to regulate the environmental and related impacts of surface coal mining operations and the surface effects of underground mining operations. A principal purpose of SMCRA is to “assure that the coal supply essential to the Nation’s energy requirements, and to its economic well-being is provided” and to “strike a balance between the protection of the environment and agricultural productivity and the Nation’s need for coal as an essential source of energy.” 30 U.S.C. § 1202(f).

50. Like the CWA, SMCRA is anchored in cooperative federalism principles and a recognition that “the primary governmental responsibility for developing, authorizing, issuing, and enforcing regulations for surface mining and reclamation operations . . . should rest with the States,” 30 U.S.C. § 1201(f); *see also* 30 U.S.C. § 1253. After a state’s SMCRA program has been approved, all those wishing to engage in coal mining operations in the state must obtain a SMCRA permit from the state regulatory authority. *See* 30 U.S.C. § 1256(a).

51. A SMCRA permit must incorporate and implement extensive environmental performance standards. *See* 30 U.S.C. § 1265. Such standards contemplate and regulate disposal of excess spoil material. *See* 30 U.S.C. § 1265(0)(22). A SMCRA permitted operation must transport and place excess spoil material “in a controlled manner” and in a way that assures “mass stability” and prevents “mass movement.” *Id.* at § 1265(b)(22)(A). Further, Congress contemplated that such disposal would occur in water courses — if a disposal area contains “springs, natural water courses or wet weather seeps,” lateral drains must be constructed “from the wet areas to the main underdrains in such a manner that filtration of the water into the spoil pile will be prevented,” *Id.* at § 1265(b)(22)(D). These provisions are implemented by the various states pursuant to their authority under SMCRA.

D. Administrative Procedure Act

52. If Plaintiffs suffer a “legal wrong because of agency action” and are “adversely affected or aggrieved” by EPA’s and the Corps’ actions, the APA affords judicial review of these agency actions. *See* 5 U.S.C. §§ 702, 704.

53. The APA also provides the applicable process a Federal agency must follow when it proposes and adopts final rules and regulations. *See* 5 U.S.C. § 553; *id.* § 551(4)-(5). When EPA and the Corps arbitrarily issued substantive revisions to the Section 404 permitting process without following the required APA procedures, they violated the APA.

FACTUAL BACKGROUND

54. In January 2009, in a marked departure from prior, longstanding EPA practice and a harbinger of the agency actions challenged in this Complaint, EPA initiated an extra-regulatory review process for CWA Section 404 permits that had no basis in the Corps’ or EPA’s codified procedures. EPA issued a series of letters to the Corps recommending denial of certain CWA Section 404 permit applications for coal mining operations. In each of these cases, the Corps was poised to imminently issue the permits, and EPA had already either commented or waived its opportunity to comment during the interagency comment process, long-expired by January 2009. Undaunted by the fact that the opportunity for comment, as provided by regulation, had passed, EPA’s January 2009 letters contained newly articulated positions questioning the legality of the permits at issue. Specifically, EPA raised concerns about conductivity levels in water quality, citing for the first time (even though it was readily available to EPA during the interagency review process) a 2008 study (Pond *et al.*) that analyzed the relationship between conductivity as a measure of water quality and aquatic life use.

55. On February 13, 2009, the U.S. Court of Appeals for the Fourth Circuit decided *Ohio Valley Environmental Coalition v. Aracoma Coal Company*, 556 F.3d 177 (4th Cir. 2009), which ended long-running litigation by various citizen advocacy organizations against the Corps and various coal companies challenging four proposed CWA Section 404 permits for coal mining operations. The Fourth Circuit upheld the Corps' permit review procedures and analysis on all fronts (including (a) affirming the Corps' exclusion of upland areas from CWA and NEPA review, (b) ruling that a state's CWA Section 401 certification is binding on the Corps and confirms compliance with all EPA-approved state water quality standards, (c) affirming the Corps' practice of utilizing cumulative and hydrological impacts analyses performed pursuant to SMCRA to avoid regulatory overlap, (d) upholding the Corps' use of available assessment tools and best professional judgment in mitigation determinations, and (e) upholding the Corps' use of off-site stream mitigation measures), thus clearing the way for prompt release of the backlog and processing of long-pending Section 404 permit applications. The decision provided a path forward not only for the permits challenged in the case, but also for numerous other Section 404 permit applications pending with the Corps that had been stalled awaiting the Fourth Circuit's decision.

56. Reacting in part to the Fourth Circuit's decision, on March 23, 2009, EPA sent two more letters to the Corps expressing concerns regarding two coal mining projects in West Virginia and Kentucky. The press statement accompanying the release of the letters indicated Administrator Jackson had "directed the agency to review other mining permit requests" and indicated the need for EPA to be "actively involved" in review of permits anticipated to be forthcoming after the Fourth Circuit decision. Similar letters followed in April 2009 with EPA objecting to at least four proposed coal mining projects in Virginia, West Virginia, and

Kentucky. An EPA spokesperson stated on April 9, 2009 that EPA “could not rule out that more permits would soon be reviewed.”

57. On June 4, 2009, U.S. Representative Shelley Moore Capito and eleven other U.S. Representatives wrote to Administrator Jackson seeking action on more than 200 permit applications for coal mining that were being delayed by a “new process” of EPA review.

A. June 11, 2009 Memorandum of Understanding

58. On June 11, 2009, EPA, the Corps, and the Department of Interior released a Memorandum of Understanding on Implementing the Interagency Action Plan on Appalachian Surface Coal Mining (the “MOU”). A key component of the MOU was to formalize the extra-regulatory review process of CWA Section 404 permits that EPA had previously commenced in January 2009.

59. The MOU stated that the agencies will begin immediately to implement the EC Process for the CWA review of Section 404 permit applications for Appalachian surface coal mining activities, including those pending permit applications submitted prior to execution of the MOU.

60. An initial list of 108 pending Section 404 permit applications for proposed coal mines was provided by the Corps and published at the same time as the MOU. The agencies stated that those 108 permits would be evaluated for further coordination under the EC Process.

61. The Corps had already issued public notice for all of the permit applications now subject to the EC Process, and the official comment period for those permit applications had expired a year earlier. Thus, the EC Process had the effect of revisiting and/or restarting the interagency review process for hundreds of pending permit applications.

62. Under the MOU, the BC Process will apply to Section 404 permit applications in six states and three EPA regions in the eastern United States.

63. Since the release of the MOU and announcement of the EC Process, the Corps permit backlog had grown to more than 235 permits by July 30, 2009, and several companies have since withdrawn their Section 404 permit applications.

B. June 11, 2009 EC Process Memoranda

64. In conjunction with the release of the MOU, EPA also issued formal details on the EC Process, which were immediately effective and imposed substantive changes to the Section 404 permitting process. See [http://www.epa.gov/owow/wetlands/pdf/Final Permit Coordination Procedures 6-11-09.pdf](http://www.epa.gov/owow/wetlands/pdf/Final%20Permit%20Coordination%20Procedures%206-11-09.pdf); and [http://www.epa.gov/owow/wetlands/pdf/Final EPA MTM letter to Army 6-11--09.pdf](http://www.epa.gov/owow/wetlands/pdf/Final%20EPA%20MTM%20letter%20to%20Army%206-11--09.pdf). Such details included those considerations that would be used by EPA to screen and identify pending permit applications that would be subject to the EC Process.

1. New Screening Process for Section 404 Permit Applications

65. EPA's first step in the EC Process is to screen all pending Section 404 permit applications and decide which will proceed for review by the Corps under existing permit Case 1:113-cv-01220-RBW Document 1 Filed 07/20/10 Page 21 of 42 processing procedures, codified in 33 C.F.R. Part 325, and which will instead be subject to the EC Process.

66. Such screening occurs pursuant to a special method, the Multi-Criteria Integrated Resource Assessment (the "MCIR Assessment"). The stated goal of the MCIR Assessment is to develop a threshold of acceptable mining impacts and to create a list of permits that EPA determines do not meet that threshold and, therefore, require the use of the EC Process, whereas only those permits that do meet EPA's newly established threshold will proceed through the Corps' lawful regulatory process governed by regulations at 33 C.F.R. Part 325. The Corps was

not involved in developing the components of the MCIR Assessment.

67. EPA's development and use of the MCIR Assessment for evaluating Section 404 permit applications and identifying them for application of EC Process is not embodied or otherwise provided for in any properly promulgated regulation, nor has it been subjected to public notice and comment.

68. On September 11, 2009, EPA announced that it utilized the MCIR Assessment to identify 79 coal-related Section 404 permits currently pending with the Corps and was proposing to submit those 79 permit applications to the EC Process, rather than the 33 C.F.R. Part 325 process. The permits were associated with coal mining projects proposed within six states: Ohio, Pennsylvania, Tennessee, Virginia, Kentucky, and West Virginia. EPA published the list of 79 permit applications on its website for a 14-day review period. *See* http://www.epa.gov/owow/wetlands/pdf/ECP_Factsheet_09-11-09.pdf.

69. On September 30, 2009, EPA announced in a letter to the Corps that all 79 proposed, pending projects previously identified using the MCIR Assessment would be subject to the EC Process. EPA directed that "each Corps District will notify the appropriate EPA Region in writing when a permit application is ready to begin the 60-day coordination period."

70. As of July 19, 2010, of the 79 pending projects identified in 2009 for the EC Process, 36 are still awaiting the start of the 60-day EC Process, 36 permit applications have been withdrawn, only five permits have been issued, and just two are under current review.

2. The EC Process

71. Once triggered after the MCIR Assessment, the EC Process adds significant additional time to the Corps regulatory review. The EC Process involves discussions among EPA, the Corps, the permit applicant, and other potentially relevant agencies. While EPA

describes a 60-day EC Process, as written, the 60-day period actually does not begin until the Corps initiates the EC Process, and there is no binding requirement for the Corps to do so in a timely fashion, in direct contrast to the permitting processing timelines set forth in Section 404(a) and (q), 33 U.S.C. § 1344(a), (q).

72. In fact, EPA has instructed the Corps that the 60-day period for EC Process discussions does not commence until after the Corps, EPA, and permit applicant have held multiple negotiation sessions, which effectively could delay initiation of the EC Process indefinitely. Thus, the EC Process adds a minimum 60 days (and potentially many months) of review to the existing review process entirely outside of, and in addition to, the procedures and timelines codified in 33 C.F.R. Part 325.

73. During the EC Process period, EPA will attempt to “resolve” environmental concerns raised by the permit application by, for example, proposing revisions to proposed discharges, special conditions, or mitigation requirements.

74. At the end of the EC Process period, if issues identified by EPA are resolved in individual permit applications, those permits may move forward to the Corps for processing and incorporation of new permit terms or conditions dictated by EPA during the EC Process. If EPA’s concerns remain unresolved at the close of the EC Process period, EPA may then initiate Section 404(c) procedures. In short, the EC Process provides EPA with an extra-regulatory vehicle to impose its will on coal mining permits and avoid the spotlight and administrative burden of the statutory Section 404(c) process.

75. Neither EPA nor the Corps proposed to revise the existing codified procedures for review of Section 404 permits at 33 C.F.R. Part 325, and EPA has not proposed to amend its existing 404(b)(1) Guidelines as part of formalizing the EC Process.

C. April 1, 2010 Detailed Guidance

76. On April 1, 2010, EPA released the Detailed Guidance as one of a series of documents to provide “detailed guidance” to EPA Regions 3, 4, and 5 for those Regions’ review of all surface coal mining operations under the CWA, NEPA, and the Environmental Justice Executive Order. The Detailed Guidance and all related documents are found at <http://www.epa.gov/owow/wetlands/guidance/mining.html#memo20100401>. While EPA issued the Detailed Guidance for public comment, 75 Fed. Reg. 18500, it also nevertheless stated that the Detailed Guidance is effective immediately. “We expect you to begin using this interim final guidance immediately in your review of Appalachian surface coal mining activities.” Detailed Guidance at 2. The Detailed Guidance addresses CWA permitting under Sections 402 and 404, along with NEPA review of Section 404 permits, and operational practices covered by SMCRA permitting.

1. Section 402 Permits

77. In the Detailed Guidance, EPA proclaimed that it “expects that in many, if not most, cases the available science will demonstrate that there is a reasonable potential for these [surface coal mining] discharges to cause or contribute to an excursion above numeric or narrative water quality standards, thus making water quality-based effluent limits necessary.” Detailed Guidance at 8. Such a blanket statement about the need for water quality-based limits ignores (i) the role of the delegated state regulatory authority under Section 402 and (ii) the existing protections under the CWA and its implementing regulations. Because all the states subject to the Detailed Guidance have delegated authority to issue Section 402 NPDBS permits, the states, not EPA, have the duty to determine whether any proposed discharges will cause, or have the reasonable potential to cause, or contribute to an in-stream excursion above a numeric

or narrative criteria within an applicable water quality standard. *See* 40 C.F.R. § 122.44(d).

78. The states make the “reasonable potential” determination on a case-by-case basis using site specific data and information, EPA’s blanket presumption ignored the fact that states cannot approve any discharge which would cause or contribute to an excursion in excess of a water quality standard. *See* 40 C.F.R. § 122.4(i); 40 C.F.R. § 122.44(d).

79. Under existing regulations, in writing a permit based on narrative water quality standards, states are to “[e]stablish effluent limits using a calculated numeric water quality criterion for the pollutant which the [state] demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect, the designated use,” 40 C.F.R. § 122.44(d)(1)(vi)(A). States are free to use state criteria, policies, regulations, or other relevant information in establishing these permit limits. *See id.*

80. Nonetheless, in discussing how states should derive NPDES permit effluent limits from applicable narrative water quality standards, EPA directed its Regions to a draft, not-yet-peer reviewed, EPA report entitled, “A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams,” which purports to recognize “stream-life impacts associated with conductivity.” Detailed Guidance at 11. EPA’s draft report on conductivity concluded “that genus-level impacts to the biological community occur at conductivity levels of 300 μ S/cm.” Detailed Guidance at 12. EPA stated that it has been working on developing scientific information “to support new numeric water quality values for conductivity.” Detailed Guidance at 7.

81. Even though (i) EPA’s draft report on conductivity has not yet been subjected to external peer review by the Science Advisory Board, (ii) EPA expressly provides that the report is to be used “solely for the purpose of pre-dissemination peer review” and that the report is not

an EPA “determination or policy,” and (iii) the Detailed Guidance makes no attempt to interpret particular states’ existing narrative water quality standards or the uses to which these criteria apply, the Detailed Guidance directs that the study “should be considered by Appalachian states . . . in implementing state narrative water quality standards in NPDES permits, and by Regions in . . . review of these permits,” Detailed Guidance at 12.

82. Further, EPA established a presumption that “EPA expects that the conductivity impacts of projects with predicted conductivity levels below 300 $\mu\text{S}/\text{cm}$ generally will not cause a water quality standard violation and that in-stream conductivity levels above 500 $\mu\text{S}/\text{cm}$ are likely to be associated with adverse impacts that may rise to the level of exceedances of narrative state water quality standards. If water quality modeling suggests that in-stream levels will exceed 500 $\mu\text{S}/\text{cm}$, EPA believes that a reasonable potential likely exists to cause or contribute to an excursion above applicable water quality standards Similarly, if water quality monitoring suggests that in-stream levels will exceed 300 $\mu\text{S}/\text{cm}$ but will be below 500 $\mu\text{S}/\text{cm}$, EPA should work with the permitting authority to ensure that the permit includes conditions that protect against conductivity levels exceeding 500 $\mu\text{S}/\text{cm}$ As noted above, as a general matter, EPA expects that in-stream conductivity levels above 500 $\mu\text{S}/\text{cm}$ are likely to be associated with adverse impacts to water quality.” Detailed Guidance at 12. On information and belief, these levels are, for many streams in the Appalachian region, lower than naturally-occurring background. Moreover, the draft report contains express limitations that make these levels wholly inappropriate to apply “as a general matter.” Rather, on information and belief, the effect of discharges with these levels of electrical conductivity varies greatly among the many surface waters in the regions subject to the Detailed Guidance.

83. EPA next expressed its expectation for states in their review of surface coal Mining NPDES permit applications, and specifically the analysis of compliance with narrative water quality standards that incorporate the newly expressed conductivity standard: “The state must provide adequate documentation in the permit fact sheet or statement of basis to demonstrate that it has assessed reasonable potential and, where necessary, developed effluent limits (or other permit conditions) adequate to protect all applicable water quality standards, including narrative water quality standards Where EPA concludes that the state’s explanation is not adequate, or the state fails to provide an explanation of how it has interpreted or applied its narrative water quality standards, EPA may object to the permit in accordance with the provisions of 40 C.F.R. Section 123.44(c).” Detailed Guidance at 13.

84. EPA is now utilizing the Detailed Guidance to cause indefinite delays in the Section 402 permit process for coal mining operations. EPA is informing state permitting authorities that the permit application materials submitted to EPA are “incomplete,” without further guidance on the alleged deficiency, and that EPA’s period to review and object to the proposed permit does not commence until the state submits complete information. In so doing, permits are held in indefinite abeyance while the state works to determine what information is missing from the permit application package.

85. The Detailed Guidance further concludes that state-issued general permits for NPDES discharges from surface coal mining activities “will often be inadequate,” and suggests that EPA Regional offices may demand that “permitting authorities should require individual permits in all instances.” Detailed Guidance at 15 (emphasis added). Yet, these general permits were properly promulgated as part of the state programs, and EPA cites no authority or basis to rescind its approval of these general permits.

2. Section 404 Permits

86. With respect to EPA review of proposed authorizations from the Corps for Section 404 permits, the Detailed Guidance contains a series of directives for the Regions to follow. First, EPA emphasized its “role and responsibility for ensuring that water quality standards are not exceeded because of discharges regulated under Section 404 from Appalachian surface coal mining operations.” Detailed Guidance at 18. That “responsibility” even extends to “ensuring that neither numeric nor narrative water quality standards are exceeded due to discharges of fill material even if a state has issued a water quality certification under Section 401 of the CWA,” Detailed Guidance at 18 (emphasis added). “Regions should convey their conclusions with respect to possible exceedances of water quality standards to the Corps and, if appropriate changes to the permit are not made in response to these water quality concerns, may proceed under the 404(q) MOA and/or 404(c).” Detailed Guidance at 19.

87. Just as with review of water quality impacts in the Section 402 permit process, EPA instructs the Regions to utilize the draft, not-yet-peer-reviewed report on conductivity “when examining whether a draft 404 permit is likely to result in significant degradation of waters of the U.S. . . . EPA anticipates that the conductivity impacts of projects with predicted conductivity levels below 300 $\mu\text{S}/\text{cm}$ generally will not cause a water quality standard violation or significant degradation of the aquatic ecosystem. On the other hand, EPA expects that in-stream conductivity levels above 500 $\mu\text{S}/\text{cm}$ are likely to be associated with adverse impacts that could rise to the level of significant degradation of the aquatic ecosystem.” Detailed Guidance at 22. “Projects projected to increase conductivity levels above 300 $\mu\text{S}/\text{cm}$ should include permit conditions requiring adaptive remedial action to prevent conductivity levels from rising to levels that may contribute to water quality degradation.” *Id.*

88. EPA has provided no basis to conclude that these conductivity levels will harm the uses protected by the various narrative water quality standards promulgated by the states. In some instances, natural background is higher than these levels. In other cases, because of the chemistry of a particular stream, the data accumulated in the draft report would have no application. EPA also ignores the fact that water quality standards have no place in a Section 404 permit for coal mining where the ultimate discharge from any fill areas is regulated by a Section 402 permit.

89. The Detailed Guidance also imposes several *de facto* amendments to the 404(b)(1) Guidelines and interpretive Corps guidance, including (a) requiring watershed scale (HUC 12) cumulative impact analysis “as an element of the factual determinations required by the 404(b)(1) Guidelines; and (b) denying Section 404 mitigation credit for sediment, groin, or other water control ditches required for mining projects under SMCRA and CWA Section 402 (despite the Fourth Circuit’s ruling to the contrary).

3. Operational Practices Regulated Under SMCRA

90. EPA next proffers a series of best management practices that EPA “expects” will help reduce or eliminate any increases to conductivity levels to meet narrative water quality standards. Such practices are part of the SMCRA permitting process administered and enforced by OSM and primacy states. In the Detailed Guidance, EPA rejects many of the industry’s proposed best management practices associated with the design of mining operations as “unproven in their effectiveness to protect water quality and prevent significant degradation.” Detailed Guidance at 24. In the alternative, EPA suggests that multiple fills on a project should be “sequenced,” such that the permit applicant must demonstrate compliance with water quality standards at each valley fill before construction of subsequent valley fills may commence.

Detailed Guidance at 24-25.

91. Other best management practices issues addressed in the Detailed Guidance include: (a) a presumption that high-ratio mining operations “generally do not represent the least environmentally damaging alternative,” and (b) a direction that “[p]rojects should also incorporate environmentally effective limits on the linear extent of stream impacts per ton of excess spoil produced through a robust alternatives analysis.” Detailed Guidance at 26.

4. NEPA Review of Section 404 Permits

92. Finally, the Detailed Guidance also addresses issues related to NEPA analyses performed by the Corps in conjunction with Section 404 permit decisions. Detailed Guidance at 29-30. EPA repeats earlier assertions that cumulative impact analyses should be on a watershed scale, and that mitigation for sediment, groin, or other water control ditches is inappropriate and should not be used as a basis for supporting a FONSI. In addition, EPA proffers a presumption “that projects that involve more than one mile of stream loss or more than one valley fill are likely to result in significant adverse impacts,” thus requiring an EIS. The Detailed Guidance is quick to point out that while “the decision to prepare an EIS rests with the Corps and GSM, under EPA’s Clean Air Act Section 309 authority, EPA must ‘refer’ to CEQ matters that the Administrator finds ‘are unsatisfactory from the standpoint of public health or welfare or environmental quality.’” Detailed Guidance at 30.

93. Concurrent with the Detailed Guidance, EPA released a Guidance Summary Memorandum to Regions 3, 4, and 5 that made EPA’s expectations clear with respect to Appalachian surface coal mining: “[W]e expect that, generally, it will be easier for projects with no or few valley fills to demonstrate that they comply with the requirements of the CWA and the 404(b)(1) Guidelines. Conversely, projects with multiple valley fills will generally raise

questions about their compliance with CWA requirements and may require permit objection under 402 or elevation and possible veto under 404.” Guidance Summary at 4. Administrator Jackson stated during the press conference releasing the Detailed Guidance that, “You’re talking about no, or very few, valley fills that are going to meet this standard.” *See* http://www.washingtonpost.com/wp_dyn/content/article/2010/04/01/AR2010040102312.html.

94. While seeking public comment on the Detailed Guidance and submitting the non-peer-reviewed conductivity study to the Science Advisory Board for review, EPA is applying the Detailed Guidance, its various presumptions, and the conductivity standard to pending coal mining permit applications as part of the EC Process. Implementation of the Detailed Guidance is yielding further unreasonable delay and severe irreparable harm for Plaintiffs.

CLAIMS FOR RELIEF

COUNT I

The EC Process constitutes a legislative rule that was not properly promulgated under the AM

95. Plaintiffs incorporate by reference the allegations contained in the preceding paragraphs of this Complaint, as though fully set forth below.

96. The EC Process constrains EPA’s and the Corps’ decision-making process in a way that substantially affects agency decisions. In addition, the EC Process amounts to a substantive revision of the 33 C.F.R. Part 325 regulations. Therefore, the EC Process is a substantive and legislative rule and should not have been issued absent compliance with the notice-and-comment rulemaking requirements of APA § 553.

97. Accordingly, Defendants have violated APA § 553 through the issuance of the EC Process, which is arbitrary, capricious, an abuse of discretion, otherwise not in accordance with law, and issued without observance of procedure required by law.

COUNT II

The MCIR Assessment constitutes a legislative rule that was not properly promulgated under the APA

98. Plaintiffs incorporate by reference the allegations contained in the preceding paragraphs of this Complaint, as though fully set forth below.

99. EPA's use of the MCIR Assessment model effectively curtails the agency's discretion and has present binding effect. Therefore, the MCIR Assessment is a substantive and legislative rule and should not have been issued absent compliance with the notice-and-comment rulemaking requirements of APA § 553.

100. Accordingly, Defendants have violated APA § 553 through the issuance of the MCIR Assessment, which is arbitrary, capricious, an abuse of discretion, otherwise not in accordance with law, and issued without observance of procedure required by law.

COUNT III

The Detailed Guidance constitutes a legislative rule that was not properly promulgated under the APA

101. Plaintiffs incorporate by reference the allegations contained in the preceding paragraphs of this Complaint, as though fully set forth below.

102. The Detailed Guidance is immediately effective, constrains the agency's discretion, and has a substantial effect on agency decisions. Further, the Detailed Guidance amounts to a substantive revision and unlawful amendment of the 404(b)(1) Guidelines, codified at 40 C.F.R. Part 230, water quality standards regulations, codified at 40 C.F.R. Part 131, and permitting regulations applicable to the states, codified at 40 C.F.R. Parts 122, 125. Therefore, the Detailed Guidance is a substantive and legislative rule and should not have been issued absent compliance with the notice-and-comment rulemaking requirements of APA § 553.

103. Accordingly, Defendants have violated APA § 553 through the issuance of the Detailed Guidance, which is arbitrary, capricious, an abuse of discretion, otherwise not in accordance with law, and issued without observance of procedure required by law.

COUNT IV

The EC Process is contrary to the Clean Water Act

104. Plaintiffs incorporate by reference the allegations contained in the preceding paragraphs of this Complaint, as though fully set forth below.

105. CWA Section 404(a) grants authority to the Corps to issue permits for the discharge of dredged and fill material. *See* 33 U.S.C. § 1344(a). In addition, the Corps' regulations specify that an applicant has a right to a "full public interest review and independent decision by the division or division engineer." 30 C.F.R. § 325.2(e)(3) ("the applicant's rights to . . . an independent decision by the district of division engineer must be strictly observed").

106. The EC Process was not issued pursuant to any statutory direction or authorization.

107. The EC Process authorizes EPA to supplant the Corps at the beginning of the Section 404 permitting process and control a new permit review process that falls wholly outside the codified regulatory process. Accordingly, the EC Process violates the CWA's delegation of authority to the Corps as the permitting authority and disrupts the division of authority Congress crafted between the Corps and EPA in Section 404 permitting decisions. *See* 33 U.S.C. § 1344(a)-(b). Further, the EC Process violates 30 C.F.R. § 325.2(e)'s guarantee of an independent Corps permitting decision.

108. In addition, the EC Process is unlawful in that it violates the CWA's directive to "minimize, to the maximum extent practicable, duplication, needless paperwork, and delays in

the issuance of permits under this section,” in addition to thwarting Congress’s directive for a permitting decision within 90 days after the permit is published for public notice and comment (which must occur within 15 days after an application is complete, 33 U.S.C. § 1344(a)). 33 U.S.C. § 1344(q).

109. For the above reasons, the EC Process is unlawful and should be set aside pursuant to 5 U.S.C. § 706(2).

COUNT V

The MCIR Assessment is contrary to the Clean Water Act

110. Plaintiffs incorporate by reference the allegations contained in the preceding paragraphs of this Complaint, as though fully set forth below.

111. CWA Section 404(b)(1) directs EPA to develop guidelines for the specification of disposal sites for dredged and fill material, and such guidelines are to be applied by the Corps in evaluating permit applications. *See* 33 U.S.C. § 1344(b). Outside of the Section 404(e) process and the Section 404(a) public notice and comment process, EPA lacks statutory authority to apply the 404(b)(1) Guidelines during the Section 404 permitting process.

112. EPA contends that the MCIR Assessment is based upon the 404(b)(1) Guidelines, and EPA has used the MCIR Assessment to screen and identify Section 404 permit applications for the EC Process. By utilizing the MCIR Assessment to apply the 404(b)(1) Guidelines and direct the regulatory process for Section 404 permit applications, EPA is exceeding its statutory authority under the CWA. Authority to apply the 404(b)(1) Guidelines at the onset of the Section 404 permitting process rests solely with the Corps. Accordingly, the MCIR Assessment is contrary to law and should be set aside pursuant to 5 U.S.C. § 706(2).

COUNT VI

The Detailed Guidance is contrary to the Clean Water Act Unlawful Development of Water Quality Standard

113. Plaintiffs incorporate by reference the allegations contained in the preceding paragraphs of this Complaint, as though fully set forth below.

114. The Clean Water Act allocates authority for development of water quality standards to the states. Under Section 303(e) of the statute, states perform the function of establishing, reviewing and revising water quality standards. *See* 33 U.S.C. § 1313(c).

115. EPA echoed the statutory provision in its regulation prescribing that, “[s]tates ... are responsible for reviewing, establishing, and revising water quality standards.” 40 C.F.R. § 131.4. In construing the statute and its own regulation, EPA has consistently taken the position that it does not perform a federal rulemaking to establish water quality standards and that, except under specified circumstances for particular waters, only the states perform the functions necessary to establish the standards.

116. Yet, in its Detailed Guidance, EPA has pronounced that “in-stream conductivity levels above 500 μ S/cm are likely to be associated with adverse impacts to water quality,” Detailed Guidance at 12, and directed the EPA Regions to “work with the permitting authority to ensure that the permit includes conditions that protect against conductivity levels exceeding 500 μ S/cm.” *Id.* EPA has gone so far as to direct its Regional offices to “object to issuance of [a] proposed permit” if it does not satisfy the requirements of the Act “as noted” in the Detailed Guidance. Detailed Guidance at 8.

117. Thus, EPA’s 500 μ S/cm amounts to a water quality standard that the Agency is imposing on the states and permittees. Unilateral imposition of its own water quality standard is contrary both to the Clean Water Act and to EPA’s regulatory interpretation of the statute.

118. Because the water quality standard is unlawful, EPA lacks authority to direct regulatory authorities to implement the standard through Section 402 or 404 permits.

Unlawful Conflict with Regulations Codified Pursuant to Section 404(b)(1)

119. The Corps and EPA issued joint regulations, codified at 40 C.F.R. Part 230, Subparts H and J, governing mitigation for activities authorized by permits issued by the Corps pursuant to Section 404. In addition, the Corps has issued lawful guidance interpreting its regulations.

120. The Detailed Guidance (at 23-24) addresses mitigation issues in a way that conflicts with codified regulations and existing guidance, *e.g.* EPA states that “No Section 404 compensation credit should be given for sediment, groin, or other water control ditches required for mining projects.”

121. In addition, the Detailed Guidance seeks to impose water quality based effluent limits in Section 404 permits, which is inconsistent with the 404(b)(1) Guidelines as applied to coal mining activity that controls any effluent discharges from Section 404 fill areas through sediment ponds that discharge pursuant to Section 402 permits. EPA lacks authority to demand, and the Corps lacks authority to impose, such water quality limits in Section 404 permits for coal mining.

122. Accordingly, the Detailed Guidance is unlawful and should be set aside pursuant to 5 U.S.C. § 706(2).

COUNT VII

The conductivity water quality standard is arbitrary and capricious under the APA in that it is based upon unlawful presumptions

123. Plaintiffs incorporate by reference the allegations contained in the preceding paragraphs of this Complaint, as though fully set forth below.

124. The Detailed Guidance assumes that “in-stream conductivity levels above 500 μ S/cm are likely to be associated with adverse impacts to water quality,” and that such levels are likely caused or contributed to by surface coal mining operations where such levels appear in Appalachian streams. Detailed Guidance at 12-13. EPA relies on scientific literature that has not yet been peer reviewed as the basis for these presumptions and on a study that it has specifically disclaimed as not constituting an EPA determination or policy.

125. The Detailed Guidance dictates that EPA utilize these presumptions to require from state regulators reasonable potential analyses and the development of permit conditions that enforce the conductivity standard unless the state has site-specific data that supports an alternative approach. Detailed Guidance at 11-12.

126. Since the issuance of the Detailed Guidance, EPA is applying, and demanding adherence to, the conductivity standard in its review of Section 404 permit applications.

127. EPA makes no attempt to cite specific state narrative water quality standards that it claims will be violated at these levels. Because it has not even identified the narrative standards at issue, the Agency has no record that would link its levels to these unspecified narrative water quality standards. Finally, EPA can claim no basis for applying these numeric limits to a very large number of unnamed streams across six states with varying natural constituents, differing flows, and varying chemistry.

128. EPA has created impermissible and irrational administrative presumptions through the conductivity standard, in that there is no “sound or rational connection between the proved and inferred facts.” *See Sec’y of Labor v. Keystone Coal Mining Corp.*, 151 F.3d 1096, 1100 (D.C. Cir, 1998). Accordingly, the conductivity standard is unlawful and should be set aside under 5 U.S.C. § 706(2).

COUNT VIII

The Detailed Guidance is contrary to the National Environmental Policy Act

129. Plaintiffs incorporate by reference the allegations contained in the preceding paragraphs of this Complaint, as though fully set forth below.

130. To determine whether a matter is sufficiently “significant” that it requires an EIS, an agency must assess the environmental impacts by their “context” and “intensity.” *See* 40 C.F.R. § 1508.27. The regulatory scheme prescribes this assessment on a case-by-case basis.

131. The Corps is the lead agency in preparing NEPA documents related to Section 404 permits for coal mining operations. EPA’s only role is to comment and, if an EIS is prepared, to review the EIS for sufficiency. Thus, EPA is not empowered to decide by “guidance” what may be a “significant” impact requiring preparation of an EIS.

132. EPA nonetheless directs that “projects that involve more than one mile of stream loss or more than one valley fill are likely to result in significant adverse impacts.” Detailed Guidance at 30. This presumption is well outside NEPA regulations and beyond EPA’s authority.

133. Similarly, under longstanding practices and regulations, the Corps decides, based upon conditions of each mine, whether particular efforts constitute mitigation that will permit it to issue a FONSI. Yet, EPA announces in its Detailed Guidance that “no mitigation credit should be given for sediment, groin, or other water control ditches.” Detailed Guidance at 24. In addition, EPA asserts that “mitigation measures that rely on establishing or re-establishing streams, rather than rehabilitating or enhancing existing streams, . . . should generally not be used to support a FONSI.” *Id.* at 30.

134. EPA purports to establish NEPA procedures applicable to coal mining in the

Detailed Guidance. Yet, such “procedures shall be adopted only *after* an opportunity for public review and after review by the Council [on Environmental Quality] for conformity with [NEPA] and [40C.F.R. § § Part 1500 — 1599].” 40 C.F.R. § 1507.3. The procedures in the Detailed Guidance were adopted without prior public review and EPA provides no record of having submitted the procedures for review by CEQ.

135. Nor may EPA suggest that this is only a suggestion without consequences. In the paragraph following its opinions about what constitutes a “significant” impact from yet-to-be announced mines, while acknowledging that it is the Corps who decides whether to prepare EISs, the Agency asserts that it has authority to find NEPA compliance “unsatisfactory” and the Detailed Guidance recounts EPA’s ability to “refer” matters to the Council on Environmental Quality. Detailed Guidance at 30.

136. Accordingly, the Detailed Guidance violates NEPA and should be set aside under 5 U.S.C. § 706(2).

COUNT IX

The Detailed Guidance is contrary to the Surface Mining Control and Reclamation Act

137. Plaintiffs incorporate by reference the allegations contained in the preceding paragraphs of this Complaint, as though fully set forth below.

138. SMCRA’s structure of cooperative federalism grants “exclusive jurisdiction over the regulation of surface coal mining and reclamation operations” to those states with regulatory programs approved by OSM, 30 U.S.C. § 1253(a), subject to the continuing validity of various federal laws, including the CWA. *See* 30 U.S.C. § 1292.

139. The recitation of best management practices in the Detailed Guidance, along with EPA’s rejection of existing practices as “unproven in their effectiveness,” (Detailed Guidance at 24) have no basis in any of the federal laws listed in 30 U.S.C. § 1292. Specifically, they are

not lawful amendments to the 404(b)(1) Guidelines under the CWA, nor are they cognizable under any other federal law.

140. Therefore, EPA's rejection of existing mining management practices and preference for additional practices (Detailed Guidance at 24-27) that have never been evaluated by OSM or primacy states, nor subject to public notice and comment prior to implementation, invade and disrupt the primary regulatory authority Congress granted to OSM and primacy states under SMCRA.

141. Specifically, EPA establishes a permitting scheme that "sequences" multiple valley fills on a project (Detailed Guidance at 24-25). Requiring authorization for only one valley fill at a time is *ultra vires* under SMCRA and beyond the scope of EPA's delegated authority under any federal law. EPA's permitting authorization scheme is within the sole jurisdiction of OSM and primacy states, and indeed, such issues are currently under consideration by OSM in a pending SMCRA rulemaking regarding stream protection, EPA has no jurisdiction or authority to predetermine OSM's regulatory decisions.

COUNT X

The EC Process, MCIR Assessment, and the Detailed Guidance are arbitrary, capricious, an abuse of discretion, otherwise not in accordance with law, or in excess of statutory jurisdiction, authority, or limitations

142. Plaintiffs incorporate by reference the allegations contained in the preceding paragraphs of this Complaint, as though fully set forth below.

143. To the extent not specifically alleged above, the EC Process, MCIR Assessment, and the Detailed Guidance are arbitrary, capricious, an abuse of discretion, otherwise not in accordance with law, or in excess of statutory jurisdiction, authority, or limitation in violation of 5 U.S.C. § 706, for numerous reasons, including: (a) conflict with existing codified regulations and/or unlawful or unreasonable interpretations of codified regulations, including 33 C.F.R. Part

325 and 40 C.F.R. Part 230; (b) articulation of impermissible presumptions that lack a reasonably articulated basis, *e.g.* presumption that high-ratio mining operations do not represent the least damaging alternative; presumption that general permits are inadequate; and presumption that an EIS is required for projects that involve more than one mile of stream loss or more than one valley fill; (c) expressing authority to overrule CWA Section 401 state water quality certifications; (d) lacking substantial scientific evidentiary support for the conductivity standard and other findings on the impacts of surface coal mining operations; and (e) creating unreasonable delay in the review and processing of Section 404 permits.

COUNT XI

The EC Process, MCIR Assessment, and Detailed Guidance are *ultra vires*.

144. Plaintiffs incorporate by reference the allegations contained in the preceding paragraphs of this Complaint, as though fully set forth below.

145. The EC Process, MCIR Assessment, and Detailed Guidance are in excess of delegated statutory authority under the CWA and other federal law and therefore are *ultra vires*, for multiple reasons, including *inter alia*, that EPA lacks authority to (a) direct the course of the Section 404 permit review process through the application of the 404(b)(1) Guidelines; (b) impose unreasonable delays on the Section 404 permit review process; (c) undermine the independent decision-making of the Corps, the statutory permitting authority; (d) develop and apply a water quality standard outside of the CWA Section 303 process; (e) develop and impose presumptions that affect NEPA and other statutory review; and (f) apply and enforce the 404(b)(1) Guidelines outside of the interagency comment or Section 404(c) process. Accordingly, and irrespective of federal court jurisdiction under any other statute, the EC Process, MCIR Assessment, and Detailed Guidance are unlawful and should be set aside as *ultra*

vires.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs respectfully request this Court enter judgment in their favor and against Defendants on Counts I through XI and grant the following declaratory, injunctive and other relief:

- a. Declare that EPA and the Corps violated the APA in issuing and implementing the EC Process without following APA procedures;
- b. Declare that EPA violated the APA in issuing and implementing the MCIR Assessment and the Detailed Guidance without following APA procedures;
- c. Declare that the EC Process, MCIR Assessment, and Detailed Guidance are contrary to federal law, including the Clean Water Act, NEPA, and SMCRA, or are otherwise arbitrary, capricious, an abuse of discretion, in excess of statutory jurisdiction, authority, or limitations, or *ultra vires*;
- d. Declare that EPA has exceeded its statutory role in the Section 404 permitting process, and is imposing unreasonable delay on the Section 404 permitting process, through the issuance and implementation of the EC Process, MCIR Assessment, and Detailed Guidance;
- e. Declare that EPA is imposing unreasonable delay on the Section 402 permitting process through the issuance of the Detailed Guidance;
- f. Vacate the EC Process, MCIR Assessment, and Detailed Guidance;
- g. Enjoin and restrain Defendants, their agents, employees, successors, and all persons acting in concert or participating with them from enforcing, applying, or implementing (or requiring others to enforce, apply, or implement) the EC

Process, MCIR Assessment, and Detailed Guidance;

- h. Order the Corps to process all pending Section 404 permit applications pursuant to the codified regulatory process and timelines;
- i. Award Plaintiffs their attorney's fees and costs reasonably incurred and expended in the necessary prosecution of this Complaint; and
- j. Grant Plaintiffs such other relief as may be necessary and appropriate or as the Court deems just and proper.

PLAINTIFFS DEMAND A TRIAL BY JURY ON ALL COUNTS SO TRIABLE.

Respectfully submitted,

/s/ F. William Hardt, III

Paul E. Sullivan

Barry Hunter

F. William Hardt III

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**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF KENTUCKY
SOUTHERN DIVISION AT LONDON**

GORMAN COMPANY, LLC , KYCOGA)
COMPANY, LLC, BLACK GOLD SALES, INC.,)
KENTUCKY UNION COMPANY AND)
HAZARD COAL CORPORATION)

PLAINTIFFS,)

v.)

LISA JACKSON, UNITED STATES)
ENVIRONMENTAL PROTECTION AGENCY,)
JOHN MCHUGH, LT. GENERAL ROBERT L.)
VAN ANTWERP, and UNITED STATES)
ARMY CORPS OF ENGINEER)

DEFENDANTS.)

CIVIL ACTION NO. _____

PLAINTIFFS' FRCP RULE 7.1 CORPORATE DISCLOSURE STATEMENT

Plaintiffs, Gorman Company, LLC (“Gorman”), Kycoga Company, LLC (“Kycoga”), Black Gold Sales, Inc. (“Black Gold”), Kentucky Union Company (“Kentucky Union”), and Hazard Coal Corporation (“Hazard Coal”) (collectively, “Plaintiffs”) by counsel, for their disclosure statement pursuant to Fed.R.Civ.P. 7.1, state as follows:

1. Gorman Company, LLC has no parent corporation, and no publicly held corporation owns 10% or more of Gorman’s membership units.
2. Kycoga Company, LLC has no parent corporation, and no publicly held corporation owns 10% or more of Kycoga’s membership units.
3. Black Gold Sales, Inc. has no parent corporation, and no publicly held corporation owns 10% or more of Black Gold’s shares.

4. Kentucky Union Company has no parent corporation, and no publicly held corporation owns 10% or more of Kentucky Union's shares.

5. Hazard Coal Corporation has no parent corporation, and no publicly held corporation owns 10% or more of Hazard Coal's shares.

Respectfully submitted,

/s/F. William Hardt III

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November 3, 2010

Dear Senator Carper:

Thank you for your letter of October 6, 2010 requesting the Institute of Clean Air Companies' (ICAC) insights and perspective regarding the questions of labor availability and the capacity of the electric power industry to install air pollution control systems on a timely schedule and the types of jobs these installations create. As you recognize in your letter, this is not a new concern. In fact, industry stakeholders raised this exact concern when EPA proposed the NOx SIP Call rule in 1998 and, again, when EPA proposed the Clean Air Interstate Rule (CAIR) in 2005. Notably however, these were concerns raised primarily in advance of the finalization of rules, and in both cases proved unfounded as the stationary source air pollution control and measurement (APC) industry satisfied demand for labor and other resources placed upon us and related industries. These concerns and doubts are being raised again; however, based on a history of successes, we are now even more resolute that labor availability will in no way constrain the industry's ability to fully and timely comply with the proposed interstate Transport Rule and upcoming utility MACT rules. Contrary to any concerns or rhetoric pointing to labor shortages, we would hope that efforts that clean the air also put Americans back to work. We appreciate your efforts to more fully understand this issue and we offer the following responses to the specific questions you raise:

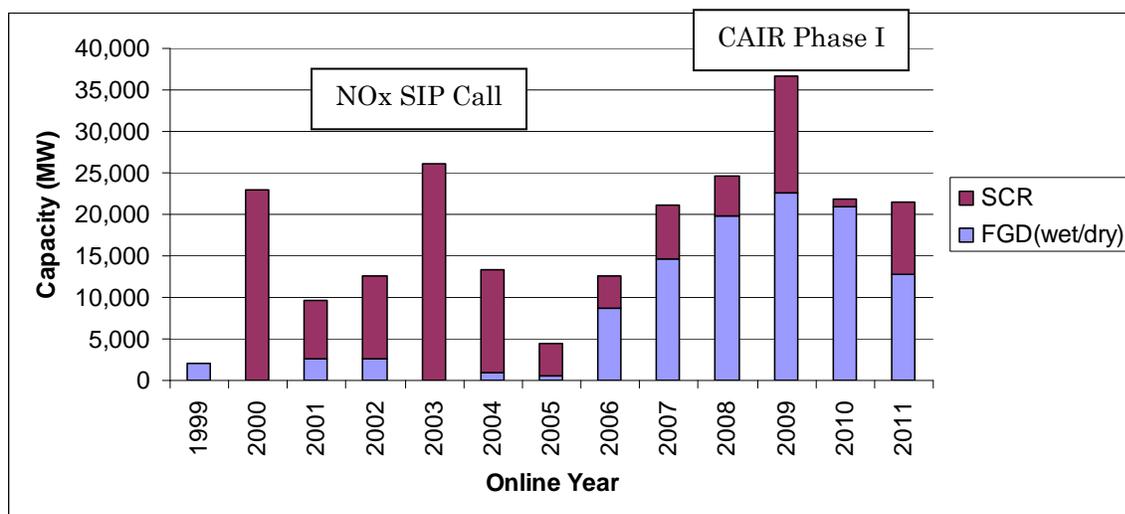
- The APC Industry is able to meet future demands for emission control technology due to our overwhelming experience in meeting requirements for selective catalytic reduction (SCRs) and flue gas desulfurization (FGDs) under the NOx SIP Call and CAIR.
- Less resource and time-intensive technologies are available to be quickly deployed offering the electric generating industry the needed flexibility to comply with the proposed Clean Air Transport Rule and the upcoming utility MACT. For example direct sorbent injection (DSI) and dry scrubbing technology installation times are approximately 12 and 24 months, respectively.
- The design and construction of NOx, SO₂ and HAPs control technologies require engineers, skilled craft labor such as boilermakers and creates upstream and downstream employment and economic benefits.
- We estimate that over the past seven years, the implementation of CAIR Phase 1 resulted in 200,000 jobs in the APC industry.

Is labor availability likely to constrain the industry as it seeks to comply with the interstate transport and utility MACT rule?

The simple answer is that labor availability has never jeopardized overall industry compliance requirements, nor is there any reason to assume that it would prevent the power generation industry from effectively complying in a timely way with requirements. As an industry, we respond to whatever demand for products and services is placed upon us by affected industries complying with requirements. The corollary to this response is that the APC industry has proven, particularly in recent years, the dynamic nature of ours and related industries in meeting demand from the electric power generating industry. This has been demonstrated by repeatedly satisfying rapid and substantial increases in demand for services and products, working effectively with end-users to efficiently deploy resources to meet compliance deadlines, innovating then bringing those innovations quickly to market, and relying on inherent competitiveness within the industry to bring an ever broader range of economically reasonable solutions to our customers. The variable nature of our industry, including supporting and related industries, now finds us at a point where demand for products and services is low, so we are well-positioned to meet any new demand.

We are extremely confident in the ability of our industry to deliver and satisfy, as we have so successfully in the past, the labor, materials and resources needed to meet the demand. Labor availability did not constrain the electric power industry's ability to comply with CAIR and the NOx SIP Call. We based this observation on (1) recent and past decade of industry installation experience, and (2) the extent of controls already installed at existing coal-fired power plants. In addition, there are less capital intensive control technology options available to the industry that can be implemented in a shorter period of time. In these current market conditions the APC industry is in a period of underutilization as compared to the NOx SIP Call and CAIR Phase I years.

Figure 1. Cumulative SCR and FGD Installations by Year



Source: US EPA NEEDs database 4.10 v

Many of the technologies that will be needed to be installed to comply with the requirements of the proposed interstate Transport Rule and the as yet-to-be-proposed utility MACT rule are likely to be the same technologies installed in recent years for other successful and more labor-intensive programs. In fact, over the past decade (as illustrated in Figure 1) our industry has already successfully met the challenge of installing what were substantially new technologies on a significant portion of the electric power industry. These technologies have been refined and are readily available, as are the resources needed to complete their installation. Today more than one-half of the coal-fired electric generation fleet currently operates reliably on some combination of these technologies.

The trend in recent years has been to install the largest and most effective control systems such as FGD and SCR systems, which are also some of the most labor-intensive and time-consuming technologies available. The design and construction of a large ‘wet’ scrubber system may take 36 months to complete. Wet scrubbers reduce SO₂ emissions by more than 98 percent, and their construction and installation employ several hundred workers. Currently, more than one-half of the coal-fired electric generation capacity of the U.S. operates with FGD systems, with most having been installed over the past decade. We anticipate that FGD control installations from implementing the proposed Transport Rule will be radically less than our recent installation experience under CAIR Phase I. EPA projects that about 14 gigawatts (GW) of coal-fired generating capacity will be retrofitted with scrubbers and less than 1 GW with SCR controls by 2014 to comply with the recently proposed interstate Transport Rule. This is substantially less than what was accomplished under CAIR.

Going forward, ICAC expects a wide range of technologies will be available to provide flexibility for utility compliance strategies. In particular, we expect greater use of both DSI and dry scrubbing technologies, such as circulating dry scrubbers (CDS) and spray dryer absorber (SDA) technology, due to future backend water and disposal requirements. The added advantages of using these technologies are fewer resources required and shorter installation times – 12 months for DSI and 24 months for a dry scrubber. Moreover, the next round of EGU control installations will likely be on smaller coal-fired units, and DSI and dry scrubbing are well-suited to smaller footprints and high-sulfur bituminous coal applications. However, exact technology controls are chosen by electric power generating companies based on final requirements and in a context of multiple market variables.

Recent Industry Experience

The electric power sector has a demonstrated ability to install a large number of complex pollution control systems in a relatively short period of time, while coordinating outage schedules to maintain electric system reliability. Specifically, the industry’s recent experience with the CAIR and the NO_x SIP Call clearly demonstrates that the industry has more than sufficient capacity to comply with the proposed interstate Transport Rule and upcoming utility MACT rules.

The majority of coal plants have already installed NO_x and SO₂ controls. Of the 310 GW of coal capacity in the United States, 170 GW have installed FGD systems and another 55 GW have FGD controls planned. As a result, roughly two-thirds of the existing coal fleet will soon be

retrofit with FGD controls. Additionally, about one-half of U.S. coal capacity has installed or soon will be retrofit with advanced NO_x controls. Many companies have also installed or optimized existing control systems for mercury reductions in response to state regulations, giving them a jump start on a future utility MACT rule. In the absence of a federal standard, almost 20 states have adopted mercury regulations for coal-fired power plants over the past several years.

Clean Air Interstate Rule. The Clean Air Interstate Rule (CAIR), limiting NO_x and SO₂ emissions in the Eastern U.S., created substantial demand for SCR and FGD systems. Between 2008 and 2010, coal-fired power plants added approximately 60 GW of FGD controls and almost 20 GW of SCR controls with a total of 80 GW of FGD controls installed under CAIR Phase 1. CAIR created unprecedented high demand for scrubber components and, lead times on key components, including large recycle pumps, motors, fans, chimney components and construction. Utilities managing large, multiple-scrubber programs, also used the compliance flexibility in the rule to stage and optimize use of personnel and other resources over longer periods than would have been needed were there just one scrubber. It is notable to point out that in a recently presented paper (*Implementation Strategies for Southern Company FGD Projects*; Wall, Healy & Huggins; Power Plant Pollutant Control “Mega” Symposium, September 2010), the Southern Company authors noted that company-wide planning for FGD installations started in 2003, while the CAIR rule was not final until 2005.

Labor limitations are normally cited by the utility industry as the chief limiting factor in undertaking clean air retrofits, and boilermakers, in particular, are cited as the major source of concern because of their specialized skills. Other craft labor, such as iron and steel workers and carpenters, can be drawn from the broader construction industry.

Prior to the implementation of CAIR, EPA and industry stakeholders, such as the Utility Air Regulatory Group, assumed that skilled labor would limit the industry’s ability to install air pollution control equipment. However, based on a retrospective review of actual experience by James Staudt, Ph.D., CFA, it was determined that EPA and industry dramatically underestimated the ability of the air pollution control industry to support the utility industry in responding to CAIR¹. According to Staudt:

“The assumptions regarding the availability of labor were demonstrated in this White Paper to be too limiting and, by imposing a “hard cap” on labor availability, did not take into account the dynamic nature of U.S. labor markets, which US EPA had acknowledged in the past. Also, assumptions by US EPA and the representatives of the utility industry regarding the timing of orders relative to the finalization of the CAIR proved to be incorrect. As a result, both US EPA and representatives of the utility industry underestimated the ability of the [air pollution control] industry to support the utility industry in its response to the CAIR.”

Staudt offers several reasons for why EPA and industry underestimated the capabilities of the labor market: (1) boilermakers will work overtime during periods of high demand; (2)

¹ “Availability of Resources for Clean Air Projects”, James Staudt PH.D., CFA, Andover Technology Partners, October 2010

boilermakers frequently travel to different locations for work, supplementing local available labor; (3) boilermakers work in fields other than power, such as refining/petrochemical, shipbuilding, metals industries and other construction trades, and workers can shift industry sectors with appropriate training; and (4) new workers will enter the field between 1999 and 2001 - for example, in advance of the NO_x SIP Call, boilermakers increased their ranks by 35 percent mostly by adding new members.

NO_x SIP Call. Between 2001 and 2005, the electric industry successfully installed more than 96 GW of SCR systems in response to the NO_x SIP call thus adding NO_x controls to roughly one-third of the U.S. coal fleet. During this same time period, the industry was simultaneously adding a record amount of new generating capacity. Between 2001 and 2004, the electric industry built more than 180 GW of new generating capacity, including natural gas combined cycle power plants, coal-fired power plants, and renewable energy facilities.

Alternative Control Options

Much of our discussion has focused on scrubbers and SCR systems that may be used for compliance with the proposed interstate Transport Rule and upcoming utility MACT rule. These technologies may require longer installation times, however, there are other less resource and labor-intensive alternatives that will also be used for compliance. For example, DSI is a technology that reduces SO₂ through injection of trona, sodium bicarbonate or hydrated lime upstream of a particulate control device. DSI does not generally provide the high rates of SO₂ control achieved with a scrubber, but the technology can achieve significant levels of control and can be implemented very quickly—typically within one year. DSI and other dry scrubbing systems also are effective in reducing some hazardous air pollutants that would be controlled under MACT, such as hydrochloric acid (HCl). These systems are likely to preferentially reduce HCl in the flue gas. With regard to NO_x control, selective non-catalytic reduction (SNCR) is a widely used technology that can also be implemented in under a year. The levels of NO_x control are less than what can be achieved with SCR, but the technology can be installed quickly with fewer labor resources. Again, industry choices prevail in complying with requirements, and there are now approximately 18 GW of generation with SNCR NO_x controls.

Even if the upcoming utility MACT were to require the level of control achieved by wet scrubbers, it is unlikely that this technology would then be applied to all of the remaining unscrubbed fleet. We can see that the already installed pollution control systems, along with potential coal plant retirements, will change the future demand for equipment orders. When anticipating outcomes of the yet to be proposed utility MACT, it is important to recognize that wet scrubbers are placed into service to substantially eliminate SO₂ emissions, while the hazardous air pollutants may rely on a different set of less labor intensive technologies. One observation, is that the demand for large equipment orders on the scale of wet scrubbers, may diminish significantly for the near future when driven by the transport rule and utility MACT; and be largely supplanted by alternative technologies that demand less labor and shorter installation time. Historically, affected industry will comply with requirements by utilizing a suite of reasonably economic technology solutions.

It may also be possible to improve the scrubber performance of many older scrubbers that were installed in the 1970's and 1980's. For example, limestone forced oxidation wet scrubber system upgrades at the Vectren Culley Station Units 2 & 3, E.On's Trimble County Unit 1, and Michigan South Central Power's Endicott Station resulted in increased removal efficiencies in the range of 98 percent. Upgrades such as these can also be implemented quickly and at lower cost versus the installation of a new scrubber.

Preserving these compliance alternatives will require that EPA allow a degree of compliance flexibility in its regulatory design. For example, EPA has proposed a hybrid cap-and-trade approach under the proposed interstate Transport Rule that would allow companies to take advantage of these alternative control strategies. In addition, the Clean Air Act MACT program allows a state-granted one year compliance extension, if needed, to complete installation of controls.

What types of engineering and construction skills are required to design and construct NOx, SO2, and HAPs controls?

This is an extremely relevant question, such that dollars spent on air pollution control not only result in avoided health costs including avoided premature mortality, but these same dollars are plowed back into the U.S. economy as good and green jobs. Adding pollution control equipment to existing power plants requires engineers to design the systems and specialized construction labor, particularly boilermakers, to build and install the equipment. When operational, these control systems rely on a continuous supply of manufactured and processed reagents resulting in jobs in related industries. FGD and SCR systems require: (1) construction materials, such as steel plate, alloy steel, fabricated steel components, structural steel, and concrete; (2) engineered equipment and specialty materials, such as slurry pumps, fans, motors and catalyst; and (3) reagents, especially limestone and ammonia. These requirements are examples of direct and indirect employment opportunities resulting from the environmental drives for new and retrofitted air pollution control systems.

Looking back over the past seven years as industry installed SCR and FGD controls in readiness for the CAIR Phase I requirements, we estimate that this work required approximately 200,000 person-year jobs in direct and indirect labor. Specifically, a typical turnkey installation of a 500 MW scrubber is estimated to employ approximately 200 people, with about 80 percent dedicated to construction and 20 percent for engineering and project management². The installation of SCR controls creates a similar number of jobs over a shorter time period and employs a greater number of boilermakers. As we near the end of installing this latest phase of beneficial control projects, these workers are readily available and trained to continue this level of activity.

Boilermakers are an important trade in terms of the installation of pollution control equipment. It is a specialized trade, serving the electric power, refining/petrochemical, shipbuilding, and metals industries, and boilermaker supply, represented by both union and non-union labor, is

²*Engineering and Economic Factors Affecting Installation of Control Technologies for Multipollutant Strategies*; U.S. EPA; October 2002

dynamic in responding to demand. Other crafts can be and have been drawn from the broader construction labor market.

We are not aware that engineering labor has ever been raised as an issue that might limit the industry's ability to install air pollution control equipment. There are numerous suppliers of air pollution control equipment. If one supplier becomes busy, there are several other options. Also, companies that are building multiple scrubbers will often adopt standardized equipment designs, reducing the need for engineering support, as supported by Southern Company's experience referenced above.

In addition to the amplified employment demands of major clean air initiatives such as CAIR and the NOx SIP Call, our industry provides a continuous and enduring stream of good and green jobs related to the manufacturing, installation and servicing of air pollution control and measurement technologies.

If labor is in short supply among any of these trades are there actions that we should be taking today in order to ensure that we have the skilled labor needed to comply with the Clean Air Act?

We are extremely confident in the ability of the industry to deliver and satisfy, as we have so successfully in the past, the labor, materials and resources needed to meet the demand. While we do not believe that skilled labor will be in short supply, proactive steps to provide more clarity sooner to industry on the full suite of requirements for air, water, and waste regulations that they are facing, will in turn provide the needed investments and assist our industry in meeting demand. EPA's efforts to move forward expeditiously with the proposed interstate Transport Rule and the upcoming utility MACT rules will be helpful in this regard. We believe early and continuous installations are needed to promote job security in ours and other industries, as well as ensure more efficient application of resources to meet longer term challenges. As discussed throughout our response, labor availability has not and is not an impediment to industry compliance, and we are already at a high level of industry readiness. In closing, ICAC shares your enthusiasm that now is the time "to put American workers back on the job of modernizing our electric generating fleet" and give America the clean healthy air they deserve.

Sincerely Yours,

A handwritten signature in blue ink, appearing to read "David C. Foerter". The signature is fluid and cursive, with a large initial "D" and "F".

David C. Foerter, ICAC Executive Director

United States Senate

WASHINGTON, DC 20510-0803
October 6, 2010

David C. Foerter
Executive Director
Institute of Clean Air Companies
1220 N. Fillmore Street, Suite 410
Arlington, VA 22201

Dear Mr. Foerter,

As you know, the U.S. Environmental Protection Agency (EPA) has proposed regulations to limit electric sector nitrogen oxide (NO_x) and sulfur dioxide (SO₂) emissions in the Eastern U.S. and will soon be proposing regulations to limit hazardous air pollutant (HAP) emissions from coal- and oil-fired power plants. These regulations are vital for protecting public health and the environment. The proposed transport rule alone is projected to yield \$120 to \$290 billion in annual health and welfare benefits in 2014.

The Subcommittee on Clean Air and Nuclear Safety held an oversight hearing on EPA's proposed interstate transport rule on July 22, 2010. As part of that hearing, American Electric Power (AEP) introduced written testimony suggesting that labor availability would constrain the industry's ability to install SO₂ scrubbers. Similar claims were made when EPA proposed the NO_x SIP call rule in 1998 and the Clean Air Interstate Rule (CAIR) in 2005.

In light of the important contributions that your members have made in terms of installing advanced pollution control systems in recent years, I wanted to seek your input and opinion on the issue of labor availability in the pollution control industry. Based on the recent experience of your members, installing scrubbers and other pollution control systems, is labor availability likely to constrain the industry as it seeks to comply with the interstate transport and utility MACT rules? What types of engineering and construction skills are required to design and construct NO_x, SO₂, and HAPs controls? If labor is in short supply among any of these trades are there actions that we should be taking today in order to ensure that we have the skilled labor needed to comply with the Clean Air Act?

I appreciate your input on this issue. These environmental standards are vital for protecting human health and the environment. They also offer an opportunity to put American workers back on the job modernizing our electric generating fleet. Understanding the ability of labor to provide timely solutions and the capacity of the industry to install the necessary controls will be critical for developing an appropriate regulatory response. With best personal regards, I am

Sincerely yours,



Tom Carper
U.S. Senator

United States Senate

WASHINGTON, DC 20510

March 26, 2010

Administrator Lisa Jackson
USEPA Ariel Rios Building
1200 Pennsylvania Avenue N.W.
Washington, DC 20004

Dear Administrator Jackson:

We are writing to request that EPA address a rulemaking of critical importance to our states in a manner that encourages robust public comment and reflects the best interests of our nation during these challenging economic times.

The Clean Air Act (CAA) offers U.S. EPA discretion in certain areas to balance economic and environmental interests. Exercising this discretion is particularly important during periods of prolonged economic contraction, when job stability and creation as well as business recovery are critical.

We are writing today to ask that you exercise this CAA discretion as you work on the Maximum Achievable Control Technology rule for industrial, commercial, and institutional boilers and process heaters (Boiler MACT). We understand this rule, which EPA is under court order to propose by April 15, could impose significant capital costs at thousands of facilities across the country. This rule would affect boilers that provide steam to university campuses and Federal facilities, the gas-fired boilers that help make recycled paper and foodstuffs, the biomass -fired boilers that recover energy from renewable material to produce furniture or wood products, and the municipal utility boilers that provide reliable local electricity generation.

To help reduce the cost burden in a manner that does not compromise the public health and safety we believe EPA should consider exercising the "health threshold" discretion that Congress allowed under Section 112(d)(4) of the Act. Under this section of the law, for pollutants that are considered safe to human health in concentrations that fall below an established threshold, EPA may use this risk information to set emission standards.

The Clean Air Act also provides EPA with broad discretion to subcategorize within the Boiler source category based on size, type and class of source to help ensure that the emission limitations are determined by the best performing similar sources and that the emission standard can ultimately be achieved in practice. Within the proper subcategory, EPA has further discretion to use a method for setting emissions standards based on what real world best performing units actually achieve so that the units setting the standard for the rest of the subcategory will not have additional emission control obligations.

Letter to Administrator Jackson
March 26, 2010
Page 2

We believe that it is critical that the EPA's proposed rule for Boiler MACT present a range of technically sound and cost-effective options, foster robust public comment, and make appropriate use of the discretion afforded EPA to responsibly balance environmental and economic interests. Our states and our nation simply cannot afford job losses associated with rules more stringent than necessary to protect the public health and safety.

We would be glad to discuss our views with you in more depth. Thank you for your consideration.

Sincerely,

George V. Kenovich

Shirrod Brown

John Compton

Richard J. Lopez

Lamar Alexander

Em Bayh

Giff Bond

Mark R. Warner

Jon Webb

cc:
Gina McCarthy, Environmental Protection Agency
Robert Perciasepe, Environmental Protection Agency
Robert Sussman, Environmental Protection Agency
Cass Sunstein, Office of Information and Regulatory Affairs
Lawrence Summers, National Economic Council



INTERNATIONAL UNION, UNITED AUTOMOBILE, AEROSPACE & AGRICULTURAL IMPLEMENT WORKERS OF AMERICA - UAW

RON GETTELFINGER, President

ELIZABETH BUNN, Secretary-Treasurer

VICE PRESIDENTS: GENERAL HOLIEFIELD • BOB KING • CAL RAPSON • JIMMY SETTLES



IN REPLY REFER TO

1757 N STREET, N.W.
WASHINGTON, D.C. 20036
TELEPHONE: (202) 828-8500
FAX (202) 293-3457

June 7, 2010

Dear Senator:

This week the Senate may take up Senator Murkowski's disapproval resolution that would overturn the EPA's endangerment finding on greenhouse gas emissions. The UAW opposes this misguided effort and urges you to vote against this disapproval resolution.

In our judgment, Congress should move forward to enact comprehensive climate change legislation that will reduce greenhouse gas emissions. Although we recognize the difficulties involved in this effort, we believe that legislation can be crafted that will reduce global warming pollution while at the same time creating jobs and providing a boost to our economy. In particular, we believe such legislation can help to provide significant investment in domestic production of advanced technology vehicles and their key components, as well as other energy saving technologies. But such progress would be undermined if a disapproval resolution were to overturn EPA's endangerment finding.

The UAW understands the concerns that have been expressed about EPA attempting to use its authority under the Clean Air Act to regulate greenhouse gas emissions from various industries. However, we believe the best way to address these concerns is for Congress to move forward with comprehensive climate change legislation that properly balances concerns of various regions and sectors, and establishes a new coherent national program to combat climate change.

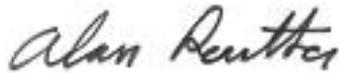
The UAW also is deeply concerned that overturning EPA's endangerment finding would unravel the historic agreement on one national standard for fuel economy and greenhouse gas emissions for light duty vehicles that was negotiated by the Obama administration last year. As a result of this agreement among all stakeholders, NHTSA and EPA engaged in a joint rulemaking effort that will result in significant reductions in fuel consumption and greenhouse gas emissions by 2016. At the same time, these joint rules retain the structural components that Congress enacted in the 2007 energy legislation, thereby providing important flexibility to full line manufacturers and a backstop for the domestic car fleet. Most importantly, California and other states have agreed to forgo state-level regulation of tailpipe emissions and abide by the new national standard that has been created by these NHTSA and EPA rules. This will avoid the burdens that would have been placed on automakers if they had been forced to comply with a multitude of federal and state standards. The UAW is very pleased

that all stakeholders recently agreed to continue efforts to extend this national standard from 2016 to 2025.

However, the critically important progress that has been achieved with these historic agreements will be undermined if EPA's endangerment finding is overturned. Without this finding, EPA may not be able to implement the current rule on light duty vehicles. In the absence of the EPA standard, California and other states could move forward with their standards, thereby subjecting auto manufacturers to all of the burdens that the one national standard was designed to avoid.

For all of these reasons, the UAW opposes Senator Murkowski's disapproval resolution that seeks to overturn EPA's endangerment finding. We urge you to vote against this measure. Thank you for considering our views on this important issue.

Sincerely,

A handwritten signature in black ink that reads "Alan Reuther". The signature is written in a cursive, slightly slanted style.

Alan Reuther
Legislative Director

AR:lb
opeiu494
L8683

**NAACP EMERGENCY RESOLUTION
CALL TO ACTION - GULF OIL DISASTER
May 15, 2010**

WHEREAS, the British Petroleum Horizon Oil Rig destruction has resulted in over 200,000 gallons of oil per day being released into the Gulf of Mexico since April 20, 2010 creating a massive oil slick; and

WHEREAS, little oil has reached land at this point but shifts in wind speed and direction could propel the oil slick toward populated areas along the gulf coast and east coast of the United States; and

WHEREAS, several efforts to stop the oil leak including the placement of a giant oil containment box over the leak has not been successful; and

WHEREAS, this oil disaster will result in a negative impact on the environment, economics, health, and the climate; and

WHEREAS, whenever a disaster strikes like hurricanes Katrina and Rita, the NAACP is concerned with disparate treatment of African Americans and other minorities, in ensuring that benefits are provided equally and fairly through the process; and

WHEREAS, supplemental but related to the oil drilling disaster, climate change has been proven to be linked to an increase in severe weather events as we've seen in the recent surge in tornados and flooding and of course hurricanes Katrina and Rita, and thus NAACP must establish policies, systems and protocols to address civil and human rights issues that are always in peril during disasters in general; and

WHEREAS, the impacted areas consist of many African Americans and other minorities both individually and business owners;

WHEREAS, the impact of this disaster will be great and it is imperative that the NAACP stands at the forefront of response to disaster in the protection of civil rights of African Americans and other minorities; and

WHEREAS, the NAACP Resolution on Climate Change of 2009 specifically references shifting away from our current energy policy, which relies heavily on fossil fuels such as oil, and calls for NAACP leadership in advancing a new energy economy which includes energy alternatives that are less harmful to our communities and our environment; and

WHEREAS, it is important that NAACP Units in the impacted areas are provided with staff support in order to build their capacities to provide leadership to the impacted communities; and

WHEREAS, there is a need for the NAACP to continue documenting, monitoring and reporting on the activities of government and private industry in order to ensure that the rights of African Americans and minority citizens are not violated; and

WHEREAS, there is a need to continue coordinating all NAACP Units in the impacted area to ensure that the NAACP speaks with one voice; and

NOW THEREFORE BE IT RESOLVED, that the NAACP express great concerns regarding the Horizon Oil Spill Disaster taking place in the Gulf of Mexico; and

NOW BE IT FURTHER RESOLVED, that the NAACP Board of Directors hereby request that the President & CEO takes any and all steps necessary to get NAACP staff involved in order to monitor the civil rights impact of the oil spill disaster on the people, climate/environment, health, economics and wild life of the impacted states and take whatever steps he deems necessary to ensure that the civil rights of African Americans and other minority citizens are not violated;

BE IT FINALLY RESOLVED, that the NAACP national office provide support to local NAACP Units to help build capacity in order to address the advocacy needs resulting from this disaster including but not limited to filing of applications to qualify the NAACP as first responder with the United States Department of Homeland Security.



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

June 8, 2010
(Senate)

STATEMENT OF ADMINISTRATION POLICY

S.J. Res. 26 – Disapproval of EPA Endangerment Rule and Cause and Contribute Findings

(Sen. Murkowski, R-Alaska, and 40 cosponsors)

The Administration strongly opposes Senate passage of S.J. Res. 26, which would undermine the Clean Air Act and hinder EPA's ability to comply with a Supreme Court ruling on greenhouse gasses (GHGs). The Administration believes that comprehensive energy and climate legislation is the most effective way to transition to a clean energy economy that will create jobs, protect the environment, and increase national security. S.J. Res. 26 would do just the opposite; it would increase the Nation's dependence on oil and other fossil fuels and block efforts to cut pollution that threatens our health and well-being.

Specifically, passage of S.J. Res. 26 would block implementation of an historic, multi-agency Federal program set in motion by the Administration to promote fuel economy standards that will reduce oil consumption, save American consumers more than \$3,000 in fuel costs over the lifetime of a model year 2016 vehicle, and limit pollution from tailpipe emissions. S.J. Res. 26 also would undermine the Administration's efforts to reduce the negative impacts of pollution and the risks associated with environmental catastrophes, like the ongoing BP oil spill. As seen in the Gulf of Mexico, environmental disasters harm families, destroy jobs, and pollute the Nation's air, land and water. Further, S.J. Res. 26 is contrary to the widely-accepted scientific consensus that GHGs are at increasingly dangerous concentrations and are contributing to the threat of climate change. S.J. Res. 26 would strip EPA of its authority to protect the public from GHG pollution, and thus prevent it from following its statutory obligations as interpreted by the Supreme Court.

Finally, S.J. Res. 26 would undo EPA's carefully constructed approach to reducing pollution generated by the largest oil companies, oil refineries, and other large-scale polluters. EPA's reasoned approach will provide industry certainty, which is essential to jumpstarting private - sector investments and innovation in clean, renewable energy. S.J. Res. 26 would block the United States from taking action to control environmentally damaging GHGs while other nations take the lead in transitioning to clean energy economies that create the jobs of the future.

If the President is presented with this Resolution of Disapproval, which would seriously disrupt EPA's ability to address the threat of GHG pollution, as well as the multi-agency Federal GHG and fuel economy program, his senior advisors would recommend that he veto the Resolution.

* * * * *



**White House Delegation Proposed Itinerary
2010 Paralympic Games
As of March 3, 2010**

Thursday, March 11

Afternoon Arrive Vancouver

Friday, March 12

14:30-15:00 White House Delegation Briefing Hampton Inn Suites
Secretary Shinseki and full delegation *Request AV*
Ambassador Vancouver Overview, USOC Games Overview

15:00 Depart via foot to Georgian Court

15:15-16:00 USOC Opening Ceremonies Reception William Tell Restaurant
in honor of the 2010 Paralympic Winter Games Georgian Court Hotel
Attendees (150): USOC Board of Directors, Guests & 773 Beatty Street
Senior Staff, Paralympic Experience, SkiTam, The Hartford
Brief welcome remarks by USOC Chairman and Secretary
Run of show and recommended remarks will be provided

16:00 Depart via foot for Athlete Staging at BC Place

16:15-17:00 Meet and Greet with Members of the BC Place
(Time TBC) 2010 US Paralympic Team 777 Pacific Boulevard
In athlete staging area, one-on-one meet and greets

18:00-20:00 Opening Ceremonies BC Place
777 Pacific Boulevard

Saturday, March 13

8:15 Depart for Biathlon Hampton Inn Suites

10:00-14:00 Biathlon Whistler Paralympic Park
M/W 3k x 2 Pursuit (Standing, Sitting, Visually Impaired)

11:30-14:00 Alpine Skiing Whistler Creekside
M/W Downhill (Standing, Sitting, Visually Impaired)

14:15-16:00 Whistler Village Free Time Whistler Village

16:30-17:30 Paralympic Hospitality Club Garibaldi Lift Company
Schedule athlete appearances if schedule permits

Sunday, March 14* (Daylight Savings Time)

9:00	Depart for Vancouver Athletes Village	Hampton Inn Suites
9:30-12:00	Tour and Lunch at Vancouver Athletes' Village	Vancouver Paralympic Village
12:15	Depart Village for Wheelchair Curling	
12:30-15:00	Wheelchair Curling (USA vs. GER)	Vancouver Paralympic Centre
15:00-16:15	Open	
16:15	Depart for Sled Hockey	Hampton Inn Suites
17:00-19:00	Sled Hockey (USA vs. CZE)	UBC Thunderbird Arena
19:30-21:00	Delegation Dinner in Vancouver	Location TBD

Safe Chemicals Act Section-by-Section

Sec. 1. Short title.

“Safe Chemicals Act of 2010.”

Sec. 2. Purpose.

To ensure that risks from chemicals are adequately understood and managed.

Sec. 3. Findings, Policy, and Goal.

Amends section 2 of existing law to reflect the findings, policy, and goal of this Act.

Sec. 4. Definitions.

Amends several definitions in the existing law and adds other definitions used under this Act.

Sec. 5. Minimum Data Set and Testing of Chemical Substances and Mixtures

Amends section 4 of existing law to mandate industry submission of sufficient safety information for EPA to make a safety standard determination on chemicals. The Agency must issue a rule or rules defining the minimum data set for every chemical within 1 year of enactment. Industry must submit the minimum data set within 18 months of the chemical being placed on the priority list for existing chemicals, or as part of a pre-manufacture notice for new chemicals.

The test order and test rule authority in 4(b) streamlines and broadens EPA’s existing authority to require additional testing to obtain data on chemicals. Section 4 also allows EPA to obtain samples of chemical substances so that the Agency can conduct high throughput screening and other advanced testing methods.

In order to avoid duplicative testing, the bill maintains the exemptions in current law. Section 4(d) allows one company to conduct toxicity testing on behalf of other companies. In order to avoid unnecessary testing, the data set may be tailored to specific chemicals or category of chemicals.

Sec. 6. Manufacturing and Processing Notices

Amends section 5 of existing TSCA to require more upfront data on the safety of new chemicals and restrict market access for chemicals that do not meet the safety standard. This section also maintains a pathway for expedited safety review for some new safer chemicals. The bill allows these new chemicals to enter the market only if the manufacturer can prove to EPA that the substance does not, and likely will not, meet *any* of the criteria that indicate potentially high risk. However, if the new chemical meets any of the priority criteria, then the manufacturer must demonstrate that the substance meets the safety standard.

New uses of an existing chemical that has not yet undergone a safety determination require notice to EPA. New uses of an existing chemical that has already undergone a safety determination require a notice, updating of the minimum data set, and a finding by EPA that the chemical will continue to meet the safety standard when the new use is considered.

EPA has the authority under section 5 to determine that a new form of a chemical substance—through nanotechnology, for example—is a new chemical or a new use, and, in the case of a new use, to establish a process for approving the chemical for the market.

Sec. 7. Prioritization, Safety Determination, and Risk Management

Amends section 6 of existing law to set out the process for prioritizing chemical substances, conducting safety standard determinations, and managing risk from substances that do not meet the safety standard. This section places the burden on industry to demonstrate the safety of a chemical. EPA's primary function under this bill is to determine whether the data submitted by industry demonstrates that the chemical is safe. The safety standard determination will apply only to the uses evaluated in the determination with any conditions, and any other use of the substance or use in violation of conditions specified are unlawful. EPA may grant exemptions for uses that are vital to our economy and national security.

The process for prioritizing, assessing, and approving or restricting chemicals operates as follows:

- **Prioritizing Chemical Substances for Safety Determination.** Based on available information, including data collected under sections 4 and 8, EPA must, within 18 months of enactment, publish a list of 300 priority chemicals for safety determination. The Agency must then add chemical substances to the list annually to ensure that a minimum of 300 chemicals are listed, and consider petitions to add chemicals. The purpose of the priority list is to signal which chemicals substances will next be assessed for safety.

The bill instructs EPA to select chemicals for the priority list based on criteria that indicate environmental or health risk. After all the substances that meet any of the priority criteria have been prioritized and assessed, EPA will continue to add substance to the list based on likelihood of posing health or environmental risks. EPA is to review all chemicals for safety within fifteen years.

- **Submission of the all data supporting the safety determination.** Within 18 months of the placement of a chemical on the priority list, all manufacturers and processors must submit the minimum data set for that chemical substance. Within 30 months of placement on the priority list, industry must submit to EPA the package of specific uses to be evaluated, any proposed conditions, and all supporting information to demonstrate that the chemical meets the safety standard. This includes any information not previously submitted under the minimum data set or section 8, any data required under section 4 test orders, or any data which industry believes will be necessary to demonstrate safety. Applications for critical or essential use exemptions may be submitted at this time.

If a manufacturer or processor fails to meet the deadline for submitting information described above, EPA may act to immediately to prevent that party from manufacturing or processing the chemical.

- **Safety Determination.** Within 6 months of receiving the complete data set required within 30 months of the chemical's placement on the priority list, EPA must determine whether industry has demonstrated that a chemical meets the safety standard. EPA's determination applies only to the specific uses evaluated in the safety determination, and the Administrator may place conditions on uses or require other risk management actions to ensure the chemical substance meets the safety standard.

If EPA misses the deadline for making the determination, all manufacturers or processors must immediately inform their customers that EPA has not been able to find that the chemical meets the safety standard.

Sec. 8. Imminent Hazards

Amends section 7 of the existing law to authorize the Administrator to initiate a judicial proceeding or issue orders as necessary to protect health or the environment from a chemical substance or mixture or any article containing such a substance or mixture that "may present an imminent and substantial endangerment to health or the environment." This section will ensure the Administrator may act at any time to prevent or mitigate an imminent and substantial endangerment, regardless of whether the Administrator has issued a safety determination under section 6.

Sec. 9. Reporting and Retention of Information

This section amends section 8 of the existing law to impose an automatic statutory obligation to submit a broad range of *existing* data, including all existing data on health and environmental effects that has not previously been submitted to EPA, within one year of enactment. Industry must update those data every three years, or if significant new safety-related data becomes available. The section resets EPA's inventory to provide a more accurate picture of the number and types of chemicals in commerce.

The section also requires EPA, within 5 years of enactment and using available information, to develop and publish a list of all chemicals in commerce that categorizes each such chemical. EPA must promptly update the categorizations based on receipt of the minimum data sets required of manufacturers under the bill, or any other information received by EPA that alters a chemical's category assignments.

Sec. 10. Relationship to Other Federal Laws

This section amends section 9 of current law to strengthen EPA's ability to request that other agencies take action within that agency's jurisdiction to reduce risks from chemical substances that fail to meet the safety standard, or would fail to meet the standard without risk management actions. The Administrator is authorized to take action under this Act should another agency not take needed action.

When acting to control workplace exposures, the bill requires that any such action be implemented in a manner that is consistent with the industrial hygiene hierarchy of controls.

Sec. 11. Inspections and Subpoenas

Amends section 11 of existing law to clarify and strengthen EPA's authority to conduct inspections, gather information, and issue warrants for the purposes of administering or enforcing the Act. The authority to conduct inspections applies to all chemical substance, mixtures or articles subject to the Act, to any premises or conveyances containing such substances, and to any place where records are held. The Administrator is authorized to obtain samples of chemical substances, mixtures, articles, containers and labeling, and to require development of analyses and other information, and to obtain and execute warrants.

Sec. 12. Exports

Amends section 12 of the existing law to ensure this Act's protections of health and the environment apply to exports of chemical substances, mixtures or articles that are subject to actions under sections 4, 6 and 7 of this Act. To ensure information about exports is available, notice must be provided to the Administrator, and the Administrator must provide notice to the government of the foreign country.

Sec. 13. Entry into Customs Territory or the United States

Amends section 13 of existing law to require that the Secretary of Homeland Security refuse entry into the customs territory of the United States of any chemical substance, mixture or article that fails to comply with any rule or order in effect under this Act.

Sec 14. Disclosure of Data

Amends current section 14, which governs claims of Confidential Business Information (CBI), to require upfront justification for CBI claims, require EPA to review and make a determination on all CBI claims, require that confidentiality expire after a certain period of time not to exceed five years, provide for greater sharing of CBI between governments, and provide access for workers to information on the chemicals to which they are exposed in the workplace.

Sec. 15. Prohibited Acts

Amends section 15 of the existing law to make clear that it is unlawful to fail or refuse to comply with any rule, order, prohibition, restriction, or other requirement imposed by this Act or by the Administrator under this Act or to make a false submission under this Act.

Sec. 16. Penalties

Amends section 16 of the existing law to increase civil and criminal penalties and expand procedures for assessing penalties against persons who violate a rule, order, or provision of this Act. Civil penalty actions may be commenced in US District Courts or through administrative

proceedings, and civil penalties are increased. Any knowingly violation is subject to increased criminal penalties, and penalties are increased further for any knowing violation that places another person in imminent danger of death or serious bodily injury.

Sec. 17. Specific Enforcement and Seizure.

Amends section 16 to provide the Administrator with authority to commence a civil action in the appropriate US District Court to compel compliance with any rule, order of provision of the Act. The Administrator's authority to enforce the Act includes the authority to seek civil or criminal penalties, to enjoin violations, and to order compliance through administrative proceedings.

Sec. 18. Preemption.

Amends section 18 of the existing law to make clear that provisions of any law of a State or political subdivision of a State relating to any chemical substance or mixture, or any article that contains a chemical substance or mixture which are more stringent than provided under this Act are not preempted.

Sec. 19. Judicial Review.

Amends section 19 of the existing law to ensure that agency action taken under this Act is subject to the same standard of review as other agency action in accordance with the Administrative Procedure Act, expressly replacing the existing standard.

Sec. 20. Citizen's Civil Action.

Amends section 20 of existing law to clarify where citizen suits are permitted in light of the changes to other sections of the existing law.

Sec. 21. Citizens' Petitions.

Amends section 21 of existing law to clarify where citizen petitions are permitted in light of the changes to other sections of the existing law.

Sec 22. Employment Effects.

Amends section 22 of existing law to clarify when evaluation is required and the relationship between this section and other provisions of the Act.

Sec. 23. Administration of the Act.

Amends section 26 of the existing law to allow EPA to collect user fees from industry for administration of the Act.

Sec. 24. State Programs.

Sec. 25. Authorization of Appropriations.

Reorders several sections of the existing law, and amends the appropriations section to authorize sums necessary to carry out EPA's authorities under TSCA. Amends section 28 of the existing law to require EPA to establish a process to coordinate with state governments on efforts to manage risks from chemicals.

Sec. 26. Additional Requirements

Adds the following sections to the existing law:

Sec. 29. Expedited Action for Chemicals of Highest Concern

This section instructs EPA to act quickly to manage risk from chemicals of highest concern.

Sec. 30. Children's Environmental Health Research Program.

This section requires EPA to establish within 90 days of enactment a research program focused on children's health, which would provide grants to independent researchers to support research that furthers understanding of children's vulnerability to industrial chemicals.

The section also requires EPA to establish within 90 days of enactment an advisory board with representation from other federal agencies with duties and expertise relevant to children's health and toxic chemicals, and from existing children's health centers.

The board would provide independent advice, expert consultation, and peer review upon request of the Administrator or Congress on the scientific and technical aspects of issues relating to the implementation of this Act with respect to protecting children's health and research.

Sec. 31. Reduction of Animal-Based Testing.

This section requires the Administrator to minimize the use of animals in testing of chemical substances or mixtures by encouraging the use of existing data, grouping of chemical substances for testing, formation of industry consortia to reduce redundancy, use of existing methods that eliminate or reduce the use of animals, and the development and validation of emerging methods and models. The Administrator would be required to establish an Interagency Science Advisory Board on Alternative Testing Methods and develop a strategic plan to promote alternative methods. This section will also allow a manufacturer or processor to request adaptation or waiver of animal testing requirements

Sec. 32. Safer Alternatives and Green Chemistry and Engineering.

This section seeks to support and encourage the development and use of safer alternatives to hazardous substances.

It requires, within 1 year of enactment, the establishment of a safer alternatives program to develop market and other incentives for safer alternatives. These include expedited review for new chemicals that claim to be safer for a given use than the conventional substance(s) and recognition for safer alternatives through special marketing designations, awards and rewards.

The section also calls on EPA to establish a green chemistry research network of at least 4 centers to support development and use of safer alternatives. EPA is to provide research grants to promote the development and use of safer alternatives, especially for priority hazardous chemicals for which alternatives do not presently exist.

Also, EPA is required to establish Green Chemistry Workforce Education and Training Program to facilitate the development of a workforce, including industrial and scientific workers, that produces safer alternatives to existing chemical substances.

Sec. 33. Cooperation with International Efforts.

This section requires EPA to cooperate with any international efforts undertaken to develop a common protocol or electronic database relating to chemical substances, or to develop safer alternatives for hazardous chemical substances.

Sec. 34. Reliable Information and Advice.

This section establishes procedures to ensure that the information that EPA uses to make safety determinations is accurate and reliable. Required procedures include random inspections laboratories conducting testing, auditing of data submissions, establishment of a mandatory registry of health and safety studies, EPA access to records of research, and funding source disclosure by researchers.

Sec. 35. Hot spots.

This section requires EPA to identify localities within the United States where the resident population is subject to disproportionate exposure to toxic chemical substances, and take action to reduce those exposures.

Sec. 36. Application of this act to federal agencies.

Requires other federal agencies to comply with the Act, and waives sovereign immunity as a defense. The President can grant exemptions in situations of paramount interest of the United States.

Sec. 37. Implementation of Stockholm Convention, the LRTAP POPs Protocol, and the Rotterdam Convention.

Provides for implementation by the United States of the provisions of Stockholm Convention, the LRTAP POPs Protocol, and the Rotterdam Convention that enter into force for

the United States. The manufacture, processing, distribution in commerce, use or disposal of any chemical subject to such provisions in a manner inconsistent with such obligations is prohibited. Also, provides a notice and comment process and authority for EPA for implementation and enforcement.

Please let us know when you are available to meet with representatives from our groups to discuss this request, and thank you for your commitment to ensuring that the public has an opportunity to provide public comments.

Respectfully submitted by:

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Safe Chemicals Act of 2010

The Toxic Substances Control Act of 1976 (TSCA) governs industrial chemicals. That antiquated laws' provisions have not been amended since their adoption more than three decades ago – despite huge changes in chemical production and use and our state of knowledge about how chemicals can harm health or the environment.

TSCA also placed severe burdens on EPA's ability to require safety testing or regulate a chemical – burdens so onerous that over the past 30 years EPA has been able to require testing for only about 200 chemicals out of more than 80,000 on the EPA's inventory. And TSCA has allowed EPA to regulate only limited uses of five chemicals. In 1989, EPA issued a regulation, ten years and tens of millions of dollars in the making, to ban most uses of the highly carcinogenic substance asbestos. The regulation was promptly challenged and ultimately tossed out by the courts, which ruled that EPA had not met its burden of proof under TSCA that asbestos poses an "unreasonable risk." Since then, EPA has not tried again to regulate a chemical's production or use.

The Government Accountability Office has issued several reports strongly criticizing the law, and, in January of 2009, placed TSCA on its list of "high risk" areas of the law.

The Safe Chemicals Act, introduced by Senator Lautenberg, would address each of the core failings of TSCA. In short, it would:

- Ensuring EPA will have information on chemical hazards, uses and exposures sufficient to judge a chemical's safety. The bill requires manufacturers to develop and submit a minimum data set for each chemical they produce. It provides EPA with full authority to require any data beyond the minimum data set needed to determine safety of a chemical. While it ensures EPA can obtain data necessary to make a safety determination, the bill also contains numerous provisions to ensure that no duplicative or unnecessary testing occurs, and that data is submitted to EPA only at the time it is needed.
- Requiring EPA to use this information to categorize and prioritize chemicals, based on their hazard and exposure characteristics. EPA will identify and prioritize chemicals by their likely risk, based on anticipated use, production volume, toxicity, persistence, bioaccumulation, and other properties that indicate risk. Prioritizing chemicals based on risk focuses EPA's resources on the chemicals most likely to cause harm, and allows the Agency to move quickly to manage risk for those chemicals.
- Ensuring that expedited action is taken to reduce the use of or exposures to chemicals of highest concern. In addition to setting up a system to evaluate the safety of all chemicals, the bill calls for EPA to act quickly on chemicals that clearly demonstrate high risk.

- Requiring all chemicals to be shown to be safe in order to remain in or enter commerce. The burden of proving safety rests on chemical manufacturers and users, not on government to show harm before it can act. All uses of a chemical must be identified, and the resulting aggregate exposure measured against a health-based safety standard set to protect both the general population and vulnerable subpopulations that may be more susceptible or more exposed to the chemical, such as children. If the safety standard is not met, the chemical cannot be marketed.
- Ensuring broad public, market and worker access to reliable chemical information. It establishes a public database that will house both chemical information submitted to EPA and decisions made by EPA about chemicals. It narrows the conditions under which data submitted by industry can be claimed to be confidential business information (CBI), while still ensuring appropriate protections for legitimate CBI. It provides access to CBI by workers and local, state, Tribal and (in some cases) foreign governments as long as they protect its confidentiality. Finally, EPA is to impose requirements to ensure that information developed and submitted by industry, and advice received from advisory committees convened by EPA, are reliable.
- Promoting innovation and the development and use of green chemistry and safer alternatives to chemicals of concern. The bill requires EPA to establish a program to develop market and other incentives for safer alternatives, and a research grant program targeted at priority hazardous chemicals for which alternatives do not presently exist. A network of research centers would be established to conduct green chemistry research and alternatives analyses, and to provide training, educational materials, and technical assistance to educational institutions, small businesses, government and non-governmental organizations. The bill also allows some new chemicals onto the market using an expedited process for reviewing safety.

The Safe Chemicals Act of 2010 is a long-overdue modernization of the Toxic Substances Control Act. It address the problems with TSCA that have been identified by the Government Accountability Office and other experts and industry leaders that have testified in Senator Lautenberg's Subcommittee on Superfund, Toxics, and Environmental Health over the past year. The bill comports with principles for TSCA reform issued by the Obama Administration, the American Chemistry Council, and the Safer Chemicals, Healthy Families Coalition.

National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling

THE AMOUNT AND FATE OF THE OIL

---Draft---

Staff Working Paper No. 3

Staff Working Papers are written by the staff of the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling for the use of members of the Commission. They are preliminary, subject to change, and do not necessarily reflect the views either of the Commission as a whole or of any of its members. In addition, they may be based in part on confidential interviews with government and non-government personnel.

The federal government's estimates of the amount of oil flowing into and later remaining in the Gulf of Mexico in the aftermath of the Macondo well explosion were the source of significant controversy, which undermined public confidence in the federal government's response to the spill. By initially underestimating the amount of oil flow and then, at the end of the summer, appearing to underestimate the amount of oil remaining in the Gulf, the federal government created the impression that it was either not fully competent to handle the spill or not fully candid with the American people about the scope of the problem.

Federal government responders may be correct in stating that low flow-rate estimates did not negatively affect their operations.¹ Even if responders are correct, however, loss of the public's trust during a disaster is not an incidental public relations problem. The absence of trust fuels public fears, and those fears in turn can cause major harm, whether because the public loses confidence in the federal government's assurances that beaches or seafood are safe, or because the government's lack of credibility makes it harder to build relationships with state and local officials, as well as community leaders, that are necessary for effective response actions.

This working paper first tells the story of the government's struggle to accurately estimate the rate of oil flow from the Macondo well. It next discusses the debate surrounding the government's report on the fate of the oil.² More extensive, peer-reviewed government reports, which will allow for greater substantive evaluation of government estimates related to flow rate and fate, are forthcoming. In the meantime, this paper discusses some of the key government estimates with a view towards eventual Commission findings regarding whether flow-rate estimates should have been more accurate from the outset, and whether the government

¹ As explained further in Part I.B below, Commission staff is still gathering information with which to evaluate responders' assertions.

² DEEPWATER HORIZON MC252 GULF INCIDENT OIL BUDGET [hereinafter OIL BUDGET] (Aug. 4, 2010), *available at* <http://www.noaanews.noaa.gov/stories2010/PDFs/DeepwaterHorizonOilBudget20100801.pdf>.

presented information regarding the amount and fate of the oil to the public in an appropriate manner. Commission staff believe that recommendations aimed at improving the quality of information provided to the public are critical to improving public confidence, and thus to the success of future emergency responses.

I. FLOW RATE: THE AMOUNT OF OIL RELEASED

This Part of the paper describes governmental and non-governmental efforts to accurately estimate the flow of oil from the Macondo well. It attempts to frame the questions of why initial government estimates were inaccurate, and whether the information conveyed to the public was different from operational estimates used by responders or other information known to the government. Section A charts flow-rate estimates created during the spill's first month. Section B discusses the question of which estimates—the low flow-rate estimates, or worst-case estimates—were the basis of government response operations. Section C considers whether the Flow Rate Technical Group, the government team assembled to address the gulf between official and independent flow-rate estimates, addressed the problem of failing public confidence due to inaccurate estimates. Finally, Section D compares the flow-rate estimates of non-governmental scientists generated since the well was capped with the government's current flow-rate figures.

A. The First Month

On the evening of April 20, 2010, the U.S. Coast Guard District Eight command center in New Orleans, Louisiana received a report of an explosion and fire aboard the mobile offshore drilling unit Deepwater Horizon.³ On the morning of April 22, 2010, the Coast Guard informed the media that the rig was leaking oil at a rate of 8,000 barrels per day (bbls/day), and that responders were preparing for a leak of up to 700,000 gallons of diesel fuel (the total amount of fuel the rig could hold).⁴ Later that morning, Deepwater Horizon sank, leaving a one mile by five mile sheen on the ocean's surface.⁵

How much oil was leaking into the Gulf of Mexico? For responders, politicians, and the public, the leaking well's "flow rate" quickly became a crucial and controversial question. Throughout the first month of the spill, government responders officially adhered to what we now know were low and inaccurate estimates. Non-governmental scientists, on the other hand, used the small amount of publicly available flow data to generate estimates that have proven to be much more accurate. To make forward-looking recommendations, it is important to understand how this came to pass.

³ Press Release, United States Coast Guard, Coast Guard Responding to Oil Drilling Platform Fire (Apr. 21, 2010), <http://app.restorethegulf.gov/release/2010/04/22/coast-guard-responding-oil-drilling-platform-fire-0>.

⁴ See CNN Wire, *Coast Guard: Oil Rig That Exploded Has Sunk*, CNN (Apr. 22, 2010), <http://news.blogs.cnn.com/2010/04/22/coast-guard-oil-rig-that-exploded-has-sunk/>.

⁵ See CNN Wire, *Oil Slick Spreads from Sunken Rig*, CNN (Apr. 22, 2010), <http://www.cnn.com/2010/US/04/22/oil.rig.explosion/index.html>.

1. The Government's Estimates

As a first step in determining whether, or how much, oil was flowing from the Macondo well, BP enlisted remotely operated vehicles (ROVs) to investigate the immediate wellhead area. These ROVs did not uncover any leaks.⁶ Rear Admiral Mary Landry, the Federal On-Scene Coordinator (and ranking federal official on the spill response team at the time), told *CBS News* on April 23, 2010, that “at this time there is no crude emanating from that wellhead at the ocean floor . . . there is not oil emanating from the riser either.”⁷

But at the time of Admiral Landry's statement, the riser had not yet been inspected. Over the next 24 hours, BP's ROVs traced the riser from the wellhead to where the Deepwater Horizon rig had come to rest, approximately 1,500 feet from the blowout preventer (BOP). The ROVs discovered two leaks, one from a kink in the riser above the BOP (“kink leak”) and a primary leak from the end of the riser, where it had broken off from the rig.⁸

After the discovery of these leaks on April 24, 2010, Coast Guard and BP officials put out an estimate: Up to 1,000 bbls/day were flowing from the two leaks in the riser.⁹ Neither the Coast Guard nor BP divulged the data or methodology behind this estimate. Based on the information we have to date, it appears the figure came from BP without supporting documentation.¹⁰

In the spill's second week, the official flow-rate estimate increased from 1,000 bbls/day to 5,000 bbls/day as a result of input from the National Oceanic and Atmospheric Administration (NOAA). On April 28, 2010, Admiral Landry stated that “NOAA experts believe the output could be as much as 5,000 barrels.”¹¹ Although Admiral Landry did not provide further explanation, the media speculated that this latest estimate was derived through a method known as the “Bonn Convention.”¹² The method involves using aerial data to measure the extent of a spill, using color to estimate the thickness of various parts of the spill, and then calculating the volume.¹³

⁶ Press Conference, Admiral Mary Landry and Doug Suttles, New Orleans, LA (Apr. 28, 2010), http://cgvi.uscg.mil/media/main.php?g2_itemId=843309.

⁷ Television Interview of Mary Landry, *Coast Guard: Oil Not Leaking from Sunken Rig*, CBS NEWS (Apr. 23, 2010), <http://www.cbsnews.com/video/watch/?id=6424647n>.

⁸ Press Conference, Admiral Mary Landry and Doug Suttles, New Orleans, LA (Apr. 28, 2010); Campbell Robertson, *Oil Leaking Underwater From Well in Rig Blast*, N.Y. TIMES (Apr. 24, 2010).

⁹ See, e.g., Press Release, Unified Command, Unified Command Continues to Respond to Deepwater Horizon (Apr. 25, 2010), <http://app.restorethegulf.gov/release/2010/04/25/update-7-unified-command-continues-respond-deepwater-horizon-0>; Robertson, *Oil Leaking Underwater From Well in Rig Blast*.

¹⁰ Interviews with government officials.

¹¹ Press Conference, Admiral Mary Landry and Doug Suttles, New Orleans, LA (Apr. 28, 2010); Tim Dickinson, *The Spill, the Scandal, and the President*, ROLLING STONE (June 8, 2010).

¹² See, e.g., Joel Achenbach, *How Big is the Gulf Spill, Really?*, SEATTLE TIMES (May 13, 2010); Justin Gillis, *Size of Spill Is Underestimated, Scientists Say*, N.Y. TIMES (May 13, 2010).

¹³ NOAA, OFFICE OF RESPONSE AND RESTORATION, OPEN WATER OIL IDENTIFICATION JOB AID FOR AERIAL OBSERVATION (Nov. 2007), http://response.restoration.noaa.gov/book_shelf/1462_FINAL%20OWJA%202007.pdf.

Based on the information currently available to Commission staff, the source of the 5,000 bbls/day estimate appears to have been an unsolicited, one-page document emailed to Admiral Landry's Scientific Support Coordinator on April 26, 2010, by a NOAA scientist.¹⁴ The scientist derived an "estimated present volume release rate" of roughly 5,000 bbls/day, based on visual observation of the speed at which oil was leaking from the end of the riser.¹⁵ While he also used a method based on satellite imagery, similar to the Bonn Convention, to estimate that 10,000 barrels of oil were on the ocean's surface, he did not base his flow-rate estimate on that surface volume estimate. (He noted, moreover, that estimating surface volume from the visual appearance of an oil slick was "a highly unreliable process.")¹⁶

The NOAA scientist's 5,000 bbls/day estimate did not take into account the kink leak, and his methodology for estimating the velocity of the leaking oil was imprecise.¹⁷ Further, there is no indication that the scientist had expertise in estimating deep-sea flow velocity from video data or that he used an established or peer-reviewed methodology when doing so. This is not a criticism of the scientist, who made clear his assumptions and that the 5,000 bbls/day figure was a "very rough estimate[.]".¹⁸ His stated intent in disseminating the estimate was to warn government officials that the flow rate was multiple times greater than 1,000 bbls/day.¹⁹

Despite the acknowledged inaccuracies of the NOAA scientist's estimate, and despite the existence of other and potentially better methodologies for visually assessing flow rate (discussed below), 5,000 bbls/day was to remain the government's official flow-rate estimate for a full month, until May 27, 2010.²⁰

¹⁴ NOAA Document. The scientist also verbally noted to the Scientific Support Coordinator that the flow rate might be upwards of 10,000 bbls/day. Internal NOAA e-mail.

¹⁵ NOAA Document. The scientist generated this number by assuming that the flow came from a hole with a diameter of 40 centimeters, at a velocity of 15 cm/sec, and that 50% of the total flow was oil (as opposed to gas and other material).

¹⁶ *Id.*; Interview with government official. The surface volume calculation was based on an American Society for Testing and Materials standard for determining surface oil thickness. The scientist also assumed that at least half of the oil released evaporated or dispersed in the water column before reaching the surface. Based on those assumptions, the surface volume estimate could have confirmed or yielded a flow-rate estimate of 5,000 bbls/day. E.g., if the oil first began leaking on April 22, 2010, one could then take the 10,000 barrel figure, double it to account for evaporation and dispersion, and then divide by 4 days to arrive at 5,000 bbls/day. The one-page document, however, did not take these steps. Instead, it estimated the "present volume release rate" of 5,000 bbls/day based on visual observation of the velocity of the oil plume leaking from the riser.

¹⁷ NOAA Document. For example, the document notes that the velocity could be "between 7 cm/sec and 30 cm/sec" and then, without explanation, uses 15 cm/sec when generating the 5,000 bbls/day estimate (using 30 cm/sec, the flow rate would be over 10,000 bbls/day).

¹⁸ Internal NOAA e-mail.

¹⁹ Interview with government official. On the day following the release of the 5,000 bbls/day estimate, President Obama made his first public statement about the spill and Secretary of Homeland Security Janet Napolitano declared it a Spill of National Significance, paving the way for the appointment of Admiral Thad Allen as National Incident Commander. *BP Oil Spill Timeline*, GUARDIAN (July 22, 2010), <http://www.guardian.co.uk/environment/2010/jun/29/bp-oil-spill-timeline-deepwater-horizon>; Campbell Robertson, *White House Takes a Bigger Role in the Oil Spill Cleanup*, N.Y. TIMES (Apr. 29, 2010).

²⁰ See Press Release, Unified Command, Flow Rate Group Provides Preliminary Best Estimate of Oil Flowing from BP Oil Well (May 27, 2010), <http://app.restorethegulf.gov/release/2010/05/27/flow-rate-group-provides-preliminary-best-estimate-oil-flowing-bp-oil-well>.

2. Non-governmental Estimates

From the outset, estimates from non-governmental sources were significantly higher than official government estimates. In at least some instances, the cause of the discrepancy appears to be that non-government scientists relied on more refined or better-established methodologies.

a. *Estimates Based on Satellite Imagery*

The first independent flow-rate estimate surfaced on April 27, 2010, at the time the official estimate was 1,000 bbls/day. Using publicly available satellite images, John Amos, the founder of SkyTruth.org, estimated the leak size to be at least five times the government estimate—5,000 to 20,000 bbls/day.²¹ Amos generated the low number in his range by multiplying the surface area of the spill by what he considered the minimum thickness for oil to be visible on the Gulf's surface (1 micron). He then generated the high number by relying on a BP statement that 3% of the slick was significantly thicker (100 microns). Amos's estimate was conservative (i.e., low) in assuming that none of the oil had burned with the rig, been collected by response crews, evaporated, dispersed, or was then below the surface.²² Within days, Amos's estimate appeared in the national press.²³

On May 1, 2010, Dr. Ian MacDonald (a Florida State University oceanographer) published a new estimate on SkyTruth.org. Based on a Coast Guard map that tracked the spill's surface size and classified the color of the surface oil throughout, Dr. MacDonald generated a flow estimate of 26,500 bbls/day using the Bonn Convention. Like Amos, he assumed that none of the oil had burned, evaporated, dispersed, been skimmed, or was then below the surface.²⁴

Both independent scientists estimated the spill's volume from the visual appearance of the surface slick—the same general method used by the NOAA scientist who generated the 10,000 barrel surface volume estimate. Experts note that such methods are not reliable for estimating the volume of large spills, due in part to the difficulty of accurately determining oil thickness from aerial data.²⁵ Dr. MacDonald, however, did at least use an established protocol—the Bonn Convention—for determining surface oil thickness. Similarly, Amos explained the basis for his minimum and maximum assumptions regarding thickness. By contrast, the NOAA

²¹ See John Amos, *Gulf Oil Spill Rate Must Be Much Higher Than Stated—6 Million Gallons So Far?*, SKYTRUTH.ORG (Apr. 27, 2010), <http://blog.skytruth.org/2010/04/gulf-oil-spill-rate-must-be-much-higher.html>; John Amos, *Gulf Oil Spill—Bigger Than Exxon Valdez*, SKYTRUTH.ORG (Apr. 28, 2010), <http://blog.skytruth.org/2010/04/gulf-oil-spill-bigger-than-exxon-valdez.html>.

²² *Id.* Amos assumed that all oil leaking from the well reached the surface to be observed. If that were not the case, the estimated flow rate would be higher.

²³ Ian Talley, *Experts: Oil May Be Leaking at Rate of 25,000 Barrels a Day in Gulf*, WALL ST. J. (Apr. 30, 2010); see also Emily Gertz, *Gulf Oil Spill Far Worse Than Officials, BP Admit, Says Independent Analyst*, ONE EARTH BLOG (Apr. 29, 2010), <http://www.onearth.org/node/2084>.

²⁴ John Amos, *Gulf Oil Spill—New Spill Calculation—Exxon Valdez Surpassed Today*, SKYTRUTH.ORG (May 1, 2010), <http://blog.skytruth.org/2010/05/gulf-oil-spill-new-spill-rate.html>.

²⁵ Achenbach, *How big is Gulf Spill, Really?*; Gillis, *Size of Oil Spill Underestimated, Scientists Say*; NOAA Paper, *Visual Observations and the Bonn Agreement*.

surface volume estimate appears to have been based on an unexplained assumption that 99% of the spill was 0.1 microns thick, while the remainder was 100 microns thick.²⁶ Thus, while estimating volume from surface appearance may be inherently unreliable, the non-government scientists appeared to make greater efforts to be clear and rigorous in their methodologies, possibly leading their estimates to be closer to the actual flow rate (though still far off).

b. Estimates Based on Video of the Flow

On May 12, 2010, BP released a thirty-second video of oil coming out of the end of the broken riser—a crucial piece of data. As discussed above, the government’s estimate of 5,000 bbls/day appears to have been based on visual observation of flow from the riser. Within 24 hours, at least three scientists had used various methodologies to derive estimates of the flow rate substantially greater than the government’s then-current estimate.²⁷

- **Dr. Timothy Crone**, a marine geophysicist at Columbia University’s Lamont-Doherty Earth Observatory, estimated that 50,000 to 100,000 bbls/day of total flux were flowing out of the end of the riser.²⁸ To determine the velocity of the flow, Dr. Crone used a technique called Optical Plume Velocimetry, which involves temporal cross-correlation of the visual intensity of two pixels in a video (both in the plume, one downstream from the other). He developed this technique in a 2008 peer-reviewed paper relating to flow rates.²⁹
- **Dr. Eugene Chiang**, an astrophysicist at the University of California at Berkeley, estimated the total flux from the end of the riser to be between 20,000 and 100,000 bbls/day.³⁰ Dr. Chang is an expert in orders-of-magnitude estimation (i.e., estimating size or scale from small amounts of data). He estimated the velocity of oil coming out of the riser based on the angle of flow and the rate at which oil would naturally rise through sea water. He used this information to estimate the diameter of the riser, which generated the high end of his range; he based the low-end number on information that the plume could be emanating from a smaller pipe within the riser.³¹
- **Dr. Steven Wereley**, a mechanical engineer at Purdue University and expert in fluid mechanics, estimated that the total flux from the end of the riser was 72,179 bbls/day

²⁶ NOAA Document.

²⁷ Richard Harris, *Gulf Spill May Far Exceed Official Estimates*, NATIONAL PUBLIC RADIO (May 14, 2010), <http://www.npr.org/templates/story/story.php?storyId=126809525>.

²⁸ *Id.*; Raymond Gellner, *BP Oil Spill Rate in Gulf May Be 3 Million Gallons Per Day*, WORLD NEWS EXAMINER (May 14, 2010); Telephone Interview with Dr. Timothy Crone, Lamont-Doherty Earth Observatory (Aug. 18, 2010 and Sept. 3, 2010). Dr. Crone noted that his early estimates could not be more precise because of the low quality and short duration of the video.

²⁹ Crone, McDuff, & Wilcock, *Optical Plume Velocimetry: A New Flow Measurement Technique for Use in Seafloor Hydrothermal Systems*, EXPERIMENTS IN FLUIDS, vol. 45, no. 4, at 899-915 (2008).

³⁰ Harris, *Gulf Spill May Far Exceed Official Estimates*.

³¹ *Id.*; Telephone Interview with Dr. Eugene Chiang, University of California at Berkeley (Aug. 13, 2010).

(±20%).³² To arrive at this estimate, Dr. Wereley used a method called Particle Image Velocimetry, which uses a computer program to identify and track distinct “flow structures” in the plume exiting the riser (akin to the billows of a cloud). The method analyzes how fast structures move across the screen in terms of pixels, and then factors in scale and volume to determine flow rate.³³ Dr. Wereley co-authored a 2007 book on this flow-rate estimation method.³⁴

All of these non-government figures estimated the total flux being released from the end of the riser, which includes both oil and natural gas.³⁵ If we were to assume the then-current understanding that the flux was 50% oil, the Crone, Chiang, and Wereley estimates would be, respectively: 25,000-50,000 bbls/day; 10,000-50,000 bbls/day; and 36,090 bbls/day. The Crone, Chiang, and Wereley estimates did not include flow from the kink leak, for which there was then no public data.

BP attempted to dismiss the Crone, Chiang, and Wereley estimates. It told *National Public Radio* on May 13, 2010, that “there’s no way to estimate the flow coming out of the pipe accurately.”³⁶ Five days later, BP released the first video of the kink leak and an initial estimate that the flux was about 50% oil. Testifying before Congress the next day, Dr. Wereley estimated that the kink leak was producing a flow of roughly 25,000 bbls/day (±20%) of total flux. Adding that figure to his previous estimate of flow from the end of the riser (72,179 bbls/day of flux), he arrived at a total flow rate of approximately 50,000 bbls/day of oil.³⁷

The Crone, Chiang, and Wereley estimates proved to be significantly more accurate than the official estimates. The government’s 5,000 bbls/day figure, derived from the same type of visual observation as the Crone, Chiang, and Wereley estimates, appears to have been based on a cruder methodology than at least Crone’s and Wereley’s. It is possible that the early official flow estimates would have been more accurate if the government had either enlisted greater in-house scientific expertise, or enlisted outside scientific expertise by making available the data on which government estimates were based. The government appears to have taken an overly

³² Harris, *Gulf Spill May Far Exceed Official Estimates; Sizing up the BP Oil Spill: Science and Engineering Measuring Methods*, Briefing Before the Subcomm. on Energy and Environment of the H. Comm. on Energy and Commerce, 111th Cong. (May 19, 2010) (testimony of Dr. Steven Wereley).

³³ *Id.*

³⁴ RAFFEL, WILLERT, WERELEY, & KOMPENHANS, *PARTICLE IMAGE VELOCIMETRY: A PRACTICAL GUIDE* (2d ed. 2007).

³⁵ Telephone Interview with Dr. Chiang, (Aug. 13, 2010); Telephone Interview with Dr. Crone, (Aug. 18, 2010); Telephone Interview with Dr. Steven Wereley, Purdue University (Aug. 12, 2010). While estimates of the oil-to-gas ratio in the flux varied over the course of the spill, scientists from Woods Hole Oceanographic Institution took measurements at the source and concluded that the flux was 43.7% oil.

³⁶ MORNING EDITION, *Transcript: Gulf Spill May Far Exceed Official Estimates*, NATIONAL PUBLIC RADIO (May 14, 2010), <http://www.npr.org/templates/transcript/transcript.php?storyId=126809525>; Suzanne Goldenberg, *Marine Scientists Study Ocean-Floor Film of Deepwater oil leak*, GUARDIAN (May 13, 2010), <http://www.guardian.co.uk/business/2010/may/13/bp-oil-spill-ocean-footage>.

³⁷ *Sizing up the BP Oil Spill: Science and Engineering Measuring Methods*, Briefing Before the Subcomm. on Energy and Environment (May 19, 2010) (testimony of Dr. Steven Wereley).

casual approach to the calculation and release of the 5,000 bbls/day estimate—which, as the only official estimate for most of May, took on great importance.

Suggestions for the Commission’s Consideration:

- The Commission may wish to recommend adoption of policies or procedures to ensure that, in a federal spill response, the federal government dedicates appropriate scientific expertise to initial spill volume estimates, to the extent that it wishes to release such estimates.
- The Commission may wish to recommend that, where possible without compromising confidentiality or operations, the federal government disclose the methodology and/or data on which its spill volume estimates are based either to the public or to outside scientific experts. Such information would allow outside scientists to generate estimates or to offer informed criticism of the government’s work, helping to refine and to increase public confidence in official estimates.

B. The Impact on Operations

Government responders have repeatedly insisted to Commission staff that low initial flow-rate estimates did *not* impact the response. Responders have uniformly maintained—and, indeed, publicly stated during the response itself—that they scaled their efforts to the “worst-case” spill scenario rather than to official flow-rate estimates. Commission staff is still in the process of evaluating these assertions. Because the worst-case figures that emerged within days of the spill, although imprecise, ended up being roughly equivalent to the actual flow rate, we cannot at this point conclude that inaccurate official estimates adversely impacted the response and clean-up operations. It may, however, have been better practice for the government to disclose the estimates that drove the Unified Command operational plan—that is, the operational worst-case discharge figures. Moreover, it is possible that inaccurate flow-rate figures may have hindered the subsea efforts to stop and to contain the flow of oil at the wellhead. A later staff working paper will consider the impact, if any, of flow-rate estimates on well control and containment.

Soon after the spill began, frontline Coast Guard personnel requested worst-case discharge information from the Minerals Management Service and BP, both of which reported a figure of 162,000 bbls/day (the worst-case estimate from BP’s original drilling permit).³⁸ A high-level official, however, told us that the Coast Guard did not believe the figure from the drilling plan was a credible worst-case estimate.³⁹ On April 23, 2010, the Coast Guard and NOAA received an updated estimate of 64,000-110,000 bbls/day, which appeared in both an

³⁸ Interviews with Coast Guard officials; INITIAL EXPLORATION PLAN, MISSISSIPPI CANYON BLOCK 252, 7-1 (Mar. 10, 2009), *available at* <http://www.gomr.boemre.gov/PI/PDFImages/PLANS/29/29977.pdf>.

³⁹ Interview with Coast Guard official.

internal Coast Guard Situation Report and on a dry-erase board in the NOAA Seattle war room.⁴⁰ By early May, BP had lowered its worst-case estimate to 60,000 bbls/day.⁴¹ BP officials disclosed a similar estimate to Congress on May 4, 2010, stating during a briefing that the “maximum estimated flow would be 60,000 barrels a day, with a mid-range estimate of 40,000 barrels a day”⁴²

Thus, although there is evidence to suggest that the worst-case discharge figures BP disclosed to the Unified Command and Congress did not conform to its internal worst-case estimates,⁴³ front-line responders may have based their decision-making on estimates roughly reflecting the magnitude of the spill. But despite the fact that the Unified Command had this information, relied on it for operations, and publicly stated that it was operating under a worst-case scenario, the government never disclosed what its operational scenario was. As a confidential NOAA report drafted on April 28, 2010, noted: “There is no official change in the volume being released but the [Coast Guard] is no longer stating that the release rate is 1,000 barrels a day. Instead they are saying that they are preparing for a worst-case release and bringing all assets to bear.”⁴⁴ Responders stuck to this blueprint, stating that, while 1,000 or 5,000 bbls/day were the official best flow-rate estimates, the government was scaling the response to an *unquantified* worst-case scenario.⁴⁵

⁴⁰ U.S. COAST GUARD, DISTRICT EIGHT SITUATION REPORT 18 (April 23, 2010), *available at* <http://s3.documentcloud.org/documents/3176/uscg-logs.pdf>; Ben Raines, *Video Shows Federal Officials Knew Quickly of Potential for Massive Oil Flow in Gulf Spill*, MOBILE PRESS-REGISTER (May 1, 2010), http://blog.al.com/live/2010/05/video_shows_federal_officials.html; Dickinson, *The Spill, the Scandal, and the President*. The refined worst-case figure apparently came from either the Minerals Management Service or BP, though its origin and the methodology underlying it have not been established. Interviews with government officials.

⁴¹ Interviews with government officials.

⁴² Press Release, Markey: New Flow Rate Shockingly Close to BP’s Initial “Worst Case” Scenario (Aug. 2, 2010), http://markey.house.gov/index.php?option=com_content&task=view&id=4076&Itemid=141.

⁴³ In May 2010, BP turned over a document to congressional investigators that demonstrated that their in-house estimates were as follows: “[e]xpected range of possible flow rates is 5,000 to 40,000 BOPD,” the “[m]aximum theoretical flow rate is 60,000 BOPD,” and, if the BOP and wellhead are removed, “the rate could be as high as ~ 100,000 barrels per day”; BP WORST CASE SCENARIO DOCUMENT, *available at* <http://globalwarming.house.gov/files/WEB/flowrateBP.pdf>; Ernest Scheyder, *BP Estimates Oil Spill Up to 100,000 Barrels Per Day in Document*, REUTERS (June 20, 2010), <http://www.reuters.com/article/idUSN1416392020100620>; Bryan Walsh, *The Worse Case Scenario Gets Worse for BP as New Documents Come to Light*, TIME (June 21, 2010), <http://ecocentric.blogs.time.com/2010/06/21/the-worse-case-scenario-gets-worse-for-bp-as-new-documents-come-to-light/>.

⁴⁴ Ben Raines, *Leaked Report: Government Fears Deepwater Horizon Well Could Become Unchecked Gusher*, MOBILE PRESS-REGISTER (Apr. 30, 2010), http://blog.al.com/live/2010/04/deepwater_horizon_secret_memo.html.

⁴⁵ See, e.g., Press Briefing, Admiral Thad Allen (May 1, 2010), <http://www.marinelog.com/DOCS/NEWSMIX/2010may00010.html> (“At the outset, when we realized that the unit had sunk, we made preparations to stage equipment for a worst-case scenario. The deployment of our equipment was not related to any of the early estimates related to 1,000 barrels a day or 5,000 barrels a day”); Press Briefing, Admiral Mary Landry (May 14, 2010), <http://app.restorethegulf.gov/release/2010/05/19/transcript-press-briefing-may-14-2010> (“Whether the flow is one, five, 10, or 15 thousand barrels per day, the mobilization of resources has been to prepare for a worst-case scenario. Our resources and tactics are not constrained by flow estimates—I have to emphasize that.”); Press Briefing, NOAA Administrator Jane Lubchenco (May 20, 2010), <http://app.restorethegulf.gov/release/2010/05/24/teleconference-lubchenco-may-20> (“5,000 was always understood

The decision to withhold worst-case discharge figures may have been made above the operational level. It is the understanding of the Commission staff that the possibility of releasing the worst-case discharge figures was at least discussed at the Unified Command level.⁴⁶ The Commission staff has also been advised that, in late April or early May 2010, NOAA wanted to make public some of its long-term, worst-case discharge models for the Deepwater Horizon spill, and requested approval to do so from the White House's Office of Management and Budget.⁴⁷ Staff was told that the Office of Management and Budget denied NOAA's request.⁴⁸

The Commission may wish to consider recommendations that encourage government responders to disclose information about the scenarios under which they are operating—in this case, the operational worst-case discharge estimates. Putting aside the question of whether the public had a right to know the worst-case discharge figures, disclosure of those estimates, and explanation of their role in guiding the government effort, may have improved public confidence in the response. Instead, government officials attempted to assure the public that they were not basing operations on the official flow-rate estimates, while not stating what they were basing operations on instead. That lack of information may have contributed to public skepticism about whether the government appreciated the size of the Deepwater Horizon spill and was truly bringing all of its resources to bear. Moreover, the national response may have benefited early on from a greater sense of urgency, which public discussion of worst-case discharge figures may have generated.⁴⁹

Suggestions for the Commission's Consideration:

- The Commission may wish to consider recommendations that encourage government responders to scale operations to a credible worst-case scenario, as it appears they did here, and to disclose information about their operational scenarios. Such a recommendation would be consistent with current Coast Guard policy, which directs responders not to “lose sight of the importance of accurate and timely spill volume quantification based on maximum potential volume during initial response actions.”⁵⁰

to be a very rough estimate. That number was useful and sort of the best estimate at the time. . . . The response to the spill has never been pegged to that estimate of [5,000 bbls/day] or any other estimate. We've always pegged our response to the worst-case scenario and had much more significant effort than would have been required had it only been five.”)

⁴⁶ Interviews with government officials.

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ See Draft Staff Working Paper: *Decision-Making Within the Unified Command*, National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling, at § II(B).

⁵⁰ See Coast Guard “ALCOAST” Bulletin, Subject: Coast Guard Marine Environmental Response Doctrine—Incident Specific Preparedness Review (ISPR) Update (Jan. 12, 2009), <http://www.uscg.mil/announcements/alcoast/ALCOAST02209.txt>.

C. The Flow Rate Technical Group

Although responders stated that accurate flow-rate estimates were not important to their operations, the Unified Command eventually felt a need to assert leadership on the issue, possibly as a result of media attention and public criticism of the low early numbers.⁵¹ On May 19, 2010, the National Incident Command spearheaded the creation of an inter-agency Flow Rate Technical Group (Flow Rate Group) and charged it with generating (1) a preliminary flow rate as soon as possible and (2) a final flow-rate estimate based on peer reviewed methodologies within two months.⁵² On May 23, 2010, Dr. Marcia McNutt, Director of the U.S. Geological Survey and Science Advisor to the Secretary of the Interior, was appointed the Group's leader.⁵³

The Flow Rate Group was originally comprised of three sub-groups, made up of both governmental and non-governmental scientists: (1) the Plume Modeling Team, which used the Particle Image Velocimetry method to estimate flow velocity from video of the leaks; (2) the Mass Balance Team, which estimated spill size from aerial images taken by NASA's AVARIS aircraft; and (3) a team that analyzed the flow captured by the Riser Insertion Tube Tool to establish a baseline flow rate.

The Flow Rate Group enlisted non-governmental scientists with applicable expertise and experience, including Dr. Wereley, a critic of the low early estimates. The Group's initial estimates, however, proved chronically low, too. Moreover, the Group's later, more accurate estimates relied primarily upon data collected by a team led by Secretary of Energy Dr. Steven Chu and a team from the Woods Hole Oceanographic Institution, though the Group did play a significant role in analyzing and interpreting this data.

The initial success of the Flow Rate Group is questionable given that it did not release an arguably accurate flow-rate estimate until mid-June, when Secretary Chu's team was able to provide the Group with data. The Group's estimates may also have suffered from a failure to disclose enough information to enable other experts to assess the group's methodologies and findings. If more of the Group's data had been made public, its estimates may have evolved more rapidly with input from the broader scientific community.⁵⁴

⁵¹ Interview with government official.

⁵² Coast Guard Document; Press Release, Deepwater Horizon Incident Joint Information Center, The Ongoing Administration-Wide Response to the Deepwater BP Oil Spill (May 21, 2010), <http://www.restorethegulf.gov/release/2010/05/21/ongoing-administration-wide-response-deepwater-bp-oil-spill>.

⁵³ Coast Guard Document.

⁵⁴ On September 16, 2010, Public Employees for Environmental Responsibility (PEER), an environmental whistleblower group, filed a complaint in the U.S. District Court for the District of Columbia under the Freedom of Information Act seeking to compel the U.S. Geological Survey to produce documents related to the Flow Rate Group. PEER requested these records "in order to learn about how the [U.S. Geological Survey] and the [Flow Rate Group] developed a scientific estimate of the rate of oil leaking from the BP Deepwater Horizon blowout in the Gulf of Mexico." Complaint at 2, *Pub. Emp. for Envtl. Responsibility v. Dep't of Interior* (D.D.C. filed Sept. 16, 2010).

1. May 27, 2010 Estimate (12,000-25,000 bbls/day)

The Flow Rate Group published its first estimate on May 27, 2010, noting that “[t]he only range of flow rates that is consistent with all 3 of the methods considered by the [the Group] is 12,000 to 19,000 barrels per day. Higher flow rates [of up to 25,000 bbls/day] are consistent with the data considered by [the Plume Team].”⁵⁵ The Group’s press release contained little information as to how each of the three Flow Rate Group teams calculated those ranges, other than to note that the Plume Team’s range of 12,000-25,000 bbls/day was “an initial lower bound estimate.”⁵⁶

On June 2, 2010, the Flow Rate Group released a three page *Summary Preliminary Report* that explained the May 27, 2010 estimate in more detail.⁵⁷ That document noted that the Plume Team produced “a range of lower bounds” of 12,000 to 25,000 bbls/day ($\pm 40\%$), but did not elaborate on the underlying data or calculations.⁵⁸ Moreover, the June 2, 2010 report did *not* include the upper ranges of the Plume Team’s estimates because “[t]he experts concluded that the effect of the unknown unknowns made it more difficult to produce a reliable upper bound on the flow rate.”⁵⁹ It is the Commission staff’s understanding that the “lower bound” range was simply a collection of the minimum estimates produced by each of the Plume Team members. A few members had also produced maximum estimates, several of which were in excess of 50,000 bbls/day, but this upper bound was not released.⁶⁰ Further, the Plume Team’s report originally contained appendices that revealed some divergence of opinion within the Team.⁶¹ The appendices were not publicly released.

2. June 10, 2010 Estimate (20,000-40,000 bbls/day)

On June 10, 2010, the Flow Rate Group announced a revised flow-rate estimate of 25,000 to 30,000 bbls/day with a lower bound of 20,000 and a higher bound of 40,000 bbls/day.⁶² The Group produced a three page document called *Pooling Expert Assessments* to accompany those estimates. That document provided intervals with high and low numbers from each of six

⁵⁵ Press Release, Deepwater Horizon Incident Joint Information Center, Flow Rate Group Provides Preliminary Best Estimate of Oil Flowing From BP Oil Well (May 27, 2010), <http://app.restorethegulf.gov/release/2010/05/27/flow-rate-group-provides-preliminary-best-estimate-oil-flowing-bp-oil-well>.

⁵⁶ *Id.*

⁵⁷ MARCIA McNUTT, SUMMARY PRELIMINARY REPORT FROM THE FLOW RATE TECHNICAL GROUP (June 2, 2010), available at <http://www.doi.gov/deepwaterhorizon/loader.cfm?csModule=security/getfile&PageID=33972>.

⁵⁸ *Id.*

⁵⁹ *Id.*

⁶⁰ Interview with non-governmental source.

⁶¹ E-mail from Steven Wereley to members of the Flow Rate Technical Group’s Plume Team (May 27, 2010), available at <http://www.usgs.gov/foia/budget/05-27-2010...experts%20statements%201.pdf>.

⁶² Press Release, Deepwater Horizon Incident Joint Information Center, Admiral Allen; Dr. McNutt Provide Updates on Progress of Scientific Teams Analyzing Flow Rates From BP’s Well (June 10, 2010), <http://app.restorethegulf.gov/release/2010/06/10/admiral-allen-dr-mcnutt-provide-updates-progress-scientific-teams-analyzing-flow->.

members of the Plume Team, but only after a “statistical procedure” was applied to “reconcile” the different members’ full ranges.⁶³

The June 10, 2010 press release also noted an estimate by researchers with Woods Hole, led by Dr. Richard Camilli, who were conducting their work outside of the auspices of the Flow Rate Group but in coordination with Unified Command. On May 31, 2010, these researchers had used an ROV mounted with sonar and acoustic sensors to determine the volume and velocity of the outflow from the end of the riser and kink leak. Their initial rough estimate was a flow rate for total flux (oil plus gas) of between 65,213 and 124,991 bbls/day (0.12 to 0.23 cubic meters/second).⁶⁴ Along with the Flow Rate Group’s press release, the government released a brief one-page statement by the Woods Hole team explaining the methodology behind its estimate.⁶⁵ Yet, seemingly because this estimate was given in cubic meters/second rather than bbls/day, it did not attract media attention.

Finally, the June 10, 2010 press release announced that two new teams had been added to the Flow Rate Group: the Reservoir Modeling Team, which would help determine the rate at which oil flowed from the reservoir into the well, and the Nodal Analysis Team, which would use that information to determine the rate at which the oil traveled through the well and into the Gulf.⁶⁶ These two teams did not contribute to the June 10 or June 15 estimates. Their purpose was to arrive at a peer-reviewed, final estimate, while the Plume and Mass Balance Teams focused on generating preliminary estimates for public release and for use during the spill.⁶⁷

3. June 15, 2010 Estimate (35,000-60,000 bbls/day)

On June 15, 2010, the Flow Rate Group announced that it had generated a new official flow estimate of 35,000 to 60,000 bbls/day in conjunction with Secretary Chu and Secretary of the Interior Ken Salazar.⁶⁸ According to the accompanying press release, the new estimate was

⁶³ ANTONIO POSSOLO AND PEDRO ESPINA, POOLING EXPERT ASSESSMENTS (June 8, 2010), *available at* <http://www.doi.gov/deepwaterhorizon/loader.cfm?csModule=security/getfile&PageID=34800>. On the same day, the Plume Team issued a statement noting: “On May 27, the Team issued an Interim Report that established an estimated range for the minimum possible spillage rate but did not issue an estimate for a possible maximum value because the quality and length of the video data could not support a reliable calculation.” BILL LEHR, STATEMENT OF THE PLUME TEAM OF THE FLOW RATE TECHNICAL GROUP (June 10, 2010), *available at* <http://www.doi.gov/deepwaterhorizon/loader.cfm?csModule=security/getfile&PageID=34638>.

⁶⁴ Press Release, Deepwater Horizon Incident Joint Information Center, Admiral Allen; Dr. McNutt Provide Updates on Progress of Scientific Teams Analyzing Flow Rates From BP’s Well (June 10, 2010). Commission staff converted the Woods Hole team’s estimate from cubic meters per second to barrels per day.

⁶⁵ RICHARD CAMILLI, PRELIMINARY REPORT FROM THE WOODS HOLE OCEANOGRAPHIC INSTITUTION FLOW RATE MEASUREMENT GROUP (June 10, 2010), *available at* <http://www.doi.gov/deepwaterhorizon/loader.cfm?csModule=security/getfile&PageID=34799>.

⁶⁶ Press Release, Deepwater Horizon Incident Joint Information Center, Admiral Allen; Dr. McNutt Provide Updates on Progress of Scientific Teams Analyzing Flow Rates From BP’s Well (June 10, 2010).

⁶⁷ Interviews with government officials.

⁶⁸ Press Release, Deepwater Horizon Incident Joint Information Center, U.S. Scientific Team Draws on New Data, Multiple Scientific Methodologies to Reach Updated Estimate of Oil Flows from BP’s Well (June 15, 2010), <http://app.restorethegulf.gov/release/2010/06/15/us-scientific-team-draws-new-data-multiple-scientific-methodologies-reach-updated>.

“based on a combination of analyses of high resolution videos taken by ROVs, acoustic technologies, and measurements of oil collected by the oil production ship together with pressure measurements inside the top hat.”⁶⁹ No additional information on methodology was provided.

We now know that the high end of this estimate was accurate because of pressure readings from a sensor that Secretary Chu’s team had BP place in the Top Hat above the blowout preventer on June 13, 2010.⁷⁰ These sensor readings, along with data on the amount of oil being captured by the Top Hat and an estimate of the percentage of oil still escaping into the Gulf, allowed Secretary Chu’s team to generate a flow rate estimate of approximately 60,000 bbls/day.⁷¹

On June 14, 2010, Secretary Chu and his team, Secretary Salazar, and members of the Flow Rate Group hosted a conference call.⁷² On the call, the teams decided that they would jointly announce a flow-rate range of 35,000-60,000 bbls/day. The Chu team’s estimate accounted for the high end of the range, while the Flow Rate Group’s work provided the low end.⁷³

4. The Current Estimate (52,700-62,200 bbls/day)

The June 15, 2010 estimate was finally updated on August 2, 2010. A press release announced that, at the outset of the spill, the flow rate was 62,000 bbls/day ($\pm 10\%$), but that it had declined to 53,000 bbls/day ($\pm 10\%$) by the time the well had been capped on July 14, 2010.⁷⁴

Another document released on August 4, 2010, the *Deepwater Horizon MC252 Gulf Incident Oil Budget*, provides some additional details, but none concerning the data upon which the June 15, 2010 estimate was based. It notes only that the “[g]overnment estimate of discharge ranged from 62,200 bbl[per day] on April 22, 2010 to 52,700 bbl[per day] on July 14, 2010.”⁷⁵

We now understand that Secretary Chu’s team calculated the 52,700 bbls/day figure by taking pressure readings on July 14, 2010, using a sensor inside the capping stack that eventually stopped the flow of oil entirely. Before all of the valves on the stack had been closed, the sole channel for flow into the Gulf was an opening in the capping stack’s kill line. Pressure readings

⁶⁹ *Id.* “Top Hat” was the nickname for the loose-fitting cap placed over the top of the blowout preventer, which collected up to approximately 15,000 bbl/day from the Macondo well between June 3 and July 10, 2010.

⁷⁰ Interviews with government officials; *see also* Henry Fountain, *BP Provides Plan to Speed Up Siphoning*, N.Y. TIMES (June 14, 2010).

⁷¹ Interviews with government officials.

⁷² NOAA Document.

⁷³ Interviews with government officials.

⁷⁴ Press Release, Deepwater Horizon Incident Joint Information Center, U.S. Scientific Teams Refine Estimates of Oil Flow from BP’s Well Prior to Capping (Aug. 2, 2010), <http://app.restorethegulf.gov/release/2010/08/02/us-scientific-teams-refine-estimates-oil-flow-bps-well-prior-capping>.

⁷⁵ OIL BUDGET at 1.

from inside that line, along with some other data points, allowed the government to generate a flow-rate estimate with an uncertainty of plus or minus ten percent.⁷⁶

Once the capping stack was closed on July 15, 2010, the pressure from the reservoir was about 2,000 psi lower than anticipated, signaling that it had decreased by that amount during the spill. Using this information, and modeling backwards, Secretary Chu's team and the Flow Rate Group together arrived at an estimate of 62,200 bbls/day for the first day of the spill, based on the Woods Hole finding that 43.7% of the total flux was oil.⁷⁷ Given the new figures, the *Deepwater Horizon MC252 Gulf Incident Oil Budget* concluded that the total amount of oil discharged during the spill was 4,928,100 barrels ($\pm 10\%$, which gives a range of 4,435,290 to 5,420,910 total barrels), a number not reduced by the amount of oil captured at the wellhead.⁷⁸

The Flow Rate Group is presently compiling more information on the flow rate and total amount of oil discharged, with the intention of generating a peer-reviewed paper. Release of this paper will allow for a better assessment of the Group's work and value. It is worth noting now, however, that the Flow Rate Group did not succeed in releasing an accurate high-end estimate until mid-June and that Secretary Chu's team, rather than any of the Group's teams, appears to have been responsible for the accuracy of that June 15 estimate. Moreover, the best currently available data on flow rate were collected by Secretary Chu's team and the Woods Hole team, although the Flow Rate Group's Reservoir and Nodal Analysis Teams, established in June, played a significant role in interpreting and analyzing the data to arrive at the current government estimate.

Suggestions for the Commission's Consideration:

- The Flow Rate Group may be a valuable model for integration of outside scientific expertise, and the Commission may wish to recommend certain methodologies used by the Group as best practices. However, the Commission may also wish to recommend a review of why the Group's estimates were initially inaccurate. Finally, the Commission may want to consider whether scientific working groups such as the Flow Rate Group should disclose more of their underlying data and methodologies, allowing for greater input from the rest of the scientific community.

D. Final Government Estimate Versus Estimates of Independent Scientists

The flow-rate estimates of non-governmental scientists, generated since the well was capped, are useful in assessing the accuracy and durability of the government's current figures.

In a peer-reviewed paper published on September 23, 2010, Dr. Timothy Crone and Dr. Maya Tolstoy of Columbia University's Lamont-Doherty Earth Observatory describe their total estimate of the flow from the Macondo well. Using the Optical Plume Velocimetry method

⁷⁶ Interview with government official.

⁷⁷ Interviews with government officials.

⁷⁸ OIL BUDGET at 1.

referenced above, they conclude that, from April 22, 2010, until the riser was cut on June 3, 2010, the flow rate was 55,900 bbls/day ($\pm 21\%$); and that between June 3 and July 15, 2010, when the well was capped, the flow was 67,500 bbls/day ($\pm 19\%$).⁷⁹ Crone and Tolstoy estimate the total release to be 5,174,887 barrels ($\pm 20\%$).⁸⁰ Their calculations assume that oil represents 40% of the total flux from the well and do not include oil that was released from the kink leak prior to the riser cut on June 3, 2010.⁸¹ If the kink leak were taken into account, and the oil ratio was increased to the 43.7% figure generated by the Woods Hole team, this estimate would be on the high end of the government's current estimate for the total release.

The Woods Hole team also generated an estimate for the total flow from the well.⁸² On May 31, 2010, with the aid of the Coast Guard, Woods Hole took readings from the end of the broken riser and kink leak. The measurements at each site were taken using an ROV-mounted acoustic Doppler current profiler to determine velocity, and imaging multi-beam sonar to determine flow volume.⁸³

Following the Flow Rate Group's press release on June 10, 2010, the Woods Hole team refined its data and factored in the assumption that oil accounted for 43.7% of the total flux.⁸⁴ With this new assumption, the team concluded that, on May 31, 2010, the riser was leaking oil at 40,700 bbls/day and the kink was leaking at 18,500 bbls/day, for a total oil flow of 59,200 bbls/day.⁸⁵ Using that figure and the 53,000 bbls/day estimate for July 14, 2010 generated by Secretary Chu's team, the Woods Hole team calculated the declining flow rate over time, from April 22 to July 14, 2010. The team estimated a total release of approximately five million barrels during the course of the spill.⁸⁶

The emerging consensus is that roughly five million barrels of oil were released by the Macondo well, with roughly 4.2 million barrels pouring into the waters of the Gulf of Mexico. Using different methods, the government teams and independent scientists arrived at the same approximate figure.

⁷⁹ Timothy J. Crone, et al., *Magnitude of the 2010 Gulf of Mexico Oil Leak*, SCIENCE EXPRESS, at 1 (Sept. 23, 2010); Telephone Interview with Dr. Crone (Aug. 18, 2010 and Sept. 3, 2010).

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² Woods Hole was originally contacted by BP on May 1, 2010 to undertake diagnostic work on the failed blowout preventer, which would include measuring the flow rate. BP, however, cancelled the project, citing a need to focus on the containment dome effort. *Sizing up the BP Oil Spill: Science and Engineering Measuring Methods*, Briefing Before the Subcomm. on Energy and Environment of the H. Comm. on Energy and Commerce, 111th Cong. (May 19, 2010) (testimony of Dr. Richard Camilli).

⁸³ RICHARD CAMILLI, PRELIMINARY REPORT FROM THE WHOI FLOW RATE MEASUREMENT GROUP; Interview with Dr. Richard Camilli and Dr. Christopher Reddy, Woods Hole Oceanographic Institution, Washington, D.C. (Aug. 19, 2010); Telephone Interview with Dr. Camilli. (Sept. 10, 2010).

⁸⁴ *Id.* Scientists from Woods Hole took measurements at the source and concluded that 43.7% of the flux was oil.

⁸⁵ Telephone Interview with Dr. Camilli (Sept. 10, 2010).

⁸⁶ *Id.*

Suggestions for the Commission’s Consideration:

- The Commission may wish to recommend the technology and/or methods used by the Woods Hole team as a best practice going forward, if flow rate has to be determined rapidly in the absence of accurate pressure readings.

II. THE FATE OF THE OIL RELEASED

The second Part of this draft staff working paper describes the background to, and controversy surrounding, the “fate of the oil” released into the Gulf of Mexico during the Deepwater Horizon spill. On August 4, 2010, the government released an Oil Budget providing figures for the amounts of oil captured at the wellhead, burned, skimmed, evaporated or dissolved, chemically dispersed, and naturally dispersed. An important question for the Commission is whether that document or associated statements by administration officials created a misleading impression that the “fate of the oil” was clear, and that a large majority of the oil was “gone.”

Section A briefly describes the background to the Oil Budget and its rollout by the Obama administration. Section B outlines the Oil Budget’s limitations, which may have been obscured in that rollout. Section C discusses the early reaction to the Oil Budget. Finally, Section D summarizes ongoing scientific research related to the fate of the oil, which suggests that whether spilled oil in the Gulf of Mexico is gone or still lingering below the surface remains unclear.

A. Overview of the Oil Budget

1. History of the Budget Tool

The Oil Budget began as an operational tool that helped responders target their efforts and assess the effectiveness of skimming, burning, dispersants, and other response techniques. In the days immediately following the sinking of the Deepwater Horizon, the Coast Guard relied on a simple Microsoft Excel spreadsheet to evaluate the ongoing success of the response.⁸⁷ As the complexity and scale of the Deepwater Horizon spill became apparent, however, Coast Guard leadership needed a more advanced tracking tool to monitor the discharged oil.⁸⁸ On June 11, 2010, the National Incident Command requested the creation of a tool with the ability to document the efficacy of all skimming, burning, source capture, and dispersant application activities.⁸⁹ Experts from NOAA, the National Institute of Standards and Technology, and the United States Geological Survey formed the Oil Budget Calculator Science and Engineering

⁸⁷ JANE LUBCHENCO, ET AL., BP DEEPWATER HORIZON OIL BUDGET: WHAT HAPPENED TO THE OIL? 5 [hereinafter WHAT HAPPENED TO THE OIL?] (Aug. 4, 2010), *available at* http://www.noaa.gov/stories2010/PDFs/OilBudget_description_%2083final.pdf; U.S. Geological Survey Document.

⁸⁸ U.S. Geological Survey Document.

⁸⁹ Interview with government officials.

Team (Oil Budget Team) to develop the tool, which relied upon flow-rate data from the Flow Rate Group.⁹⁰

The Oil Budget Team's tool was ready for use by July 6, 2010.⁹¹ From that point on, Coast Guard personnel would enter daily data on dispersant applied, oily water skimmed, and oil burned. The budget tool produced reports detailing the daily and cumulative results of the response efforts, as well as the volume of oil that remained to be dispersed or cleaned up.⁹²

2. Fate of the Oil Estimates

On August 4, 2010, the Oil Budget Team released *Deepwater Horizon MC252 Gulf Incident Oil Budget (Gulf Incident Oil Budget)*⁹³ and a supporting document entitled *BP Deepwater Horizon Oil Budget: What Happened to the Oil (What Happened to the Oil)*⁹⁴ (collectively, the Oil Budget). The Oil Budget provided the first public estimate of the amount of oil discharged over the course of the spill (April 22 to July 14, 2010), a total of 4,928,100 barrels ($\pm 10\%$, which gives a range of 4,435,290 to 5,420,910 total barrels). The documents also provided an assessment of the fate of the spilled oil, as depicted in Figure 1 below:

Figure 1



⁹⁰ U.S. Geological Survey Document; Interview with government officials; *Oil Budget Q&A 8.4.10*, U.S. GEOLOGICAL SURVEY 1, <http://www.usgs.gov/foia/budget/08-04-2010...FW-%20FINAL%20Tps%20and%20Q&A%20on%20%20Oil%20Budget.pdf>.

⁹¹ Interview with government official.

⁹² U.S. Geological Survey Document.

⁹³ OIL BUDGET.

⁹⁴ WHAT HAPPENED TO THE OIL?

The Oil Budget accounted for 100% of the oil from the Macondo well through the following seven categories:

1. **Direct Recovery from Wellhead** (17%): Calculated by aggregating the amount of oil siphoned from the source through methods such as the Riser Insertion Tube Tool and Top Hat.
2. **Burned** (5%): Calculated using the American Society for Testing Materials burn rate standards, with differing rates for non-emulsified and emulsified oil.
3. **Skimmed** (3%): Calculated by multiplying the total amount of oily water collected by a fraction corresponding to the estimated average oil content of the mixture.
4. **Chemically Dispersed** (8%): Calculated based on the amount of chemical dispersants applied at the source and on the surface. (“Dispersed” oil is defined as oil droplets smaller than 100 microns.) The calculation assumes an oil-to-dispersant ratio of 20:1, based on an international standard. The subsea application of dispersants is, however, believed to be more efficient, possibly resulting in a ratio of 50:1 to 75:1.⁹⁵ If these higher subsea ratios are correct, more oil may have been chemically dispersed than is accounted for in the 8% figure.
5. **Naturally Dispersed** (16%): Calculated by taking the total amount of oil, subtracting the estimate for subsurface chemical dispersion, and then multiplying the remainder by an estimated factor for “natural dispersion,” which represents the process by which some oil coming out of the riser at high speed is sprayed off into small droplets.
6. **Evaporated or Dissolved** (25%): Calculated by applying an evaporation rate for Louisiana sweet crude oil to the amount of oil estimated to have reached the surface and not to have been burned. The calculation accounted for dissolution, and applied a higher evaporation rate to oil released within the past 24 hours than to older oil.⁹⁶
7. **Residual** (26%): The remainder once all oil accounted for in the other categories is subtracted from the total amount released from the well. Also described in the government reports as oil “remaining.”⁹⁷ The Oil Budget Team contemplated using the label “other” for this category, but decided against doing so.⁹⁸ *What Happened to the Oil* notes that the residual category “includes oil still on or just below the surface in the form

⁹⁵ See, e.g., Letter from Doug Suttles, Chief Operating Officer for Exploration and Production, BP, to Rear Admiral James Watson, Federal On-Scene Coordinator (July 11, 2010), available at <http://www.scribd.com/doc/34931289/2010-07-06-Suttles-Watson>; Katie Peek, *How Do Oil Dispersants Work?*, POPSCI (May 28, 2010), <http://www.popsci.com/science/article/2010-05/how-do-oil-dispersants-work>.

⁹⁶ Interview with government official; see also Justin Gillis, *U.S. Finds Most Oil From Spill Poses Little Additional Risk*, N.Y. TIMES (Aug. 4, 2010).

⁹⁷ OIL BUDGET.

⁹⁸ Interview with government officials.

of light sheen or tar balls, oil that has washed ashore or been collected from the shore, and some that is buried in sand and sediments and may resurface through time.”⁹⁹

3. The Rollout of the Budget

The unveiling of the Oil Budget coincided with Admiral Allen’s announcement that the “static kill” effort had succeeded. On the morning of August 4, 2010, the Director of the White House Office of Energy and Climate Change Policy, Carol Browner, appeared on *ABC*, *CBS*, *NBC*, *MSNBC*, and *Fox News* morning shows to discuss the success of the static kill effort and the conclusions of the Oil Budget Team.¹⁰⁰

Ms. Browner did not describe the Oil Budget as an operational tool designed to assist responders. Instead, some of her statements presented the budget as a scientific assessment of how much of the oil was “gone”:

- “I think it’s also important to note that our scientists have done an initial assessment, and more than three-quarters of the oil is gone. The vast majority of the oil is gone.”¹⁰¹
- “The scientists are telling us about 25 percent was not captured or evaporated or taken care of by mother nature.”¹⁰²

Subsequent headlines on August 4, 2010 reflected these characterizations: “75 percent of spilled Gulf oil gone, White House says.”¹⁰³ The Oil Budget Team’s findings, however, did not

⁹⁹ WHAT HAPPENED TO THE OIL? at 2.

¹⁰⁰ See, e.g., David Jackson, *Obama Aide on Gulf Spill: ‘No Oil is Leaking’*, USA TODAY (Aug. 4, 2010), <http://content.usatoday.com/communities/theoval/post/2010/08/obama-aide-on-gulf-no-oil-is-leaking/1>. Subsequent news media reports raised questions about this timing, including the possibility that political pressures within the White House might have prompted a premature release. See Dan Fromkin, *Questions Mount About White House’s Overly Rosy Report On Oil Spill*, HUFFINGTON POST (Aug. 20, 2010), http://www.huffingtonpost.com/2010/08/20/overly-rosy-report-on-oil_n_688142.html.

¹⁰¹ Television Interview of Carol Browner, TODAY SHOW, NBC NEWS (Aug. 4, 2010), <http://www.youtube.com/watch?v=To-fGPNyUdw>; Robert Farley, *Carol Browner Says Three-Quarters of the Oil Spilled in the Gulf is Gone*, ST. PETERSBURG TIMES (Aug. 16, 2010), <http://www.politifact.com/truth-o-meter/statements/2010/aug/16/carol-browner/carol-browner-says-three-quarters-oil-spilled-gulf/>; see also Television Interview of Carol Browner, MSNBC (Aug. 4, 2010), <http://content.usatoday.com/communities/theoval/post/2010/08/obama-aide-on-gulf-no-oil-is-leaking/1> (“Dispersants played a small role, they weren’t the only reason why almost 75% of the oil has been contained and is gone.”).

¹⁰² Television Interview of Carol Browner, *White House: Turning Point in Oil Containment*, ABC NEWS (Aug. 4, 2010), <http://abcnews.go.com/GMA/video/white-house-turning-point-oil-containment-11320458>; AFP, *75 Percent Oil From Gulf of Mexico Spill is Gone: Official*, GOOGLE NEWS (Aug. 4, 2010), <http://www.google.com/hostednews/afp/article/ALeqM5h1qkjFdSvSOH6qmoXacsi4EtmjQ>.

¹⁰³ The Associated Press, *Oil Well Plugged with Mud, BP Says; 75 Percent Spilled Gulf Oil Gone, White House Says*, TIMES-PICAYUNE (Aug. 4, 2010), http://www.nola.com/news/gulf-oil-spill/index.ssf/2010/08/oil_well_plugged_with_mud_bp_s.html; see also, e.g., Jim Polson & Allison Bennett, ‘Vast Majority’ of Oil Gone From Gulf, Browner Says, BLOOMBERG (Aug. 4, 2010); Farley, *Carol Browner Says Three-*

support the claim that 75% of the oil was “gone.” The 75% not in the “remaining” category included “dissolved” and “dispersed” oil, which was potentially being biodegraded, but was not “gone.”

The Oil Budget rollout continued on the afternoon of August 4, 2010 with a White House press briefing attended by Ms. Browner, White House Press Secretary Robert Gibbs, Admiral Thad Allen, and NOAA Administrator Dr. Jane Lubchenco. At the briefing, the speakers again discussed the success of the static kill and the findings of the Oil Budget Team. Administrator Lubchenco described the Budget’s findings in somewhat different and more conservative terms than Ms. Browner, stating that “at least 50 percent”—not 75 percent—“of the oil that was released is now completely gone from the system.”¹⁰⁴

In addition, Ms. Browner and Administrator Lubchenco emphasized that the report was “peer-review[ed]” by federal and non-federal scientists.¹⁰⁵ These references to peer review by two senior officials in a White House press briefing likely contributed to public perception of the budget’s findings as more exact and complete than the budget, as an operational tool, was designed to be.

B. The Oil Budget’s Shortcomings

The Oil Budget was never meant to be a precise tool, and its rollout as a scientific report obscured some important shortcomings.

First, perhaps because the Oil Budget was originally intended for responders rather than for public evaluation, it did not disclose the formulas and assumptions upon which its estimates were based. Of the seven categories in which it provided estimates, “direct recovery” was the only one based on direct measurements. The Oil Budget Team built its assessment of the fate of the other 83% of the oil—roughly 4.1 million barrels—on unreleased formulas. It also presented estimates for those categories as fixed numbers or percentages, without attendant confidence intervals.

Quarters of the Oil Spilled in the Gulf is Gone, ST. PETERSBURG TIMES (Aug. 16, 2010); AFP *75 Percent Oil From Gulf of Mexico Spill is Gone: Official*.

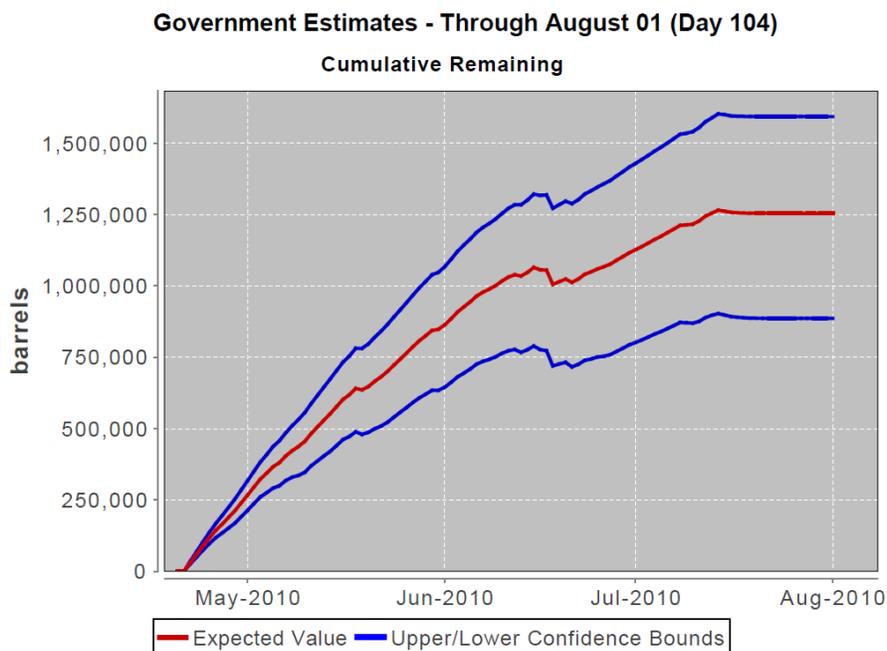
¹⁰⁴ White House Press Briefing, Robert Gibbs, Admiral Thad Allen, Carol Browner, and NOAA Administrator Jane Lubchenco, Washington, D.C. (Aug. 4, 2010), <http://www.whitehouse.gov/the-press-office/press-briefing-press-secretary-robert-gibbs-admiral-thad-allen-carol-browner-and-dr>. To reach the 50% figure, Administrator Lubchenco would have had to include as “gone” not only the 25% of the oil that was recovered at the wellhead, skimmed, or burned, but also the 25% that had evaporated or dissolved. Yet she also noted at the briefing that dissolved oil “in microscopic droplets that is still there may be toxic”; that “diluted and out of sight doesn’t necessarily mean benign”; and that dissolved and dispersed oil are “pretty comparable.” *Id.*; see also *infra* notes 106-07.

¹⁰⁵ White House Press Briefing (Aug. 4, 2010) (Lubchenco: “The report was produced by scientific experts from a number of different agencies, federal agencies, with peer review of the calculations that went into this by both other federal and non-federal scientists.”; Browner: “This has all been—as Dr. Lubchenco said—been subjected to a scientific protocol, which means you peer review, peer review and peer review.”).

Second, and more important, the Oil Budget was simply not designed to explain, or capable of explaining, the “fate of the oil.” Its purpose was to tell responders how much oil was present for clean-up operations, not to tell the public how much oil was still in Gulf waters. Thus, it did not attempt to quantify biodegradation, or the exact amounts of remaining, dissolved, and dispersed oil, which were not the targets of response actions.

One of the report’s graphs (*see* Figure 2 below) illustrates that biodegradation was not a component of the budget. The amount of oil is depicted as constant following the July 15, 2010 well capping:

Figure 2



The Oil Budget’s failure to account for biodegradation could result in over- or under-estimation of the amount of oil remaining in Gulf waters. On the one hand, oil that the budget classified as “dispersed,” “dissolved,” or “evaporated” is not necessarily gone. Dispersed or dissolved oil may still be present in the water, and even evaporated oil remains in the atmosphere for a short time. As Administrator Lubchenco has stated, “dispersed or diluted doesn’t necessarily mean benign.”¹⁰⁶ On the other hand, oil that the budget classified as “remaining” is

¹⁰⁶ Renee Schoof, *NOAA Head: Scientists’ Work on Gulf Spill Far From Done*, MCCLATCHY NEWSPAPERS (Sept. 15, 2010), http://www.mcclatchydc.com/2010/09/15/100645/noaa-head-scientists-work-on-gulf.html?storylink=MI_email. Similarly, when testifying before the Commission on August 25, 2010, Administrator Lubchenco noted that “even though [subsea oil] is dilute it is not necessarily benign. Dilute is not benign.” She said that she “continue[d] to have grave concerns about the impact that that oil had when it was first released as well as continuing to have until it is completely biodegraded.” Testimony of Administrator Lubchenco

not necessarily still present, as some portion may have already biodegraded. That category might have been better described as “other”—oil not included in any of the other categories. The *What Happened to the Oil* document did discuss the biodegradation issue, noting that “[o]il in the residual and dispersed categories is in the process of being degraded,” and referencing early indications that the oil is “biodegrading quickly.”¹⁰⁷ But because the Oil Budget did not provide sources or data to support this claim, or define “quickly,” this note seemed to increase, rather than address, public confusion about whether and how the budget demonstrated that most of the oil was “gone.”

C. Early Reactions to the Oil Budget

The Oil Budget received immediate criticism. Critics focused on Ms. Browner’s and Administrator Lubchenco’s statements that the report had been peer-reviewed; on the decision to present the findings as fixed numbers rather than ranges, without disclosure of the underlying formulas;¹⁰⁸ and on the claim that the oil was “biodegrading quickly.”¹⁰⁹ Scientists argued that the report painted a misleadingly optimistic picture of the situation in the Gulf, presenting uncertain information as fact.¹¹⁰

The criticism that the Oil Budget was not a peer-reviewed scientific report was accurate. Even the independent scientists that were described as peer reviewers were critical of the report and the way it was presented. According to the *What Happened to the Oil* document, these scientists “consulted on the oil budget calculations, contributed field data, suggested formulas, analysis methods, or reviewed the algorithms used in the calculator.”¹¹¹ When interviewed, many of these scientists described their contributions in similar terms, but they emphasized the large degree of uncertainty in their work and their impression that they were assisting in the development of an operational tool rather than a public government report.¹¹² Indeed, it is unclear whether any of the independent scientists actually reviewed the final report prior to its

Before the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (Aug. 25, 2010), <http://www.oilspillcommission.gov/meeting-2/video-2>.

¹⁰⁷ WHAT HAPPENED TO THE OIL?; see also White House Press Briefing (Aug. 4, 2010) (Administrator Lubchenco, stating that most of the 50% of the remaining oil “is degrading rapidly or is being removed from the beaches”).

¹⁰⁸ For example, Representative Edward Markey (D-Massachusetts) asserted that the formulas and assumptions underlying the Oil Budget should have been made public at the same time as the findings, to permit independent verification. Katie Howell, *White House, Critics Reach Stalemate in Dispute Over Oil Budget in Gulf*, N.Y. TIMES (Aug. 23, 2010).

¹⁰⁹ David A. Fahrenthold, *Scientists Question Government Team’s Report of Shrinking Gulf Oil Spill*, WASH. POST (Aug. 5, 2010); see also Howell, *White House, Critics Reach Stalemate in Dispute Over Oil Budget in Gulf*.

¹¹⁰ See, e.g., Fahrenthold, *Scientists Question Government Team’s Report of Shrinking Gulf Oil Spill* (Quoting Dr. Ian MacDonald who stated that “[The *Oil Budget*] seems very reassuring, but the data aren’t there to actually bear out the assurances that were made.”).

¹¹¹ WHAT HAPPENED TO THE OIL?

¹¹² Dan Froomkin, *NOAA Claims Scientists Reviewed Controversial Report; The Scientists Say Otherwise*, THE HUFFINGTON POST (Aug. 20, 2010), http://www.huffingtonpost.com/2010/08/20/noaa-claims-scientists-re_n_689428.html; Kate Sheppard, *NOAA’s Supposed Peer Reviewers: We Never Reviewed the Report*, MOTHER JONES (Aug. 20, 2010), <http://motherjones.com/blue-marble/2010/08/was-noaa-report-independently-evaluated>.

release.¹¹³ In the words of consulting expert Ed Overton, “[t]o a scientist, peer review means something Clearly it wasn’t a peer review from a scientific perspective.”¹¹⁴

The Administration has declined to make public the data underlying the Oil Budget before publication of a comprehensive report in mid-October.¹¹⁵

D. Subsequent Scientific Research

Scientific reports on the fate of the oil from the Macondo well have begun to emerge over the past two months. Some research has already been peer-reviewed and published; other research is more preliminary. The peer-reviewed studies generally focus on the location of dispersed oil and other hydrocarbons and the rate at which they are biodegrading.¹¹⁶ Although different research teams appear to be providing pieces missing from the Oil Budget and the larger puzzle regarding the fate of the oil, their findings suggest that understanding where the oil went will be an incremental process.

1. An Underwater Plume

The first important peer-reviewed scientific paper—by Camilli, et al., released on August 19, 2010—focused on the discovery of an underwater plume of hydrocarbons.¹¹⁷ While conducting research in the Gulf of Mexico between June 19 and 28, 2010, Camilli’s Woods Hole team found a continuous plume of highly diffuse hydrocarbons 35 kilometers long, 200 meters high, and 2 kilometers wide, at a depth of approximately 1,100 meters.¹¹⁸ After determining that the Macondo spill was the source of the plume, the group estimated that the plume likely extended beyond the 35-kilometer boundary of the study. The Woods Hole researchers also examined the biodegradation rate by analyzing oxygen drawdown within the plume. The team was unable to find evidence of “systematic oxygen drawdown,” which suggested that rapid biodegradation might not be occurring.¹¹⁹

The release of this study attracted considerable media attention, with many outlets focusing on whether it supported the conclusions of the Oil Budget.¹²⁰ The authors of the study have tried to curtail this line of inquiry, describing the Oil Budget as a “first pass[.]” that is part of a “foundation from which to work, road maps to use in assigning future research assets in

¹¹³ *Id.*

¹¹⁴ Sheppard, *NOAA’s Supposed Peer Reviewers: We Never Reviewed the Report*.

¹¹⁵ Interviews with government officials.

¹¹⁶ Oil was not the only hydrocarbon released from the Macondo well. Natural gas represented a significant percentage of the total discharge. Telephone Interview with Dr. Camilli (Sept. 10, 2010).

¹¹⁷ Richard Camilli et al., *Tracking Hydrocarbon Plume Transport and Biodegradation at Deepwater Horizon*, SCIENCE EXPRESS, at 1 (Aug. 19, 2010).

¹¹⁸ *Id.* at 2.

¹¹⁹ *Id.* at 3.

¹²⁰ Justin Gillis and John Collins Rudolf, *Oil Plume is Not Breaking Down Fast, Study Says*, N.Y. TIMES (Aug. 19, 2010); Christopher Reddy, Op-Ed., *How Reporters Mangle Science on Gulf Oil*, CNN (Aug. 25, 2010), <http://edition.cnn.com/2010/OPINION/08/25/reddy.science.media/index.html>.

examining the transport and fate of oil in the Gulf of Mexico.”¹²¹ The Woods Hole study itself considered only one factor giving an indication of the biodegradation rate.

2. Further Work on Biodegradation

The next peer-reviewed paper to emerge, published on August 24, 2010, by Hazen, et al. and titled *Deep-Sea Oil Plume Enriches Indigenous Oil-Degrading Bacteria*, primarily focused on biodegradation of deep-sea plumes of hydrocarbons.¹²² The Hazen team, researchers from Lawrence Berkeley National Laboratory, conducted their fieldwork between May 25, 2010 and June 2, 2010. Like the Woods Hole team, the Hazen team detected a subsea plume of hydrocarbons at a depth of 1,100-1,200 meters. Unlike Woods Hole, however, the team did find slight oxygen drawdown within the plume. The Hazen team also noted the type and density of the microbes in the plume and did laboratory tests to determine the biodegradation rate in terms of hydrocarbon half-life (1.2-6.1 days). Based on their findings, the researchers concluded that microbes were rapidly adapting in response to the presence of the subsea plume, and that the biodegradation rates for hydrocarbons were “faster than expected.”¹²³ While the Hazen team’s research suggests more rapid biodegradation, both Hazen and Camilli have described their studies as complementary rather than conflicting.¹²⁴ Both found deep sea plumes of hydrocarbons, with Hazen using different, more varied methods to estimate biodegradation.¹²⁵

A third study related to biodegradation was produced by the National Incident Command’s Joint Analysis Group on August 16, 2010, and found depressed, but not hypoxic, oxygen levels at the site of the Macondo well.¹²⁶ The group’s study, conducted between May 8 and August 9, 2010, noted reduced oxygen levels at depths of 1,000 to 1,400 meters, which they interpreted as consistent with the presence of hydrocarbons from the Macondo well.¹²⁷ They did not find that oxygen drawdown was increasing over time. Their report concluded that oxygen levels were not decreasing because the oxygen depleted by biodegradation (as found by Hazen, et al.) was being replenished through the mixing of plume water with surrounding waters.¹²⁸

¹²¹ Reddy, Op-Ed., *How Reporters Mangle Science on Gulf Oil*.

¹²² Terry C. Hazen et al., *Deep-Sea Oil Plume Enriches Indigenous Oil-Degrading Bacteria*, SCIENCE EXPRESS (Aug. 24, 2010).

¹²³ *Id.*

¹²⁴ Deborah Zabarenko, *Microbes Ate BP Oil Deep-Water Plume: Study*, REUTERS (Aug. 24, 2010), <http://www.reuters.com/article/idUSTRE67N5CC20100824>.

¹²⁵ *Id.*

¹²⁶ JOINT ANALYSIS GROUP, REVIEW OF PRELIMINARY DATA TO EXAMINE OXYGEN LEVELS IN THE VICINITY OF MC252#1, (Aug. 16, 2010), *available at* http://ecowatch.ncddc.noaa.gov/JAG/files/JAG_Oxygen_Report%20FINAL%20090410.pdf. Hypoxic oxygen levels lead to insufficient oxygenation of surrounding organisms’ blood.

¹²⁷ *Id.* at 7.

¹²⁸ *Id.* at 8.

3. The Fate of All Hydrocarbons

The most recent peer-reviewed paper on the subject, *Propane Respiration Jump-Starts Microbial Response to a Deep Oil Spill*, was published on September 16, 2010 by Valentine, et al. and focused on the fate of all hydrocarbons rather than just oil.¹²⁹ Conducted from June 11-21, 2010, the study found subsea plumes in the vicinity of the Macondo well that included high concentrations of natural gas. To analyze biodegradation rates, the team looked at oxygen drawdown, as well as several other factors to determine which forms of hydrocarbons were being degraded.¹³⁰ They concluded that most of the initial biodegradation in the plumes involved gaseous hydrocarbons (propane and ethane), rather than oil. But they suggested that this initial degradation of gas could prime bacteria to degrade other hydrocarbons in the aging plumes.¹³¹

4. Current Research

In addition to these published studies, the media has reported on a number of ongoing field studies and their preliminary findings. Dr. Samantha Joye, a professor of Marine Sciences at the University of Georgia,¹³² is currently taking sediment samples in the Gulf of Mexico and has found a layer of oily substance up to two inches thick covering the ocean floor in the region of the Macondo well.¹³³ Dr. Joye thinks the layer is fresh because recently deceased shrimp, worms, and other sea life lie below it.¹³⁴ While Dr. Joye has yet to confirm that the oil comes from the Macondo well, she has voiced her belief that what she found is likely dispersed subsurface oil from the spill.¹³⁵

Similarly, a team from the University of South Florida (USF) found oil droplets in marine sediment in the DeSoto Canyon, an underwater fissure that runs from the Macondo site towards

¹²⁹ David L. Valentine et al., *Propane Respiration Jump-Starts Microbial Response to a Deep Oil Spill*, SCIENCE EXPRESS (Sept. 16, 2010).

¹³⁰ *Id.*

¹³¹ *Id.* Other researchers, however, have made the converse suggestion to Commission staff: i.e., that the presence and biodegradation of gaseous hydrocarbons could slow the degradation of heavier liquid oil compounds. Telephone Interview with Dr. Camilli (Sept. 10, 2010).

¹³² Dr. Joye is also part of the Georgia Sea Grant, an “ad hoc group of university-based oceanographic experts” that released a report criticizing the Oil Budget on August 17, 2010. Georgia Sea Grant, *Outcome/Guidance from Georgia Sea Grant Program: Current Status of BP Oil Spill* (Aug. 17, 2010), http://uga.edu/aboutUGA/joye_pkit/GeorgiaSeaGrant_OilSpillReport8-16.pdf. Based largely on the figures in the Oil Budget, but using different methodologies and assumptions, the report estimated that a full 70-79% of the 4.1 million barrels of oil released into Gulf waters was still remaining at the time of publication. The report attempted to account for biodegradation, using an estimate of 5%-10% based on data from earlier spills. The Georgia Sea Grant report has been criticized as based upon insufficient data and for underestimating the rate of biodegradation. See, e.g., John Collins Rudolph, *Scientists Tussle Over Gulf Oil Tally*, N.Y. TIMES (Aug. 17, 2010), <http://green.blogs.nytimes.com/2010/08/17/tussle-over-gulf-oil-tally-drags-on/>.

¹³³ Cain Burdeau and Seth Bornstein, *Where's the Oil? On the Gulf Floor, Scientists Say*, ST. PETERSBURG TIMES (Sept. 13, 2010); Richard Harris, *Scientists Find Thick Layer of Oil on Seafloor*, NATIONAL PUBLIC RADIO (Sept. 10, 2010), <http://www.npr.org/templates/story/story.php?storyId=129782098>; Samantha Joye, *Focusing in on Oil*, GULF OIL BLOG (Sept. 5, 2010), <http://gulfblog.uga.edu/2010/09/focusing-in-on-oil/>.

¹³⁴ Harris, *Scientists Find Thick Layer Of Oil On Seafloor*.

¹³⁵ *Id.*; Burdeau and Bornstein, *Where's the Oil? On the Gulf Floor, Scientists Say*.

the coast of Florida.¹³⁶ Although this research took place from August 6-16, 2010, the researchers have not confirmed that the droplets are from the Macondo well.¹³⁷ One of the researchers involved has noted that their findings are preliminary and should not “get misconstrued as scientific fact.”¹³⁸

Dr. Joye and the USF team appear to be publicizing their work in part to highlight that the oil spilled is not gone.¹³⁹ Perhaps to some extent as a consequence of these early findings, government officials have changed the tone of their public statements on the fate of the oil. For example, on September 15, 2010, Administrator Lubchenco acknowledged that oil is being found on the seafloor and promised that the government “will continue to monitor, sample and study the oil and [dispersants] from the near shore to the open ocean, from the surface to the seafloor . . . mindful of the need to understand how much oil remains, where it is and in what concentrations and how rapidly it’s being naturally degraded.”¹⁴⁰ Pursuant to Admiral Allen’s August 13, 2010 directive, NOAA is now leading an extensive study, which includes independent and government scientists, to better understand how much oil remains in the Gulf and its impacts on the marine ecosystem.¹⁴¹

Suggestions for the Commission’s Consideration:

- Certain statements by administration officials to the effect that the Oil Budget was a “peer-review[ed]” scientific report, and that it concluded 75% of the oil was “gone,” were inaccurate and led to news reports that were misleading. In fact, the Oil Budget was a rough operational tool, and its findings were neither as clear nor as reassuring as the initial rollout suggested.
- As with the Flow Rate Technical Group, the Commission may wish to consider recommending that government scientific study groups disclose more of their underlying methodologies, assumptions, and data, allowing for greater review and input from the rest of the scientific community.

¹³⁶ Vickie Chachere, *USF Scientists Detect Oil on Seafloor*, UNIVERSITY OF FLORIDA NEWS SERVICE (Aug. 17, 2010), <http://usfweb3.usf.edu/absoluteNM/templates/?a=2604&z=120>.

¹³⁷ *Id.*

¹³⁸ Christine Dell’Amore, *Toxic Oil Found Deep on Gulf Seafloor?*, NATIONAL GEOGRAPHIC DAILY NEWS, Aug. 18, 2010, <http://news.nationalgeographic.com/news/2010/08/100818-gulf-oil-spill-seafloor-toxic-science-environment/>.

¹³⁹ Burdeau and Bornstein, *Where’s the Oil? On the Gulf Floor, Scientists Say*.

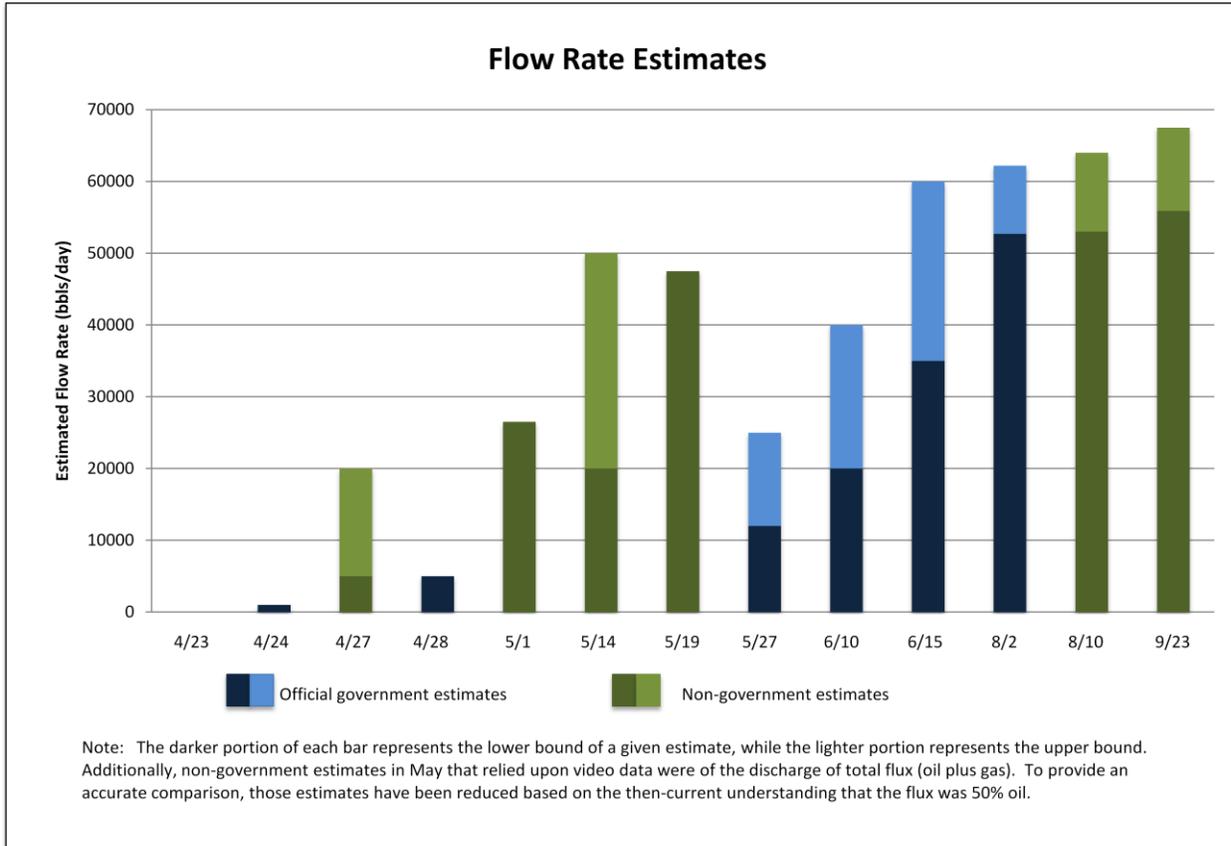
¹⁴⁰ Press Briefing and Teleconference, Admiral Thad Allen and NOAA Administrator Dr. Jane Lubchenco (Sept. 15, 2010), <http://www.piersystem.com/go/doc/2931/898775>.

¹⁴¹ Press Briefing, Admiral Thad Allen (Aug. 13, 2010),

<http://www.restorethegulf.gov/release/2010/08/13/transcript-press-briefing-national-incident-commander-admiral-thad-allen>; Laura Parker, *NOAA Launches Mission to Solve BP Oil Mystery*, AOL NEWS (Sept. 24, 2010), <http://www.aolnews.com/gulf-oil-spill/article/noaa-launches-mission-to-solve-bp-oil-mystery/19648228>; Editorial, *Science and the Gulf*, N.Y. TIMES (Sept. 13, 2010).

- The fate and impacts of oil released from the Macondo well are unlikely to be resolved before the Commission issues its report. The Subcommittee on Restoration: Impacts and Assessment will follow emerging scientific findings and take up these important issues.

Appendix



National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling

THE CHALLENGES OF OIL SPILL RESPONSE IN THE ARCTIC

--Draft--

Staff Working Paper No. 5

Staff Working Papers are written by the staff of the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling for the use of members of the Commission. They are preliminary, subject to change, and do not necessarily reflect the views either of the Commission as a whole or of any of its members. In addition, they may be based in part on confidential interviews with government and non-government personnel.

This draft staff working paper describes some of the difficulties of spill response in the Arctic.¹ In the staff's view, response challenges in the Arctic are important for the Commission to consider in its recommendations for the future of offshore drilling. This paper provides background information regarding the status of offshore drilling in Arctic waters, identifies problems with responding to oil spills in Arctic waters, and highlights areas for further Commission inquiry with respect to Arctic drilling.

I. Background

A. The Region at Issue

The two locations of offshore drilling in the Arctic, the Beaufort Sea and the Chukchi Sea, present different drilling conditions and response issues.

The Beaufort Sea drilling sites are situated on man-made gravel islands located two to fifteen miles offshore, in water depths up to approximately 100 feet.² They are often linked to onshore facilities and are close to land and shoreline resources. The majority of the construction

¹ This working paper does not address all issues related to Arctic drilling in which the Commission may be interested. For example, the paper does not address the evaluation of spill impacts, the potential non-oil spill impacts of oil and gas development in the Arctic, or the role of environmental regulatory review under the National Environmental Policy Act, the Marine Mammal Protection Act, and other federal laws (or their Alaska state counterparts).

² BP IN ALASKA, www.bp.com/assets/bp_internet/us/bp_us_english/STAGING/local_assets/downloads/a/A02_alaska_facts_figures.pdf (last visited Sept. 15, 2010); SHELL'S BEAUFORT SEA EXPLORATORY DRILLING PROGRAM: OIL SPILL PREVENTION AND RESPONSE, http://www-static.shell.com/static/usa/downloads/about_shell/strategy/major_projects/alaska/final_shell_ospr_booklet_10-1-07.pdf (last visited Sept. 18, 2010); Ian Urbina, *BP Is Pursuing Alaska Drilling Some Call Risky*, N.Y. TIMES (June 23, 2010).

of the offshore gravel islands, however, needs to be completed during the winter ice season when an ice road exists between the site and the mainland.³

The locations of drilling interest in the Chukchi Sea are much further offshore and, consequently, much less accessible. This area had until recently generated less interest from industry as a result of its lack of shoreline infrastructure and the consequent heightened cost of drilling.⁴ The current applications from the Shell Oil Company and StatOil are for seismic exploration and exploratory drilling at least sixty miles off the coast that would take place during the open water season from July to October.⁵

These differences in environmental conditions and drilling proposals mean that spill response in the Beaufort Sea would potentially be more straightforward than spill response in the Chukchi. The Beaufort region has more developed and proximate infrastructure, so access to a spill area might be easier. However, the Beaufort drilling sites are closer to both the sensitive shoreline and the areas traversed by bowhead whales and whale hunters.

A spill or blowout in the Chukchi Sea area would be more difficult to access, let alone contain and clean up. Although Shell has pre-positioned assets dedicated to potential spill response in the Chukchi Sea,⁶ bringing any assets, both the pre-staged equipment and any additional resources brought from elsewhere, to bear on a spill in the Arctic would be more difficult than in the Gulf of Mexico. And once the winter freeze occurs, any spill would be impossible to access for purposes of response. On the other hand, any spill in the Chukchi Sea would be far from coastal resources, and oil trapped beneath sea ice would be unlikely to spread into marine ecosystems until the ice began to melt.

The Arctic areas also stand in contrast with the Gulf of Mexico in terms of the issues posed by deepwater drilling. The Deepwater Horizon containment efforts were complicated immensely by the depth of the wellhead and the high well pressures encountered at the Macondo well. Wells in both the Chukchi and the Beaufort Seas would be in far shallower water, which could make it easier to contain a blowout or riser leak. Shell asserts that well pressures in the Chukchi and Beaufort Seas would be approximately one third to one half of the pressures faced by BP at the Macondo well.⁷ Finally, although wells in the Chukchi would be similar to the

³ J.D. Hall, *Oooguruk Project Offshore Alaska*, OFFSHORE (Aug. 1, 2008), <http://www.offshore-mag.com/index/article-display/337896/articles/offshore/volume-68/issue-8/arctic-frontiers/oooguruk-project-offshore-alaska.html>.

⁴ CHARLES THOMAS, WALTER NORTH, TOM DOUGHTY & DAVID HITE, *ALASKA NORTH SLOPE OIL AND GAS: A PROMISING FUTURE OR AN AREA IN DECLINE?*, DOE/NETL (Apr. 8, 2009), http://www.netl.doe.gov/technologies/oil-gas/publications/AEO/ANS_Potential.pdf [hereinafter THOMAS ET AL., *ALASKA NORTH SLOPE OIL AND GAS*].

⁵ Online Public Notice, State of Alaska, North Slope Borough: Shell Offshore Inc. 2010 Chukchi Sea Exploration Plan (Nov. 25, 2009), http://notes4.state.ak.us/pn/pubnotic_nsf/PNByPublActive/863634D1F5F7724089257678000615E2?OpenDocument (last visited Sept. 15, 2010).

⁶ Peter K. Velez, Upstream Emergency Response Manager, Shell International Exploration and Production B.V., Presentation to Commission staff (Sept. 16, 2010).

⁷ The Macondo wellhead lay below about 5,000 feet of water; the proposed exploratory wells in the Chukchi Sea would be at depth of about 150 feet. Shell believes, based on the testing it has already done, that the pressures in the Chukchi Sea would be two to three times less than they were in the Macondo well. Letter from Marvin E. Odum, President, Shell Oil Company to S. Elizabeth Birnbaum, Minerals Management Service (May 14, 2010), available at http://www.thearcticsouder.com/article/1020shell_letter_defends_arctic_program_in_light.

Macondo well in terms of distance from shore, the human uses of the shoreline of the Gulf Coast are much more expansive than the human uses of the North Slope Coast.⁸

The contrasts between these regions and between open water and ice conditions affect the nature of spill response and spill response planning. Many of the issues highlighted in this paper apply to both the Beaufort and the Chukchi Seas, but the different conditions should be kept in mind.

B. Industry Interest

Although interest in exploring Alaska's North Slope for oil began in the early 20th century, the region's remoteness and lack of land availability prevented serious private investment, leaving most exploration to the U.S. Navy. It was the discovery of the Prudhoe Bay and Kuparuk River fields from 1967-69 that spurred the industry to explore the Arctic region of Alaska.⁹ In 1979, the government conducted a leasing sale that included state and federal waters of the Beaufort Sea, resulting in the first major venture into Arctic offshore exploration.¹⁰

Drilling in the Beaufort began in 1981, with a total of 20 wells drilled by 1989. Only a few of the wells were further developed, including those in the Northstar and Liberty fields. Most of the wells drilled in the Beaufort came up dry. Among the dry wells were those in the Mukluk field, which, at a cost of \$120 million, are considered the most expensive dry wells ever drilled.¹¹ In the Chukchi, remoteness and harsh conditions continued to discourage industry activity. The first lease sale in the area was not held until 1988.

In the 1990s, industry's interest decreased in both the Chukchi and the Beaufort, in part because of the failure of Mukluk. But more recently, interest—in particular, by Shell—has begun to grow once again. Several factors have contributed to renewed oil industry interest in drilling in the Beaufort and Chukchi Seas. Improved technology has made remote locations more economically viable to explore. Additionally, the then-Minerals Management Service (MMS)¹² issued new information for the Burger field in the Chukchi Sea in advance of the lease sales held in 2008, which detailed significant untapped oil and gas resources and made the region much more attractive for exploration and investment.¹³ The U.S. Geology Survey, also in 2008, released a reevaluation of Arctic potential resources, estimating that “90 billion barrels of oil, 1,669 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids may remain to be found in the Arctic, of which approximately 84 percent is expected to occur in offshore areas.”¹⁴

Shell estimates that there are 25 billion barrels of oil in the Alaskan Arctic, with the majority in the Chukchi Sea; the data from BOEMRE, which accounts only for oil that is economically recoverable with current technology, is 0.15 to 12 billion barrels of oil in the

⁸ Some of the shoreline and human use issues of Gulf of Mexico and the Chukchi and Beaufort Seas will be discussed in later Commission work on the potential impacts of a spill.

⁹ THOMAS ET AL., ALASKA NORTH SLOPE OIL AND GAS, at 2-17 to 2-25.

¹⁰ *Id.* at 2-26.

¹¹ *Id.* at 2-35.

¹² MMS is now the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE).

¹³ THOMAS ET AL., ALASKA NORTH SLOPE OIL AND GAS at 2-79.

¹⁴ Fact Sheet, U.S. Geological Survey, Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle (2008), available at <http://pubs.usgs.gov/fs/2008/3049/>.

Chukchi.¹⁵ Shell acquired leases in the Beaufort during Lease Sale 195 in 2005 and in the Chukchi during Lease Sale 193 in 2008, and it has announced plans to drill in both regions. Shell's proposal for drilling exploratory wells in the Chukchi Sea envisions operations taking place from approximately July 15 to October 30. Drilling will occur from a floating drillship. If Shell begins production at some time in the future, production drilling will occur year-round, though access to the drilling operations by boat will be easier during open water season.

The shrinking Arctic ice cap is also a factor. A smaller ice cap creates longer open water seasons and increased open water areas, while diminishing risk of ice collisions.¹⁶ The Arctic Ocean is subject to regular freezing and melting as the ice shelf that extends off the main Arctic ice cap expands in the winter and retreats in the warmer summer months. The ice seasons consist of: "open water" in the summer, "freeze up" as the ice forms through the fall, "over winter" as the solid floating ice attaches to the shelf, and "break up" as the ice melts and cracks into floes and other large pieces through the spring. As the temperatures in the Arctic increase, both the extent of ice cover overall and the length of time that ice blocks the sea decreases. Estimates vary as to how soon the Arctic Ocean will be ice-free in the summer months, but most projections place the event sometime between 2030 and 2100.¹⁷

C. Status of Exploration and Leasing

The Beaufort and Chukchi Seas sit in different positions with regard to where, how, and when exploration and drilling may occur. All drilling in the Arctic is on pause as of this writing. On September 3, 2010, during a trip to Alaska, Department of Interior Secretary Ken Salazar announced that the Department of the Interior will not decide whether to allow exploratory drilling for oil and gas in the Alaska Arctic outer continental shelf until the Department has completed a review of issues relating to offshore drilling activities.¹⁸ On September 9, 2010, the state of Alaska sued the Department of the Interior in the United States District Court for the District of Alaska, contending that the announcement imposed an improper de facto moratorium and did not give the state a chance to comment or a final decision to appeal.¹⁹ An Interior spokesperson indicated that the Department was "taking a cautious approach" and needed "additional information about spill risks and spill response capabilities."²⁰ The Department also

¹⁵ Shell Beaufort and Chukchi Sea, Program Update, Presentation to National Commission Staff, in Washington D.C. (Sept. 17, 2010); Questions and Answers: The Next Five-Year OCS Oil and Gas Leasing Program (2012-2017), http://www.doi.gov/whatwedo/energy/ocs/QA_2012-2-17.cfm.

¹⁶ RONALD O'ROURKE, CONG. RESEARCH SERV., CHANGES IN THE ARCTIC: BACKGROUND AND ISSUES FOR CONGRESS 17 (Mar. 30, 2010).

¹⁷ See, e.g., Press Release, National Snow and Ice Data Center, Arctic Sea Ice Shatters All Previous Record Lows (Oct. 1, 2007), available at http://nsidc.org/news/press/2007_seaiceminimum/20071001_pressrelease.html (predicting 2030); Walter Meier, Julienne Stroeve, and Florence Fetterer, *Whither Arctic sea ice? A clear signal of decline regionally, seasonally and extending beyond the satellite record*, 46 ANNALS OF GLACIOLOGY 433 (2007); (predicting 2035-2106); Julienne Stroeve, Marika Holland, Walt Meier, Ted Scambos, and Mark Serreze, *Arctic Sea Ice Decline: Faster than Forecast*, 34 GEOPHYSICAL RESEARCH LETTERS 5 L09501 (2007) (predicting 2050-2100).

¹⁸ Kim Murphy, *Salazar says Arctic Drilling Must Wait Until More is Known About Potential Pitfalls*, LOS ANGELES TIMES (Sept. 4, 2010), <http://articles.latimes.com/2010/sep/04/news/la-artic-drilling-greenspace-sept4-m>.

¹⁹ Alaska v. Salazar, No. 3:10-cv-00205 (D. Alaska filed Sept. 9, 2010).

²⁰ Margaret Cronin Fisk, *Alaska Claims in Suit U.S. Government Improperly Banned Off-Coast Drilling*, BLOOMBERG (Sept. 10, 2010), <http://www.bloomberg.com/news/2010-09-09/u-s-improperly-banned-drilling-off-alaska-coast-state-alleges-in-lawsuit.html>.

contends that there is no moratorium in place for Alaska, but rather a period of additional review of proposed drilling plans.²¹

a. Beaufort Sea

Pioneer Natural Resources, Eni Petroleum, Shell, and BP all have interests in the Beaufort Sea. All offshore fields in the Beaufort Sea are either fully or partially based on artificial offshore islands.

Pioneer Natural Resources was the first independent company to control a producing field in the Beaufort Sea. It has been extracting oil in the Ooguruk offshore field since 2008 in partnership with Eni. The site is located on an artificial gravel island five miles offshore in four-and-a-half feet of water.²² Italy's Eni has gradually relinquished some of its onshore leases and has instead focused on developing its near-shore Nikaitchuq field in the Beaufort Sea. Eni plans initially to produce oil through an onshore base and later to construct an offshore island and continue production from the water. The company has also teamed up with Shell to conduct seismic tests in the Harrison Bay area of the Beaufort.²³

BP operates three offshore fields in the Beaufort Sea: Northstar, Endicott, and Liberty. All of them are constructed on man-made gravel islands in the Beaufort Sea waters. The first two fields are older operations, while Liberty was set to begin operating this summer. Liberty is of particular note because it is an ultra-extended reach well: although it will be drilled in fairly shallow water within three miles from shore on state submerged lands, the well will extend laterally for up to eight miles from the surface location of the drilling rig.²⁴ In light of the Gulf of Mexico oil spill, federal regulators have decided to review BP's plans before allowing BP final permission to drill at Liberty.²⁵

MMS proposed additional lease sales in the Beaufort Sea in its 2010-2015 draft proposed five-year leasing program.²⁶ The National Oceanic and Atmospheric Administration (NOAA) commented on this plan, raising issues related to the impacts of off shore oil exploration and development on living marine resources and their habitats. It also conveyed its concern about the lack of oil spill response preparedness in the Arctic and encouraged leasing to be delayed pending additional research.²⁷ President Obama's March 31, 2010 announcement of a new outer-continental shelf policy cancelled planned some leases under the 2007-2012 leasing plan

²¹ Dan Joling, *Alaska rips feds over suspension of Arctic drilling*, ANCHORAGE DAILY NEWS (Sept. 10, 2010).

²² Hall, *Ooguruk Project Offshore Alaska*.

²³ Alan Bailey, *More leases Dropped*, 15 PETROLEUM NEWS (Aug. 15, 2010), <http://www.petroleumnews.com/pntruncate/109175427.shtml>.

²⁴ Letter from Sean Parnell, Governor of Alaska, to Michael Bromwich, Director, Bureau of Ocean Energy Management, Regulation, and Enforcement 5 (Aug. 25, 2010), *available at* http://gov.alaska.gov/parnell_media/documents/govltrtoBromwich.pdf.

²⁵ Jim Efstathiou Jr., *BP's Liberty Oil Well in Alaska to Face New Safety Rules*, BLOOMBERG, June 24, 2010, <http://www.businessweek.com/news/2010-06-24/bp-s-liberty-oil-well-in-alaska-to-face-new-safety-rules.html>.

²⁶ MMS, Draft Proposed Outer Continental Shelf (OCS) Oil and Gas Leasing Program 2010-2015 (January 2009) [hereinafter MMS 2009 Proposal] (on file with Commission).

²⁷ Letter from Jane Lubchenco, Under Secretary of Commerce for Oceans and Atmosphere, to S. Elizabeth Birnbaum, Director, Minerals Management Service 5-12 (Sept. 21, 2009) [hereinafter NOAA 2009 Comments] (detailing NOAA's comments on the U.S. Department of the Interior/Minerals Management Service Draft Proposed Outer Continental Shelf Oil and Gas Leasing program for 2010-2015) (on file with Commission).

and delayed implementation of the proposed 2010-2015 plan to 2012-2017. The 2012-2017 plan is in its early stages of development, and will evaluate whether or not to lease areas in the Beaufort and the Chukchi Seas. Public meetings to determine the scope of the environmental impact statement and the areas to be considered in the five-year leasing program were scheduled for summer 2010, but were cancelled in light of the Deepwater Horizon spill.²⁸

b. Chukchi Sea

The 2008 sale of Lease Area 193 in this region proved to be the most profitable in the history of Alaska offshore leasing. Companies bid a total of \$2.6 billion for the available lease areas. Lease Sale 193 encompasses approximately 29.4 million acres of the Outer Continental Shelf in the Chukchi Sea. In 2008 seven companies bid for leases: ConocoPhillips, Shell Gulf of Mexico, StatoilHydro USA E&P, the Northern America Civil Recovery Arbitrage Corp, Repsol E&P USA, Eni Petroleum, and Iona Energy Company.²⁹

Shell is the only company that has presented plans to drill in the Chukchi (after conducting seismic studies there in 2006 and 2007). It received preliminary permits to drill up to three wells during the summer of 2010. A coalition of Alaska Native and environmental groups challenged the adequacy of the environmental review of the lease sale, contending that the Final Environmental Impact Statement had not fully examined impacts on the environment and human communities. On July 21, 2010, the Federal District Court for the District of Alaska agreed, enjoined all activity under Lease Sale 193, and remanded to the BOEMRE to conduct a more thorough environmental impact analysis.³⁰ On August 2, 2010, the court amended its ruling and allowed non-drilling activities to continue, granting Shell and Statoil permission to conduct seismic tests in the Chukchi Sea during the remainder of the 2010 summer.³¹

Shell spent \$2.1 billion for its 275 lease blocks in the Chukchi in 2008.³² A leaseholder can have a tract for up to ten years but then must have a development plan in place or the Secretary of the Interior will cancel the non-producing lease.³³ Shell has used up three of those years on its Chukchi sites. Even if the exploratory drilling occurs in the Chukchi and is successful, Shell predicts that another ten to fifteen years would pass before production began.³⁴

As with the Beaufort Sea, NOAA's comments on recent proposed lease sales in the Chukchi expressed the view that no leasing should occur in the Chukchi Sea without additional research on oil spill response.³⁵

²⁸ BOEMRE, Introduction—5-Year Program, <http://www.boemre.gov/5-year/> (last visited Sept 17, 2010).

²⁹ Kristen Nelson, *Chukchi High Five*, 13 PETROLEUM NEWS (Feb. 10, 2008), <http://www.petroleumnews.com/pntruncate/347813743.shtml>.

³⁰ *Native Village of Point Hope v. Salazar*, 2010 WL 2943120 (D. Alaska July 21, 2010).

³¹ Yereth Rosen, *Shell, Statoil get OK to do Chukchi Oil Surveys*, REUTERS (Aug. 6, 2010), <http://uk.reuters.com/article/idUKN0620571620100806>.

³² Nelson, *Petroleum High Five*.

³³ 43 U.S.C. §§ 1334(c), 1337(b)(2).

³⁴ Shell Presentation to National Commission.

³⁵ NOAA 2009 Comments, at 5.

D. Overview of Applicable Regulatory Requirements Related to Spill Response³⁶

a. BOEMRE and Alaska Regulations

BOEMRE and Alaska Department of Conservation regulations require an applicant for a permit to conduct offshore exploration or production to provide information regarding its response capabilities. BOEMRE requires an emergency response action plan, which identifies, among other things, a spill management team, a planned location for a spill-response operations center, and an identification of procedures to be followed in the event of a spill.³⁷ The plan must also include a worst-case discharge appendix.³⁸ In addition to information about the potential volume, trajectory, and impacted areas in a worst-case discharge spill, the appendix must include a discussion of the potential response to the worst-case discharge scenario in adverse weather conditions. This discussion requires a description of the response equipment; its type, location, and quantity; the amount of time to move the equipment to the spill; and capability, including effective daily recovery capacity. Adverse weather conditions are defined elsewhere in the regulations and “include, but are not limited to: Fog, inhospitable water and air temperatures, wind, sea ice, current, and sea states.”³⁹

Alaska regulators may additionally require an applicant for a permit for an exploration or production facility to “account for variations in seasonal conditions” and “provide response scenarios for a discharge of the applicable response planning standard volume under typical summer environmental conditions and typical winter environmental conditions.”⁴⁰ Alaska regulations also specify how much response equipment, including boom, skimmers, and personnel, must be carried, while noting that these are minimum planning requirements, not what may be actually required to respond to a spill.

In the wake of the Deepwater Horizon disaster, Alaska is conducting an analysis of the state regulations regarding offshore drilling. Additionally, the Alaska Oil and Gas Conservation Commission⁴¹ has put together a commission to review offshore drilling practices and ultra-extended reach wells.⁴² The Commission put out a public notice on June 24, 2010, seeking public comment on the current requirements regarding well blowout prevention and well control

³⁶ This section is a general introduction to spill planning in Alaska and is not meant as a comprehensive evaluation of planning requirements. Commission staff intends to provide further evaluation of spill planning requirements in general, and in the Arctic in specific, in a later working paper.

³⁷ 30 C.F.R. § 254.23.

³⁸ 33 C.F.R. § 254.21 (requiring an emergency response plan with appendices); 33 C.F.R. § 254.2 (setting out requirements for the worst-case discharge appendix).

³⁹ 30 C.F.R. § 254.6.

⁴⁰ ALASKA ADMIN. CODE 18 § 75.425(e)(1)(I).

⁴¹ The Alaska Oil and Gas Conservation Commission (AOGCC) was formerly a part of the Department of Natural Resources, but is now a quasi-judicial agency within the executive branch. *See* Letter from Parnell to Bromwich (urging BOEMRE to lift the moratorium on offshore drilling in Alaska waters).

⁴² The review team is made up of the AOGCC’s petroleum engineer commissioner, a petroleum engineer; the chairman of the AOGCC, a geologist; and a public appointee with oil and gas experience. That Commission will also hold hearings after this Commission releases its report. “At this hearing, public testimony will be received and the Commission will examine relevant issues in light of the findings and conclusions of the National Commission.” *See* Order by Daniel T. Seamont, Jr., Chair, Alaska Oil and Gas Conservation Commission, Notice of Inquiry by the State of Alaska (June 24, 2010), *available at* <http://doa.alaska.gov/ogc/hear/OTH-10-16.pdf> (indicating that a public hearing on the review will be noticed thirty days after this Commission issues its report).

and their possible expansion, including whether the Commission should require “operators drilling offshore or ultra-extended reach wells to demonstrate the ready capability to drill a relief well if necessary.”⁴³ The review is focused on source control and does not appear to be investigating spill response issues. The Division of Oil and Gas, within the Department of Natural Resources, is evaluating its own rules and requirements to determine whether the existing authorities regulating petroleum are sufficient. That study may be completed as early as this September.⁴⁴

b. Shell’s Chukchi Regional Exploration Discharge Prevention and Contingency Plan

A review of Shell’s Chukchi Regional Exploration Oil Discharge Prevention and Contingency Plan (“Shell C-Plan”) illustrates some of the current requirements and the level of detail provided to meet them. Shell is the only company to have made a proposal for drilling in the Chukchi, so there are unfortunately no competing plans with which to compare the response plans Shell proposes. This paper’s brief discussion of Shell’s proposal is not meant to be comprehensive.

Because Shell’s proposal is for exploratory drilling, rather than production, it is subject to different requirements than those for producing wells.⁴⁵ BOEMRE regulations require an exploratory drilling operation to calculate a worse-case discharge scenario lasting thirty days, and to provide a response plan for that scenario.⁴⁶ The worst-case discharge is the daily volume possible from an uncontrolled blowout.⁴⁷ The state regulations require an exploration facility to plan for a release of 16,500 barrels, and an additional 5,500 barrels for each of twelve days past seventy-two hours in the case of a blowout.⁴⁸ Shell’s final C-Plan includes response plans for a discharge of 5,500 barrels for thirty days, for a total release of 165,000 barrels.⁴⁹

With regard to risks from loss of well control, Shell believes that “a prudent operator can conduct a Chukchi Sea drilling program using a single drillship,” which would “relocate to a safe location to initiate a relief well” in the event of a blowout.⁵⁰ Shell estimates that it could drill a relief well in as few as sixteen days or as many as thirty-four days. Shell’s preferred method for containing a blowout is the use of dynamic surface control measures.⁵¹ The plan, which Shell indicates is accepted as best available technology, is to pump fluid down the well casing and circulate the fluid at a sufficient rate to create friction, which will match or exceed the reservoir pressure and stop the flow.⁵² Shell states that it would likely not be able to use a well-capping technique because of the nature of the well. It notes that “[w]ell capping is not feasible for

⁴³ *Id.*

⁴⁴ Tim Bradner, *Alaska’s Oil Regulators Work to Ensure the Industry is Responsible*, ALASKA J. COMMERCE (July 16, 2010), http://www.alaskajournal.com/stories/071610/oil_ao.shtml.

⁴⁵ The Macondo well was similarly in the exploratory drilling phase.

⁴⁶ 30 C.F.R. § 254.26(d).

⁴⁷ 30 C.F.R. § 254.47(b).

⁴⁸ ALASKA ADMIN. CODE 18 § 75.434.

⁴⁹ SHELL, CHUKCHI SEA REGIONAL EXPLORATION OIL DISCHARGE PREVENTION AND CONTINGENCY PLAN (Mar. 2010), *available at* <http://alaska.boemre.gov/fo/ODPCPs/Shell%20Chukchi%20C-Plan%20March%202010%20Final%2005-19-10.pdf> [hereinafter SHELL C-PLAN].

⁵⁰ *Id.* at 1-23

⁵¹ *Id.* at 4-3.

⁵² *Id.*

offshore wells from moored vessels with [the blowout preventer] sitting below the mudline.”⁵³ Because of this limitation, the C-Plan asserts that Shell would immediately mobilize to drill a relief well in the event of a blowout.

Since the Deepwater Horizon event, Shell has added to its plan a proposal to build a containment system similar to that built to control the Macondo well. It plans to store a containment dome and containment recovery system at a port in Alaska and to deploy it in the event of a subsea spill.⁵⁴

The Shell C-Plan notes that, in addition to the Shell-operated response equipment and response teams, Alaska Clean Seas would be used as the primary contractor. Alaska Clean Seas is a non-profit oil spill response operator whose members are companies exploring or drilling on the North Slope or on the Outer Continental Shelf.⁵⁵ (A similar organization, the Marine Spill Response Corporation, exists for the Gulf of Mexico.) The Arctic Slope Regional Corporation also runs an additional oil spill response company. In the event of a blowout, Shell proposes to call on Wild Well Control, Inc., a well-control specialist.⁵⁶

Shell notes that recovery of the spilled oil would be limited by the presence of ice, and the plan anticipates that during freeze-up conditions, some oil would become encapsulated by the ice. Shell states that it would monitor and track such oil, and that “response strategies and specific tactics will be modified to accommodate the challenges of working with a variety of potential ice conditions.”⁵⁷ Within the context of each response strategy discussed in the plan, Shell acknowledges some of the limitations that the presence of ice creates. As discussed in greater depth below, it is likely that non-mechanical response strategies such as in situ burning would play a large role in any response.

MMS conditionally approved Shell’s exploration plan (as distinguished from the C-plan) on December 7, 2009.⁵⁸ MMS found that Shell’s plans for “responding to a blowout, loss or disablement to the drilling unit, or loss of or damage to support craft,” complied with a regulation specific to Alaska offshore projects requiring emergency plans, and included, as required, accompanying procedures for critical operations and curtailment.⁵⁹ However, MMS required that Shell “provide documentation on the availability of suitable alternative drilling unit(s) that would be made available to Shell should it be necessary to drill a relief well.”⁶⁰ Shell has identified an additional drillship that could be mobilized to begin drilling a relief well, the Kulluk drilling unit, likely to be stored at Dutch Harbor in the Aleutian Islands in southwest Alaska.⁶¹

⁵³ *Id.*

⁵⁴ Shell, Presentation to Commission staff, in Washington D.C. (Sept. 16, 2010).

⁵⁵ ALASKA CLEAN SEAS, www.alaskacleanseas.org.

⁵⁶ SHELL C-PLAN at 1-22.

⁵⁷ *Id.* at 1-26.

⁵⁸ Letter from Jeffrey Walker, Regional Supervisor, Field Operations, MMS, to Susan Childs, Shell Offshore Inc. (Dec. 7, 2009), *available at* http://alaska.boemre.gov/ref/ProjectHistory/2009_Chukchi_Shell/2009_1207.pdf [hereinafter EP Letter] (conditionally approving Shell’s 2010 exploration drilling program and noting that response to the contingency plan would follow separately).

⁵⁹ 30 C.F.R. § 250.220.

⁶⁰ EP Letter at 3.

⁶¹ Shell, Presentation to Commission Staff, in Washington D.C. (Sept. 16, 2010).

Shell's initial C-Plan was submitted in May 2009.⁶² MMS gave its conditional approval on December 18, 2009.⁶³ Both MMS and Alaska regulators required Shell to submit additional information on several response issues, such as where response equipment would be pre-staged, the estimated mobilization times for spill response equipment, a copy of its contract with oil spill response operators for dispersant support, and the length of time it would take Alaska Clean Seas to transport response support from Prudhoe Bay to the Chukchi sites.⁶⁴ MMS also required Shell to conduct contingency plan exercises, including a tabletop drill addressing the worst-case discharge scenario, and deployment exercises demonstrating the capacity to carry out the response activities described in the plan. Shell submitted a revised plan in March 2010.⁶⁵

On April 6, 2010, MMS gave final unconditional approval of the Shell C-Plan, finding that the requested information had been provided. In a news interview after the Deepwater Horizon spill, BOEMRE spokesperson John Callahan said, "The Alaska Region [of BOEMRE] can confirm that it reviewed Shell's contingency plan and found it adequate for the time it was issued. However, in light of the BP oil spill in the Gulf and new requirements for the plans, we will be reviewing the adequacy of the current version of the project's spill plan."⁶⁶

II. Challenges of Spill Response

The Arctic environment poses unique challenges for spill response. Some limitations of existing techniques are discussed below. To the extent the Shell C-Plan seeks to address these issues, Shell's proposed method of adapting to the limitations is described.

A. Adverse Weather

The presence or absence of ice is a large factor in the ability to respond to a spill, but it is not the only environmental factor affecting spill response. Temperature affects the consistency of oil and the speed at which it degrades. Winds and the resulting wave action are another factor. High energy from wind and waves can help oil to disperse naturally, but this energy also breaks up a thick slick into multiple thinner slicks, which are more difficult to address. Also, in broken ice, waves are less effective at naturally dispersing oil.⁶⁷

Weather, including wind and wave activity, also affects responder access to an oiled area and whether recovery strategies such as boom and skimmers will work. Adverse weather conditions prevented responders from collecting oil from the wellhead, employing mechanical recovery methods, and conducting in situ burns at times during the Deepwater Horizon response. Seasonally short Arctic days and the prevalence of fog and storms also limit the amount of time

⁶² SHELL, CHUKCHI SEA REGIONAL EXPLORATION OIL DISCHARGE PREVENTION AND CONTINGENCY PLAN (May 2009), available at http://alaska.boemre.gov/ref/ProjectHistory/2009_Chukchi_Shell/2009_0623_Shell_cplan.pdf.

⁶³ Letter from Jeffrey Walker, Field Operations, MMS, to Susan Childs, Shell Offshore Inc. (Dec. 18, 2009), available at http://alaska.boemre.gov/ref/ProjectHistory/2009_Chukchi_Shell/2009_1218_childs.pdf (conditionally approving the Shell C-Plan).

⁶⁴ SHELL C-PLAN at 1-13.

⁶⁵ SHELL C-PLAN.

⁶⁶ Charles W. Schmidt, *Cold Hard Cache: The Arctic Drilling Controversy*, 118 ENVIRONMENTAL HEALTH PERSPECTIVES A394 (2010).

⁶⁷ MAR, INC. ET AL., EMPIRICAL WEATHERING PROPERTIES OF OIL IN ICE AND SNOW PROJECT NUMBER 1435-01-04-RP-34501 FINAL REPORT FOR U.S. DEPARTMENT OF THE INTERIOR MINERALS MANAGEMENT SERVICE ALASKA OUTER CONTINENTAL SHELF REGION (Oct. 2008), available at [hereinafter WEATHERING PROPERTIES].

when response is feasible. Sea state may be calmer in the Arctic than in the Gulf, as the sea ice has a muffling effect on waves. However, the water may grow turbulent over time as the summer ice melts and wave activity increases.⁶⁸

The amount of time when responders are simply unable to work is known as the response gap, and it is based on, among other things, adverse weather conditions. A study of response capabilities in Prince William Sound attempted to quantify the response gap in that region.⁶⁹ Researchers identified when response efforts would not be possible based on their investigation of when environmental conditions would cause mechanical recovery systems to fail. For example, they concluded that response efforts would not be affected by wind speeds of less than twenty-one knots, would be impaired but possible in speeds between twenty-one and thirty knots, and would not be possible in winds of over thirty knots. They then used six years of hourly wind, sea state (a measure which includes wave height and wave period), temperature, and visibility data from two locations in Prince William Sound to evaluate the length of time that environmental conditions exceeded response operating limits.⁷⁰ They eliminated any days when the locations in the Sound were closed to tanker traffic. The study found that, considering all the environmental limitations together, response operating limits were exceeded, and response was not possible, 38% of the time. That figure rose to 65% of the time during the winter season.⁷¹

It does not appear that a similar comprehensive response gap analysis has been conducted for the Arctic.⁷² However, the Shell C-Plan notes that temperature alone would be a significant limitation. All non-emergency work stops when temperatures reach below -45 degrees Fahrenheit. This limitation would prevent response 50% of the time in the month of January and 64% of the time in the month of March.⁷³

B. Locating the Oil

One of the main challenges for oil spill responders in Arctic waters is the problem of locating oil. Oil spilled into broken ice will tend to move with the ice.⁷⁴ Oil is also more difficult to locate if it moves under ice floes or becomes encapsulated into surrounding ice. Visual observations are not an adequate means of detection, as the oil is generally hidden from view beneath the ice. In 2009, then-MMS published a report entitled “Arctic Oil Spill Response Research and Development Program: A Decade of Achievement.”⁷⁵ This paper chronicles issues and advances in oil spill response in the icy Arctic environment. In the paper, MMS noted

⁶⁸ Luc Rainville and Rebecca A. Woodgate, *Observations of internal wave generation in the seasonally ice-free Arctic*, 36 GEOPHYSICAL RESEARCH LETTERS L23604 (Dec. 2, 2009).

⁶⁹ NUKA RESEARCH AND PLANNING GROUP, LLC, REPORT TO PRINCE WILLIAM SOUND REGIONAL CITIZENS’ ADVISORY COUNCIL: RESPONSE GAP ESTIMATE FOR TWO OPERATING AREAS IN PRINCE WILLIAM SOUND, ALASKA (2007).

⁷⁰ *Id.* at 41.

⁷¹ *Id.* at 52.

⁷² See, e.g., *Response Gap*, OCEANS NORTH U.S., <http://www.oceansnorth.org/response-gap> (last visited Sept. 15, 2010) (noting the potential value of a response gap analysis).

⁷³ SHELL C-PLAN, at 3-20.

⁷⁴ WEATHERING PROPERTIES.

⁷⁵ U.S. DEPARTMENT OF THE INTERIOR MINERALS MANAGEMENT SERVICE, ARCTIC OIL SPILL RESPONSE RESEARCH AND DEVELOPMENT PROGRAM: A DECADE OF ACHIEVEMENT (2009), *available at* <http://www.boemre.gov/tarprojectcategories/PDFs/MMSArcticResearch.pdf> [hereinafter ACHIEVEMENT].

that the “ability to reliably detect and map oil trapped in, under, on, or among ice is critical to mounting [an] effective response in Arctic water.”⁷⁶

The existing method for locating oil in or under ice involves drilling holes in a grid through the ice to detect oil underneath. This method is expensive, dangerous, and not always possible based on ice conditions. MMS has conducted several research studies aimed at evaluating potential solutions to this problem. Ground penetrating radar (GPR) is the only technology viewed as having potential.⁷⁷ GPR units can be used by personnel walking on the ice or can be mounted on helicopters flying over the ice at a very low altitude.⁷⁸ According to MMS’s GPR laboratory and field-testing, the technology can detect oil slicks that are at least two centimeters (approximately one inch) thick in or under one to three feet of ice when used from a helicopter and up to seven feet of ice when a hand-held unit is used.

Though GPR represents an advance over the drilling method, many factors limit its usefulness. MMS’s field test report acknowledges that “[d]etection of oil under ice through multi-year ice or rafted/ridged first-year ice might be difficult or impossible.”⁷⁹ Other types of rough or pocketed ice will pose similar difficulties. Additionally, though oil slicks may tend to be thicker in the Arctic environment than in other places as a result of the cold temperatures, the oil is still likely to spread out, making the ability to detect only slicks that are more than two centimeters thick a serious limitation. Though researchers indicate that the technology has promise, the responder may still need to start out with a basic sense of where the oil is in order for GPR to be of use.

The Shell C-Plan acknowledges that tracking a spill through ice might be necessary. Shell indicates that it could track the oil with drift buoys, radar reflectors, flags, GPR, and laser fluorosensors.⁸⁰ In the section on planning for a release in winter pack ice, the Shell C-Plan states that “[p]romising results of tests with Ground Penetrating Radar and other remote-sensing systems could lead to the development and refinement of detection and tracking techniques for oil that is trapped deep within a thick ice layer.” The C-Plan goes on to predict that such trapped oil could be dealt with through a “leave in place” strategy, discussed below.⁸¹ It does not appear that MMS had any comment on this aspect of the plan when the agency approved the C-Plan.⁸²

⁷⁶ *Id.* at 11.

⁷⁷ *Id.*

⁷⁸ DF DICKENS ASSOCIATES LTD., SINTEF, THE UNIVERSITY CENTRE AT SVALBARD, BOISE STATE UNIVERSITY, 2006 SVALBARD EXPERIMENTAL SPILL TO STUDY SPILL DETECTION AND OIL BEHAVIOR IN ICE: SUMMARY FIELD REPORT (Apr. 12, 2006), <http://www.boemre.gov/tarprojects/569/SummaryFieldReport.pdf> [hereinafter “SVALBARD 2006”].

⁷⁹ Svalbard 2006.

⁸⁰ SHELL C-PLAN, at 1-27.

⁸¹ *Id.* at 3-27.

⁸² See MINERALS MANAGEMENT SERVICE OFFICE OF PUBLIC AFFAIRS, QUESTIONS AND ANSWERS ON SHELL’S OCS CHUKCHI SEA EXPLORATION PLAN, available at http://www.boemre.gov/ooc/PDFs/CHUKCHI_SEA_QA1209.pdf (last visited Sept. 15, 2010); Press Release, Minerals Management Service, Salazar Conditionally Approves Shell’s Exploration Plan for Certain Chukchi Sea Leases (Dec. 7, 2009), <http://www.boemre.gov/ooc/press/2009/press1207.htm> (last visited Sept. 15, 2010).

C. Mechanical Recovery Technology

In addition to acting as a barrier to detection, ice also poses a physical barrier to mechanical containment and response efforts. Boom and skimmers, which are often deployed in tandem as part of early response efforts, are not very effective in broken ice conditions.⁸³ For any mechanical recovery technology to work, it needs to “encounter” the oil, which means that the oil needs to be grouped together in a thick enough slick for the recovery system to separate the oil at the surface from the water.

Boom is difficult to deploy through broken ice. MMS notes that boom is “of little to no use in large moving ice floes or in ice concentrations greater than 30%.”⁸⁴ Boom for use in the Arctic also must be made of a durable material that can withstand impacts from pieces of ice.

Skimmers can become clogged with ice and slush, and they need to be positioned between ice floes, which may not always be possible. Additionally, a skimming vessel will break up ice floes, moving the natural ice barrier and letting the oil spread out, thus making it harder to skim.⁸⁵ The oil that is skimmed will still likely contain pieces of ice. Although some advances in the material used to make skimmers, such as the development of grooved skimming drums, have improved skimmer efficiency in ice conditions, overall skimming potential is limited by the presence of ice.⁸⁶

If the ice cover is too great, and mechanical recovery is not possible, it may be necessary to let the oil become incorporated into the ice and deal with it when the ice melts.⁸⁷ MMS notes: “For high ice concentrations of 8/10 or more, most of the spilled oil (especially from a subsea blowout) will become immobilized or encapsulated within the ice Oil encapsulated within the ice is isolated from any weathering processes (evaporation, dispersion, emulsification). The fresh condition of the oil when exposed (e.g. through ice management or natural melt processes) enhances the potential for in situ burning.” This strategy effectively requires responders to leave oil in place but somehow track it, so that they can attempt to remove it once it is freed from the ice but before it re-enters the marine environment. This is sometimes referred to as “mining” of oil.⁸⁸ In the interim, the oil is unlikely to degrade, making it more susceptible to burning but less likely to be reduced in amount by natural processes.

This “leave-in-place” strategy does not appear to have been used during an actual spill, though it is the subject of research. The Shell C-Plan indicates that this strategy might be used for a spill in early winter. The plan predicts that “[t]ypically, within a day or two, new ice would completely surround the oil, encapsulating, immobilizing and preserving the condition of the oil.

⁸³ Of course, boom and skimmer technology can be of only limited use in spills in non-Arctic waters as well. The oil recovery from boom-and-skimmer efforts as part of the Deepwater Horizon response only constituted 3% of the total amount of oil recovered. JANE LUBCHENCO ET AL., DEEPWATER HORIZON OIL BUDGET: WHAT HAPPENED TO THE OIL? (Aug. 4, 2010), http://www.deepwaterhorizonresponse.com/posted/2931/Oil_Budget_description_8_3_FINAL.844091.pdf.

⁸⁴ ACHIEVEMENT at 15.

⁸⁵ Hans V. Jensen & Joseph V. Mullin, *MORICE—new technology for mechanical oil recovery in ice infested waters*, 47 MARINE POLLUTION BULLETIN 453 (2003).

⁸⁶ Victoria Broje and Arturo A. Keller, *Improved Mechanical Oil Spill Recovery Using an Optimized Geometry for the Skimmer Surface*, 40 ENVIRON. SCI. TECHNOL. 7914 (Oct. 26, 2006).

⁸⁷ ACHIEVEMENT at 15.

⁸⁸ SHELL C-PLAN, at 3-27

The ice-encapsulated oil can be marked and tracked for removal when the ice is safe to work on, or the oil could be tracked until spring. At that time the oil would become exposed at the surface through brine-channel migration or through surface melt down to the small entrapped oil droplets.”⁸⁹

The behavior of oil in ice is an important topic of research.⁹⁰ According to researchers, the accepted view is that oil becomes encapsulated as ice forms around it. As the ice begins to melt, the oil is transported through the ice to the surface of the ice through brine channels, which are paths through the ice where salt is very concentrated.⁹¹ However, newer research calls this assumption about transportation up to the surface into question, and there remain unknowns about the role of brine channels as a pathway for marine exposure to oil. Questions remain about whether oil may be pulled into the brine channels and, rather than moving to the surface of the ice, move down through the ice and into the water column.⁹²

The Shell C-Plan comments on the difficulties of using mechanical response technologies in icy conditions. The plan notes that even low concentration of individual ice floes “can obstruct containment or deflection boom, prevent oil from accumulating in large pools, and block the flow of oil toward a recovery device.”⁹³ Shell explains that, though it will modify mechanical response tactics to suit the Arctic environment, as ice concentrations increase, non-mechanical tools such as in situ burning and dispersants (both discussed below) will become more practical.⁹⁴

D. In Situ Burning

In situ burning is another response technique that was used in the Deepwater Horizon response and would be used in any Arctic oil spill response. This strategy requires gathering the oil either with fireproof boom or between natural ice berms. It also requires that the oil not be overly weathered. Burning is an important strategy in the Arctic, where there is less risk of having a fire spread out of control. Additionally, there is potentially less concern about the negative air quality impacts of burning as there are lower concentrations of people and wildlife that could be affected. Moreover, oil mixed with some ice, snow, or slush can still burn.

Burning in the Arctic, however, is not without difficulty. In order to stage the fire-proof boom, vessels must be able to can access the area and boom must be pre-staged for quick deployment. Oil is more difficult to ignite at lower temperatures. Chemical “herders” may be required to gather and thicken the oil, but no commercially-produced herders are currently approved for use in Arctic waters.⁹⁵ Oil that enters the water column before hitting the surface, such as from a subsea pipe leak or blowout, will be more likely to become emulsified and spread

⁸⁹ *Id.* at 3-26.

⁹⁰ *See, e.g.*, WEATHERING PROPERTIES; PROGRESS REPORT, OIL IN ICE: TRANSPORT, FATE, AND POTENTIAL EXPOSURE (Progress Report for the Period Oct. 15, 2008 to Apr. 15, 2009) , *available at* http://www.crrc.unh.edu/progress_reports/sintef/04_2009/index.htm.

⁹¹ WEATHERING PROPERTIES.

⁹² Amy Merten, NOAA Office of Response and Restoration, Coastal Response Research Center, “NOAA’s Increased Preparedness for Arctic Response,” Presentation at the National Ice Center Symposium (June 11, 2009).

⁹³ SHELL C-PLAN, at 1-27.

⁹⁴ *Id.* at 1-27-1.28.

⁹⁵ WORLD WILDLIFE FUND, NOT SO FAST: SOME PROGRESS IN SPILL RESPONSE BUT US STILL ILL-PREPARED FOR ARCTIC OFFSHORE DEVELOPMENT (2009) (reviewing and critiquing MMS’s “Decade of Achievement” report).

out once it reaches the surface and will therefore be harder to burn. Because of the propensity of oil to spread, in situ burning is a technique that will work best with a rapid response.

As with all response techniques, the efficiency of in situ burning will vary widely. Efficiency rates of 90% were achieved in an experiment in Norway that simulated a tanker spill,⁹⁶ but a 1998 well blowout study estimated only 3.4-6.4% efficiency in fall freeze-up conditions on open water.⁹⁷

The Shell C-Plan takes a positive view of in situ burning, asserting that “the consensus of research” is that it is an “effective technique with removal rates of 85 to 95 percent in most situations.”⁹⁸ The C-Plan describes difficulties associated with ice, but also suggests that ice may assist burning by containing the oil, dampening wave action, and reducing the propensity of the oil to spread out in a thin layer.⁹⁹ Shell does not estimate the percentage of days that wind and wave conditions would likely prevent in situ burning.

E. Chemical Countermeasures

Dispersants were used extensively in the Deepwater Horizon response and are often a critical component of oil spill response. However, their potential Arctic use is limited by uncertainty over their effectiveness and toxicity in that environment.

Dispersant effectiveness depends on the properties of the oil, the amount of weathering that has taken place, and the energy available to mix the dispersants into the oil. Aerial spraying can occur even during broken ice or bad weather conditions, but mixing might be reduced. Application by boat can increase mixing as the vessel churns up the water, but requires a boat capable of traveling in the ice and appropriate weather. Once the oil is encapsulated into or emulsified with the water, dispersants are unlikely to be effective. A 2001 study commissioned by the Prince William Sound Regional Citizens’ Advisory Council found that dispersants were less than 10% effective when applied to Alaska North Slope crude oil spilled on water at the temperature and salinity common in the estuaries and marine waters of Alaska.¹⁰⁰ The study found that temperature had a strong effect on the behavior of the oil, which in turn affected dispersant effectiveness. However, an MMS/ExxonMobil-sponsored project, based on testing at Ohmsett, the National Oil Spill Response Test Facility in New Jersey, concluded that dispersants could be effective in cold water.¹⁰¹ This study estimated dispersant effectiveness at a range of

⁹⁶ Svalbard 2006.

⁹⁷ SL ROSS ENVIRONMENTAL RESEARCH, D.F. DICKINS AND ASSOCIATES, VAUDREY AND ASSOCIATES, EVALUATION OF CLEANUP CAPABILITIES FOR LARGE BLOWOUT SPILLS IN THE ALASKAN BEAUFORT SEA DURING PERIODS OF BROKEN ICE (June 1998), *available at* <http://www.boemre.gov/tarprojects/297/297AA.pdf>.

⁹⁸ SHELL C-PLAN, at 3-24, 3-32 to 3-33.

⁹⁹ *Id.* at 3-25.

¹⁰⁰ ADAM MOLES, LARRY HOLLAND, AND JEFFREY SHORT, THE EFFECTIVENESS OF COREXIT 9527 AND 9500 IN DISPERSING FRESH, WEATHERED, AND EMULSION OF ALASKA NORTH SLOPE CRUDE OIL UNDER SUBARCTIC CONDITIONS (April 2001), *available at* <http://www.pwsrca.org/docs/d0001400.pdf>.

¹⁰¹ SL ROSS ENVIRONMENTAL RESEARCH, DISPERSANT EFFECTIVENESS TESTING IN COLD WATER (August 2002) *available at* <http://www.boemre.gov/tarprojects/450/450mmsExCold.pdf>.

82% to 99%. More research is needed regarding dispersant effectiveness in situations involving ice cover, heavy wind conditions, and weathered oils.¹⁰²

Concerns about dispersant toxicity in the Arctic are similar to concerns about dispersant toxicity generally. One Arctic-specific issue is the speed of biodegradation of dispersed oil. Dispersants break down oil into smaller droplets, which may then be more easily biodegraded by oil-consuming bacteria.¹⁰³ Oil-consuming bacteria are present in Arctic waters, but they may break down dispersed oil more slowly than in warmer waters.¹⁰⁴ As a result, dispersed oil may be present in the ecosystem for a longer period of time. Moreover, concerns about the long-term fate and effects of dispersed oil in the Arctic are potentially magnified because of the lack of baseline data about the environment.

The Alaska Regional Contingency plan sets out dispersant guidelines.¹⁰⁵ Within the Alaska plan, the North Slope subarea contingency plan sets out the decision-making process for the use of dispersants: “Any decision regarding the use of dispersants and/or *in situ* burning in the North Slope Subarea will be made by the [Federal and State On-Scene Coordinators] in consultation with the Alaska Regional Response Team” and should also involve the North Slope Borough.¹⁰⁶ The plan includes specific dispersant guidelines for Alaska.¹⁰⁷ The Federal On-Scene Coordinator must “examine conventional response alternatives, such as containment and cleanup, for comparison to dispersant application” and may consider dispersant use only “when an effective conventional response is not feasible or not totally adequate in containing/controlling the spill.”¹⁰⁸

Shell’s dispersant plan for Chukchi exploration is to store 25,000 gallons of Corexit 9500 in Anchorage and pre-stage another 1,300 gallons with Alaska Clean Seas on the North Slope.¹⁰⁹ The Shell C-Plan contends that “[d]ispersant use is a rational approach to mitigate environmental impacts from spills when sea states or other factors limit or negate conventional countermeasures.”¹¹⁰ The plan suggests that, because mechanical recovery and *in situ* burning opportunities might be limited, dispersants are a valuable option.¹¹¹ However, the plan also notes the potential limitations on dispersant effectiveness. It recognizes that because the properties of the oil in the reservoir are unknown, on-site testing would be a condition of dispersant use. The plan also notes that, to be effective, dispersants must be applied to fresh crude before it has an opportunity to emulsify or weather, and that dispersants are less effective

¹⁰² See, e.g., PRINCE WILLIAM SOUND OIL SPILL RESPONSE INSTITUTE, ADVANCING OIL SPILL RESPONSE IN ICE-COVERED WATERS 4 (2003), available at http://www.pws-osri.org/publications/OilIce_final.pdf (identifying research needs to improve response abilities in icy environments)

¹⁰³ There is dispute within the scientific literature about whether dispersants promote biodegradation of oil. For more information, see the draft staff working paper on dispersants.

¹⁰⁴ See WORLD WILDLIFE FUND, OIL SPILL RESPONSE CHALLENGES IN ARCTIC WATERS 7 (2007).

¹⁰⁵ ALASKA REGIONAL RESPONSE TEAM, UNIFIED PLAN, ANNEX F: CHEMICAL COUNTERMEASURES F-11 (1999), available at <http://www.akrrt.org/UnifiedPlan/F-Annex.pdf> [hereinafter ANNEX F].

¹⁰⁶ ALASKA REGIONAL RESPONSE TEAM, UNIFIED PLAN, NORTH SLOPE SUBAREA CONTINGENCY PLAN, RESPONSE SECTION, A-22 (1999), available at <http://www.akrrt.org/NSplan/nstoc.shtml>.

¹⁰⁷ ANNEX F.

¹⁰⁸ *Id.* at F-2.

¹⁰⁹ SHELL C-PLAN, at 3-40.

¹¹⁰ *Id.* at 3-37.

¹¹¹ *Id.* at 3-38.

on colder, more viscous oil. Finally, Shell states that it would try to avoid applying dispersant on or near sea birds or marine mammals.¹¹²

F. Bioremediation and Natural Processes

Oil will degrade in the water over time as it is consumed by bacteria. Bioremediation is “the act of adding materials to contaminated environments to cause an acceleration of the natural biodegradation processes.”¹¹³ The National Contingency Plan, which governs oil spill response, specifies that “bioremediation agents” are “microbiological cultures, enzyme additives, or nutrient additives that are deliberately introduced into an oil discharge and that will significantly increase the rate of biodegradation to mitigate the effects of the discharge.”¹¹⁴ Bioremediation may be a potential response strategy in the Arctic, where the temperature and weather conditions otherwise slow the natural biodegradation process.

Responders have used bioremediation techniques in the cleanup of a number of major oil spills.¹¹⁵ For example, one day after the June 8, 1990 spill from the *Mega Borg* off the coast of Texas, the federal on-scene coordinator authorized the use of a bioremediation product on the open-sea oil slick.¹¹⁶ It was unclear how effective the product was, and this response highlighted the difficulties of open-sea application.¹¹⁷ Responders applied bioremediation materials—including nutrients, fertilizer, and exogenous bacteria—to the shoreline after the *Amoco Cadiz* wrecked off the coast of France.¹¹⁸ The approaching tourist season, however, prevented more extensive use in the area.¹¹⁹

The most prominent experimentation with onshore bioremediation occurred after the *Exxon Valdez* spill.¹²⁰ The level of endogenous oil-metabolizing bacteria had already increased on the Alaska shoreline. Responders decided to promote growth of these endogenous bacteria by adding nutrients and fertilizer to the shoreline of Prince William Sound, instead of seeding the shoreline with exogenous bacteria.¹²¹ This technique was considered successful.¹²² As with the *Amoco Cadiz* response, bioremediation in the *Exxon Valdez* response involved shoreline use, rather than use in open water.

There are concerns that low temperatures and the variable salinity in the Arctic will decrease the potential of bioremediation. Research done in Norway, however, suggests that

¹¹² *Id.* at 3-42.

¹¹³ Richard P.J. Swannell et al., *Field Evaluations of Marine Oil Spill Bioremediation*, 60 MICROBIOLOGICAL REV. 342, 342 (1996) (internal quotations omitted).

¹¹⁴ 40 C.F.R. § 300.5.

¹¹⁵ Swannell, at 351-52.

¹¹⁶ *Id.* at 351.

¹¹⁷ *Id.*; see also *id.* at 358 (“[T]here is little convincing evidence to suggest that bioremediation is effective at sea. This is partly due to the logistical difficulties involved in conducting controlled open-sea trials. Further research is required to derive an effective bioremediation strategy at sea.”) (internal citations omitted).

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.* at 352.

¹²¹ See *id.*; P.H. Pritchard et al., *Oil Spill Bioremediation: Experiences, Lessons and Results from the Exxon Valdez Oil Spill in Alaska*, 3 BIODEGRADATION 315 (1992).

¹²² Pritchard at 315.

microbial communities located in ice can begin to break down oil.¹²³ A patent issued in 2001 registers an improved method of administering bacteria to an open-water spill, and a pending patent application filed by a German group discloses a technique specifically aimed at bioremediating open water Arctic spills.¹²⁴

The regulatory framework governing bioremediation processes is complicated. The NCP treats bioremediation products similarly to dispersants, with a product schedule and authorization requirements.¹²⁵ Twenty-four products are listed on the product schedule. The North Slope Subarea Area Contingency Plan also discusses bioremediation products, and contains a general protocol for testing products listed on the NCP schedule for use in Alaskan waters.¹²⁶ These products are not preapproved for any use. A later staff working paper will provide a more detailed discussion of research on bioremediation.

III. Geographic and Cultural Issues

A. Response Posture and Readiness

As noted above, the Beaufort and Chukchi Seas are different in terms of response needs. This section focuses mainly on response in the Chukchi, where the distance from shore and lack of infrastructure make access, let alone response, difficult. Some of these concerns do apply to the Beaufort as well.

Coast Guard officials have noted over the past few years that they are ill-prepared to respond to a major spill in the Arctic.¹²⁷ In addition to the response limitations detailed above, the Coast Guard lacks ice-class vehicles capable of responding to a spill under Arctic conditions. The Coast Guard has three polar icebreakers: the *Polar Star*, the *Polar Sea*, and the *Healy*. Both the *Polar Star* and the *Polar Sea* are currently non-operational, and both have exceeded their intended 30-year service lives.¹²⁸

The *Polar Sea*, originally commissioned in 1978, was returned to service in 2006 following a rehabilitation project intended to extend the vessel's service life to 2014.¹²⁹ In June of this year the Coast Guard announced that the *Polar Sea* would cease operations until January 2011 due to "an unexpected engine casualty," the cause of which is still under investigation.¹³⁰ Another rehabilitation project, budgeted at \$60 million and intended to extend the life of the

¹²³ SINTEF, Oil Biodegradation in Arctic Ice, <http://www.sintef.no/Home/Materials-and-Chemistry/Marine-Environmental-Technology/Projects-and-News/Oil-biodegradation-in-Arctic-ice/>. SINTEF is studying a number of techniques for combating oil spills in ice covered water. See SINTEF, JIP Oil in Ice, <http://www.sintef.no/Projectweb/JIP-Oil-In-Ice/>.

¹²⁴ U.S. Patent No. 6,267,888 (issued July 31, 2001); U.S. Patent Application Publication No. US2010/0051541 A1.

¹²⁵ 40 C.F.R. § 300 Subpart J.

¹²⁶ ANNEX F at F-85.

¹²⁷ See, e.g., Captain J.J. Fisher, "Policy & Cooperation in the Arctic," Presentation at Capitol Hill Ocean Week, (June 10, 2010), available at <http://nmsfocean.org/CHOW-2010-agenda>; "Oil Spill Response in the U.S. Arctic: A U.S. Coast Guard Perspective," Presentation at the Environmental Law Institute (Mar. 11, 2010), available at http://www.eli.org/program_areas/ocean_arctic_spill.cfm.

¹²⁸ RONALD O'ROURKE, CONGRESSIONAL RESEARCH SERVICE, COAST GUARD POLAR ICEBREAKER MODERNIZATION: BACKGROUND, ISSUES, AND OPTIONS FOR CONGRESS 1 (July 2, 2010).

¹²⁹ *Id.* at 3.

¹³⁰ *Id.* at 4.

Polar Star by seven to ten years, began in 2006.¹³¹ It is expected to be completed in 2013. The most recent Coast Guard estimates suggest that the work required to further extend the lives of the *Polar Sea* and the *Polar Star* would cost about \$400 million per vessel (in 2008 dollars), and the cost of replacement ships would be between \$800-925 million.¹³² The same report predicts that it would take eight to ten years to build the new ships.

The Coast Guard procured the third ship, the *Healy*, in the 1990s, and commissioned it in 2000. The *Healy* was supposed to complement the *Polar Sea* and the *Polar Star* with its greater research support capabilities. It has less icebreaking capability than the other ships.

The funding for operations and maintenance on all of these vessels has come through the National Science Foundation's budget since FY2006, because of the ships' increasing research functions.¹³³ Should a major drilling program begin offshore in the Chukchi Sea, additional operational polar icebreakers would be required to reach a rig or a spill in icy conditions. Decisions regarding whether to repair the current vessels or to acquire additional ice-class vessels are currently in the hands of Congress and subject to the budgeting process.

Distance is another major hurdle, even in open water and good weather conditions. Though the Coast Guard has a presence on the North Slope, the nearest Coast Guard operations base to the Chukchi region is on Kodiak Island, which is approximately 1,000 miles from the leasing sites. In Northern Alaska, the Coast Guard has only forward operating locations, not fully staffed and equipped bases. No infrastructure presently exists along the Chukchi. If drilling moves forward, some of this infrastructure would naturally be created by industry, but in a seasonal drilling environment it is unclear how much permanent development can be expected.

In the Beaufort Sea, response capability is increased by proximity to the city of Barrow and the shoreline. However, Barrow is still a small community of less than 5,000 people.¹³⁴ Wainwright, the second-largest town in the North Slope Borough and on the Chukchi Sea coast, had a population of about 550 at the time of the 2000 census.¹³⁵ A major spill would require bringing in responders, but it would be difficult for this region to support a large influx of response personnel. The nature of the sea also complicates the staging of operations. The sea is too shallow at Wainwright to support a full dock, and there is only a boat ramp from which to launch smaller vessels. The nearest dock capable of supporting large vessels is at Prudhoe Bay in the Beaufort Sea.

Shell's plan for exploratory drilling in the Chukchi involves a small flotilla of ships available to assist with response efforts. The Shell C-Plan asserts that an oil spill response vessel will be positioned so that it could arrive at a spill site within one hour.¹³⁶ It also anticipates that a larger transport vessel will be able to arrive within 24 hours and would be able to store 287,100 barrels of oil or oily water, which is the worst-case planning discharge amount. Additional

¹³¹ *Id.*

¹³² *Id.* at 10-11.

¹³³ *Id.* at 7.

¹³⁴ U.S. Census Bureau, Population for the 15 Largest County Equivalents and Incorporated Places in Alaska: 1990 and 2000, available at http://www.census.gov/census2000/pdf/ak_tab_6.PDF.

¹³⁵ U.S. Census Bureau, Fact Sheet, Wainwright city, Alaska, available at http://factfinder.census.gov/home/saff/main.html?_lang=en (search for Wainwright, AK).

¹³⁶ SHELL C-PLAN at 1-19, 1-25.

personnel and resources, according to the plan, will be mobilized through the contractor Alaska Clean Seas, which has personnel stationed on the North Slope in Prudhoe Bay and along the Beaufort Sea. They have an advisor on Chukchi exploration issues but do not appear to have any response personnel stationed west of Barrow at present.¹³⁷ According to the C-Plan, equipment will be pre-staged at Wainwright, where there is a small airport and a boat ramp from which to deploy the equipment to the spill.

Environmental groups have criticized this plan, asserting that the estimated response times are unrealistic. Pew Environment's U.S. Arctic program is currently drafting a report on oil spill response in the Arctic, which will include a response scenario analysis for the Chukchi Sea. This report will be peer-reviewed and should be available by the end of October 2010.¹³⁸

B. Subsistence Resource Use

Subsistence resource uses provide an important background to any discussion of offshore drilling in the Arctic. Inupiat Eskimos are the dominant population in Alaska's Arctic region and have practiced subsistence hunting and fishing for thousands of years. For most residents of the North Slope, a subsistence-based lifestyle is an economic necessity. The cost of living is high as a result of transportation costs for goods and services. While jobs are available in oil extraction facilities in the Prudhoe Bay area, the per-capita income does not correspond to the high cost of living.¹³⁹ The Inupiat are forced to supplement their diet through subsistence hunting and fishing since the harsh weather makes agriculture impossible.¹⁴⁰ Walruses, seals, and caribou make up part of the Inupiat diet, but the bowhead whale is of particular importance due to its size and food potential.

Bowhead whales can reach 60 feet in length and weigh more than 120,000 pounds. They migrate from Russian to Canadian waters and back through the Chukchi and Beaufort Seas. They are the most important subsistence animal for the coastal communities of northwest and northern Alaska.¹⁴¹ Of the 74 percent of North Slope Borough households that responded to a 1998 survey, nearly 69 percent of Inupiat families reported that the bowhead whale makes up more than half of their subsistence food diet.¹⁴²

Whale hunting and the customs surrounding it are also an important part of the cultural heritage of the Inupiat. A 1986 study estimated that 70 percent of the population of Wainwright, Alaska directly participates in preparing and preserving a whale that has been caught. No other communal activity involves as high a level of participation.¹⁴³

¹³⁷ See Alaska Clean Seas, Yearbook 30-41 (2009), available at http://www.alaskacleanseas.org/adobefiles/2010%20Yearbook_web.pdf (listing personnel and office locations)

¹³⁸ Email to National Commission Staff from Marilyn Heiman, U.S. Arctic Program, Pew Environment Group, received Sept. 15, 2010.

¹³⁹ COMMITTEE ON THE CUMULATIVE ENVIRONMENTAL EFFECTS OF OIL AND GAS ACTIVITIES ON ALASKA'S NORTH SLOPE, NATIONAL RESEARCH COUNCIL, CUMULATIVE ENVIRONMENTAL EFFECTS OF OIL AND GAS ACTIVITIES ON ALASKA'S NORTH SLOPE 20 (2003) [hereinafter CUMULATIVE ENVIRONMENTAL EFFECTS].

¹⁴⁰ *Id.* at 132.

¹⁴¹ ALASKA DEPARTMENT OF FISH & GAME, BOWHEAD WHALE (2008), <http://www.adfg.state.ak.us/pubs/notebook/marine/bowhead.php>.

¹⁴² CUMULATIVE ENVIRONMENTAL EFFECTS at 135.

¹⁴³ *Id.*

Many coastal Inupiat are strongly opposed to offshore drilling, largely because it can interfere with the migratory patterns and well-being of the bowhead whale. Much of this opposition relates to concerns over seismic activities, which can drive the whales off their normal migratory path.¹⁴⁴ Oil spills present another hazard. In case of a spill, whales may pass through the oil, exposing their bodies to harmful hydrocarbons. No research has studied the toxic effects of inhaled or ingested oil on bowhead whales, but scientists believe the consequences would be similar to those for polar bears and seals, which are both seriously affected by oiling.¹⁴⁵ While no major oil spill has occurred in the Beaufort Sea, concerns about the potentially calamitous effects of a spill on the bowhead whale population are a major factor in any evaluation of offshore drilling.

IV. Areas for Commission Inquiry

The areas for Commission inquiry suggested by this draft are all topics that can and should be discussed by panelists at the hearing on September 27, 2010. Staff recommends that the Commission ask the panelists to address these issues.

Shell's exploratory drilling C-Plan is currently the only formal industry proposal for contingency planning and oil spill response in the Arctic. While Shell's plan acknowledges many of the challenges of spill response in the Arctic, questions remain as to whether its solutions to those challenges are realistic. For its final report, the Commission may want to consider the forthcoming analysis conducted by the Pew Environmental group in evaluating the Shell plan and the requirements for Arctic response plans generally.

The Commission may also want to consider the regulatory standards to which the C-Plan is keyed. The regulations set out requirements for spill response planning, such as the volume for the worst-case discharge scenario and the proximity to the well of spill response equipment. The Shell plan appears to go beyond these standards, but other drillers may not. Environmental groups have criticized the current response planning standards as inadequate because they allow an applicant to underestimate the risk of, and do not require sufficient response capacity in the event of, a worst-case discharge. Bills in both the House and Senate attempt to respond to these concerns by requiring response plans to include a more comprehensive risk analysis, greater detail about response capability, and specific information on measures to be used in case of a loss of well control.¹⁴⁶ The Commission, after further review of the regulations and an evaluation of the action Congress is considering, may wish to recommend amending the regulations.

The Commission may also want to consider the resources brought to bear to review contingency plans. The Shell C-plan process, where MMS did request further information in

¹⁴⁴ See NATIONAL MARINE FISHERIES SERVICE, ENDANGERED SPECIES ACT—SECTION 7 CONSULTATION, BIOLOGICAL OPINION 13 (2002) (noting that, with reference to the construction and operation of the Liberty Oil production island in the Beaufort Sea, that bowhead whales will defect from their normal migratory paths at distances of up to 35 miles from seismic operations). Changes in migratory patterns will have a significant effect on Inupiat hunting: hunters must follow the whales into riskier waters, making the hunting trip longer and more dangerous. Further, the hunters may not be able to transport the carcass to the shore before it begins deteriorating, thus jeopardizing the whale's food potential.

¹⁴⁵ CUMULATIVE ENVIRONMENTAL EFFECTS at 103.

¹⁴⁶ See The Consolidated Land, Energy, and Aquatic Resources Act of 2009, H.R. 3534, 111th Cong. (2009); Outer Continental Shelf Reform Act of 2010, S. 3516, 111th Cong. (2010).

support of the plan, shows that at least some review of the plan took place. The Commission may wish to consider whether the new BOEMRE possesses the expertise, resources, and appropriate incentives to review spill response plans, and whether other agencies should play a role in such review. For example, EPA and NOAA may possess scientific expertise relevant to the evaluation of Arctic response plans, and the Coast Guard may possess relevant operational expertise. EPA and NOAA are currently involved in the environmental review process, but could play a larger role in the spill response planning process. Proposed Congressional actions would require the lead agency reviewing the response plan, such as BOEMRE, to obtain the written concurrence of other agencies that have a significant responsibility to remove, mitigate damage from, or prevent or reduce a substantial threat of the worst-case discharge of oil. The Commission may wish to consider this and other mechanisms to incorporate consultation with other agencies into spill response planning.

It is unclear the extent to which and the speed at which the Coast Guard, the oil spill response contractors, and industry could mobilize response equipment and personnel in the event of a spill in the Chukchi Sea. Because the Coast Guard has an admitted lack of response capacity in the Arctic, immediate responsibility would fall on industry and their oil spill response contractors. Shell, at least, accepts this responsibility. One of the questions for the Commission is whether increased Coast Guard capacity should be a prerequisite for offshore activity or whether the government is comfortable with accepting responsible parties (and private contractors) as primary spill responders—especially in light of widespread public concern about BP’s role as the responsible party in the Deepwater Horizon response.

The Commission may also wish to consider encouraging research in two areas. First, further research is needed on the dynamics of the Arctic marine ecosystem and the ways in which marine mammals use sea and shoreline resources. Second, further information is required on the effectiveness of common response methods and whether they can be modified for the Arctic environment. The use of dispersants, bioremediation, and more advanced GPR technology should be investigated to improve response capacity. A response gap analysis, such as the analysis conducted in Prince William Sound, may be a useful tool to identify which response mechanisms should be prioritized.

The United States Geological Service is presently evaluating the state of scientific knowledge about the Arctic and will identify specific areas for research. DOI directed this analysis on April 13, 2010 (a week before the Deepwater Horizon explosion).¹⁴⁷ Potential mechanisms for funding oil spill response research in general, and in the Arctic specifically, will be discussed in a later working paper.

Another question the Commission may consider is the role of the local Inupiat community in setting up response infrastructure and assisting with response efforts. The Prince William Sound Regional Citizens’ Advisory Council, established after *Exxon Valdez*, has been suggested as a model for incorporating local communities into spill planning and spill response. The Commission may wish to recommend that a similar council be created in the North Slope communities and be funded by industry engaging in offshore activities.

¹⁴⁷ Press release, Department of Interior, Secretary Salazar Unveils Arctic Studies Initiative that will Inform Oil and Gas decisions for Beaufort and Chukchi Seas (April 13, 2010).

National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling

THE USE OF SURFACE AND SUBSEA DISPERSANTS DURING THE BP DEEPWATER HORIZON OIL SPILL

---Draft---

Staff Working Paper No. 4

Staff Working Papers are written by the staff of the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling for the use of members of the Commission. They are preliminary, subject to change, and do not necessarily reflect the views either of the Commission as a whole or of any of its members. In addition, they may be based in part on confidential interviews with government and non-government personnel.

This Working Paper examines the issues raised by the use of dispersants in the Deepwater Horizon spill. Dispersants change the distribution, not the amount, of oil within a marine environment. They are chemicals typically applied directly to oil on the water surface in order to break the oil into small droplets that can then mix with water below the surface. The dispersed oil is rapidly diluted, mixing both vertically and horizontally in the water column.¹ While this alleviates high concentrations at the surface, it may expose organisms to lower, but more widespread, concentrations of oil.

The use of dispersants in the aftermath of the Macondo deepwater well explosion was controversial for three reasons.² First, the total amount of dispersants used was unprecedented: 1.84 million gallons. Second, 771,000 of those gallons were applied at the wellhead, located 5,067 feet below the surface. Little or no prior testing had been done on the effectiveness and potential adverse environmental consequences of subsea dispersant use, let alone at those volumes.³ Third, the existing federal regulatory system pre-authorized dispersant use in the Gulf

¹ Press Conference with Lisa P. Jackson, EPA Administrator (May 24, 2010), *available at* <http://www.epa.gov/bpspill/dispersants/statement-dispersant-use-may24.pdf> [hereinafter Jackson Press Conference]. For further information about dispersants, see Committee on Understanding Oil Spill Dispersants: Efficacy and Effects, National Research Council of the National Academies, UNDERSTANDING OIL SPILL DISPERSANTS: EFFICACY AND EFFECTS 9 (2005), *available at* <http://www.nap.edu/catalog/11283.html> [hereinafter NRC Report].

² The day after the Macondo well was capped and the amount of daily dispersant use dropped precipitously, a group of marine scientists opposed to the high volume use of dispersants issued a statement calling for an immediate end to their use. See Susan D. Shaw et al., *Consensus Statement: Scientists Oppose the Use of Dispersant Chemicals in the Gulf of Mexico* (July 16, 2010), *available at* <http://www.meriresearch.org/Portals/0/Documents/CONSENSUS%20STATEMENT%20ON%20DISPERSANTS%20IN%20THE%20GULF%20updated%20July%2017.pdf>.

³ BP's "Lessons Learned" report refers to "limited trials" and "some discussion in technical papers of applying dispersant to the source." BP, DEEPWATER HORIZON CONTAINMENT AND RESPONSE: HARNESSING CAPABILITIES AND LESSONS LEARNED 26 (2010), *available at* <http://www.boemre.gov/ooc/PDFs/NarrativeFinal.pdf>. BP also claims that "EPA has permitted use of dispersants subsea to remediate oil spills since the 1990s." *Id.* None of the experts (whether from EPA, BP, or independent) with whom Commission staff spoke in researching this paper was

of Mexico without any limits or guidelines as to amounts or duration. Faced with an emergency, the government had to make decisions about high-volume and subsea dispersant use within time frames that denied officials the opportunity to gather necessary information. The resulting uncertainty even fueled unfounded suspicions that BP was using dispersants without authorization from the government in an effort to mask the oil and to limit its ultimate liability.

This paper considers two issues. The first is how well the government handled the dispersant issues it faced in the absence of necessary scientific information and pursuant to a regulatory regime that had failed to anticipate this kind of problem. The second is how, in light of lessons learned from this recent experience, government procedures and existing laws might be improved to allow for sounder decisions regarding the use of dispersants in the future.

The paper is divided into three parts. Part I provides background information on dispersants and their potential authorization for use in responses to oil spills. It then recaps the chronology of the use of dispersants following the Macondo well explosion. This chronology includes the volume of dispersants used, where they were used, the types of dispersants used, and the role of various government agencies in making relevant decisions regarding dispersant use. Part I also describes some of the contemporaneous public controversy concerning the use of dispersants, including the debate, still ongoing, regarding their potentially adverse impacts. Part II considers the distinct questions of whether the government's decisions were reasonable at the time; and whether, regardless of their reasonableness or unreasonableness when made, preliminary scientific research since undertaken suggests those decisions may, in fact, have been sensible. Finally, Part III describes some possible implications for changes in agency procedures and regulations arising out of the use of dispersants in the Deepwater Horizon spill response that Commissioners may wish to consider.

I. Background on Dispersants

A. The Trade-offs of Dispersant Use

When an oil spill occurs, responders have several tools to manage potential environmental impacts. Mechanical means are generally preferred, but they cannot always be used and do not recover all of the spilled oil.⁴ Non-mechanical methods such as *in-situ* burning and chemical dispersants can contribute to the elimination of the oil. In response to the

aware of prior subsea use of dispersants, which suggests that any such use or approval was not well-known. On September 7, 2010, we requested information from BP's counsel regarding the trials, papers, and EPA actions to which BP refers. On September 27, 2010, BP's counsel confirmed in an email to Commission staff that "the reference on page 26 of the report to EPA's approval of subsea dispersant use in the 1990s is an error. Although dispersants have been on the Product Schedule since the 1970s, we understand that only surface uses were contemplated in the 1990s." BP's counsel also provided the Commission staff with references to two technical papers discussing the application of subsea dispersants. *See, e.g.*, NRC Report at 138.

⁴ *See* NRC Report at 9 ("The effectiveness of mechanical response techniques is variable and highly influenced by the size, nature, and location of the spill as well the environmental conditions under which the response is carried out. Essentially, mechanical response works satisfactorily under a finite subset of all possible spill scenarios.").

Deepwater Horizon oil spill, BP used large amounts of the dispersant Corexit 9500 and some Corexit 9527.⁵

Dispersants function like detergents to break up oil into small droplets that mix easily with water. They contain a combination of surfactants and solvents. Surfactants are compounds that have lipophilic groups, which mix with non-polar substances like oil, and hydrophilic groups, which mix with polar substances like water. By combining lipophilic and hydrophilic groups, surfactants can lower surface tension to allow water and oil to mix more easily.⁶ The solvents help the surfactants pass through the oil to reach the oil-water boundary where the surfactants operate.⁷

The resulting oil/water mixture takes the form of small droplets of dispersant-covered oil, which, because of their small size, can remain suspended in water rather than rising to the surface.⁸ These droplets can move into and through the water column from the water's surface.⁹ This process depends on outside forces to disperse the oil droplets through the top of the water column. For that reason, dispersants applied to surface oil slicks are more effective in areas with high wave energy.¹⁰

The toxicity of available dispersants has diminished substantially over the past several decades.¹¹ Generally, dispersants are less toxic than oil or chemically dispersed oil. However, dispersants and dispersed oil are typically more toxic than oil alone to embryos and larvae.¹²

Using dispersants to remove oil from the water surface has several potential benefits. First, less oil will float ashore to adversely affect shorelines and fragile estuarine environments. Second, animals and birds that float on or wade through the water surface may be less exposed to oil.¹³ Third, dispersants may accelerate the rate at which oil biodegrades. Smaller droplets have a larger surface-area-to-volume ratio, which in theory should allow microorganisms greater access to the oil, and speed their rate of consumption. The expected acceleration of this biodegradation is often cited as a major reason to use dispersants.

⁵ See David Biello, *Is Using Dispersants on the BP Gulf Oil Spill Fighting Pollution with Pollution?*, SCI. AM. (June 18, 2010), available at <http://www.scientificamerican.com/article.cfm?id=is-using-dispersants-fighting-pollution-with-pollution>. Toxicity information on these dispersants can be found in Anita George-Ares & James R. Clark, *Aquatic Toxicity of Two Corexit Dispersants*, 40 CHEMOSPHERE 897 (2000).

⁶ See Coastal Response Research Center, RESEARCH & DEVELOPMENT NEEDS FOR MAKING DECISIONS REGARDING DISPERSING OIL 1 (Apr. 2006), http://www.crrc.unh.edu/dwg/dispersant_workshop_report-final.pdf [hereinafter CRRC Report].

⁷ See International Tanker Owners Pollution Federation Ltd, *Dispersants*, <http://www.itopf.com/spill-response/clean-up-and-response/dispersants/>.

⁸ See CRRC Report at 7.

⁹ See NRC Report at 10.

¹⁰ See Merv Fingas, A REVIEW OF LITERATURE RELATED TO OIL SPILL DISPERSANTS 1997-2008 5 (Sept. 2008), available at <http://www.pwsrcc.org/docs/d0053000.pdf>.

¹¹ NRC Report at 207.

¹² *Id.*

¹³ The NRC Report, however, suggests that the effect of dispersants on the fur and feathers of animals and birds—*e.g.*, potential negative effects on waterproofing—requires further study. See NRC Report at 196, 274.

There are uncertainties regarding both the actual realization of some of these benefits, especially in the subsea, and potential offsetting costs. For instance, less oil on the surface means more in the water column, increasing exposure for subsurface marine life. And, while the smaller droplets may accelerate biodegradation, their smaller size increases the dissolution of potentially toxic compounds and exposure to aquatic organisms. Moreover, according to at least some scientific literature, the assumption of increased biodegradation may not always be accurate. Some studies have found that dispersants have no effect on the biodegradation rate or may even inhibit biodegradation.¹⁴ It is also only largely in the aftermath of the Macondo well explosion that scientists have begun to research the extent to which oil-eating bacteria are present at the low temperatures of deepwater.¹⁵ Finally, there is no reason to suppose that all dispersants act in the same manner. They may, depending upon their chemical makeup, have strikingly dissimilar impacts. For example, some evidence indicates that the ionic surfactant in Corexit 9527 and 9500 inhibits biodegradation while their non-ionic surfactants increase biodegradation.¹⁶

B. Regulation of the Use of Dispersants in Oil Spill Response

The Clean Water Act expressly contemplates the use of dispersants in response to oil spills. Section 311(d)(2)(G) of the Act requires that the federal National Contingency Plan for oil spill response contain a schedule identifying:

- (i) dispersants . . . , if any, that may be used in carrying out the Plan,
- (ii) the waters in which such dispersants . . . may be used, and
- (iii) the quantities of such dispersant . . . which can be used safely in such waters¹⁷

In addition, subsection (G) requires each schedule to provide for use of other, non-listed dispersants: “[T]he President, or his delegate, may, on a case-by-case basis, identify the dispersants, other chemicals, and other spill mitigating devices and substances which may be used, the waters in which they may be used, and the quantities which can be used safely in such waters.”¹⁸

The National Contingency Plan under the Clean Water Act and Oil Pollution Act of 1990 further provides for the establishment of regional and area-wide contingency plans, which may expressly pre-authorize the use of dispersants:

In meeting the provisions of this paragraph, preauthorization plans may address factors such as the potential sources and types of oil that might be spilled, the existence and location of environmentally sensitive resources that might be impacted by spilled oil, available product and storage locations, available equipment and adequately trained operators, and the available means to monitor product application and effectiveness

¹⁴ See Fingas at 22.

¹⁵ See, e.g., Richard Camilli et al., *Tracking Hydrocarbon Plume Transport and Biodegradation at Deepwater Horizon*, SCIENCE (Aug. 19, 2010), <http://www.sciencemag.org/cgi/content/abstract/science.1195223>; Terry C. Hazen, et al., *Deep-Sea Plume Enriches Indigenous Oil-Degrading Bacteria*, SCIENCE (Aug. 24, 2010), <http://www.sciencemag.org/cgi/content/abstract/science.1195979>.

¹⁶ See Fingas at 22.

¹⁷ 33 U.S.C. § 311(d)(2)(G).

¹⁸ *Id.*

Approved preauthorization plans shall be included in the appropriate RCPs and ACPs [regional and area contingency plans].¹⁹

When dispersants have *not* been pre-authorized in an oil spill response contingency plan, they can still be approved after a spill has occurred. Federal regulations require the Federal On-Scene Coordinator to obtain “concurrence” in this circumstance from EPA and applicable state authorities, but require only “consultation” with the Department of Commerce (through the National Oceanic and Atmospheric Administration [NOAA]) and the Department of the Interior:

[T]he OSC [On-Scene Coordinator], with the concurrence of the EPA representative to the RRT [Regional Response Team] and, as appropriate, the concurrence of the RRT representatives from the states with jurisdiction over the navigable waters threatened by the release or discharge, and in consultation with the DOC [Department of Commerce, *i.e.*, NOAA] and DOI [Department of the Interior] natural resource trustees, when practicable, may authorize the use of dispersants, surface washing agents, surface collecting agents, bioremediation agents, or miscellaneous oil spill control agents on the oil discharge, provided that the products are listed on the NCP [National Contingency Plan] Product Schedule.²⁰

The effect of pre-approval, accordingly, is to eliminate the need for approvals and consultations during the response and to allow the Federal On-Scene Coordinator to act unilaterally.

The National Contingency Plan also establishes “Area Committees”²¹ under the direction of a Federal On-Scene Coordinator²² that are charged with “work[ing] with State and local officials to expedite decisions for the use of dispersants and other mitigating substances and devices.”²³

The decision whether to approve the use of dispersants can be difficult, whether it occurs through the pre-approval process in developing a contingency plan or, in the absence of pre-approval, once a spill has occurred. As described by the National Research Council of the National Academies of Sciences, “[g]iven the potential impacts that dispersed oil may have on water-column and seafloor biota and habitats, thoughtful analysis is required prior to the spill

¹⁹ 40 C.F.R. § 300.910(a).

²⁰ 40 C.F.R. § 300.910(b).

²¹ “There is established for each area designated by the President an Area Committee comprised of members appointed by the President from qualified personnel of Federal, State, and local agencies.” Clean Water Act § 311(j)(4)(A); 40 C.F.R. § 300.5. In the spill-affected area there are two “areas” (and thus Area Committees) for Louisiana, three for Texas, two for Northwest/West Florida, and one for Mississippi/Alabama.

²² “On-scene coordinator (OSC) means the federal official pre-designated by EPA or the USCG [U.S. Coast Guard] to coordinate and direct responses under subpart D, or the government official designated by the lead agency to coordinate and direct removal actions under subpart E of the NCP.” 40 C.F.R. § 300.5. Rear Admiral Mary Landry was the Federal On-Scene Coordinator until June 1, 2010, when Rear Admiral James Watson assumed that role. On July 12, 2010, Rear Admiral Paul Zukunft replaced Admiral Watson as the Federal On-Scene Coordinator.

²³ Clean Water Act § 311(j)(4)(B); *see also* 40 C.F.R. § 300.910(a) (“RRTs Area Committees shall address, as part of their planning activities, the desirability of using appropriate dispersants, surface washing agents, surface collecting agents, bioremediation agents, or miscellaneous oil spill control agents listed on the NCP Product Schedule, and the desirability of using appropriate burning agents.”).

event so that decision makers understand the potential impacts with and without dispersant application.”²⁴ The trade-offs are complex:

Decisions to use dispersants . . . involve trade-offs between decreasing the risk to water surface and shoreline habitats while increasing the potential risk to organisms in the water column and on the seafloor. This trade-off reflects the complex interplay of many variables, including the type of oil spilled, the volume of the oil, sea state and weather, water depth, degree of turbulence (thus mixing and dilution of the oil), and relative abundance and life stages of resident organisms.²⁵

Under the National Contingency Plan, EPA is responsible for obtaining dispersant toxicity data from industry before placing a dispersant on the product schedule, which then serves as the basis for listing particular dispersants for pre-approved use in oil spill response contingency plans. The accuracy and consistency of pre-listing testing by manufacturers has been questioned, with toxicologists suggesting that the results of industry testing vary more widely than they should.²⁶

Moreover, the required pre-authorization testing is limited to acute toxicity studies (48 and 96 hours) on two species: a fish species and a mysid shrimp species, *Menidia beryllina* and *Mysidopsis bahia*, respectively. EPA commonly uses these species in laboratory tests, and they are useful in providing comparative acute toxicity information, but the tests are not designed as proxies for all possible adverse ecosystem impacts. The pre-testing of dispersants did not include other important matters such as environmental persistence, effectiveness with multiple varieties of oil and at multiple temperatures, byproducts, and endocrine effects.

C. The Use of Dispersants in Response to the Deepwater Horizon Spill

The federal government’s response to the oil spill began immediately after the Macondo well explosion on the night of April 20, 2010. In addition to the emergency search-and-rescue mission, efforts to address the released oil were soon underway. Pursuant to the National Contingency Plan, the Coast Guard Captain of the nearest port, Morgan City, Louisiana, served as the Federal On-Scene Coordinator, in charge of the government’s response action, until a few days later when the District (Eight) Commander, Rear Admiral Mary Landry, took over the Coordinator role.

²⁴ See NRC Report at 3.

²⁵ *Id.* at 2.

²⁶ See Biello, *Fighting Pollution with Pollution*. Discrepancies between the pre-approval tests and EPA’s post-spill toxicity testing results suggest that there were potential flaws in the earlier testing, although it may not be possible to resolve that question definitively at this late date. The pre-approval tests found differences in toxicity between dispersants that did not appear in the EPA test. *Gulf Coast Oil Spill: Small Business and the Cleanup Effort Before the S. Subcomm. On Small Business and Entrepreneurship*, 111th Cong. (June 18, 2010) (statement of Carys Mitchelmore) (“Noteworthy is that the reference toxicant LC50s for the different dispersants listed on the NCPPS differ by orders of magnitude, up to nearly 300-fold. For example, in Table 2 reference toxicant data for the mysid shrimp tests range from an LC50 (ppm, 96-hr) from 0.98 (for Sea Brat #4) to 267.7 (for Nokomis 3-F4). One product (Nokomis 3-AA) used copper sulfate as a reference toxicant instead of the EPA-required SDS reference toxicant. These issues are of concern if you are trying to compare the relative toxicity of the dispersants. Indeed, this currently, cannot be accurately assessed given the data presented on the NCPPS. These toxicity tests should be repeated.”).

The oil spill response contingency plans applicable to the Gulf (Regions 4 and 6 within the National Response Plan framework) pre-authorized the use of a list of specific dispersants. Neither of the plans limited the overall volume or duration of such pre-authorized use.²⁷ With the permission of the Federal On-Scene Coordinator, BP applied 14,654 gallons of the dispersant Corexit, which was on the approved list, on the surface during the week of April 20-26, 2010.²⁸ On April 29, 2010, the Coast Guard formally designated the Gulf spill a “Spill of National Significance” pursuant to the Oil Pollution Act.²⁹ Based on that designation, the Commandant of the Coast Guard, Admiral Thad Allen, became the “National Incident Commander” in charge of the federal government’s response actions.

During May, dispersants were applied both to the surface and subsea, and the volume used increased rapidly. During the week of April 27 to May 3, 2010, responders applied 141,358 gallons to the surface, and that amount grew to 168,988 by the following week.³⁰ The week of May 11 to May 17, 2010, the amount of surface dispersants used reached 255,000 gallons.³¹

On May 1, 2010, Admiral Thad Allen reported that response crews had begun testing the subsurface application of dispersants to oil escaping from the broken riser.³² Nearly 3,000 gallons of subsea dispersants were applied.³³ At the time, it was unclear whether the National Contingency Plan’s pre-approval of the use of dispersants in the Gulf applied to subsea use in addition to surface use, and therefore whether additional EPA approval and NOAA consultation were required.³⁴ Notwithstanding those uncertainties regarding governing law, on May 7, 2010, “having deployed test applications of subsea dispersants, EPA halted subsea dispersant operations, awaiting additional test results.”³⁵

²⁷ The Region 6 dispersant guidelines pre-authorize use of any dispersant on the National Product Schedule in water at least ten meters deep and at least three miles from shore. Region 4’s dispersant guidelines give the same general pre-authorization, but exclude certain geographic areas. Both sets of guidelines also provide the Federal On-Scene Coordinator with a checklist of factors to consider—not including overall volume or duration—in determining whether to permit dispersant use. RRT-6, FOSC DISPERSANT PRE-APPROVAL GUIDELINES AND CHECKLIST (2001), available at http://www.losco.state.la.us/pdf_docs/RRT6_Dispersant_Preapproval_2001.pdf; REGION IV REGIONAL RESPONSE TEAM RESPONSE AND TECHNOLOGY COMMITTEE DISPERSANT WORKGROUP, USE OF DISPERSANTS IN REGION IV (1996), available at <http://ocean.floridamarine.org/acp/mobacp/PDF/ANNEXES/RRT%20IV%20Dispersant%20Policy.pdf>.

²⁸ Figures on the volume of dispersant use are either taken directly from, or calculated based on data in, the *Operations and Ongoing Response* daily reports for the Deepwater Horizon Response, available at www.restorethegulf.gov [hereinafter Restore the Gulf Estimates].

²⁹ Campbell Robertson, *White House Takes a Bigger Role in the Oil Spill Cleanup*, N.Y. TIMES (Apr. 29, 2009).

³⁰ Restore the Gulf Estimates.

³¹ *Id.*

³² See Transcript from Press Briefing, Coast Guard Commandant Thad Allen and Assistant to the President for Homeland Security John Brennan (May 1, 2010), available at <http://coastguardnews.com/gulf-oil-spill-press-conference-transcript/2010/05/01/>; Deepwater Horizon Response, *The Ongoing Administration-Wide Response to the Deepwater Horizon Oil Spill* (May 3, 2010), available at <http://www.restorethegulf.gov/release/2010/05/03/ongoing-administration-wide-response-deepwater-horizon-oil-spill> [hereinafter May 3, 2010 Release].

³³ May 3, 2010 Release.

³⁴ Interview with Coast Guard official.

³⁵ See H.R. Committee on Energy and Commerce, 111th Cong., CHRONOLOGY OF DEEPWATER HORIZON EVENTS, available at <http://energycommerce.house.gov/documents/20100615/EE.Attachment.A.2010.6.12.pdf>.

Testing and monitoring, however, presented substantial logistical and organizational problems. BP itself performed three tests, based on protocols established by EPA and the Coast Guard.³⁶ On May 15, 2010, the testing for effectiveness and toxicity that had been completed prompted EPA and the Coast Guard to announce their joint approval of subsea dispersant use with the condition that BP conduct further monitoring.³⁷ The EPA Administrator, Lisa Jackson, made the approval decision on behalf of EPA herself and has since publicly acknowledged the difficulty of making this decision with the limited amount of scientific information then available. Considerations related to response worker health and ease of application—subsea application would minimize the necessary human contact with dispersants, and could occur at night and in foul weather—reportedly played a role in the decision to approve the method.³⁸ By May 17, 2010, BP had made extensive use of dispersants. The cumulative totals by this time were 580,000 gallons on the surface and 45,000 gallons subsea.

On May 20, 2010, in the wake of continuing media reports relating public concern about the potential toxicity of the high volumes of dispersants being used,³⁹ the Coast Guard and EPA issued a joint directive requiring BP to identify and use a less toxic and more effective dispersant than Corexit 9500 from the list of dispersants authorized by the National Contingency Plan.⁴⁰ According to the data in the National Contingency Plan Product Schedule, some of the pre-approved dispersants were both less toxic and more effective on South Louisiana crude oil than Corexit 9500.⁴¹ Based on the Plan, the federal directive required BP to identify a less toxic alternative to be used both on the surface and subsea at the source of the oil leak within 24 hours, and to begin using the less toxic dispersant within 72 hours of submitting the alternative. Specifically, the directive called for toxicity levels LD₅₀ “at or below” 23 parts per million (ppm)

³⁶ See Conference Call with Lisa P. Jackson, EPA Administrator (May 12, 2010), *available at* <http://www.epa.gov/bpspill/dispersants/may12transcript-final.pdf>; *see also* Joel Achenbach & Steven Mufson, *Engineers draw battle lines in effort to plug gulf oil well: ‘Top hat,’ ‘hot tap’ among tactics pursued; uncertainties still loom*, WASH. POST (May 11, 2010).

³⁷ See EPA, DISPERSANT MONITORING AND ASSESSMENT DIRECTIVE FOR SUBSURFACE DISPERSANT APPLICATION (May 10, 2010); *available at* <http://www.epa.gov/bpspill/dispersants/subsurface-dispersant-directive-final.pdf>; EPA, DISPERSANT MONITORING AND ASSESSMENT DIRECTIVE FOR SUBSURFACE DISPERSANT APPLICATION—ADDENDUM 1 (May 14, 2010), *available at* <http://www.epa.gov/bpspill/dispersants/subsurface-dispersant-addendum-final.pdf>; Press Release, Deepwater Horizon Incident Joint Information Center, *Coast Guard and EPA Approve Use of Dispersant Subsea in Further Effort to Prevent Oil From Reaching U.S. Shoreline* (May 15, 2010), *available at* <http://www.restorethegulf.gov/release/2010/05/15/coast-guard-and-eps-approve-use-dispersant-subsea-further-effort-prevent-oil-reac>.

³⁸ Jeff Goodell, *The Poisoning*, ROLLING STONE (July 21, 2010). Administrator Jackson gave a wide-ranging and candid interview to *Rolling Stone*, in which she stated that she had told her aides that the approval decision was among the hardest she had ever made. She also reportedly said that BP argued for subsea application as a method that would reduce the overall volume of chemicals discharged into the marine ecosystem. *Id.*

³⁹ See, e.g., Elizabeth Rosenthal, *In Gulf of Mexico, A Huge Experiment with Chemical Dispersants*, N.Y. TIMES (May 6, 2010) (characterizing “BP and federal officials [as] engaging in one of the largest and most aggressive experiments with chemical dispersants in the history of the country, and perhaps the world.”).

⁴⁰ See EPA, DISPERSANT MONITORING AND ASSESSMENT DIRECTIVE FOR SUBSURFACE DISPERSANT APPLICATION—ADDENDUM 2 (May 20, 2010), *available at* <http://www.epa.gov/bpspill/dispersants/directive-addendum2.pdf> [hereinafter EPA ADDENDUM 2]. BP had used Corexit 9500 and 9527, though it discontinued use of the latter early on during the spill because Corexit 9527 contained 2-butoxyethanol, which had allegedly created health problems for *Exxon Valdez* workers. See Elana Schor, *Ingredients of Controversial Dispersants Used on Gulf Spill Are Secret No More*, N.Y. TIMES (June 9, 2010).

⁴¹ See EPA, NATIONAL CONTINGENCY PLAN PRODUCT SCHEDULE TOXICITY AND EFFECTIVENESS SUMMARIES, *available at* http://www.epa.gov/emergencies/content/ncp/tox_tables.htm#dispersants.

for *Menidia* or 18 ppm for *Mysidopsis*.⁴² If BP was unable to identify acceptable alternative dispersant products, BP had to provide the Coast Guard and EPA with a detailed description of the alternative dispersants investigated, and the reasons it believed those products did not meet the required standards.⁴³

BP responded to the directive the day it was issued.⁴⁴ BP contended that only five products on the National Contingency Plan Product Schedule (which lists acceptable dispersants) met the criteria in the directive and that Corexit 9500A was the “best alternative.”⁴⁵ BP noted that one of these five acceptable dispersants “contains a small amount of a chemical that may degrade to a nonylphenol,” a class of chemicals that have been identified as potential endocrine disruptors and may persist in the environment for a period of years.⁴⁶ Unfortunately, BP said, neither the manufacturer nor BP had had the opportunity to test the product for these potential effects.⁴⁷

BP said that it would be prudent to obtain the chemical formulas for the other dispersants to evaluate their potential to degrade to a nonylphenol, but indicated that it had not been able to do so.⁴⁸ BP noted that “there may be only limited information on the constituents of the dispersants, since the dispersants typically contain proprietary substances whose identities are not publicly available.”⁴⁹ In contrast, BP explained, the manufacturer of Corexit had said that it reached “maximum biodegradability” within one month and was not persistent in the environment.⁵⁰ In short, BP concluded, Corexit “appears to have fewer long term effects than the other dispersants evaluated.”⁵¹ BP also made clear that the company did not, in any event, then have a sufficient stockpile of any dispersants other than Corexit and Sea Brat #4, and that the Sea Brat #4 supply might not be sufficient for both surface and subsea use.⁵² Corexit 9500 was the only dispersant used during the remainder of the spill.

⁴² See EPA ADDENDUM 2. LD₅₀ is the dose that is lethal to 50% of the test population. *Menidia* is a genus of silverside fish found in the Gulf of Mexico. *Mysidopsis* are a type of shrimp used for toxicity testing. The reference to toxicity levels “at or below” designated LD₅₀ levels was confusing, because a higher LD₅₀ actually means a safer substance.

⁴³ See *id.*

⁴⁴ See Letter from Douglas J. Suttles of BP to Rear Admiral Mary Landry, Commander, Eighth Coast Guard District, and Samuel Coleman, Director, Superfund Division EPA Region 6 (May 20, 2010), available at <http://www.epa.gov/bpspill/dispersants/5-21bp-response.pdf> [hereinafter Suttles Letter]. This letter refers to the directive (EPA Addendum 2) as having a May 19, 2010 date.

⁴⁵ Corexit is a product of the Nalco Company, headquartered in Napier, Illinois. Corexit 9500A contains petroleum distillates, propylene glycol, and a proprietary organic sulfonate (a type of detergent). See Safety Data Sheet, Nalco Company, Corexit EC 9527A (May 11, 2010), available at http://www.deepwaterhorizonresponse.com/posted/2931/Corexit_EC9527A_MSDS.539295.pdf (last visited Sept. 14, 2010).

⁴⁶ See Suttles Letter.

⁴⁷ See *id.* The manufacturer tests were also conducted by different laboratories and on dispersants mixed with No. 2 fuel oil, not Louisiana sweet crude. See EPA, DISPERSANTS TOXICITY TESTING—PHASE II QUESTIONS AND ANSWERS (Aug. 2, 2010), available at <http://www.epa.gov/BPSpill/dispersants/qanda-phase2.pdf> [hereinafter DISPERSANTS TOXICITY Q&A] (explaining in answer to question seven that No. 2 fuel oil is not the oil in the Gulf).

⁴⁸ See Suttles Letter.

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² See *id.*

In a May 24, 2010 press conference, EPA Administrator Jackson stressed three points, while generally acknowledging that federal regulators remained “deeply concerned about the things we don’t know” such as the “long-term effect on aquatic life.”⁵³ First, she said, the government was instructing BP to “take immediate steps to significantly scale back the overall use of dispersants” and expressed EPA’s belief that “we can reduce the amount of dispersant applied by as much as half, and I think probably 75%, maybe more.”⁵⁴ Second, she expressed dissatisfaction with BP’s efforts to analyze other dispersant options.⁵⁵ Third, she announced, EPA would perform its own tests to verify BP’s data and to “determine the least toxic, most effective dispersant available in the volumes necessary for a crisis of this magnitude.”⁵⁶

Two days later, Administrator Jackson sent a letter to David Rainey of BP criticizing BP’s inadequate compliance with the May 20, 2010 directive, which had instructed BP “to analyze alternative dispersants for toxicity and effectiveness and report back within 24 hours.”⁵⁷ “Because we believe your analysis of potential alternative dispersants was insufficient,” she wrote, “the EPA is performing its own scientific verification of the data BP presented.”⁵⁸ EPA said it would make laboratory comparisons with Gulf of Mexico species, including a silverside fish and a mysid shrimp.⁵⁹ EPA would also identify a test for endocrine disrupters.⁶⁰ Administrator Jackson’s letter continued: “Furthermore, as we discussed, the federal government, led by the Coast Guard, is reiterating its instructions to BP to take immediate steps to significantly scale back the overall use of dispersants.”⁶¹ A May 26, 2010 directive provided that “BP shall eliminate the surface application of dispersants” except in “rare cases where there may have to be an exemption.”⁶²

On June 30, 2010, EPA released results of its own testing of eight dispersants.⁶³ EPA had conducted acute toxicity tests with two Gulf of Mexico aquatic species, and *in vitro* cytotoxicity (cell damage) and endocrine screening assays using human cell lines. EPA’s results indicated that none of the eight dispersants displayed significant endocrine disrupting activity. It also suggested that Corexit 9500 was not overall more toxic than alternatives: “While the dispersant products alone—not mixed with oil—have roughly the same impact on aquatic life,

⁵³ Jackson Press Conference.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.*

⁵⁷ Letter from Lisa P. Jackson, EPA Administrator, to David Rainey, V.P. of Gulf of Mexico Exploration, BP Exploration and Production (May 26, 2010), *available at* <http://www.epa.gov/bpspill/dispersants/Rainey-letter-052610.pdf>.

⁵⁸ *Id.*

⁵⁹ *See id.*

⁶⁰ *See id.*

⁶¹ *Id.*

⁶² *See* EPA, DISPERSANT MONITORING AND ASSESSMENT DIRECTIVE FOR SUBSURFACE DISPERSANT APPLICATION—ADDENDUM 3 (May 26, 2010), *available at* <http://www.epa.gov/bpspill/dispersants/directive-addendum3.pdf>.

⁶³ *See* Press Release, Deepwater Horizon Incident Joint Information Center, *EPA Releases First Round of Toxicity Testing Data for Eight Oil Dispersants* (July 1, 2010), *available at* <http://www.deepwaterhorizonresponse.com/go/doc/2931/731363/> The dispersants were Corexit 9500A, Dispersit SPC 1000, JD-2000, Nokomis 3-AA, Nokomis 3-F4, SAF-RON GOLD, Sea Brat #4 and ZI-400.

JD-2000 and Corexit 9500 were generally less toxic to small fish and JD-2000 and SAF-RON GOLD were least toxic to mysid shrimp.⁶⁴

The effort to scale back use of dispersants had some effect. During the week of May 18, 2010, BP applied 190,000 gallons total.⁶⁵ The following week, it applied roughly two-thirds as much (135,000 gallons).⁶⁶ Surface use fell from 120,000 gallons the week of May 18, 2010, to 40,000 gallons the week of May 25, 2010, although it then rose again and remained steady for several weeks at 80-90,000 gallons per week. By the end of May, BP had used a total of 950,000 gallons of dispersants, of which 740,000 were applied on the surface and 210,000 subsea.⁶⁷ As the following table shows, use of dispersants remained at a roughly constant level through most of June, but then began to decline again later in the month through early July:

Table 1: Weekly Use of Dispersants June 1-July 12⁶⁸

Week	Weekly Use of Dispersants (gallons)	Total Use of Dispersants to Date (gallons) (lower bound)⁶⁹
June 1 – June 7	171,000 (total): 50,000 (surface) 121,000 (subsea)	1.12 million (total): 790,000 (surface) 331,000 (subsea)
June 8 – June 14	163,000 (total): 92,000 (surface) 71,000 (subsea)	1.28 million (total): 882,000 (surface) 402,000 (subsea)
June 15 – June 21	169,000 (total): 88,000 (surface) 80,000 (subsea)	1.45 million (total): 970,000 (surface) 482,000 (subsea)
June 22 – June 28	112,000 (total): 30,000 (surface) 83,000 (subsea)	1.56 million (total): 1 million (surface) 565,000 (subsea)
June 29 – July 5	145,000 (total): 40,000 (surface) 92,000 (subsea)	1.71 million (total): 1.06 million (surface) 645,000 (subsea)
July 6 – July 12	90,000 (total) 10,000 (surface) 90,000 (subsea)	1.8 million (total) 1.07 (surface) 735,000 (subsea)

⁶⁴ *Id.*

⁶⁵ *See* Restore the Gulf Estimates.

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *Id.* Note that “totals” may not exactly correspond to the sum of components, apparently due to rounding, use of different data sources, or minor calculation errors in the original source. Weekly totals in the table are calculated by subtracting the government figures for cumulative use between weeks; the results do not always correspond to the amounts reported separately for subsea and surface use. The discrepancies in the government figures appear to be relatively minor, however.

⁶⁹ The “lower bound” refers to the fact that, according to the source, use was “more than” these amounts.

Despite the joint Coast Guard-EPA directive that BP “eliminate the surface application of dispersants” except in “rare cases where there may have to be an exemption,” the use of surface dispersants was not eliminated after May 26, 2010. The “rare cases” were not very rare. Until late June, surface use in most weeks remained at about 40% of the pre-directive rate. The directive remained in effect despite suggestions that it be modified as responders became aware that the oil flow was much larger than previously believed.⁷⁰

After the well was capped on July 15, 2010, there was virtually no further use of dispersants. By that time, BP had applied a total of 1.84 million gallons, of which 1.07 million gallons were applied on the surface and 771,000 gallons were subsea.⁷¹ As Table 1 indicates, the amounts injected underwater became larger than the amounts applied to the surface during the last three weeks. The week before the well was capped, only about 10% of dispersants used were applied to the surface. The National Incident Command estimated in an August 4, 2010 report that approximately 8% of the oil emanating from the well was chemically dispersed, either subsea or on the surface, while about three times that much evaporated or dissolved, and twice that much was dispersed naturally at the wellhead.⁷²

Although the use of dispersants had ended earlier in the month, debate about the use of dispersants surfaced again at the end of July. On July 12, 2010, Admiral Allen’s Chief of Staff informed Rep. Edward Markey that dispersants were used “only when absolutely necessary to preserve the health and safety of workers at the well site and to minimize shoreline impacts.”⁷³ On July 30, 2010, Rep. Markey sent a letter to Admiral Allen pointing to more than 74 BP exemption requests in 48 days, of which all but ten were fully approved by the Coast Guard. Rep. Markey alleged “these applications appear to be rubber stamped by the Coast Guard.”⁷⁴

The next day, in a conference call, Admiral Allen and Administrator Jackson replied that they had cooperated closely and nearly attained the goal of a 75% reduction in dispersant use.⁷⁵ On August 1, 2010, Admiral Allen said in a press conference that field commanders on a case-by-case basis decided to use dispersants where surveillance aircraft spotted oil and no other method of cleaning it up was available in the area. Admiral Allen noted that the decision to use the dispersants did not rest with BP. Rather, he said, “it’s a decision by the Federal on-scene coordinator” through a “very disciplined doctrinal process.”⁷⁶

⁷⁰ Letter from Rear Admiral James A. Watson, Federal On-Scene Coordinator, to Regional Response Team, Federal Region VI (June 22, 2010), *available at* <http://markey.house.gov/images/DISPERSANTDOCUMENTSJUNE22-24.pdf>.

⁷¹ *Id.*

⁷² See notes 94 and 95, *infra*.

⁷³ Letter from Peter Gautier, Chief of Staff, National Incident Command, to Rep. Edward J. Markey (July 12, 2010), *available at* <http://markey.house.gov/docs/07-30-10ejmtocgdispersants.pdf>.

⁷⁴ Letter from Rep. Edward J. Markey to Admiral Thad W. Allen, National Incident Commander, United States Coast Guard (July 30, 2010), *available at* <http://markey.house.gov/docs/07-30-10ejmtocgdispersants.pdf>.

⁷⁵ Matthew L. Wald, *Despite Directive, BP Used Dispersant Often, Panel Finds*, N.Y. TIMES (Aug. 1, 2010). Commission staff has learned from EPA staff that this claim was based on a comparison to the highest daily rate of use, rather than a comparison of amounts used on a weekly basis. See Table 1.

⁷⁶ Press Conference with Thad Allen, National Incident Commander, U.S. Coast Guard (Aug. 1, 2010), *available at* <http://www.restorethegulf.gov/release/2010/08/01/transcript-press-briefing-national-incident-commander-admiral-thad-allen-0>.

In a *CNN* interview the following day, Admiral Allen elaborated upon the working relationship between Coast Guard and EPA regarding the use of dispersants. According to the Admiral, he and Administrator Jackson “talk daily about dispersant use,” the Coast Guard “ha[s]n’t ignored EPA’s guidelines,” and he was “satisfied” with dispersant use in the Deepwater Horizon disaster.⁷⁷ Relatedly, *CNN* quoted an EPA spokesman as saying that, “[w]hile EPA may not have concurred with every individual waiver granted by the federal on-scene coordinator, the agency believes dispersant use has been an essential tool in mitigating this spill’s impact, preventing millions of gallons of oil from doing even more damage to sensitive marshes, wetlands and beaches and the economy of the Gulf coast.”⁷⁸ These statements suggested that coordination with EPA did not mean that the Federal On-Scene Coordinator heeded EPA’s advice on all occasions. Given the pre-approval of dispersant use, the Federal On-Scene Coordinator was not required to do so.

II. Assessing the Federal Government’s Use of Dispersants During the Deepwater Horizon Spill

It is too early to assess many aspects of the federal government’s use of dispersants in response to the Deepwater Horizon spill between the explosion on April 20, 2010, and the containment of the well on July 15, 2010. In making any assessment, moreover, it is important to distinguish between three inquiries: (1) whether the federal government adequately prepared in advance for the possible use of dispersants to address such a spill; (2) whether, once the spill occurred, the government’s decisions regarding the use of dispersants were reasonable in light of the resources and the information then available; and (3) whether, with the benefit of hindsight, those government decisions, regardless of their reasonableness or unreasonableness when made, resulted in benefits that outweighed harms.

A. The Adequacy of the Government’s Contingency Planning

The first of these three questions is the one most easily answered. The government was not adequately prepared for the use of dispersants to address such a large oil spill. Notwithstanding the National Contingency Plan’s express requirements for planning regarding the use of dispersants, including pre-authorization to deal with emergencies, EPA clearly did not anticipate the potential demands of an oil spill of the kind the nation faced after the Macondo well explosion. In particular, EPA did not consider, in its roles on the National Response Team and the relevant Regional Response Teams, the possibility that dispersants might have to be used in the massive volumes required in the Gulf. And EPA did not consider the distinct possibility that massive volumes of dispersants might be needed at the subsea level.

Neither omission can be justified on the ground that a major subsea spill was wholly unforeseeable. The oil and gas industry has been extracting high volumes of oil from reservoirs in the Gulf for twenty years. This is not a new, unanticipated development. Nor is deepwater drilling. Yet, just as the Minerals Management Service and industry failed to plan adequately for a blowout of this magnitude and duration (topics to be discussed in other staff work), EPA did

⁷⁷ Allen ‘satisfied’ with dispersant use in Gulf oil disaster, *CNN* (Aug. 2, 2010), <http://edition.cnn.com/2010/US/08/01/gulf.oil.spill/index.html#fbid=CAHE69XH089>.

⁷⁸ *Id.*

not consider adequately the challenges of dispersant use flowing from large-scale drilling operations, especially operations in deepwater. EPA did not require studies or testing that took account of the likely amounts or locations of dispersant use necessary in the event of a well blowout, in particular a deepwater blowout.

Nor had NOAA adequately planned for such an event. NOAA has significant responsibility to provide scientific support for national response and contingency planning pursuant to the Clean Water and Oil Pollution Acts.⁷⁹ Its related expertise arises out of its work in many areas, including its duties under the Endangered Species Act,⁸⁰ Marine Mammal Protection Act,⁸¹ and Magnuson-Stevens Fishery Conservation and Management Act⁸² to protect endangered and threatened species of marine life, marine mammals, and the nation's fisheries in U.S. waters. Yet NOAA had also not previously evaluated the potential impacts of voluminous and extended use of dispersants on marine life and the nation's fisheries.

As a result, the National Incident Commander, the EPA Administrator, and the NOAA Administrator were seriously handicapped when the Macondo well explosion occurred and decisions had to be made immediately in the absence of adequate contingency planning. These officials had to make difficult choices with insufficient information about the critical trade-offs identified by the National Academy of Sciences for the use of dispersants: the value of the dispersants in reducing the harm caused by released oil versus the potential risks of harm from the dispersants themselves. The limited toxicity data they possessed was questionable and limited to acute lethal effects on two estuarine species.⁸³ It did not consider potential environmental persistence resulting from repeated or continuous sublethal effects, such as endocrine disruption.

The absence of adequate contingency planning had a further negative impact on the effectiveness of the government's response. It made unclear the lines of authority between various federal agencies in determining whether dispersants should be used. In particular, there was uncertainty regarding the extent to which the Coast Guard needed to secure EPA's approval before permitting the use of dispersants. Notwithstanding the lack of any requirement that the Federal On-Scene Coordinator defer to EPA on the use of dispersants at the surface (given EPA's pre-approval), and the lack of a clear requirement with regard to the subsea, EPA decided to exercise substantial control over both types of dispersant use, which at times led to delays in necessary decision-making (and, according to Coast Guard responders, to some avoidable shoreline impacts from oil as a result of the inability to use dispersants quickly).⁸⁴

⁷⁹ 40 C.F.R. §§ 300.145, 300.175, 300.210.

⁸⁰ 7 U.S.C. §§ 1531 *et seq.*

⁸¹ 16 U.S.C. §§ 1361 *et seq.*

⁸² 16 U.S.C. §§ 1801 *et seq.*

⁸³ *See supra* note 26; Biello, *Fighting Pollution with Pollution* (quoting toxicologist Carys Mitchelmore's statement that "[i]f you think the data on COREXIT is bad, try to find any decent toxicology data on the alternatives").

⁸⁴ In interviews with Commission staff, responders stated that EPA representatives on the scene, unlike representatives from other government agencies, were not empowered to make binding decisions notwithstanding EPA's claims of authority over the use of dispersants. Instead, those EPA representatives had to relay information to agency superiors, which inevitably delayed decisions that needed to be made quickly. In addition, these response participants from other federal agencies stated that the EPA on-scene representatives sometimes lacked the necessary experience in oil spill response and that EPA scientists with such experience were not being adequately consulted in EPA's decision-making process. Finally, these individuals expressed an overall concern that EPA's

B. The Reasonableness of the Government's Decision To Authorize the Use of Dispersants at the Time It Was Made

As described above, the reasonableness of the federal government's decision to authorize the use of dispersants is distinct from the questions of whether there was adequate contingency planning (which there was not) and whether the decision ultimately turned out to be prudent. This inquiry instead focuses on whether the government acted reasonably given the limited knowledge and resources that it possessed at the time. Based on the information currently available to the Commission staff, we cannot conclude that the government acted unreasonably in deciding to approve the use of massive volumes of dispersants at the subsea and surface.

Because federal agencies had failed to plan adequately, they did not possess the scientific information that officials most certainly would have wanted to guide their choices. They had to make choices nevertheless: Millions of gallons of oil were flowing from the Macondo well into the Gulf of Mexico every day, imperiling the responders who worked in the immediate vicinity of the spill, residents living along the Gulf Coast, the Gulf marine ecosystem, and the fishing and tourism industries.

Given the conditions under which officials like Admiral Allen and EPA Administrator Jackson were acting, there is no clear evidence that their decisions to authorize high volumes of dispersants, including at the subsea, were unreasonable. They instead appear to have acted reasonably in the difficult circumstances in which they were placed. For instance, officials directed the Regional Response Teams to seek input as quickly as possible from fifty expert scientists.⁸⁵ On June 4, 2010, the experts reported a consensus that "use of dispersants and the effects of dispersing oil into the water column has generally been less environmentally harmful than allowing the oil to migrate on the surface into the sensitive wetlands and near shore coastal habitats."⁸⁶ In the experts' view, though gaps in relevant information existed, the environmental trade-off between the deep-ocean ecosystem and the shoreline made dispersants an acceptable choice.

There are, however, three caveats regarding the decision-making process. First, Commission staff heard repeated reports that EPA could have done a better job of ensuring that its on-scene representatives had both the expertise and the authority to make decisions regarding the use of dispersants, so as to avoid the delays that reportedly occurred because of the absence of such authority and expertise. For example, the Commission staff has heard from two sources

internal decision-making procedures were simply not organized to make the kind of rapid decisions necessary in the oil spill context, which are quite different from the lengthier deliberative processes that mark the kind of long-term regulatory rulemakings in which EPA more routinely engages.

⁸⁵ In May, the Regional Response Teams asked for scientific input to direct their future dispersant use and, to that end, fifty experts met together on May 26 and 27, 2010, at Louisiana State University for the "Deepwater Horizon Dispersant Use Meeting." Coastal Response Research Center, DEEPWATER HORIZON DISPERSANT USE MEETING REPORT 5 (June 4, 2010) *available at* http://www.crrc.unh.edu/dwg/dwh_dispersants_use_meeting_report.pdf. In the meeting, the experts split into four breakout groups: (1) efficacy and effectiveness of surface and deep ocean dispersants use; (2) physical transport and chemical behavior of dispersants and dispersed oil; (3) exposure pathways and biological effects resulting from deep ocean application of dispersants; and (4) exposure pathways and biological effects resulting from surface application of dispersants. *Id.*

⁸⁶ *Id.* at 4.

that EPA waited until late June to permanently install one of the Agency's most senior officials at the Unified Command Center in Robert, Louisiana.⁸⁷

The second caveat relates to implementation of the planned approach for decision-making regarding dispersants. The planning documents for the area require the Regional Response Teams to make decisions about novel uses of dispersants, upon request from the Federal On-Scene Coordinator. Here, as the issue of dispersant application became more and more prominent in the media and for the public, the decisions to apply both surface and subsea dispersants were taken out of hands of the Regional Response Teams. Admiral Allen and Administrator Jackson to a large extent bypassed the National and Regional Response Team structures and instead issued decisions regarding dispersant policy through joint directives. Though this reflected the high level at which the issues were being evaluated, it was outside of the process that responders were supposed to implement.

These two caveats aside, the Commission staff has reason to believe that there was generally a sound and cooperative working relationship between the federal agencies on the question of dispersants.⁸⁸ While the National and Regional Response Teams did not play the coordinating and decision-making role envisioned under the National Contingency Plan, the Federal On-Scene Coordinators worked directly with EPA and NOAA on dispersant policy. That coordination resulted in, among other things, the specific designation of subsea dispersants as an appropriate response technology subject to stringent limits on amounts as well as expansive testing and monitoring guidelines. In addition, the Federal On-Scene Coordinators and EPA worked together to reduce significantly the application of surface dispersants and to resolve the disagreements between the two agencies.

The third caveat relates to the role of BP. The fact that BP itself (or its oil spill response contractors) directly applied the dispersants authorized by the federal government led to the impression that BP rather than federal officials was in charge of decisions regarding dispersant use. Commission staff has not discovered any evidence that such a usurpation of government authority occurred. Nor could Commission staff conclude, based on interviews with Coast Guard responders, that BP or its contractors ever intentionally violated government directives regarding dispersant use (*e.g.*, regarding the permitted locations for such use). Yet, the impression remained and fueled public distrust of the decision to use dispersants.

C. The Prudence, in Hindsight, of the Federal Government's Decision To Permit Use of High Volumes of Dispersants at the Surface and Subsea

It is too soon to answer this final question with the degree of certainty necessary for scientific analysis. The gap between what federal government officials should know prior to the use of high volumes of dispersants at the surface and subsea and what they in fact know has begun to narrow. But closing that gap will require rigorous scientific inquiry based on years of

⁸⁷ Interviews with government officials.

⁸⁸ The Unified Command's working relationship with the state of Louisiana on the issue of dispersant use may not have been as cooperative. Commission staff heard in multiple interviews with state and federal government officials that Louisiana disagreed with the Unified Command's decision to apply dispersants subsea.

data collection and analysis, followed by the essential process of peer review, before any conclusions can be drawn upon which future government officials can safely rely.

With this crucial limitation in mind, EPA's preliminary analyses do not suggest that the government's use of dispersants caused major problems. Just the opposite, they support the possibility that the benefits of dispersant use outweighed the costs.

First, it appears that the subsea use of dispersants served an important function by increasing the safety of the working conditions faced by responders in the immediate vicinity of the spill. That group included individuals working on containment efforts—to cap the well—and those seeking to retrieve, burn, and skim oil. The very real concern had been that high concentrations of volatile organic compounds within the oil would be a serious safety and health hazard to response workers. The use of subsea dispersants, by reducing the volume and concentration of the oil reaching the surface, likewise reduced those associated risks.⁸⁹

Second, EPA's subsequent toxicity tests, while still preliminary, have not revealed major problems. On August 2, 2010, EPA released the results of additional tests on the toxicity of dispersants, which the Agency contended “confirm that the dispersant used in response to the oil spill in the gulf, Corexit 9500A, is no more or less toxic than the other available alternatives.”⁹⁰ The EPA report itself concluded:

Overall, the dispersants/L[ouisiana] S[weet] C[rude]mixtures were classified as being highly toxic to moderately toxic depending on the test species and dispersant. The ZI-400/ L[ouisiana] S[weet] C[rude] mixture was the exception and would be considered only slightly toxic to *Menidia*. Corexit 9500A, the dispersant that has been applied offshore at the surface and in the deep ocean, falls into the moderately toxic category for both species. For all eight dispersants in both test species, the dispersants alone were less toxic than the dispersant-oil mixture.⁹¹

Finally, EPA also reported on August 2, 2010, that the dispersants seemed to have succeeded in protecting the coastal area from greater contamination from the oil spill. The Agency referred to “fluorescence data that indicated the dispersants are working to keep the oil away from the shore. . . . [T]he dispersants are working to keep oil off our precious shorelines and away from sensitive ecosystems.”⁹² The Agency further noted that “EPA monitoring has not found dispersant chemicals in water or sediment near coasts or wetlands.”⁹³

⁸⁹ Interviews with government officials. EPA staff has told Commission staff that, while decreasing volatile organic compounds at the surface was not a primary justification for permitting subsea dispersant use, it was an important benefit that became apparent after use commenced, even without conclusive proof of a causal link between subsea use and the reduction.

⁹⁰ See DISPERSANTS TOXICITY Q&A.

⁹¹ EPA, COMPARATIVE TOXICITY OF LOUISIANA SWEET CRUDE OIL (LSC) AND CHEMICALLY DISPERSED LSC TO TWO GULF OF MEXICO AQUATIC TEST SPECIES (July 31, 2010), available at <http://www.epa.gov/BPSpill/reports/phase2dispersant-toxtest.pdf>.

⁹² Conference Call with Paul T. Anastas, EPA Assistant Administrator (Aug. 2, 2010), available at www.epa.gov/bpspill/dispersants/conference-call-transcript-08022010.pdf [hereinafter Anastas Conference Call]. Later data supports this conclusion about oxygen levels. See Paul Voosen & Katie Howell, *Gulf Spill Roundup: Subsurface Oil Increasingly Difficult to Detect*—NOAA, E&E NEWS (Sept. 2, 2010), <http://www.eenews.net/eenewspm/print/2010/09/07/1>.

⁹³ See Anastas Conference Call.

On August 4, 2010, experts from NOAA, the National Institute of Standards and Technology, and the United States Geologic Survey released two reports that lent support to the claim that dispersants decreased the harms that might have otherwise resulted from the oil spill, by indicating that a significant percentage (8%) of the oil was chemically dispersed: the *Deepwater Horizon MC252 Gulf Incident Oil Budget* and a supporting document entitled *BP Deepwater Horizon Oil Budget: What Happened to the Oil* (collectively, the Oil Budget).⁹⁴ These reports have since been the subject of controversy for potentially overstating in significant respects and understating in other respects the amount of oil from the spill “remaining” in the Gulf.⁹⁵ One major focal point of criticism was the failure of the Oil Budget to analyze and take account of biodegradation, which chemical dispersants are intended in part to promote.⁹⁶ Several subsequent, non-governmental reports have debated how quickly subsurface Macondo oil is biodegrading.⁹⁷

The ongoing debate regarding the fate of subsurface Macondo oil underscores the futility of trying now to evaluate conclusively the government’s decision to use high volumes of dispersants. Even without application of dispersants subsea, the turbulent mixing of oil and gas from the wellhead could have created the deepwater plume of dispersed oil. According to the Oil Budget, subsea dispersant use only added to the amount of oil in the plume.⁹⁸ As more scientific research occurs, a better understanding of the degradation and impacts of this naturally and chemically dispersed oil will undoubtedly emerge.⁹⁹ It will also take time and research to determine whether the dispersants themselves, used in such high volumes and subsea, have any longer-term detrimental effects on marine life or public health. For now, there has not been compelling evidence of harmful effects to indicate that decision-makers misjudged the risks versus the benefits of applying dispersants.

⁹⁴ DEEPWATER HORIZON MC252 GULF INCIDENT OIL BUDGET (Aug. 4, 2010), *available at* <http://www.noaanews.noaa.gov/stories2010/PDFs/DeepwaterHorizonOilBudget20100801.pdf>; Jane Lubchenco et al., *BP DEEPWATER HORIZON OIL BUDGET: WHAT HAPPENED TO THE OIL?* (Aug. 4, 2010), *available at* http://www.deepwaterhorizonresponse.com/posted/2931/Oil_Budget_description_8_3_FINAL.844091.pdf.

⁹⁵ For further discussion, see the Draft Staff Working Paper on the amount and fate of the oil.

⁹⁶ *Id.*

⁹⁷ The subsequent reports include, ordered by their release date: The Georgia Sea Grant report (Aug. 17, 2010), *available at* http://uga.edu/aboutUGA/joye_pkit/GeorgiaSeaGrant_OilSpillReport8-16.pdf, which suggested that only a small amount of biodegradation had occurred; a peer-reviewed Woods Hole Oceanographic Institution Team report (Aug. 19, 2010), which suggested the existence of an “oil plume” and that rapid biodegradation might not be occurring (*see* Camilli et al., *Tracking Hydrocarbon Plume Transport*); a peer-reviewed article published by a team from the Lawrence Berkeley National Laboratory (Aug. 24, 2010), which found evidence of increased microbial respiration within the “plume” and concluded that biodegradation rates were “faster than expected” (*see* Hazen, et al., *Deep-Sea Plume*); and, most recently, a peer-reviewed report published in *Science Express* on September 16, 2010 (David L. Valentine et al., *Propane Respiration Jump-Starts Microbial Response to a Deep Oil Spill*, *SCIENCE EXPRESS*), which added another nuance by suggesting that, while most of the initial degradation was of gaseous hydrocarbons (not liquid oil), this could prime bacteria to degrade other hydrocarbons in the aging plume.

⁹⁸ DEEPWATER HORIZON MC252 GULF INCIDENT OIL BUDGET (Aug. 4, 2010), *available at* <http://www.noaanews.noaa.gov/stories2010/PDFs/DeepwaterHorizonOilBudget20100801.pdf> (concluding that 16% of the oil was naturally dispersed at the wellhead, while only 8% was chemically dispersed subsea or at the surface).

⁹⁹ For example, as explained by NOAA Administrator Jane Lubchenco, “one of the worst case scenarios involving longer exposures due to dispersed oil—big losses of spawning bluefish tuna populations—may not be detectable for years.” *See* Eli Kintisch, *An Audacious Decision in Crisis Gets Cautious Praise*, 329 *SCIENCE* 735, 736 (2010).

III. Issues for Commission Consideration

This final part describes policy implications for Commissioner consideration that arise from possible lessons learned from the use of dispersants during the Deepwater Horizon spill response. These lessons and related policy implications are not intended as exhaustive of those that may flow naturally from the above analysis, but merely illustrative of the possibilities.

A. Further Research

Perhaps more than anything, the Deepwater Horizon experience with dispersants reveals the paucity of the kind of information that government officials need to make intelligent decisions about dispersant use in response to an oil spill. Although the absence of such information was well known before April 20, 2010, its practical effect had not been so glaringly realized.

As of 1999, EPA reported, “few long-term environmental effects tests have been conducted after a dispersant application.”¹⁰⁰ In 2005, the National Research Council noted that U.S. research funding to support oil spill response was “extremely limited and declining” (with an annual total below \$10 million).¹⁰¹ The Council called on the relevant federal agencies to develop an integrated research plan focusing on peer-reviewed information.¹⁰² Only a quarter of the \$40 million in proposed research funding on dispersants and chemically dispersed oil ever materialized.¹⁰³

The Deepwater Horizon oil spill confirms the urgency of these prior funding requests and suggests additional needs as well, including, for example, studies about the impacts of high volumes of dispersants, subsea impacts, and the long-term fate and effects of dispersants and dispersed oil—none of which appear to have been meaningfully addressed or at least addressed to the extent that now seems essential.¹⁰⁴ Efforts are ongoing to learn more about dispersant impacts in the Gulf. On August 3, 2010, the National Incident Commander recommended a detailed monitoring strategy, with NOAA as the operational lead, to evaluate the “distribution of indicators of break-down products of dispersants used in oil spill response activities.”¹⁰⁵

¹⁰⁰ EPA, UNDERSTANDING OIL SPILLS AND OIL SPILL RESPONSE 13 (1999).

¹⁰¹ NRC Report at 4.

¹⁰² *Id.*

¹⁰³ *Id.* at 5-8; see Elana Schor, *Oil Spill Dispersants Shifting Ecosystem Impacts in Gulf, Scientists Warn*, N.Y. TIMES (July 30, 2010) (“[Dr. Nancy] Kinner said the National Research Council’s report outlined a \$40 million plan for dispersant research, but a quarter of the money materialized over the past five years.”).

¹⁰⁴ See CRRRC Report at 7 (confirming need for research into “chemical dispersion,” including understanding “the long-term fate of chemically dispersed oil” and “investigating...multiple oil (including heavy) and dispersant types.”).

¹⁰⁵ Memorandum from Admiral Thad. Allen, National Incident Commander, Deepwater Horizon Response, to Rear Admiral Paul Zukunft, Federal On-Scene Coordinator (Aug. 3, 2010), *available at* <http://www.deepwaterhorizonresponse.com/external/content/document/2931/875939/1/SUB-SURFACE%20OIL%20AND%20DISPERSANT%20DETECTION,%20SAMPLING%20AND%20MONITORING%20STRATEGY.pdf>; see also Press Conference with Admiral Thad Allen, National Incident Commander, Deepwater Horizon Response, and Dr. Jane Lubchenco, NOAA Administrator (July 27, 2010), *available at* <http://www.deepwaterhorizonresponse.com/go/doc/2931/829055/>.

The development of dispersant alternatives should also be a priority. So-called “green chemistry” carries promise. Dispersants would seem to be a potentially important market for efforts to find new chemical products that are effective, less toxic, and more readily biodegradable.

Research and development, of course, requires funding. Offshore drilling provides a context within which substantial funding should be in reach. The nation’s need for oil and gas from the outer continental shelf is undeniable. But so too are the massive revenues those reserves yield in the market and the harm, as recent events demonstrate, if drilling goes awry. The smallest fraction of those revenues, whether charged directly to industry or originating in what the government already receives, would provide a major benefit in terms of potential to mitigate the impact of oil spills from offshore drilling.

B. Government Contingency Planning and Decision-Making Procedures

Government contingency planning for the use of dispersants was, as described, lacking. The federal agencies charged with planning did not adequately anticipate the need for dispersants in high volumes and at subsea locations. Federal officials must now survey existing and future offshore facilities and locations and consider systematically the particular challenges they present for spill response. In the future, officials should not find themselves similarly faced in the future with the need to make immediate decisions in the absence of adequate information.

Contingency planning reform should extend to rethinking both testing requirements and the use of pre-approved lists of dispersants. Plainly, the pre-approval process has significant advantages in the immediate aftermath of an oil spill and for that reason should not be abandoned. Indeed, it should be more rigorously applied by ensuring that those dispersants that are pre-approved are subject to more comprehensive testing.

There is clearly a need for expanded testing and greater information regarding dispersants placed on the National Contingency Plan Product Schedule, to include characteristics such as effectiveness and persistence under different environmental conditions. Testing should also be based on the use of higher volumes, including subsea. Moreover, current EPA protocols for industry testing may not be adequate to yield reliable and consistent results.¹⁰⁶ Given the ever-changing nature of the underlying science, periodic updating of testing and testing protocols is essential.

The Deepwater Horizon spill also suggests the possibility of including temporal, spatial, and/or volumetric limits on the pre-approval of dispersants for use in a geographic area. It is one thing to pre-approve based on the frequently reliable assumption that the response action will be limited in time, space, and dispersant volume. But, as the Deepwater Horizon spill dramatically illustrated, where those assumptions no longer hold, the force of a pre-approval is diminished. In particular, there is more reason to allow for federal officials other than the On-Scene Coordinator, such as EPA officials who possess particular expertise, to play a role in decision-making during the actual response. To that end, contingency planning for the use of dispersants

¹⁰⁶ See, e.g., Biello, *Fighting Pollution with Pollution*.

during oil spill response should consider distinguishing between types of oil spills, based on their temporal duration, spatial reach, and volume.

With greater authority comes greater responsibility. During the Deepwater Horizon spill, there were reports that on-scene EPA representatives lacked the expertise and authority essential in a response action. Any enhancement of EPA's authority therefore must be coupled with assurances that EPA has the resources and clear lines of decision-making authority necessary for effective spill response. Ultimately, any recommendations for changes in the unified command structure should turn not just on the recent experience with the use of dispersants, but on a more cross-cutting inquiry, which is the subject of a separate Commission staff working paper. The issues surrounding dispersant use should inform that broader set of recommendations.

Finally, federal officials must from the outset leave no question in the public's mind regarding who is in charge during an emergency response, especially when, as happened with dispersants, public concern with the wisdom of the government's decisions is great. Here, a mistaken impression was created in the minds of too many that BP was making the decisions based on its own interests. That misimpression fueled the controversy over the potentially harmful impacts of dispersants, which itself harmed the public, creating real fears that had economic consequences to the extent they affected tourism and other consumer choices. In the future, government officials must leave no doubt that they, and not private industry, are making difficult decisions.

National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling

DECISION-MAKING WITHIN THE UNIFIED COMMAND

--Draft--

Staff Working Paper No. 2

Staff Working Papers are written by the staff of the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling for the use of members of the Commission. They are preliminary, subject to change, and do not necessarily reflect the views either of the Commission as a whole or of any of its members. In addition, they may be based in part on confidential interviews with government and non-government personnel.

The response to the Deepwater Horizon spill continues to the present. As of July 15, 2010—the day the well stopped flowing—the response involved approximately 44,000 responders; more than 6,870 vessels (including skimmers, tugs, barges, and recovery vessels); approximately 4.12 million feet of boom; 17,500 National Guard troops from Gulf Coast states; five states; multiple corporations; and untold hours of work by federal, state, and local officials; employees or contractors of BP; and private citizens.¹ The spill response is governed by the National Contingency Plan (NCP), a set of federal regulations that prescribe how the government will respond to oil spills. In some respects, the response effectively implemented the provisions of the plan and helped to mitigate the most serious negative impacts of the spill. In other respects, the plan was inadequate to handle the scale of the spill—its magnitude, duration, and effects on many stakeholders. This working paper describes the structure of the spill response and the roles of various government and private actors within that structure. The paper identifies situations in which responders altered, or operated outside of, the National Contingency Plan structure and suggests possible recommendations for improvement of that structure in the future.

Issues for the Commission To Consider:

- ***Scale and Structure of the Response:*** Was the structure of the response adequate for the nature of the spill, and was that structure put into place quickly enough?
- ***Role of the Responsible Party:*** Did BP exercise too much control over the response? If not, what factors led to the public perception that BP, and not the government, was in charge of the response?
- ***Interaction with State and Local Officials:*** Does the NCP appropriately integrate state and local officials in the response, and were such officials

¹ Press Release, Deepwater Horizon Incident Joint Information Center, Ongoing Administration-wide response to the Deepwater BP Oil Spill (July 15, 2010), *available at* <http://www.restorethegulf.gov/release/2010/07/15/operations-and-ongoing-response-july-15-2010>.

appropriately involved in this response? Should the NCP and existing contingency planning documents be changed to create a larger or clearer role for state and local officials in oil spill response?

I. Background: The National Contingency Plan and the Unified Command Structure

The National Oil and Hazardous Substances Pollution Contingency Plan, or National Contingency Plan (NCP), is the federal government's blueprint for responding to both oil spills and hazardous substance releases.² Specifically, the NCP establishes the National Response System, a multi-tiered and coordinated national response strategy. Key components of the National Response System include:

- **National Response Team**: The National Response Team is the organization of sixteen federal departments and agencies³ responsible for coordinating emergency preparedness and response to oil and hazardous substance pollution incidents.
- **Regional Response Teams**: The Regional Response Teams are composed of regional representatives of each National Response Team member agency, state governments, and local governments.⁴ The two principal components of each Regional Response Team are (1) a standing team, which consists of designated representatives from each participating federal agency, state governments, and local governments (as agreed upon by the states); and (2) incident-specific teams formed from the standing team when the Regional Response Team is activated for a response. The United States Coast Guard leads the Regional Response Teams during responses to oil spills in coastal waters.
- **On-Scene Coordinator**: The On-Scene Coordinator directs the response efforts and coordinates all other efforts at the scene. For spills of oil and hazardous substances on land, the Environmental Protection Agency (EPA) provides the On-Scene Coordinator. For oil spills in coastal waters, the Coast Guard provides the On-Scene Coordinator. In general, Coast Guard Captains of the Port serve as On-Scene Coordinators for their particular area. On-Scene Coordinators oversee the Unified Area Command.
- **Unified Area Command**: The Unified Area Command is made up of the Federal On-Scene Coordinator, the State On-Scene Coordinator, and the responsible party. The Unified Area Command supervises the work of the Regional Response Team as well as any Incident Command Posts established for front-line responders.⁵

² The NCP provisions specific to oil spill response are codified in 40 C.F.R. § 300, Subpart D.

³ These agencies include the United States Coast Guard, the Environment Protection Agency (EPA), the National Oceanic and Atmospheric Administration (NOAA), the Department of the Interior, the Department of Justice, and the Federal Emergency Management Agency (FEMA), as well as other agencies. 40 C.F.R. § 300.175(b).

⁴ In the spill-affected area there were two RRTs corresponding to the two "regions" involved: (1) Arkansas, Louisiana, New Mexico, Oklahoma, and Texas; and (2) Mississippi, Alabama, Florida, Georgia, Tennessee, North Carolina, South Carolina, Kentucky.

⁵ For this spill, the Unified Area Command was first located in Robert, Louisiana and later moved to New Orleans, Louisiana. Incident Command Posts were established in Houma, Louisiana; Mobile, Alabama; Miami, Florida; and Houston, Texas.

- National Incident Commander: Once an oil spill is classified as a Spill of National Significance, the Commandant of the Coast Guard designates a National Incident Commander to provide national-level support for the operational response. (In this paper, the National Incident Commander will be referred to as such, and the National Incident Command post he directs will be referred to as the NIC.) The On-Scene Coordinator maintains authority for response operations as directed in the NCP.
- Area Committees: Area Committees are composed of personnel from federal, state, and local agencies. The primary function of each Area Committee is to prepare an Area Contingency Plan for its designated area. Each Coast Guard Captain of the Port zone is a separate area. Area Contingency Plans are written to set a framework for joint response efforts in the event of a spill.⁶

Congress first established the NCP in 1968 after the 37-million gallon *Torrey Canyon* tanker spill off the coast of England. The Federal Water Quality Act of 1970, which became the Clean Water Act in 1972, required the President to publish a NCP.⁷ Although a version of the NCP was in place at the time of the *Exxon Valdez* spill,⁸ Congress responded to that spill by passing the Oil Pollution Act of 1990, which directed the President to expand the NCP.⁹ The authority to expand the NCP was later delegated to EPA,¹⁰ which implemented this mandate with amendments to the NCP promulgated in 1994.¹¹

The 1994 amendments to the NCP focused on expanding federal authority to coordinate effective communication and deployment of equipment—two problems that plagued the *Exxon Valdez* response.¹² Specifically, the amendments prescribed additional responsibilities for the On-Scene Coordinators and strengthened their ability to direct the on-scene response.¹³ The amendments also called for the creation of Area Committees and Area Contingency Plans under the leadership of the On-Scene Coordinator.¹⁴ To ensure that future contingency plans would not underestimate the potential size of a spill as they had in the *Exxon Valdez* disaster, the 1994

⁶ In the spill-affected states there are two “areas” designated for Louisiana, three areas designated for Texas, three areas designated for Northwest/West Florida, and one area designated for Mississippi/Alabama. These areas are each a Captain of the Port zone, and each has its own Area Contingency Plan. Their respective Area Contingency Plans were combined to form the One Gulf Plan, which includes the individual plans as appendices.

⁷ See Clean Water Act, Pub. L. No. 92-500, § 311(j), 86 Stat. 816, 862 (1972).

⁸ In fact, six applicable contingency plans were in place at the time of the *Exxon Valdez* spill. The five other plans that operated along with the NCP were the Alyeska, Captain of the Port (OSC), Regional, Alaska, and Exxon contingency plans. See NATIONAL RESPONSE TEAM, *EXXON VALDEZ OIL SPILL: A REPORT TO THE PRESIDENT* 6-8 (May 1989).

⁹ Oil Pollution Act of 1990, Pub. L. No. 101-380, 104 Stat. 484, primarily codified at 33 U.S.C. 2701 *et seq.* [hereinafter OPA 90].

¹⁰ See OPA 90 §§ 4201, 4202.

¹¹ See Rules and Regulations, Environmental Protection Agency, 40 C.F.R. Parts 9 and 300, National Oil and Hazardous Substances Pollution Contingency Plan, 59 Fed. Reg. 47,384 (Sept. 15, 1994).

¹² See *id.*

¹³ See *id.*

¹⁴ See *id.* at 47,384 (“These committees and plans are designed to improve coordination among the national, regional, and local planning levels and to enhance the availability of trained personnel, necessary equipment, and scientific support that may be needed to adequately address all discharges.”).

amendments required consideration of a worst-case discharge scenario.¹⁵ Finally, the EPA compiled general oil discharge response requirements into a single document to aid responders.¹⁶

II. The Unified Command

The guiding concept of the NCP is a “unified command system” that “brings together the functions of the Federal Government, the state government, and the responsible party to achieve an effective and efficient response.”¹⁷ The magnitude of the response to the Deepwater Horizon spill necessitated the build-out of an elaborate organizational structure with accompanying delegation of responsibilities.

A. Setting the Structure

The NCP vests the Federal On-Scene Coordinator with authority over the command system. Although the unified command system is designed to bring together different stakeholders to make decisions, one individual needs to have ultimate decision-making power in the event of a conflict. Under the NCP, that individual is the Federal On-Scene Coordinator. The Coast Guard pre-designates the official who will serve as Federal On-Scene Coordinator, and that individual has responsibilities for contingency planning and coordination even before a spill occurs. For example, the Captain of the Port for the coastal zone where a spill occurs will generally be the Federal On-Scene Coordinator. The Federal On-Scene Coordinator is required to oversee the development of the Area Contingency Plan, which is coordinated through the Regional Response Team and designated state and local representatives.¹⁸ The Federal On-Scene Coordinator can change as the nature of the event changes to require a larger response. The NCP gives the Federal On-Scene Coordinator the authority to oversee the incident command structure and to expand it as she sees necessary.

In this case, the first Federal On-Scene Coordinator was the Captain of the Marine Safety Unit at Morgan City, Louisiana, Captain Joseph Scott Paradis, because his sector was responding to the fire and conducting search and rescue missions. Once the response called for a Unified Area Command to be stood up, Admiral Mary Landry, as commander of the Eighth Coast Guard District, became the Federal On-Scene Coordinator.¹⁹ In the first days of the spill, responders established a Unified Area Command post at Robert, Louisiana in a BP training facility, and set up an Incident Command Post in Houma, Louisiana.²⁰ BP had immediately set up a command post in Houston, and Coast Guard responders went there to set up a full Incident Command Post as well. On June 1, responders established the Incident Command Post at Mobile, bringing the total of forward-operating Incident Command Posts to three.

The response was also supervised at a national level by a National Incident Commander. On April 29, 2010, the Coast Guard designated the disaster a “Spill of National Significance”

¹⁵ *See id.*

¹⁶ *Id.* at 47,414; 40 C.F.R. Part 300 Appendix E. This appendix is simply a concise restatement of the regulations set forth throughout 40 C.F.R. Part 300; it does not add any substantive regulations.

¹⁷ 40 C.F.R. § 300.105.

¹⁸ 40 C.F.R. § 300.120(e).

¹⁹ On June 1, Admiral Landry returned to her Eighth District duties to prepare for hurricane season, and Admiral James Watson became FOSC. He later transferred the position to Admiral Paul Zukunft.

²⁰ Captain Paradis became the leader of the incident command post at Houma; he was assisted by Captain Edwin Stanton, who would formally take command on May 28.

and named Admiral Thad Allen National Incident Commander.²¹ This disaster marked the first time the “Spill of National Significance” designation was used. A spill of national significance is defined as “a spill which due to its severity, size, location, actual or potential impact on the public health and welfare or the environment, or the necessary response effort, is so complex that it requires extraordinary coordination of federal, state, local, and responsible party resources to contain and cleanup the discharge.”²² The National Incident Command (NIC) can only be established, and the National Incident Commander named, after a spill of national significance is declared. The NCP provision creating the position of National Incident Commander provides that the Commander “will assume the role of the [Federal On-Scene Coordinator] in communicating with affected parties and the public, and coordinating federal, state, local, and international resources at the national level.” The NCP is otherwise silent on the role of the National Incident Commander, who can serve in the position, or what tasks the he or she will handle instead of the Federal On-Scene Coordinator.

Because of this lack of regulatory guidance, the NIC set up during the Deepwater Horizon response was based largely on the National Incident Commander’s view of what his role and the role of his staff should be. The NIC, as envisioned by Admiral Allen, primarily functioned as a national coordination and communications center to deal with high-level political and media inquiries so that the Unified Area Command and the Incident Command Posts could focus on response efforts. The goal was for the NIC not to direct tactics or response operations, but to deal with political and high-level strategy issues associated with the response. Similarly, the goal of the Federal On-Scene Coordinator and the Unified Area Command was not to direct all response operations, but rather to coordinate resources, communications, and the relationship with the responsible party. Most tactical and operational decisions were intended to be made at the Incident Command Post level.

B. Speed of Establishing Command

Though some of the command structure was put in place very quickly, in other respects the mobilization of resources to combat the spill seemed to lag. For about nine days, Deepwater Horizon response efforts continued with the Federal On-Scene Coordinator at the top of the command structure. National leaders such as Deputy Secretary of the Interior David Hayes were involved, but the response was still largely regional in nature—the President had not been to the region, Cabinet secretaries had not yet become involved, and the responders were from the local area. High-level conversations regarding whether a spill of national significance declaration and a National Incident Commander appointment were necessary occurred in the first week of the spill, but the declaration was only made on April 29, 2010.²³ Admiral Allen, then Commandant of the Coast Guard, was appointed National Incident Commander the following day.

For the first ten days of the spill, it appears that a sense of over-optimism affected responders.²⁴ Responders almost uniformly noted that, while they understood that they were facing a major spill, they believed that BP would get the well under control. At least one high-

²¹ 40 C.F.R. § 300.323; Campbell Robertson, *White House Takes a Bigger Role in the Oil Spill Cleanup*, N.Y. TIMES (Apr. 29, 2009).

²² 40 C.F.R. § 300.5.

²³ Interview with Coast Guard official.

²⁴ Interviews with Coast Guard officials.

level Coast Guard official thought that the oil would not come ashore and hesitated to open additional command posts.²⁵ Responders viewed the event as an “incident” rather than a “campaign,” which is what it became.²⁶ While it is not clear that this misplaced optimism affected any individual response effort, it may have affected the scale and speed with which national resources were brought to bear. In hindsight, some Coast Guard responders thought that their initial approach was too slow and unfocused.²⁷

It is impossible to separate an evaluation of the speed with which the response progressed in its early days from the misunderstanding of the actual flow of the well. Responders insist that they were responding to a worst-case discharge and would have not acted differently had they known the true flow rate earlier on.²⁸ They uniformly reported that long-held Coast Guard policy was to assume the worst-case discharge. They said they did not believe the flow-rate estimates they were hearing and assumed the worst. However, it is possible that a better understanding of the quantity of oil may have resulted in designating a National Incident Commander faster, beginning to move personnel and resources faster, and establishing more and better communications with affected stakeholders earlier on.²⁹ The early BP estimate that the riser was leaking 1,000 barrels per day lasted until April 28, 2010, when NOAA scientists produced an estimate of 5,000 barrels per day.³⁰ It was only after this five-fold escalation in the flow-rate estimate that the NIC structure was added to the spill response framework.

Though the response may have been slow to escalate in the first ten days, by at least mid-May, 2010, the Coast Guard was fighting a war against the oil. They built out the organizational structure for the response, and they moved resources into the area from all over the country.³¹ To accomplish these tasks they needed more personnel. The spill happened at precisely the worst time for the Coast Guard, at the beginning of transfer season, when members are reassigned to new posts.³² People were moving around and required new training. Coast Guard officials wanted to call up reservists and National Guard members to supplement their active duty ranks. This was not without difficulty. Reservists can only be called up for a certain period of time, and officials had concerns that they would quickly deplete the reserve numbers, especially if the spill lasted into the fall. High-level Coast Guard officials were also unsure of their authority to call on the National Guard, which required coordination with the states.³³ This maneuvering took time.

²⁵ Interview with Coast Guard official.

²⁶ Interviews with Coast Guard officials.

²⁷ Interviews with Coast Guard officials.

²⁸ These statements relate only to response and clean-up efforts, not efforts to stop or contain the flow of oil at the wellhead. Whether a lack of accurate information regarding flow rate impacted containment efforts will be explored in a later staff working paper.

²⁹ Commission staff continues to gather information with which to evaluate whether underestimates of flow rate impacted the response effort.

³⁰ Press conference, Admiral May Landry, United States Coast Guard, Federal On-Scene Coordinator, in New Orleans, LA (Apr. 28, 2010), http://cgvi.uscg.mil/media/main.php?g2_itemId=843309.

³¹ Coast Guard documents.

³² Interviews with Coast Guard officials.

³³ Interviews with Coast Guard officials. The National Guard in a state can be mobilized by the governor when a state of emergency is declared, and the Secretary of Defense can call on the National Guard during war or a declared national emergency. National Guard members cannot be individually involuntarily recalled. United States Code Title 32 describes state use of the National Guard in peacetime, while Title 10 establishes the federal

The majority of Coast Guard personnel interviewed insisted that they had thrown everything they had at the spill. By around the end of May, it seems that most responders believed they had the equipment they needed—they had skimmers, for example, that were adequate for the operating environment of the Gulf of Mexico, and they had enough of them. The American public, however, believed that the government could be doing more. When President Obama first visited the Gulf on May 3, 2010, the president of St. Bernard Parish in Louisiana was already suggesting that the government was not moving quickly enough.³⁴ A Pew research poll conducted from May 6 to 9, 2010, found that only 38% of Americans approved of the President’s handling of the spill, compared to 36% who disapproved.³⁵ By May 27, 2010, polls showed that 60% of adults thought that the government was doing a poor job of responding to the spill.³⁶

The government did not take any major steps to respond to this perception until the end of May, when President Obama announced that he would triple the federal manpower and resources responding to the spill.³⁷ Coast Guard responders believed they were already throwing every resource they had at fighting the spill, but they dutifully tripled personnel and tracked their progress, at least for the state of Louisiana, in a regular report titled “Status on Tripling.”³⁸ Responders noted that “tripling” taxed the Coast Guard’s ability to respond and to conduct its other missions and may not have been the most effective use of a thin-spread force in a lengthy campaign.³⁹ Tripling, or at least the arguable overreaction to the public perception of a slow response, resulted in resources being thrown at the spill in general rather than being targeted in an efficient way. For example, NIC staff believed they needed to buy every skimmer they could find, even though they were hearing that responders on the ground had enough skimmers.⁴⁰ It was also around this time that responders began deploying boom everywhere they could, even though they believed that some areas were not likely to encounter oil and boom could be more efficiently directed elsewhere (discussed in greater depth in “The Boom Wars” section below). It is not clear whether all resources in all states were actually tripled or merely increased. At the very least, tracking the “status on tripling” was probably not the most important task for front-line responders to be undertaking.

Adding personnel also meant using resources that the Coast Guard believed they needed to keep elsewhere or save for a potentially long campaign. This particularly applied to reservists. Coast Guard reservists can be recalled for sixty-day periods, after which they cannot be recalled for two more years.⁴¹ Coast Guard officials were concerned that they would deplete available

government’s authority to call on the National Guard. 32 U.S.C. § 101 *et seq.*; 10 U.S.C. § 12301. There was some debate as to the applicable statutory authority.

³⁴ Robin Bravender, *Gulf Coast Residents Send SOS to Obama*, N.Y. TIMES (May 3, 2010).

³⁵ SURVEY REPORT, THE PEW RESEARCH CENTER FOR THE PEOPLE AND THE PRESS, OIL SPILL SEEN AS ECOLOGICAL DISASTER; GOVERNMENT, BP RESPONSES FAULTED (May 1, 2010), <http://people-press.org/report/612/oil-spill>.

³⁶ Mimi Hall, et al., *Is oil spill becoming Obama’s Katrina?*, USA TODAY (May 27, 2010), http://www.usatoday.com/news/washington/2010-05-27-Spill-poll_N.htm (reporting results of USA Today/Gallup poll).

³⁷ See, e.g., *Obama Pledges to Triple Oil Response Manpower in Gulf*, BBC NEWS (May 28, 2010), <http://www.bbc.co.uk/news/10179369>; Paul Rioux, *President Barack Obama Promises No Retreat from Gulf of Mexico Oil Spill Response*, TIMES-PICAYUNE (May 28, 2010).

³⁸ Interviews with Coast Guard officials; Coast Guard documents.

³⁹ Interviews with Coast Guard officials.

⁴⁰ Interviews with Coast Guard officials.

⁴¹ 14 U.S.C. § 712.

reserves for the next two years.⁴² In July 2010, before the well was capped, NIC staff began to approach other agencies to determine if they could send additional responders. Some agencies, such as EPA and NOAA, were already moving people from their home missions and sending them to the Gulf. Other agencies, such as the Department of Defense, did not have a strong presence and were willing to send some people to assist. The well was capped and the point became moot before the federal government had to implement this strategy.

C. Decision-Making Outside the Command Structure

As discussed above, the Deepwater Horizon spill was the first time a spill of national significance was declared and a National Incident Commander was named. The spill was also unprecedented in terms of size and the technology required to address it. As a result of these factors, and of the intense political interest in the spill response, decision-making structures outside the unified command, and thus outside the regulatory framework of the NCP, evolved.

The NCP envisions the Coast Guard as the lead agency for oil spill response, anticipating that it will provide the Federal On-Scene Coordinator and a large percentage of the responders. Other agency partners, however, have roles under the NCP as well. The National Response Team and the Regional Response Team are established inter-agency and inter-jurisdictional partnerships that can be convened in an emergency to make decisions and to utilize each member agency's expertise. The Regional Response Team is activated when a spill exceeds the response capability of the Federal On-Scene Coordinator, transects state boundaries, poses a substantial threat to public health, or involves a worst-case discharge. Similarly, the National Response Team is activated when a spill exceeds the response capability of the region in which it occurs, transects regional boundaries, or involves a substantial threat to public health.⁴³

During the Deepwater Horizon response, these inter-agency groups were activated but later marginalized when issues were taken out of their hands and decided by agency heads rather than through the established decision-making structure. When the first National Response Team conference call was held, instead of the designated team members, the principals of the agencies were on the line and Secretary of Homeland Security Janet Napolitano chaired the call. The principals or their deputies remained very involved in the response and took over addressing key issues. While this was valuable in showing how seriously the government was taking the spill and the response, it also injected political involvement at the highest levels. Such involvement may have increased accountability, and helped to make controversial decision-making more transparent, but it also made the decisions more subject to criticism and delay on political grounds.

For example, the NCP provides that the Regional Response Team shall make decisions on the use of dispersants. During the earliest days of the response, acting Federal On-Scene Coordinator Captain Paradis directed the application of surface dispersants, as pre-approved in the Area Contingency Plan.⁴⁴ Sub-sea application was a novel use, and Coast Guard officials sought permission from the Regional Response Team, which elected to allow tests of the technique.⁴⁵ As the issue of dispersant application became more and more prominent in the

⁴² Interviews with Coast Guard officials.

⁴³ 40 C.F.R. § 300.110.

⁴⁴ Interviews with Coast Guard officials.

⁴⁵ Interview with Coast Guard official.

media, the decisions to apply both surface and sub-sea dispersants were taken out of hands of the Federal On-Scene Coordinator and the Regional Response Team and given to EPA Administrator Lisa Jackson.⁴⁶ Administrator Jackson elected to bypass the Regional Response Team structure and instead issue decisions regarding dispersant policy through directives, which Coast Guard representatives co-signed.⁴⁷

As explained by a senior official, the National Response Team and the Regional Response Team became “report-to” bodies rather than “decision-making” bodies.⁴⁸ This circumvention of the NCP structure made it unclear to the public and to responders who actually had authority over decisions on important issues such as dispersants. Responders, who often viewed surface dispersants as a powerful response tool that they needed to deploy to protect the coastline, and who understood the analysis that went into the decisions during the planning process to pre-approve use of surface dispersants, wondered why that advance work was suddenly being supplanted by a process led by political appointees who had not been involved in prior planning efforts.

On the one hand, it speaks well of the command structure and the NCP that the structure could be flexible enough to incorporate new interagency partnerships and new decision-making structures. On the other hand, the seeming rejection of the interagency groups specifically established by the NCP speaks to a larger issue of the failure of planning documents to adequately assist responders in preparing for a spill of this magnitude. The National Response Team and the Regional Response Teams are institutional structures with membership and responsibilities designated before a spill occurs. They are organizations that can plan, train, and generally be ready to respond in an emergency. It is not yet clear if the choices to route decision-making around those bodies were based on specific demands from politicians or high-level appointees, or simply on the scale and exigencies of the situation. Much of the unified command structure is designed to push issues down to the most local level at which they can be addressed. Having strong agency head participation tended to elevate decisions that might have otherwise been addressed closer to the source of the question.

The scientific advisor agencies—EPA, the National Oceanic and Atmospheric Agency (NOAA), and the United States Geological Survey—seem to have possessed the expertise most implicated by the spill and were therefore also the agencies most involved in ad hoc decision-making taking place outside the command structure. In addition to the issue of dispersants, this ad hoc decision-making occurred with regard to fishery closures and flow rate estimates. NOAA, the United States Department of Agriculture, and the NIC-created Interagency Solutions Group were in control of fishery closures. The Flow Rate Technical Group, also a part of the Interagency Solutions Group, and the federal scientific team led by Secretary of Energy Steven Chu spoke for the government on flow rate. These issues, and the decision-making structures that were created to address them, will be explored more fully in other staff working papers.

In contrast with the National Response Team and the Regional Response Team, the Department of Energy took on a large role during the spill. The NCP does not create any sort of role for the Department of Energy in an oil spill response, and yet the Department team was

⁴⁶ The use of dispersants is the subject of a separate Commission draft staff working paper.

⁴⁷ Interviews with Coast Guard officials.

⁴⁸ Interview with Coast Guard official.

integral in the steps to contain the well, eventually directing and exercising veto power over BP's actions with regard to source control. Because the Department of Energy team was focused on containment rather than response, the role of the Department will be explored in greater detail in a subsequent paper on containment.

Problems with setting up the command structure quickly enough, and with making lines of authority clear, arguably contributed to problems explored in the next two sections: public perceptions that BP was in charge and that state and local concerns were being ignored.

Suggestions for the Commission's consideration:

- The response structure was established more slowly than it should have been, in part because of a perception that the well would be quickly controlled and because the geographic scope, scale, and duration of the spill were unprecedented for responders.
- The National Response Team and the Regional Response Teams did not play the role envisioned by the NCP, with substitute, ad hoc structures being created in their place. The Commission may wish to recommend changes to the mission or composition of the National Response Team and the Regional Response Teams to make them more useful in the future, particularly in creating a framework to provide interagency scientific expertise.
- The Commission may wish to recommend the addition of distinct plans and procedures to the NCP to better scale the response to a Spill of National Significance and to account for the more prominent role that high-level federal and state officials will likely play in the response to such a spill.

III. The Role of BP

Very early in the response, the media and the public began to question whether the federal government or BP was truly directing the response. While all on-scene government officials with whom we have spoken have asserted that the federal government was fully in charge of the response from the outset, the government struggled to control messaging regarding who was directing containment and response efforts.

A. The Role of the Responsible Party under the Oil Pollution Act

For oil spills from offshore rigs, the NCP defines the "lessee or permittee of the area in which the facility is located" as the "responsible party." Under the Oil Pollution Act framework, a responsible party will be liable for damages resulting from the oil spill and costs incurred by the government in responding to the spill.⁴⁹

The NCP does not sort out these liability issues—it is a structure for response, not a vehicle for assigning blame. However, the NCP does direct that the responsible party play a role in the response. One of the principles of the unified command structure the NCP establishes is

⁴⁹ OPA 90 § 1002(b)(2); 33 U.S.C. § 2702.

that the responsible party must be included in order to “achieve an effective and efficient response.”⁵⁰

The NCP provides that “cleanup responsibility for an oil discharge immediately falls on the responsible party,” and notes that “in a large percentage of oil discharges, the responsible party shall conduct the cleanup.”⁵¹ Though the NCP directs the Federal On-Scene Coordinator to “monitor[] or direct[] all federal, state, local, and private removal actions,” the Federal On-Scene Coordinator may “allow the responsible party to voluntarily and promptly perform removal actions” if the [Federal On-Scene Coordinator] determines that having the responsible party perform such actions will “ensure an effective and immediate removal of the discharge.” In this situation, the Federal On-Scene Coordinator supervises the responsible party’s actions. The NCP expresses a preference for setting up the response in this manner— “[w]here practicable, continuing efforts should be made to encourage response by responsible parties.”⁵² In a spill that “results in a substantial threat to the public health or welfare of the United States...the [Federal On-Scene Coordinator] must direct all response efforts.”⁵³

There are policy choices behind this preference. First, the responsible party may be in the best position to respond because of its knowledge or technical expertise related to the processes involved in its own facility. Second, the responsible party bears the ultimate costs of removal under the Oil Pollution Act.⁵⁴ Rather than expending further resources on collecting response costs in a later civil action, it is more efficient to let the responsible party bear those costs up front.

The interests of the responsible party and the public are generally aligned with respect to stopping an ongoing spill. Under the Clean Water Act, the responsible party can be liable for a civil penalty determined by the amount of oil that was spilled,⁵⁵ so it shares the public’s interest in cutting off the oil flow as quickly as possible. On other issues, the incentives of the public and the responsible party may diverge. For instance, the responsible party may, at least in theory, have an interest in using dispersants even if they cause ecological harm. Environmental damage caused by low concentrations of widely dispersed oil may be harder to document than concentrated surface harm in coastal areas. Moreover, public opinion may be more likely to be influenced by easily visible harm to wetlands, beaches, birds, and terrestrial animals. Hence, the responsible party may have an incentive to favor greater use of dispersants than is in the public interest. Similarly, the public may have an interest in knowing the rate of flow from the well, while the responsible party may benefit from obfuscating or underestimating the rate of flow because high flow means higher liability.⁵⁶ Moreover, a responsible party has a fiduciary duty to its shareholders to minimize costs incurred. This fiduciary duty can be at odds with the public’s interest in maximizing cleanup efforts.

⁵⁰ 40 C.F.R. § 300.105.

⁵¹ 40 C.F.R. Part 300, Appendix E § 2.3(b).

⁵² 40 F.C.R. § 300.305.

⁵³ *Id.*

⁵⁴ 33 U.S.C. § 2702.

⁵⁵ 33 U.S.C. § 1321(b)(7).

⁵⁶ 33 U.S.C. § 1321(b)(7)(A) (establishing civil liability for spills in the amount of \$25,000 per day or \$1,000 per barrel spilled); 33 U.S.C. § 1321(b)(7)(D) (raising the penalty to \$3,000 per barrel of oil in cases of gross negligence or willful misconduct).

The Oil Pollution Act does not address the responsible party's ability to "conduct" the cleanup by issue, though it does mandate stronger authority for the government in a catastrophic spill, where the Federal On-Scene Coordinator "directs" the response. Similarly, although the Oil Pollution Act requires that operators name a "qualified individual" who has full authority to implement removal actions," the Act is silent about circumstances where that individual's responsibility for cleanup conflicts with her duties to shareholders as a corporate officer.⁵⁷ One possibility that has been suggested, which staff has not yet considered fully, is to provide for appointment of a "qualified individual" under the Oil Pollution Act that is an independent third party, rather than a corporate officer, with authority to deploy the responsible party's resources. Such an arrangement might be akin to the compensation scheme set up by BP in the wake of the Deepwater Horizon spill, with corporate funds disbursed by an independent administrator.

B. BP's Control in the Command Structure

During the Deepwater Horizon response, BP had decision-makers in multiple locations within the command structure. The Incident Command Post at Houston was set up in BP headquarters. In the Unified Area Command at Houma, most Coast Guard responder positions had a BP counterpart, and Coast Guard members and BP employees worked side by side. BP executive Doug Suttles was at Unified Area Command at Houma. Federal On-Scene Coordinator Watson viewed Suttles as his counterpart and the set-up as similar to that of other spill responses he had handled in the past. The organizational charts from the Unified Area Command and the Incident Command Posts show BP employees scattered through the command structure, in roles ranging from waste management to environmental assessment. In some command chains, a BP employee was at the top and a Coast Guard member would report up to the BP employee.⁵⁸

Most critically, BP controlled access to the wellhead at all times from Houston. BP had control of the remotely operated vehicles (ROVs) operating 5,000 feet below the surface of the water at the riser pipe and wellhead, as well as control of all vessel traffic in the area above. BP used ROVs to coordinate nearly every element of the containment response, including gathering data, carrying out mechanical containment procedures, and applying subsea dispersants.⁵⁹

In its *Lessons Learned* report, BP details the complexity of coordinating its response to the spill.⁶⁰ BP's Simultaneous Operations unit managed ships moving in and out of the area. There may have been good reasons for BP's control of this issue. Too much traffic over the wellhead was dangerous, particularly when large, unproven containment devices such as the cofferdam were being tested.⁶¹ Also, some of the operations that the containment ships carried out required extreme precision—movement by even a few feet could lead to failure of the operation.

BP's control over the wellhead region, however, also limited scientists' access. As government and independent scientists began to become involved with determining the flow rate

⁵⁷ 33 U.S.C. § 1321(j)(5)(D)(ii).

⁵⁸ Coast Guard documents.

⁵⁹ BP, DEEPWATER HORIZON CONTAINMENT AND RESPONSE: HARNESSING CAPABILITIES AND LESSONS LEARNED 15-16 (Sept. 1, 2010) [hereinafter LESSONS LEARNED].

⁶⁰ LESSONS LEARNED

⁶¹ See Clifford Krauss et al., *Acrimony Behind the Scenes of Gulf Oil Spill*, N.Y. TIMES (Aug. 26, 2010).

of the well and with developing containment solutions, some grew frustrated with what they perceived as BP's total control over access to the source, and ultimately information about the leaking well.⁶² The federal science team in Houston may have had better access to information from BP than independent scientists, however. The scientists with whom Commission staff have spoken reported that they all needed some type of access to the source—either to take pictures with an ROV, or to acquire samples, or to obtain some other source data for determining flow rate. Given that its potential liability under the Clean Water Act depended directly on the flow rate, BP had real incentives to maintain exclusive control over the ability to estimate that rate.

C. BP's Role in Containment

The containment effort will be discussed in greater detail in a later staff working paper. The following section is intended only to provide preliminary information relevant to the role of BP in the overall response.

BP assembled a team to work on containment issues and took the lead on early efforts.⁶³ BP used ROVs in the first days of the leak to attempt to actuate the faulty blowout preventer. When these attempts failed, BP developed a large "cofferdam," which it planned to place over the leaking riser pipe.⁶⁴ That plan failed after hydrates built up in the cofferdam because of the high-pressure, low-temperature environment.⁶⁵ Next, in late May, the company tried the "top kill" method of plugging the well with heavy drilling mud, coupled with the "junk shot" technique of filling the failed blowout preventer with debris. After that too failed, during the following month, BP's focus shifted to collection of the oil, rather than stopping flow from the well. BP employed various methods, including a loose-fitting cap known as the "top hat," to recover a fraction of the leaking oil and gas. On July 12, 2010, BP replaced the top hat with a tight-fitting capping stack, and on July 15, BP succeeded in closing the valves in the stack, stopping the flow of oil for the first time since the spill began.⁶⁶ On August 4, 2010, BP declared that it had successfully undertaken a "static kill," during which it forced hydrocarbons back into the reservoir using heavy drilling mud. On August 5, BP sealed the well with cement.⁶⁷ Since May, BP had been drilling two relief wells to intersect the Macondo well to seal the reservoir. Admiral Allen finally declared the well dead on Sunday, September 19, 2010, when the first relief well intersected the bottom of the Macondo well and the drilling crew successfully pumped in cement.⁶⁸

High-level government officials asserted that they were in charge from the beginning, and the Coast Guard (through the Federal On-Scene Coordinator and later through the National Incident Commander) in theory approved all of BP's actions. In hindsight, though, some Coast Guard responders indicated that they had functioned more as observers than as participants in BP's very early containment efforts, with one observing that BP was permitted to try to activate

⁶² Interview with non-governmental officials.

⁶³ The decision-making processes with regard to containment will be discussed more fully in a later draft staff working paper.

⁶⁴ Clifford Krauss et al., *Acrimony Behind the Scenes of Gulf Oil Spill*.

⁶⁵ *Id.*

⁶⁶ Campbell Robertson & Henry Fountain, *BP Says Oil Flow has Stopped as Cap is Tested*, N.Y. TIMES (July 15, 2010).

⁶⁷ Clifford Krauss, *BP Done Pumping Cement Into Well*, N.Y. TIMES (Aug. 5, 2010).

⁶⁸ Henry Fountain, *U.S. Says BP Well is Finally 'Dead'*, N.Y. TIMES (Sept. 19, 2010).

the failed blowout preventer for five days before efforts started in earnest on the containment dome.⁶⁹ The Unified Area Command was briefed every day, but the information was insufficient in quantity and level of detail.⁷⁰ Because the Coast Guard's oil spill response mission deals predominantly with capturing and cleaning oil on the surface of the water—not 5,000 feet below the surface—the Coast Guard had limited ability to contribute expertise to the challenge of controlling the well.⁷¹

Though the Coast Guard may not have been highly involved with containment efforts, it was not the only government agency contributing to the containment efforts after the first few days, even though it had (again, at least in theory) final approval authority for all actions. Deputy Secretary of the Interior David Hayes became involved in the efforts early on.⁷² Near the end of the first ten days, the White House asked the Department of Energy National Laboratories to participate in the containment efforts. Secretary of Energy Steven Chu, a Nobel Prize-winning physicist, went to BP headquarters in Houston, along with other scientists from the National Laboratories.⁷³

The participation of the federal science team in early containment efforts was limited, and they were unclear on their role. Before the failed cofferdam attempt, the federal science team was assisting in diagnostics and general testing, but was not playing an authoritative role.⁷⁴ As the scientists became more familiar with the situation, and as it became clear that BP's containment efforts were not working, the team's role became more comprehensive.

At some point in late May or early June, 2010, around the same time as the “tripling” directive, the White House, through the National Incident Commander, requested more engagement in source control by the federal science team. The team began to play a larger part in decision-making.⁷⁵ BP began working on containment action plans with the federal science

⁶⁹ Interview with Coast Guard official.

⁷⁰ Interview with Coast Guard official.

⁷¹ *Oil Spill Response Technician Course*, U.S. COAST GUARD, <http://www.uscg.mil/hq/nswfweb/nswcc/ops/LogisticsInventory/osrt.asp> (Coast Guard training program for oil spill responders).

⁷² Deputy Secretary Hayes went to the Gulf the morning of April 21, 2010. The White House Blog, *The Ongoing Administration-Wide Response to the Deepwater BP Oil Spill*, <http://www.whitehouse.gov/blog/2010/05/05/ongoing-administration-wide-response-deepwater-bp-oil-spill>.

⁷³ See John M. Broder, *Energy Secretary Emerges to Take a Commanding Role in Effort to Corral Well*, N.Y. TIMES (July 16, 2010). On May 7, 2010, U.S. Geological Survey director Marcia McNutt also went to Houston, at the direction of Secretary of the Interior Ken Salazar, to help coordinate the efforts of federal and BP scientists. Press Release, *Deepwater Horizon Incident Joint Information Center, Secretary Salazar and Secretary Chu to Meet with Scientists and Engineers at BP Houston Command Center* (May 12, 2010).

⁷⁴ See, e.g., Joshua Green, *Exclusive: How Steven Chu Used Gamma Rays to Save the Planet*, THE ATLANTIC (May 13, 2010), <http://www.theatlantic.com/technology/archive/2010/05/exclusive-how-steven-chu-used-gamma-rays-to-save-the-planet/56685/> (transcribing an interview with Secretary Chu, who noted that BP was “taking the lead” but to “the extent BP wants it, we can give advice on how to think through” various options).

⁷⁵ See Broder, *Energy Secretary Emerges to Take a Commanding Role in Effort to Corral Well*; *The Ongoing Administration-Wide Response to the Deepwater Horizon BP Oil Spill*, RESTORE THE GULF (MAY 28, 2010), <http://www.restorethegulf.gov/release/2010/05/28/ongoing-administration-wide-response-deepwater-horizon-bp-oil-spill>.

team, seeking its approval before sending the plans to Admiral Allen for permission to take action.⁷⁶

Despite their eventually active role, neither the Department of Energy in general, nor Secretary Chu and his scientific team, were functioning within the NCP structure. When responders looked around in the government for specific expertise on well blow-outs, including in the military and in the scientific agencies, they found little to none. The oil and gas industry is the main source of expertise in dealing with blow-outs, and the government eventually turned to experts from other companies as a result.⁷⁷

Later staff work will consider the question of whether BP's leadership made the source control and response efforts any less effective than they could otherwise have been. While this paper does not answer that question, it is plain that BP's leadership role affected public perception of who was in charge. Much of the public, watching the ROV video of oil gushing from the ground, was focused on the effort to stop and contain the flow of oil from the well, over which BP exercised far more actual control than it did over spill cleanup and response.

D. Public Perception of Control

At the beginning of the spill, BP and the government would hold joint press conferences. This was consistent with the Coast Guard view—shaped by its experience implementing the NCP under a unified command system—of the responsible party as a co-combatant in the fight against the oil. This was not a view shared by either large segments of the public or by high-ranking officials in other government agencies, who viewed the relationship as a far more adversarial one. On April 29, 2010, at a press conference involving senior Administration officials such as Carol Browner, Assistant to the President for Energy and Climate Change; Administrator Jackson; Deputy Secretary Hayes, and Secretary Napolitano, Coast Guard Rear Admiral Sally Brice O'Hara referred to BP as “our partner,” prompting Secretary Napolitano to quickly correct the record, saying, “They are not our partner!”⁷⁸ Secretary of the Interior Ken Salazar said the government would keep its “boot on the neck” of BP.⁷⁹ These statements seemed to have a two-fold purpose—to provide reassurance that BP would be held accountable and to show that government was in control of BP and the situation. With much of the country believing that the government had lost control and was managing the response badly, the joint press conferences with BP stopped, and Admiral Allen instead began holding a solo daily press briefing.⁸⁰

When Rear Admiral James Watson took over as Federal On-Scene Coordinator on June 1, 2010, at around the time of the “tripling” announcement, he contributed to the move to a stronger and more visible federal presence. On June 8, 2010, Admiral Watson directed BP to

⁷⁶ Coast Guard documents.

⁷⁷ Interview with government official.

⁷⁸ Tim Dickinson, *The Spill, the Scandal, and the President*, ROLLING STONE (June 24, 2010).

⁷⁹ See, e.g., Matthew Bigg, *U.S. keeps “boot on neck” of BP over spill*, REUTERS (May 24, 2010), <http://www.reuters.com/article/idUUSTRE6430AR20100524>; Frank James, *BP Will Feel Either ‘Boot on Throat’ or ‘Feet to Fire’*, NPR THE TWO-WAY NEWS BLOG (May 2, 2010), http://www.npr.org/blogs/thetwo-way/2010/05/bp_will_feel_either_boot_on_th.html.

⁸⁰ Mike Allen, *Gulf commander to begin solo briefings*, POLITICO (May 31, 2010), <http://www.politico.com/news/stories/0510/37965.html>.

“establish system(s) capable of safely collecting the oil and gas flowing” from the well and to provide a plan for doing so in 72 hours.⁸¹ Though this directive related to source control, the intent was to increase the participation and visibility of the government in the response.⁸²

Another factor that may have affected the public perception of control was the number of front-line responders from the federal government versus the number of front-line responders either employed directly by BP or employed through a BP subcontractor or oil spill response operator. The responders that local citizens saw operating skimming vessels, picking up tarballs, or deploying boom were private hired workers and not Coast Guard or other government personnel.⁸³ BP was providing the money and a large part of the equipment, and BP was providing the contractors and response personnel out on the beaches.

E. Funding Projects Outside the Unified Command

BP may have heightened the perception that it was running the show by distributing money for response costs directly to state and local governments. There is a procedure in the NCP by which state governments can seek up to \$250,000 from the Oil Spill Liability Trust Fund for removal costs.⁸⁴ The Federal On-Scene Coordinator must approve and then manage the request, which must comply with the NCP.⁸⁵

Funds started flowing from BP to states and communities early in the response. On May 5, 2010, BP gave \$25 million each to Florida, Alabama, Mississippi, and Louisiana to “accelerate the implementation of Area Contingency Plans.”⁸⁶ Two weeks later, BP gave Louisiana another \$25 million and the other three states \$15 million each to promote tourism. BP also gave smaller sums of around \$500,000 to \$1 million directly to Louisiana parishes.⁸⁷ These sums, provided completely outside of the unified command structure and without any requirement that the monies be used in a manner consistent with the NCP, gave states and communities reason to believe that BP controlled the means and the methods of the response. This money may also have had a detrimental effect on the overall response efforts. For example, some of the money was spent by states and parishes to purchase boom directly, limiting the overall supply of boom available to the unified command and making it difficult for the unified command to make sure that the boom got to locations where it would be most helpful and not cause any additional environmental damage.⁸⁸

⁸¹ Letter from Admiral James A. Watson, Federal On-Scene Coordinator, United States Coast Guard, to Doug Suttles, Chief Operating Officer, Exploration & Production, BP America Inc. (June 8, 2010), *available at* <http://www.deepwaterhorizonresponse.com/external/content/document/2931/621367/1/FOSC%20letter%20to%20BP%202008%20June%20Final.pdf>.

⁸² Interview with Coast Guard official.

⁸³ Private oil spill response operators turned out in force for skimming and shoreline cleanup efforts. Jia Lynn Yang, *Aftermath spawning profits for many contractors*, WASH. POST (June 12, 2010).

⁸⁴ 40 C.F.R. Part 133.

⁸⁵ 40 C.F.R. §§ 133.13, 133.15.

⁸⁶ Press Release, BP, BP Announces Tourism Grants to Four Gulf States (May 17, 2010), *available at* <http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7062187>.

⁸⁷ Doug Suttles, statement at Commission hearing, in Washington, DC (Sept. 27, 2010).

⁸⁸ This problem is one the Joint Industry Task Force observed in its evaluation of the spill response. The Task Force recommended that government “establish clear-well understood protocols to discourage shoreline protection and cleanup response operations outside scope of [unified command] planning, review, and direction.” JOINT INDUSTRY

F. Appropriate Role of a Responsible Party

It is politically problematic for the government to work with the party responsible for the disaster, because it seems inappropriate for the party who created the problem to have a large role in deciding how to fix it. However, at the responder level, government and the responsible party must work together to have the means to stop the spill. Responders accept this fundamental tension between political preferences and practical realities; here, the public did not. Admiral Allen referred to the public's resistance to BP playing a role in the response as the social or political nullification of the NCP.⁸⁹ The Commission may wish to consider making recommendations regarding the proper role of the responsible party and the proper way to communicate that role in the context of a major response effort.

Specifically, three issues deserve mention. First, the oil and gas industry has significant expertise that the federal government lacks, so the responsible party can and likely must play a substantial role in containment and response efforts. Second, the government may need to consider the extent to which the interests of the public and the interest of the responsible party in minimizing liability diverge with respect to particular issues, and to consider more detailed oversight on issues where divergence is more likely. For example, because the volume of oil released directly affects BP's liability under the Clean Water Act, the government may have had particular reason to have its own or independent scientists determine the flow rate, rather than relying on estimates created by scientists employed by the responsible party. Third and finally, the government's position needs to be explained to the public: the fact that a responsible party continues to assist with containment and cleanup does not mean that the government will not also hold it responsible via mechanisms such as the Clean Water Act. Continuing to work closely with the responsible party while clarifying the nature and extent of government oversight would likely require significant effort by all governmental entities involved, but it is crucial to maintaining public confidence in the containment and response efforts.

Suggestions for the Commission's consideration:

- Consider distinctions in the NCP framework between issues where the responsible party may have greater operational expertise, such as source control, and issues with respect to which the government possesses equivalent or superior operational expertise, such as other response techniques.
- Consider clarifying the extent and nature of government oversight with respect to different classes of issues, including issues where the responsible party's interests in minimizing liability and the interests of the public may be more likely to diverge.
- Clarify the role of the responsible party both for the public and for other agencies when operating within the NCP structure.
- Consider changing the NCP to provide for greater government direction and oversight during the response to a Spill of National Significance.

OIL SPILL PREPAREDNESS AND RESPONSE TASK FORCE, DRAFT INDUSTRY RECOMMENDATIONS TO IMPROVE OIL SPILL PREPAREDNESS AND RESPONSE viii (Sept. 3, 2010).

⁸⁹ Interview by Melissa Block, NPR with Adm. Thad Allen, (Aug. 5, 2010), <http://www.npr.org/templates/transcript/transcript.php?storyId=129005047>. See also Joel Achenbach, *With BP's Know-How and U.S. Authority, the Macondo Well was Plugged*, WASH. POST (Aug. 21, 2010).

IV. The Role of State and Local Governments

Significant differences of opinion existed between the affected states and the federal responders regarding each other's role and appropriate response tactics. Federal responders were employing the NCP, a response structure with which state and local governments were unfamiliar and in which they were not highly involved. That unfamiliarity led to conflicts that hampered the response. The Commission may want to consider recommendations that increase awareness of the NCP on the part of state governments and that alter spill response contingency planning to expand the role of existing state and local emergency response structures.

A. The Stafford Act

State and local officials, and perhaps particularly those in the hurricane-stricken Gulf states, are familiar with the Robert T. Stafford Disaster Relief and Emergency Assistance Act.⁹⁰ The Stafford Act describes how the federal government may provide aid to an overwhelmed state during an emergency.⁹¹ The organizing principle of the Act is the funding and coordinating, not directing or controlling, role of the federal government.

When a governor determines that local and state resources are insufficient to handle an emergency response, the governor may ask the President to contribute federal aid pursuant to the Stafford Act by declaring an emergency or major disaster.⁹² When requesting such a declaration a governor must describe what the state will do to implement its emergency response plan and detail the type and extent of federal assistance needed. The Act broadly defines an emergency as any instance where federal assistance is needed to supplement state efforts to avert a catastrophe, or to save lives and protect property, health, and safety. Specific forms of aid the government may provide during an emergency are: to direct federal agencies to use their resources to *support* state and local efforts;⁹³ to coordinate all disaster relief *assistance* provided by federal agencies, private organizations, and state and local governments;⁹⁴ and to *assist* state and local governments in the distribution of medicine, food, and other consumable supplies.⁹⁵ The emphasized terms indicate that Congress intended a supportive, not a preeminent role for the federal responders.⁹⁶ The Federal Emergency Management Agency (FEMA) administers the bulk of the aid provided under the Stafford Act.⁹⁷ The Administrator of FEMA appoints a

⁹⁰ See 42 U.S.C. §§ 5121-5206; 44 C.F.R. §§ 206.1-206.440.

⁹¹ See Ross C. Paolino, *Is it Safe to Chevron "Two-Step" in a Hurricane? A Critical Examination of how Expanding the Government's Role in Disaster Relief Will Only Exacerbate the Damage*, 76 GEO WASH. L. REV. 1392, 1394 (2008).

⁹² See 42 U.S.C. § 5170 (major disaster); § 5191 (emergency).

⁹³ See *id.* § 5192(a)(1).

⁹⁴ See *id.* § 5192(a)(2).

⁹⁵ See *id.* § 5192(a)(7).

⁹⁶ See *id.* § 5192(a)(2) provides that the President may "coordinate all disaster relief assistance (including voluntary assistance) provided by Federal agencies, private organizations, *and State and local governments*" (emphasis added). This could be read as granting the President the authority to coordinate the entire response. In light of the clearly supportive role for federal responders evinced throughout the Act, this provision probably grants authority to coordinate assistance from other state governments.

⁹⁷ See 44 C.F.R. § 206.1; see also *id.* § 206.62 (delegating emergency response authority to the Administrator of FEMA). The Administrator of FEMA serves as the chairperson of the interagency task force created by the president to coordinating the implementation of pre-disaster hazard mitigation programs. See 42 U.S.C. § 5134 (2006).

federal coordinating officer tasked with determining the types of relief most needed, establishing field offices, coordinating the administration of relief among organizations that agree to operate under his direction, and taking any other action necessary to assist citizens and officials.⁹⁸ For example, the Stafford Act was invoked during Hurricane Katrina to provide aid to the same states affected by the Deepwater Horizon spill. Governors of the Gulf States requested and received declarations of emergency and major disaster. Admiral Allen was named the Principal Federal Officer in that situation, and his role was to provide federal resources and coordinate state responders, not to actually direct the response.⁹⁹

B. Oil Spill Response Under the NCP

The NCP provides a fundamentally different role for the federal government. Instead of a state-run response supplemented with federal resources and financing, the NCP demands that the federal government direct the response through a federal On-Scene Coordinator with the participation of the state through the Unified Command structure. The state then provides a State On-Scene Coordinator to represent the state at the Unified Command, and also provides personnel to implement the response decisions reached by the Federal On-Scene Coordinator or the unified command. Because states and local governments cannot spend funds from the Oil Spill Liability Trust Fund without an authorization agreement from the Federal On-Scene Coordinator, they are limited in their ability to respond as they may like to the threat of encroaching oil.

State and local officials were unfamiliar with this structure and were uncomfortable with a federally directed response. Whether the cause was political demands, concern that the federal government was ineffective, or genuine confusion about the applicable legal framework, state and local officials closest to the affected areas complained that they were shut out from decision-making, as described in the next section on the boom conflict. Meanwhile, federal responders reported their feeling that the message they were hearing from the states was “give us the money and go away.”¹⁰⁰

This unfamiliarity and discomfort with the federal response manifested itself in competing state structures, which undercut the efficiency of response efforts. This was particularly true in Louisiana. Governor Jindal’s advisors reportedly spent days determining whether the Stafford Act or the NCP applied.¹⁰¹ Louisiana declared a State of Emergency on April 29, 2010, authorizing the director of the Governor’s Office of Homeland Security and

⁹⁸ See 42 U.S.C. § 5143; 44 C.F.R. § 206.41. The federal coordinating officer also leads the emergency support and response teams. See 42 U.S.C. § 5144.

⁹⁹ The use of the Stafford Act during Hurricane Katrina response and the role of the federal government within the response was not without problems. See SELECT BIPARTISAN COMMITTEE TO INVESTIGATE THE PREPARATION FOR AND RESPONSE TO HURRICANE KATRINA, 109TH CONG., A FAILURE OF INITIATIVE: FINAL REPORT OF THE SELECT BIPARTISAN COMMITTEE TO INVESTIGATE THE PREPARATION FOR AND RESPONSE TO HURRICANE KATRINA, U.S. HOUSE OF REPRESENTATIVES 146 (Comm. Rep. 2006) available at <http://katrina.house.gov/>. Some critics felt that the federalism concerns embodied in the Stafford Act system contributed to the slow response. See Stephen M. Griffin, *Stop Federalism Before it Kills Again: Reflections on Hurricane Katrina*, 21 ST. JOHN’S J. LEGAL COMMENT 527, 531-32 (2007).

¹⁰⁰ Interviews with Coast Guard officials.

¹⁰¹ Interview with government official.

Emergency Preparedness to undertake any legal activities deemed necessary to respond.¹⁰² Roland Guidry, the Louisiana Oil Spill Coordinator and the state's pre-designated State On-Scene Coordinator, had reported to the Unified Command when summoned at the beginning of the spill. He was removed, however, from his duties at the Unified Area Command after approximately eleven days and Governor Jindal named himself State On-Scene Coordinator.¹⁰³ No one else had the authority to speak for the state, so all decisions had to flow through the Governor's office, which slowed decision-making and caused problems in the response efforts. Louisiana was not the only state where the governor stepped in and removed the designated State On-Scene Coordinator; all five Gulf state governors declared a state of emergency and became the State On-Scene Coordinator at some point in the response. However, based on interviews with Coast Guard and state personnel, the conflicts between federal responders and state government appear to have been most severe in Louisiana.

Federal responders improved their relationship with state and local officials as the response progressed. Senior Coast Guard officials were assigned to parishes in Louisiana and coastal counties in the other affected states to serve as liaisons.¹⁰⁴ Had this system been in place earlier, the relationship between the federal responders and local leaders may have been stronger and more productive in the early days of the spill response.

C. The Boom Wars

Boom became one of the most visible manifestations of state and local dissatisfaction with federal response efforts. Boom is a physical barrier between oil and water or shoreline. Ocean boom is placed in the water to try to keep oil in a contained area where it can then be skimmed or burned. Absorbent boom is placed along beaches or in marshes to absorb oil before it can enter and damage sensitive shoreline environments. Boom is a measurable, physical object that visibly stops oil from moving into areas to be protected. In this way it is different from source control efforts or skimming far out at sea—efforts that cannot be seen by residents in towns waiting for oil to hit.

In part for this reason, boom became a symbol of how responsive the government was to local communities.¹⁰⁵ Each state wanted the entire shoreline boomed, and each state wanted as much or more boom than the next state. This translated down to the parish and town levels as well. Federal responders thought that local people complaining about their lack of boom were missing the big picture; local people thought that federal responders were not paying attention to local needs.¹⁰⁶ As a result, boom was eventually distributed according to political imperatives, not operational ones, in part because of distrust from state and local officials as to whether the federal government was adequately considering and addressing their needs during the response.

¹⁰² Press Release, Office of the Governor, Governor Jindal Issues State Declaration of Emergency for Oil Leak (Apr. 29, 2010), *available at*

<http://www.gov.state.la.us/index.cfm?md=newsroom&tmp=detail&catID=2&articleID=2137&navID=3>.

¹⁰³ Interview with government official.

¹⁰⁴ Interview with Coast Guard official; Coast Guard documents.

¹⁰⁵ Interviews with Coast Guard officials.

¹⁰⁶ Interviews with Coast Guard officials.

Responders were frustrated with the time they spent laying what was, in their view, unnecessary boom.¹⁰⁷ The Area Contingency Plan does not lay out a specific booming map, as the marshy coastal ecosystem frequently changes and any boom plan would be quickly out of date. Responders wanted to be able to direct the boom where they thought it most efficient and felt hampered by pressure to place boom everywhere. When the oiling risk was highest in Louisiana, the Coast Guard directed boom to Louisiana. They then heard complaints from the other states: Alabama Governor Bob Riley contended that the decision to move boom from the Alabama coast to the Louisiana coast left his shoreline in danger of oiling, and Mississippi and Alabama felt that they were being ignored as they had been during the Hurricane Katrina response.¹⁰⁸

Governor Jindal in Louisiana said at a press conference in mid-May 2010 that the supplies, including containment boom, provided by the Coast Guard and BP were inadequate. At the same time, local officials held up pictures of oil-coated birds.¹⁰⁹ Governor Jindal said that he had requested 5 million feet of hard boom but had received only 786,185 feet, also referencing 143,000 feet of boom he said sat idle in staging areas.¹¹⁰ Florida Department of Environmental Protection Secretary Mike Sole told reporters, “A lot of the decisions about Florida are being made in Mobile,” by Admiral Landry and the Coast Guard-led command. “I told [Admiral Landry], ‘Florida is important. We have 770 miles of shoreline to protect. I’m concerned that we’re not getting enough focus on Florida.’”¹¹¹

Local officials expressed similar views. Billy Nungesser, President of Plaquemines Parish, was a vocal critic of the response. President Nungesser deplored the lack of available boom, wanting enough material to create a second line of defense along the coast.¹¹² From the early days of the spill, he sought funds to enlist local fisherman to deploy boom and complained of the minimal boom that was available for use.¹¹³

The NIC was not deaf to these concerns. Directions went out to “keep the parishes happy,” which resulted in operational decisions that may have been politically motivated.¹¹⁴ Boom was placed everywhere, including in passes where swift tidal currents rendered it ineffective, and in places where it was unlikely to encounter oil.

In addition to worries about unnecessary boom, responders had concerns about environmentally damaging boom. Boom is not a perfect solution. For example, boom can harm environmentally sensitive areas such as marshes if severe weather conditions blow it around and

¹⁰⁷ One responder deemed this activity laying “political boom.” Interview with Coast Guard official.

¹⁰⁸ Holbrook Mohr, Justin Pritchard, Tamara Lush, *BP’s gulf oil spill response plan lists the walrus as a local species. Louisiana Gov. Bobby Jindal is furious.*, CHRISTIAN SCIENCE MONITOR (June 9, 2010); Interview with Coast Guard official.

¹⁰⁹ Campbell Robertson, *Louisiana Officials Threaten Action as Spill Response Proves Inadequate*, N.Y. TIMES (May 23, 2010).

¹¹⁰ David Hammer, *Frustration mounting over BP delays, lack of progress in Gulf of Mexico oil spill*, TIMES-PICAYUNE (May 23, 2010).

¹¹¹ Craig Pittman and Rebecca Catalanello, *BP plan to protect Florida from oil spill inadequate, officials say*, ST. PETERSBURG TIMES (May 3, 2010).

¹¹² Dan Murtaugh, *Gulf Coast Prepares Oil Defenses, Rallies Volunteers*, PRESS-REGISTER (April 30, 2010).

¹¹³ *BP’s Gulf oil spill response plans severely flawed*, ASSOCIATED PRESS (June 9, 2010),

http://www.nola.com/news/gulf-oil-spill/index.ssf/2010/06/bps_gulf_oil_spill_response_pl.html.

¹¹⁴ Interviews with Coast Guard officials.

onto delicate grasses and habitat. Responders were in a difficult position as they boomed places based on local pressures, pulled boom away during bad weather, and then put it out again.¹¹⁵

Once parishes had boom, they did not want to let it go. On July 22, 2010, President Nungesser, opposed the Coast Guard's decision to began removing boom in preparation for Hurricane Bonnie.¹¹⁶ He threatened to slash the tires of trucks carrying away protective boom. He later explained that his statement was only a joke.¹¹⁷ Other parish presidents, either believing they had the authority or hoping to take that authority upon themselves, issued orders prohibiting response equipment from being moved out of the parish.¹¹⁸ Coast Guard responders were threatened with arrest if they moved equipment.¹¹⁹

These problems were also a serious distraction that took time away from responders' ability to focus on the spill. For example, because state and local officials wanted to be able to evaluate the response on their own terms, they measured the "feet of boom deployed," a measurement that took time to compile but was of very little value in evaluating the effectiveness of response efforts.

The boom wars never reached a resolution. In many instances, responders knew that in deploying boom they were responding to the politics of the spill rather than the spill itself. They deployed boom along miles and miles of shoreline, and it was still not sufficient to prevent oil from washing up on the beaches.

D. Berms

Berms will be addressed in greater detail in a later staff working paper, and this short section is intended only to sketch the federal-state conflict over the issue. On May 8, 2010, President Nungesser and Governor Jindal proposed to build up the barrier islands along the Louisiana coast using dredges. President Nungesser argued that it would be much easier to clean up oil from the sand than from wetlands. He hoped that BP would fund the costly project and met with BP executives in the following days to discuss the proposition.¹²⁰ The state request was filed on May 11, 2010, and revised on May 14, 2010,¹²¹ but the Army Corps of Engineers did not approve it immediately, fearing that even temporary berms would disrupt natural tidal flows.¹²²

¹¹⁵ Interview with Coast Guard official.

¹¹⁶ "Oren Dorell, *Storm Forces Evacuation of Well Site BP Official Says Break Will be 10-12 Days After Federal Overseer Halts Gulf Work*, USA TODAY (July 23, 2010).

¹¹⁷ See Liz Robbins and Campbell Robertson, *Tension Among Officials Grows as Storm Nears*, N.Y. TIMES (July 23, 2010).

¹¹⁸ See *id.*; Angel Gonzalez, *Locals to BP: Don't Leave Town Yet*, WALL STREET JOURNAL (Aug. 1, 2010); *St. Bernard Leader: Keep All Spill Equipment Here*, ASSOCIATED PRESS (July 30, 2010)

<http://www.wsfa.com/Global/story.asp?S=12902614>; *Parishes Move to Block Movement of Oil Protection*, ASSOCIATED PRESS (July 22, 2010), <http://www.klfy.com/Global/story.asp?S=12856658>.

¹¹⁹ Interview with Coast Guard official.

¹²⁰ Chris Kirkham, *Jindal, Nungesser Propose Building Barrier Islands, Dredges Could Shield Wetlands*, TIMES PICAYUNE (May 9, 2010).

¹²¹ Chris Kirkham, *Sand barrier idea faces bureaucratic delays, ecological questions*, TIMES-PICAYUNE (May 21, 2010).

¹²² Tim Padget, *Dredge, Baby, Dredge: Can Sand Stop the Oil?*, TIME MAGAZINE (June 1, 2010); James McKinley, *Experts Express Doubts on Sand-Berm Proposal*, N.Y. TIMES (May 22, 2010).

President Nungesser grew very critical of the Army Corps' slow response, saying "we could have built 10 miles of sand boom already if [the feds] would have approved our permit when we originally requested it" and adding that "the federal government has got to move on this and BP has got to pay for it."¹²³ After President Nungesser's disappointment made national headlines on May 21, 2010, the Army Corps of Engineers issued emergency permits on May 27, 2010, authorizing one protective sand berm in the Plaquemines area.¹²⁴

The tension surrounding the berm project reappeared a few weeks later when the federal government shut down the dredging activities on June 22, 2010, prompting President Nungesser to comment that "our government resource agencies, which are intended to protect us, are now leaving us vulnerable to the destruction of our coastline and marshes by the impending oil."¹²⁵ He evoked battlefield rhetoric, stating "we know we're getting ready to fight a war over there," and accusing the administration of limiting the tools for this fight.¹²⁶ A week later, the Army Corps of Engineers allowed berm building to resume after operations were shifted to a more distant site.¹²⁷

E. Potential Problems with the NCP

In addition to the structural issue of differences between Stafford Act and the NCP, another factor at the root of the federal-state and federal-local conflicts was likely the failure of the contingency plans to adequately involve state and local officials. Coast Guard responders were well-connected to state responders such as the designated State On-Scene Coordinators, but not well connected with local officials or political officials at the state level.

a. State officials

Even though the various planning documents required by the NCP, including the Area Contingency Plans, had been signed by state officials, higher-level state officials did not appear to have participated in the planning process such that they understood what the plans called for. When confronted with a contingency plan, a state official reportedly told a Coast Guard responder, "I didn't sign that." In the opinion of the Coast Guard responder, the state official was not denying that his signature appeared on the document; he meant that no one had ever properly explained the content of the plan to him.¹²⁸ When the time came to implement the plans as the State On-Scene Coordinator understood them, the governors largely rejected the plans and opted to run the response operations in different ways.¹²⁹ This set of circumstances at the state

¹²³ Padget, *Dredge, Baby, Dredge: Can Sand Stop the Oil?*

¹²⁴ Schleifstein, *Sand berm to protect Barataria Bay wetlands gets federal OK*, TIMES-PICAYUNE (May 27, 2010).

¹²⁵ *Federal Gov't Halts Sand Berm Dredging*, WDSU (June 23, 2010), <http://www.wdsu.com/r/23997498/detail.html>.

¹²⁶ Chris Kirkham, *Louisiana Officials Urge Feds to Let Dredging Continue on Berm to Fight Gulf Oil Spill*, TIMES-PICAYUNE (June 23, 2010).

¹²⁷ Chris Kirkham, *Dredging on Sand Barriers to Continue When Weather Improves*, TIMES-PICAYUNE (June 30, 2010).

¹²⁸ Interview with Coast Guard official.

¹²⁹ The governors of Louisiana, Mississippi, Alabama, and Florida all declared a state of emergency. They also all appointed themselves the State On-Scene Coordinator. Press Release, Governor Jindal Issues State Declaration of Emergency (Apr. 29, 2010),

(<http://www.gov.state.la.us/index.cfm?md=newsroom&tmp=detail&catID=2&articleID=2137&navID=3>); Press Release, Gov. Riley Declares State of Emergency to Prepare for Oil Approaching Alabama Coast (Apr. 30, 2010),

level may change as a result of this spill; we can expect that high-level state officials will now be more involved in contingency planning under the NCP. Though lesser spills had occurred in the region before, for many high-level officials, this was the first large-scale NCP response they had encountered. The Area Contingency Plans also did not appear to take state contingency plans into account. A Coast Guard responder with responsibility for pre-spill planning indicated that he knew that the states had contingency plans but was not familiar with them.¹³⁰ A requirement that planning documents be consistent and incorporate each other might help to ensure the engagement of responders at all levels.

b. Local officials

The failure of the planning process to adequately involve state governments was magnified at the local level. Local communities were not involved in the contingency planning process, nor were they anticipated to play a large role in the response. The applicable Area Contingency Plan, called the One Gulf Plan, has no reference to the role of local officials or local communities in general. Two of the Area Contingency Plans included in the One Gulf Plan do include a section instructing planners to coordinate with state and local officials. The New Orleans Area Contingency Plan, for example, instructs the Area Committee planner to work “with state and local officials to pre-plan for joint response efforts, including appropriate procedures for mechanical recovery, dispersant use, shoreline cleanup, protection of sensitive environmental areas, and protection, rescue, and rehabilitation of fisheries and wildlife. The Area Committee is required to work with state and local officials to expedite decisions for the use of dispersants and other mitigating substances and devices.”¹³¹ The Commander of the Port for Morgan City, Louisiana reported that he had consistently invited parish representatives to area committee planning meetings, but that they did not often attend. Before the Deepwater Horizon spill, when there had been an incident, Coast Guard responders would telephone parish representatives to provide information, but did not seem to expect the parishes to provide information in return.¹³² Parish representatives, for their part, said that they had not been invited to participate in spill planning exercises, in contrast with the annual hurricane drills in which they do participate. Overall, the pre-Deepwater Horizon level of parish involvement in spill planning or spill response was low.

In other regions, local officials are sometimes involved through a Local On-Scene Coordinator. Area contingency plans in Alaska and in San Francisco both provide for such a position.¹³³ Planners in San Francisco realized they needed to incorporate a way to address local concerns after the *Cosco Busan* oil spill in San Francisco Bay in November 2007.

(<http://governorpress.alabama.gov/pr/pr-2010-04-30-04-emergency.asp>; State of Florida, Office of the Governor, Executive Order 10-99 (Apr. 30, 2010), http://www.dep.state.fl.us/deepwaterhorizon/files/authorizations/043010_eo1.pdf); State of Mississippi, Office of the Governor, Executive Order No. 1038 (Apr. 30, 2010), (<http://www.governorbarbour.com/news/2010/apr/Orders%20for%20Coast.pdf>). See also Press Release, BP, BP Announces Tourism Grants to Four Gulf States (May 17, 2010), available at <http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7062187>.

¹³⁰ Interview with Coast Guard official.

¹³¹ SECTOR NEW ORLEANS, LOUISIANA, GEOGRAPHIC RESPONSE PLAN 8 (1999).

¹³² Interview with Coast Guard official.

¹³³ See ALASKA REGIONAL RESPONSE TEAM, <http://www.akrrt.org/plans.shtml> (1999); Meeting Notes from California Emergency Management Agency meeting (Aug. 12, 2009),

Because local officials did not have a clear role in the Deepwater Horizon response, many felt ignored by federal responders. This contributed to their empowerment, as discussed above, to go directly to BP for response funding. This problem seemed to be exacerbated in Louisiana, where the unique parish structure and home rule provisions gave a great deal of autonomy to local governments. In Mississippi and Alabama, though there were local issues and local mayors expressed concerns about the response, the unified command was able to work more directly with the State On-Scene Coordinator, who in turn worked with county and town governments.¹³⁴ Planning did not take into account the differing governance structures of the Gulf states.

Better incorporation of existing local emergency response structures in spill response planning may help to build trust between the federal government and local officials and to utilize local expertise and resources. The creation of emergency response structures is currently a high priority for many states and local governments, and the federal government has grant programs in place to support this priority.¹³⁵ Incorporating some of these structures would potentially require changing the NCP to direct that the Area Contingency Planning process involve local leaders in the unified command, either as principal players or on a consulting basis. The regions that currently have local on-scene coordinators are very different from the Gulf of Mexico in terms of the diversity and sheer number of shoreline communities potentially affected by a spill. However, there may be ways in which the federal government can use the local on-scene coordinator model to access local government emergency response structures. Greater participation by a local representative in the planning process could facilitate the inclusion of local resources and concerns in contingency plans. A Local On-Scene Coordinator, or Coordinators for many communities, could participate in spill response by organizing local volunteers, cataloging response resources, and serving as a point of contact for local concerns.

Suggestions for the Commission's consideration:

- Consider clarifying at the national, state, and local level the differences between the Stafford Act and the NCP.
- Consider recommending higher-level state involvement in the contingency planning process, potentially including political in addition to career officials.
- Establish liaisons between the unified command and affected local communities early in the spill response process.
- Consider recommending ways to incorporate local emergency response structures into contingency planning, and consider adding a Local On-Scene Coordinator position in the Unified Command structure.

[http://www.calema.ca.gov/WebPage/oeswebsite nsf/ClientOESFileLibrary/Coastal%20Region%20Branch/\\$file/2009.08.12.pdf](http://www.calema.ca.gov/WebPage/oeswebsite%20nsf/ClientOESFileLibrary/Coastal%20Region%20Branch/$file/2009.08.12.pdf).

¹³⁴ Interviews with Coast Guard officials.

¹³⁵ See, e.g., FEMA, FY2010 EMERGENCY MANAGEMENT PERFORMANCE GRANTS (EMPG),

<http://www.fema.gov/government/grant/empg/index.shtm>; Emergency Management; Interview with Coast Guard official.