



North Carolina Department of Environment and Natural Resources

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MEMORANDUM

TO: ENVIRONMENTAL REVIEW COMMISSION
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FISCAL RESEARCH DIVISION
Mark Trogdon, Director

FROM: Jim Womack 
Chairman of the North Carolina Mining and Energy Commission

SUBJECT: Funding Levels and Potential Funding Sources Study Group Report Addendum

DATE: April 1, 2014

Pursuant to Session Law 2013-365 Section 2(b), the North Carolina Mining and Energy Commission (MEC) studied severance tax strategies in association with oil and gas exploration and development. Respective findings and recommendations were delineated in pages 28 through 31 and in Appendix A in the MEC's Funding Levels and Potential Funding Sources Study Group report. The report was submitted to the Joint Legislative Commission on Energy Policy on October 1, 2013 and is available here:

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Additionally, the MEC's Funding Levels and Potential Funding Sources Study Group produced the attached Emergency Response and Contaminant Release Mitigation Recommendations Addendum. This document delineates Study Group recommendations in accordance with Session Law 2013-365 Section 2(b) to address funding recommendations for emergency response and environmental protection. Please consider submission of the October 1, 2013 report, as well as the attached addendum as the Commission's fulfillment of the requirements under the respective session law.

If you have any questions or need additional information, please contact me by phone at (919) 770-4783 or via e-mail at commissioner.womack@gmail.com.

cc: Mitch Gillespie, Assistant Secretary for Environment
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Funding Levels and Potential Funding Sources Study Group Addendum: Emergency Response and Contaminant Release Mitigation Recommendations

Preamble/Introduction

The Funding Levels and Potential Funding Sources Study Group presented its initial report to the Joint Legislative Commission on Energy Policy on October 01, 2013. The document satisfied research and reporting requirements under Session Law 2012-143, wherein the Study Group provided recommendations for hydrocarbon severance taxing, well permit fees, industry impact fees, reimbursement of impact expenses to local governments, property taxation, municipal road maintenance agreements, and financial assurance for surface owner bonding, geophysical bonding, well plugging and abandonment bonding, and site reclamation bonding.

This document serves as an addendum to the October 01, 2013 Study Group report and was developed in response to Session Law 2013-365, which required the Funding Levels and Potential Funding Sources Study Group to “...formulate recommendations for appropriate levels of funding that should be maintained to address emergency events associated with oil and gas exploration, including sufficient funding for emergency preparation, emergency response, emergency environmental protection, or mitigation associated with a release of liquid hydrocarbons or associated fluids directly related to onshore energy exploration, development, production, or transmission.” As a result of the above charge, the Study Group has considered and developed recommendations for the following matters:

1. Funding for emergency response operations, specifically to address well blowouts.
2. Funding for long-term contaminant release mitigation.

Well Blowout Mitigation and Related Emergency Response Recommendations

The Study Group recommends that all companies applying for NC oil or gas drilling permits be required to have a current, active hazard mitigation memorandum of understanding or similar such contract or agreement in force to be considered for permitting. Said contract must be held with a company specializing in well disaster mitigation (well blowout, fire, etc.). We also recommend that all well blow-out mitigation companies operating in the State be registered with the NC Secretary of State’s Office.

Currently, all major oil and gas companies (Exxon-Mobile, Shell, etc.) have hazard mitigation contracts or agreements in place with third party organizations that specialize in such incidents. Few, if any, of the oil companies have operational, in-house well blow-out mitigation personnel to handle these potential situations. Mitigation costs are highly dependent on the severity of the well mishap; total area impacted; condition of the drilling rig and well head; duration of the incident; and other unforeseen impacts or occurrences. The items that are included within a contract between an operator and a well blow-out mitigation company vary depending on services needed or requested. They could range from

extinguishing a fire and capping the respective well, to pressure control, well control engineering, “hot tapping” and valve drilling services, response equipment, source control response drills and exercises, and rig site training. Mitigation costs per catastrophic well blowout incident generally total \$2 to \$3 million with higher costs incurred for more complex disaster situations. As a result of these high costs, financial assurance strategies to address blowout and related emergency response operations are impractical.

We have identified (in alpha order) three hazard mitigation companies below. Though not all-inclusive, they are representative of the market segment and each provides services in the USA and worldwide.

- Boots and Coots (Houston, TX) is a division of Halliburton that offers customized risk management solutions for both well hazard prevention and out of control wells.
- SafetyBOSS (Calgary, Alberta, Canada) became the number one firefighting company in Kuwait after 1991 Gulf War, having doused 180 out of the 600 fires there.
- Wild Well Control (Houston, TX) mitigates 80 percent of oil and gas well blow-outs/fires, and has current agreements with all major oil and gas companies; offered overview presentation to Study Group.

Contaminant Release: Funding for Assessment, Remediation and Alternate Water Supply

Under 15A NCAC 02L .0106, any Responsible Party (RP) for a contaminant release is required to perform corrective action to protect human health and the environment. Implementation of this rule requires environmental remediation to be performed by the RP (or by the RP’s contractor) to address both short and long term impacts. Depending on the site and contaminant characteristics, response actions range from small volume soil removal to large scale groundwater assessment and cleanup, along with provision of alternate water supply where needed. For comparative purposes, see the section below, *“Example Costs: Response Activities at Abandoned Hazardous Waste Sites”*.

The Study Group recommends using one of DWM’s existing programs to mitigate potential long-term environmental contamination resulting from an RP which is unable to fund clean-up costs. This practical and efficient option utilizes professional assistance from an existing, experienced, and proven state organization without the expense of creating another oversight or bureaucratic agency. Therefore, we also recommend that additional funding support be provided to DWM by statutorily allocating one to ten percent of all hydrocarbon severance tax monies to this Division. Additionally, DWM should have management flexibility to use these funds to deal with a wide range of environmental restoration projects. Thus, monies could be used to address contamination from oil and gas exploration and development, as well as from activities unrelated to the oil or gas industry. As a result, the severance tax allotment would have the benefit of environmental restoration to North Carolina whether or not industry activities resulted in contamination.

Example Costs: Response Activities at Abandoned Hazardous Waste Sites

Sampling and Community Outreach

In DWM's experience at medium-scale contaminated groundwater incidents, one-time well sampling and community outreach typically costs \$50,000 or more, including staff time.

A number of larger incidents in recent years required multiple sampling events for 60 to 100 residential wells, accruing costs ranging from \$100,000 to \$280,000.

Alternate Water Provision

Water supply well replacement may be appropriate in some cases. Costs are likely to range from \$10,000 to \$20,000 per well, including administrative costs.

"Point of entry filter systems" are cost-effective for communities located distant from municipal waterlines, and where housing density is low.

- The systems need periodic testing and filter media changes.
- Filter systems cost \$8,000, on average, to install and to conduct sampling to confirm adequate filtration.
- Filter media replacement, maintenance and any needed sampling costs average \$1,500 per year.
- Over a decade, costs would average about \$23,000 per residence.

Extension of municipal water lines, where proximity and project scale permit, range from a few hundred thousand dollars to multi-million dollar projects. EPA's extension of waterlines in the Stony Hill Road Community to provide alternate water to 22 homes with contaminated wells, and to neighboring wells at risk of future contamination, cost \$1.7 million for the waterline construction alone. Additional costs will include well abandonment averaging about \$6,000 per well, waterline and plumbing from meter box into the houses, informational meetings and administrative costs. Extension of City of Hendersonville waterlines to the rural community of Dana, NC, where 20 homes are impacted by historic pesticide use, will cost nearly \$1.0 million.

Abatement of Contamination

Contaminants in soil and groundwater can migrate and affect water supply wells at the time of the event and in the future. Remediation can cost from several thousand dollars to several million dollars to abate exposure risks.

DWM Oversight of Response Activities

The Study Group recommends using DENR's Division of Waste Management's (DWM) staff to oversee the types of response actions described above. DWM staff are not first responders and do not typically provide long-term response measures themselves. Rather, DWM staff typically provides guidance and oversight to the firms hired by responsible parties, or in limited cases, to firms contracted by DWM using trust funds, State appropriations, or bankruptcy funds.

In addition to the proposed severance tax allocation to build the remediation fund, the Study Group also recommends that \$100,000 per year of severance tax monies collected be used to fund the salary, fringe, and operating costs for one senior Hydrogeologist or Environmental Engineer within DWM to conduct oversight of responses to contaminant releases associated with oil and gas drilling and production sites. In addition to duties typically associated with environmental assessment and remediation, job duties for the position would include maintaining familiarity with industry drilling and production practices, the type of materials associated with those practices, and the hydrogeology of the oil and gas fields being developed. Duties would include organizing and directing the work of additional DWM staff assigned to assist during a response of significant scale or duration. During periods when response to oil and gas-related incidents did not fully occupy this staff person's time, he or she would work on DWM priority abandoned hazardous wastes sites. By this provision, proceeds from oil and gas development would support the State's broader efforts to protect public health and the environment, while allowing DWM to maintain the specific capabilities needed to respond effectively in the event of releases at oil and gas sites.

DWM Response Authorities

North Carolina regulations under 15A NCAC 2L require immediate notification to DENR on the discovery of a non-permitted activity that has resulted in groundwater contamination. DWM support of a DENR response at oil and gas-related contamination incidents would occur after the notification requirements of 15A NCAC 2L and of the Inactive Hazardous Site Act (G. S. § 130A-310) were met, and the reporting party had provided information indicating that a hazardous substance or petroleum-based substance had been released to the environment. 15A NCAC 02L .0106 requires the Responsible Party to assess and clean up contaminant releases.