



Energy/Environmental/Engineering/Carbon

Carbon Management

Marshall Miller & Associates Carbon Management Division (CM) provides a wide range of consulting, engineering and environmental services. Committed to achieving the highest standards in carbon related projects, MM&A's staff of 200 professional geologists, hydrogeologists, engineers and scientists work in tandem with clients to identify needs, analyze opportunities, prevent problems and respond to the constantly evolving carbon market.

In an increasingly "carbon-conscious" society, our awareness, management and growth will be measured by our carbon footprint or output. As power producers and their fuel suppliers, manufacturers and government agencies fight the battle of carbon reduction, one of the essential tools will be capture and storage (e.g. sequestration) of carbon. From business and engineering managers to legislators and end users, understanding Greenhouse Gas (GHG) emissions and strategies will afford open dialogue and better understanding of the implications of carbon management.

By providing a comprehensive set of services, MM&A makes it possible for its clients to minimize costs associated with permitting and regulatory compliance issues, reduce environmental risks, and maximize investments into new or existing operations or ventures.

The Carbon Management (CM) division of MM&A is a national leader and a significant International participant in areas including greenhouse gas inventorying, reporting and reduction, carbon capture & storage (carbon sequestration) and carbon offset credit verification. Our talented, experienced staff, combined with the resource pool of support services at MM&A (i.e., Geophysical Logging Systems and Marketing and Communications), strive to deliver accurate and relevant analysis, consultation and recommendations to our clientele.

Carbon Credits

MM&A is approved by the Chicago Climate Exchange (CCX) as a qualified, independent verifier for carbon credits for a variety of markets including coal mine methane (CMM) and abandoned mine methane (AMM) projects. CCX is the world's first legally binding rules-based greenhouse gas emissions trading system. Carbon credits can be earned (and traded on the exchange) for documented reductions in methane emissions occurring during the mining process if the gas that would have otherwise been emitted to the atmosphere is rather (1) sold as high quality gas on a natural gas pipeline system, or (2) used as mid-quality gas in electricity generation.

Greenhouse Gas Inventories and Reductions

MM&A's staff has considerable experience in the accounting, collection, assembly and reporting of GHG emissions. This experience is translated from the reporting to Reduction Plans for our clients allowing goals to be set, met and exceeded, affording carbon off-set trading options. MM&A has worked with a wide variety of protocols including WRI, WBCSD, or CA General Reporting Protocol. With the impending regulation from the USEPA's Mandatory GHG Reporting Rule (MRR), the option to participate in the collection and reporting of GHG emissions is soon to be a thing of the past. The new rules require some two dozen industries to provide specific reporting of GHG emissions to the government on a yearly basis. MM&A's staff has reviewed and evaluated the impact of this new rule and we have the cutting-edge experience to offer compliance services to all of MM&A's clients

MM&A, through our Carbon Management Division, offers categorized GHG services in the following areas:

- Carbon Footprint Analysis
- Greenhouse Gas (GHG) or Emission Inventories (1605b Format)

- Inventory Reduction Plans (IRP) and Inventory Management Plans (IMP)
- Project Off-Set and Aggregation Services

US EPA Methane-to-Markets Program

MM&A participates in the USEPA's Methane-to-Markets Program providing Coal Mine Methane (CMM) reduction and guidance documentation for the coal mining market in China. MM&A is assessing multiple drilling techniques to produce methane in advance of mining. The purpose of the project is to define improved methods for recovery of CBM and CMM in regions previously thought to hold little promise for methane production.

Carbon Capture & Storage

The Carbon Management Division is also a prime contractor and lead researcher for the Southern States Energy Board's (SSEB) management of the United States Department of Energy's (USDOE) Southeastern Regional Carbon Sequestration (SECARB) Central Appalachian coal seam project. The objective of this program is to assess and verify the sequestration capacity and performance of mature CBM and enhanced CBM reservoirs in the region.

Currently, 1,000 tons of CO₂ has been injected into a CBM production well. This test site is being monitored at depth and on the surface for gas migration. Additionally, MM&A is assessing the feasibility for a large scale injection project involving stacked reservoirs (unmineable coalbeds, depleted gas producing formations, and saline aquifers).

The carbon capture and storage project is receiving industry support from coal and gas producing companies, and large land-holding companies.

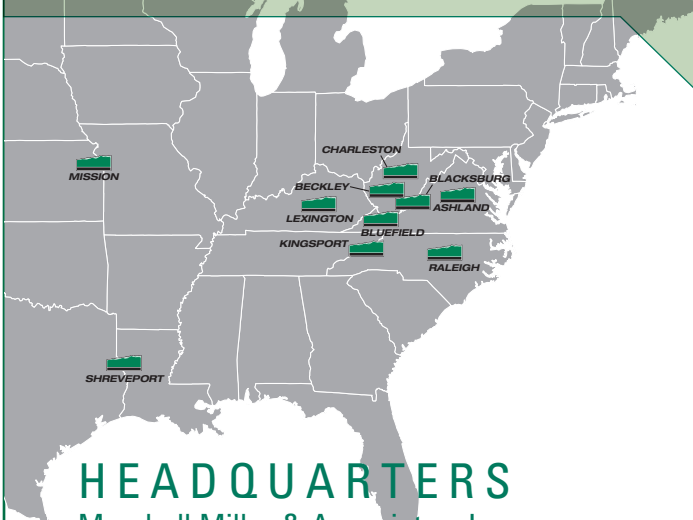
For more information regarding MM&A's Carbon Management Division, contact Vince Alaimo – (804) 798-6525 or vince.alaimo@mma1.com

OVERVIEW OF CARBON CONSULTING SERVICES

OFFICE LOCATIONS



- ◆ Greenhouse Gas Inventory & Reduction
- ◆ Carbon Credit Verification
- ◆ Off-Sets and Aggregation Services
- ◆ US EPA Methane-to-Markets Program
- ◆ Carbon Capture & Storage (Sequestration)
- ◆ Geologic Evaluations
- ◆ Conventional Oil and Gas
- ◆ Coalbed Methane
- ◆ Organic Shales
- ◆ Coal Mine Methane
- ◆ Due Diligence
- ◆ Reservoir Engineering
- ◆ Economics and Reserves
- ◆ Production Engineering
- ◆ Field Services



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