

PE Short Course - Design and Construction of Livestock Manure Systems To Meet MDNR Regulations

Dates: 9:30 a.m. Nov 14 to 3:00 p.m. Nov 16, 2012 Cost: \$295 (includes two lunches)

Location: Bradford Technology Transfer Center, 4969 Rangeline Rd., Columbia, MO 65201

To register contact: Sandy at 573-882-2731 or zaringsj@missouri.edu

<i>Wednesday – November 14, 2012</i>	
9:00 a.m.	On-site check-in opens
9:25 a.m.	Welcome & Overview of Course
9:30 a.m.	Evolution of Manure Management in Missouri John Hoehne, P.E., Agricultural Engineer, University of Missouri
10:00 a.m.	Overview of Animal Manure Systems Dr. Joe Zulovich, P.E., Agricultural Engineer, University of Missouri
10:30 a.m.	Break
	<u>Familiarity with Rules and Regulations</u>
10:45 a.m.	CAFO Permit Options – 6.300 rule Dr. John Lory, State Nutrient Management Specialist, University of Missouri
11:15 a.m.	CAFO Manure Storage Design Rules – 8.300 rule Dr. Joe Zulovich, P.E., Agricultural Engineer, University of Missouri
11:45 a.m.	Nutrient Management Technical Standard and Record Keeping Dr. John Lory, State Nutrient Management Specialist, University of Missouri
12:15 p.m.	Lunch (provided)
	<u>Site Selection Concerns</u>
1:00 p.m.	Livestock Production Site Evaluation Procedures John Hoehne, P.E., Agricultural Engineer, University of Missouri
1:30 p.m.	AFOSITE and BERM web tools Drs. John Lory and Joe Zulovich, University of Missouri
2:00 p.m.	Site and System Impacts on Emissions and Odor Issues Dr. Teng Lim, P.E., Agricultural Engineer, University of Missouri
2:50 p.m.	Break

	<u>Initial Feasibility Analysis of New or Expanding Operations</u>
3:00 p.m.	Water Supplies for Livestock Operations Dr. Joe Zulovich, P.E., Agricultural Engineer, University of Missouri
3:15 p.m.	Preliminary Estimating of Manure Volume for Feasibility Analysis Dr. Joe Zulovich, P.E., Agricultural Engineer, University of Missouri
3:30 p.m.	Initial Agronomic Feasibility Analysis Dr. John Lory, State Nutrient Management Specialist, University of Missouri
4:30 p.m.	Student problems – Site Selection and Initial Feasibility John Hoehne and Drs. John Lory and Joe Zulovich, University of Missouri
5:30 p.m.	Adjourn for day
<i>Thursday, November 15, 2012</i>	
	<u>Mechanics of Sizing Manure Storage Structures</u>
8:00 a.m.	Overview of Animal Waste Management (AWM) Program Dr. Joe Zulovich, P.E., Agricultural Engineer, University of Missouri
8:30 a.m.	Example Sizing Designs Using AWM Dr. Joe Zulovich, P.E., and John Hoehne, P.E., University of Missouri
10:20 a.m.	Break
10:40 a.m.	Estimation/Design Verification of Storage Volume Dr. Joe Zulovich, P.E., and John Hoehne, P.E., University of Missouri
12:10 p.m.	Lunch (provided)
	<u>Operational Feasibility of Proposed Designs</u>
1:00 p.m.	Available Spreading Windows Based on Crop Rotations Dr. John Lory, State Nutrient Management Specialist, University of Missouri
2:00 p.m.	Field Work Days – Probability of Completing in Spreading Window Dr. John Lory, State Nutrient Management Specialist, University of Missouri
2:30 p.m.	Sizing of Spreading Equipment Dr. Joe Zulovich, P.E., Agricultural Engineer, University of Missouri
3:00 p.m.	Break
3:15 p.m.	Student Problems – Matching Design Storage Period to Proposed Nutrient Management Plan John Hoehne and Drs. John Lory and Joe Zulovich, University of Missouri
4:45 p.m.	Overview of SPAW Dr. Joe Zulovich, P.E., Agricultural Engineer, University of Missouri
5:15 p.m.	Adjourn for day

Friday, November 15, 2012

	<u>Designing Manure Storage Structures</u>
8:00 a.m.	Sizing and Designing Concrete Manure Storage Tanks Dr. Joe Zulovich, P.E., Agricultural Engineer, University of Missouri
9:00 a.m.	Design and Construction Requirements for Earthen Storage Basins (Part 1) Dr. Joe Zulovich, P.E., and John Hoehne, P.E., University of Missouri
10:30 a.m.	Break
10:45 a.m.	Design and Construction Requirements for Earthen Storage Basins (Part 2) Dr. Joe Zulovich, P.E., and John Hoehne, P.E., University of Missouri
11:15 p.m.	Sizing and Designing an Anaerobic Lagoon with No Lot Runoff Dr. Joe Zulovich, P.E., and John Hoehne, P.E., University of Missouri
11:45 p.m.	Sizing and Designing an Anaerobic Lagoon with Lot Runoff Dr. Joe Zulovich, P.E., and John Hoehne, P.E., University of Missouri
12:15 p.m.	Lunch (provided)
	<u>Completing the Application</u>
1:00 p.m.	Mortality Management Options and Requirements Drs. Joe Zulovich and Teng Lim, and John Hoehne, University of Missouri
2:00 p.m.	Overview of Complete Construction Application George Fletcher, P.E., Environmental Engineer, MDNR
3:00 p.m.	Wrap up & Adjourn class

21 PDH credits can potentially be earned for registered professional engineers. Of the 21 PDH credits, 17 PDH credits are taught by registered professional engineers.

Preregistration and prepayment required.

Program sponsored by:



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