Continuing Education Course #327
An Introduction to Pond and Lake Dredging

1. What are some common desired outcomes for dredging a pond or a lake?
- a. Increased water depth
- b. Better water quality
- c. Control of Aquatic Invasive Species
- d. All of the above

2. Which is the least accurate hydrographic survey method?
- a. Multibeam
- b. Lead Line
- c. Traditional Land Survey
- d. Single Beam

3. At what angle does a multibeam transducer typically collect accurate data up to?
- a. 3 degrees
- b. 20 degrees
- c. 45 degrees
- d. 70 degrees

4. What is a good sampling device for sampling soft mucky organic soils?
- a. Russian peat corer
- b. Ponar
- c. Vibracore

5. What is a typical density of sediment samples to plan for a dredge project?
- a. 1 sample per 200 cy of material to be dredged
- b. 1 sample per 2000 cy of material to be dredged
- c. 1 sample per 1000 cy of material to be dredged
- d. 1 sample per 100 cy of material to be dredged

6. What slope is considered stable for dense glacial till soils?
- a. 3 horizontal to 1 vertical
- b. 2 horizontal to 1 vertical
- c. 1.5 horizontal to 1 vertical
- d. 1 horizontal to 1 vertical

7. Which design methodology is going to result in generating a large volume of sediment?
- a. Shallow slopes projected down to the bottom of a pond
- b. Steep slopes projected down to the bottom of a pond
- c. Shallow slopes projected to a target elevation above the bottom of the pond
- d. Steep slopes projected to a target elevation above the bottom of the pond

8. Which dredge methodology is best suited to larger lakes or reservoirs with a lot of water depth (>5 feet), large equipment access, but insufficient area to allow for a large dewatering operation?

- a. Mechanical Dredging
- b. Hydraulic Dredging
- c. Excavation in the dry

9. Which dredge methodology is best suited to water bodies with good water depth, uniform soils (free of cobbles and boulders) and an area suited for dewatering operations?

- a. Mechanical Dredging
- b. Hydraulic Dredging
- c. Excavation in the dry

10. Which dredge methodology is best suited for a small pond with relatively shallow water depths that has a single inflow and outflow point?

- a. Mechanical Dredging
- b. Hydraulic Dredging
- c. Excavation in the dry

11. What is the typical composition of solids in a hydraulic dredge slurry?

- a. Between 90% and 75%
- b. Between 50% and 60%
- c. Between 35% and 10%
- d. Between 10% and 0%

12. What is a common additive to be mixed in with dredge spoils to absorb residual water in a passive dewatering process?

- a. Road salt
- b. Water
- c. Quicklime
- d. Peat

13. What is a classic dewatering approach used for hydraulic dredging?

- a. In-situ dewatering
- b. Geo-tubes or geo-bags
- c. Filter Presses
- d. Clarification Systems

14. What a common type of active dewatering process?

- a. Filter Presses
- b. Filtration and Clarification systems
- c. Both A and B
- d. None of the above

15. What is the first on-site activity the contractor should undertake on a dredge project?

- a. Inflow diversion
- b. Installation of erosion controls
- c. Dredging
- d. Truck off sediments

16. Where is the best place for a contractor to perform re-fueling activities?

- a. In the pond
- b. In an upland lay-down area

- c. Along the access road
- d. Next to a natural resource area

17. What are some common materials used to create access routes for heavy equipment?
- a. Dense Graded Aggregate
- b. Trap Rock
- c. Swamp Mats
- d. All of the above

18. What is a good option for diverting an inflow stream for a dredge project?
- a. Installing a rigid conduit diversion
- b. Using pumps and hoses
- c. Installing a porta-dam or equivalent type structure

19. What is the absolute minimum slope for diverting an inflow source in order to keep positive drainage?
- a. 0.005 ft/ft
- b. 0.01 ft/ft
- c. 0.02 ft/ft
- d. 0.05 ft/ft

20. When is the best time to begin re-filling a waterbody after a dredge project?
- a. Once a survey shows the contractor has achieved the line and grade of the project
- b. Once the contractor believes he has met the design grade
- c. When a series of large storm events is forecast
- d. None of he above