PRELIMINARY ASSESSMENT CHECKLIST

The Environmental Protection Division requires a detailed hydrogeological investigation in the form of a workplan to evaluate the potential for ground subsidence and the development of sinkholes from dewatering when mining below the water table at limestone quarries. This checklist offers specific actions mining operators can take when first exploring a limestone site in an attempt to streamline the completion of the workplan. Before implementing any of the checklist items below, read and understand the workplan guidance document on EPD's website or contact the manager of the Surface Mining Unit.

I. Conversion of Exploration Boreholes into Permanent Monitoring Wells

A. Consult Georgia Registered Professional Geologist or Engineer Before Drilling
B. Core All Test Holes
C. Collect Detailed Boring Notes to Produce Boring Logs: Geologic Contacts, Fracture Trace Analysis (Depth, RQD, Karst Features, Weathered Zones, Water Bearing Zones, etc.)
D. Install Monitoring Wells with Oversight from PG or PE and Generate Well Construction Diagrams

II. Geology Evaluation

A. Expand Review of Publically Available Resources to include Physiographic Province in which Site is Located. Focus on Geologic Maps and Cross Sections
B. Begin Evaluating Borehole Data for Cross Sections of Quarry
C. Consider Field Mapping to Assist in the Generation of Geologic Map and Cross Sections
D. Research Documented Karst Features Associated with Local and Regional Geology

III. Hydrogeology Evaluation

A. Expand Review of Publically Available Resources to include Physiographic Province in which Site is Located. Focus on Hydrostratigraphy & Cross Sections, Potentiometric Maps, Aquifer Data, Rainfall Data, Etc.

B. Install Transducers. Begin Tabulating Groundwater Elevations from any Installed Monitoring Wells to Develop Potentiometric Maps and Groundwater Flow Maps

C. If an Existing Site, Begin Collecting Data on Storm Water and Quarry Water Management (Diversions, Pumping Rates, Pumping Schedules, Rainfall Data, Onsite Storage, Etc.) to Develop Water Balance Equations

D. Begin Evaluating Pump Test Design Based on Geology & Hydrogeology

IV. Environmental Inventory

A. Begin Review of Publically Available Resources to Locate All Environmentally Sensitive Areas Within Two-Mile Radius of Proposed Quarry
   1. Karst Features: Sinkholes, Cave Systems, Areas of Subsidence
   2. Water Supplies: Public Wells, Private Wells, Surface Water Intakes
   3. Surface Water Features: Streams, Springs, Ponds, Lakes, Wetlands

B. Begin Developing a Table and Map Showing All Environmentally Sensitive Areas

C. Consider Collecting Specific Data on Each Environmentally Sensitive Area if Readily Available
   1. Lakes/Ponds/Wetlands: Water Levels
   2. Streams: Flow Rates, Perennial or Ephemeral?, Trout Stream?, Gaining or Losing?, Temperature, Turbidity, pH, Dissolved Oxygen
   3. Private/Public Wells: Construction Details, Groundwater Elevations, Producing Formations, Pumping Rates, Water Uses, Turbidity
   4. Springs: Flow rates, Temperatures, Turbidity, pH, Dissolved Oxygen
   5. Surface Water Intakes: Use(s), Intake Rates
   6. Karst Features: Description and Location