

## **AQUIFER STORAGE AND RECOVERY (ASR) SYSTEM RECOVERY INITIATION INDEX**

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The Peace River Manasota Regional Water Supply Authority is a surface water utility that relies exclusively upon flow in the Peace River to meet customer needs. The utility stores raw water in off-stream reservoirs and can store treated drinking water in a system of 21 Aquifer Storage and Recovery (ASR) wells which have a combined storage capability of 6 billion gallons. The storage zone used for ASR at this location is the Suwannee Aquifer formation between an interval of 500 and 1,000 feet below land surface. This resource is used to help sustain the utility through droughts when flow in the Peace River is too low for withdrawal.

The water stored in ASR wells during recharge operations mixes with the native water found in the formation. The naturally occurring water at this location is fairly good, with moderate hardness, sulfate and total dissolved solids (TDS) of about 1,200 mg/L. Operational decisions about when to start ASR recovery entering a dry period or drought, can greatly impact system reliability and resulting water quality. So the decision of when to start ASR recovery operations is vitally important and difficult as well.

The utility developed an ASR Recovery Initiation Index in 2014 working with Florida WCA scientists. This is a decision tool that is useful for projecting optimal timing for when to initiate ASR Recovery. The decision tool combines ten variables comprised of seasonality, climate prediction products, soil moisture and both hydrologic and operational conditions. The resulting index is designed to synthesize these various data in a comprehensive manner that yields guidance on system operation.

**PRESENTER BIO:** Mr. Morris is a licensed Professional Engineer with 30 years of experience in water supply development and planning. He has numerous specialty certifications and is actively involved in the community with youth mentoring and leadership development.