

Title 785 - Chapter 32

Aquifer Storage and Recovery

Draft Permitting Process
Planning and Management Division

April 19th, 2022



OK SB 1219 - Section 1

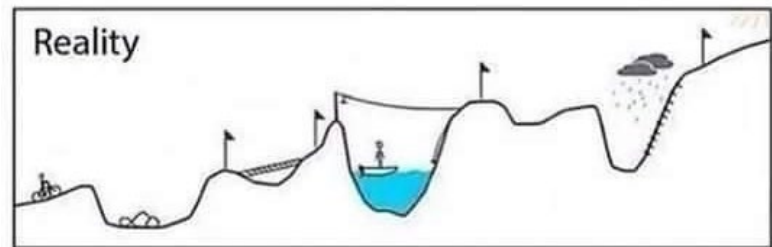
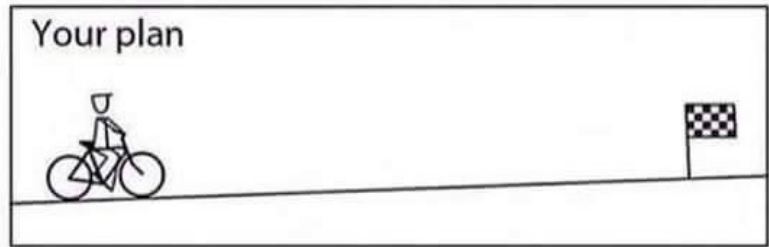
B. The Oklahoma Water Resources Board shall promulgate and implement rules for the taking and use of water stored in an aquifer pursuant to a site-specific aquifer storage and recovery plan, including the issuance of permits for the taking and use of such water and for the approval of such site-specific aquifer storage and recovery plans. Rules related to the approval of site-specific aquifer storage and recovery plans shall mandate, in addition to requirements necessary to demonstrate that the requested amount of stored water is available for recovery, the spacing of wells necessary to ensure that the storage and recovery of water permitted under this section shall not interfere with any domestic or permitted groundwater use in the basin.

Our Mission

Our primary duties and responsibilities include water use appropriation and permitting, water quality monitoring and standards, financial assistance for water/wastewater systems, dam safety, floodplain management, **water supply planning**, technical studies and research, and water resource mapping.

Keys to success

- Collect enough data so you know your system
- Interagency cooperation is key
- Comprehensive planning prevents failure
- **Flexibility** in the rules to accommodate storage and recovery strategies



General Requirements

- Applicant has legal access to the water stored in the aquifer
- If applicable, applicant must have water right permit for the source water
- Applicant must hold valid right to the lands where ASR is to take place or have documented permission
- Site-specific plan submitted to the Board
- In compliance with DEQ ASR rules
- Optional meeting with Board staff



Well Spacing

- ASR wells shall not interfere with any domestic or permitted groundwater use in the basin
- Bedrock GW basins, no new or proposed well(s) shall be drilled and completed within 1320 ft of authorized existing wells or proposed well locations
- A&T GW basins, no new or proposed well(s) shall be drilled and completed 660 ft of an authorized existing well or proposed well locations
- Well spacing provisions do not apply to plugged or abandoned wells
- ASR system shall not interfere with base flow to groundwater supplied springs and creeks in sensitive sole source GW basins where the MAY has been determined

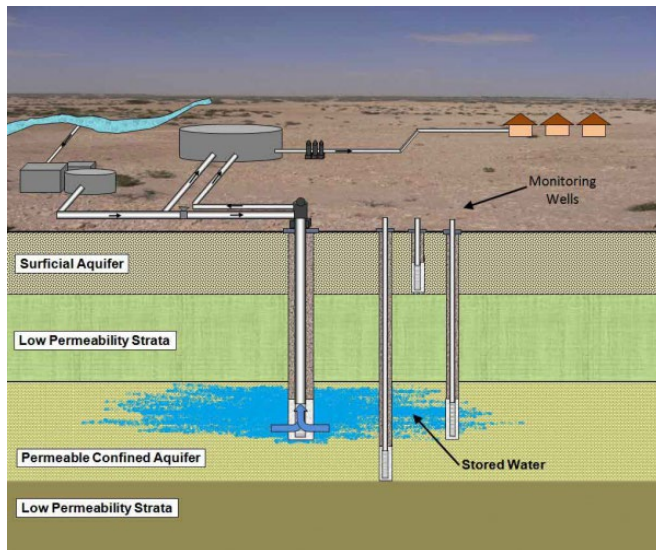
Site-specific Plan

An approvable site-specific aquifer storage and recovery plan shall include at a minimum...

- ASR area of hydrologic influence/effect
- Est. annual recharge and recovery volumes
- Infiltration rates
- System design schematic
- Method for determining proportion of source water at recovery
- Plan must account for potential changes in volume and quality of source water (solely to determine proportion of source water at recovery)

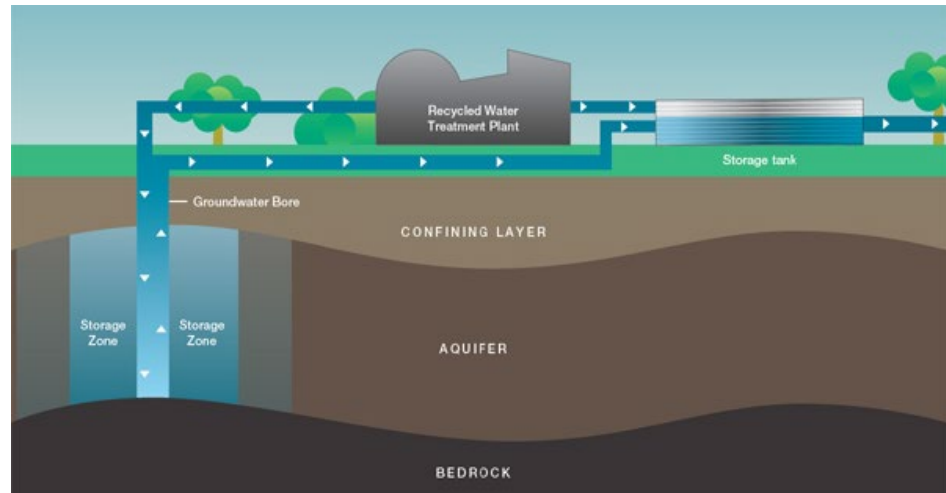
Site-specific Plan

- Land use within area of hydrologic influence/effect
- Location of surface water features
- Annual site monitoring plan



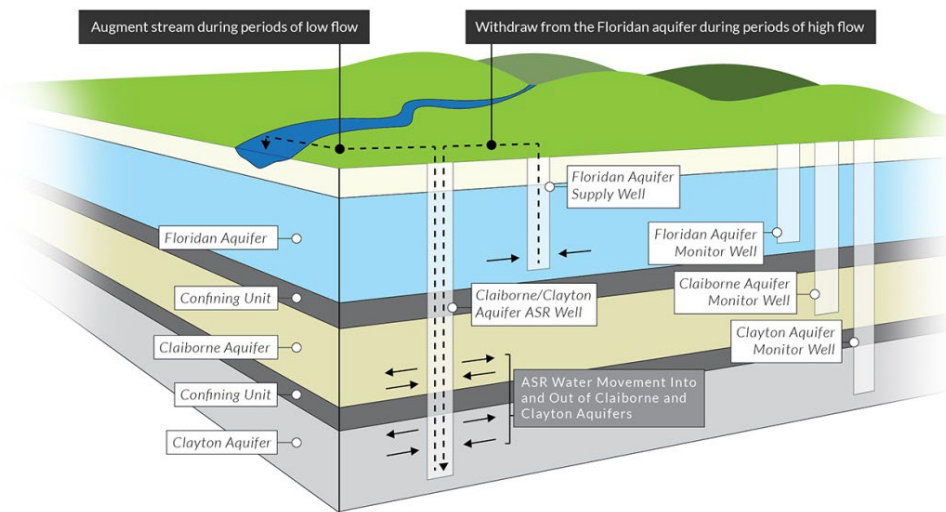
Site-specific Plan

- Description of the aquifer
 - Areal extent
 - Associate confining or semi-confining layer(s)
 - Other aquifers present
 - Lithology description, geochemistry, soil types, and well logs



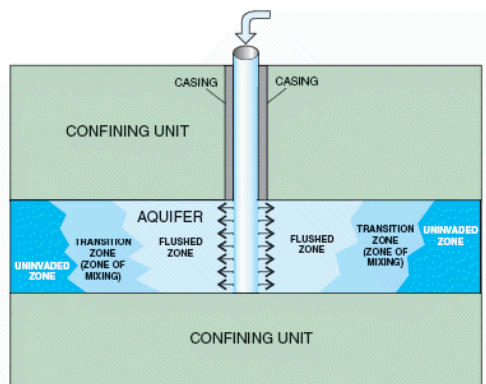
Site-specific Plan

- Groundwater information
 - Elevation of water table
 - Location of water rights and wells in the area of hydrologic influence
 - GW flow direction and gradient
 - Assessment of previous hydrologic data



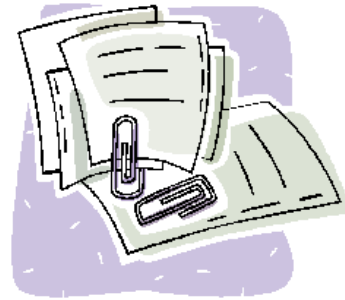
Site-specific Plan

- Site-specific hydrogeologic characteristics
 - Storage capacity
 - Hydraulic conductivity
 - Transmissivity
 - Porosity
 - Aquifer thickness and saturated thickness
 - Estimated annual recharge in inches per year



Submit ASR application & plan

- Forms for application to be provided by the Board.



- Site-specific ASR plan satisfying req's of OAC 785:32-3-2



Public Notice

- Notice of application provided by applicant in the county or counties of proposed ASR site
- Published once a week for two consecutive weeks
- Certified mail for all surface estate owners of lands located within 1,320' of ASR activity
- Adequate notice must be provided



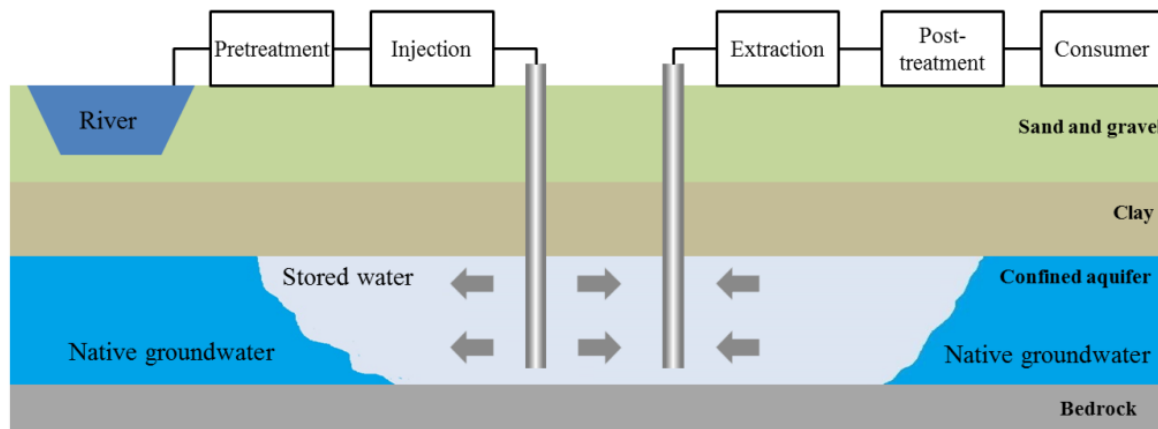
Protests and hearings

- Any interested person may protest the application and present evidence and testimony
- If protest is ruled valid per Section 785:4-5-4, a hearing will be set
- If there is no protest, applicant shall be advised and given opportunity for hearing if the application cannot be recommended for approval to the Board

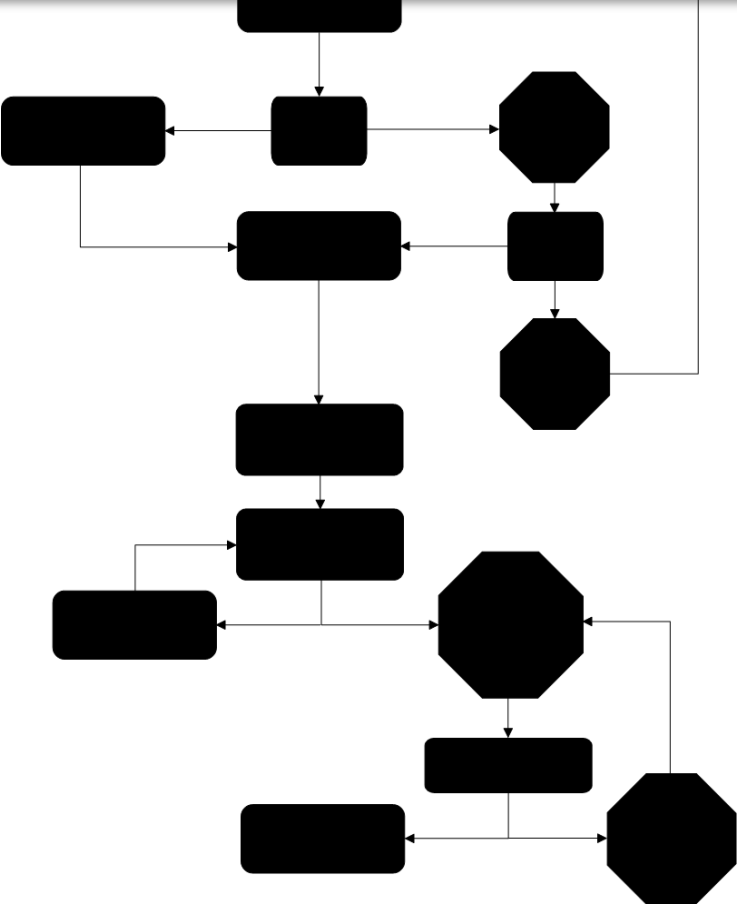


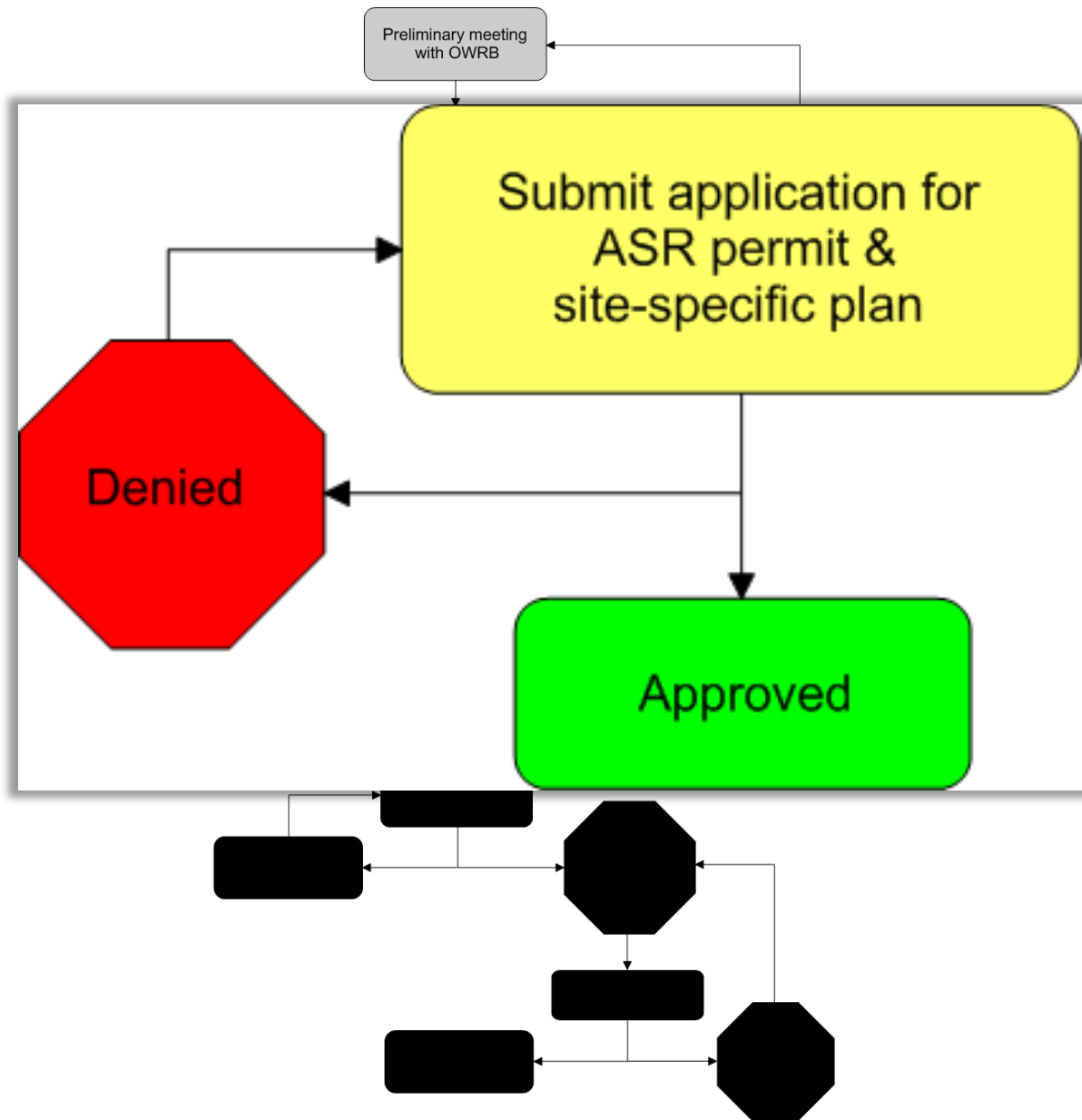
Annual Report

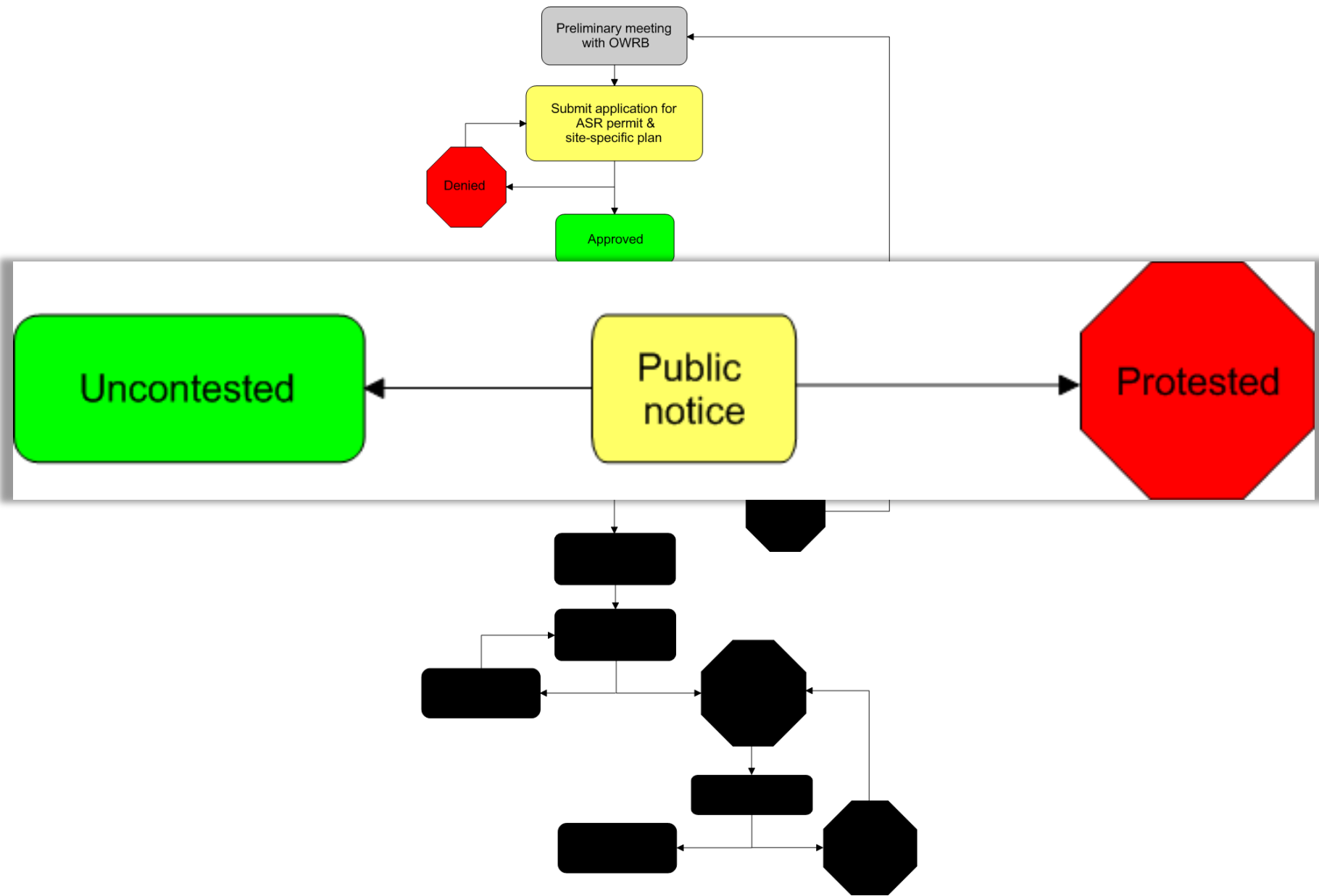
- Monitor groundwater flow direction and gradient
- Location of water delivery mechanisms
- Proportion of source water in recovery
- Effects of operation on water table elevation, aquifer leakage, and groundwater discharge rates
- Impacts of ASR operation on nearby surface water features

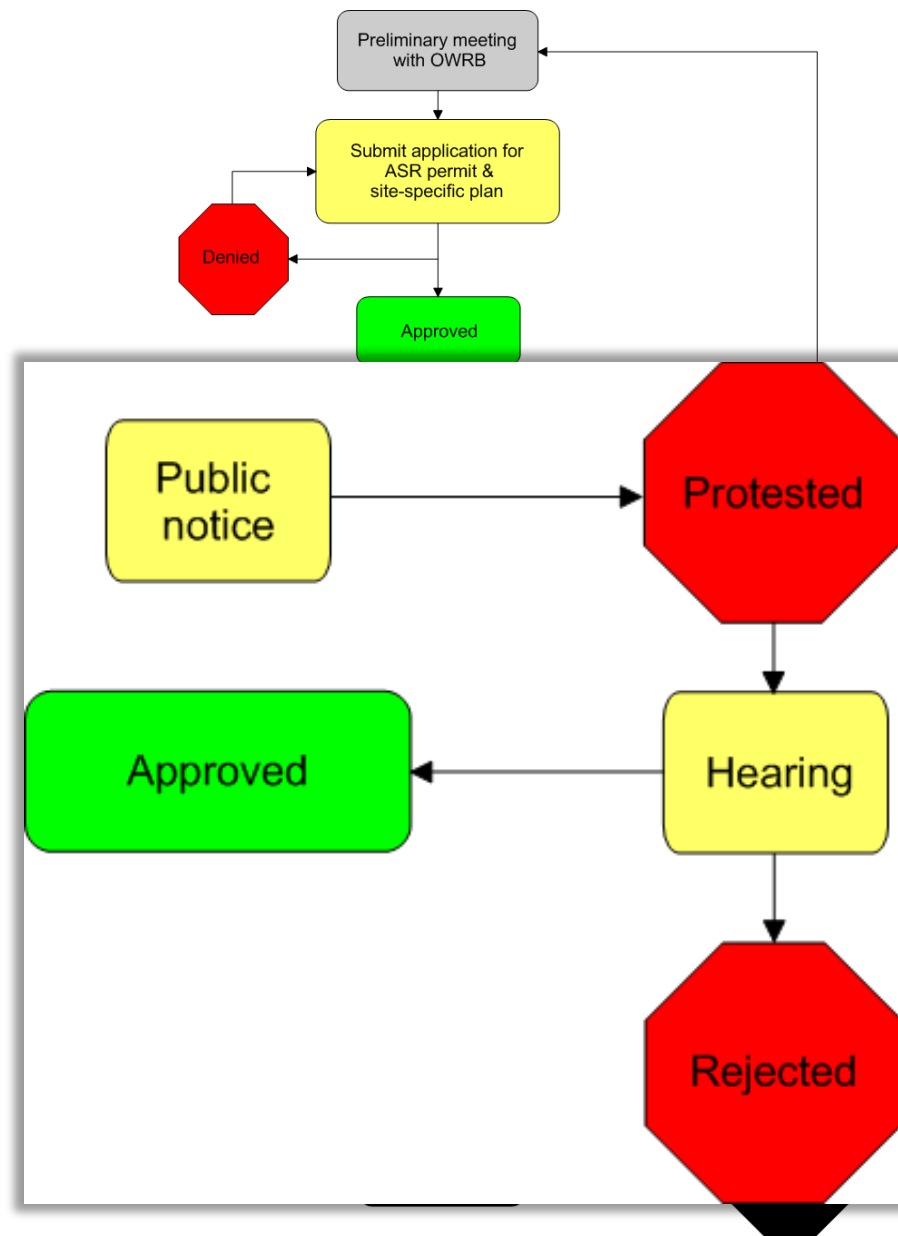


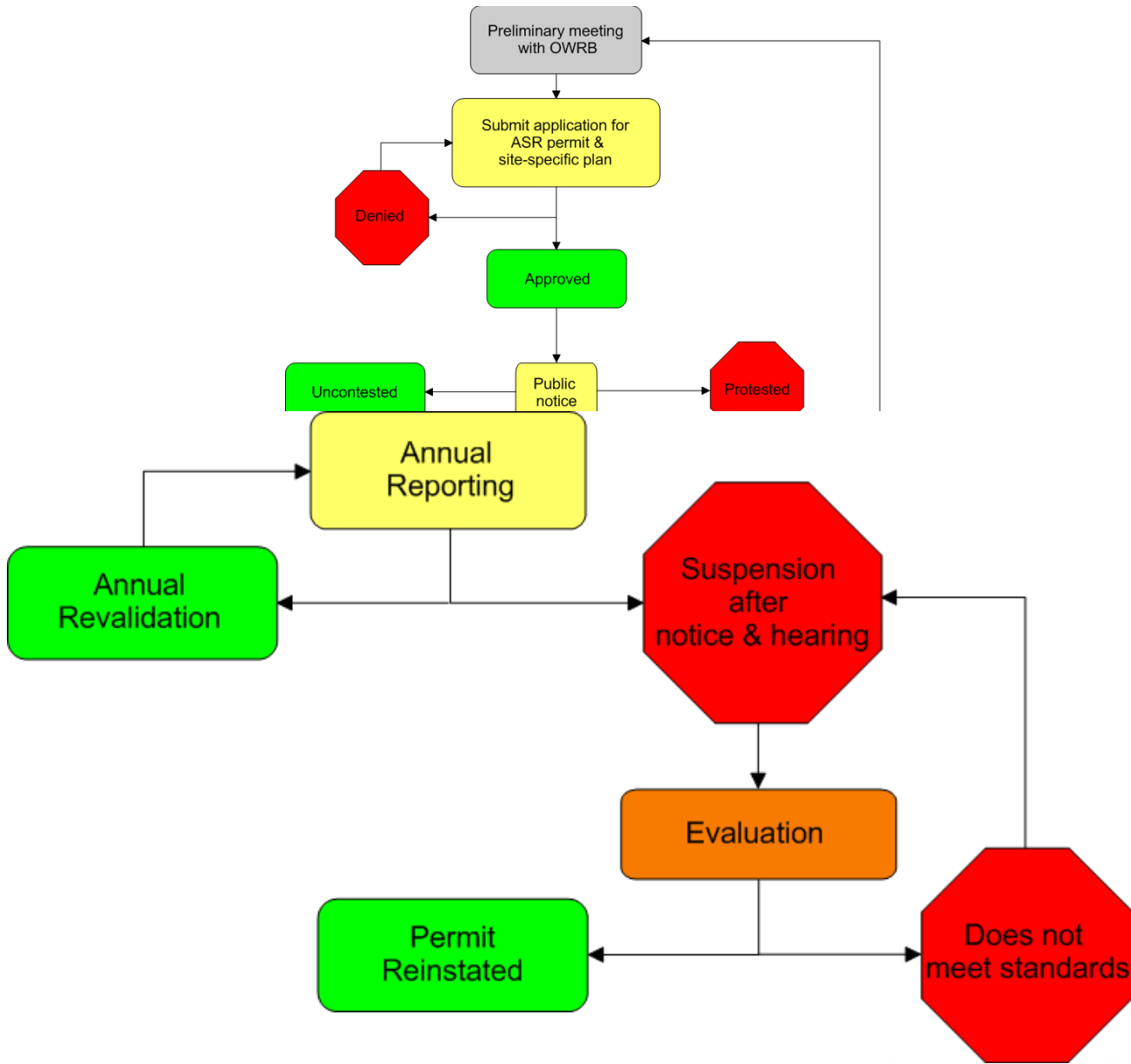
Preliminary Meeting with OWRB



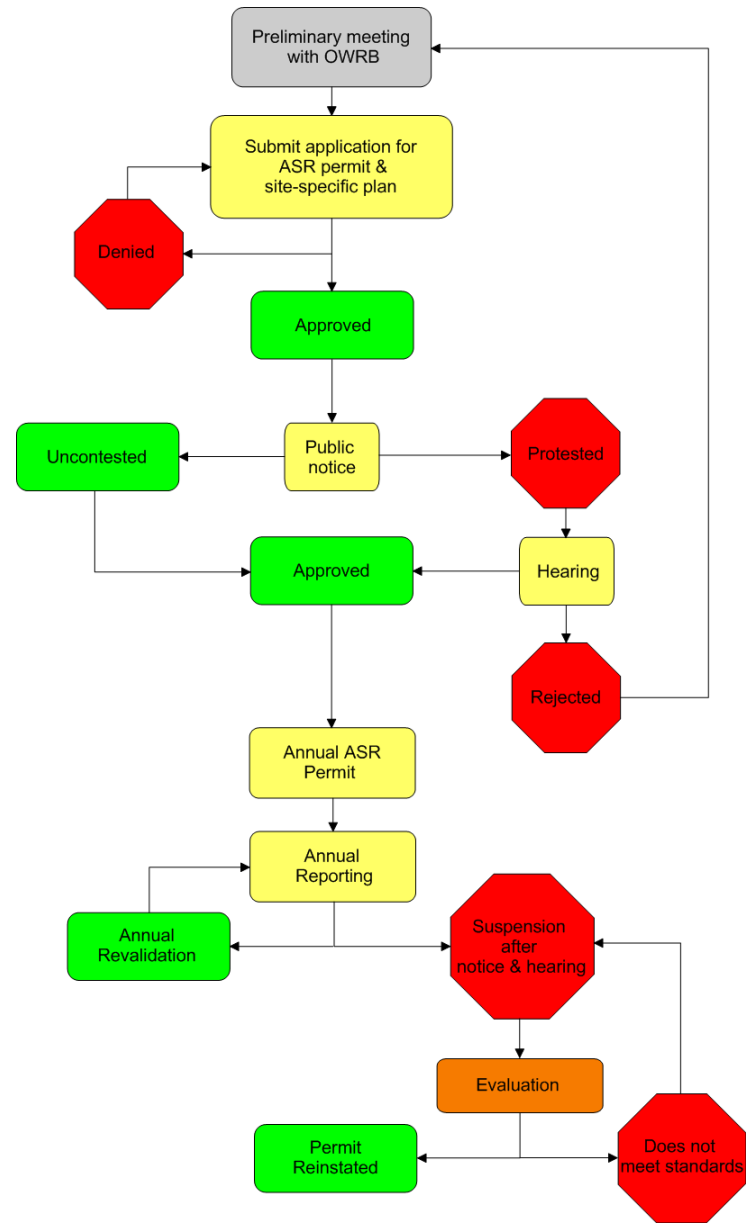






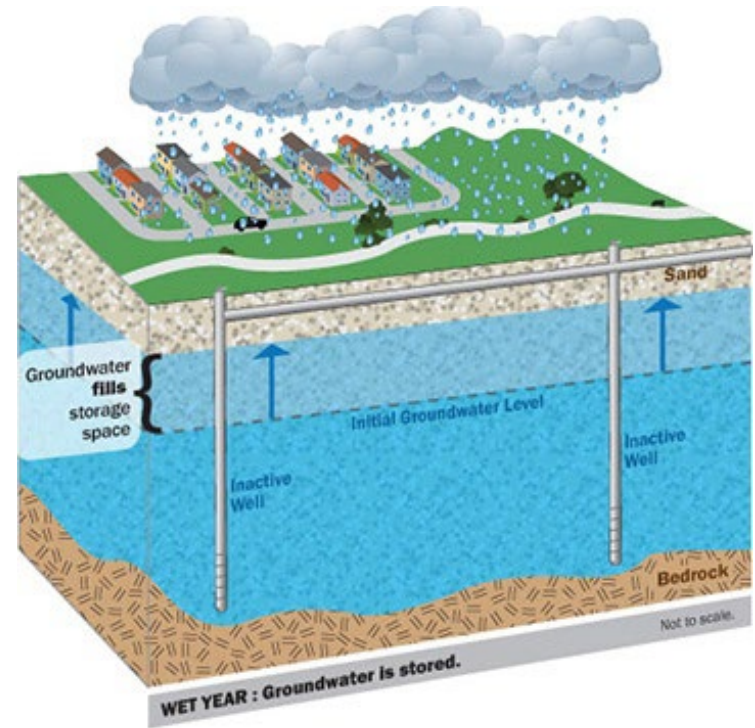


ASR Flow Chart



Closing Remarks

- Collaboration
- Data collection
- Research
- Analysis
- **Flexibility** in planning



Successful ASR operations are reliant upon the quality of these factors, ensuring Oklahomans continue to have reliable fresh water resources.

Questions & Discussion

Water Rights Administration

Oklahoma Water Resources Board

3800 North Classen Boulevard

Oklahoma City, OK 73118

Phone: 405.530.8800

Fax: 405.530.8900



References

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