

The Potomac Aquifer Recharge Oversight Committee
Meeting Minutes
September 10, 2026

Meeting attendance: James Bennett (V), Jay Bernas (V), Brian Campbell (V), Weedon Cloe (V), Eva Doty (V), Jason Early (V), Dan Holloway, Whitney Katchmark (chair), Abhishek Khan (V), Preston Kirby, Mark Kram (V), William Mann (V), Ivy Ozmon, Charles Paulin (V), R. Mack Pearce, Harold Post (V), Doug Powell (V), Jennifer Reitz, Gary Schafran, Jake Tabor (V), Bryant Thomas (V), Sydney Turner, Greg Voigt (V), Mark Widdowson.

Ms. Katchmark (HRPDC) called the meeting to order at 11:06 a.m. and led introductions.

The committee approved the March 30, 2026, and June 8, 2026 meeting summaries.

Dr. Mark Widdowson and Dr. Gary Schafran (PARML) provided updates on research, monitoring, laboratory activities, and public communication planning. PARML reported on its July 2026 annual SWIFT research workshop, where graduate students and researchers presented findings on managed aquifer recharge, groundwater chemistry, microbial processes, groundwater modeling, and vertical land motion. Research continues at the SWIFT Research Center (SRC) through push-pull tests, extended backflush studies, and experiments aimed at better understanding aquifer geochemistry, microbial activity, recharge well performance, and the causes of injection well clogging. PARML also discussed ongoing Soil Aquifer Treatment (SAT) column experiments and well-screen clogging studies intended to improve understanding of long-term recharge well performance under full-scale operations.

Dr. Widdowson reviewed the development of PARML's public-facing website and data dashboards. Planned features include water quality dashboards, groundwater-level visualizations, regional aquifer tracking tools, and an operational "digital twin" based on the RESCUE-C groundwater model. These tools are intended to provide transparent and accessible information for the public regarding SWIFT operations, groundwater conditions, and recharge water movement following startup at the James River SWIFT facility.

Dr. Schafran provided updates on PARML analytical laboratory operations and monitoring programs. PARML continues monthly sampling at the SRC, including monitoring wells and SAT wells, while also conducting monitoring at James River SWIFT. Laboratory staff recently completed an internal sample traceability audit and found operations generally conform to the laboratory Quality Management Manual, with only minor administrative findings unrelated to data quality. PARML has also expanded analytical methods, including bromate and chloride measurements, and continues development of additional capabilities and agreements with external laboratories needed for full-scale SWIFT monitoring.

Dr. Schafran presented preliminary findings regarding calcium behavior in SWIFT recharge water at the SRC. Monitoring data indicate calcium concentrations decrease between the injection point of recharge water and nearby monitoring locations. Monitoring has raised questions about potential geochemical reactions occurring in the aquifer. PARML is evaluating whether calcium removal may result from mineral precipitation or ion exchange processes. Additional analyses are underway before final conclusions are drawn.

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Dr. Sydney Turner (PARML) presented an update on the draft PARML Communications Plan. The purpose of the plan is to translate PARML's statutory responsibilities into a coordinated, transparent, and actionable communication framework that supports PAROC oversight and public understanding of SWIFT activities. The plan focuses on role clarity among partner organizations, transparency of monitoring data, inquiry management, coordination of communications, and information governance.

Dr. Turner reviewed progress made through a series of workshops involving HRSD, PARML and HRPDC staff. These workshops examined communication roles, information-sharing procedures, public inquiry management, media coordination, and response protocols. Multiple communication scenarios were tested to identify opportunities to improve communication pathways and ensure consistent messaging across organizations.

The draft framework includes a multi-tiered inquiry system, escalation pathways, and a SharePoint-based collaboration platform that contains citizen and media inquiry logs, as well as communication resources. The intent is to create a centralized record of public questions and responses, helping partner organizations identify recurring concerns and improve public-facing information resources over time. Development of the PARML website is ongoing and is intended to support both public access to information and collaboration among participating organizations.

Mr. Mack Pearce (HRSD) provided an extensive update on commissioning and startup activities at the James River SWIFT facility. HRSD reported substantial progress in incrementally bringing treatment processes online, allowing operators to gain familiarity with facility operations while refining treatment performance. Major systems now operating include flocculation, sedimentation, ozonation, biofiltration, and portions of the granular activated carbon (GAC) treatment train. Process Building 1 is operating successfully, while Process Building 2 continues startup and commissioning activities.

HRSD reported favorable treatment performance to date. Turbidity levels following flocculation and sedimentation have consistently outperformed design targets. Total organic carbon (TOC) removal has also exceeded expectations. The diversion of Bethel Landfill leachate to the York River Treatment Plant significantly reduced influent concentrations of PFOA, bromide, and 1,4-dioxane entering the James River Treatment Plant. Following diversion, PFOA concentrations declined substantially and recent samples of filter effluent showed non-detectable levels for all regulated PFAS compounds.

HRSD shared results from ozone treatment startup testing. Ozone doses of 3-4 mg/L achieved meaningful 1,4-dioxane reductions while maintaining bromate concentrations well below regulatory limits. Additional testing is planned to optimize hydrogen peroxide addition and further minimize bromate formation as treatment moves toward full-scale operation.

Construction and startup activities continue throughout the recharge well field. Well pumps, aeration systems, UV disinfection equipment, GAC contactors, and monitoring infrastructure are being installed and commissioned. HRSD plans a gradual startup approach in which recharge

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wells will be activated sequentially, beginning with Well 10 and increasing by approximately one well per week until minimum operational flow targets are achieved. This phased approach supports both operational reliability and seismic risk mitigation objectives. Baseline groundwater sampling and extensive monitoring activities are planned before recharge begins.

Mr. Brian Campbell (DEQ) presented updates on SWIFT-related improvements to DEQ's groundwater monitoring network. Following recommendations from DEQ's 2024 monitoring network assessment, DEQ and USGS upgraded six existing State Observation Wells near James River SWIFT from periodic monitoring to real-time monitoring. Additional chloride-monitoring wells are being installed north and south of the James River Treatment Plant, creating a real-time groundwater monitoring perimeter surrounding the James River SWIFT injection site. These enhancements will support detection of groundwater-level changes associated with recharge and improve future groundwater model calibration.

The completed upgrades include new real-time monitoring stations at the Moonlight, Russell Slade, and Magnet observation well sites, installation of replacement monitoring wells at Newport News Park, and construction of a new James River Bridge monitoring site. DEQ emphasized that these improvements will provide high-quality baseline and operational groundwater-level data as recharge operations begin.

Mr. Campbell presented a summary of DEQ's Senate Joint Resolution 25 report on groundwater supply east of Interstate 95. The study evaluated groundwater trends, groundwater availability, water-quality conditions, groundwater modeling results, and the effectiveness of Virginia's Ground Water Management Act of 1992. The report concluded that major historic withdrawals, caused groundwater levels within the Potomac Aquifer to decline dramatically and alter regional groundwater flow directions. Following the closure of the Franklin paper mill in 2010 and subsequent groundwater management actions, groundwater levels rebounded and stabilized across much of the region before beginning to level off and decline again around 2021. DEQ used analyses of data pre- and post-closure to assess changes in water level (pressure) propagation through the aquifer system.

DEQ's analysis found that pressure signals within the Potomac Aquifer propagate far more rapidly than groundwater itself, suggesting that managed aquifer recharge projects such as SWIFT could produce regional groundwater-level benefits even while recharge water remains localized. However, DEQ cautioned that these gains may be temporary if recharge operations cease. The report also concluded that the aquifer system currently has limited capacity for significant new groundwater withdrawals, with modeled sustainable additional withdrawals ranging from near zero in some regions to approximately 360,000 gallons per day under optimal conditions.

Groundwater-quality analyses showed that overall regional water quality has remained stable over time, although localized increases in chloride concentrations have been observed in areas influenced by long-term pumping. DEQ recommended legislative clarification of groundwater management authority, expanded support for monitoring and modeling programs, consideration of groundwater availability in local growth planning, and increased funding for groundwater management activities.

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Ms. Mitchell (HRSD) provided a brief overview of the regulatory drivers behind the SWIFT program. She explained that SWIFT is fundamental to HRSD's long-term nutrient reduction compliance strategy under Chesapeake Bay restoration requirements. Recharge of highly treated SWIFT water provides a means of achieving required nitrogen and phosphorus reductions while helping avoid costly nutrient removal upgrades at other HRSD treatment facilities. SWIFT projects also receive significant support through Virginia Water Quality Improvement Fund (WQIF) grants, which include recharge commitments and associated performance obligations. HRSD emphasized that these compliance drivers reinforce its long-term commitment to maintaining SWIFT operations.

No public comments were received. The meeting adjourned at 1:51 PM with the next PAROC meeting scheduled for November 20, 2026.

Approved:

Date:

Committee Chair

Committee Members:

- Mike Rolband, Director of Virginia DEQ
- Dr. Cameron Webb, Virginia State Health Commissioner
- Dr. William Mann, Governor Appointee
- Doug Powell, Governor Appointee
- Whitney Katchmark, HRPDC
- Dr. Stanley Grant, Director of Occoquan Watershed Monitoring Laboratory
- Dr. Mark Widdowson, Co-Director of the Potomac Aquifer Recharge Monitoring Lab
- Dr. Gary Schafran, Co-Director of the Potomac Aquifer Recharge Monitoring Lab

Non-voting members:

- Mark Bennett, Director of the Virginia and West Virginia Water Science Center, USGS
- Greg Voigt, Deputy Director, Water Division, US EPA Region 3