



6PPD Updates from the Stormwater Work Group and Ecology

SWG 6PPD Subgroup
February 5, 2025

Ecology Updates

- BMP Effectiveness Studies
- SAM Study Check in
- Conference Announcements
- Action Plan and Budget Request Updates
- ITRC document
- Stormwater Work Group Announcements

Snoqualmie Indian Tribe

- Characterizing runoff from a **parking lot** and **upstream development** outside of the Snoqualmie Casino
- Assessing the effectiveness of **unamended floating wetlands** and **grassy swales**
- Quality Assurance Project Plan - Adds 6PPDQ to their Nonpoint Source Pollution Monitoring Project



Photo: Snoqualmie Indian Tribe

EA Engineering Unamended Soils

- **Test unamended soils for potential to reduce 6PPDQ in stormwater**
 - Includes unamended soils from several sites in Washington that meeting the site suitability criteria from the manual
- **Test the reduction of 6PPDQ in soil-vegetation systems and evaluating potential uptake in vegetation**



NV5 6PPD 3 Phase Study

- **QAPP Fully Executed for the following phases:**
 - **Crumb Rubber Investigation**
 - Leachate test on crumb rubber samples of various ages
 - **Street Sweeping and Traffic Density Characterization**
 - Collecting street sweeping and stormwater samples from areas with different street sweeping frequencies, traffic, and land uses
- **Verification of BMP effectiveness**
 - Literature Review to identify BMPs to be sampled and monitored and Summary Report to help define next steps

Results– Pierce County Decant Facility

- **Project objectives**

- Conduct 6PPDQ sampling and analysis in different stages of stormwater treatment at Pierce County's Decant facility.
- Investigate 6PPDQ removal by solid/liquid separation and GAC filtration and interferences by co-contaminants such as TPH, other organics, and suspended solids.
- Evaluate the hydraulic impact on GAC filtration based on pump rate and empty bed contact time.

Results– Pierce County Decant Facility



Dumping Pad



Pre-settling (Moat)



GAC Filtration



Flocculation

Results– Pierce County Decant Facility

6PPD-Quinone Concentration in Treatment Processes

6PPD-Quinone (ng/L)			
Sample Date	Pre-settling Tank	Flocculation Tank	GAC
7/11/2024	83.3	49.7	1.88
7/25/2024	89	53.7	2.05
8/8/2024	31.4	46.6	2.09
8/22/2024	52.5	31.6	2.2
9/5/2024	143	29.4	2.03
9/19/2024	59.7	39.1	2.61
Note: First sample taken on 7/11/2024 was from existing GAC bed that has been in service for 2 years. All other samples are taken after a new GAC media bed was put in service.			

Results– Pierce County Decant Facility

6PPD-Quinone Removal from Pre-settling Tank to Flocculation

6PPD-Quinone (ng/L)			
Sample Date	Pre-settling Tank	Flocculation Tank	% Removal
7/11/2024	83.3	49.7	40%
7/25/2024	89	53.7	40%
8/22/2024	52.5	31.6	40%
9/5/2024	143	29.4	79%
9/19/2024	59.7	39.1	35%

Results– Pierce County Decant Facility

6PPD-Quinone Removal from Flocculation to GAC Filtration

6PPD-Quinone (ng/L)			
Sample Date	Flocculation Tank	GAC	% Removal
7/11/2024	49.7	1.88	96%
7/25/2024	53.7	2.05	96%
8/22/2024	31.6	2.2	93%
9/5/2024	29.4	2.03	93%
9/19/2024	39.1	2.61	93%

Results– Pierce County Decant Facility

Overall 6PPD-Quinone Removal

6PPD-Quinone (ng/L)			
Sample Date	Pre-settling Tank	GAC	% Removal
7/11/2024	83.3	1.88	98%
7/25/2024	89	2.05	98%
8/22/2024	52.5	2.2	96%
9/5/2024	143	2.03	99%
9/19/2024	59.7	2.61	96%

Results– Pierce County Decant Facility

- Initial treatment stages (settling and flocculation) exhibited limited 6PPDQ removal, primarily affecting 6PPDQ partitioned in the solid phase.
- Conversely, GAC filtration demonstrated significant removal of dissolved 6PPDQ.
- The combined treatment process consistently reduced 6PPDQ levels below 3 ng/L, achieving an average removal efficiency exceeding 96%.

SAM 6PPD Project Updates

- Characterization of Stormwater Transport of Contaminants of Emerging Concern
- Longevity biological protection using bioretention
- Paired watershed retrofit and restoration
- Street Sweeping load analysis

Conferences

- [PCNWA Spring Summit](#)
 - Date: February 26 and 27
 - University of Washington Seattle
- [Green Infrastructure Summit](#)
 - Date: March 14
 - Cascadia College
- [Washington State Municipal Stormwater Conference](#) (MuniCon)
 - Dates: May 20 – May 21
 - Location: Hilton Vancouver Washington

6PPD Action Plan

- A bottom-up approach to shaping **state agency budget requests** about 6PPD for the 2025 – 2027 biennium
- Now implementing actions in the 2025-2027 budget package and assessing additional recommendations
- Visit the [6PPD Action Plan Website](#) for more information

6PPD Action Plan

- **Publications**

- [Legislative Report](#)
 - [Data Gaps, Research Needs, and Recommendations](#)
 - [Ecology's Legislative Focus Sheet](#)
- All budget requests have been included in former Governor Inslee's budget package; pending Governor Ferguson's and the Legislative budget

6PPD Action Plan: Budget Requests

- **Support stormwater permit and manual implementation**
 - Integrating 6PPD research into stormwater manuals
 - Spending freeze has affected our hiring for positions
- **6PPD stormwater best management practices effectiveness research**
 - Will be holding a forum at the Spring 6PPD Subgroup meeting to define research priorities
 - We are looking to fund research partners!
Contact madison.bristol@ecy.wa.gov.

Interstate Technology and Regulatory Council (ITRC)

- Published the **first nationwide guidance document on 6PPD** in Fall 2024
- <https://6ppd.itrcweb.org/>

Stormwater Work Group (SWG)

- Four meetings scheduled for 2025: February 12, May 14, September 10, November 12
- At the [SWG meeting next week](#), there will be a follow-up conversation about **6PPD lab accreditation** and how it impacts the work of the SWG and the Stormwater Action Monitoring Collective
- For more details about the SWG, visit the [SWG Website](#) or contact madison.bristol@ecy.wa.gov