
Final Plan for Management of Lead Shot

Sunnydell Shooting Range

292 Dryke Road, Sequim WA

Revised September 2025

(To address Ecology's comment dated July 2nd 2025)

The Sunnyside Shooting Range is located in Sequim WA as shown on Figure 1. It has been in operation since 1967. Sunnyside is considered a low volume shooting facility. It is only open part time. It purchases approximately 100,000 clay targets per year compared to shooting ranges in the Seattle area which throw one million or more targets per year. These targets are thrown from fixed stations within four active shooting areas shown on Figure 2. Figure 2 also delineates the area where shot fall occurs as well as backstop locations. The shot fall areas total approximately 5 acres in size (or 220,000 sq ft). At one location, the upper pond, shot fall primarily occurs in the pond waters. To minimize the release of lead leaching into the environment from the shot fall areas the following activities will be implemented.

1. *Avoid shooting into wetlands.* - The lower pond area is the only classified wetland area of the site. This area was used in the past for duck hunting and dog training. Shooting has not occurred here for many years and none will occur in the future. Soil cleanup along the banks of the pond occurred here as part of the cleanup action in 2013.
2. *Prevent off-site migration of lead through groundwater and surface water runoff.* - This is occurring through the regular monitoring of groundwater which shows no impact from lead shot leaching. There is no surface water runoff at the site.
3. *Maintain soil pH between 6.5 and 8.5 in the shot fall zone.* Soil pH was recently tested in the four active shooting areas and all samples were of neutral pH (7.0). The neutral pH does not require soil amendment to lower the risk of lead leaching. Soil pH will be checked annually and recorded. If soil pH were to fall outside of the limits, then soil amendments would be added to bring the pH within limits. The soil amendments to be used could range from lime amendments (if soil pH were low) to peat moss or sulfur (if soil pH were high).
4. *Conduct lead recovery.*

According to the Cleanup Action Plan, in 2012, Cascade Reclamation spent six months reclaiming lead from the shot fall zone at four shooting areas (a small hydraulic dredge and sluice was used to remove lead from the pond). This was the first time lead had been reclaimed since the range opened in 1967. Cascade recovered 108 tons of lead shot in total. Cascade was a Washington company that is no longer in business. There currently are no companies in the Pacific Northwest companies who provide lead shot reclamation services.

The time frame in which commercial lead reclamation is justified is by estimating the tonnage of lead shot available for recovery. This can be estimated using the amount of lead in each shot shell fired assuming one shot per target thrown. A shot shell typically contains 1 oz of lead. Therefore, 100,000 targets thrown per year implies 100,000 oz of lead shot (which is equivalent to 6,250 lbs or 3.125 tons). Given that it has been over 12 years since the prior reclamation in 2012, the tonnage that can be reclaimed is approximately 40 tons (80,000 lbs). Additionally, the density of lead shot per square foot of shot fall area can be estimated. Sunnyside's 220,000 sq feet of shot fall area implies an overall density of roughly 0.36 pounds of lead shot per square foot).

The minimum tonnage of lead shot that warrants commercial reclamation at shooting ranges typically depends on the price for scrap lead and other operational factors, with the mobilization cost of the heavy equipment required being one of the highest. Based on conversations with other shooting ranges in Washington, a minimum of 60 to 100 tons is required to make it financially feasible to perform reclamation assuming local contractors, and a higher tonnage would be required for out of state contractors. This tonnage is consistent with EPA's Best Management Practices for Shooting Ranges document which

states (Chapter 3, page 111-16)

" For shotgun ranges, tracking the number of targets thrown can help indicate when the lead shot should be reclaimed. For example, considering environmental issues, the market for scrap lead and common cleanup methods, one source indicated that when a range has thrown at least 250,000 to 1,000,000 targets depending on the shooting area, reclamation of the lead shot is encouraged. Another reclaimer indicated that if at least two pounds of lead per square foot have accumulated on the range, reclamation is recommended"

The low concentration of lead shot currently at the site and lack of local contractors makes commercial lead reclamation difficult to perform at the current time. All current lead reclamation contractors are located outside of Washington State. However, once lead accumulations reach an estimated 60 tons, Sunnyside will seek out bids for lead reclamation from reliable contractors and inform Ecology of the results of the bids. In the meantime, Sunnyside will follow the EPA's Best Management Practices for Shooting Ranges and attempt to reclaim lead shot manually using the following hand raking procedure identified in Chapter 3.3.1 of that document.

The EPA's guidance recommends sifting and raking activities, which will occur at Sunnyside in the most concentrated shot fall zone at each shooting area, less the upper pond which is not amenable to raking. Basically, the process consists of raking the soil with a yard rake in vegetation free areas into small piles. Once the soil has been raked and collected, it will be passed through a standard 3/16 inch screen to remove the large particles and allow the lead shot sized particles to pass through the screen. The sifted material (those not captured by the 3/16 inch screen) should then be passed through a 5/100 inch screen to capture the lead shot. This process will also allow fine sand and silt to pass through the screen. The screens will be mounted on a frame for support. The collected lead will be stored in waterproof plastic containers prior to delivery to a scrap metal yard or given away to shooters for use in reloading. Hand raking and sifting will occur annually during a spell of dry weather each summer or fall. Sunnyside has no paid staff and so will rely on frequent shooter or friends or family to assist with reclamation.

Records will be maintained as to the areas where hand raking occurred and when and the amount of lead recovered.

FIGURES



Figure 1. Map showing the approximate location of the Site (red circle) relative to the town of Sequim, Washington. The project is located in Clallam County, Washington. The blue area in the northern portion of this map is the Strait of Juan De Fuca.

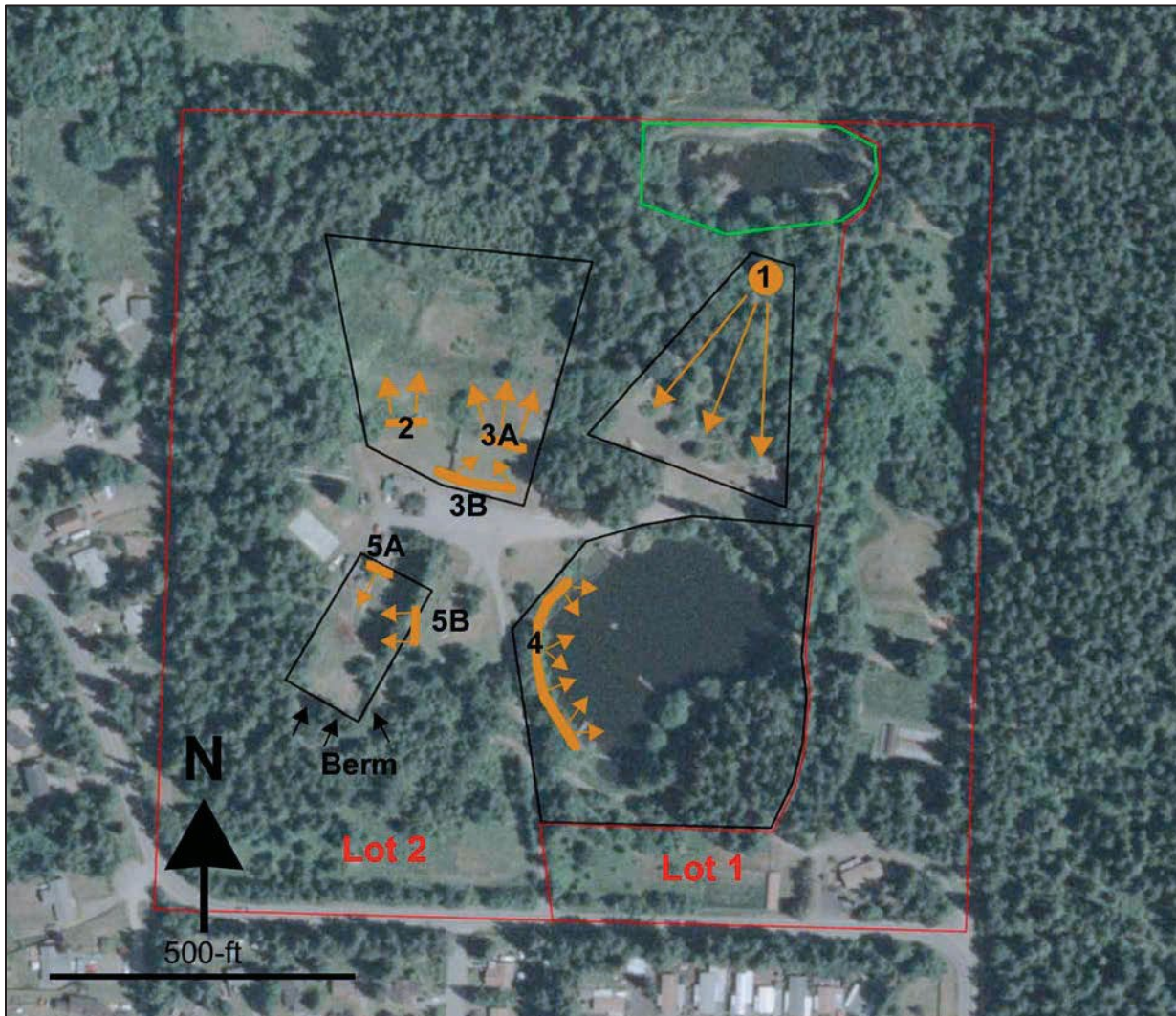


Figure 2. Map showing locations of Active Shooting Range Management Areas (4 black polygons); shooting locations (1, 2, 3A, 3B, 4, 5A, 5B); shooting directions (orange arrows); Lower Pond Management Area (green polygon), and Lots 1 and 2 (red polygons). There are berms located at the south and southeast sides of Management Area 5. These berms prevent stray shot. The area outside of the black and green polygons in Lot 2 comprise the Non-Shooting Management Areas. The text describes BMPs and an institutional control for these management areas. Lot 1 will be managed separately and is excluded from these BMPs and institutional control.

