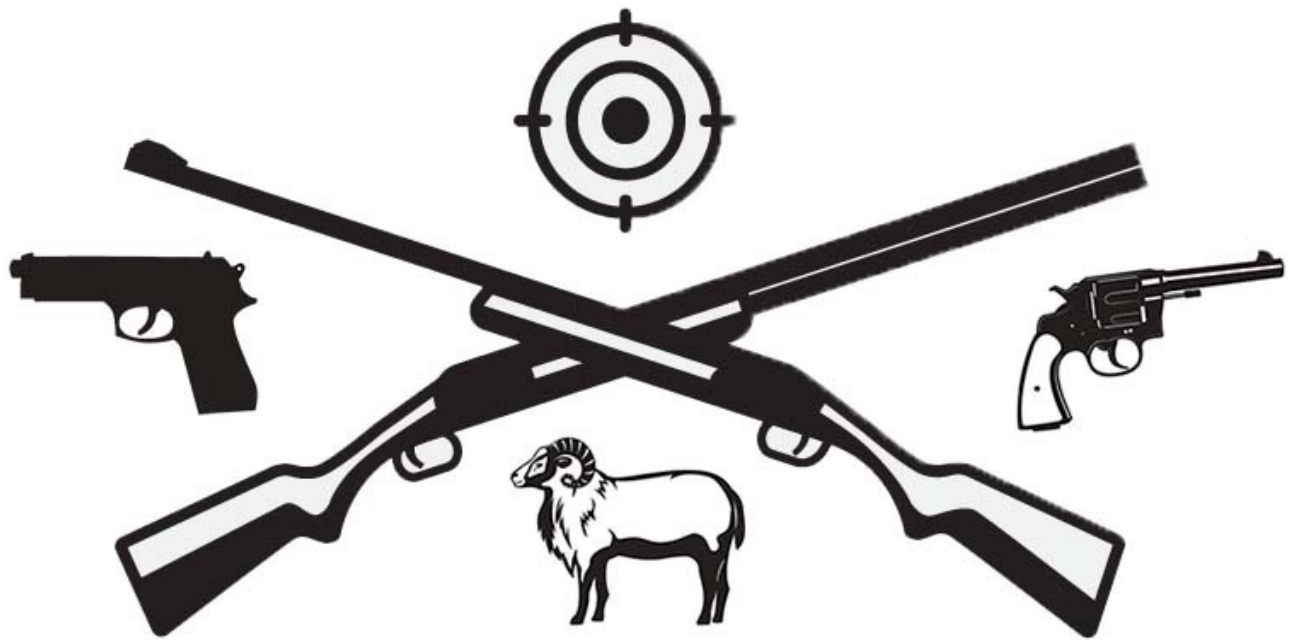

SAVANNAH RIVER RIFLE & PISTOL CLUB

ENVIRONMENTAL STEWARDSHIP PLAN



Prepared for: SRR&PC Executive Committee

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Approved by the Executive Committee, September 27, 2022

SAVANNAH RIVER RIFLE & PISTOL CLUB ENVIRONMENTAL STEWARDSHIP PLAN

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1.0 INTRODUCTION

Mission Statement

The Savannah River Rifle & Pistol Club (SRR&PC) is committed to managing its outdoor shooting facilities in a manner that protects the environment and assures future generations the opportunity to participate in the shooting sports well into the future.

Purpose

- Identify issues of potential environmental concern.
- Identify, evaluate and prioritize appropriate actions to manage issues identified.
- Select appropriate Best Management Practices (BMP's) for implementation.
- Develop a BMP implementation schedule.
- Monitor and measure Environmental Stewardship Plan (ESP) implementation.
- Annually evaluate progress in achieving ESP goals and make any adjustments needed.

Goals

- Prevent off-site migration of lead through groundwater and surface water runoff.
- Maintain soil pH between 6.5 and 7.5 in shot fall zones.
- Discourage ingestion of lead by wildlife.

Regulations

Lead is not considered hazardous waste subject to Resource Conservation and Recovery Act (RCRA) at the time it is discharged from a firearm because it is being utilized for its intended purpose. Consequently, a RCRA permit is not required to operate a shooting range. However, spent lead (bullets or shot) are subject to the broader definition of solid waste. As such, spent shot and bullets may potentially be subject to RCRA statutory authority, including Section 7002 and 7003. In general, the following points serve as guidance regarding RCRA and how it applies to SRR&PC ranges:

- If the spent lead is recycled, it is considered scrap metal pursuant to 40 Code of Federal Regulations (CFR) 261.6(a)(3)(ii) and is therefore exempt from RCRA regulation.
- After the removal contractor/reclaimer applies standard BMP's to separate lead from soil, the soil may be placed back on the range without further treatment; however, lead may still exist in the soil in relatively high concentrations and may benefit from treatment with phosphate material.

The collected lead shot or bullets are excluded from RCRA regulation, and need not be manifested, nor does the range need to obtain a RCRA generator number (i.e., the range is not a hazardous waste "generator"), provided that the lead is recycled or reused. The transporter does not need to have a RCRA ID number. However, the club

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should retain records of shipments of lead from the range, and the facilities to which they were sent, in order to demonstrate (if necessary) that the lead was actually recycled.

Sections 7002 and 7003 of RCRA allow the US EPA, states, or citizens, using a civil lawsuit, to compel cleanup of solid waste (such as lead) posing actual or potentially imminent and substantial endangerment. Such action can be sought whether the range is in operation or closed, and is based solely on a determination that real or potential harm is being posed by the range to public health or the environment. Since the risk of lead migrating increases with time and precipitation, ranges that have not removed lead are more likely candidates for government action or civil lawsuits under RCRA Section 7003. Therefore, it is advisable to remove accumulated lead periodically and follow appropriate BMP's to minimize the threat of lead migration.

Lead management has several benefits, including:

- Minimize risk to human health and the environment of range operations
- Reduce potential for liability from agency actions or citizen lawsuits
- Reduce cost and scope of cleanup if the range were to close
- Potential economic benefit from recycling of lead
- Enhance the status of the club as a member of the community and good steward of the environment

If BMP's are followed to remove and recycle lead, then hazardous waste regulations do not apply. The soil may remain on site, assuming no other environmental issues exist. To this end, the SRR&PC should ensure that lead levels in the area immediately surrounding the water well (located on the Right Pistol Range) remain within regulatory limits and should verify through sampling that the water quality is acceptable for its intended purpose.

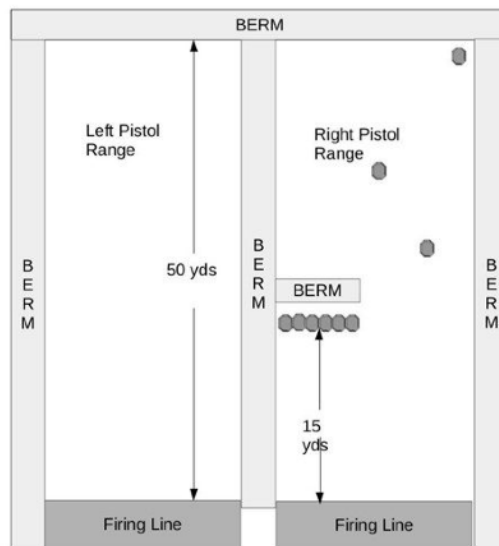
2.0 SITE ASSESSMENT

Description of Ranges

The outdoor range is located at 1184 Kirkland Street, Batesburg, SC. From I-20, take Exit 33 south for about 1 mile. Turn left on Old Chalk Bed Road. Go approximately 3 miles on Old Chalk Bed Road to the first road that actually “crosses” Old Chalk Bed Road. To the left this is named “Thunder Road.”, to the right it is “Kirkland Street.” Turn right on to Kirkland Street. The entrance to the range is about 200 yards on the left. The range property consists of approximately 38 acres total with three embedded ranges. The property surrounding the firing ranges is wooded and is used as a buffer. No firing is allowed except into the berms on each range.

Two 50 yard pistol ranges (referred to as the Left and Right Pistol Ranges when facing downrange) were constructed in 2003 when the club membership was about 80. Rules applying to each of the two pistol ranges are provided in the General Range Rules section of the Range Standard Operating Procedure (SOP). There is a water well near the right pistol range in the parking lot. Trash receptacles are located in each firing bay and a large trash dumpster (which is emptied frequently) is located across the parking area from the pistol bays. A “Port-O-Let” is located at the pistol ranges.

The pistol ranges are surrounded on three sides by berms. No one is allowed on the berms when the range is open. If the range has been properly closed for maintenance, then authorized maintenance personnel only are permitted on the berms. In addition, members are required by the SOP to ensure that fired rounds impact berms.



Notes:
Targets shown are for illustration purposes only
and do not represent actual locations.
Drawing is not to scale.

Parking Area

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Left Pistol Range

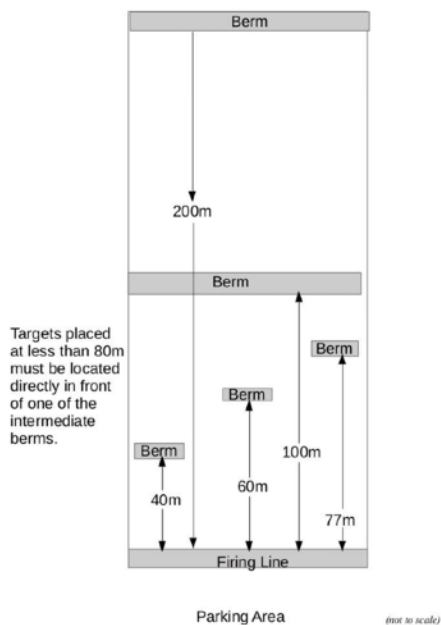


Right Pistol Range



The rifle range was initially constructed in 1994 (when club membership was 50 people) as a 100 yard range, but was reconstructed and converted to a 200 meter range in 2017. This range has intermediate berms at 40, 60 77, and 100 meters and a covered firing line with storage at each end. Firing is controlled by the SOP and rounds are required to impact the berm. There is a water faucet at the rifle range (fed from the well at the Right Pistol Range). For purposes of this environmental stewardship plan, the Rifle Range is considered new enough (only a few years of operations in the current configuration) and usage is lighter than that of the pistol ranges. Consequently, there is little/no environmental concern associated with the Rifle Range at this time. The Rifle Range will be monitored and appropriate actions taken as conditions potentially warrant in the future.

Rifle Range



Existing Environmental Conditions

Soils at the SRR&PC Pistol Ranges consist predominantly of Lakeland Sand (LaB), which is reported to have a high water transmissibility rate (6 - 20 in/hr). However, sands on the berms appear to be mixed with some denser soils, such as clay, which would tend to improve consolidation and slope stability. Some minor amounts of kaolin (likely imported from behind the rifle range berm) were also noted clumped in the berm soil. The soils in the vicinity of the Left and Right Pistol Ranges (berms and flat “floor” areas) are well drained, fine sandy to sandy/clayey soils. The upper regions of the soil are light tan in color with an orangish tint, with many fine particles and are moderately acidic (pH 5.0-5.5).

Soils at the Rifle Range are predominantly Udorthents-Ardents Complex Loamy and Sandy Soils (UaB), which is a sandy clay loam material, is moderately well drained (transmissibility rate of less than 2 in/hr).

Mild to moderate erosion is evident on Pistol Range Berms due to runoff of rainwater, resulting in small gullies in the berms and sandy depositions at the toe of each berm. There is no surface water on the SRR&PC ranges. The nearest stormwater drainage to firing ranges is the ditch located about 100 ft. to the right of the Right Pistol Range, which is sandy and does not contain a permanent stream. The average rainfall at the range is approximately 48 inches per year. There is no significant stormwater runoff from the range property, as the site has a large amount of pervious area and is surrounded by native trees and undergrowth.

There is wildlife in the vicinity of the SRR&PC property, but the area is not frequented by much wildlife, due to daily human presence and the firing of guns on the ranges. Wildlife sightings are infrequent, and those that have been reported consist of an occasional deer or fox on the fringes of the forested area away from firing ranges.

There is a deep water well on the SRR&PC property (located in the Right Pistol Range parking lot). Faucets are provided in the Right Pistol Range and Rifle Range parking lots. The water from the well has not been tested for potability, so action may be needed to verify the water quality. The well and faucets from the well are located away from shooting range berms and runoff pathways.

The relative risk of lead exposure to people is low where BMP's are in place. Users of the shooting ranges and any lead retrieval/recycling personnel should follow the recommendations of the National Institute for Occupational Safety and Health publication, “Reducing Exposure to Lead and Noise at Outdoor Firing Ranges.” Generally, at outdoor ranges, lead issues are limited to surface and near-surface soils.

3.0 OUTDOOR RANGE ENVIRONMENTAL PLAN

Environmental Action Plan

Through a sound lead management program, the SRR&PC can reduce potential for lead exposure to range users, wildlife, and the environment. The SRR&PC ranges will be operated in a safe and environmentally responsible manner. Environmental actions planned or implemented are as follows:

Responsible	Action	Expected Response	Schedule
EC and Member Lead Management Committee	Obtain and analyze soil samples on pistol ranges and drainage paths for lead and pH to help guide appropriate actions	Identify soils with elevated lead and potential for lead transport in the soil	9/30/2022 and semi-annually thereafter
EC and Contractor	Obtain and analyze water sample from well on Right Pistol Range	Identify any potential contaminant and assure proper usage of the water	9/30/2022 and annually thereafter
Executive Officer	Provide for general site cleanup and maintenance and ensure good housekeeping on all ranges.	Assure ranges are maintained in good order, berms maintained to capture lead projectiles and minimize erosion, fence lines and forested areas are maintained properly.	Continuously, with monthly updates to EC
EC and Member Lead Management Committee	Establish and maintain a specific plan for environmental management actions to reduce exposure and prevent migration of lead	Prepare and approve an ESP that is consistent with US EPA guidance and addresses SRR&PC needs. Conduct a periodic review to maintain the plan considering changing conditions.	11/30/2022 (Initial issue) and annual update thereafter
EC and Member Fence Committee	Reduce potential for access and potential lead exposure and/or safety/health issues to the public and transient wildlife	Fence and gate range property and install appropriate signs to minimize potential for unintentional access to the ranges by the public or hunters, and to potentially reduce access by animals.	3/31/2023
EC and Member Lead Management Committee	Select best management practices for management of spent lead bullets on ranges	Control/prevent migration of lead in the environment and periodically collect, remove and recycle lead	11/30/2022

Best Management Practices Selection

Knowing how lead will react at the particular environmental conditions specific to SRR&PC firing ranges can help in the selection of Best Management Practices (BMP's). Lead issues at outdoor firing ranges are generally limited to lead in the surface and near-surface soils. Keeping the spent lead in a well defined area helps facilitate recovery and recycling. The solubility of lead in water is highly dependent on pH. As pH increases, lead solubility decreases. Using lime spread on and in the area beneath the berms can help keep the lead in a solid form and prevent leaching into the soil. Also, periodic removal of spent projectiles from the berm can help prevent fragmentation of the lead (which promotes dissolution and reduces recoverability), as well as enhance safety through reduction of potential ricochets.

Once lead has been removed from the soil, the soil can be placed back on the berm. Adding lime at this point is beneficial.

The SRR&PC will select BMP's to operate the ranges and to collect, remove and recycle spent lead. The scrap value of lead varies considerably due to market conditions, but clean lead currently is worth about \$.20 per pound (CMC Metals, Augusta, GA, September 2022).

BMP options are included in the following table (see next page):

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BMP Options		
Environmental Issue	BMP Options	BMP Selected
Keep projectiles in a well defined area	<ol style="list-style-type: none"> 1. Maintain current sandy berm backstop 2. Use constructed bullet traps 3. Select another alternative from EPA's guidance documents 	Implement #1. Evaluate #2 for Plate Rack.
Increase pH of the backstop and surrounding range floor soils to between 6.5 and 8.5 to reduce lead leaching	<ol style="list-style-type: none"> 1. Apply lime to backstop and berm areas 2. Use another stabilizing chemical from EPA's guidance documents 	Implement #1. Further evaluate #2.
Reclaim lead from berms for recycling and repeat on a regular basis (Fall/winter are good times to remove lead. Repeat timing could be about every 5-10 years.	<ol style="list-style-type: none"> 1. Perform in-house using OSHA trained volunteers with DIY equipment 2. Perform in-house using OSHA trained volunteers with rented or borrowed equipment 3. Hire a contractor 	Implement #3 (Seek quotes for consideration by EC). Continue evaluation of #1 and #2.
Recycle the lead from berms	<ol style="list-style-type: none"> 1. Take to a reputable metals recycler 2. Hire a contractor to both reclaim and transport to recycler 	Implement #2 (seek quotes for consideration by EC). Continue evaluation of #1.
Prevent bullets from impacting forested areas surrounding firing ranges	<ol style="list-style-type: none"> 1. Rely on operating rules to require all fired rounds impact the berms 2. Construct wood or metal baffles 3. Select another alternative from EPA's guidance documents 	Implement #1 (currently required by SOP and adherence monitored by RSO's). Implement #2 for plate rack (currently in place).
Operate the ranges and surrounding property in a way that minimizes environmental concerns	<ol style="list-style-type: none"> 1. Sustain vegetative cover and forests around ranges 2. Ensure berm grading is not too steep (for stability and minimal erosion, should be max of about 2.5:1 slope) 3. Remove rocks and obstructions that could cause ricochets 4. Monitor accumulation of surface lead on berms through routine inspections 5. Schedule regular berm maintenance for removal of lead from berms as needed 6. Periodically till in or remove projectiles on berm to prevent fragmentation and prevent ricochets 	All selected to be implemented/continued.

4.0 MEASURING SUCCESS

By monitoring the impact or success of the ESP, the SRR&PC will be prepared to make whatever changes are necessary to reinforce success and assure that stewardship efforts have been effective in achieving their desired aims.

Vegetation

Vegetation surrounding the three SRR&PC ranges will be kept in its natural, native state. Maintenance performed in areas surrounding the ranges will be conducted periodically to reduce threat of fire, preserve fence lines, assure security of range property, and deal with any problems identified.

Wildlife

Wildlife sightings at SRR&PC ranges occur from time to time, but are infrequent. No known endangered species frequent SRR&PC the ranges. Range users will be asked to note in the range sign-in log any visual observations of wildlife in the vicinity of the shooting ranges during use. This will be utilized in future to assess whether additional wildlife management actions may be needed.

Soil and Runoff

Lead and pH in the soil on all ranges and surrounding drainage paths will be monitored semi-annually and will be discussed at Executive Committee (EC) meetings. The status of lead on the ranges and need for reclamation or other action will also be discussed annually at EC meetings. Chemical amendments (e.g., lime) will be applied periodically to maintain pH levels (i.e., a pH of 6.5 - 8.5) and stabilize lead in projectile impact zones and drainage flow paths to inhibit dissolution and transport of lead. Runoff will be controlled by appropriate use of vegetation and/or features that slow down flow and assist in preventing lead from exiting the ranges.

Erosion

The range areas will be inspected as part of routine maintenance activities, problem areas will be documented in photographs and the EC will be informed. The EC will discuss and authorize implementation of appropriate measures to control erosion.

5.0 DOCUMENTS AND RECORDKEEPING

5.1 SRR&PC Member Handbook and SOP's

The SRR&PC Member Handbook and SOP's will be revised to recognize and formalize implementation of this ESP, assure that environmental best practices are followed, and to incorporate specific expectations of members and officers for environmental stewardship at the ranges.

5.2 Environmental Stewardship Plan

The ESP will be utilized as the roadmap for environmental monitoring. The ESP will be maintained and updated as needed, but at least on an annual basis. Each year, the plans goals will be reviewed and revised as needed for subsequent years. Updates to goals will be reviewed and approved and actions assigned for implementation by the EC.

5.3 Operational Records

The following data will be maintained on file in the SRR&PC records throughout the life of the range. Records maintained may include maintenance plans, Range Workday records, contracts for services, test reports, EC Meeting Minutes, emails, memos, etc. that document actions planned and/or taken.

- Range and natural areas maintenance activities performed, including:
 - Housekeeping
 - Landscape preservation on ranges
 - Erosion control activities
 - Soil amendment additions, including amounts and locations
- Chemical testing, including:
 - pH sampling/field testing
 - Lead sampling/field testing
- Lead recovery actions taken:
 - Dates performed
 - Amount removed in pounds
 - Contractor or self-performed
 - Where taken for recycling

6.0 REFERENCES

Savannah River Rifle and Pistol Club Standard Operating Procedure and Member Handbook, February 16, 2015 with August 2021 revision.

Public Law 94-580, Resource Conservation and Recovery Act of 1976, Sections 7002 and 7003.

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