Response to Comments

Public Listening Session

Camp Bonneville Cleanup Site
Clark County, WA

Toxics Cleanup Program

Washington State Department of Ecology

Headquarters Office

Lacey, Washington

April 2022

DEPARTMENT OF ECOLOGY
State of Washington

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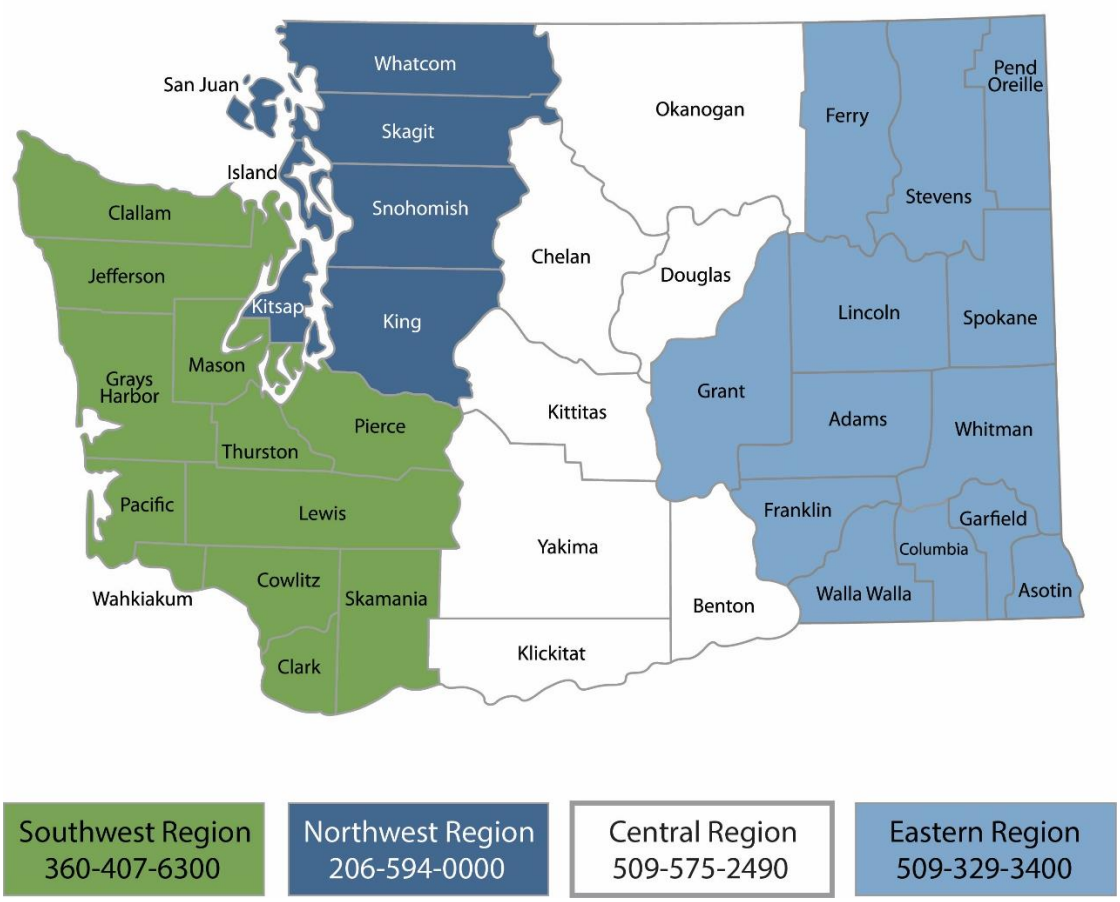
[1] www.ecology.wa.gov/contact

Department of Ecology's Regional Offices

Map of Counties Served



Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 46700 Olympia, WA 98504	360-407-6000

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Public Outreach Summary

The Camp Bonneville cleanup site located in Clark County is continuing Washington State's formal cleanup process[2] as directed under the Model Toxics Control Act (MTCA[3]). The U.S. Army conducted investigations and cleanup actions at Camp Bonneville until 2006, when the deed for the site was transferred to Clark County. The county is addressing contamination at the site under a legal agreement with Ecology (the Prospective Purchaser Consent Decree).

The Department of Ecology's public involvement activities related to this voluntary public listening session on January 19, 2022 included:

- **Fact Sheet:**
  - US mail distribution of a fact sheet providing information about the cleanup and public listening session to approximately 2,551 addresses within one mile of the site, including neighboring businesses, local elected officials, neighborhood groups, and other interested parties.
  - Email distribution of the listening session to 97 people on December 22 including interested individuals, local/county/state/federal agencies, neighborhood associations, and interested community groups. Follow up notification to the Camp Bonneville email distribution list[4] on January 13 and 19.
  - The fact sheet was available digitally through Ecology's cleanup site webpage[5].
- **Media Notification:**
  - An online display ad was published in the Columbian newspaper during the week beginning January 14, and a print ad was published on January 16.
  - The meeting was announced on Ecology's Twitter and Facebook accounts
  - A meeting notification was sent to the Camas and Vancouver School Districts for distribution in their parent newsletters.
- **Online Public Meeting**
  - Ecology hosted an online meeting January 19, 2022 at 6:00 p.m. Ecology staff presented an overview[6] of the cleanup activities at the site and answered questions.
- **Websites**:
  - Ecology announced the public listening session on Ecology's Camp Bonneville webpage[7] and Ecology's Public Inputs & Events webpage[8].

[2] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Cleanup-process
[3] https://ecology.wa.gov/mtca
[4] https://public.govdelivery.com/accounts/WAECY/subscriber/new?topic_id=WAECY_222
[5] https://apps.ecology.wa.gov/cleanupsearch/site/11670#site-documents
[6] https://apps.ecology.wa.gov/cleanupsearch/document/108876
[7] https://apps.ecology.wa.gov/cleanupsearch/site/11670
[8] https://ecology.wa.gov/Events/Search/Listing

Comment Summary

From June 2021 to January 2022, Ecology gathered questions and comments from the public regarding cleanup activities for the Camp Bonneville cleanup site.

Table 1: List of Commenters

Commenter number	First name	Last name	Comment source
1	Dave	Blair	Email
2	Elizabeth	Hofman-Hicks	Email
3	Patti	Reynolds	Email and listening session comments
4	Gregory	Shaw	Email and listening session comments
5	Ann	Shaw	Email and listening session comments
6	Chris	McMeen	Email
7	Linda	Felver	Listening session comments
8	Joe	Zimmerman	Listening session comments
9	Steve	Sekel	Listening session comments
10	Sherry	Kam	Listening session comments
11	Wendy	McCullough	Listening session comments
12	Christine	Neill	Listening session comments
13	Meredith	Shaw	Listening session comments
14	Dave	Kozmak	Listening session comments
15	Kirk	VanGelder	Listening session comments
16	Erin	Allee	Listening session comments
17	John	Breuer	Listening session comments

Next Steps

Work is expected to begin in 2023 on the final area of cleanup (RAU 2C groundwater). When completed, Ecology will transition out of active management of cleanup at Camp Bonneville. Ecology's role will be to support Clark County and oversee development and implementation of an Operation and Maintenance Plan for the site. See graphic below and visit Ecology's cleanup process webpage[9] to learn more about Washington's formal cleanup process.

A public comment period will be held to gather comments on the cleanup plans for RAU 2C groundwater.

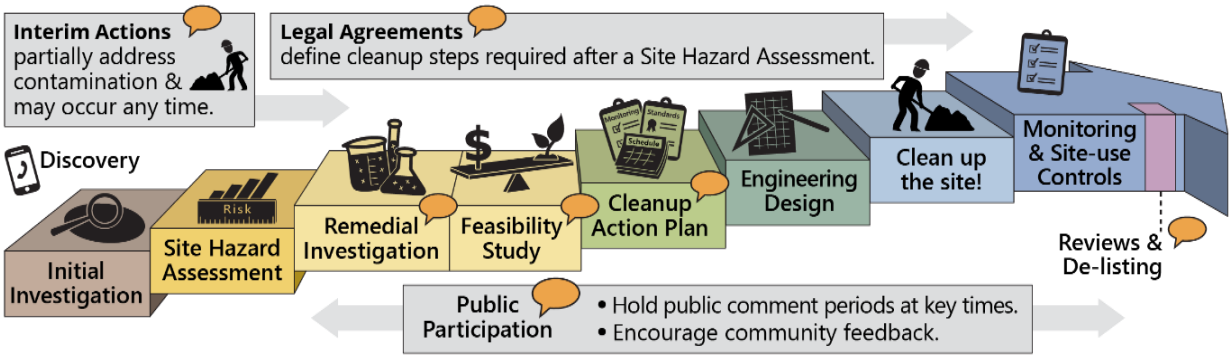


Figure 1: Washington's formal cleanup process (download a text explanation[10])

[9] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Cleanup-process
[10] https://apps.ecology.wa.gov/publications/SummaryPages/1909166.html

This Comment Summary contains Ecology's responses to public comments about ongoing work at the Camp Bonneville cleanup site. Comments in this document were received by Ecology either in writing or during a public listening session between June 2021 and January 21, 2022.

This Comment Summary document addresses each of the topic areas from the comments received. A list of commenters and an index of relevant responses is provided in Appendix B, page 46. The following is a list of the topic areas:

- Overall cleanup efforts, including the effectiveness of the cleanup
- Activities currently taking place at the site
- Future planning for the site
- Groundwater contamination and testing
- Public involvement efforts, outreach, and documentation

Overall cleanup at the site

Questions were raised about the approach to cleanup at the site overall. The questions and concerns people had included:

- Budget and cost responsibility
- Effectiveness of cleanup
- Cleanup requirements
- Cleanup standards and depth of cleanup
- Sources of contamination
- Effectiveness of capping contaminated soil
- Marking cleared areas on a master grid system
- Disposal of outside materials at the site
- Liability for injuries, fire, or failure of institutional controls
- Verification of cleanup standards
- Role of the U.S. Environmental Protection Agency
- Project timeline
- Uncleared wetland area in the Central Valley Floor

The following sections respond to specific concerns.

Budget and cost responsibility

Ecology heard questions from the public about the parties responsible for paying for cleanup at Camp Bonneville, as well as whether cleanup decisions were impacted by available funding. [Comments 1, 2, 78, and 82]

Ecology's response

Clark County pays all cleanup costs including long-term obligations incurred by Ecology pursuant to the Consent Decree and consistent with WAC 173-340-550(2). To make those payments, Clark County has used the funding provided by U.S. Army through the Environmental Services Cooperative Agreement since 2006.

The whole cost of the county's future development or reuse activities will be paid by Clark County by itself. However, the county's reuse plan is restricted to conservation purposes by the Deed conveying the early transfer Parcel from the Army to Clark County.

The original cost estimate by the Army for the complete cleanup of the Camp Bonneville site following Model Toxics Control Act (MTCA) guidance was $37.3 million in 2006. In order to conduct a more thorough cleanup, Ecology staff compelled the Army to spend, as of February 2022, approximately $76.2 million on the cleanup of Camp Bonneville (according to reports from Clark County). Ecology staff made these decisions based on protection of human health and the environment and regulations governing the site.

Throughout the past 15-year-long cleanup process and decision-making steps, Ecology has maintained focus on protecting human health and the environment, prioritizing that over the cost of cleanup. As required by MTCA (WAC 173-340-360(3)(e)), the cleanup action selected must use permanent solutions to the maximum extent practicable. To select the most practicable permanent solution from among those cleanup action alternatives that are protective of human health and the environment requires conducting a disproportionate cost analysis, in which is typically conducted during the Feasibility Study stage. This analysis involves comparing the costs and benefits of various alternatives and selecting the alternative whose incremental costs are not disproportionate to the incremental benefits.

Under MTCA, "Practicable" means capable of being designed, constructed and implemented in a reliable and effective manner, including consideration of cost (WAC 173-340-200). For example, Ecology and Clark County staff had gone through an extensive review process in order to develop and screen six cleanup action alternatives based on seven evaluation criteria specified in WAC 173-340-360. See Chapter 6 of the Draft Final Remedial Investigation/Feasibility Study for RAU 3, 2007.[11]

All six alternatives for different work areas were scored based on the benefit over the cost as shown in Appendix C of the 2006 RI/FS report. After a rigorous evaluation, Ecology agreed on a preferred cleanup alternative and shared the RI/FS report in a public review process to solicit any significantly different opinion on the preferred cleanup alternative selected. This draft RI/FS for RAU 3 was reviewed by the public for 90 days from 8/15/2005 through 11/15/2005. On

[11] See: BCRRT. *Camp Bonneville Draft Final Remedial Investigation/Feasibility Study for RAU-3.* (2007). This report is available for viewing or download at Ecology's Camp Bonneville online document repository: https://apps.ecology.wa.gov/cleanupsearch/site/11670.

February 2006, Ecology issued a report that summarized our responses to the comments received.[12]

The preferred cleanup alternative determined during the Feasibility Study period was carried over to the Draft Cleanup Action Plan, which was reviewed by the general public during the public review period 6/8/2009 through 7/8/2009. The Final Cleanup Action Plan for RAU 3 was issued in August 2010.[13]

Ecology is not aware of the specific situation or reasoning why cleanup activities are currently suspended at the Fort Ord site. Due to the uniqueness (nature and extent of contamination and governing regulations) of each cleanup site, it is not practical to compare the Camp Bonneville site to other sites.

Effectiveness of cleanup

Commenters expressed questions about the overall effectiveness of the cleanup, wondering why areas of the site such as some areas in the Central Valley Floor, the roads and trails, and the wildlife areas were left uncleared. Questions were also raised about contaminated soils remaining at Landfill 4 and the "pop-up" firing range. [Comments 87, 109, 117, 123, 141, 144, 145, and 146]

Ecology's response

The Roads and Trails have the same munitions-related historical use and characteristics as the Maneuver Areas, or troop movement areas. The Department of Defense Explosive Safety Board gave it a very low relative explosive safety risk ranking based on the type and likelihood of munitions occurrence. As the clearance of the roads was not necessary, actual clearance of the roads was not done due to their long-term use and because of regular road maintenance activities, including grading, and fill. A 20-foot wide buffer on either side of the roads and trails was cleared of vegetation and surface cleared of munitions. This was done as a precautionary measure in the event that anyone walking on the roads and trails decided to walk off the road or trail for a short distance.

Reconnaissance fieldwork was conducted in 2002 by munitions experts of the existing Roads and Trails located within Camp Bonneville. The only items recovered within a 50-foot buffer along the Road and Trails during the reconnaissance efforts were expended pyrotechnics and small arms ammunition. A total of 38 inert munitions scrap items were located, including expended trip flares, expended slap flares, expended smoke grenades, expended, inert practice 40mm projectiles, and an expended practice 2.36-inch rocket body. These practice munitions

[12] See: *2006 Camp Bonneville Response to Public Comment for RI/FS for RAU-3*. This report is available for viewing or download at Ecology's Camp Bonneville online document repository: https://apps.ecology.wa.gov/cleanupsearch/site/11670.
[13] See: *Camp Bonneville Final Cleanup Action Plan RAU – 3, August 2010.* This report is available for viewing or download at Ecology's Camp Bonneville online document repository: https://apps.ecology.wa.gov/cleanupsearch/site/11670.

contained no explosive components whatsoever. None of the munitions-related items located within the proposed future regional park or along the roads and trails during the 2002 reconnaissance posed an explosive safety risk. In addition, during the RAU clearances, all roads and trails that were in the clearance grids were cleared.

The Wildlife Management Area was generally a troop movement area, so no high explosive munitions would have been used in that area. Just like the roads and trails, the Department of Defense Explosive Safety Board gave it a very low relative explosive safety risk ranking based on the type and likelihood of munitions occurrence. All of the roads and trails buffer zones (20 ft. on each side of the road or trail) in the Wildlife Management Area have been investigated/cleared. Signage will be posted for areas that are closed to the public.

Institutional controls are commonly used at cleanup sites to limit access and reduce risk. No munitions remained in soil that was removed from the site. All soil removed from the site was first checked for explosive hazards.

Cleanup requirements

Questions were asked about how cleanup requirements for a conservation conveyance differed from requirements for an economic conveyance. Commenters also asked how the cleanup at Camp Bonneville compared to cleanups at other Base Realignment and Closure (BRAC) sites. [Comments 133, 153, and 154]

Ecology's response

Generally, a conservation conveyance is for property that's intended for conservation or recreational use. It is not intended for activities that would require extensive development. Most of the decisions that were made at Camp Bonneville were based on the conservation conveyance, and there are site-specific decisions based upon risk and health and safety. Whereas Economic Development Conveyance (EDC) is for the transfer of the real property to the Local Redevelopment Area for the purposes of job generation on the former military installation. The legal definitions for each conveyance are:

- Conservation conveyances of surplus military real property: 10 U.S.C. § 2694(a) authorizes the Secretary of the Military Department to convey surplus real property to a state, political subdivision of a state, or a non-profit organization to be used and maintained for the perpetual conservation of natural resources.
- Economic development conveyances: 32 C.F.R. § 174.9 allows for the transfer of real property, e.g., former military installations, to a Local Redevelopment Agency for the purposes of job generation (economic development) at the former installation.

Under the Model Toxics Control Act, the difference in cleanup requirements for any given site will depend on the specific contaminants of concern or hazardous substances that have been released at a site, the extent of contamination, the ability to remediate the contamination, and the expected future use of the property.

The 2006 Quit Claim Deed document (Clark County Document # 4231240 D), signed by Clark County and the Bonneville Conservation, Restoration and Renewal Team (BCRRT), clarified the use of site property as follows:

> "The right of the Grantee (BCRRT) to conduct revenue-producing activities on the Property shall be limited to the conduct of incidental revenue-producing activities that are compatible with the use of the Property for conservation purposes."

Ecology's understanding is that Army and BCRRT/Clark County had already determined that the county's current reuse plan is compatible with use of the property for conservation purposes. All past cleanup activities led by Ecology had been designed and conducted to be compatible with final reuse plan for the conservation conveyance (10 U.S.C. §2694a). The property shall not be used for residential purposes, which does not include multiple overnight stays associated with the Rustic Retreat Center and Outdoor School, or day camping within existing or new buildings on the property.

The site will not be open to the public until additional engineering controls (like fences, signs, any deterrence measures) and appropriate educational materials are developed. In addition, the long-term operations and maintenance plan must be approved, and a mechanism that assures Clark County's preparedness to maintain their financial responsibility must be in place before public access in order to guarantee that the containment system is maintained and the long-term monitoring and maintenance obligations at the site are being met.

Ecology does not have information concerning other BRAC properties and has not conducted an analysis comparing the cleanup at Camp Bonneville to Fort Ord. Ecology suggests interested parties contact the U.S. Army for that information.

Cleanup standards and depth of cleanup

There were concerns about the decision to clear the Central Valley Floor to a depth of 14" throughout the site. Questions were also raised about the changes to the cleanup area for the Western Slopes. [Comments 15, 16, 39, 77, 80, 81, 90, 91, 92, 139, and 155]

Ecology's response

Ecology's decision to change the clearance procedures due to slope angles in the Western Slopes Area (WSA) is based on the clearance results and investigations that were completed from 1997-2017. Results and observations from these actions support reducing the Western Slopes cleanup area. Some of the investigations and reports leading to Ecology's decision include:

- Bonneville Conservation, Restoration, and Renewal Team (BCRRT), LLC. (2009). *After Action Report Roads and Trails*.
- BCRRT LLC. (2008). *2.36-Inch Rocket Range After Action Report*.

- Weston Solutions, Inc. (2020). *Subsurface Clearance of the Artillery Firing Points - Final RAU 3, Phase 2 Site Specific Final Report.*
- Weston Solutions, Inc. (2018). *Site-Specific Final Report Munitions and Explosives of Concern Remedial Action Unit 3 Western Slopes Area Pilot Study.*

Slope accessibility was an updated Conceptual Site Model, which describes our understanding of the conditions of the site, the ways contamination can move or change, and its potential impacts to people or the environment. It was determined that Since 2010, new data from surface clearance of the WSA and from the 2017 pilot test provided additional information that indicated the initial cleanup area had been overestimated and supported a proper readjustment of the size of the initial cleanup area to 194 acres.

One commenter asked about a change in units from degrees to percent when illustrating the Western Slopes Area during a 2019 presentation. We were unable to locate a map from that period that shows 25 degree slopes and assume any such reference was an error.

Subsurface clearance of the Central Valley Floor area was conducted to 14 inches. This is due to information indicating 14 inches is the frost heave depth for this area and frost heave is one of the most likely ways for any item to move towards the soil surface.

When the ground freezes and thaws, items can move through the soil. That's called frost heave. We wanted to make sure there wasn't a risk of munitions moving through the soil. Anything that's under 14" will not move up through the soil from frost heave. In addition, the types of munitions that were fired in the Central Valley Floor would not normally penetrate below 14". Direct fire munitions such as the 37mm, 2.36" rockets, and the 3.5" rockets typically either land on the surface or only penetrate the ground five to six inches. This is because the firing angle is usually parallel to the ground surface at targets either placed on the surface of the ground or sometimes at moving targets that can be towed or pulled across the ground. Indirect fire munitions such as the 60mm, 81mm or the 4.2" mortars will penetrate the ground because these are larger munitions and sometimes are fired at a steeper vertical angle to the ground surface or fired at the site of a hill (like the Central Impact Target Area), but penetrating past 14" would be extremely unlikely. Types of ordnance that could penetrate the ground deeper than 14" are the heavier artillery rounds, which were fired into the Central Impact Area, which has been and will be completely closed to the public. Bear in mind that anything below 14" is below the frost heave, which will prevent it from surfacing. Also, almost all the munitions found were practice ammunition, containing no explosive components whatsoever.

A 2001 U.S. EPA study[14] concluded there have been 39 deaths in the U.S. since the World War I timeframe due to unexploded ordnance (UXO) accidents, none of which were a result of anyone engaging with buried munitions on a formerly active firing range. In the 1980s, long

[14] DPRA Incorporated, 2001. *UXO Incident Report, Revision 1*. Retrieved from: https://www.epa.gov/sites/default/files/documents/2001uxoreport.pdf

before any clearance operations were conducted at the site, the Camp Bonneville property was occasionally used for non-military purposes including religious retreats, picnicking, camping, educational purposes, and pistol training for the State Police. To our knowledge, there have been no records of any UXO-related incidents from this period.

Ecology's understanding is that there is no national numerical standard to define the UXO clearance depth defined by federal- or state-level regulation. In their 2002 handbook, the U.S. EPA states that clearance depth is determined using site-specific information such as site-specific geophysical characteristics, surface detection and intrusive sampling data along with frost line and erosion.

In a letter from the U.S. EPA addressed to Ecology (dated February 14, 2022), they convey their trust that Ecology, the County, and the Army will continue to work to ensure the protection and safety of all workers and visitors to the Camp Bonneville site. The letter cites a number of different acceptable approaches to munitions cleanups, and they often rely on a combination of clearance and future land use controls. For more details about the relationship between the U.S. EPA and Ecology in Camp Bonneville's management, see "Role of the U.S. Environmental Protection Agency," on page 22.

Ecology is not aware of any munitions buried by the Army in the Central Valley Floor. All areas near the known firing positions were investigated for potential stored or buried munitions and none were discovered. All areas of the Central Valley Floor have been subsurface cleared in Camp Bonneville to 14". All areas are accessible for firefighters and they would be safe for anybody to walk on, fight fires, recreate, or any of the things that are described in the future reuse. The difference between 14- and 24-inch depth clearances in the Central Valley floor would not affect firefighter's efforts (please see answer to Fire Risk, page 28) in any way. Munitions experts must be on site if any utility work, etc., is done. No digging will be allowed in these areas. Munitions experts must be on site if any ground-disturbing activities (e.g., utility work, etc.) is done.

Sources of contamination

Commenters asked about other potential sources of contamination at the site, including copper-jacketed bullets and nuclear waste. [Comments 122 and 176]

Ecology's response

The types of rounds primarily used in Camp Bonneville included mortar rounds and 37- and 40-millimeter anti-vehicle and anti-tank rounds. It is possible that lead-only bullets may have been used at Camp Bonneville, but if so, it would have been in a very limited amount. Almost all of the small arms ammunition in the military inventory is copper-jacketed bullets. Certain types of lead bullets that were in the military inventory are .22, .38 and .45 caliber wad cutter, and 12 gauge 00 buck, pellets or slug rounds. There has been no documentation stating what kind of ammunition that was used on Camp Bonneville, other than the caliber of the ammunition itself.

At all of the firing positions, including the small arms ranges, lead was a primary contaminant of concern for toxicity. Lead affects human blood lead levels and human development in small children. At all of the firing positions, we sampled all the muzzle blast zones for chemical contamination that could have originated through muzzle blast fires in a radius outside of those firing positions. We also sampled soil for hazardous substances around some of the impact areas for RDX (an abbreviation of research department explosive, also known as cyclotrimethylenetrinitramine, or T_4) and perchlorate. We did not find levels that were of concern for any chemicals coming from any one single sampling round. The areas that we found levels of concern were the areas around the landfill where munitions were detonated, burned, or broken open. The perchlorate in those large quantities is what got into the soil and the groundwater and created the groundwater contamination that we see near the Landfill 4 area.

We are not aware of any nuclear waste that would have been disposed of at the site. Early on in the investigation we looked into radium contained in glow in the dark dials and instrumentation that was used on airplanes and vehicles. During that investigation, we did not find any records or evidence that there was any radium, which was considered low-level radioactive waste, which had ever been disposed of at Camp Bonneville, including radium dials or other radioactive waste in Landfill 4.Furthermore, in 2007, the Site and Radiological Assessment Branch of the federal ATSDR (Agency for Toxic Substances and Disease Registry) conducted a rigorous public health assessment and found no radiation-related issues.[15]

Effectiveness of capping contaminated soils

Commenters asked about the effectiveness of capping to contain lead contamination remaining in the soil. Questions were also asked about the concentrations of lead in the soil used as capping materials. [Comments 83, 84, 85, 86, 168 and 169]

Ecology's response

There are a few different ways to achieve "cleanup" of contaminated soil under Washington's cleanup law. Removing contaminated material, treating it so the dangerous chemicals become inert, or leaving it in place and preventing exposure to it. When we choose that last option, we need to make sure the contaminant won't move (leaching) into nearby water, that people and animals can't touch it or ingest it, and that future land use won't create conditions for possible exposure.

The two places at Camp Bonneville where lead contamination was left in the soil and covered with a geotextile fabric, then with a thick cap of clean soil are the small arms ranges RAU 2A-16 and RAU 2A-21 (see further detail about these below). The soil used for capping must be below the cleanup level for any contaminant of concern at the site. The cap prevents direct exposure, and an environmental covenant is in place that prevents activities that would disturb or

[15] See: Agency for Toxic Substances and Disease Registry. (2008). *Public Health Assessment for Camp Bonneville Military Reservation*. This report is available for viewing or download at Ecology's Camp Bonneville online document repository: https://apps.ecology.wa.gov/cleanupsearch/site/11670.

damage the cap of clean soil. We will also inspect the cleanup every five years to make sure the cap is still working as planned.

WAC 173-340-440 states as follows:

> "In addition to meeting each of the minimum requirements specified in WAC 173-340-360, cleanup actions shall not rely primarily on institutional controls and monitoring where it is technically possible to implement a more permanent cleanup action for all or a portion of the site."

One of the critical factors for selecting a cleanup action is that the action uses permanent solutions to the maximum extent practicable per WAC 360-340-360(3). Ecology has been consistent with its application of this language contained in that MTCA rule. Ecology has conducted cleanup by trying to remove the source materials to the maximum extent practicable at the time. The soil was tested for lead leachability using an EPA/state approved process and was found to comply with state and federal standards.

Any soils that meet cleanup levels can be reused as along as the soil would not cause any cross media contamination (for example, for soil contamination to move to groundwater). To check the potential for cross-media contamination, the leachability test was conducted and soils passed the rigorous leaching test specified in WAC 73-340-747(7).

Ecology clarifies that contaminated soil remains at Landfill 4/Demolition Area 1. Groundwater cleanup is still underway in that area and remedial alternatives to potentially address the contaminated soil and groundwater will be included in a forthcoming feasibility study.

Soil lead contamination cleanup in RAU 2A

Twenty-one small arms ranges at the property have had cleanups conducted, all in accordance with the state's Model Toxics Control Act cleanup law. The cleanup for nineteen of these ranges was excavation (removal), and the other two were capped. At these small arms ranges, the cleanup objective was to remediate lead bullets, lead bullet fragments, and lead in soil. Based on information from the site's Remedial Investigation and Feasibility Study, which described the nature and extent of contamination at the RAU 2A site, the selected cleanup remedy included excavation, on-site treatment, and off-site disposal or recycle, or partial excavation and/or covering the lead-contaminated soil with a geotextile fabric and one foot of clean soil.

For nineteen of these ranges, the cleanup contractor excavated the contaminated range areas and range berms on the surface and removed lead bullets and large lead fragments from the soil by sifting the soil and removing the lead objects.

When the removed soil contained lead higher than the cleanup level of 250 mg/kg for unrestricted land use, it was disposed of off-site (at Waco County landfill, The Dalles, OR) or recycled.

At the other two small arms ranges (RAU 2A-16 and RAU 2A-21), the U.S. Army reconfigured the ranges by bulldozing them, regrading and reworking the soil. This resulted in mixing and burial of much of the soil that was contaminated with lead bullet fragments from two to four feet below the ground surface. An addendum to the RAU 2A Cleanup Action Plan[16] was prepared in June, 2017 to address the remaining lead-impacted areas at RAU 2A-16 and RAU 2A-21. The proposed remedy was capping the lead-contaminated soil with a geotextile demarcation layer and one foot of clean soil. After providing a public review opportunity (August 16 – September 18, 2017), the addendum was formally adopted and used as the basis for the 2017 cleanup actions at RAU 2A-16 and RAU 2A-21.

Under the addendum to the cleanup plan, 1.76 acres of lead-impacted soil at RAU 2A-16 and 6.21 acres of lead-impacted soil at RAU 2A-21 were covered/capped with a geotextile demarcation layer and one foot of clean fill. This capping process was completed in compliance with state cleanup laws. Lead bullets and fragments have a low degree of mobility in the environment. One of the most common forms of lead exposure is through ingestion of the lead and/or lead contaminated soil. Capping reduces this type of exposure considerably, as well as other types of exposure like inhalation of dust containing lead, and direct contact with soil. Since lead contamination remains in the capped areas at the site, long-term monitoring, institutional controls, and periodic reviews are required. See WAC 173-340-440.

Ecology's understanding is that Slide 10 of the presentation presented on January 19, 2022 represents exactly the site condition which is protective of human health and the environment. As Ecology was not sure what extent of grading work had been conducted previously by the Army, we are not certain what could have been done back then. At Landfill 4/Demolition Area 1, where groundwater cleanup is still underway, a substantial amount of contaminated soil (source) was removed to the maximum extent practicable in 2004/2005, there has been no additional source removal conducted since then. Extensive groundwater monitoring has been underway to address the residual contaminated soil and groundwater contamination plume since then. Ecology is uncertain what contaminated soil at the "pop-up" firing range is present after EPA's 2003 testing.

Marking cleared areas on a master grid system

There were concerns that areas cleared during the cleanup effort were not documented on a master grid system. [Comments 74, 75, 76, 102, 160, and 164]

Ecology's response

All areas within the borders of Camp Bonneville have been surveyed. There are GPS coordinates of every grid at the site. The grids were marked with individual grid stakes, with a grid identification number written on the southwest corner of each stake. During the clearance

[16] See: Weston Solutions, Inc. (2017). *Addendum to the Cleanup Action Plan Small Arms Ranges RAU 2A-16 and 2A-21*. This report is available for viewing or download at Ecology's Camp Bonneville online document repository: https://apps.ecology.wa.gov/cleanupsearch/site/11670.

operations, all of the areas were marked and lanes are established so that munitions experts could identify and hand dig the located anomalies. When the unexploded ordnance team completed a grid, the team leader recorded the data on a grid completion sheet. At the end of the day, the completed grid sheets were turned over to the management staff, and the data was recorded in a database. We have GPS coordinates and grids for all of the areas that are cleared and the areas that aren't cleared, and those are maintained. Right now, there are not physical lines or marks on the ground, the information is stored in a database.

One commenter asked about records documenting wetland restoration at Camp Bonneville. Ecology is not aware of public records regarding any restored wetland areas at Camp Bonneville.

Disposal of outside materials at the site

Commenters asked about the disposal and detonation of hazardous materials at Camp Bonneville that were brought in from areas outside the site. Concerns were raised about materials such as explosives, munitions, chemicals, and solid waste. Commenters requested documentation of these policies as well as any activities that had occurred. [Comments 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, and 56]

Ecology's response

Ecology has neither a written policy nor control over the disposal and detonation of explosive materials at Camp Bonneville that were brought in from areas outside the site (Bureau of Alcohol, Firearms, Tobacco, and Explosives; National Guard; FBI; County Sheriff's Bomb Squad; etc.). These types of activities have been strictly conducted per the Use Agreement or Memorandum of Understanding between the county and local law enforcement agencies. These disposals happened very rarely. Ecology found these disposal activities have never disrupted or interfered with cleanup activities in the past.

Ecology's understanding is that the County would not allow the disposal of hazardous waste brought in from the outside. As far as the noise, a State Environmental Protection Act (SEPA) determination prepared by Clark County anticipated that the disposal would temporarily produce high noise levels due to explosion. The SEPA determination also planned to dispose of explosive materials in a way that would have low impact to noise levels. SEPA determinations, which in this case would be led by Clark County, do have a public notice requirement. You can find Clark County's SEPA notices posted on their website.[17]

There is no written policy that would allow or disallow the demolition of non-cleanup unexploded ordnance (UXO) and munitions and explosives of concern (MEC) at Camp Bonneville in the Washington Administrative Code. Clark County and any other relevant agencies are responsible for conducting and paying for cleanup work that is not related to the

[17] https://clark.wa.gov/public-works/sepa

Model Toxics Control Act cleanup underway, such as demolition activities. Clark County is responsible for any explosion noise at Camp Bonneville.

Demolition Area 1 was where those explosives were brought to from outside and was used for disposal purposes. Demolition Area 1 has been cleared/cleanup as a part of the RAU 3- Phase 2 cleanup activity. Further detail is included in the Site-Specific Final Report – Remedial Action Unit 3 Phase 2, dated April 2020.[18] Clark County staff can provide additional details or records on the disposal of non-cleanup related UXO and MEC.

The disposal and transport of hazardous substances like waste oil and solid waste (old junk tires, junk cars, used transformers) does need a special disposal permit: a Dangerous Waste Facility Permit from Ecology's Hazardous Waste and Toxics Reduction Program and Washington State Department of Health. Ecology is not aware of any history of these types of waste being brought to the site and disposed of at the site.

Liability for injuries, fire, or failure of institutional controls

There were questions about who would be liable for a future injury at the site related to uncleared munitions, as well as injuries or damage due to wildfire or the failure of institutional controls. [Comments 23, 24, 26, 27, 156, and 157]

Ecology's response

Commenters asked for Ecology's legal opinions on general liability at the subject site. Since Ecology is not authorized to provide formal legal advice to the public, we would advise those interested to confer with the Clark County Prosecuting Attorney's office.

If the institutional controls that are required by the Amended Consent Decree fail to limit actions that may interfere with the integrity of a cleanup action or that may result in exposure to hazardous substances at the Property or fail to limit access to the Property, Ecology may require Clark County to perform additional remedial actions at the Property.

Under the 2006 land transfer agreement from the Army to Clark County, the Department of Defense (via the U.S. Army) permanently retains all liability for any injury or death related to munitions on site from historic Army activity.

The U.S. Army has retained much of the environmental liability for "new finds" of any contamination that has not been anticipated as part of the current cleanup. If new or additional contamination is found, then the Army will be contacted and we will work through that with the Army and the county. This also applies to any contamination that could potentially be found outside the property boundary.

[18] Weston Solutions, Inc. (2020). *Site-Specific Final Report Munitions and Explosives of Concern Remedial Action Unit 3 Phase 2.*

Verification of cleanup standards

Commenters asked what agency would verify the cleanup was complete and that it met safety requirements. [Comments 9, 33, 41, and 174]

Ecology's response

Clark County and Ecology will consider the cleanup complete when it meets the standards agreed to by Ecology. When these requirements are met, Clark County can begin implementing its reuse plan, which includes developing a regional park. While property cleanup can never be guaranteed at 100 percent, cleanup standards are so rigorous that the property will pose the lowest risks practicable to people and wildlife. Safety measures will be in place at the site to ensure that any areas considered insufficiently cleaned will not be accessible to the public.

The verification, or quality assurance/quality control (QA/QC), procedures for chemical contamination vs. ordnance differs each other at the site as follows:

1) For ordnance clearance validation:

   A UXO [unexploded ordnance] Safety Officer and Quality Control Specialist are responsible for the overall quality of the data during fieldwork via the daily report. Quality control measures and failure criteria for the surface MEC [munitions and explosives of concern] clearance is described in each RAU's Work Plan. Ecology and Clark County performed QA in 20 percent of each payment unit (grouping of five 100-foot x 100-foot subgrids and/or partial sub-grids). The quality requirements associated with field activities are defined in the work plan section for each RAU. These requirements apply to all field activities that affect the quality of work and work products. Quality control checks were conducted as follows: Daily briefings, communications, trainings, Geophysical Instrument Function Testing, Documentation for all daily field activity records.

   Once a subgrid has passed the QC check, the Clark County Munitions Safety Officer is notified for QA inspection. After Clark County's QA, Ecology staff is notified to perform their final QA. Quality control measures and failure criteria for MEC clearance area is based on the failure criteria.

2) For chemical contamination in soil and groundwater/surface water, those interested can refer to Washington Administrative Code (WAC) language:
   - WAC 173-340-830 for analytical Procedure;
   - WAC 173-340-720(9) for Groundwater Compliance Monitoring Procedure;
   - WAC 173-340-730(7) for Surface water Compliance Monitoring Procedure; and
   - WAC 173-340-740(7) for Soil Compliance Monitoring Procedure.

Since the Camp Bonneville site is not on the EPA's National Priority List, the federal superfund or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) programs, the U.S. EPA's standards and regulations are not applicable to its cleanup. The U.S.

EPA's role at Camp Bonneville is advisory, neither leading nor directing the cleanup. The two agencies have been in good communication about Camp Bonneville and Ecology's understanding is that any review or comments made by the EPA are advisory.

The federal Occupational Safety and Health Act (OSHA) governs the explosives safety program standards. The EPA's Handbook on the Management of Ordnance and Explosives at Closed, Transferring, and Transferred Ranges and Other Sites, Interim Final, February 2002, is part of the reference materials for the Cleanup Action Plan.[19]

Federal explosives safety regulations and guidance are applicable at the site. Compliance with these regulations was addressed through the development of an Explosives Safety Submittal (ESS; MKM, 2006) for the Roads and Trails and Small Arms Ranges. The ESS was reviewed and approved by the United States Army Technical Center for Explosives Safety (USATCES). Therefore, explosives safety was not anticipated to be an issue during implementation of the cleanup action.

The UXO/munitions and explosives of concern (MEC) clearance work done at the site is ultimately for Clark County's reuse and conservation goals. Ecology maintains that the cleanup is aligned with state and federal standards. Should any MEC be found when public access is allowed at Camp Bonneville, we encourage that it be reported to the appropriate authorities. Such discoveries will be evaluated and may be considered in the five-year review process.

The Army has funded $6.5 million to maintain Clark County's Institutional Controls in 2006. It will be a decision for the County whether a portion of this funding can be used for safety education for public in the future or the itemized list of future funding for the remaining work to do.

Role of the U.S. Environmental Protection Agency

What is the EPA's role in managing Camp Bonneville and is there a point person who community members can contact with concerns? [Comment 32]

Ecology's response

Initially, the U.S. EPA was actively involved in the cleanup process with the U.S. Army. In 2012, the U.S. EPA issued a fact sheet indicating that Ecology is the lead regulatory agency responsible for providing oversight of the investigation and cleanup at the site. After this designation, the U.S. EPA's role at this site became advisory by "recommending, suggesting, and encouraging" Ecology's cleanup pathway and cleanup-related decision-making processes. As agencies with mutual environmental goals, Ecology and the U.S. EPA strive to maintain a collaborative relationship. While the U.S. EPA doesn't have a formal role in defining the cleanup work at

[19] https://www.epa.gov/fedfac/handbook-management-ordnance-and-explosives-closed-transferring-and-transferred-ranges-and

Camp Bonneville, Ecology is in regular communication with U.S. EPA staff to keep them informed of developments at the site.

The cleanup is being conducted under the Authority of Department of Ecology's regulations (Model Toxics Control Act and Hazardous Waste Management Act) under the Prospective Purchaser Consent Decree. Parties bound to the Decree are Ecology and Clark County. The Model Toxics Control Act requires that cleanup actions under its authority shall also comply with applicable Washington state and Federal laws. In addition, remedial actions shall comply with the substantive requirements of applicable local government requirements. For instance, the applicable Clean Water and Clean Air Acts are administered by the U.S. EPA.

Those interested in contacting the U.S. EPA regarding Camp Bonneville can reach out to Debra Sherbina, Community Involvement Coordinator, at Sherbina.debra@epa.gov; 800-424-4372 Ext 0247.

Project timeline

Questions were asked about the overall timeline for the project, including the final cleanup activities. [Comments 7, 18, and 166]

Ecology's response

The major cleanup work at Camp Bonneville started in 2006; right after the Prospective Purchase Consent Decree[20] was signed by two parties (Department of Ecology and Clark County and the Bonneville Conservation, Restoration, and Renewal Team) under the authority of MTCA (Model Toxics Control Act) and HWMA (Hazardous Waste Management Act). As of May 18, 2021, the cleanup of unexploded ordnance (UXO) was complete once Ecology issued the No Further Action Determination letter for RAU 3 – the Central Valley Floor and Associated Wetlands.[21] As of today, all fieldwork related to munitions and explosives of concern (MEC) clearance over RAU 1, 2, and 3 area and roads and trails is complete.

We have not set a fixed timeline for the remaining work. We are in the process of conducting a Remedial Investigation and Feasibility Study (RI/FS) focusing on contaminated groundwater at Demolition Area 1/Landfill 4. This study will describe the extent and nature of contamination there, and evaluate different cleanup alternatives to select the preferred remedy. Once this is complete, Clark County/Ecology will draft a Cleanup Action Plan (CAP) to address the residual site-wide groundwater contamination. We expect to have these draft RI/FS and CAP in approximately a year or two, depending on the timing of Clark County's process of hiring a consultant to develop those reports.

[20] State of Washington, Clark County Superior Court. (2006). *Prospective Purchaser Consent Decree Re: Camp Bonneville Military Reservation*. Available for viewing or download at Ecology's Camp Bonneville online document repository: https://apps.ecology.wa.gov/cleanupsearch/site/11670.
[21] https://fortress.wa.gov/ecy/gsp/DocViewer.ashx?did=101344

When these documents (the draft RI/FS and CAP) are satisfactory to Ecology's expectations and are ready for the public's review, we will host a public comment period to invite public input.

This does depend on Clark County's contracting mechanisms to hire a reliable consultant to draft the documents for public review, and how quickly Ecology staff can complete the oversight and review work. At that point, Ecology will be transitioning to supporting Clark County as the County starts to look at their future land use options, getting long-term operations and maintenance plans finalized for the whole site, and institutional controls. We'll be assisting the County through that process in more of a support role.

Overall, Ecology anticipates it would take two to three years depending on how quickly the county hires reliable consultants who are capable of conducting the work listed above.

Uncleared area of wetlands in the Central Valley Floor

Questions were asked about why a 12.5-acre area of wetlands in the Central Valley Floor were left uncleared, and where exactly that area is. [Comments 107, 108, 151, 163, and 167]

Ecology's response

A wetland area located on the northeastern edge of the Central Valley Floor, approximately 12.5 acres, was determined to be permanently saturated with significant standing water during the supplemental Remedial Investigation and Feasibility Study and associated MEC (munitions and explosives of concern) surface clearance effort. The 12.5 acres contained water and thick vegetative growth year-round, even in the driest part of the years. We believe that if there were any munitions items in those wetlands, they would be underwater and under the mud in the bottom of very thick wetland plant growth.

The Bonneville Conservation, Restoration, and Renewal Team, Clark County, and Ecology agreed that clearing the equivalent acreage in another area of the Regional Park would meet the requirement of the 2006 Prospective Purchaser Consent Decree. The three parties decided not to clear the 12.5-acre wetland area, in favor of using the available funding to clear a different area of the same size in the southwest corner of the site adjacent to the wetlands, Western Slopes, and Environmental Study Area. Ecology is not certain how this inaccessible 12.5 acres of wetland would affect the County's overall future wetland management plan, if at all.

Ecology has thoroughly reviewed all available site GIS data since the public listening session and we do not possess a GIS delineation of the 12.5 acre uncleared wetland area mentioned. However, we do have a GIS record of all wetland areas that could be cleared with wetland protocols. It is Ecology's understanding that a GIS-based precision survey of the 12.5 acre uncleared area was not performed because this region of the site was never intended to be accessible to future use, and as with many other areas of Camp Bonneville, exposure to this uncleared area would be prevented by institutional controls restricting access. Ecology does have a good working knowledge of the location of the 12.5 acres of wetlands that was not

cleared so the signs and fencing can be installed to restrict access to this location in the future (see Appendix A, page 45).

Details of public access and signage will be worked out before public access is allowed, during the process of developing a long-term operations and maintenance plan for Camp Bonneville with Clark County. Public input on the long-term operations and maintenance plan will be solicited before the plan is finalized.

Activities currently taking place at the site

Several commenters expressed concerns about current activities or infrastructure at the Camp Bonneville site, including the site fencing, helitack operation, firing ranges, and logging.

Fences

Commenters asked about the extent of fencing at the site (especially the Central Impact Target Area (CITA)), details about funding and expenses for fencing, as well as the schedule to inspect and maintain existing fencing. [Comments 17, 93, 94, 129, and 165]

Ecology's response

The entire property boundary of the site has not been fully fenced. Ecology has confirmed that 1.5 miles of the property boundary is not currently fenced. Clark County has spent roughly $300k/year on average for the purpose of Institutional Controls including Clark County's staff labor, fence inspection, maintenance, and repair. The County's Public Works Department has inspected, maintained, and repaired the site's fencing using a portion of Clark County's institutional controls cost with the environmental services cooperative agreement funding, which the Army has included in their budget since 2006. The initial funding amount was $6.5 million. Clark County has spent approximately $4.9 million as of February 2022. Ecology's understanding is there has been no limit (or allowance) allocated for the County's annual cost for institutional controls such as fencing.

Please refer to Clark County's fence inspection report for the details of their history of inspections. While Ecology, the Army, and Clark County draft a long-term operations and maintenance plan, we will discuss the improvement of existing fences and new fence installations needed, as well as the details of warning sign installation based on the risk level for each area of concern and the final cleanup effort completed. During that period of drafting the long-term operations and maintenance plan, the public will have an opportunity to make valuable comments on it, along with the estimated cost for institutional controls effort.

The cleanup supervised by Ecology was intended to clear the area identified within the reuse plan for safe public use. Areas that cannot be cleared to a safe level (such as the Central Impact Target Area or CITA, Phase 3) will be permanently fenced and access restricted with regular monitoring and removal of munitions that may emerge to the surface.

The area of the CITA was expanded by 107 acres to account for the possibility that munitions items may have landed outside of the existing boundary. During CITA cleanup, we identified historic firing positions and used range safety fan maps that illustrated the potential range of a given munition from those positions. We did increase those clearance areas with step-outs every time that we found a munition item near the edge of an investigation and clearance area. If it was close to the edge, we increased that area and continued going out until we stopped finding evidence of munition items. We did find some munition debris next to that northern fence line of the central impact target area along one of the roads and trails. After finding that we decided, in an abundance of caution and safety, to expand that northern fence line to try to make sure that we had coverage and fencing to restrict access to that area.

Public access to the CITA will never be allowed. The CITA will be permanently restricted with perimeter fencing and warning signs posted every 50 feet. Visitors entering the Camp Bonneville property will also receive educational information alerting them to the danger and restrictions within the Camp. The remoteness and inaccessibility of the CITA will prevent access, as will the fencing and warnings posted around the property. These fenced areas will be off limits to any activities, including those that would disturb the soil. Though the CITA is remote and highly restricted to access, surface monitoring inspections are intended to prevent potential encounters of unexploded ordnance at the soil surface by trespassers.

Helitack

There were questions about a potential violation of deed restrictions, the location of the helitack facility at the site, and whether helitack operations were at risk from or contributing to contamination at the site. Commenters also asked about the public process that supported the selection of the helitack site at Camp Bonneville. [Comments 69, 70, 71, 72, and 73]

Ecology's response

The deed restriction contained in the 2006 Quitclaim Deed does not make any stipulations about the Department of Natural Resources' (DNR) use of a helitack facility at Camp Bonneville. Ecology does not have any legal authority to approve or disapprove DNR's activities that are being governed by the agreement made between Clark County and DNR.

One clause that might be relevant can be found in Section 3 (Disruption of Remedies Prohibited) of Exhibit C of the 2006 Quitclaim Deed is as follows:

> "The grantee agrees that it shall not, nor shall it allow its sublessees, tenants, invitees, or licensees to engage in activities that will disrupt any remedial investigation, response action and/or oversight activities on the property related to hazardous substances or MEC [munitions and explosives of concern]."

Ecology found the DNR's activities, including the helitack facility, on their leased land have never disrupted the cleanup activities such as the remedial investigation, response action, and/or oversight activities on the property related to hazardous substances or MEC.

Accordingly, comments, questions, and restrictions related to the temporary helitack facility, the public meeting to allow DNR's helitack facility, the briefing to DNR regarding DNR's activities, training for the pilot, access to dangerous acres of the property, etc., would be best addressed by Clark County or DNR as they refer to the agreement between those two agencies.

To Ecology's knowledge, the helitack facility has not caused new contamination. There is always a possibility that new contamination (fuel spill, etc.) could occur due to the helitack facility (or any parking lot, etc.) at the site. Any new release discovered shall be addressed as part of an existing RAU or as a separate RAU by agreement of the Parties.

Ecology confirms that DNR has their own fuel trucks they bring in to fuel the helicopter as needed. They also have their own spill response equipment for the temporary helitack facility required by law in case there is an incident. If the spilled amount is significant, just like any other facility in Washington State, DNR would contact Ecology's Spill Prevention, Preparedness, and Response Program.[22]

Firing ranges

Questions were raised about the active shooting ranges at the site, including their consistency with cleanup objectives and future planned land use. [Comments 13, 88, 89 and 125]

Ecology's response

The FBI firing range is an active firing range that is currently maintained by the federal government, under an agreement between Clark County and the FBI. Ecology does not have the authority to allow or disallow the FBI's activities in this case. Because it is an active firing range, lead bullets and lead fragments are being added to the range on a continuous basis. During operations, lead bullets and shot are added to the range, so it is not practical to undertake cleanup activities until it closes. Ecology's authority only starts at the closure of that range.

The United States Environmental Protection Agency has provided technical information to assist range owners and operators in managing lead at active shooting ranges entitled Best Management Practices for Lead at Outdoor Shooting Ranges, EPA-902-B-01-001.[23]

Once the range is closed, the Model Toxics Control Act requires that lead above 250 ppm is remediated. It is Ecology's position that the federal government, either represented as the U.S. Army or the FBI, would be responsible for the ultimate cleanup of the range after it is closed. This cleanup will occur under the state's Model Toxics Control Act authority.

[22] https://ecology.wa.gov/Footer/Report-an-environmental-issue/Report-a-spill
[23] https://www.epa.gov/lead/best-management-practices-lead-outdoor-shooting-ranges-0

Logging

There were questions about the current logging activities at Camp Bonneville. [Comment 135]

Ecology's response

The Washington Department of Natural Resources (DNR) owns property near the Camp Bonneville site. This land is used as a quarry and for timber harvest, and is separate from the Camp Bonneville cleanup site. Logging activities on DNR lands do not impact or affect the cleanup of the site. There are no plans for DNR to transport any timber through Camp Bonneville. Ecology does not have authority over these operations. For more information on DNR activities, please contact DNR or Clark County representatives at (360) 635-3890.

Future planning for the site

Some questions expressed concern about the future planned uses for the Camp Bonneville site. Concerns were raised about:

- Public safety and unauthorized access to the site
- Fire risk
- Future land use
- Management and maintenance costs
- Required reviews
- Historic and cultural resources
- Protecting sensitive areas
- Wildlife conservation

The following sections respond to specific concerns.

Public safety and unauthorized access to the site

Questions were raised about how people would be prevented from accessing areas of the site that were not cleared in the cleanup. Others wondered how access restrictions have been or would be enforced in the future. [Comments 4, 34, 35, 40, 79, 95, 116, 118, 147, and 175]

Ecology's response

Ecology's role in Camp Bonneville is overseeing the County's cleanup work to ensure the cleanup meets state standards in the context of their reuse plan for the site, and support for the county in ensuring cleanup work is protected during Camp Bonneville's operations in the future. Clark County is responsible for redeveloping and managing (operations, maintenance, monitoring) the site once cleanup is complete. Questions about topics like park management, policing, the details of interpretive or educational materials, noise management, etc., will be addressed through the development of a long-term operations and maintenance plan, which Ecology will have a role in, and through the County's development planning process. Public input will be invited for both of these processes. Questions about current trespassing issues

would be best brought to either the Clark County Parks Department, Sheriff's office, or the Clark County Prosecuting Attorney's Office.

The cleanup supervised by Ecology is intended to clear areas identified within the reuse plan for safe public use. Areas that are unsafe and cannot be cleared (such as the Central Impact Target Area, Phase 3) will be permanently fenced to restrict access and will require regular monitoring and removal of munitions that may emerge to the surface. It is ultimately Clark County's obligation to implement any necessary actions to prevent the public from accessing uncleared areas at the site.

Clark County has placed and will put additional fences and maintain fencing around uncleared areas at the site that are not safe, along with signage warning of potential unexploded ordnance.

A specific question was raised about permit enforcement at Livingston Quarry. It appears that this might be referring to a permit issued by the Washington State Department of Natural Resources (DNR). Ecology would direct those interested to bring questions to the entities that issued the permits in question.

There will only be public access allowed to the roads and trails that have been cleared. Clark County will have to restrict access to any other roads and trails that have not been cleared.

Most of the DNR properties are in the wildlife conservation area, so any future use of the DNR properties would still need to be managed to be consistent with the conservation conveyance, the deed restrictions, or consent decree. Any activities in there would be managed consistent with the cleanup that's been conducted. Those areas are slated to continue to be a wildlife conservation area and only accessible to the public through roads and trails.

Fire risk

There were questions about plans to address future wildfires on the site, including the potential risk to firefighters entering uncleared areas and potential risks to surrounding residential communities. Commenters asked about maintaining firebreaks and reducing fuel loads. Comments were also made about potential funding from the Army to support wildfire suppression. [Comments 20, 25, 63, 64, 65, 66, 67, 68, 71, 121, 132, 134, and 171]

Ecology's response

Clark County, the Department of Natural Resources, and likely the Clark County and/or local city fire department would respond to fires or make fire management decisions such as use of helicopters, evacuation plans, or park closures, depending on the circumstances. Ecology is available to assist these agencies if they need any technical assistance in regards to conditions at the property.

While Ecology is not responsible for fire management in the Camp Bonneville area and has not worked with other agencies on fire management for the site, we tried to build into the cleanup

a couple of things that were helpful to fight wildfires. First, we requested funding when the property was initially transferred to Clark County to clear a buffer zone around the perimeter fence of Camp Bonneville that would then be accessible to ATVs or vehicles or firefighters. We also cleared a firebreak around the entire Central Impact Target Area that would be accessible. Through the clearance activities that we conducted, we entirely cleared all the brush and all the small trees, trees under six inches in diameter and all underbrush was cleared. The fire load was reduced significantly through those cleanup activities in the Central Valley floor and any of the other areas that were cleared. Clark County is responsible for the maintenance of fire breaks as part of ongoing property management.

Our understanding is that funds were not requested by the County specifically for fire management, but the cleanup had a secondary effect of assisting fire management.

The DNR would likely have to use different types of firefighting techniques if a wildfire broke out at Camp Bonneville. We do not believe that any of the cleanup activities or munitions would preclude them from fighting a wildfire at Camp Bonneville, and we believe it is highly unlikely that helicopter crews would be at risk from any munitions remaining at Camp Bonneville. However, there are areas where they would not go into to fight a wildfire on foot. One of those areas is the Central Impact Target Area. Should a formal wildfire suppression plan be in place, Clark County or the Department of Natural Resources would have that plan in their possession.

There will be a long-term operations and maintenance plan for Camp Bonneville, developed by Clark County and the Department of Ecology. One of the topics in that plan will be maintenance of the firebreaks. Those are also maintained for cleanup purposes as well, so that we can do things like fence and signage inspections.

Future land use

Commenters asked about the decision-making process for future land use planning at the site. Questions were also asked about future traffic changes to support access to the site, and potential new uses at the site such as ATVs. [Comments 3, 5, 6, 8, 10, 14, 19, 128, 130, 131, and 136]

Ecology's response

Ecology's role in Camp Bonneville is overseeing the County's cleanup work to ensure it aligns with state cleanup standards in the context of their reuse plan for the site, and support for the County in ensuring cleanup work is protected during Camp Bonneville's operations (future land reuse plan) in the future.

Clark County is responsible for redeveloping and managing the site once cleanup is complete. Questions about topics like park management, policing, the details of interpretive or educational materials, noise management, etc., will be addressed through the development of a long-term operations and maintenance plan, which Ecology will have a role in, and through

the county's development planning process. Public input will be invited for both of these processes.

As the property owner, Clark County is responsible for determining how the land is used in the future. There was an extensive public process in the late 1990s to develop a reuse plan showing intended park uses. This plan helped determine an appropriate cleanup action plan at the site. Any future land use decisions will be consistent with the cleanup objectives. Clark County's development and use of the property is described in its Clark County's Camp Bonneville Master Plan, 2019.[24] That reuse plan is restricted to conservation purposes by the deed, and a conservation conveyance limits the use of the property to conservation purposes under the United States Code 10 U.S.C. § 2694(a).

Determination of how the land can be used after cleanup and what is necessary for the development of the county park is dependent on Clark County. Some examples of choices that Clark County will make include:

- The purchase of private land if necessary;
- Necessary easement;
- Evaluation of other (eco- and budget-friendly) development alternatives other than the Park;
- Clark County's decision-making process for future development at Camp Bonneville site;
- Access route - traffic changes or improvement, traffic control and monitoring, access roads to the park; and
- Activities allowed such as ATV use and campfires.

Ecology's understanding is that the County will be conducting a public process for the planned and anticipated reuse of the property. Ecology will still be involved to help develop and execute an O&M plan for the cleanup as previously stated, and to ensure future land use is consistent with the cleanup.

You can reach out to Erik Harrison at Clark County to learn more about their plans. (360) 635-3890, erik.harrison@clark.wa.gov.

Management and maintenance costs

There were questions about the costs to Clark County for future maintenance of institutional controls at Camp Bonneville, and whether those costs had been discussed with the county. [Comments 94, 126, 137, 138, 152, and 158]

Ecology's response

[24] See slides from a Clark County Council presentation, detailing the County's Camp Bonneville master plan: https://clark.wa.gov/sites/default/files/dept/files/council-meetings/2019/2019_Q1/020619WS_CampB_MasterPlan.pdf

Institutional or engineering controls are measures taken to protect people and the environment from coming into contact with hazardous substances left behind after a cleanup is completed, to ensure that the cleanup continues to protect people and the environment. These can include signage, site monitoring, cap maintenance, fencing, necessary contingency actions, and deed restrictions. Institutional controls are commonly used and authorized under the state clean up law as viable methods to manage long-term risk at these sites. They are typically identified during the cleanup planning process and all project partners (here, the U.S. Army, who funds cleanup at Camp Bonneville; Clark County, who conducts cleanup work; and Ecology, who ensures cleanup is aligned with Washington's cleanup law) are active participants in deciding whether to design a cleanup that requires them.

Clark County Public Works has used the Environmental Services Cooperative Agreement fund, Contract Line Item Numbers (CLIN) 0011 and 0012, for site maintenance and associated activities since 2006. This work category includes, but is not limited to, general site and structure maintenance to comply with institutional controls including: the County's oversight labor; the maintenance, repair, and inspection of fences and signs; maintenance of culverts; drainage ditches and road; grass re-seeding; invasive plant species control; brush clearance, etc. As of February 2022, Clark County spent approximately $4.9 million for these tasks, which means roughly $300k/year on average. The continued effectiveness of institutional or engineering controls is required as part of the cleanup action. The current institutional controls are based on the language stipulated in the 2006 Restrictive Covenant, which is applicable to only the RAU 1 area. Additional institutional controls will be required for the two soil caps on the small arms ranges with lead remaining in the soil, and for access restrictions to areas that may be unsafe for public access due to the possibility of any remaining munitions item(s).

Ecology will work with Clark County staff as they develop a long-term operations and maintenance plan along with the plan for additional fences as needed. The County needs to revisit the current restrictive covenant, or add additional language to the restrictive covenant to reflect recent cleanup activities (2021) and the county's reuse plan.

The types of things that would require institutional controls would be the caps on the two lead soil areas, where the remaining lead contamination was covered in clean soil. Institutional controls will be required for those caps, including inspection and maintenance, and there will be dig restrictions in and around the areas of those caps so they are not compromised. We have not sat down with the County and done long term cost estimates on the institutional controls for Camp Bonneville, because the details of those things have not been entirely worked out in the long-term operations and maintenance plan for those specific sites.

It will be up to Clark County, working with Ecology, to determine an annual maintenance and operations budget associated with this project that complies with state law and the Consent Decree.

Required reviews

Commenters asked about the required reviews at the site, including post-storm and annual clearance at the CITA and MTCA-required periodic reviews. [Comments 148, 149, 150, and 170]

Ecology's response

A periodic review consists of a review by Ecology of post-cleanup site conditions and monitoring data to assure that human health and the environment are being protected. Ecology looks at the effectiveness of engineering controls, institutional controls, and any changes to regulations that would impact the effectiveness and the protectiveness of an implemented remedy. In addition, Ecology reviews other matters that concern or affect the effectiveness and protectiveness of the implemented remedy. Clark County is responsible for conducting periodic reviews, which must be conducted at least every five years. The County is behind on this requirement. We are working with them to ensure they fulfill this requirement.

Ecology intends to require MTCA periodic reviews at the site's remedial action units that are required to have such reviews. WAC 173-340-420 contains a full list of the requirements for these periodic reviews, which includes an opportunity for public notice and public comment.

There are additional requirements for Clark County to conduct inspections following ground-disturbing events at Camp Bonneville that have the potential to expose munitions items to the surface of the soil. These events could include large storm events, erosional events, landslides, or other significant ground-disturbing events. The information from these inspections are intended to be included in the periodic reviews for those sites or locations.

The latest monthly report published by the County is for February 2022, which summarizes the progress achieved and issues addressed by Clark County. The latest report informed that the contractor (Weston) completed all remaining fieldwork in RAU3 Phase 4 munitions surface clearance for Western Slopes area (194 acres). All other previously contracted work is complete as of that reporting period.

As of February 17th 2022, Ecology, Clark County and the U.S. Army have resumed regular monthly project coordinator meetings to discuss various remaining issues. Accordingly, the County has published the February 2022 monthly report as well.

If the MTCA regulations change for chemical contamination aspect, Ecology will need to revisit the site condition and reevaluate the protectiveness of the implemented remedy to make sure it is compatible with revised rule.

Historic and cultural resources

Questions were raised about how other sensitive areas were being protected, including archaeological sites, historic pioneer sites, and historic Army buildings. [Comments 104, 105, 106, and 159]

Ecology's response

State cleanup law requires that activities related to site investigation and remediation be conducted in a manner that considers the impact of these activities on cultural and historic resources that may be present on the site, and that work follows prescribed steps for monitoring for the presence of potential artifacts.

Camp Bonneville Army buildings and structures have been evaluated two times for National Register of Historic Places (NRHP) eligibility, in 1986 and 1997. During both inspections, Camp Bonneville buildings were determined to be ineligible for the NHRP.

Clark County and Ecology have included a Cultural and Historical Resource Protection Plan in the Cleanup Action Plan for each RAU. These reports describe cultural resource protection measures to be taken during the cleanup action. In 2009, the Cultural and Historical Resources Protection Plan was prepared and implemented where the cleanup action required significant soil excavation/disturbance during the cleanup activities. Refer to Appendix C of the final Cleanup Action Plan for RAU 3, 2010.[25] This protection plan fulfilled the requirements stipulated in the Preservation Covenant for Conveyance of Property that includes Archeological sites, in the environmental covenants, conditions, and restrictions section of the Finding of Suitability for Early Transfer (FOSET).[26]

Furthermore, the Finding of Suitability for early Transfer and the Programmatic Agreement between the Army, State, County, and the Cowlitz Tribe also describes and controls cultural resource protection. Finally, all individuals conducting vegetation or munitions clearance are required to attend a cultural and archaeological training. A qualified archaeologist from Archaeological Investigations Northwest, Inc. provided consulting and identification of cultural resources encountered during remediation activities.

Section 6 of the 2006 Quitclaim describes Clark County's responsibility for undertaking any and all asbestos and lead-based paint abatement or remediation in the buildings that may be required under applicable law or regulation governed by local Clean Air Agency and Washington State Department of Labor and Industries. For details on the cost of building maintenance, please refer to Erik Harrison at Clark County at (360) 635-3890 or erik.harrison@clark.wa.gov.

Protecting sensitive areas

Questions were asked about how wetlands were being mapped, evaluated, and managed at the site. [Comment 103]

[25] https://fortress.wa.gov/ecy/gsp/DocViewer.ashx?did=78713
[26] https://fortress.wa.gov/ecy/gsp/DocViewer.ashx?did=2911

Ecology's response

Below is the list of recent wetland survey and evaluation reports prepared. Please refer to the reports below for more detailed information:

- Weston Solutions. (2018). *Wetland and Waters Delineation Report for Camp Bonneville – Northern Central Impact Target Area (CITA) Expansion*. Delineation of wetlands and ordinary high water mark at multiple stream crossing along a proposed perimeter access road for the Northern CITA Expansion was conducted. Study on topography, plant communities, soils, hydrology, jurisdiction of various wetland areas.
- PBS Engineering & Environmental. (2008). *Wetland Delineation Report*. Biologist/hydrologists conducted the field survey on order to delineate the wetland boundary, soils, hydrology, vegetation, climate, precipitation using the Washington State Wetlands Identification and Delineation Manual (Ecology, 1997).

In order to protect wetlands and wetland species, the Wetlands Protocol prepared by the contractor was used to guide MEC clearance activities in the wetlands. All work in or near a wetland area was completed using reasonable and prudent measures to minimize impact to the wetlands as described in the final construction report for RAU 3. Whether a new wetland survey is necessary or not in the future can be determined during the future periodic review period.

To prepare for munitions clearance at Camp Bonneville, we worked with Ecology's Shorelands and Environmental Assistance program, Washington's wetlands regulation experts, to establish wetland protocols to hand-remove vegetation along the creek and in the wetlands. We removed vegetation in a number of the wetland and riparian areas and did it in a way that we tried to protect those sensitive environments through the clearance activities.

Wildlife conservation

There were questions about wildlife conservation planning and surveying, and the impacts of cleanup on habitat health and safety at the site. [Comments 96, 97, 98, 99, 100, and 101]

Ecology's response

In 2001, the U.S. Fish and Wildlife conducted a survey of endangered species and indicated that no listed animal species were within Camp Bonneville. Coastal cutthroat trout have been documented at Camp Bonneville and are proposed for listing under the Endangered Species Act (ESA).

The ESA is administered by the U.S. Fish and Wildlife service (wildlife, plants, and fish species) and the National Oceanic and Atmospheric Administration. This law requires protection of listed species and associated habitat. Per the biological assessment completed for the Camp Bonneville cleanup project, no effect is anticipated for the implementation of this project.

Formal biological opinions have been issued by each agency confirming the effect determination in the biological assessment (USACE, 2001[27]).

Ecology would assist the County in conservation planning efforts if the County requests such assistance. Clark County would be best able to respond to questions about specific conservation assessments or conservation planning.

We do not have a staff person specifically assigned to assist with developing a conservation plan for Camp Bonneville. Clark County's Habitat Conservation Ordinance – Unified Development Code (UDC) Title 40.440 [CC 40.440] protects fish/wildlife habitat while allowing reasonable use of the property. Whether new survey of endangered species is necessary or not in the future can be determined during future periodic review periods.

Two threatened/sensitive plant species have been observed on the site. The small-flowered trillium (sensitive) and hairy-stemmed checker-mallow (threatened) were observed near Lacamas creek, however this area is not anticipated to be impacted by the proposed activities. Field clearance personnel are routinely briefed on the nature, appearance, and presence of those plant species and instructed that if they encounter the plant in a previously undiscovered location to stop work activities and notify the county/Ecology staff. These areas are then closed off to foot traffic and no mechanical brush clearance is allowed. More diverse plant communities generally surround the Lacamas Creek drainage. There have been no major impacts identified for animals resulting from the Proposed Action, and thus no mitigation measures are required.

There are no specific studies currently being conducted to monitor the wildlife habitat health or diversity in Camp Bonneville, but an assessment of impacts from remaining munitions or contamination could potentially be included in the long-term operations and maintenance plan for the property.

Groundwater contamination and testing

Several people shared their concerns about groundwater contamination at the site, including the following topics:

- Current groundwater contamination dynamics
- The status of Ecology groundwater studies
- Impacts to the nearby gas pipeline

Understanding of current groundwater contamination dynamics

Questions were raised about Ecology's response to consistent levels of perchlorate and RDX contamination in the Landfill 4 area, concerns raised about potential domestic well

[27] USACE, 2001. Environmental Assessment for the Disposal and Reuse of Camp Bonneville, Washington, October 2001.

contamination, and the potential for lead contamination in groundwater. [Comments 12, 37, 110, 113, and 114]

Ecology's response

The groundwater monitoring program at Camp Bonneville is based on regular data collection from a network of 28 wells. There are 18 wells surrounding the original contamination source area in Landfill 4 where perchlorate and RDX are known to exceed cleanup levels. There are 10 sentinel wells installed near the southeast corner of the site that were installed to serve as an early warning system in the event that groundwater contamination were to move away from the area of known contamination and pose a risk of leaving the base boundary.

The only contaminants of concern detected above MTCA cleanup levels at Camp Bonneville are perchlorate and RDX; lead has never been found above detection limits in groundwater at the site. Perchlorate and RDX concentrations have remained consistently high in the Landfill 4 area because the natural geologic formation the shallow groundwater plume resides in is containing the contaminants and the plume is not able to migrate very far from the source area.

Perchlorate and RDX are both highly soluble compounds with low affinity for "sticking" to soils and many of the source materials were disposed of as far back as the 1960s. This means that they should theoretically move through the watershed quickly in the absence of impediments to groundwater flow in the site geology, and there has been ample time for that movement to occur. Despite these facts, there have never been detections of either perchlorate or RDX above laboratory method detection limits in the sentinel wells, which are designed to intercept groundwater contamination if it moves away from the source area (the Landfill 4 vicinity) and toward on-base production wells or surface water. The non-detections observed in sentinel wells, on-base production wells, and surface water confirm the relative immobility and effective containment of these contaminants at this particular site.

For assessing risk to nearby water resources such as domestic drinking water wells, it is necessary to look at the ways contamination can move to nearby groundwater supplies both vertically and horizontally. Here we will first address the vertical pathway for possible contamination. Perchlorate and RDX have been monitored closely for over 15 years and the shallow groundwater contaminant plume has never been found to migrate downward to the typical depth where wells in the area are likely to be screened. Groundwater contamination is present in shallow monitoring wells at Camp Bonneville screened at approximately 20-70 feet below ground surface. Wells used for domestic water production are likely 200 feet or more below ground surface, with a highly impermeable zone of clay and solid, stable bedrock sitting between contamination at the surface and aquifer units screened in the deeper Troutdale aquifer. The three wells used for non-potable water production located within Camp Bonneville have never had detections of perchlorate or RDX. These wells are screened between 350-600 feet below ground surface and are tested annually.

In terms of horizontal extent, concentrations of RDX and perchlorate diminish to either below cleanup level or to non-detect levels at the edges of the Landfill 4 monitoring network. This indicates that the plume is localized to a relatively small region and at shallow depth within Camp Bonneville.

Lastly, there are sentinel wells located at the southwest corner of Camp Bonneville where Lacamas Creek exits the site and these wells have also never had detections of either contaminant above cleanup levels or the respective method detection limit. As groundwater is inferred to follow the surface drainage of Lacamas Creek, if contaminants were leaving the base and impacting nearby properties, detections would have been registered at these monitoring points first, and that has not happened. Given the very localized nature of the contaminant plume and the absence of detectable levels of contaminants in either on-base deep wells or shallow sentinel wells, we have determined that there is presently very little risk to nearby domestic wells, though we expect quarterly monitoring to continue to ensure that contamination remains contained.

Ecology has evaluated the groundwater monitoring data for over 15 years and concluded that the shallow groundwater contamination still present in the Landfill 4 area is not currently a risk for contaminating nearby surface water or nearby wells. Ecology is the lead regulatory agency on this cleanup, but we have maintained open communication with the Environmental Protection Agency's Region 10 office about the project as a professional courtesy. We will take into consideration their recent feedback to an update on the status of the RAU-2C site-wide groundwater cleanup as we proceed with the cleanup.

The current status of the groundwater cleanup effort is that groundwater was last sampled in June of 2021 and has not been sampled since due to unforeseen delays in Clark County completing the contracting process to recommence regular, quarterly groundwater sampling. Ecology has been in active, frequent communication with Clark County about recommencement of groundwater sampling efforts and we have requested that sampling continue as soon as is practicable. Once that contracting process is completed and a contractor can proceed with completing the feasibility study, then remedial alternatives will be evaluated and ultimately a remedial action (or actions along with contingency actions) will be selected as part of the Cleanup Action Plan (CAP) to address the residual groundwater contamination present.

Status of Ecology's groundwater studies

Commenters raised questions about the current work being done to understand groundwater contamination at Camp Bonneville, whether Ecology plans to screen for PFAS, Ecology's rationale for moving from quarterly to twice-yearly groundwater monitoring, and plans for testing off-base domestic wells. [Comments 11, 115, 119, 142 and 143]

Ecology's response

Groundwater cleanup is the last active component of cleanup at Camp Bonneville. Ecology will oversee the completion of a groundwater remediation feasibility study (FS) for site-wide groundwater at Camp Bonneville once Clark County completes the aforementioned contracting process so that this may move forward. This FS will provide an update on the conceptual site model (CSM), which describes our understanding of the conditions of the site, the ways contamination can move or change, and its potential impacts to people and the environment. The FS report will be available for public review and input through a public comment period when it is completed and there will be another opportunity to ask questions or make comments about groundwater contaminant plume behavior at that time. The FS will draw on prior modeling work in its conclusions and recommendations.

Ecology is actively in communication with the U.S. Army and Clark County about conducting a PFAS investigation and we know that the Army has prioritized Camp Bonneville for a Preliminary Assessment (PA) that will examine site-wide groundwater for possible PFAS impacts. Once the PA is completed and has undergone all necessary reviews, this document will be available to the public.

Ecology is the lead regulatory authority for monitoring groundwater, as stated in the 2006 Prospective Purchaser Consent Decree (PPCD) and the revised 2011 PPCD.[28] The monitoring frequency was changed from quarterly to semi-annual following Clark County's request in 2020 because our analysis showed that it was very unlikely that data of any additional value would come from monitoring groundwater quarterly rather than semi-annually. The basis for this determination was that contaminant levels have remained relatively stable over time and had not demonstrated any substantial variability from year to year or even over the entire course of sampling, aside from a seasonal dilution trend in the wetter part of the year. Ecology's interpretation was that the language in the 2011 amended PPCD provided the latitude to make this management decision.

However, in response to citizen concerns and out of an abundance of caution, Ecology chose to revert to relying on the much more specific language of the 2006 PPCD, which stated that groundwater should be monitored quarterly until a clear and consistent downward trend for all contaminants of interest has been observed in all wells for four consecutive quarters. We expect a return to quarterly groundwater monitoring once Clark County's contracting process allows the monitoring to start again.

Groundwater from sentinel wells is to be tested quarterly for perchlorate and RDX, per the existing sampling plan. Sentinel wells were last tested in June 2021 and will be tested again once groundwater monitoring recommences at Camp Bonneville.

[28] https://fortress.wa.gov/ecy/gsp/DocViewer.ashx?did=5370

In 2015, nine off-base domestic wells were sampled and none were found to have any detectable levels of the perchlorate or RDX. Ecology, Clark County, and the Army will be looking into off-base domestic well sampling as the Feasibility Study for the Landfill 4 area moves ahead. We do not have any information to lead us to believe that any drinking water wells outside of the property have been impacted by contamination from any of the cleanup sites on the property.

Impacts to gas pipeline

One commenter asked whether groundwater contamination could impact the nearby gas pipeline. [Comment 124]

Ecology's response

We do not think the presence of perchlorate and/or RDX in groundwater would impact a gas pipeline. These compounds are present at extremely low levels (parts per billion range) and thus it is very unlikely that their presence would impact any underground piping. While perchlorate in a concentrated form is a known oxidizer, the extremely diluted presence of this chemical would be highly unlikely to have any effect on a pipeline.

Public involvement

Several concerns were raised about the Ecology's public involvement activities for Camp Bonneville. Those concerns included:

- Increased engagement in the future
- Online document repository
- Meeting planning and notification
- Educational materials

Increased engagement in the future

Commenters requested additional opportunities to engage with Ecology about current and future work at the site, including open public discussions and forming a Citizen's Advisory Committee. [Comments 22, 29, 38, 61, 111, 127, 173, and 177]

Ecology's response

During early planning efforts, Ecology and the partner agencies working on Camp Bonneville supported public engagement tools such as advisory groups that went above and beyond the legal requirements for public participation defined under the Model Toxics Control Act (MTCA, WAC 173-340-600). Over the last ten years, Ecology's Camp Bonneville efforts have gone into implementing the plans that were developed with that extensive public input, and returning to the standard public involvement processes outlined in section 600 of MTCA. These standard

processes are centered on supporting public comment periods for specific key documents – providing those documents for review during the comment periods online and at the Vancouver Public Library, responding to comments we receive, hosting public meetings or hearings as needed, and providing notice of comment periods through specific venues, including:

- Mailers to addresses in the area
- Advertisements in prominent local newspapers
- Notice in Ecology's Site Register; and
- Notice on Ecology's Camp Bonneville webpage

MTCA also includes a section that describes a requirement for regional citizen's advisory committees (WAC 173-340-610). Those committees were designed to focus on issues of region-wide significance and do not support site-specific concerns. The Toxics Cleanup Program has not staffed these committees in many years. This was in part due to 2001's Senate Bill 5401, which struck the requirement for these committees from state statute. These regional citizen's advisory committees are different from, and were designed for a different purpose than, the Camp Bonneville Restoration Advisory Board that was established by the U.S. Army in 1995 and the Camp Bonneville Citizen's Advisory Group that was established in 2007 by Clark County for the Camp Bonneville site specifically.

At this time, Ecology will continue to use its public participation process for public involvement for the Camp Bonneville site. However, it is not Ecology's intention to support a site-specific citizen's advisory committee for the remaining cleanup decisions at the site, and regional citizens advisory councils are not an available resource to address site-specific concerns.

We do recognize the level of interest in the site and are in active communication with Clark County in support of their intent to host an advisory group focusing on the redevelopment of the site. We also recognize that a complete understanding of the site's cleanup history and current status will be critical to redevelopment planning. As such, we anticipate that part of Ecology's work participating in the County's advisory group will include providing information to build that understanding.

Moving forward, Ecology plans to continue following the guidance outlined in section 600 of MTCA. We will ensure the public has the opportunity to review and comment on key cleanup documents before they are finalized for the remaining groundwater planning work at RAU-2C. Those documents include the draft Remedial Investigation and Feasibility Study report, the draft Cleanup Action Plan, and any substantive revisions to the above-mentioned documents.

For more information about Clark County's plans for establishing an advisory group for Camp Bonneville, you can reach out to Erik Harrison at (360) 635-3890 or erik.harrison@clark.wa.gov.

Online document repository

Questions were asked about the documents available through Ecology's online document repository. Commenters requested a comprehensive posting of project documents, including all quarterly groundwater reports. [Comments 28, 30, 112, 120, and 140]

Ecology's response

All of Ecology's environmental cleanup sites, including Camp Bonneville, have a collection of key documents posted in online repositories. These repositories are intended to provide access to a core set of critical documents such as those that are shared for review during public comment periods, or foundational legal agreements. Over the years working on Camp Bonneville, we have included additional documents outside of that core set, including select groundwater monitoring reports, which do include figures that illustrate all previous groundwater monitoring data collected at the site.

Ecology doesn't currently have the resources needed to support full digital collections of documents for all of our cleanup sites, especially sites at the scale of Camp Bonneville. Because of that, our practice is to offer the public records request process to interested members of the public who cannot find the document they are interested in included in the online document repository.

We are in the process of considering digitizing the Camp Bonneville records that Ecology holds. Changes in program management and limited staff capacity have unfortunately meant that this decision-making process is taking a long time. In the interest of setting appropriate expectations, it's important to acknowledge that this process would also be lengthy if it does move forward. Some elements of getting Camp Bonneville documents clickable online include: developing a new contract, hiring a contractor, scanning thousands and thousands of pages, accurately naming and organizing those scanned documents, then uploading them all to the internet. If we do decide to move forward with this project, we will announce that decision and the implications for public records searches through the Camp Bonneville email distribution list. You can sign up for that list here.[29]

Specific questions were raised about groundwater monitoring reports. We have uploaded the two most recent groundwater monitoring reports to the Camp Bonneville online repository, and are evaluating the possibility of making the entire collection available online, as part of the process mentioned above. In the meantime, it may be useful to note that each groundwater monitoring report includes an appendix with a collection of graphs that show the complete historical monitoring data since the beginning of each well's monitoring program.

[29] https://public.govdelivery.com/accounts/WAECY/subscriber/new?topic_id=WAECY_222

Meeting planning and notification

Several questions were asked about the planning and notification for the listening session, as well as the Zoom format. Concerns were raised about how the public could participate in the virtual forum and plans for overall meeting management. One question was asked about the number of attendees at the listening session. [Comments 21, 31, 36, 57, 58, 59, 60, and 172]

Ecology's response

Ecology's first announcement of the listening session was on December 22, close to the Christmas holiday and during a time that many are busy. Our intention was to balance that out by providing notice of the meeting through several platforms and at several times leading up to the meeting. Readers can refer to the public outreach summary on page 7 for a description of all of the notification times and methods used to announce this meeting. Our rationale for scheduling the meeting in late January was that it was far enough from the winter holidays to support broad attendance.

One email notification, sent on January 13, mistakenly listed the day of the meeting as Thursday, January 19 rather than Wednesday, January 19. We sent a correction to this notice about thirty minutes later. That error was unfortunately compounded by a Clark County Neighborhood Planning Coordinator who shared the notice to their network and listed the day of the meeting as Tuesday, January 19. That error was also recognized by the person who shared it and corrected quickly.

Following our initial announcement, a member of the public raised concerns about internet bandwith limitations creating a barrier to access for people near Camp Bonneville. We welcome and appreciate hearing such feedback. In response, we included information about accessing the meeting by phone in the following announcements and provided a PDF of the slides provided during the meeting so those attending by phone could follow along with visuals.

Our primary goal for this meeting was to provide people interested in Camp Bonneville opportunity to share their thoughts and concerns about the site with us. During the meeting and outside of it we welcome all types of feedback, including critical feedback, as long as it doesn't include personal attacks or threats to staff safety. We made decisions about the meeting format and available tools, such as limiting speaking time to three minutes and limiting sharing to speaking during the meeting or sending in written comments, to support those remarks while providing as many people as possible the opportunity to share their thoughts and give us a path for managing escalations if needed. In practice, no escalations occurred. Seventy-nine people attended the meeting. We heard a wide range of comments from about twenty people over three hours, and we are not aware of any individual not being able to participate.

Educational materials

Commenters asked about the educational programs and materials that had been prepared to support outreach about the site. [Comments 62, 161, and 162]

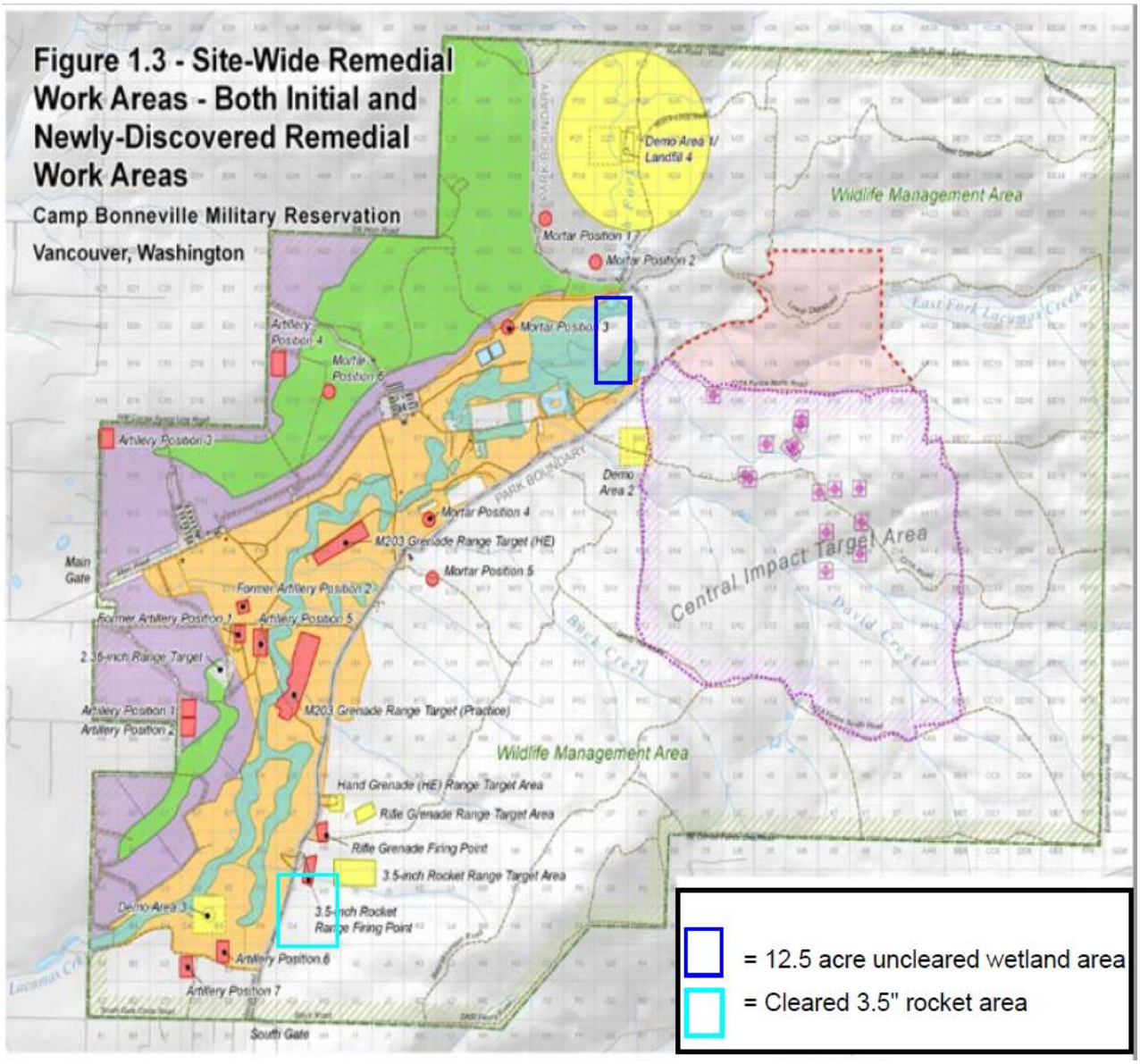
Ecology's response

Ecology has not developed educational materials for Camp Bonneville outside of materials provided for public comment periods and meetings regarding the environmental cleanup at the site. We expect interpretation and education to be a key aspect of the site's development once cleanup is complete and public access is established. Clark County will be leading that redevelopment planning, with Ecology's participation. During that process, we will continue to support the County in following the guidelines that were developed with community input in the early stages of work on Camp Bonneville.

We have not pursued funding specifically for education during the cleanup, and will consider it as we move forward.

Appendices

Appendix A. Map of approximate uncleared wetland area in the Central Valley Floor



Appendix B. Public comments in original format

Comment	Commenter	Comment ID
Who is paying for the cleanup and development?	1	1
What is the budget for cleanup and development?	1	2
How will the park be accessed? What traffic changes or improvements are planned?	1	3
How will the park be policed? There is potential for unwanted traffic, noise, crime, litter, unauthorized camping. What are the rules and regulations for the park?	1	4
Will any private land be purchased for development of the park? Any easements required for development of the park?	1	5
How will construction traffic be controlled and monitored?	1	6
What is the timeline for this project?	1	7
Are there better alternatives that are more budget-friendly and eco-friendly? What alternatives are being considered other than a park?	1	8
How is the cleanup of chemicals, ordinance, other debris from the Army going to be verified as completed? What safety assurances are there?	1	9
How is the final decision being made? Will voters have a chance to approve/reject this proposal?	1	10
I've heard that there's been a stop to quarterly groundwater testing at Camp Bonneville, despite prior records indicating elevated levels of lead. How will this be remediated? How often is testing being done?	2	11
All of our families have well water in our area. What is the potential danger of lead or any other contaminants from the Bonneville site for the residents in the surrounding area?	2	12
I've heard there is some active shooting ranges on Camp Bonneville. How does this fulfill the "park or conservation" use requirements? When will other organizations stop using the site as a firing range so it can be cleaned? Who is using the firing ranges? What will it take to clean it of ordnance?	2	13
Prior there was talk of a public private partnership for Camp Bonneville. It didn't receive an enthusiastic community response. Is this still on the table?	2	14
Is cleanup limited to the first 12 inches of soil? For what reason was the change made from 24 inches?	2	15

Comment	Commenter	Comment ID
Slopes that appear easily scalable to anyone are pictured as an example of being too steep to need to clear. What degree of slope has been considered unnecessary to clear munitions from?	2	16
Who maintains the fences around Bonneville? There are a number of images of fence sections in poor repair floating around.	2	17
What is the actual timeline on cleanup?	2	18
Will ATV's and the like be permitted? Campfires?	2	19
How will fires caused by human activities (see above ATVs as an example) be dealt with, considering the risk of ordnance to firefighters, and how will you protect surrounding neighborhoods?	2	20
Reminder emails were sent about this meeting to citizens repeatedly with wrong days/dates in them. Will these attempts to obfuscate the actual meeting date and stifle community involvement continue?	2	21
When and how often does the Camp Bonneville citizen committee meet? Applications were requested from citizens seven months ago and I haven't heard anything about it since then. Who is on the committee and how do other citizens contact them?	2	22
Who is liable for injuries from uncleared munitions on the site?	2	23
Who is liable for fires caused by human use on the site?	2	24
Will the entire area be closed during high fire risk events?	2	25
Can the site be insured despite the unexploded ordnance?	2	26
Is insurance even necessary? How does all that work?	2	27
What is the progress and process on digitizing the Camp Bonneville records?	2	28
Why have community engagement requirements been ignored for so many years? What changes will be implemented going forward to remedy the years of lack of engagement?	2	29
What comprehensive list of entities or departments are currently involved with Camp Bonneville? How do citizens contact them?	2	30
What is going on that would make it necessary to attempt to prevent neighboring communities from even asking questions during a "community session"? Is there legal or liability issues that citizens should be concerned about?	2	31

Comment	Commenter	Comment ID
How is the EPA involved in Camp Bonneville? Who at the EPA should citizens contact with concerns?	2	32
Are the standards set by the EPA on ordnance clearing and groundwater safety and all other requirements being met? What are those requirements? Who checks that they're being followed? How can citizens contact them?	2	33
Who would police Camp Bonneville? Would there be restrictions on use? How will these restrictions be enforced? Who would citizens contact for concerns about illegal or unpermitted activity? Can a rapid response be expected? Can any response be expected?	2	34
The lack of enforcement of the permits of the quarries on Livingston Mountain has shown the neighborhood that permits will never be enforced. How is ecology going to reassure such ill-treated citizens that they're willing and able to enforce any permit?	2	35
Is Ecology concerned about a negative public reaction to any activity or decisions? Have decisions been made that would warrant a suspected negative public reaction?	2	36
While there is documentation regarding the continued existence of contamination to neighborhood wells, Ecology has continued to cancel quarterly sampling plans as required by the EPA. Why is known neighborhood well water contamination not listed as an ongoing concern? Under whose authority was the quarterly testing plan amended?	3	37
As Ecology is mandated to have a Citizen's Advisory Committee to have access to public participation regarding Camp Bonneville, what if any attempt has been made to engage the local citizenry surrounding Camp Bonneville in the last decade.	3	38
Even though Ecology was aware of its own decision to clear the central valley floor of UXO and other anomalies below 24", you have unilaterally amended this to 14" and there is documentation of 722 uncleared anomalies remaining due to this random decision. This decision is well below existing national standard adopted and mandated by the EPA. This suggests either significant lack of time management or poor financial management. Which is it? An addition to this question is---since this clearing decision is for the area defined Regional Park, has Ecology determined that this reduction is within public safety limits?	3	39
An area immediately outside of the anticipated park boundaries has been reassessed unreasonably. The criteria change is creating an easily accessible hiking area that will not have any notable clearing and is therefore at risk for public interaction with UXO. How does Ecology intend to prevent access to these uncleared but easily accessible areas?	3	40

Comment	Commenter	Comment ID
Your recent flyer contains a statement that the cleanup work is nearly complete and is consistent with the state and federal cleanup regulations developed to protect people and the environment. Yet Ecology appears to have made multiple decisions against EPA recommendations and without any public input over the last decade which clearly suggest this is not the case. How much of the left over cleanup of soil and water contamination and known UXO will be handed over to the county? Will this come with specific funding and education? Will the county receive an itemized list of what is left to do as well as those tasks that were originally given to Ecology by the Department of the Army and the EPA (to include cost and whether or not they were successfully completed)?	3	41
we'd gone to the 24 inches would there be more accessibility for the firefighters to come in and protect the citizens and the wildlife of that particular area?	3	139
is any of this accessible on the website so that I can see when things were sent, what the topics were and build my own timeline for what was handled when?	3	140
I request clarification on the Deportment of Ecology policy for the Use of Camp Bonneville for the disposal of explosives by military, state and regional law enforcement agencies during MTCA-required cleanup. I have not been able to locate any such written policy in public records. Public records show that during the course of munitions cleanup at Camp Bonneville and following the natural resource conveyance of the property to Clark County in 2006, both County and Department of Ecology staff have allowed such agencies to detonate or otherwise dispose of explosives on site without public notice or warning. Specifically, on 13 May 2014, a local resident asked Ecology staff member Ben Forson about a “house-rattling explosion” that morning that appeared to have occurred at Camp Bonneville. Ecology staff replied on the 14th “I am aware that the Portland National Guard and Clark County Bomb Squad were at the site yesterday morning to dispose of some explosives.” The private citizen was referred to the County Camp Bonneville Program Manager for additional information. Since 1995, more than $80 million have been spent to remove explosives, explosive debris, toxic chemical from weapons use, and other hazardous material on the site.	4	42
Is the demolition of explosives from off-site still allowed at Camp Bonneville? It was explicitly allowed by county managers in 2014. Is/was there an end date to this?	4	43
What section of the WAC allows the demolition of non-cleanup UXO and MEC at an MTCA cleanup facility? Who pays for cleanup of these detonations?	4	44
Who is liable for the non-cleanup-related demolition activities? The Army would not seem liable for damages from non-Army explosives.	4	45
Are “house-rattling explosions” heard “several miles away” for non-cleanup activities a violation of SEPA or the County noise ordinance?	4	46

Comment	Commenter	Comment ID
Is there any public notice requirement for non-cleanup explosions at Camp Bonneville?	4	47
What documentation and approvals are required for demolition activities?	4	48
How many such demolitions of non-cleanup explosives have there been since Ecology assumed oversight of the cleanup and remediation effort?	4	49
What is Ecology's policy on the locations at Camp Bonneville open for such demolition activity? Can outside agencies just pick a random location? Who approves? Where are they recorded?	4	50
Does the Ecology or Clark County have any UXO-certified personnel to assure safe demolition operations?	4	51
Are munitions or explosives debris from these demolition activities disposed on the Camp Bonneville site? Are there any site documents to record the location of this material? If Weston was involved, Ecology is contractually required to act as a repository for such records.	4	52
Other records show that the FBI and Sheriff's Office have used Camp Bonneville for Improvised Explosives training and other weapons uses beyond the narrow uses authorized in the 2012 FBI Use Agreement.	4	53
Is there any policy concerning the disposal of other, non-explosive materials at Camp Bonneville? Chemicals, radioactive materials?	4	54
Is there a policy against the disposal of waste oil? solid waste such as old tires, junk cars, scrap RVs, metal waste? old transformers?	4	55
Is there a policy regulating the transfer of waste from other Washington State cleanup sites to Camp Bonneville? Have there been such transfers?	4	56
Roads and trails were not cleared.	4	141
Those domestic wells, to my knowledge and based on the records, have not been tested again.	4	142
There are three domestic wells on the site that have been tested, but that testing was interrupted because of issues I won't go into here.	4	143
Three thousand acres of Camp Bonneville have not been cleared. The only thing protecting them are institutional controls. That is a specific violation of the WAC.	4	144

Comment	Commenter	Comment ID
Wildlife areas are totally unclear. That's where all the trails are out there. But other than the buffer along the uncleared roads, none of that has been cleared. There can be surface munitions everywhere on the site.	4	145
Ecology left almost 10,000 cubic yards of soil contaminated more than 500 parts per billion of perchlorate and unknown amount, I don't have the number right now of how much RDX was left there.	4	146
There's 130 acres owned by DNR, which is not separately fenced. It's inside the Camp Bonneville area. It was not cleared. There's no agreement between the county, Ecology, DNR and the governor what's going to happen to that area and when that will be cleared. It is readily accessible, and it is not safe.	4	147
Ecology is not done its five-year reviews of required under the WAC for the remedial action units.	4	148
The post-storm surface and annual clearance in the CITA area that is required under the Cleanup Action Plan for RAU 3, has not been done.	4	149
There have been no monthly reports that are required under the consent decree for the last year	4	150
There are 12 and a half acres more or less in the Central Valley floor, wetlands that have not been cleared and the Department of Ecology can't find them	4	151
The dependence on institutional controls is a burden that will cost the county and the taxpayer hundreds of thousands or millions of dollars a year to comply with the requirements.	4	152
How does announcing this virtual “listening session” on December 22, 2021 enhance Ecology’s ability to reach as many members of the public as possible? There has been no public engagement since the Feb 15, 2019 “public comment period” which was limited to changes in the Western Slopes cleanup. There has been no Citizen’s Advisory Committee for the Camp Bonneville cleanup since the previous committee was disbanded by Ecology in August 2011. What is the urgency for announcing a listening session in the midst’s of the winter holidays? Was scheduling the meeting a few weeks later considered when the public record shows planning for this meeting took many months? What strategy or reasons justify the timing of this “listening” session?	5	57
What is the reason there no information in Ecology’s announcement of this virtual “listening session” about accommodating residents that have no broadband access or are unable to access this virtual meeting format? Ecology has contact information for individual requiring disability access that is required by law. Ecology is aware that Clark County is a largely rural area with limited broadband service.	5	58

Comment	Commenter	Comment ID
What is the reason Ecology has chosen a Zoom webinar format rather a Zoom meeting format? What is the reason Ecology's planning document for this event states that video images of participants will not be allowed, audience reaction will be disabled, chat will be disabled, and only Ecology staff will be allowed to see questions submitted by the public? This planning document also has provisions for removing participants who are making others feel "unsafe". Does Ecology staff feel "unsafe" at meetings intended to information the public of their actions?	5	59
What provisions are there for assuring that the provisions for removing individuals will not be misused to unfairly exclude or to censor members of the public?	5	60
When will Ecology schedule a public meeting where that will allow longer presentations so that individuals or groups will have sufficient time to have exchanges with Ecology staff about complex issues? How can members of the public understand the full extent of the UXO, MEC and hazardous materials that will remain permanently at Camp Bonneville in the absence of open public discussions?	5	61
What educational programs and materials to educate the public about the permanent dangers of Camp Bonneville have been prepared? Since 2012, how many public education events have been sponsored or conducted by Ecology? Have any educational events been held at public schools? Other BRAC sites have funded a full-time staff member to develop educational presentations and materials for the public and hold on-going educational events for public school children.	5	62
What are the reasons Ecology staff never requested funding from the Army for wildfire suppression? At similar BRAC sites, the Army has funded the construction of roads, clearing and maintenance of firebreaks, and funded on-site firefighting equipment/crews.	5	63
Is there a professional wildfire suppression plan in the event wildfire starts in or threatens Camp Bonneville?	5	64
Has Ecology determined that the remaining, permanent UXO, MEC and contamination left at Camp Bonneville poses no risk to wildfire crews?	5	65
Will a wildfire in Camp Bonneville be allowed to burn unchecked?	5	66
Has Ecology worked with DNR to assess how a wildfire will impact surrounding residential communities?	5	67
Is there an evacuation plan in place to notify /evacuate surrounding residential communities in the event of a wildfire in Camp Bonneville?	5	68
Why did Ecology choose to violate deed restrictions when by allowing DNR to stage a temporary helitak facility at Camp Bonneville? Did Ecology discuss the fact with DNR that any other options were available as locations to stage a temporary helitak	5	69

Comment	Commenter	Comment ID
crew in SW Washington? Records show that DNR was aware of many available options but insisted it be allowed to stage a helitak crew at Camp Bonneville.		
Why did Ecology not require a public meeting prior to allowing DNR to stage a temporary helitak facility at Camp Bonneville? Why did Ecology choose to ignore neighbor concerns regarding noise, traffic and other issues related to this helitak facility? DNR met privately with a few residents, but no open public meeting was arranged.	5	70
Are helicopter pilots flying in/out of Camp Bonneville briefed about the UXO dangers? Are helicopter pilots expected to assist in suppressing any wildfire that might ignite in Camp Bonneville? Will helicopter pilots or ground crews be at additional serious risk due to UXO and contamination should a wildfire ignite in Camp Bonneville?	5	71
Has any new contamination (e.g. fuel or oil spills) resulted from the presence of this helitak facility in Camp Bonneville? What mitigation measures are in place to limit and mitigate this source of new contamination?	5	72
What restrictions did Ecology impose on helitak crews to prevent them from accessing dangerous areas of the property? Is Ecology aware that these crews had unfettered access to all areas of the property? Were these helitak crews briefed about the specific dangers and Camp Bonneville and required to sign injury/death waivers? Were these crews required to sign in/out while deployed to Camp Bonneville?	5	73
Did clearance crews mark each area that was cleared as they worked?	5	74
Did any staff involved the cleanup effort mark cleared areas on the ground so they could be easily identified?	5	75
Did any staff member document on the master Camp Bonneville grid system map which cleared areas were marked on the ground?	5	76
What are the reasons Ecology changed its cleanup standards for the Western Slopes? In 2009, Ecology won an arbitration against BCRRT (the cleanup authority at that time) where Mr. Rogowski and Mr. Nord were adamant that clearing all 609 acres of the Western Slopes was essential to protect human health. In 2019, announced to the public that only 194 acres of the Western Slopes would be surface cleared. The land did not change between 2009 and 2019.	5	77
What is the justification Ecology has for compromising human health in order to accommodate funding limits imposed by the Army?	5	78
What is the reason Ecology believes the public will not access uncleared areas in the Western Slopes? The public record shows that at a June 21, 2018 meeting, Mr.	5	79

Comment	Commenter	Comment ID
Forson cited the dispute resolution where all 600+ acres of the Western Slopes were required to be cleared. He further cites "empirical evidence" where "now over 2000 items" were found, yet "Army says one-sies, two-sies, won't find much". Mr. Forson further noted, "can't reply on historical record or investigations" to predict where UXO and MEC would be on the Western Slopes. Mr. Forson said, "Best we can do is revert back to 25% (14 degrees)", and argued that "vegetation" would prevent public access. Though there are "no physical barriers to access", Mr. Forson stated "Ecology can only defend accessibility argument ".		
Why did Ecology mislabel slopes on the maps presented at February 15, 2019 meeting, and delete from the draft of its public flier any reference to 25 degree slopes being changed to 14 degree slopes? The map shows 25 degree slopes (not 14 degree slopes nor "25%" slopes. 25 degree slope label was replaced with 25%. (25 degrees = 45%; 14 degrees = 25%) The June 21, 2018 meeting notes state, "shows 184 acres after 14 degrees removed". In other words, reverting to a 14 degree slope eliminated over 425 acres of the Western Slopes in order to meet the Army's artificially imposed funding limit. It appears Ecology understood the confusion created by substituting 25 degrees with 25%.	5	80
How is public health protected when over 425 acres of the Western Slopes were left uncleared -- acres that directly border the Central Valley Floor and have no physical barriers?	5	81
Why did Ecology choose to compromise cleanup standards when insufficient Army funding was available? Was Ecology aware that cleanup activities at other BRAC sites (e.g. Fort Ord) are suspended until additional Army funding was available? Did Ecology cite the need to protect human health based on EPA/Ecology standards when. discussing funding requirements with the Army? And that cleanup efforts would necessarily be suspended until sufficient funding was provided?	5	82
What is the reason Ecology violated WAC 173-340- 440 by "capping" dangerous levels of lead contamination at the RAU 2A-16 and RAU 2A-21 firing ranges? This WAC mandates: "cleanup actions shall not reply primarily on institutional controls and monitoring where it is technically possible to implement a more permanent cleanup action for all or a portion of the site."	5	83
What is the justification for Ecology choosing not to fence or mark the areas where the dangerous lead contamination at RAU 2A-16 and RAU 2A-21 is capped?	5	84
How does Ecology justify covering the orange geotech fabric tarps used at RAU 2A-16 and RAU 2A-21 with on-site soil that contained lower levels of lead contamination, rather than "clean" uncontaminated soil it claims publicly was used?	5	85
Are there other contaminated areas in Camp Bonneville that Ecology chose to "cap"?	5	86

Comment	Commenter	Comment ID
Did Ecology remove any of the contaminated soil at the “pop-up” firing range after EPA’s 2003 testing showed lead contamination exceeding safe levels? Did Ecology simply leave this contamination in situ?	5	87
Can Ecology document any efforts between 1909 and 2007 to clean up the so call “FBI firing range” that is still in use?	5	88
What is the reason Ecology DID NOT clean up the FBI firing range after the FBI’s lease to use this area expired on October 14, 2007? What is the reason Ecology allowed Clark County to sign a new use lease with the FBI in 2012 to use this same area despite it not being an area designated for area for a firing range? Why did Ecology allow this firing range to be used despite an assessment showing it is unsafe?	5	89
Why did Ecology clear the Central Valley Floor only to a depth of 14” after telling EPA that Ecology would adhere to the 24” standard established for other BRAC sites?	5	90
How did Ecology determine that clearing to 14” was sufficient? Did Ecology consider erosion, animal activity and factors other than “frost depth” as ways UXO and MEC can be exposed and threaten human health? Did Ecology consider Army studies that address the depth various munitions can penetrate the ground?	5	91
What areas of the Central Valley Floor did the Army bulldoze and level to bury dangerous munitions? How often did the Army do this leveling? What munitions are now buried deeper than 14” as a result of this Army activity?	5	92
Was the entire property boundary of Camp Bonneville ever fenced? Public records show at least 1.5 miles of the property boundary were never fenced.	5	93
Is there documentation showing the last time each mile of boundary fencing was inspected? How much money was allocated/spent each year since 2011 to inspect and repair the boundary fencing?	5	94
Since 2011, how many individuals have trespassed in Camp Bonneville? How many of these individuals were arrested? Prosecuted?	5	95
When was a survey of endangered species last conducted? When were habitats that could support endangered species last surveyed and evaluated?	5	96
Who is the Dept of Ecology conversation staff member assigned to assist the county in developing a conservation plan? Who is assigned to develop an endangered species survey plan?	5	97
When was the last conservation assessment of Camp Bonneville conducted?	5	98

Comment	Commenter	Comment ID
Have federal Fish/Wildlife staff been consulted about a conservation plan for Camp Bonneville?	5	99
Are areas of Camp Bonneville being monitored to assess the impact remaining MEC and contamination has on wildlife? On habitat?	5	100
Are there any specific studies currently being conducted to monitor the habitat health/diversity in Camp Bonneville?	5	101
Public records show that clearance efforts restored and expanded some wetland areas. Are these restored wetland acres accurately mapped on the property's master grid map?	5	102
Has a new wetland study been conducted to map and evaluate the current status of the wetlands?	5	103
What measures have been taken to protect archaeological sites identified in Camp Bonneville? Are there ongoing discussions with Cowlitz tribal leaders on necessary measures to protect their ancestral sites? Many archaeological sites are considered sacred. Measures to prohibit the public from accessing or disturbing such sites are mandated by NAGPRA and other federal and state legislation.	5	104
What measures are being taken to protect historic pioneer sites identified in Camp Bonneville? Are any of these sites listed on or eligible for the National Register of Historic Places? What measures are being taken to protect these historic archaeological sites?	5	105
What measures are being taken to protect/maintain the historic Army buildings identified in Camp Bonneville? Are any of these buildings listed on or eligible for the National Register of Historic Places? What is the annual cost to maintain these buildings? How many of these buildings contain friable asbestos and lead paint contamination that has not been removed?	5	106
Public records show that there are 12.5 acres of the Central Valley Floor that were left uncleared. What is the reason these acres were left uncleared? Where exactly are these 12.54 acres located? How were these acres mapped on the master Camp Bonneville grid system? What is the reason these acres were left uncleared? Where the uncleared acres marked with ground stakes or other markers so that individuals visiting the property could easily identify the area that has not been cleared?	5	107
How does not clearing these 12.5 acres effect the management of the property's wetlands?	5	108
Public records show that a substantial amount of contaminated soil was left in Landfill 4/Demo Area 1. What additional efforts were made to remove this contaminated soil after initial cleanup efforts failed?	5	109

Comment	Commenter	Comment ID
Monitoring of Landfill 4/Demo Area 1 shows that groundwater contamination is not behaving as the initial models of this area suggested. What re-assessment and new modeling theories have been proposed to account for groundwater plume behavior?	5	110
Have private owners with properties potentially impacted by this groundwater contamination plume been regularly briefed about the status of this contamination? Have any public briefings with specific details about this groundwater contamination been done?	5	111
Has Ecology placed every quarterly groundwater contamination report in document repositories so they are easily accessible by the public?	5	112
Public records show that levels of perchlorate and RDX remain consistently high or are increasing in key wells monitoring groundwater contamination at Landfill 4/Demo Area 1. Has there been an assessment of this groundwater plume data been conducted by independent outside experts other than PBS who are not involved in the monitoring?	5	113
Have any Ecology hydrologists evaluated this groundwater plume contamination data or compared historical data to the proposed plume models since monitoring was instituted? If not, why not?	5	114
Has the Department of Ecology, has any staff member ever sat down with the county manager or the county councilors or leadership in the county and actually talked about the significant cost for institutional controls and when institutional controls were instituted because of Ecology's decisions and how this would impact the county financially going forward?	5	137
can you describe the Ecology decisions that resulted in the necessity for institutional controls and any cost estimates that you may have provided the county about the long-term costs for those institutional controls that the county would then bear?	5	138
When the clearance was being conducted, were any of the cleared areas actually physically marked on the ground with markers or steaks so that if someone were walking around in the camp, they would be able to track exactly where they were, that they were in a cleared area as opposed to an unclear area? how will it be possible then for, in a planning process, for anyone to know exactly what areas were cleared if there are no markers on the ground now? Won't you have to send in now survey crews to re-establish cleared areas and uncleared areas?	5	160
Has there been any educational materials developed, any outreach to the public in an educational sense, any educational events, any educational events held at public schools, for example?	5	161

Comment	Commenter	Comment ID
The army also funded $200,000 a year to a staff member dedicated full time to doing that kind of educational programing. Did Ecology ever request that kind of funding for ongoing programing from the Army?	5	162
, I still am curious about that 12 and a half acres in the Central Valley floor that a decision was made to not clear that area. And not only was the area not marked, it apparently was not accurately documented. So we don't actually know where it is. How are we going to protect human health if Ecology cannot actually pinpoint exactly where those acres are?	5	163
Why those areas weren't marked in the actual grid maps in real time why those decisions were being made, and why you're now having to go back and retro make maps. Why wasn't documentation actually about that decision and about that precise location actually made in real time?	5	164
We have been hired by Vancouver as they grapple with the emerging and difficult PFAS issue. One of our tasks is to try and understand where low level PFAS levels in some of their wells may have (and still be) originating. As we looked regionally, Camp Bonneville is upgradient, and well, was an Army facility. While the historic uses, as I understand them, do not reflect the kind of high risk of PFAS contamination seen at other military installations, there may always be a question about what the Army might have placed in the local landfill, etc., and the levels at which certain PFAS are problematic are incredibly low. All that said, with Ecology's Chemical Action Plan finalized, and WDOH promulgating State Action Levels, do you anticipate that PFAS screening will be added to groundwater monitoring in and around the facility? It would be helpful (and good news) to screen out the base as a potential source.	6	115
Is that reasonable to expect every public person in the Central Valley floor area is not going to dig or not go more than 20 feet off the trail?	7	116
Has that 20-foot buffer on either side of the roads and trails been cleared of ordnance?	7	117
What is the plan for roads and trails that have not been cleared?	7	118
What is the current frequency of testing of the century wells and of the homeowner wells in the past year? When are the domestic wells going to be tested again?	7	119
Why are the results of the groundwater and century wells and creek water testing, why are those results not publicly available on the Department of Ecology website? Why does one have to try to do a public records request to the disclosure officers, and that takes a lot of energy and lots of time?	7	120

Comment	Commenter	Comment ID
Does the Department of Ecology not plan to do anything in regard to fire danger or interface with the DNR and leave that entirely up to Clark County?	7	121
We haven't used pure lead bullets or non-copper-jacketed bullets since the Spanish-American War. Are all of these bullets copper jacketed?	8	122
What percentage do you believe to still be in the soil of the rounds that you've hauled off?	8	123
Would the chemical contamination of perchlorate and or RDX in soil or groundwater potentially impact the gas pipeline?	9	124
The scope of Ecology's involvement did not include the facilities of Camp Bonneville itself and Camp Killpack. And having been established in 1909, it's quite likely that there is lead-based paint in some of these buildings. There may be asbestos in some of the facilities. And you know who's...what's Ecology's role in that and turning this over because that would be a remaining hazardous concern.	9	159
I'm just wondering if the Department of Ecology has any plans for cleaning up the ongoing ranges, the gun ranges?	10	125
What plans are the Department of Ecology going to arrange with the county for maintaining cleanup?	10	126
In the last five years, what have you done to reach out to all the new landowners up on Livingston Mountain?	11	127
Department of Ecology is wrapping this up as quick as they can to pass off to Clark County, and then Clark County is going to use the tax dollars of the citizens to create a public park.	11	128
Will the central impact area fencing be improved?	12	129
What am I expecting from Clark County, the re-use, is it expected to change at all? I know that your cleanup has to do with following the reuse plan right now. I just want to know, are we adding different things? Is there subtracting? What kind...is the reuse just on track right now for how it was written?	12	130
Are you going to use the South Gate at all for any access?	12	131
The Central Impact Area is just that's where they aimed, you know, their rockets and everything at. How confident are you that that boundary is a good fence line boundary to go off of? I know, Barry, you talked about step outs and how that was kind of maybe not the best method to chase down, maybe something that has gone out of the boundary. Is there a way we can corral that area better, A, with really good fencing and signage and B, be very conservative with that boundary	12	165

Comment	Commenter	Comment ID
What's the timeline as you turn it over to Clark County? What can we expect, especially as a neighbor? How long until you turn it over and you have kind of, you're switching gears as the second person behind Clark County? What does that timeline look like?	12	166
What kinds of wildfire protections have been put in place at the property?	13	132
Particularly with regards to wildfire, but also regards to the broader cleanup in particular sort of considerations around reuse and how that relates to the deed, how does the cleanup at Camp Bonneville compare to similar BRAC properties like at Fort Ord, for example?	13	133
Is there a plan for ongoing maintenance of those fire breaks?	13	134
What kind of validation or reconciliation mechanism will Ecology be using to make sure any conflicts in what is documented versus what you knew through institutional knowledge or personal experience as you go forward towards closing out Ecology's involvement in this site?	13	177
In the last few years there's been a multitude of log trucks coming out of the facility. Is that part of the fire mitigation plan or is there something else going on there as far as commerce for people making money or what?	14	135
When it comes time for the, if they open up this Camp Bonneville for public access is there more than one access point into the facility or is it pretty much the space that I'm talking about down 22nd?	14	136
There's a difference between what can and can't be done on a property with a conservation conveyance versus one with an economic conveyance. What are the differences in uses, briefly?	15	153
Are there different cleanup requirements of property between an economic conveyance and a conservation conveyance?	15	154
What are we thinking allowing people into this site as a public park with those kinds of dangers? When the BCRRT had responsibility, Ecology insisted in a ruling that the western slopes be cleared of all UXO on all slopes less than twenty-five degrees and cited that as meeting the requirement standards of other BRAC sites. But when Ecology took over for the responsibility, they quietly reduced the requirement on themselves from twenty-five degrees to twenty five percent, only equaling about 14 degrees and only about half the original requirement	15	155
Relating to the 12 and a half acres of wetlands? I believe the record stated that there was 12 and a half acres substituted somewhere else for that.	15	167

Comment	Commenter	Comment ID
Ecology allowed dirt from the shooting range berms to be used to cap the highest lead contaminated areas. The shooting range berms contained lead contaminated dirt, albeit supposedly under the legal limit. Also, the record states that lead-based dirt was regularly graded into the Central Valley floor over decades, so slide number 10 seems to be a little bit misleading on that and all. Do you have any more thoughts on that?	15	168
If the Army graded those things into the Central Valley floor other places, would we have caught that?	15	169
As regulations change, will that cause us problems in the future (cleanup decisions)?	15	170
We've only done ten to 25 percent, that leaves a huge amount of fire risk, especially if people are wandering through there through trails and stuff.	15	171
Can you tell us how many people were on the call or have been on the call total?	15	172
We want public meetings either monthly or every other month until we, the people, are satisfied. There's a lot of proverbial ground to be made up for these last past ten years. And third and lastly, we want an official Camp Bonneville Citizen's Advisory Committee, and we really want that now.	15	173
When a child blows up in the regional park, who will be liable?	16	156
If institutional controls are found to have failed, will the Army still retain the liability for that?	16	157
It's clear that there has been a total lack of communication on the limitations of this property for re-use, and I think that I would encourage you to be very, very clear with the landowner about the limitations.	16	158
One question about the DNR parcel that has yet to be cleared. What is the solution for that parcel in the future about the Livingston Quarry? The public will not be allowed entry in that in that DNR portion of the property because it's in the wildlife conservation area. Now it's being widely used right now by residents who access all the way from the west and the south. They use the roads as hiking trails.	16	175
Is Ecology aware of any nuclear waste that would have ever been disposed at the site at all?	16	176
Would it change your confidence in going above what you called for if you knew a local youth who shall remain unnamed, found a fully loaded with live ammunition M4 magazine sitting on top of the ground about three years ago inside the boundary?	17	174