This letter was submitted to Ecology February 5, 2024 at: AFFFDisposal@ecy.wa.gov:

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From: Scott Cave, President
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Subject: Comments on Aqueous Film-Forming Foam Collection and Disposal Program Draft Programamatic Environmental Impact Statement, PN 3-04-064

On behalf of *Carole DeGrave* and *Friends of Rocky Top* (FORT), we appreciate the opportunity to comment on the Aqueous Film-Forming Foam (AFFF) Collection and Disposal Program Draft Programamatic Environmental Impact Statement (DEIS) regarding the public health impacts associated with the collection, transport and disposal of AFFF stock at municipal fire stations.

FORT is a group of neighbors and concerned citizens seeking to protect the land, air, and water resources around the Rocky Top area from further environmental degradation from *East Mountain Investments, Inc. and DTG Enterprises, Inc. (*DTG*)* toxic landfill and associated facilities. FORT is a CascadiaNOW! fiscally sponsored project: https://www.cascadianow.org/friends-of-rocky-top. In September, 2022 Ecology declared an area of DTG's landfill Cell 1, a *Model Toxics Control Act* (*MTCA*) cleanup site, and soon confirmed subsurface fires; see Anderson Landfill, Facility Site ID: 79747294 https://apps.ecology.wa.gov/cleanupsearch/site/11537#site-documents.

Ownership note: DTG purchased the Anderson limited purpose landfill (landfill), petroleum contaminated soil (PCS) remediation site, and surface mine on Oct. 31, 2019 renaming it a *Sustainability Park*. On December 1, 2022, Macquarie Asset Management (MAM), the world's largest infrastructure manager, announced that one of its funds had acquired DTG. Notably, the *MTCA* site agreed order (AO) lists *East Mountain Investments, Inc. and DTG Enterprises, Inc.,* not MAM as Potentially Liable Persons (PLP) for the cleanup (more below).

Comment 1: While the state recognizes the potential threat posed at 'secondary sources' (landfills that received and disposed of AFFF) from AFFF/PFAS contamination of groundwater in this DEIS, it does not include them, and strictly considers AFFF fire service release sites only. Given the AFFF/PFAS threat to groundwater at known secondary sources, Ecology should separately evaluate the benefit of AFFF/PFAS monitoring at secondary sources that would establish baseline data and increase early detection at problem sites.

Between 2004 and 2006, contaminated soils containing *elevated concentration levels* of *AFFF/PFAS* were removed from the U.S. Army, Department of Defense, Yakima Training Center (YTC) near Selah and remediated and disposed at the Anderson PCS site and landfill on Rocky Top, Yakima County, respectively.

From the DEIS & Executive Summary (ES):

"PFAS within AFFF are water soluble and highly mobile, meaning they can easily contaminate groundwater and can be hard to filter out. There are no known natural processes that can break down these substances. Exposures could continue for hundreds of years or more."

ES-3

"If released into the environment, PFAS can contaminate soil, sediment, surface water, and groundwater. Many PFAS are highly mobile and, due to their unique structures, can strongly sorb to soils and sediments. If PFAS compounds reach groundwater or surface water, they can travel long distances due to their chemical stability."

DEIS, p. 1-3

"PFAS are often found in the environment in multiple areas on sites where AFFF was applied, stored, or released. These areas include emergency response locations, fuel spill areas, hazardous waste storage facilities, hanger-related AFFF storge tanks and pipelines, firefighting equipment test areas, stormwater and/or surface water drainage features, and outfalls. Landfills that received AFFF and wastewater treatment plants that receive stormwater and landfill biosolids may become secondary sources. AFFF is responsible for some of the larges PFAS releases to the environment. These are also complex, costly, and difficult to investigate and remediate."

"When AFFF was historically used, the foam residual wasn't always collected or pretreated prior to discharge, and may have reached drinking water sources, such as groundwater and surface water. PFAS-containing Class B firefighting foam has been associated with drinking water contamination in Washington. In their risk-based efforts to identify and mitigate PFAS in drinking water, both the military and Washington Department of Health focused on firefighting foam release sites."

DEIS, p 1-5

Last year Ecology informed the Yakima Health District (YHD), the jurisdictional solid waste permitting agency, about the disposal of 743 cubic yards of YTC AFFF/PFAS contaminated soils on Rocky Top:

"Ecology staff in our solid waste management division has recently learned that soils removed from the Yakima Training Center's (YTC) former Fire Training Facility were brought to the former Anderson Landfill (now DTG) for petroleum contamination treatment and disposal in 2004. As you may be aware, YTC's Fire Training Facility was a shallow unlined pit that was periodically filled with old fuel and set on fire so that fire crews at the YTC could practice fighting fires with aqueous film forming foam (AFFF). Prior to 2004, soil and groundwater at the YTC site was determined to be contaminated with petroleum-related compounds and cleanup was initiated. One of the selected remedies was to excavate the contaminated soil and remove it from the site. Approximately 743 cubic yards of the excavated soils were taken to Anderson Landfill for treatment at the petroleum contaminated soils (PCS) treatment site and disposal in the landfill."

"In 2004, at the time of excavation of the YTC Fire Training Facility, the toxic characteristics of the ingredients of AFFF were not understood by YTC, the Yakima Health District (YHD), or Ecology. AFFF contains per- and poly-flouroalkyl substances (PFAS) which are now understood to be toxic at very low concentrations and extremely persistent in the environment. At the time of disposal of the Fire Training Facility soils, analytical methods were not available to identify and quantify PFAS in soil, and regulators were not aware that these compounds were as persistent or as toxic as they are now understood to be."

"The PCS removed from the YTC site, were transported to the Anderson Landfill for treatment at the PCS site and disposal in the landfill. This material likely contained elevated concentrations of PFAS. Because the existing landfill and the PCS treatment site are unlined, there is a risk of migration of PFAS into groundwater. Ecology recommends that the sampling and analysis plan for routine monitoring at

the landfill be amended to include analysis for PFAS. Ecology also recommends soil grid sampling of the PCS pad area and installation of monitoring wells around the PCS treatment area and development of a sampling and analysis plan for the site which should include soil sampling to determine if PFAS is present. Ecology recommends this work gets completed within 1 year time."

James Rivard, Regional Manager, Solid Waste Management Program,
Washington State Department of Ecology, Central Region Office, January 19, 2023

The AFFF/PFAS soil removal, transfer, remediation and disposal at Rocky Top facilities occurred nearly two decades ago, when the state's analytical methods were not capable to properly identify and quantify the PFAS concentration in the YTC AFFF/PFAS soils. State and federal regulators were also less informed about the persistent and toxic characteristics of PFAS. That dramatically changed in the last 8 years, with U.S. EPA's reconsideration of the harmful impacts from PFAS exposure. In March, 2023 the agency proposed national drinking water standards for six types of PFAS, and last week EPA's Administrator declared nine PFAS as hazardous:

"… signed a proposal to change the Resource Conservation and Recovery Act (RCRA) regulations by adding nine particular per- and polyfluoroalkyl compounds, their salts, and their structural isomers, to its list of hazardous constituents in Title 40 of the Code of Federal Regulations Part 261 Appendix VIII. These nine PFAS are:

1. *Perfluorooctanoic acid.*
2. *Perfluorooctanesulfonic acid*
3. *Perfluorobutanesulfonic acid.*
4. *Hexafluoropropylene oxide-dimer acid.*
5. *Perfluorononanoic acid.*
6. *Perfluorohexanesulfonic acid.*
7. *Perfluorodecanoic acid.*
8. *Perfluorohexanoic acid.*
9. *Perfluorobutanoic acid.*

To be listed as a hazardous constituent under RCRA, scientific studies must show that the chemical has toxic, carcinogenic, mutagenic, or teratogenic effects on humans or other life forms. EPA evaluated toxicity and epidemiology data for these chemicals and determined that these nine PFAS compounds meet the criteria for listing as a RCRA hazardous constituent.

With this proposal, EPA is working to protect communities by strengthening its ability to address PFAS contamination under the RCRA cleanup program, known as the RCRA Corrective Action Program. This change would facilitate additional corrective action to address releases of these specific PFAS at RCRA hazardous waste treatment, storage, and disposal facilities. It would not require the suite of cradle to grave management controls that are associated with a RCRA hazardous waste."

In a press release February 1, 2024, the Biden Administration stated:

"EPA is proposing to modify the definition of hazardous waste as it applies to cleanups at permitted hazardous waste facilities. This modification would assure that EPA's regulations clearly reflect EPA's and authorized states' authority to require cleanup of the full range of substances that the Resource Conservation and Recovery Act (RCRA) intended, including emerging chemicals of concern, such as PFAS, that may present substantial hazards, at permitted facilities.

"EPA is also proposing to amend its RCRA regulations to add multiple PFAS compounds as hazardous constituents. These PFAS would be added to the list of substances identified for consideration in facility assessments and, where necessary, further investigation and cleanup through the corrective action process at hazardous waste treatment, storage and disposal facilities."

"These proposed rules would strengthen protections for communities and drinking water supplies located near the 1,740 permitted hazardous waste facilities across the nation."

https://www.epa.gov/newsreleases/biden-harris-administration-announces-new-steps-protect-communities-pfas-and-other

EPA's action is good news as it will increase our national response to PFAS contamination at these permitted hazardous waste facilities.

Comment: But what about the people and communities near unlined 'secondary sources' that are known to have received and disposed of AFFF/PFAS materials and contamination soils? As noted in the above Ecology quote, the contaminated *AFFF/PFAS* soils approved for remediation and disposal at Rocky Top contained "*elevated concentrations.*" Today, EPA considers even minimal exposure of AFFF/PFAS harmful to human health, and the *elevated concentration levels* in the soils remediated and disposed on Rocky Top would be considered hazardous today, requiring site controls for containment, handling and transfer, and disposal at a Subtitle C facility (out of state).

The two unlined facilities have not historically monitored for PFAS. The landfill (3 wells) was required to add PFAS to future quarterly monitoring. For years, Ecology and the YHD have requested DTG to drill additional monitoring wells to update site characterization, and establish a compliant groundwater monitoring system, which is the drinking water source for neighbors. DTG has informed regulators of its intention to drill wells in 2024.

Neighbor concerns about the lack of groundwater monitoring and determination of contamination flow-paths is exasperated by the threat posed by 'forever chemicals' in the liner of the landfill and PCS site. To appreciate our concern of the contamination threat on Rocky Top, consider the following:

1) **Model Toxic Control Act cleanup site**

DTG's 'Sustainability Park', is an unlined toxic waste site, known as the Anderson Contaminated Landfill Site ID:79747294 :https://apps.ecology.wa.gov/cleanupsearch/site/11537#site-documents.

Volatile organic compounds (VOCs) were detected in ambient air and in landfill gas at the facility in December 2021 and confirmed in July 2022. Benzene and naphthalene were detected in ambient air at concentrations 40-50 times higher than the USEPA's default concentrations for Municipal Solid Waste landfills (USEPA, AP-42, Section 2.4, October, 2008) exceeding outdoor air quality standards under the state *MTCA.* From Ecology's Anderson Landfill Cleanup Site page:

Cleanup

In 2023, Ecology and the two parties responsible for cleanup, East Mountain Investments, Inc. and DTG Enterprises, Inc. negotiated an agreed order for cleanup work at the site. An Agreed Order is a legal agreement between Ecology and the Potentially Liable Persons (PLPs) outlining the expectations, process, and schedule for site cleanup. The order requires delineation of hazardous compounds in gas originating in the waste and groundwater monitoring to identify if hazardous compounds have reached groundwater.

Fire

In March 2023, contractors working for DTG identified temperatures greater than 500ºF at a depth of 10 feet below the landfill's surface. These high temperatures as well as gas readings collected from within the landfill indicate fire beneath the surface. Additional investigation in September 2023 and subsequent gas monitoring identified high temperatures and gas readings that indicate a fire that at extends from a depth of approximately 10 feet to at least 40 feet below the landfill's surface. The fire is in the same area that the agreed order intends to investigate.

As of late December 2023, DTG completed application of a soil cap in the fire area. The intent of the soil cap is to reduce emission of combustion products from the landfill and to suppression oxygen within the waste to smother the fire. Ecology is working with the YHD, who has jurisdiction over the landfill's operating permit, to review the effectiveness of the soil cap in suppression of oxygen and extinguishment of the fire. The effectiveness of the soil cap in reducing emissions of combustion products from the landfill will be evaluated as part of the agreed order.

Next Steps

The investigation required by the agreed order cannot be conducted safely until the fire is extinguished and temperatures within the landfill have returned to normal. Therefore, the work required by the agreed order has been postponed until the fire has been addressed. The next steps for this site include creation and implementation of a fire suppression plan.

Point Comment: In September, 2022, Ecology determined a portion of the landfill a MTCA site and has signed an Agreed Order with DTG to investigate the area, identify workplans and implement remedies. However, Ecology paused the investigation pending completion of the emergency effort to remediate landfill fires. The MTCA investigation should include the AFFF/PFAS soil layer in Cell 1.

2) **Ongoing landfill fires create emergency situation, pause MTCA investigation**

Since DTG ownership, neighbors have registered complaints of horrible, eye-watering odors, including burning smells, starting in the summer of 2020. DTG and regulators would point to the landfill quarterly methane monitoring that never detected any levels of concern. But in November 2021, regulators investigated the odor complaints and agreed the facility was in violation and required landfill gas sampling. In December, 2021 independent sampling detected volatile organic compounds (VOCs) in ambient air and in landfill gas at the facility, and was confirmed in July 2022, and soon after the presence of landfill fires.

Review of DTG LPL quarterly methane monitoring with a hand-wand flipped on for a few seconds at five locations around the landfill perimeter, have consistently revealed no noticeable methane emissions, implying the facility was, and is, compliant with state required and permitted air emissions, and by extension, does not pose a health threat to landfill workers or neighbors.

Point Comment: The toxic fumes and fire reflect poor management, potentially suspect disposal and a constrained, limited regulatory structure of oversight. More concerning is the potential for the landfill to generate leachate, increasing the risk of migration to downgradient, nearby drinking supply wells. The failure of adequate property setbacks and reduced environmental controls (no liner or leachate collection system), limited regulatory oversight and coordination, and ability and willingness to enforce permit and code violations, all contributed to the facility proximity to neighbors, loose compaction, steep slopes and subsurface fires that required purchase of adjacent property.

The state should recognize and evaluate the gaps in the current regulatory structure and landfill air emission monitoring system that failed to detect obvious toxic emissions and landfill fires. Specifically, the state should consider increasing the monitoring requirements for groundwater and methane emissions, similar to those recently proposed for MSW landfills.

3) **Disposed AFFF/PFAS contaminated soils part of LPL alternative liner**

As this DEIS acknowledges, PFAS are 'forever chemicals' and poise a serious threat to human health and the environment even at low levels of exposure, prompting U.S. EPA and state regulatory agencies to exponentially reduce allowed maximum contamination levels (MCL) and categorize them as hazardous. Exposure to these highly fluorinated chemicals are of grave concern to Rocky Top neighbors, recreationalists, and nearby residents whose air quality has been compromised by DTG facilities and operations. Like Selah, DTG Rocky Top neighbors fear future groundwater contamination.

As reported, the DoD is responsible for the U.S. Army Yakima Training Center (YTC) near Selah, and the resulting AAAF and PFAS contamination of local groundwater. Arguably, it would bear responsibility for future PFAS contamination of groundwater at Rocky Top, the 'secondary source' that received, remediated, and disposal of 743 cubic yards of YTC AAAF contaminated soils with elevated concentration levels of PFAS.

> *The Yakima fire training facility was a shallow unlined pit, filled with old fuel and set on fire so fire crews could practice fighting fires with AFFF. Prior to 2004, soil and groundwater at the YTC site was determined to be contaminated with petroleum-related compounds and cleanup was initiated. One of the selected remedies was to excavate the contaminated soil and remove it from the site. Approximately 743 cubic yards of the excavated soils were taken to the Anderson Landfill for treatment at the petroleum contaminated soils (PCS) treatment site and disposal in the landfill.*
>
> James Rivard, Regional Manager, Solid Waste Management Program,
> Washington State Department of Ecology, Central Region Office, January 19, 2023

During the period regulatory agencies approved the YTC AFFF/PFAS contaminated soils for remediation and disposal, the facility was using native and remediated soils to construct an alternative liner (300 inches of compacted soil) that was proposed and approved for Anderson's 2007-08 Limited Purpose Landfill application. Determining the approximate location of the alternative liner is complicated by the absence of required as-built diagrams and schematics that would show the excavation for each phase (1, 2 & 4) in Cell 1.

The alternative compacted soil layer replaced the WAC 173-350-400 prescriptive composite liner consisting of a two-foot layer of compacted soil with a hydraulic conductivity no greater than 1 x 10-7 cm/sec overlying a high-density polyethylene (HDPE) geomembrane with a leachate collection and control system.

Point Comment: Since June, 2023, this facility is required to monitor for PFAS during quarterly groundwater monitoring events. Currently the facility has 3 monitoring wells, located in two, or three separate water bearing zones, according to water quality sampling and the limited site characterization and questionable interpretations provided and approved by, jurisdictional permit authorities. While PFAS has been added to the quarterly landfill monitoring, regulators did not support local neighbors' request for PFAS sampling of nearby drinking supply wells. We respectfully

request the state to consider sampling at 'secondary sources', and for the MTCA investigation to include the PFAS soil layer in Cell 1.

4) **DTG remains out of compliance with state groundwater monitoring requirements, per WAC 173-350-500**

Unfortunately, regulators approved a two-well monitoring system (MW-2 & MW-3) for the Anderson 2007-08 LPL permit, and the Anderson 2015 LPL 78-acre expansion. While a third well (MW-4) was drilled in July, 2022, DTG has refused to install the additional 9 monitoring wells requested by state and local regulators to 1) launch the MTCA investigation and 2) further characterize site conditions, including groundwater flow and flow-paths to develop a compliant groundwater monitoring system.

In 2021 neighbors complained the approved two-well groundwater monitoring system for the Rocky Top landfill and PCS site were inadequate and indefensible. Ecology agreed, and in early 2022 informed the YHD:

> "*Per WAC 173-350-500, the groundwater monitoring network must have enough wells to yield representative samples and sufficient data to interpret groundwater flow paths during each sampling event. It does not appear… that the existing monitoring network is satisfactory to meet these (state) regulatory requirements*"
>
> James Rivard, Ecology, letter to Shawn Magee, Yakima Health District
> DTG Yakima Limited Purpose Landfill New Cell Development – Hydrogeology Comments, February 11, 2022

DTG's limited landfill site characterization and groundwater monitoring system fails to meet the requirements of WAC 173-350-500:

> *(3)* ***Groundwater monitoring - System design.***
>
> *(a) The groundwater monitoring system design and report must be submitted with the permit application and must meet the following criteria:*
>
> *(i) A sufficient number of monitoring wells must be installed at appropriate locations and depths to yield representative groundwater samples from those hydrostratigraphic units which have been identified during site characterization as the earliest potential contaminant flowpaths;*
> *(ii) Represent the quality of groundwater at the point of compliance, and include at a minimum:*
>
> *(A) A groundwater flow path analysis which supports why the chosen hydrostratigraphic unit is capable of providing an early warning detection of any groundwater contamination;*
>
> *(b) Upgradient monitoring wells (background wells) must meet the following performance criteria:*
>
> *(i) Must be installed in groundwater that has not been affected by leakage from a solid waste handling unit; or*

(ii) If hydrogeologic conditions do not allow for the determination of an upgradient monitoring well, then sampling at other monitoring wells which provide representative background groundwater quality may be allowed.

(c) Downgradient monitoring wells (compliance wells) must meet the following performance criteria:

(i) Represent the quality of groundwater at the point of compliance;

(ii) Be installed as close as practical to the point of compliance; and

(iii) When physical obstacles preclude installation of groundwater monitoring wells at the point of compliance, the downgradient monitoring system may be installed at the closest practical distance hydraulically downgradient from the point of compliance that ensures detection of groundwater contamination in the chosen hydrostratigraphic unit.

In addition, the PCS site was proposed and approved with three monitoring wells, but to date, there are no monitoring wells at this 30-year old site. In addition, regulators did not require the PCS site to apply for and obtain the required air emissions permit (see next point).

Point Comment: DTG has drilled a single additional monitoring well (July, 2022) the month before it was declared a MTCA site. The landfill's three-well monitoring system remains non-compliant with state regulations and permit conditions, and is not effectively monitoring downgradient flow of potential contamination, including of AFFF/PFAS. Regulators need to not allow facilities to negate their requirement to adequately characterize groundwater conditions necessary to generate data and information, including flow direction and likely flow-paths, to establish a compliant groundwater monitoring system.

5) **No air emissions permits required/approved for Rocky Top landfill or PCS site**

In the 30 years the PCS site operated (1992-2022) the local agency responsible for air quality in Yakima County, the Yakima Regional Clean Air Agency (YRCAA), never required it to have an approved air emissions permit, as required. To date, the agency has not offered a public explanation for not requiring the operator to apply and secure an air operating permit.

In the 15 years the landfill has been permitted as a limited purpose landfill (2007 to present), the YRCAA never required it to obtain an air emissions Order of Approval in violation of the first and second conditions of the landfill's conditional use permit, CUP2015-00051:

1. *The applicant shall obtain all necessary local, state, and federal permits relevant to the operation of the Limited Purpose Landfill prior to the expansion and commencement of use….*
2. *The applicant must obtain necessary permits from the Yakima Regional Clean Air Agency.*

Point Comment: The LPL and PCS site have operated for their entirety without required air emission permits. DTG's neighbors witnessed and submitted complaints to regulators of the company's questionable operations, harsh odors and violations the years before it became a MTCA site, on fire.

YRCAA's abdication of its responsibility to do its job and evaluate air emission from potentially harmful sources, is not just failure of duty, but a failure of the public trust.

When a local agency responsible to protect air quality fails to require permits and monitoring at facilities known to be capable of generating a toxic brew of volatile organic compounds, they put neighbors and the community at risk. The result in Yakima County is a privately owned and operated landfill that accepted unrestricted amounts of waste, including huge volumes of ground 'drywall backing paper' (gypsum based product) from Canada, and a mix of Construction & Demolition material, some ground, and residual waste from its Puget Sound collection facilities that helped it create a toxic dump on Rocky Top that threatens groundwater resources.

6) **Challenges with adequate and multi-jurisdictional oversight**

DTG receives revenue from tipping fees paid by customers dropping off loads of debris at its material recovery facilities (MRFs). The company is only permitted to accept construction and demolition waste (not household garbage or other municipal solid waste) at its western Washington MRFs, which includes materials such as wood, metal, carpet, and commingled construction and demolition debris. Once collected, these materials are required to be sorted and separated. MRFs exist to recover these materials so they can be sold to industries that will process and integrate them back into the economy, diverting them from landfills. Any leftover material ("residual waste") is required to be disposed of at a landfill in accordance with local regulations.

A patchwork of state, county, and city regulations governs the construction and demolition recycling industry, and these regulations vary in consistency and scope. Some counties, like Snohomish and King, require that any residual waste collected within their jurisdiction be disposed at the County-designated municipal solid waste landfill, referred to as "flow control," intended to ensure that residual waste disposal fee revenue stays within the local system. Because DTG moves collected material among its facilities across county lines, tracking materials and residuals for enforcement of local regulations can be challenging. Nonetheless, DTG has still been cited for violating relevant ordinances. In 2021, Snohomish County issued a Notice of Violation to DTG for having hauled a load of residual waste from its MRF in Woodinville and disposing of it at the Yakima landfill.

The state-level regulatory landscape is fragmented, with Ecology and the Utilities and Transportation Commission (UTC) each playing a role. Ecology requires annual reporting of recycling rates for each type of construction and demolition material but has no means for validating the information in these reports, while the UTC regulates the transportation of solid waste, requiring any firms hauling garbage in the state to obtain a specific permit. However, because DTG presents itself as a recycling company, it is not required to, and has not, obtained a permit for transporting solid waste. The UTC currently has only one investigator for suspected solid waste transportation violations, making it difficult to catch unpermitted companies in the act of illicitly hauling garbage.

This matters because limited public funds and resources dedicated to the regulation and enforcement of solid waste requirements, permit conditions and code enforcement, including for jurisdictional coordination to monitor waste flow across jurisdictions to prevent 'sham' recycling.

It appears the lack of adequate regulatory tools and coordination has incentivized bad actors to not comply, and ignore regulatory concerns. Historically, limited public health resources are dedicated to permitting, inspecting and investigating solid waste facilities for compliance, violations or enforcement.

This situation of reduced regulatory capability and oversight in Yakima County is called out in a Yakima Herald editorial, on February 24, 2023:

> *Closer to home, ask the folks who live near Rocky Top if it might help to have closer oversight of DTG Recycle's landfill, which seems to get noisier and less neighborly as it expands operations. Or check with Naches-area folks who live anywhere near the Caton Landfill, which, if we're lucky, might not be on fire for the moment.*
>
> *Oddly, many of these "smaller government" politicians argue passionately that we must give law enforcement agencies every dime we can spare for the sake of protecting our communities. Enforcing traffic rules and chasing down criminals is a top priority, but preventing businesses from fouling our environment and threatening our children's health? Somehow, that's different.*
>
> *The two local landfills are by no means the only commercial sources of community complaints and potential health hazards. Other businesses cut corners, get away with it and in small ways degrade our lives, too. And as distinctly different as the DTG and Caton landfills are, they have one key thing in common:*
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> *Evidently, they don't need to worry much about oversight or consequences.*
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> *No less than three government agencies have some sort of say in permitting and monitoring local landfills — the Yakima County Planning Department, the Yakima Health District and the state Department of Ecology.*
>
> *Yet none showed much sign of stepping forward until neighbors were up in arms because of dust, after-hours racket or flames.*
>
> *Why? We suspect it's partly because none of those agencies wanted to get entangled in a messy fight that could end up in court — as the Caton Landfill case has after county officials concluded the landfill was operating beyond the scope of its permits. And we suspect none of them wanted to be the bad guy. Nobody wanted anyone to think "The Government" was interfering in a local business.*
>
> *It's also because those agencies lack the manpower to do much in the way of effective code enforcement. They wait until complaints pile up before they do much actual regulating. Instead of being out in the field, scouting for potential problems, it's all they can do to keep up with reading and reviewing permit applications, site maps and so forth.*
>
> *The end result of all this is that companies like DTG, Caton and others know they face few, if any, consequences if their operations break any rules. Who's going to notice, let alone try to stop them?*

Point Comment: DTG's operations demonstrate how current waste acceptance and state and local solid waste and recycling rules create a multi-jurisdictional regulatory system that has allowed a so-called recycling company to flow huge volumes of largely unregulated material to Rocky Top, not for recovery but disposal, and how this disposal created harmful, dangerous air pollutants that triggered a MTCA site determination. Important to this DEIS, was the remediation and disposal of 743 cy of YTC

PFAS soils at elevated concentrations at the Anderson PCS site and landfill, when PFAS was not fully understood or regulated as hazardous. Federal and state agencies need to reconsider the potential threat from known secondary sources of PFAS contamination, including the Macquarie/East Mountain Investments, Inc., DTG/Anderson contaminated site on Rocky Top.

Both the DTG LPL and the Caton LPL are privately owned and operated and have received significant volumes of waste from outside of Yakima County, primarily Westside counties and gypsum-based waste from Canada. Both LPLs represent significant unknown environmental and regulatory challenges, and highlight the difficulty for state and local regulators in coordinating oversight across multiple jurisdictions to ensure compliance and site management that arguably would have prevented the current crises at these two Yakima LPLs.

Secondary Source Final Comment: How do landfills and PCS sites become hazardous waste sites? Arguably, when regulators permit facilities with alternative, less protective environmental controls, limited study of groundwater, and approval of a two-well monitoring system. Waste acceptance and handling at these facilities matter because they operate on a largely honor-based system. Regulators need to evaluate and verify facility waste flow, acceptance, disposal, and recycling by examination of operating records and coordination with jurisdictional regulatory partners.

Forthcoming MCLs, ground and air monitoring requirements, potential waste acceptance limitations, material handling modifications for worker safety, and contamination remedies, present a mix of uncertainty and future potential challenges for landfills, including at 'secondary sources'. The state should acknowledge 'secondary sources' of AFFF/PFAS disposal that have, or the state suspects, could be contaminated, due to their risk to human health and the environment, and consider agency legislation to address these known or suspected secondary sources.

Comment 2: A recent "Whitepaper", *Choosing the Right PFAS Tech for Landfill Leachate - A Review of Currently Available Technology for Landfill Leachate Management* by Aclarity, 2023 Technology Guide provides insight into multiple 'Destruction Technology' alternatives for PFAS that may have application for the agency's DEIS review, as well as Ecology PFAS programs to remediate suspect and contaminated landfills. Aclarity's mission is to destroy PFAS forever. The guide can be requested here: https://www.aclaritywater.com/landfill-pfas-treatment-technologies/?utm_source=wastedive&utm_medium=newsletter. Here's a few quotes:

> *"Aclarity is eliminating man made "forever chemicals" that bioaccumulate in humans, animals and remain permanently in our environment. Aclarity's proprietary technology and commercialized solution break the current PFAS cycle. By design, PFAS chemicals have strong molecular bond. Until now, the current way to "remediate" PFAS has been a dangerous cycle of removal and disposal, either by putting the PFAS back into landfills after removal or by burning the removed PFAS and releasing toxic aerosols into the air. Aclarity's technology utilizes electricity to zap the carbon and fluorine bonds that make PFAS compounds so robust."*
> *"As PFAS destruction technologies continue to advance, a pressing distinction is how effective they will be in handling both short- and long-chain PFAS. In addition, the safety and overall efficacy are of top concern for landfill operators. Workplace safety is a paramount concern for landfill operators, with sweeping ramifications should issues arise onsite. When evaluating new technologies, technological readiness factor is extremely important. Aclarity had an independent leading company validate at a Technology Readiness Level of 9 (max) while others in the emerging PFAS destruction field had TRL of 6 or lower."*

> *"At the moment, removal and disposal of PFAS could sound alluring, especially when combined with concentration methods that concentrate PFAS and lessen the need for options like incineration, deep well injection, or further disposal that have detrimental environmental effects. However, forward-thinking companies are assessing PFAS destruction technologies that eliminate the need for any PFAS disposal and destroy PFAS on-site, which can be very cost-feasible and serve as a desirable alternative for landfill sites as the increasing regulatory oversight and compliance designations from the EPA loom."*

I'm not an expert in PFAS chemistry, but it may be worthwhile for the state to consider PFAS 'destruction technologies' for onsite remediation at municipal fire stations, in addition to the proposed five alternatives. If applicable, given the long-term costs and liability for PFAS removal and disposal, this could be a viable option for some fire service agencies.

Comment 3: The U.S. Department of Defense (DoD) recently announced a prototype project to demonstrate remediation technologies for PFAS, calling it "*a major step forward in the effort to provide [it] with commercial PFAS treatment options for a variety of scenarios*."

Six companies - Clean Earth, Aquagga, Arcadis, 374Water, Battelle, and General Atomics - will participate in remediation of PFAS-impacted waste collected from two Department of Defense bases in Pennsylvania with the waste being treated at Clean Earth's offsite locations. Clean Earth is a division of Enviri Corporation, an environmental and waste management services firm. According to a waste trade publication:

> "*This collaboration represents a synergy of exciting technology, world-class expertise, and a practical strategy for scale-up and accelerated commercialization*," said Craig Divine, Ph.D., Arcadis, Senior Vice President and Project Principal Investigator. "*As we coordinate this pivotal project's implementation and performance analysis, Arcadis is proud to partner with Clean Earth and 374Water, bringing forth advanced and cost-effective solutions to tackle PFAS contamination*."
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> "*Clean Earth's ReSolve™ program has tested various methods to treat PFAS-contaminated soil and water*," said Beswick. "*With operations covering all 50 states, Clean Earth can support on-site PFAS remediation or treat it offsite at one of our facilities. Rather than a short-term fix, we are committed to implementing sustainable solutions that minimize the long-term risk for our customers*."
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> Clean Earth Joins in Department of Defense Study for PFAS Remediation,
> WASTE ADVANTAGE, January 23, 2024

Comment: As stated, the DoD is responsible for the U.S. Army Yakima Training Center (YTC) near Selah, and the resulting AAAF and PFAS contamination of local groundwater. Arguably, it would also bear responsibility for future PFAS contamination of groundwater at Rocky Top, a 'secondary source' of contamination where the remediation and disposal of 743 cubic yards of YTC AAAF contaminated soils with elevated concentrations of PFAS. As the state engages with federal partners, including DoD regarding AFFF/PFAS contamination and storage at military installations and airports, it should include consideration of 'secondary sources'.