UNITED STATES DISTRICT COURT FOR THE
DISTRICT OF NEW MEXICO

STATE OF NEW MEXICO, *ex rel.* HECTOR BALDERAS, Attorney General, and the NEW MEXICO ENVIRONMENT DEPARTMENT, Plaintiffs, v. THE UNITED STATES and THE UNITED STATES DEPARTMENT OF THE AIR FORCE, Defendants.	§	Case No. 6:19-cv-00178 **PLAINTIFFS' BRIEF IN SUPPORT OF MOTION FOR PRELIMINARY INJUNCTION**

INTRODUCTION

The New Mexico Attorney General and the New Mexico Environment Department ("NMED") (collectively "the State") move the Court for a preliminary injunction to require the Defendants to do what is immediately necessary to protect the people and the environment of the State of New Mexico from the potentially devastating effects of exposure to toxic chemicals known to be present at and emanating from Cannon Air Force Base ("Cannon") and Holloman Air Force Base ("Holloman") (collectively "the Bases").

The State brought this civil action against Defendants, the United States and the United States Department of the Air Force (collectively "Defendants"), pursuant to the New Mexico Hazardous Waste Act, NMSA 1978, §§ 74-4-1 to -14 ("HWA"), and the Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901, *et seq.* ("RCRA"), to end the imminent and substantial endangerment to human health and the environment that is present at Cannon and Holloman as a result of the Defendants' improper disposal and failure to contain per and polyfluoroalkyl substances ("PFAS"), hazardous and solid wastes present in "aqueous film-forming foam" ("AFFF") used extensively by the United States Air Force for firefighting training activities and petroleum fire extinguishment at the Bases.[1] To date, the Air Force continues to use these constituents or similarly dangerous replacements in the same way despite the known adverse effects on human health and the environment.

The most studied PFAS compounds, perflurooctanoic acid ("PFOA") and perfluorooctanesulfonic acid ("PFOS"), which are found in AFFF, are toxic and pose significant threats to human health and the environment.[2] Even in small amounts, exposure to these toxic

[1] Additional hazardous and toxic substances have been discharged and are present at Cannon and Holloman; the current application, however, is focused on the PFAS contamination at the Bases.
[2] Certification of M. Laska, ¶ 15.

chemicals increases the risk of various forms of cancer and other severe illnesses as well as ecological damage.[3] PFAS are particularly dangerous because they are highly mobile and persistent in the environment. The presence of more than one PFAS compound has been found to have additive adverse effects on human health and the environment. Additionally, PFAS bioaccumulate, meaning that they continue to increase in volume in humans and some animals faster than they are excreted. The State does not yet know the full measure of present PFAS exposure levels in residents on and near the Bases or in the nearby environment, but does know that the Defendants' pollution constitutes an actionable imminent and substantial endangerment under RCRA and the HWA. Ongoing exposures to these toxic chemicals will pose increasingly significant harms to environmental and public health.

At Cannon, where Defendants used AFFF for firefighting training and fire extinguishment for decades, PFAS are found in groundwater, soil, surface water, and sediment at several locations throughout the base at extremely high levels, some up to 374 times the United States Environmental Protection Agency's ("EPA") Health Advisory ("HA") limit of 70 parts per trillion ("ppt") where PFOS and PFAS levels are combined.[4] PFAS migrated offsite via groundwater and infiltrated water supplies of neighboring properties.[5]

Families and businesses in Clovis have already suffered catastrophic losses as a result of the contamination and risk losing much more as the contamination continues to spread. Highland Dairy, a major agricultural business in Clovis, shut down in 2019 due to PFAS contamination in its cattle, milk, and land. The dairy is located about a mile southeast of Cannon. Air Force sampling showed a maximum of 539 parts per trillion ("ppt") of PFOA in the Highland Dairy well (7.7 times the EPA HA), and Highland Dairy's own sampling showed 2,920

[3] *Id.*
[4] Certification of M. Laska, ¶ 10.
[5] *Id.* ¶14.

ppt of PFOA (nearly 42 times the HA), with a total PFOS/PFOA of 14,320 ppt in an irrigation well (more than 204 times the HA). Highland Dairy owner Art Schaap has reported to the press that his and his wife's exposure to PFAS is anticipated to lead to acute health problems. Three additional dairies operate downgradient of the suspected plume and only slightly farther away. The agricultural area downgradient of the suspected plume supports numerous farms and additional businesses dependent upon the local water supply, including Southwest Cheese and Westway Feed Products. Numerous private wells also operate in the agricultural areas downgradient of the suspected plume at Cannon.

Defendants acknowledged that the PFAS contamination resulted from their use of AFFF, but they have refused to recognize the authority of the State to regulate these contaminants and to take any necessary actions to prevent further damages, placing the lives and livelihoods of the citizens of New Mexico and the environment directly in harm's way. Defendants have even sued the State, challenging its hazardous waste permit requiring delineation and cleanup at Cannon. In addition, despite requests, Defendants have not provided the State with complete information already within their possession regarding the full nature and extent of this problem.

PFAS were similarly detected in soil, surface waters, sediment, and groundwater throughout Holloman at levels even higher than at Cannon, in some instances at more than 4,314 times the EPA HA. PFAS contamination extends to valuable public resources at Holloman, including Lake Holloman. Lake Holloman is considered an important habitat for birds, including migrating ducks, shorebirds, and a number of federally-listed endangered species and state-listed species of concern. Lake Holloman also serves as a valuable recreational resource to the community surrounding the base. However, as with the contamination at Cannon,

Defendants refused to take any additional steps to protect these resources and the public from further exposure to dangerous PFAS they have released into the environment and failed to abate.

Although the State has and will continue to defend its regulatory and permitting authority, the instant action was necessitated by the Defendants' refusal to address the urgent crises presented at the Bases. While PFAS contamination is known to be present on- and offsite at Cannon and Holloman, and thus presents an imminent and substantial endangerment to the public and the environment, the full magnitude of the contamination is not yet known. The public and the environment continue to be exposed to these hazardous wastes. Accordingly, the State requests the following relief under its authority to protect the public and the environment from an imminent and substantial endangerment on an interim basis pending trial in order to delineate the extent of PFAS contamination resulting from Defendants' discharges at Cannon and Holloman and to protect the public and the environment from the adverse impacts associated with exposure from the same:

- Expedited discovery of existing documents related to the following:
  - The current delineation of contamination conducted by the Air Force, including groundwater, surface water, and potential airborne exposure pathways and bioaccumulation at Cannon and Holloman; and
  - Interim measures to prevent additional human and environmental exposures, including but not limited to the closure of Lake Holloman to the public.

- Further work to delineate the extent of PFAS contamination, including:
  - Regular sampling of all water wells located within a four-mile radius of the southeastern corner of Cannon and within a six-mile radius southwest of Holloman (collectively the "Zones");
  - Sampling of offsite river and ephemeral stream habitat within six miles of Holloman to the west;
  - Production of documentation that the Defendants made due diligent and good faith efforts to timely obtain permission from owners of offsite wells in these Zones;
  - Production of all sampling results for PFAS conducted at Cannon and Holloman and any sampling that might have occurred offsite;
  - Analysis and quantification of perfluorobutanoate ("PFAB") in the ongoing testing of soil and water on and near the Bases;

  - Resampling of all on-base water wells for all PFAS constituents; and
  - Sampling/surveys of wildlife, including migratory birds.

- Interim measures to protect the public health, including:
  - Providing voluntary blood tests for residents who wish to quantify their exposures to known and suspected PFAS used at the Bases; and
  - Providing alternative drinking water sources to all individuals that have affected water supplies, to the extent those impacts can be determined without full delineation of the contaminant plume.

A preliminary injunction is an "extraordinary and drastic remedy," but this is an extraordinary case, and the State has satisfied the requirements for this emergency relief. Given the long-term presence and extreme levels of PFAS contamination at and around Cannon and Holloman and the migration of that contamination into areas that threaten public water sources, as well as irreplaceable ecological resources, the State is able to prove that Defendants have created an imminent and substantial endangerment to human health and the environment under both the HWA and RCRA. If the State is not granted the relief that it now seeks, irreparable harm will continue to occur to not only the public health and the environment, but also to local economies and small business owners that depend upon a clean, non-toxic environment for their livelihoods. The threat of this continued injury far outweighs any prejudice that Defendants would face if a preliminary injunction is granted. Granting an immediate injunction to prevent continued and expanded exposure of the public to these chemicals is of great public interest, as it would serve to protect irreplaceable ecological, recreational, and economic resources, as well as the health of the citizens of the State.

The continued presence of PFAS associated with the Bases and their migration off Bases poses an ongoing severe threat to people and the environment. Rather than take responsibility for the harm that they have caused, Defendants have chosen to ignore their obligations and fight the State's right and duty to protect its citizens and environment. In the absence of the injunctive

measures, there is an unacceptable risk of continued exposure and resulting harm at Cannon, Holloman, and the surrounding communities. As such, a preliminary injunction is appropriate and this Court should grant the relief requested herein.

FACTS IN SUPPORT OF PRELIMINARY INJUNCTION

I. PFAS Are a Hazardous Substance Contained in AFFF that Cause Substantial Harm to the Public Health and the Environment.

PFAS are large group of synthetic fluorinated organic compounds.[6] Due to their ability to repel oil and water, manufacturers produced PFAS for a variety of industries and products, including surface treatments for soil/stain/water resistance; surface treatments of textiles, paper, metals, and for specialized applications, such as fire suppression.[7] PFAS are considered by the EPA to be emerging contaminants, meaning that the risk that they pose to human health and the environment are not yet fully understood.[8] However, what is already known about these chemicals provides sufficient reason for immediate action.

PFOS and PFOA are the most widely studied of the PFAS chemicals.[9] PFOS and PFOA are toxic.[10] In humans, PFOS and PFOA exposure is associated with a variety of illnesses, including kidney cancer, thyroid cancer, high cholesterol, ulcerative colitis, testicular cancer in men, and pregnancy-induced hypertension in women, as well as developmental delays in children.[11] PFOS and PFOA are also extremely persistent in the environment and are resistant to

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[6] *See* U.S. EPA Technical Fact Sheet—PFOS and PFOA (Nov. 2017), *available at* https://www.epa.gov/sites/production/files/2017-12/documents/ffrrofactsheet_contaminants_pfos_pfoa_11-20-17_508_0.pdf.

[7] *Id.*

[8] U.S. EPA, *Emerging Contaminants Fact Sheet – Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)* (March 2014), https://nepis.epa.gov/Exe/ZyPDF.cgi/P100LTG6.PDF?Dockey=P100LTG6.PDF.

[9] *See* EPA Technical Fact Sheet—PFOS and PFOA (Nov. 2017), *supra* n. 2, at 1.

[10] *Id.*

[11] *See* EPA, Drinking Water Advisory for Perflurooctanoic Acid (PFOA) (May 2016), https://www.epa.gov/sites/production/files/2016-

typical environmental degradation processes.[12] PFOS and PFOA are also known to bioaccumulate and biomagnify in humans and wildlife.[13] The toxicity, mobility and bioaccumulation potential of PFOS and PFOA, as well as other PFAS, result in adverse effects on the environment and human health,[14] and when more than one PFAS compound is present, those adverse effects become more severe.[15]

AFFF is a firefighting foam developed in the 1960s to be used for flammable liquid fire extinguishment.[16] Training with AFFF is a critical part of proper AFFF use. AFFF concentrate contains PFOA and PFOS.[17] AFFF was primarily used on Air Force installations, including Cannon and Holloman, at fire training areas, but was also been used, stored, or released from hangar fire suppression systems, at firefighting equipment testing and maintenance areas, and during emergency response actions for fuel spills and mishaps.

EPA and multiple states developed a variety of health-based advisories for PFOA and PFOS. In 2009, EPA first developed provisional HAs for PFOA and PFOS, and following further research and investigation, in 2016, EPA finalized a lifetime drinking water HA of 70 ppt

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05/documents/pfoa_health_advisory_final_508.pdf; EPA, Drinking Water Advisory for Perflurooctane Sulfonate (PFOS) (May 2016), https://www.epa.gov/sites/production/files/2016-05/documents/pfos_health_advisory_final_508.pdf; ATDSR, Toxicological Profile for Perfluoroalkyls (June 2018), *available at* https://www.atsdr.cdc.gov/toxprofiles/tp200.pdf.

[12] EPA Technical Fact Sheet—PFOS and PFOA, *supra* n. 2, at 1.

[13] *Id.*

[14] ATDSR, *An Overview of Perfluoroalkyl and Polyfluoroalkyl Substances and Interim Guidance for Clinicians Responding to Patient Exposure Concerns*, at 1 (June 7, 2017), *available at* https://www.atsdr.cdc.gov/pfc/docs/pfas_clinician_fact_sheet_508.pdf.

[15] *See* U.S. Dep't of Health and Human Services and Centers for Disease Control and Prevention, *Fourth National Report on Human Exposure to Environmental Chemicals*, Updated Tables (March 2018), *available at* https://www.cdc.gov/exposurereport/pdf/FourthReport_UpdatedTables_Volume1_Mar2018.pdf.

[16] U.S. EPA, *Emerging Contaminants Fact Sheet – Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA)*, *supra* note 4, at 2.

[17] Although manufacturers of AFFF in the United States now use PFAS other than PFOS, early studies of the replacement PFAS, including what are known as C6 products, indicate that they are nearly as harmful.

for the individual or combined concentrations of PFOA and PFOS.[18] These levels are only guidance at this time, and thus far have not caused the Defendants to take active containment or remedial measures. As of July 2018, the New Mexico Water Quality Control Commission added PFOA and PFOS to the list of toxic pollutants the State regulates at a risk-based level of 70 ppt for PFOA and PFOS combined. *See* 20.6.2.3103.A(2) and 20.6.2.7.T(2)(s) NMAC.[19] The HAs may change as new information becomes available. Further, toxicity information is being developed on additional PFAS, which will be considered in setting additional HAs as more information becomes available.

There is a substantial body of evidence suggesting that the EPA's HA should be more stringent and protective of human health. For example, in 2018, the Agency for Toxic Substances and Disease Registry ("ATSDR") released an updated Toxicological Profile for PFAS that revised its minimal risk levels ("MRLs") for PFOA and PFOS.[20] An MRL is the estimated amount of a chemical a person can eat, drink, or breathe each day without a detectable risk to health. The MRLs were lowered because, unlike the EPA HA, they now take into consideration immune system effects; the former thresholds and the EPA HA were based only on developmental health effects.[21] At least four states, including Vermont, California, Minnesota, and New Jersey, adopted limits or health guidelines for PFAS lower than the current EPA HAs.

As of July 2018, the New Mexico Water Quality Control Commission added PFOA and PFOS to the list of toxic pollutants the State regulates. *See* 20.6.2.3103.A9(2) and 20.6.2.7.T(2)(s) NMAC. The HAs and other regulatory limits will likely become stricter as new

[18] EPA, Drinking Water Advisory for PFOA, *supra* note 7; EPA, Drinking Water Advisory for PFOS, *supra* note 7.
[19] *See also* Certification of M. Laska, ¶¶ 11-13.
[20] ATDSR, Toxicological Profile for Perfluoroalkyls (June 2018), *supra* note 7.
[21] *Id.*

public health data and exposure information becomes available. Further, toxicity information is being developed on additional PFAS, which will be considered in setting additional limits.

Levels of PFAS detected thus far at both Cannon and Holloman exceed the EPA's advisory limits, as well as the lower limits determined to be more protective by other states, by significant orders of magnitude. As described below, the gross contamination at these sites, which spread off-site and into public water sources and the environment, is of such concern that immediate efforts are needed to investigate the full extent of PFAS contamination and implement interim measures to protect the public and the environment from further adverse impacts. Upon completing such an investigation and implementing interim measures, effective risk-based remedial actions and other removal measures can be implemented.

II. Extensive PFAS Contamination Resulting from Releases of PFAS-Containing AFFF Used for Decades by Defendants at Cannon and Holloman Has Created a Need for Emergency Relief to Protect Public Health and the Environment and to Prevent Further Harm to the State.

Defendants' investigations affirm that they used AFFF at Cannon and Holloman for more than fifty years in training and actual firefighting events at the Bases during which AFFF was sprayed directly on the ground and/or tarmac in several areas.[22] Defendants also confirmed that additional releases of PFAS-containing AFFF occurred at the Bases through testing of equipment, false alarms, equipment malfunctions, and other incidental releases at the hangars, fire stations, and other locations. The release of PFOA and PFOS into the environment through the use of PFAS-based AFFF at Cannon and Holloman caused contamination on and offsite in locations to which the contaminants migrated.

[22] *See* Certification of M. Laska, ¶ 9.

A. PFAS Contamination at Cannon Threatens the Public Health and Economic Resources of the State.

Cannon is located in eastern New Mexico, near the city of Clovis in Curry County. Cannon encompasses approximately 3,789 acres of land owned by Defendants and hosts a population of roughly 7,800 people. Clovis is a city with a population of approximately 39,000 people who rely upon the Ogallala Aquifer for their potable water.

As a result of decades of AFFF use and discharges at Cannon, PFAS are now present at very high concentrations both on and off of the Cannon site.[23] In 2015, the Air Force completed an initial site inspection at Cannon to assess potential impacts to soil, sediment, surface water, and groundwater at Cannon from PFAS. The resulting August 2018 *Final Site Inspection Report, Investigation of Aqueous Film Forming Foam Cannon Air Force Base, New Mexico* (Cannon Site Inspection Report) indicates that PFAS were detected in soil, surface water, sediment, and groundwater at various sampled locations throughout the site at levels above the EPA's HA, sometimes at levels up to 374 times the HA.[24] As such, the Site Investigation Report demonstrates substantial exceedances of even the least protective guidance regarding PFAS.[25]

Air Force sampling also detected PFAS in off-base wells, which provide drinking water and livestock and irrigation water to local dairies. The Highland Dairy is one of those dairies, located half of a mile south and slightly east of Cannon. Air Force sampling showed a maximum of 539 ppt for PFOA in a Highland Dairy well, and the dairy's own sampling detected a combined level of PFOS/PFOA of 14,320 ppt at an irrigation well, nearly 204 times the EPA's

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[23] *See* Certification of D. Cobrain, ¶ 11; Certification of M. Laska, ¶¶ 18-26.

[24] *Final Site Investigation Report, Investigation of Aqueous Film Forming Foam Cannon Air Force Base, New Mexico* (Nov. 2018), attached as **Exhibit A**; *see also* Cannon Air Force Base-Maximum Observed PFAS Concentrations and Exceedance Summary, attached as **Exhibit B.** Exhibits referenced herein are those attached to the Certification of C. Khoury filed in connection with this Motion.

[25] *See* Certification of D. Cobrain, ¶ 14; Certification of M. Laska, ¶¶ 18-26, 33-37.

HA. A number of other dairies neighbor Cannon, as do residential communities and other important ecological resources, which are faced with an imminent risk of harm due to Defendants' PFAS releases and failure to control the spread of the same.[26]

B. PFAS Contamination at Holloman Threatens Ecological and Recreational Resources of the State.

Holloman is located in Otero County near the city of Alamogordo, New Mexico. The base covers approximately 59,800 acres and hosts a population of roughly 21,000. Alamogordo is a city with a population of approximately 31,000 people who rely partially upon groundwater in the Tularosa Basin for their potable water.

In 2015, the "*Final Preliminary Assessment Report for Perfluorinated Compounds at Holloman Air Force Base, Alamogordo, New Mexico,*" prepared by Defendants, identified thirty-one potential PFAS release areas at Holloman. In November 2018, Defendants issued the "*Final Site Inspection of Aqueous Film Forming Foam (AFFF) Release Areas Environmental Programs Worldwide,*" which selectively focused its investigation on five of these release areas, but did not rule out PFAS contamination at other areas of the site.[27] The 2018 Holloman Site Inspection Report confirmed PFOS and PFOA contamination in soil, sediment, and groundwater at Holloman at levels as high as 4,314 times the EPA's HA.[28]

The results of recent sampling from Lake Holloman taken by the New Mexico Department of Health with the assistance of NMED confirm extremely high levels of PFAS throughout the lake.[29] Specifically, PFOA was detected at levels as high as 5,900,000 ppt, more

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[26] Certification of M. Laska, ¶¶ 29-32.
[27] *Holloman Final Site Inspection of Aqueous Film Forming Foam (AFFF) Release Areas Environmental Programs Worldwide* (Nov. 2018), attached as **Exhibit C.**
[28] Holloman Air Force Base- Maximum Observed PFAS Concentrations and Exceedance Summary, attached as **Exhibit D**; *see also* Certification of D. Cobrain, ¶ 25.
[29] *See* Detection Summary for Lake Holloman Sampling, attached as **Exhibit E**; *see also* Certification of M. Laska, ¶¶ 48-50.

than 84,000 times the EPA;s HA of 70 ppt, and PFOS was detected as high as 1,600,000 ppt, more than 22,000 times the EPA HA.[30]

Lake Holloman is home to many precious ecological resources, most of which are endangered by Defendants' pollution.[31] The Lake Holloman area has been officially recognized as a state Watchable Wildlife viewing area since 1996. The Lake Holloman area provides a variety of foraging and nesting habitat for over 73 species of migrating and resident wetland birds. It is the most important area within the Tularosa Basin for shorebirds like Wilson's phalarope and snowy plovers.[32]

Underscoring the ecologically sensitive nature of the affected ecosystem, two federally endangered species have been observed on Holloman: the northern aplomado falcon and the interior least tern. An additional 31 state-listed species or species of concern have been observed on Holloman. Of these, five species have been observed within the Lake Holloman area.

Within the Lake Holloman area there are four impoundments that were constructed in 1996 for the primary purpose of providing a disposal area for treated sewage effluent from the Waste Water Treatment Plant ("WWTP") on Holloman that have naturally attenuated into wetlands.[33] Emergent wetlands also occur along the margins of Lake Holloman primarily on the western edge and northern end of the lake. Dominant species include cattail and alkali bulrush.[34]

Although swimming and fishing are both prohibited at Lake Holloman per signage, it is unknown if the Air Force monitors and enforces this prohibition. Lake Holloman is open to boaters, including those who might allow individuals or pets to periodically enter the water. The

[30] *Id.*
[31] *See* Lake Holloman Recreational Area Development Environmental Assessment (Aug. 2009), *available at* https://apps.dtic.mil/dtic/tr/fulltext/u2/a636343.pdf; *see also* Certification of M. Laska, ¶¶ 43-45.
[32] Lake Holloman Recreational Area Development Environmental Assessment.at 142.
[33] *Id.* at 61.
[34] *Id.*

area is also open to the public for non-watersport recreation like bird watching, hiking, primitive camping, and limited waterfowl hunting. At certain times of the year, wind produces PFAS-laden foam that blows onto the shore presenting an exposure pathway for non-watersport recreation.[35] The ongoing exposure and persistence of PFAS continues to damage this and nearby habitats while creating a threat to human health. The potential surface water connection from Lake Holloman to ephemeral streams suggests a strong likelihood that PFAS has traveled far beyond the Lake boundaries.

III. Defendants Continue to Cause Severe Damage to Human Health and the Environment and Are Unwilling to Take Responsibility for the Cleanup of the Extensive Contamination.

Defendants were aware of potentially high levels of PFAS contamination at Cannon and Holloman for years before notifying the State and engaging in site inspections. After Defendants shared with the State that PFAS compounds were not only present at the Bases but were present at levels far exceeding the least restrictive guidance, the State took immediate action to attempt to coordinate containment and cleanup actions with Defendants. Defendants, however, maintained an adversarial approach to remedying the dangerous circumstances presented at the Bases and impinged on the State's right and duty to protect its citizens and the environment from the harm caused by the PFAS contamination.

In 2017, the State learned for the first time that the Air Force had conducted a preliminary assessment as early as 2015 and a scoping visit in 2016.[36] NMED did not learn until 2018 that the Air Force collected samples both on and off site at Cannon, which showed high levels of PFAS compounds.[37] Indeed, according to the Air Force, samples were also taken

[35] *See* Photographs of PFAS-laden Foam at Lake Holloman (taken March 13, 2019 at 6pm), attached as **Exhibit F.**
[36] *See* Certification of D. Cobrain, ¶¶ 15-16.
[37] *Id.* ¶ 18.

during the EPA's Third Unregulated Contaminant Monitoring Rule ("UCMR 3") in or around 2013. *See* Cannon Site Inspection Report, § 4.2.2. These results were not provided to NMED at the time or since then despite the State's requests.

In September 2018, NMED conditionally approved the 2018 Cannon Site Investigation Report, subject to a number of conditions that Defendants have yet to fulfill, including providing NMED with additional information associated with sampling efforts and remedial measures.[38] Defendants refused to comply with these requirements, and accordingly, on November 30, 2018, NMED issued a notice of violation against Defendants and requested that Defendants take corrective action at Cannon.[39] Defendants refused to take the action requested by NMED.

On December 18, 2018, Cannon's RCRA corrective action permit became final.[40] But the Air Force sued New Mexico in January 2019, challenging NMED's authority to regulate and compel PFAS cleanup under its state permit. Although the State has and will continue to defend its regulatory and permitting authority, the instant action was necessitated by the Defendants' refusal to address this crisis appropriately. The State pursues this relief under its authority to protect the public and the environment from an imminent and substantial endangerment.

On May 9, 2019, after conducting a sampling event at Lake Holloman, the State sent a letter to Defendants regarding the disturbing findings of extremely high levels of contamination

[38] *See* Ltr. from M. Hunter, Chief, Ground Water Quality Bureau, NMED, to C. Segura, Chief, Installation Support Section, AFCEC/CZOW, re: Soil and Groundwater Contamination with per- and poly-fluoroalkyl substances Cannon Air Force Base, Clovis, New Mexico (Sept. 26, 2018), attached as **Exhibit G.**

[39] Notice of Violation, Cannon Air Force Base, Soil and Groundwater Contamination with PFAS (Nov. 2018), attached as **Exhibit H.**

[40] Issuance of RCRA Hazardous Waste Permit for Cannon Air Force Base, New Mexico (Dec. 19, 2018), attached as **Exhibit I;** *see also* Certification of D. Cobrain, ¶ 24; Certification of M. Laska, ¶ 16.

in the waters of Lake Holloman, asking Defendants to close public access to the Lake.[41] Defendants refused to make any changes regarding restrictions at the lake.[42]

AUTHORITY AND ARGUMENT

By allowing the continued uncontrolled presence and migration of PFAS at Cannon and Holloman, Defendants are failing to protect the public and the environment from exposure to these toxic chemicals. In order to prevent Defendants from causing further harm, the State respectfully requests that this Court grant a preliminary injunction to mandate the expedited discovery, delineation of the contamination, and the measures described above. These measures are immediately necessary to protect the public health and the environment until the Court can issue a decision on the merits following trial.

I. Legal Standard for Obtaining a Preliminary Injunction

The primary purpose of RCRA is to regulate the management of hazardous waste "'so as to minimize the present and future threat to human health and the environment.'" *Meghrig v. KFC W., Inc.*, 516 U.S. 479, 483 (1996) (quoting 42 U.S.C. § 6902(b)). To effectuate this statutory purpose, RCRA empowers district courts to exercise "broad and flexible equity powers" to reduce or eliminate the risk of harm to human health. *United States v. Price*, 688 F.2d 2014, 211 (3rd Cir. 1982). In particular, 42 U.S.C. § 6972 grants district courts the authority to order preliminary injunctive relief in order to prevent irreparable harm. *Meghrig*, 516 U.S. at 484; *Francisco Sanchez v. Esso Standard Oil Co.*, 572 F.3d 1, 20 (1st Cir. 2009).

To obtain a preliminary injunction, the moving party must demonstrate: (1) a likelihood of success on the merits; (2) a likelihood that the movant will suffer irreparable harm in the

[41] Ltr. from Hector Balderas, New Mexico Attorney General, to USAF (May 9, 2019), attached as **Exhibit J.**

[42] Ltr. from Joseph Campo, Colonel, USAF, to Hector H. Balderas, New Mexico Attorney General (June 10, 2019), attached as **Exhibit K.**

absence of preliminary relief; (3) that the threatened injury to the movant outweighs whatever damage the injunction may cause to the defendant; and (4) that the injunction is in the public interest. *Attorney General of Oklahoma v. Tyson Foods, Inc*., 565 F.3d 769, 776 (10th Cir. 2009). These criteria are satisfied here, and thus, emergency relief is warranted.

II. The State is Likely to Prevail on the Merits of Its Case

The State will be able to make the required showing to succeed on its claim under RCRA, § 6972(a)(1)(B).[43] Section 6972(a)(1)(B) requires: (1) the defendant must be a person, including, though not limited to, one who was or is a generator of solid or hazardous waste, or one who was or is an owner of a solid or hazardous waste treatment, storage, or disposal facility; (2) that this defendant contributed to, or is contributing to, the handling, storage, treatment, transportation, or disposal of solid or hazardous waste; and (3) that such waste may present an imminent and substantial endangerment to health and the environment. *See Burlington Northern & Santa Fe Ry. Co. v. Grant*, 505 F.3d 1013, 1020 (10th Cir. 2010). Where these elements have been met, RCRA provides for injunctive relief. 42 U.S.C. § 6972(a).

A. The United States Is a Person that was a Generator of a Solid Waste and Hazardous Waste and Has Contributed to the Disposal of that Waste.

The State can easily satisfy the first element: that Defendants are persons that were or are generators of solid or hazardous waste. RCRA defines a "person" as including "each department, agency, and instrumentality of the United States." 42 U.S.C. § 6903(15). The Air Force is not exempted from the obligations of RCRA. Further, RCRA includes a clear and unambiguous waiver of sovereign immunity. *See id.* § 6961 ("The United States hereby

[43] The HWA also provides for injunctive relief where there presents an imminent and substantial endangerment of human health or the environment. NMSA 1978 § 74-4-10(A)(2). The arguments presented herein for relief under RCRA also warrant relief under the HWA.

expressly waives any immunity otherwise applicable to the United States with respect to any such substantive or procedural requirement. . . .").

Defendants generated solid and hazardous waste at Cannon and Holloman. RCRA defines hazardous waste as "a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may—(A) cause, or significantly contribute to an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed." 42 U.S.C. § 6903(5).[44] "[F]or a waste to be classified as hazardous, it must first qualify as a solid waste under RCRA." *United States v. Self*, 2 F.3d 1071, 1076 (10th Cir. 1993).[45]

RCRA defines "solid waste" as "any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. . . ." *Id.* § 6903(5). RCRA regulations define "discarded material" to include material which is "abandoned" or "recycled." 40 C.F.R. § 261.2(a)(2). A material is abandoned by being "[d]isposed of" or "[a]ccumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned or incinerated." *Id.* § 261.2(b). "The term 'disposal' means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste or hazardous waste into or on any land or water so that such solid waste or hazardous waste or

[44] New Mexico has adopted the same definition of hazardous waste as in RCRA. Compare NMSA 1978, § 74-4-14(K), with 42 U.S.C. § 6961(a).
[45] In addition, NMED has identified PFOS and PFOA as toxic chemicals. *See* 20.6.2.3103.A(2) and 20.6.2.7.T(2)(s) NMAC.

any constituent thereof may enter the environment or be emitted into the air or discharged into any waters, including ground waters." 42 U.S.C. § 6903(3).

PFOS and PFOA are a discarded material, disposed of for decades by Defendants through the unrestrained discharges, leaks, and spills of PFAS-containing AFFF throughout Cannon and Holloman. Once PFAS reached soil, groundwater, or other resources, they ceased to be useful and may be deemed to be abandoned. *See Craig Lyle Ltd. P'ship v. Land O'Lakes, Inc.*, 877 F. Supp. 476, 482 (D. Minn. 1995). PFAS are not subject to an exclusion from the definition of solid waste at 40 C.F.R. § 261.4(a) and have not been granted a variance under 40 C.F.R. §260.30, and thus, fit within the statutory definitions of solid waste.

PFAS also satisfy the second element of the statutory definition of "hazardous waste:" they pose a "substantial present or potential hazard to human health of the environment." PFAS are, as described above, extremely toxic chemicals that are known to adversely affect human health. PFAS may pose additional adverse effects for human health given their mobility and bioaccumulation potential. PFAS also have additive effects, meaning that where more than one PFAS is present, the adverse impacts are more severe. RCRA's definition of hazardous wastes includes not only those solid wastes that do pose hazards to human health or environment, but also those that "may" do so. *American Chemistry Council v. EPA*, 337 F.3d 1060, 1064 (D.C. Cir. 2003). Further, Congress intended a liberal reading when deciding what substances were "hazardous" under RCRA. *Id.* at 1066.

Defendants engaged in the generation of hazardous and solid waste and contributed to the handing of such wastes by discarding large quantities of PFAS-containing AFFF at both Cannon and Holloman and failing to properly manage these releases. Because these solid and hazardous wastes present an imminent and substantial endangerment, Plaintiffs are entitled to relief.

B. PFAS Contamination at Cannon and Holloman Presents an Imminent and Substantial Endangerment to Human Health and the Environment.

The State is able to prove that the presence of PFAS in the groundwater, soil, surface water, and sediments at and spreading from Cannon and Holloman "may present an imminent and substantial endangerment to health or the environment," as required under RCRA. 42 U.S.C. § 6972(a)(1)(B). "Endangerment has been interpreted by courts to mean a threatened or potential harm." *Burlington*, 505 F.3d at 1020. Thus, it is not necessary to show proof of actual harm to health or the environment, so long as the risk is real. *Id.*; *see also Tyson Foods*, 565 F.3d 776. A court may grant relief "to the extent necessary to eliminate any risk posed by toxic wastes." *Burlington*, 505 F.3d at 1030. "[I]f an error is to be made in applying the endangerment standard, the error must be made in favor of protecting health, welfare and the environment." *Id.* at 1021.

To succeed under RCRA, the endangerment must be ongoing, but the conduct that created the endangerment need not be. *Id.* at 1020. Thus, that Defendants may be or are no longer routinely utilizing AFFF containing PFOA and/or PFOS, or using them in a different manner, does not defeat the State's claim. Because PFAS is still present in the groundwater and other resources at and around Cannon and Holloman, the public health and environment continues to be endangered. Moreover, the current identified commercial alternative to AFFF containing PFOA and/or PFOS, if used at these sites, suffers from similar hazardous effects to that of those PFAS compounds.

This is not a case about past contamination that no longer poses a danger. *C.f. Meghrig*, 516 U.S. 479 (holding that RCRA did not authorize action to recover costs of cleanup up toxic waste that did not pose a current threat). PFAS contamination is present at both Cannon and Holloman, is spreading, is adversely affecting the environment, and is putting the public at risk

of great harm. Defendants have taken no measures to effectively contain or remove the contaminants from the environment or provide a full analysis of the extent the contaminants present at and around the Bases.

For endangerment to be imminent, it must threaten to occur immediately; however, a finding of immanency does not require a showing that actual harm will occur immediately as long as the risk of threatened harm is present. *Burlington*, 505 F.3d at 1020. "[A]n endangerment is 'substantial' under RCRA when it is 'serious.'" "This does not necessitate quantification of endangerment, as an endangerment is substantial where there is a reasonable cause for concern that someone or something may be exposed to risk of harm by release, or threatened release, of hazardous substance in the event remedial action is not taken." *Id.* at 1021.

Defendants previously identified at least seventeen onsite AFFF release areas at Cannon associated with fire training areas, fuel spills, and aircraft crashes. *See* 2018 Cannon Site Inspection Report. Testing at these sites confirmed the presence of PFAS at levels well above the EPA's HA. The largest exceedances in groundwater have been reported in monitoring wells immediately adjacent to the property boundary. Groundwater at Cannon generally flows southeast, which is consistent with the where PFAS contamination has been detected offsite.[46] PFAS have been detected in groundwater up to approximately 2.5 miles southeast of the base. Soils at Cannon are also contaminated with PFAS at levels higher than EPA's HA, with the largest exceedances occurring at the aircraft hangars and in the Base's southwest corner. Samples also exceed the HA at North Playa Lake near the eastern boundary of the site.

At Holloman, Defendants identified five AFFF release areas onsite associated with training exercises and stormwater transport. Specifically, high levels of PFAS were found in the groundwater and soil at the evaporation pond and former fire training area at the site, among

[46] 2018 Cannon Site Inspection Report, at 12.

other locations, including Lake Holloman. Groundwater and surface water at Holloman generally flow southwest, which is again consistent with where PFAS exceedances have been identified at the site.

As evidenced by the sampling that occurred thus far, without any remedial action, PFAS contamination will continue to migrate throughout Cannon and Holloman and impact additional on- and off-site resources. The public has already begun to feel the impacts of this contamination, and the risk of further human exposure increases each day that action is not taken. The circumstances here present an imminent and substantial endangerment to human an environmental health, and the State is entitled to relief to protect the public from further harm.

III. Irreparable Harm Is Likely in the Absence of Injunctive Relief

To receive a preliminary injunction, the moving party must establish that it will suffer irreparable harm without the preliminary injunction—that is, that failing to grant the injunction will cause plaintiff to suffer an injury that is not "merely serious or substantial" but "certain, great, actual and not theoretical." *Vill. of Logan v. U.S. Dep't of Interior*, 577 Fed. Appx. 760, 766 (10th Cir. 2014) (quoting *Heideman v. S. Lake City*, 348 F.3d 1182, 1189 (10th Cir. 2003)).

Citizens of New Mexico live in the area and use the resources that have been, and will continue to be, affected. Specifically, citizens living near Cannon and the city of Clovis use groundwater to irrigate crops and care for livestock. Citizens living near Holloman use Lake Holloman for recreational purposes. Both communities rely on groundwater as a source of drinking water, either partially or completely. As in *Valley Community Preservation Commission v. Mineta*, 373 F.3d 1078 (10th Cir. 2004), there is sufficient proximity to the harm to show that the ongoing, unmitigated presence of contamination will cause irreparable harm.

Local businesses that rely on groundwater to nourish livestock and irrigate crops have also suffered as a result of PFAS contamination. For example, the Highland Dairy in Clovis, where sampling detected a combined level of PFOS/PFOA of 14,320 ppt at an irrigation well, has been forced to shut down due to the presence of contamination in its groundwater that has poisoned its cattle and land. There are other dairies within miles of Cannon that may face the same fate if immediate action is not taken.

In addition to dairy wells, additional irrigation wells, domestic wells, livestock wells, and potentially municipal wells are in the path of the flow of contaminants and are also at risk. If contaminated, the remedial costs as well as the social costs would be substantial. Given the scarcity of water throughout the State, the loss of these sources of water to contamination would have serious implications. *See, e.g., Vill. of Logan*, 577 F. App'x at 768 (calling into question the long-term viability of the Ogallala aquifer).

Ecological resources of the State are and will continue to be damaged, although the full extent of those injuries has not yet been fully identified. Environmental harm is, by its nature, generally irreparable. *Valley Cmty. Pres. Comm'n*, 373 F.3d at 1086 (citation omitted). Further, the longer persistent and biomagnifying pollutants remain in the environment, devoid of protective controls, the more difficult it becomes to impose an appropriate remedy. Because these resources are contaminated, the risk of human exposure severely limits recreational opportunities as well. Those who live and recreate around Lake Holloman, for example, already lost the opportunity to fully enjoy camping, hunting, and bird watching or hunting at the site.

Without immediate steps, PFAS will continue to spread throughout Cannon and Holloman, into the environment, and into communities surrounding the Bases, eventually reaching public water supplies and thereby exposing countless people to harmful PFAS. Any

exposure to PFOA or PFOS can be toxic, even at low levels. Exposure to PFOA and PFOS has serious health implications. These chemicals persist in the environment; thus, once released, they will remain and continue to cause harm for years and years. The public health will suffer, irreplaceable ecological resources will be lost, and local economies will suffer catastrophic losses. As some of these injuries already manifested, this harm is not speculative in nature. Further, the impacts associated with continued exposure to PFAS could be greater than currently expected, as the full extent of dangers associated with the chemicals are still yet to be discovered.

These present and potential harms cannot be readily or expeditiously cured. Thus, because the public health and environment have already been injured and will continue to be injured without immediate action to identify the extent of the contamination and stop its spread, injunctive relief is needed to prevent potentially devastating impacts throughout New Mexico.

IV. The Balance of Equities Tips in Favor of the State

The balance of equities in this case tilts strongly in favor of preventing continued harm to the citizens and environment of the State of New Mexico. As described above, the harms that have been and will continue to be suffered by the State and the citizens of New Mexico are sufficiently likely, and thus, the balance of harms favors the issuance of an injunction. *Amoco Prod. Co. v. Vill. of Gambell, AK*, 480 U.S. 531, 545 (1987).

In the context of RCRA, the court must take into account the statute's overarching purpose: to address situations where hazardous wastes imperil human health. *See Maine People's Alliance & Natural Res. Def. Council v. Mallinckrodt Inc.*, 471 F.3d 277, 296–97 (1st Cir. 2006). RCRA's citizen suit provision places "a congressional thumb" on the scale in favor of environmental protection. *See id.* at 297. This congressional pre-balancing of the interests must

be weighed against a defendant's complaints about the cost of injunctive relief. *See id.* at 297–98. In the end, costs cannot and should not thwart human safety.

"There is substantial authority that when a case is brought pursuant to an environmental or public health statute, including RCRA and the CWA, the primary focus shifts from irreparable harm to concern for the general public interest. . . . Thus, although it is not appropriate to dispense with the required showing of irreparable harm, it is permissible as part of the traditional balancing process to lessen the weight attributable to that usually dispositive factor." *Wilson v. Amoco Corp.*, 989 F. Supp. 1159, 1171 (D. Wyo. 1998).

Any hardship Defendants may face as a result of this Court's issuance of a preliminary injunction would be temporary and monetary. Such hardships pale in comparison to the irreparable harm that the citizens of the State will continue to face in the absence of any remedial actions. When weighing temporary economic injury against "preventable human suffering," courts typically find that the balance of equities "'tips decidedly' in favor of the latter." *Golden Gate Rest. Ass'n v. City & Cty. of San Francisco*, 512 F.3d 1112, 1126 (9th Cir. 2008) (quoting *Lopez v. Heckler*, 713 F.2d 1432, 1437 (9th Cir. 1983)). Further, financial concerns alone generally do not outweigh environmental harm. *Valley Cmty. Pres. Comm'n*, 373 F.3d 1078.

There is no public interest served by allowing the PFAS contamination to remain in the environment and continue to migrate uncontrolled into the public's resources and bioaccumulate. Unlike other cases where courts have found that projects that would serve public interests such as transportation, *id.* at 186-187, public safety, *id.*, or gas production, *Wilderness Workshop v. U.S. Bureau of Land Mgmt.*, 531 F.3d 1220 (10th Cir. 2008), there is simply no benefit conferred by Defendants' inaction. To the contrary, the damages suffered by the State and the public by further delay on the part of Defendants are significant. As described above, the public health,

economic resources, ecological resources, and recreational resources are all at risk of substantial, irreparable harm. Thus, the balancing of harms tips strongly in favor of the State.

V. Issuance of a Preliminary Injunction Is in the Public Interest

The well-recognized and constitutionally based interest of protecting the public health and the environment weighs heavily in favor of a preliminary injunction in this case. Article XX, Section 21 of the New Mexico Constitution provides that "protection of the State's beautiful and healthful environment is . . . declared to be of fundamental interest to the public interest, health, safety and the general welfare." Allowing decades-old toxic chemicals to remain in the resources in the State and allowing them to continue to migrate and poison more and more of the public and the environment for no reason other than to avoid the responsibility of cleaning them up serves no public interest. Accordingly, the Court should promote the public interest and issue the preliminary injunction in favor of the State.

CONCLUSION

Citizens of New Mexico and the environment, including resources upon which citizens depend for their livelihood, are being exposed to an excess of toxic chemicals released as a result of decades of Defendants' releases of PFAS-containing AFFF throughout Cannon and Holloman. Well beyond a mere risk of harm, these exposures cause significant and potentially irreversible injuries. Without immediate relief, these harms will continue. Plaintiffs met their burden to show a likelihood of success on the merits at trial, irreparable harm in the absence of injunctive relief, and that both the balance of equities and the public interest favor an injunction. As such, Plaintiffs respectfully requests this Court to grant this Motion for Preliminary Injunction.

Dated: July 24, 2019

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CERTIFICATE OF SERVICE

I CERTIFY that, on July 24, 2019, I filed the foregoing using CM/ECF which cause the parties of record to be served by electronic means, as more fully reflected on the Notice of Electronic Filing.

/s/P. Cholla Khoury