DEPARTMENT OF FIRE AND EMERGENCY MEDICAL SERVICES
Station 1 Tekken Drive
Civic Center Susupe

Ralph DLG Torres
Governor

Victor B. Hocog
Lt. Governor

January 24, 2018

Jeff Scott
Director, Land Division
US Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, CA 94105

RE: Application for renewal of Remedial Action Plan permit to treat remediation waste munitions

Dear Mr. Scott,

The Commonwealth of Northern Mariana Islands has been utilizing the Remedial Action Plan (RAP) for the treatment of munitions that are found within Saipan. Munitions that require remedial treatment at the detonation site are still encountered on a routine basis as construction occurs on the island. This application serves as a request to renew the RAP for another term. We are requesting to continue the conditions in the current RAP, attached to this letter as reference.

There have been the following updates in the operating conditions that should be updated in the new RAP:

1) The new operator is: CNMI Department of Fire and Emergency Medical Services

Claudio K. Norita
Station 1 Tekken Drive
P.O. Box 7068 SVRB
Saipan MP. 96950
Tel: (670) 664-9003/04 (24 Hours)

The detonation site and storage cave are operated and maintained in a manner that is protective of human health and the environment. They meet the environmental performance standards found in 40 CFR § 264.601 in the following ways:

1) *The volume and physical and chemical characteristics of the treated waste, including its potential for migration through the soil;*

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The waste that is treated at the site is limited to reactive waste munitions. These wastes are not in liquid form and are not expected to migrate readily into soil. The detonation treatment process uses a high order detonation which results in only a fraction of the remaining contaminants present after the detonation; therefore this is an effective treatment process.

2) *The hydrologic and geologic characteristics of the unit and the surrounding area;*

The site is located on the northeast end of the island of Saipan. Saipan is mostly limestone with some underlying volcanic rock. The site is on what is known as a "low limestone platform" (fairly level ground) made of the Mariana Limestone at an elevation of approximately 220 feet above sea level. Immediately south of the site is a cliff of Tapachao Limestone that towers above the site to an elevation of approximately 330 feet above sea level. The site is located near the center of a small peninsula such that it is about one-half mile from the site to the coast in the northeast, southeast and southwest directions. Groundwater elevation is at or just slightly above sea level. The groundwater elevation is heavily influenced by sea level and fluctuates daily with the tides and seasonally with the seasonal rise and fall of sea level in Micronesian (Carruth, 2003). Practically all rainfall in the area eventually becomes groundwater as the rain infiltrates into the highly porous and fractured limestone, however the watershed in this area is very small since the island is only 1-1/2 miles wide at the site. The soil at the site is known as the "Chinen-Takpochoa" clay loam. It is a well-drained soil typically 25-50 centimeters in depth atop the porous coralline limestone. (Young, 1989)

3) *The existing quality of ground water, including other sources of contamination and their cumulative impact on the ground water;*

The existing groundwater is not a useable aquifer due to the presence of salt. Additionally, the groundwater was impacted with petroleum hydrocarbons in the 2007 sampling event. The treatment process does not utilize petroleum hydrocarbons; therefore, this is not presumed to be related to the current permitted treatment. A sampling effort is underway to update the existing data. The impact of the disposal site on groundwater is being evaluated and the data will be submitted to support the application as it is available and incorporated into the groundwater monitoring plan.

4) *The quantity and direction of ground-water flow;*

Groundwater flow is presumed to be in the direction of the coast radiating from the site between the northeast and southeast directions. The quantity of (fresh) groundwater is limited to rainfall directly on the small watershed area of this peninsula. The quantity of salty groundwater is virtually unlimited as there is a direct connection of the groundwater with the ocean. (Carruth, 2003)

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5) *The proximity to and withdrawal rates of current and potential ground-water users;*

There are no current or potential groundwater users within a 2 mile radius of the site so withdrawal rates are not necessary.

6) *The patterns of land use in the region;*

The site is located in an unpopulated area of the island. Land use in the area includes a sanitary landfill immediately to the west. There is a popular cave scuba diving site on the coast one-half mile to the south of the site. There is a marine protected area (MPA) three-quarters of a mile to the southwest. The land on the cliff above the site is leased for cattle grazing. There are no residential or cropland areas within 1 mile of the site.

7) *The potential for deposition or migration of waste constituents into subsurface physical structures, and into the root zone of food-chain crops and other vegetation;*

The potential for deposition or migration of contaminants into the root-zone of food crops is minimal since there are no crops within 1 mile of the site and the waste is not liquid state.

8) *The potential for health risks caused by human exposure to waste constituents;*

The potential for health risks caused by human exposure to waste constituents is minimized because the site is remote, difficult to get to, secured and only accessible to authorized and trained personnel. When the site is used for demolition of UXO, access to the entire north end of the island is restricted by law enforcement personnel until the demolition activity is complete and the area is deemed safe. The public is not allowed to access the site at any time.

9) *The potential for damage to domestic animals, wildlife, crops, vegetation, and physical structures caused by exposure to waste constituents;*

The remote location of this site and its situation on the peninsula such that it faces to the north minimizes exposure to waste constituents. Although there is cattle grazing and a marine protected area within a 1 mile radius of the site, those activities are to the south and are physically separated from the site by a "mountain" – a 100 foot high wall of limestone. Figure 13 in the USGS publication *Groundwater Resources of Saipan* describes that the groundwater flow is in the northeast direction, away from the marine protected area and the scuba dive site. (Carruth, 2003).

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Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, or wetlands or on the soil surface is accomplished by the following:

1) *The effectiveness and reliability of containing, confining, and collecting systems and structures in preventing migration;*

   As stated above, the site is remote, difficult to get to, secured and only accessible to authorized personnel. As per the existing RAP, UXO is stored in a secured cave in the cliff side where it is not exposed to the weather. When an appropriate amount of UXO has been collected in the cave it is then detonated by US Navy, trained contractors or personnel. As stated above there is minimal surface sheet flow from the site. Groundwater flow is towards the coast to the northeast.

2) *The patterns of precipitation in the region;*

   Saipan receives about 80 inches of rainfall annually and has distinct wet and dry season. The months of July through November (the wet season) receive about 67% of the annual rainfall; January through May (the dry season) receive 21% of the rainfall; and December and June (transitional months) receive 12%. Rainfall from tropical storms makes up a significant percentage of the total annual rainfall and a lack of storms may significantly contribute to drought conditions (Carruth, 2003).

3) *The proximity of the unit to surface waters;*

   As stated above – the site is approximately one-half mile from the coast (Pacific Ocean) which is the nearest surface water. There are no fresh surface waters (lakes, ponds or streams) near the site. Rainwater in this small watershed does not sheet flow across the ground surface for much distance before percolating into the fractured limestone ground.

4) *The current and potential uses of nearby surface waters and any water quality standards established for those surface waters;*

   The waters along the coast of this part of Saipan are all designated as Class AA coastal marine waters, meaning that these waters should remain in their natural state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-related source or action. The uses protected in these waters are the support and propagation of marine life, conservation of coral reefs and wilderness areas, oceanographic research, and aesthetic enjoyment and compatible recreation inclusive of whole body contact (e.g. swimming and snorkeling) and related activities. (Arriola, et al., 2016)

In practice, the waters along the coast are not used by the public. There are no protected beach areas, and it is isolated and difficult to access, and the coastal waters are generally not user friendly.

5) *The existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils;*

In BECQ's 2016 Integrated Water Quality Report the Banaderu Watershed (Segment 22) – Grotto Cave (the watershed where the site is located) was added to the list of impaired waters for the Recreational Use designation due to numerous Enterococci exceedances in fiscal year 2015. While the exact cause of the Enterococci exceedances is not known, it is assumed that the frequent closure of the public restroom (that has a septic holding tank) due to lack of running water has encouraged the increased number of tourists, snorkelers and scuba divers at the site to find alternative spots to relieve themselves including the surrounding forest and the cave water itself. This listing has nothing to do with the disposal site however since this water quality listing is strictly for microbiological contamination. Please note that although the Grotto is in the watershed, it is not impacted by any of the UXO activity due to distance and geologic barriers.

In the 2016 report The Banaderu Watershed attains the Aesthetic Enjoyment use designation, the Propagation of Aquatic Life use designation and the Fish and Shellfish Consumption use designation (Arriola, et al., 2016)

Prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents in the air is accomplished by the following:

1) *The operating characteristics of the unit;*

Detonations are conducted before the UXO inventory reaches 500 pounds of munitions to minimize the impact on the air space at the site.

2) *The atmospheric, meteorological, and topographic characteristics of the unit and the surrounding area;*

Atmospheric/Meteorological: Since the island of Saipan is located in the Pacific Ocean in the tropics at approximately 15 degrees north latitude it is subject to a fairly constant sea breeze and mild temperatures. The average wind speed at 10 meters above the ground in the winter months (October to April) is 14.3 mph, while the average wind speed in summer (April to October) is 11.3 mph. The wind is predominately from the east throughout the year.

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Topographic: The site is located on a limestone platform about 220 feet in elevation which slopes gently to the coast in the north an east directions. The coast is mostly cliff line about 40 feet above sea level. To the west of the site at about the same elevation is the municipal landfill. To the south the site abuts a 100 foot tall limestone cliff. This cliff isolates the site from activities to the south. The watershed where the site is located (the Banaderu Watershed) has insufficient precipitation, topographical or geological features to support stream systems. Precipitation flows by subterranean transport from land to sea (Arriola, et al., 2016).

3) *The existing quality of the air, including other sources of contamination and their cumulative impact on the air;*

There are no known concerns of air quality in the area from this source or othero sources.o

4) *The potential for health risks caused by human exposure to waste constituents;*

The potential for health risks caused by human exposure to waste constituents iso minimized because the site is remote, difficult to get to, secured and only accessibleo to authorized and trained personnel. When the site is actually used for demolition ofo UXO, access to the entire north end of the island is restricted by law enforcemento personnel until the demolition activity is complete and the area is deemed safe. Theo actual detonation site is located within 50 feet of the base of the cliff. The cliff actingo as a wall minimizes the sea breeze at the site reducing the risk of contaminationo spreading in the air during detonation.o

Works Cited:

Arriola, Camacho, Chambers, Derrington, Kaipa, Okano, & Yuknavage. (2016). *2016 Commonwealth of the Northern Mariana Island 303(d), 305(b) and 314 Water Quality Assessment Integrated Report.* Saipan, CNMI: CNMI Bureau of Environmental Quality.

Carruth, R. L. (2003). *Ground-Water Resources of Saipan, Commonwealth of the Northern Mariana Islands.* U.S. Geological Survey Water Resources Investigations Report 03-4178.

Young, F. J. (1989). *Soil Survey of the Islands of Aguijan, Rota, Saipan and Tinian, Commonwealth of the Northern Mariana Islands.* U.S. Department of Agriculture Soil Conservation Service.

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This application with the attached RAP meets the information requirements found in 40 CFR 270.110.

The land owner of the facility is the CNMI Department of Public Lands, a different governmental body than CNMI DFEMS. CNMI Department of Public Lands is a signatory on this application certifying that it acknowledges the current land use as treatment of remediation waste munitions under the RAP and agrees to allow this practice to continue into the future.

I certify under penalty of law that I understand that this application is being submitted for the purpose of obtaining a permit to operate a facility to treat hazardous remediation waste. I understand fully that the CNMI Department of Public Lands, as the landowner, and CNMI DFEMS, operator, are jointly and severally liable for compliance with applicable provisions of RCRA, its implementing regulations and any permit issued pursuant to the application and those regulations.

Claudio K. Norita
Commissioner Fire & EMS
Operator

04.25.18
Marianne Concepcion-Teregeyo
Secretary Department of Public Lands
Land Owner

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