

Congressman Steve Buyer
Veterans' Affairs Committee
Ranking Republican Chairman
2230 Rayburn Building
Washington, DC 20515

2 November 2010

Dear Congressman Buyer,

I am deeply saddened to hear about your upcoming retirement from the United States Congress House of Representatives. I will pray for you and your wife's health. I know she will be in your good hands and care after your retirement.

Sir, like you, I am a proud retiree of the US Military Forces, I retired from the US Air Force as a MSgt. in 1992 after 22 years of service to this great nation. I still believe this is a great nation and our greatest moments are yet to come.

I am grateful for your service to the United States as a Col. in the US Army Reserves, the Congressman who has represented the great State of Indiana's 4th District, and the House Committee on Veteran's Affairs. You Sir, are one of the true hero's we have in the Congress.

I am not a citizen of your district, nor the State of Indiana, I live in Fort Worth, Texas, and Congresswoman Kay Granger represents me in the US House of Representatives. But, she is not on the committee you have been on, in the past the Chairman of that committee and currently the Ranking Member.

Please let me explain why I am writing to you. I am looking for information of herbicide storage (Agent Orange), shipments, use, and disposal on Guam.

During my service, I was deployed to Andersen AFB, Guam from Nov. 1972 to May 1973 as part of Operation Bullet Shot. Those of us deployed, and those permanently assigned to Andersen AFB were directly supporting B-52 and KC-135 combat operations, including Linebacker II, the 1972 Christmas bombing campaign of North Vietnam. My duties normally were to drive a bus transporting the B-52 and KC-135 crews to and from their aircraft.

I also was assigned to drive cargo trucks from time to time. On occasion I would be tasked to transport Agent Orange and the other "Rainbow Agent Herbicides" to or from the US Navy base for transport by ship, the flight line for transport by aircraft, and even to "Northwest Field" to be dumped by myself and several other USAF Airmen and NCOs. We were ordered to dump drums that were leaking over a small cliff into a trash/junk pile at the bottom of the 20 to 30 ft cliff. To my knowledge, in 1972 and 1973 those orders we followed were not illegal, and Northwest Field was USAF property.

These herbicides and their chemicals were splashed on me and my fellow Airman.

I developed Hodgkin's Disease in 2007 and filed a claim with the Department of Veteran's Affairs (VA) (claim # XXX-XX-XXXX) . My claim was denied, but I am appealing that decision and should be reviewed by the DRO at the Waco, TX VARO. As you know, Hodgkin's Disease is a rare form of cancer and one of the 14 illnesses the VA recognizes as being caused by exposure to Agent Orange and its chemical components 2,4-D, TCDD, and 2, 4, 5-T. Hodgkin's Disease effects less than 8,000 people annually, lucky me.

The VA's decision is based on the fact that no records were found of Herbicide Agent Orange was ever stored, used, or disposed of on Guam. It is my understanding that if the VA cannot find evidence that can dispute the veteran's claim and evidence, then the law requires the claim to be found in the veteran's favor. In other words, just because those records cannot be found does not mean they never existed. Therein lies the "fight" I am having with the VA. I have submitted a mountain of evidence to support my claim, as other veterans have. Recently, I have come across a letter written by, then, Principal Assistant Deputy Under Secretary of Defense (for Installations and Environment) Philip W. Grone dated 23 September 2003. In his letter,

The Honorable Mr. Grone said:

The Department has found no record of the use, storage, or testing of Herbicides Orange, Blue, or White on Guam. In 1952, roughly 5,000 drums of Herbicide Purple were transported to Guam and stored there in anticipation of use on the Korean Peninsula. The herbicide was never used and was returned to the United States. Although other herbicides may have passed through Guam during the Vietnam Conflict, we have no record of long-term storage or use of these herbicides on Guam.

He goes on to try to explain why the concentration of DIOXIN (DIOXIN is also known as TCDD and is one of many deadly chemicals that are ingredients of Agent Orange, and perhaps the deadliest, most toxic, chemical know) is so high at Andersen AFB. The EPA has said it is as high as **19,000 ppm** at one location, and very high concentrations at several other locations on the base, as well as other places on the Island of Guam.

Sir, as you know, the EPA considers a "safe" level of DIOXIN (TCDD) is **1 ppb**, making Andersen AFB some **19 MILLION times the "safe" level**. The TCDD is one of many other chemicals that have been found in the soils and water supply of the base between the mid 1970s and the early 2000s, along with TCE and PCE. We drank this water, and showered and cooked with it.

The Honorable Mr. Grone said:

The presence of dioxin contamination at a site does not necessarily indicate that Herbicide Orange was used or stored at that site. According to Air Force studies, the dioxins at sites references in the Public Health Assessment were associated with burned material. Access to sites on Guam with elevated dioxin levels is highly restricted and public exposure is not expected.

With all due respect to Mr. Grone, that is a lot of burning, I was there and he was not, in 1972 and 1973. I am not the only veteran that supported the Vietnam War from Guam that had the effects of herbicides and TCDD exposure and have it give terrible health problems 30, 35, or even 40 years after exposure. There are approximately 200 other veterans, that I have been told of, who served on Guam in the 1960s and 1970s, or later who have one, or more of the 14 diseases and illnesses, and still suffer the effects or secondary effects, the VA acknowledges are caused by Herbicide Exposure.

I am asking, Sir, what is Mr. Grone saying when he said “Although other herbicides may have passed through Guam during the Vietnam Conflict, we have no record of long term storage or use of these herbicides on Guam” mean?

I know from my own military career, “long term storage” means 10 or more years to the military. That is what some USN ships and USAF aircraft are in Arizona and California, long term storage.

Which herbicides is Mr. Grone talking about, Agent Orange, Agent Purple, Agent Blue, or other Rainbow Agents? When did these shipments of herbicides to Guam take place, and how long were they there? Why doesn't the DOD have records of dumping and disposal of some of these drums on Guam!

I know for a fact these herbicides were on Guam in 1972 and 1973, and were there before and after those years.

Northwest Field is an abandoned airfield that is still USAF property. It was abandoned shortly after WWII and has had very little use since then. If! this property is not needed (excess?), why does the USAF keep it? Is it because of all the herbicide drums containing TCDD veterans, including myself, dropped over the cliffs there, contaminating the soils, and water?

The US Army, US Air Force, and US Navy all say they have no records saying Agent Orange was shipped to, stored, used, or disposed of on Guam. That is a long way from saying Agent Orange was not on Guam during the Vietnam War. They said they have no records of it.

Military logistics would keep the stockpile of Agent Orange near South Vietnam during

the war, and it would also need to be stored somewhere after Operation Ranch Hand was stopped in 1972. It was also 1972 when the EPA ordered this herbicide no longer used (commercially) within the United States, so the DOD had to store it outside of the US. The USAF began transferring these deadly herbicides to Johnston Island, for disposal at sea (I believe it was burned on barges) in 1978 and completed in 1984. Guam would be the only place where DOD could store it, as it is a US Territory, although the US Navy had some stored in Gulfport, MS about that time.

Sir, does your committee have access to any such records and can you help find the records Mr. Grone was talking about when he said herbicides may have been shipped through Guam, or any other records? If they can be found, can I have a copy of those records to support my VA claim?

I know you work very closely with Chairman Bob Filner. He has told veterans that Guam will be included in his bill of presumptive locations updating the Agent Orange bill of 2009, HR-2254. But, I have not seen this happen, also, as far as I can tell, HR-2254 is still in your committee and Guam has not been added to the bill. Do you know when, or if that will be added to HR-2254, or is it essentially dead until the 112th Congress begins their first secession on 3 January 2011?

Sir, I wish you, your wife, and your family many happy years in your retirement. As I said earlier, her care is in good hands.

Thank you,

Edward W. Jackson,
MSgt. (RET), USAF
116 Grand Meadow Dr.
Fort Worth, TX 76108

Cc:

Senator Kay Bailey Hutchison
284 Russell Senate Office Building
Washington, DC 20510

Senator John Cornyn
517 Hart Senate Office Building
Washington, DC 20510

Congresswoman Kay Granger
320 Cannon House Office Building
Washington, DC 20515

The Honorable Eric Shinseki
Department of Veteran's Affairs
810 Vermont Ave, NW
Washington, DC! 20420

Attachment:

Assistant Deputy Under Secretary of Defense (for Installations and Environment) Philip
W. Grone dated 23 September 2003 letter



OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION,
TECHNOLOGY
AND LOGISTICS

The Honorable Lane Evans
Ranking Member
Committee on Veterans' Affairs
335 Cannon House Office Building
Washington, DC 20515

SEP 23 2003

Dear Congressman Evans:

This is in response to your letter to the Secretary of Defense concerning the use and storage of Vietnam-era herbicides, including the contaminant dioxin on Guam. I am responding on his behalf.

The Department has found no record of the use, storage, or testing of Herbicides Orange, Blue, or White on Guam. In 1952, roughly 5,000 drums of Herbicide Purple were transported to Guam and stored there in anticipation of use on the Korean Peninsula. The herbicide was never used and was returned to the United States. Although other herbicides may have passed through Guam during the Vietnam Conflict, we have no record of long-term storage or use of these herbicides on Guam.

The presence of dioxin contamination at a site does not necessarily indicate that Herbicide Orange was used or stored at that site. According to Air Force studies, the dioxins at sites references in the Public Health Assessment were associated with burned material. Access to sites on Guam with elevated dioxin levels is highly restricted and public exposure is not expected.

A summary of information obtained from a search of the records at the U.S. Army's Center for Unit Records Research on the use Vietnam-era herbicides in the other locations you requested is attached and has already been supplied to the Department of Veterans Affairs.

Sincerely,

Philip W. Grone

Principal Assistant Deputy Under Secretary of Defense
(Installations and Environment)

Attachment:
As stated



Attachment
Summary of Available Information
On Use, Testing and Storage of
Dioxin Containing Herbicides

Aberdeen Proving Ground, Aberdeen MD

Report Title: Summary Report, Herbicide Operations Conducted from Riverine Watercraft
Location: Poole's Island, Aberdeen Proving Ground, MD
Date(s): 7/14/1969
Herbicides: Orange, Orange plus foam, Orange plus foam Orange, Foam
Summary: During the week of 7/14/1969, personnel from Naval Applied Science Laboratory in conjunction with personnel from Limited War Laboratory conducted a defoliation test along the shoreline.

Apalachicola National Forest (Sohoppy, Florida)

Report Title: Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant
Location: Apalachicola National Forest near Sophoppy, FL
Date(s): 5/3/1967-5/8/1967
Herbicides: basic desiccants and Orange/Blue
Summary: During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and University of Hawaii sites.

Avon Air Force Base, Florida

Report Title: Special Report No. 149, Low Volume Anti-crop Aerial Spray Trials
Location: Avon Air Force Base, FL
Date(s): 2/1951- 4/1951
Herbicides: butyl 2,4 D
Summary: Trials were conducted at Avon Air Force Base, FL by Chemical Corps with personnel of the Air Force and Navy to determine the practical effectiveness of spraying pure anti-crop herbicides at low volume from aircraft. C-47 and Navy XBT2D-1 aircraft with various nozzles were used.

Report Title: Special Report No. 225, Chemical Anti-crop Aerial Spray Trials Using Jet Aircraft also in Special Report 232, Some Effects of Altitude and Airspeed on the Behavior of Chemical Anti-crop Sprays
Location: Avon Park Air Force Base, FL
Date(s): Spring 1954
Herbicides: butyl 2,4-D, butyl 2,4,5-T, Isopropyl 2,4-D
Summary: Series of tests were conducted at Avon Park AFB during the spring of 1954 to study the behavior of chemical anti-crop aerial sprays when released from high-speed jet aircraft. The Navy F3D jet fighter was used with Aero 14A Airborne Spray Tanks to disperse the anti-crop herbicides.

Beaumont Texas

Report Title: Special Report No. 13, Marking and Defoliation of Forest Vegetation

Location: Beaumont, TX

Date(s): 1950-51

Herbicides: 2,4-D

Summary: The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Here, irrigation water studies were done with the agent

Report Title: Special Report No. 79, Destruction by Chemical Agents also see Special Report No. 25, Vigo Plant CWS, Terre Haute, Indiana, and Beaumont TX, Box 12

Location: Beaumont, TX

Date(s): 6/1944

Herbicides: LN *phenoxy

Summary: Small plot experiments were commenced to test the effectiveness of LN herbicides. Various trials were done under contract with the USDA, aided by personnel at Camp Detrick. Here, they were testing on rice crops.

Brawley, California

Report Title: Special Report No. 13, Marking and Defoliation of Forest Vegetation

Location: Brawley, CA

Date(s): 1950-51

Herbicides: 2,4-D

Summary: The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Here, irrigation water studies were done with the agent.

Bushnell Army Air Field, Florida

Report Title: Special Report No. 79, Destruction by Chemical Agents

Location: Bushnell Army Air Field, FL

Date(s): 2/1945

Herbicides: LN *phenoxy

Summary: Small plot experiments were commenced to test the effectiveness of LN herbicides. Various trials were done under contract with the USDA, aided by personnel at Camp Detrick. Here, it was aerial spray experiments on potted plants.

Report Title: Crop Destruction by Aerial Sprays, Preliminary Trials

Location: Bushnell Army Air Field, Bushnell, FL

Date(s): 2/1945-4/1945

Herbicides: 2,4-D and its ammonium salt

Summary: Trials, performed by C.W.S. personnel from Camp Detrick, MD, tested the practicability of severely injuring or destroying crop plants sprayed from smoke tanks mounted on tactical aircraft.

Camp Detrick, Maryland

- Report Title:** Special Report No. 92, Field Plot Experiments with Plant Inhibitors 1946 and 1947 Seasons
Location: Camp Detrick, MD-Fields A,B, and C
Date(s): 1946-1947
Herbicides: 2,4,5-T, 2,4,5-T triethanolamine, tributylphosphate, ethyl 2,4-D, butyl 2,4,5-Triet 2,4-D,
Summary: The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots.
- Report Title:** Special Report No. 130, Field Plot Experiments with Plant Inhibitors 1949 Season
Location: Camp Detrick, MD-Fields C,D,E
Date(s): 1949
Herbicides: triethelyne. 2,4,5-T, carbamates
Summary: The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots.
- Report Title:** Special Report No. 105, Field Plot Experiments with Plant Inhibitors 1948 Season
Location: Camp Detrick, MD- Fields C,D, and E
Date(s): 1948
Herbicides: 2,4,5-T, isopropyl phenol carbamate, LN-2426, 2,4-D
Summary: The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots.
- Report Title:** Special Report No. 153, Field Plot Experiments with Plant Inhibitors, 1950 Season
Location: Camp Detrick, MD-Fields A,B,D,E
Date(s): 1950
Herbicides: 2464, butyl 2,4-D, 974, butyl 2,4,5-T, q:q 143 and 974
Summary: The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots.
- Report Title:** Special Report No. 156, Field Plot Experiments with Plant Inhibitors, 1950-51 Season
Location: Camp Detrick, MD-Field F
Date(s): 1950-51
Herbicides: 2464, carbamate, butyl 2,4-D, 143 and 974 (orange?),2,4,5-T, 2,4-D, Orange
Summary: The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots.
- Report Title:** Abstracts of Technical Publications April 1965-June 1965, July 1965, Technical Report 50, Defoliation Studies: Screening of Defoliant, Herbicides, and Desiccants
Location: Fort Detrick, MD
Date(s): 8/1961-6/1963
Herbicides: 1410 compounds
Summary: From 8/1961 to 6/1963, compounds were spray-tested in the greenhouse to evaluate them as effective defoliant, desiccants, and herbicides.
- Report Title:** Special Report No. 201, Field Development of Chemical Anticrop Agents, Response of Field Grown Crops to Chemical Anticrop Agents Released from Experimental Spray tower
Location: Area B, Camp Detrick, MD
Date(s): Spring/Summer 1953
Herbicides: 3:1 mixture 2,4-D and 2,4,5-T
Summary: Personnel at Camp Detrick tested the feasibility of using an experimental spray tower for applying a mixture of chemical anti-crop Herbicides to broad-leaf crops.

Dar and Prek Clong, Cambodia

Report Title: Record 1305-01, Report of Cambodian Rubber Damage
Location: southeastern part of Kompong Cham Province and Dar and Prek Clong plantations, Cambodia
Date(s): 6/1969
Herbicides: Orange
Summary: In 6/1969, the US government received notice of charge by Cambodian government that major defoliation damage to the Cambodian rubber plantation near the Republic of Viet Nam border had occurred as a result of US defoliation activity. This was confirmed by a team of experts.

Eglin Air Force Base, Florida

Report Title: Minutes-Meeting of Vegetation Control Subcommittee of the JTCCG/CB, 2-3 March 1971
Location: Eglin AFB, FL, C-52A test area
Date(s): 1962-70
Herbicides: Orange (1962-68), Purple (1962-68), White (1967-70), Blue (1968-70)
Summary: CPT John Hunter discussed vegetation changes and ecological studies of the 2 square mile test area which had been sprayed with herbicides over the period 1962-70.

Report Title: Spread Factor Study of Drops of Orange and Stull Bifluid Defoliant on Kromekote Cards and Plant Leaves
Location: Eglin AFB, FL
Date(s): 6/11/1968-9/12/1968
Herbicides: orange, Bifluid #1, Bifluid#2, Stull Bifluid
Summary: A spread factor study was performed by the Army to correlate the spherical drop sizes of both Orange and Stull Bifluid defoliant. It involved development of new techniques to determine spread factors over an extended range of drop sizes. A spinning cup drop generator was used.

Report Title: Special Report No. 184, Anticrop Aerial Spray Trials, Phase III
Location: Eglin Air Force Base, FL
Date(s): 11/1952-12/1952
Herbicides: 2,4-D, 2,4,5-T: 143 and 974, respectively
Summary: Two trials: Chemical Corps concerned with basic fundamental work, using 2,4-D; Air Force concerned with evaluating prototype large capacity spray system for aircraft installation using 2,4,5-T, primarily. Used 3 atomizing nozzles: Bete Fog Nozzles, Whirljet Spray Nozzles, and Fogjet 1.5F50.

Fort Gordon Georgia

Report Title: Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant
Location: Fort Gordon, GA
Date(s): 7/15/1967- 7/17/1967
Herbicides: in-house desiccants mixtures and formulations, Orange and Blue
Summary: During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and University of Hawaii sites.

Fort Ritchie, Maryland

Report Title: Miscellaneous Publication 8, Proceedings of the Second Defoliation Conference 5-6 August 1964

Location: Fort Ritchie, MD

Date(s): 1963

Herbicides: Tordon, 2,4-D, Orange, diquat, endothal, and combinations of each with Tordon

Summary: Various studies were done to explore the effectiveness of different herbicides. They were all field trials. These studies were done by personnel from the US Army Biological Laboratories.

Report Title: Technical Report BWL 16, Defoliation and Desiccation

Location: Fort Detrick, MD; Fort Ritchie, MD

Date(s): 1956-1957

Herbicides: various, 577 compounds

Summary: In 1956 And 1957, defoliation and desiccation were carried out at Fort Detrick and Fort Ritchie, Md, by the Chemical Corps and Biological Warfare Research. These were bench tests.

Fredericton, New Brunswick, Canada

Report Title: Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant

Location: Base Gagetown near Fredericton, New Brunswick, Canada

Date(s): 6/20/1967- 6/24/1967

Herbicides: basic desiccants and Orange, Blue, various

Summary: During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and University of Hawaii sites.

Guanica, and Joyuda, Puerto Rico

Report Title: Second Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654

Location: Guanica and Joyuda, PR

Date(s): 6/1956-9/1956

Herbicides: 2,4,5-T, potassium cyanate, amiendo, F-2, 6-Ca-4, Y-F Tree and Brush Kiler, ACP M-118, Shed-A-Leaf

Summary: 9 chemicals were evaluated on 16 genera of tropical woody between June and September. The chemicals were sprayed to duplicate small branches, using a microsprayer.

Report Title: Third Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654

Location: Las Mesas and La Jagua, Mayaguez, Joyuda at Cabo Rojo, and Guanica Insular Forest at Guanica, PR

Date(s): 9/1956-12/1956

Herbicides: 6-Ca-4, Liojn Oil, 2,4,5-T, B-1613, B-1638, Ammate, V-C1-186, endothal, shed-a-leaf, M-118, Y-F, esteron 2,4-D, F3, F4, F5, F6

Summary: 16 compounds with defoliating properties were evaluated using 28 different tropical woody plants, each representing a separate genus. The chemicals were applied to duplicate small branches with a microsprayer and to single larger branches or whole trees with a 2-gallon knapsack sprayer.

Guanica, and Joyuda, Puerto Rico (continued)

Report Title: Fourth Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654

Location: Las Mesas and La Jagua, Mayaguez, Guanica Beach, PR

Date(s): 1/1957-3/1957

Herbicides: V-C 3-105, V-C 1-21, V-C 1-443, F-7, TBP, Phillips 713, V-C 3-173

Summary: 7 compounds were evaluated on 29 different woody plants to determine their effectiveness as defoliant, desiccant, and as killing herbicides. They were applied with a microsprayer to the upper leaf surfaces of duplicate small branches.

Report Title: Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654

Location: Las Mesas and La Jagua, Mayaguez, Guanica Beach, PR

Date(s): 4/1957-6/1957

Herbicides: B-1676, B-1638, NP 1098, SD 1369, Ammate, Shed-a-leaf

Summary: 7 compounds were sprayed on 25 different plants in order to evaluate their effectiveness as defoliant, desiccant, and killing agents. The compounds were applied with a microsprayer to the upper and lower leaf surfaces of duplicate small branches.

Gulfport, Mississippi

Report Title: Minutes of the Quarterly Meetings for Calendar Year 1970 of the Subcommittee on Defoliant/Anti-crop Systems, Joint Technical Coordinating Group/Chemical Biological

Location: Gulfport, Miss.

Date(s): 1968-1970

Herbicides: Orange

Summary: While discussing the mandatory disposal of Orange, it was mentioned that 15,161 drums were being stored at Gulfport, Mississippi.

Huntington County, State College, Pennsylvania

Report Title: Soil Applied Herbicides in the Control of Temperate Zone Grasses, Broadleaf Weeds and Woody Plants

Location: Stone Valley Experimental Forest in Huntington County and near State College in Centre County, PA

Date(s): 3/1969-10/1970

Herbicides: bromacil, diuron, tandex, fenuron, picloram

Summary: Soil-applied herbicides were studied by the U of Pa with Ft Detrick for 18 months for their effectiveness, rapidity of action, and duration of response in native stands of central PA grasses, broadleaf weeds and woody plants. These herbicides were spread or sprayed.

Jacksonville, Florida

Report Title: Spray Test Calibration of the HIDAL (HUS-1 or H-34)

Location: Jacksonville, FL

Date(s): 7/18/1962-7/21/1962

Herbicides: Purple, Fuel Oil, Mix

Summary: The HIDAL was used successfully on an H-34 helicopter to spray herbicidal materials. Therefore, it had not been calibrated previously. Spray tests were performed to do so. This was done under order by OSD/ARPA.

Kauai, Hawaii

Report Title: Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliants

Location: Kauai Branch Station near Kapaa, Kawai, HI

Date(s): 6/1967, 10/1967, 2/1968, 12/1967

Herbicides: Blue, diquat, paraquat, Orange, PCP, Picloram, White, HCA, 2,4,5-T, Endothall

Summary: During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and University of Hawaiisites.

Report Title: Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia

Location: Kauai, HI

Date(s): 1967

Herbicides: Orange

Summary: Field tests of defoliants were designed to evaluate such variables as rates, volume of application, season, and vegetation. Data from aerial application tests at several CONUS and OCONUS locations are provided in tables.

Kingston, Rhode Island

Report Title: Special Report No. 130, Field Plot Experiments with Plant Inhibitors 1949 Season

Location: Kingston, RI

Date(s): 7/26/1949, 1950-51

Herbicides: trieth.2,4,5-T, butyl 2,4,5-T,974

Summary: The experiments were directed mainly towards the investigation of plant inhibitors applied as sprays or to the soil in the solid form to be taken up by the roots.

Kompong, Cham Province, Cambodia

Report Title: Record 1305-01, Report of Cambodian Rubber Damage

Location: southeastern part of Kompong Cham Province and Dar and Prek Clong plantations, Cambodia

Date(s): 6/1969

Herbicides: Orange

Summary: In 6/1969, the US government received notice of charge by Cambodian government that major defoliation damage to the Cambodian rubber plantation near the Republic of Viet Nam border had occurred as a result of US defoliation activity. This was confirmed by a team of experts.

Laos

Report Title: Herbicide Operations in Southeast Asia, July 1961-June 1967

Location: Laos

Date(s): 12/1965- 1967

Herbicides: Orange

Summary: In December 1965, herbicide operations were begun in Laos, with sorties being flown from Tan Son Nhut and Da Nang. The purpose was the exposure of foot trails, dirt roads and other lines of communication that crossed into South Viet Nam. This network leads from North Viet Nam, through the eastern panhandle, to Cambodian border.

Las Marias, Puerto Rico

Report Title: Technical Report 114, Field Evaluation of Desiccants and Herbicide Mixtures as Rapid Defoliant
Location: Las Marias, Puerto Rico
Date(s): 2/1967- 12/1967
Herbicides: various, including Orange
Summary: During the period of 12/1966 - 10/1967, a comprehensive short-term evaluation was conducted by personnel from Fort Detrick's Plant Science Lab in coordination with contract research on formulations by chemical industry and field tests by USDA and University of Hawaii sites.

Las Mesas, Cerros and LaJagua, Mayaguez, Puerto Rico

Report Title: Formulation and Testing of Broad Spectrum of Herbicide Pellets, Second Six Month's Report on Contract No. DAAA13-67-C-0218
Location: Las Mesas Cerros, Mayaguez, PR
Date(s): 5/24/1968, 5/26/1968, 5/27/1968
Herbicides: picloram, bromacil, pyriclor
Summary: In 1967, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures of various herbicides and to test them on varying vegetation situations for the control of a range of plant species.

Report Title: First Quarterly Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654
Location: Las Mesas and La Jagua experimental areas at Mayaguez, PR
Date(s): 2/1956-6/1956
Herbicides: 2,4,5-T, 2,4-D, pentachlorophenol, ammate, weedazol, endothal Harvestaid, Butyne - 1,4-diol
Summary: During February to June, 9 chemicals were evaluated in PR on 16 genera tropical woody plants. The chemicals were applied in highly concentrated solutions with a microsprayer to the leaves.

Report Title: Progress Report of Research carried out by the Federal Experiment Station in Puerto Rico for The Chemical Corps Biological Laboratories, Fort Detrick on contract #CD6-404-3654
Location: Las Mesas and La Jagua, Mayaguez, PR
Date(s): 7/1957-12/1957
Herbicides: MgClO₃, Golden Harvest Defoliant, Dow-M562, F-8, F-9, F-10, F-11, F-12
Summary: 8 different spray formulations were applied to 16 different tropical trees and shrubs in order to evaluate their effectiveness as defoliant, desiccant, and killing agents.

Loquillo, Puerto Rico

Report Title: Miscellaneous Publication 33, Information Manual for Vegetation Control in Southeast Asia
Location: Loquillo, PR
Date(s): 4/1966, 10/1966
Herbicides: Orange
Summary: Field tests of defoliant were designed to evaluate such variables as rates, volume of application, season, and vegetation. Data from aerial application tests at several CONUS and OCONUS locations are provided in tables.

Mauna Loa, Hilo, Hawaii

Report Title: Dow Sponsored Test of TORDON Ester and Orange in Hawaii
Location: State Forest area, 3500 ft. elevation on slope of Mauna Loa, near Hilo, HI
Date(s): 12/2/1966, 12/4/1966, 1/12/1967
Herbicides: Orange, M-3140, TORDON ester, 2,4-D ester, 2,4,5-T ester
Summary: The purpose of this project was to evaluate iso-octyl ester of picloram (TORDON) in mixtures with ORANGE, as a candidate defoliant agent, using ORANGE as standard. There were personnel from Fort Detrick there.

Operation PACER HO (Disposal at Sea)

Report Title: Technical Report USAF OEHL TR 78-92, the Toxicology, Environmental Fate and Human Risk of Herbicide Orange and its Associated Dioxin
Location: Sea
Date(s): Summer 1977
Herbicides: Orange
Summary: In 1977, the USAF incinerated 2.22 million gallons of Herbicide Orange at sea in an operation entitled PACER HO. Extensive industrial hygiene sampling efforts supporting the transfer operations at Gulfport, MS and Johnston Island indicated all exposures were inconsequential (2-3 orders of magnitude below the TLVs for 2,4-D and 2,4,5-T)

Pinal Mountains, Globe, Arizona

Report Title: Investigation of Spray Project near Globe, AZ
Location: Pinal Mountains near Globe, AZ
Date(s): 1965, 1966, 1968, and 1969
Herbicides: 2,4-D isooctyl-ester, 2,4,5-t isooctyl-ester, silvex, propyleneglycolbutylether ester, 2,4,5-T butyl ester, 2,4,5-T 2-e-h e
Summary: In 1965, the US Forest Service began a land improvement program in the Pinal Mountains. The program called for spraying an area of chaparral with herbicides to accomplish the objectives of multiple land use.

Pranburi and other locations in Thailand

Report Title: Appendix D, Aerial Herbicide Applications Evaluated for Maximum Effect and Minimum Drift
Location: Replacement raining Center of the Royal Thai Army near Pranburi, Thailand
Date(s): 1964 and 1965
Herbicides: Orange, Purple
Summary: An extensive series of tests were conducted by Fort Detrick during 1964 and 1965 in collaboration with the Military Research and Development Center of Thailand. The objective was to perform onsite evaluation of phytotoxic chemicals on vegetation in SE Asia.

Prosser, Washington

Report Title: Special Report No. 13, Marking and Defoliation of Forest Vegetation
Location: Prosser, WA
Date(s): 1950-51
Herbicides: 2,4-D
Summary: The purpose was to determine means of accomplishing defoliation of tropical forest vegetation by application of a chemical agent. Here, irrigation water studies were done with the agent.

Rio Grande, Puerto Rico

Report Title: Formulation and Testing of Broad Spectrum of Herbicide Pellets, First Six Month's Report on Contract No. DAAA13-67-C-0218
Location: near Rio Grande, on the northeast coast of Puerto Rico
Date(s): 8/23/1967, 10/18/1967, 12/21/1967-12/26/1967
Herbicides: picloram, bromacil, pyriclor, and terbacil
Summary: In 1967, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures of various herbicides and to test them on varying vegetation situations for the control of a range of plant species.

Wayside and Wilcox, Mississippi

Report Title: Formulation and Testing of Broad Spectrum of Herbicide Pellets, First Six Month's Report on Contract No. DAAA13-67-C-0218
Location: near Wayside, Miss., Wilcox Road, Greenville, Miss.
Date(s): 9/19/1967
Herbicides: picloram, bromacil, pyriclor, and terbacil, Orange, cacodylic acid
Summary: In 1967, the Dow Chemical Company was awarded a DoD research contract. The objective was to prepare as pellets mixtures of various herbicides and to test them on varying vegetation situations for the control of a range of plant species.