To be released at 16:00 on 29th June 2015

(Tentative translation)

29th June 2015

Okinawa Defense Bureau

# NOTIFICATION

1. Survey-result of 17 barrels

Concerning 17 barrels found at a former KAB area (current Okinawa City Soccer Field) from 6th Feb to 19th Feb this year, ODB has analyzed accumulated matters and soil taken from and under them in the following survey work.
In this connection, ODB released an interim survey-report in March this year about 11 analysis-items of metals, etc. detected in accumulated matters samples as well as the presence or absence of 11 hazardous substances, which belong to category one hazardous substances under Soil Contamination Countermeasures Act, in soil samples.
Recently, the survey contractor has completed the remaining analysis and submitted its survey-report to this office.
The attachment #1 is a summary of the recent report results other than analysis items whose survey results were released in the interim report.

(Reference information about the survey above)

- Name of operation: Civil engineering work and others at an area released from Kadena Air Base, JFY 2014
- Period of work: from 3rd September 2014 to 30th June 2015
- Amount of contract: 145,022,400 yen (tax included)
- Name of contractor: Kyoa Construction Corporation

2. Magnetic detection survey by means of removing topsoil layer by layer (at the side of parking)

In order to confirm the presence or absence of barrels at areas where there used to be a valley and at the depth of two meters and below, the survey team has been conducting magnetic detection survey by means of removing topsoil layer by layer since January this year focusing on the parking area and the former site of west-side spectators stand.
The survey team completed the detection on 19th June, and as a result, 25 barrels were found at the side of parking in total (17 barrels found from 6th Feb. to 9th Feb and 8 barrels found from 8th Apr. to 11th Apr. subsequently).
The attachment #2 shows the discovered barrels and their discovery-points. Also, the discovered barrels had no logos, numbers and letters that may indicate the presence or inclusion of defoliant.
Furthermore, ODB will continue to analyze the 8 barrels found in Apr with regard to the specified hazardous substances, agrichemicals, dioxins and others under Soil Contamination Countermeasures Act and Wastes Disposals and Public Cleaning Act as same as before.

3. Future actions

(1) Soil under 83 barrels

Concerning the soil located under the 83 barrels found at the side of soccer field in June 2013, the extent of soil contamination has been confirmed, and thus ODB will conduct a soil contamination countermeasure work in this Japanese fiscal year. The soil containing DDTs and oil will be transported out of the soccer for disposal,

and the soil with oil odor will be cleaned up within the soccer field, and cleaned soil will be refilled there afterwards.

Also, ODB will search for possible barrels at the former site of west-side spectators- stand around the same time as the soil contamination countermeasure work. (Please see the attachment #3)

(2) Magnetic abnormal points confirmed through vertical magnetic survey

Magnetic abnormal points have been confirmed around toilet (to the side of parking). However, in view of their proximity to toilet building and for a construction-method reason, their confirmation survey needs to come after the nearby layers-scraping survey. Thus ODB will start coordination with Okinawa City over the confirmation of the abnormal points after the site of layers-scraping survey is backfilled in the future.

Also, magnetic abnormal points have been confirmed along the pedestrian of Prefectural Highway. However, they are closely-situated to the Prefectural Highway, ODB plans to coordinate with local authorities over how to deal with the points. Please refer to the attachment #3 for digging spots of magnetic abnormal points .

(3) Soil mixed with waste matters

Concerning the soil mixed with waste matters found at the parking side, ODB has unearthed and put aside it at the soccer field side for now. Currently, ODB is analyzing the soil based on related laws and will categorize it into special control industrial waste and/or ordinary industrial waste for disposal.

The soil has been covered with blue sheets properly so as not to create negative effect to the surround local community.

ODB will continue to advance the remaining analysis and deal with this matter appropriately with making sufficient coordination with local authorities such as Okinawa City.

It is added that the aforementioned survey work (Civil engineering work and others at an area released from Kadena Air Base, JFY 2014) was due on 30th June 2015 originally. However, its period of work is extended to 31st October 2015 because pollution-confirmation survey for the soil mixed with waste materials itself as well as the soil located under the wastes-mixing soil (down to the original ground surface) is underway.

Point of Contact:

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Okinawa Defense Bureau, Release Countermeasures Division at 098-921-8156

Website of Okinawa Defense Bureau (http://www.mod.go.jp/rdb/okinawa/)

Attachment #1

**Summary report of 17 barrels (other than analysis items notified in Mar this year)**

## 1. Content of survey

- Concerning the 17 barrels found at the Okinawa City Soccer Field from 6th Feb. 2015 to 19th Feb 2015, the survey team collected samples from accumulated matter on barrels (17 samples), soil under barrels (16 samples) and stagnant water under barrels (2 samples), and did the analysis with regard to dioxins, PCBs and agrichemicals, etc.
- The survey team processed the survey with absorbing the views of Professor Morita, Visiting Professor at the University of Ehime, Agricultural Department, and compiled the final report under his supervision.

## 2. Result of survey

(1) State of barrels

- Of the 17 unearthed barrels, 3 were equivalent to 30-gallon barrel (approx. 49cm in diameter and 74cm in height) and 7 were equivalent to 55-gallon barrel (approx. 59cm in diameter and 89cm in height). The rest of 1 barrel was difficult to determine.
- The survey team has confirmed neither stripe-marking in orange or other colors that is said to have been painted around barrel containing defoliants such as Agent Orange nor labels and letters indicating defoliants.

(2) Result of analysis

① Accumulated matter on unearthed barrels (17 specimens)

- Dioxins was detected in all of the specimens ranging from 25 to 970pg-TEQ/g.
- As to PCBs, elusion amount was not detected in any of the specimens, and contained amount was detected in 8 specimens ranging from 0.5 to 1.9mg/kg.
- As to agrichemicals, the detected substances and concentrations were as follows. 2,4,5-trichlorophenol(2,4,5-TCP) in 5 specimens ranging from 0.1 to 9.3 mg/kg, 2,4-dichlorophenol(2,4-DCP) in 2 specimens with a level of 1.0 mg/kg, Pentachlorophenol(PCP) in 15 specimens ranging from 0.1 to 180mg/kg.
- Total arsenic and total fluorine were detected in all of the specimens ranging from 6.7 to 93mg/kg and ranging from 20 to 540mg/kg respectively. Organic-arsenic of cacodylic acid was detected in 5 specimens ranging from 0.002 to 0.11mg/L.
- As to arsenic and its chemical compound, 1 specimen exceeded judgment criteria (judgment criteria for landfill disposal of industrial waste under the article 12-1 of Waste Disposal and Cleaning Act).
- Total petroleum hydrocarbon was detected in all the specimens ranging from 100 to 350,000mg/kg.

②Soil under barrels (16 specimens)

- Dioxins was detected in all of the specimens ranging from 1.6 to 1,000 pg-TEQ/g.
- As to PCBs, elusion amount was not detected in any of the specimens, and contained amount was detected in 13 specimens ranging from 0.5 to 20mg/kg.
- As to agrichemicals, the detected substances and concentrations were as follows. 2,4,5-T in 1 specimen with a level of 0.2mg/kg and PCP in 15 specimens ranging from 0.1 to 2.2mg/kg.
- Total arsenic and total fluorine were detected in all of the specimens ranging from 15 to 33mg/kg and ranging from 230 to 400mg/kg respectively.

- Organic-arsenic of cacodylic acid was detected in 5 specimens ranging from 0.002 to 0.012mg/L.
- As to arsenic and its chemical compound, 8 specimen exceeded judgment criteria (criteria for elusion amount of specified hazardous substances under the article 2-1 of Soil Contamination Countermeasures Act).
- As to fluorine and its chemical compound, 10 specimen exceeded judgment criteria (criteria for elusion amount of specified hazardous substances under the article 2-1 of Soil Contamination Countermeasures Act).
- Total petroleum hydrocarbon was detected in 15 specimens ranging from 300 to 34,000mg/kg.

③Stagnant water under barrels (2 specimens)

- Dioxins was detected in both specimens in unfiltered and filtered water, and their concentrations were 14,000 to 21,000pg-TEQ/L and 29 to 150pg-TEQ/L respectively.
- PCBs was detected in both specimens with a level of 0.0007mg/kg.
- Agricultural chemicals was detected in both specimens, and the detected substances and concentrations were as follows. 2,4-D ranging from 0.0029 to 0.003mg/L, 2,4-DCP ranging from 0.1 to 0.37mg/L, 2,4,5-TCP ranging from 0.12 to 0.17mg/L, PCP ranging from 0.78 to 4.8mg/L.
- Organic-arsenic of cacodylic acid was in both specimens ranging from 0.004 to 0.01mg/L.
- Total petroleum hydrocarbon was detected in both specimens ranging from 2,300 to 19,000mg/kg.

**3. Consideration**

(1) Source of pollution and others

- It is inferable that the dioxins detected in accumulated matter, undersoil and stagnant water are derived from the following three matters.
  - ① Impure substances given off from the manufacturing process of herbicide PCP.
  - ② Combustion product
  - ② Presence of PCB components
- The levels of dioxins in all of undersoil specimens were lower than environmental standards of soil.
- It is inferable that 2,4,5-TCP, 2,4-D, and 2,4-DCP detected in accumulated matter, undersoil and stagnant water arose from herbicide (admixture of 2,4,5-T or 2,4-D).
- In relation to the detection of total petroleum hydrocarbon in accumulated matter and undersoil, much of the detected TPH can be categorized into diesel type.
- In relation to the detection of dioxins in stagnant water, it is inferable that the level of TEQ was high because analysis measurement sensed the dioxins which were being absorbed onto other small substances.
- It is inferable that barrels originally contained the following seven substances.①Herbicide 2,4,5-T (including admixture of 2,4-D) , ②Herbicide PCP, ③PCB, ④Combustion product, ⑤Arsenic, ⑥Fossil fuel such as diesel, ⑦Volatile substance such as dichloremethane.

(2) Impact on surrounding environment

- Accumulated matter on barrels and undersoil have already unearthed/removed together with barrels. Thus it will not create impact on the surrounding environment in the future.
- It is unlikely that stagnant water will create considerable impact on the surrounding environment for the following three reasons.

① Stagnant water was removed totally and kept in storage.

② Stagnant water was not underground water but it was water accumulated inside and around barrels when unearthed.

③ Okinawa Prefectural Government checks the levels of drainage water from the soccer field as well as bottom materials at the mouth of a river running around the soccer field, and both levels have been under relevant standard values.

(3) Relation to defoliant

- For the five reasons below, the survey can't give evidence to prove that defoliant was originally contained in the unearthed barrels.

① From the standpoint of superficial feature of the unearthed barrels, there is no description or marking indicating the presence of defoliant.

② It is said that defoliant (Agent Orange) was an admixture of 2,4-dichlorophenoxyacetic acid butyl ester and 2,4,5-trichlorophenoxyacetic acid butyl ester in equal amount. However, these two substances were not detected in any of the specimens used in the survey this time.

③ The survey this time detected small quantity of cacodylic acid, which was said to have been used to create other type of defoliant. However, the detected level was can be found in nature. Also, picloram was not detected this time.

④ 2-4-DCP and 2,4,5-TCP was detected in accumulated matter. However, 2,3,7,8-TeCDD (an impurity in 2,4,5-T and an isomer of dioxins) was not detected in any of specimens.

⑤ Concerning the origin of dioxins, PCP-derived one makes up a considerable portion. Also, some of dioxins were thought to have been derived from PCB and combustion.

**4. Proposal for contaminated objects**

(1)Barrels

- Barrels have been packed in plastic bag one by one and stored in a container on the premise of disposing them as waste material. They will have to be disposed of based on applicable laws and regulations according to their degree of pollution.

(2)Unearthed soil

- ODB will categorize the soil that is put aside temporary at the soccer field into ①ordinary soil, ②ordinary industrial waste, ③special control industrial waste based on survey results to come. As a result of categorization, ordinary soil will be backfilled to the area of layers-scraping survey. Meanwhile, transportation and disposal methods for the other two types will be determined through a comparison with related judgment criteria as well as due coordination between related authorities.

(3)Stagnant water under barrels

- It is inferable that the detected dioxins was present in stagnant water in the form of being absorbed on to other small substances. In view of the fact that a high level of dioxins was detected in the testing of the filtered water, ODB will have stagnant water treated by a specialized contractor.