Former Kadena Airfield (２５) Soil Investigation Survey (Part２)

Survey Report Executive Summary

June 2014

Procurement Department Okinawa Defense Bureau

IDEA Consultants, Inc.

I certify that the foregoing is a correct translation.
Translator's signature: David Vincent Higgins
Translator's Name: David Vincent Higgins
Date: July 23rd, 2014

沖縄翻訳者
デビット ヴィンセント ヒギンズ
〒904-0114 日本沖縄県北谷町
港20-10-201 ステーションみなと
電話：05055345965

Okinawa Translator
David Vincent Higgins
#201-10-20 Station Minato
Minato, Chatan, Okinawa
〒904-0114 Japan
Ph：05055345965

www.okinawatranslator.com/davidvincenthiggins@gmail.com

Table of Contents

Overview

Excerpt of drum deposit analysis result

General Overview of the Former Kadena Airfield (25) Soil Investigation Survey (Part 2)

Purpose: To confirm the location of and excavate the drums buried under the Okinawa City soccer field, and investigate the condition of the drums and the surrounding area.

Survey Plan and Preparations

Survey Plan Development

Geographical History Survey

Purpose: To establish the magnetic survey range and soil contamination survey points.
Survey Included: Studying the history of topographical changes and land use, and gathering of information on drum burial.

General Soil Condition Survey

Survey End: No soil contamination found

Confirmation of the Buried Drum Locations

Removal of bleachers from the soccer field

Purpose: Removal of site impeding objects for the magnetic survey.
Bleacher parts were stored inside the soccer field area

Horizontal Magnetic

Irregular magnetic response at 58 points

Test Dig Survey

Buried drums confirmed at two points; high magnetic response at one point nearby.

Confirmed history of buried items other than drums

Confirmed construction waste material and domestic waste at 45 points; one hand grenade excavated from 0.6 m below ground surface to the east of the soccer field.

Test Boring Survey

Conducted where vertical magnetic survey was difficult due to the large number of irregular magnetic responses

Test boring at 24 points
Vertical magnetic survey conducted at 27 points
Re-examined the 1947 topographical map

Investigation Plan Development

Investigation plan consisting of four survey zones: Soccer Field East, Soccer East North, Drum Excavation Site and Its Vicinity, and Parking Lot

Drum Excavation; Assay and Evaluation; Necessary Measures

Drum Excavation Survey

Excavated 61 drums; soil samples taken from 29 points immediately below the drum bottom and two samples taken from standing water

Specimen Analysis

Analyzed for substances associated with Waste Disposal Law, such as dioxins, agrichemicals, oils, and items subject to soil contamination countermeasures requirements

Assay and Evaluation of Analysis Results

Dioxins contained in the accumulated matter inside the drum were found to be derived from agrichemical 2,4,5-T, PCP and PCB. Agrichemicals such as 2,4,5-T, PCP and PCB were also detected.
From the perspective of waste disposal, none of the analysis results exceeded the criteria for Specially Controlled Industrial Waste. Dioxins contained in the soil under the drum bottom were of lower concentration than the accumulated matter inside the drum, indicating that the soil was affected by the accumulated matter. Agrichemicals such as 2,4,5-T, PCP, and DDT were detected.
Additional surveys are needed for DDTs. Standing water contained high level of dioxins, requiring additional surveys. Agrichemicals were also detected.

Study of Necessary Measures

Accumulated matter inside the drums will be disposed of in accordance with the Waste Disposal Law.
For the soil below the drum bottom, survey plan was developed to determine the range affected by DDT and For standing water, additional dioxin survey plan was developed.

Report Submitted

What Triggered This Survey

- Drums were discovered from the Okinawa City Soccer Field. Survey was conducted in July 2013. Dioxins and agrichemicals such as 2,4,5-T were detected.

[Geographical History Survey] (From September 2013)

- Topographical changes of the Okinawa City Soccer Field area were studied using Okinawa Prefectural Archives reference material, National Basic Map of Japan, urban planning drawings, and drawings provided by Okinawa City. According to a topographical map from 1947, there were ravines to the west and east of the Okinawa City Soccer Field, and a ridge in the center.
- These conditions were also confirmed by aerial photography. A 1947 aerial photograph showed the area to be wooded hills; photos from 1962, 1970, and 1977 showed civil engineering works being conducted in the subject area.
- Since 1996, Okinawa City developed the subject area as soccer field, as indicated in the information provided from Okinawa City.
- According to interview surveys, drum disposal allegedly took place around 1964.
- The July 2013 survey location map overlaid on a topographical map indicates that the subject site is a filled area between the ravine and the ridge, as shown in figures 1 and 2.
- Based on the above information, a decision was made to conduct a soil contamination level survey and a horizontal magnetic survey covering the entire soccer field, and a vertical magnetic survey for the filled area.
- In addition to items listed in the Soil Contamination Countermeasures Law, the survey covered dioxins, agrichemicals, oils, arsenic and fluorine that were detected in the July 2013 survey. For agrichemicals, items associated with 2,4-dichlorophenoxyacetic acid and 2,4,5-trichlorophenoxyasetic acid were also added.

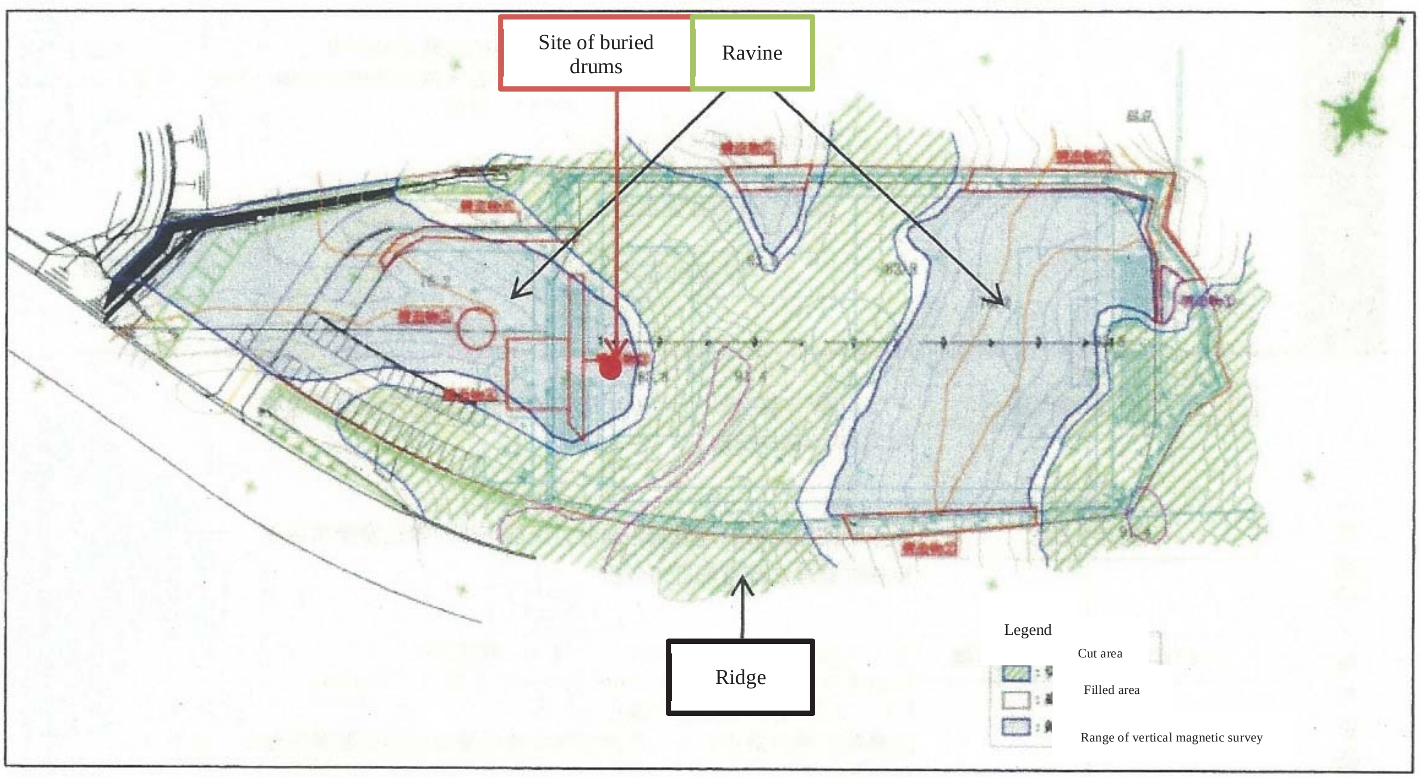


Figure 1. Ravines and Ridge Areas Based on 1947 Topographical Map

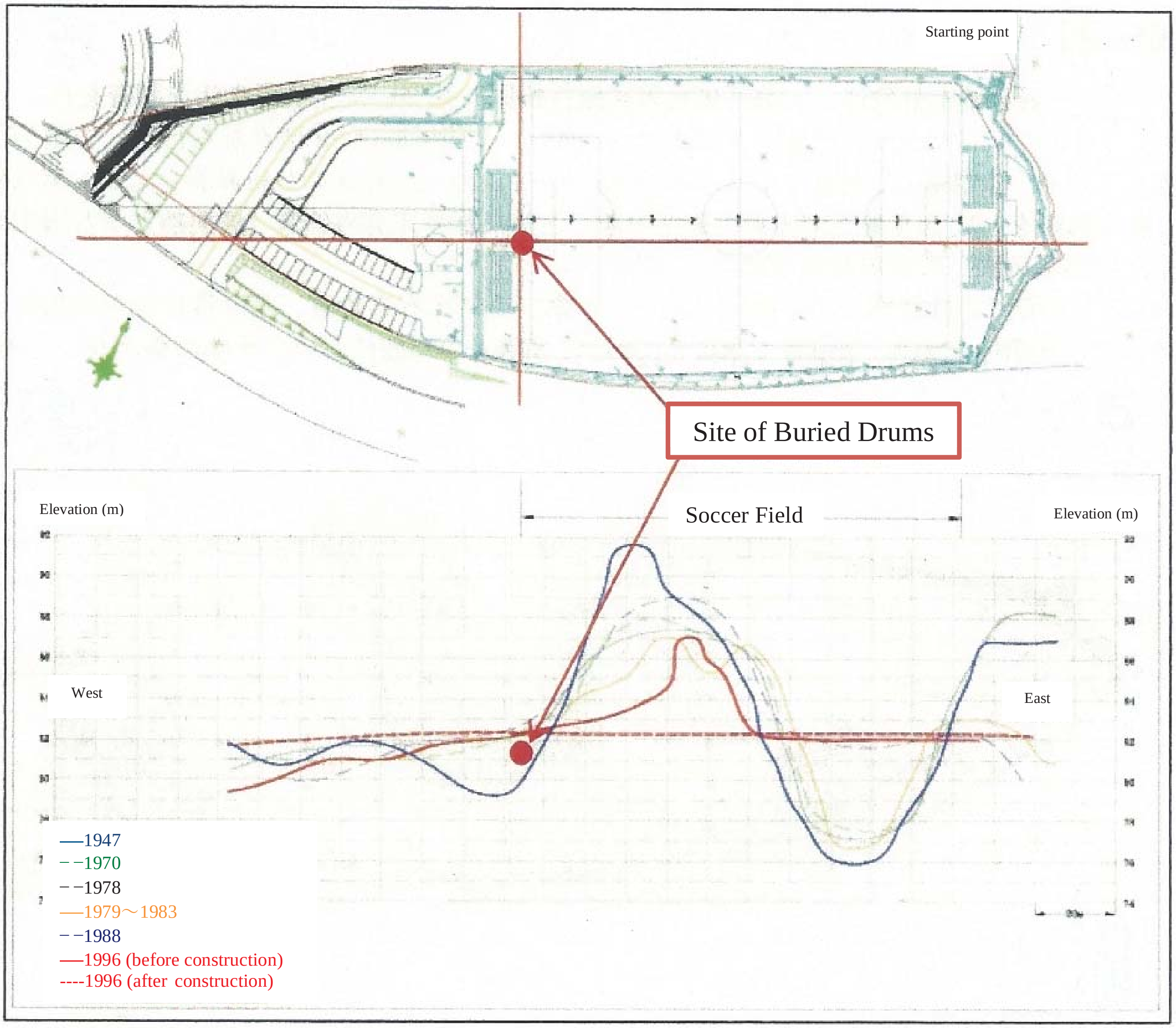


Figure 2. Buried Drum Site and Depth
(Lines indicate ground surface level for the respective years; blue solid line is ground surface level in 1947; red dashed lines are the ground surface level today.)

[General Soil Condition Survey] (November 2013)

- Soil contamination level survey was conducted on the entire Okinawa City Soccer Field in accordance with the Soil Contamination Countermeasures Law Enforcement Regulations.
- Survey sites consisted of 23 points for the soil gas survey and 98 points for soil sampling. Soil analysis was conducted by mixing equal amounts of samples from five points, and analyzing 23 specimens from the point survey (one specimen per point), covering all items for Class 3 Specified Hazardous Materials (agrichemicals and polychlorinated biphenyls; test of elution amount).
- Survey results: No soil gas was detected from any of the survey points. All survey points met the criteria designated in the Soil Contamination Countermeasures Law for both Class 2 Specified Hazardous Materials and Class 3 Specified Hazardous Materials. These results indicate that there is no soil contamination within the survey range.

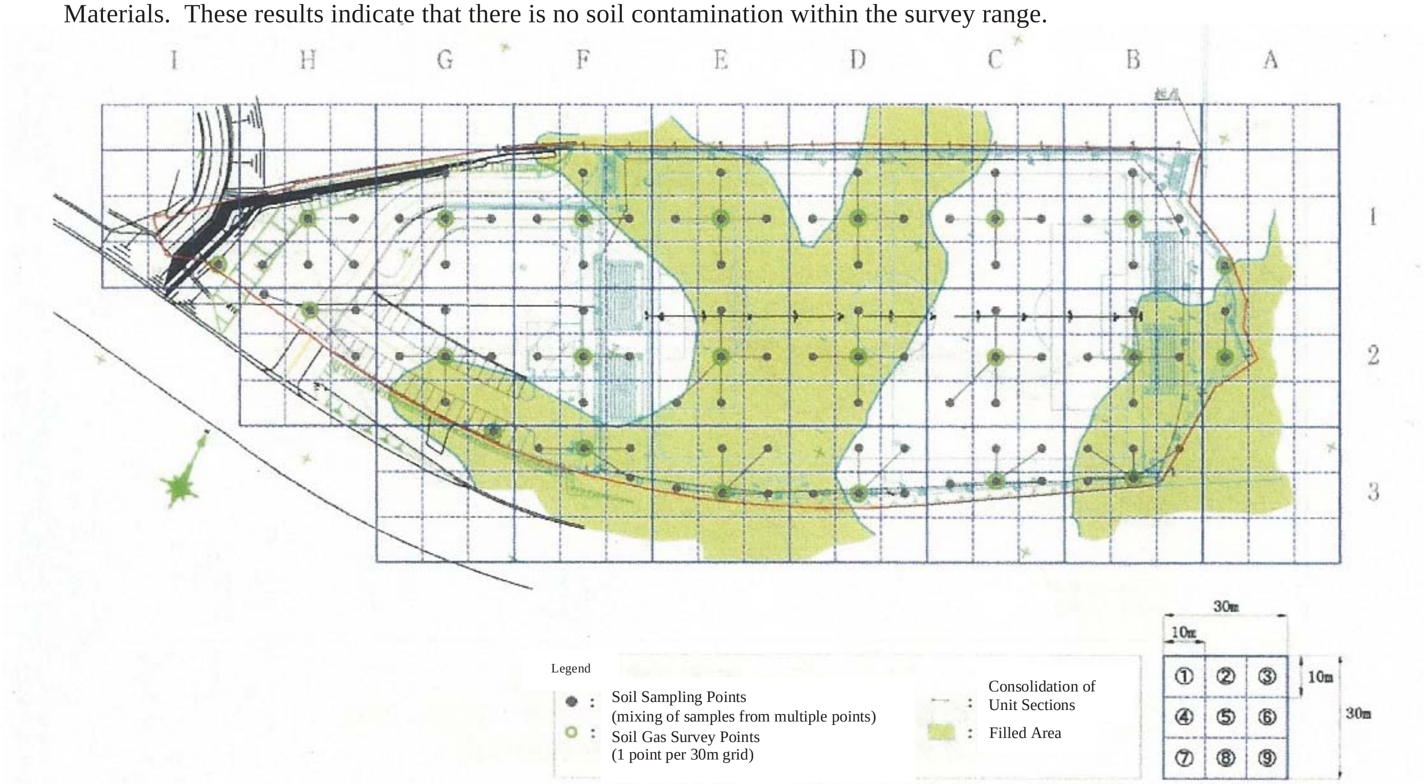
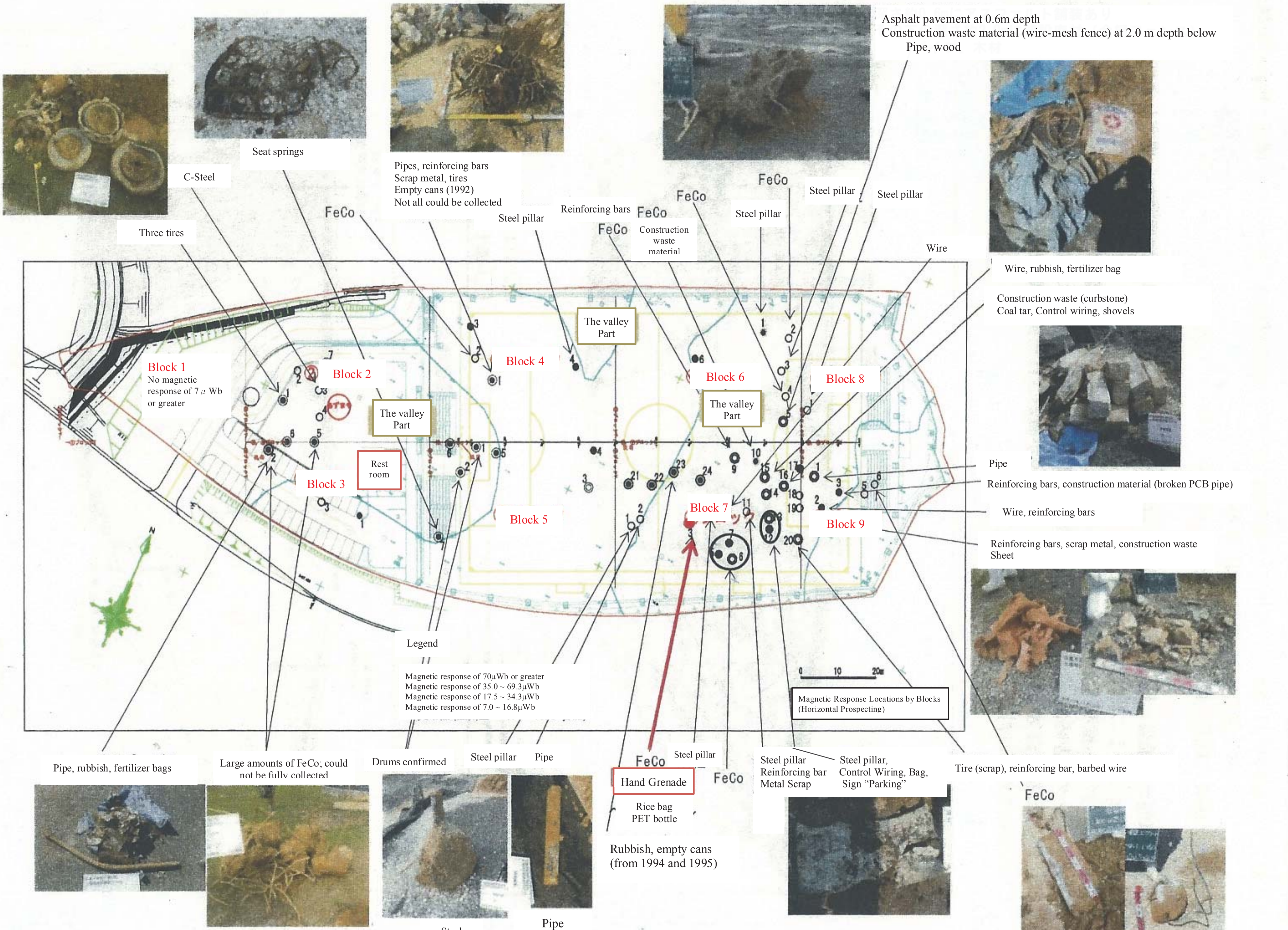


Figure 3. Site Map of the Soil Contamination Level Survey

[Horizontal Magnetic Survey and Test Dig Survey] (Nov 2013 – Feb 2014)

- Before conducting the horizontal magnetic survey, magnetic charge detection levels were studied using mock drums, as well as buried drums for which buried locations were known. Based on discussions with Okinawa City, the magnetic charge detection level was set at 7 μ Wb for the purpose of the survey, which allowed for survey up to a depth of 2 meters. The Okinawa City Soccer Field was divided into nine blocks for the execution of the horizontal magnetic survey.
- The bleachers installed to the east and west of the Okinawa City Soccer Field were removed because they were impediments to the magnetic survey. The disassembled parts are currently stored in the soccer field.
- Horizontal magnetic survey resulted in 58 points with abnormal magnetic response. Only three of those points near the bleachers on the west side of the soccer field had drums buried in the ground. From 45 other points shown in Figure 4, construction waste material (ferroconcrete, pillars, curbs, etc.) and empty cans and bottles were uncovered. For the remaining 10 points, the abnormal magnetic response was due to water mist pipes buried underground for soccer field maintenance and other existing structures in the vicinity.
- The 45 points where non-drum waste materials were found were mostly located in the former ravine area.
- One hand grenade from the WWII period was uncovered from 0.6 m below the ground surface on the east side of the Okinawa City Soccer Field (as marked by a red circle in Figure 4). The necessary procedures were taken to dispose of the hand grenade immediately.
- The horizontal and vertical magnetic survey results revealed the presence of many items other than the drums that gave magnetic responses exceeding 7 μ Wb within the area where the vertical magnetic survey was originally planned. If conducted as originally planned, the vertical magnetic survey would have likely been affected by these buried metal objects. Therefore, a test boring survey was conducted to re-study how to conduct the magnetic prospecting in the vertical direction.



*FeCo = Ferroconcrete

*Blue line indicates the approximate boundary between cut area and filled area

Figure 4. Distribution of Waste Material Excavated During Test Dig Survey

[Test Boring Survey] (February 2014 – March 2014)

- Inside the site where vertical prospecting is planned, boring and vertical magnetic surveys were conducted at 24 points, down to the depth of the original ground level based on the 1947 topographical map.
- The boring survey revealed that in the western parking lot are, the original ground level was the same or 2-5 meters deeper than the 1947 topographical map.
- On the eastern side of the soccer field, the original ground level was the same in some areas, and shallower or deeper in other areas compared to what the 1947 topographical map showed. Therefore, the topography was somewhat different from what was assumed based on the 1947 topographical map.
- A new topographical map (2014 version) was created based on the original ground elevation levels estimated from the boring survey results, to use as reference for further surveys.
- Based on the results of the vertical magnetic survey conducted in conjunction with the boring survey, the following plan was developed: vertical magnetic prospecting will be conducted for the filled areas to the east and north of the soccer field (see Figure 6); where buried drums were discovered below the western bleachers and the parking lot, vertical prospecting will be achieved by conducting magnetic surveys after excavating soil in layers.

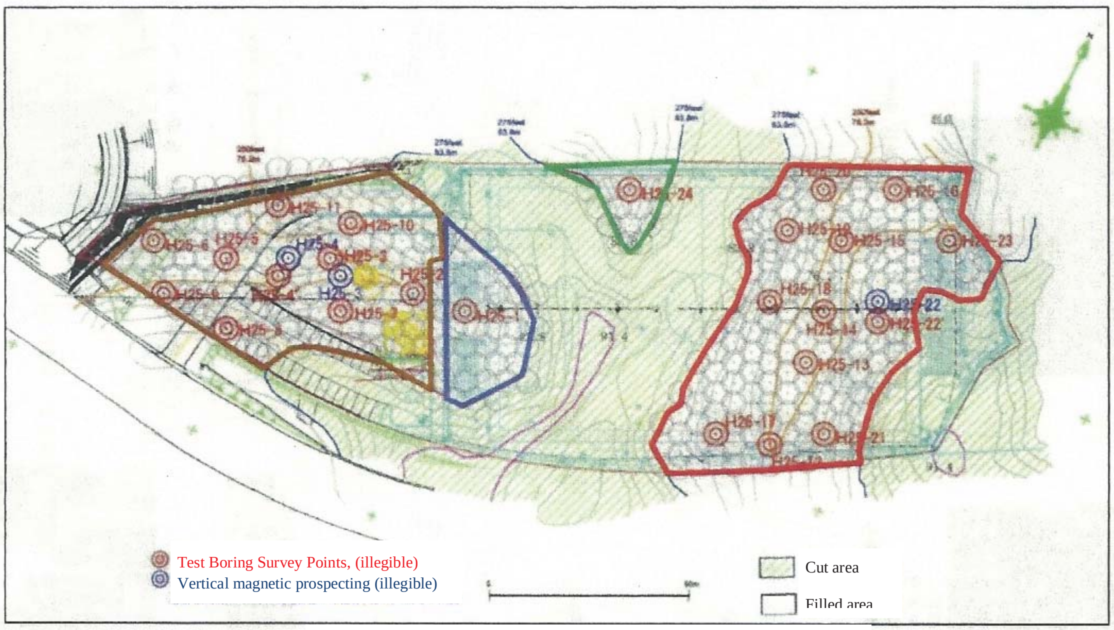


Figure 5. Test Boring Survey Points

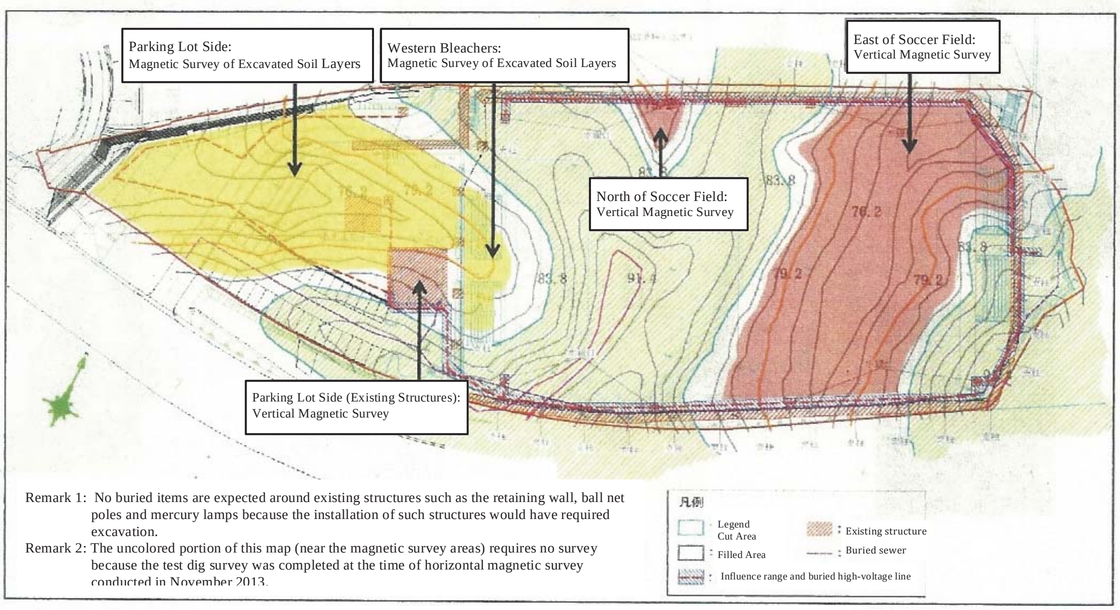


Figure 6. Survey Method for Each Block

EXCERPT: Analysis Results of the Accumulated Matter Inside the Drum

1. Conditions and Properties of the Collected Specimens

   1.1 Accumulated Matter Inside the Drum

- Many of the uncovered drums did not retain their original shape so accurate size of the drums could not be measured; but there were 32 drums of 30 gallon size (approximately 49 cm in diameter and 74 cm in height), and 24 drums of 55 gallon size (approximately 59 cm in diameter and 89 cm in height). There were five drums of miscellaneous sizes.
- Many of the writings were illegible, but 27 of the drums had letters which appeared to read "DOW", likely the Dow Chemical Company. (25 of the drums were 30 gallon size; one was 55 gallon size, and one other was of unknown size.) Twelve other cans also had some letters on them.
- As for the drum exterior, none of the drums had the orange-colored band, which was used to mark the drums containing defoliant Agent Orange. None of the content description on the drums showed defoliant substances such as "2, 4-D Butyl Esther" or "2,4,5-T Butyl Ester".
- Drums were cut opened to collect specimens. Seven of the drums were empty. Other drums contained accumulated matter (sand and soil) of 0.1 to 19 kg. (A total of 183 kg were collected as accumulated matter inside the drums.)
- For analysis, 2 kg of accumulated matter was collected from each drum. When a drum did not contain sufficient amount of accumulated matter inside to make up a specimen, accumulated matter on the outside of the drum were taken and mixed into the specimen.

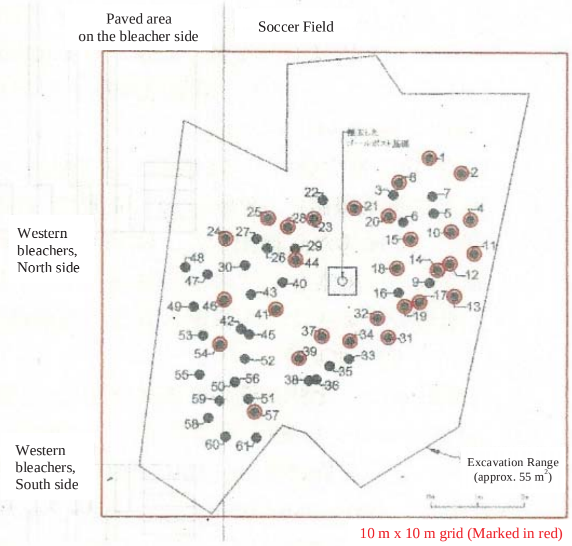


Figure 1: Drum burial site
(The numbers indicate specimen numbers;
red circle indicates points where soil was collected from)

   1.2 Soil Below the Drums

- The drums were buried irregularly on top of each other. Soil specimens were collected from 29 spots immediately below the drums at the very bottom of the stack.

   1.3 Standing Water

   Standing Water Collected on January 30th

- When Drum No. 17 was being excavated, oil slick was observed in the standing water. Excavation work was suspended, and approximately 3 liters of standing water (which were turbid due to excavation activity) were collected to conduct to identify the oil type and to analyze for agrichemical content such as 2,4-D and 2,4,5-T.

   Standing Water Collected on February 1st

- Standing water was already present when Drum No. 7 was excavated on January 29. The drums at the bottom of the stack were partially immersed in water. When these drums were lifted from the ground, some of the water that had collected inside the drum drained out with the accumulated matter inside the drum. The drained water were stirred and mixed inside the hole dug to excavate the drums, and was in turbid condition.
- After the excavation of 61 drums was completed on the evening of January 31, a sump was created inside the hole to allow the standing water to collect in one place. Water sample of 108 liters were taken on February 1, after most of the soil particles had settled. The water was brown in color.

2. Overview of the Survey Results

   2.1 Accumulated Matter Inside the Drums

- Dioxins were detected, ranging from 14 to 2,900 pg-TEQ/g.
- Polychlorinated biphenyl (PCB) leaching test resulted in "not detected" for all the samples.

～detected from 22 samples in the range of ~ 5.2mg/kg.

- Agricultural chemicals 2, 4, and 5-trichlorophenoxyacetic acid (2, 4, 5-T) in the 0.1 (determination limit value)-32mg/kg range from 40 samples, 2, 4, and 5- trichlorophenol (2, 4, 5-TCP) in the 0.1 (determination limit value)-250mg/kg range from 50 samples, 2,4- dichlorophenol (2,4-DCP) were detected in the 0.1(determination limit value)-0.3mg/kg range, and two samples of pentachlorophenol (PCP) were detected from 26 samples in the 0.1(determination limit value)-1.6mg/kg range.
- 2,4 - dichlorophenoxyacetic acid (2,4-D), 2,4-D butyl ester, 2,4,5-T butyl ester, picloram were not detected in all samples.
- DDT(s) were detected from 21 samples by qualitative analysis, and carried out in the quantitative analysis of about 21 samples. As a result, DDD was detected from 21 samples in the 0.2 (determination limit value)-180mg/kg range, DDE was detected from 16 samples in the 0.1(determination limit value)-73mg/kg range, and DDT was not detected by all 21 samples.
- Arsenic was in the range of 9.8 ~ 46mg/kg in the analysis of the results of the total arsenic.
- The arsenic content (chloride extraction) by Soil Pollution Control Measures Law was in the range of 0.6-8.3mg/kg, and was less than all the content results at all the points.
- The arsenic acid (arsenic of 5 values) was detected from seven samples in the range of 0.002 (determination limit value) - 0.009 mg/L, and, as for each state of arsenic, 0.006 mg/L detection of the cacodylic acid (dimethylarsinic acid) of organic arsenic was preformed in one sample.
- The analysis result of all the fluoride was the range of 160-650mg/kg.
- Oil was detected from 42 samples in the 100-250,000mg/kg range. Types are classified as light oil of C12 ~ C23 carbon atom types and many can be classified into gasoline of C6 ~ C12 carbon atoms also were observed.
- The bottom of malathion and soil deposits were analyzed in drums of No. 13 because there was a representation of the malathion by hand. The analysis results did not detected in both the soil and the bottom deposits.

2.2 Drum Bottom Soil Result Summary (Soil immediately below the drums that had been buried)

- Dioxins were detected in the range of 11 ~ 620pg-TEQ / g.
- PCB: The elution volume of the test results was not detected in all samples. Content from seven specimens at 0.5 (lower limit of quantitation) in the range of 3.3mg/kg was detected.
- Agricultural chemicals: 2,4,5-T was detected from 5 samples at 0.1 mg/kg (lower limit of quantification) in the range of 7.7 mg/kg; 2,4,5-TCP was detected from 15 samples at 0.1 mg/kg (lower limit of quantification) in the range of 43 mg/kg; PCP was detected from 5 samples at 0.1mg/kg (lower limit of quantification).
- 2,4-D; 2,4-D n-butyl ester; 2,4, 5-T n-butyl ester; 2,4-DCP; Picloram was not detected in all samples.
- DDT class was detected from the nine samples in qualitative analysis. DDD was detected in 9 samples in the range of 0.2 - 61mg/kg; DDE was detected from four samples at 0.1 (lower limit of quantitation) in the range of 20mg/kg; DDT in all 9 samples was not detected.
- Arsenic: Arsenic was detected in the range of 16 - 28mg/kg as total arsenic. Arsenic content by the Soil Contamination Countermeasures Act (hydrochloric acid extraction) was detected in all the samples in the range of 0.8 - 4.5mg/kg. I met the specified reference value (150mg/kg or less) and the arsenic elution volume as a compound was incongruent with the specified standard (0.01mg/L or less) in 4 samples out of 29 samples.
- Forms of arsenic: (Pentavalent arsenic) arsenate from 6 samples was detected at 0.002 (lower limit of quantitation) in the range of 0.013 mg/L; Dimethylarsinic acid organic arsenic was detected in five samples at 0.002 (lower limit of quantitation) in the range of 0.007mg/L as (cacodylate) emissions acid.
- Total fluorine: Was detected in all the samples in the range of 130 – 520 mg/kg. In 14 specimens out of 29 samples, the amount of fluorine eluted was incongruent (0.8mg/L or less) on a constant basis.
- There was no item in excess of the specified reference value of the Soil Contamination Countermeasures Act for elution other than the amount of fluorine and arsenic above.
- Oil content: Was detected in 12 samples in the range of 200 - 9,300 mg/kg. The carbon chains in the gasoline can be classified as C6-C12.

2.3 Stagnant Water

2.3.1 Stagnant Water January 30

- The samples were analyzed by gas chromatographic method for the specification of the grade of crude oil, but because the samples were less than the lower limit of quantitation, they could not be specified.

- SS was at 540mg / L. The pesticides 2,4-D,2,4-D butyl ester,2,4,5-T butyl ester,2,4-DCP, PCP were not detected in both the unfiltered water and filtered water.
- Unfiltered water was 0.13mg / L, 2,4,5-T was filtered water 0.12mg / L is ,2,4,5-TCP unfiltered water was0.19mg / L, filtered water was 0.16mg / L.
- DDT acids were not detected in both the unfiltered water and filtered water in qualitative analysis.

2.3.2 Stagnant water contents as of February 1st.

- The SS of the unfiltered water was 150pg-TEQ / L dioxins at 12mg / L, the Dioxins in the filtered water were 55pg-TEQ / L.
- PCB was not detected in both the unfiltered water and filtrated water.
- The Pesticides 2,4-D butyl ester,2,4,5-T butyl ester, cacodylate, and picloram were detected in both the unfiltered water and filtered water.
- 2,4-D has a non-filtered water 0.0034mg / L, and a Filtered water content of 0.0031mg / L, 2,4,5-T has a non filtered water content of 2.4mg / L, and a Filtered water content of 2.3mg / L, 2,4-DCP has a non filtered water content of 0.0072mg / L, and a Filtered water 0.0055mg / L, 2,4,5-TCP has a non filtered water content of 4.4mg / L, and a Filtered water content of 3.6mg / L, PCP has a non filtered water content of 0.0009mg / L, and a filtered water content of 0.0007mg / L.
- DDT acids were not detected in both the unfiltered water and filtered water in qualitative analysis.
- Arsenic was not detected in both Inorganic and Organic matter except in other states, each state of arsenic was measured at 0.011mg / L.
- Oil contents (by weight) were not detected.

3. Analysis of the survey results・Discussion

3.1 Dioxins

- The dioxins toxicity equivalence quantity of a drum affix sample and isomeric form distribution were shown in Fig. 2, and the dioxins toxicity equivalence quantity of the bottom soil sampling and Isomerism distribution were similarly shown in Fig. 3.
- In the dioxins toxicity equivalence quantity of the drum adhering matter, six samples of No.28, 38, 41, 51, 53, and 55 were 1,000 or more pg-TEQ/g. Moreover, the dioxins of bottom soil were 1,000 or less pg-TEQ/g which is environmental standards of soil in all the samples. The dioxins toxicity equivalence quantity of bottom soil tended to be of the lower tendency than the drum adhering matter.
- However, since the tendency of a higher than average dioxins concentration of 2.0 pg-TEQ/g (ranges on average of 0 - 96 pg-TEQ/g of the domestic 674 points from the year 2011 from Ministry of Environment) in common soil was suited, it is considered to be subject to the influence of the drum adhering matter. However, in taking a sample from (just below the drum) a place that would receive the most risk from pollution in the study from the source. □At this time, the possible presence of soil dioxin concentration from the survey result of this time around are low. □Since the bottom of the soil sampling this time exists underground it is a place where humans do not have direct contact □There is no use of groundwater in the vicinity and few possibilities that the bottom soil which was investigated at this time will have any big environmental impact in the area relating to drinking the water and causing health effects with no significant environmental impact in the area.
- The sample (The Blue of Fig. 2) to which 2, 3, 7, and 8-TeCDD contained as impurities in 2 of the herbicides, 4, and 5-T accounts for a high rate to toxicity equivalence quantity about the isomeric form of dioxins, Although the sample (The Green of Fig. 2) with a large rate which accounts for the toxicity equivalence quantity of 1, 2, 3, 4, 6 and 7 which were similarly contained as impurities in PCP of a herbicide, 8-HpCDD, and OCDD, the sample (The Deep Blue of Fig. 2) with a large rate that a PCB ingredient accounts for toxicity equivalence quantity were checked. They could not be classified clearly but also the sample was considered that the dioxins of each origin are mixed.
- As the source of dioxins in this study was subjected to (principal component analysis) statistical analysis using all of the (toxic equivalent) bottom soil survey results and drums deposits of this study.
  □Those derived from impurities in the manufacturing process of 2,4,5-T herbicide (2,3,7,8-TeCDD).
  □ (HxCDF ~ OCDF and HxCDD ~ OCDD of 6-8 chloride) derived from the impurities in the manufacturing process of the herbicide PCP.
  □It was found that from the PCB components included they are roughly divided into three.
- As the origin of the dioxins and other possible formation of chlorodibenzofurans from the herbicide (CNP), incineration, and chlorination is characteristic of some isomer patterns in their origin, in drum deposits of this investigation and on the bottom soil was considered less proportion of dioxins in the origins of CNP, incinerated or treated with chlorine.

- It has been classified into three categories by the results of principal component analysis – 2,4,5-T, PCP and PCB. Dioxin isomers were included in the multiple regression analysis emissions to estimate the percentage of each ingredient derived from drum deposits of dioxins in bottom soil sample subjected to analysis. Since the materials were analyzed by isomer composition they could not be confirmed for, 2,4,5-T to be obtained from the reference of the isomer composition of dioxins. PCB, PCP and almost all 2,3,7,8-TeCDD was subjected to multiple regression analysis. Estimation of dioxins derived from components by multiple regression analysis was able to explain most of dioxins TEQ (2,4,5-T derived, PCP origin, PCB-derived) by the above three.
- It should be noted that the 1, 2, 3, 7, 8-PeCDD percentage of samples is large, and the rate cannot be explained according to the three above-mentioned origins as it is increased. Since it is an isomeric form which may generate 1, 2, 3, 7, and 8-PeCDD in the process in which 2, 4, and 5-T or PCP is manufactured, the rates of 1, 2, 3, 7, and 8-PeCDD may be increased, and the possibility of impurities contained in the drum deposits, and 2, 4, and 5-T or PCP is to be considered.
- Fig. 4 shows the percentage composition by extracting the toxic equivalent of dioxin isomers of PCP from the bottom of the drum and soil deposits. In almost all of the drum deposits and soil, the composition rate was almost the same. From this drum, it is thought that PCP having adhered to the can would be the same kind.
- The toxicity equivalence quantity of the dioxins of the drum deposit and corresponding bottom (in the undersurface of drum) soil was measured. Drum bottom soil was a low result, although it seemed that 46 samples out of 61 had affected drum bottom soil to some extent. Toxicity can be seen in the bottom soil which has high drum deposits. In 15 specimens, nine specimens are almost the same in equal amounts, four specimens which had been buried nearby another drum are highly toxic. In the two samples (bottom soil No.22) the drum did not have isomeric form composition, and in No. 23 of the cause was unknown.
- Further, in order to understand the influence that the drum deposits would have on the corresponding bottom soil, all the drum deposits and bottom soil investigation results (toxicity equivalence quantity) were used, and cluster analysis was conducted. As a result, drum deposit and bottom soil samplings are large, and the rate of two classifications (from 55 samples of drum affix and bottom soil) has a large rate of PCP origin and 2, 4, and 5-T origin is also large -- it classifies into one. Two classifications came from 28 samples, seven other classifications were classified from one sample, which makes ten classifications total. Although 46 samples were classified into the same classification among 61 samples of drum deposit, classifications differed by 15 samples.

  Drum deposits: The reasons for which the classification of bottom soil differed: ①The toxicity equivalence quantity of bottom soil is not low subject to the influence of a drum deposit. ②It was subject to the influence of another drum with high toxicity equivalence quantity which was buried in the same area. ③The one drum deposit sample classified is not a sample classified with the same classification categories. However, the cause of why the drum was affected was not found in bottom soil No.23 and 24, but why it became a different classification was unknown.
- Estimated percentage of the origin of drum deposits by multiple linear regression analysis and isomer ratio of dioxins is different for each sample. The (90% or more by multiple linear regression analysis) occupied sample had a single origin, and many samples which the isomeric form of two or more dioxins origins was mixing clearly also existed. There were also many deposit samples considering that 2, 4, 5-T and PCP, and PCB mixed and existed in the drum from this. It is possible that the 2, 4, and 5-T result was due to the drum intentionally being crushed at the time of burial, and as a result, PCP and PCB were mixed in the drum.

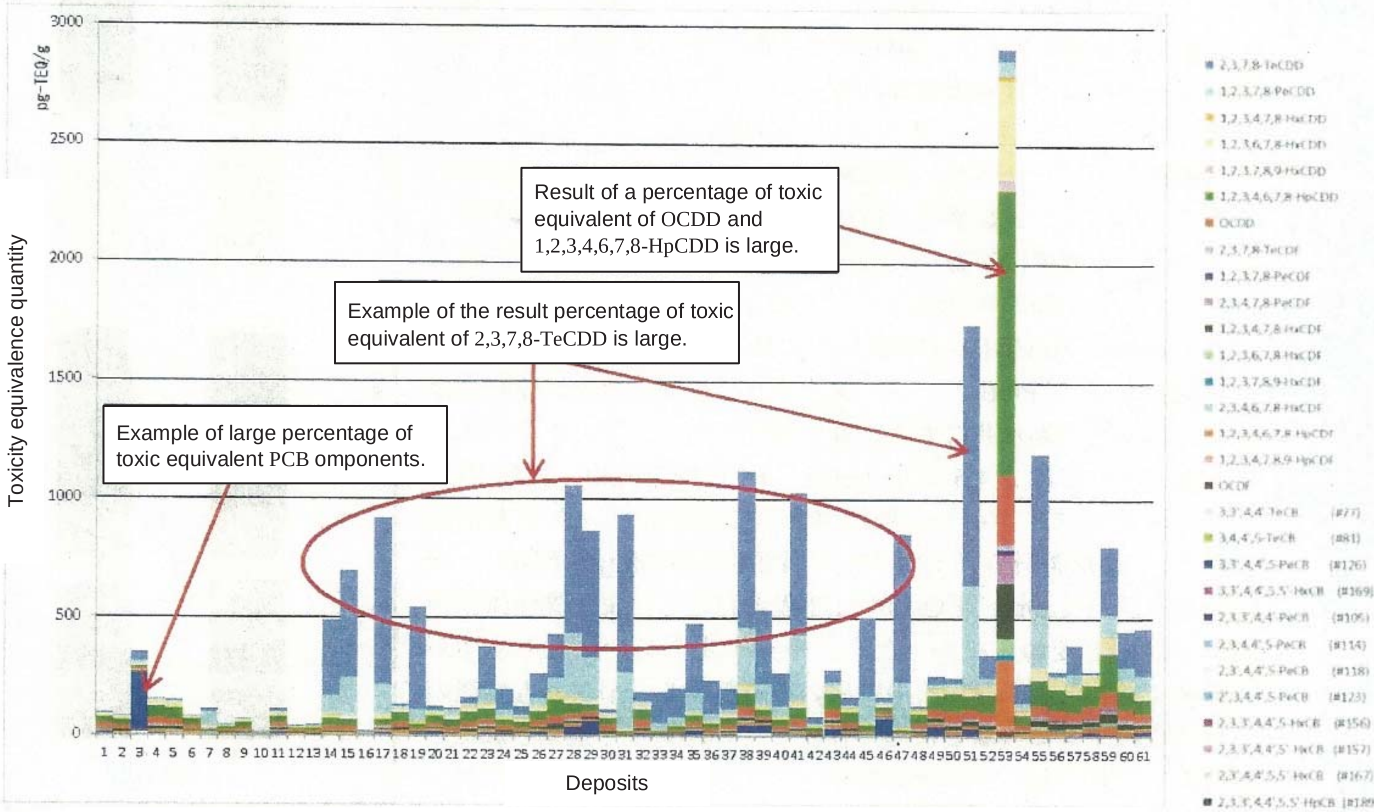


Figure 2: Dioxin analysis of drum deposits (The horizontal axis sample number)

The Legend
for figures 2,3,4.

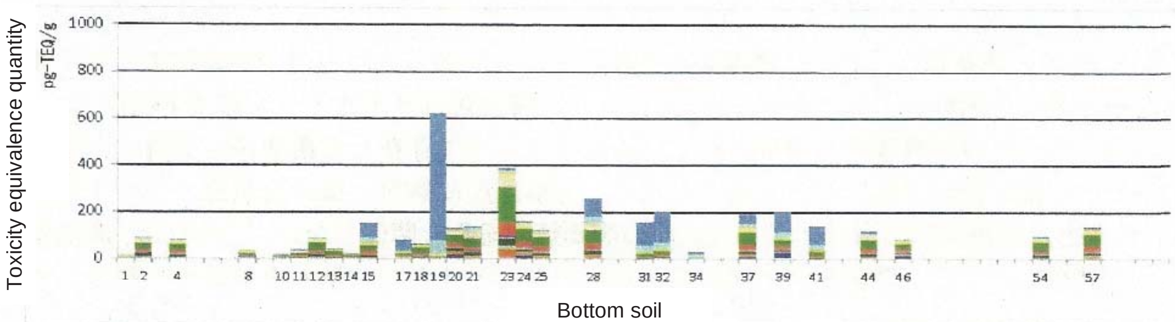


Figure 3: Dioxin analysis of drum bottom soil (The horizontal axis sample number)

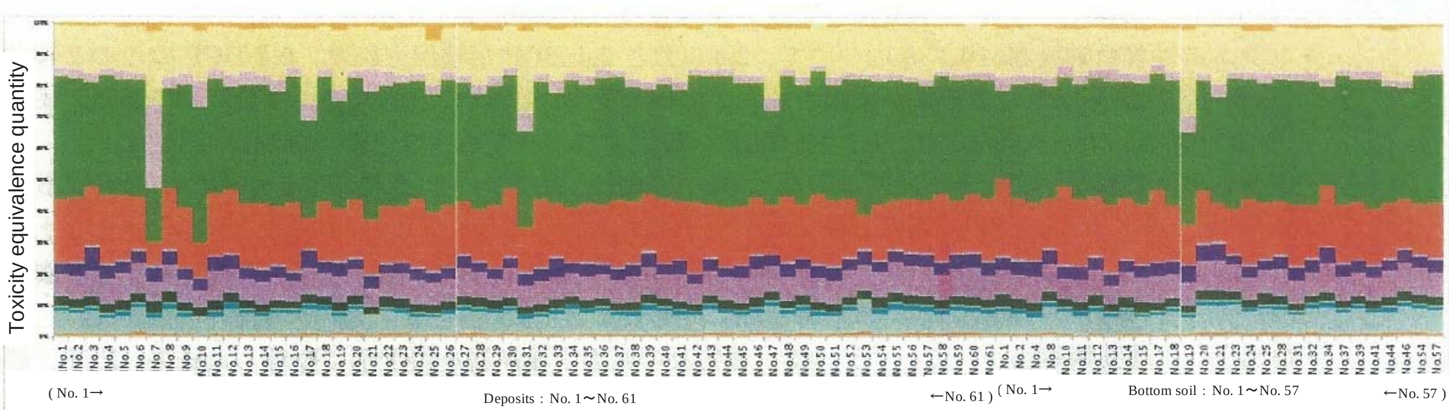


Figure 4: Proportion of toxic equivalents of dioxin isomers of PCP from the bottom soil and drums

- The non-filtrate bank water and filtrate water showed a value of toxicity equivalency quantity of dioxins that was comparatively high. This sample was not actual groundwater but the water which had accumulated within and without the drum at the time of a drum excavation. Although the possibility that water due to rain would come from the river as seepage water was also considered, it was thought that through the investigation that Okinawa Prefecture is conducting in which the dioxin concentration of the discharge water meets the effluent standard, there was no discharge which would have an affect on the environment. Regarding the isomeric form of dioxins, all of 2, 3, 7, 8-TeCDD (impurities in 2, 4, and 5-T), HxCDD-OCDD, HxCDF-OCDF (impurities in PCP), and PCB were checked, and there was no difference in which non-filtrate water and the filtrate water where these isomeric form rates were increased. Filtrate water: As for the dioxin toxicity equivalency quantity (55 pg-TEQ/L) of a sample, 1/3 of the non-filtrate water sample (150 pg-TEQ/L) exists. Moreover, since water solubility was very low, the isomeric form rates hardly changed and dioxins were conjectured to have existed in the form where it stuck to the particles, etc., in which particle diameter is smaller than the filter paper (0.5 micrometer) used for filtration.
- Although the drum deposit which contained PCB was checked, it is unclear regarding the cause.

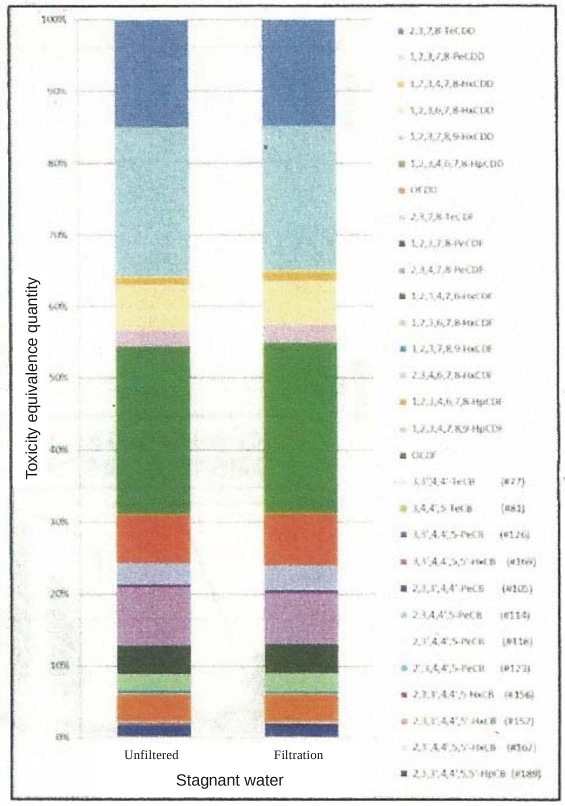


Figure 5 Toxic equivalent percentage of dioxins in the stagnant water

3.2 Agricultural Chemicals

- While pesticides such as 2, 4, 5-T and PCP were not detected, an estimated ratio of dioxin of these impurities origin, but some high samples were seen. Because pesticides such as these are not long lasting as PCB and dioxins, if they existed once and degraded, a partial result can still be detected as these agricultural chemicals do not degrade completely. The quantity of the agricultural chemicals detected now in the samples is not necessarily what it was at the time of contamination due to various states of the sample and decomposition rates. It is not related to the total amount of pesticides. For this reason, while the sample decomposition of pesticides was early and pesticides were not detected, a large rate of dioxins in the original sample is presumed.
- Overall, in many of the samples there was a high concentration of dioxins in isometric form and a high concentration of agricultural chemicals was observed.
- 2, 4, and 5-T and 2 and 4-DCP were detected in drum deposit samples No. 10 and 38. 2 and 4-DCP were a fixed quantity only from these two samples. A value near the lower limit was detected. 2, 4-DCP is the degradation product or raw material of 2, 4-D. In addition, dichlorophenol may have been generated by the dechlorination of 2, 4, 5-TCP and PCP.
- While 2, 4-D is not detected (less than lower limit of determination), in the water sampling on February 1 from the bottom soil samples and drum deposits, 2, 4-D was detected from the accumulated water sample. As to the reason why 2, 4-D was only found from the bank water, this is because bank water is not often disturbed, thereby giving it high sensitivity for component detection and analysis. It was a low concentration compared to 2, 4, 5-T, but the difference may be due to the decomposition rate.
- As a result of arranging the drum deposit and bottom soil sampling according to concentration/density, the agricultural chemicals which were detected were PCB, agricultural chemicals, and oil. When the concentration of the drum deposit corresponding to the bottom soil was high, the tendency for the bottom soil to be more concentrated was seen. From this, it was thought that it was subject to the influence of the drum deposit.
- The soil concentration guideline value of the environment management guideline value concerning "agricultural chemicals and other chemicals at the quantitative-analysis result of DDT(s) detected from qualitative analysis" (content). As for the sample which is over the quantity of 50mg/kg, DDT in drum deposit No.4 is not detected. DDD is 180mg/kg, DDE is 73 mg/kg, and DDT 253mg/kg. In drum deposit No. 34 DDT is not detected, DDD is 100mg/kg, DDE is 36 mg/kg and DDT was 81 mg/kg as a total amount.
- Since it was an organic arsenic compound "2.3 Arsenic and Fluoride", cacodylic acid (dimethylarsinic acid) was indicated.

3.3 Arsenic and Fluorine

- The total arsenic content, of the Soil Contamination Countermeasures Law in the sample of bottom soil and a sample of the deposit except No2,7, the evaluation of whether or not it exclusively comes from certain hazardous substances of the soil contamination state and the artificial contamination was not confirmed as it was less than 39mg/kg in the estimated upper limit total content of natural causes. Also, No2,7 of the deposit sample was slightly beyond the upper limit total content of 41mg/kg, it was detected with 46mg/kg, the total arsenic content may not result in a specifically high value comparable to other deposit samples, which according to the Soil Contamination Countermeasures Law is 1.3mg/kg each, 5.0 mg/kg was lower than the specified reference value of 150mg/kg, not all of the arsenic content was detected because No2,7 of the deposit sample was slightly beyond the aim of the upper limit of the total content, therefore considered a range of natural contamination.
- From the bottom soil samples, initial listing requirements were exceeded by about four samples from the investigation of the arsenic, based on Soil Pollution Control Measures Law and its compound, because artificial pollution was not confirmed as the origin of arsenic as described above, therefore the ground soil is considered to be due to natural causes.
- In the analysis of form by arsenic, arsenic acid and cacodyl (dimethylarsinic acid) are detected from some samples of bottom soil deposits, also arsenate was detected in stagnant water. This arsenate is in the form of inorganic arsenic, moreover cacodyl acid was used as a pesticide or in agricultural chemicals, it is also one form of organic arsenic which exists in nature. Arsenic as a whole as an artificial effect was not observed, and these arsenic acids and cacodyl acids (dimethylarsinic acid) were also considered to be of a natural origin.
- The total amount of perfluorinated (fluoride) deposits of the Soil Contamination Countermeasures Law of the bottom soil, contaminated by hazardous substances in the soil of the land is a dedicated determination as to whether or not they were derived naturally or not, and it’s below the 700mg/kg upper limit for natural causes, therefore artificial contamination was not confirmed. As for the bottom soil samples, fluorine based on the Soil Contamination Countermeasures Law and its compound state that 14 samples exceed the specified criteria, artificial contamination was confirmed as described above for the origin of the fluorine, it was considered to be from natural causes.

3.4 Qualitative analysis by gas chromatography mass spectrometer samples.

- The result of the qualitative analysis of a drum deposit, straight chain hydrocarbon, benzene and naphthalene derivatives, there is a component of the origin of fossil fuels such as polycyclic aromatic compounds. Furthermore, DDT was detected from 21 of the drum deposit samples and seemed to have persistent organic pollutants (PoPs). When guessed from the chemical constitution formula, it was thought that the relevance with dioxins contamination was very low.
- The result of the qualitative analysis of bottom soil as with drum deposits, straight-chain hydrocarbon component was derived from fossil fuels, benzene-naphthalene derivative, although there were polycyclic aromatics and they tended to be lower than the deposit of each chemical. DDT was also observed from the bottom 9 soil specimens.
- The results of qualitative analysis of stagnant water is the component of fossil fuels were low. Drum deposits and DDT seen in the bottom soil was not detected.
- The conducted quantitative analysis of DDT was detected from the qualitative analysis. As a result, it is shown in 2.1-2.3 and 3.2.

4. Summary

[The appearance of unearthed drums]

- The unearthed drums could not be measured exactly as they had collapsed but they were the equivalent of 30 gallons (49cm diameter, height approx. 74cm) 32 cans, 55 gallon equivalent (approx. 59cm diameter, 89cm height) in 24 cans. The other size drums had 5 cans.
- Although many of these readings were unknown; they are of a manufacturer of agricultural chemicals. [DOW][The Dow Chemical Company] There were 27 cans of drums which can be read or guessed (25 is equivalent to 30 gallons, 1 is equivalent to 55 gallons, 1 is unknown) In addition there were 12 cans of drums.
- About the appearance of the drum, there is no drum in which belts, such as orange which is said to have been written on the drum into which the Agent Orange defoliant was put, were checked. Also, [2,4-D butyl ester] [2,4,5-T butyl esters] there were no drums of the suggested component of Agent Orange that the content has been confirmed.

[The Results]

・Although there was no result in which the dioxins of the drum exceeded 3ng-TEQ/g (3000pg-TEQ/g), it was over 1000 pg-TEQ for about six samples. Since the drum had already been unearthed and removed it will not affect the future of the environment in the area.

・The dioxins at the bottom of the soil were 1000pg times or less -TEQ/g which is at the environmental standards of the soil in all samples. The dioxin toxic equivalent of the base soil is lower than the drum dioxin toxicity, and in general tend to show higher values.

1) In the survey of pollution sources most affected in unlikely surroundings in this survey have a result of non dioxin soil, and samples taken from one place (just below the drum) have a slightly higher result of dioxins.
2) Since this bottom soil sample exists underground, it is in a vicinity where people do not contact/cant contact directly.
3) There is no possibility that any health effects are caused by the drinking of this groundwater. It was also concluded that there were few possibilities that the bottom soil which we investigated this time will have a big environmental impact on the outskirts for any reason.

・Both unfiltered stagnant water and filtered water show a relatively high dioxin toxic equivalent value. The sample of actual groundwater had nothing in it, it was the water that had accumulated around the drum during the time of excavation. The emission amount from dioxin concentrations in the Okinawa Prefecture meets the current effluent standards, the stagnant water along the river is normal as is the rain water and discharge water from surrounding areas, and from this concentration there is no effect to the environment.

・The impurities in the manufacturing process of 2,4,5-T herbicide and the isomer composition of dioxins in soil and bottom drum deposits (HxCDDs~ OCDD, HxCDFs those derived from impurities in the manufacturing processing (2,3,7,8-TeCDD), herbicide PCP. It was found that from the PCB and components ~OCDF), include but are roughly divided into three.

・In agricultural chemicals, butyl ester of 2,4-D was not detected in the bottom soil samples or drum deposits. The 2,4-D and 2,4-DCP which is believed to have been produced has decomposed but was detected in 2 samples. 2,4,5-TCP butyl ester was not detected. 2,4,5-TCP which is believed to have produced 2,4,5-T is decomposed and was detected in some of the samples. These are because herbicide related substances are not as persistent as PCB and dioxins, they decompose over a long period of time.

・Although it has not been detected in soil and bottom drums for 2,4-D, but was barely detected in the reservoir. This is in the water with fewer interferences, high sensitivity and the analysis should be detected. Compared to the 2,4 and 2,4,5-t low concentrations, the difference is either derived from the difference in the rate of degradation.

・The detected deposits, bottom soils from the 2,4,5,T, 2,4,5-TCP, 2,4-D, 2,4-DCP herbicides are presumed to be a mixture where 2,4,5-T and 2,4-D originated from.

・The qualitative analysis of bottom soil and drum deposits, straight-chain hydrocarbon, benzene, naphthalene derivatives and polycyclic aromatics and DDTs were observed.

・The oil on the bottom soil and drum deposits is carbon number C-5 type and can be classified into gasoline and carbon number C-12-classified and C28 diesel types.

・Samples of insecticide DDT were detected by qualitative analysis results and exceed the soil concentration guidelines for environmental management recommendations on pesticides and other chemicals (content) was in 3 samples of bond drum No.4,34, bottom soil No.34.

・Fluorine (including cacodylate) of arsenic bottom soil samples and drum deposits can not be considered to have potential impacts on artificial or natural areas, these are determined by the above factors.

・Ratios of each deposit differed for each drum. Intentionally buried drums and crushed drums had mixed results with the fossil fuels in drums 2,4,5-T and PCB which the result could be suited in the drum as gasoline, light oil or insecticide. It is possible that DDT(s) were mixed in as well.

・The quantity of pesticides and the classification of dioxins in the time come from the quantitative analysis of the removal of substances that was (1) contained in the drums (including the mix 2,4-D), (2) herbicide PCP, fossil fuels, gas, oil or gasoline, (5) the pesticide DDT such as 2,4,5-T. The presence of at least five other substances was estimated into the equation.

[Relationship with Agent Orange]

・About the appearance of the drum after it was unearthed, there are no drums with a belt labeling them with Agent Orange defoliant. Also, 2,4-D butyl ester and 2,4,5-T butyl esters etc. were not found to display any content suggesting Agent Orange was a component in these drums.

・The bottom soil sample from drum 2,4,5-T had impurities, also 2,3,7,8-TeCDD had samples found where the isomer is considered to be derived from the impurities of 2,4,5-T. 2,4-DCP is detected from the two samples in the drum deposits, where 2,4,5-TCP is believed to have been produced 2,4,5-T and has decomposed after being detected. For this reason it is believed that in drum 2,4,5 there may have been butyl ester inside, in 2,4,5-T there may have been coolant from the butyl ester, but most likely it is from a herbicide usually used for killing trees which the military was known to be using. It may not have been the military that was responsible for the ingredients here in drums 2,4,5-T. In Japan, we locally manufacture a large amount of 2,4,5-T, the Dow Chemical Company had a display drum of this, which has been sprayed in large amounts onto forests and has been known to be mixed with 2,4-D with 2,4,5-T present as well.

・Also, Agent Orange is a mixture of equal amounts of 2,4-D butyl ester and 2,4,5-T butyl ester, but the survey is for 2,4,5-T butyl esters, and 2,4-D butyl ester wasn't detected in all of the samples. While 2,4 and 5-T is detected in this drum and the analysis results from the bottom soil at two or more points, there is no sample of 2,4-D detected and the decomposition output of 2,4-D is good. The concentration near the determination limit value is detected by two samples with a lower limit of 2,4-DCP found. The soil of 2,4-D and 2,4,5-T is not clear because it seems the decomposition rates differ inside. The investigation into 2,4,5-T and 2,4-D remains in question if there was ester in the body of equal parts. This can be summarized below:

1) In this study, a characteristic of the drum suggesting that a defoliant with features seemingly could not be found.
2) 2,4,5-T is a pesticide that has been used widely in the country as a herbicide for weeding purposes, generally at the base of trees. It is believed that it has been used in this area.
3) 2,4,5-T butyl ester and 2,4-D butyl ester is a substance directly used with Agent Orange and in all samples it was not detected. Also once the concentration is different between 2,4-DCP, 2,4,5-TCP (not detected at all), 2,4,5-T and 2,4-D it cannot be said that equal amounts in these are present when 2,4,5-T and 2,4-D are higher.

Evidence for the above reasons state that the results were unable to find Agent Orange defoliant in the drums.

References:

①Shigeki Masunaga, Takumi Takasuga, Junko Nakanishi (2001) Dioxin and dioxin-like PCB impurities in some Japanese agrochemical formulations. Chemosphere, 44:873-885

②Takumi Takasuga, Kuruthanchalam Senthil Kumar, Yuko Noma, Shinichi Sakai (2005) Chemical Characterization of Polychlorinated Byphenils, -Dibenzo-p-Dioxins, and -Dibenzofurans in Technical Kanechlor PCB Formulations in Japan. Arch. Environ. Contam. Toxicol.,49:385-395

5. Future Actions

5.1 Drum Deposits

・61 oil drums were unearthed in this survey and their deposits are separated by the assumption that they were disposed of as a storage of waste.

・DDT waste such as pesticides, oil and dioxins challenges the results.

・In the future, the processing of these substances is to investigate the possible facilities while taking into the compliance of transportation conditions and to determine the disposal place(s).

・Each drum differs in what it contains, dioxin deposits, DDT waste such as pesticides and the concentration of oil content are all determined in the accordance with acceptable conditions for sorting these samples in proper storage conditions.

- The conditions of each institution for disposing at certain places comes down to the processing permission of the institution and the waste is subject to special control for ①traces of dioxins, ②waste and ③agricultural chemicals.
- Agricultural waste and chemicals being incinerated, melted or by chemical breakdown is a necessary process. Special management of dioxin, melt treatment, incineration or cement solidification requires certain conditions.
- If the waste has adhered to the drum, incineration is the favourable disposal method. The following criteria can be examined below for each process.
- Following 3 ng-TEQ/g (300 pg-TEQ/g) of a judging standard value guide for dioxins. If the drum affixed has followed the guide and exceeded the 3 ng-TEQ/g (3000 pg-TEQ/g) it is an industrial abandonment known specially as industrial waste, subject to special control. Cement solidification or incineration will be processed with the permission from an institution based on the dioxins. If they are lower than 3 ng-TEQ/g, a drum affixed will usually carry out processing disposal by incineration disposal (things other than industrial waste are subject to special control).
- Heavy metals (including PCB) have to fit the criteria of special control for industrial waste for all 25 items. It means that industrial waste must be treated with incineration or by a disposal facility managed by landfills.
- Although agricultural chemicals such as 2,4,5-T and PCP are waste and their registration as pesticides has been revoked, the substances do not meet standards or regulatory values. Since the substance that was detected is also a problem from dioxins, it is decided to manage the disposal of these. It should be noted that 2,4-D is registered as a pesticide and has come up as a low concentration from the analysis.
- However, the qualitative analysis found that DDT, a substance in the Stockholm Convention, designated as hazardous waste pesticides and efforts were made to regulate specified POP pesticides and 9 substances in the country. As a result of carrying out the quantitative analysis at this time, two samples are ‘agricultural chemicals’ of buried agricultural chemicals. It was detected exceeding 50mg/kg which is an environment management guideline. Waste agricultural chemicals, other than the 9 substances specified are also included and it is the Act of Disposal Waste Matter that is in accordance with the process of the ‘technical considerations for treatment of pesticide POPs waste’, irreversible degradation of incineration is necessary. This needs to be followed and must be disposed of and carried out at a waste facility.
- If the waste has more than 5% oil it is treated as waste oil and reclamation is directly impossible. Therefor after it is incinerated it has to go to a landfill for disposal with an oil disposal permit.
- In order to correspond to the standard 5% oil content, oil from the result of the (TPH) analysis needs to be used, not based on the Environmental Agency Notification No. 64 0/1974, analyzed by gravimetric method as a solvent of hexane base.
- When moving waste or contaminated soil it may require advance notice and be collected by a confirmed local government and recycler and the processing company must check all formalities necessary from the municipality.

5.2 Drum Bottom Soil

- Referring to the soil directly under the drum that had been buried, the bottom soil, or depth of 1.28m from the surface of the current excavation work when the drum was buried, this refers to the earth’s surface area that had been dug out. The pits were dug, covered with a blue sheet that prevented the penetration of rain water.
- The results of the survey and issues about handling the bottom soil (1) the soil samples quality standards (1000pg-TEQ/g) than the dioxin exceeds the survey index value of (250pg-TEQ/g). (2) The environmental management guideline values such as DDT is exceeded in the soil content. (3) The TPH concentration of oil is high and there is a portion of oil odour that is clearly observed. Environment improvement is difficult unless a high concentration is removed.
- Since the bottom soil that removed was in an area of 10m x 10m, which is a comparatively narrow range, the measure against oil is taken as a digging removal. However, the position and range of the drums with DDT(s) were detected beforehand and excavation and removal was carried out.
- Strategies for each shall be as follows.

①For Dioxins:

・In the case of a "index value or more, situation, from other sources around the soil, or other media”, to implement continuous monitoring surveys and additional actions to the notice of "The enforcement of the Law Concerning Special Measures against Dioxins".
・Based on the "(Ministry of the Environment Water and air quality station soil Environment Division Edition March 2009) Soil Investigation Measurement Manual relating to dioxins", this study is positioned as a "Target Area Situational Awareness Survey" source of contamination procedure is the "Buried Drums".
・The next step has been decided to preform additional research and soil survey material in accordance with the estimation of the cause "Survey Index Value Confirmation Study" depending on the surrounding conditions. In regards to this the horizontal magnetic survey confirms there is no more buried metal anomalies such as drums around because all of the drums have been excavated and collected in this study. The future of the environmental standards have been considered and there is no further risk of exceeding the values so there is no need for further investigation of the soil.
・In the study documentation in regards to the environmental criteria additional studies are required according to the "Survey Index Values Confirmation Survey" in order to grasp the transition of the concentration of the dioxins in the soil placing every 3 to 5 years. "The performing of continuous monitoring study" as described above is believed to be unnecessary for continuous monitoring studies because of the removal of the drums as the contamination source.

②About DDT

・For DDT classification, one sample of No.34 exceeds the standards of content (50mg/kg). If only the excess of the amount is in containment, it is considered a measure, but if it exceeds the eluted value of (0.026mg/L) in the buried pesticide research manual, then it is decided to remove all means of it.
・Also, if the release value exceeds the guideline value of 0.026mg/L it cannot be disposed of in a landfill. Although manuals such as the burial ‘agricultural-chemicals investigation and digging’ were used about the pollution range of DDT(s) since a value had not been investigated yet. It investigates a depth of [1m] drum burial and exceeds the environmental guideline value (content and elution value) of DDT(s)
・Disposal of the soil content and the processing guideline value (elution value) are over examined, preferentially carrying out thermal disposal with the processing permission institution of waste agricultural chemicals.

③About Oil

・For oil, what is regulated as a hazardous material and is only benzene contained in gasoline. Since there are no specimens in excess of the criteria in this survey, regulations such as the Soil Contamination Countermeasures Law does not apply.
・For measures of oil, action taken by landowners or the like into the oil odor or oil slick problems due to soil, including ‘mineral oils from the Ministry of the Environment’ has been published from the concept of the solution when the oil film and oil odor problem and land transactions occurred. In this case it is a relatively narrow pollution range of 10m x 10m in which the drums had been buried.
・The depth which the digging removal was carried out in aimed to be 1.1m depth and thickness. DDT(s) were detected in the drum digging after the first removal of the first range that were buried.
・The end of the drilling was to be performed based on the processing target of the oil odor intensity and was carried out to the oil pollution prevention guidelines. The processing goals were discussed and related to the institutions about the odor intensity.
・To guarantee oil degradation in disposal of it, there should be priority given to facilities such as cement factories and incineration and recycling plants.

・In addition to this, it was decided that agricultural chemicals 2,4,5-T and 2,4,5-TCP would be disposed of as there were agents of dioxins.
・From a viewpoint of Soil Pollution Control Measures Law, arsenic fluoride exceeded the initial-listing requirements value, since it was a natural cause, the object of measure does not carry any withdrawal.

5.3 About Stagnant Water

・The stagnant water had less respective amounts of dioxins than filtered water, the filtered water was higher at 150-pg-TEQ/L and 55pg-TEQ/L respectively. It is estimated to have been present in the form of absorbed particles such as particle dioxins the size of grains. For confirmation water was collected from a drain outlet at a football field and north of the field where the drums were buried and both to be analyzed for dioxins.

- For now, the drum burial places around stagnant water locations have a presence of unknown high results from the above survey, the next step is to investigate further and measure the high intensity around the location of the stagnant water, high density electrical prospecting will be used, an electrode will be placed on top of the line, then the electrical resistivity of the soil will be observed around the stagnant water area.
- 2,4-DCP, 2,4,5-TCP, 2,4,5-T and 2,4-D pesticides have been detected, but the regulation value and reference value in the environment is not known. However, material that is currently detected has a problem because agents of dioxins have been present. They will be treated as dioxins and based on additional findings as described above and the treatment and disposal. Since the survey was taken, the buried drums have been collected and it is considered that there is no possibility of an increase of the concentration of pesticides in the future. In addition any kinds of DDT have not been detected in the analysis.
- Further measures aren't necessary because the presence of PCB has not been detected.
- Heavy metals (arsenic) have exceeded the environmental standard but they are of a natural origin, this water isn't drinking water but more over stagnant water, it has been confirmed in the survey that there is no need for special measures.
- The circumference in which the drum was buried again had shifted slightly west from the movement of stagnant water, there is a layer of soil covering the stones underneath that have a low permeability with a depth of 5-8m, since it is so deep and think it is nearly impossible for the bank water to penetrate. Moreover, groundwater hasn't been seen even at a digging depth of 6.5m and at this depth the mixture of stone and clay are still present starting from 5.4m down. It is thought that the bank water hardly influences the ground water so there is no need to monitor it.
- Pathways of water beneath the surface can move small amounts over time, but usually only with the assistance of rain water or a flash flood (natural phenomenon).
- It is believed that the bank water which moved in this manner did so because it drained from the exhaust port on the north side of the football stadium, because of this concern dioxins were measured and the flow from this is monitored. The Water Pollution Control Law of the Okinawa Prefecture has decided with agencies that the frequency of this survey be once a year.
- As a result of Okinawa's analysis of the football field drainage on February 7, 2014, the results of dioxins found at the end of the survey was published.

- The Agriculture Ehime University's visiting Professor Masatoshi Morita, compiled the analysis summary of the results.

Excess Space Below

Old Kadena Air Fields（２５）Confirmation Soil Survey（Part２）

Analysis Results（1/3）

Sample（Drum）Number			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Determination Limit Value	Standard
Survey Item		Unit＼Extraction Day	Jan. 28	Jan. 28	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 30	Jan. 30	Jan. 30	Jan. 30		
Dioxins（Analysis in soil survey manual measurement）		Pg-TEQ/g	91	79	350	150	140	82	110	42	68	14	110	37	41	490	690	18	920	130	540	120	—	—
Polychlorinated biphenyls (soil)	Soil Elution Volume	mg/L	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	0. 0005	Not detected
	Content	mg/kg	1. 9	0. 5	4. 4	〈0. 5	0. 5	〈0. 5	〈0. 5	〈0. 5	〈0. 5	〈0. 5	0. 5	〈0. 5	〈0. 5	〈0. 5	〈0. 5	〈0. 5	〈0. 5	〈0. 5	〈0. 5	〈0. 5	0. 5	—
Attn:) Agricultural Chemicals	2,4−dichlorophenoxyacetic acid (2,4−D)	mg/kg	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 1	—
	2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	mg/kg	〈0. 1	〈0. 1	0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 7	0. 9	〈0. 1	〈0. 1	1. 1	0. 3	0. 1	2. 4	0. 1	1. 2	〈0. 1	0. 1	—
	2,4-D Butyl Ester	mg/kg	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 1	—
	2,4,5-T Butyl Ester	mg/kg	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 1	—
	2,4−dichlorophenol (2,4-DCP)	mg/kg	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 1	—
	2,4,5-trichlorophenol (2,4,5-TCP)	mg/kg	〈0. 1	〈0. 1	2. 7	0. 2	〈0. 1	〈0. 1	0. 4	〈0. 1	〈0. 1	47	0. 2	〈0. 1	〈0. 1	2. 9	3. 3	1. 8	55	〈0. 1	18	0. 2	0. 1	—
	Pentachlorophenol (PCP)	mg/kg	〈0. 1	〈0. 1	〈0. 1	0. 1	0. 1	〈0. 1	0. 2	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 2	〈0. 1	0. 1	〈0. 1	0. 1	—
	Cacodyl ate acid + sodium cacodyl ate (arsenic concentration)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 006	〈0. 002	0. 002	—
	Picloram	mg/kg	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 1	—
Total Arsenic (Content)		mg/kg	25	41	30	28	19	36	46	30	21	18	24	36	17	26	28	37	17	19	20	22	0.2	39mg/kg cap value
Arsenic (Content) (content by Soil Pollution Control Measures Law)		mg/kg	1. 8	1. 3	3. 9	1. 6	0. 6	1. 1	5. 0	3. 7	0. 8	5. 2	1. 2	1. 5	1. 5	1. 7	1. 6	8. 3	4. 7	1. 8	3. 2	1. 3	0. 2	150 mg/kg or less
Arsenic Factors (Eluate)	Arsenic Acid (arsenic concentration of 5 values)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 002	—
	Arsenious Acid (arsenic concentration of 3 values)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 002	—
	Mono-methylarsonic acid (as arsenic concentration)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 002	—
	Dimethylarsinic acid (as arsenic concentration)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 006	〈0. 002	0. 002	—
	Arsenobetaine (as arsenic concentration)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 002	—
Fluoride (content)		mg/kg	200	220	270	330	410	310	250	310	320	260	470	430	350	410	470	310	280	350	330	360	10	700mg/kg cap value
Oil	Oil（TPH）	mg/kg	〈100	200	9900	3400	〈100	〈100	4000	〈100	〈100	180000	4400	〈100	500	300	400	56000	250000	300	5300	〈100	100	—
	C_6〜C_{12}	mg/kg	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	76000	200	〈100	〈100	〈100	〈100	16000	51000	〈100	1100	〈100	—	—
	C_{12}〜C_{28}	mg/kg	〈100	100	8100	2600	〈100	〈100	3200	〈100	〈100	100000	3600	〈100	300	200	300	40000	130000	200	4100	〈100	—	—
	C_{28}〜C_{44}	mg/kg	〈100	〈100	〈100	800	〈100	〈100	300	〈100	〈100	2700	〈100	〈100	100	〈100	〈100	〈100	〈100	〈100	100	〈100	—	—

Note 1: In the result, the sign of inequality a column expresses, is less than the shown numerical value. Therefor the notes 1-3 are applied to all affixed results.
Note 2: The result of polychlorinated biphenyl showed the amount of elution based on the Soil Pollution Control Measures Law and the content result by low concentration of PCB content and waste.
Note 3: As for arsenic (based on content-Soil Pollution Control Measures Law), the content standard of the upper limit of all the arsenic content and the fluoride (content) is judged by soil capacity standards of the upper limit content at the time of PCB judging of contamination from natural origins.
Attn:)Notes: The agricultural-chemicals (qualitative analysis) results are shown on the attached sheet.

Analysis Results（2/3）

Sample（Drum）Number			21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Determination Limit Value	Standard
Survey Item		Unit/ Extraction Day	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31		
Dioxins（Analysis in soil survey manual measurement）		Pg-TEQ/g	110	160	370	200	120	260	430	1100	860	110	930	180	180	200	470	230	200	1100	530	270	—	—
Polychlorinated biphenyls (soil)	Soil Elution Content	mg/L	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	〈0. 0005	0. 0005	Not detected
		mg/kg	〈0. 5	0. 5	0. 7	〈0. 5	〈0. 5	〈0. 5	〈0. 5	2. 4	0. 7	〈0. 5	〈0. 5	1. 7	〈0. 5	0. 5	0. 6	2. 2	0. 7	5. 2	2. 3	〈0. 5	0. 5	—
Agricultural Chemicals	2,4−dichlorophenoxyacetic acid (2,4−D)	mg/kg	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 1	—
	2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	mg/kg	0. 2	〈0. 1	〈0. 1	0. 2	〈0. 1	〈0. 1	0. 3	32	0. 5	0. 6	0. 8	0. 6	〈0. 1	1. 0	0. 1	0. 5	2. 8	3. 1	3. 4	2. 2	0. 1	—
	2,4-D Butyl Ester	mg/kg	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 1	—
	2,4,5-T Butyl Ester	mg/kg	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 1	—
	2,4−dichlorophenol (2,4-DCP)	mg/kg	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 3	〈0. 1	〈0. 1	0. 1	—
	2,4,5-trichlorophenol (2,4,5-TCP)	mg/kg	8. 5	0. 1	0. 8	1. 1	0. 5	0. 1	0. 6	7. 1	3. 2	0. 6	5. 0	0. 2	0. 2	1. 0	0. 8	0. 7	0. 8	250	0. 5	1. 0	0. 1	—
	Pentachlorophenol (PCP)	mg/kg	0. 1	〈0. 1	0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 2	0. 1	〈0. 1	〈0. 1	0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 4	〈0. 1	〈0. 1	0. 1	—
	Cacodyl ate acid + sodium cacodyl ate (arsenic concentration)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 002	—
	Picloram	mg/kg	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	〈0. 1	0. 1	—
Arsenic (Content)		mg/kg	17	20	20	29	12	20	21	18	19	14	20	15	17	17	23	27	17	25	18	15	0.2	39mg/kg cap value
Arsenic (Content) (content by Soil Pollution Control Measures Law)		mg/kg	2. 2	1. 3	2. 7	4. 0	2. 7	3. 0	2. 3	3. 2	3. 2	3. 2	2. 5	1. 5	2. 2	1. 9	3. 2	4. 8	2. 8	2. 9	3. 1	2. 8	0. 2	150 mg/kg or less
Arsenic Factor (Eluate)	Arsenic Acid (arsenic concentration of 5 values)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 006	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 006	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 003	〈0. 002	〈0. 002	0. 003	0. 002	—
	Arsenious Acid (arsenic concentration of 3 values)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 002	—
	Mono-methylarsonic acid (as arsenic concentration)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 002	—
	Dimethylarsinic acid (as arsenic concentration)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 002	—
	Arsenobetaine (as arsenic concentration)	mg/L	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	〈0. 002	0. 002	—
Fluoride (content)		mg/kg	440	500	510	500	400	650	500	450	320	340	370	380	310	310	310	260	220	380	270	200	10	700mg/kg cap value
Oil	Oil（TPH）	mg/kg	170000	500	200	〈100	〈100	〈100	8400	5200	3100	700	3100	400	200	2900	300	800	300	8500	2600	300	100	—
	C_6〜C_{12}	mg/kg	23000	〈100	〈100	〈100	〈100	〈100	2000	400	〈100	300	〈100	〈100	〈100	200	〈100	〈100	〈100	1200	〈100	〈100	—	—
	C_{12}〜C_{28}	mg/kg	140000	400	200	〈100	〈100	〈100	6400	4100	2500	200	2500	300	200	2300	300	600	200	6700	2100	200	—	—
	C_{28}〜C_{44}	mg/kg	〈100	100	〈100	〈100	〈100	〈100	〈100	700	600	200	600	〈100	〈100	400	〈100	〈100	〈100	600	400	〈100	—	—

Analysis Results（3/3）

Sample（Drum）Number			41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	Determination Limit Value	Standard
Survey Item		Unit / Extraction Day	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31		
Dioxins（Analysis in soil survey manual measurement）		Pg-TEQ/g	1000	79	280	160	500	160	850	120	250	240	1700	340	2900	220	1200	270	380	270	800	440	460	—	—
Polychlorinated biphenyls (soil)	Soil Elution Content	mg/L	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	0.0005	Not detected
		mg/kg	〈0.5	〈0.5	2.4	〈0.5	〈0.5	〈0.5	〈0.5	〈0.5	〈0.5	1.0	1.7	〈0.5	〈0.5	〈0.5	0.6	〈0.5	0.5	0.6	〈0.5	〈0.5	〈0.5	0.5	—
Agricultural Chemicals	2,4−dichlorophenoxyacetic acid (2,4−D)	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	mg/kg	1.3	0.2	0.4	0.6	0.3	0.7	〈0.1	1.0	〈0.1	〈0.1	1.1	15	0.5	0.7	0.3	〈0.1	0.2	〈0.1	0.1	0.3	9.5	0.1	—
	2,4-D Butyl Ester	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4,5-T Butyl Ester	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4−dichlorophenol (2,4-DCP)	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4,5-trichlorophenol (2,4,5-TCP)	mg/kg	100	0.7	0.5	0.6	1.7	17	95	0.1	0.2	〈0.1	2.2	12	0.2	0.8	0.6	0.1	〈0.1	0.3	0.7	0.3	26	0.1	—
	Pentachlorophenol (PCP)	mg/kg	0.2	〈0.1	0.1	〈0.1	〈0.1	0.1	0.2	〈0.1	〈0.1	0.1	0.1	0.1	1.6	〈0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	—
	Cacodyl ate acid + sodium cacodyl ate (arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
	Picloram	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
Arsenic (Content)		mg/kg	23	10	22	18	16	18	9.8	20	20	21	19	19	20	24	24	18	21	20	22	22	18	0.2	39mg/kg cap value
Arsenic (Content) (content by Soil Pollution Control Measures Law)		mg/kg	2.5	1.5	2.3	2.0	4.4	4.7	1.8	3.5	2.5	1.8	1.6	2.2	2.5	4.5	4.1	1.9	3.1	2.0	4.6	4.2	1.7	0.2	150 mg/kg or less
Arsenic Factor (Eluate)	Arsenic Acid (arsenic concentration of 5 values)	mg/L	〈0.002	0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.004	0.009	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
	Arsenious Acid (arsenic concentration of 3 values)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
	Mono-methylarsonic acid (as arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
	Dimethylarsinic acid (as arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
	Arsenobetaine (as arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
Fluoride (content)		mg/kg	180	480	260	180	290	160	350	280	280	430	370	440	470	170	500	450	320	460	400	450	260	10	700mg/kg cap value
Oil	Oil（TPH）	mg/kg	4700	〈100	〈100	〈100	200	70000	6800	200	400	100	1000	300	〈100	〈100	〈100	〈100	〈100	2400	200	〈100	500	100	—
	C_6〜C_{12}	mg/kg	600	〈100	〈100	〈100	〈100	18000	900	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	—	—
	C_{12}〜C_{28}	mg/kg	3800	〈100	〈100	〈100	200	48000	5400	100	200	〈100	800	300	〈100	〈100	〈100	〈100	〈100	1300	200	〈100	400	—	—
	C_{28}〜C_{44}	mg/kg	300	〈100	〈100	〈100	〈100	4000	500	〈100	100	〈100	200	〈100	〈100	〈100	〈100	〈100	〈100	1000	〈100	〈100	〈100	—	—

Old Kadena Air Base（２５）Confirmation Soil Survey（Part２）

Items other than bottom soil investigation result-Soil Pollution Control Measures Law（1/2）

Sample（Drum）Number			1	2	4	8	10	11	12	13	14	15	17	18	19	20	21	23	24	25	28	31	Determination Limit Value	Standard
Survey Item		Unit/ Extraction Day	Jan. 28	Jan. 28	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 31		
Dioxins（Analysis in soil survey manual measurement）		Pg-TEQ/g	11	87	80	34	15	38	87	41	20	150	79	61	620	130	140	390	160	120	260	160	—	1000pg-TEQ/g or less
Polychlorinated biphenyls (soil)	Soil Elution Content	mg/L	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	0.0005	Not detected
		mg/kg	〈0.5	〈0.5	0.9	〈0.5	〈0.5	0.9	〈0.5	〈0.5	〈0.5	0.5	1.3	〈0.5	〈0.5	〈0.5	〈0.5	〈0.5	〈0.5	〈0.5	〈0.5	1.9	0.5	—
Agricultural Chemicals	2,4−dichlorophenoxyacetic acid (2,4−D)	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	〈0.1	7.7	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4-D Butyl Ester	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4,5-T Butyl Ester	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4−dichlorophenol (2,4-DCP)	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4,5-trichlorophenol (2,4,5-TCP)	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	2.4	〈0.1	43	〈0.1	0.1	〈0.1	0.6	〈0.1	2.5	0.7	0.1	—
	Pentachlorophenol (PCP)	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	〈0.1	〈0.1	0.1	〈0.1	0.1	0.1	〈0.1	0.1	—
	Cacodyl ate acid + sodium cacodyl ate (arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	0.003	0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.007	〈0.002	〈0.002	〈0.002	0.007	〈0.002	〈0.002	〈0.002	〈0.002	0.002	0.002	—
	Picloram	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
Arsenic (Content)		mg/kg	27	21	22	20	24	28	22	20	25	20	18	24	25	24	22	19	16	17	26	22	0.2	39mg/kg cap value
Arsenic (Content) (content by Soil Pollution Control Measures Law)		mg/kg	2.0	1.3	2.2	3.1	1.7	0.8	1.7	2.6	1.3	1.5	4.0	2.5	1.7	2.3	4.5	2.4	2.4	1.9	3.8	2.3	0.2	150 mg/kg or less
Arsenic Factor (Eluate)	Arsenic Acid (arsenic concentration of 5 values)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.006	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	0.002	〈0.002	〈0.002	0.002	—
	Arsenious Acid (arsenic concentration of 3 values)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
	Mono-methylarsonic acid (as arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
	Dimethylarsinic acid (as arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	0.003	0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.007	〈0.002	〈0.002	〈0.002	0.007	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
	Arsenobetaine (as arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
Fluoride (content)		mg/kg	230	220	450	280	280	360	300	230	260	300	210	260	260	520	200	170	170	200	130	330	10	700mg/kg cap value
Oil	Oil（TPH）	mg/kg	〈100	〈100	〈100	500	〈100	〈100	〈100	〈100	〈100	〈100	9300	〈100	7100	〈100	6900	〈100	〈100	〈100	200	〈100	100	—
	C_6〜C_{12}	mg/kg	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	2100	〈100	1000	〈100	1700	〈100	〈100	〈100	〈100	〈100	—	—
	C_{12}〜C_{28}	mg/kg	〈100	〈100	〈100	400	〈100	〈100	〈100	〈100	〈100	〈100	7200	〈100	5600	〈100	5200	〈100	〈100	〈100	200	〈100	—	—
	C_{28}〜C_{44}	mg/kg	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	〈100	500	〈100	〈100	〈100	〈100	〈100	〈100	〈100	—	—

Note 1: In the result, the sign of inequality a column expresses, is less than the shown numerical value. Therefor the notes 1-3 are applied to all affixed results.
Note 2: The result of polychlorinated biphenyl showed the amount of elution based on the Soil Pollution Control Measures Law and the content result by low concentration of PCB content and waste.
Note 3: As for arsenic (based on content-Soil Pollution Control Measures Law), the content standard of the upper limit of all the arsenic content and the fluoride (content) is judged by soil capacity standards of the upper limit content at the time of PCB judging of contamination from natural origins.
Attn:)Notes: The agricultural-chemicals (qualitative analysis) results are shown on the attached sheet.

Items other than bottom soil investigation result-Soil Pollution Control Measures Law（2/2）

Sample（Drum）Number			32	34	37	39	41	44	46	54	57	Determination Limit Value	Standard
Survey Item		Unit/ Extraction Day	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31		
Dioxins（Analysis in soil survey manual measurement）		Pg-TEQ/g	200	30	190	200	140	120	83	97	140	—	1000pg-TEQ/g or less
Polychlorinated biphenyls (soil)	Soil Elution Content	mg/L	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	〈0.0005	0.0005	Not detected
		mg/kg	〈0.5	〈0.5	1.1	3.3	〈0.5	〈0.5	〈0.5	〈0.5	〈0.5	0.5	—
Agricultural Chemicals	2,4−dichlorophenoxyacetic acid (2,4−D)	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	mg/kg	0.2	0.1	〈0.1	1.2	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4-D Butyl Ester	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4,5-T Butyl Ester	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4−dichlorophenol (2,4-DCP)	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
	2,4,5-trichlorophenol (2,4,5-TCP)	mg/kg	1.4	0.7	0.2	1.0	4.2	0.8	4.2	0.4	〈0.1	0.1	—
	Pentachlorophenol (PCP)	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	0.1	—
	Cacodyl ate acid + sodium cacodyl ate (arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.005	〈0.002	〈0.002	0.002	—
	Picloram	mg/kg	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	〈0.1	0.1	—
Arsenic (Content)		mg/kg	20	24	24	24	24	21	18	25	20	0.2	39mg/kg cap value
Arsenic (Content) (content by Soil Pollution Control Measures Law)		mg/kg	2.8	2.2	2.9	3.8	2.2	3.1	2.6	1.6	3.0	0.2	150 mg/kg or less
Arsenic Factor (Eluate)	Arsenic Acid (arsenic concentration of 5 values)	mg/L	0.005	〈0.002	0.003	〈0.002	〈0.002	0.013	〈0.002	〈0.002	〈0.002	0.002	—
	Arsenious Acid (arsenic concentration of 3 values)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
	Mono-methylarsonic acid (as arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
	Dimethylarsinic acid (as arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.005	〈0.002	〈0.002	0.002	—
	Arsenobetaine (as arsenic concentration)	mg/L	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	〈0.002	0.002	—
Fluoride (content)		mg/kg	270	320	320	300	270	260	350	380	340	10	700mg/kg cap value
Oil	Oil（TPH）	mg/kg	1400	6300	400	1400	300	〈100	7500	200	〈100	100	—
	C_6〜C_{12}	mg/kg	〈100	1500	〈100	〈100	〈100	〈100	1700	〈100	〈100	—	—
	C_{12}〜C_{28}	mg/kg	1100	4800	300	1100	300	〈100	5800	〈100	〈100	—	—
	C_{28}〜C_{44}	mg/kg	〈100	〈100	〈100	300	〈100	〈100	〈100	100	〈100	—	—

Old Kadena Air Base（２５）Confirmation Soil Survey（Part２）

Bottom soil survey results（Related to the Soil Contamination Countermeasures Act（1/2）

		Sample (drums) number		1	2	4	8	10	11	12	13	14	15	17	18	19	20	21	23	Lower limit of quantitation	The specified standard
		Certain types of hazardous substances	Unit＼Extraction Day	Jan. 28	Jan. 28	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30		
Elution volume	The First Type of Hazardous Substances	Carbon tetrachloride	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.002mg/L or less than
		1,2 - dichloroethane	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.004mg/L or less than
		1,1 - dichloroethylene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.02mg/L or less than
		Cis-1 ,2 - dichloroethylene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.04mg/L or less than
		1,3 - dichloropropene	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.002mg/L or less than
		Dichloromethane	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.02mg/L or less than
		Tetrachlorethylene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.01mg/L or less than
		1,1,1 - trichloroethane	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	1mg/L or less than
		1,1,2 - trichloroethane	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.006mg/L or less than
		Trichlorethylene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.03mg/L or less than
		Benzene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.01mg/L or less than
	The Second Type of Hazardous Substances	Cadmium and its compounds	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.01mg/L or less than
		Hexavalent chromium compound	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	0.05mg/L or less than
		Cyanide	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	May not be detected
		Mercury and its compounds	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.0005mg/L or less than
		Selenium and its compounds	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.01mg/L or less than
		Lead and its compounds	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.01mg/L or less than
		Arsenic and its compounds	mg/L	0.003	<0.002	<0.002	.007	0.004	<0.002	<0.002	0.009	<0.002	<0.002	0.014	<0.002	<0.002	<0.002	0.019	0.003	0.002	0.01mg/L or less than
		Fluorine and its compounds	mg/L	0.24	0.76	1.0	0.24	0.24	0.91	0.58	0.69	0.46	0.79	0.37	0.82	0.60	0.78	0.62	1.5	0.05	0.8mg/L or less than
		Boron and its compounds	mg/L	0.02	<0.01	0.01	<0.01	0.01	<0.01	0.01	0.03	<0.01	0.01	0.01	0.01	<0.01	0.01	0.01	<0.01	0.01	1mg/L or less than
	Third type of Hazardous Substances	Simazine	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0003	0.003mg/L or less than
		Thiobencarb	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.02mg/L or less than
		Thiuram	mg/L	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0006	0.006mg/L or less than
		Polychlorinated biphenyls	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	May not be detected
		Organophosphorus compound	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	May not be detected
Content	The second type Hazardous Substances	Cadmium and its compounds	mg/kg	<0.1	0.1	0.1	0.1	<0.1	<0.1	0.1	0.2	<0.1	0.1	0.1	0.1	<0.1	<0.1	<0.1	0.1	0.1	150mg/kg or less than
		Hexavalent chromium compound	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	250mg/kg or less than
		Cyanide	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	Or free of cyanide 50mg/kg or less than
		Mercury and its compounds	mg/kg	<0.01	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	15mg/kg or less than
		Selenium and its compounds	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	150mg/k or less than
		Lead and its compounds	mg/kg	16	26	27	34	11	7	44	28	12	32	23	15	9	14	26	15	1	150mg/kg or less than
		Arsenic and its compounds	mg/kg	2.0	1.3	2.2	3.1	1.7	0.8	1.7	2.6	1.3	1.5	4.0	2.5	1.7	2.3	4.5	2.4	0.2	150mg/kg or less than
		Fluorine and its compounds	mg/kg	12	25	29	23	6	14	26	37	9	30	29	26	7	20	21	40	2	4000mg/kg or less than
		Boron and its compounds	mg/kg	1	1	<1	1	<1	<1	1	2	<1	1	1	1	<1	<1	<1	<1	1	4000mg/kg or less than

Note 1： Inequality in the column represents a number less than the indicated results. Below, apply to all bottom soil survey results of 1-4 notes.

Note 2： The yellow shaded results are shown as a non-compliance of specified criteria.

Note 3： Specified criteria column of leaching cyanide compounds such as: polychlorinated biphenyls and organic phosphorus that not found in specified standards of compounds, drop below the lower limit of the determination of the relevant test methods. Cyanide compounds and organic phosphorus compounds quantitation limit is 0.1 mg/l, 0.0005 mg/l the lower limit of determination in polychlorinated biphenyls.

Note 4： Criteria for designation of mercury and its compounds (Elution volume) are 0.0005 mg/l or less when mercury and alkyl mercury is not detected. To measure alkyl mercury when discovered the mercury measurement needs be to clear of any alkyl mercury pollution that is shown by the Environment Ministry guidelines.

Old Kadena Air Base（２５）Confirmation Soil Survey（Part２）

Bottom soil survey results（Related to the Soil Contamination Countermeasures Act 2/2）

Category	Type	Sample (drums) number		24	25	28	31	32	34	37	39	41	44	46	54	57	Lower limit of quantitation	The specified standard
		Certain types of hazardous substances	Unit＼Extraction Day	Jan. 30	Jan. 30	Jan. 30	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31		
Elution volume	The First Type of Hazardous Substances	Carbon tetrachloride	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.002mg/L or less than
		1,2 - dichloroethane	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.004mg/L or less than
		1,1 - dichloroethylene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.02mg/L or less than
		Cis-1 ,2 - dichloroethylene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.04mg/L or less than
		1,3 - dichloropropene	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.002mg/L or less than
		Dichloromethane	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.02mg/L or less than
		Tetrachlorethylene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.01mg/L or less than
		1,1,1 - trichloroethane	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	1mg/L or less than
		1,1,2 - trichloroethane	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.006mg/L or less than
		Trichlorethylene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.03mg/L or less than
		Benzene	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.01mg/L or less than
	The Second Type of Hazardous Substances	Cadmium and its compounds	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.01mg/L or less than
		Hexavalent chromium compound	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	0.05mg/L or less than
		Cyanide	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	May not be detected
		Mercury and its compounds	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.0005mg/L or less than
		Selenium and its compounds	mg/L	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	0.001	0.01mg/L or less than
		Lead and its compounds	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.01mg/L or less than
		Arsenic and its compounds	mg/L	0.004	0.004	0.002	0.004	0.009	0.003	0.007	0.002	<0.002	0.018	0.011	<0.002	0.003	0.002	0.01mg/L or less than
		Fluorine and its compounds	mg/L	1.9	0.94	1.6	0.49	0.40	0.82	1.9	1.3	0.89	0.99	0.63	1.0	2.1	0.05	0.8mg/L or less than
		Boron and its compounds	mg/L	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.03	<0.01	<0.01	0.02	0.01	1mg/L or less than
	Third type of Hazardous Substances	Simazine	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0003	0.003mg/L or less than
		Thiobencarb	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.02mg/L or less than
		Thiuram	mg/L	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0006	0.006mg/L or less than
		Polychlorinated biphenyls	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	May not be detected
		Organophosphorus compound	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	May not be detected
Content	The second type Hazardous Substances	Cadmium and its compounds	mg/kg	0.4	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	<0.1	0.1	0.1	150mg/kg or less than
		Hexavalent chromium compound	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	250mg/kg or less than
		Cyanide	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	Or free of cyanide 50mg/kg or less than
		Mercury and its compounds	mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	15mg/kg or less than
		Selenium and its compounds	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	150mg/k or less than
		Lead and its compounds	mg/kg	22	39	16	13	18	9	14	56	11	17	18	8	14	1	150mg/kg or less than
		Arsenic and its compounds	mg/kg	2.4	1.9	3.8	2.3	2.8	2.2	2.9	3.8	2.2	3.1	2.6	1.5	3.0	0.2	150mg/kg or less than
		Fluorine and its compounds	mg/kg	120	71	48	12	30	11	57	76	27	45	38	31	85	2	4000mg/kg or less than
		Boron and its compounds	mg/kg	2	2	1	<1	2	<1	1	3	1	2	<1	<1	1	1	4000mg/kg or less than

Old Kadena Air Base（２５）Soil Analysis （Part２）

Stagnant Water Results

Survey Items		Sampling Day	Jan.30		February 1		Limit Value
		Unit	Unfiltered	Filtered	Unfiltered	Filtered	
Suspended Matter (SS)		mg/L	540	-	12	-	1
Dioxins		pg-TEQ/L	-	-	150	55	-
Polychlorinated Biphenyls		mg/L	-	-	<0.0005	<0.0005	0.0005
Agricultural Chemicals	2,4−dichlorophenoxyacetic acid (2,4−D)	mg/L	<0.0005	<0.0005	0.0034	0.0031	0.0005
	2,4,5-trichlorophenoxyacetic acid (2,4,5-T)	mg/L	0.19	0.16	2.4	2.3	0.0005
	2,4-D Butyl Ester	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	0.0005
	2,4,5-T Butyl Ester	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	0.0005
	2,4−dichlorophenol(2,4-DCP)	mg/L	<0.0005	<0.0005	0.0072	0.0055	0.0005
	2,4,5-trichlorophenol (2,4,5-TCP)	mg/L	0.13	0.12	4.4	3.6	0.0005
	Pentachlorophenol (PCP)	mg/L	<0.0005	<0.0005	0.0009	0.0007	0.0005
	Cacodyl ate acid + sodium cacodyl ate (arsenic concentration)	mg/L	-	-	<0.002	<0.002	0.002
	Picloram	mg/L	-	-	<0.001	<0.001	0.001
Arsenic Factors (Eluate)	Arsenic (arsenic concentration)	mg/L	-	-	0.011	0.011	0.002
	Sub-arsenic (arsenic concentration)	mg/L	-	-	<0.002	<0.002	-
	Monomethylarsonous acid (arsenic concentration)	mg/L	-	-	<0.002	<0.002	-
	Dimethylarsinic acid (arsenic concentration)	mg/L	-	-	<0.002	<0.002	-
	Arsenobetaine (arsenic concentration)	mg/L	-	-	<0.002	<0.002	-
Oil	Normal hexane extraction materials	mg/L	-	-	<0.5	-	0.5
	Oil (TPH)	mg/L	<100	-	-	-	100
	C6～C12	mg/L	<100	-	-	-	100
	C12～C28	mg/L	<100	-	-	-	100
	C28～C44	mg/L	<100	-	-	-	100

Note 1: In the result, the sign of inequality a column expresses, is less than the shown numerical value.
Note 2: May 1st water remarks: water sampling was about 3L because of the oil odor in the field, oil film/slick was observed in the field.
Analysis items focusing on the oil and oil(TPH), and other such pesticides such as 2,4-D, 2,4,5-T and PCP.

Old Kadena Air Base（２５）Soil Analysis （Part２）

Bottom-Deposit Soil Survey Results

Sample（drum）Number			13	Quantification Limits	Standards
Survey Item	Medium	Unit＼Extraction Day	Jan.28		
Malathion	Deposit	mg/kg	<0.1	0.1	None
	Bottom Soil	mg/kg	<0.1	0.1	

Note: In the result, the sign of inequality a column expresses, is less than the shown numerical value.

Qualitative Analysis Result Table

Drum Deposits

Chemical Substances/ Sample No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Hydrocarbon Transfer Lock	+	+	++	+	+	+	++	+	+	+++++	+	+	+	+	+	+++	+++++	+	+	+
Benzene Derivative	+	+	+	+	+	+	+	+	+	+++++	+	+	+	+	+	+++++	+++++	+	+	+
Naphthalene Derivative	+	+	+++++	+++	+	+	++	+	+	+++++	+++++	+	+	+	++	+++++	+++++	+	+++++	+
Polycyclic Aromatic	+	+	+	+	+	+	+	+	+	+++++	++	+	+	+	+	+++++	++	+	+	+
Trichlorophenoxy Derivative	-	-	+	+	-	-	+	-	-	++	-	-	-	+	+	++	+++	-	+	-
PCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorinated Insecticides	-	-	-	+++++	+	+	+	-	-	-	+	-	-	-	-	-	-	+	-	+

Drum Bottom Soil

Chemical Substances/ Sample No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Hydrocarbon Transfer Lock	-	-		+				+		+	-	-	-	-	-		+	+	+	-
Benzene Derivative	+	+		-				+		+	-	-	-	-	-		-	-	-	-
Naphthalene Derivative	-	-		+				+		+	-	-	-	-	-		++	-	++++	-
Polycyclic Aromatic	-	-		-				+		+	-	+	-	+	-		+	-	+	-
Trichlorophenoxy Derivative	-	-		-				-		-	-	-	-	-	-		+	-	+	-
PCP	-	-		-				-		-	-	-	-	-	-		-	-	-	-
Chlorinated Insecticides	-	-		+				-		+	-	+	-	-	-		-	-	+	-

Drum Deposits

Chemical Substances/ Sample No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Hydrocarbon Transfer Lock	+++++	+	+	+	+	+	-	+	+	+	+	+	-	+	+	+	+	-	+	+
Benzene Derivative	+++++	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Naphthalene Derivative	+++++	+	+	+	+	+	+	+++++	++++	+	+++++	+	+	+++++	+	++	+	+++++	+	+
Polycyclic Aromatic	+++++	-	+	+	+	+	+	+	+	+	++	+	+	+	+	+	+	+	+	+
Trichlorophenoxy Derivative	+	-	-	-	-	-	-	++	+	+	+	-	-	-	-	-	-	+++	-	-
PCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorinated Insecticides	-	-	+	-	-	-	-	-	+	-	+	+	+	+++	+	+	+	+	+	+

Drum Bottom Soil

Chemical Substances/ Sample No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Hydrocarbon Transfer Lock	-		+	-	-			+			-	+		-			-		+	
Benzene Derivative	-		-	-	-			-			-	-		-			-		-	
Naphthalene Derivative	++++		+	-	-			+			+	++		++			+		+	
Polycyclic Aromatic	+		+	-	-			+			+	+		+			+		+	
Trichlorophenoxy Derivative	-		-	-	-			+			-	+		-			-		+	
PCP	-		-	-	-			-			-	-		-			-		-	
Chlorinated Insecticides	-		-	-	-			-			+	+		++			+		+	

Drum Deposits

Chemical Substances/ Sample No.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Hydrocarbon Transfer Lock	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-	-	+	-	-
Benzene Derivative	+	+	+	+	+	+++	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Naphthalene Derivative	+++++	+	+	+	+	+++++	+++++	+	+	+	+	+	+	+	++	+	+	+	+	+
Polycyclic Aromatic	+++	-	+	+	+	+++++	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Trichlorophenoxy Derivative	++	-	-	-	-	-	++++	-	-	-	+	+	-	-	-	-	-	-	-	-
PCP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorinated Insecticides	+	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Drum Bottom Soil

Chemical Substances/ Sample No.	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Hydrocarbon Transfer Lock	+			+		+								-			-			
Benzene Derivative	-			-		-								-			-			
Naphthalene Derivative	+			+		++								-			-			
Polycyclic Aromatic	+			+		+								-			-			
Trichlorophenoxy Derivative	+			-		+								-			-			
PCP	-			-		-								-			-			
Chlorinated Insecticides	-			-		-								-			-			

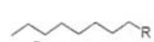
Drum Deposits

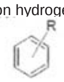
Chemical Substances/ Sample No.	61
Hydrocarbon Transfer Lock	-
Benzene Derivative	+
Naphthalene Derivative	+
Polycyclic Aromatic	+
Trichlorophenoxy Derivative	+
PCP	-
Chlorinated Insecticides	-

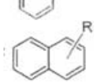
Drum Bottom Soil

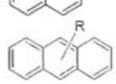
Chemical Substances/ Sample No.	61
Hydrocarbon Transfer Lock	
Benzene Derivative	
Naphthalene Derivative	
Polycyclic Aromatic	
Trichlorophenoxy Derivative	
PCP	
Chlorinated Insecticides	

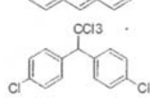
Remark1: Indicates that the compound could not be identified in the qualitative analysis.
Remark 2: Chemical name (any substituent shows structural formula in 'R')

- Straight-chain hydrocarbon hydrogen compounds : 

Chemical Substances combined with carbon series
- Benzene Derivatives : 

A group of chemicals that some substituents are attached to a benzene ring.
- Naphthalene Derivatives : 

A group of chemicals some substituents were attached to the naphthalene ring.
- Polycyclic Aromatic : 

A Group of chemicals that the benzene ring has bonded to three or more as anthracene.
- Chlorine Insecticide : 

Not currently used) Chlorine insecticides typified by DDT (Cl) is attached.

Classification	
	+++++
	++++
	+++
	++
	+
	-

Old Kadena Air Fields（２５）Analysis of soil（Part 2）

The quantitative-analysis results of DDT(s) detected by qualitative analysis (drum deposit)

Sample (drums) number		4	5	6	7	11	18	20	23	29	31	32	33	34	35	36	Lower Limit Quantitation Value	Guideline Value
Full DDT isomer species	Unit＼Extraction Day	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31		
DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	Soil concentrations (content) expands to 50mg/kg or less 0.26mg/L or less as a treatment guideline value Soil concentrations (dissolution) expands to 0.26mg/L or less
DDD	mg/kg	180	0.5	0.2	1.9	3.4	1.2	0.2	0.5	1.7	3.3	9.4	0.8	100	0.3	0.7	0.1	
DDE	mg/kg	73	<0.1	<0.1	0.7	1.6	0.4	0.1	0.8	<0.1	<0.1	3.1	0.6	36	0.9	1.6	0.1	
DDT Aggregate amount	mg/kg	250	0.7	0.4	2.7	5.1	1.7	0.4	1.4	1.9	3.5	12	1.5	130	1.3	2.4	-	(The amount of DDT, DDD, DDE)

Note 1: In a result, the sign of inequality of a column that expresses less than the shown numerical value, therefore it is the same.
Note 2: The grand total of (valid 2 digits) DDT, DDD, DDE when calculated is lower limit than the quantification value, then all three items were used as a lower limit of determination, less than the total sum at the time of calculation.
※The guideline value was based on the separate attachment 7 an environment management guideline value list about agricultural chemicals, the Ministry of Environment water on airborne issues, such as burial agricultural-chemicals investigation and digging.
If added shading to the result and it exceeds the soil concentration guideline value of 50 mg/kg, then it is shown.

Sample (drums) number		37	38	39	40	41	44	Lower Limit Quantitation Value	Guideline Value
Full DDT isomer species	Unit＼Extraction Day	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31		
DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	Soil concentrations (content) expands to 50mg/kg or less 0.26mg/L or less as a treatment guideline value Soil concentrations (dissolution) expands to 0.26mg/L or less
DDD	mg/kg	7.2	2.3	1.5	1.0	1.0	0.4	0.1	
DDE	mg/kg	2.3	8.2	0.7	0.4	<0.1	0.1	0.1	
DDT Aggregate amount	mg/kg	9.6	10	2.3	1.5	1.2	0.6	-	(The amount of DDT, DDD, DDE)

The quantitative-analysis results of DDT(s) detected by qualitative analysis (drum deposit)

Sample (drums) number		4	10	12	19	31	32	34	37	39	Lower Limit Quantitation Value	Guideline Value
Full DDT isomer species	Unit＼Extraction Day	Jan. 29	Jan. 29	Jan. 29	Jan. 30	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31		
DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	Soil concentrations (content) expands to 50mg/kg or less 0.26mg/L or less as a treatment guideline value Soil concentrations (dissolution) expands to 0.26mg/L or less
DDD	mg/kg	<0.1	0.3	0.2	0.4	0.3	0.8	61	19	17	0.1	
DDE	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	20	6.1	0.5	0.1	
DDT Aggregate amount	mg/kg	<0.1	0.5	0.4	0.6	0.5	1.0	81	25	17	-	(The amount of DDT, DDD, DDE)

Old Kadena Air Fields（２５）Soil Survey Confirmation（Part２）

Soil Profile Survey Results (Soil Gas Survey Results)

Actual survey applied on: November 07th, 08th, 2013

Substance		A1-7	A2-4	B1-5	B2-5	B3-5	C1-5	C2-5	C3-5	D1-5	D2-5	D3-5	E1-5	E2-5	E3-5	F1-5	F2-5	F3-5	G1-5	G2-5	G3-3	H1-5	H2-2	I1-9
	Place Names	A1-7	A2-4	B1-5	B2-5	B3-5	C1-5	C2-5	C3-5	D1-5	D2-5	D3-5	E1-5	E2-5	E3-5	F1-5	F2-5	F3-5	G1-5	G2-5	G3-3	H1-5	H2-2	I1-9
	Survey date	Nov. 7	Nov. 7	Nov. 7	Nov. 7	Nov. 7	Nov. 7	Nov. 7	Nov. 7	Nov. 7	Nov. 7	Nov. 7	Nov. 7	Nov. 7	Nov. 7	Nov. 8	Nov. 8	Nov. 8	Nov. 8	Nov. 8	Nov. 8	Nov. 8	Nov. 8	Nov. 8
	Set Time	13:08	13:15	13:24	13:28	13:33	13:38	13:44	13:48	15:06	15:11	15:17	15:26	15:29	15:39	9:47	9:55	10:01	10:07	10:18	10:30	11:26	11:37	11:42
	Inoculation Time	13:54	13:57	14:04	14:09	14:14	14:20	14:25	14:29	15:42	15:53	15:59	16:08	16:12	16:21	10:34	10:38	10:41	10:48	11:00	11:11	12:08	12:18	12:27
Carbon tetrachloride		Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable
1,2-dichloroethane		Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable
1,1−dichloroethylene		Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable
CIS-1, 2-dichloroethylene		Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable
1,3-dichloropropene		Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable
Dichloromethane	volppm	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable
Tetrachlorethylene		Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable
1,1,1-trichloroethane		Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable
1,1,2−trichloroethane		Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable
Trichlorethylene		Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable
Benzene		Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable

Note: To No. 16 in March, The ministry of Environment stated, a determination limit value is set to 0.1vplppm about the objective substances other than benzene and is set to 0.005volppm, anything less is not detectable.

Old Kadena Air Fields（２５）Soil Survey Confirmation（Part２）

Overview of soil survey results（1/2）

Category	Type	Point number	Unit	A1	A2	B1	B2	B3	C1	C2	C3	D1	D2	D3	E1	E2	Lower limit of quantitation	The specified standard
		Sampling method		Point survey	Point-to-point mixing method	5 point mixing method	5 point mixing method	5 point mixing method	5 point mixing method	5 point mixing method	5 point mixing method	5 point mixing method	5 point mixing method	5 point mixing method	5 point mixing method	5 point mixing method		
		Soil date of collection		11/11	11/11	11/11～11/12	11/11～11/12	11/11～11/12	11/12	11/12	11/12	11/12	11/12	11/12	11/12	11/13		
		Date of analysis		11/11～11/28	11/11～11/28	11/11～11/28	11/11～11/28	11/11～11/28	11/12～11/28	11/12～11/28	11/12～11/28	11/12～11/28	11/12～11/28	11/12～11/28	11/12～11/28	11/13～11/28		
Elution volume	The Second type of Hazardous Substances	Cadmium and its compounds	(mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.01mg/L or less than
		Hexavalent chromium compound	(mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	0.05mg/L or less than
		Cyanide	(mg/L)	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	0.1	May not be detected
		Mercury and its compounds	(mg/L)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	See Note 2
		Selenium and its compounds	(mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.01mg/L or less than
		Lead and its compounds	(mg/L)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.01mg/L or less than
		Arsenic and its compounds	(mg/L)	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.01mg/L or less than
		Fluorine and its compounds	(mg/L)	0.15	0.32	0.29	0.28	0.20	0.19	0.22	0.30	0.19	0.25	0.32	0.28	0.24	0.05	0.8mg/L or less than
		Boron and its compounds	(mg/L)	0.02	0.02	0.01	0.01	<0.01	0.03	0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	1mg/L or less than
	The Third type of Hazardous Substances	Simazine	(mg/L)	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0003	0.003mg/L or less than
		Thiobencarb	(mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.02mg/L or less than
		Thiuram	(mg/L)	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0006	0.006mg/L or less than
		Polychlorinated biphenyls	(mg/L)	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	0.0005	May not be detected
		Organophosphorus compound	(mg/L)	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	0.1	May not be detected
Content	The Second type of Hazardous Substances	Cadmium and its compounds	(mg/kg)	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	150mg/kg or less than
		Hexavalent chromium compound	(mg/kg)	<0.5	<0.5	<0.5	0.9	<0.5	0.5	<0.5	1.4	0.7	0.8	<0.5	0.6	<0.5	0.5	250mg/kg or less than
		Cyanide	(mg/kg)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	Or free of cyanide 50mg/kg or less than
		Mercury and its compounds	(mg/kg)	0.01	0.01	<0.01	0.01	0.01	<0.01	<0.01	0.01	0.01	0.01	0.02	<0.01	0.02	0.01	15mg/kg or less than
		Selenium and its compounds	(mg/kg)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	150mg/kg or less than
		Lead and its compounds	(mg/kg)	7	5	6	7	5	8	11	7	6	9	7	8	5	1	150mg/kg or less than
		Arsenic and its compounds	(mg/kg)	1.5	1.5	1.8	1.2	1.3	1.4	1.2	1.4	1.1	1.2	1.1	1.5	1.2	0.2	150mg/kg or less than
		Fluorine and its compounds	(mg/kg)	33	150	140	33	19	23	10	53	8	4	11	20	10	2	4000mg/kg or less than
		Boron and its compounds	(mg/kg)	2	10	8	1	2	2	<1	4	<1	1	1	1	1	1	4000mg/kg or less than

Note 1 : Specified criteria column of leaching cyanide compounds such as: polychlorinated biphenyls and organic phosphorus that not found in specified standards of compounds, drop below the lower limit of the determination of the relevant test methods. Cyanide compounds and organic phosphorus compounds quantitation limit is 0.1 mg/l, 0.0005 mg/l the lower limit of determination in polychlorinated biphenyls. Below, apply to all soil Overview findings of 1-4 notes.

Note 2 : Criteria for designation of mercury and its compounds (Elution volume) are 0.0005 mg/l or less when mercury and alkyl mercury is not detected. To measure alkyl mercury when discovered the mercury measurement needs be to clear of any alkyl mercury pollution that is shown by the Environment Ministry guidelines.

Note 3 : Analytical results less than the indicated number (= quantitative lower bound value) are less than the representing. The quantitation limit of each item was consulted with the Okinawa City designated contractor to determine the value.

Note 4 : The sampling method column indicated as "Point Survey" sampling point represents the results of only one point.

Overview of soil survey results（2/2）

Category	Type	Point number	Unit	E3	F1	F2	F3	G1	G2	G3	H1	H2	I1	Lower limit of quantitation	The specified standard
		Sampling method		5 point mixing method	5 point mixing method	5 point mixing method	4 point mixing method	5 point mixing method	5 point mixing method	Point survey	5 point mixing method	4 point mixing method	Point survey		
		Soil date of collection		11/13	11/13	11/13	11/13	11/13～11/14	11/13～11/14	11/13	11/14	11/14	11/14		
		Date of analysis		11/13～11/28	11/13～11/28	11/13～11/28	11/13～11/28	11/13～11/28	11/13～11/28	11/13～11/28	11/14～11/28	11/14～11/28	11/14～11/28		
Elution volume	The Second type of Hazardous Substances	Cadmium and its compounds	(mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.01mg/L or less than
		Hexavalent chromium compound	(mg/L)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	0.05mg/L or less than
		Cyanide	(mg/L)	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	0.1	May not be detected
		Mercury and its compounds	(mg/L)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	See Note 2
		Selenium and its compounds	(mg/L)	<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.01mg/L or less than
		Lead and its compounds	(mg/L)	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.002	<0.002	<0.002	0.002	0.01mg/L or less than
		Arsenic and its compounds	(mg/L)	<0.002	0.004	0.005	<0.002	0.003	0.002	0.007	0.010	0.003	0.008	0.002	0.01mg/L or less than
		Fluorine and its compounds	(mg/L)	0.29	0.22	0.28	0.26	0.24	0.25	0.31	0.18	0.07	0.05	0.05	0.8mg/L or less than
		Boron and its compounds	(mg/L)	<0.01	0.04	0.04	0.01	0.01	0.01	0.02	0.01	0.01	0.03	0.01	1mg/L or less than
	The Third type of Hazardous Substances	Simazine	(mg/L)	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0003	0.003mg/L or less than
		Thiobencarb	(mg/L)	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.02mg/L or less than
		Thiuram	(mg/L)	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0006	0.006mg/L or less than
		Polychlorinated biphenyls	(mg/L)	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	0.0005	May not be detected
		Organophosphorus compound	(mg/L)	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	Not detectable	0.1	May not be detected
Content	The Second type of Hazardous Substances	Cadmium and its compounds	(mg/kg)	<0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	<0.1	0.1	0.1	150mg/kg or less than
		Hexavalent chromium compound	(mg/kg)	<0.5	2.1	1.0	<0.5	1.3	<0.5	<0.5	1.2	<0.5	<0.5	0.5	250mg/kg or less than
		Cyanide	(mg/kg)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	Or free of cyanide 50mg/kg or less than
		Mercury and its compounds	(mg/kg)	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.01	15mg/kg or less than
		Selenium and its compounds	(mg/kg)	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	150mg/kg or less than
		Lead and its compounds	(mg/kg)	5	7	11	13	7	9	8	9	9	9	1	150mg/kg or less than
		Arsenic and its compounds	(mg/kg)	1.3	1.7	2.1	1.0	1.7	2.1	1.8	1.9	2.0	1.8	0.2	150mg/kg or less than
		Fluorine and its compounds	(mg/kg)	28	29	67	13	33	58	21	32	9	43	2	4000mg/kg or less than
		Boron and its compounds	(mg/kg)	2	4	6	1	2	4	1	2	1	3	1	4000mg/kg or less than

Old Kadena Air Field（２５）soil survey confirmation（Part 2）

Analysis of the 25 items of Metal Waste - Deposit Analysis Results（1/3）

Sample (drums) number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Lower limit of quantitation	The specified standard
Specific types of hazardous substances	Unit＼Extraction Day	Jan. 28	Jan. 28	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 29	Jan. 30	Jan. 30	Jan. 30	Jan. 30		
Dioxins	pg-TEQ/g	90	80	370	160	160	76	92	35	82	13	110	41	41	450	630	12	670	120	490	140	-	3ng(3,000pg)-TEQ/g or less than
Alkyl mercury compound	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	May not be detected
Mercury or its compounds	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.005mg/L or less than
Cadmium or its compounds	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Lead or its compounds	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Organic phosphorus compounds	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	1mg/L or less than
Hexavalent chromium compound	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.15	1.5mg/L or less than
Its compounds or arsenic	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Cyanide	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	1mg/L or less than
PCP	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.003mg/L or less than
Trichlorethylene	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Tetrachlorethylene	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.1mg/L or less than
Dichloromethane	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.2mg/L or less than
Carbon tetrachloride	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.02mg/L or less than
1,2 - dichloroethane	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.004	0.04mg/L or less than
1,1 - dichloroethylene	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	1mg/L or less than
Cis-1 ,2 - dichloroethylene	mg/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.04	0.4mg/L or less than
1,1,1 - trichloroethane	mg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	3mg/L or less than
1,1,2 - trichloroethane	mg/L	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.006	0.06mg/L or less than
1,3 - dichloropropene	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.02mg/L or less than
Thiuram	mg/L	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.006	0.06mg/L or less than
Simazine	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.003	0.03mg/L or less than
Thiobencarb	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.2mg/L or less than
Benzene	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.1mg/L or less than
Selenium or its compounds	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
1,4 - dioxane	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.5mg/L or less than

Note 1 : Result of inequality columns represent numbers less than indicated. Below are the deposit analysis results. Notes 1~2 apply to all the results of the 25 items of metal waste.

Note 2 : Criteria for designation of mercury and its compounds (Elution volume) are 0.0005 mg/l or less when mercury and alkyl mercury is not detected. To measure alkyl mercury when discovered the mercury measurement needs be to clear of any alkyl mercury pollution that is shown by the Environment Ministry guidelines.

※Criteria of industrial waste related to sludge including "metals and other" are based on the Cabinet Order for the Partial Revision of the Waste Disposal and Public Cleaning Law Enforcement Ordinance (Final Revision No.#3 Ordinance of the Ministry of the Environment Feb. 21st, 2013) based on the (No.5 Total Decree from February 17th,1973)

Analysis of the 25 items of Metal Waste - Deposit Analysis Results（2/3）

Sample (drums) number		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	Lower limit of quantitation	The specified standard
Specific types of hazardous substances	Unit＼Extraction Day	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 30	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31		
Dioxins	pg-TEQ/g	83	150	330	170	110	250	360	1200	850	96	1100	170	180	170	420	240	180	1300	370	210	-	3ng(3,000pg)-TEQ/g or less than
Alkyl mercury compound	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	May not be detected
Mercury or its compounds	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.005mg/L or less than
Cadmium or its compounds	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Lead or its compounds	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Organic phosphorus compounds	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	1mg/L or less than
Hexavalent chromium compound	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.15	1.5mg/L or less than
Its compounds or arsenic	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Cyanide	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	1mg/L or less than
PCP	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.003mg/L or less than
Trichlorethylene	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Tetrachlorethylene	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.1mg/L or less than
Dichloromethane	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.2mg/L or less than
Carbon tetrachloride	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.02mg/L or less than
1,2 - dichloroethane	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.004	0.04mg/L or less than
1,1 - dichloroethylene	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	1mg/L or less than
Cis-1 ,2 - dichloroethylene	mg/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.04	0.4mg/L or less than
1,1,1 - trichloroethane	mg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	3mg/L or less than
1,1,2 - trichloroethane	mg/L	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.006	0.06mg/L or less than
1,3 - dichloropropene	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.02mg/L or less than
Thiuram	mg/L	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.006	0.06mg/L or less than
Simazine	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.003	0.03mg/L or less than
Thiobencarb	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.2mg/L or less than
Benzene	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.1mg/L or less than
Selenium or its compounds	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
1,4 - dioxane	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.5mg/L or less than

Old Kadena Air Field（２５）soil survey confirmation（Part 2）

Analysis of the 25 items of Metal Waste - Deposit Analysis Results（1/3）

Sample (drums) number		41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	Lower limit of quantitation	The specified standard
Specific types of hazardous substances	Unit＼Extraction Day	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31	Jan. 31		
Dioxins	pg-TEQ/g	910	55	250	150	460	180	660	110	260	260	2000	330	3000	200	1200	300	350	250	850	400	470	-	3ng(3,000pg)-TEQ/g or less than
Alkyl mercury compound	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	May not be detected
Mercury or its compounds	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.005mg/L or less than
Cadmium or its compounds	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Lead or its compounds	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Organic phosphorus compounds	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	1mg/L or less than
Hexavalent chromium compound	mg/L	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	0.15	1.5mg/L or less than
Its compounds or arsenic	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Cyanide	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	1mg/L or less than
PCP	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.003mg/L or less than
Trichlorethylene	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
Tetrachlorethylene	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.1mg/L or less than
Dichloromethane	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.2mg/L or less than
Carbon tetrachloride	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.02mg/L or less than
1, 2 - dichloroethane	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	0.004	0.04mg/L or less than
1, 1 - dichloroethylene	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	1mg/L or less than
Cis-1, 2 - dichloroethylene	mg/L	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.04	0.4mg/L or less than
1, 1, 1 - trichloroethane	mg/L	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	3mg/L or less than
1, 1, 2 - trichloroethane	mg/L	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.006	0.06mg/L or less than
1, 3 - dichloropropene	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.002	0.02mg/L or less than
Thiuram	mg/L	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	0.006	0.06mg/L or less than
Simazine	mg/L	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.003	0.03mg/L or less than
Thiobencarb	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.2mg/L or less than
Benzene	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	0.1mg/L or less than
Selenium or its compounds	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	0.3mg/L or less than
1, 4 - dioxane	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.5mg/L or less than

Old Kadena Air Field（２５）Soil Survey Confirmation（Part 2）

Analysis of PCB and dioxins - July 2013 Survey Sample Analysis Results,

Sample (drums) number		1	2	3	4	5	6	Lower limit of quantitation	The specified standard
Specific type of hazardous substances	Unit＼Extraction Day	July. 2013	July. 2013	July. 2013	July. 2013	July. 2013	July. 2013		
Dioxins	pg-TEQ/g	140	180	180	76	920	1100	-	3ng(3,000pg)-TEQ/g or less than
PCB（Elution volume）	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.003mg / L or less than

Note: The Inequality of column results shows values lower than indicated. Less than or the same.

※The Criteria depended on the list by the special control of industrial waste (Article 1 of 2 of the Waste Disposal Act Enforcement Regulations).

Sample (drums) number		7	8	9	10	11	12	Lower limit of quantitation	The specified standard
Specific type of hazardous substances	Unit / Extraction Day	July. 2013	July. 2013	July. 2013	July. 2013	July. 2013	July. 2013		
Dioxins	pg-TEQ/g	160	150	180	1100	220	66	-	3ng(3,000pg)-TEQ/g or less than
PCB（Elution volume）	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.003mg / L or less than

Sample (drums) number		13	14	15	16	17	18	Lower limit of quantitation	The specified standard
Specific type of hazardous substances	Unit / Extraction Day	July. 2013	July. 2013	July. 2013	July. 2013	July. 2013	July. 2013		
Dioxins	pg-TEQ/g	620	160	240	650	1300	620	-	3ng(3,000pg)-TEQ/g or less than
PCB（Elution volume）	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.003mg / L or less than

Sample (drums) number		19	20	21	22	Lower limit of quantitation	The specified standard
Specific type of hazardous substances	Unit / Extraction Day	July. 2013	July. 2013	July. 2013	July. 2013		
Dioxins	pg-TEQ/g	130	500	710	240	-	3ng(3,000pg)-TEQ/g or less than
PCB（Elution volume）	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	0.003mg / L or less than

Old Kadena Air Field（２５）Soil Survey Confirmation（Part 2）

Analysis of the 25 items of waste - July 2013 Survey Sample Analysis Results,

Sample (drums) number		Sludge 1	Sludge 1	Lower limit of quantitation	The specified standard
Specific types of hazardous substances	Unit / Extraction Day	May. 1	May. 1		
Dioxins	pg-TEQ/g	260	240	-	3ng(3,000pg)-TEQ/g or less than
Alkyl mercury compound	mg/L	<0.0005	<0.0005	0.0005	May not be detected
Mercury or its compounds	mg/L	<0.0005	<0.0005	0.0005	0.005mg/L or less than
Cadmium or its compounds	mg/L	<0.03	<0.03	0.03	0.3mg/L or less than
Lead or its compounds	mg/L	<0.03	<0.03	0.03	0.3mg/L or less than
Organic phosphorus compounds	mg/L	<0.1	<0.1	0.1	1mg/L or less than
Hexavalent chromium compound	mg/L	<0.15	<0.15	0.15	1.5mg/L or less than
Its compounds or arsenic	mg/L	<0.03	<0.03	0.03	0.3mg/L or less than
Cyanide	mg/L	<0.1	<0.1	0.1	1mg/L or less than
PCP	mg/L	<0.0005	<0.0005	0.0005	0.003mg/L or less than
Trichlorethylene	mg/L	<0.03	<0.03	0.03	0.3mg/L or less than
Tetrachlorethylene	mg/L	<0.01	<0.01	0.01	0.1mg/L or less than
Dichloromethane	mg/L	<0.02	<0.02	0.02	0.2mg/L or less than
Carbon tetrachloride	mg/L	<0.002	<0.002	0.002	0.02mg/L or less than
1,2 - dichloroethane	mg/L	<0.004	<0.004	0.004	0.04mg/L or less than
1,1 - dichloroethylene	mg/L	<0.1	<0.1	0.1	1mg/L or less than
Cis-1,2 - dichloroethylene	mg/L	<0.04	<0.04	0.04	0.4mg/L or less than
1,1,1 - trichloroethane	mg/L	<0.3	<0.3	0.3	3mg/L or less than
1,1,2 - trichloroethane	mg/L	<0.006	<0.006	0.006	0.06mg/L or less than
1,3 - dichloropropene	mg/L	<0.002	<0.002	0.002	0.02mg/L or less than
Thiuram	mg/L	<0.006	<0.006	0.006	0.06mg/L or less than
Simazine	mg/L	<0.003	<0.003	0.003	0.03mg/L or less than
Thiobencarb	mg/L	<0.02	<0.02	0.02	0.2mg/L or less than
Benzene	mg/L	<0.01	<0.01	0.01	0.1mg/L or less than
Selenium or its compounds	mg/L	<0.03	<0.03	0.03	0.3mg/L or less than
1,4 - dioxane	mg/L	<0.05	<0.05	0.05	0.5mg/L or less than

Note 1：The inequality of the column represents a number less than the indicated results.

Note 2：The "May not be detected" criteria of alkyl mercury compounds states that if it falls below the lower limit of quantification value of the test method for the item. The lower limit of quantitation of alkyl mercury compounds is 0.0005mg/L.

※Criteria of industrial waste related to sludge including "metals and other" are based on the Cabinet Order for the Partial Revision of the Waste Disposal and Public Cleaning Law Enforcement Ordinance (Final Revision No.#3 Ordinance of the Ministry of the Environment Feb. 21st, 2013) based on the (No.5 Total Decree from February 17th, 1973)