



**ANDERSEN AFB
GUAM**

**ADMINISTRATIVE RECORD
COVER SHEET**

AR File Number 656

**ANDERSEN AIR FORCE BASE
RESTORATION ADVISORY BOARD (RAB)
MEETING MINUTES
12 August 2004**

Board Members:

Colonel Stephen Wolborsky – Installation Co-Chairperson
Mr. Fred Castro – Community Co-Chairperson
Mr. John Jocson – RAB Member
Ms. Carmen Sian-Denton – RAB Member
Ms. Lucrina Concepcion – RAB Member
Mr. Mike Gawel – RAB Member
Mr. Edward Artero – RAB Member
Mr. Michael Cruz - GEPA

Support Staff Attendees:

Mr. Gregg Ikehara – 36 CES/CEVR
Mr. Jess Torres – 36 CES/CEVR
Mr. Danny Agar – 36 CES/CEVR
Ms. Yvette Bordallo – 36 CES/CEVR

Public Attendees:

Lt Colonel Marvin W. Smith – 36 CES/CC
Senator Larry Kasperbauer – Guam Legislature/Private
Capt Matthew Welling – 36 CES/CEVQ
Mr. Scott Whittaker – 36 CES/CEV
Mrs. Chris Camacho – Landowner
Mr. Tom Camacho – Duenas & Associates
Mrs. Julie Dusenbury - Community
Mr. Paul Dusenbury – Booz, Allen & Hamilton
Mr. Brian Thomas – Booz, Allen & Hamilton
Mr. Toraj Ghofrani – EA Engineering
Mr. Robert Okoniewski – EA Engineering
Mr. Chip Brown – EA Engineering
Mr. Paul Packbier – PCR Environmental
Mr. Chris Arnsfield – Shaw Environmental
Mr. Vicente Santos – Landowner
Mr. Walter Leon Guerrero – GEPA
Mr. Victor Wuerch - GEPA
Mr. Frank Palomo – Community

1. Introduction

Mr. Gregg Ikehara began the meeting by clarifying that this public meeting will focus on the First Five-Year Review of Record of Decision (ROD) for MARBO. He then introduced Colonel Stephen Wolborsky, as the new Installation Co-Chair. Colonel Wolborsky expressed his interest with the program and assured the attendees of the Air Force (AF) and regulatory agencies intent on working together to achieve the same goal.

2. Review of Previous Minutes

Mr. Ikehara stated that the last RAB meeting was held in November 2003, and asked the RAB members to review the previous meeting minutes for their approval. With no discrepancies noted, the previous meeting minutes were unanimously approved. He then introduced the presenter for the evening, Mr. Jess Torres.

3. MARBO Annex Operable Unit First Five-Year Review

The Comprehensive Environmental Response and Liability Act (CERCLA) and the National Oil and Hazardous Substance Contingency Plan (NCP) requires a review of the ROD if a remedy leaves contaminants in place and does not allow for unrestricted or unlimited use of the land. The purpose of the review is to evaluate if the remedy implemented is still protective of human health and the environment. The three questions that need to be addressed are: is the remedy functioning as intended by the ROD? Second, are the exposure assumptions, toxicity data, cleanup values, and remedial action objectives used at the time of the remedy still valid? And third, has any other information come to light that could call into question, the protectiveness of the remedy?

The MARBO ROD covered six sites and the groundwater beneath those sites. In addition to those areas, three additional sites in MARBO, the groundwater at MARBO, the groundwater between MARBO and Tumon Bay, and the groundwater at Tumon Bay would be reviewed.

The remedy at Landfill 29 called for soil removal of 10 CY. During the removal process it was discovered that the contamination was 13,000 CY. A ROD Amendment was prepared and signed by the regulatory agencies. The cleanup was conducted and verification sampling done, confirming that the area is clean. Thus the remedy is still protective of human health and the environment.

The remedy at the MARBO Laundry was soil removal. The cleanup levels for Arochlor 1254 were reduced by EPA from 0.97 ppm in 1998 to 0.22 ppm in 2002. Confirmation soil sampling showed that cleanup levels below 0.22 ppm were achieved. The remedy at MARBO Laundry is therefore protective of human health and the environment.

No contaminants except for lead were found above the cleanup levels at the War Dog Borrow Pit. The industrial PRG for lead was reduced by EPA from 1000 ppm in 1998 to 750 ppm in 2002. One sample out of more than fifty was above cleanup levels, at 833 ppm. Because

it was 11-feet below ground surface, it posed little or no risk. The remedy is still protective of human health and the environment.

At Waste Pile 5, there were no contaminants above the cleanup level, and the remedy is still protective of human health and the environment.

The remedy at Waste Pile 6 was soil removal. Cleanup and verification sampling was completed. Therefore the remedy is protective of human health and the environment.

The remedy at Waste Pile 7 was to construct a soil cover of approximately 1.8 acres in size. Contaminated soil averaging 11-feet deep, contained metal debris, pesticides, and PCB. The cover was placed to protect human exposure to these contaminants. In February 2004, the regulatory agencies conducted a site investigation and identified several issues. The first issue was that there were no signs posted at Waste Pile 7 to prevent activities such as trenching or excavation that may damage the cover. The remedy was to post warning signs. The second issue was that pigs were digging holes into the soil cover. Fortunately, they did not breach the soil cover but should it continue and soil erosion occurs, the contaminants may be exposed. So the recommendation for this issue is to implement quarterly inspections to check and maintain the integrity of the soil cover. The last issue is that the soil cover is subject to frequent island natural disasters such as typhoons and earthquakes that can damage the structural integrity of the soil cover. The recommendation is to inspect the soil cover immediately after each disaster. An O & M plan for Waste Pile 7 is due to the regulatory agencies in September. Based on the review, the soil cover is still protective and functioning as intended.

There are three additional sites at MARBO that will be investigated within a year. Surface and subsurface soil sampling will be conducted. If sources for TCE or PCE are found, monitoring wells will be constructed.

The other reason for this review is the groundwater. The remedy was to let the groundwater naturally attenuate which left contamination in place. The remedy included natural attenuation with institutional controls, land use restrictions, groundwater monitoring, and existing wellhead treatment. Initially there were 45 wells that were sampled on a semi-annual basis. The review focused on the wells that have been problematic with TCE and PCE. Those wells are MW-1, MW-2, GPA-1, IRP 31, IRP 14, and IRP 29. At IRP 31, the TCE has consistently been above the Maximum Contaminant Level (MCL). This well is drilled to the bottom of the freshwater lens, at a depth where groundwater for drinking water is not pumped. The GPA-1 and MW-2 wells were also reviewed. TCE concentrations fluctuated above and below the MCL. The other three wells IRP 14, IRP 29, and IRP 31 were reviewed and had PCE concentrations above the MCL. In 1998, the AF requested and received concurrence from the regulatory agencies to reduce the number of wells to 33 wells. Then in 2003, the AF requested and received approval to reduce the number of sampling wells to twenty. The wells that were removed from the sampling program did not have contaminants, but there is a stipulation that should contaminants be discovered, the sampling of these wells will be reinitiated.

The Guam Waterworks Authority has drilled two production wells, Y-18 and Y-20, and the AF was unable to obtain VOC sampling data for these wells. The AF sampled these wells for VOCs and confirmed there were no problems with water quality at these wells.

The historical data for MW-1 and MW-2 were reviewed and showed TCE concentrations have been present since 1978.

Additionally, the AF began investigating the groundwater data towards Tumon. One of the wells looked at was EX-6, located near the Dededo flea market. Several samples were collected and no TCE or PCE were detected.

The AF sampled the GEPA Harmon wells, HMW-1 and HMW-2 at the Harmon McDonalds, and HMW-3 at the Dededo Sports Complex. These three wells are screened throughout the entire freshwater lens. Vertical profile sampling was conducted at these three wells. The detection limit for TCE and PCE was 1 ppm and neither contaminant was detected in any of the wells.

Historical data for the Tumon Maui Well were reviewed, revealing that PCE has been present since 1987.

Samples were collected from groundwater seeps along the beach from the Hilton Hotel to Gun Beach. There were five hits of PCE and four hits of TCE in August 2000. During the February groundwater sampling round, neither of these contaminants was detected. In June 2001, only one hit of TCE was detected. But then in August 2001, there were two hits of PCE and one hit of TCE.

The regulatory agencies had two issues with the groundwater. First, the AF has not found the source of the PCE and TCE at the MARBO Annex, and the fate and transport of TCE and PCE at MARBO are not understood, particularly at depth. The recommendation is to drill deep soil borings at the two new IRP sites to look for potential sources. The AF will also consider additional borings through the entire freshwater lens. A dye trace study relevant to IRP 31 and IRP 29 will be considered to investigate the fate and transport of TCE. The second issue is that the Tumon Maui Well is not currently in production and that there are no benefits to the AF from the remediation of the Tumon Maui Well water. The recommendation is to assess the long term AF need for the Tumon Maui Well and to determine what to do with the well if it is not essential to the AF mission.

The results of our five-year review, based on the water samples collected at the taps at Y-18 and Y-20, indicate that the institutional controls are working. Although wellhead treatment at MW-2 was part of the initial remedy, it is no longer in effect. Its usefulness was more effective as a protective measure than as a means to remediate the groundwater. Production Wells MW-1 and MW-3 continue to produce potable water and are monitored to assure TCE and PCE concentrations remain consistently below the MCL. In addition, the AF will develop a plan and schedule to further investigate the groundwater at MARBO Annex OU, which is due to regulators in November 2004.

As part of the five-year review the AF conducted interviews with Senator Joanne Brown, Senator Larry Kasperbauer, Mr. Fred Castro, and Mr. Victor Wuerch. Mr. Torres stated that the interviewee's responses were positive, except, for issues with regards to the groundwater at MARBO and the status of the Tumon Maui Well.

Mr. Torres reminded the attendees that the MARBO First Five-Year Review ROD comment period begins today and ends on 10 September 2004. Public comments can be presented this evening, while written comments can be submitted to the address provided and must be postmarked by the due date. He reiterated that the MARBO ROD was available at both of the information repositories located at the RFK (UOG) Library and the Nieves Flores Library in Hagatna.

4. Questions

Mr. John Jocson asked what is the next step with regards to remediation? Mr. Torres replied that the issues at MARBO are Waste Pile 7 and the groundwater. The fate and transport of groundwater are not fully understood and the source for TCE and PCE has not been located. The AF is developing a plan to investigate the TCE and PCE source, and to expand the investigation to more areas to better understand how the groundwater flows out of the MARBO area. The next five-year review will determine if the plan implemented is effective. Mr. Jocson asked if a dye trace study will be used. Mr. Torres replied, it is one of the recommendations and the AF will address the dye trace study in the plan.

Mr. Fred Castro inquired whether there has been consideration in examining the fluctuations of the TCE and PCE detection levels? Mr. Ikehara explained that fluctuations of the TCE and PCE at particular wells were compared to atmospheric conditions, rainfall, and drought periods. Since the source of TCE and PCE have not been located, it is difficult to understand the mechanics that drive it and where to find it, which is deep in the aquifer. Part of the problem deep in the aquifer is the movement is slower in occurrence and not as quick as on top of the freshwater lens.

Mr. Mike Gawel questioned if one of the recommendations is to bore for migration through the freshwater lens and what would the difference be between a production well that captures at the top of the freshwater lens versus getting to the bottom of the lens? Also, how deep would these wells be to the lens and how much deeper to get to the bottom of the lens? Mr. Ikehara said, typically the production wells drilled in the Dededo/Yigo area are in the uppermost layer of the freshwater lens. There are probably 20-foot screened intervals at the top of the freshwater lens and the thickness of the lens depends on the height of the water above the sea level. In this case, a water table about three to four feet above mean sea level, roughly equates to about 100 to 120 feet to the transition zone. The AF does sample the production wells to determine if there is any problem or vertical migration occurring. What has been noted is that the highest concentrations are at depth. Mr. Ikehara assured the audience that the AF is intent on being protective of the groundwater production sources that are in the uppermost part of the water column.

Senator Kasperbauer requested clarification on the contaminants buried 11-feet under and not knowing where the contaminants were located that are showing up. Also, where is this in relation to the Laundry Facility? Mr. Torres clarified that the buried contamination was at Waste Pile 7. He described Waste Pile 7 as a large quarry that was filled with metal debris. The average depth of the debris and soil was about 11-feet and the contaminants that were found in this soil were pesticides, PCBs, and lead. Rather than excavate and remove the soil, the protective measure was to construct a soil cover. By constructing the soil cover, the potential for human exposure was eliminated. Because the contaminants are still in place, groundwater wells in the area are monitored to ensure contaminants are not getting into the groundwater. *Senator Kasperbauer then asked if there is any plan for future removal?* Mr. Torres said the site is approximately 1.8 acres with an average depth of about 11-feet and that a substantial amount of soil would need to be removed. At the time of the implementation the soil cover was the most economically and feasible remedy agreed upon by the regulatory agencies. Colonel Wolborsky commented that the whole rationale behind the five-year review is because the AF did not take a more permanent measure and at the time the AF did not have the resources to implement a more permanent measure. By constructing the soil cover, the five-year review process was imposed.

Ms. Lucrina Concepcion inquired if the AF considered capping it like how a landfill would be capped to minimize contaminant migrations during heavy rainfall? Mr. Ikehara stated that the AF did consider the implementation of an impervious cap, but it was too expensive of an option. The primary risk factor was dermal exposure and not infiltration to the groundwater. He reiterated that there is groundwater sampling in and around the area that indicated there was no leaching of the contaminants into the groundwater. The soil cover option was most viable.

Mr. Castro asked what it would cost for complete removal, and what impact would it have on other cleanup projects that were funded? Mr. Ikehara explained that it would cost approximately \$4M to \$8M, which would probably have taken up one full year of study and remediation funding for other sites. *Mr. Castro asked if it would have impacted the Urunao project.* Mr. Ikehara agreed that it would affect Urunao and other projects. In this case, the AF believes it would be wiser to deal with the remediation of this site by covering it with soil and perhaps reconsider an alternative at a future date when funds become available.

Mrs. Chris Camacho, landowner, commented that she understands the cost consideration for a cleanup of this size. However pesticides, PCB, and lead are contaminants that concern her and other citizens. She urged the AF to consider complete removal seriously. Mr. Ikehara assured her that the AF does share her concerns as well, and it is the AF's intention to do the right thing. The AF will continue to address this issue.

Mr. Gawel asked what pesticides were found and what the potential is to leach at that site, and if it was bio-degradable in the years? Mr. Toraj Ghofrani, EA Engineering contractor, clarified that pesticides, such as DDTs are contaminants that are stable and do not migrate readily. The AF has been monitoring the groundwater for the past decade and have not had any hits of DDT. The pesticides at Waste Pile 7 consist of 4,4- DDE at 6.7 ppm, 4,4-DDT at 6.2 ppm, dieldrin at 0.12 ppm, alpha chlordane at 0.44 ppm, and gamma chlordane at 0.38 ppm.

Mr. Tom Camacho asked if the contaminants would affect any development to adjacent properties other than drilling the wells and tapping the lens. Would there be any restrictions? Mr. Ikehara informed him that there would be no significant impact to land use near those areas. The distance to the groundwater is about 300-feet or more and does not pose any risk to surface activity.

Mr. Camacho asked what concentrations of contaminants are present in the groundwater and if there been any time related studies based on population growth and use of the water lens. Mr. Ikehara estimated that at the bottom of freshwater lens it will take some time before the contaminants would disperse, either by physical or chemical means. The important fact is the highest contamination level is found at the bottom of the freshwater lens, which is non-potable water. In order for the AF to remediate it at that depth, it could possibly cause problems for the freshwater lens that overlays it.

Mr. Castro had two questions. First, is there is any data that could characterize the groundwater age in the MARBO area, and secondly, in the five-year report is there any reference of the risk assessment study? Mr. Ikehara stated that, there have been hydrologic studies for the cycling of the groundwater on Guam, and it was estimated that it takes 7-10 years for recycling of the system, at least in the upper portion of the freshwater lens. For the deeper portion no data is available to suggest the longevity of that water because it moves at a much slower pace under different hydrodynamic forces. The seepage rate is dependant upon how much water is loaded on the freshwater lens. The challenge to make water available to the public is to intercept that recharge water and not cause degradation to the lens from saltwater intrusion. With regards to the risk assessment study, the AF always considers the risk assessment aspect when evaluating the remedial systems and protectiveness of human health and the environment.

Mrs. Camacho asked where she would be able to obtain copies of the MARBO ROD. Mr. Ikehara informed her that the documents were available at both information repositories, the RFK Memorial Library at UOG and the Nieves Flores Library in Hagatna.

Mr. Gawel inquired as to whether the pesticide listing for Landfill 2 and some information on the removal of the underground storage tanks at Tumon would be available tonight. Mr. Ikehara informed him that all the information would be provided at the next scheduled RAB.

Mr. Castro questioned if there was a plan in effect to the upcoming wet/dry groundwater sampling round. Mr. Ikehara said the AF has attempted to pare away the wells that no longer provide useful data. The AF is focusing on the wells that show significant changes and things that can compare to other wells to try and determine a cause and effect. There will be new well locations added to the groundwater sampling that should provide more meaningful data. A dye trace study combined with historical water table elevation data could determine the actual groundwater flow direction.

Mr. Frank Palomo asked how close is the contaminated site to private properties, and is there a possibility of releasing the property? Mr. Torres indicated on the slide that the next private property is approximately located about 1 to 2 miles away. Mr. Ikehara stated that as long as the contamination is present in the ground, it will not be released. The AF would have to

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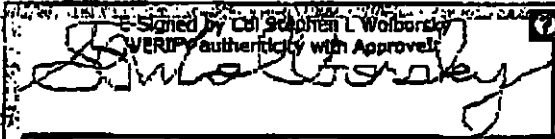
determine if the contamination can be removed and the land made available for unrestricted use. In order to excess the property, all the contamination would need to be removed. Colonel Wolborsky commented that is one criteria that is considered, but there are also other factors that affect excessing property as well.

5. Next RAB Meeting

Mr. Ikehara graciously thanked everyone for attending the meeting. With no other business at hand, the meeting was adjourned at 8:30 p.m. The next RAB meeting will be scheduled for the third Thursday in November 2004.

APPROVED/DISAPPROVED

Signed by Col Stephen L Wolborsky
VERIFY authenticity with Approval



STEPHEN L. WOLBORSKY, Colonel, USAF
Installation Co-Chair, Restoration Advisory Board

4 Oct 04
DATE



FRED M. CASTRO
Community Co-Chair, Restoration Advisory Board

11 Oct 04
DATE

DISTRIBUTION LIST

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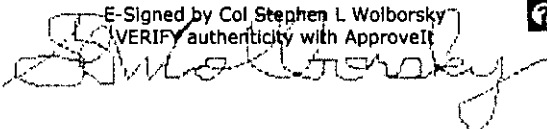
MEMORANDUM FOR SEE DISTRIBUTION LIST

FROM: 36 AEW/CV

SUBJECT: Meeting Minutes for Restoration Advisory Board (RAB) Meeting, 12Aug 04

1. The Andersen Air Force Base RAB meeting minutes for 12 Aug 04 are forwarded for your review at Attachment 1. The RAB member distribution list can be found at Attachment 2.
2. We look forward to continued communication with you. Should you have any questions, please contact Mr. Gregg Ikehara at 366-4692.

E-Signed by Col Stephen L. Wolborsky
VERIFY authenticity with ApproveIt



STEPHEN L. WOLBORSKY, Colonel, USAF
Installation Co-Chairperson
Restoration Advisory Board

Attachments:

1. RAB Meeting Minutes
2. Distribution List

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE