Minutes
Restoration Advisory Board
Navy Area Wide

A Restoration Advisory Board (RAB) meeting for the Navy Area-Wide Installation Restoration (IR) sites was held on Wednesday, May 9, 2001, at the Hyatt Regency Hotel, Guam at 7:00 p.m. Enclosure (1) is a list of attendees for the meeting and preceding public tour. Copies of the minutes from February 7, 2001 RAB meeting were made available for distribution to all interested parties.

LCDR Ron Kramps, Regional Environmental Officer for Commander, U.S. Naval Forces, Marianas (COMNAVMARIANAS) and RAB co-chairman made opening remarks and introduced Mr. Mike Gawel of the Bureau of Planning as co-chairman and Mr. Roy Tsutsui as facilitator for the meeting. Mr. Gawel extended his welcome and requested that attendees review handout materials that were available for each of the meeting's presentations. Mr. Gawel also announced that the website is now working and invited those interested to use the website www.guam.navy.mil for further information. Mr. Gawel introduced the evening's speakers.

Mr. Blaise Koki, COMNAVMARIANAS, informed all interested parties of upcoming training that will be available on Health and Environmental Risk Communication to be held from July 24 to July 26. Also an Environmental Negotiation Workshop is to be held from July 31 to August 2. Those who are interested can contact him at 339-5311 for information on where the training will be held.

Ms. Darlene Ige presented an overview of the eight (8) IR sites with on-going investigations and clean-ups. Six (6) of the sites are located on the COMNAVMARIANAS Main Base. The main projects are the Orote Landfill, the Carpentry Shop Dip Tank, Dry Cleaning Shop, and the CB landfill located near Finegayan Housing Area. The main concerns at the Carpentry Shop Dip Tank are the chemicals that were used for wood preservation. Cleanup to remove the source of the contamination was completed in 1998. Soil and groundwater samplings have been taken during wet and dry seasons. This information has been incorporated into the Draft Final Remedial Investigation (RI) Report completed in February 2001. A detailed briefing will be discussed later during the meeting.

The concern at the Dry Cleaning Shop is the petroleum solvents. The Remedial Investigation (RI) Report was completed in February 1996. Additional groundwater sampling has been completed. The data is being evaluated and the draft RI Addendum Report will be completed this summer.

At Building 3009, treatment of PCB contaminated soil was completed in March 1997. Additional soil sampling was completed in November 1998. The draft Site Inspection Work Plan/Sampling and Analysis Plan was completed in October 2000. Additional sampling is planned for 2001.

Cleanup was started at the NEX Garage Septic Tank Site in January 2001 and completed in March 2001.

Ground water samples at the Construction Battalion (CB) Landfill show that the water quality is better than drinking water standards. This was the last quarterly groundwater sampling; future samples will be accomplished on a semi-annual basis.

Construction of the seawall at the Orote Landfill started in March 1999. Construction of the landfill cap started in February 2000. All construction was completed in February 2001. A detailed briefing will be discussed later during the meeting.

At the Lower Sasa Fuel Burning Pond, we completed a draft Removal Action Design which proposed to excavate sediment from 4 areas with high concentrations of petroleum hydrocarbons and dispose of the sediment off-island. Since then, we did a reassessment of ecological risk to address the common moorhen as an endpoint. First we did a screening ecological risk assessment and based on that, we decided that we would have to do a more in-depth ecological risk assessment. We are currently working on our in-depth ecological risk assessment and expect to complete the assessment in September 2001. We will take the results and incorporate it into the final design.

Ques.: There is a concern regarding why the pond was demolished since the moorhen has been sighted in the area.
Ans: Roy Tsutsui explained that the pond was constructed to burn waste petroleum, not as a habitat for moorhens. It was later used as a holding pond for discharge from an oil/water separator and was removed since it was no longer needed. The pond was located on the upland portion of the site. The common moorhen were sited in seasonal wetland area of the site which is across of a constructed wetland. The constructed wetland was a Government of Guam project that the Navy had no involvement. Since the moorhen has been sighted, an in-depth ecological risk assessment is being conducted.

Ques.: There was a concern on the sampling and analysis results at the constructed wetland across from the Lower Sasa Fuel Burning Pond seasonal wetland.**Ans:** The constructed wetland was a Government of Guam project and not a Navy project. We don't know if samples were taken or if there is any data from the constructed wetland. The road between the constructed wetland and the Lower Sasa seasonal wetland is elevated and serves as a physical barrier. Most of the contaminates are located in the densely vegetated area. We are still conducting an assessment of the seasonal wetland area of the site where the moorhen were sighted and will most likely occupy.

Mr. Cowan Azuma, PACDIV Remedial Project Manager for the Carpentry Shop Dip Tank Site was the next speaker. This site was used for wood preservation treatment. The aboveground storage tank and drying rack were removed in 1979. The dip tank was left in place and filled in with crushed rock. In 1998, the dip tank, associated piping and sump were also removed. Six additional soil samples were taken during the wet season in July 1999. Groundwater samples were also taken from the 19 monitoring wells during wet and dry

seasons. Results of the soil samples detected dioxins and furans above Environmental Protection Agency (EPA) standards. Groundwater samples taken during wet season showed detections of several semi-volatiles and a few detections of dioxin/furans above the screening criteria. Dry season samples detected the same amount of semi-volatiles and only one detection of dioxins and furans. Investigation results showed no significant ecological risk.

Soil samples indicated that there is a risk to humans if the soil is disturbed. The groundwater samples indicated that the water has a high salinity, is not a drinking water source, and poses no significant risk to the marine environment.

Ques.: What are furans?
Ans.: Furans are related to dioxins. It has to do with combustion of chlorides and is not as toxic as dioxin. Sometimes they are present due to impurities in the chemical used at the site.

Ques.: What year was it that you found or detected the dioxin/furans above the EPA level?
Ans.: The soil samples results were from the sampling conducted in July 1999.

Ques.: From that time on, there were remedial cleanup of the contaminated soil right? Are you still doing it?
Ans.: No, we have not done that yet.

Ques.: Was there sufficient soil sampling conducted at the site to fully characterize where the extent of the contamination is, so you will know what to cleanup and that you'll cleanup all of it?
Ans.: We took six additional samples and found dioxins close to the surface, within 2 ft below ground surface. A work plan will be developed prior to the removal of the soil. Confirmation samples will be collected to ensure all contaminated soil is removed.

This was the last presentation for Mr. Azuma. Future presentations will be given by Mr. Lance Young, the new Remedial Project Manager for this site.**Mr. Eric Wetzstein, AMEC Earth and Environmental**, presented an overview of the Orote Landfill site. From roughly 1944 to 1969, flammable material was burned and ashes were buried on a nearby cliff or bulldozed over the beach. Large amounts of rusted metal were present on the beach from past disposal operations. Cleanup activities included the removal of landfill material from the beach and nearby areas. A seawall was constructed to protect the landfill material from eroding further and the landfill was capped with a low permeability cover. Salinity surveys were conducted in January 2001. Fieldwork identified discharge points for ground water discharge into the marine environment. A Human Health Risk Assessment (HHRA) concluded that site-related contamination does not pose a significant carcinogenic risk to human health. However, contamination does present a non-carcinogenic hazard. The modes of exposure are primarily direct contact with the soil and ingestion of organisms from the site. A Baseline Ecological Risk Assessment will be conducted. Tissue samples will include stationary aquatic organisms like algae and coral, grazers and herbivores like the sergeant major fish, and carnivores and omnivores like groupers and triggerfish.

Ques: Is there some kind of anchor device to keep the armor (cubes) from rolling down the seawall? What is keeping the seawall stable?
Ans: No, the 24 and 9 ton cubes are laid in. It will not slide due to the design configuration, the massive toe wall at the bottom are anchored. Friction between each layer prevents the armor from rolling down. The seawall was designed this way to dissipate the wave action and can be repaired after storms.

Ques: Does the Navy have some sort of maintenance plan in case of a really high, heavy storm and some of these cubes get dislodged? Does someone do an inspection of the cubes and put them back where they are supposed to be?
Ans: Yes, an Inspection and Maintenance Plan will be developed and would require inspections of the seawall to be conducted especially after storms and seismic activity.

Ques: Over time, how long are you going to be here to do the monitoring and will you keep repairing the seawall or pack up and leave?
Ans: Nothing is invincible, so every structure has a design life and the seawall was designed for a 100-year storm event. What we have to realize is that a 100-year storm event can happen in the next two weeks or may not happen for 200 or 300 years. The beauty about this type of wall is that you can repair it by replacing the units and the inspection and maintenance is a long-term thing.

Ques: Before you cleaned the site, fish accumulated contamination, how long would the possible contaminants be found in fish? How do you know if the fish are picking up contamination?
Ans: We presume for the life of the fish. Tests have been conducted on the algae and sea slugs. We are looking at the overall impact that may or may not be occurring. The fish tissue sampling will be a baseline and we are making sure a thorough ecological risk assessment is completed. If the baseline ecological risk assessment shows there is a risk, then you would probably kick in a monitoring program of those tissues to see if the contaminates drop off.

Ques: What is the list of chemicals being tested in the groundwater?
Ans.: Those chemicals of concern were presented at previous RABs. That list is provided in the Work Plan. Chemicals of concern are dioxins and pesticides. Since the capping has been completed, we are looking at specific items. A series of tests will be done using the agreed upon list. The chemicals to be tested include metals, polycyclic aromatic hydrocarbons (PAHs), chlorinated pesticides, PCBs, and dioxins/furans.

Ques: We're concerned with bio-accumulation at this site. Another study was done in Mongmong (Agana swamp) for bioaccumulation of PCB in catfish. If we could share the data, we can get a better feel for what is the bioaccumulation rate, if any, and compare it with the results at the Agana swamp. It should be

interesting to see the PCB results since one is marine environment and the other is fresh water environment, the difference is kind of species. Is PCBs being tested for?
Ans.: Yes.

Ques: When will that type of data be ready for discussion in a RAB?
Ans.: Looking at next summer.

The next RAB meeting is tentatively scheduled for the second week of August. Booklets are available regarding Navy-wide projects. One member was concerned that due to work, she is unable to go on the scheduled site visits and requested a site visit be conducted on weekends. Roy Tsutsui requested she call his office and he would arrange for a site visit.

The meeting was adjourned at 9 p.m.

Approved by

MICHAEL J. GAWEL
Community Co-Chairperson

RONALD F. KRAMPS, LCDR, CEC, USN
Navy Co-Chairperson

AGAT BAY SEAFOOD WARNING
COMMUNITY MEETING NOTICE

The Navy will hold a community information forum at the Southern High School cafeteria at 7:00 p.m. on Saturday October 27, 2001 to discuss the recent Agat Bay Seafood Warning.

Based on recent environmental studies, the Navy, Guam EPA and Guam Public Health Department are advising that **you should not eat any seafood caught in the area from Orote Point to Nimitiz Beach, Agat.** Representatives will be present at the meeting to provide information and answer your questions about the studies and the corrective measures underway.

If you are unable to attend this meeting and want more information on the Agat Bay Seafood Warning, please contact COMNAVMARIANAS Public Affairs Office at 339-5207.

In addition, you can review information about the Navy's Clean-up program, including minutes from the previous Restoration Advisory Board (RAB) meetings, reports, and studies at the Information Repository established at the Hagatna Nieves M. Flores Memorial Library.

Navy Area-Wide Restoration Advisory Board Meeting
Hyatt Regency Guam, Santa Rita/Rosa Ballroom
Wednesday, May 9, 2001; 7:00 p.m. - 9:00 p.m.

Name	Organization/Company	Address	Contact Number(s)	e-mail address
Dan Seely	IT Corp	GCIC Building, Suite 602	472-0530 ext. 234	dseely@itcorp.com
Trini Torres	RAB Board Member	[redacted]		
Lane Relm	GEPA	P.O. Box 129, Guam	477-2797	lrichmar@kuentos.guam.net
Anthony Hoover	COMNAVMAR			n453@guam.navy.il
Terry Perez	Bureau of Planning	Adelup	475-9664	tnperez@mail.gov.gu
Amelia F. DeLeon	Bureau of Planning	Adelup	475-9669	afdeleon@mail.gov.gu
Dionie DeLeon	DPW	P.O. Box 363, Agana, Gu 96932	475-4535	diondeleon@hotmail.com

Navy Area-Wide Restoration Advisory Board Meeting
Hyatt Regency Guam, Santa Rita/Rosa Ballroom
Wednesday, May 9, 2001; 7:00 p.m. - 9:00 p.m.

Name	Organization/Company	Address	Contact Number(s)	e-mail
Julie Duwel	JTD	[redacted]		
Cole Hengdon	Marianas Military Museum			
Steven Oshiro	PACDIV	Bldg 258 Makalapa Dr. Pearl Harbor, Hi 96786	(808) 472-1440	
Roy Tsutsui	COMNAVMAR	P.O. Box 2993 Agana, Gu	339-5094	
Mike Gawel	RAB	[redacted]		
Ben Hernandez		[redacted]		
Clint Huntington	Leo Palace Resort	[redacted]		

Navy Area-Wide Restoration Advisory Board Meeting
Hyatt Regency Guam, Santa Rita/Rosa Ballroom
Wednesday, May 9, 2001; 7:00 p.m. - 9:00 p.m.

Name	Organization/Company	Address	Contact Number(s)	e-mail address
Stanley Bol	USACE	Ft. Shafter, Hi	(808) 437-9526	
Edward F. Thompson	USACE	Vicksburg, MS	(601) 634-2027	
Morman Scheffner	USACE	Vicksburg, MS	(601) 634-3220	
Milton Yoshimoto	USACE	Ft. Shafter, Hi	(808) 438-2252	

Navy Area-Wide Restoration Advisory Board Tour
Wednesday, May, 9, 2001

Name	Organization/Company	Contact Number(s)
Ed Thompson	Army Corp of Engineers, Engineer R&D Center	(601) 634-2027
Norman Scheffner	Army Corp of Engineers, Engineer R&D Center	(601) 634-3220
Milton Yashimoto	Army Corp of Engineers, Engineer R&D Center	(808) 438-2250
Stanley Bol	Honolulu Engineer District	(808) 438-9526
Eric Wetzstein	AMEC Earth & Environmental (formerly Ogden)	(808) 545-2462
Dan Seely	IT Corp	(671) 472-0530 ext 234
Steven Oshiro	PACDIV	(808) 472-1440
Darlene Ige	PACDIV	(808) 472-1420
Lance Young	PACDIV	(808) 472-1387

Navy Area-Wide Restoration Advisory Board Tour
Wednesday, May, 9, 2001

Name	Organization/Company	Contact Number(s)
Cowan Azuma	PACDIV	(808) 472-1421
John Fern	Earth Tech	(808) 523-8874
LCDR Ron Kramps	COMNAVMAR	(671) 339-4365
Mike Gawel	Bureau of Planning	

Proposed Sampling for Assessment of Ecological Impact

at the

Orote Landfill Site

COMNAVMARIANAS, Guam

Restoration Advisory Board Meeting

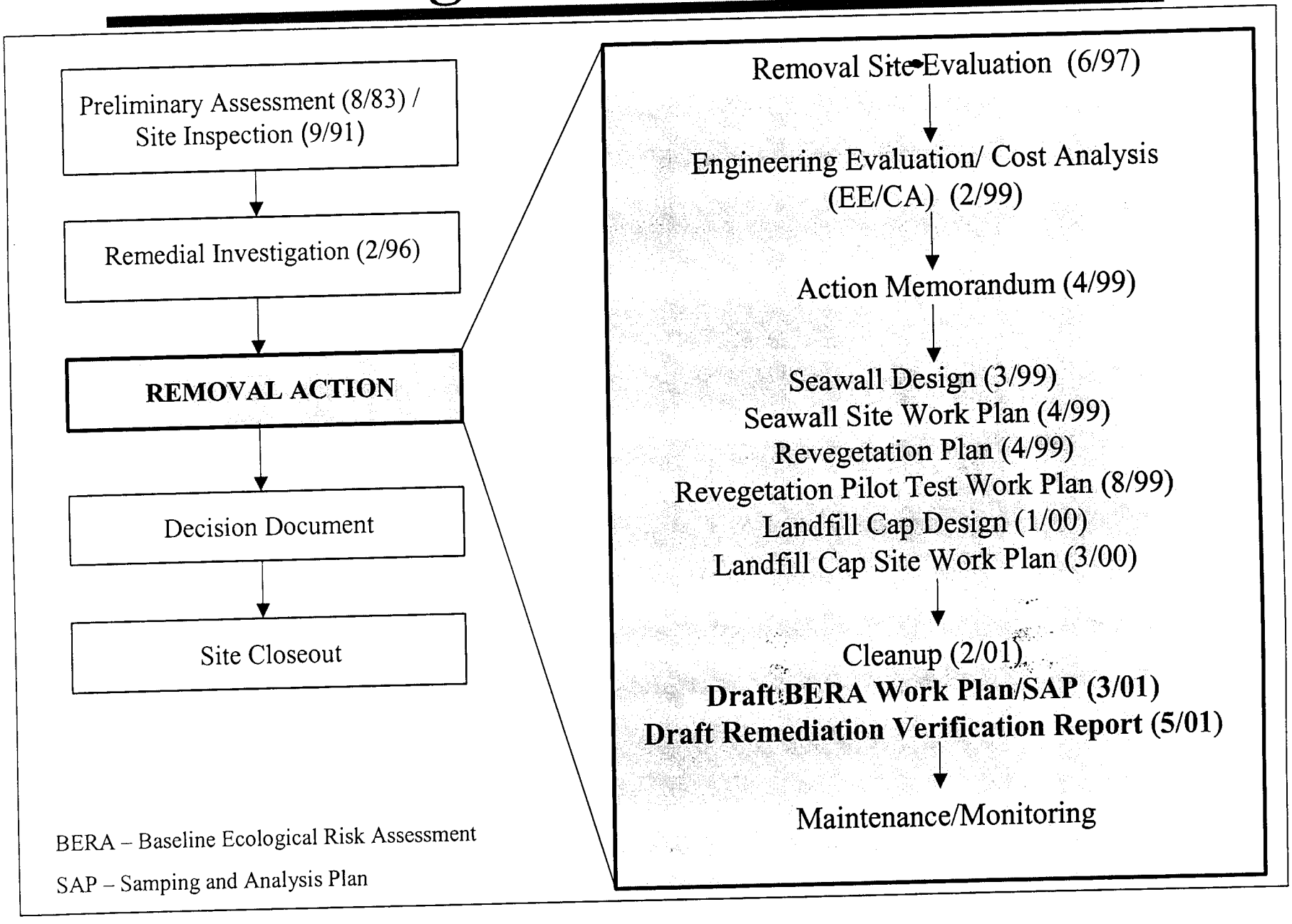
May 9, 2001

Helen Lam /Eric Wetzstein

Background

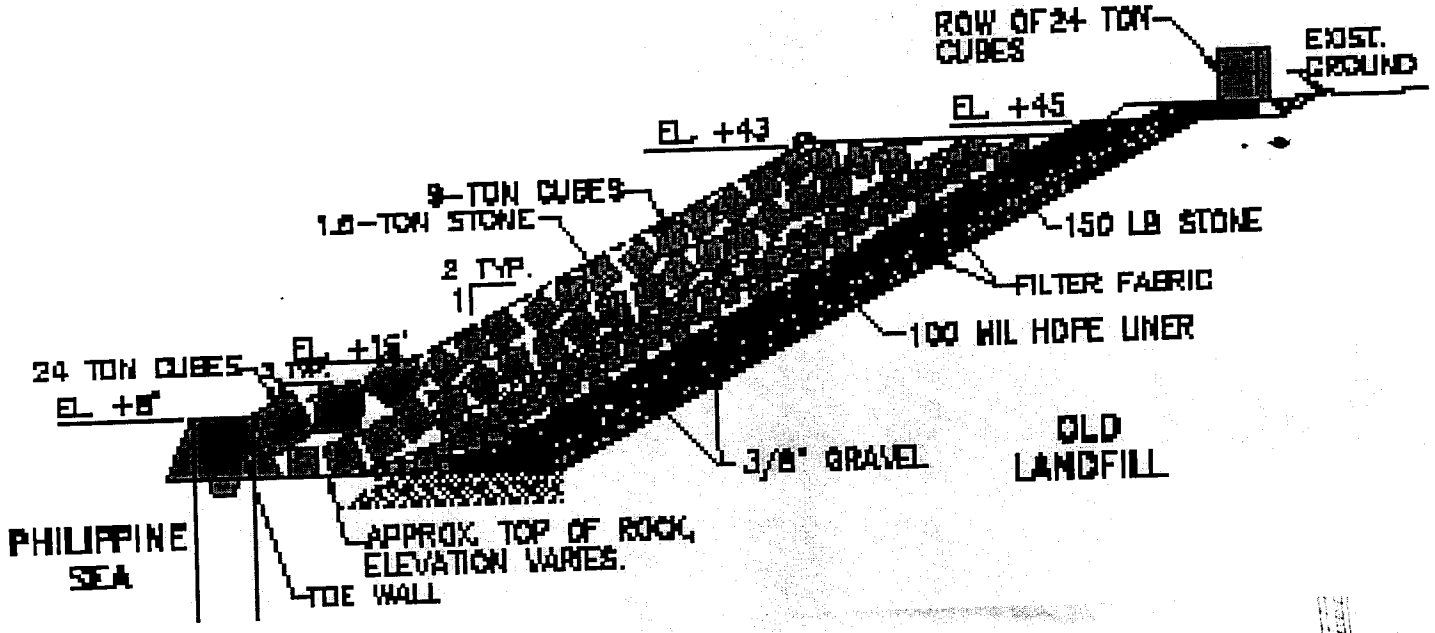
- Landfill used for disposal of residential, industrial, and construction wastes from roughly 1944 to 1969
- Flammable material burned, and ashes buried on nearby cliff or bulldozed over beach
- Large amounts of rusted metal were present on beach from disposal operations

Progress of Cleanup



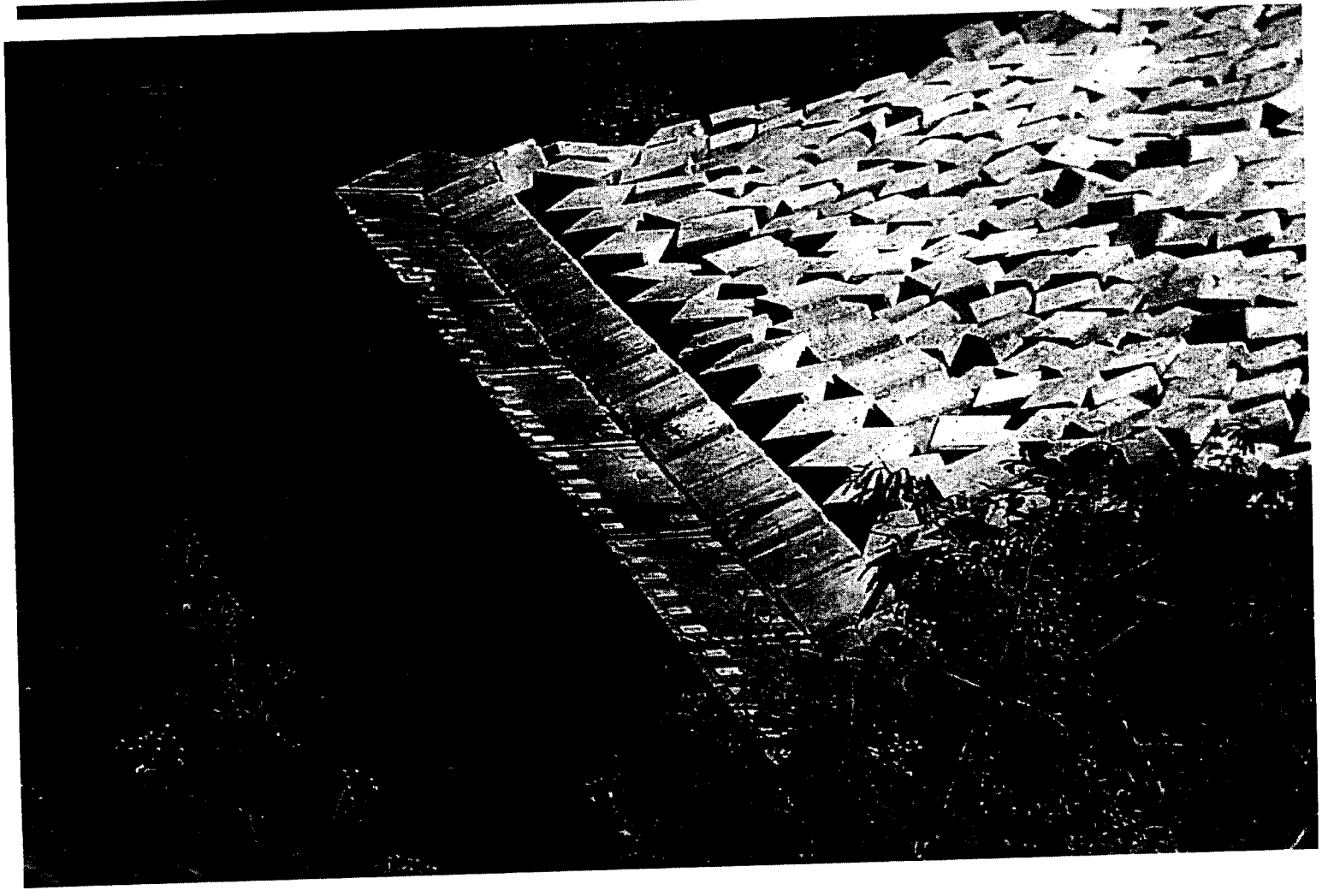
BERA – Baseline Ecological Risk Assessment

SAP – Samping and Analysis Plan

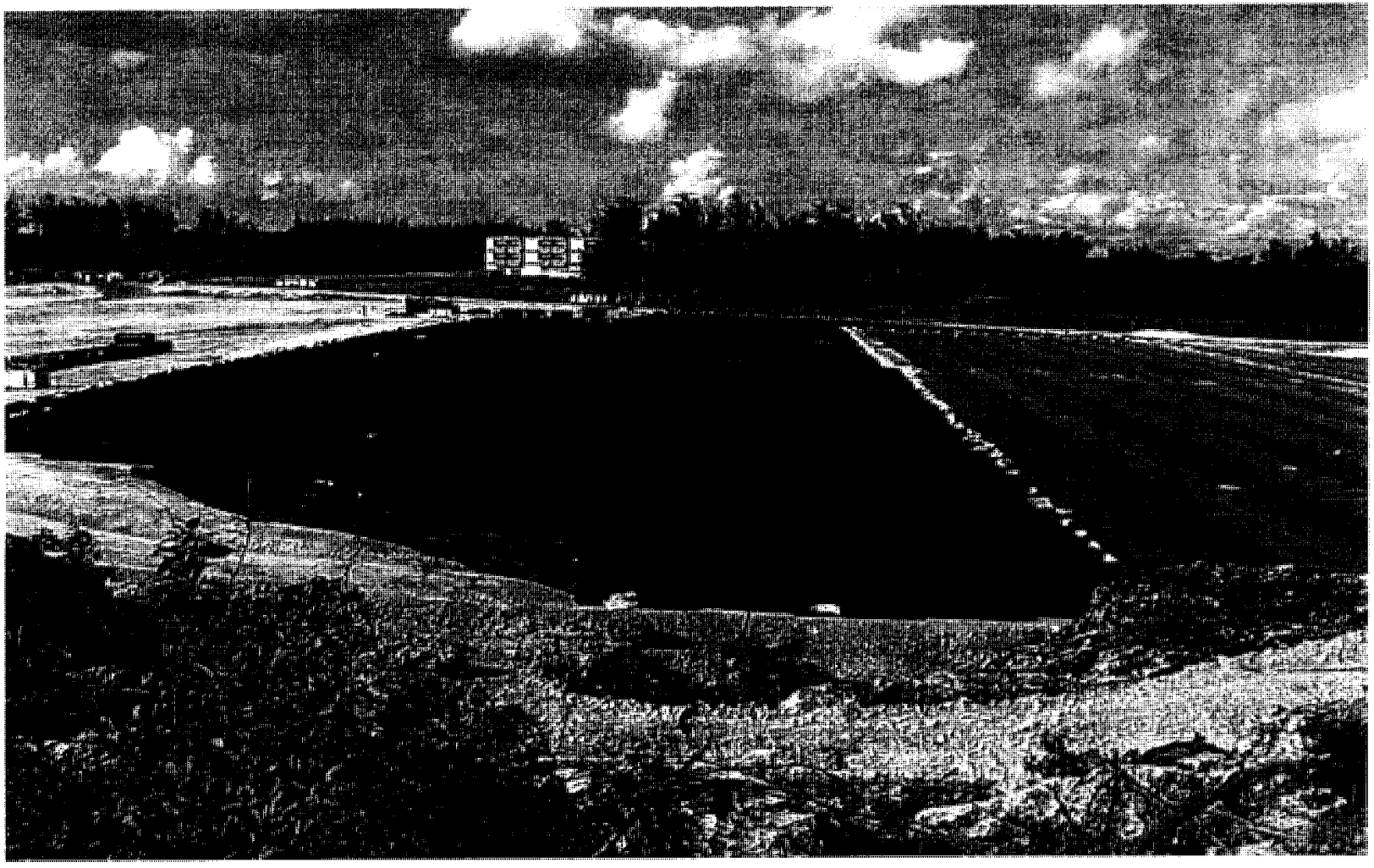


Seawall Cross-Section

Close-up of Toewall - March 2001



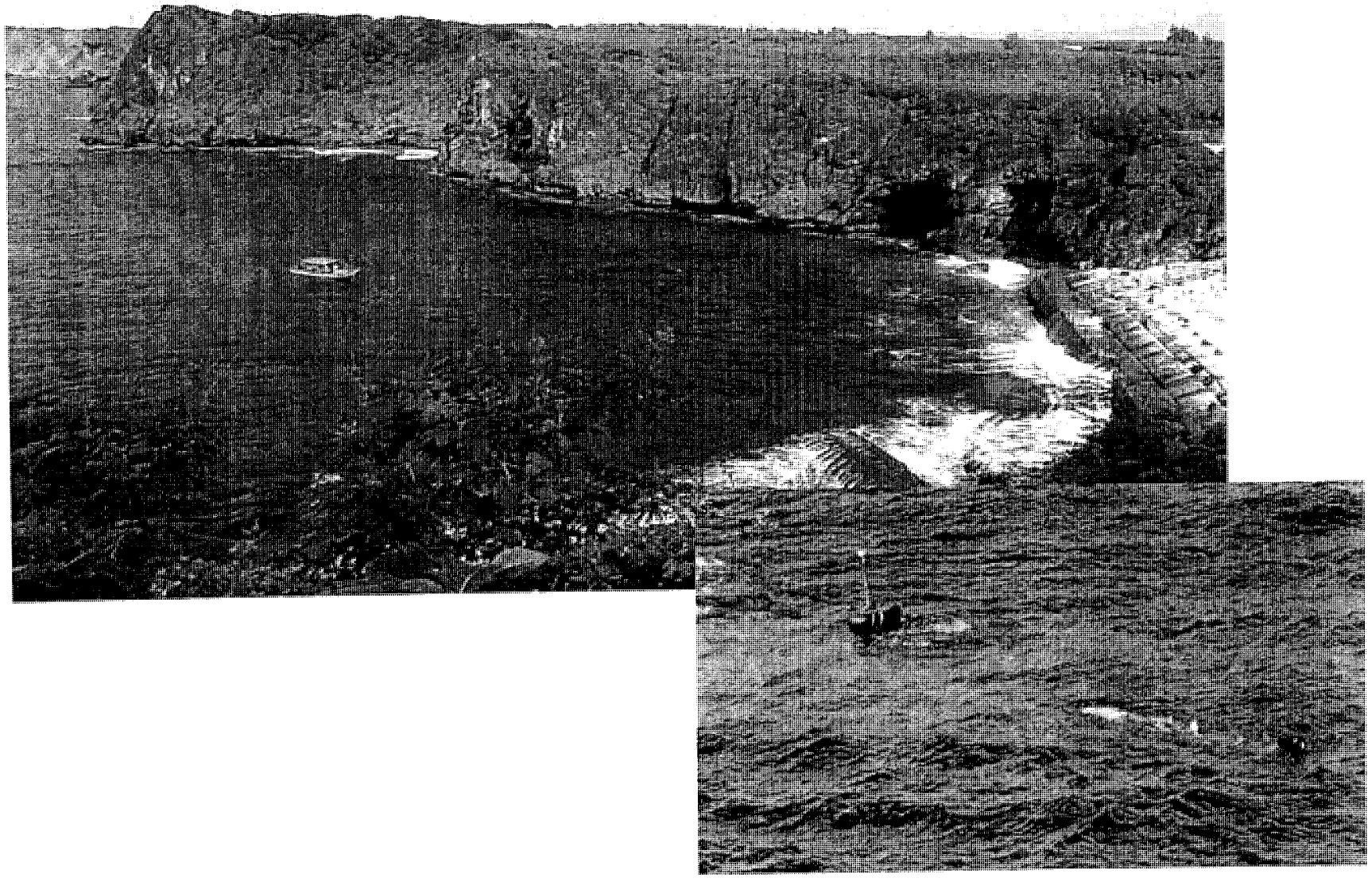
Liner Installation



Contaminant Sources Removed

- REMOVED: Erosion of cliff face - removed by placement of seawall
- REMOVED: Surface runoff from landfill - removed by placement of landfill cap
- REMOVED: Leaching from debris on beach and in near shore areas- eliminated by removal of debris
- NEAR SHORE ASSESSMENT: Ground water discharge to near shore - potential for continuing occurrence after completion of cleanup

Conducting Salinity Profiles



Selection of Sampling Areas Based on Salinity Survey

- Sampling locations for water and tissue in vicinity of landfill selected as maximum discharge locations for ground water
  - separate locations at north end and south end of seawall
  - water samples to be collected at ebb or low tide at maximum freshwater discharge
- Reference location for water and tissue measurements at Barracuda Rock

Sampling Schedule

- Separate sampling events during annual cycle
  - dry season (December-June)
    - collect samples in late May/June 2001
    - collect water and tissue samples for chemistry/toxicity measurements
  - wet season (July-November)
    - collect samples in August 2001
    - collect only water samples for chemistry/toxicity measurements

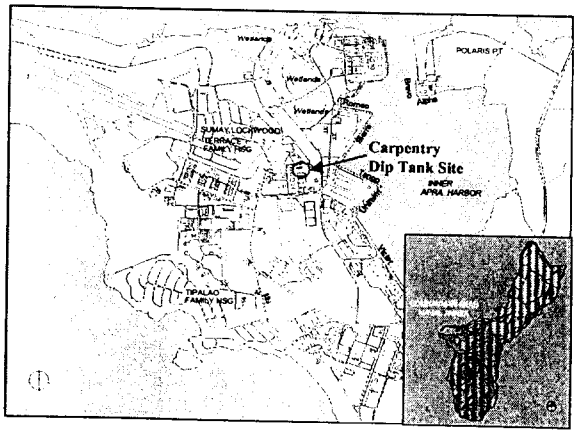
INVESTIGATION

at the

CARPENTRY SHOP DIP TANK SITE
Public Works Center (PWC)
Apra Harbor, Guam

Restoration Advisory Board Meeting
May 9, 2001
Cowan Azuma

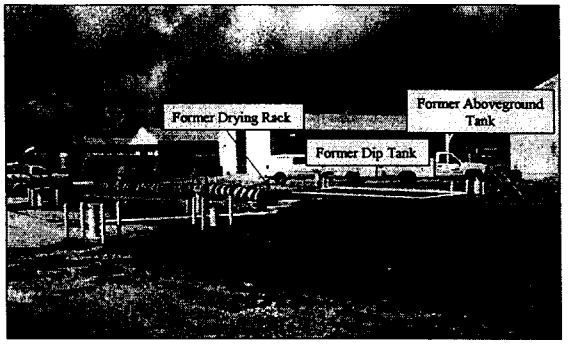
Site Location Map



Site is located within PWC maintenance compound in the COMNAVMAR Naval Annex

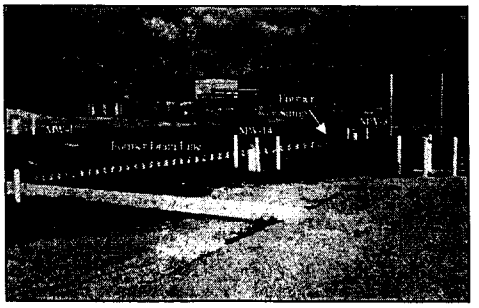
Site Background

- Used from 1953 to 1972, sporadically from 1972 to 1979 for termite treatment operations
- Dip Tank Assembly
  - Aboveground Storage Tank
  - Dip Tank
  - Drying Rack
  - Drainage lines
  - Sump (dry well)

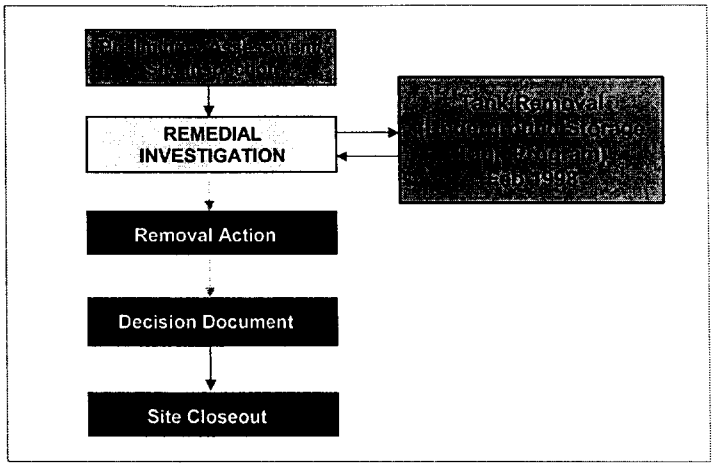


Background (cont.)

- Other wood preservatives used
- In 1979,
  - Aboveground Storage Tank and Drying Rack Removed
  - Dip Tank left in place and filled with crushed rock
- Groundwater not used for drinking

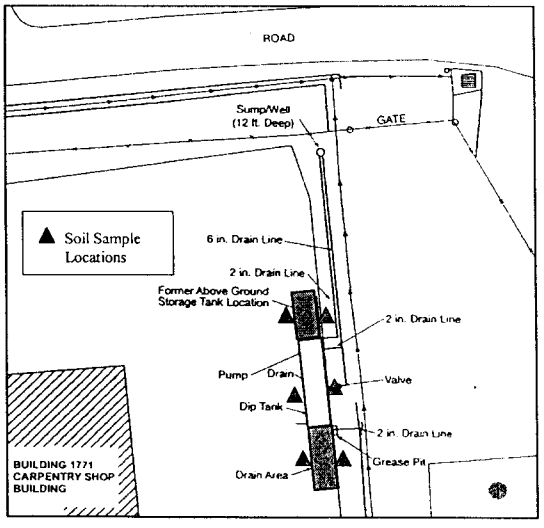


Site Progress



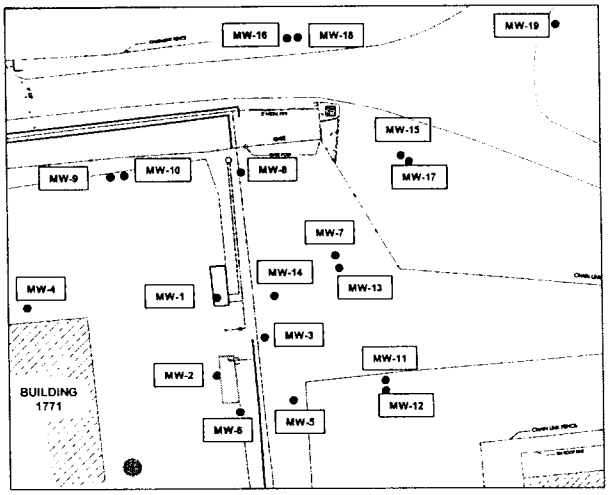
Soil Sample Locations

Six additional soil samples surrounding former dip tank location
(only during wet season sampling July 1999)



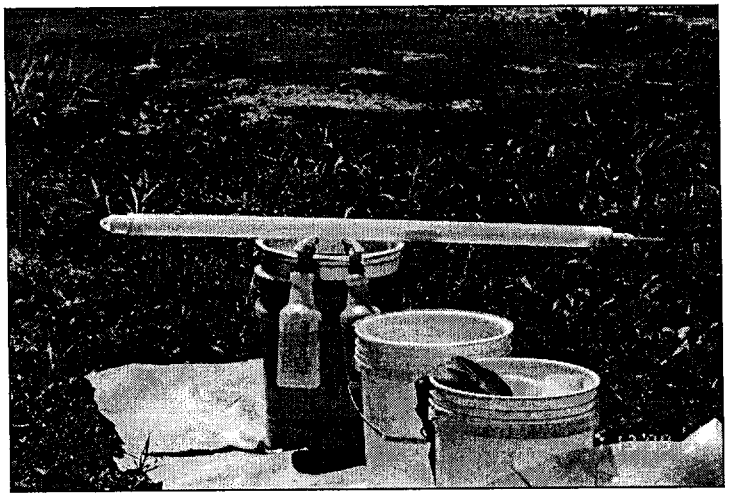
Monitoring Well Network

- 19 monitoring wells sampled
- Groundwater sampled in 2 events
  - Wet season
  - Dry season



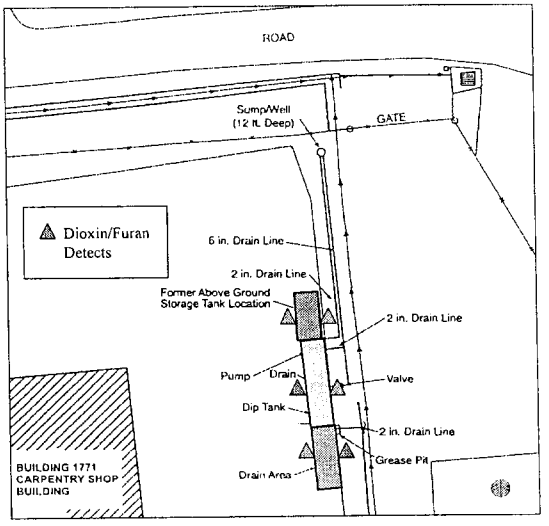
Groundwater Sampling

Groundwater Sampling Equipment



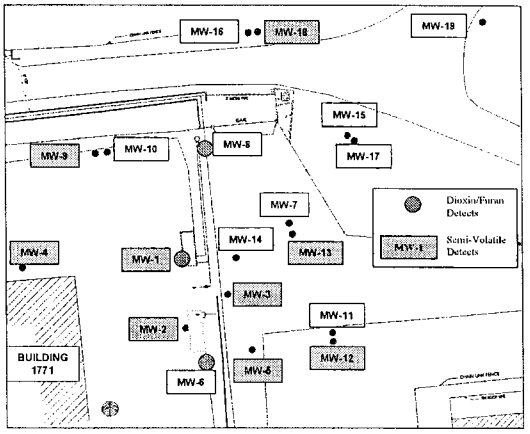
Soil Sample Results

- Detected dioxins and furans above EPA PRGs (Industrial Use)



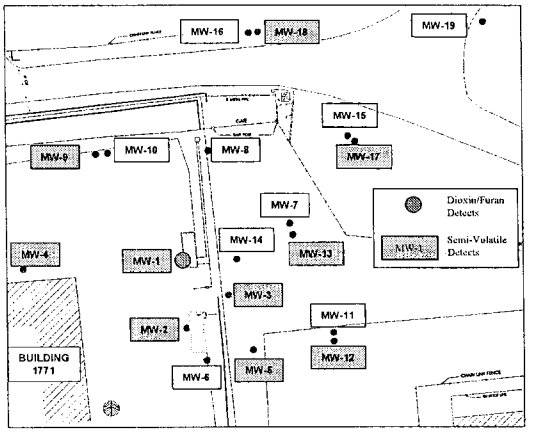
Wet Season Groundwater Sample Results

- Several semi-volatiles detected above Screening Criteria
- A few detections of dioxin/furans above Screening Criteria



Dry Season Groundwater Sample Results

- Several semi-volatiles detected above Screening Criteria
- One detection of dioxin/furans above Screening Criteria



Investigation Results

No significant ecological risk

- Significant biological resources, sensitive or endangered species do not exist on site.

Soil

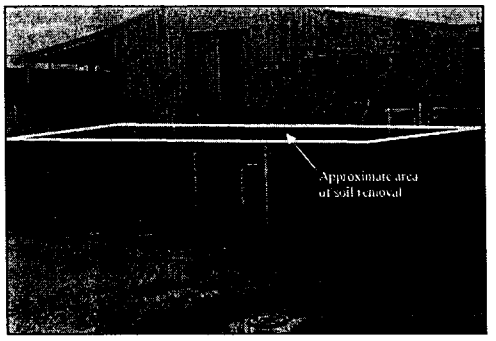
- Poses a risk to humans if soil disturbed (construction scenario).

Groundwater

- High salinity, not a drinking water source.
- No significant risk to marine environment.

Future Activities

- Initiate a removal action to clean the soil contamination.
- Finalize the RI with regulatory concurrence.
- Initiate a Decision Document.
- Closeout the site.



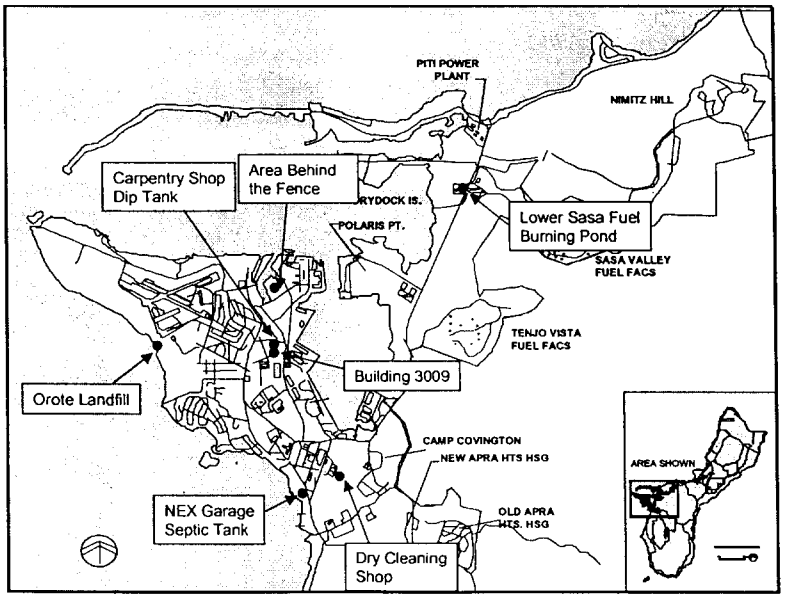
Updates on Progress of Installation Restoration (IR) Sites in Guam

Restoration Advisory Board Meeting

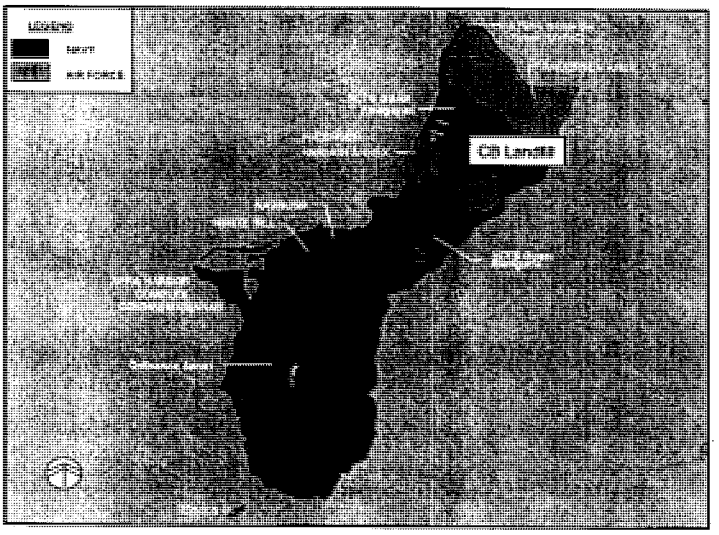
May 9, 2001

Darlene Ige

Site Locations



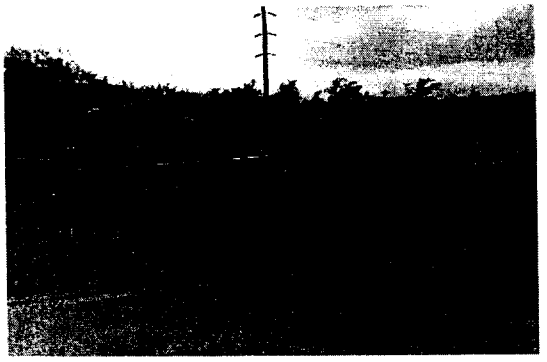
Site Location (cont.)



Carpentry Shop Dip Tank (PWC)

- **Dip Tank, Drain Lines, and Sump Removed in Feb 1998**
- **Wet Season Groundwater Sampling Conducted in July 1999**
- **Dry Season Groundwater Sampling Conducted in Feb 2000**
- **Draft Final Remedial Investigation Report completed in Feb 2001**

Dry Cleaning Shop (COMNAVMARIANAS)



- Remedial Investigation (RI) Report Finalized in Feb 1996
- Additional Wet Season Groundwater Sampling Conducted in Aug 2000
- Dry Season Groundwater Sampling Conducted in Feb 2001

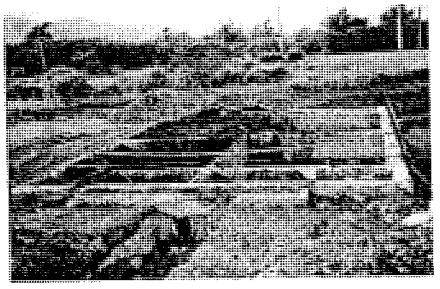
Building 3009 (PWC)

- Treatment of PCB Contaminated Soil Completed in Mar 1997
- Additional Soil Sampling Completed in Nov 1998
- Remediation Verification Report Completed in Dec 1998
- Draft Site Inspection Work Plan / Sampling and Analysis Plan was Completed in Oct 2000

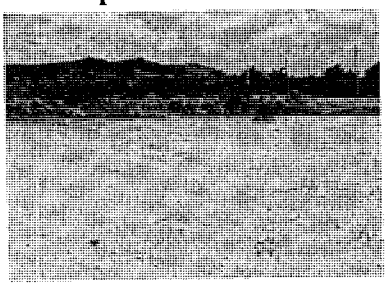
Area Behind the Fence (COMNAVMARIANAS)

- **Remedial Investigation Finalized in 1995**
- **Additional Sampling Planned for 2006**

NEX Garage Septic Tank Site (COMNAVMARIANAS)

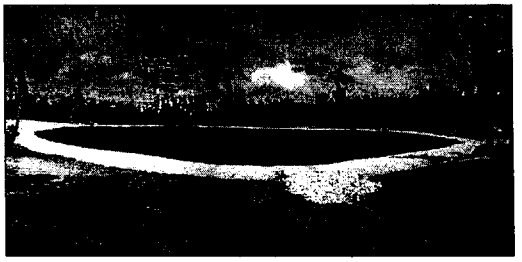


- **Final Field Sampling Plan (Aug 00) and Final QAPP (Dec 00) Completed**
- **Field Work for Cleanup Started in Jan 2001, Completed in Mar 2001**



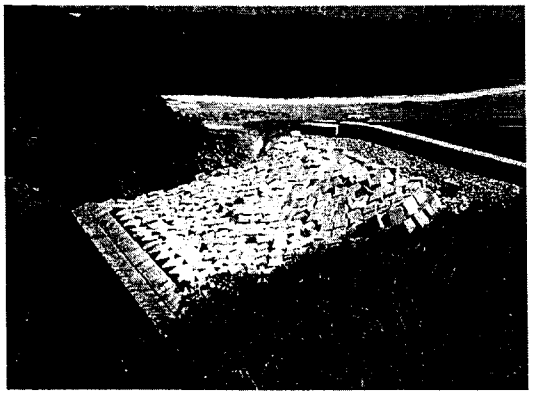
QAPP Quality Assurance Project Plan

South Finegayan Construction Battalion Landfill (PWC)



- Completed Construction in June 1998
- Final Site Work Plan for Groundwater Sampling Completed in April 1999
- Dye Trace Study Conducted in July 1999
- Continue Groundwater Monitoring and Maintenance

Orote Landfill (COMNAVMARIANAS)



- Construction of Seawall Started in March 1999
- Construction of Landfill Cap Started in Feb 2000
- Construction Completed in Feb 2001

Lower Sasa Fuel Burning Pond, COMNAVMARIANAS

- **Engineering Evaluation/ Cost Analysis (EE/CA) Finalized in Dec 1997**
- **Draft Removal Action Design Completed in Aug 1998**
- **Draft Revised Screening Ecological Risk Assessment Completed in Aug 2000**
- **Draft Baseline Ecological Risk Assessment scheduled for completion in Sep 2001**