



DEPARTMENT OF THE NAVY
CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
300 HIGHWAY 361
CRANE, INDIANA 47522-5001

IN REPLY REFER TO

5090
Ser 095/0068

05 APR 2000

MEMORANDUM

From: Installation Co-Chair
To: Restoration Advisory Board Members
Subj: **RESTORATION ADVISORY BOARD (RAB) MEETING**

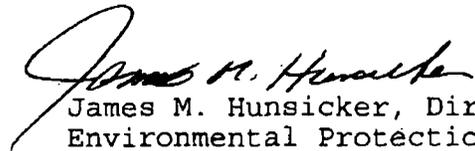
Encl: (1) March 21, 2000 RAB Meeting Minutes

Crane Division, Naval Surface Warfare Center (NAVSURFWARCENDIV Crane) conducted, on Center, a RAB meeting on March 21, 2000. Enclosure (1) is a copy of the minutes from that meeting.

The next NAVSURFWARCENDIV Crane Community RAB meeting is scheduled for Tuesday, November 14, 2000. The meeting will take place on Center at the Lakeview Training and Conference Center, in Crane, Indiana from 1200 to 1600 hours. A reminder and an agenda will be e-mailed or sent out approximately two weeks prior to the meeting. Your ideas and input for additional topics to, or presentations for, the agenda would be especially welcome. Currently, the proposed agenda for the next meeting includes:

- Presentations concerning progress of the Full Scale contaminated soil operations for the Bioremediation Facility
- Presentations concerning Interim Measures Cleanup Projects
- Updates on all ongoing Installation Restoration Projects
- Discussion Concerning Project Funding for Fiscal Years 01 & 02
- Discussion Concerning NAVSURFWARCENDIV Crane RAB Status; signature of revised RAB Charter

For questions, comments, or information, please contact NAVSURFWARCENDIV Crane POC, Ms. Christine D. Freeman, Code 09511, telephone 812-854-4423.


James M. Hunsicker, Director,
Environmental Protection Department

Subj: RESTORATION ADVISORY BOARD (RAB) MEETING

Distribution:

ADMINISTRATIVE RECORD
BEDFORD TIMES-MAIL (J. Wildman)
BLOOMFILED EVENING WORLD (N. Schneider)
COMARCO (A. Netherland)
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M. Chase
T. Ellis
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J. Myers
IDEM (D. Griffin)
IDEM (J. Workman)
NAVSEASYSKOM (SEA 00T)
NAVSURFWARCENDIV Crane (00)
NAVSURFWARCENDIV Crane (01)
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NAVSURFWARCENDIV Crane (09A)
NAVSURFWARCENDIV Crane (095)
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NAVSURFWARCENDIV Crane (ROICC)
NAVSURFWARCENDIV Crane (POA)
NAVSURFWARCENDIV Crane (PA)
ROSE HULMAN (K. Pennell)
ROSE HULMAN (A. Witszczyk)
SIOCN-EDS (B. Quigley)
SIOCN-SF (D. Johnson)
SIOCN-SF (F. Mitchell)
SOUTHNAVFACENCOM (CODE 1864)
TOLTEST (L. Parsons)
USEPA Region V (DW-8J)
USEPA Region V (P-19J)
USCEWES (GG)

Restoration Advisory Board Meeting Minutes March 21, 2000

Crane Division, Naval Surface Warfare Center (NAVSURFWARCENDIV Crane) conducted a Restoration Advisory Board (RAB) Meeting, Tuesday, March 21, 2000. The meeting was held on Center in Building 3241 Conference Room B in Crane, Indiana. From 1100 to 1430 hours an informal meeting was called to order. Attachment (1) is a list of the RAB meeting attendees. CDR Frank Aucremanne, NAVSURFWARCENDIV Crane Public Works Officer opened the meeting and welcomed everyone attending. CDR Aucremanne then announced that lunch would be served and invited the speakers to approach the line first.

Mr. William Gates, Remedial Project Manager, Southern Division Naval Facilities Engineering Command, gave a presentation on the current NSWC Crane Installation Restoration projects & proposed FY 2001 projects. Attachment (2) represents the presentation given by Mr. Gates. A short break was taken after the presentation by Mr. Gates.

Mr. Thomas Brent, NAVSURFWARCENDIV Crane Environmental Protection Department (EPD) then gave a presentation discussing the Dye Burial Grounds RFI Phase III Soils & Ground Water, Risk Assessment, and Method Development for Dye. Mr. Brent received questions from the audience. Question: Why was the dye material not removed instead of just covered up? Answer: The dye was not removed because there is currently no known treatment method for the dye; as with any dye, a little goes a long way when it contacts water during excavation. Question: Why weren't horizontal migration aspects built into the cap. Answer: The dye material has not proven to be mobile so restricting vertical infiltration from rainwater was the main objective. Attachment (3) is a representation of the presentation given by Mr. Brent.

The next presentation given concerned the Ammunition Burning Grounds (ABG) Natural Attenuation Demonstration presented by Dr. James May, Army Corps of Engineers Waterways Experiment Station. Attachment (4) represents the presentation given by Dr. May. Dr. May received questions from the audience. Question: What causes the Natural Attenuation of explosives and metals? Answer: Dilution, adsorption, and microbial decomposition cause Natural Attenuation. Question: Of the slides showing the ions, which was for the Big Clifty/Beach Creek and which was the Beaver Bend Aquifers? Answer (provided after the RAB): The first ion slide was from the Big Clifty/Beach Creek Aquifer and the second ion slide was for the Beaver Bend Aquifer.

Mr. Brent then gave an update on Insect Collection Survey for presence of explosives and metals in the food chain of the Endangered Indiana Bat at ABG. Attachment (5) is a representation of the presentation given by Mr. Brent. Question: Why isn't a sample taken from an Indiana Bat instead of insects? Answer: The Indiana Bat is a Federally Endangered species and therefore cannot be taken without a permit. Question: Why couldn't you find a dead Indiana Bat to sample? Answer: The bats would be roosting in trees (instead of caves) and the chances of finding a bat would be slim and the foraging area of that bat could not be confirmed. A short break was taken after the presentation by Mr. Brent.

Ms. Christine Freeman, NAVSURFWARCENDIV Crane Environmental Protection Department gave an update, overview, and contractor turnover information for the Full Scale Explosives Contaminated Soil Composting Operations. Attachment (6) addresses the specifics of the

presentation given by Ms. Freeman. Ms. Freeman received questions from the audience on the Bioremediation Facility presentation. Question: How much soil (not amendments) is in each windrow and how long is the cycle time? Answer: There are 232.2 tons in each windrow and the average cycle time for a windrow is 9 days.

An update on the Mustard Gas Burial Ground RFI Phase III Soils & Ground Water was presented by Mr. Brent. Attachment (7) is a representation of the presentation given by Mr. Brent.

Mr. Brent then gave a quick overview of the Interim Measures (IM) at the Roads & Grounds Area. Attachment (8) is a representation of the presentation given by Mr. Brent. A quick break was taken after Mr. Brent's presentation to clear away the tableware from the luncheon.

After the break, Ms. Freeman gave an overview on the IM at the Mine Fill A (MFA) Battery Site. Attachment (9) represents the presentation by Ms. Freeman. Ms. Freeman received a question from the audience on the IM MFA Battery Site presentation. Question: How long had the batteries been there? Answer: The batteries were found legible and intact in 1995 and have now disintegrated until only the core material is left, so the batteries most likely couldn't have been there for more than a couple of years prior to 1995.

Mr. Peter Ramanauskas, United States Environmental Protection Agency (U.S. EPA), Region V Corrective Action Representative, gave a short presentation on the overview of the regulatory transition from U.S.EPA to Indiana Department of Environmental Management. Attachment (10) contains the slides presented by Mr. Ramanauskas.

Ms. Freeman then led an open discussion session on RAB operations and posed a question to the community members of the audience concerning reducing the number of RAB meetings to once or twice per year instead of four. The motion to reduce the RAB meetings from 4 to 2 times per year or as needed was made by Mr. Jeffery Myers and seconded by Mrs. Teresa Ellis. The motion was approved by unanimous decision. Ms. Freeman will modify the RAB Charter to state that the RAB will meet a minimum of two times per year or more often if needed. The RAB Charter signature page will also be modified from the 1996 version to show changes in NAVFACENGCOM, U.S.EPA, & IDEM representatives. The addition of a new RAB member Mr. Mike Chase was also discussed. Ms. Freeman stated that all the membership paper work would be sent to Mr. Chase with the minutes and a vote to add him as a member could be taken at the next RAB meeting.

Because of the reduced meeting schedule it was proposed that additional steps be taken to bolster community involvement. One way is to continue having the CAPT share RAB information at the Mayor's Roundtable Meetings, which are held monthly, and the CAPT attends when his schedule allows. Another way is to reestablish a CD version of the Administrative Record (a copy of all formal documents between U.S.EPA, IDEM, & the Navy concerning the Corrective Action Program) at a local library. A RAB website was discussed and is to be constructed to provide additional information. The point was made that the RAB should not be entirely electronic due to limiting access to individuals who do not have the Internet. The community members will meet July 18, 2000 to discuss the content of the proposed RAB website. The next official RAB meeting will be November 14, 2000, which will allow public participation in planning the Fiscal Year 2002 budget. The RAB meeting was adjourned at 1430.

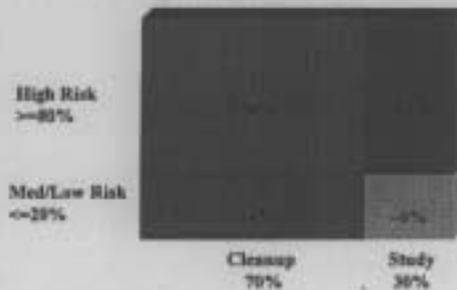
**RESTORATION ADVISORY BOARD
MEETING ATTENDEES LIST
FOR MARCH 21, 2000**

NAME	TELEPHONE & FAX	ORGANIZATION REPRESENTED AND MAILING OR E-MAIL ADDRESS
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Lois Richardson	812-854-6409 4107	richardson-lo@crane.navy.mil
Kathy Powell	712 217-7210	powell.k@roehampton.edu

**RESTORATION ADVISORY BOARD
MEETING ATTENDEES LIST
FOR MARCH 21, 2000**

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Peter Cavalier	-6944 FAX 812/854-6941	TelTest, Inc.
Teresa Ellis	812/274-3087	Greene Co. Community
Michele Welch	812/277/1300	Chosec DMRTC.net
Janis Witzman	812-277-7257 812-277 FAX - 3472	TIMES-MAIL
FRANK Mitchell	812-854-1796 FAX 3407	CAA - ENVIRONMENTAL PROGRAM OFFICE MITCHELLF@smr.criane-smt.p.army.mil
Jim May	601-634-3395 mayj@wes.army.mil	U.S. Army waterways Experiment Station
		Mike Chase
		Box 143 Rt2 Springville IN 47462
Stuart Hill	312 886-0689	U.S. EPA 224 A198 77W. Jackson Chicago, IL 60609 Hill.Stuart@epa.gov

ERN BUDGET



Current Projects

- SWMU 1 MGBG - RFI Work Plan
- SWMU 2 DBG - RFI Work Plan/RA/CMS
- SWMU 3 ABG - Natural Attenuation Study
- SWMU 3 ABG - GW Monitoring (ERN portion)
- SWMU 3 ABG - RFI Work Plan (Jeep Trail)

Current Projects *continued*

- SWMU 3 ABG - Insect Study
- SWMUs 4, 5, 9, 10 - Risk Assessment
- SWMUs 6/7 DR/ORR - RFI Work Plan
- SWMU 10 RKI - Begin Composting
- SWMU 12 MFA - Interim Measure

Current Projects *continued*

- SWMU 13 MFB - Complete Composting
- SWMU 13 MFB - Admin. Support EJOC
- SWMU 15 RGA - Interim Measure
- SWMUs 14, 17, 24, 26(soil) - NFA
- SWMU 30 Landfarm - GW Monitoring
- Basewide Background Soil Investigation

FY01 Projects

- SWMU 1 MGBG - Fieldwork and Report
- SWMU 3 ABG - Fieldwork and Report
- SWMU 3 - GW Monitoring (ERN portion)
- SWMUs 6/7 DR/ORR - Fieldwork and Report
- SWMU 10 RKI - Complete Composting
- SWMU 10 RKI - Admin. Support EJOC

FY01 Projects *continued*

- SWMUs 12, 13, 16, 23, 25, 26 - Complete RFI (IMRs approved in FY00)
- SWMUs 19, 21, 22, 28 - Begin RFI
- SWMU 20 CAAA QA/QC Test Area - Prepare Compost Planning Documents and Begin Composting

ENVIRONMENTAL
RESTORATION, NAVY(ERN)
FUNDING PROGRAM
for
NSWC CRANE

March 2000

Funding Program

- Funding Process
- Current Projects
- FY 01 Projects

Funding Process

- NAVFACENCOM manages ERN funds for the Navy
- SOUTHDIV manages ERN funds for naval activities within its 26 state area of responsibility.
- Crane project team (Crane, SOUTHDIV, regulators) develops a prioritized list of ERN projects each fiscal year.

Funding Process continued

- SOUTHDIV ERN Project Validation Team scores each project using eleven criteria jointly prepared by Navy and stakeholders. Examples include:
 - Importance to the project team,
 - use of cost effective technologies,
 - potential to contain significant threats or reduce future costs,

Funding Process continued

- comply with legal drivers,
- importance to stakeholders,
- potential to protect natural resources from future loss.
- All projects are ranked by score. Highest scoring projects receive funding first.

Funding Process continued

- SOUTHDIV drafts budget to match targets:
 - \$39,000,000 maximum,
 - 80% of budget for high risk sites/20% for medium and low risk sites,
 - 70% of budget for cleanup projects/30% for study projects.
- HQ approves and forwards funds after Congress authorizes budget.

**DBG RFI PIII Soils & GW, RA, & Method
Development for Dye**

- **Background**
 - Geophysical investigation report submitted June 1997
 - Phase III ground water release characterization report dated July 1998
 - Cap completed in 1997

**DBG RFI PIII Soils & GW, RA, & Method
Development for Dye**

- **Objectives of Current Investigation**
 - Collect necessary samples needed to complete human health and eco. RA & CMS
 - Collect soil samples to confirm that all dye contaminated soils are under the cap
 - Analysis of representative GW, SW, & Sed. samples for dye constituents
 - Conduct a human health & Eco. RA
 - Conduct a CMS

DBG RFI PIII Soils & GW, RA, & Method Development for Dye

- **Dye Method Development**
 - There are no U.S. EPA approved analytical methods for dyes.
 - NSWCC Crane Code 40 is doing the development work.
- **Dye Toxicity Parameters Development**

DBG RFI PIII Soils & GW, RA, & Method Development for Dye

- **Project Milestones**

Item	Activity/Milestone	Date
1	Submit Draft Plans w/o Dye QAPP Info. to EPA/IDEM	7 APR 00
2	Complete Anal. Method Dev't for Dyes	28 APR 00
3	Submit Dye QAPP Info. to EPA/IDEM	12 MAY 00
4	Receipt of EPA Comments on D. Plans	7 JUL 00
5	Submit Resp. to Comments on Draft Plans	28 JUL 00
6	Comment/Response Meeting (Telecon)	14 AUG 00
7	Submit Final Plans	17 OCT 00
8	Begin Field Operations	17 NOV 00
9	End Field Operations	20 JAN 01
10	Submit Draft Risk Assessment Report	4 JUN 01

**Ammunition Burning Grounds
Natural Attenuation Demonstration
Presented by Dr. James May of the Army Corps of
Engineers, Waterways Experiment Station**

**Attachment (4) was to represent the Natural Attenuation
Demonstration slide presentation given by Dr. May.
Attachment (4) was unavailable at the time the RAB
minutes were to be distributed.**

Insect Collection Survey for presence of toxins in the Indiana Bat food chain at ABG

- **Background**
 - Eco RA for Subpart X permit resulted in the capture of a single male Indiana Bat (*Myotis sodalis*) on June 25, 1996. The capture occurred south of the ABG on Little Sulphur Creek.
 - Subsequently agreed w/USFWS & USEPA to conduct a survey of available prey in the area to look for explosives and metals.

Insect Collection Survey for presence of toxins in the Indiana Bat food chain at ABG

- **Preliminary Studies**
 - Surrogate Cricket
 - QC (determine changes to preparation and analytical procedures, interferences, detection limits, required sample volumes, etc.)
 - 1997 Insect Collection
 - Determined volumes of insects we could reasonably obtain

**Insect Collection Survey for presence of toxins
in the Indiana Bat food chain at ABG**

- **Current Status**
 - Finalized SOPs, QAPP, & FSP for submittal to U.S. EPA & USFWS
 - To begin sample collection in June 2000
 - Analytical results expected in October 2000

**Insect Collection Survey for presence of toxins
in the Indiana Bat food chain at ABG**

- **Sample procedure:**

	June	June	July	August
Terrestrial	1	2	2	2
Aquatic	1	3	3	3
Lepidopterans	1	4	4	4

1. Collect. No sorting. Grind, split, and weigh splits. Analyze ½ now & ½ late Aug. early Sept.
2. Separate from Aquatic. Obtain weights/month. Store frozen until all 3 months arrive. Analyze as 1 sample.
3. Separate from Terrestrial. Obtain wts./month. Store frozen until all 3 months arrive. Analyze as 1 sample.
4. Collect. Obtain weights/month. Store frozen until all 3 months arrive. Analyze as 1 sample.

Crane Division, Naval Air Force Warfare



Explosive Contaminated
Composting

Contractor Change

- Morrison Knudsen Corporation turned over Full Scale Bioremediation Facility Operations to ToITest, Incorporated on March 26, 1999
- Contract mechanism changed from a "cost plus" contract to a "fixed price" contract
- ToITest has completed the following:

Background

Site Investigations ➤ Cleanup Activities
NSWC Crane has 33 SWMUs

Explosive contaminants in the soil:

- Ammunition Burning Grounds (11 acres)
- Rockeye Munitions (1 acre)
- Mine Fill A (2 acres)
- Mine Fill B (2 acres)

Background (Cont.)

Several treatment methods for remediation of explosives contaminated soils were evaluated.

Composting is a process by which organic materials are biodegraded by microorganism, resulting in the production of organic and/or inorganic byproducts and energy in the form of heat.

Purpose of the Testing Phases

Optimize a mix for Composting
Explosives Contaminated soils.

Based upon:

- Greatest Contaminant Reduction
- Speed at which Contaminants are reduced
- Cost of the amendments
- Others:
 - Texture & Handling of Mix
 - Ease of Measuring Contents of Mix

Testing Phases Conducted

Bench-Scale
Cold Weather
Dewar
Pilot Scale (PS)

- Clean Soil
- Explosive Contaminated Soil

Full Scale (FS)

Full Scale (FS)

Mix Used in FS

- Mix 7B from PS

- 15% Chicken Manure,
 - 80% Straw, &
 - 25% Soil
- } by volume

Pile Size: ~ 860 Cubic Yards
(270'x20'x7')

Explosives Contaminated Soils



Explosives Contaminated Soils - Yucca Removal



Excavated Explosives Contaminated Soils



Excavated Explosives Contaminated Soils (Cont.)



Excavation Operations (Cont.)



**Excavation Operations
(Cont.)**



**Bioremediation Facility
Complex**

5.5 acres; near NSWC Crane Landfill
3 Buildings measuring 300'x70'x18'
- each building - 1,000 gallon sump
2 Storm water collection ponds
Vehicle & personnel decontamination areas
Laboratory & administrative facilities
Truck Scales

Biofacility Operations



**Biofacility Operations
(Cont.)**



**Biofacility Operations
(Cont.)**



**Biofacility Operations
(Cont.)**



Biofacility Operations (Cont.)



Biofacility Operations (Cont.)



Explosives Concentrations

Prior to Composting

- TNT	3,790 mg/kg
- RDX	15,300 mg/kg
- HMX	10,400 mg/kg

Goal After Composting

- TNT	15 mg/kg
- RDX	4 mg/kg
- HMX	3,300 mg/kg

Staged Compost



Finished Compost

Once acceptable reduction of explosives has been achieved finished compost will be:

- Stockpiled for use as daily cover for the on-site solid waste landfill (continued negotiations w/DEM), or
- Used as backfill at the original excavation site

Good News Stories



Mustard Gas Burial Ground RFI Phase III Soils & Ground Water +RA

- **Background**
 - **Burial of Mustard gas bombs, thorium nitrate, and R&D chemicals occurred from after World War II into the 1960s.**
 - **1974 and 1980 exhumation of buried materials.**
 - **1981-86 GW Monitoring of 27 wells.**
 - **1995 WES geophysical survey indicates only 2 subsurface anomalies remaining at the site.**

Mustard Gas Burial Ground RFI Phase III Soils & Ground Water +RA

- **Ground Water, Surface Water, Sediment, and Soil Sampling Plans are in the initial stages of being written.**
- **Potential Contaminants:**
 - **Mustard gas (HD) + degradation products (1,4-thioxane; 1,4-dithiane; and thiodiglycol)**
 - **Thorium nitrate, other metal salts, and laboratory metals**
 - **VOCs**

Mustard Gas Burial Ground RFI Phase III Soils & Ground Water +RA

- What's Next?

#	Activity/Milestone	Date
1	Submit ID QAPP and ID HASP to Navy for review.	24 MAY 00
2	Receipt of Navy comments on ID QAPP and ID HASP.	23 JUN 00
3	Submit Draft Plans to the EPA & IDEM for review.	25 JUL 00
4	Receive EPA & IDEM comments on Draft Plans.	23 SEP 00
5	Submit final plans to EPA, IDEM, & Navy.	3 NOV 00

Mustard Gas Burial Ground RFI Phase III Soils & Ground Water +RA

- Issues to be Resolved
 - Army Involvement
 - Degree of Safety Required

Interim Measures at the Roads & Grounds Area

- **Background**
 - Phase I EMR lists such activities as pesticide storage and an asphalt batch plant.
 - Dump discovered over the hill east of 555

Interim Measures at the Roads & Grounds Area

- **Objectives**
 - Characterize the area via soil analysis
 - Remove debris and contaminated soil (if present)
 - Properly dispose of contaminated material
 - Complete post-excavation confirmatory sampling and analysis
 - Implement site restoration to prevent excessive soil erosion, & complete IMR.

Interim Measures at the Roads & Grounds Area

- **Current Status**
 - Workplan, Field Sampling Plan, Health and Safety Plan, and QAPP have all been reviewed by the Navy.
 - Upon receipt of draft plans, those will be submitted to EPA & IDEM.

Interim Measures



Mine Fill A Battery Dump Site

Background



- ◆ **Area Outside MFA Fence**
- ◆ **AA Batteries Were Dumped**
- ◆ **Potentially Contaminated Soil Areas**

Project Objectives

- ◆ **Characterize Soil by Sampling**
- ◆ **Remove Battery Fragments**
- ◆ **Remove/Dispose of Potentially Contaminated Soil**
- ◆ **Conduct Post-excavation Confirmatory Sampling**

Current Status

- ◆ **Workplan Submitted to EPA**
- ◆ **Comments Received from EPA**
- ◆ **ToI Test Incorporating Comments into Workplan**
- ◆ **Renegotiate Contract based on EPA Comments**



Regulatory Transition from USEPA to IDEM for RCRA CA

Peter Ramanauskas (USEPA)
Doug Griffin (IDEM)



USEPA & IDEM Involvement at Naval Surface Warfare Center

- 1990: USEPA & IDEM Issued a Joint RCRA Storage Permit. Federal Portion Identified 30 SWMUs requiring CA
- 1995: USEPA & IDEM Issued Joint Renewal for RCRA Storage Permit. Federal Portion included CA for 33 SWMUs



Corrective Action Activities

- USEPA has been the lead agency in matters of Corrective Action
- IDEM became authorized to administer Corrective Action rules in 1996
- IDEM will reissue RCRA permit containing Corrective Action conditions



USEPA to IDEM Transition

- Gradual Transition of Oversight from USEPA to IDEM
- Project Work Transferred at Logical Points
- Work Together to Ensure Efficient Transition and Minimal Impacts