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DEC 24 1997

U.S. Environmental Protection Agency
Region II
Attn: Ms. Nicoletta DiForte
290 Broadway - 22nd Floor
New York, New York 10007-1866

Re: U.S. Naval Station Roosevelt Roads, Puerto Rico
Operable Units 1, 6 and 7, EPA Comments on the
Revised RFI Report Addendum (EPA Ltr Dated Nov 14, 1997)
RCRA/HSWA Permit Number PR2170027203

Dear Ms. DiForte:

Provided in this letter (and the accompanying attachments) are the Navy responses to EPA comments transmitted by your letter of November 14, 1997 (received at this office on November 19, 1997). We have included the applicable text from your letter for reference when reviewing the response. The original comments have been italicized.

EPA Comment

1. *Tables 4-1 and 4-2 should be labeled "Average Detected Constituents in Background . . ." [bolding for emphasis only], as the concentration values listed are the average background detections plus two normal standard deviations.*

Response

The suggested change has been made. Copies of the revised tables are included in Attachment 1 to this letter.

EPA Comment

2. *On Table 4-1, why is ND (no detections) listed for the [average] background concentration of dioxin in subsurface soils, and the herbicide 2, 4, 5-T is not even listed, when positive detections of both were recorded in subsurface soils from samples BGMW03-03 and BGMW01-06 respectively (refer to July 14, 1997 Preliminary Working Copy of same Report, containing full analytical results)? The table should be corrected as necessary.*

J Mantz/PRGM
Quality Per T Fuller/PROJ results
M Kimes

Response

The table has been appropriately emended and a copy of the revised version is included in Attachment 1 to this letter.

EPA Comment

3. On Table 4-2 , why no [average] background concentrations of the semi-volatile constituents dimethylphthalate and bis(2-ethylhexyl)phthalate listed for groundwater, when positive detections of both were recorded in groundwater samples from BGMW03 (refer to July 14, 1997 Preliminary Working Copy of same Report, containing full analytical results)? The table should be corrected as necessary.

Response

The table has been appropriately emended and a copy of the revised version is included in Attachment 1.

EPA Comment

SWMU #30 (Former Incinerator)

In addition, as was discussed briefly during the October 21 and 22, 1997 meetings in San Juan, EPA does not approve the conclusions and recommendation, given in the [as yet not fully approved] July 1996 Draft RFI Report for OUs 1, 6, and 7 SWMUs, of no further action for SWMU #30 (Former Incinerator). Although EPA's original comments (November 8, 1996), by an inadvertent omission, did not address the conclusions and recommendations for that SWMU, EPA does not fully concur with the Navy's determination that the contamination at SWMU #30, as presently characterized, poses no unacceptable threat to human health and the environment.

EPA has never given final approval for the July 1996 Draft RFI Report for OU 1, 6, and 7 SWMUs. In fact, this letter, commenting on the third [August 29, 1997] Preliminary Revised Addendum to the July 1996 Draft RFI Report, results from some of the unresolved issues regarding EPA's final approval of that report. EPA's basis for not approving the conclusions and recommendation of no further action for SWMU #30 are that the human health and/or the environmental risk evaluations did not consider all contamination known at the site, nor has the site been sufficiently characterized for certain detected contaminants to make such determinations. Our reasons are described more fully below.

Pursuant to the September 1995 approved RFI work plan five surface soil samples were collected at SWMU #30; however, pursuant to that workplan, only two of these five surface samples were analyzed for the full Appendix IX constituent list. The other three surface samples were only analyzed for volatiles, semi-volatiles, and "RCRA metals" (i.e., listed in Table 1 of 40 CFR Part 261.24).

In both of the surface soil samples subject to the full Appendix IX analytical program (30SS03 and 30SS04), PCBs (Aroclor 1260) were found at concentrations exceeding the EPA Region III residential risk based concentration (RBC) level of 83 ug/kg (utilized in the Draft RFI report as a relevant standard/action level). The PCB concentrations measured were 200 and 250 ug/kg respectively (Table 5-21 of July 1996 Draft RFI Report for OUs 1, 6, and 7). Since both of the surface soil samples subjected to PCB analysis found concentrations exceeding the RBC level, surface soils cannot be considered adequately characterized for that constituent.

Response

The two samples, taken in accordance with the EPA approved RFI workplan, that were analyzed for Appendix IX constituents did indicate the presence of PCBs. Recent changes in the Region III RBCs (March 17, 1997) resulted in a new RBC for PCB which is 320 ug/kg. The two concentrations found at the site are well below the present RBC. This information notwithstanding, additional site soil characterization is provided for in Attachment 2.

EPA Comment

Subsurface soil samples were not collected during the 1995 RFI investigations. However, during underground storage tank (UST) program investigations in 1993 subsurface soil samples were collected and analyzed (but no surface soil samples). In the nine soil borings installed as part of the 1993 UST investigations, elevated total petroleum hydrocarbon (TPH) concentrations (exceeding 100 mg/kg) were present in 8 of the 19 subsurface soil samples collected. The 8 samples with elevated TPH concentrations ranged in depth from four to ten feet below ground surface (BGS), with the maximum TPH concentration detected being 9800 mg/kg in sample 1983-SB6 at the depth of 4 to 6 feet BGS. The TPH concentration of 100 mg/kg is generally taken as the clean-up standard in Puerto Rico, under the UST program. The results were reported in the October 1994 Site Characterization Report prepared by Blasland, Bouck, & Lee for the UST program. The 1994 UST Characterization Report (page 4-1) estimated that "the maximum volume of [TPH] contaminated soil at the site is . . . 918 cubic yards". The July 1996 Draft Final

RFI Report for OUs 1, 6, and 7 did not evaluate the human health or the environmental risk posed by the TPH contaminated soils. The Draft RFI report must address whether or not the TPH contaminated soils at SWMU #30 should be remediated.

Response

A qualitative risk assessment was performed on the subsurface soils during the UST investigations and was reported on in the Blasland, Bouck, & Lee report. It was the finding of this assessment that "the contaminants of concern, therefore, do not present a hazard to personnel who visit, work, or live at the NAVSTA Roosevelt Roads." (Page 5-4).

This, in much the same manner as the Tow Way, was brought into the program as a result of the RCRA permit. The approved RFI workplan never considered the UST associated with the incinerator or the subsurface petroleum contaminated soils since, at the time the workplan was being written, the UST and soils were being addressed by the UST program. Based on the November 14, 1997, the Navy now recognizes that the EPA considers them as part of the SWMU 30.

The EPA letter of November 14, 1997 indicates the need for the RFI to address whether the TPH containing soils require remediation. In the same letter, additional site characterization work is mandated which would provide more information regarding the site subsurface soils. For this reason, the Navy feels it premature to render a judgment on the need for soils remediation and recommends that a decision be postponed until the information from the investigations provided for in Attachment 2 becomes available.

EPA Comment

In addition, as part of those 1983 UST investigations, a more extensive analytical program was performed on 5 discrete subsurface samples from four of the borings (1983-SB3, -SB4, -SB6 [two intervals], and SB7). Results are listed in Table 4-2 of the 1994 Characterization Report. The depth intervals of these 5 samples ranged from 4 feet BGS to 12 feet BGS. PCBs (Aroclor 1260) were detected in 3 of the 5 subsurface samples at concentrations ranging from 38 to 130 ug/kg. Because of the presence of elevated PCB concentrations in 3 of the 5 subsurface samples analyzed and both (2) of the surface samples analyzed, further delineation of PCB contamination in both the surface and subsurface soils at SWMU #30 appears necessary, before a definitive determination of the risks to human health and the environment can be made. Therefore, a program of additional

surface and subsurface sampling for PCBs (and antimony as will be discussed below) is required.

Response

Additional characterization of site soils is proposed in Attachment 2 to this comment response letter.

EPA Comment

In addition, during the 1983 UST program investigations five semi-volatile constituents were detected in a subsurface soil sample (4 to 6 foot BGS) from boring 1983-SB6. The semi-volatiles detected were naphthalene (26,000 ug/kg); acenaphthene (3,400 ug/kg); n-nitrosediphenylamine (3,600 ug/kg); phenanthrene (6,900 ug/kg); and 2-methylnaphthalene (64,000 ug/kg). Semi-volatile constituents were reported as non detect in the other 4 subsurface soil samples analyzed during the 1993 UST investigations. However, no information was supplied in the 1984 Characterization Report on detection levels, etc., therefore, there is uncertainty as to whether the subsurface soils have been adequately characterized for these semi-volatile constituents. Nevertheless, the 1994 UST Characterization Report stated (on page 4-1) that "This area includes the area around [soil boring] 1983-SB6, which is near the former UST, and is heavily contaminated with diesel constituents (Table 4-2)." The July 1996 Draft RFI report for OUs 1, 6, and 7 did not evaluate the human health or the environmental risk posed by contamination from these diesel semi-volatile constituents, and must be revised to address this.

Response

It is proposed that a reassessment of risk wait until the results of additional site characterization are available.

EPA Comment

Groundwater samples were collected in 5 wells installed during the 1993 UST investigations. Although a limited screening [analysis] for organic constituents (benzene, toluene, ethylbenzene, xylenes, TPH, and total naphthalenes [in 2 wells only]) and one metal (lead) was performed, no detections were reported (refer to Table 4-3 of the 1994 Characterization Report). However, as with the semi-volatile constituents, no information was supplied in the 1994 Characterization Report on detection levels, etc., therefore, there is uncertainty as to whether the groundwater was adequately characterized for these volatile constituents (and lead).

Therefore, during the 1995 OUs 1 RFI investigations, groundwater was sampled in two of the previously installed UST program wells (1983-DW1 and 1983-MW3), and a full Appendix IX analysis was conducted for both. No organic constituents, including PCBs, were detected in the groundwater of the two wells; however, the metal antimony was detected in the groundwater in both wells at total concentrations of 16.2 ug/L and 31.5 ug/L respectively, exceeding the maximum contaminant level (MCL) of 6 ug/L in both wells (refer to Table 5-23 of July 1996 Draft RFI Report). Although the July 1996 Draft Final RFI Report concluded there was no unacceptable risk to human health posed by the antimony in the groundwater, there was no discussion of the source for this constituent, or possible environmental risks.

Furthermore, since antimony is not a "RCRA metal" (i.e., listed in Table 1 of 40 CFR Part 261.24) it was analyzed in only 2 of the 5 surface soil samples (where Appendix IX analysis was conducted), and has never been analyzed in subsurface soil samples. Therefore, since additional surface and subsurface soil investigation for PCBs appears warranted as discussed previously, additional antimony surface and subsurface soil characterization should also be performed.

Response

Additional characterization of site soils is proposed in Attachment 2 to this comment response letter.

EPA Comment

Also, since both (2) of the wells analyzed for antimony in the groundwater found elevated concentrations, the antimony plume may not be adequately characterized. However, the determination of the adequacy of groundwater characterization for antimony should await fuller characterization of the surface and subsurface soils for antimony.

In addition, since as discussed previously, PCBs were present in 3 of the 5 subsurface soil samples analyzed (1993 UST investigations), and in both (2) of the surface soil samples (1995 RFI investigations), the groundwater may not have been adequately characterized for this constituent, even though in both wells (2) where it was analyzed it was non-detect. However, the determination of the adequacy of groundwater characterization for PCBs should await fuller characterization of the surface and subsurface soils for PCB contamination.

Response

The Navy concurs with this judgment.

EPA Comment

In addition, since its submission in July 1996, the Draft RFI report for OUs 1, 6 and 7 has been subject to extensive revision via separate addendums submitted to address various EPA comments. Due to the multiplicity of revision and addendums to that original draft RFI report, and possible confusion over the final resolution of certain issues, EPA has determined that when all issues are resolved and any additional required investigations are completed, a comprehensive revised Final RFI Report for OUs 1, 6, and 7 should then be submitted. However, the due date for such a submission will be determined when all issues are fully resolved, and any additional required investigations are completed.

Response

The Navy understands EPA's concern and will comply with the request.

Please do not hesitate to call Mr. Christopher T. Penny at (757) 322-4815 if you have any questions or would like to discuss any of the items in more detail.

Sincerely,



C. T. PENNY

Navy Technical Representative
Installation Restoration Section (South)
Environmental Engineering Branch
Environmental Division
By direction of the Commander

Copy to:

USEPA Region II (Mr. Tim Gordon)
NSRR (Ms. Madeline Rivera, PWD/EED)
Baker Environmental (Mr. Thomas Fuller)
EQB Puerto Rico (Mr. Isreal Torres)

ATTACHMENT 1
REVISED TABLES

TABLE 4-1

**AVERAGE DETECTED CONSTITUENTS IN BACKGROUND SURFACE
AND SUBSURFACE SOIL SAMPLES
CTO-0277 RFI REPORT OU#1, #6 AND OU#7
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO**

Constituent	Background Surface Soil ⁽¹⁾	Background Subsurface Soil ⁽¹⁾	Industrial RBC	Residential RBC
Volatiles (µg/kg)				
Xylene (total)	ND	3.79 4.52	1E+06 1,000,000,000	160,000 160,000,000
Semivolatiles (µg/kg)				
Bis(2-ethylhexyl)phthalate	193.77 270	ND	410 410,000	46 46,000
Butylbenzylphthalate	193.67 292	ND	410,000 410,000,000	16,000 16,000,000
Di-n-butylphthalate	ND	391.86 308	2E+08 200,000,000	7.8E+06 7,800,000
Fluoranthene	193.63 304	ND	82,000 82,000,000	3,100 3,100,000
Pesticide/PCBs (µg/kg)				
No detections	ND	ND	ND	ND
Herbicides (µg/kg)				
2,4,5-TP (Silvex)	ND	27.8	--	--
Dioxins (µg/kg)				
No detections Total HXCDD	ND	ND 0.31	ND 0.4	ND 0.04
Total Metals (mg/kg)				
Arsenic	2.46	2.57 2.44	3.8 ⁽³⁾	0.43 ⁽³⁾
Barium	206	331	140,000	5,500
Beryllium	0.55 0.49	0.832	1.3	0.15
Cadmium	ND	0.828 0.712	1,000	39
Chromium	57.3	172	10,000	390
Cobalt	40.2	45.6	120,000	4,700
Copper	298	183	82,000	3,100
Lead	15.8	6.86	--	400 ⁽²⁾
Mercury	0.100	0.270 0.150	610	23
Nickel	12.5	45.8	14,000 41,000	1,600
Selenium	2.00 1.79	1.36 1.05	10,000	390
Tin	3.31 2.72	4.92 3.74	1,000,000	47,000
Vanadium	264	391	14,000	550
Zinc	126	103	610,000	23,000

Notes:

-- = Not Established; ND = No Detections

TABLE 4-1

**AVERAGE DETECTED CONSTITUENTS IN BACKGROUND SURFACE
AND SUBSURFACE SOIL SAMPLES
CTO-0277 RFI REPORT OU#1, #6 AND OU#7
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO**

- (1) The background concentration values are representative of the average background detection plus two normal standard deviations.
 - (2) USEPA Action Level
 - (3) *Arsenic as a carcinogen.*
- Shading indicates background exceedance of residential RBC.

TABLE 4-2

**AVERAGE DETECTED CONSTITUENTS IN BACKGROUND GROUNDWATER SAMPLES
CTO-0277 RFI REPORT OU#1, #6 AND OU#7
NAVAL STATION ROOSEVELT ROADS, PUERTO RICO**

Compound	Groundwater ⁽¹⁾	Tap Water RBC	Federal MCL
Volatiles (µg/kg L)			
No detections	ND	ND	ND
Semivolatiles (µg/kg L)			
Acetophenone	5.19 8.33	200,000 0.042	7,800
Bis(2-ethylhexyl)phthalate	7.53	4.8	0.006
Dimethylphthalate	7.75	370,000	--
Total Metals (µg/kg L)			
Arsenic	5.20 4.32	0.045 ⁽³⁾	0.05 50
Barium	708	2,600	2.0 2,000
Beryllium	4.01 3.21	0.016	0.004 4
Chromium	122	180	0.1 100
Cobalt	110	2,200	--
Copper	432	1,500	1.3 1,300 ⁽⁴⁾
Lead	10.16 9.12	--	0.015 15 ⁽²⁾
Nickel	85.3	730	0.1 100 ⁽²⁾
Vanadium	675	260	--
Zinc	378	11,000	--
Dissolved Metals (µg/mg L)			
Barium	174	2,600	2.0 2,000
Copper	62.9 39.7	1,500	1.3 1,300 ⁽⁴⁾
Vanadium	14.9 9.8	260	--
Zinc	177.84 118	11,000	--

Note:

- (1) The background concentrations values are representative of the average background detection plus two normal standard deviations.
- (2) USEPA Action Level
- (3) Arsenic as a carcinogen.
- (4) MCLG/Action Level.
- Not established

Shading indicates background groundwater exceedance of either the tap water RBC or the MCL.

ATTACHMENT 2
WORKPLAN FOR ADDITIONAL SITE CHARACTERIZATION
SWMU 30 - FORMER INCINERATOR
