



DEPARTMENT OF THE NAVY
CRANE DIVISION
NAVAL SURFACE WARFARE CENTER
300 HIGHWAY 36
CRANE INDIANA 47522-5001

N00164.AR.000958
NSWC CRANE
5090.3a

IN REPLY REFER TO
5090/S4.7.1
Ser RP3/5190

3 JUN 2005

U.S. Environmental Protection Agency, Region V
Waste, Pesticides, & Toxics Division
Waste Management Branch
Corrective Action Section
77 West Jackson Blvd.
Chicago, IL 60604

Dear Mr. Ramanauskas:

Crane Division, Naval Surface Warfare Center submits Responses to U. S. EPA Comments on the Draft QAPP Addendum #3 for Solid Waste Management Units (SWMUs) 12, 13, 16, and 19 (Mine Fill A, Mine Fill B, B146 Incinerator, and the Pyrotechnic Test Areas, respectively). Enclosure (1) contains the responses along with applicable change pages. The permit required Certification Statement is provided as enclosure (2).

If you require any further information, my point of contact is Mr. Thomas J. Brent, Code RP3-TB, at 812-854-6160, email thomas.brent@navy.mil.

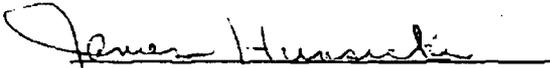
Sincerely,

JAMES M. HUNSICKER
Manager, Environmental Protection
By direction of the Commanding Officer

Enclosures: 1. Responses to Comments on QAPP Addendum #3
2. Certification Statement

Copy to:
ADMINISTRATIVE RECORD
SOUTHNAVFACENCOM (Code ES31) (w/o encl)
IDEM (Doug Griffin)
TTNUS (Ralph Basinski) (w/o encl)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.


SIGNATURE

Manager, Environmental Protection
TITLE

6/3/05
DATE

**RESPONSES TO
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (U.S. EPA) COMMENTS
DATED MAY 19, 2005
ON
QAPP ADDENDUM NUMBER 3 FOR RFI AT SWMUS 12, 13, 16, AND 19
NSWC CRANE
CRANE, INDIANA**

Comments are shown in bold font. Responses follow each comment are shown in regular font. Changes to QAPP text are italicized and enclosed in quotation marks.

1) I believe we should add all perimeter monitoring wells to the long-term plan so that we can show no further plume expansion in the groundwater. There are also a few of the wells that are not currently noted for monitoring that have RDX detections. It would be useful to see what is happening there. Add wells: 12MWT25, 26, 27, 45, 47, 48, ?37 instead of 23?, 24, and 43.

The quarterly monitoring program at SWMU 12 (Rounds 3-9) was designed to determine whether or not:

- the three primary plumes identified during rounds 1 and 2 are shrinking, stable, or expanding laterally to the edge of the ridge,
- contaminants are migrating vertically downward within the ridge,
- daughter products of RDX and TNT are in sufficient concentrations to confirm that biodegradation is occurring at significant rates, and
- contaminants in surface drainages are causing measurable concentrations in Turkey Creek.

In order to answer these questions and to comply with U.S. EPA Region 5 guidance for Natural Attenuation (NA) Framework, the monitoring wells and surface water sampling locations were chosen, as currently proposed. For each of the three plumes identified, wells were chosen within, upgradient, downgradient, and vertically below each plume. A total of six or more wells were selected to monitor for each plume. In addition, surface water monitoring points were selected to catch any contamination (contaminated groundwater or surface waters) that may be leaving the site. Not all wells at the downgradient edge of the SWMU were selected for monitoring because most of these wells do not have detectable concentrations of explosives currently, nor is it anticipated that explosives will show up in these wells in the future (partially because explosives have been released at the SWMU since the 1940s and RDX should have reached the perimeter wells by now). Therefore, the Navy feels that the number and locations of wells selected for NA monitoring are optimal.

However, to ensure significant contaminant concentrations are not migrating to the perimeter wells in the future, all perimeter wells (12MWT45 through 12MWT50 on the east side of SWMU 12 and 12MWT41, 12MWT43, and 12MWT44 on the west side) will be sampled during Rounds 5 and 9.

Tables 3-1, 3-2, and 3-3 have been modified to reflect this response as follows:

TABLE 3-1

PROPOSED LOCATIONS AND RATIONALE FOR SELECTION OF QUARTERLY GROUNDWATER MONITORING WELLS
 SWMU 12 - MFA (ROUNDS 3 THROUGH 9)
 NSWC CRANE
 CRANE, INDIANA

Plume Name	Well No.	Location Relative to Plume	Aquifer Designation	Comments and Selection Rationale ⁽¹⁾
Bldg. 157 Plume	12MWT42	<i>laterally downgradient of plume</i>	<i>Puz</i>	<i>Determine whether plume expansion has occurred (Round 5 and 9 only)</i>
	12MWT45	<i>laterally downgradient of plume</i>	<i>Pmz</i>	<i>Determine whether plume expansion has occurred (Round 5 and 9 only)</i>
Bldg. 154 Plume	12MWT43	<i>laterally downgradient of plume</i>	<i>Plz</i>	<i>Determine whether plume expansion has occurred (Round 5 and 9 only)</i>
	12MWT44	<i>laterally downgradient of plume</i>	<i>Mgd</i>	<i>Determine whether plume expansion has occurred (Round 5 and 9 only)</i>
Bldg. 152 Plume	12MWT50	<i>laterally downgradient of plume</i>	<i>Mdg</i>	<i>Determine whether plume expansion has occurred (Round 5 and 9 only)</i>
	12MWT47	<i>laterally downgradient of plume</i>	<i>Pmz</i>	<i>Determine whether plume expansion has occurred (Round 5 and 9 only)</i>
	12MWT48	<i>laterally downgradient of plume</i>	<i>Pmz</i>	<i>Determine whether plume expansion has occurred (Round 5 and 9 only)</i>

Plz = Lower Pennsylvanian water-bearing zone.

TABLE 3-2

**GROUNDWATER SAMPLES AND LABORATORY ANALYSES⁽¹⁾
 LONG-TERM MONITORING PROGRAM FOR SELECTED WELLS
 SWMU 12 - MFA (ROUNDS 3 THROUGH 9)
 NSWC CRANE
 CRANE, INDIANA**

Sample Location	Sample ID	Explosives		Miscellaneous
		Nitroaromatics and Nitramines SW-846 8330	RDX Degradation Products SW-846-8330, Modified	Nitrate + Nitrite (as N) EPA 353.2

Round 5

12MWT45	12GWT4505	1		
12MWT47	12GWT4705	1		
12MWT48	12GWT4805	1		
12MWT49	12GWT4905	1		
12MWT50	12GWT5005	1		
12MWT41	12GWT4105	1		
12MWT43	12GWT4305	1		
12MWT44	12GWT4405	1		

Round 9

12MWT45	12GWT4505	1		
12MWT47	12GWT4705	1		
12MWT48	12GWT4805	1		
12MWT49	12GWT4905	1		
12MWT50	12GWT5005	1		
12MWT41	12GWT4105	1		
12MWT43	12GWT4305	1		
12MWT44	12GWT4405	1		

TABLE 3-3

**SUMMARY OF GROUNDWATER ANALYSES(1) AND QUALITY CONTROL SAMPLES
 SWMU 12 - MFA (ROUNDS 3 THROUGH 9)
 NSWC CRANE
 CRANE, INDIANA**

Sample Type	Explosives		Miscellaneous
	Nitroaromatics and Nitramines SW-846 8330	RDX Degradation Products SW-846-8330, Modified	Nitrate + Nitrite (as N) EPA 353.2
Total SWMU 12 Samples	162	62	62
Field Duplicate⁽²⁾	8	4	4
Trip Blank⁽³⁾	NA	NA	NA
Rinsate Blank⁽⁴⁾	NA	NA	NA
Source Water Blank	0	0	0
Ambient Condition Blank⁽⁵⁾			
Matrix Spike⁽⁶⁾	7	3	3
Matrix Spike Duplicate⁽⁷⁾	7	3	3

2) When are rounds 3 to 9 scheduled to take place?

Round 3 – May 2005
 Round 4 – August 2005
 Round 5 – November 2005
 Round 6 – February 2006
 Round 7 – May 2006
 Round 8 – August 2006
 Round 9 – November 2006

No changes were made to the QAPP Addendum Number 3 in response to this comment.

3) Because we are seeing fairly substantial RDX detections in surface water, I would like to get a risk characterization done for both human health and eco risk (surface water exposure) to see if we need to do anything in the interim. Sediments are non-detect?

Human Health and ecological risk assessments will be developed and will be include in the RFI. All media including surface waters will be considered in both risk assessments.

No changes were made to the QAPP Addendum Number 3 in response to this comment.

5090
Ser RP3/5190

3 June 2005

The letter Ser RP3/5190 was for the submittal of change pages and response to comments for the Draft QAPP Addendum No. 3 for SWMUs 12, 13, 16 and 19. The change pages were added to the draft report dated 5/9/05.