



DEPARTMENT OF THE NAVY

INDIAN HEAD DIVISION
NAVAL SURFACE WARFARE CENTER
101 STRAUSS AVE
INDIAN HEAD MD 20640-5035

5090
Ser 046C/45

07 APR 1997

Mr. Elmer Biles
ARARAT
6315 Indian Head Highway
Indian Head, MD 20640

Dear Mr. Biles:

We are writing in response to your letter of April 29, 1995. We apologize for the extended time period between our receipt of your letter and our response. A copy of your original letter has been provided as enclosure (1).

You had many concerns over wells, especially those used for drinking water, as related to Installation Restoration (IR) sites. The Indian Head Division, Naval Surface Warfare Center (IHDIVNAVSURFWARCEN) currently uses 11 deep wells. Two of these wells (3A and 16A) are used for industrial purposes only. Some of these wells were installed as early as 1915. A survey was conducted in 1982, which provided information on well abandonment for many of the wells on-site. Those wells that were not abandoned according to Maryland Department of the Environment (MDE) requirements, were properly abandoned in 1986. However, the locations of a few wells could not be found. We are currently working with the MDE to locate information on the wells we could not find and to prepare a well head protection plan for our existing wells. This will include, in some cases, evaluating older wells by camera to check their integrity. Based on the results, wells will be repaired, replaced, or abandoned, as appropriate.

Enclosure (2) is a map showing the active deep well locations with respect to high priority IR sites at the IHDIVNAVSURFWARCEN. The water from these wells is used for drinking, steam production, as well as other industrial operations where river water is not an acceptable alternative. It is also worth mentioning that the well heads for wells 6, 7, and 9 are upgradient of IR Sites 39 (Silver Release to Sediments), 41 (Scrap Yard), and 57 (Trichloroethylene Contamination at Building 292).

Enclosure (3) contains the list of priority pollutants, both regulated and unregulated, and Maximum Contaminant Levels (MCLs) for drinking water. All active wells were tested at the well head in 1995 by the MDE and our contractor. The MDE sampled the

wells for the Volatile Organic Contaminants, regulated and unregulated, in April. Our contractors took four quarterly rounds of samples. Rounds one through four included sampling for Synthetic Organic Contaminants and Radionuclides. Round two also included sampling for Inorganics and Secondary Contaminants. The results of all contaminants tested were below the MCLs.

The Site Inspection (SI) Report: Phases I and II were placed in the IR Repositories on August 7, 1995. Currently, the shallow monitoring wells installed during the SI are not being tested periodically. However, two rounds of samples were collected for all of the monitoring wells that were installed during the SI. These results are included in the SI reports.

As you mentioned in your letter, monitoring wells were not installed at all sites. You may remember that an SI is conducted to determine if contamination is present, not to determine the extent of contamination. Therefore, for sites where metals are the suspected contaminant, the most likely location of the metal is on the surface of the ground. Even at sites such as IR Site 8, where the contamination migrated downgradient laterally, the majority of the mercury remained upgradient and was quite detectable. Therefore, in the interest of saving taxpayer's money, monitoring wells were only installed at sites where the suspected contaminant was liquid, such as volatile and semi-volatile organic compounds. However, based on the results of the SI, some additional monitoring wells may be installed during the Remedial Investigation/Feasibility Study (RI/FS) phase of the IR program, even at sites where metals were the only contaminant found. This must be done to fully characterize the site.

Also, per your request, we have checked further into marking sites where metal contaminated soil has been placed, i.e., Magazine 606 and Rum Point Borrow Pit. Although, because of safety reasons, we cannot place markers on explosive storage magazines, we can place them around the magazine. A problem that we have encountered in the past with signs of this type is that our lawn mowing contractor has a tendency to mow them over. We have searched through a few catalogs, but have not found any signs that would be sturdy and low to the ground (no taller than an inch or two). If you know of any signs that fit this description, we would be amenable to your suggestions. However, if you are still concerned that someone will dig up the mercury or silver contamination, we can assure you that having these sites in facility drawings and using caution tape under the top fill as a secondary precaution is sufficient to ensure this does not occur.

5090
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If you have any additional questions or comments, please do not hesitate to contact Mr. Shawn Jorgensen on (301) 743-6745/6746. You may also FAX your comments/questions to (301) 743-4180 or submit them in writing to the address above, attention Code 046.

Sincerely,



SUSAN P. ADAMS
Head, Safety Department
By direction of the Commander

Encl:

- (1) E. Biles ltr of 16 Feb 95
- (2) Map of Active Deep Wells
and High Priority IR Site
- (3) List of Priority Pollutants
and Other Contaminants

Copy to:
RAB Members

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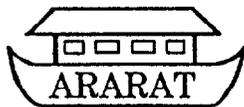
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Copy to:
RAB Members

Blind copy to:
OC
PAO
045NR

Writer: S. Jorgensen, 046C, X6745
Typist: S. Jorgensen, 26 May 95

046C SAQ
046 *Ch*
046S *SA*
045H *SA*
045E *SA*



6315 Indian Head Highway
Indian Head, Maryland 20640

April 29, 1995

Ms. Susan P. Adams, Director
Environmental Division
NSWC, Indian Head Division
Attn: Code 095, Bldg. D-28
101 Strauss ave
Indian Head, MD 20640

Dear Ms. Adams:

Thank you for your letter of April 5. responding to my specific questions regarding RAB related operations at the NSWC.

You indicate that the numerous deep wells that are used for drinking water are sampled for priority pollutants. I was wondering if you could, without compromising defense security, identify the location of those wells that are used for drinking water as well as other wells used for industrial or other purposes that would show their proximity to identified hazardous site locations. Figure 1-1 "Facility Map and Site Locations" dated 2/24/94 states only that production wells (are) located throughout the facility. I think it would also be useful to identify the specific tests for pollutants for all wells. (The list of chemicals established by EPA changes from time-to-time). Could the results of these tests also be made available for selected time intervals?

Your letter also indicates that shallow monitoring wells were installed during the Site Inspection: Phase I and Phase II. I would appreciate your informing us when the reports will be placed in the repositories. Am I correct in assuming that periodic testing will be conducted on an ongoing basis on the monitoring wells? If so, at what frequency is the testing being conducted?

Regarding the clay layer that acts as a confining barrier for the lower aquifers-- are all well heads adequately sealed to avoid leaching of pollutants or surface contaminants from around the well head?

In reviewing the "Installation Restoration Site Fact Sheets" appendix "B" to the March 1995 "Community Relations Plan for Installation Restoration Program" I note that monitoring wells have not been installed at all sites. As an example for site 53 (page B-21) it mentions that six wells were to be installed, but none were, due to the absence of any shallow water bearing zones being present. Yet, we note that for site 41 (Page B-7) three monitoring wells were installed and tests conducted. For many of the other sites we find no mention of any monitoring wells being installed. Why not? Is this not a standard site inspection requirement?

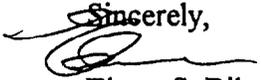
ENCLOSURE(2)

Rec'd
5/4/95

Regarding my recommendation to mark sites for relocated hazardous materials--I have some difficulty in accepting the rationale that above ground site markings are a good idea but would "take away from the aesthetics of the areas" These relocation sites are in either the industrial or some remote area of the facility and the safeguarding of confined hazardous materials should be a paramount consideration. The markings I have in mind would be rather simply and of the type used to identify buried gas lines.

Thank you for your consideration of the above comments. Call me if you have any questions.

Sincerely,



Elmer S. Biles
283 6298

cc: Vincent Hungerford

List of Priority Pollutants and Other Contaminants

<u>VOLATILE ORGANIC CONTAMINANTS</u>	<u>MCLs(mg/l)</u>	<u>INORGANIC CONTAMINANTS</u>	<u>MCLs (mg/l)</u>	<u>SYNTHETIC ORGANIC CONTAMINANTS</u>	<u>MCLs (mg/l)</u>
Regulated		Regulated		Regulated	
Vinyl chloride	0.002	Antimony	0.006	Alachlor	0.002
Benzene	0.005	Arsenic	0.05	Atrazine	0.003
Carbon tetrachloride	0.005	Asbestos	*	Carbofuran	0.04
1,2-Dichloroethane	0.005	Barium	2	Chlordane	0.002
Trichloroethylene	0.005	Beryllium	0.004	Dibromochloropropane	0.0002
para-Dichlorobenzene	0.075	Cadmium	0.005	2,4-D	0.07
1,1-Dichloroethylene	0.007	Chromium	0.1	Ethylene dibromide	0.00005
1,1,1-Trichloroethane	0.2	Cyanide (as free Cyanide)	0.2	Heptachlor	0.0004
cis-1,2-Dichloroethylene	0.07	Fluoride	4.0	Heptachlor epoxide	0.0002
1,2-Dichloropropane	0.005	Mercury	0.002	Lindane	0.0002
Ethylbenzene	0.7	Nickel	0.1	Methoxychlor	0.04
Monochlorobenzene	0.1	Nitrate as Nitrogen	10	Polychlorinated biphenyls	0.0005
o-Dichlorobenzene	0.6	Nitrite as Nitrogen	1	Pentachlorophenol	0.001
Styrene	0.1	Total Nitrate plus		Toxaphene	0.003
Tetrachloroethylene	0.005	Nitrite as Nitrogen	10	2,4,5-TP	0.05
Toluene	1	Selenium	0.05	Benzo(a)pyrene	0.0002
Trans-1,2-Dichloroethylene	0.1	Thallium	0.002	Dalapon	0.2
Xylenes (total)	10	*7 million fibers per liter (longer than 10 µm)		Di(2-ethylhexyl)adipate	0.4
Dichloromethane	0.005			Di(2-ethylhexyl)phthalate	0.006
1,2,4-Trichlorobenzene	0.07	Unregulated		Dinoseb	0.007
1,1,2-Trichloroethane	0.005	Sulfate		Diquat	0.02
				Endothal	0.1
Unregulated				Endrin	0.002
Chloroform				Glyphosate	0.7
Bromodichloromethane				Hexachlorobenzene	0.001
Chlorodibromomethane				Hexachlorocyclopentadiene	0.05
Bromoform				Oxamyl (Vydate)	0.2
Dibromomethane				Picloram	0.5
m-Dichlorobenzene				Simazine	0.004
1,1-Dichloropropene				2,3,7,8-TCDD (Dioxin)	3x10 ⁻⁶
1,1-Dichloroethane					
1,1,2,2-Tetrachloroethane				Unregulated	
1,3-Dichloropropane				Aldicarb	
Chloromethane				Aldicarb sulfone	
Bromomethane				Aldicarb sulfoxide	
1,2,3-Trichloropropane				Aldrin	
1,1,1,2-Tetrachloroethane				Butachlor	
Chloroethane				Carbaryl	
2,2-Dichloropropane				Dicamba	
o-Chlorotoluene				Dieldrin	
p-Chlorotoluene				3-Hydroxycarbofuran	
Bromobenzene				Methyomyl	
1,3-Dichloropropene				Metolachlor	
				Metribuzin	
				Propachlor	

ENCLOSURE(2)

mg/l = milligrams per liter

List of Priority Pollutants and Other Contaminants
(continued)

INORGANICS

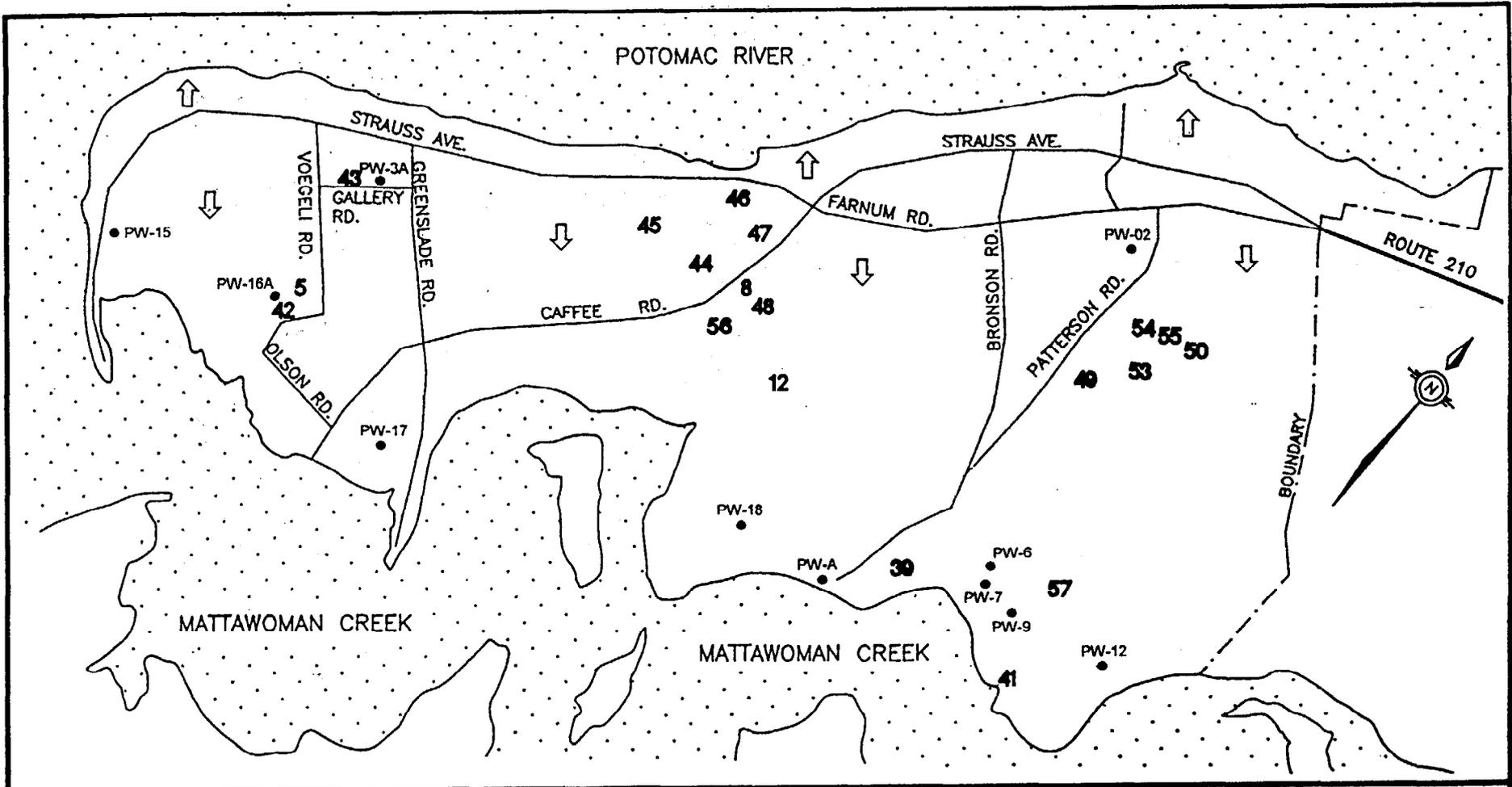
Fluoride
Nitrate
Nitrite
Nitrate + Nitrite
Barium
Cadmium
Chromium
Mercury
Selenium
Antimony
Beryllium
Cyanide
Nickel
Thallium
Sulfate

SECONDARY CONTAMINANTS

Aluminum
Chloride
Color
Copper
Corrosivity
Foaming Agents
Iron Manganese
Odor
Silver
Total Dissolved Solids
Zinc

RADIONUCLIDES

Gross Alpha
Gross Beta
Radium, Total



LEGEND

INSTALLATION RESTORATION SITES

5-SILVER IN SEDIMENT	47-MERCURIC NITRATE DISPOSAL
8-MERCURY IN SEDIMENT	48-DUMP SITE
12-TOWN GUT LANDFILL	49-CHEMICAL DISPOSAL PIT
39-ORGANICS PLANT	50-BUILDING 103
41-SCRAP YARD	53-GENERAL LABORATORY AREA
42-OLSON ROAD LANDFILL	54-BUILDING 101
43-TOLUENE DISPOSAL SITE	55-BUILDING 102
44-SOAK OUT AREA	56-LEAD IN SEDIMENT
45-ABANDONED DRUMS	57-TRICHLOROETHANE CONTAMINATION
46-CADMIUM SANDBLAST GRIT	

OTHER RELATED INFORMATION

PW-#	ARTESIAN (DEEP) WELLS
↓ ↑	GROUNDWATER (WATER TABLE) FLOW

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