



DEPARTMENT OF THE NAVY
ATLANTIC DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
NORFOLK, VIRGINIA 23511

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IN REPLY REFER TO

114:JGW
6280

81 JUL 1981

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Commanding General, Marine Corps Base, Camp Lejeune (Attention Assistant Chief of Staff for Facilities)

Subj: Suspect Chemical Dump, Rifle Range Area; analyses of groundwater, surface water and potable water

Ref: (a) LANTNAVFACENGCOM ltr 114:JGW 6280 of 8 May 1981
(b) Environmental Protection Agency National Interim Primary Drinking Water Regulations, 40 CFR 141.12
(c) LANTNAVFACENGCOM ltr 114:WLC 6280 of 7 Aug 1980
(d) FONECON USAEHA (RD-S) (Mr. W. Neal)/LANTNAVFACENGCOM Code 114 (Mr. W. Carter) of 21 Jul 1981

Encl: (1) Jennings Laboratories, Inc., Laboratory Analyses Nos. 243-247 of 29 May 1981
(2) Data Summarization of Enclosure (1) Laboratory Analyses
(3) Data Summarization of 30 March 1981 Sampling and Analyses
(4) Data Summarization of 10 April 1981 Sampling and Analyses
(5) Environmental Protection Agency ltr of 1 Jul 1981 with Suggested No Action Response Level (SNARL) enclosures

1. Reference (a) forwarded copies of laboratory analysis of water samples collected on 30 March and 10 April 1981 in the vicinity of the Rifle Range Area suspected chemical dump site. It also included a preliminary interpretation of the significance of the data.

2. Enclosures (1) and (2) are the Laboratory Analysis Reports and the Data Summarization, respectively, of the 20 May 1981 sampling and analysis. Samples were collected from the suspect dump site as well as the raw and finished water from the Rifle Range Water Treatment Plant (RR-85).

3. Enclosures (3) and (4) were originally included as enclosures to reference (a) and are provided for comparative purposes with past repetitive analyses of the sampling points. It is noteworthy that there is considerable variation (qualitatively and quantitatively) in the degree of contamination found in the repetitive analyses.

4. As stated in reference (a), there appears to have been a sample bottle contamination and/or a sampling technique problem which caused erroneously high readings indicated in enclosure (3).

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Results - ASAP

5. Reference (a) noted that of all the trace organic contaminants found, only the total trihalomethanes (TTHM) have an established drinking water standard (reference (b)). The trihalomethanes are a family of one-carbon alkanes with three halogen atoms substituted for hydrogen atoms. The family consists of bromodichloromethane (CHCl_2Br) dibromochloromethane (CHClBr_2), chloroform (CHCl_3), and bromoform (CHBr_3). Of these, only chloroform was detected, although methylene chloride (a precursor of chloroform formed in the chlorine disinfection of water) was detected in the majority of samples.

6. Maximum contaminant levels (MCL) for total trihalomethanes apply only for water treatment plants applying a disinfectant in the treatment process, and serving a population of 10,000 or more individuals. Thus, technically, the TTHM limits are not effective standards at the Rifle Range Water Treatment Plant.

10,000 users

7. Reference (c) documents the initiation of drinking water TTHM monitoring program which includes samples from the Hadnot Point and Air Station plants and distribution systems. Analyses for TTHM are performed by the U.S. Army Environmental Health Agency (RD-S) Laboratory, Fort McPherson. By reference (d), arrangements have been made to include the Rifle Range plant and system in the TTHM monitoring program. Sampling and analyses are to commence in July 1981.

8. Enclosure (5) is the latest EPA Suggested No Action Response Level (SNARL), for five organic contaminants in drinking water. As is emphasized in the preface of each SNARL, these are non-enforceable standards for contaminant levels which are calculated to result in no adverse response or either in low (typically 1 in 1,000,000 or 1 in 100,000) additional cancer risk. Only three of the four SNARLS are applicable to the contaminants found in enclosures (2), (3) and (4). The applicable SNARL guidelines are summarized as follows:

- | | |
|-----------------------|---|
| 1,1,1-Trichloroethane | 1 mg/l (ppm) chronic SNARL |
| Tetrachloroethylene | 2.3 mg/l (ppm) one-day SNARL
175 ug/l (ppb) ten-day SNARL
20 ug/l (ppb) Long term SNARL
35 ug/l (ppb) 10^{-5} excess cancer risk
3.5 ug/l (ppb) 10^{-6} excess cancer risk
Suggested guidance - no more than 40 ug/l (ppb) |
| Trichloroethylene | 2 mg/l (ppm) one-day SNARL
200 ug/l (ppb) ten-day SNARL
75 ug/l (ppb) long-term SNARL
45 ug/l (ppb) 10^{-5} excess cancer risk
4.5 ug/l (ppb) 10^{-6} excess cancer risk |

9. Thus, disregarding the initial sampling and analysis data due to suspect contamination or other error, LANTNAVFACENGCOCM offers the following interpretation of enclosures (2) and (4) data in light of the SNARL and TTHM criteria:

a. The 20 May 1981, RR-85 WTP finished water analysis indicates TTHM levels very close to the maximum contaminant level.

b. The 10 April 1981, RR-97 well water analysis indicates low level organic contamination. However, due to the lower levels of contamination found in the samples from RR-45 and RR-47 Wells, ~~consideration~~ should be given to operating these wells preferentially over the ~~RR-97~~ Well.

c. Test well and surface water data from samples at or around the suspect dump site, especially at Test Well 16 and Sample Point No. 5, a stagnant pool of water at the dump site, indicate significant levels of contamination which will require additional investigation.

10. Notification has been received by LANTNAVFACENGCOCM that MCB CAMP LEJEUNE is scheduled for FY-82 Initial Assessment Study (IAS) in the Navy Assessment and Control of Installation Pollutants (NACIP) Program. The IAS is the first phase in a program to identify, assess, and control the contamination of the environment from past hazardous waste disposal operations at Navy and Marine Corps activities. Information contained in this report and the TTHM monitoring program will be utilized in the IAS.

11. LANTNAVFACENGCOCM recommends no further action on this matter at this time until the NACIP, IAS and TTHM monitoring programs begin to yield additional data for review. It is suggested that this information be passed along to State and local officials to appraise them of the potential problem, our analyses to date indicating no migration of pollutants into the Rifle Range Well System, and the future investigative and corrective actions that will be undertaken. (See Below)

12. Point of contact for this matter is Mr. Jerry Wallmeyer, telephone 444-4972, AUTOVON 690-4972 of this Command.

J. R. BAILEY
By direction

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Copy to:
CMC (Code LFF 2)
NAVFACENGCOCM (Code 112)
NAVENENVSA

NAVREGMEDCEN CAMP LEJEUNE (Occupational and Preventative Medicine)
MCB CAMP LEJEUNE (Natural Resources and Environmental Affairs)

Supervisory Ecologist recommends a meeting be arranged with NC Dept. Health Services Regional Personnel, Base legal, Base Maintenance officer reps. (i.e. Utilities Director, Water Quality Control Chemist, Supervisory Ecologist Director NHEAD) and ACF facilities to review the enclosed. AS opposed to a written notification.

MCB CAMP LEJEUNE
 SAMPLE DATE 10 APRIL 1981
 ALL RESULTS IN PARTS PER BILLION (ppb)

	TEST WELL NO. 15	TEST WELL NO. 16	POOL OF WATER BELOW WELL NO. 16	SP #4 RAD POOL	RR-45 WELL	RR-47 WELL	RR-97 WELL	RR-85 WTP FINISHED WATER TAP	Sample No. 5*	SP No. 6*	SP No. 7*	SP No. 8*
PERZENE									1			
DICHLORIDE		52							101			
TRICHLORIDE		52							176			
1,1,1 - TRICHLOROETHANE									103			
1,1 - DICHLOROETHANE		38		2					101			
1,1 - DICHLOROETHYLENE		74							258			
1,1,2 - TRICHLOROETHANE									252			
CHLOROFORM									35			
ETHYLENE DICHLORIDE	2	13	3	2	4	17	6	17	37	14		
TRICHLOROETHYLENE												
CHLOROETHYLENE						2			141	6		
TOTAL	2	229	3	4	4	25	20	20	1,205	20		

5 Pool of water with old barrel in it at old chemical dump
 6 Stream bed below and behind old chemical dump, about 100 yds SSE of Test Well No. 17.
 7 Tidal Marsh at end of road past old chemical dump
 8 Bay river, between mouth of stream and Everett Creek, right fork of road through TLZ owl to river

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Robert

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