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MCB CAMP LEJUENE  
5090.3a

LETTER TO THE U S EPA REGION IV REGARDING EPIDEMIOLOGICAL STUDY AND  
PUBLIC WATER SUPPLY MCB CAMP LEJEUNE NC  
4/7/2011  
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

Agency for Toxic Substances  
and Disease Registry  
Atlanta, GA 30333

April 7, 2011

Ms. Gwendolyn Keyes Fleming  
Region IV Administrator  
U.S. Environmental Protection Agency  
Sam Nunn Atlanta Federal Center  
61 Forsyth Street, S.W.  
Atlanta, Georgia 30303

Dear Administrator Fleming:

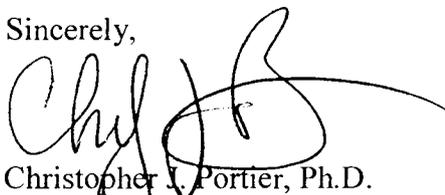
The Agency for Toxic Substances and Disease Registry (ATSDR) is conducting an epidemiological study to evaluate whether in utero and infant (up to 1 year of age) exposures to drinking water contaminated with volatile organic compounds (VOCs) at U.S. Marine Corps Base Camp Lejeune, North Carolina, were associated with specific birth defects and childhood cancers. To support this study, we are using water-modeling techniques to reconstruct historical groundwater and drinking-water concentrations at Camp Lejeune.

My staff has identified a number of information sources and documents related to water-quality sampling and analyses at Camp Lejeune that may contain data pertinent to our study efforts. This information and data were provided to the U.S. Environmental Protection Agency (USEPA) Region IV by the Department of the Navy (DON) as referenced in a letter dated April 25, 1986. The letter is enclosed as a reference.

The DON has been unable to locate these files, leaving a gap in the information we need for our evaluation. This letter is to request that your Region IV staff locate the information cited in the DON letter and provide copies to ATSDR. I am requesting all information and data provided to the USEPA by the DON described in enclosures 1-3 in the 1986 letter.

I appreciate your assistance with this request.

Sincerely,



Christopher J. Portier, Ph.D.  
Director, National Center for  
Environmental Health, and  
Agency for Toxic Substances and  
Disease Registry

Enclosure:

DON letter to USEPA, April 25, 1986

cc:

NCDENR

NCDOH

DHAC/OD

ATSDR Record Center ✓

EISAB



DEPARTMENT OF THE NAVY

ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
NORFOLK, VIRGINIA 23511-6287

0275  
TELEPHONE NO.

(804) 445-1814

IN REPLY REFER TO:

5090

1143CFB

25 APR 1986

U.S. Environmental Protection Agency  
Attn: Arthur G. Linton, P.E.  
Regional Federal Facilities Coordinator  
Region IV  
345 Courtland Street  
Atlanta, GA 30365

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Gentlemen:

In response to both your letter of February 3, 1986 and subsequent conversations between Jim Holdaway and Wayne Mathis of your office and Paul Rakowski and Cherryl Barnett of this office, we are enclosing all the analytical data from testing of the monitoring and potable wells at the Marine Corps Base, Camp Lejeune. Enclosure (1) is a preliminary report from NACIP Phase II initial sampling prepared by Environmental Science and Engineering, Incorporated (ESE). Enclosure (2) is the set of lab reports from sampling conducted by Camp Lejeune and analyses performed by our contract laboratory, JTC Environmental Consultants, Incorporated. The State of North Carolina also did some sampling and analyses; their reports are forwarded as enclosure (3).

Since much of the data is still in raw form, we would like to present a brief discussion of each enclosure to provide you with some background on the objectives of the investigation, the time frames involved, and the resulting actions that have been taken.

ESE is conducting the Phase II Confirmation Study at Camp Lejeune. This study is divided into three steps: verification, characterization, and development of feasible alternatives for remediation. The verification step is subdivided into three rounds of sampling. We believe that three rounds of data from groundwater and surface water samples are the minimum requirement for denying the existence of contamination and deleting a site from the NACIP program or proceeding with characterization and feasibility evaluation for the site. The contract for each step and round is independently negotiated; enclosure (1) is based on round one verification step sampling only. Since contamination has been verified in the Hadnot Point area, we are proceeding with the next two steps in the study. Round two verification step sampling as well as characterization and feasibility steps in the Hadnot Point area are currently being negotiated. We have enclosed a proposed milestone chart for these activities as enclosure (4).

Upon receipt of ESE's raw analytical data, a comprehensive sampling program for Volatile Organic Compounds (VOCs) was initiated at all potable wells and water treatment plants. This began in December of 1984 with sampling of wells in the Hadnot Point system. VOC analyses on all wells was completed by March 1985 and additional contamination was discovered in the Tarawa Terrace

system. After confirmatory sampling of all wells showing VOC contaminants, 10 wells were shut down: 601, 602, 608, 634, 637, 651, 652, 653, TT-26, and TT-New. Since July 1985, Camp Lejeune has conducted weekly sampling of the finished effluent from the Hadnot Point and Tarawa Terrace plants and monthly sampling of TT-25, the closest operational well to the two contaminated wells in Tarawa Terrace. In addition, they collected another round of samples from the Hadnot Point wells in January 1986 and plan to sample all other wells for VOCs in the next month. No additional VOC problems have been discovered.

Additional samples and analyses conducted by the State of North Carolina included potable wells, treatment plants, and points in the Holcomb Boulevard and Tarawa Terrace distribution systems. The dramatic drop in VOC levels in the distribution system between February 8, 1985 to February 22, 1985 corresponds to the time the contaminated well 651 was shut down. As a quality control check, samples were split between JTC and the North Carolina laboratory on two occasions. These data have been compiled in enclosure (5).

The State conducted a separate investigation into the Tarawa Terrace contamination and concluded that a dry cleaner located off base is the likely source. We have not yet been provided a copy of their report or informed of any steps they will take to determine the extent of the contamination and to initiate remedial measures as required. Your support and coordination with the State on this matter would be appreciated to ensure that remedial measures are identified and implemented to prevent further contamination of Camp Lejeune's Tarawa Terrace well field. This well field is currently strained to meet water demand requirements and rapid groundwater cleanup is required.

We hope the enclosed information will alleviate any concerns you may have regarding the extent and sensitivity of our analytical procedures and the thoroughness of our investigation. Closure of the contaminated wells has eliminated detectable VOCs in the Hadnot Point and Tarawa Terrace distribution systems. We believe the well closures and the ongoing sampling of treatment plant effluents and operational wells are effective interim measures to minimize human exposure to hazardous substances and we are proceeding with a study to identify permanent solutions as part of the NACIP program. Other issues raised in your letter regarding analytical parameters for NACIP sampling and the National Priorities List were addressed in our letter of February 6, 1986.

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In a telephone conversation between Jim Holdaway, Cheryl Barnett, and Paul Rakowski of February 18, 1986, Mr. Holdaway suggested a review meeting at Camp Lejeune. We invite you to attend a briefing ESE will be giving at the start of additional confirmation study field activities. Our point of contact for the NACIP program, Cheryl Barnett, will let you know when the briefing is scheduled.

Sincerely,

J. R. BAILEY, P.E.  
Head, Environmental Quality Branch  
Utilities, Energy and Environmental  
Division  
By direction of the Commander

Encl:

- (1) Evaluation of Data from First Round of Verification Sample Collection and Analysis, Marine Corps Base, Camp Lejeune
- (2) JTC Lab Reports
- (3) State of North Carolina Lab Reports
- (4) Milestone Chart
- (5) Tarawa Terrace Water System, Comparison of Water Quality Data

Copy to: (w/encls (2), (3), (Summary Sheets only), (4), & (5))  
MARCORB Camp Lejeune ~~██████████~~  
CMC (LFL)  
CNO (OP-45)  
COMNAVFACENGCOM

Division of Environmental Management (w/encls 1, 2, 4, & 5)  
Attn: R. Paul Williams  
Director  
P.O. Box 27687  
Raleigh, NC 27611-7687

Division of Health Services (w/o encls)  
Attn: Dr. Ronald H. Levine  
Director  
P.O. Box 2091  
Raleigh, NC 27602-2091

Environmental Science and Engineering (w/encls 2, 3, & 5)  
Incorporated  
Attn: Mr. Russ Bowen  
P.O. Box ESE  
Gainesville, FL 32602-3053

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SUMMARY OF JTC LAB REPORTS

<u>Number</u>	<u>Date Issued</u>	<u>Sample Description</u>
4	12/18/84	HP-20 (1); potable wells in HP system
7	12/18/84	potable wells in HP system; HP-20
3	12/18/84	HP well 602; HP-20
)	12/20/84	HP-20
2	12/21/84	HP-20; FC-540 (distribution system)
7	02/06/85	potable wells in HP system
7 (addendum)	02/19/85	HP well 636
)	02/12/85	potable wells in other systems (including Tarawa Terrace (TT))
) (addendum)	02/19/85	CHB new well
)	02/14/85	potable wells in other systems
)	03/08/85	potable wells; water treatment plants
)	02/14/85	TT wells; TT WTP effluent
)	03/18/85	WTP effluents; new wells
7	03/01/85	TT wells; TT WTP effluent
4	03/27/85	TT new well; TT WTP (samples taken before, during, and after pump tests on new well)
5	04/04/85	HP-20, TT effluent; wells LCH-4006 (2) & RR-227 (2)
6	04/26/85	HP-20, TT effluent
7	05/02/85	TT-39A (3)
2	05/20/85	TT effluent; Well RR-227; TT-39A
7	06/07/85	Well AS-106 (2)
4	07/05/85	HP-20
6	07/05/85	HP-20
2	07/11/85	HP-20, TT effluents; Well TC-600 (2)
3	07/11/85	AS-110 (4), AS-2800 (distribution system)
7	07/11/85	HP-20, TT effluents
9	07/19/85	HP, TT effluents
1	07/29/85	HP, TT effluents
3	08/21/85	HP, TT effluents
0	08/21/85	HP, TT effluents
0	09/12/85	HP, TT effluents
2	09/18/85	HP, TT effluents
8	09/24/85	HP, TT effluents
1	09/24/85	HP, TT effluents

-20 is the Hadnot Point Water Treatment Plant (WTP).

These wells were out of service when the other wells were sampled. VOC analysis was done on each well before it was brought back on line.

-39A (same as TT STT 39A) is the pump house that distributes Tarawa Terrace finished water. Sampling point is the same for TT WTP effluent.

-110 is the water treatment plant for the Marine Corps Air Station, W River.

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Encl (2)

SUMMARY OF JTC LAB REPORTS

<u>Report Number</u>	<u>Date Issued</u>	<u>Sample Description</u>
149	09/30/85	HP, TT effluents
153	10/03/85	HP, TT effluents
157	10/11/85	HP, TT effluents
161	10/17/85	HP, TT effluents
166	10/25/85	HP, TT effluents
171	10/31/85	Well TT-25
172	10/31/85	HP, TT effluents
175	11/07/85	HP, TT effluents
176	11/06/85	Well TT-25
180	11/14/85	Well TT-25
181	11/14/85	HP, TT effluents
183	11/27/85	HP, TT effluents
187	11/27/85	HP, TT effluents
191	12/04/85	Well TT-25
192	12/09/85	HP, TT effluents
199	12/18/85	HP, TT effluents
201	12/31/85	HP, TT effluents
208	01/02/86	HP, TT effluents
209	01/02/86	HP, TT effluents
214	01/21/86	potable wells, HP area
218	01/17/86	Well TT-25; HP, TT effluents
221	01/30/86	potable wells, HP area
226	02/20/86	Well TT-25; HP, TT effluents
229	02/25/86	HP, TT effluents
231	02/26/86	HP, TT effluents
237	02/28/86	HP, TT effluents
243	03/12/86	HP, TT effluents; Well TT-25
253	03/27/86	HP-20
261	03/27/86	HP, TT effluents
265	04/14/86	HP, TT effluents; Well TT-25

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SUMMARY OF NORTH CAROLINA DIVISIONS OF  
ENVIRONMENTAL MANAGEMENT AND HEALTH SERVICES LAB REPORTS

<u>Report Date</u>	<u>Description</u>
02/04/85	HP-20; Holcomb Boulevard (HB) distribution system (fed by HP-20)
02/08/85	HP-20; Building 670 (1); HB distribution system
02/22/85	TT new well; Well TT-26; TT WTP; HP WTP; HB WTP and distribution system
03/11/85	TT new well; Well TT-26; TT WTP
06/21/85	TT new well; Well TT-26; Well TT-25

(1) Building 670 is the HB plant.

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Encl (3)

MILESTONE CHART

<u>Milestone</u>	<u>Day</u>
Government Issuance of Change Order	0
Submit POA&M and Safety/Contingency Plan for Characterization Effort	10
Government Approval of POA&M and Safety/Contingency Plan	17
Initiate Characterization On-Site Investigations for Hadnot Point Industrial Area	45
Initiate Round Two Sampling, Verification Step	45
Initiate Potable Well Sampling	45
Submit Report with Round Two Results, Potable Well Results	125
Return of Government Comments	155
Complete Characterization On-Site Investigation	260
Submit Preliminary Report with Hadnot Point Characterization Step Results	290
Return of Government Comments	320
Submit Characterization Step Draft Report for Hadnot Point	350
Submit Preliminary Feasibility Step Report for Hadnot Point	380
Return of Government Comments	410
Submit Feasibility Step Draft Report for Hadnot Point	440

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TARAWA TERRACE WATER SYSTEM  
COMPARISON OF WATER QUALITY DATA (ug/l)  
SAMPLE DATE

<u>Location</u>	<u>VOC Parameters</u>	<u>19 Feb (N)</u>	<u>19 Feb (L) (#37)</u>	<u>11 Mar (N)</u>	<u>11 Mar (L) (#44)</u>
TT 26 Well	TCE	3.91	4.1		
	TetraCE	55.17	64		
	trans 1,2-DCE	trace	9.5		
	Benzene	ND	ND		
TT New Well	TCE TetraCE trans 1,2-DCE Benzene	53.53	ND	Pumped 2 Hours	
		26.17	ND	ND	1..3*
		trace	13	14.9	165
		ND	6.3	ND	1..2*
	TCE TetraCE trans 1,2-DCE Benzene			**	6..7
				Pumped 24 Hours	
		ND		ND	2..4*
		40.6		488	
	TCE TetraCE trans 1,2-DCE Benzene			ND	2..8*
				**	4..3*
TT Finished Water	TCE TetraCE trans 1,2-DCE Benzene	W/O New Well			
				ND	ND0
				ND	ND0
				ND	ND0
	TCE TetraCE trans 1,2-DCE Benzene			**	ND0
		Upstream of Reservoir at 24 Hours			
		TCE		ND	1. 1*
		TetraCE		21.3	200
	trans 1,2-DCE Benzene			ND	1. 2*
				**	2. 2*
TCE TetraCE trans 1,2-DCE Benzene	Downstream of Reservoir at 24 Hours				
	TCE		ND	ND0	
	TetraCE		6.6	8. 9*	
	trans 1,2-DCE		ND	ND0	
Benzene		**	1. 6*		

LEGEND

ND = Not Detectable at limit of 10 ppb.  
TCE = Trichloroethylene  
TetraCE = Tetrachloroethylene  
trans 1,2-DCE = 1,2-trans-dichloroethylene  
(L) = LANTNAVFACENGCOR Laboratory, JTC Environmental Consultants, Inc.  
(N) = State of NC Laboratory  
\*Below method detection limit.  
\*\*State lab did not test for benzene.

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Enc1 (5)

Dany info

ASSISTANT CHIEF OF STAFF, FACILITIES  
HEADQUARTERS, MARINE CORPS BASE

DATE 5/12

TO:

BASE MAINT O

PUBLIC WORKS O

COMM-ELECT O

DIR., NAT. RESOURCES & ENV. AFFAIRS

DIR, FAMILY HOUSING

DIR, BACHELOR HOUSING

BASE FIRE CHIEF

ATTN: \_\_\_\_\_

1. Attached is forwarded for info/action.

*LANTOW Response to E.P.A.  
on the N.A.C.I.P. study.*

~~2. Please initial or comment and return all papers to this office~~

*Looks like June for next act.*

3. ~~Your file copy.~~

*-call if ?cs. v/r  
Bost.*

"LET'S THINK OF A FEW REASONS  
WHY IT CAN BE DONE"

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