

DEPARTMENT OF HUMAN RESOURCES  
DIVISION OF HEALTH SERVICES  
ENVIRONMENTAL HEALTH SECTION

REPORT OF INVESTIGATION OR INSPECTION OF water system

Place visited Holcolmb Boulevard WTP Date January 29 1985  
Address USMC, Camp Lejeune, NC Time spent \_\_\_\_\_  
By whom Fred Hill  
Willard Price, W&S Supt.; Elizabeth Betz, Chemist; Lt. Ron Curley, Preventive  
Persons contacted Medicine; Col. Luttrell, Base Maintenance Officer; Gold Johnson, Jr., Utility  
(Owner, agent, tenant, manager, other) Director  
Reason for visit Complaints from water distribution system regarding petroleum odor.  
Copies to: C. E. Rundgren  
M. P. Bell

**REPORT:**

Complaints from the water distribution system were received at the WTP on January 27, 1985, concerning a petroleum odor in the water. Plant personnel immediately investigated and confirmed the complaint.

Supervisors were contacted and the treatment facilities shut down. Investigation by plant personnel revealed a high concentration of petroleum odor in the 1.0 MG finished water reservoir and not at the remainder of the treatment plants. All other treatment plants were re-started on January 27, 1985.

The reservoir at the Holcolmb Boulevard plant has four high service pumps on the concrete top, two of which have auxiliary gasoline motors. Investigation revealed a gasoline line from the outside (above ground) storage tank through the concrete wall of the reservoir under the pump room floor. Corrosion of the ferrous line (1" x 20') at the concrete slab allowed gasoline leakage ( $\pm 1.0$  gal.) directly into the reservoir.

The reservoir was drained and washed with high pressure water then refilled on 1/28/85. A slight petroleum odor was present in the head space on 1/29.

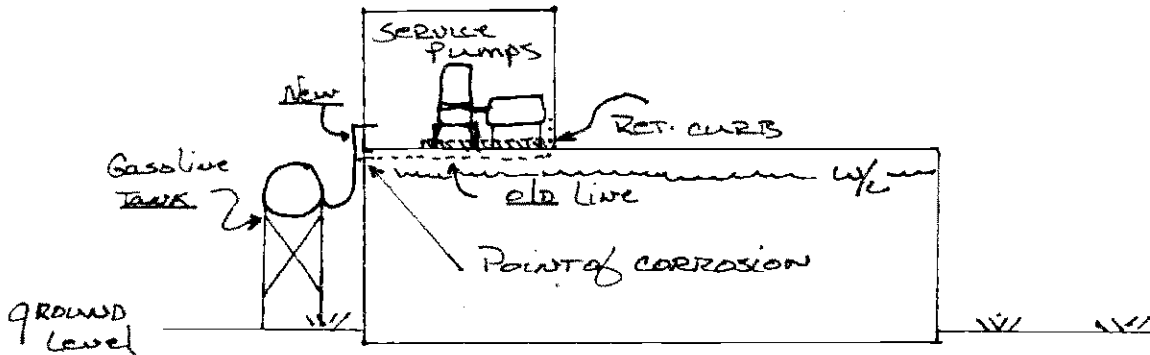
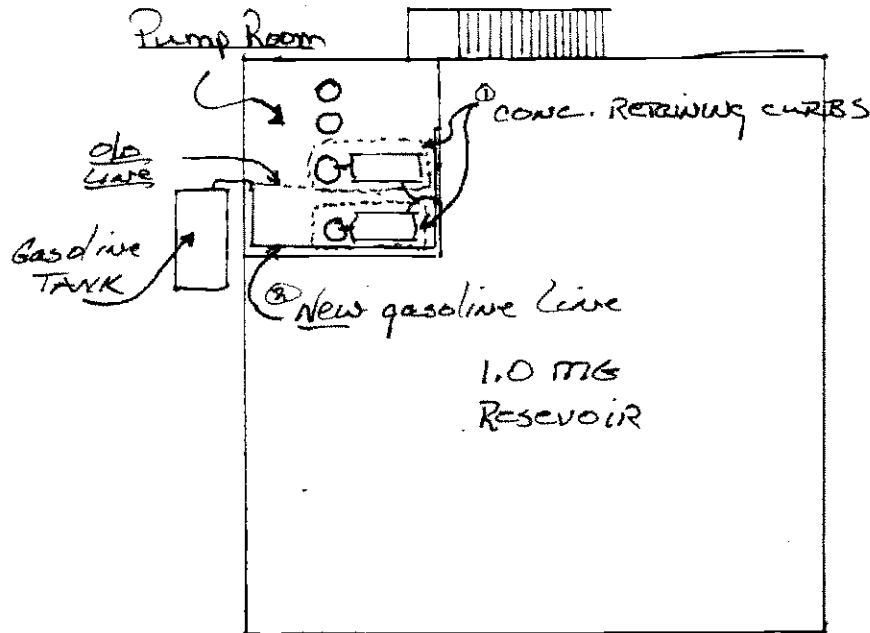
Cleaning the reservoir with a powdered activated carbon slurry and stiff brushes was discussed as an option. The decision is to be based on results of organic analyses.

Samples were collected from the distribution system, reservoir, and WTP filter effluent. Gas chromatography analyses indicated no EDB or gasoline present; however, T.C.E. was found up to  $\pm 1000$  ug/l (ppb).

Additional samples are to be collected from other treatment plants, wells, and the distribution system for organic analyses, specifically TCE. Decisions will be made regarding the continued/altered operation of the wells and treatment facilities based on these results.

To prevent a recurrence: (1) the gasoline supply line has been re-routed above the concrete slab and (2) concrete retaining curbs will be constructed around the gasoline motors.

USMC - Camp Lejeune  
Hokomab Blvd WTP  
1/29/85



*Please Rush it  
J. Stearns*

STATE LABORATORY OF PUBLIC HEALTH  
DIVISION OF HEALTH SERVICES  
N. C. DEPARTMENT OF HUMAN RESOURCES  
P.O. BOX 28047 - 306 N. WILMINGTON ST., RALEIGH 27611

**X** ORGANIC CHEMICAL ANALYSES-PRIVATE WATER SYSTEM

Complete All Items Above Heavy Line  
(See Instructions on Reverse Side)

*# 308, 309,  
310, 311*

*4/8/50/1*

Name of System: WTP-CAMP Lejeune  
Address: Bldg. 670 - WTP  
ZIP: \_\_\_\_\_  
County: ONslow  
Report To: J. Fred Hill  
Address: 404 St Andrews St  
Breville NC  
ZIP: \_\_\_\_\_  
Collected By: Elizabeth C. Bly  
Date Collected: 1/29/85 Time: 1420 AM/PM  
Location of Sampling Point: Bldg 670 TREATED  
BEFORE RESERVOIR

Source of Water:  
 Ground  
 Surface  
 Both  
 Purchased

Source of Sample:  
 House Tap  
 Well Tap

Type of Sample:  
 Raw  
 Treated

Type of Treatment:  
 None  
 Chlorinated  
 Fluoridated  
 Filtered  
 Alum  
 Lime  
 Soda Ash  
 Polyphosphate  
 Water Softener  
 Other

Type of Analysis Desired:  
 Regular Parameters  
 Optional Parameters  
 Both

Remarks:  
PETROLEUM PRODUCT ANALYSIS

Gasoline & EDB  
HS

Regular Parameters		Results	units
Chloride			mg/l
Fluoride			mg/l
Iron			mg/l
Manganese			mg/l
Nitrate			mg/l
Nitrite			mg/l
Phosphate			mg/l
Sulfate			mg/l
Total Hardness			mg/l
Calcium			mg/l
Magnesium			mg/l
Total Solids			mg/l
Total Suspended Solids			mg/l
Total Dissolved Solids			mg/l
Color			NTU
Odor			units
Turbidity			NTU
Residual Chlorine			mg/l

Optional Parameters (List as needed)		Results
NO gasoline hydrocarbons indicated by purge and trap analysis.		
TRICHLOROETHYLENE		339.8 ppb
EDB		< 50 ppt

Received 1/30/85 n.w. Date Reported 1-31-85 Reported By John R. Neal  
Analyzed 1/30/85 1-30-85 HS Laboratory Number 510308  
n.w.

Call Reservoirs  
 &  
 Please Rush  
 H. Shears

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ORGANIC CHEMICAL ANALYSES-PRIVATE WATER SYSTEM

Complete All Items Above Heavy Line  
 (See Instructions on Reverse Side)

Name of System: USMC - Camp Lejeune  
 Address: Bldg. 670 - WTP  
 ZIP: \_\_\_\_\_  
 County: Onslow  
 Report To: J. Fred Hill  
 Address: 404 St Andrews St  
Greenville NC  
 ZIP: 27834  
 Collected By: Elizabeth A. Boly  
 Date Collected: 29 JAN 1985 Time: 1405 AM/PM  
 Location of Sampling Point: Bldg 670 Reservoir

Source of Water:  
 Ground  
 Surface  
 Both  
 Purchased

Source of Sample:  
 House Tap  
 Well Tap

Type of Sample:  
 Raw  
 Treated

Type of Treatment:  
 None  
 Chlorinated  
 Fluoridated  
 Filtered  
 Alum  
 Lime  
 Soda Ash  
 Polyphosphate  
 Water Softener  
 Other

Type of Analysis Desired:  
 Regular Parameters  
 Optional Parameters  
 Both

Remarks: PETROLEUM PRODUCT ANALYSIS

methane 2 samples per  
EAB & Gasoline  
HS

Regular Parameters		Optional Parameters (List as needed)	
	Results		Results
pH	units		
Arsenic	mg/l		
Lead	mg/l		
Iron	mg/l		
Manganese	mg/l		
Copper	mg/l		
Zinc	mg/l		
Calcium	mg/l		
Magnesium	mg/l		
Hardness-CaCO <sub>3</sub> (Ca, Mg)	mg/l		
Alkalinity-CaCO <sub>3</sub>	mg/l		
Chloride	mg/l		
Color	units		
Turbidity	NTU units		
Fluoride	mg/l		
		<u>No gasoline hydrocarbons indicated by purge and trap analysis.</u>	
		<u>TRICHLOROETHYLENE</u>	<u>8.2 ppb</u>
		<u>EAB</u>	<u>&lt;50 ppt</u>

Date Received: 1/30/85 NW Date Reported: 1-31-85 Reported by: John R. Neal  
 Date Analyzed: 1/30/85 NW Laboratory Number: 500309

*Please Rush*  
*J. Swears*

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P.O. BOX 28047 - 306 N. WILMINGTON ST., RALEIGH 27611

ORGANIC CHEMICAL ANALYSES - Petroleum Prod.

Complete All Items Above Heavy Line  
(See Instructions on Reverse Side)

Name of System: USMC-Camp Lejeune

Address: Bldg 670 - WTP

ZIP: \_\_\_\_\_

County: Onslow

Report To: J. Fred Hill

Address: 404 St Andrews St  
Greenville NC ZIP 27834

Telephone Number: ( ) - -

Collected By: Elizabeth O. Bety

Date Collected: 29 JAN 1985 Time: 1315 AM PM

Location of Sampling Point: MOQ 2212 PARADISE POINT  
(Address where sample was collected)

Remarks: gasoline & EDB CAMP LEJEUNE

Source of Water:  
 Ground  Both  
 Surface  Purchased

Source of Sample:  
 Distribution Tap  House Tap  
 Well Tap

Type of Sample:  
 Raw  Treated

Type of Treatment:  
 None  Lime  
 Chlorinated  Soda Ash  
 Fluoridated  Polyphosphate  
 Filtered  Water Softener  
 Alum  Other

Type of Sample:  
 Regular  Private  
 Check  Special

WATER SYSTEM I.D. NUMBER (COPY FROM MAILING LABEL)

□ □ - □ □ - □ □ □

State Drinking Water Parameters (Required)      Optional Parameters (List as needed)

	Results	Results
(CHLORINATED HYDROCARBONS:)		
Endrin	mg/l 5	<i>No gasoline hydrocarbons</i>
Lindane	mg/l 4	
Methoxychlor	mg/l 3	
(CHLOROPHENOXYSES:)		
Toxaphene	mg/l 4	<i>indicated by purge and trap analysis</i>
2,4-D	mg/l 3	
2,4,5-TP	mg/l 4	<i>TRICHLOROETHYLENE 1,040.9 ppb</i>
		<i>EDB 250 ppt</i>

Date Received 1/30/85 NW Date Reported 1-31-85 Reported By J. L. Neal

Date Extracted 1-30-85 HS Date Analyzed 1/30/85 Laboratory Number 5 0310

Comments: (+) HS #500310

North Carolina Department of Human Resources  
 Division of Health Services  
 Occupational Health Laboratory

ANALYSIS REPORT

Company: USMC Camp Lejeune  
 Address: Bldg. 670 Gas tank  
 Service Requested: \_\_\_\_\_  
 Sample Taken On: 1/29/85 By: Betz  
 Submitted To Laboratory On: 1/30/85 By: Federal Express  
 Date of Analysis: 1-30-85 Date Reported: 1-31-85  
 Analyzed By: JM

LABORATORY NUMBER	SAMPLE NUMBER	DESCRIPTION	REMARKS	RESULTS IN
500311		Bulk gasoline	Gasoline hydrocarbons present. No trichloroethylene identified. Sample not analyzed for EDB.	

COMMENTS:

REPORTED BY: John S. Neal  
 Chief, Occupational Health Lab