

Environment I, Incorporated

Wastewater Analyses – Environmental Consultants



PHONE (919) 756-6208
BOX 7085
GREENVILLE, N. C. 27834

March 2, 1982

Commanding General
Camp LeJeune
Marine Corps Base
Camp LeJeune, NC 28542

Dear Sir:

In August of 1981 and again in February of 1982, the North Carolina Division of Health Services listed certain additional monitoring requirements in its *Water Supply News*, newsletters 9 and 10, excerpts of which are attached.

In brief, the regulations specify that samples for corrosivity be collected twice in this year for surface supplies, and once in this year for ground supplies. Samples for sodium must be collected annually for surface supplies and once each three years for ground supplies. The regulations become effective February 27, 1982, and the first series of tests must be completed within one year thereafter. All analyses must be performed by an approved laboratory, such as Environment I, Incorporated.

There is, however, a major difference between these samples and others you may have shipped to laboratories in the past. The term "corrosivity" involves several different tests plus a series of calculations. The State specifies that two of these analyses be collected and analyzed in the field (see attached sampling requirement sheet). The State further specifies that the pH must be analyzed using a properly calibrated, temperature compensated meter within six hours of collection, and that the temperature be read immediately upon collection using a Celsius thermometer which has been checked against, and is traceable to, an NBS certified precision thermometer. The other samples have holding times of from 24 hours to 6 months.

Since only very large water supplies would likely have such equipment, the only practical solution is to have an approved commercial firm with the proper capabilities come to the water supply, make the necessary on-site analyses, and collect the additional samples for laboratory analyses. If these samples are not collected in the proper manner and using the proper equipment, the results could be in error and subject to refusal by the State. Our firm routinely has technicians traveling in your area and we are prepared to give you a contract price (payable in next fiscal year if your budget requires) for collecting, analyzing, and reporting results for one or both sets of samples. You may have recently received a list of approved laboratories which will do the analyses; however, if they do not offer field collection and analysis service, their results may be of no benefit to you.

Our prices are very competitive and we will be pleased to discuss details with you if you will contact us at the above address or telephone number.

Sincerely,

A handwritten signature in dark ink, appearing to read 'John S. Melvin'.

John S. Melvin



WATER SUPPLY NEWS

N.C. Division of Health Services, Water Supply Branch, P.O. Box 2091, Raleigh, N.C. 27602 919/733-2321

Newsletter 10
February 1982

This newsletter is a reminder of the sodium and corrosivity monitoring requirements which become effective February 27, 1982. These new regulations were approved by the State Commission for Health Services and are now part of North Carolina's Rules Governing Public Water Supplies. They are required by the United States Environmental Protection Agency.

The following is a review of these additions which apply only to community water systems.

Special Monitoring for Sodium

- 1) Water suppliers for community public water systems must collect and analyze one sample per treatment plant at the entry point of the distribution system to determine sodium concentration levels. Samples must be collected and analyzed every year for systems using surface water (completely or partially) such as lakes or rivers. For systems using only ground water sources such as wells, samples must be collected and analyzed every three years. The minimum number of samples required is based on the number of treatment plants used by the system. There is an exception: multiple wells drawing raw water from a single aquifer (natural underground water source) may, with state approval, be considered one treatment plant for determining the minimum number of samples. The state may require more frequent sampling in areas where the sodium content is variable.
- 2) The water supplier must report the sodium analysis results to the state by the 10th of the month following the month in which the sample results were received; or within the first 10 days following the end of the required monitoring period set by the state, whichever comes first. Sampling may be required more than annually. In this case, the supplier must report to the state the average no later than the 10th of the month following the month in which the analytical results of the last sample used for the annual average were received. For example, if the supplier receives the final analytical results for that year in November, then the supplier must report the average annual sodium concentration to the state no later than December 10.
- 3) The Water Supply Branch will notify the public health officials of the sodium levels.

Special Monitoring for Corrosivity Characteristics

- 1) Water suppliers for community public water systems must collect samples from a representative entry point to the water distribution system to determine the corrosivity characteristics of the water.
 - a) The supplier must collect two samples for each plant using surface water sources (completely or partially) -- one during mid-winter and one during mid-summer. The supplier must collect one sample for each plant using ground water sources. The state may require more samples in either case. The minimum number of samples required is based on the number of treatment plants used by the system. There is an exception: multiple wells drawing raw water from a single aquifer may, with state approval, be considered one treatment plant for determining the minimum number of samples.
 - b) Determination of the corrosivity characteristics of water must include measuring pH, calcium hardness, alkalinity, temperature and total dissolved solids (total filterable residue).

- 2) The water supplier must report to the state the analysis results for corrosivity characteristics by the 10th of the month following the month in which the sample results were received. If the state requires more frequent sampling, the supplier can collect the data and then must report each value by the 10th of the month following the month in which the analytical results of the last sample were received.

SUMMARY OF METHODOLOGY, SAMPLING, AND HANDLING REQUIREMENTS
FOR CORROSIVITY AND SODIUM ANALYSIS

Contaminant	Methodology	REFERENCES				Minimum Sample Size	Container ²	Preservative	Maximum ⁶ Holding Time
		EPA	ASTM	SM 14 th ed	Other				
Corrosivity Calculation	Langelier Index Aggressive Index	- -	- -	203 -	- C400-77 ¹	- -	- -	- -	- -
Alkalinity	Methyl Orange Titrametric	310.1	D1067-70B	403	-	200 ml	P, G	Cool 40C	24 Hours
Calcium Hardness	EDTA Titrametric	130.2	D1126-27	309.B	-	100 ml	P, G	HNO ₃ ³ to pH <2	6 Mo.
Dissolved Solids	Gravimetric	160.1	-	208B	-	≥100 ml ⁴	P, G	Cool 40C	7 Days
pH ⁵	Potentiometric	150.1	D1293-78A Or B	424	-	50-100ml	P, G	None	6 Hours
Temperature ⁵	Thermometer	-	-	212	-	-	P, G	None	No Holding
Sodium	AA Direct Aspiration	273.1	D1428-64A	-	-	100 ml	P	HNO ₃ ³ to pH <2	6 Mo.
	AA Graphite Furnace	273.2	-	-	-				
	Flame Photometric	-	-	320A	-				

¹AWWA Standards For Asbestor -Cement Pipe, 4 in. through 24 in. for water and other liquids." AWWA C400-77 Revision of C400-75 AWWA, Denver, Colorado.

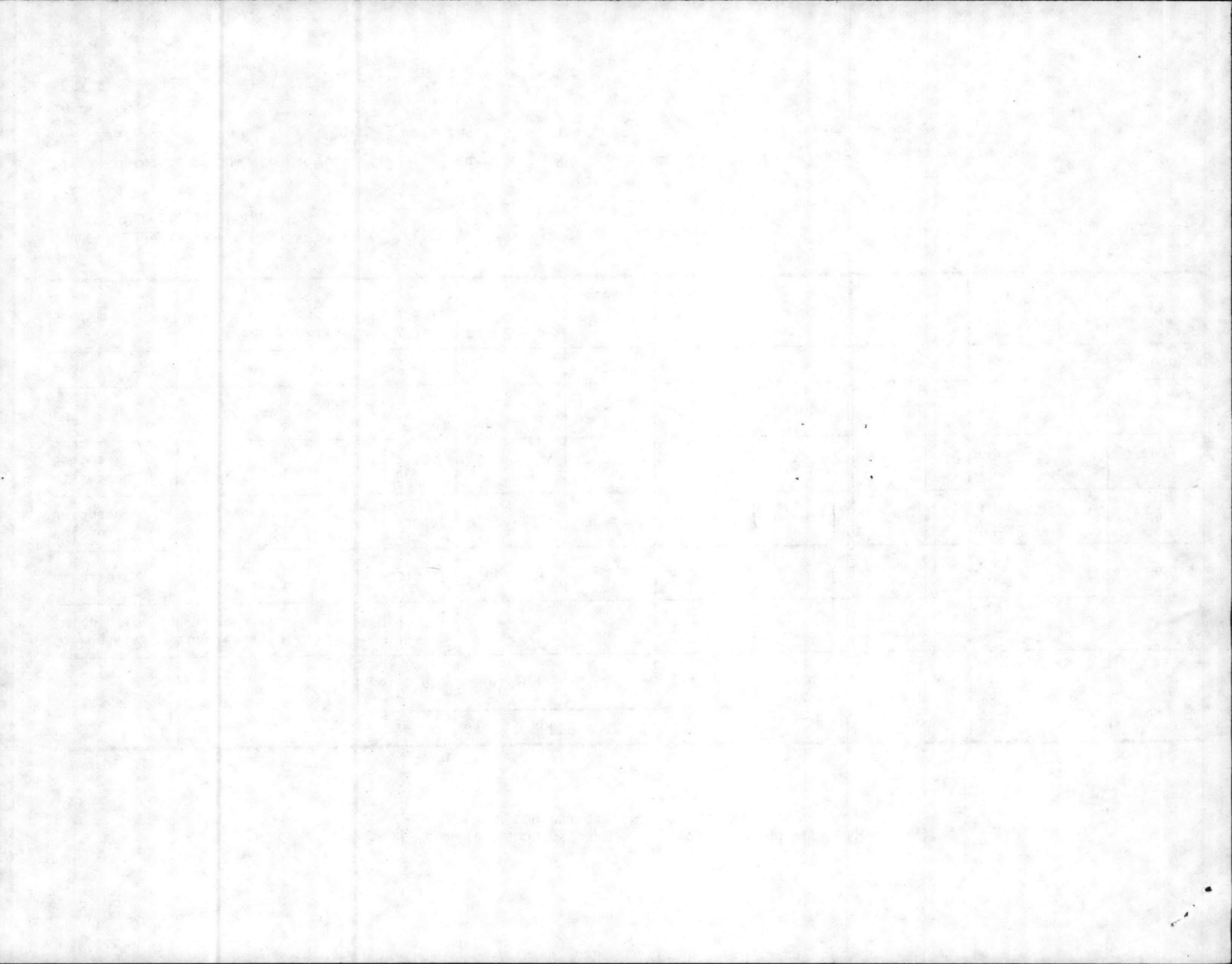
²Plastic (P), Glass (G)

³If shipping requirements prohibit HNO₃, refrigerate to 40C and acidify in the laboratory

⁴At least 100 ml should be tested. Volumes should be adjusted to yield at least 1 mg of residue.

⁵Field Test

⁶EPA Recommendations (EPA 600/4-79-020)



ODS → Betz for info

Environment 1, Incorporated

BOX 7085
GREENVILLE, N.C. 27835-7085

114 OAKMONT DRIVE
PHONE (919) 756-6208

MR. DANNY SHARP
MARINE CORPS CAMP LEJEUNE
CG MCB DIR NR & ENV AFF
CAMP LEJEUNE, NC 28542

Recently, you received notification from the Solid & Hazardous Waste Management Branch of the Division of Health Services regarding a new regulation which requires all owner/operators of sanitary landfill facilities operating within the State of North Carolina to monitor and report data from monitoring wells at their site. In the past the State Laboratory of Public Health would perform such testing, but it is now required that you contract for these tests with a commercial laboratory that is certified by the Laboratory of Public Health for drinking water analyses.

Our firm is certified by the Public Health Laboratory and would welcome the opportunity to provide this service for your site. We can provide both sample collection and analyses, following the required protocols established by the State Division of Health Services. Another option is for your landfill personnel to do the sample collection, then ship the samples to us for analysis. If this option is used, you should be aware that special equipment and procedures are required and may be beyond the present scope of your local personnel.

In an effort to provide training and assistance for you and your personnel, should you decide to use them, Environment 1 will sponsor a free seminar during the month of May to explain the requirements and answer specific questions. Representatives from the Division of Health Services will be present to discuss the various requirements regarding methods of collecting samples and the type of equipment that must be used for the collection. Our firm will discuss the various procedures for preparing the samples for shipment to the laboratory and how to understand the results when you receive them. We will also discuss how we can do the collection, analyses and reporting for those choosing this option. Finally, for those who will be doing their own sample collection, we hope to have present representatives of firms who sell the necessary sampling equipment so that you will have a source to order the equipment that is needed for your particular site.

The specific date in May for this seminar will be announced in the near future. If you are interested in attending this seminar, please advise us prior to April 30th so that we can put you on our list. We will need to know the number of people that you will be bringing in order to have enough space available. If you should need price information prior to the seminar, please contact us.

Thank You!

Clifford J. Edwards

1940-1941

1940-1941

DOY

BOX 7085
GREENVILLE, N.C. 27834

114 OAKMONT DRIVE
PHONE (919) 756-6208

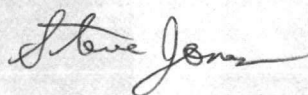
September 10, 1984

Mr. Danny Sharpe
Camp LeJeune Marine Corps Base
Hwy 24 & US Hwy 16
Camp LeJeune, N.C. 28542

Dear Mr. Sharpe:

I would like to take this opportunity to introduce to you the services which our laboratory has to offer. We presently hold certifications in water and wastewater analyses including hazardous waste testing. Over 200 industries and municipalities use our services for pre-treatment and sewer use ordinance monitoring and for hazardous waste testing required by the State Hazardous Waste authorities. Our prices are extremely competitive and we strive to deliver results in a timely manner. Prices are available either by written request or you may contact me at the above telephone number. Thank you for your time and hope to be hearing from you soon.

Sincerely,



Steve Jones

THE UNIVERSITY OF CHICAGO
LIBRARY

1950

Journal of the History of Ideas

Volume 11, Number 1
January, 1950

1950

11