



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

Doc. No.: CLET-00376-
3.04-05/08/81

TELEPHONE NO.
AUTOVON 690-4972
IN REPLY REFER TO:

114:JGW
6280

8 MAY 1981

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

Subj: Suspected Chemical Dump, Rifle Range Area; analyses of groundwater and surface water at

Ref: (a) LANTNAVFACENGCOM ltr 114:JGW 6280 of 25 Mar 1981
(b) Environmental Protection Agency National Interim Primary Drinking Water Regulations, 40 CFR 141.12, of 27 Aug 1980
(c) Quality Criteria for Water, Environmental Protection Agency, PB 263943, Jul 1976

Encl: (1) Summary of tabulated results of water sampling on 30 Mar 1981, MCB CAMP LEJEUNE
(2) Summary of tabulated results of water sampling on 10 Apr 1981, MCB CAMP LEJEUNE
(3) Detailed Laboratory results of all samples

1. Reference (a) is a letter transmitting analytical results of a water sample collected from a pit near the suspect waste dump site in the Rifle Range Area. Due to the nature of the chemical preservation technique used, analyses for organic parameters could not be undertaken.

2. A more detailed follow-up sampling, on 30 March 1981, indicated a high level of some chlorinated organic materials. Enclosure (1) is a summary presentation of the analytical results. The composite sample consisted of equal aliquots from the four samples. After determination of organic contaminants in the composite sample, the same parameters were analyzed in the individual samples. (Significant cost savings were realized by this procedure.)

3. While at MCB CAMP LEJEUNE assisting in a Naval Energy and Environmental Support Activity (NAVENENVSA) investigation of a reported radiological contamination, the results of the 30 March 1981 sampling and analysis (enclosure (1)) were obtained. (Mr. Kip Rimm, Health Physicist, Radiological Affairs Support Officer (RASO), will forward a separate report of the radiological investigation.)

4. Based on the results of the above analyses, additional samples from the same points, plus eight other points, were collected on 10 April 1981. Analyses indicated greatly reduced levels of organic contaminants as summarized in enclosure (2). Detailed laboratory results for all samples are provided for your files as enclosure (3).

5. At the present time, the cause for the disparity between the two sets of analytical results is indeterminant. However, sampling technique and sample bottle contamination are considered to be possible candidates.

6. Because of the above divergence of results, it is recommended that at least the initial four sampling points along with RR-85 (Water Treatment Plant Finished Water Tap) be resampled. LANTNAVFACENGCOCOM personnel will be at Camp Lejeune for meetings related to the EPA Hazardous Waste Management Program requirements during the latter part of May 1981 and will collect samples at that time.

7. A detailed interpretation of the significance of contamination indicated in enclosures (1) and (2) will not be presented until the third set of analytical results can be included. In abbreviated form, however, the methylene chloride, chloroform, and trichloroethylene contamination in the Rifle Range Area wells and finished water warrant the following considerations:

a. Chloroform is one of four compounds which comprise the trihalomethanes. Reference (b) sets a total trihalomethane limit of 0.10 mg/l, which equates to 100 ppb. The measured level of 17 ppb at RR-85, as noted in enclosure (2), is well within the 100 ppb standard.

b. Methylene chloride is an organic solvent commonly used in paint stripping and degreasing compounds. At the present time there are no standards set by either reference (b) or (c) for this compound.

c. Trichloroethylene is a common organic solvent used in degreasing, solvent extraction and drycleaning. At the present time there are no standards set by either reference (b) or (c) for this compound.

8. Based on the low level of contaminants found relative to the total trihalomethane standard and the chemical (not necessarily toxicological) similarity of the contaminants, it is not believed that there is an imminent threat to human health presented by consumption of water from the Rifle Range WTP and distribution system.

9. By copy of this letter consideration should be given by NAVENENVSA to advanced prioritization of MCB CAMP LEJEUNE in the Navy Assessment and Control of Installation Pollutants Program.

10. If there are any questions, please contact Mr. Jerry Wallmeyer (telephone 444-4972) of this Command.

J. R. Bailey

J. R. BAILEY
By direction

Copy to:
CMC (Code LFF 2)
COMNAVFACENGCOCOM (Code 112)
NAVENENVSA (Code 20, RASO)
NAVREGMEDCEN MCB CAMP LEJEUNE (Occupational and Preventative Medicine)
MCB CAMP LEJEUNE (Natural Resources and Environmental Affairs)

MCB CAMP LEJEUNE
 SAMPLE DATE 30 MARCH 1981
 ALL RESULTS IN PARTS PER BILLION (ppb)

	COMPOSITE	TEST WELL NO. 15	TEST WELL NO. 16	POOL OF WATER BELOW WELL NO. 16	RAD POOL
BENZENE					
TOLUENE	62		242		
CARBON TETRACHLORIDE	2,583	3,560	2,920	1,840	1,189
1, 2, - DICHLOROETHANE	44		155		
1, 1, 1 - TRICHLOROETHANE					
1, 1 - DICHLOROETHANE	69	65	122	38	38
1, 1, - DICHLOROETHYLENE	124		424		
1, 1, 2 - TRICHLOROETHANE					
CHLOROFORM	11,267	15,520	13,260	880	7,380
METHYLENE CHLORIDE	24,859	4,154	20,460	9,640	7,693
TETRACHLOROETHYLENE					
TRICHLOROETHYLENE					
TOTAL	39,008	23,299	37,583	12,398	16,300

Doc No: CLEJ-66376-3.64-05/08/81

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

OF WATER WELL	RAD POOL	RR-45 WELL	RR-47 WELL	RR-97 WELL	RR-85 WTP FINISHED WATER TAP	No. 5*	No. 6*	No. 7*	No. 8*
						1			
						101			
						176			
						103			
	2					101			
						258			
						252			
				17	17	35			
	2	4		6	3	37	14		
		1					6		
				2		141			
	4	4		25	20	1,205	20		

ump
 100 yds 55E of Test Well No. 17

right fork of road through TLZ owl to river

Doc 1001 2125-00376-3.04 -
 05/08/81

JENNINGS LABORATORIES, INC.
ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

(EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

ASBESTOS ANALYSIS - NIOSH 582

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 9, 1981

SAMPLE OF WATER SAMPLES from (Test Well #15, Roadside of Chemical Dump) Test Well
MARKED #16, Creek Side of Chemical Dump) (Lake, Pool of Water) (Ens. Kalisch-
Radiation Pool) taken 3/30/81 at Camp Lejeune, Marine Corps Base, North Carolina
and delivered to laboratory 4/01/81

OFFICIAL SAMPLE BY: BETZ & LURE

TEST WELL #15

Carbon Tetrachloride	3,560	PPB
1,1 Dichloroethane	65	PPB
Chloroform	15,520	PPB
Methylene chloride	4,154	PPB

POOL OF WATER

Carbon Tetrachloride	1,340	PPB
1,1 Dichloroethane	38	PPB
Chloroform	330	PPB
Methylene Chloride	9,640	PPB

TEST WELL #16

1,1 Dichloroethane	122	PPB
Chloroform	13,260	PPB
Carbon Tetrachloride	2,920	PPB
Methylene Chloride	20,460	PPB
1,2 Dichloroethane	154.6	PPB
1,1 Dichloroethylene	423.6	PPB
Toluene	242.	PPB

RADIATION POOL

Carbon Tetrachloride	1,189	PPB
1,1 Dichloroethane	38	PPB
Chloroform	7,380	PPB
Methylene Chloride	7,693	PPB

Respectfully submitted,
JENNINGS LABORATORIES, INC.

W. H. Jennings
CHEMIST

Laboratory
Analysis No. 4109

Doc No: CLEJ-00376-3.04-05/08/81

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

VA (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

CERTIFICATE OF ANALYSIS

Mr. Dave Goodwin

TO: Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 7, 1981

SAMPLE OF WATER SAMPLES from (Test Well #15, Roadside of Chemical Dump) (Test Well
MARKED #16, Creek side of Chemical Dump) (Luke, Pool of Water) (Ens. Kalisch-Radiation
Pool) taken 3/30/81 at Camp Lejeune, Marine Corps Base, North Carolina and
delivered to laboratory 4/01/81


OFFICIAL SAMPLE BY: BETZ & LUKE

	<u>PURGEABLE ORGANICS</u>	<u>DETECTION LIMITS ug/l</u>
<u>Protein</u>	None Detected	2.0
<u>Acrylonitrile</u>	None Detected	2.0
<u>Benzene</u>	None Detected	10.0
<u>Toluene</u>	61.75 ppb	10.0
<u>Ethylbenzene</u>	None Detected	10.0
<u>Carbon Tetrachloride</u>	2,583.0 ppb	.007
<u>Chlorobenzene</u>	None Detected	.03
<u>1,2-Dichloroethane</u>	43.77 ppb	.006
<u>1,1,1-Trichloroethane</u>	None Detected	.005
<u>1,1-Dichloroethane</u>	68.92 ppb	.004
<u>1,1-Dichloroethylene</u>	124.0 ppb	.006
<u>1,1,2-Trichloroethane</u>	None Detected	.006
<u>1,1,2,2-Tetrachloroethane</u>	None Detected	.006
<u>Chloroethane</u>	None Detected	.01
<u>2-Chloroethyl vinyl ether</u>	None Detected	.08

Respectfully submitted,

JENNINGS LABORATORIES, INC.

Navy
Laboratory
Analysis No. 109


CHEMIST

Corrected Sheet

PERCEIVABLE ORGANICS (Continue)

DETECTION LIMITS ug/l

Chloroform	11,267.0 ppb	.010
1,2-Dichloropropane	None Detected	.004
1,3-Dichloropropane	None Detected	.006
Methylene Chloride	24,859.0 ppb	.010
Methyl Chloride	None Detected	.009
Methyl Bromide	None Detected	.03
Bromoform	None Detected	.02
Dichlorobromomethane	None Detected	.006
Trichlorofluoromethane	None Detected	.03
Dichlorodifluoromethane	None Detected	.01
Chlorodibromomethane	None Detected	.01
Tetrachloroethylene	None Detected	.007
Trichloroethylene	None Detected	.005
Vinyl Chloride	None Detected	.01
1,2-Trans-Dichloroethylene	None Detected	.006
bis(chloromethyl) ether	None Detected	.003

BASE/NEUTRAL EXTRACTABLE ORGANIC COMPOUNDS

1,2-Dichlorobenzene	None Detected	.04
1,3-Dichlorobenzene	None Detected	.04
1,4-Dichlorobenzene	None Detected	.04
Hexachloroethane	None Detected	.001
Hexachlorobutadiene	None Detected	.001
Hexachlorobenzene	None Detected	.002
1,2,4-Trichlorobenzene	None Detected	.006
Bis(2-Chloroethoxy)methane	None Detected	.40
Naphthalene	None Detected	.04
2-Chloronaphthalene	None Detected	.04
Isophorone	None Detected	5.0
Nitrobenzene	None Detected	5.0
2,4-Dinitrotoluene	None Detected	.06
2,6-Dinitrotoluene	None Detected	.06

W. H. Jennings, Jr.

BASE/NEUTRAL EXTRACTABLE ORGANIC COMPOUNDS

DETECTION LIMITS µg/l

4-Bromophenyl phenyl ether	None Detected	1.1
(2-Ethylhexyl) phthalate	None Detected	.02
Di-n-octyl phthalate	None Detected	.11
Dimethyl phthalate	None Detected	.11
Diethyl phthalate	None Detected	.13
Di-n-butyl phthalate	None Detected	.02
Fluorene	None Detected	.04
Fluoranthene	None Detected	.04
Chrysene	None Detected	.04
Pyrene	None Detected	.04
Phenathrene	None Detected	.04
Anthracene	None Detected	.04
Benzo (a) anthracene	None Detected	.04
Benzo (b) fluoranthene	None Detected	.04
Benzo (k) fluoranthene	None Detected	.04
Benzo (a) pyrene	None Detected	.04
Ideno (1,2,3-c,d) pyrene	None Detected	.10
Dibenzo (a,h) anthracene	None Detected	.10
Benzo (g,h,i) perylene	None Detected	.10
4-Chlorophenyl phenyl ether	None Detected	2.2
3,3'Dichlorobenzidine	None Detected	.04
Benzidine	None Detected	.04
Bis (2-Chloroethyl) ether	None Detected	.04
1,2-Diphenylhydrazine	None Detected	.04
Hexachlorocyclopentadiene	None Detected	.04
N-Nitrosodiphenylamine	None Detected	1.0
Acenaphthylene	None Detected	.04
Acenaphthene	None Detected	.04
Butyl benzyl phthalate	None Detected	.04
N-Nitrosodimethylamine	None Detected	.2
N-Nitrosodi-n-propylamine	None Detected	.5
bis (2-Chloroisopropyl) ether	None Detected	.9

BY



Chemist

LAB # 109

ACID EXTRACTABLE ORGANIC COMPOUNDS

DETECTION LIMITS µg/l

Phenol	None Detected	1.4
2-Nitrophenol	None Detected	2.5
4-Nitrophenol	None Detected	2.5
2,4-Dinitrophenol	None Detected	7.0
4,6-Dinitro-o-cresol	None Detected	2.0
Pentachlorophenol	None Detected	10.0
p-Chloro-m-cresol	None Detected	.01
2-Chlorophenol	None Detected	2.0
2,4-Dichlorophenol	None Detected	2.1
2,4,6-Trichlorophenol	None Detected	5.0
2,4-Dimethylphenol	None Detected	1.7

PESTICIDES/PCB's

α-Endosulfan	None Detected	.005
β-Endosulfan	None Detected	.01
Endosulfan sulfate	None Detected	.03
α-BHC	None Detected	.002
β-BHC	None Detected	.004
δ-BHC	None Detected	.004
γ-BHC	None Detected	.002
Aldrin	None Detected	.003
Dieldrin	None Detected	.006
4,4'-DDE	None Detected	.006
4,4'-DDD	None Detected	.012
4,4'-DDT	None Detected	.016
Endrin	None Detected	.009
Endrin Aldehyde	None Detected	.023
Heptachlor	None Detected	.002
Heptachlor Epoxide	None Detected	.004
Chlordane	None Detected	.04
Toxaphene	None Detected	.40

BY

[Handwritten Signature]
 Chemist

PESTICIDES/PCB'sDETECTION LIMITS µg/l

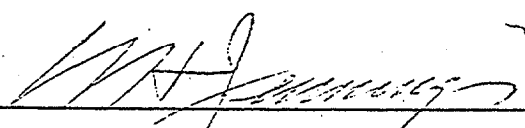
Aroclor 1016	None Detected	.04
Aroclor 1221	None Detected	.10
Aroclor 1232	None Detected	.10
Aroclor 1242	None Detected	.06
Aroclor 1248	None Detected	.08
Aroclor 1254	None Detected	.08
Aroclor 1260	None Detected	.15
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	None Detected	.003

	<u>METALS</u>	<u>DETECTION LIMITS</u> mg/l
Antimony	<0.20	0.2
Arsenic	<0.002	0.002
Beryllium	<0.005	0.005
Cadmium	0.01	0.002
Chromium	0.11	0.02
Copper	<0.01	0.01
Lead	0.12	0.005
Mercury	<0.002	0.002
Nickel	0.09	0.02
Selenium	0.004	0.002
Silver	<0.01	0.01
Thallium	<0.10	0.1
Zinc	27.23	0.005
Barium	0.13	

MISCELLANEOUS

Total Cyanides	<0.01	0.01
Asbestos (fibrous)	None Detected	
Total Phenols	<0.005	0.005

BY


 Chemist

LAB # 109

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

(EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

CERTIFICATE OF ANALYSIS

Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 17, 1981

SAMPLE OF WATER SAMPLE
MARKED Test Well #15 CAMP LEJEUNE Marine Corps Base, North Carolina taken 4/10/81
@ 1340 hours. Delivered to laboratory 4/12/81 by Mr. Wallmeyer
OFFICIAL SAMPLE BY: E. A. Betz

Carbon Tetrachloride	None Detected (<0.007 ug/l)
1,1 Dichloroethane	None Detected (<0.004 ug/l)
Chloroform	None Detected (<0.010 ug/l)
Methylene Chloride	2.0 ppb

Respectfully submitted,
JENNINGS LABORATORIES, INC.

Laboratory
Analysis No. 154

W. H. Canning, Jr.
CHEMIST

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

VA (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
• Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Divison
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 17, 1981

SAMPLE OF WATER SAMPLE

MARKED Test Well #16 CAMP LEJEUNE Marine Corps Base, North Carolina taken 4/10/
@ 1355 hours. Delivered to laboratory 4/12/81 by Mr. Wallmeyer

OFFICIAL SAMPLE BY: E. A. Betz

1,1 Dichloroethane	39.0 ppb
Chloroform	None Detected (<0.010 ug/l)
Carbon Tetrachloride	None Detected (<0.007 ug/l)
Methylene Chloride	13.0 ppb
1,2 Dichloroethane	52.0 ppb
1,1 Dichloroethylene	73.6 ppb
Toluene	51.8 ppb

Respectfully submitted,
JENNINGS LABORATORIES, INC.

Laboratory
Analysis No. 155

[Signature]
CHEMIST

DGC No: CLEJ-06376-3.04
05/08/81

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

VA (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

ASBESTOS ANALYSIS - NIOSH 582

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 17, 1981

SAMPLE OF WATER SAMPLE

MARKED POOL OF WATER BELOW DUMP BEHIND TEST WELL #16 CAMP LEJEUNE Marine Corps
Base, North Carolina taken 4/10/81 @ 1450 hours. Delivered to laboratory
4/12/81 by Mr. Wallmeyer

OFFICIAL SAMPLE BY: E. A. Betz

Carbon Tetrachloride	None Detected (<0.007 ug/l)
1,1 Dichloroethane	None Detected (<0.004 ug/l)
Chloroform	None Detected (<0.010 ug/l)
Methylene Chloride	3.4 ppb

Respectfully submitted,
JENNINGS LABORATORIES, INC.

Laboratory
Analysis No. 156

W. H. Jennings, Jr.
CHEMIST

Doc No: CLEJ-00376-3.04-81
05/08/81

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

VA (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

ASBESTOS ANALYSIS - NIOSH 582

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY

NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 17, 1981

SAMPLE OF WATER SAMPLE

MARKED Taken from Radiation Pool of Water (Ens Kalisch Pool) CAMP LEJEUNE, Marine
Corps Base, North Carolina taken 4/10/81 @ 1500 Hours. Delivered 4/12/81 by
Mr. Wallmeyer.

OFFICIAL SAMPLE BY: Jerry Wallmeyer

Carbon Tetrachloride	None Detected (<0.007 µg/l)
1,1 Dichloroethane	2.0 ppb
Chloroform	None Detected (<0.010 µg/l)
Methylene Chloride	2.4 ppb

Respectfully submitted,
JENNINGS LABORATORIES, INC.

Laboratory
Analysis No. 157


CHEMIST

Doc No! CLEJ-00376-3.04-05/08/81

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

(EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

CERTIFICATE OF ANALYSIS

Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF WELL FOR WATER PLANT

MARKED MCB CAMP LEJEUNE RR-45 taken 4/10/81 @ 1230 hours

Samples delivered to laboratory 4/13/81 AM by Mr. Wallmeyer

OFFICIAL SAMPLE BY: E. A. Betz

PRIORITY POLLUTANTS	PURGEABLE ORGANICS	DETECTION LIMITS (µg/l)
Acrolein	None Detected	2.0
Acrylonitrile	None Detected	2.0
Benzene	None Detected	10.0
Toluene	None Detected	10.0
Ethylbenzene	None Detected	10.0
Carbon Tetrachloride	None Detected	.007
Chlorobenzene	None Detected	.03
1,2-Dichloroethane	None detected	.006
1,1,1-Trichloroethane	None Detected	.005
1,1-Dichloroethane	None Detected	.004
1,1-Dichloroethylene	None Detected	.006
1,1,2-Trichloroethane	None Detected	.006
1,1,2,2-Tetrachloroethane	None Detected	.006
Chloroethane	None Detected	.01
2-Chloroethyl vinyl ether	None Detected	.08

Respectfully submitted,
JENNINGS LABORATORIES, INC.

W. A. Jennings, Jr.
CHEMIST

Laboratory
Analysis No. 150

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

Doc No: 2283-
60376-3.04-
05/08/81

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

VA (EPA) CERTIFIED LABORATORY for
inking Water Analysis - Microbiological,
Inorganic and Organic

ASBESTOS ANALYSIS - NIOSH 582

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF WELL FOR WATER PLANT

MARKED MCB CAMP LEJEUNE RR-45

OFFICIAL SAMPLE BY: _____

	PURGEABLE ORGANICS (CONTINUED)	DETECTION LIMITS (µg/l)
Chloroform	None Detected	.010
1,1-Dichloropropane	None Detected	.004
1,3-Dichloropropane	None Detected	.006
Methylene Chloride	4.0 ppb	.010
Methyl Chloride	None Detected	.009
Methyl Bromide	None Detected	.03
Bromoform	None Detected	.02
Dichlorobromomethane	None Detected	.006
Trichlorofluoromethane	None Detected	.03
Dichlorodifluoromethane	None Detected	.01
Chlorodibromomethane	None Detected	.01
Tetrachloroethylene	None Detected	.007
Trichloroethylene	None Detected	.005
Vinyl Chloride	None Detected	.01
1,2-Trans-Dichloroethylene	None Detected	.006
bis(chloromethyl) ether	None Detected	.003

Respectfully submitted,
JENNINGS LABORATORIES, INC.

Laboratory
Analysis No. 150

W. H. Jennings
CHEMIST

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

VA (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and OrganicOfficial Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETYLaboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF WELL FOR WATER PLANT

MARKED MCB CAMP LEJEUNE RR-47 taken 4/10/81 @ 1220 Hours

Samples delivered to laboratory 4/13/81 AM by Mr. Wallmeyer

OFFICIAL SAMPLE BY: E. A. Betz

PRIORITY POLLUTANTS	PURGEABLE ORGANICS	DETECTION LIMITS (ug/l)
Acrolein	NONE Detected	2.0
Acrylonitrile	None Detected	2.0
Benzene	None Detected	10.0
Toluene	None Detected	10.0
Ethylbenzene	None Detected	10.0
Carbon Tetrachloride	None Detected	.007
Chlorobenzene	None Detected	.03
1,2-Dichloroethane	None Detected	.006
1,1,1-Trichloroethane	None Detected	.005
1,1-Dichloroethane	None Detected	.004
1,1-Dichloroethylene	None Detected	.006
1,1,2-Trichloroethane	None Detected	.006
1,1,2,2-Tetrachloroethane	None Detected	.006
Chloroethane	None Detected	.01
2-Chloroethyl vinyl ether	None Detected	.03

Respectfully submitted,

JENNINGS LABORATORIES, INC.

Laboratory
Analysis No. 151


W. H. Jennings

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1198

(EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

CERTIFICATE OF ANALYSIS

Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF WELL FOR WATER PLANT
MARKED MCB CAMP LEJEUNE RR-47 taken 4/10/81 @ 1220 Hours

OFFICIAL SAMPLE BY: _____

	PURGEABLE ORGANICS (CONTINUED)	DETECTION LIMITS (µg/l)
Chloroform	None Detected	.010
1,2-Dichloropropane	None Detected	.004
1,3-Dichloropropane	None Detected	.006
Ethylene Chloride	None Detected	.010
Ethyl Chloride	None Detected	.009
Ethyl Bromide	None Detected	.03
Chloroform	None Detected	.02
Dichlorobromomethane	None Detected	.006
Dichlorofluoromethane	None Detected	.03
Dichlorodifluoromethane	None Detected	.01
Dibromodibromomethane	None Detected	.01
Tetrachloroethylene	None Detected	.007
Trichloroethylene	None Detected	.005
Vinyl Chloride	None Detected	.01
1,2-Trans-Dichloroethylene	None Detected	.006
Dichloromethyl ether	None Detected	.003

Respectfully submitted,

JENNINGS LABORATORIES, INC.

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

A (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

ASBESTOS ANALYSIS - NIOSH 582

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY

NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF WELL FOR WATER PLANT

MARKED MCB CAMP LEJEUNE RR-97 taken 4/10/81 @ 1235 Hours

Samples delivered to laboratory 4/13/81 AM by Mr. Wallmeyer

OFFICIAL SAMPLE BY: E.A. Betz

PRIORITY POLLUTANTS	PURGEABLE ORGANICS	DETECTION LIMITS (µg/l)
Acrolein	None Detected	2.0
Acrylonitrile	None Detected	2.0
Benzene	None Detected	10.0
Toluene	None Detected	10.0
Ethylbenzene	None Detected	10.0
Carbon Tetrachloride	None Detected	.007
Chlorobenzene	None Detected	.03
1,2-Dichloroethane	None Detected	.006
1,1,1-Trichloroethane	None Detected	.005
1,1-Dichloroethane	None Detected	.004
1,1-Dichloroethylene	None Detected	.006
1,1,2-Trichloroethane	None Detected	.006
1,1,2,2-Tetrachloroethane	None Detected	.006
Chloroethane	None Detected	.01
2-Chloroethyl vinyl ether	None Detected	.08

Respectfully submitted,

JENNINGS LABORATORIES, INC.

M. H. Jennings

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

(EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

CERTIFICATE OF ANALYSIS

Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

NAME OF WELL FOR WATER PLANT

KEYED RR-97

ANALYTICAL SAMPLE BY:

PURGEABLE ORGANICS (CONTINUED) DETECTION LIMITS (µg/l)

ORGANIC	CONCENTRATION	DETECTION LIMITS (µg/l)
Oil	16.6 ppb	.010
-Dichloropropane	None Detected	.004
-Dichloropropane	None Detected	.006
ethylene Chloride	5.8 ppb	.010
ethyl Chloride	None Detected	.009
ethyl Bromide	None detected	.03
monoform	None Detected	.02
chlorobromomethane	None Detected	.006
chlorofluoromethane	None Detected	.03
chlorodifluoromethane	None Detected	.01
chlorodibromomethane	None Detected	.01
trichloroethylene	None Detected	.007
chloroethylene	1.8 ppb	.005
vinyl Chloride	None Detected	.01
-Trans-Dichloroethylene	None Detected	.006
(chloromethyl) ether	None Detected	.003

Respectfully submitted,

JENNINGS LABORATORIES, INC.



JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

VA (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS.
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF RIFLE RANGE WATER TREATMENT PLANT AT SINK OF TREATED WATER

MARKED MCB CAMP LEJEUNE RR-85 taken 4/10/81 @ 1245 Hours

Samples delivered to laboratory 4/13/81 AM by Mr. Wallmeyer

OFFICIAL SAMPLE BY: _____

PRIORITY POLLUTANTS	PURGEABLE ORGANICS	DETECTION LIMITS (µg/l)
Acrolein	None Detected	2.0
Acrylonitrile	None Detected	2.0
Benzene	None Detected	10.0
Toluene	None Detected	10.0
Ethylbenzene	None Detected	10.0
Carbon Tetrachloride	None Detected	.007
Chlorobenzene	None Detected	.03
1,2-Dichloroethane	None Detected	.006
1,1,1-Trichloroethane	None Detected	.005
1,1-Dichloroethane	None Detected	.004
1,1-Dichloroethylene	None Detected	.006
1,1,2-Trichloroethane	None Detected	.006
1,1,2,2-Tetrachloroethane	None Detected	.006
Chloroethane	None Detected	.01
2-Chloroethyl vinyl ether	None Detected	.08

Respectfully submitted,

JENNINGS LABORATORIES, INC.

Laboratory
Analysis No. 152

W. H. Jennings, Jr.
CHEMIST

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

8 CYPRESS AVENUE • P.O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

OFFICIAL LABORATORY for
Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ISO 9001 ANALYSIS - NIOSH 582

NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

CERTIFICATE OF ANALYSIS

By: Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF RIFLE RANGE WATER TREATMENT PLANT AT SINK OF TREATED WATER

MARKED RR-85

OFFICIAL SAMPLE BY: _____

	PURGEABLE ORGANICS (CONTINUED)	DETECTION LIMITS (µg/l)
Chloroform	17.0 ppb	.010
1,1-Dichloropropane	None Detected	.004
1,3-Dichloropropane	None Detected	.006
Methylene Chloride	3.0 ppb	.010
Methyl Chloride	None Detected	.009
Methyl Bromide	None Detected	.03
Bromoform	None detected	.02
Dichlorobromomethane	None detected	.006
Trichlorofluoromethane	None Detected	.03
Dichlorodifluoromethane	None Detected	.01
Chlorodibromomethane	None detected	.01
Tetrachloroethylene	None Detected	.007
Trichloroethylene	None Detected	.005
Vinyl Chloride	None Detected	.01
1,2-Trans-Dichloroethylene	None detected	.006
bis(chloromethyl) ether	None Detected	.003

Respectfully submitted,

JENNINGS LABORATORIES, INC.

W. H. Jennings
CHEMIST

Laboratory Analysis No. 152

Doc No: CLEJ-00376-3.04-05/08/81

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

A (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF: POOL-OF-WATER WITH OLD BARREL IN IT AT OLD CHEMICAL DUMP

MARKED: MCB CAMP LEJEUNE SAMPLE #5 taken 4/10/81 @ 1420 Hours

Samples delivered to laboratory 4/13/81 AM by Mr. Wallmeyer

OFFICIAL SAMPLE BY: D. Sharpe

PRIORITY POLLUTANTS	PURGEABLE ORGANICS	DETECTION LIMITS (µg/l)
Acrolein	None Detected	2.0
Acrylonitrile	None Detected	2.0
Benzene	1.0 ppb	10.0
Toluene	101.0 ppb	10.0
Ethylbenzene	None Detected	10.0
Carbon Tetrachloride	None Detected	.007
Chlorobenzene	None Detected	.03
1,2-Dichloroethane	176.0 ppb	.006
1,1,1-Trichloroethane	103.0 ppb	.005
1,1-Dichloroethane	101.0 ppb	.004
1,1-Dichloroethylene	258.0 ppb	.006
1,1,2-Trichloroethane	252.0 ppb	.006
1,1,2,2-Tetrachloroethane	None Detected	.006
Chloroethane	None Detected	.01
2-Chloroethyl vinyl ether	None Detected	.08

Respectfully submitted,

JENNINGS LABORATORIES, INC.



Doc No: CLEJ-00376-3.64-05/08/81

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1198

(EPA) CERTIFIED LABORATORY for
inking Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

CERTIFICATE OF ANALYSIS

Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF POOL OF WATER WITH OLD BARREL IN IT AT OLD CHEMICAL DUMP
SAMPLE #5
MARKED

OFFICIAL SAMPLE BY:

PURGEABLE ORGANICS (CONTINUED) DETECTION LIMITS (µg/l)

Chloroform	34.6 ppb	.010
1,2-Dichloropropane	None Detected	.004
1,3-Dichloropropane	None Detected	.006
Ethylene Chloride	37.0 ppb	.010
Ethyl Chloride	None Detected	.009
Ethyl Bromide	None Detected	.03
Bromoform	None Detected	.02
Dichlorobromomethane	None Detected	.006
Dichlorofluoromethane	None Detected	.03
Dichlorodifluoromethane	None Detected	.01
Dibromodibromomethane	None Detected	.01
Tetrachloroethylene	None Detected	.007
Trichloroethylene	141.0 ppb	.005
Vinyl Chloride	None Detected	.01
2-Trans-Dichloroethylene	None detected	.006
1,2-Dichloroethyl ether	None detected	.003

Respectfully submitted,

JENNINGS LABORATORIES, INC.

W. H. Jennings, Jr.
CHEMIST

Laboratory Analysis No. 158

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

A (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

ASBESTOS ANALYSIS - NIOSH 582

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF STREAM BED BELOW & BEHIND OLD CHEMICAL DUMP ABOUT 100 yds SSE of Test

Well #17
MARKED MCB CAMP LEJEUNE SAMPLE #6 taken 4/10/81 @ 1435 hours

Samples delivered to laboratory 4/13/81 AM by Mr. Wallmeyer

OFFICIAL SAMPLE BY: _____

PRIORITY POLLUTANTS	PURGEABLE ORGANICS	DETECTION LIMITS (µg/l)
Acrolein	None Detected	2.0
Acrylonitrile	None detected	2.0
Benzene	None Detected	10.0
Toluene	None detected	10.0
Ethylbenzene	None Detected	10.0
Carbon Tetrachloride	None Detected	.007
Chlorobenzene	None Detected	.03
1,2-Dichloroethane	None Detected	.006
1,1,1-Trichloroethane	None Detected	.005
1,1-Dichloroethane	None Detected	.004
1,1-Dichloroethylene	None Detected	.006
1,1,2-Trichloroethane	None Detected	.006
1,1,2,2-Tetrachloroethane	None Detected	.006
Chloroethane	None Detected	.01
2-Chloroethyl vinyl ether	None Detected	.08

Respectfully submitted,

JENNINGS LABORATORIES, INC.

Laboratory
Analysis No 159

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

VA (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

ASBESTOS ANALYSIS - NIOSH 582

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY

NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

CERTIFICATE OF ANALYSIS

To: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF STREAM-BED BELOW & BEHIND OLD CHEMICAL DUMP ABOUT 100 yds SSE of Test

MARKED SAMPLE #6

Well #17

OFFICIAL SAMPLE BY: _____

	PURGEABLE ORGANICS (CONTINUED)	DETECTION LIMITS (µg/l)
Chloroform	None Detected	.010
1,2-Dichloropropane	None Detected	.004
1,3-Dichloropropane	None Detected	.006
Methylene Chloride	14.0 ppb	.010
Methyl Chloride	None Detected	.009
Methyl Bromide	None detected	.03
Bromoform	None detected	.02
Dichlorobromomethane	None Detected	.006
Trichlorofluoromethane	None Detected	.03
Dichlorodifluoromethane	None Detected	.01
Chlorodibromomethane	None Detected	.01
Tetrachloroethylene	5.8 ppb	.007
Trichloroethylene	None Detected	.005
Vinyl Chloride	None Detected	.01
1,2-Trans-Dichloroethylene	None Detected	.006
bis(chloromethyl) ether	None Detected	.003

Respectfully submitted,

JENNINGS LABORATORIES, INC.



Doc No: CLEJ-00356-3.04-05/08/81

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

VA (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF TIDAL MARSH @ End of Road past old chemical dump

MARKED MCB CAMP LEJEUNE SAMPLE #7 taken 4/10/81 @ 1510 hours


Samples delivered to laboratory 4/13/81 AM by Mr. Wallmeyer

OFFICIAL SAMPLE BY: Mr. Jerry Wallmeyer

PRIORITY POLLUTANTS	PURGEABLE ORGANICS	DETECTION LIMITS (µg/l)
Acrolein	None Detected	2.0
Acrylonitrile	None Detected	2.0
Benzene	None Detected	10.0
Toluene	None detected	10.0
Ethylbenzene	None Detected	10.0
Carbon Tetrachloride	None Detected	.007
Chlorobenzene	None Detected	.03
1,2-Dichloroethane	None Detected	.006
1,1,1-Trichloroethane	None Detected	.005
1,1-Dichloroethane	None Detected	.004
1,1-Dichloroethylene	None Detected	.006
1,1,2-Trichloroethane	None Detected	.006
1,1,2,2-Tetrachloroethane	None Detected	.006
Chloroethane	None Detected	.01
2-Chloroethyl vinyl ether	None Detected	.08

Respectfully submitted,
JENNINGS LABORATORIES, INC.

Laboratory
Analysis No. 160



JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

• A (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF TIDAL MARSH @ END OF ROAD PAST OLD CHEMICAL DUMP

MARKED SAMPLE #7

OFFICIAL SAMPLE BY: _____

	PURGEABLE ORGANICS (CONTINUED)	DETECTION LIMITS (µg/l)
Chloroform	None Detected	.010
1,2-Dichloropropane	None Detected	.004
1,3-Dichloropropane	None Detected	.006
Methylene Chloride	None Detected	.010
Methyl Chloride	None Detected	.009
Methyl Bromide	None Detected	.03
Bromoform	None Detected	.02
Dichlorobromomethane	None Detected	.006
Trichlorofluoromethane	None Detected	.03
Dichlorodifluoromethane	None Detected	.01
Chlorodibromomethane	None Detected	.01
Tetrachloroethylene	None Detected	.007
Trichloroethylene	None Detected	.005
Vinyl Chloride	None Detected	.01
1,2-Trans-Dichloroethylene	None Detected	.006
bis(chloromethyl) ether	None Detected	.003

Respectfully submitted,

JENNINGS LABORATORIES, INC.

Laboratory 160
Analysis No. _____

W. H. Jennings
CHEMIST

Dec No: ELEJ-60376-3.04-05/08/81

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1498

(EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

ASBESTOS ANALYSIS - NIOSH 582

NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF NEW RIVER, BETWEEN MOUTH OF STREAM & EVERETT CREEK RIGHT FORK OF ROAD THRU
TLZ OWL TO RIVER
MARKED MCB CAMP LEJEUNE SAMPLE #8 taken 4/10/81 @ 1530

Samples delivered to laboratory 4/13/81 AM by Mr. Wallmeyer

OFFICIAL SAMPLE BY: _____

PRIORITY POLLUTANTS	PURGEABLE ORGANICS	DETECTION LIMITS (µg/l)
Acrolein	None Detected	2.0
Acrylonitrile	None Detected	2.0
Benzene	None Detected	10.0
Toluene	None Detected	10.0
Ethylbenzene	None detected	10.0
Carbon Tetrachloride	None Detected	.007
Chlorobenzene	None Detected	.03
1,2-Dichloroethane	None Detected	.006
1,1,1-Trichloroethane	None Detected	.005
1,1-Dichloroethane	None Detected	.004
1,1-Dichloroethylene	None Detected	.006
1,1,2-Trichloroethane	None Detected	.006
1,1,2,2-Tetrachloroethane	None Detected	.006
Chloroethane	None Detected	.01
2-Chloroethyl vinyl ether	None Detected	.08

Respectfully submitted,

JENNINGS LABORATORIES, INC.

Laboratory
Analysis No 161

W. H. Jennings, Jr.
CHEMIST

JENNINGS LABORATORIES, INC.

ANALYTICAL AND CONSULTING CHEMISTS

1118 CYPRESS AVENUE • P. O. BOX 851 • VIRGINIA BEACH, VA. 23451 • PHONE (804) 425-1198

✓ A (EPA) CERTIFIED LABORATORY for
Drinking Water Analysis - Microbiological,
Inorganic and Organic

ASBESTOS ANALYSIS - NIOSH 582

Official Referee Chemists for:
AMERICAN OIL CHEMISTS SOCIETY
NATIONAL SOYBEAN
PROCESSORS ASSOCIATION

Laboratory Certified by VA. STATE WATER
CONTROL BOARD for Analysis of
Effluents for NPDES PERMITS
CERTIFIED OFFICIAL U.S.D.A. LABORATORY
FOR MEAT ANALYSIS

CERTIFICATE OF ANALYSIS

TO: Mr. Dave Goodwin
Building N-23 Atlantic Division
Naval Facilities Engineering Command
Norfolk, Virginia 23511

DATE: April 16, 1981

SAMPLE OF NEW RIVER, BETWEEN MOUTH OF STREAM & EVERETT CREEK RIGHT FORK OF ROAD
THRU TLZ OWL TO RIVER
MARKED Sample #8

OFFICIAL SAMPLE BY: _____

	PURGEABLE ORGANICS (CONTINUED)	DETECTION LIMITS (µg/l)
Chloroform	None Detected	.010
1,2-Dichloropropane	None Detected	.004
1,3-Dichloropropane	None Detected	.006
Methylene Chloride	None detected	.010
Methyl Chloride	None Detected	.009
Methyl Bromide	None Detected	.03
Bromoform	None Detected	.02
Dichlorobromomethane	None Detected	.006
Trichlorofluoromethane	None Detected	.03
Dichlorodifluoromethane	None Detected	.01
Chlorodibromomethane	None Detected	.01
Tetrachloroethylene	None Detected	.007
Trichloroethylene	None Detected	.005
Vinyl Chloride	None Detected	.01
1,2-Trans-Dichloroethylene	None Detected	.006
bis(chloromethyl) ether	None Detected	.001

Respectfully submitted,

JENNINGS LABORATORIES, INC.

Laboratory
Analysis No 161

W. H. Jennings, Jr.
JENNINGS