04.01-07/17/92-01002

(840) 445-2931

5090
1823:BCB:clt

CERTIFIED MAIL RETURN RECEIPT REQUESTED

Ms. Michelle Glenn
Waste Management Division
United States Environmental Protection Agency, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: MCB Camp Lejeune Installation Restoration Program; Treatment of TCE Contaminated Groundwater at the Hadnot Point Wastewater Treatment Plant

Dear Ms. Glenn:

As discussed in our meeting on April 28, 1992 aboard Marine Corps Base Camp Lejeune with you and Mr. John Lank, we have finalized a report entitled "Interim Remedial Action Proposed Plan for the Shallow Aquifer at the Hadnot Point Industrial Area Operable Unit." Our preferred alternative for remediation of the shallow aquifer involves utilizing the Hadnot Point Wastewater Treatment Plant (WTP) to treat chlorinated solvent contaminated groundwater from the Hadnot Point Industrial Area (HPIA) shallow aquifer.

As previously stated in our letter dated 6 April 1992, we assert that the TCE contaminated groundwater in the HPIA shallow aquifer should not be considered a listed hazardous waste. In your letter dated 14 April 1992 you stated that "if wastewater enters a surface impoundment at any time in the treatment process the RCRA regulations would apply (as) an 'Applicable or Relevant and Appropriate Requirement.'"

Nonetheless, in the meeting referenced above Mr. Lank indicated that the 40 CFR 261.3 allows the exclusion of the listed hazardous waste provisions for wastewater, if the generator can demonstrate that the maximum weekly usage of these solvents divided by the average weekly flow of wastewater into the headworks of the wastewater treatment plant does not exceed one (1) part per million (ppm). Although we do not consider the TCE-contaminated groundwater in the HPIA shallow aquifer as "wastewater", an analogy can be drawn between the treatment of contaminated wastewater and contaminated groundwater. As agreed during the referenced meeting, we are providing calculations detailing the theoretical concentrations of chlorinated solvents at the headworks of the Hadnot Point WTP.

Please find enclosed our Chlorinated Solvents Concentration Calculations package, which details Marine Corps Base Camp

Lejeune information regarding hazardous material purchases, hazardous waste disposal, and Hadnot Point WTP flows for calendar year 1991. These calculations were prepared in accordance with 40 CFR 261.3. The results of these calculations demonstrate MCB Camp Lejeune potentially has 0.372 ppm of chlorinated solvent in the flow to the wastewater treatment plant. As discussed in the enclosure, this calculation is very conservative, predominantly because all the solvents were assumed to process through the Hadnot Point WTP, rather than being split among the seven (7) wastewater treatment plants aboard the Base. Complete supporting documentation for the enclosure is maintained at MCB Camp Lejeune and available for review.

More accurate information that strongly supports the enclosed calculations can be found in the report previously submitted to you entitled "Draft Supplemental Document to the Interim Remedial Action Focused Feasibility Study for the Shallow Aquifer at the Hadnot Point Industrial Area Operable Unit." In Chapter 3 of the above-mentioned document, Table 3-4 reports the results of three (3) 12-hour composite samples of the influent to the Hadnot Point WTP. These composite samples were taken by Baker Environmental, Inc personnel on 4-6 February 1992 to support the Interim Remedial Action Proposed Plan. TCE was detected in only one of these samples at a concentration of one (1) part per billion.

Based on the enclosure and the aforementioned submitted report, the concentration of chlorinated solvent at the headworks of the Hadnot Point WTP during treatment of the contaminated groundwater from the HPIA shallow aquifer should be well below one part per million (ppm). Thus, if an analogy between the treatment of TCE-contaminated wastewater and TCE-contaminated groundwater is made, the treatment of TCE-contaminated groundwater from the HPIA shallow aquifer at the Hadnot Point WTP would be allowable.

In order to maintain our expedited schedule for this action, we request your written confirmation of this interpretation by 29 July 1992. If you have questions or comments, please contact Mr. Byron Brant, MCB Camp Lejeune Remedial Program Manager, at (804) 445-2931.

Sincerely,

P. A. RAKOWSKI, P.E.
Head
Environmental Programs Branch
Environmental Quality Division
by direction of the Commander

Encl:
Chlorinated Solvents Concentrations Calculations Package

Copy to:
MCB Camp Lejeune (AC/S, Environmental Management)
N.C. DEHNR (Attn: Mr. Jack Butler)
EPA Region IV, RCRA (Attn: Mr. John Lank)

Blind copy to: (w/ encl)
1823 (BCB)(2 copies)
Administrative Record MCB Camp Lejeune

Blind copy to: (w/o encl)
182
18S

BCBDOC:TCEGW}4.BCB
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MARINE CORPS BASE, CAMP LEJEUNE
HADNOT POINT WASTEWATER TREATMENT PLANT
CHLORINATED SOLVENT (F001 AND F002)
CONCENTRATION CALCULATIONS PACKAGE

CY 1991

Annual Chlorinated Solvent Purchases		878 Gallons
Annual Chlorinated Solvent Listed HW Shipped Out for Disposal	-	257 Gallons
CY 1991 Annual Chlorinated Solvent Usage		621 Gallons

Yearly Average (CY 1991) Hadnot Point Wastewater Plant Flow:

4.575 MGD * 365 Days/Year = 1670 Million Gallons/Year

Solvent Exclusion Calculation:

$$\frac{\text{621 Gallons/Year Chlorinated Solvent}}{\text{1,670,000,000 Gallons/Year Wastewater}} = 3.72 * 10^{-7}$$

or

.372 parts per million (ppm)

0.372 ppm is a conservative calculation and is substantially below the 1 ppm exclusion limit.

CONSERVATIVE ASSUMPTIONS UTILIZED IN CALCULATING THE CHLORINATED SOLVENT CONCENTRATION CALCULATIONS PACKAGE

- All chlorinated solvent purchases were included in the calculation.

- Calculations are on an annual basis. Weekly hazardous material purchase information is not readily available and would not reflect actual total weekly usages.

- Listed chlorinated hazardous wastes (F001 and F002) were obtained from the CY 1991 Environmental Protection Agency (EPA) hazardous waste report and combined for the exclusion calculation.

- The HW solvent exclusion calculation was based on not exceeding one part per million, even though several solvent purchases could have been calculated using 25 parts per million.

- Marine Corps Base, Camp Lejeune operates seven separate wastewater treatment plants. For this calculation, all chlorinated solvent usage, after subtracting that disposed of as HW, is assumed to be treated at the Hadnot Point Wastewater Treatment Plant. Actually, chlorinated solvent usage and potential discharge would be split among all seven plants.

- Conversion of listed HW reported on the CY 1991 EPA HW Report from pounds to gallons assumes an average chlorinated solvent density of 11.7 lb/gal.

GENERAL INFORMATION FOR THE CALCULATION OF HAZARDOUS MATERIAL IN GALLONS UTILIZED IN CALENDAR YEAR (CY) 1991 ABOARD MARINE CORPS BASE, CAMP LEJEUNE

CAN = 12 oz 1 PINT = 16 oz 1 DRUM = 55 gal

128 oz = 1 gal

TOTAL GALLONS:

123 (12 oz CANS OF TRICHLOROETHANE) = 11.5 gal

148 (GALLONS of RIFLE BORE CLEANING COMPOUND) = 148 gal

30 (16 oz PINTS OF DEGLAZING SOLVENT) = 3.75 gal

13 (55 GALLON DRUMS of DRY CLEANING SOLVENT TYPE II) = 715 gal

TOTAL = 878.2 gal

TOTAL = **878 GALLONS**

METHODOLOGY FOR COMPILING THE HAZARDOUS MATERIAL QUANTITY

1. Reviewed Logistics purchasing information for potentially chlorinated compounds.

2. Utilized the Navy computerized Hazardous Material Information System to generate Material Safety Data Sheets (MSDS's) for each potentially chlorinated compound.

3. Utilized MSDS's to screen potentially chlorinated compounds and determine actual chlorinated compounds.

4. Compiled a list of chlorinated solvent purchases.

5. Created a spreadsheet using the CY 1991 chlorinated solvent purchases.

6. Calculated the total gallons of chlorinated Hazardous Material purchased for CY 1991.

CHLORINATED SOLVENT
AVERAGE DENSITY CALCULATIONS

CHLORINATED SOLVENT	SPECIFIC GRAVITY
tetrachloroethylene (perchloroethylene)	1.625
trichloroethylene	1.456
carbon tetrachloride	1.595
chlorobenzene	1.107
methylene chloride	1.335
111 trichloroethane	1.325

Average S.G. = 1.40

1.40 * 8.342 lb/gal water = **11.7 lb/gal Average Chlorinated Solvent Density**

Chemical Densities Taken From: Condensed Chemical Dictionary Tenth Edition Revised by Gessner G. Hawley Van Nostrand Reinhold Company, 1981.

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Average S.G. = 1.40

1.40 * 8.342 lb/gal water = **11.7 lb/gal Average Chlorinated Solvent Density**

Chemical Densities Taken From: Condensed Chemical Dictionary Tenth Edition Revised by Gessner G. Hawley Van Nostrand Reinhold Company, 1981.

CHLORINATED SOLVENT HAZARDOUS MATERIAL

NSN	TRADE NAME	WHO BOUGHT	UNIT	QUANTITY
810- 930631	TRICHLOROETHANE DEGREASER	BASE MAINTENANCE	CAN	1
		BASE MAINTENANCE	CAN	1
		BASE MAINTENANCE	CAN	1
		BASE MAINTENANCE	CAN	2
		BASE MAINTENANCE	CAN	1
		MCAS NEW RIVER	CAN	1
		MCAS NEW RIVER	CAN	5
		MCAS NEW RIVER	CAN	5
		MCAS NEW RIVER	CAN	5
		MCAS NEW RIVER	CAN	5
		MCAS NEW RIVER	CAN	5
		BASE MAINTENANCE	CAN	2
		BASE MAINTENANCE	CAN	2
		BASE MAINTENANCE	CAN	1
		BASE MAINTENANCE	CAN	2
		BASE MAINTENANCE	CAN	1
		BASE MAINTENANCE	CAN	2
		BASE MAINTENANCE	CAN	5
		BASE MAINTENANCE	CAN	1
		BASE MAINTENANCE	CAN	1
		M93177	CAN	6
		BASE MAINTENANCE	CAN	1
		M91358	CAN	3
		BASE MAINTENANCE	CAN	1
		DEPENDANT SCHOOLS	CAN	1
		BASE MAINTENANCE	CAN	1
		BASE MAINTENACNE	CAN	2
		M20197	CAN	3
		M27100	CAN	4
		M20197	CAN	4
		M20197	CAN	10
		MCAS NEW RIVER	CAN	4
		BASE MAINTENANCE	CAN	[illegible]
		2D AA BN, 2D MARDIV	CAN	[illegible]
		BASE MAINTENANCE	CAN	1
		BASE MAINTENANCE	CAN	1
		BASE MAINTENANCE	CAN	[illegible]
		BASE MAINTENANCE	CAN	1
		2D AA BN, 2D MARDIV	CAN	[illegible]
		BASE MAINTENANCE	CAN	1
[illegible]	RIFLE BORE CLEANING COM.	2D FORCE RECON	GAL	1
		M[illegible]	GAL	[illegible]
		M[illegible]	GAL	[illegible]
		M[illegible]	GAL	[illegible]
		14 MEU SSG	GAL	1
		MCAS NEW RIVER	GAL	[illegible]

		MCAS NEW RIVER	GAL	1
		M03020	GAL	[illegible]
		W81IA7	GAL	1
		M20133	GAL	1
		SOI, MCB	GAL	2
		M20133	GAL	1
		M05064	GAL	1
		M91476	GAL	3
		M91372	GAL	2
		M93060	GAL	2
		M20198 26 MEU SSG	GAL	3
		M93060	GAL	6
		MCAS NEW RIVER	GAL	5
		M93060	GAL	6
		M93060	GAL	4
		MWHS MAW MCAS CHERRY PT	GAL	1
		2D FORCE RECON	GAL	1
		M27100	GAL	2
		8TH COMM BN	GAL	2
		M12110	GAL	3
		MCES	GAL	1
		M12110	GAL	1
		M20179	GAL	2
		W36LXM	GAL	2
		M20179	GAL	3
		MCAS NEW RIVER	GAL	5
		M12110	GAL	4
		BTRY A 17TH ARTY DURHAM,NC	GAL	1
		W36QZU	GAL	1
		M12220	GAL	1
		MWHS MAW MCAS CHERRY PT	GAL	2
		2D FORCE RECON	GAL	1
		M12230	GAL	8
		1/2 2D MARDIV	GAL	1
		SOI	GAL	19
		8TH COMM BN	GAL	1
		SOI	GAL	6
		M11000	GAL	1
		II AA BN 2D MARDIV	GAL	2
		M11100	GAL	4
		II SFG 1ST SFG FT BRAGG	GAL	1
		3I SFG 1ST SFG FT BRAGG	GAL	2
		8TH MARINES 2D MARDIV	GAL	2
		M05064	GAL	1
		8TH COMM BN	GAL	1
		M5[illegible]	GAL	1
6850-	DEBLASING SOLV.	M11001	PINT	6
[illegible]		M11001	PINT	14
6850-	DRY CLEANING	M10111	DRUM	1
285801	SOLV. TYPE II	M91476	DRUM	4
		M10179	DRUM	1

SITE NAME U. S. Marine Corps Base

Camp Lejeune, NC 28542-5001

EPA ID NO. N C 6 1 7 0 0 2 2 5 8 0

FORM **GM**

1991 Hazardous Waste Report

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 13 of the 1991 Hazardous Waste Report booklet before completing this form

Sec. I

A. Waste description Instruction Page 15

Trichlorotrifluorethane/spent solvent

B. EPA hazardous waste code Page 15: F 0 0 2 | N A | N A | N A | N A

C. State hazardous waste code Page 15:

D. SIC code Page 16	E. Origin code Page 16	F. Source code Page 17	G. Point of measurement Page 17	H. Form code Page 17	I. RCRA-radioactive mixed Page 17
9 7 1 1	1 (System type M N A)	A 0 7	1	B 2 0 2	2

J. Reported TRI constituent Page 18: 1

K. CAS numbers Page 18: 1. N A 2. 3. 4. 5.

Sec. II

A. Quantity generated in 1990 Instruction Page 18	B. Quantity generated in 1991 Page 18	C. UOM Page 19 / Density	D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? Page 19
N A .	8 0 . 0	1 ☐ 1 lbs/gal ☐ 2 sg	☒ 1 Yes (CONTINUE TO SYSTEM 1) ☐ 2 No (SKIP TO SEC. III)

ON-SITE SYSTEM 1

On-site system type Page 19: M N A

Quantity treated, disposed or recycled on site in 1991:

ON-SITE SYSTEM 2

On-site system type Page 19: M N A

Quantity treated, disposed or recycled on site in 1991:

Sec. III

A. Was any of this waste shipped off site in 1991? Instruction Page 20 ☒ 1 Yes (CONTINUE TO BOX B) ☐ 2 No (SKIP TO SEC. IV)

	B. EPA ID No. of facility waste was shipped to Page 20	C. System type shipped to Page 20	D. Off-site availability code Page 21	E. Total quantity shipped in 1991 Page 21
Site 1	N C D 0 0 0 6 4 8 4 5 1	M 1 4 1	1	2 5 . 0
Site 2	N A	M		

Sec. IV

A. Did new activities in 1991 result in minimization of this waste? Instruction Page 22 ☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 22	C. Other effects Page 22	D. Quantity recycled in 1991 due to new activities Page 23	E. Activity/production index Page 23	F. 1991 Source reduction quantity Page 24
W W W W	☐ 1 Yes ☐ 2 No			

Comments:

Enclosure

SITE NAME: U. S. Marine Corps Base
Camp Lejeune, NC 28542-5001

EPA ID NO. N C 6 1 7 0 0 2 2 5 8 0

PROTECTION AGENCY

1991 Hazardous Waste Report

FORM GM

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 13 of the 1991 Hazardous Waste Report booklet before completing this form.

Sec. I

A. Waste description (Instruction Page 15)

Waste oil/freon (Trichloroethylene mixture) derived from Hydraulic Test

B. EPA hazardous waste code (Page 15): F 0 0 2 | N A | N A | N A | N A | N A

C. State hazardous waste code (Page 15):

D. SIC code (Page 16): 9 7 1 1

E. Origin code (Page 16): 1 — System type: M | N A

F. Source code (Page 17): A 3 2

G. Point of measurement (Page 17): 1

H. Form code (Page 17): B 2 0 2

I. RCRA-radioactive mixed (Page 17): 2

J. Reported TRI constituent (Page 18): 1

K. CAS numbers (Page 18): 1. | N A | 2. 3. 4. 5.

Sec. II

A. Quantity generated in 1990 (Instruction Page 18): | N A |

B. Quantity generated in 1991 (Page 18): 2 6 1 4 . 0

C. UOM (Page 19): 1 — Density: ☐ 1 lbs/gal ☐ 2 sg

D. Did this site do any of the following to this waste: treat on site, dispose on site, recycle on site, or discharge to a sewer/POTW? (Page 19)
☐ 1 Yes (CONTINUE TO SYSTEM 1)
☒ 2 No (SKIP TO SEC. III)

ON-SITE SYSTEM 1

On-site system type (Page 19): M | N A

Quantity treated, disposed or recycled on site in 1991:

ON-SITE SYSTEM 2

On-site system type (Page 19): M | N A

Quantity treated, disposed or recycled on site in 1991:

Sec. III

A. Was any of this waste shipped off site in 1991? (Instruction Page 20)
☒ 1 Yes (CONTINUE TO BOX B)
☐ 2 No (SKIP TO SEC. IV)

	B. EPA ID No. of facility waste was shipped to (Page 20)	C. System type shipped to (Page 20)	D. Off-site availability code (Page 21)	E. Total quantity shipped in 1991 (Page 21)
Site 1	N C D 0 0 0 6 4 8 4 5 1	M 1 4 1		
Site 2		M		

Sec. IV

A. Did new activities in 1991 result in minimization of this waste? (Instruction Page 22)
☐ 1 Yes (CONTINUE TO BOX B)
☒ 2 No (THIS FORM IS COMPLETE)

B. Activity (Page 22)	C. Other effects (Page 22)	D. Quantity recycled in 1991 due to new activities (Page 23)	E. Activity/production index (Page 23)	F. 1991 Source reduction quantity (Page 24)
W | W | W | W	☐ 1 Yes ☐ 2 No			

Comments:

SITE NAME U. S. Marine Corps Base

Camp Lejeune, NC 28542-5001

EPA ID NO. N C 6 1 7 0 0 2 2 5 8 0

PROTECTION AGENCY

1991 Hazardous Waste Repor

FORM **GM**

WASTE GENERATION AND MANAGEMENT

INSTRUCTIONS: Read the detailed instructions beginning on page 13 of the 1991 Hazardous Waste Report booklet before completing this f

Sec. I A. Waste description Instruction Page 15

Methylene chloride solvent, spent

B. EPA hazardous waste code Page 15: F 0 0 2 | N/A | N/A | N/A | N/A

C. State hazardous waste code Page 15:

D. SIC code Page 16	E. Origin code Page 18	F. Source code Page 17	G. Point of measurement Page 17	H. Form code Page 17	I. RCRA-radioactive m Page 17
9 7 1 1	1 (System type M N/A)	A 5 9	1	B 2 0 2	2

J. Reported TRI constituent Page 18: 1

K. CAS numbers Page 18: 1. N/A 2. 3. 4. 5.

Sec. II

A. Quantity generated in 1990 Instruction Page 18	B. Quantity generated in 1991 Page 18	C. UOM Page 19 / Density	D. Did this site do any of the following to thi waste: treat on site, dispose on site, recy on site, or discharge to a sewer/POTW? Page 19
N/A	3 0 9 0	1 ☐ 1 lbs/gal ☐ 2 sg	☐ 1 Yes (CONTINUE TO SYSTEM ☒ 2 No (SKIP TO SEC. III)

ON-SITE SYSTEM 1: On-site system type Page 19: M N/A; Quantity treated, disposed or recycled on site in 1991:

ON-SITE SYSTEM 2: On-site system type Page 19: M N/A; Quantity treated, disposed or recycled on site in 1991:

Sec. III A. Was any of this waste shipped off site in 1991? Instruction Page 20 ☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (SKIP TO SEC. IV)

	B. EPA ID No. of facility waste was shipped to Page 20	C. System type shipped to Page 20	D. Off-site availability code Page 21	E. Total quantity shipped in 1991 Page 21
Site 1	N/A	M		
Site 2	N/A	M		

Sec. IV A. Did new activities in 1991 result in minimization of this waste? Instruction Page 22 ☐ 1 Yes (CONTINUE TO BOX B) ☒ 2 No (THIS FORM IS COMPLETE)

B. Activity Page 22	C. Other effects Page 22	D. Quantity recycled in 1991 due to new activities Page 23	E. Activity/production index Page 23	F. 1991 Source reduction quantity Page 24
W W W W	☐ 1 Yes ☐ 2 No			

Comments:

Enclosure

PLANT: HADNOT POINT
PERMIT #: NC0063029

YEAR: 1991

NPDES MONITORING DATA
MONTHLY AVERAGES

SAMPLE MONTH	FLOW MGD	DO mg/L	CL2 mg/L	BOD INF mg/L	BOD EFF mg/L	TSS INF mg/L	TSS EFF mg/L	pH MIN	pH MAX	TEMP CEL °C	AMMONIA mg/L	NITROGEN mg/L	PHOS mg/L	FECAL ** CLNY/ 100ML	OIL/ GREASE mg/L
JANUARY	3.993	9.3	1.8	99	9	91	9	6.1	6.8	15	1.966	7.90	4.8	1.89	0.55
FEBRUARY	3.735	9.3	1.8	109	11	81	13	6.3	6.8	15	3.093	11.00	3.5	1.34	4.40
MARCH	3.791	9.1	2.2	110	9	105	11	6.3	7.2	17	2.397	9.85	2.7	1.24	0.00
APRIL	4.229	8.8	2.4	116	9	110	9	6.4	7.0	20	2.966	9.04	3.1	1.25	0.50
MAY	4.462	8.1	2.2	108	8	108	6	6.4	6.8	24	3.615	10.00	3.3	1.38	1.45
JUNE	4.447	7.9	2.1	160	10	165	9	6.5	6.8	26	5.528	9.69	3.7	2.95	1.60
JULY	5.187	7.9	1.9	177	9	105	8	6.6	7.0	27	3.758	9.63	3.3	1.41	1.80
AUGUST	6.004	7.3	1.6	151	9	100	10	6.5	6.8	27	2.237	6.80	2.4	1.97	1.10
SEPTEMBER	5.063	7.8	1.7	146	10	103	11	6.3	7.0	25	2.115	9.28	2.4	1.62	1.90
OCTOBER	4.891	8.0	1.5	202	10	111	14	6.2	7.0	22	2.733	13.20	3.0	1.26	2.90
NOVEMBER	4.574	9.4	1.6	159	14	103	16	6.4	7.6	18	4.685	13.50	3.4	1.27	6.00
DECEMBER	4.440	9.4	1.6	152	12	100	13	6.4	7.0	16	2.614	12.70	3.1	1.40	10.55
MONTHLY LIMITS:	8.000	>5.0			*		30	6.0	8.5		*			14.00	30.00
YEARLY AVERAGES:	4.575	8.5	1.9	141	10	107	11	6.1	7.6	21	3.123	10.22	3.2	1.52	2.95

** GEOMETRIC MEAN

* MORE THAN 5.87 MGD :
FROM NOV-MAR
BOD LIMIT = 22
NH3 LIMIT = 19

FROM APR-OCT
BOD LIMIT = 22
NH3 LIMIT = 13

* LESS THAN 5.87 MGD :
BOD LIMIT = 30
NH3 LIMIT = NO LIMIT