

14-Oct-87

MINISTRY OF ENVIRONMENT AND PARKS

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ENVIRONMENTAL LABORATORY

Report for form 00411977

Lower Mainland - Waste Program

ATTN: BRAYBROOK J T L

Sample 87011324

Site: NOSITE AQUARIUS SEAFARMS PE 7660

From : 87/09/23:1600

To : 87/09/23:1600

Depth Range : 0.0 0.0

Tide :

Sample State: Waste Water

Sample Comment:

RECEIVED
OCT 16 1987

Parameter Description	Result	Units	LOWER MAINLAND REGION	
			Analysis Technique	(Sparcode/Medium/Pres'n)
pH	✓ 6.3	pH units	Automated pH Meter	(00041220/01/01)
Residue Nonfilt.	✓ 3	mg/L	Grav; 9 cm Buchner, 105C	(00081070/01/01)
Conductance Specific	52	uS/cm	Cond. Meter Siebold	(00111160/01/01)
Biochem. Oxygen Dem.	✓ < 10	mg/L	Seeded Dil. Nit. Inh. 5 Day	(01151110/02/01)
Coliform - Fecal	< 2	MPN	Confirmed Test- CL	(04502493/28/01)
Coliform - Total	< 2.0	MPN	Confirmed Test- CL	(04512493/28/01)
Nitrogen Organic-Tot	0.38	mg/L	Calculated Result	(0112CALC/--/--)
Nitrogen Kjehl. Tot(N)	0.83	mg/L	Block Dig. Auto. Color	(01131360/01/01)
Nitrogen Total	1.14	mg/L	Calculated Result	(0114CALC/--/--)
Nitrogen Amm. Diss(N)	✓ 0.453	mg/L	Automated Bertholot meth	(11081351/01/01)
Nitrogen NO3+NO2 Dis	0.31	mg/L	Auto. Cadmium Reduction	(11091350/01/01)
Nitrogen NO3 Diss(N)	✓ 0.31	mg/L	Calculated Result	(1110CALC/--/--)
Nitrogen NO2 Diss(N)	< 0.005	mg/L	Auto. Diazotization	(11111354/01/01)
Phosphorus Tot. Diss	✓ 0.099	mg/L	Dig. Auto. Ascorbic Acid	(P--D1390/01/01)

14-Oct-87

MINISTRY OF ENVIRONMENT AND PARKS

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ENVIRONMENTAL LABORATORY

Report for form 00411977

Lower Mainland - Waste Program

ATTN: BRAYBROOK J T L

Site: NOSITE AQUARIUS SEAFARMS PE 7660

Submitted by (51649) BRAYBROOK J T L

Address (00) MINISTRY OF ENVIRONMENT
15326-103A AVE
SURREY B C
V3R7A2

Phone No. -

Audit Sample ()
Client study reference code ()
Sampling agency code (02)

Site (NOSITE) AQUARIUS SEAFARMS PE 7660

Sample Adjective ()
Sample State (WW) Waste Water
Sample Descriptor (OT) Other or Not Applicable

This form was processed to the computer on 25-SEP-1987 as REGULAR
The cost for analyzing samples for this form is

Routine analysis:	\$	139.20
Special analysis:	\$	0.00
Total	\$	139.20

RECEIVED
OCT 16 1987
LOWER MAINLAND REGION
FILE

10-Jul-87

MINISTRY OF ENVIRONMENT AND PARKS

Page- 2

ENVIRONMENTAL LABORATORY

Report for form 00402678

Lower Mainland - Waste Program

ATTN: BRAYBROOK J T L

Sample 87004626

Site: NOSITE AQUARIUS SEAFARMS HATCHERY PE7660

RECEIVED
JUL 15 1987

From : 87/06/17:1500

To : 87/06/17:1500

Depth Range : 0.0 0.0

Tide :

Sample State: Waste Water

Sample Comment:

Parameter Description	Result	Units	Analytical Technique (Sparcode/Medium/Pres'n)
pH	✓ 6.1	pH units	Automated pH Meter (00041220/01/01)
Residue Nonfilt.	✓ < 1	mg/L	Grav; 9 cm Buchner, 105C (00081070/01/01)
Conductance Specific	14	uS/cm	Cond. Meter Siebold (00111160/01/01)
Biochem. Oxygen Dem.	✓ < 10	mg/L	Seeded Dil. Nit. Inh. 5 Day (01151110/02/01)
Nitrogen Amm. Diss(N)	✓ 0.171	mg/L	Automated Bertholot meth (11081351/01/01)
Nitrogen NO3+NO2 Dis	< 0.02	mg/L	Auto. Cadmium Reduction (11091350/01/01)
Nitrogen NO3 Diss(N)	✓ < 0.02	mg/L	Calculated Result (1110CALC/--/--)
Nitrogen NO2 Diss(N)	< 0.005	mg/L	Auto. Diazotization (11111354/01/01)
Phosphorus Total	✓ 0.056	mg/L	Dig. Auto. Ascorbic Acid (P--T1390/01/01)

10-Jul-87

MINISTRY OF ENVIRONMENT AND PARKS

Page- 1

ENVIRONMENTAL LABORATORY

Report for form 00402678

Lower Mainland - Waste Program

ATTN: BRAYBROOK J T L

=====
Site: NOSITE AQUARIUS SEAFARMS HATCHERY PE7660
=====

Submitted by (51649) BRAYBROOK J T L

Address (06) Waste Management Branch
 Lower Mainland Region
 15326 - 103A Avenue
 Surrey, BC V3R 7A2

Phone No. 584-8822

Audit Sample ()
Client study reference code ()
Sampling agency code (02)

Site (NOSITE) AQUARIUS SEAFARMS HATCHERY PE7660

Sample Adjective ()
Sample State (WW) Waste Water
Sample Descriptor (OT) Other or Not Applicable

This form was processed to the computer on 19-JUN-1987 as REGULAR
The cost for analyzing samples for this form is

Routine analysis:	\$	104.40
Special analysis:	\$	0.00

Total	\$	104.40

CHEMICAL ANALYSIS REPORT

ASL

PE 7660

Date: June 20, 1988
File No. 5694A
Report On: May 31, 1988 Water Sample
Report To: Aquarius Seafarms Ltd.
Box 2540
Sechelt, B.C.
V0N 3A0
Attention: Kim Klotins, DVM

RECEIVED

JUL 5 1988

LOWER MAINLAND REGION
FILE No.

DATE OF SUBMISSION:

June 1, 1988

SAMPLE IDENTIFICATION

Labelled as shown in RESULTS section.

METHODOLOGY

Analysed in accordance with "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, 1985.

RESULTS OF ANALYSIS

Results are presented in the table(s) attached.

ASL ANALYTICAL SERVICE LABORATORIES LTD.

Allan W. Maynard
Allan W. Maynard
Senior Partner

Christine M. Smith
Christine M. Smith
Technologist

CMS/1AWM/lc

What is flow rate of effluent discharge is not reported



analytical service laboratories

CONSULTING CHEMISTS & ANALYSTS

1650 Pandora Street
Vancouver, B.C. V5L 1L8
Page 5
(604) 253-4188

RESULTS OF ANALYSIS

File No.5694A

Page 2 of 2

Aquarius
Seafarms
May 31/88

pH		6.01	
Suspended Solids		2.5	✓
T-Phosphorous	P	0.13	✓
Nitrate	N	0.12	✓
Nitrite	N	0.006	✓
Ammonia	N	0.48	✓
BOD-5		6.0	✓

< = Less than

Results are expressed as milligrams per litre except for pH,
T = Total BOD₅ = 5 Day Biochemical Oxygen Demand.

*Sample was taken at the time of highest Biomas
and during flushing of tanks.*

3,600,000 fish @ 4gram average

= 14,400 Kg

ENVIRONMENTAL LABORATORY

Report for form 00425371

Lower Mainland - Waste Program

ATTN: WOODBINE S B

Sample 88010668

Site: NOSITE PE07660-01 EFFLUENT

From : 88/10/19:1000

To : 88/10/19:1000

Depth Range : 0.0 0.0

Tide :

Sample State: Waste Water

Sample Comment:

Parameter Description	Result	Units	Analytical Technique (Sparcode/Medium/Pres'n)
pH	✓ 6.8	pH units	Automated pH Meter (00041220/35/01)
Residue Nonfilt.	✓ 1	mg/L	Grav; 9 cm Buchner, 105C (00081070/35/01)
Specific Conductance	131	uS/cm	Cond. Meter Siebold (00111160/35/01)
Biochem. Oxygen Dem.	✓ < 10	mg/L	Seeded Dil. Nit. Inh. 5 Day (01151110/02/01)
Nitrogen Amm. Diss(N)	✓ 0.113	mg/L	Automated Bertholot meth (11081351/35/01)
Nitrogen NO3+NO2 Dis	0.23	mg/L	Auto. Cadmium Reduction (11091350/35/01)
Nitrogen NO3 Diss(N)	✓ 0.23	mg/L	Calculated Result (1110CALC/--/--)
Nitrogen NO2 Diss(N)	< 0.005	mg/L	Auto. Diazotization (11111354/35/01)
Phosphorus Ort. Dis-P	✓ 0.012	mg/L	Auto. Ascorbic Acid (11181380/35/01)

16-Nov-88

MINISTRY OF ENVIRONMENT AND PARKS

Page- 1

ENVIRONMENTAL LABORATORY

Report for form 00425371

Lower Mainland - Waste Program

ATTN: WOODBINE S B

Site: NOSITE PE07660-01 EFFLUENT

Submitted by (51443) WOODBINE S B

Address (06)

Waste Management Branch
Lower Mainland Region
15326 - 103A Avenue
Surrey, BC V3R 7A2

Phone No.

Audit Sample

()

Client study reference code ()

Sampling agency code

(02)

Site (NOSITE) PE07660-01 EFFLUENT

Sample Adjective ()

Sample State (WW) Waste Water

Sample Descriptor () Undefined

This form was processed to the computer on 20-OCT-1988 as REGULAR

The cost for analyzing samples for this form is

Routine analysis: \$ 98.40

Special analysis: \$ 0.00

Total \$ 98.40

26-Jul-88

MINISTRY OF ENVIRONMENT AND PARKS
ENVIRONMENTAL LABORATORY

RECEIVED
JUL 29 1988

Page- 2

Lower Mainland - Waste Program

Report for Form 00409490

ATTN: BRAYBROOK LOWER MAINLAND REGION 88005133

Site: NOSITE AQUARIUS SEAFARMS PE-7660

FILE NO: 88005133

From : 88/07/12: 1615

To : 88/07/12: 1615

Depth Range : 0.0 0.0

Tide :

Sample State: Waste Water

Sample Comment:

Parameter Description	Result	Units	Analytical Technique (Sparcode/Medium/Freq'n)
pH	✓ 6.3 ^{6.5}	pH units	Automated pH Meter (00041220/01/01)
Residue Nonfilt	✓ 4	mg/L	Grav; 9 cm Buchner, 105C (00081070/01/01)
Specific Conductance	18	uS/cm	Cond. Meter Siebold (00111160/01/01)
Biochem. Oxygen Dem.	✓ < 10	mg/L	Seeded Dil. Nit. Inh 5 Day (01151110/02/01)
Nitrogen Organic-Tot	0.23	mg/L	Calculated Result (0112CALC/---/---)
Nitrogen Kjehl. Tot(N)	0.44	mg/L	Block Dig. Auto. Color (01131360/01/01)
Nitrogen Total	0.47	mg/L	Calculated Result (0114CALC/---/---)
Nitrogen Amm. Diss(N)	✓ 0.209	mg/L	Automated Bertholot meth (11081351/01/01)
Nitrogen NO3+NO2 Dis	0.03	mg/L	Auto. Cadmium Reduction (11091350/01/01)
Nitrogen NO3 Diss(N)	✓ 0.03	mg/L	Calculated Result (1110CALC/---/---)
Nitrogen NO2 Diss(N)	< 0.005	mg/L	Auto. Diazotization (11111354/01/01)
Phosphorus Ort. Dis-P	✓ 0.042	mg/L	Auto. Ascorbic Acid (11181380/01/01)

26-JUL-88

MINISTRY OF ENVIRONMENT AND PARKS
ENVIRONMENTAL LABORATORY

Page- 1

Report for Form 00409490

Lower Mainland - Waste Program

ATTN: BRAYBROOK J T L

Site: NOSITE AQUARIUS SEAFARMS PE-7660

Submitted by (51649) BRAYBROOK J T L

Address (06) Waste Management Branch
Lower Mainland Region
15326 - 103A Avenue
Surrey, BC V3R 7A2

Phone No. -

Audit Sample ()
Client study reference code ()
Sampling agency code (02)

Site (NOSITE) AQUARIUS SEAFARMS PE-7660

Sample Adjective ()
Sample State (WW) Waste Water
Sample Descriptor (OT) Other or Not Applicable

This form was processed to the computer on 14-JUL-1988 as REGULAR
The cost for analyzing samples for this form is

Routine analysis:	\$	123.60
Special analysis:	\$	0.00
Total	\$	123.60

RESULTS OF ANALYSIS

File No. 7652A
Page 2 of 2

Effluent From Tank
56 H2O Well #1.
Apr 17/89 Apr 17/89 Apr 17/89

Physical Tests

pH	-	6.73	6.69
Conductivity	-	-	1010.
Salinity	-	<1.0	-
Colour	-	-	<5.0
Turbidity NTU	-	-	<1.0
Suspended Solids	-	<1.0	<1.0
Dissolved Solids	-	500.	500.
Tot. Solids mg/L	(290.)	-	-
Hardness CaCO3	-	-	144.

Anions and Nutrients

Alkalinity CaCO3	-	-	13.0
Sulphate SO4	-	-	14.1
Chloride Cl	-	-	316.
Fluoride F	-	-	0.04
Silicate SiO2	-	-	12.4
T-Phosphorous P	0.073	-	-
Nitrate N	0.16	0.002	-
Nitrite N	0.022	<0.001	-
NO3/NO2 N	-	-	0.29
Ammonia N	0.46	<0.005	-

Other Tests

Sulphide S	-	<0.02	-
BOD-5	(40.0)	-	-

Total Metals

Cadmium T Cd	-	<0.0002	-
Chromium T Cr	-	<0.001	-
Copper T Cu	-	<0.001	-
Iron T Fe	-	-	<0.03
Lead T Pb	-	<0.001	-
Manganese T Mn	-	-	0.16
Mercury T Hg	-	0.00005	-
Nickel T Ni	-	<0.001	-
Zinc T Zn	-	<0.005	-

Dissolved Metals

Arsenic D As	-	-	<0.0001
Barium D Ba	-	-	0.079
Cadmium D Cd	-	-	0.0003
Chromium D Cr	-	-	0.011
Copper D Cu	-	-	<0.010
Iron D Fe	-	-	<0.03
Lead D Pb	-	-	<0.001
Manganese D Mn	-	-	0.16
Zinc D Zn	-	-	<0.005
Calcium D Ca	-	-	31.4
Magnesium D Mg	-	-	15.6
Potassium D K	-	1.29	3.14
Sodium D Na	-	0.15	110.

Microbiological Tests

Total Coliform	-	-	ND
Fecal Coliform	-	-	ND

< = Less than T = Total D = Dissolved
BOD-5 = 5 Day Biochemical Oxygen Demand
NO3/NO2 = Nitrate/nitrite nitrogen
Results expressed as milligrams per litre except for pH,
Conductivity (µmhos/cm), Turbidity (NTU), Colour (CU),
Salinity (0/00) and Coliform Bacteria (colonies/100 ml)

Settling ponds cleaned after this date.

Waste Water discharge 1989 Gray Creek Hatchery

		GPM	l/sec	m ³ /min	m ³ /day
Dec	31	900	56.7	$3.402 \times 60 \times 24 =$	4899
Jan	31	1250	78.75	4.725	= 6804
Feb	28	1900	119.7	7.182	= 10342
Mar	31	2210	139.23	8.3538	= 12029
Apr	30	2660	167.58	10.0548	= 14479
May	31	2390	150.57	9.0342	= 13009
June	30	120	7.56	0.4536	= 653
July	31	215	17.325	1.0395	= 2009
Aug	31	200	12.6	0.756	= 1089
Sept	30	1440	90.72	5.4432	= 7838
Oct	31	2220	139.86	8.3916	= 12083
Nov	30	660	41.58	2.4948	= 3593
Dec	31	505	31.815	1.9089	= 2864

Tonage of Fish April 17th 1989

15.66 TONS

RECEIVED

JUN 15 1990

Susan Woodbine

LOWER MAINLAND REGION
FILE No. _____

CHEMICAL ANALYSIS

Date: May 11, 1990
File No. 1219B AMENDED June 15, 19
Report On: Water Analysis
Report To: Aquarius Seafarms Ltd.
Sta. 1000 - 1130 W. Pender St.
Vancouver, BC
V6E 4A6
Attention: Bob Amsted

DATE OF SUBMISSION: April 10/90

SAMPLE IDENTIFICATION

Labelled as shown in RESULTS section.

REFERENCE

Analyzed in accordance with "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, 1985.

RESULTS OF ANALYSIS

Results are presented in the table(s) attached.

ASL ANALYTICAL SERVICE LABORATORIES LTD.

A. W. Maynard, M.Sc.
Senior Partner

Brent A. Hakelki, B.Sc.

AWM/BAM/dmo

.../report/may/aqua11218

Two pages
June 15 / 90
Fred
Aquarius Seafarms
Sechelt

RESULTS OF ANALYSIS

File No. 1219B
Page 2 of 2Hatchery Effluent
Apr 10/90Physical Tests/Anions

pH		✓ 7.27
Turbidity	NTU	✓ 0.4
Suspended Solids		✓ 4.0
Sulphate	SO ₄	17.1

Nutrients

Nitrate	N	✓ 0.25
Nitrite	N	0.079
Ammonia	N	✓ 0.62
Total Phosphorus P		✓ <0.001

Other Tests

BOD-5		15.5
Coliform	Total	30.
	Fecal	ND

< = Less than

ND = Not Detected

BOD-5 = 5 Day Biochemical Oxygen Demand

Results expressed as milligrams per litre except for pH,
Turbidity (NTU), and Coliform Bacteria (colonies/100 ml).

CANTEST

Country Ltd

Professional Analytical Services

第200号
152号 152号 152号
Vanoverton, D.C.
152号

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2810 2811 2812 2813 2814 2815 2816 2817 2818

五、五、

REPORTED TO: Scanmar Seafood Ltd.
720 - 1140 West Pender St.
Vancouver BC
V6E 4G1

DATE: 11 May 2000

We have modeled the growth of *Salmonella* in ground beef, chicken, and turkey.

SAMPLE IDENTIFICATION

PROJECT NAME:	Water Quality
DATE SAMPLED:	January 9, 1991
DATE SUBMITTED:	January 10, 1991
TYPE OF CONTAINER:	Plastic

RESULTS OF TESTING

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840.

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✓ 39
✓ 40
✓ 41
✓ 42
✓ 43
✓ 44

8 Tonnes

Quercus Rubra mass.

5.000 m (19639 m³/day)

• the results expressed in g/m² = 10 grams per m²

METHODS OF TESTING.

AN 753 170

Don A. Erbe, E.Sc. M.B.A.
Manager

ONE OF
THE CHALLENGES

26-Apr-91

ZENON ENVIRONMENTAL INC.
B. C. LABORATORY SERVICES
Report for form 03024026

Page- 2

INDUSTRIAL - LOWER MAINLAND(KHARE) ATTN: WOODBINE S B Sample 91005660

Site: NOSITE MAIN EFFLUENT PE-7660

From : 91/04/11:1435

To : 91/04/11:1435

Depth Range : 0.0 0.0

Tide :

Sample State: Waste Water

Sample Comment:

| Parameter Description | Result | Units | Analytical Technique
(Sparcode/Medium/Pres'n) |
|-----------------------|---------|----------|--|
| pH | 7.0 | pH units | Automated pH Meter
(00041220/01/01) |
| Residue Nonfilt. | 1 | mg/L | Grav; 9 cm Buchner, 105C
(00081070/01/01) |
| Biochem. Oxygen Dem. | < 10 | mg/L | Seeded Dil. Nit. Inh. 5 Day
(01151110/02/01) |
| Nitrogen Amm. Diss(N) | 0.142 | mg/L | Automated Bertholot meth
(11081351/01/01) |
| Nitrogen NO3+NO2 Dis | 0.11 | mg/L | Auto. Cadmium Reduction
(11091350/01/01) |
| Nitrogen NO3 Diss(N) | 0.11 | mg/L | Calculated Result
(1110CALC/--/--) |
| Nitrogen NO2 Diss(N) | < 0.005 | mg/L | Auto. Diazotization
(11111354/01/01) |
| Phosphorus Total | 0.071 | mg/L | Dig. Auto. Ascorbic Acid
(P--T1390/01/01) |

RECEIVED

MAY 2 - 1991

LOWER MAINLAND REGION

MAY 2 1991

09-Oct-91

ENON ENVIRONMENTAL INC.
B.C. LABORATORY SERVICES
Report for form 10001409

Page- 2

INDUSTRIAL - LOWER MAINLAND(KHARE) ATTN: WOODBINE S B Sample 91018362

Site: E208276 PE-7660 MAIN EFFLUENT

From : 91/09/18:0000

To : 91/09/18:0000

Depth Range : 0.0 0.0

Tide :

Sample State: Waste Water

Sample Comment:

| Parameter Description | Result | Units | Analytical Technique
(Sparcode/Medium/Pres'n) |
|-----------------------|-----------|----------|--|
| pH | 7.0 ✓ | pH units | Automated pH Meter
(00041220/35/01) |
| Residue Nonfilt. | 2 ✓ | mg/L | Grav; 9 cm Buchner, 105C
(00081070/35/01) |
| Biochem. Oxygen Dem. | < 10 ✓ | mg/L | Seeded Dil. Nit. Inh. 5 Day
(01151110/02/01) |
| Nitrogen Amm. Diss(N) | 0.545 ✓ | mg/L | Automated Bertholot meth
(11081351/35/01) |
| Nitrogen NO3+NO2 Dis | 0.24 ✓ | mg/L | Auto. Cadmium Reduction
(11091350/35/01) |
| Nitrogen NO3 Diss(N) | 0.24 ✓ | mg/L | Calculated Result
(1110CALC/--/--) |
| Nitrogen NO2 Diss(N) | < 0.005 ✓ | mg/L | Auto. Diazotization
(11111354/35/01) |
| Phosphorus Total | 0.110 ✓ | mg/L | Dig. Auto. Ascorbic Acid
(P--T1390/35/01) |

OK

09/Jan/93

ENON ENVIRONMENTAL INC.
L.C. LABORATORY SERVICES
Report for form 03025632

IRM
Page- 2

IND - L MAINLAND - DABROWSKI ATTN: WOODBINE S B Sample 71025219
Client Code TL

Site: E208276 PE-7660 MAIN EFFLUENT

RECEIVED

From : 91/12/18:0000

To : 91/12/18:0000

Depth Range : 0.0 0.0

Tide :

Sample State: Waste Water

WATER (MAINLAND PE-7660)

Sample Comment:

140 mg

| Parameter Description | Result | Units | Analytical Technique
(Sparcode/Medium/Pres'n) |
|-----------------------|---------|----------|--|
| pH | ✓ 7.2 | pH units | Automated pH Meter
(00041220/35/01) |
| Residue Nonfilt. | ✓ 1 | mg/L | Grav: 9 cm Buchner, 105C
(00081070/35/01) |
| Biochem. Oxygen Dem. | ✓ 1.10 | mg/L | Seeded Dil. Nit. Inh. 5 Day
(01151110/02/01) |
| Phosphorus Total | ✓ 0.051 | mg/L | Pres. Dig. Auto. Ascorbic A
(P--T139A/35/01) |
| Nitrogen Amm Diss(NH) | ✓ 0.188 | mg/L | Automated Berthelot meth
(11051351/35/01) |
| Nitrogen NO3+NO2 Dis | 0.18 | mg/L | Auto. Cadmium Reduction
(11051350/35/01) |
| Nitrogen NO3 Diss(NH) | ✓ 0.18 | mg/L | Calculated Result
(1110CALC/---/---) |
| Nitrogen NO2 Diss(NH) | ✓ 0.005 | mg/L | Auto. Diazotization
(11111354/35/01) |

NTH - Sue Wood Bin

CANTEST

CanTest Ltd

Professional
Analytical
Services

REPORT ON: Results of Testing

REPORTED TO: Scanmar Seafood Ltd.
720 - 1140 West Pender St.
Vancouver, B.C.
V6E 4G1

Suite 200
1523 West 3rd Ave
Vancouver, BC
V6J 1J8

Fax: 604 731 2355

Tel: 604 734 7275

Attn: Joyce Francis / Bob Anstead

FILE NO: 6319-I

DATE: January 25, 1991

We have tested the sample of water submitted by you and report as follows:

SAMPLE IDENTIFICATION

PROJECT NAME: Water Quality
DATE SAMPLED: January 9, 1991
DATE SUBMITTED: January 10, 1991
TYPE OF CONTAINER: Plastic

RESULTS OF TESTING:

CTL #
CLIENT I.D.

6319
Gray Creek Hatchery
Effluent

pH (pH units)
Total Suspended Solids
Biochemical Oxygen Demand (BOD5)
Nitrate & Nitrite N
Ammonia N
Total Phosphate P

✓ 6.43
✓ < 2.0
✓ < 10
✓ 0.64
✓ < 0.01
✓ < 0.02

8 Tonnes

8,000 Kg Biomass

3,000 gpm (19639 m³/day)

< = Less than

All other results expressed in mg/L = milligrams per liter

METHODS OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 17th Edition, 1989 and 18th Edition, 1985, published by the American Public Health Association.

CAN TEST LTD.

(per) *Malashuk*
Don M. Enns, B.Sc., M.B.A.
Manager

DME/π
C:SCAN6319

SCANMAR SEAFOOD

a member of the BERGEN SEAFOOD group

GRAY CREEK HATCHERY

DATE: 25 Feb 93

TRANSMISSION TIME: _____

TO: Sue Woodbine

FROM: Joyce Francis

FAX: (604) 885-7949

We are transmitting on a Panafax UF-150. To contact the operator please call (604) 885-4688.

We are transmitting 1 pages including this cover page.

NOTES: This is a summary of our daily water flows for 1992. If you need more info, let me know.

| 1992 | Well Flow | |
|-------|-----------|--------------------------------|
| Jan. | 1550 GPM | 253109 m ³ / month. |
| Feb | 1510 | 246577 |
| March | 1470 | 240045 |
| April | 1020 | 163562 |
| May | 410 | 66951 |
| June | 1240 | 202487 |
| July | 1300 | 212285 |
| Aug | 780 | 127371 |
| Sept | 100 | 16329 |
| Oct. | 1070 | 174727 |
| Nov. | 1350 | 220450 |
| Dec | 1620 | 244540 |

2171433 / y

5949 m³/day

RECEIVED SCANMAR SEAFOOD

1992

a member of the BERCEN SEAFOOD group

LOWER MAINLAND REGION

FILE NO.

GRAY CREEK HATCHERY

DATE:

7 July 92

TRANSMISSION TIME :

TO:

David Thomson

FROM:

Joyce Francis885-4688584-9751FAX: (604) 885-7949

We are transmitting on a Xerox 7010. To contact the operator please call (604) 885-4688.

We are transmitting 2 pages including this cover page.

NOTES:

Re: Permit # PE 7660

The following is the results of the
water quality test taken at the point
of highest biomass in the hatchery.

Biomass on 18 May 1992 was

12,200 kg.

REPORT ON: Results of Testir
REPORTED TO: Scanmar Seafood Ltd.
 Gray Creek Hatchery
 P.O. Box 2540
 Sechart, BC V0N 3A0
 Attention: Bob Anstead

CANTEST

CanTest Ltd
 Professional
 Analytical
 Services
 Suite 200
 1523 West 3rd Ave
 Vancouver, BC
 V6J 1J8
 Fax: 604 731 2386
 Tel: 604 734 7276

FILE NO: 4455-J
DATE: June 24, 1992
cc & Invoice: Scanmar Seafood Ltd., #1550 - 555 W. Hastings St., Vancouver, BC V6B 4N5

We have tested the sample of water submitted by you and report as follows:

SAMPLE IDENTIFICATION:

PROJECT NAME: Water Quality
DATE SAMPLED: May 18, 1992
DATE SUBMITTED: May 20, 1992
TYPE OF CONTAINER: Plastic

RESULTS OF TESTING:

CTL #: 4455-J
CLIENT I.D.: EFFLUENT

| | |
|----------------------------------|-------|
| pH (pH units) | 8.78 |
| Total Suspended Solids | <1.0 |
| Biochemical Oxygen Demand (BOD5) | <10 |
| Nitrate & Nitrite N | 0.078 |
| Ammonia N | 0.24 |
| Total Phosphorus P | <0.02 |

< = Less than
 All other results expressed in milligrams per litre (mg/L).

METHODS OF TESTING:

The analyses were carried out in accordance with procedures described in "Laboratory Manual for the Chemical Analysis of Water, Wastewater, Sediments and Biological Materials (2nd Edition)" published by the Government of B.C., Ministry of Environment, Water Resources Services, 1976 and "Standard Methods for the Examination of Water and Wastewater" 17th Edition, 1989 and 16th Edition, 1985, published by the American Public Health Association.

CANTEST LTD.

(for) *Elaine Anstead*
 Richard S. Jorntz, A.Sc.T.
 Supervisor
 Inorganic Testing

RSJ:jr
 C:\WATERLAB\SCAN4455

