

ENVIRONMENTAL DYNAMICS INC.

ATTN: Meghan Marjanovic

2195 - 2nd Ave

Whitehorse YT Y1A 3T8

Date Received: 19-NOV-15

Report Date: 03-DEC-15 16:27 (MT)

Version: FINAL

Client Phone: 867-393-4882

# Certificate of Analysis

Lab Work Order #: L1704428
Project P.O. #: NOT SUBMITTED

Job Reference: MOUNT NANSEN 15-Y-0146

C of C Numbers: 1

Legal Site Desc:

Comments: Please note ALS identified sample L1704428-1 was sublet to Nautilus Environmental for

Rainbow Trout LC50 analysis.

Can Dang

Senior Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700 ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



L1704428 CONTD.... PAGE 2 of 3

# ALS ENVIRONMENTAL ANALYTICAL REPORT

03-DEC-15 16:27 (MT) Version: FINAL

	Sample ID Description Sampled Date Sampled Time Client ID			
Grouping	Analyte			

L1704428 CONTD....
PAGE 3 of 3
03-DEC-15 16:27 (MT)

Version:

**FINAL** 

## **Reference Information**

**Test Method References:** 

ALS Test Code	Matrix	Test Description	Method Reference**							
** ALS test methods may incorporate modifications from specified reference methods to improve performance.										
The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:										
Laboratory Definition Co	ode Labora	tory Location								

#### **Chain of Custody Numbers:**

1

#### **GLOSSARY OF REPORT TERMS**

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



**ALS Environmental** 

ATTN: Can Dang Suite 100-8081 Lougheed Hwy. Burnaby, BC V5A 1W9 Report Date: December 2, 2015

Work Order: 15960

# **Data Report**

Species: Rainbow trout (Oncorhynchus mykiss)

Protocol: EPS 1/RM/13 (Second Ed. with 2007 amendments)

**Table 1.** Results for the 96-h rainbow trout acute toxicity test.

Sample ID	Collection Date and Time	96-h LC50 (% v/v)
L1704428-1 (WQ-LC50)	November 17, 2015 @ N/A	>100

N/A = Not Available.

The test met performance criteria and there were no deviations from the test method. The results presented here relate only to the sample tested.

Josh Baker, M.Sc., P.Chem Environmental Chemist

Josh Baker

Reviewed By: Edmund Canaria, R.P.Bio Senior Reviewer

# **Rainbow Trout Summary Sheet**

Client:	ALS	Start Date/Time: Nov 20/15 @ 1615 h
Work Order No.:	15960	Test Species: Oncorhynchus mykiss
Sample Information:	L1704428-1(wa-	Test Validity Criteria: ≥ 90% control survival
Sample ID: Sample Date: Date Received:	NOVIZII	WQ Ranges: T (°C) = 15 ± 1; DO (mg/L) = 7.0 to 10.3; pH = 5.5 to 8.5
Sample Volume: Other:	NOV 20 115	
Dilution Water:	,	
Type: Hardness (mg/L CaCo Alkalinity (mg/L CaCo		al Tap Water
Test Organism Infor	mation:	
Batch No.: Source: No. Fish/Volume (L): Loading Density (g/L) Mean Length ± SD (m Mean Weight ± SD (g	nm): 28±2	Range: 25 - 31
Zinc Reference Toxi	cant Results:	
Reference Toxicant II Stock Solution ID: Date Initiated: 96-h LC50 (95% CL):	15Zn05 Nov16/15	
Reference Toxicant N	Mean and Historical Range:	75.7 (39.2-146.3) Mg/LZr 39.0%
Test Results:	The 96-hr LCSO is	= > 100 % (v/v)
Reviewed by:	W	Date reviewed: Nov. 30, 2615

Nautilus Environmental Company Inc.

Version 1:4; Issued May 29, 2015.

# 96-Hour Rainbow Trout Toxicity Test Data Sheet

				ALS  L1704428-1 (WQ-LCS) 15960 102715 NOV 17/15 (Q N/A NOV 20/15 (Q 1615h  C)  2						)	Number Fish/Volume: 7-d % Mortality: Total Pre-aeration Time (mins): Aeration rate adjusted to 6.5 ± 1 mL  Undiluted Sample WQ Parameters Initial WQ Adj Temp °C 15.0 pH 6.9 D.O. (mg/L) 9,0 Cond. (µS/cm) 158 4								10   10   10   10   10   10   10   10						
Concentration	on # Survivo			ors			٦	Temp	eratu	re (°C	;)	Diss	olved	Oxyg	en (r	ng/L)			рН			Conductivity (µS/cm)			
(% v/v)	1	2	4	24	48	72	96	0	24	48	72	96	0	24	48	72	96	<u>_0</u>	24	48	72	96	0	96	
(4)				10	10	10	10	15.0	140	IYP	14:0	145	(O.O)	10.0	9,9	9.8	10.0	10.6	69	20	69	7.0	31	38	
6.25				10	10	10	(0					14.5		9,9	9.8		2.7					7.2	157	159	
12.5				10	10	10	10					14.5					2,9				7.4		317	722	
25				10	10	10	10							9,3			7.8				1.7	***	477	482	
50				)0	10	10	10					14.5					9.9			<u> </u>		8.1	815	828	
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WQ Ranges: T	(°C)	= 15 :	± 1; C	00 (m	g/L) =	7.0 t	o 10.	3; pH	= 5.5	to 8.	5						0	) pH	@ 0	:6.9	त्रा				
Sample Descrip	otion/	Comn	nents	s: ,				ð	VÜV	nge	b									6, %	112.	5			
Fish Descriptio	n at 9	6 h						1.					er of Stressed Fish at 96 h					Ø	6.9 25 7.0 50 7-1 100						
Other Observat	Other Observations:																								
Reviewed by:	eviewed by: Date Reviewed: Nov. 30, 2015																								

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## **Subcontract Request Form**

### Subcontract To:

NOTES:

#### **NAUTILUS ENVIRONMENTAL**

8664 COMMERCE COURT BURNABY,BC V5A 4N7

Sample Integrity Issues:

1650

Please reference on final report and invoice: PO#

ALS requires QC data to be provided with your final results.

Rain bow Tout

wo# 15960

Please see enclosed sample(s) in 2 Container(s) 1 SAMPLE NUMBER **DATE SAMPLED** Priority **ANALYTICAL REQUIRED DUE DATE** Flag L1704428-1 WQ-LC50 11/17/2015 Special Request- Nautilus Environmental (SPECIAL 11/26/2015 REQUEST-NL 14) Subcontract Info Contact: Walter Lin (604) 253-4188 Analysis and reporting info contact: Can Dang 8081 LOUGHEED HWY SUITE 100 BURNABY, BC V5A 1W9 Phone: (604) 253-4188 Email: can.dang@alsglobal.com Please email confirmation can.dang@alsglobal.com Shipped By: Date Shipped: Received By: Date Received: Verified By: Date Verified: Temperature:

# ALS Environmental

# Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



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Contact:	Meghan Marjanovic											Priority (2-4 bus, days if received by 3pm) 50% surcharge - contact ALS to confirm TAT													
Address:					☐ Criteria on Report - provide details below if box checked ☐ I Emergency							us. days	if receiv	ed by :	3pm) 10	)0% sur	charge -	contact /	U.S to co	nfirm TAT					
	Whitehorse, YT Y1A 3T8	Whitehorse, YT Y1A 3T8 Select				AIL 🛄 MAIL	FAX	E2	E2 Same day or weekend emergency - contact ALS to confirm TAT and surcharge																
Phone:	867-393-4882			Email 1 or Fax	mmarjanovic@ed	vnamics.com		Specify Date Required for E2,E or P:																	
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				Email 3	erik,pit@gov.yk,ca								A	nalys	ls Req	uest		•							
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