



**CRG**

## Marine Laboratories, Inc.

2020 Del Amo Blvd. Suite 200, Torrance, CA 90501 • (310) 533-5190 • FAX (310) 533-5003 • [mmercier@crqlabs.com](mailto:mmercier@crqlabs.com)

---

November 12, 2004

MACTEC Engineering and Consulting  
9177 Sky Park Court, Suite A  
San Diego, CA 92123

Re: CRG Project ID: P24133b  
MACTEC: Rainbow Creek Project

ATTN: Mr. Sean Porter

CRG Laboratories is pleased to provide you with the enclosed analytical data report for your Rainbow Creek Project. According to the chain-of-custody, 2 samples were received intact and cool at CRG on October 28, 2004. Per your instructions, the samples were analyzed for:

- Dissolved Trace Metals By ICPMS Using EPA 200.8
- Ammonia Using SM 4500-NH3 F
- Nitrate-N Using SM 4500-NO3 E
- Nitrite-N Using SM 4500-NO2 B
- Total Dissolved Solids Using SM 2450-C
- Total Hardness as CaCO<sub>3</sub> Using SM 2340-B
- Total & Dissolved Phosphorus Using SM 4500-P C
- Total Suspended Solids Using SM 2540-D
- Turbidity Using EPA Method 180.1

Please don't hesitate to call if you have any questions and thank you very much for using our laboratory for your analytical needs.

Regards,  
Misty B. Mercier  
Project Manager

Reviewed and Approved \_\_\_\_\_

---

# **DATA REPORT**

# **TRACE METAL RESULTS**

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133b

**CRG ID#:** 20819

**Sample** STA 1

**Date Sampled:** 28-Oct-04 12:00

**Replicate #:** R1

**Description:** Rainbow Creek

**Date Received:** 28-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 08-Oct-04

**Instrument:** ICPMS #1 HP 4500

**Analyst:** P. Hershelman

**Date Analyzed:** 08-Oct-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Aluminum (Al)	Dissolved	EPA 200.8	105	µg/L	1	5	1	NA
Antimony (Sb)	Dissolved	EPA 200.8	0.61	µg/L	0.1	0.5	1	NA
Arsenic (As)	Dissolved	EPA 200.8	2.65	µg/L	0.1	0.5	1	NA
Barium (Ba)	Dissolved	EPA 200.8	30.7	µg/L	0.1	0.5	1	NA
Beryllium (Be)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Cadmium (Cd)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Chromium (Cr)	Dissolved	EPA 200.8	1.01	µg/L	0.1	0.5	1	NA
Cobalt (Co)	Dissolved	EPA 200.8	E 0.2	µg/L	0.1	0.5	1	NA
Copper (Cu)	Dissolved	EPA 200.8	5.8	µg/L	0.1	0.5	1	NA
Iron (Fe)	Dissolved	EPA 200.8	148	µg/L	1	5	1	NA
Lead (Pb)	Dissolved	EPA 200.8	E 0.29	µg/L	0.1	0.5	1	NA
Manganese (Mn)	Dissolved	EPA 200.8	32.4	µg/L	0.1	0.5	1	NA
Mercury (Hg)	Dissolved	EPA 200.8	E 0.06	µg/L	0.05	0.1	1	NA
Molybdenum (Mo)	Dissolved	EPA 200.8	6.98	µg/L	0.1	0.5	1	NA
Nickel (Ni)	Dissolved	EPA 200.8	1.65	µg/L	0.1	0.5	1	NA
Selenium (Se)	Dissolved	EPA 200.8	0.56	µg/L	0.1	0.5	1	NA
Silver (Ag)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Strontium (Sr)	Dissolved	EPA 200.8	248	µg/L	0.5	1	1	NA
Thallium (Tl)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Tin (Sn)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Titanium (Ti)	Dissolved	EPA 200.8	4.13	µg/L	0.1	0.5	1	NA
Vanadium (V)	Dissolved	EPA 200.8	2.12	µg/L	0.1	0.5	1	NA
Zinc (Zn)	Dissolved	EPA 200.8	26	µg/L	0.1	0.5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20819

R1

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133b

**CRG ID#:** 20819

**Sample** STA 1

**Date Sampled:** 28-Oct-04 12:00

**Replicate #:** R2

**Description:** Rainbow Creek

**Date Received:** 28-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 08-Oct-04

**Instrument:** ICPMS #1 HP 4500

**Analyst:** P. Hershelman

**Date Analyzed:** 08-Oct-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Aluminum (Al)	Dissolved	EPA 200.8	108	µg/L	1	5	1	NA
Antimony (Sb)	Dissolved	EPA 200.8	E 0.48	µg/L	0.1	0.5	1	NA
Arsenic (As)	Dissolved	EPA 200.8	2.65	µg/L	0.1	0.5	1	NA
Barium (Ba)	Dissolved	EPA 200.8	30.6	µg/L	0.1	0.5	1	NA
Beryllium (Be)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Cadmium (Cd)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Chromium (Cr)	Dissolved	EPA 200.8	1.01	µg/L	0.1	0.5	1	NA
Cobalt (Co)	Dissolved	EPA 200.8	E 0.1	µg/L	0.1	0.5	1	NA
Copper (Cu)	Dissolved	EPA 200.8	5.87	µg/L	0.1	0.5	1	NA
Iron (Fe)	Dissolved	EPA 200.8	151	µg/L	1	5	1	NA
Lead (Pb)	Dissolved	EPA 200.8	E 0.23	µg/L	0.1	0.5	1	NA
Manganese (Mn)	Dissolved	EPA 200.8	32.9	µg/L	0.1	0.5	1	NA
Mercury (Hg)	Dissolved	EPA 200.8	E 0.07	µg/L	0.05	0.1	1	NA
Molybdenum (Mo)	Dissolved	EPA 200.8	7.14	µg/L	0.1	0.5	1	NA
Nickel (Ni)	Dissolved	EPA 200.8	1.65	µg/L	0.1	0.5	1	NA
Selenium (Se)	Dissolved	EPA 200.8	E 0.47	µg/L	0.1	0.5	1	NA
Silver (Ag)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Strontium (Sr)	Dissolved	EPA 200.8	252	µg/L	0.5	1	1	NA
Thallium (Tl)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Tin (Sn)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Titanium (Ti)	Dissolved	EPA 200.8	4.26	µg/L	0.1	0.5	1	NA
Vanadium (V)	Dissolved	EPA 200.8	2.1	µg/L	0.1	0.5	1	NA
Zinc (Zn)	Dissolved	EPA 200.8	25.5	µg/L	0.1	0.5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20819

R2

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133b

**CRG ID#:** 20820  
**Replicate #:** R1  
**Batch ID:** 24133-24133  
**Instrument:** ICPMS #1 HP 4500

**Sample Description:** STA 2  
Rainbow Creek  
**Matrix:** Stormwater  
**Analyst:** P. Hershelman

**Date Sampled:** 28-Oct-04 11:30  
**Date Received:** 28-Oct-04  
**Date Processed:** 08-Oct-04  
**Date Analyzed:** 08-Oct-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Aluminum (Al)	Dissolved	EPA 200.8	135	µg/L	1	5	1	NA
Antimony (Sb)	Dissolved	EPA 200.8	E 0.5	µg/L	0.1	0.5	1	NA
Arsenic (As)	Dissolved	EPA 200.8	2.45	µg/L	0.1	0.5	1	NA
Barium (Ba)	Dissolved	EPA 200.8	40.1	µg/L	0.1	0.5	1	NA
Beryllium (Be)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Cadmium (Cd)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Chromium (Cr)	Dissolved	EPA 200.8	3.88	µg/L	0.1	0.5	1	NA
Cobalt (Co)	Dissolved	EPA 200.8	E 0.24	µg/L	0.1	0.5	1	NA
Copper (Cu)	Dissolved	EPA 200.8	7.71	µg/L	0.1	0.5	1	NA
Iron (Fe)	Dissolved	EPA 200.8	173	µg/L	1	5	1	NA
Lead (Pb)	Dissolved	EPA 200.8	2.4	µg/L	0.1	0.5	1	NA
Manganese (Mn)	Dissolved	EPA 200.8	3.33	µg/L	0.1	0.5	1	NA
Mercury (Hg)	Dissolved	EPA 200.8	E 0.07	µg/L	0.05	0.1	1	NA
Molybdenum (Mo)	Dissolved	EPA 200.8	6.58	µg/L	0.1	0.5	1	NA
Nickel (Ni)	Dissolved	EPA 200.8	2.04	µg/L	0.1	0.5	1	NA
Selenium (Se)	Dissolved	EPA 200.8	0.9	µg/L	0.1	0.5	1	NA
Silver (Ag)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Strontium (Sr)	Dissolved	EPA 200.8	308	µg/L	0.5	1	1	NA
Thallium (Tl)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Tin (Sn)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Titanium (Ti)	Dissolved	EPA 200.8	4.2	µg/L	0.1	0.5	1	NA
Vanadium (V)	Dissolved	EPA 200.8	5.54	µg/L	0.1	0.5	1	NA
Zinc (Zn)	Dissolved	EPA 200.8	16.1	µg/L	0.1	0.5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20820 R1

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133b

**CRG ID#:** 20820  
**Replicate #:** R2  
**Batch ID:** 24133-24133  
**Instrument:** ICPMS #1 HP 4500

**Sample Description:** STA 2  
Rainbow Creek  
**Matrix:** Stormwater  
**Analyst:** P. Hershelman

**Date Sampled:** 28-Oct-04 11:30  
**Date Received:** 28-Oct-04  
**Date Processed:** 08-Oct-04  
**Date Analyzed:** 08-Oct-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Aluminum (Al)	Dissolved	EPA 200.8	119	µg/L	1	5	1	NA
Antimony (Sb)	Dissolved	EPA 200.8	E 0.46	µg/L	0.1	0.5	1	NA
Arsenic (As)	Dissolved	EPA 200.8	2.33	µg/L	0.1	0.5	1	NA
Barium (Ba)	Dissolved	EPA 200.8	39	µg/L	0.1	0.5	1	NA
Beryllium (Be)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Cadmium (Cd)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Chromium (Cr)	Dissolved	EPA 200.8	3.75	µg/L	0.1	0.5	1	NA
Cobalt (Co)	Dissolved	EPA 200.8	E 0.16	µg/L	0.1	0.5	1	NA
Copper (Cu)	Dissolved	EPA 200.8	7.59	µg/L	0.1	0.5	1	NA
Iron (Fe)	Dissolved	EPA 200.8	163	µg/L	1	5	1	NA
Lead (Pb)	Dissolved	EPA 200.8	2.18	µg/L	0.1	0.5	1	NA
Manganese (Mn)	Dissolved	EPA 200.8	3.15	µg/L	0.1	0.5	1	NA
Mercury (Hg)	Dissolved	EPA 200.8	E 0.07	µg/L	0.05	0.1	1	NA
Molybdenum (Mo)	Dissolved	EPA 200.8	6.34	µg/L	0.1	0.5	1	NA
Nickel (Ni)	Dissolved	EPA 200.8	1.99	µg/L	0.1	0.5	1	NA
Selenium (Se)	Dissolved	EPA 200.8	E 0.45	µg/L	0.1	0.5	1	NA
Silver (Ag)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Strontium (Sr)	Dissolved	EPA 200.8	302	µg/L	0.5	1	1	NA
Thallium (Tl)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Tin (Sn)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Titanium (Ti)	Dissolved	EPA 200.8	4.11	µg/L	0.1	0.5	1	NA
Vanadium (V)	Dissolved	EPA 200.8	5.43	µg/L	0.1	0.5	1	NA
Zinc (Zn)	Dissolved	EPA 200.8	15.6	µg/L	0.1	0.5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20820 R2

# **GENERAL CHEMISTRY RESULTS**



# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** MACTEC

**CRG Project ID:** 24133b

**CRG ID#:** 20819

**Sample** STA 1

**Date Sampled:** 28-Oct-04 12:00

**Replicate #:** R1

**Description:** Rainbow Creek

**Date Received:** 28-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 05-Nov-04

**Instrument:**

**Analyst:** C. Raubach

**Date Analyzed:** 05-Nov-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Ammonia-N	Total	SM 4500-NH3 F	0.65	mg/L	0.01	0.05	1	NA
Nitrate-N	Total	SM 4500-NO3	6.1	mg/L	0.02	0.05	1	NA
Nitrite-N	Total	SM 4500-NO2 B	0.28	mg/L	0.02	0.05	1	NA
Total Dissolved Solids	Dissolved	SM 2450-C	580	mg/L	0.1	0.2	1	NA
Total Hardness as CaCO3	Total	SM 2340-B	106	mg/L	1	5	1	NA
Total Phosphorus	Dissolved	SM 4500-P C	ND	mg/L	0.016	0.05	1	NA
Total Phosphorus	Total	SM 4500-P C	5.2	mg/L	0.016	0.05	1	NA
Total Suspended Solids	Total	SM 2540-D	234	mg/L	0.1	0.5	1	NA
Turbidity	Total	EPA 180.1	158	NTU	1	2	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20819

R1

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133b**

**CRG ID#:** **20819**

**Sample** STA 1

**Date Sampled:** 28-Oct-04 12:00

**Replicate #:** R2

**Description:** Rainbow Creek

**Date Received:** 28-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 01-Nov-04

**Instrument:**

**Analyst:** P. Hershelman

**Date Analyzed:** 01-Nov-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Total Hardness as CaCO3	Total	SM 2340-B	107	mg/L	1	5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20819

R2

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** MACTEC

**CRG Project ID:** 24133b

**CRG ID#:** 20820

**Sample** STA 2

**Date Sampled:** 28-Oct-04 11:30

**Replicate #:** R1

**Description:** Rainbow Creek

**Date Received:** 28-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 05-Nov-04

**Instrument:**

**Analyst:** C. Raubach

**Date Analyzed:** 05-Nov-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Ammonia-N	Total	SM 4500-NH3 F	0.36	mg/L	0.01	0.05	1	NA
Nitrate-N	Total	SM 4500-NO3	5.5	mg/L	0.02	0.05	1	NA
Nitrite-N	Total	SM 4500-NO2 B	ND	mg/L	0.02	0.05	1	NA
Total Dissolved Solids	Dissolved	SM 2450-C	630	mg/L	0.1	0.2	1	NA
Total Hardness as CaCO3	Total	SM 2340-B	148	mg/L	1	5	1	NA
Total Phosphorus	Total	SM 4500-P C	7.6	mg/L	0.016	0.05	1	NA
Total Phosphorus	Dissolved	SM 4500-P C	ND	mg/L	0.016	0.05	1	NA
Total Suspended Solids	Total	SM 2540-D	292	mg/L	0.1	0.5	1	NA
Turbidity	Total	EPA 180.1	237	NTU	1	2	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20820

R1

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133b**

**CRG ID#:** **20820**

**Sample** STA 2

**Date Sampled:** 28-Oct-04 11:30

**Replicate #:** R2

**Description:** Rainbow Creek

**Date Received:** 28-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 01-Nov-04

**Instrument:**

**Analyst:** P. Hershelman

**Date Analyzed:** 01-Nov-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Total Hardness as CaCO3	Total	SM 2340-B	161	mg/L	1	5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20820 R2

# **QUALITY CONTROL REPORT**

## **PROCEDURAL BLANK RESULTS**

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133b

**CRG ID#:** 20818

**Sample** QAQC

Procedural Blank

**Date Sampled:**

**Replicate #:** B1

**Description:**

**Date Received:**

**Batch ID:** 24133-24133

**Matrix:** DI Water

**Date Processed:** 08-Oct-04

**Instrument:** ICPMS #1 HP 4500

**Analyst:** P. Hershelman

**Date Analyzed:** 08-Oct-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Aluminum (Al)	Dissolved	EPA 200.8	ND	µg/L	1	5	1	NA
Antimony (Sb)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Arsenic (As)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Barium (Ba)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Beryllium (Be)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Cadmium (Cd)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Chromium (Cr)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Cobalt (Co)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Copper (Cu)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Iron (Fe)	Dissolved	EPA 200.8	ND	µg/L	1	5	1	NA
Lead (Pb)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Manganese (Mn)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Mercury (Hg)	Dissolved	EPA 200.8	ND	µg/L	0.05	0.1	1	NA
Molybdenum (Mo)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Nickel (Ni)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Selenium (Se)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Silver (Ag)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.2	1	NA
Strontium (Sr)	Dissolved	EPA 200.8	ND	µg/L	0.5	1	1	NA
Thallium (Tl)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Tin (Sn)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Titanium (Ti)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Vanadium (V)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA
Zinc (Zn)	Dissolved	EPA 200.8	ND	µg/L	0.1	0.5	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20818

B1

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** MACTEC

**CRG Project ID:** 24133b

**CRG ID#:** 20818

**Sample** QAQC

Procedural Blank

**Date Sampled:**

**Replicate #:** B1

**Description:**

**Date Received:**

**Batch ID:** 24133-24133

**Matrix:** DI Water

**Date Processed:** 05-Nov-04

**Instrument:**

**Analyst:** C. Raubach

**Date Analyzed:** 05-Nov-04

CONSTITUENT	FRACTION	METHOD	RESULT	UNITS	MDL	RL	DILUTION FACTOR	ACCEPTANCE RANGE
Ammonia-N	Total	SM 4500-NH3 F	ND	mg/L	0.01	0.05	1	NA
Nitrate-N	Total	SM 4500-NO3	ND	mg/L	0.02	0.05	1	NA
Nitrite-N	Total	SM 4500-NO2 B	ND	mg/L	0.02	0.05	1	NA
Total Dissolved Solids	Dissolved	SM 2450-C	ND	mg/L	0.1	0.2	1	NA
Total Hardness as CaCO3	Total	SM 2340-B	ND	mg/L	1	5	1	NA
Total Phosphorus	Total	SM 4500-P C	ND	mg/L	0.016	0.05	1	NA
Total Phosphorus	Dissolved	SM 4500-P C	ND	mg/L	0.016	0.05	1	NA
Total Suspended Solids	Total	SM 2540-D	ND	mg/L	0.1	0.5	1	NA
Turbidity	Total	EPA 180.1	ND	NTU	1	2	1	NA

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20818

B1



# **ACCURACY DATA**

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133b**

**CRG ID#:** **20818**

**Sample** QAQC

Procedural Blank

**Date Sampled:**

**Replicate #:** BS1

**Description:**

**Date Received:**

**Batch ID:** 24133-24133

**Matrix:** DI Water

**Date Processed:** 05-Nov-04

**Instrument:**

**Analyst:** C. Raubach

**Date Analyzed:** 05-Nov-04

CONSTITUENT	METHOD	% RECOVERY	TRUE VALUE	ACCEPTANCE RANGE	COMMENT
Ammonia-N	SM 4500-NH3 F	92	0.25 mg/L	70 - 130%	PASS
Nitrate-N	SM 4500-NO3	85	0.25 mg/L	70 - 130%	PASS
Nitrite-N	SM 4500-NO2 B	87	0.25 mg/L	70 - 130%	PASS
Total Dissolved Solids	SM 2450-C	97	250 mg/L	70 - 130%	PASS
Total Phosphorus	SM 4500-P C	90	25 mg/L	70 - 130%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20818 BS1

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133b**

**CRG ID#:** **20818**

**Sample** QAQC

Procedural Blank

**Date Sampled:**

**Replicate #:** BS2

**Description:**

**Date Received:**

**Batch ID:** 24133-24133

**Matrix:** DI Water

**Date Processed:** 05-Nov-04

**Instrument:**

**Analyst:** C. Raubach

**Date Analyzed:** 05-Nov-04

CONSTITUENT	METHOD	% RECOVERY	TRUE VALUE	ACCEPTANCE RANGE	COMMENT
Ammonia-N	SM 4500-NH3 F	100	0.25 mg/L	70 - 130%	PASS
Nitrate-N	SM 4500-NO3	85	0.25 mg/L	70 - 130%	PASS
Nitrite-N	SM 4500-NO2 B	89	0.25 mg/L	70 - 130%	PASS
Total Dissolved Solids	SM 2450-C	102	700 mg/L	70 - 130%	PASS
Total Phosphorus	SM 4500-P C	95	25 mg/L	70 - 130%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261

20818

BS2

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133b**

**CRG ID#:** 20820

**Sample** STA 2

**Date Sampled:** 28-Oct-04 11:30

**Replicate #:** MS1

**Description:** Rainbow Creek

**Date Received:** 28-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 05-Nov-04

**Instrument:**

**Analyst:** C. Raubach

**Date Analyzed:** 05-Nov-04

CONSTITUENT	METHOD	% RECOVERY	TRUE VALUE	ACCEPTANCE RANGE	COMMENT
Ammonia-N	SM 4500-NH3 F	92	0.25 mg/L	70 - 130%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20820 MS1

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133b**

**CRG ID#:** **20820**

**Sample** STA 2

**Date Sampled:** 28-Oct-04 11:30

**Replicate #:** MS2

**Description:** Rainbow Creek

**Date Received:** 28-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 05-Nov-04

**Instrument:**

**Analyst:** C. Raubach

**Date Analyzed:** 05-Nov-04

CONSTITUENT	METHOD	% RECOVERY	TRUE VALUE	ACCEPTANCE RANGE	COMMENT
Ammonia-N	SM 4500-NH3 F	96	0.25 mg/L	70 - 130%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20820 MS2

# **PRECISION DATA**

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133b

**CRG ID#:** 20819

**Sample Description:** STA 1  
Rainbow Creek

**Date Sampled:** 28-Oct-04 12:00

**Date Received:** 28-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 08-Oct-04

**Instrument:** ICPMS #1 HP 4500

**Analyst:** P. Hershelman

**Date Analyzed:** 08-Oct-04

CONSTITUENT	METHOD	R1 µg/L	R2 µg/L	% RPD	ACCEPTANCE RANGE	COMMENT
Aluminum (Al)	EPA 200.8	105	108	3	0 - 30%	PASS
Antimony (Sb)	EPA 200.8	0.61	0.48	24	0 - 30%	PASS
Arsenic (As)	EPA 200.8	2.65	2.65	0	0 - 30%	PASS
Barium (Ba)	EPA 200.8	30.7	30.6	0	0 - 30%	PASS
Chromium (Cr)	EPA 200.8	1.01	1.01	0	0 - 30%	PASS
Cobalt (Co)	EPA 200.8	0.2	0.1	67	0 - 30%	FAIL
Copper (Cu)	EPA 200.8	5.8	5.87	1	0 - 30%	PASS
Iron (Fe)	EPA 200.8	148	151	2	0 - 30%	PASS
Lead (Pb)	EPA 200.8	0.29	0.23	23	0 - 30%	PASS
Manganese (Mn)	EPA 200.8	32.4	32.9	2	0 - 30%	PASS
Mercury (Hg)	EPA 200.8	0.06	0.07	15	0 - 30%	PASS
Molybdenum (Mo)	EPA 200.8	6.98	7.14	2	0 - 30%	PASS
Nickel (Ni)	EPA 200.8	1.65	1.65	0	0 - 30%	PASS
Selenium (Se)	EPA 200.8	0.56	0.47	17	0 - 30%	PASS
Strontium (Sr)	EPA 200.8	248	252	2	0 - 30%	PASS
Titanium (Ti)	EPA 200.8	4.13	4.26	3	0 - 30%	PASS
Vanadium (V)	EPA 200.8	2.12	2.1	1	0 - 30%	PASS
Zinc (Zn)	EPA 200.8	26	25.5	2	0 - 30%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20819

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## Trace Metals

**Client:** MACTEC

**CRG Project ID:** 24133b

**CRG ID#:** 20820

**Sample Description:** STA 2  
Rainbow Creek

**Date Sampled:** 28-Oct-04 11:30

**Date Received:** 28-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 08-Oct-04

**Instrument:** ICPMS #1 HP 4500

**Analyst:** P. Hershelman

**Date Analyzed:** 08-Oct-04

CONSTITUENT	METHOD	R1 µg/L	R2 µg/L	% RPD	ACCEPTANCE RANGE	COMMENT
Aluminum (Al)	EPA 200.8	135	119	13	0 - 30%	PASS
Antimony (Sb)	EPA 200.8	0.5	0.46	8	0 - 30%	PASS
Arsenic (As)	EPA 200.8	2.45	2.33	5	0 - 30%	PASS
Barium (Ba)	EPA 200.8	40.1	39	3	0 - 30%	PASS
Chromium (Cr)	EPA 200.8	3.88	3.75	3	0 - 30%	PASS
Cobalt (Co)	EPA 200.8	0.24	0.16	40	0 - 30%	FAIL
Copper (Cu)	EPA 200.8	7.71	7.59	2	0 - 30%	PASS
Iron (Fe)	EPA 200.8	173	163	6	0 - 30%	PASS
Lead (Pb)	EPA 200.8	2.4	2.18	10	0 - 30%	PASS
Manganese (Mn)	EPA 200.8	3.33	3.15	6	0 - 30%	PASS
Mercury (Hg)	EPA 200.8	0.07	0.07	0	0 - 30%	PASS
Molybdenum (Mo)	EPA 200.8	6.58	6.34	4	0 - 30%	PASS
Nickel (Ni)	EPA 200.8	2.04	1.99	2	0 - 30%	PASS
Selenium (Se)	EPA 200.8	0.9	0.45	67	0 - 30%	FAIL
Strontium (Sr)	EPA 200.8	308	302	2	0 - 30%	PASS
Titanium (Ti)	EPA 200.8	4.2	4.11	2	0 - 30%	PASS
Vanadium (V)	EPA 200.8	5.54	5.43	2	0 - 30%	PASS
Zinc (Zn)	EPA 200.8	16.1	15.6	3	0 - 30%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20820



# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133b**

**CRG ID#:** **20818**

**Sample Description:** QAQC

Procedural Blank

**Date Sampled:**

**Date Received:**

**Batch ID:** 24133-24133

**Matrix:** DI Water

**Date Processed:** 05-Nov-04

**Instrument:**

**Analyst:** C. Raubach

**Date Analyzed:** 05-Nov-04

CONSTITUENT	METHOD	BS1 % Recovery	BS2 % Recovery	% RPD	ACCEPTANCE RANGE	COMMENT
Ammonia-N	SM 4500-NH3 F	92	100	8	0 - 30%	PASS
Nitrate-N	SM 4500-NO3	85	85	0	0 - 30%	PASS
Nitrite-N	SM 4500-NO2 B	87	89	2	0 - 30%	PASS
Total Dissolved Solids	SM 2450-C	97	102	5	0 - 30%	PASS
Total Phosphorus	SM 4500-P C	90	95	5	0 - 30%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20818

# CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206 (310) 533-5190 FAX (310) 533-5003 crglabs@sbcglobal.net

## General Chemistry

**Client:** **MACTEC**

**CRG Project ID:** **24133b**

**CRG ID#:** **20820**

**Sample Description:** STA 2  
Rainbow Creek

**Date Sampled:** 28-Oct-04 11:30

**Date Received:** 28-Oct-04

**Batch ID:** 24133-24133

**Matrix:** Stormwater

**Date Processed:** 05-Nov-04

**Instrument:**

**Analyst:** C. Raubach

**Date Analyzed:** 05-Nov-04

CONSTITUENT	METHOD	MS1 % Recovery	MS2 % Recovery	% RPD	ACCEPTANCE RANGE	COMMENT
Ammonia-N	SM 4500-NH3 F	92	96	4	0 - 30%	PASS

MDL= Method Detection Limit (CFR 40 Part 136); RL= Minimum Level (SWRCB); E= Estimated Value below the RL and above the MDL; ND= Not Detected; NA= Not Applicable.

California ELAP Certificate # 2261  
20820

# **CHAIN OF CUSTODY**



CRG Marine Laboratories, Inc.

2020 Del Amo Blvd., Suite 200, Torrance, CA 90501-1206  
PHONE (310) 533-5190 FAX (310) 533-5003

# CHAIN-OF-CUSTODY RECORD

Client Name Address		MACTEC		REQUESTED ANALYSIS																												
Sampled By		Kris Green																														
Project Manager		Sean Porter																														
Phone		858 278 3600																														
FAX		858 278 5800																														
Email		Kgreen@mac-tec.com																														
Project Name/Number		Rainbow Creek																														
P.O. Number		5012-04-0011 03																														
Client Sample ID	Sample Date	Sample Time	Sample Matrix*	Quantity	Container Type	TSS/TSS			Turbidity/Hardness			Dissolved phosphorus			Total phosphorus			Nitrate/Nitrite			TKN/Ammonia			5 day BOD			Dissolved metals			200.0		
1	STA 1	10/28	12:00	STORM	39.1	19L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
2	STA 2	10/28	11:30	STORM	15.94	19L	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
Correct Containers:		Yes	No	RELINQUISHED BY																												
Sample Temperature:		Ambient	Cold	Warm																												
Sample Preservative:		Yes	No																													
Turnaround Time:		STD	Specify:																													
Report Format:		pdf	EDD	hardcopy																												
Comments:																																
CRG Project ID: P241336																																
CRG Sample ID: 20820-20819																																
Signature:		Kris Green																														
Print:		Kris Green																														
Company:		MACTEC																														
DATE:		10/28/04																														
TIME:		1:30																														
Signature:		[Signature]																														
Print:		STEVE KETSEK																														
Company:		OCEG																														
DATE:		10/28/04																														
TIME:		1:30																														

\*MATRIX CODES: (SED = Sediment), (TISS = Tissue), (SW = Seawater, Saltwater), (FW = Freshwater), (WW = Wastewater), (STORMW = Stormwater)