ANALYTICA

# Cooler Receipt Form

Client: Kennecott Greens Creek Min Client Code: 012040 Order #: J0306206
Project: NPDES Quarterly Seawater

Cooler ID: 1

A. Preliminary Examination Phase: Date cooler opened: 6/18/2003
Cooler opened by: KS Signature: Kevin Schraft

1. Was airbill Attached? No Airbill #: Carrier Name: Client
2. Custody Seals? Yes How many? 1 Location: Cooler Seal Name: TM
3. Seals intact? Yes
4. Screened for radiation? No
5. COC Attached? Yes Properly Completed? Yes Signed by AEL employee? Yes
6. Project Identification from custody paper: NPDES Quarterly Seawater
7. Preservative: BlueGel Temperature: 9.3

Designated person initial here to acknowledge receipt: Kevin Schraft Date: 6/24/03

COMMENTS:

B. Log-In Phase: Samples Log-in Date: 6/24/2003 Log-in By: DW Signature:

1. Packing Type: Other
2. Were samples in separate bags? Yes
3. Were containers intact? Yes Labels agree with COC? Yes
4. Number of bottles received: 8 Number of samples received: 4
5. Correct containers used? Yes Correct preservatives added? Yes
6. Sufficient sample volume? Yes
7. Bubbles in VOA samples? N/A
8. Was Project manager called and status discussed? No
9. Was anyone called? No Who was called? _____ By whom? _____ Date: _____

COMMENTS:

July 24, 2003

Battelle
. . . Putting Technology To Work

Marine Sciences Laboratory
1529 West Sequim Bay Road
Sequim, Washington 98382

Telephone: (360) 681-3627
Facsimile: (360) 681-3699

Mr. Bill Oelklaus
Kennecott Greens Creek
P.O. Box 32199
Juneau, AK 99803-2199

Dear Bill:

Enclosed are the results for trace metals in Green's Creek (Hawk Inlet) seawater samples received on June 19, 2003. Holding times were met for all samples. The acceptable cooler temperature range was met as the samples were preserved in the field.

These results are comparable to past results and indicate mining activities are not contributing to ambient metal concentrations. The SRM and duplicate results were within Battelle's default criteria of ±20%, except CASS-4 for Zn, Cd and Pb. If these SRM results are blank corrected the Zn, Cd and Pb falls within acceptable criteria (15%, 1%, and 9% difference, respectively). SRM 1640 results are provided for Cd and Pb to show the instrument was operating properly and recoveries were within the acceptable criteria. SRM 1640 results are not shown for Zn because the results for this metal were reprocessed using the method of standard addition. No corrective action was taken. Matrix spikes were within our criteria of ±25% for all metals. Duplicate results were within the criteria of ±20%, except Zn. Results comparing metal concentrations in samples collected in bottles that contained acid for a period of approximately 3 months versus those that did not contain acid until the sample was collected showed an overall increase in the bottles with acid. Although the difference was not significant, it would be better for us to send acid vials along with the sample bottles to allow preservation when the sample is collected.

The field blank was provided as part of the requirement for your permit. Results have been included in the accompanying report. Lab blank results were comparable. I have sent electronic copies of the data via email.

A cost breakdown has been included with these data and appears in Table 1. Our contracts department will send you an invoice for these costs shortly. If you have any questions or comments concerning the data or cost breakdowns, please don't hesitate to contact me at 360-681-3627 or email: l.bingler@pnl.gov at anytime. These samples will be disposed of on August 15th, unless otherwise advised by you.

# Clearance of CHEMISTRY DATA REPORTS

| | |
|---|---|
| **Marine Sciences Laboratory**<br>**Sequim, WA 98382** | Date Requested: 7/24/2003<br>Data Entry: LSB |

**CHEMICAL ANALYSES OF:** Metals in Water

803GC

| | |
|---|---|
| Lead Author: Linda S. Bingler | Other Authors (if applicable) |

Green's Creek Seawater - second quarter 2003

**I HAVE READ THE ATTACHED DOCUMENT(S)**

Author: Linda S. Bingler Date
Linda S. Bingler 7/24/03

QA Reviewer: D. Coffey Date
Deborah S. Coffey 7/24/03

Peer Reviewer: Date
Eric A Crecelius 7/24/03

**I certify that this data is in compliance with requirements specified in NPDES Permit No. AK-004320-6.**

Martin L. Miller for RM Ecker 7/24/03
**Richard M. Ecker** **Date**

RETURN COMPLETED FORM, ALONG WITH FINAL TABLE REPORT TO:

DATA ENTRY or AUTHOR
Linda Bingler

**COMMENTS:**

BATTELLE MARINE SCIENCES LABORATORY
1529 W. Sequim Bay Road
Sequim, WA 98382
(360) 683-4151

Report Date: 7/24/03

# TRACE METAL CONCENTRATIONS IN GREENS CREEK SEAWATER SAMPLES

Samples received: 6/19/03

(concentrations in μg/L (not blank corrected))

| Lab ID | Lab Sample Number | Sample Identifier | Sampling Date | Date Received | Date Analyzed | Parameter Number | Analysis Method | Value | Detection Limit | Parameter Description | Flag | Sample Description | RPD | Percent Recovery | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SAMPLE RESULTS** | | | | | | | | | | | | | | | |
| MSL | 803GC*246 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 0.464 | 0.027 | TRM Cu-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*246 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 1.25 | 0.200 | TRM Zn-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*246 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 0.0733 | 0.025 | TRM Cd-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*246 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 0.106 | 0.007 | TRM Pb-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*246 | 104-5' | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.000857 | 0.0003 | Total Hg-CVAF | | Sample | N/A | N/A | |
| MSL | 803GC*247 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 0.404 | 0.027 | TRM Cu-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*247 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 2.02 | 0.200 | TRM Zn-ICP/MS | U | Sample | N/A | N/A | |
| MSL | 803GC*247 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 0.0602 | 0.025 | TRM Cd-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*247 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 0.311 | 0.007 | TRM Pb-ICP/MS | U | Sample | N/A | N/A | |
| MSL | 803GC*247 | 106-5' | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.00184 | 0.0003 | Total Hg-CVAF | | Sample | N/A | N/A | |
| MSL | 803GC*248 | 107-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 0.440 | 0.027 | TRM Cu-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*248 | 107-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 1.31 | 0.200 | TRM Zn-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*248 | 107-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 0.0746 | 0.025 | TRM Cd-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*248 | 107-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 0.142 | 0.007 | TRM Pb-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*248 | 107-5' | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.000687 | 0.0003 | Total Hg-CVAF | | Sample | N/A | N/A | |
| MSL | 803GC*249 | 108-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 0.478 | 0.027 | TRM Cu-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*249 | 108-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 1.66 | 0.200 | TRM Zn-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*249 | 108-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 0.0778 | 0.025 | TRM Cd-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*249 | 108-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 0.176 | 0.007 | TRM Pb-ICP/MS | U | Sample | N/A | N/A | |
| MSL | 803GC*249 | 108-5' | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.000988 | 0.0003 | Total Hg-CVAF | | Sample | N/A | N/A | |
| MSL | 803GC*250 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 0.425 | 0.027 | TRM Cu-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*250 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 1.07 | 0.200 | TRM Zn-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*250 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 0.0748 | 0.025 | TRM Cd-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*250 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 0.100 | 0.007 | TRM Pb-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*250 | 104-5' | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.421 | 0.0003 | Total Hg-CVAF | | Sample | N/A | N/A | |
| MSL | 803GC*251 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 0.359 | 0.027 | TRM Cu-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*251 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 1.50 | 0.200 | TRM Zn-ICP/MS | U | Sample | N/A | N/A | |
| MSL | 803GC*251 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 0.0705 | 0.025 | TRM Cd-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*251 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 0.169 | 0.007 | TRM Pb-ICP/MS | U | Sample | N/A | N/A | |
| MSL | 803GC*251 | 106-5' | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.000713 | 0.0003 | Total Hg-CVAF | | Sample | N/A | N/A | |
| MSL | 803GC*252 | 107-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 0.385 | 0.027 | TRM Cu-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*252 | 107-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 1.34 | 0.200 | TRM Zn-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*252 | 107-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 0.0729 | 0.025 | TRM Cd-ICP/MS | | Sample | N/A | N/A | |

BATTELLE MARINE SCIENCES LABORATORY
1529 W. Sequim Bay Road
Sequim, WA 98382
(360) 683-4151

Report Date: 7/24/03

# TRACE METAL CONCENTRATIONS IN GREENS CREEK SEAWATER SAMPLES

Samples received: 6/19/03

(concentrations in $\mu g/L$ (not blank corrected))

| Lab ID | Lab Sample Number | Sample Identifier | Sampling Date | Date Received | Date Analyzed | Parameter Number | Analysis Method | Value | Detection Limit | Parameter Description | Flag | Sample Description | RPD | Percent Recovery | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SAMPLE RESULTS** | | | | | | | | | | | | | | | |
| MSL | 803GC*252 | 107-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 0.110 | 0.007 | TRM Pb-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*252 | 107-5' | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.0188 | 0.0003 | Total Hg-CVAF | | Sample | N/A | N/A | |
| MSL | 803GC*253 | 108-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 0.391 | 0.027 | TRM Cu-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*253 | 108-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 0.864 | 0.200 | TRM Zn-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*253 | 108-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 0.0741 | 0.025 | TRM Cd-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*253 | 108-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 0.125 | 0.007 | TRM Pb-ICP/MS | U | Sample | N/A | N/A | |
| MSL | 803GC*253 | 108-5' | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.00109 | 0.0003 | Total Hg-CVAF | | Sample | N/A | N/A | |
| MSL | 803GC*254 | Field Blank | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 0.459 | 0.027 | TRM Cu-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*254 | Field Blank | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 1.27 | 0.200 | TRM Zn-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*254 | Field Blank | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 0.0614 | 0.025 | TRM Cd-ICP/MS | U | Sample | N/A | N/A | |
| MSL | 803GC*254 | Field Blank | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 0.0377 | 0.007 | TRM Pb-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*254 | Field Blank | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.000786 | 0.0003 | Total Hg-CVAF | | Sample | N/A | N/A | |
| MSL | 803GC*256 | Lab Blank | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 0.429 | 0.027 | TRM Cu-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*256 | Lab Blank | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 1.62 | 0.200 | TRM Zn-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*256 | Lab Blank | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 0.0614 | 0.025 | TRM Cd-ICP/MS | U | Sample | N/A | N/A | |
| MSL | 803GC*256 | Lab Blank | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 0.0388 | 0.007 | TRM Pb-ICP/MS | | Sample | N/A | N/A | |
| MSL | 803GC*256 | Lab Blank | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.000457 | 0.0003 | Total Hg-CVAF | | Sample | N/A | N/A | |
| **PROCEDURAL BLANK** | | | | | | | | | | | | | | | |
| MSL | Blank | N/A | N/A | N/A | 7/1/03 | 1119 | 1640m | 0.156 | 0.027 | TRM Cu-ICP/MS | | Blank | N/A | N/A | |
| MSL | Blank | N/A | N/A | N/A | 7/1/03 | 1094 | 1640m | 0.275 | 0.200 | TRM Zn-ICP/MS | | Blank | N/A | N/A | |
| MSL | Blank | N/A | N/A | N/A | 7/1/03 | 1113 | 1640m | 0.00762 | 0.025 | TRM Cd-ICP/MS | U | Blank | N/A | N/A | |
| MSL | Blank | N/A | N/A | N/A | 7/1/03 | 1114 | 1640m | 0.027 | 0.007 | TRM Pb-ICP/MS | U | Blank | N/A | N/A | |
| MSL | Blank | N/A | N/A | N/A | 6/26/03 | 71900 | 1631m | 0.000105 | 0.0003 | Total Hg-CVAF | U | Blank | N/A | N/A | |
| **CERTIFIED REFERENCE MATERIAL RESULTS** | | | | | | | | | | | | | | | |
| MSL | CASS-4 | N/A | N/A | N/A | 7/1/03 | 1119 | 1640m | 0.689 | 0.027 | TRM Cu-ICP/MS | | SRM | 16% | N/A | |
| MSL | CASS-4 | N/A | N/A | N/A | 7/1/03 | 1094 | 1640m | 0.659 | 0.200 | TRM Zn-ICP/MS | | SRM | 73% | N/A | # |
| MSL | CASS-4 | N/A | N/A | N/A | 7/1/03 | 1113 | 1640m | 0.0374 | 0.025 | TRM Cd-ICP/MS | | SRM | 44% | N/A | # |
| MSL | CASS-4 | N/A | N/A | N/A | 7/1/03 | 1114 | 1640m | 0.0359 | 0.007 | TRM Pb-ICP/MS | | SRM | 266% | N/A | # |
| MSL | 1640 | N/A | N/A | N/A | 7/1/03 | 1113 | 1640m | 23.9 | 0.025 | TRM Cd-ICP/MS | | SRM | 5% | N/A | |
| MSL | 1640 | N/A | N/A | N/A | 7/1/03 | 1114 | 1640m | 27.2 | 0.007 | TRM Pb-ICP/MS | | SRM | 3% | N/A | |
| MSL | 1641d | N/A | N/A | N/A | 6/26/03 | 71900 | 1631m | 1475 | 0.0003 | Total Hg-CVAF | | SRM | 7% | N/A | |

BATTELLE MARINE SCIENCES LABORATORY
1529 W. Sequim Bay Road
Sequim, WA 98382
(360) 683-4151

Report Date: 7/24/03

## TRACE METAL CONCENTRATIONS IN GREENS CREEK SEAWATER SAMPLES

Samples received: 6/19/03

(concentrations in $\mu$g/L (not blank corrected))

| Lab ID | Lab Sample Number | Sample Identifier | Sampling Date | Date Received | Date Analyzed | Parameter Number | Analysis Method | Value | Detection Limit | Parameter Description | Flag | Sample Description | RPD | Percent Recovery | Flag |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MATRIX SPIKE RESULTS (mean)** | | | | | | | | | | | | | | | |
| MSL | 803GC*246 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 2.19 | 0.027 | TRM Cu-ICP/MS | | MS | N/A | 90% | |
| MSL | 803GC*246 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 3.29 | 0.200 | TRM Zn-ICP/MS | | MS | N/A | 102% | |
| MSL | 803GC*246 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 1.83 | 0.025 | TRM Cd-ICP/MS | | MS | N/A | 88% | |
| MSL | 803GC*246 | 104-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 2.08 | 0.007 | TRM Pb-ICP/MS | | MS | N/A | 88% | |
| MSL | 803GC*248 | 107-5' | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.0167 | 0.0003 | Total Hg-CVAF | | MS | N/A | 105% | |
| **REPLICATE RESULTS** | | | | | | | | | | | | | | | |
| MSL | 803GC*247 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1119 | 1640m | 0.392 | 0.027 | TRM Cu-ICP/MS | | Duplicate | 3% | N/A | |
| MSL | 803GC*247 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1094 | 1640m | 2.94 | 0.200 | TRM Zn-ICP/MS | | Duplicate | 37% | N/A | # |
| MSL | 803GC*247 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1113 | 1640m | 0.0676 | 0.025 | TRM Cd-ICP/MS | | Duplicate | 12% | N/A | |
| MSL | 803GC*247 | 106-5' | 6/18/03 | 6/19/03 | 7/1/03 | 1114 | 1640m | 0.334 | 0.007 | TRM Pb-ICP/MS | | Duplicate | 7% | N/A | |
| MSL | 803GC*248 | 107-5' | 6/18/03 | 6/19/03 | 6/26/03 | 71900 | 1631m | 0.000798 | 0.0003 | Total Hg-CVAF | | Duplicate | 15% | N/A | |

# = Outside QC limits.
U = Not detected at or above the detection limit.
N/A = Not applicable/analyzed.

LOG-IN CHECKLIST

Reference SOP# MSL-A-001

Central File #: 803 Sample No(s): 246-254 Project Manager: Bingler

**TO BE COMPLETED BY PROJECT MANAGER (prior to arrival when possible)**

Matrix: Seawater WP# 539822

| Yes | No | |
|---|---|---|
| | X | Navy-type Project (requires high-level sample tracking procedures) |
| | X | Filter Samples: Amount: Entire sample Half of sample |
| | X | Freeze dry sample(s) - samples will be weighed and placed in ultralow temp freezer (Lab# 130) |
| | X | Special instructions: |

Sample Preservation Instructions:

Date To Archive: Date To Dispose: See Lims

**TO BE COMPLETED UPON SAMPLE ARRIVAL/LOG-IN**

| Yes | No | N/A | Indicate in Appropriate Box |
|---|---|---|---|
| X | | | Was a custody seal present? |
| X | | | Was the custody seal intact? |
| X | | | Was cooler(s) temperature(s) within acceptable range of 4±2°C? (if multiple coolers, note temp. of each) |
| | | X | Was Project Manager notified of any custody/login discrepancies (cooler temp, sponsor codes, etc)? |
| X | | | Were all chain of custody forms signed and dated? |
| | X | | Were samples filtered at MSL? |

#1 4.7 °C

#2 2.9 °C

Comment/Remedy:

Sample condition(s): Acceptable Other (explain)

Container type: Teflon Poly Glass Spex Other:

Notes:

Completed By: [signature] Date/Time: 06/19/03 1300

**SAMPLE PRESERVATION**

- [ ] Sample(s) were preserved at MSL
- [X] Sample(s) were preserved prior to arrival at MSL (noted on CoC / Sample / per PM Instruction )
- [ ] Random pH checked for ~10% of samples (use dip paper) Sample IDs:
- [ ] Complete pH check required for project (use pH meter and record on pH Record form)

If preservation necessary, record Acid Lot#

Type:
- [ ] 0.2% HNO3 Notes:
- [ ] 0.5% HCl (Hg samples) Notes:
- [ ] Refrigerate/Freeze Notes:
- [ ] Other Notes:

Completed By: [signature] Date/Time: 06/19/03 1300

cc: Project Manager/Central File
Login File 803

# SAMPLE LOGIN
(SOP# MSL-A-001)

Project Manager: Blinger
Date Received: 06/19/03
Batch: 36

PROJECT: Kennecott Minerals

| SPONSOR CODE | Site Description | BATTELLE CODE | MATRIX | STORAGE LOCATION | PARAMETERS REQUESTED | COLLECTION DATE | INITIALS |
|---|---|---|---|---|---|---|---|
| 104-5' | NA | 803-246 | water | Prep Lab K-1 | metals | 06/18/03 | MLFM |
| 106-5' | NA | 803-247 | water | Prep Lab K-1 | metals | 06/18/03 | MLFM |
| 107-5' | NA | 803-248 | water | Prep Lab K-1 | metals | 06/18/03 | MLFM |
| 108-5' | NA | 803-249 | water | Prep Lab K-1 | metals | 06/18/03 | MLFM |
| Acid for above samples sent in sample bottles | | | | | | | |
| 104-5' | NA | 803-250 | water | Prep Lab K-1 | metals | 06/18/03 | MLFM |
| 106-5' | NA | 803-251 | water | Prep Lab K-1 | metals | 06/18/03 | MLFM |
| 107-5' | NA | 803-252 | water | Prep Lab K-1 | metals | 06/18/03 | MLFM |
| 108-5' | NA | 803-253 | water | Prep Lab K-1 | metals | 06/18/03 | MLFM |
| Field Blank | NA | 803-254 | water | Prep Lab K-1 | metals | 06/18/03 | MLFM |
| Acid for above samples sent in separate vials | | | | | | | |

Kennecott Minerals

LGN:
CSN:

# Chain of Custody Record / Analysis Request

| | | | |
|---|---|---|---|
| Company Name: | K.G.C.M.C.<br>Greens Creek Mine | Project Name: | NPDES<br>Quarterly Seawater |
| Company Address: | P.O.Box 32199<br>Juneau, AK 99803 | Report To: | Bill Oelklaus |
| | | Sampler: | M. Morales, S. Hutson |
| | | P.O.Number | |
| Telephone: | (907) 790-8472 / 8473 / 8470 | | |
| Fax: | (907) 790-8478 or 789-8119 | | |

| Sample I.D. | Date Collected | Time Collected | Matrix Water / Soil | # Containers: 1lt. White | 1lt. Green | 500ml. Red | | Metals | | | | | | | | | | pH < 2 | RUSH ( see below ) | LAB I.D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 803-246 104-5' | 06-18-03 | 11:48 | Water | 1 | | | | x | | | | | | | | | | | | |
| 247 106-5' | 06-18-03 | 10:45 | Water | 1 | | | | x | | | | | | | | | | | | |
| 248 107-5' | 06-18-03 | 11:20 | Water | 1 | | | | x | | | | | | | | | | | | |
| 803-249 108-5' | 06-18-03 | 11:00 | Water | 1 | | | | x | | | | | | | | | | | | |
| acid sent in Bottles | | | | | | | | | | | | | | | | | | | | |

Comments: Bottles receiced in March 2003

Lab sent to: Battelle Marine Science Lab

Deliverables
- ☐ Level 1
- ☐ ADEC Format
- ☐ ACOE
- ☐ Other:_____
- ☐ EDD-Format:_____Specify

Turnaround Time
- ☐ 2 Business Days
- ☐ 5 Business Days
- ☐ 10-15 Business Days
- ☐ Other:____# Business Days

| RELINQUISHED BY SAMPLER: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: | Condition of Sample Containers: |
|---|---|---|---|---|
| Signature: M. T. Morales | Signature: | Signature: | Signature: | Temp Received: _____ °C |
| Printed Name: M. T. Morales | Printed Name: HLFH'Gahan | Printed Name: | Printed Name: | # of Coolers: _____ |
| Firm: KGCMC | Firm: HSL | Firm: | Firm: | Seals Intact: _____ |
| Date / Time: 06-18-03 18:40 | Date / Time: 06/19/03 1300 | Date / Time: | Date / Time: | Page _____ of _____ |

Kennecott Minerals

RECEIVED
NOV 26 2003

LGN:
CSN:

# Chain of Custody Record / Analysis Request

| | | | |
|---|---|---|---|
| Company Name: | K.G.C.M.C. Greens Creek Mine | Project Name: | NPDES Quarterly Seawater |
| Company Address: | P.O.Box 32199 Juneau, AK 99803 | Report To: | Bill Oelklaus |
| | | Sampler: | M. Morales, S. Hutson |
| | | P.O.Number | |
| Telephone: | (907) 790-8472 / 8473 / 8470 | | |
| Fax: | (907) 790-8478 or 789-8119 | | |

| Sample I.D. | Date Collected | Time Collected | Matrix Water / Soil | # Containers 1lt. White | 1lt. Green | 500ml. Red | | Metals | | | | | | | | | | pH < 2 | RUSH ( see below ) | LAB I.D. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 803-250 104- 5' | 06-18-03 | 11:48 | Water | 1 | | | | x | | | | | | | | | | | | |
| 251 106-5' | 06-18-03 | 10:45 | Water | 1 | | | | x | | | | | | | | | | | | |
| 252 107-5' | 06-18-03 | 11:20 | Water | 1 | | | | x | | | | | | | | | | | | |
| 253 108-5' | 06-18-03 | 11:00 | Water | 1 | | | | x | | | | | | | | | | | | |
| 803 - 254 Field Blank | 06-18-03 | 11:53 | Water | 1 | | | | x | | | | | | | | | | | | |
| acid sent in vials | | | | | | | | | | | | | | | | | | | | |

Comments:

Lab sent to: Battelle Marine Science Lab

Deliverables
- ☐ Level 1
- ☐ ADEC Format
- ☐ ACOE
- ☐ Other:_____
- ☐ EDD-Format:_____Specify

Turnaround Time
- ☐ 2 Business Days
- ☐ 5 Business Days
- ☐ 10-15 Business Days
- ☐ Other:____# Business Days

| RELINQUISHED BY SAMPLER: | RECEIVED BY: | RELINQUISHED BY: | RECEIVED BY: | Condition of Sample Containers: |
|---|---|---|---|---|
| Signature: M.T. Morales | Signature: MLF McGahan | Signature: | Signature: | Temp Received: _____ °C |
| Printed Name: M.T. Morales | Printed Name: MLF McGahan | Printed Name: | Printed Name: | # of Coolers: _____ |
| Firm: KGCMC | Firm: MSL | Firm: | Firm: | Seals Intact: _____ |
| Date / Time: 06-18-03 @ 18:40 | Date / Time: 06/19/03 1300 | Date / Time: | Date / Time: | Page _____ of _____ |