AIR SCIENCES INC.

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Annual
Air Quality Data Report
Village Air Monitoring
Kivalina, Alaska
October 1, 2003 – September 30, 2004

TECK COMINCO ALASKA INCORPORATED

PROJECT 30-06
DECEMBER 2004

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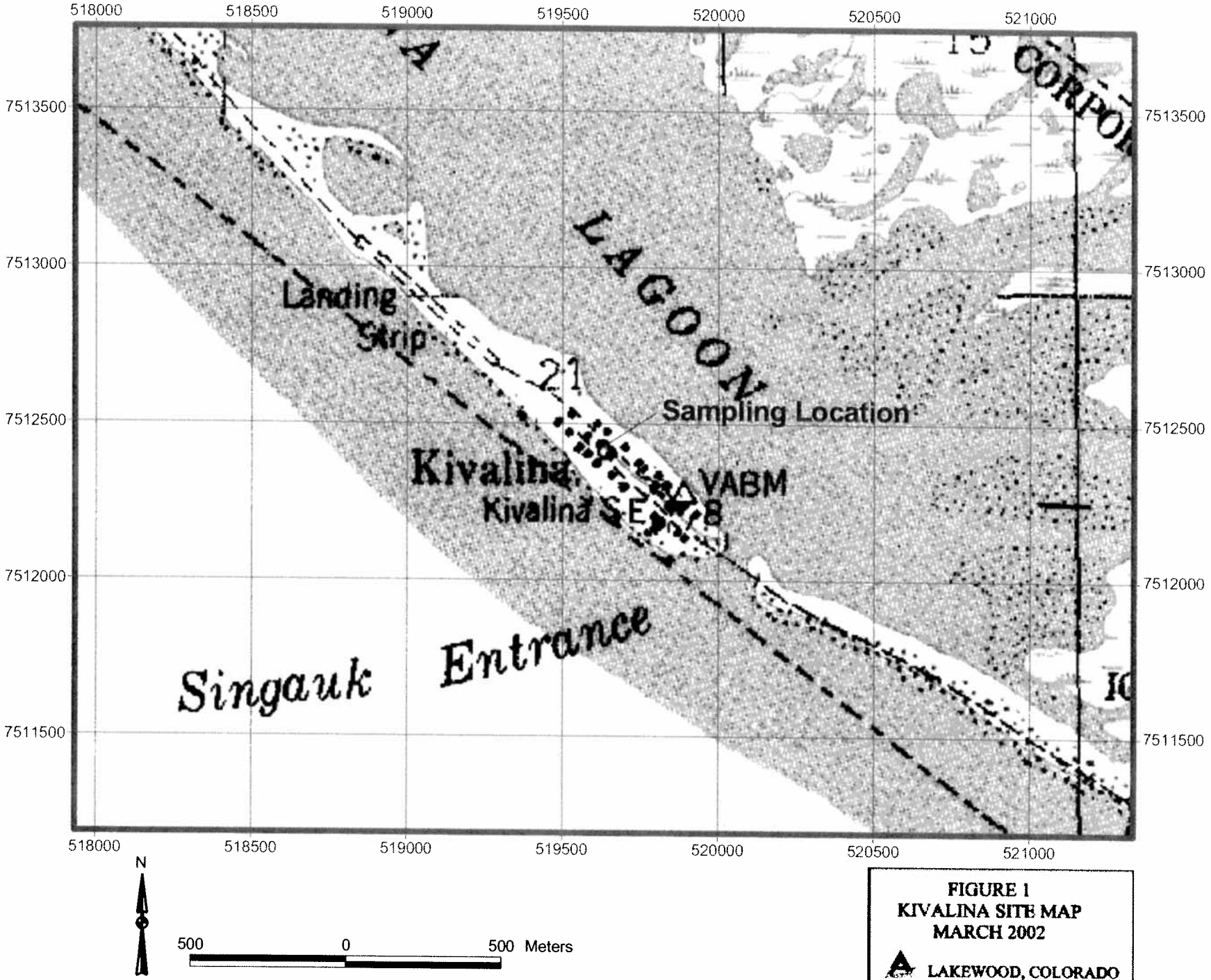


FIGURE 1
KIVALINA SITE MAP
MARCH 2002

LAKEWOOD, COLORADO

1.3 Quality Control

Quality assurance, equipment calibration, and audit procedures are based on U.S. EPA guideline documentation (EPA-450/4-87-007, Ambient Monitoring Guidelines for Prevention of Significant Deterioration [PSD]; and EPA 600/R-94/038d, Quality Assurance Handbook for Air Pollution Measurements, Volume II-Ambient Air Specific Methods, Section 2.8). Calibrations of the TSP samplers were performed by project technicians. System and performance audits were performed by Hoefler Consulting Group (HCG). All calibrations and performance audits performed were within acceptance criteria. The quality assurance on the lead analysis of the filters was performed by CES and Chester Labnet.

The data recovery rate for purposes of determining lead impact was 88 percent. The data loss was due to a combination of monitoring equipment and power malfunctions. The filter exchange was also problematic, and seven filters were exposed for more than 24 hours during the sampling period.

SECTION 2

LEAD SUMMARY

The lead data for the year are presented in Table 2 and Figure 2. The average lead concentration for the period was 0.00574 $\mu g/m^3$, which is well below the federal and Alaska State lead standards (primary and secondary) of 1.5 $\mu g/m^3$. The highest quarterly average was recorded during the summer months, July 1 through September 30, 2004, and was 0.00788 $\mu g/m^3$, which is still 200 times less than the 1.5 $\mu g/m^3$ standard. The winter quarter, January 1 through March 31, 2004, had the lowest quarterly average of 0.00390 $\mu g/m^3$.

Table 2: Lead Data
October 1, 2003 - September 30, 2004

Sampling Date	Lead Value µg/m³
10/03/03	0.00321
10/06/03	0.00188
10/09/03	
10/12/03	
10/15/03	0.00233
10/18/03	
10/21/03	
10/24/03	0.00354
10/27/03	0.00276
10/30/03	0.00268
11/02/03	
11/05/03	0.00221
11/08/03	0.02709
11/11/03	0.00732
11/14/03	0.00366
11/17/03	0.00179
11/20/03	0.00597
11/23/03	
11/26/03	0.01488
11/29/03	0.00470
12/02/03	0.00665
12/05/03	0.01091
12/08/03	0.00220
12/11/03	0.00076
12/14/03	0.00059
12/17/03	0.00033
12/20/03	
12/23/03	
12/26/03	
12/29/03	0.00192
01/01/04	0.00416
01/04/04	0.00335
01/07/04	0.00641
01/10/04	0.00120
01/13/04	0.00000
01/16/04	0.00298
01/19/04	0.00505
01/22/04	0.00756
01/25/04	0.00962

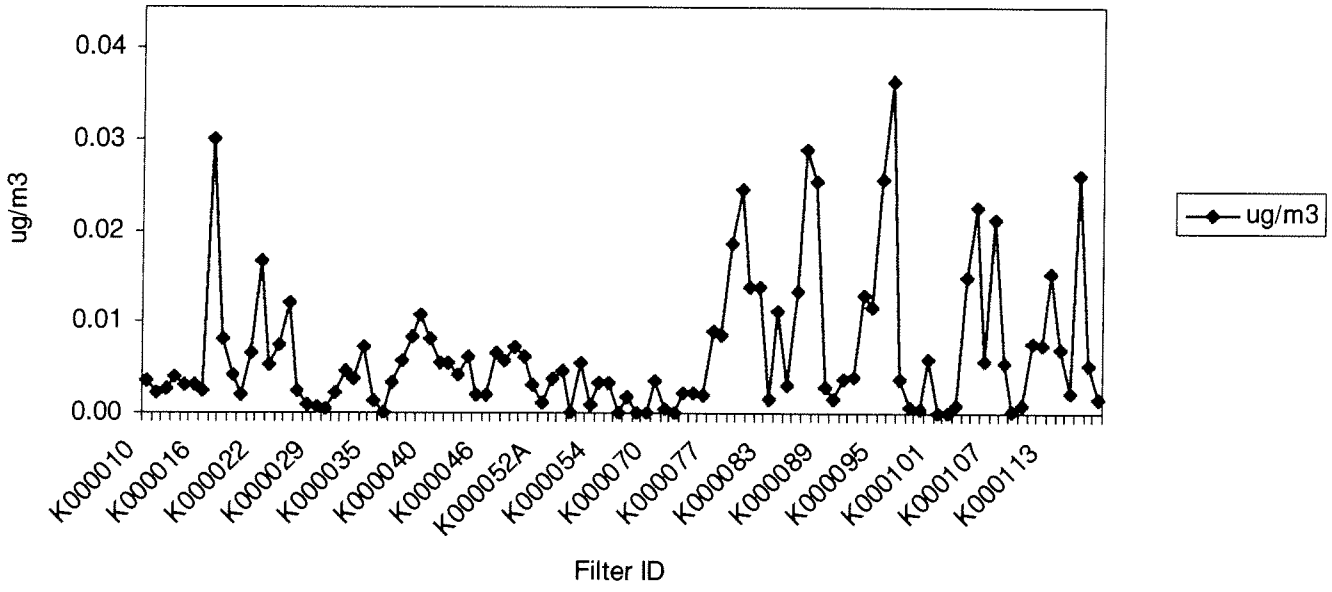
Sampling Date	Lead Value µg/m³
01/28/04	0.00738
01/31/04	0.00493
02/03/04	0.00487
02/06/04	
02/09/04	
02/12/04	0.00382
02/15/04	
02/18/04	0.00549
02/21/04	0.00169
02/24/04	0.00171
02/27/04	0.00585
03/01/04	0.00517
03/04/04	0.00648
03/07/04	0.00543
03/10/04	0.00284
03/13/04	0.00102
03/16/04	0.00333
03/19/04	0.00406
03/22/04	0.00000
03/25/04	0.00500
03/28/04	0.00086
03/31/04	0.00300
04/03/04	0.00301
04/27/04	0.00001
04/30/04	0.00154
05/06/04	0.00000
05/09/04	0.00000
05/12/04	0.00323
05/15/04	0.00039
05/18/04	0.00000
05/21/04	0.00202
05/24/04	0.00202
05/27/04	0.00184
05/30/04	0.00801
06/02/04	0.00767
06/05/04	0.01667
06/08/04	0.02206
06/11/04	0.01240
06/14/04	0.01232

Sampling Date	Lead Value µg/m³
06/17/04	0.00136
06/20/04	0.01005
06/23/04	0.00271
06/26/04	0.01203
06/29/04	0.02597
07/02/04	0.02281
07/05/04	0.00249
07/08/04	0.00137
07/11/04	0.00326
07/14/04	0.00350
07/17/04	0.01174
07/20/04	0.01042
07/23/04	0.02308
07/26/04	0.03273
07/29/04	0.00330
08/01/04	0.00065
08/04/04	0.00045
08/07/04	0.00533
08/10/04	0.00000
08/13/04	0.00000
08/16/04	0.00070
08/19/04	0.01334
08/22/04	0.02024
08/25/04	0.00504
08/28/04	0.01909
08/31/04	0.00500
09/03/04	0.00021
09/06/04	0.00079
09/09/04	0.02859
09/12/04	0.00679
09/15/04	0.01372
09/18/04	0.00628
09/21/04	0.00202
09/24/04	0.02341
09/27/04	0.00471
09/30/04	0.00143

Table 3: Quarterly Averages

Date	Quarter	Average µg/m³
October 1 - December 31, 2003	Q4	0.00501
January 1 - March 31, 2004	Q1	0.00390
April 1 - June 30, 2004	Q2	0.00618
July 1 - September 30, 2004	Q3	0.00788
Annual Average (October 1, 2003 - September 30, 2004)		0.00574

Figure 2: Lead Concentrations for Kivalina TSP Sampler
October 1, 2003 through September 30, 2004



SECTION 1

INTRODUCTION

This report summarizes the air quality data collected at the Red Dog Mine air monitoring station operated by Teck Cominco Alaska, Inc. (TCAK) for the period of October 1, 2003, through September 30, 2004. Monitoring was performed in accordance with the DEC-Settlement Agreement ADEC #00-354-84-214. The relevant monitoring guidelines include: *Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II: Ambient Air Specific Methods (EPA/500/R-94/036b April 1994); 40CFR Part 50, Sec 50.12 to Appendix G, EPA Compendium Method IO-3.3 EPA 625/R-96/010a;* and *Village Air Monitoring Quality Assurance Project Plan Noatak, Alaska, Kivalina, Alaska (January 2003).* The purpose of the monitoring is to determine the lead levels of the fugitive dust in Kivalina.

1.1 Location

The monitoring is being performed in the village of Kivalina, which is located approximately 55 miles west of the Red Dog Mine facility, and 16 miles North of the DeLong Mountain Regional Transportation System port facility (Figure 1). Kivalina is located at the tip of an 8-mile barrier reef located between the Chukchi Sea and Kivalina River at 67.72 degrees north of the equator and 164.53 degrees west of the prime meridian. Kivalina is a village consisting of about 366 people.

The sampler is located at the south end of the village, directly across from the McQueen School, near the Native Store, on the east edge of the main road. Most of the vehicular traffic consists of ATVs traveling on gravel roads. There is, to a smaller extent, some trucks and heavy machinery activity.

1.2 Program Description

The monitoring equipment consists of a blower motor, critical orifice, and support screen on which a glass fiber filter is placed. The equipment is housed in an aluminum shelter equipped with a hinged roof. Control of the sampler is via relays activated by a CR10 data logger. The data logger is equipped with a pressure transducer, which records the actual flow at two-second intervals. Additionally, a thermistor located in a radiation shield is used to continually measure the temperature.

Line power is available to operate the equipment at the station. A U.S. Robotics modem is installed at the station for remote access of sampler and data downloading.

The lead analysis is performed by Cooper Environmental Services (CES) using a Spectrace QuanX analyzer. Filters that could not be analyzed by XRF due to heavy loading were subbed out to Chester Labnet for analysis by wet chemistry.