**NWB Annual Report** **Year being reported:** 2009

**License No:** 2BE-GOO0510 **Issued Date:** March 11, 2005
**Expiry Date:** March 31, 2010

**Project Name:** Goose Lake Project

**Licensee:** Sabina Gold & Silver Corp.

**Mailing Address:** 930 West 1st Street, Suite 202
North Vancouver, BC V7P 3N4

**Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):**

**General Background Information on the Project (*optional):**

The Goose Lake Project is located approximately 160 km south of the hamlet of Bathurst Inlet, with the camp located at 65°32'40" N, 107°27'35" W.

**Licence Requirements: the licensee must provide the following information in accodance with**

Part B

**A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.**

| | | |
|---|---|---|
| Water Source(s): | Camp Lake for domestic use; lakes proximal to drilling | |
| Water Quantity: | 155 m3/day | Total Quantity Allowable (cu.m) |
| | 3.9 m3/day | Actual Quantity Used Domestic (cu.m) |
| | | Quantity Allowable Drilling (cu.m) |
| | 45.4 m3/day | Total Quantity Used Drilling (cu.m) |

Waste Management and/or Disposal

- [x] Solid Waste Disposal
- [x] Sewage
- [x] Drill Waste
- [x] Greywater
- [x] Hazardous
- [ ] Other:

Additional Details:

See attached discussion.

**A list of unauthorized discharges and a summary of follow-up actions taken.**

Spill No.: (as reported to the Spill Hot-line)

Date of Spill:

Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Two incidents occurred at the Goose Lake property in 2009. Between July 18-20, a series of small spills occurred while refuelling a Turbo Beaver at the dock at Goose Lake. This plane was under contract with the INAC Inspector and they reported the fuel spill to the Spill Reporting Line. Sabina has not been provided a copy of the report.

On August 27 a drum fell approximately 100 feet while being slung by helicopter to the west of camp. Approximately 70L of P-50 was spilled onto the ground. A copy of the report to the Spill Reporting Line detailing the incident and mitigation measures taken is appended.

**Revisions to the Spill Contingency Plan**

Other: (see additional details)

Additional Details:

An updated Spill Contingency Plan for the 2010 season was submitted with the application for renewal on December 3, 2009.

**Revisions to the Abandonment and Restoration Plan**

Other: (see additional details)

Additional Details:

An updated Abandonment and Restoration Plan for the 2010 season was submitted with the application for renewal on December 3, 2009.

**Progressive Reclamation Work Undertaken**

Additional Details (i.e., work completed and future works proposed)

Two of the four exploration trenches adjacent to camp were drained, backfilled and recontoured in August. The fourth trench will be reclaimed during the 2010 season; trench #3 will remain for use as a cuttings sump. See attached photos and discussion.

**Results of the Monitoring Program including:**

**The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;**

Details attached

Additional Details:

**The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;**

Details attached

Additional Details:

**Results of any additional sampling and/or analysis that was requested by an Inspector**

Additional sampling requested by an Inspector or the Board (See below)

Additional Details: (date of request, analysis of results, data attached, etc)

In preparation for reclamation of the exploration trenches adjacent to camp, samples of the contained meltwater were collected and analyzed for major and trace metals, anions, nutrients and routine water chemistry. The water was subsequently discharged onto the tundra prior to backfilling the trenches. Results of the analyses are appended.

**Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.**

No additional sampling requested by an Inspector or the Board

Additional Details: (Attached or provided below)

**Any responses or follow-up actions on inspection/compliance reports**

No inspection and/or compliance report issued by INAC

Additional Details: (Dates of Report, Follow-up by the Licensee)

If a report is issued, it will be appended to this report as an addendum.

**Any additional comments or information for the Board to consider**

| | | |
|---|---|---|
| **Date Submitted:** | March 31, 2010 | |
| **Submitted/Prepared by:** | Dan Russell, P.Geo. | |
| **Contact Information:** | **Tel:** | 604-998-4175 |
| | **Fax:** | |
| | **email:** | drussell@sabinagoldsilver.com |

## GPS Coordinates for water sources utilized

| Source Description | Latitude | | | Longitude | | |
|---|---|---|---|---|---|---|
| | Deg ° | Min ' | Sec " | Deg ° | Min ' | Sec " |
| Camp water | 65 | 32 | 42 | 106 | 25 | 29 |
| Drilling water sources | 65 | 34 | 18 | 106 | 32 | 51 |
| | 65 | 34 | 8 | 106 | 32 | 45 |
| | 65 | 34 | 6 | 106 | 32 | 56 |
| | 65 | 32 | 54 | 106 | 27 | 24 |
| | 65 | 32 | 41 | 106 | 27 | 53 |
| | 65 | 32 | 0 | 106 | 27 | 14 |
| | 65 | 32 | 8 | 106 | 24 | 47 |
| | 65 | 32 | 39 | 106 | 25 | 12 |
| | 65 | 32 | 32 | 106 | 26 | 51 |

## GPS Locations of areas of waste disposal

| Location Description (type) | Latitude | | | Longitude | | |
|---|---|---|---|---|---|---|
| | Deg ° | Min ' | Sec " | Deg ° | Min ' | Sec " |
| Camp greywater | 65 | 32 | 39 | 106 | 25 | 39 |
| Cuttings sump | 65 | 32 | 30 | 106 | 25 | 35 |
| Incinerator | 65 | 32 | 37 | 106 | 25 | 29 |
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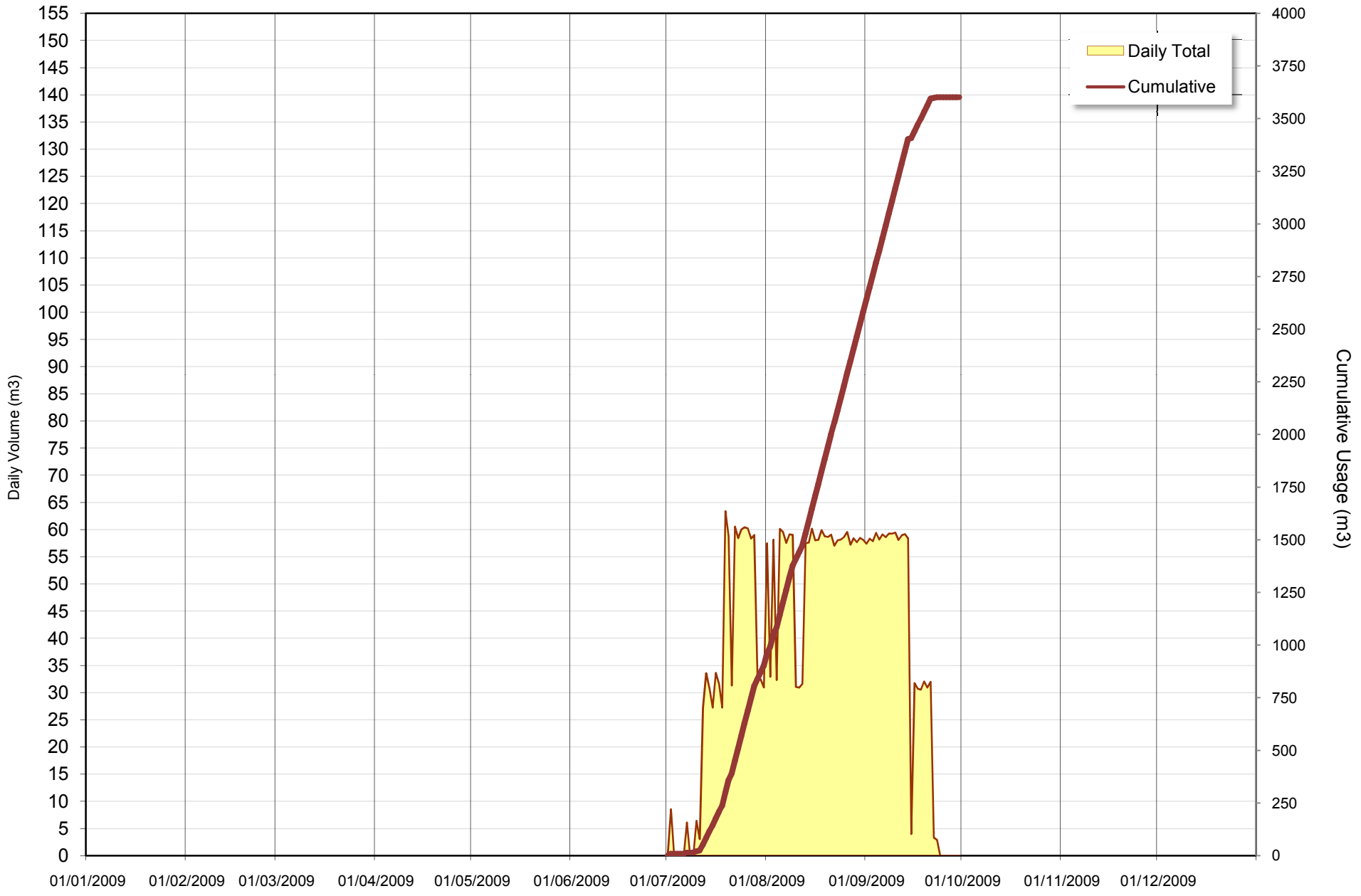
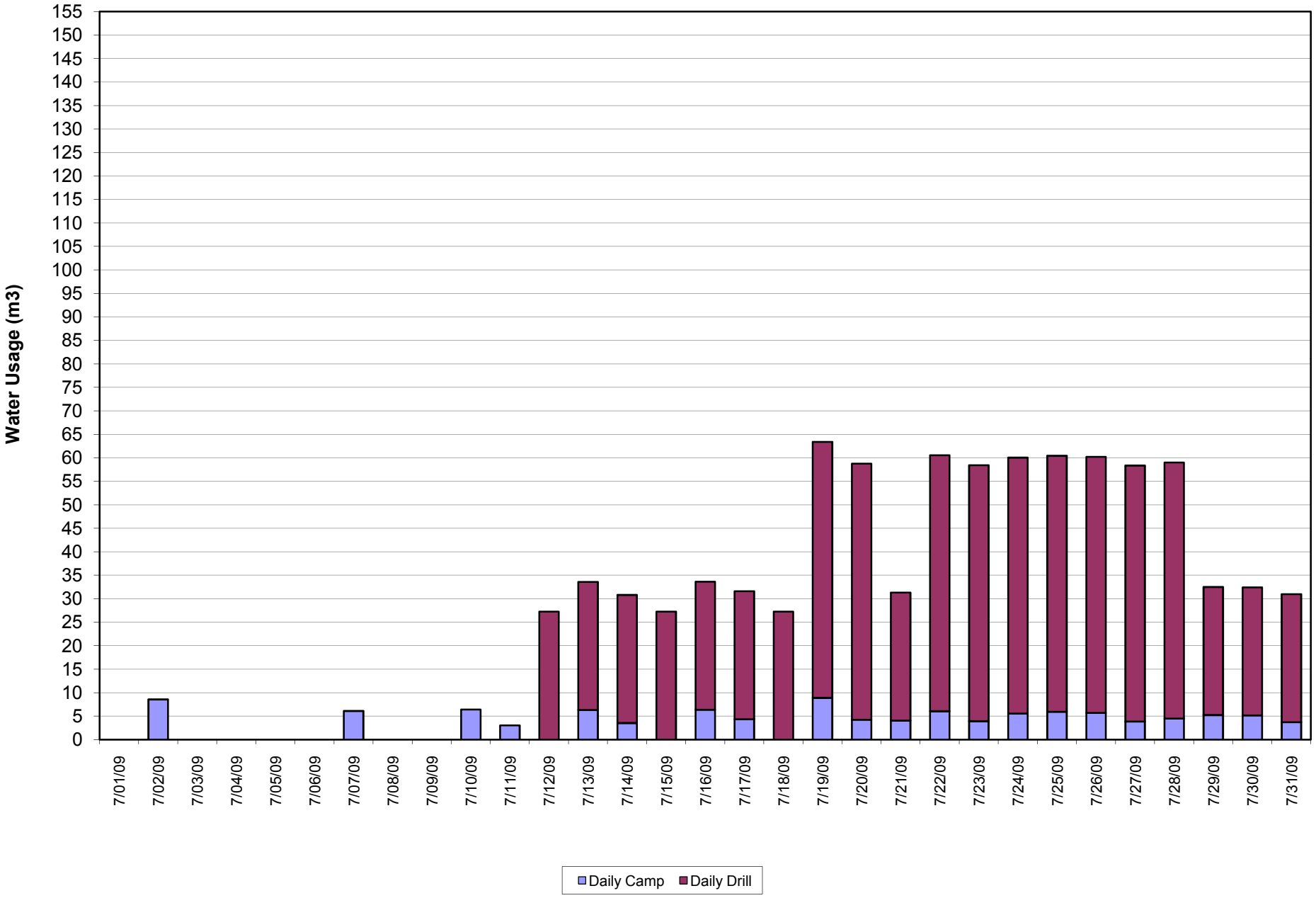
| | | *Red shaded cells indicate periods of camp closure.* | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ***Date*** | ***Drills*** | ***Reading (m3)*** | ***Daily Camp*** | ***Daily Drill*** | ***Daily Total*** | ***Cumulative*** | ***Pop'n*** | ***Daily usage/person*** |
| July 1, 2009 | 0 | 96.51 | 0.00 | 0.00 | 0.00 | 0.00 | 0 | 0.00 |
| July 2, 2009 | 0 | 105.07 | 8.56 | 0.00 | 8.56 | 8.56 | 6 | 1.43 |
| July 3, 2009 | 0 | 105.07 | 0.00 | 0.00 | 0.00 | 8.56 | 6 | 0.00 |
| July 4, 2009 | 0 | 105.07 | 0.00 | 0.00 | 0.00 | 8.56 | 6 | 0.00 |
| July 5, 2009 | 0 | 105.07 | 0.00 | 0.00 | 0.00 | 8.56 | 6 | 0.00 |
| July 6, 2009 | 0 | 105.07 | 0.00 | 0.00 | 0.00 | 8.56 | 11 | 0.00 |
| July 7, 2009 | 0 | 111.18 | 6.11 | 0.00 | 6.11 | 14.67 | 11 | 0.56 |
| July 8, 2009 | 0 | 111.18 | 0.00 | 0.00 | 0.00 | 14.67 | 11 | 0.00 |
| July 9, 2009 | 0 | 111.18 | 0.00 | 0.00 | 0.00 | 14.67 | 19 | 0.00 |
| July 10, 2009 | 0 | 117.59 | 6.41 | 0.00 | 6.41 | 21.08 | 19 | 0.34 |
| July 11, 2009 | 0 | 120.63 | 3.04 | 0.00 | 3.04 | 24.12 | 19 | 0.16 |
| July 12, 2009 | 1 | 120.63 | 0.00 | 27.25 | 27.25 | 51.37 | 19 | 0.00 |
| July 13, 2009 | 1 | 126.96 | 6.33 | 27.25 | 33.58 | 84.95 | 23 | 0.28 |
| July 14, 2009 | 1 | 130.51 | 3.55 | 27.25 | 30.80 | 115.76 | 23 | 0.15 |
| July 15, 2009 | 1 | 130.51 | 0.00 | 27.25 | 27.25 | 143.01 | 25 | 0.00 |
| July 16, 2009 | 1 | 136.89 | 6.38 | 27.25 | 33.63 | 176.64 | 33 | 0.19 |
| July 17, 2009 | 1 | 141.24 | 4.35 | 27.25 | 31.60 | 208.24 | 35 | 0.12 |
| July 18, 2009 | 1 | 141.24 | 0.00 | 27.25 | 27.25 | 235.49 | 38 | 0.00 |
| July 19, 2009 | 2 | 150.14 | 8.90 | 54.50 | 63.40 | 298.90 | 36 | 0.25 |
| July 20, 2009 | 2 | 154.40 | 4.26 | 54.50 | 58.76 | 357.66 | 34.5 | 0.12 |
| July 21, 2009 | 1 | 158.46 | 4.06 | 27.25 | 31.31 | 388.97 | 35 | 0.12 |
| July 22, 2009 | 2 | 164.52 | 6.06 | 54.50 | 60.56 | 449.54 | 34 | 0.18 |
| July 23, 2009 | 2 | 168.45 | 3.93 | 54.50 | 58.43 | 507.97 | 34 | 0.12 |
| July 24, 2009 | 2 | 173.99 | 5.54 | 54.50 | 60.04 | 568.02 | 35.5 | 0.16 |
| July 25, 2009 | 2 | 179.92 | 5.93 | 54.50 | 60.43 | 628.45 | 36 | 0.16 |
| July 26, 2009 | 2 | 185.62 | 5.70 | 54.50 | 60.20 | 688.65 | 33 | 0.17 |
| July 27, 2009 | 2 | 189.47 | 3.85 | 54.50 | 58.35 | 747.01 | 33 | 0.12 |
| July 28, 2009 | 2 | 193.96 | 4.49 | 54.50 | 58.99 | 806.00 | 33 | 0.14 |
| July 29, 2009 | 1 | 199.20 | 5.24 | 27.25 | 32.49 | 838.49 | 32.5 | 0.16 |
| July 30, 2009 | 1 | 204.37 | 5.17 | 27.25 | 32.42 | 870.92 | 32.5 | 0.16 |
| July 31, 2009 | 1 | 208.08 | 3.71 | 27.25 | 30.96 | 901.88 | 31 | 0.12 |
| August 1, 2009 | 2 | 211.05 | 2.97 | 54.50 | 57.47 | 959.35 | 31 | 0.10 |
| August 2, 2009 | 1 | 216.71 | 5.66 | 27.25 | 32.91 | 992.26 | 33 | 0.17 |
| August 3, 2009 | 2 | 220.37 | 3.66 | 54.50 | 58.16 | 1050.43 | 33 | 0.11 |
| August 4, 2009 | 1 | 225.45 | 5.08 | 27.25 | 32.33 | 1082.76 | 33 | 0.15 |
| August 5, 2009 | 2 | 231.08 | 5.63 | 54.50 | 60.13 | 1142.89 | 30 | 0.19 |
| August 6, 2009 | 2 | 236.13 | 5.05 | 54.50 | 59.55 | 1202.45 | 30 | 0.17 |
| August 7, 2009 | 2 | 239.18 | 3.05 | 54.50 | 57.55 | 1260.00 | 24 | 0.13 |
| August 8, 2009 | 2 | 243.81 | 4.63 | 54.50 | 59.13 | 1319.14 | 24 | 0.19 |
| August 9, 2009 | 2 | 248.36 | 4.55 | 54.50 | 59.05 | 1378.19 | 24 | 0.19 |
| August 10, 2009 | 1 | 252.15 | 3.79 | 27.25 | 31.04 | 1409.23 | 24 | 0.16 |
| August 11, 2009 | 1 | 255.81 | 3.66 | 27.25 | 30.91 | 1440.14 | 24 | 0.15 |
| August 12, 2009 | 1 | 260.18 | 4.37 | 27.25 | 31.62 | 1471.77 | 25 | 0.17 |
| August 13, 2009 | 2 | 263.17 | 2.99 | 54.50 | 57.49 | 1529.26 | 25 | 0.12 |
| August 14, 2009 | 2 | 266.29 | 3.12 | 54.50 | 57.62 | 1586.88 | 25 | 0.12 |
| August 15, 2009 | 2 | 271.95 | 5.66 | 54.50 | 60.16 | 1647.05 | 25 | 0.23 |
| August 16, 2009 | 2 | 275.47 | 3.52 | 54.50 | 58.02 | 1705.07 | 25 | 0.14 |
| August 17, 2009 | 2 | 279.08 | 3.61 | 54.50 | 58.11 | 1763.19 | 25 | 0.14 |
| August 18, 2009 | 2 | 284.47 | 5.39 | 54.50 | 59.89 | 1823.08 | 25 | 0.22 |
| August 19, 2009 | 2 | 288.72 | 4.25 | 54.50 | 58.75 | 1881.83 | 25 | 0.17 |
| August 20, 2009 | 2 | 292.87 | 4.15 | 54.50 | 58.65 | 1940.49 | 23 | 0.18 |
| August 21, 2009 | 2 | 297.45 | 4.58 | 54.50 | 59.08 | 1999.57 | 23 | 0.20 |
| August 22, 2009 | 2 | 300.00 | 2.55 | 54.50 | 57.05 | 2056.63 | 23 | 0.11 |
| August 23, 2009 | 2 | 303.54 | 3.54 | 54.50 | 58.04 | 2114.67 | 23 | 0.15 |
| August 24, 2009 | 2 | 307.21 | 3.67 | 54.50 | 58.17 | 2172.84 | 25 | 0.15 |
| August 25, 2009 | 2 | 311.34 | 4.13 | 54.50 | 58.63 | 2231.48 | 25 | 0.17 |
| August 26, 2009 | 2 | 316.40 | 5.06 | 54.50 | 59.56 | 2291.04 | 27 | 0.19 |
| August 27, 2009 | 2 | 319.12 | 2.72 | 54.50 | 57.22 | 2348.27 | 27 | 0.10 |
| August 28, 2009 | 2 | 323.02 | 3.90 | 54.50 | 58.40 | 2406.67 | 26 | 0.15 |
| August 29, 2009 | 2 | 326.19 | 3.17 | 54.50 | 57.67 | 2464.34 | 27 | 0.12 |
| August 30, 2009 | 2 | 330.16 | 3.97 | 54.50 | 58.47 | 2522.82 | 27 | 0.15 |
| August 31, 2009 | 2 | 333.77 | 3.61 | 54.50 | 58.11 | 2580.93 | 27 | 0.13 |

| | | *Red shaded cells indicate periods of camp closure.* | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ***Date*** | ***Drills*** | ***Reading (m3)*** | ***Daily Camp*** | ***Daily Drill*** | ***Daily Total*** | ***Cumulative*** | ***Pop'n*** | ***Daily usage/person*** |
| September 1, 2009 | 2 | 336.68 | 2.91 | 54.50 | 57.41 | 2638.35 | 27 | 0.11 |
| September 2, 2009 | 2 | 340.52 | 3.84 | 54.50 | 58.34 | 2696.69 | 29 | 0.13 |
| September 3, 2009 | 2 | 343.88 | 3.36 | 54.50 | 57.86 | 2754.55 | 29 | 0.12 |
| September 4, 2009 | 2 | 348.78 | 4.90 | 54.50 | 59.40 | 2813.96 | 27 | 0.18 |
| September 5, 2009 | 2 | 352.44 | 3.66 | 54.50 | 58.16 | 2872.12 | 27 | 0.14 |
| September 6, 2009 | 2 | 357.06 | 4.62 | 54.50 | 59.12 | 2931.25 | 27 | 0.17 |
| September 7, 2009 | 2 | 361.18 | 4.12 | 54.50 | 58.62 | 2989.87 | 27 | 0.15 |
| September 8, 2009 | 2 | 365.95 | 4.77 | 54.50 | 59.27 | 3049.14 | 28 | 0.17 |
| September 9, 2009 | 2 | 370.71 | 4.76 | 54.50 | 59.26 | 3108.41 | 41 | 0.12 |
| September 10, 2009 | 2 | 375.65 | 4.94 | 54.50 | 59.44 | 3167.85 | 27 | 0.18 |
| September 11, 2009 | 2 | 379.23 | 3.58 | 54.50 | 58.08 | 3225.94 | 27 | 0.13 |
| September 12, 2009 | 2 | 383.69 | 4.46 | 54.50 | 58.96 | 3284.90 | 27 | 0.17 |
| September 13, 2009 | 2 | 388.35 | 4.66 | 54.50 | 59.16 | 3344.06 | 27 | 0.17 |
| September 14, 2009 | 2 | 392.19 | 3.84 | 54.50 | 58.34 | 3402.41 | 27 | 0.14 |
| September 15, 2009 | 0 | 396.16 | 3.97 | 0.00 | 3.97 | 3406.38 | 22 | 0.18 |
| September 16, 2009 | 1 | 400.66 | 4.50 | 27.25 | 31.75 | 3438.13 | 19 | 0.24 |
| September 17, 2009 | 1 | 404.12 | 3.46 | 27.25 | 30.71 | 3468.84 | 19 | 0.18 |
| September 18, 2009 | 1 | 407.42 | 3.30 | 27.25 | 30.55 | 3499.39 | 19 | 0.17 |
| September 19, 2009 | 1 | 412.23 | 4.81 | 27.25 | 32.06 | 3531.46 | 16 | 0.30 |
| September 20, 2009 | 1 | 415.90 | 3.67 | 27.25 | 30.92 | 3562.38 | 18 | 0.20 |
| September 21, 2009 | 1 | 420.64 | 4.74 | 27.25 | 31.99 | 3594.37 | 18 | 0.26 |
| September 22, 2009 | 0 | 423.97 | 3.33 | 0.00 | 3.33 | 3597.70 | 12 | 0.28 |
| September 23, 2009 | 0 | 426.89 | 2.92 | 0.00 | 2.92 | 3600.62 | 6 | 0.49 |
| September 24, 2009 | 0 | 426.89 | 0.00 | 0.00 | 0.00 | 3600.62 | 6 | 0.00 |
| September 25, 2009 | 0 | 426.89 | 0.00 | 0.00 | 0.00 | 3600.62 | 0 | 0.00 |
| September 26, 2009 | 0 | 426.89 | 0.00 | 0.00 | 0.00 | 3600.62 | 0 | 0.00 |
| September 27, 2009 | 0 | 426.89 | 0.00 | 0.00 | 0.00 | 3600.62 | 0 | 0.00 |
| September 28, 2009 | 0 | 426.89 | 0.00 | 0.00 | 0.00 | 3600.62 | 0 | 0.00 |
| September 29, 2009 | 0 | 426.89 | 0.00 | 0.00 | 0.00 | 3600.62 | 0 | 0.00 |
| September 30, 2009 | 0 | 426.89 | 0.00 | 0.00 | 0.00 | 3600.62 | 0 | 0.00 |

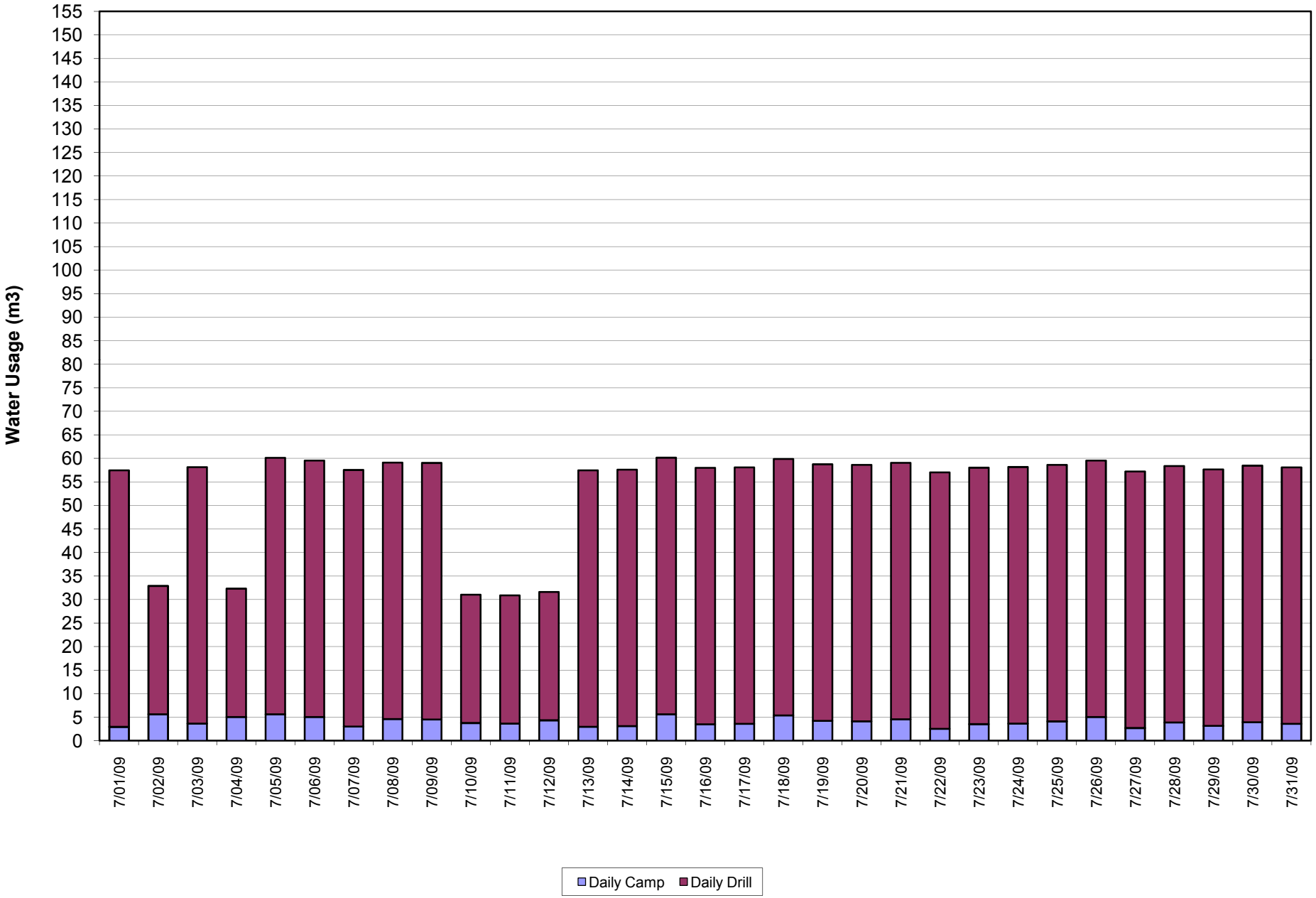
# 2BE-GOO0210 - Total Usage 2009



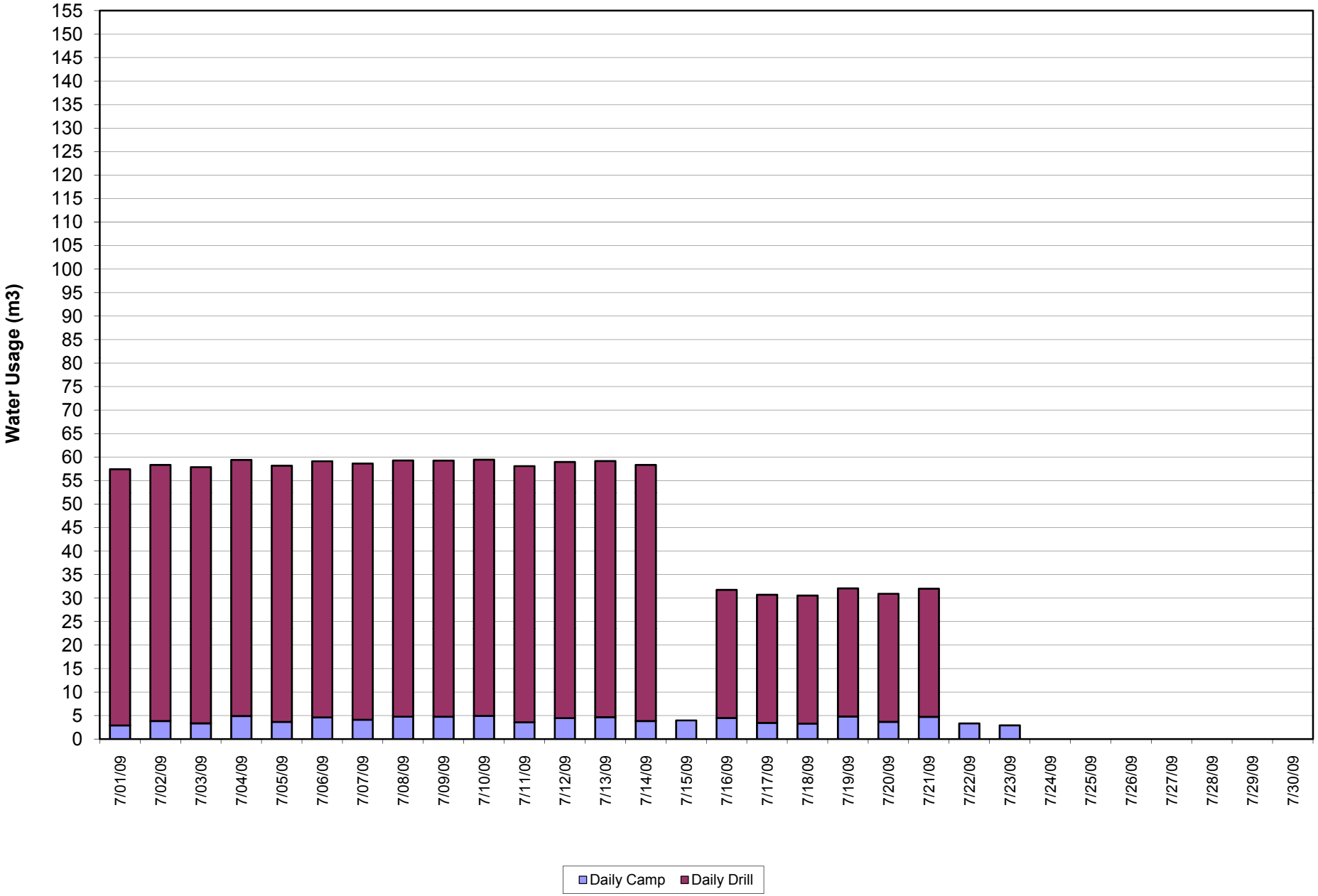
# 2BE-GOO0210 Daily Water Usage- July 2009

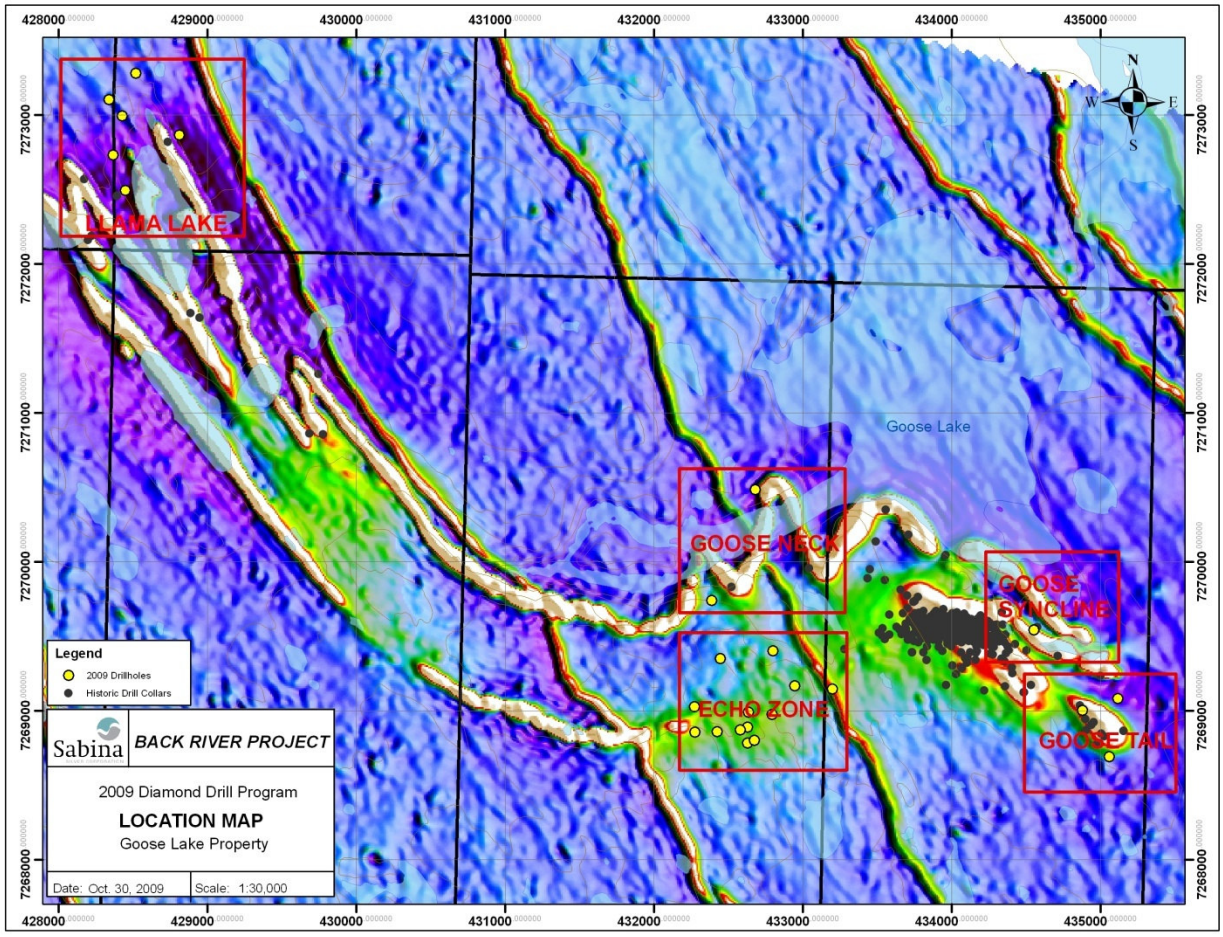


# 2BE-GOO0210 Daily Water Usage- August 2009



# 2BE-GOO0210 Daily Water Usage- September 2009




428000
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7268000
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LLAMA LAKE
Goose Lake
GOOSE NECK
GOOSE SYNCLINE
ECHO ZONE
GOOSE TAIL
Legend
2009 Drillholes
Historic Drill Collars
Sabina
BACK RIVER PROJECT
2009 Diamond Drill Program
LOCATION MAP
Goose Lake Property
Date: Oct. 30, 2009
Scale: 1:30,000

## Sabina Silver Corporation — Back River Spill Report

This form is to be used for internal documentation of spills of any petroleum product, chemical, ethylene glycol (antifreeze), or other hazardous material in quantities of less than 25L. For quantities in excess of 25L, spills MUST be reported to the NWT/NU 24-hour spill reporting line (867-920-8130), and the appropriate form filled in. ALL spills (regardless of quantity) into a water body must be reported to the spill reporting line.

| ***Report Date and Time*:** | ***Spill Date and Time*:** |
|---|---|
| 8/28/2009 15:00 | ☒ Spill occurred 8/27/2009 14:30<br>☐ Spill observed |
| ***Spill Location*:**<br>☒ Goose Lake ☐ Other (e.g. Drill, Boulder Pond)<br>☐ George Lake | ***Describe Location*:**<br>On ridge approx. 500 NW of camp |
| ***Coordinates (Lat/Long or UTM)*:** 433488E, 7269708N; NAD83 UTM Zone 13 | |

| ***Product(s) Spilled*:** | Jet fuel | Diesel (P50) | Gasoline | AvGas | Oil (type) | Antifreeze | Other (describe) |
|---|---|---|---|---|---|---|---|
| ***Quantity (L or kg)*:** | | 70 L | | | | | |

***Personnel Involved:*** ☐ Sabina Employee ☒ Contractor ☐ Visitor ☐ Other

***Cause of Spill*:**
The helicopter was transporting 4 drums of diesel fuel using barrel slings during a drill move. Approximately half way into the one mile flight, one partially full drum fell 100 feet onto a rocky ridge below. The drum broke open upon impact and the entire contents were emptied. The reason that it became disengaged from the barrel slings is presumed to be due to the fact that it was only partially full, and didn't have the necessary weight required to fully engage the barrel clasps on the sling. The barrel slings were examined by the pilot and engineer and deemed to be in normal working condition. An additional factor may have been that the drum was also located on the outside of the four drum sling, resulting in greater turbulence caused by the air flow around it.

***Containment/Cleanup Measures Taken*:**
The size of the contaminated area was approximately 27 square metres. It was located in an area of boulders and sand with no waterways close by and only limited vegetation. The decision was made to burn off the fuel in situ, and it was set alight approximately one hour after the spill occurred.

***Factors Affecting Spill or Recovery (weather, snow, ground conditions, etc.)*:**
Due to the limited soil cover and rocky nature of the area, it was not practical to remove the contaminated ground.

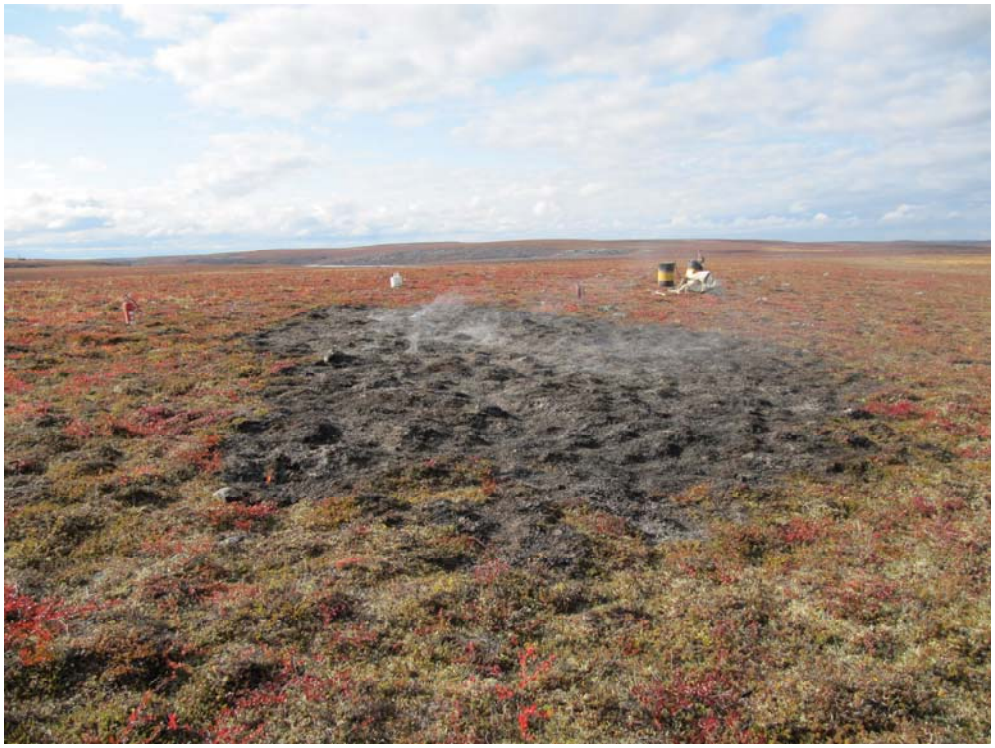
***Additional Action Required*:**
The area will be re-examined for any further traces of fuel. If found, the contaminated areas will be cleaned by using absorbent pads, removing the affected ground, or by additional burning if deemed necessary.

***Additional Comments*:**
The drillers and pilot have been informed that all partial drums of fuel are to be moved using a net as opposed to barrel slings. This should be adequate to prevent this sort of spill from occurring in the future.

| | ***Name*** | ***Employer*** | ***Signature*** |
|---|---|---|---|
| ***Reported by*:** | Cam Bartsch | Sabina | |
| ***Reported to*:** | Lorne Keith | Sabina | |

***The discoloured tundra outlining the area of the spill shortly after it occurred.***

***The burn in progress.***



***Spill area post burn.***

# NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

**NT-NU 24-HOUR SPILL REPORT LINE**
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

**REPORT LINE USE ONLY**

| | | | | |
|---|---|---|---|---|
| A | REPORT DATE: MONTH – DAY – YEAR<br>**Aug-28-2009** | REPORT TIME<br>**08:00** | [X] ORIGINAL SPILL REPORT,<br>OR<br>☐ UPDATE # _____<br>TO THE ORIGINAL SPILL REPORT | REPORT NUMBER<br>____-____ |
| B | OCCURRENCE DATE: MONTH – DAY – YEAR<br>**Aug-27-2009** | OCCURRENCE TIME<br>**14:30** | | |

| | | |
|---|---|---|
| C | LAND USE PERMIT NUMBER (IF APPLICABLE)<br>**N2006C0008** | WATER LICENCE NUMBER (IF APPLICABLE)<br>**2BE-GOO0510** |
| D | GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION<br>**Goose Lake Camp** | REGION<br>☐ NWT [X] NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN |
| E | LATITUDE<br>DEGREES **65** MINUTES **32** SECONDS **42** | LONGITUDE<br>DEGREES **106** MINUTES **25** SECONDS **43** |
| F | RESPONSIBLE PARTY OR VESSEL NAME<br>**Helicopter - C-FARE** | RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION<br>**Northern Air Support- 6285 Airport Way, Kelowna, BC V1V 1S1** |
| G | ANY CONTRACTOR INVOLVED<br>**Bradley Bros. Ltd.** | CONTRACTOR ADDRESS OR OFFICE LOCATION<br>**270 Industrial Blvd. Rouyn-Noranda, Quebec J9X 6T3** |

| | | | |
|---|---|---|---|
| H | PRODUCT SPILLED<br>**Diesel Fuel (P-50)** | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES<br>**approx. 70 litres** | U.N. NUMBER |
| | SECOND PRODUCT SPILLED (IF APPLICABLE) | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES | U.N. NUMBER |
| I | SPILL SOURCE<br>**Partial 45 gal. drum** | SPILL CAUSE<br>**Dropped while slinging with heli** | AREA OF CONTAMINATION IN SQUARE METRES<br>**27** |
| J | FACTORS AFFECTING SPILL OR RECOVERY<br>**Rocky/sandy soil cover** | DESCRIBE ANY ASSISTANCE REQUIRED | HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT<br>**none** |

K — ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS

**The partial drum containing approx. 70 litres of diesel was one of four drums being transported approx. 1 mile to a new drill setup. The drum became detached from the barrel slings being used to transport fuel by the helicopter, likely due to the combination of the reduced weight of the drum due to the level of fuel inside, and the turbulence caused by the slowing of the helicopter. The drum fell approximately 100 feet to the ground before landing on a rocky ridge just west of Goose Camp. The top of the drum burst open upon impact, releasing fuel over an approximate area of 27 sq. meters, with the bulk of it restricted to an area approx. 1m x 1m. There is limited soil and vegetation in the area, and no waterways are located nearby. The decision was made by camp personnel to burn the fuel off and it was incinerated approximately 1 hour after the spill occurred.**
**A decision was also made that all partial drums of fuel will now be transported by helicopter with the use of a net, rather than the use of barrel slings.**

| | | | | | |
|---|---|---|---|---|---|
| L | REPORTED TO SPILL LINE BY<br>**Cameron Bartsch** | POSITION<br>**Sr. Project Geologist** | EMPLOYER<br>**Sabina Silver** | LOCATION CALLING FROM<br>**Goose lake** | TELEPHONE<br>**604-759-0624** |
| M | ANY ALTERNATE CONTACT<br>**Doug Cater** | POSITION<br>**Project Manager** | EMPLOYER<br>**Sabina Silver** | ALTERNATE CONTACT<br>LOCATION | ALTERNATE TELEPHONE<br>**604-998-4175** |

**REPORT LINE USE ONLY**

| | | | | | |
|---|---|---|---|---|---|
| N | RECEIVED AT SPILL LINE BY | POSITION<br>STATION OPERATOR | EMPLOYER | LOCATION CALLED<br>YELLOWKNIFE, NT | REPORT LINE NUMBER<br>(867) 920-8130 |

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

| AGENCY | CONTACT NAME | CONTACT TIME | REMARKS |
|---|---|---|---|
| LEAD AGENCY | | | |
| FIRST SUPPORT AGENCY | | | |
| SECOND SUPPORT AGENCY | | | |
| THIRD SUPPORT AGENCY | | | |

**Camp Water Use**

Water used in the camp is taken from Goose Lake with the water source adjacent to the dock, approximately 30 feet offshore in 6-8 feet of water. The intake hose is equipped with a screen to prevent entrapment of fish. Drinking water is pumped into a holding pool located in a heated shed adjacent to the kitchen and dry facility. Any larger particles will settle to the bottom of the pool. Filtration is then used to remove smaller suspended material. Final treatment consists of UV and chlorination.

The holding pool for camp water will store up to 11 $m^3$ of water. The pool is normally filled on a daily basis (sometimes every other day), though the entire tank is not usually drawn down.

Up to 5 $m^3$ will be stored in a plastic tank in the core processing facility at Goose Lake camp for on-demand use with the core splitting saws. Refilling of this tank is anticipated to occur every few days when the saws are in use.

Pacto type toilets were used to deal with sewage with the resulting waste incinerated daily.

Greywater from the kitchen and dry facilities, is plumbed to a common line which discharges behind the camp, well away from Goose Lake. The area is mostly bedrock and shallow soil, precluding the digging of a suitable sump. The discharge area is lined with stones to disrupt the flow of flow of water and allow larger particles to come out of suspension, as well as to disperse the flow of water and help alleviate erosion of the topsoil. The greywater percolates into the ground after leaving the discharge point.

**Camp Associated Solid Waste Disposal Activities**

Solid waste in camp is separated at source. Burnable solid waste consisting mainly of paper, food scraps, small wood pieces and plastic packaging is incinerated in a diesel fuel, dual stage forced air commercial incinerator.

Much of the final solid waste generated in camp consists of ashes containing unburnable metallic residue that accumulates in the incinerator. The ashes from the incinerator are placed in empty metal fuel drums, sealed and flown out to Yellowknife for subsequent disposal at a hazardous waste facility near Onaway, Alberta, operated by E.I.L. Environmental Services.

Tin cans, aerosol cans, glass containers and other non-burnable trash produced by camp operations are flown out to Yellowknife for disposal in the Yellowknife dump. Aluminum cans, plastic water bottles and Gatorade bottles are separated and sent back to Yellowknife for recycling.

Sabina paid a transport company (KBL Environmental Ltd.) to ship the drums of solid waste to the E.I.L. Environmental facility for disposal, including empty fuel drums, which are crushed on site at Goose Lake.

**Drilling Associated Water Use**

The drills in service during 2009 were supplied by helicopter- portable water pumps, equipped with secondary containment drip pans. The intake hose for each of the pumps was equipped with a screen. A pressure hose leading from the pump to the drill supplied water.

The pumps for the drills would operate continuously as long as the drills were drilling, but were shut down for drill moves. Drill moves typically took about 12 – 24 hours depending on weather and the time of day that the drill was shut down. During drilling, the water was stored in a 500-gallon, trough-type surge tank at the drill where it was then pressurized by a second pump and pumped down the drill hole to cool the drill bit and remove cuttings. Drill water was re-circulated through the hole and new water was added on an as needed basis to replace any lost through the sludge separation process and to fill the drill hole. Most of the water diverted from the lake and pumped to the drill was not used at the drill site and was allowed to return to the lake, or for land based drilling, the water was allowed to percolate into the soil.

Sludge from the drills was pumped into fibre mega bags, which allowed the water to percolate out while retaining the cuttings. The bags were then flown to the trench adjacent to camp which has been used as a cuttings sump for several years.

### Drilling Associated Solid Waste Disposal Activities

Drilling-associated solid waste produced in 2009 consisted of broken or damaged drill steel, various broken, used or worn out pieces of equipment, plastic lubricant containers, plastic bags, wood scraps, greasy burlap and absorbent material. The burnable waste was incinerated in camp and the metal items were flown out to Yellowknife for disposal or recycling, as per the other waste material sent out. Metal waste and trash encountered at historic drill sites was gathered up and moved back to camp where it was subsequently flown out to Yellowknife for disposal or recycling.

### Hazardous Waste Management

The primary hazardous wastes dealt with at Hackett Camp are petroleum-based fuel products; diesel, Jet-B, gasoline, engine oil and propane. Other hazardous wastes consist of used aerosol paint cans and expired dry-cell batteries.

Much of the hydrocarbon waste generated on site is retained for use in the waste oil furnace installed to heat the Quonset, which cuts down on the volume to be shipped offsite and sent to a hazardous waste facility. Additional waste hydrocarbon products are stored in empty 205 L drums, with the tops sealed with plastic, in secondary containment berms pending backhaul. A shortened field season in 2009 resulted in a lower level of waste generated, but also resulted in reduced capacity for backhauling material.

Empty propane tanks were returned to Yellowknife for recycling and re-use as they became available through consumption.

Used alkaline batteries and empty paint and aerosol spray cans were placed with the unburnable kitchen waste and double bagged in plastic garbage bags and flown back to Yellowknife for disposal.

The secondary containment berms used with primary fuel and salt supplies or waste material have generally proven to be an effective measure to safeguard impacts to freshwater sources as they are quickly and easily set up where needed. Snowmelt and rainwater collection can be easily managed with periodic inspections and appropriate use of the rain drains and a water transfer pump should pooling of snowmelt or rainwater occur.

### Trench Reclamation

In late July the Project Manager was notified of Sabina's interest to reclaim the mechanically excavated trenches on the Goose Lake property. All permitting agencies were notified by both letter and phone contact of Sabina's reclamation plan for the trenches and verbal permission was provided by all agencies in support of the reclamation effort. Two water samples were collected from each trench and they were submitted to ALS Environmental Lab located in Yellowknife for analysis (results attached). The samples were analyzed for pH, conductivity, temperature and trace metals. The trenches were dewatered and reclaimed by Sabina Silver personnel using project equipment.

The photos below document the reclamation effort. Trenches 1 and 2 were reclaimed in 2009. Trench 4 will be scheduled for reclamation in 2010.

**Figure 1: Goose Lake Trenches before Reclamation -Aug 2009.**

**Figure 2: Goose Trenches post reclamation - Sept 2009.**

# Certificate of Analysis

SABINA SILVER CORPORATION
**ATTN:** E. SHERLOCK / D. CATER
202 - 930 W 1 STREET
NORTH VANCOUVER BC V7P 3N4

**Report Date:** 24-AUG-09 15:06 (MT)
**Version:** FINAL

**Lab Work Order #:** L807127 **Date Received:** 18-AUG-09

**Project P.O. #:**
**Job Reference:**
**Legal Site Desc:**
**CofC Numbers:**
**Other Information:**

**Comments:** For pH and Temperature the samples exceeded the recomended holding time prior to analysis.

Sean Whitaker

# ALS LABORATORY GROUP ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | By | Batch |
|---|---|---|---|---|---|---|---|---|
| L807127-1 GOOSE TRENCH 1A | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| **Total Metals** | | | | | | | | |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | | |
| Aluminum (Al)-Total | 0.331 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Antimony (Sb)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Arsenic (As)-Total | 0.00470 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Barium (Ba)-Total | 0.0136 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Beryllium (Be)-Total | <0.0010 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Bismuth (Bi)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Boron (B)-Total | <0.020 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cadmium (Cd)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Chromium (Cr)-Total | 0.00102 | | 0.00080 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cobalt (Co)-Total | 0.00023 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Copper (Cu)-Total | 0.0035 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Lead (Pb)-Total | 0.00122 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Molybdenum (Mo)-Total | 0.0113 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Nickel (Ni)-Total | 0.00192 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Selenium (Se)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Silver (Ag)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Strontium (Sr)-Total | 0.0554 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Thallium (Tl)-Total | <0.00010 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Tin (Sn)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Titanium (Ti)-Total | 0.0093 | | 0.0050 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Uranium (U)-Total | 0.00047 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Vanadium (V)-Total | 0.00053 | | 0.00050 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Zinc (Zn)-Total | <0.0040 | | 0.0040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| **Total Metals in Water by ICPOES (Low)** | | | | | | | | |
| Calcium (Ca)-Total | 57.7 | | 0.50 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Iron (Fe)-Total | 0.518 | | 0.010 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Magnesium (Mg)-Total | 10.2 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Manganese (Mn)-Total | 0.0082 | | 0.0020 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Potassium (K)-Total | 2.98 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Sodium (Na)-Total | 2.4 | | 1.0 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Conductivity (EC) | 407 | | 0.20 | uS/cm | | 20-AUG-09 | CLTT | R913187 |
| Temperature | 25.0 | | 1.0 | Degree C | | 20-AUG-09 | CLTT | R913187 |
| pH | 7.95 | | 0.10 | pH | | 20-AUG-09 | CLTT | R913187 |
| L807127-2 GOOSE TRENCH 1B | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| **Total Metals** | | | | | | | | |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | | |
| Aluminum (Al)-Total | 0.293 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Antimony (Sb)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Arsenic (As)-Total | 0.00483 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Barium (Ba)-Total | 0.0138 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Beryllium (Be)-Total | <0.0010 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Bismuth (Bi)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Boron (B)-Total | <0.020 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cadmium (Cd)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Chromium (Cr)-Total | 0.00120 | | 0.00080 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cobalt (Co)-Total | 0.00023 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Copper (Cu)-Total | 0.0038 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |

# ALS LABORATORY GROUP ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | By | Batch |
|---|---|---|---|---|---|---|---|---|
| L807127-2 GOOSE TRENCH 1B | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| **Total Metals** | | | | | | | | |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | | |
| Lead (Pb)-Total | 0.00274 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Molybdenum (Mo)-Total | 0.0102 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Nickel (Ni)-Total | 0.00182 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Selenium (Se)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Silver (Ag)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Strontium (Sr)-Total | 0.0550 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Thallium (Tl)-Total | <0.00010 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Tin (Sn)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Titanium (Ti)-Total | 0.0091 | | 0.0050 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Uranium (U)-Total | 0.00037 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Vanadium (V)-Total | 0.00078 | | 0.00050 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Zinc (Zn)-Total | <0.0040 | | 0.0040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| **Total Metals in Water by ICPOES (Low)** | | | | | | | | |
| Calcium (Ca)-Total | 57.1 | | 0.50 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Iron (Fe)-Total | 0.565 | | 0.010 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Magnesium (Mg)-Total | 10.4 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Manganese (Mn)-Total | 0.0088 | | 0.0020 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Potassium (K)-Total | 3.14 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Sodium (Na)-Total | 2.5 | | 1.0 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Conductivity (EC) | 409 | | 0.20 | uS/cm | | 20-AUG-09 | CLTT | R913187 |
| Temperature | 25.0 | | 1.0 | Degree C | | 20-AUG-09 | CLTT | R913187 |
| pH | 7.95 | | 0.10 | pH | | 20-AUG-09 | CLTT | R913187 |
| L807127-3 GOOSE TRENCH 2A | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| **Total Metals** | | | | | | | | |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | | |
| Aluminum (Al)-Total | 0.055 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Antimony (Sb)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Arsenic (As)-Total | 0.00632 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Barium (Ba)-Total | 0.0103 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Beryllium (Be)-Total | <0.0010 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Bismuth (Bi)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Boron (B)-Total | 0.023 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cadmium (Cd)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Chromium (Cr)-Total | <0.00080 | | 0.00080 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cobalt (Co)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Copper (Cu)-Total | 0.0044 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Lead (Pb)-Total | 0.00258 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Molybdenum (Mo)-Total | 0.00032 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Nickel (Ni)-Total | 0.00123 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Selenium (Se)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Silver (Ag)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Strontium (Sr)-Total | 0.0766 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Thallium (Tl)-Total | <0.00010 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Tin (Sn)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Titanium (Ti)-Total | <0.0050 | | 0.0050 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Uranium (U)-Total | 0.00033 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Vanadium (V)-Total | <0.00050 | | 0.00050 | mg/L | | 23-AUG-09 | SYF | R914206 |

# ALS LABORATORY GROUP ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | By | Batch |
|---|---|---|---|---|---|---|---|---|
| L807127-3 GOOSE TRENCH 2A | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| **Total Metals** | | | | | | | | |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | | |
| Zinc (Zn)-Total | <0.0040 | | 0.0040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| **Total Metals in Water by ICPOES (Low)** | | | | | | | | |
| Calcium (Ca)-Total | 30.0 | | 0.50 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Iron (Fe)-Total | 0.091 | | 0.010 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Magnesium (Mg)-Total | 11.9 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Manganese (Mn)-Total | 0.0048 | | 0.0020 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Potassium (K)-Total | 1.62 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Sodium (Na)-Total | 2.1 | | 1.0 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Conductivity (EC) | 276 | | 0.20 | uS/cm | | 20-AUG-09 | CLTT | R913187 |
| Temperature | 25.0 | | 1.0 | Degree C | | 20-AUG-09 | CLTT | R913187 |
| pH | 7.93 | | 0.10 | pH | | 20-AUG-09 | CLTT | R913187 |
| L807127-4 GOOSE TRENCH 2B | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| **Total Metals** | | | | | | | | |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | | |
| Aluminum (Al)-Total | 0.053 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Antimony (Sb)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Arsenic (As)-Total | 0.00612 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Barium (Ba)-Total | 0.0106 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Beryllium (Be)-Total | <0.0010 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Bismuth (Bi)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Boron (B)-Total | 0.024 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cadmium (Cd)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Chromium (Cr)-Total | <0.00080 | | 0.00080 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cobalt (Co)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Copper (Cu)-Total | 0.0052 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Lead (Pb)-Total | 0.0137 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Molybdenum (Mo)-Total | 0.00033 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Nickel (Ni)-Total | 0.00129 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Selenium (Se)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Silver (Ag)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Strontium (Sr)-Total | 0.0795 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Thallium (Tl)-Total | <0.00010 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Tin (Sn)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Titanium (Ti)-Total | <0.0050 | | 0.0050 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Uranium (U)-Total | 0.00034 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Vanadium (V)-Total | <0.00050 | | 0.00050 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Zinc (Zn)-Total | 0.0063 | | 0.0040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| **Total Metals in Water by ICPOES (Low)** | | | | | | | | |
| Calcium (Ca)-Total | 31.0 | | 0.50 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Iron (Fe)-Total | 0.084 | | 0.010 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Magnesium (Mg)-Total | 12.5 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Manganese (Mn)-Total | 0.0039 | | 0.0020 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Potassium (K)-Total | 1.78 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Sodium (Na)-Total | 2.1 | | 1.0 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Conductivity (EC) | 275 | | 0.20 | uS/cm | | 20-AUG-09 | CLTT | R913187 |
| Temperature | 25.0 | | 1.0 | Degree C | | 20-AUG-09 | CLTT | R913187 |

# ALS LABORATORY GROUP ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | By | Batch |
|---|---|---|---|---|---|---|---|---|
| L807127-4 GOOSE TRENCH 2B | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| pH | 7.93 | | 0.10 | pH | | 20-AUG-09 | CLTT | R913187 |
| L807127-5 GOOSE TRENCH 3A | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| **Total Metals** | | | | | | | | |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | | |
| Aluminum (Al)-Total | 0.047 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Antimony (Sb)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Arsenic (As)-Total | 0.00190 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Barium (Ba)-Total | 0.0655 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Beryllium (Be)-Total | <0.0010 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Bismuth (Bi)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Boron (B)-Total | 0.081 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cadmium (Cd)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Chromium (Cr)-Total | <0.00080 | | 0.00080 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cobalt (Co)-Total | 0.00067 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Copper (Cu)-Total | 0.0038 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Lead (Pb)-Total | 0.00054 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Molybdenum (Mo)-Total | 0.00206 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Nickel (Ni)-Total | 0.00625 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Selenium (Se)-Total | 0.00054 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Silver (Ag)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Strontium (Sr)-Total | 0.691 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Thallium (Tl)-Total | <0.00010 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Tin (Sn)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Titanium (Ti)-Total | <0.0050 | | 0.0050 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Uranium (U)-Total | 0.00496 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Vanadium (V)-Total | <0.00050 | | 0.00050 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Zinc (Zn)-Total | <0.0040 | | 0.0040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| **Total Metals in Water by ICPOES (Low)** | | | | | | | | |
| Calcium (Ca)-Total | 309 | | 0.50 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Iron (Fe)-Total | 0.158 | | 0.010 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Magnesium (Mg)-Total | 77.4 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Manganese (Mn)-Total | 0.122 | | 0.0020 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Potassium (K)-Total | 7.96 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Sodium (Na)-Total | 11.3 | | 1.0 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Conductivity (EC) | 2330 | | 0.20 | uS/cm | | 20-AUG-09 | CLTT | R913187 |
| Temperature | 25.0 | | 1.0 | Degree C | | 20-AUG-09 | CLTT | R913187 |
| pH | 8.01 | | 0.10 | pH | | 20-AUG-09 | CLTT | R913187 |
| L807127-6 GOOSE TRENCH 3B | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| **Total Metals** | | | | | | | | |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | | |
| Aluminum (Al)-Total | 0.054 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Antimony (Sb)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Arsenic (As)-Total | 0.00236 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Barium (Ba)-Total | 0.0670 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Beryllium (Be)-Total | <0.0010 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |

# ALS LABORATORY GROUP ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | By | Batch |
|---|---|---|---|---|---|---|---|---|
| L807127-6 GOOSE TRENCH 3B | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| **Total Metals** | | | | | | | | |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | | |
| Bismuth (Bi)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Boron (B)-Total | 0.078 | | 0.020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cadmium (Cd)-Total | <0.00020 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Chromium (Cr)-Total | <0.00080 | | 0.00080 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Cobalt (Co)-Total | 0.00075 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Copper (Cu)-Total | 0.0040 | | 0.0010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Lead (Pb)-Total | 0.00042 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Molybdenum (Mo)-Total | 0.00220 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Nickel (Ni)-Total | 0.00734 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Selenium (Se)-Total | 0.00112 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Silver (Ag)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Strontium (Sr)-Total | 0.714 | | 0.00020 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Thallium (Tl)-Total | <0.00010 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Tin (Sn)-Total | <0.00040 | | 0.00040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Titanium (Ti)-Total | <0.0050 | | 0.0050 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Uranium (U)-Total | 0.00537 | | 0.00010 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Vanadium (V)-Total | 0.00072 | | 0.00050 | mg/L | | 23-AUG-09 | SYF | R914206 |
| Zinc (Zn)-Total | <0.0040 | | 0.0040 | mg/L | | 23-AUG-09 | SYF | R914206 |
| **Total Metals in Water by ICPOES (Low)** | | | | | | | | |
| Calcium (Ca)-Total | 328 | | 0.50 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Iron (Fe)-Total | 0.173 | | 0.010 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Magnesium (Mg)-Total | 80.6 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Manganese (Mn)-Total | 0.128 | | 0.0020 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Potassium (K)-Total | 8.47 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Sodium (Na)-Total | 11.9 | | 1.0 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Conductivity (EC) | 2340 | | 0.20 | uS/cm | | 20-AUG-09 | CLTT | R913187 |
| Temperature | 25.0 | | 1.0 | Degree C | | 20-AUG-09 | CLTT | R913187 |
| pH | 8.05 | | 0.10 | pH | | 20-AUG-09 | CLTT | R913187 |
| L807127-7 GOOSE TRENCH 4C | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| **Total Metals** | | | | | | | | |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | | |
| Aluminum (Al)-Total | <0.020 | | 0.020 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Antimony (Sb)-Total | <0.00040 | | 0.00040 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Arsenic (As)-Total | <0.00040 | | 0.00040 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Barium (Ba)-Total | <0.00020 | | 0.00020 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Beryllium (Be)-Total | <0.0010 | | 0.0010 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Bismuth (Bi)-Total | <0.00020 | | 0.00020 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Boron (B)-Total | <0.020 | | 0.020 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Cadmium (Cd)-Total | <0.00020 | | 0.00020 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Chromium (Cr)-Total | <0.00080 | | 0.00080 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Cobalt (Co)-Total | <0.00020 | | 0.00020 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Copper (Cu)-Total | <0.0010 | | 0.0010 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Lead (Pb)-Total | <0.00010 | | 0.00010 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Molybdenum (Mo)-Total | <0.00010 | | 0.00010 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Nickel (Ni)-Total | <0.00020 | | 0.00020 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Selenium (Se)-Total | <0.00040 | | 0.00040 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Silver (Ag)-Total | <0.00040 | | 0.00040 | mg/L | | 22-AUG-09 | SYF | R914206 |

# ALS LABORATORY GROUP ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | By | Batch |
|---|---|---|---|---|---|---|---|---|
| L807127-7 GOOSE TRENCH 4C | | | | | | | | |
| Sampled By: M MONAMI on 14-AUG-09 @ 14:00 | | | | | | | | |
| Matrix: WATER | | | | | | | | |
| **Total Metals** | | | | | | | | |
| **Total Metals in Water by ICPMS (Low)** | | | | | | | | |
| Strontium (Sr)-Total | <0.00020 | | 0.00020 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Thallium (Tl)-Total | <0.00010 | | 0.00010 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Tin (Sn)-Total | <0.00040 | | 0.00040 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Titanium (Ti)-Total | <0.0050 | | 0.0050 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Uranium (U)-Total | <0.00010 | | 0.00010 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Vanadium (V)-Total | <0.00050 | | 0.00050 | mg/L | | 22-AUG-09 | SYF | R914206 |
| Zinc (Zn)-Total | <0.0040 | | 0.0040 | mg/L | | 22-AUG-09 | SYF | R914206 |
| **Total Metals in Water by ICPOES (Low)** | | | | | | | | |
| Calcium (Ca)-Total | <0.5 | | 0.50 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Iron (Fe)-Total | <0.010 | | 0.010 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Magnesium (Mg)-Total | <0.10 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Manganese (Mn)-Total | <0.0020 | | 0.0020 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Potassium (K)-Total | <0.10 | | 0.10 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Sodium (Na)-Total | <1.0 | | 1.0 | mg/L | | 21-AUG-09 | JWU | R917946 |
| Conductivity (EC) | <0.20 | | 0.20 | uS/cm | | 20-AUG-09 | CLTT | R913187 |
| Temperature | 25.0 | | 1.0 | Degree C | | 20-AUG-09 | CLTT | R913187 |
| pH | 5.82 | | 0.10 | pH | | 20-AUG-09 | CLTT | R913187 |

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

# Reference Information

**Qualifiers for Sample Submission Listed:**

| Qualifier | Description |
|---|---|
| EHT | ph,conductivity,temperature - Exceeded Recommended Holding Time Prior To Analysis |

**Methods Listed (if applicable):**

| ALS Test Code | Matrix | Test Description | Preparation Method Reference(Based On) | Analytical Method Reference(Based On) |
|---|---|---|---|---|
| EC-ED | Water | Conductivity (EC) | | APHA 2510 B-electrode |
| MET-T-L-ICP-ED | Water | Total Metals in Water by ICPOES (Low) | APHA 3030E | EPA 200.7 |
| MET-T-L-MS-ED | Water | Total Metals in Water by ICPMS (Low) | APHA 3030E | EPA 6020 |
| PH-ED | Water | pH | | APHA 4500 H-Electrode |
| TEMP-ED | Water | Temperature | | APHA 2550-Thermometer |

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

*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 Code | Laboratory Location | Laboratory Definition Code | Laboratory Location |
|---|---|---|---|
| ED | ALS LABORATORY GROUP - EDMONTON, ALBERTA, CANADA | | |

*GLOSSARY OF REPORT TERMS*
*Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.*
*The reported surrogate recovery value provides a measure of method efficiency. The Laboratory control limits are determined under column heading D.L.*
*mg/kg (units) - unit of concentration based on mass, parts per million.*
*mg/L (units) - unit of concentration based on volume, parts per million.*
*< - Less than.*
*D.L. - The reporting limit.*
*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.*
*UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.*
*Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.*

*ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.*