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January 28, 2012

SENT VIA EMAIL

Phyllis Beaulieu, Manager of Licensing
 Nunavut Water Board
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2AM-JER0410 Monthly Report- December 2011

The following is the monthly report for December 2011 as required under the Nunavut Water Board ("NWB or Board") Water License 2AM-JER0410. Results of water monitoring, as proposed in section 5.0 of Appendix C (General Monitoring Plan) of the Care and Maintenance Plan submitted to the Water Board in January 2011, are included below.

JER-SWQ-01 (previously JER-SW1)

Effluent

ALS		Sample ID	SWQ-01 EFFLUENT	JER-SWQ-01 EFFLUENT
1/28/2012		ALS ID	L1094160-2	L1098177-2
Multiple Work Orders		Date Sampled	12/8/2011 9:00:00 AM	12/21/2011 7:30:00 AM
Analyte	Units	LOR	Water	Water
Hardness (as CaCO3)	mg/L	1.3	52	-
Temperature	Degree C	1	25	25
Total Suspended Solids	mg/L	3	24	10

Total Dissolved Solids	mg/L	10	488	466
Turbidity	NTU	0.1	9.2	5.66
Acidity (as CaCO3)	mg/L	5	27.3	9.4
Alkalinity, Total (as CaCO3)	mg/L	5	<5.0	<5.0
Ammonia (as N)	mg/L	0.005	0.592	0.674
Bicarbonate (HCO3)	mg/L	5	5.9	<5.0
Carbonate (CO3)	mg/L	5	<5.0	<5.0
Chloride (Cl)	mg/L	0.5	98.3	103
Conductivity (EC)	uS/cm	0.2	749	728
Fluoride (F)	mg/L	0.05	<0.050	<0.050
Hardness (as CaCO3)	mg/L	n/a	53.9	50.7
Hydroxide (OH)	mg/L	5	<5.0	<5.0
Ion Balance	%	n/a	107	104
Nitrate and Nitrite (as N)	mg/L	0.006	31.4	29.2
Nitrate (as N)	mg/L	0.006	31.4 *	29.2
Nitrite (as N)	mg/L	0.002	<0.050	0.0307
pH	pH	0.1	6.07	6.04
Orthophosphate-Dissolved (as P)	mg/L	0.001	8.6	7.87
Phosphorus (P)-Total Dissolved	mg/L	0.001	7.18	7.58
Phosphorus (P)-Total	mg/L	0.001	7.29	7.74
TDS (Calculated)	mg/L	n/a	433	411
Sulfate (SO4)	mg/L	0.05	42.9	35.5
Total Inorganic Carbon	mg/L	1	<1.0	<1.0
Total Organic Carbon	mg/L	1	17.4	18.8
Fecal Coliforms	CFU/100 mL	1	22	600000
Mercury (Hg)-Total	mg/L	0.00005	<0.000050	-
Aluminum (Al)-Total	mg/L	0.0002	0.302	-
Antimony (Sb)-Total	mg/L	0.000005	0.00255	-
Arsenic (As)-Total	mg/L	0.00002	0.00062	-
Barium (Ba)-Total	mg/L	0.00002	0.00727	-
Beryllium (Be)-Total	mg/L	0.000002	<0.000010 *	-
Bismuth (Bi)-Total	mg/L	0.000001	0.00107	-
Boron (B)-Total	mg/L	0.005	0.05	-
Cadmium (Cd)-Total	mg/L	0.000005	0.000278	-
Calcium (Ca)-Total	mg/L	0.03	14.6	-
Cesium (Cs)-Total	mg/L	0.000005	0.000072	-
Chromium (Cr)-Total	mg/L	0.00005	0.00086	-
Cobalt (Co)-Total	mg/L	0.000005	0.000859	-
Copper (Cu)-Total	mg/L	0.00005	0.22	-
Gallium (Ga)-Total	mg/L	0.00005	<0.00025 *	-
Iron (Fe)-Total	mg/L	0.01	0.767	-
Lead (Pb)-Total	mg/L	0.000005	0.00138	-
Lithium (Li)-Total	mg/L	0.0002	0.0039	-
Magnesium (Mg)-Total	mg/L	0.03	4.9	-
Manganese (Mn)-Total	mg/L	0.000005	0.102	-

Molybdenum (Mo)-Total	mg/L	0.00001	0.00178	-
Nickel (Ni)-Total	mg/L	0.00005	0.0185	-
Phosphorus (P)-Total	mg/L	0.05	9.43	-
Potassium (K)-Total	mg/L	0.05	31.8	-
Rhenium (Re)-Total	mg/L	0.000005	<0.000025 *	-
Rubidium (Rb)-Total	mg/L	0.000005	0.0267	-
Selenium (Se)-Total	mg/L	0.00004	0.00044	-
Silicon (Si)-Total	mg/L	0.05	6.09	-
Silver (Ag)-Total	mg/L	0.000005	<0.000025 *	-
Sodium (Na)-Total	mg/L	0.2	108	-
Strontium (Sr)-Total	mg/L	0.00001	0.022	-
Tellurium (Te)-Total	mg/L	0.00001	<0.000050 *	-
Thallium (Tl)-Total	mg/L	0.000001	0.0000221	-
Thorium (Th)-Total	mg/L	0.000005	<0.000025 *	-
Tin (Sn)-Total	mg/L	0.00001	0.00101	-
Titanium (Ti)-Total	mg/L	0.00005	0.00112	-
Tungsten (W)-Total	mg/L	0.00001	0.000098	-
Uranium (U)-Total	mg/L	0.000001	0.000109	-
Vanadium (V)-Total	mg/L	0.00001	0.000802	-
Yttrium (Y)-Total	mg/L	0.000005	0.000093	-
Zinc (Zn)-Total	mg/L	0.0001	2.68	-
Zirconium (Zr)-Total	mg/L	0.00001	0.000173	-
Aluminum (Al)-Dissolved	mg/L	0.0002	0.0177	-
Antimony (Sb)-Dissolved	mg/L	0.000005	0.00257	-
Arsenic (As)-Dissolved	mg/L	0.00002	0.00046	-
Barium (Ba)-Dissolved	mg/L	0.00002	0.00211	-
Beryllium (Be)-Dissolved	mg/L	0.000002	<0.000010 *	-
Bismuth (Bi)-Dissolved	mg/L	0.000001	0.000593	-
Boron (B)-Dissolved	mg/L	0.005	0.047	-
Cadmium (Cd)-Dissolved	mg/L	0.000005	0.000391	-
Calcium (Ca)-Dissolved	mg/L	0.03	14.0 *	13.1
Cesium (Cs)-Dissolved	mg/L	0.000005	0.000068	-
Chromium (Cr)-Dissolved	mg/L	0.00005	0.00043	-
Cobalt (Co)-Dissolved	mg/L	0.000005	0.000744	-
Copper (Cu)-Dissolved	mg/L	0.00005	0.179	-
Gallium (Ga)-Dissolved	mg/L	0.00005	<0.00025 *	-
Iron (Fe)-Dissolved	mg/L	0.01	0.077	-
Lead (Pb)-Dissolved	mg/L	0.000005	0.000279	-
Lithium (Li)-Dissolved	mg/L	0.0002	0.0036	-
Magnesium (Mg)-Dissolved	mg/L	0.03	4.61 *	4.36
Manganese (Mn)-Dissolved	mg/L	0.000005	0.0937	-
Mercury (Hg)-Dissolved	mg/L	0.00005	<0.000050	-
Molybdenum (Mo)-Dissolved	mg/L	0.00001	0.00191	-
Nickel (Ni)-Dissolved	mg/L	0.00005	0.0181	-
Phosphorus (P)-Dissolved	mg/L	0.05	8.53	-
Potassium (K)-Dissolved	mg/L	0.05	30.5 *	30.8

Rhenium (Re)-Dissolved	mg/L	0.000005	<0.000025 *	-
Rubidium (Rb)-Dissolved	mg/L	0.000005	0.0249	-
Selenium (Se)-Dissolved	mg/L	0.00004	<0.00020 *	-
Silicon (Si)-Dissolved	mg/L	0.05	5.84	-
Silver (Ag)-Dissolved	mg/L	0.000005	<0.000025 *	-
Sodium (Na)-Dissolved	mg/L	0.2	104 *	94.8
Strontium (Sr)-Dissolved	mg/L	0.00001	0.0198	-
Tellurium (Te)-Dissolved	mg/L	0.00001	<0.000050 *	-
Thallium (Tl)-Dissolved	mg/L	0.000001	0.0000254	-
Thorium (Th)-Dissolved	mg/L	0.000005	<0.000025 *	-
Tin (Sn)-Dissolved	mg/L	0.00001	0.000193	-
Titanium (Ti)-Dissolved	mg/L	0.00005	<0.00025 *	-
Tungsten (W)-Dissolved	mg/L	0.00001	0.00009	-
Uranium (U)-Dissolved	mg/L	0.000001	0.0000115	-
Vanadium (V)-Dissolved	mg/L	0.00001	0.000624	-
Yttrium (Y)-Dissolved	mg/L	0.000005	<0.000025 *	-
Zinc (Zn)-Dissolved	mg/L	0.0001	2.47	-
Zirconium (Zr)-Dissolved	mg/L	0.00001	<0.000050 *	-
Biochemical Oxygen Demand	mg/L	2	4.1	3
Oil and Grease	mg/L	1	<1.0	<1.0
* = Result Qualified				
Mouse-over the result to see the qualification.				

Influent

ALS		Sample ID	SWQ-01 INFLUENT	JER-SWQ-01 INFLUENT
1/28/2012		ALS ID	L1094160-1	L1098177-3
Multiple Work Orders		Date Sampled	12/8/2011 9:00:00 AM	12/21/2011 7:30:00 AM
Analyte	Units	LOR	Water	Water
Temperature	Degree C	1	25	25
Total Suspended Solids	mg/L	3	186	484
Total Dissolved Solids	mg/L	10	392	430
Turbidity	NTU	0.1	60.2	187
Acidity (as CaCO3)	mg/L	5	23.1	27.2
Alkalinity, Total (as CaCO3)	mg/L	5	144	198
Ammonia (as N)	mg/L	0.005	18.9	24.8
Bicarbonate (HCO3)	mg/L	5	176	241
Carbonate (CO3)	mg/L	5	<5.0	<5.0
Chloride (Cl)	mg/L	0.5	93.4	90.3
Conductivity (EC)	uS/cm	0.2	774	817
Fluoride (F)	mg/L	0.05	0.151	<0.050
Hardness (as CaCO3)	mg/L	n/a	38.2	30.6

Hydroxide (OH)	mg/L	5	<5.0	<5.0
Ion Balance	%	n/a	101	109
Nitrate and Nitrite (as N)	mg/L	0.006	4.52	0.0194 *
Nitrate (as N)	mg/L	0.006	4.09	<0.060
Nitrite (as N)	mg/L	0.002	0.428	0.0156 *
pH	pH	0.1	7.49	7.37
Orthophosphate-Dissolved (as P)	mg/L	0.001	6.28 *	8.37
Phosphorus (P)-Total Dissolved	mg/L	0.001	5.54	7.74
Phosphorus (P)-Total	mg/L	0.001	9.22	10.5
TDS (Calculated)	mg/L	n/a	359	357
Sulfate (SO4)	mg/L	0.05	33.6	13.8
Total Inorganic Carbon	mg/L	1	33.4	33.5
Total Organic Carbon	mg/L	1	41	171
Fecal Coliforms	CFU/100 mL	1	160000	76
Calcium (Ca)-Dissolved	mg/L	0.03	8.97	6.99
Magnesium (Mg)-Dissolved	mg/L	0.03	3.84	3.2
Potassium (K)-Dissolved	mg/L	0.05	23.4	23
Sodium (Na)-Dissolved	mg/L	0.2	89.2	101
Biochemical Oxygen Demand	mg/L	2	138	369
Oil and Grease	mg/L	1	1.3	21
* = Result Qualified Mouse-over the result to see the qualification.				

JER-SWQ-12 (previously JER -WQ1)

Water taken for domestic purposes at this time is taken from Carat Lake by pump and transported by water truck to tanks within the accommodation unit. Volume drawn is calculated manually. Water drawn from Carat Lake in December was 1.460m³. The results from sampling at this location are noted below.

ALS		Sample ID	JER-AEM-12 (CARAT INTAKE)
1/28/2012		ALS ID	L1098177-1
Multiple Work Orders		Date Sampled	12/21/2011 7:00:00 AM
Analyte	Units	LOR	Water
Hardness (as CaCO3)	mg/L	1.3	5.6
Temperature	Degree C	1	25
Total Suspended Solids	mg/L	3	<3.0
Total Dissolved Solids	mg/L	10	14
Turbidity	NTU	0.1	0.38
Acidity (as CaCO3)	mg/L	5	<5.0

Alkalinity, Total (as CaCO3)	mg/L	5	<5.0
Ammonia (as N)	mg/L	0.005	0.0144
Bicarbonate (HCO3)	mg/L	5	5.9
Carbonate (CO3)	mg/L	5	<5.0
Chloride (Cl)	mg/L	0.5	<0.50
Conductivity (EC)	uS/cm	0.2	15.2
Fluoride (F)	mg/L	0.05	<0.050
Hardness (as CaCO3)	mg/L	n/a	6.1
Hydroxide (OH)	mg/L	5	<5.0
Ion Balance	%	n/a	Low EC
Nitrate and Nitrite (as N)	mg/L	0.006	0.0312
Nitrate (as N)	mg/L	0.006	0.0312
Nitrite (as N)	mg/L	0.002	<0.0020
pH	pH	0.1	6.83
Orthophosphate-Dissolved (as P)	mg/L	0.001	<0.0010
Phosphorus (P)-Total Dissolved	mg/L	0.001	<0.0010
Phosphorus (P)-Total	mg/L	0.001	<0.0010
TDS (Calculated)	mg/L	n/a	4
Sulfate (SO4)	mg/L	0.05	0.934
Total Inorganic Carbon	mg/L	1	1.7
Total Organic Carbon	mg/L	1	2.9
Fecal Coliforms	CFU/100mL	1	<1
Mercury (Hg)-Total	mg/L	0.00005	<0.000050
Aluminum (Al)-Total	mg/L	0.0002	0.0138
Antimony (Sb)-Total	mg/L	0.000005	0.0000067
Arsenic (As)-Total	mg/L	0.00002	0.000161
Barium (Ba)-Total	mg/L	0.00002	0.00191
Beryllium (Be)-Total	mg/L	0.000002	0.000002
Bismuth (Bi)-Total	mg/L	0.000001	<0.0000010
Boron (B)-Total	mg/L	0.005	<0.0050
Cadmium (Cd)-Total	mg/L	0.000005	0.0000052
Calcium (Ca)-Total	mg/L	0.03	1.27
Cesium (Cs)-Total	mg/L	0.000005	<0.0000050
Chromium (Cr)-Total	mg/L	0.00005	0.000068
Cobalt (Co)-Total	mg/L	0.000005	0.0000369
Copper (Cu)-Total	mg/L	0.00005	0.00178
Gallium (Ga)-Total	mg/L	0.00005	<0.000050
Iron (Fe)-Total	mg/L	0.01	0.069
Lead (Pb)-Total	mg/L	0.000005	0.00034
Lithium (Li)-Total	mg/L	0.0002	0.00053
Magnesium (Mg)-Total	mg/L	0.03	0.668
Manganese (Mn)-Total	mg/L	0.000005	0.0076
Molybdenum (Mo)-Total	mg/L	0.00001	0.000083
Nickel (Ni)-Total	mg/L	0.00005	0.000616
Phosphorus (P)-Total	mg/L	0.05	<0.050
Potassium (K)-Total	mg/L	0.05	0.348

Rhenium (Re)-Total	mg/L	0.000005	<0.0000050
Rubidium (Rb)-Total	mg/L	0.000005	0.000803
Selenium (Se)-Total	mg/L	0.00004	<0.000040
Silicon (Si)-Total	mg/L	0.05	0.314
Silver (Ag)-Total	mg/L	0.000005	<0.0000050
Sodium (Na)-Total	mg/L	0.2	0.56
Strontium (Sr)-Total	mg/L	0.00001	0.00532
Tellurium (Te)-Total	mg/L	0.00001	<0.000010
Thallium (Tl)-Total	mg/L	0.000001	0.0000015
Thorium (Th)-Total	mg/L	0.000005	0.0000158
Tin (Sn)-Total	mg/L	0.00001	0.000021
Titanium (Ti)-Total	mg/L	0.00005	0.000131
Tungsten (W)-Total	mg/L	0.00001	<0.000010
Uranium (U)-Total	mg/L	0.000001	0.000164
Vanadium (V)-Total	mg/L	0.00001	0.000038
Yttrium (Y)-Total	mg/L	0.000005	0.0000693
Zinc (Zn)-Total	mg/L	0.0001	0.0223
Zirconium (Zr)-Total	mg/L	0.00001	0.000023
Aluminum (Al)-Dissolved	mg/L	0.0002	0.014
Antimony (Sb)-Dissolved	mg/L	0.000005	0.0000058
Arsenic (As)-Dissolved	mg/L	0.00002	0.000197
Barium (Ba)-Dissolved	mg/L	0.00002	0.00181
Beryllium (Be)-Dissolved	mg/L	0.000002	0.0000028
Bismuth (Bi)-Dissolved	mg/L	0.000001	<0.0000010
Boron (B)-Dissolved	mg/L	0.005	<0.0050
Cadmium (Cd)-Dissolved	mg/L	0.000005	<0.0000050
Calcium (Ca)-Dissolved	mg/L	0.03	1.31 *
Cesium (Cs)-Dissolved	mg/L	0.000005	<0.0000050
Chromium (Cr)-Dissolved	mg/L	0.00005	0.000065
Cobalt (Co)-Dissolved	mg/L	0.000005	0.0000219
Copper (Cu)-Dissolved	mg/L	0.00005	0.00141
Gallium (Ga)-Dissolved	mg/L	0.00005	<0.000050
Iron (Fe)-Dissolved	mg/L	0.01	0.023
Lead (Pb)-Dissolved	mg/L	0.000005	0.0000956
Lithium (Li)-Dissolved	mg/L	0.0002	0.0006
Magnesium (Mg)-Dissolved	mg/L	0.03	0.685 *
Manganese (Mn)-Dissolved	mg/L	0.000005	0.00306
Mercury (Hg)-Dissolved	mg/L	0.00005	<0.000050
Molybdenum (Mo)-Dissolved	mg/L	0.00001	0.000043
Nickel (Ni)-Dissolved	mg/L	0.00005	0.000475
Phosphorus (P)-Dissolved	mg/L	0.05	<0.050
Potassium (K)-Dissolved	mg/L	0.05	0.340 *
Rhenium (Re)-Dissolved	mg/L	0.000005	<0.0000050
Rubidium (Rb)-Dissolved	mg/L	0.000005	0.000863
Selenium (Se)-Dissolved	mg/L	0.00004	<0.000040
Silicon (Si)-Dissolved	mg/L	0.05	0.321
Silver (Ag)-Dissolved	mg/L	0.000005	<0.0000050
Sodium (Na)-Dissolved	mg/L	0.2	0.59 *

Strontium (Sr)-Dissolved	mg/L	0.00001	0.00578
Tellurium (Te)-Dissolved	mg/L	0.00001	<0.000010
Thallium (Tl)-Dissolved	mg/L	0.000001	0.0000021
Thorium (Th)-Dissolved	mg/L	0.000005	0.0000104
Tin (Sn)-Dissolved	mg/L	0.00001	<0.000010
Titanium (Ti)-Dissolved	mg/L	0.00005	<0.000050
Tungsten (W)-Dissolved	mg/L	0.00001	<0.000010
Uranium (U)-Dissolved	mg/L	0.000001	0.000144
Vanadium (V)-Dissolved	mg/L	0.00001	0.000045
Yttrium (Y)-Dissolved	mg/L	0.000005	0.0000699
Zinc (Zn)-Dissolved	mg/L	0.0001	0.00739
Zirconium (Zr)-Dissolved	mg/L	0.00001	0.000038
Biochemical Oxygen Demand	mg/L	2	<2.0
Oil and Grease	mg/L	1	<1.0
* = Result Qualified			

Site treated drinking water

ALS		Sample ID	1. BEFORE FILTER	2. CLINIC	3. DRINK STATION	4. KITCHEN	5. FAR MENS BATH
1/28/2012		ALS ID	L1094242-1	L1094242-2	L1094242-3	L1094242-4	L1094242-5
Multiple Work Orders		Date Sampled	12/8/2011 9:00:00 AM	12/8/2011 9:01:00 AM	12/8/2011 9:02:00 AM	12/8/2011 9:03:00 AM	12/8/2011 9:04:00 AM
Analyte	Units	LOR	Water	Water	Water	Water	Water
Escherichia Coli	MPN/100mL	1	<1	<1	<1	<1	<1
Total Coliforms	MPN/100mL	1	<1	<1	<1	<1	<1
* = Result Qualified							

Weekly inspections of the dams and dykes were undertaken during the month of December and temperature readings recorded were sent to a geotechnical engineer.

Total waste incinerated in December 2011 was 130kg (287lbs).

There were a number of snow storms during the month of December. The small crew working at the Jericho mine site spent a significant amount of time clearing snow from the main road to the airport. The road needs to be kept clear in case of any emergencies. Between December 5th and 7th, inclusive, a severe whiteout storm occurred with winds up to and in excess of 100 km/hr. During this whiteout it was not

possible to keep up with the snow and became unsafe to try to do so. Historical information indicates that this was a 100-year storm and a unique event.

After the storm had passed, an inspection of the site revealed that fine PK, along with esker material, had become dispersed in and around the site. A full report was prepared. Preventative measures have been taken to mitigate any further wind dispersion. Tires have been placed along the PKCA creating a wind barrier. Photos of this are attached to this report.

Due to freezing conditions around site, no water was pumped from the pit or the PKCA. This has also prevented us from taking water samples at specific locations until thaw, including East sump (SWQ-07), PKCA (SWQ-04), and the pit (SWQ-02).

Should you have any questions regarding the monthly report for December 2011 please contact the undersigned by email at mcharbonneau@sheardiamonds.com or by phone at (778) 372-2750

Sincerely,
SHEAR DIAMONDS LTD.

A handwritten signature in dark ink, reading "Mathieu Charbonneau". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Mathieu Charbonneau
Environmental Technician

Wind Block Assembly

