



shear  
diamonds

**TYPE A WATER LICENSE**

**2AM-JER1119**

**Jericho Diamond Mine**

# **Monthly Report**

***Month being reported: June 2012***

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## **1 INTRODUCTION**

This Monthly Report is prepared as per Part B, Section 2 of the Type A Water License 2AM-JER1119, made effective by the Nunavut Water Board (NWB) on February 07 2012, to Shear Diamonds (Nunavut) Corp., a wholly owned subsidiary of Shear Diamonds Ltd.

Shear Diamonds Ltd. applied for a renewal application in February 2011. The NWB held a public hearing related to that application on November 30, 2011 and December 1, 2011 in Kugluktuk, NU. License 2AM-JER1119 replaced 2AM-JER0410, which was originally granted to Benachee Resources Inc.

## 2 MONTHLY AND ANNUAL QUANTITIES OF WATER OBTAINED FROM CARAT LAKE, LYNNE LAKE AND CONTWOYTO LAKE (Schedule B, Item 1a)

Freshwater was drawn from Carat Lake for domestic water use in the accommodations complex, offices, maintenance complex, dust control, airstrip compaction and the operation of the process plant. Table 2.1 provides the monthly and annual quantity of freshwater used. A total of 1332.3m<sup>3</sup> of water was drawn from Carat Lake since the beginning of 2012.

There has not been a winter road to the Jericho site since 2008. Accordingly, no water has been obtained from either Lynne Lake or Contwoyto Lake since that time.

**Table 2.1- CARAT LAKE - Freshwater Use January - June 2012 (m3)**

| MONTH                    | Roadway<br>and Airstrip<br>Use | DOMESTIC<br>WATER USE | PROCESS<br>PLANT | CUMULATIVE<br>TOTALS |
|--------------------------|--------------------------------|-----------------------|------------------|----------------------|
| January                  |                                | 71.1                  | 50.0             | 121.1                |
| February                 |                                | 57.6                  | 11.0             | 68.6                 |
| March                    |                                | 90.0                  | 21.0             | 110.0                |
| April                    |                                | 109.6                 | 79.0             | 188.6                |
| May                      | 148.9                          | 186.0                 | 119.8            | 454.7                |
| June                     | 31.9                           | 206.4                 | 150.0            | 388.3                |
| July                     |                                | N/A                   | N/A              | N/A                  |
| August                   |                                | N/A                   | N/A              | N/A                  |
| September                |                                | N/A                   | N/A              | N/A                  |
| October                  |                                | N/A                   | N/A              | N/A                  |
| November                 |                                | N/A                   | N/A              | N/A                  |
| December                 |                                | N/A                   | N/A              | N/A                  |
| <b>ANNUAL<br/>TOTALS</b> | <b>180.8</b>                   | <b>720.7</b>          | <b>430.3</b>     | <b>1332.3</b>        |

Daily values can be found in Appendix A

### 3 MONTHLY AND ANNUAL QUANTITIES OF RECYCLED WATER (Schedule B, Item 1b)

At the start of June a pump was placed near Cell B of the PKCA to supply water to the process plant and to provide water for a sprinkler system that is installed in Cell A of the PKCA. Table 3.1 summarizes the volume of recycled water that has been pumped from Cell B of the PKCA. It is estimated that 79 200m<sup>3</sup> of water was recycled from Cell B in June 2012.

**Table 3.1 – Volume of water recycled from Cell B of the PKCA**

| MONTH                                          | VOLUME PUMPED FROM Cell<br>B to Plant and to Cell A of<br>PKCA (m <sup>3</sup> ) |
|------------------------------------------------|----------------------------------------------------------------------------------|
| January                                        | 0                                                                                |
| February                                       | 0                                                                                |
| March                                          | 0                                                                                |
| April                                          | 0                                                                                |
| May                                            | 0                                                                                |
| June                                           | 79 200*                                                                          |
| July                                           | N/A                                                                              |
| August                                         | N/A                                                                              |
| September                                      | N/A                                                                              |
| October                                        | N/A                                                                              |
| November                                       | N/A                                                                              |
| December                                       | N/A                                                                              |
| <b>TOTAL VOLUME<br/>PUMPED (m<sup>3</sup>)</b> | <b>79 200</b>                                                                    |

\*volume estimated from pumping time and pump performance

#### **4 MONTHLY AND ANNUAL QUANTITIES OF SOLIDS IN TONNES AND LIQUID FRACTIONS OF EACH WASTE STREAM DISCHARGED TO THE PROCESSED KIMBERLITE CONTAINMENT AREA (Schedule B, Item 1c)**

##### **East Sump**

No water was pumped to or from the east sump in 2012, as of the end June 2012.

##### **Sewage Treatment Plant**

Refer to section 7.

##### **Open Pit**

Refer to section 6.

##### **Oztek Unit**

Refer to Section 9.

##### **Seepage**

The seepage survey began May 29 and lasted until June 6. The results of the survey will be reported as soon as it is completed.

During Temporary Closure activities, production of fine PK was, and will continue to be limited to a small amount produced during the evaluation of the process plant using stockpiled material. Cell A has sufficient capacity for this evaluation work.

## 5 MONTHLY AND ANNUAL QUANTITIES OF ANY DISCHARGES FROM THE PROCESSED KIMBERLITE CONTAINMENT AREA (Schedule B, Item 1d)

Discharge from the PKCA has not taken place yet in 2012.

A total of 0 m<sup>3</sup> of water was discharged from the PKCA into the receiving environment.

**Table 5.1 – Volume of Supernatant Discharge to Receiving Environment**

| MONTH               | VOLUME DISCHARGED<br>FROM THE PKCA (m <sup>3</sup> ) |
|---------------------|------------------------------------------------------|
| January             | 0                                                    |
| February            | 0                                                    |
| March               | 0                                                    |
| April               | 0                                                    |
| May                 | 0                                                    |
| June                | 0                                                    |
| July                | N/A                                                  |
| August              | N/A                                                  |
| September           | N/A                                                  |
| October             | N/A                                                  |
| November            | N/A                                                  |
| December            | N/A                                                  |
| <b>ANNUAL TOTAL</b> | <b>0</b>                                             |

## 6 MONTHLY AND ANNUAL QUANTITIES OF MINE PIT WATER AND DYKE SEEPAGE PUMPED FROM ALL FACILITIES TO THE PROCESSED KIMBERLITE CONTAINMENT AREA (Schedule B, Item 1e)

Table 6.1 summarizes the monthly and annual volumes of water pumped from the Jericho pit. As of June 2012, there has not been any volume pumped from the pit into the PKCA.

**Table 6.1 – Quantities in m<sup>3</sup> of pit water pumped to the PKCA**

| <b>MONTH</b>                                   | <b>VOLUME PUMPED FROM PIT<br/>TO PKCA (m<sup>3</sup>)</b> |
|------------------------------------------------|-----------------------------------------------------------|
| January                                        | 0                                                         |
| February                                       | 0                                                         |
| March                                          | 0                                                         |
| April                                          | 0                                                         |
| May                                            | 0                                                         |
| June                                           | 0                                                         |
| July                                           | N/A                                                       |
| August                                         | N/A                                                       |
| September                                      | N/A                                                       |
| October                                        | N/A                                                       |
| November                                       | N/A                                                       |
| December                                       | N/A                                                       |
| <b>TOTAL VOLUME<br/>PUMPED (m<sup>3</sup>)</b> | <b>0</b>                                                  |



## 7 MONTHLY AND ANNUAL QUANTITIES OF TREATED EFFLUENT DISCHARGED FROM THE WASTEWATER TREATMENT FACILITY (Schedule B, Item 1f)

Table 7.1 summarizes the monthly and annual volumes of treated effluent discharged from the Wastewater Treatment Facility – Sewage Treatment Plant (STP). All discharges of treated effluent from the STP in 2012 were deposited into the PKCA. A total of 484.6 m<sup>3</sup> of treated sewage effluent was discharged from the STP to the PKCA in 2012 as of June.

**Table 7.1 – Quantities in m<sup>3</sup> discharged from Waste Water Treatment Facility to PKCA**

| <b>MONTH</b>                                   | <b>Volume Treated – WWTP<br/>Treated Effluent (m<sup>3</sup>)</b> |
|------------------------------------------------|-------------------------------------------------------------------|
| January                                        | 48.0                                                              |
| February                                       | 17.4                                                              |
| March                                          | 70.5                                                              |
| April                                          | 112.9                                                             |
| May                                            | 66.0                                                              |
| June                                           | 169.7                                                             |
| July                                           | N/A                                                               |
| August                                         | N/A                                                               |
| September                                      | N/A                                                               |
| October                                        | N/A                                                               |
| November                                       | N/A                                                               |
| December                                       | N/A                                                               |
| <b>TOTAL VOLUME<br/>PUMPED (m<sup>3</sup>)</b> | <b>484.6</b>                                                      |

Daily values can be found in Appendix B

## 8 MONTHLY AND ANNUAL QUANTITIES OF SEWAGE SOLIDS REMOVED FROM THE WASTEWATER TREATMENT FACILITY (Schedule B, Item 1g)

The removal of sewage solids from the Wastewater Treatment Facility has not been required on a regular basis while operating under Temporary Closure conditions. Settled solids were removed from the aeration tank as required based on camp population in order to maintain efficient functioning of the Sewage Treatment Plant. Settled solids are collected using a vacuum truck and deposited into a designated basin located on the till dump. Table 8.1 summarizes the volume of sewage solids removed from the Wastewater Treatment Facility. A total of 0 m<sup>3</sup> of settled sludge was deposited into the designated basin on the till dump in June of 2012.

**Table 8.1 Sewage Solids Removed January – June 2012**

| MONTH        | SEWAGE SOLIDS REMOVED (m <sup>3</sup> ) |
|--------------|-----------------------------------------|
| January      | 0                                       |
| February     | 0                                       |
| March        | 0                                       |
| April        | 4.5                                     |
| May          | 0                                       |
| June         | 0                                       |
| July         | N/A                                     |
| August       | N/A                                     |
| September    | N/A                                     |
| October      | N/A                                     |
| November     | N/A                                     |
| December     | N/A                                     |
| <b>TOTAL</b> | <b>4.5</b>                              |

## 9 MONTHLY AND ANNUAL QUANTITIES OF TREATED EFFLUENT DISCHARGED FROM THE HYDROCARBON CONTACT WATER REMEDIATION UNIT (Schedule B, Item 1h)

In 2011 Shear Diamonds Ltd. assisted in the design of a mobile hydrocarbon contact water remediation unit (Oztek). This unit is used to treat water that is pumped from secondary containment areas. Prior to discharge to the PKCA, water is treated, sampled and pumped to the PKCA. The results can be found in Appendix D. Table 9.1 summarizes the volumes of treated and discharged from the Oztek to the PKCA. The Oztek was commissioned in June and has started treating hydrocarbon contact water, however, none of that water was discharged into the PKCA during the month.

Table 9.1 Volumes of treated effluent discharged from Oztek to PKCA (m<sup>3</sup>)

| MONTH        | VOLUMES OF EFFLUENT DISCHARGED (m <sup>3</sup> ) |
|--------------|--------------------------------------------------|
| January      | 0                                                |
| February     | 0                                                |
| March        | 0                                                |
| April        | 0                                                |
| May          | 0                                                |
| June         | 0                                                |
| July         | N/A                                              |
| August       | N/A                                              |
| September    | N/A                                              |
| October      | N/A                                              |
| November     | N/A                                              |
| December     | N/A                                              |
| <b>TOTAL</b> | <b>0</b>                                         |

## **10 ANNUAL QUANTITIES OF OVERBURDEN, WASTE ROCK, ORE STOCKPILED, OR PROCESSED STORED (Schedule B, Item 1i)**

The Jericho mine site continues to be operated under Temporary Closure conditions. There have been no materials mined, stockpiled or stored since Tahera operations ceased in 2008.

## **11 SUMMARY OF CONSTRUCTION ACTIVITIES AND UPDATED MINE PLAN (Schedule B, Item 1k)**

The Jericho mine site has not had any construction activities in June 2012. No construction activities took place and there have been no changes to the Mine Plan originally filed by Tahera Diamond Corporation.

## **12 SUMMARY OF ANY MODIFICATION AND/OR MAJOR MAINTENANCE WORK AND/OR DEMOLITION WORK AND ANY ASSOCIATED STRUCTURES (Schedule B, Item 1l)**

No modifications, major maintenance work or demolition work took place in June.

## **13 LIST AND DESCRIPTION OF ALL UNAUTHORIZED DISCHARGES AND SPILLS (Schedule B, Item 1t)**

There were no unauthorized discharges at the Jericho Mine Site during June 2012.

A total of 4 spills were reported in June 2012. All spill reports can be found in Appendix C.

## **14 OUTLINE OF SPILL TRAINING EXERCISES CARRIED OUT BY THE LICENSEE (Schedule B, Item 1u)**

No spill training exercises were carried out by Shear Diamonds Ltd. June 2012. While operating under Temporary Closure conditions, the number of people on site is limited and all potential training opportunities were not conducive with flight logistics in and out of site. The decision was made to hold off on training until such time as more people were available to participate making it more cost effective and productive.

## **15 SITE INSPECTIONS**

Enforcement officers from Environment Canada were on site from June 18 to June 20. During their time here they conducted inspections under the Fisheries Act and inspections of the fuel tanks and storage on site.

## **16 SITE VISITORS**

Patick Kramers and Tim Morris, Environment Canada enforcement officers were on site from June 18 to June 20 to do inspections here and at other locations.

## **17 NON-COMPLIANCES**

Ongoing issues include improper waste sorting, disposal and incineration. Outside of these issues there were not any non-compliances in June.

Water testing analysis for SWQ-01 effluent and influent, SWQ-12 carat lake pump house, SWQ-07 East Sump, AEM-26 Southeast Dam Lake, AEM-22 Ash Lake and dustfall air quality can be found in Appendix D.

Monthly Site Inspections can be found in Appendix E.

## APPENDIX A: Daily values of water drawn from Carat Lake pump house for Domestic Use

| Date      | Time | Meter Reading (m3) | Daily Volume (m3) |
|-----------|------|--------------------|-------------------|
| 01-Jun-12 | 7:15 | 23065.8            | 23.7              |
| 03-Jun-12 | 6:30 | 23089.5            | 15.5              |
| 06-Jun-12 | 6:15 | 23105              |                   |
| 08-Jun-12 | 8:00 | 23105              |                   |
| 09-Jun-12 | 7:00 | 23125.2            | 20.2              |
| 10-Jun-12 | 7:00 | 23125.2            |                   |
| 11-Jun-12 | 7:10 | 23125.2            |                   |
| 12-Jun-12 | 7:10 | 23145.4            | 20.2              |
| 13-Jun-12 | 7:00 | 23145.4            |                   |
| 14-Jun-12 | 8:00 | 23153.7            | 8.3               |
| 15-Jun-12 | 6:45 | 23160.7            | 7                 |
| 16-Jun-12 | 6:30 | 23160.7            |                   |
| 17-Jun-12 | 6:30 | 23170.8            | 10.1              |
| 18-Jun-12 | 6:15 | 23176.5            | 6.7               |
| 19-Jun-12 | 6:30 | 23176.5            |                   |
| 20-Jun-12 | 6:30 | 23185              | 8.5               |
| 21-Jun-12 | 6:30 | 23185              |                   |
| 22-Jun-12 | 8:45 | 23208.2            | 23.2              |
| 23-Jun-12 | 6:30 | 23219.1            | 11.1              |
| 24-Jun-12 | 8:15 | 23219.1            |                   |
| 25-Jun-12 | 6:30 | 23219.2            | 0.1               |
| 26-Jun-12 | 6:45 | 23233.2            | 14                |
| 27-Jun-12 | 6:30 | 23243.1            | 9.9               |
| 28-Jun-12 | 6:30 | 23255.5            | 11.8              |
| 29-Jun-12 | 6:45 | 23272.2            | 16.7              |
| 30-Jun-12 | 6:15 | 23272.2            |                   |

## APPENDIX B: Daily quantities removed from the Waste Water Treatment Facility to Cell A of the PKCA

| Date      | Time | Flow Meter Reading (L) | Daily Discharge (L) |
|-----------|------|------------------------|---------------------|
| 1-Jun-12  | 9:45 | 112,470                | 244                 |
| 3-Jun-12  | 9:25 | 121,714                | 11,430              |
| 6-Jun-12  | 8:30 | 133,144                | 10,802              |
| 8-Jun-12  | 9:30 | 143,946                | 4,890               |
| 9-Jun-12  | 7:30 | 148,836                | 5,501               |
| 10-Jun-12 | 9:30 | 154,337                | 7,279               |

|           |       |         |        |
|-----------|-------|---------|--------|
| 11-Jun-12 | 10:10 | 161,616 | 5,082  |
| 12-Jun-12 | 7:25  | 166,698 | 3,715  |
| 13-Jun-12 | 9:15  | 170,413 | 4,903  |
| 14-Jun-12 | 9:30  | 175,316 | 4,808  |
| 15-Jun-12 | 7:45  | 180,124 | 5,602  |
| 16-Jun-12 | 6:30  | 185,726 | 6,840  |
| 17-Jun-12 | 7:00  | 192,566 | 5,066  |
| 18-Jun-12 | 6:15  | 197,632 | 6,351  |
| 19-Jun-12 | 7:00  | 203,983 | 10,549 |
| 20-Jun-12 | 16:00 | 214,532 | 12,690 |
| 22-Jun-12 | 15:15 | 227,222 | 4,218  |
| 23-Jun-12 | 6:15  | 231,440 | 5,879  |
| 24-Jun-12 | 6:30  | 237,319 | 9,197  |
| 25-Jun-12 | 8:15  | 246,516 | 8,211  |
| 26-Jun-12 | 10:20 | 254,727 | 5,290  |
| 27-Jun-12 | 6:45  | 260,017 | 8,545  |
| 28-Jun-12 | 7:45  | 268,562 | 5,101  |
| 29-Jun-12 | 6:45  | 273,663 | 8,578  |
| 30-Jun-12 | 7:30  | 282,241 | 5,406  |

## APPENDIX C: Spill reports

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                            |  |                                                                                                                                            |  |                                                                                                                |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                           |  | <b>NT-NU SPILL REPORT</b><br>OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS                                                        |  | <b>NT-NU 24-HOUR SPILL REPORT LINE</b><br>TEL: (867) 920-8130<br>FAX: (867) 873-6824<br>EMAIL: spilling@nrc.ca |  |
| <b>A</b> REPORT DATE: MONTH - DAY - YEAR<br><b>June 5, 2012</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | REPORT TIME<br><b>7:30pm</b>                                                                                                               |  | <input checked="" type="checkbox"/> ORIGINAL SPILL REPORT<br>OR<br><input type="checkbox"/> UPDATE # _____<br>TO THE ORIGINAL SPILL REPORT |  | <b>REPORT NUMBER</b><br><b>12-226</b>                                                                          |  |
| <b>B</b> OCCURRENCE DATE: MONTH - DAY - YEAR<br><b>June 4, 2012</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | OCCURRENCE TIME<br><b>3:05pm</b>                                                                                                           |  |                                                                                                                                            |  |                                                                                                                |  |
| <b>C</b> LAND USE PERMIT NUMBER (IF APPLICABLE)<br><b>KTL 311 CO15</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | WATER LICENSE NUMBER (IF APPLICABLE)<br><b>2AM-JER1119</b>                                                                                 |  |                                                                                                                                            |  |                                                                                                                |  |
| <b>D</b> GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION<br><b>Jericho Mine Site</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  | REGION<br><input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN |  |                                                                                                                                            |  |                                                                                                                |  |
| <b>E</b> LATITUDE<br>DEGREES <b>66</b> MINUTES <b>01</b> SECONDS <b>00</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | LONGITUDE<br>DEGREES <b>111</b> MINUTES <b>27</b> SECONDS <b>00</b>                                                                        |  |                                                                                                                                            |  |                                                                                                                |  |
| <b>F</b> RESPONSIBLE PARTY OR VESSEL NAME<br><b>Shear Diamonds</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION<br><b>6 Adelaide St. E, Suite 220 Toronto, ON M5C 1H6</b>                                     |  |                                                                                                                                            |  |                                                                                                                |  |
| <b>G</b> ANY CONTRACTOR INVOLVED<br><b>no</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | CONTRACTOR ADDRESS OR OFFICE LOCATION<br><b>n/a</b>                                                                                        |  |                                                                                                                                            |  |                                                                                                                |  |
| <b>H</b> PRODUCT SPILLED<br><b>diesel</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES<br><b>4L</b>                                                                                 |  | U/I NUMBER<br><b>1202</b>                                                                                                                  |  |                                                                                                                |  |
| SECOND PRODUCT SPILLED (IF APPLICABLE)<br><b>none</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES<br><b>n/a</b>                                                                                |  | U/I NUMBER<br><b>n/a</b>                                                                                                                   |  |                                                                                                                |  |
| <b>I</b> SPILL SOURCE<br><b>vehicle</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | SPILL CAUSE<br><b>leak</b>                                                                                                                 |  | AREA OF CONTAMINATION IN SQUARE METRES<br><b>6</b>                                                                                         |  |                                                                                                                |  |
| <b>J</b> FACTORS AFFECTING SPILL OR RECOVERY<br><b>none</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | DESCRIBE ANY ASSISTANCE REQUIRED:<br><b>none</b>                                                                                           |  | HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT<br><b>none</b>                                                                                 |  |                                                                                                                |  |
| <b>K</b> ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS<br><p>-this spill is being reported as required under the conditions in Part H, Section 8(b) of Shear Diamonds Water Board (NWB) License 2AM-JER1119 pursuant to the Nunavut waters and Nunavut Surface Rights Tribunal Act and as required by the Government of Nunavut's Environmental Protection Act paragraph 5.1(a)</p> <p>-this incident occurred approximately 600m northwest of Ash Lake</p> <p>-while parked behind the process plant it was noticed that the fire truck was leaking fluid</p> <p>-during transport to the truck shop the truck left a small trail of diesel</p> <p>-the truck was immediately brought to the truck shop for inspection and repair</p> <p>-after inspection it was determined that the leaked fluid was diesel</p> <p>-contaminated dirt was shovelled up into a drum and brought to the HWTA</p> |  |                                                                                                                                            |  |                                                                                                                                            |  |                                                                                                                |  |
| <b>L</b> REPORTED TO SPILL LINE BY:<br><b>Wes Atchison</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  | POSITION<br><b>Environmental Tech</b>                                                                                                      |  | EMPLOYER<br><b>Shear Diamonds</b>                                                                                                          |  | LOCATION CALLING FROM<br><b>Jericho Mine Site</b>                                                              |  |
| <b>M</b> ANY ALTERNATE CONTACT<br><b>Andrew Uyarrai</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | POSITION<br><b>Site Services Mngr</b>                                                                                                      |  | EMPLOYER<br><b>Shear Diamonds</b>                                                                                                          |  | ALTERNATE CONTACT<br><b>Jericho Mine Site</b>                                                                  |  |
| <b>N</b> RECEIVED AT SPILL LINE BY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | POSITION<br>STATION OPERATOR                                                                                                               |  | EMPLOYER                                                                                                                                   |  | LOCATION CALLED<br>YELLOWKNIFE, NT                                                                             |  |
| LEAD AGENCY <input type="checkbox"/> EO <input type="checkbox"/> OGS <input type="checkbox"/> GWT <input type="checkbox"/> GN <input type="checkbox"/> LA <input type="checkbox"/> INAC <input type="checkbox"/> NES <input type="checkbox"/> DTC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN                                |  | FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED                                                                  |  |                                                                                                                |  |
| AGENCY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | CONTACT NAME                                                                                                                               |  | CONTACT TIME                                                                                                                               |  | REMARKS                                                                                                        |  |
| LEAD AGENCY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                            |  |                                                                                                                                            |  |                                                                                                                |  |
| FIRST SUPPORT AGENCY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                            |  |                                                                                                                                            |  |                                                                                                                |  |
| SECOND SUPPORT AGENCY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                                                                                                                            |  |                                                                                                                                            |  |                                                                                                                |  |
| THIRD SUPPORT AGENCY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                            |  |                                                                                                                                            |  |                                                                                                                |  |

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Canada

## NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>A</b>                                                                                                                                                                                                                                            | REPORT DATE: MONTH - DAY - YEAR<br><b>June 14 2012</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | REPORT TIME<br><b>12:00</b>                                                                                                                | <input type="checkbox"/> ORIGINAL SPILL REPORT<br>OR<br><input type="checkbox"/> UPDATE # _____<br>TO THE ORIGINAL SPILL REPORT | REPORT NUMBER<br><b>12 - 247</b>                                          |
| <b>B</b>                                                                                                                                                                                                                                            | OCCURRENCE DATE: MONTH - DAY - YEAR<br><b>June 13 2012</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | OCCURRENCE TIME<br><b>17:50</b>                                                                                                            |                                                                                                                                 |                                                                           |
| <b>C</b>                                                                                                                                                                                                                                            | LAND USE PERMIT NUMBER (IF APPLICABLE)<br><b>N2011C0009</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | WATER LICENCE NUMBER (IF APPLICABLE)<br><b>2AM-JER1119</b>                                                                                 |                                                                                                                                 |                                                                           |
| <b>D</b>                                                                                                                                                                                                                                            | GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION<br><b>Jericho Mine Site</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | REGION<br><input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN |                                                                                                                                 |                                                                           |
| <b>E</b>                                                                                                                                                                                                                                            | LATITUDE<br>DEGREES <b>66</b> MINUTES <b>01</b> SECONDS <b>00</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | LONGITUDE<br>DEGREES <b>111</b> MINUTES <b>27</b> SECONDS <b>00</b>                                                                        |                                                                                                                                 |                                                                           |
| <b>F</b>                                                                                                                                                                                                                                            | RESPONSIBLE PARTY OR VESSEL NAME<br><b>Water Pump</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION<br><b>Jericho Mine Site</b>                                                                   |                                                                                                                                 |                                                                           |
| <b>G</b>                                                                                                                                                                                                                                            | ANY CONTRACTOR INVOLVED<br><b>N/A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CONTRACTOR ADDRESS OR OFFICE LOCATION<br><b>N/A</b>                                                                                        |                                                                                                                                 |                                                                           |
| <b>H</b>                                                                                                                                                                                                                                            | PRODUCT SPILLED<br><b>Ethylene Glycol</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES<br><b>1 L</b>                                                                                | U.N. NUMBER<br><b>3082</b>                                                                                                      |                                                                           |
|                                                                                                                                                                                                                                                     | SECOND PRODUCT SPILLED (IF APPLICABLE)<br><b>N/A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES<br><b>N/A</b>                                                                                | U.N. NUMBER<br><b>N/A</b>                                                                                                       |                                                                           |
| <b>I</b>                                                                                                                                                                                                                                            | SPILL SOURCE<br><b>Water Pump</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SPILL CAUSE<br><b>Failed Gasket</b>                                                                                                        | AREA OF CONTAMINATION IN SQUARE METRES<br><b>0.2</b>                                                                            |                                                                           |
| <b>J</b>                                                                                                                                                                                                                                            | FACTORS AFFECTING SPILL OR RECOVERY<br><b>None</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DESCRIBE ANY ASSISTANCE REQUIRED<br><b>None</b>                                                                                            | HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT<br><b>None</b>                                                                      |                                                                           |
| <b>K</b>                                                                                                                                                                                                                                            | ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS.<br>- This spill is being reported in accordance with the conditions outlined in Part H, Section 8(b) of Shear Diamonds Water Board (NWB) Licence 2AM-JER1119 pursuant to the Nunavut Waters and Nunavut Surface Rights Tribunal Act and as required by the Government of Nunavut's Environmental Protection Act paragraph 5.1(a).<br>- A dewatering pump was discovered to be leaking a small amount of Ethylene Glycol due to a leaky gasket. This pump is dewatering cell B/C to cell A of our polishing pond within the PKCA.<br>- Pump was hauled up to shop for repairs. Rocks and soil beneath were collected, drummed, and relocated to the HWTa for back haul and future remediation. |                                                                                                                                            |                                                                                                                                 |                                                                           |
| <b>L</b>                                                                                                                                                                                                                                            | REPORTED TO SPILL LINE BY<br><b>Kyle Conway</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | POSITION<br><b>Environment</b>                                                                                                             | EMPLOYER<br><b>Shear Diamonds</b>                                                                                               | LOCATION CALLING FROM<br><b>Jericho</b>                                   |
| <b>M</b>                                                                                                                                                                                                                                            | ANY ALTERNATE CONTACT<br><b>Peter Fournier</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | POSITION<br><b>Environment</b>                                                                                                             | EMPLOYER<br><b>Shear Diamonds</b>                                                                                               | ALTERNATE CONTACT<br><b>Jericho</b>                                       |
| REPORT LINE USE ONLY                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                            |                                                                                                                                 |                                                                           |
| <b>N</b>                                                                                                                                                                                                                                            | RECEIVED AT SPILL LINE BY<br>STATION OPERATOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | POSITION                                                                                                                                   | EMPLOYER                                                                                                                        | LOCATION CALLED<br><b>YELLOWKNIFE, NT</b>                                 |
| LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> ETC |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                            | SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN                     | FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED |
| AGENCY                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CONTACT NAME                                                                                                                               | CONTACT TIME                                                                                                                    | REMARKS                                                                   |
| LEAD AGENCY                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                            |                                                                                                                                 |                                                                           |
| FIRST SUPPORT AGENCY                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                            |                                                                                                                                 |                                                                           |
| SECOND SUPPORT AGENCY                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                            |                                                                                                                                 |                                                                           |
| THIRD SUPPORT AGENCY                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                            |                                                                                                                                 |                                                                           |

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Canada

# NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE  
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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>A</b>                                                                                                                                                                                                                                           | REPORT DATE: MONTH - DAY - YEAR<br><b>June 25, 2012</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | REPORT TIME<br><b>7:20 pm</b>                                                                               | <input checked="" type="checkbox"/> ORIGINAL SPILL REPORT,<br>OR<br><input type="checkbox"/> UPDATE #<br>TO THE ORIGINAL SPILL REPORT      | REPORT NUMBER<br><b>12-265</b>                                            |
| <b>B</b>                                                                                                                                                                                                                                           | OCCURRENCE DATE: MONTH - DAY - YEAR<br><b>June 25, 2012</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | OCCURRENCE TIME<br><b>5:00 pm</b>                                                                           |                                                                                                                                            |                                                                           |
| <b>C</b>                                                                                                                                                                                                                                           | LAND USE PERMIT NUMBER (IF APPLICABLE)<br><b>N2011C0009</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | WATER LICENCE NUMBER (IF APPLICABLE)<br><b>2AM-JER1119</b>                                                  |                                                                                                                                            |                                                                           |
| <b>D</b>                                                                                                                                                                                                                                           | GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION<br><b>Jericho Mine Site</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                             | REGION<br><input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN |                                                                           |
| <b>E</b>                                                                                                                                                                                                                                           | LATITUDE<br>DEGREES <b>66</b> MINUTES <b>01</b> SECONDS <b>00</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                             | LONGITUDE<br>DEGREES <b>111</b> MINUTES <b>27</b> SECONDS <b>00</b>                                                                        |                                                                           |
| <b>F</b>                                                                                                                                                                                                                                           | RESPONSIBLE PARTY OR VESSEL NAME<br><b>Shear Diamonds</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION<br><b>6 Adelaide St. E., Suite 220, Toronto ON</b>             |                                                                                                                                            |                                                                           |
| <b>G</b>                                                                                                                                                                                                                                           | ANY CONTRACTOR INVOLVED<br><b>no</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CONTRACTOR ADDRESS OR OFFICE LOCATION<br><b>n/a</b>                                                         |                                                                                                                                            |                                                                           |
| <b>H</b>                                                                                                                                                                                                                                           | PRODUCT SPILLED<br><b>hydraulic oil</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES<br><b>15L</b>                                                 | U.N. NUMBER<br><b>3082</b>                                                                                                                 |                                                                           |
|                                                                                                                                                                                                                                                    | SECOND PRODUCT SPILLED (IF APPLICABLE)<br><b>none</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES<br><b>n/a</b>                                                 | U.N. NUMBER<br><b>n/a</b>                                                                                                                  |                                                                           |
| <b>I</b>                                                                                                                                                                                                                                           | SPILL SOURCE<br><b>water truck</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | SPILL CAUSE<br><b>broken hose</b>                                                                           | AREA OF CONTAMINATION IN SQUARE METRES<br><b>2.5</b>                                                                                       |                                                                           |
| <b>J</b>                                                                                                                                                                                                                                           | FACTORS AFFECTING SPILL OR RECOVERY<br><b>none</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | DESCRIBE ANY ASSISTANCE REQUIRED<br><b>n/a</b>                                                              | HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT<br><b>n/a</b>                                                                                  |                                                                           |
| <b>K</b>                                                                                                                                                                                                                                           | ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS<br>-this spill is being reported in accordance with the conditions outlined in Part H, Section 8(b) of Shear Diamonds Water Board (NWB) Licence 2AM-JER1119 pursuant to the Nunavut Waters and Nunavut Surface Rights Tribunal Act and as required by the Government of Nunavut's Environmental Protection Act paragraph 5.1(a)<br>-this incident occurred approximately 400m east of Carat Lake<br>-hydraulic hose on water truck broke while lifting the water tank to drain it<br>-the driver noticed the broken hose and stopped the truck immediately<br>-contaminated dirt on the road was shovelled up into drums to be placed in the HWTAs<br>-water truck is currently under repair |                                                                                                             |                                                                                                                                            |                                                                           |
| <b>L</b>                                                                                                                                                                                                                                           | REPORTED TO SPILL LINE BY<br><b>Wes Atchison</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | POSITION<br><b>Environmental Tech.</b>                                                                      | EMPLOYER<br><b>Shear Diamonds</b>                                                                                                          | LOCATION CALLING FROM<br><b>Jericho Mine Site</b>                         |
| <b>M</b>                                                                                                                                                                                                                                           | ANY ALTERNATE CONTACT<br><b>Andy Uyarrai</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | POSITION<br><b>Site Services Manager</b>                                                                    | EMPLOYER<br><b>Shear Diamonds</b>                                                                                                          | ALTERNATE CONTACT<br><b>Jericho Mine Site</b>                             |
| REPORT LINE USE ONLY                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                             |                                                                                                                                            |                                                                           |
| <b>N</b>                                                                                                                                                                                                                                           | RECEIVED AT SPILL LINE BY:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | POSITION<br>STATION OPERATOR                                                                                | EMPLOYER                                                                                                                                   | LOCATION CALLED<br>YELLOWKNIFE, NT                                        |
| LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NRB <input type="checkbox"/> TO |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN |                                                                                                                                            | FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED |
| AGENCY                                                                                                                                                                                                                                             | CONTACT NAME                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | CONTACT TIME                                                                                                | REMARKS                                                                                                                                    |                                                                           |
| LEAD AGENCY                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                             |                                                                                                                                            |                                                                           |
| FIRST SUPPORT AGENCY                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                             |                                                                                                                                            |                                                                           |
| SECOND SUPPORT AGENCY                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                             |                                                                                                                                            |                                                                           |
| THIRD SUPPORT AGENCY                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                             |                                                                                                                                            |                                                                           |

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## NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------|
| <b>A</b>                                                                                                                                                                                                                                            | REPORT DATE: MONTH - DAY - YEAR<br><b>June 26 2012</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | REPORT TIME<br><b>9:00 am</b>                                                                                                              | <input checked="" type="checkbox"/> ORIGINAL SPILL REPORT,<br>OR<br><input type="checkbox"/> UPDATE #<br>TO THE ORIGINAL SPILL REPORT |                                                   | REPORT NUMBER<br><b>12-266</b>             |
| <b>B</b>                                                                                                                                                                                                                                            | OCCURRENCE DATE: MONTH - DAY - YEAR<br><b>June 26 2012</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | OCCURRENCE TIME<br><b>7:00 am</b>                                                                                                          |                                                                                                                                       |                                                   |                                            |
| <b>C</b>                                                                                                                                                                                                                                            | LAND USE PERMIT NUMBER (IF APPLICABLE)<br><b>N2011C0009</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | WATER LICENSE NUMBER (IF APPLICABLE)<br><b>2AM-JER1119</b>                                                                                 |                                                                                                                                       |                                                   |                                            |
| <b>D</b>                                                                                                                                                                                                                                            | GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION<br><b>Jericho Mine Site</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | REGION<br><input type="checkbox"/> NWT <input checked="" type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN |                                                                                                                                       |                                                   |                                            |
| <b>E</b>                                                                                                                                                                                                                                            | LATITUDE<br>DEGREES <b>66</b> MINUTES <b>01</b> SECONDS <b>00</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | LONGITUDE<br>DEGREES <b>111</b> MINUTES <b>27</b> SECONDS <b>00</b>                                                                        |                                                                                                                                       |                                                   |                                            |
| <b>F</b>                                                                                                                                                                                                                                            | RESPONSIBLE PARTY OR VESSEL NAME<br><b>Shear Diamonds</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION<br><b>6 Adelaide St. E., Suite 220, Toronto, ON</b>                                           |                                                                                                                                       |                                                   |                                            |
| <b>G</b>                                                                                                                                                                                                                                            | ANY CONTRACTOR INVOLVED<br><b>no</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | CONTRACTOR ADDRESS OR OFFICE LOCATION<br><b>n/a</b>                                                                                        |                                                                                                                                       |                                                   |                                            |
| <b>H</b>                                                                                                                                                                                                                                            | PRODUCT SPILLED<br><b>diesel</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES<br><b>20L</b>                                                                                | U.N. NUMBER<br><b>1202</b>                                                                                                            |                                                   |                                            |
|                                                                                                                                                                                                                                                     | SECOND PRODUCT SPILLED (IF APPLICABLE)<br><b>none</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES<br><b>n/a</b>                                                                                | U.N. NUMBER<br><b>n/a</b>                                                                                                             |                                                   |                                            |
| <b>I</b>                                                                                                                                                                                                                                            | SPILL SOURCE<br><b>fuel truck</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | SPILL CAUSE<br><b>nozzle malfunction</b>                                                                                                   | AREA OF CONTAMINATION IN SQUARE METRES<br><b>2</b>                                                                                    |                                                   |                                            |
| <b>J</b>                                                                                                                                                                                                                                            | FACTORS AFFECTING SPILL OR RECOVERY<br><b>none</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | DESCRIBE ANY ASSISTANCE REQUIRED<br><b>n/a</b>                                                                                             | HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT<br><b>n/a</b>                                                                             |                                                   |                                            |
| <b>K</b>                                                                                                                                                                                                                                            | ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS<br>-this spill is being reported in accordance with the conditions outlined in Part H, Section 8(b) of Shear Diamonds Water Board (NWB) Licence 2AM-JER1119 pursuant to the Nunavut Waters and Nunavut Surface Rights Tribunal Act and as required by the Government of Nunavut's Environmental Protection Act paragraph 5.1(a)<br>-this incident occurred approximately 500m northwest of Ash Lake<br>-while fueling a bobcat the fuel nozzle of the fuel truck got stuck in the on position and diesel overflowed from the bobcat on to the ground<br>-the nozzle was eventually put back into the off position<br>-the bobcat was used to shovel the contaminated dirt into drums which will be placed in the HWTa<br>-a lock was put on the fuel truck nozzle and will not be used until it can be replaced |                                                                                                                                            |                                                                                                                                       |                                                   |                                            |
| <b>L</b>                                                                                                                                                                                                                                            | REPORTED TO SPILL LINE BY<br><b>Wes Atchison</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | POSITION<br><b>Environmental Tech.</b>                                                                                                     | EMPLOYER<br><b>Shear Diamonds</b>                                                                                                     | LOCATION CALLING FROM<br><b>Jericho Mine Site</b> | TELEPHONE<br><b>778-372-2723</b>           |
| <b>M</b>                                                                                                                                                                                                                                            | ANY ALTERNATE CONTACT<br><b>Andy Uyarrai</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | POSITION<br><b>Site Services Manager</b>                                                                                                   | EMPLOYER<br><b>Shear Diamonds</b>                                                                                                     | ALTERNATE CONTACT<br><b>Jericho Mine Site</b>     | ALTERNATE TELEPHONE<br><b>778-372-2750</b> |
| REPORT LINE USE ONLY                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                            |                                                                                                                                       |                                                   |                                            |
| <b>N</b>                                                                                                                                                                                                                                            | RECEIVED AT SPILL LINE BY<br>STATION OPERATOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | POSITION                                                                                                                                   | EMPLOYER                                                                                                                              | LOCATION CALLED<br>YELLOWKNIFE, NT                | REPORT LINE NUMBER<br>(867) 920-8136       |
| LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCS <input type="checkbox"/> EMWT <input type="checkbox"/> EN <input type="checkbox"/> I.A. <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                            | SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN                           |                                                   |                                            |
| AGENCY                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                            | FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED                                                             |                                                   |                                            |
| CONTRACT NAME                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | CONTACT TIME                                                                                                                               |                                                                                                                                       | REMARKS                                           |                                            |
| LEAD AGENCY                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                            |                                                                                                                                       |                                                   |                                            |
| FIRST SUPPORT AGENCY                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                            |                                                                                                                                       |                                                   |                                            |
| SECOND SUPPORT AGENCY                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                            |                                                                                                                                       |                                                   |                                            |
| THIRD SUPPORT AGENCY                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                            |                                                                                                                                       |                                                   |                                            |

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## APPENDIX D: Raw Data from ALS and Maxxam water testing

### SWQ-01 Effluent

|              |                |
|--------------|----------------|
| Sample ID    | JER-SWQ-01-EFF |
| Maxxam ID    | DT4448         |
| Date Sampled | 21/06/2012     |

| Parameter                   | Units | RDL | EFFLUENT<br>DP7049<br>07/06/2012 | JER-SWQ-01-EFF<br>DT4448<br>21/06/2012 |
|-----------------------------|-------|-----|----------------------------------|----------------------------------------|
| <b>Anions</b>               |       |     |                                  |                                        |
| Alkalinity (PP as CaCO3)    | mg/L  |     | 0.5                              | <0.50                                  |
| Alkalinity (Total as CaCO3) | mg/L  |     | 0.5                              | 11                                     |
| Bicarbonate (HCO3)          | mg/L  |     | 0.5                              | 14                                     |
| Carbonate (CO3)             | mg/L  |     | 0.5                              | <0.50                                  |
| Chloride (Cl)               | mg/L  |     | 1                                | 55                                     |
| Hydroxide (OH)              | mg/L  |     | 0.5                              | <0.50                                  |
| Sulphate (SO4)              | mg/L  |     | 1                                | 32                                     |

|                              |       |     |        |       |
|------------------------------|-------|-----|--------|-------|
| <b>Calculated Parameters</b> |       |     |        |       |
| Anion Sum                    | meq/L | N/A | 5.4    | 5.3   |
| Cation Sum                   | meq/L | N/A | 4.8    | 5.2   |
| Filter and HNO3 Preservation | N/A   | N/A | FIELD  | FIELD |
| Hardness (CaCO3)             | mg/L  |     | 0.5    | 50.5  |
| Hardness (CaCO3)             | mg/L  |     | 0.5    | 33    |
| Ion Balance                  | N/A   |     | 0.01   | 0.9   |
| Nitrate (NO3)                | mg/L  |     | 0.013  | 140   |
| Nitrate plus Nitrite (N)     | mg/L  |     | 0.003  | 32    |
| Nitrite (NO2)                | mg/L  |     | 0.0099 | 0.34  |
| Total Dissolved Solids       | mg/L  |     | 10     | 380   |

|                           |      |  |   |     |
|---------------------------|------|--|---|-----|
| <b>Demand Parameters</b>  |      |  |   |     |
| Biochemical Oxygen Demand | mg/L |  | 2 | 6.2 |
|                           |      |  |   | 22  |

|                                  |      |  |        |        |
|----------------------------------|------|--|--------|--------|
| <b>Dissolved Metals by ICPMS</b> |      |  |        |        |
| Aluminum (Al)                    | mg/L |  | 0.0002 | 0.0202 |
|                                  |      |  |        | 0.25   |

|                 |      |          |           |           |
|-----------------|------|----------|-----------|-----------|
| Antimony (Sb)   | mg/L | 0.00002  | 0.00177   | 0.00132   |
| Arsenic (As)    | mg/L | 0.00002  | 0.000674  | 0.000654  |
| Barium (Ba)     | mg/L | 0.00002  | 0.00389   | 0.0107    |
| Beryllium (Be)  | mg/L | 0.00001  | 0.000034  | 0.000026  |
| Bismuth (Bi)    | mg/L | 0.000005 | 0.00105   | 0.00122   |
| Boron (B)       | mg/L | 0.05     | 0.544     | 0.367     |
| Cadmium (Cd)    | mg/L | 0.000005 | 0.000124  | 0.000118  |
| Calcium (Ca)    | mg/L | 0.05     | 13.1      | 8.49      |
| Chromium (Cr)   | mg/L | 0.0001   | 0.00037   | 0.00139   |
| Cobalt (Co)     | mg/L | 0.000005 | 0.000717  | 0.000547  |
| Copper (Cu)     | mg/L | 0.00005  | 0.0838    | 0.197     |
| Iron (Fe)       | mg/L | 0.001    | 0.142     | 0.733     |
| Lead (Pb)       | mg/L | 0.000005 | 0.0000783 | 0.00134   |
| Lithium (Li)    | mg/L | 0.0005   | 0.11      | 0.0932    |
| Magnesium (Mg)  | mg/L | 0.05     | 4.28      | 3.06      |
| Manganese (Mn)  | mg/L | 0.00005  | 0.068     | 0.0407    |
| Molybdenum (Mo) | mg/L | 0.00005  | 0.00151   | 0.00102   |
| Nickel (Ni)     | mg/L | 0.00002  | 0.0168    | 0.0105    |
| Potassium (K)   | mg/L | 0.05     | 28.3      | 26.3      |
| Selenium (Se)   | mg/L | 0.00004  | 0.000331  | 0.00048   |
| Silicon (Si)    | mg/L | 0.1      | 2.01      | 1.89      |
| Silver (Ag)     | mg/L | 0.000005 | 0.0000182 | 0.0000063 |
| Sodium (Na)     | mg/L | 0.05     | 45        | 58.1      |
| Strontium (Sr)  | mg/L | 0.00005  | 0.022     | 0.0163    |
| Sulphur (S)     | mg/L | 10       | <10       | 11        |
| Thallium (Tl)   | mg/L | 0.000002 | 0.0000099 | 0.0000095 |
| Tin (Sn)        | mg/L | 0.0002   | <0.00020  | 0         |
| Titanium (Ti)   | mg/L | 0.0005   | 0.00086   | 0.00136   |
| Uranium (U)     | mg/L | 0.000002 | 0.0000372 | 0.000135  |
| Vanadium (V)    | mg/L | 0.0002   | 0.00073   | 0.00068   |
| Zinc (Zn)       | mg/L | 0.0001   | 1.29      | 0.868     |
| Zirconium (Zr)  | mg/L | 0.0001   | 0.00023   | 0.00018   |
| <b>Elements</b> |      |          |           |           |
| Aluminum (Al)   | mg/L | 0.04     |           | 8.2       |
| Barium (Ba)     | mg/L | 0.01     |           | 0.24      |

|                |      |          |            |
|----------------|------|----------|------------|
| Boron (B)      | mg/L | 0.02     | 3.2        |
| Calcium (Ca)   | mg/L | 0.3      | 0.04       |
| Chromium (Cr)  | mg/L | 0.01     | 0          |
| Iron (Fe)      | mg/L | 0.06     | 29         |
| Lithium (Li)   | mg/L | 0.02     | 69         |
| Magnesium (Mg) | mg/L | 0.2      |            |
| Manganese (Mn) | mg/L | 0.004    |            |
| Mercury (Hg)   | mg/L | 0.000002 | 0.000009   |
| Mercury (Hg)   | mg/L | 0.000002 | <0.0000020 |
| Phosphorus (P) | mg/L | 0.1      |            |
| Potassium (K)  | mg/L | 0.3      |            |
| Silicon (Si)   | mg/L | 0.1      |            |
| Sodium (Na)    | mg/L | 0.5      |            |
| Strontium (Sr) | mg/L | 0.02     |            |
| Sulphur (S)    | mg/L | 0.2      |            |

#### Microbiological Param.

|                 |           |   |     |      |
|-----------------|-----------|---|-----|------|
| Fecal Coliforms | CFU/100mL | 1 | 340 | 5500 |
|-----------------|-----------|---|-----|------|

#### Misc. Inorganics

|                    |       |     |      |      |
|--------------------|-------|-----|------|------|
| Conductivity       | uS/cm | 1   | 610  | 590  |
| Hardness (CaCO3)   | mg/L  | 0.5 | 50.3 | 33.4 |
| Organic Carbon (C) | mg/L  | 0.5 | 19   | 21   |
| Solids             | mg/L  | 10  | 300  | 65   |
| Solids             | mg/L  | 1.3 | 13   | 360  |
| pH                 | N/A   |     | 6.6  | 6.59 |

#### Nutrients

|                         |      |       |     |       |
|-------------------------|------|-------|-----|-------|
| Ammonia (N)             | mg/L | 0.05  | 16  | 11    |
| Inorganic Carbon (C)    | mg/L | 0.5   | 2.5 | 4.6   |
| Nitrate (N)             | mg/L | 0.003 | 32  | 27    |
| Nitrite (N)             | mg/L | 0.003 | 0.1 | 0.036 |
| Orthophosphate (P)      | mg/L | 0.003 | 10  | 9.4   |
| Phosphorus (P)          | mg/L | 0.003 | 11  | 9.1   |
| Total Kjeldahl Nitrogen | mg/L | 0.5   | 18  | 22    |



## Physical Properties

Turbidity

NTU 0.1 5.5 38

## Total Metals by ICPMS

|                 |      |          |           |           |
|-----------------|------|----------|-----------|-----------|
| Aluminum (Al)   | mg/L | 0.0002   | 0.123     | 0.566     |
| Antimony (Sb)   | mg/L | 0.00002  | 0.00175   | 0.0013    |
| Arsenic (As)    | mg/L | 0.00002  | 0.000692  | 0.000657  |
| Barium (Ba)     | mg/L | 0.00002  | 0.00737   | 0.0206    |
| Beryllium (Be)  | mg/L | 0.00001  | 0.000031  | 0.000031  |
| Bismuth (Bi)    | mg/L | 0.000005 | 0.00138   | 0.00188   |
| Boron (B)       | mg/L | 0.05     | 0.523     | 0.357     |
| Cadmium (Cd)    | mg/L | 0.000005 | 0.000146  | 0.000227  |
| Calcium (Ca)    | mg/L | 0.05     | 12.9      | 9.05      |
| Chromium (Cr)   | mg/L | 0.0001   | 0.0006    | 0.00186   |
| Cobalt (Co)     | mg/L | 0.000005 | 0.000777  | 0.000594  |
| Copper (Cu)     | mg/L | 0.00005  | 0.143     | 0.315     |
| Iron (Fe)       | mg/L | 0.001    | 0.4       | 1.29      |
| Lead (Pb)       | mg/L | 0.000005 | 0.000516  | 0.00259   |
| Lithium (Li)    | mg/L | 0.0005   | 0.111     | 0.0919    |
| Magnesium (Mg)  | mg/L | 0.05     | 4.45      | 3.38      |
| Manganese (Mn)  | mg/L | 0.00005  | 0.071     | 0.0437    |
| Molybdenum (Mo) | mg/L | 0.00005  | 0.00146   | 0.000932  |
| Nickel (Ni)     | mg/L | 0.00002  | 0.017     | 0.0114    |
| Potassium (K)   | mg/L | 0.05     | 28.9      | 27.5      |
| Selenium (Se)   | mg/L | 0.00004  | 0.000396  | 0.000541  |
| Silicon (Si)    | mg/L | 0.1      | 1.92      | 2.05      |
| Silver (Ag)     | mg/L | 0.000005 | 0.000047  | 0.0000214 |
| Sodium (Na)     | mg/L | 0.05     | 45.8      | 61.2      |
| Strontium (Sr)  | mg/L | 0.00005  | 0.023     | 0.0167    |
| Sulphur (S)     | mg/L | 10       | <10       | 12        |
| Thallium (Tl)   | mg/L | 0.000002 | 0.000109  | 0.0000103 |
| Tin (Sn)        | mg/L | 0.0002   | <0.00020  | 0.00028   |
| Titanium (Ti)   | mg/L | 0.0005   | 0.00084   | 0.00132   |
| Uranium (U)     | mg/L | 0.000002 | 0.0000914 | 0.00028   |
| Vanadium (V)    | mg/L | 0.0002   | 0.00072   | 0.00067   |
| Zinc (Zn)       | mg/L | 0.0001   | 1.4       | 1.05      |

|                               |      |            |               |         |
|-------------------------------|------|------------|---------------|---------|
| Zirconium (Zr)                | mg/L | 0.0001     | 0.00031       | 0.00047 |
| <b><u>SWQ-01 Influent</u></b> |      |            |               |         |
| Sample ID                     |      | INFLUENT   | JER-SWQ-01-IN |         |
| Maxxam ID                     |      | DP7050     | DT4447        |         |
| Date Sampled                  |      | 07/06/2012 | 21/06/2012    |         |

| Parameter | Units | RDL |
|-----------|-------|-----|
|-----------|-------|-----|

#### Anions

|                             |      |     |       |       |
|-----------------------------|------|-----|-------|-------|
| Alkalinity (PP as CaCO3)    | mg/L | 0.5 | <0.50 |       |
| Alkalinity (Total as CaCO3) | mg/L | 0.5 | 340   | 270   |
| Bicarbonate (HCO3)          | mg/L | 0.5 | 410   | 330   |
| Carbonate (CO3)             | mg/L | 0.5 | <0.50 | <0.50 |
| Chloride (Cl)               | mg/L | 1   | 61    | 54    |
| Hydroxide (OH)              | mg/L | 0.5 | <0.50 | <0.50 |
| Sulphate (SO4)              | mg/L | 1   | <2.0  | 14    |

#### Calculated Parameters

|                              |       |     |        |        |
|------------------------------|-------|-----|--------|--------|
| Anion Sum                    | meq/L | N/A | 9.2    | 7.8    |
| Cation Sum                   | meq/L | N/A | 9.1    | 7.8    |
| Filter and HNO3 Preservation | N/A   | N/A |        | FIELD  |
| Hardness (CaCO3)             | mg/L  |     | 0.5    | 46.5   |
| Hardness (CaCO3)             | mg/L  |     | 0.5    | 27     |
| Ion Balance                  | N/A   |     | 0.01   | 1      |
| Nitrate (NO3)                | mg/L  |     | 0.013  | <0.13  |
| Nitrate plus Nitrite (N)     | mg/L  |     | 0.003  | <0.030 |
| Nitrite (NO2)                | mg/L  |     | 0.0099 | <0.099 |
| Total Dissolved Solids       | mg/L  |     | 10     | 420    |

#### Demand Parameters

|                           |      |   |     |     |
|---------------------------|------|---|-----|-----|
| Biochemical Oxygen Demand | mg/L | 2 | 390 | 350 |
|---------------------------|------|---|-----|-----|

#### Dissolved Metals by ICPMS



|                 |      |            |           |
|-----------------|------|------------|-----------|
| Aluminum (Al)   | mg/L | 0.0002     | 0.11      |
| Antimony (Sb)   | mg/L | 0.00002    | 0.000193  |
| Arsenic (As)    | mg/L | 0.00002    | 0.000513  |
| Barium (Ba)     | mg/L | 0.00002    | 0.00424   |
| Beryllium (Be)  | mg/L | 0.00001    | 0.000019  |
| Bismuth (Bi)    | mg/L | 0.000005   | 0.000216  |
| Boron (B)       | mg/L | 0.05       | 0.223     |
| Cadmium (Cd)    | mg/L | 0.000005   | 0.000103  |
| Calcium (Ca)    | mg/L | 0.05       | 6.26      |
| Chromium (Cr)   | mg/L | 0.0001     | 0.00117   |
| Cobalt (Co)     | mg/L | 0.000005   | 0.000233  |
| Copper (Cu)     | mg/L | 0.00005    | 0.281     |
| Iron (Fe)       | mg/L | 0.001      | 1.21      |
| Lead (Pb)       | mg/L | 0.000005   | 0.00167   |
| Lithium (Li)    | mg/L | 0.0005     | 0.0832    |
| Magnesium (Mg)  | mg/L | 0.05       | 3         |
| Manganese (Mn)  | mg/L | 0.00005    | 0.026     |
| Molybdenum (Mo) | mg/L | 0.00005    | 0.000247  |
| Nickel (Ni)     | mg/L | 0.00002    | 0.00646   |
| Potassium (K)   | mg/L | 0.05       | 23.9      |
| Selenium (Se)   | mg/L | 0.00004    | 0.000303  |
| Silicon (Si)    | mg/L | 0.1        | 2.32      |
| Silver (Ag)     | mg/L | 0.000005   | 0         |
| Sodium (Na)     | mg/L | 0.05       | 70        |
| Strontium (Sr)  | mg/L | 0.00005    | 0.0147    |
| Sulphur (S)     | mg/L | 10         | <10       |
| Thallium (Tl)   | mg/L | 0.000002   | 0.0000061 |
| Tin (Sn)        | mg/L | 0.0002     | 0.00024   |
| Titanium (Ti)   | mg/L | 0.0005     | 0.0011    |
| Uranium (U)     | mg/L | 0.000002   | 0.000166  |
| Vanadium (V)    | mg/L | 0.0002     | 0.00054   |
| Zinc (Zn)       | mg/L | 0.0001     | 0.221     |
| Zirconium (Zr)  | mg/L | 0.0001     | 0.00043   |
| <b>Elements</b> |      |            |           |
| Aluminum (Al)   | mg/L | 0.04 0.085 | 5.9       |

|                |      |          |        |       |
|----------------|------|----------|--------|-------|
| Barium (Ba)    | mg/L | 0.01     | <0.010 | 1.7   |
| Boron (B)      | mg/L | 0.02     | 0.51   | 2.9   |
| Calcium (Ca)   | mg/L | 0.3      | 5.4    | 0.027 |
| Chromium (Cr)  | mg/L | 0.01     | <0.010 | 0     |
| Iron (Fe)      | mg/L | 0.06     | 1.3    | 24    |
| Lithium (Li)   | mg/L | 0.02     | 0.073  | 74    |
| Magnesium (Mg) | mg/L | 0.2      | 3.5    |       |
| Manganese (Mn) | mg/L | 0.004    | 0.025  |       |
| Mercury (Hg)   | mg/L | 0.000002 |        |       |
| Mercury (Hg)   | mg/L | 0.000002 |        |       |
| Phosphorus (P) | mg/L | 0.1      | 10     |       |
| Potassium (K)  | mg/L | 0.3      | 27     |       |
| Silicon (Si)   | mg/L | 0.1      | 1.6    |       |
| Sodium (Na)    | mg/L | 0.5      | 45     |       |
| Strontium (Sr) | mg/L | 0.02     | <0.020 |       |
| Sulphur (S)    | mg/L | 0.2      | 6.7    |       |

#### Microbiological Param.

|                 |           |   |        |      |
|-----------------|-----------|---|--------|------|
| Fecal Coliforms | CFU/100mL | 1 | 830000 | 3200 |
|-----------------|-----------|---|--------|------|

#### Misc. Inorganics

|                    |       |     |      |      |
|--------------------|-------|-----|------|------|
| Conductivity       | uS/cm | 1   | 1000 | 870  |
| Hardness (CaCO3)   | mg/L  | 0.5 |      | 26.6 |
| Organic Carbon (C) | mg/L  | 0.5 | 130  | 89   |
| Solids             | mg/L  | 10  | 440  | 220  |
| Solids             | mg/L  | 1.3 | 410  | 450  |
| pH                 | N/A   |     | 7.58 | 7.52 |

#### Nutrients

|                         |      |       |        |        |
|-------------------------|------|-------|--------|--------|
| Ammonia (N)             | mg/L | 0.05  | 83     | 47     |
| Inorganic Carbon (C)    | mg/L | 0.5   | 32     | 53     |
| Nitrate (N)             | mg/L | 0.003 | <0.030 | <0.030 |
| Nitrite (N)             | mg/L | 0.003 | <0.030 | <0.030 |
| Orthophosphate (P)      | mg/L | 0.003 | 11     | 9.3    |
| Phosphorus (P)          | mg/L | 0.003 | 12     | 11     |
| Total Kjeldahl Nitrogen | mg/L | 0.5   | 120    | 83     |

## Physical Properties

| Turbidity                    | NTU  | 0.1      | 170 | 120       |
|------------------------------|------|----------|-----|-----------|
| <b>Total Metals by ICPMS</b> |      |          |     |           |
| Aluminum (Al)                | mg/L | 0.0002   |     | 1.6       |
| Antimony (Sb)                | mg/L | 0.00002  |     | 0.000164  |
| Arsenic (As)                 | mg/L | 0.00002  |     | 0.000583  |
| Barium (Ba)                  | mg/L | 0.00002  |     | 0.0577    |
| Beryllium (Be)               | mg/L | 0.00001  |     | 0.000051  |
| Bismuth (Bi)                 | mg/L | 0.000005 |     | 0.000969  |
| Boron (B)                    | mg/L | 0.05     |     | 0.219     |
| Cadmium (Cd)                 | mg/L | 0.000005 |     | 0.000331  |
| Calcium (Ca)                 | mg/L | 0.05     |     | 11.2      |
| Chromium (Cr)                | mg/L | 0.0001   |     | 0.00635   |
| Cobalt (Co)                  | mg/L | 0.000005 |     | 0.000939  |
| Copper (Cu)                  | mg/L | 0.00005  |     | 0.457     |
| Iron (Fe)                    | mg/L | 0.001    |     | 4.42      |
| Lead (Pb)                    | mg/L | 0.000005 |     | 0.00864   |
| Lithium (Li)                 | mg/L | 0.0005   |     | 0.083     |
| Magnesium (Mg)               | mg/L | 0.05     |     | 4.53      |
| Manganese (Mn)               | mg/L | 0.00005  |     | 0.0624    |
| Molybdenum (Mo)              | mg/L | 0.00005  |     | 0.000377  |
| Nickel (Ni)                  | mg/L | 0.00002  |     | 0.0172    |
| Potassium (K)                | mg/L | 0.05     |     | 25.4      |
| Selenium (Se)                | mg/L | 0.00004  |     | 0.000511  |
| Silicon (Si)                 | mg/L | 0.1      |     | 2.8       |
| Silver (Ag)                  | mg/L | 0.000005 |     | 0         |
| Sodium (Na)                  | mg/L | 0.05     |     | 73        |
| Strontium (Sr)               | mg/L | 0.00005  |     | 0.0255    |
| Sulphur (S)                  | mg/L | 10       |     | <10       |
| Thallium (Tl)                | mg/L | 0.000002 |     | 0.0000147 |
| Tin (Sn)                     | mg/L | 0.0002   |     | 0.00066   |
| Titanium (Ti)                | mg/L | 0.0005   |     | 0.00122   |
| Uranium (U)                  | mg/L | 0.000002 |     | 0.000172  |
| Vanadium (V)                 | mg/L | 0.0002   |     | 0.00138   |

|                |      |        |         |
|----------------|------|--------|---------|
| Zinc (Zn)      | mg/L | 0.0001 | 0.695   |
| Zirconium (Zr) | mg/L | 0.0001 | 0.00063 |

### **SWQ-12 Carat lake pump house**

|              |            |
|--------------|------------|
| Sample ID    | JER-AEM-12 |
| Maxxam ID    | DP7010     |
| Date Sampled | 07/06/2012 |

| Parameter                   | Units | RDL |       |
|-----------------------------|-------|-----|-------|
| <b>Anions</b>               |       |     |       |
| Alkalinity (PP as CaCO3)    | mg/L  | 0.5 | <0.50 |
| Alkalinity (Total as CaCO3) | mg/L  | 0.5 | 6.1   |
| Bicarbonate (HCO3)          | mg/L  | 0.5 | 7.4   |
| Carbonate (CO3)             | mg/L  | 0.5 | <0.50 |
| Chloride (Cl)               | mg/L  | 1   | <1.0  |
| Hydroxide (OH)              | mg/L  | 0.5 | <0.50 |
| Sulphate (SO4)              | mg/L  | 1   | 1.9   |

|                              |       |        |         |
|------------------------------|-------|--------|---------|
| <b>Calculated Parameters</b> |       |        |         |
| Anion Sum                    | meq/L | N/A    | 0.17    |
| Cation Sum                   | meq/L | N/A    | 0.19    |
| Filter and HNO3 Preservation | N/A   | N/A    | FIELD   |
| Hardness (CaCO3)             | mg/L  | 0.5    | 6.46    |
| Hardness (CaCO3)             | mg/L  | 0.5    |         |
| Ion Balance                  | N/A   | 0.01   | 1.1     |
| Nitrate (NO3)                | mg/L  | 0.013  | 0.19    |
| Nitrate plus Nitrite (N)     | mg/L  | 0.003  | 0.044   |
| Nitrite (NO2)                | mg/L  | 0.0099 | <0.0099 |
| Total Dissolved Solids       | mg/L  | 10     | <10     |

|                           |      |   |      |
|---------------------------|------|---|------|
| <b>Demand Parameters</b>  |      |   |      |
| Biochemical Oxygen Demand | mg/L | 2 | <2.0 |

# **Dissolved Metals by ICPMS**

|                 |      |          |            |
|-----------------|------|----------|------------|
| Aluminum (Al)   | mg/L | 0.0002   | 0.00959    |
| Antimony (Sb)   | mg/L | 0.00002  | 0.000024   |
| Arsenic (As)    | mg/L | 0.00002  | 0.000144   |
| Barium (Ba)     | mg/L | 0.00002  | 0.00276    |
| Beryllium (Be)  | mg/L | 0.00001  | <0.000010  |
| Bismuth (Bi)    | mg/L | 0.000005 | <0.0000050 |
| Boron (B)       | mg/L | 0.05     | <0.050     |
| Cadmium (Cd)    | mg/L | 0.000005 | 0.0000543  |
| Calcium (Ca)    | mg/L | 0.05     | 1.46       |
| Chromium (Cr)   | mg/L | 0.0001   | 0.00012    |
| Cobalt (Co)     | mg/L | 0.000005 | 0.0000911  |
| Copper (Cu)     | mg/L | 0.00005  | 0.00158    |
| Iron (Fe)       | mg/L | 0.001    | 0.437      |
| Lead (Pb)       | mg/L | 0.000005 | 0.000767   |
| Lithium (Li)    | mg/L | 0.0005   | 0.00058    |
| Magnesium (Mg)  | mg/L | 0.05     | 0.73       |
| Manganese (Mn)  | mg/L | 0.00005  | 0.021      |
| Molybdenum (Mo) | mg/L | 0.00005  | 0.000052   |
| Nickel (Ni)     | mg/L | 0.00002  | 0.000882   |
| Potassium (K)   | mg/L | 0.05     | 0.364      |
| Selenium (Se)   | mg/L | 0.00004  | <0.000040  |
| Silicon (Si)    | mg/L | 0.1      | 0.44       |
| Silver (Ag)     | mg/L | 0.000005 | <0.0000050 |
| Sodium (Na)     | mg/L | 0.05     | 0.632      |
| Strontium (Sr)  | mg/L | 0.00005  | 0.00681    |
| Sulphur (S)     | mg/L | 10       | <10        |
| Thallium (Tl)   | mg/L | 0.000002 | <0.0000020 |
| Tin (Sn)        | mg/L | 0.0002   | <0.00020   |
| Titanium (Ti)   | mg/L | 0.0005   | <0.00050   |
| Uranium (U)     | mg/L | 0.000002 | 0.000116   |
| Vanadium (V)    | mg/L | 0.0002   | <0.00020   |
| Zinc (Zn)       | mg/L | 0.0001   | 0.132      |
| Zirconium (Zr)  | mg/L | 0.0001   | <0.00010   |

|                               |           |          |            |
|-------------------------------|-----------|----------|------------|
| <b>Elements</b>               |           |          |            |
| Aluminium (Al)                | mg/L      | 0.04     |            |
| Barium (Ba)                   | mg/L      | 0.01     |            |
| Boron (B)                     | mg/L      | 0.02     |            |
| Calcium (Ca)                  | mg/L      | 0.3      |            |
| Chromium (Cr)                 | mg/L      | 0.01     |            |
| Iron (Fe)                     | mg/L      | 0.06     |            |
| Lithium (Li)                  | mg/L      | 0.02     |            |
| Magnesium (Mg)                | mg/L      | 0.2      |            |
| Manganese (Mn)                | mg/L      | 0.004    |            |
| Mercury (Hg)                  | mg/L      | 0.000002 | <0.0000020 |
| Mercury (Hg)                  | mg/L      | 0.000002 | <0.0000020 |
| Phosphorus (P)                | mg/L      | 0.1      |            |
| Potassium (K)                 | mg/L      | 0.3      |            |
| Silicon (Si)                  | mg/L      | 0.1      |            |
| Sodium (Na)                   | mg/L      | 0.5      |            |
| Strontium (Sr)                | mg/L      | 0.02     |            |
| Sulphur (S)                   | mg/L      | 0.2      |            |
| <b>Microbiological Param.</b> |           |          |            |
| Fecal Coliforms               | CFU/100mL | 1        | <1.0       |
| <b>Misc. Inorganics</b>       |           |          |            |
| Conductivity                  | uS/cm     | 1        | 18         |
| Hardness (CaCO <sub>3</sub> ) | mg/L      | 0.5      | 6.66       |
| Organic Carbon (C)            | mg/L      | 0.5      | 2.6        |
| Solids                        | mg/L      | 10       | <10        |
| Solids                        | mg/L      | 1.3      | <1.3       |
| pH                            | N/A       |          | 6.72       |
| <b>Nutrients</b>              |           |          |            |
| Ammonia (N)                   | mg/L      | 0.05     | <0.050     |
| Inorganic Carbon (C)          | mg/L      | 0.5      | <0.50      |
| Nitrate (N)                   | mg/L      | 0.003    | 0.044      |
| Nitrite (N)                   | mg/L      | 0.003    | <0.0030    |
| Orthophosphate (P)            | mg/L      | 0.003    | <0.0030    |

|                              |      |          |            |
|------------------------------|------|----------|------------|
| Phosphorus (P)               | mg/L | 0.003    | 0.003      |
| Total Kjeldahl Nitrogen      | mg/L | 0.5      |            |
| <b>Physical Properties</b>   |      |          |            |
| Turbidity                    | NTU  | 0.1      | 4          |
| <b>Total Metals by ICPMS</b> |      |          |            |
| Aluminum (Al)                | mg/L | 0.0002   | 0.0155     |
| Antimony (Sb)                | mg/L | 0.00002  | <0.000020  |
| Arsenic (As)                 | mg/L | 0.00002  | 0.000143   |
| Barium (Ba)                  | mg/L | 0.00002  | 0.00244    |
| Beryllium (Be)               | mg/L | 0.00001  | <0.000010  |
| Bismuth (Bi)                 | mg/L | 0.000005 | <0.0000050 |
| Boron (B)                    | mg/L | 0.05     | <0.050     |
| Cadmium (Cd)                 | mg/L | 0.000005 | 0.0000232  |
| Calcium (Ca)                 | mg/L | 0.05     | 1.36       |
| Chromium (Cr)                | mg/L | 0.0001   | <0.00010   |
| Cobalt (Co)                  | mg/L | 0.000005 | 0.0000815  |
| Copper (Cu)                  | mg/L | 0.00005  | 0.0021     |
| Iron (Fe)                    | mg/L | 0.001    | 1.24       |
| Lead (Pb)                    | mg/L | 0.000005 | 0.000731   |
| Lithium (Li)                 | mg/L | 0.0005   | 0.00055    |
| Magnesium (Mg)               | mg/L | 0.05     | 0.743      |
| Manganese (Mn)               | mg/L | 0.00005  | 0.0196     |
| Molybdenum (Mo)              | mg/L | 0.00005  | <0.000050  |
| Nickel (Ni)                  | mg/L | 0.00002  | 0.00083    |
| Potassium (K)                | mg/L | 0.05     | 0.372      |
| Selenium (Se)                | mg/L | 0.00004  | <0.000040  |
| Silicon (Si)                 | mg/L | 0.1      | 0.42       |
| Silver (Ag)                  | mg/L | 0.000005 | <0.0000050 |
| Sodium (Na)                  | mg/L | 0.05     | 0.614      |
| Strontium (Sr)               | mg/L | 0.00005  | 0.00641    |
| Sulphur (S)                  | mg/L | 10       | <10        |
| Thallium (Tl)                | mg/L | 0.000002 | <0.0000020 |
| Tin (Sn)                     | mg/L | 0.0002   | <0.00020   |
| Titanium (Ti)                | mg/L | 0.0005   | <0.00050   |

|                |      |          |          |
|----------------|------|----------|----------|
| Uranium (U)    | mg/L | 0.000002 | 0.000152 |
| Vanadium (V)   | mg/L | 0.0002   | <0.00020 |
| Zinc (Zn)      | mg/L | 0.0001   | 0.0593   |
| Zirconium (Zr) | mg/L | 0.0001   | <0.00010 |

### AEM-22 Ash Lake: 1m from the top, 1m from the bottom

|              |                  |                  |
|--------------|------------------|------------------|
| Sample ID    | JER-AEM-22 (1MT) | JER-AEM-22 (1MB) |
| Maxxam ID    | DT4431           | DT4441           |
| Date Sampled | 18/06/2012       | 18/06/2012       |

| Parameter | Units | RDL |
|-----------|-------|-----|
|-----------|-------|-----|

#### Anions

|                             |      |     |       |
|-----------------------------|------|-----|-------|
| Alkalinity (PP as CaCO3)    | mg/L | 0.5 | <0.50 |
| Alkalinity (Total as CaCO3) | mg/L | 0.5 | 12    |
| Bicarbonate (HCO3)          | mg/L | 0.5 | 15    |
| Carbonate (CO3)             | mg/L | 0.5 | <0.50 |
| Chloride (Cl)               | mg/L | 1   | <1.0  |
| Hydroxide (OH)              | mg/L | 0.5 | <0.50 |
| Sulphate (SO4)              | mg/L | 1   | 1.6   |

#### Calculated Parameters

|                              |       |        |         |
|------------------------------|-------|--------|---------|
| Anion Sum                    | meq/L | N/A    | 0.28    |
| Cation Sum                   | meq/L | N/A    | 0.31    |
| Filter and HNO3 Preservation | N/A   | N/A    | FIELD   |
| Hardness (CaCO3)             | mg/L  | 0.5    | 13.6    |
| Hardness (CaCO3)             | mg/L  | 0.5    | 13      |
| Ion Balance                  | N/A   | 0.01   | 1.1     |
| Nitrate (NO3)                | mg/L  | 0.013  | <0.013  |
| Nitrate plus Nitrite (N)     | mg/L  | 0.003  | <0.0030 |
| Nitrite (NO2)                | mg/L  | 0.0099 | <0.0099 |
| Total Dissolved Solids       | mg/L  | 10     | 15      |

#### Demand Parameters

|  |         |
|--|---------|
|  | 0.26    |
|  | 0.31    |
|  | FIELD   |
|  | 13.7    |
|  | 13      |
|  | 1.2     |
|  | <0.013  |
|  | <0.0030 |
|  | <0.0099 |
|  | 14      |



Biochemical Oxygen Demand

100

mg/L

**Dissolved Metals by ICPMS**

|                 |      |          |           |           |
|-----------------|------|----------|-----------|-----------|
| Aluminum (Al)   | mg/L | 0.0002   | 0.0313    | 0.0156    |
| Antimony (Sb)   | mg/L | 0.00002  | 0         | 0         |
| Arsenic (As)    | mg/L | 0.00002  | 0.000211  | 0.000143  |
| Barium (Ba)     | mg/L | 0.00002  | 0.00255   | 0.00244   |
| Beryllium (Be)  | mg/L | 0.00001  | 0         | 0         |
| Bismuth (Bi)    | mg/L | 0.000005 | 0         | 0         |
| Boron (B)       | mg/L | 0.05     | 0         | 0         |
| Cadmium (Cd)    | mg/L | 0.000005 | 0.0000053 | 0         |
| Calcium (Ca)    | mg/L | 0.05     | 3.01      | 2.9       |
| Chromium (Cr)   | mg/L | 0.0001   | 0.00016   | 0.0001    |
| Cobalt (Co)     | mg/L | 0.000005 | 0.0000198 | 0.0000129 |
| Copper (Cu)     | mg/L | 0.00005  | 0.000912  | 0.000846  |
| Iron (Fe)       | mg/L | 0.001    | 0.0475    | 0.0407    |
| Lead (Pb)       | mg/L | 0.000005 | 0.0000118 | 0.0000066 |
| Lithium (Li)    | mg/L | 0.0005   | 0         | 0         |
| Magnesium (Mg)  | mg/L | 0.05     | 1.49      | 1.45      |
| Manganese (Mn)  | mg/L | 0.00005  | 0.00413   | 0.00325   |
| Molybdenum (Mo) | mg/L | 0.00005  | 0.000059  | 0         |
| Nickel (Ni)     | mg/L | 0.00002  | 0.000947  | 0.000794  |
| Potassium (K)   | mg/L | 0.05     | 0.36      | 0.354     |
| Selenium (Se)   | mg/L | 0.00004  | 0         | 0         |
| Silicon (Si)    | mg/L | 0.1      | 0.283     | 0.293     |
| Silver (Ag)     | mg/L | 0.000005 | 0         | 0         |
| Sodium (Na)     | mg/L | 0.05     | 0.848     | 0.781     |
| Strontium (Sr)  | mg/L | 0.00005  | 0.00826   | 0.00793   |
| Sulphur (S)     | mg/L | 10       | <10       | <10       |
| Thallium (Tl)   | mg/L | 0.000002 | 0         | 0         |
| Tin (Sn)        | mg/L | 0.0002   | 0         | 0         |
| Titanium (Ti)   | mg/L | 0.0005   | 0         | 0         |
| Uranium (U)     | mg/L | 0.000002 | 0.0000971 | 0.0000904 |
| Vanadium (V)    | mg/L | 0.0002   | 0.0004    | 0.00022   |
| Zinc (Zn)       | mg/L | 0.0001   | 0.00278   | 0.00164   |
| Zirconium (Zr)  | mg/L | 0.0001   | 0         | 0         |

|                               |           |          |         |  |         |
|-------------------------------|-----------|----------|---------|--|---------|
| <b>Elements</b>               |           |          |         |  |         |
| Calcium (Ca)                  | mg/L      | 0.3      | 2.8     |  | 2.8     |
| Iron (Fe)                     | mg/L      | 0.06     | <0.060  |  | <0.060  |
| Magnesium (Mg)                | mg/L      | 0.2      | 1.5     |  | 1.5     |
| Manganese (Mn)                | mg/L      | 0.004    | <0.0040 |  | <0.0040 |
| Mercury (Hg)                  | mg/L      | 0.000002 | 0       |  | 0       |
| Potassium (K)                 | mg/L      | 0.3      | 0.34    |  | 0.33    |
| Sodium (Na)                   | mg/L      | 0.5      | 1       |  | 0.97    |
| <b>Microbiological Param.</b> |           |          |         |  |         |
| Fecal Coliforms               | CFU/100mL | 1000     |         |  |         |
| <b>Misc. Inorganics</b>       |           |          |         |  |         |
| Conductivity                  | uS/cm     | 1        | 32      |  | 31      |
| Hardness (CaCO <sub>3</sub> ) | mg/L      | 0.5      | 13      |  | 13.1    |
| Organic Carbon (C)            | mg/L      | 0.5      | 2.6     |  | 2.6     |
| Solids                        | mg/L      | 5        | <5.0    |  | <2.5    |
| Solids                        | mg/L      | 10       | 44      |  | 40      |
| pH                            | N/A       |          | 7.46    |  | 7.39    |
| <b>Nutrients</b>              |           |          |         |  |         |
| Ammonia (N)                   | mg/L      | 0.05     | <0.050  |  | <0.050  |
| Inorganic Carbon (C)          | mg/L      | 0.5      | 1.9     |  | 0.7     |
| Nitrate (N)                   | mg/L      | 0.003    | <0.0030 |  | <0.0030 |
| Nitrite (N)                   | mg/L      | 0.003    | <0.0030 |  | <0.0030 |
| Orthophosphate (P)            | mg/L      | 0.003    | <0.0030 |  | <0.0030 |
| Phosphorus (P)                | mg/L      | 0.003    | 0.008   |  | 0.007   |
| Total Kjeldahl Nitrogen       | mg/L      | 2.5      |         |  |         |
| <b>Physical Properties</b>    |           |          |         |  |         |
| Turbidity                     | NTU       | 0.1      | 0.48    |  | 0.42    |
| <b>Total Metals by ICPMS</b>  |           |          |         |  |         |
| Aluminum (Al)                 | mg/L      | 0.0002   | 0.0225  |  | 0.0244  |
| Antimony (Sb)                 | mg/L      | 0.00002  | 0       |  | 0       |

|                 |      |          |           |           |
|-----------------|------|----------|-----------|-----------|
| Arsenic (As)    | mg/L | 0.00002  | 0.000148  | 0.000177  |
| Barium (Ba)     | mg/L | 0.00002  | 0.00238   | 0.00254   |
| Beryllium (Be)  | mg/L | 0.00001  | 0         | 0         |
| Bismuth (Bi)    | mg/L | 0.000005 | 0         | 0         |
| Boron (B)       | mg/L | 0.05     | 0         | 0         |
| Cadmium (Cd)    | mg/L | 0.000005 | 0         | 0         |
| Calcium (Ca)    | mg/L | 0.05     | 2.99      | 2.98      |
| Chromium (Cr)   | mg/L | 0.0001   | 0         | 0.00015   |
| Cobalt (Co)     | mg/L | 0.000005 | 0.0000256 | 0.000028  |
| Copper (Cu)     | mg/L | 0.00005  | 0.000928  | 0.00125   |
| Iron (Fe)       | mg/L | 0.001    | 0.0681    | 0.0686    |
| Lead (Pb)       | mg/L | 0.000005 | 0.0000352 | 0.0000225 |
| Lithium (Li)    | mg/L | 0.0005   | 0         | 0         |
| Magnesium (Mg)  | mg/L | 0.05     | 1.49      | 1.51      |
| Manganese (Mn)  | mg/L | 0.00005  | 0.00518   | 0.00563   |
| Molybdenum (Mo) | mg/L | 0.00005  | 0         | 0.000056  |
| Nickel (Ni)     | mg/L | 0.00002  | 0.000828  | 0.001     |
| Potassium (K)   | mg/L | 0.05     | 0.363     | 0.367     |
| Selenium (Se)   | mg/L | 0.00004  | 0         | 0         |
| Silicon (Si)    | mg/L | 0.1      | 0.305     | 0.337     |
| Silver (Ag)     | mg/L | 0.000005 | 0         | 0         |
| Sodium (Na)     | mg/L | 0.05     | 0.79      | 0.796     |
| Strontium (Sr)  | mg/L | 0.00005  | 0.00772   | 0.00792   |
| Sulphur (S)     | mg/L | 10       | <10       | <10       |
| Thallium (Tl)   | mg/L | 0.000002 | 0         | 0         |
| Tin (Sn)        | mg/L | 0.0002   | 0         | 0         |
| Titanium (Ti)   | mg/L | 0.0005   | 0         | 0         |
| Uranium (U)     | mg/L | 0.000002 | 0.0000966 | 0.0000883 |
| Vanadium (V)    | mg/L | 0.0002   | 0         | 0         |
| Zinc (Zn)       | mg/L | 0.0001   | 0.00172   | 0.00213   |
| Zirconium (Zr)  | mg/L | 0.0001   | 0         | 0         |

# AEM-26 Southeast Dam Lake: 1m from the top, 1m from the bottom and at 5m depth

|              |            |            |            |
|--------------|------------|------------|------------|
| Sample ID    | JER-AEM-26 | JER-AEM-26 | JER-AEM-26 |
| Maxxam ID    | (1M)       | (5M)       | (1MB)      |
| Date Sampled | DT4442     | DT4443     | DT4444     |
|              | 17/06/2012 | 17/06/2012 | 17/06/2012 |

| Parameter                   | Units | RDL   |
|-----------------------------|-------|-------|
| <b>Anions</b>               |       |       |
| Alkalinity (PP as CaCO3)    | mg/L  | <0.50 |
| Alkalinity (Total as CaCO3) | mg/L  | 34    |
| Bicarbonate (HCO3)          | mg/L  | 42    |
| Carbonate (CO3)             | mg/L  | <0.50 |
| Chloride (Cl)               | mg/L  | 1.4   |
| Hydroxide (OH)              | mg/L  | <0.50 |
| Sulphate (SO4)              | mg/L  | 1.6   |

|                              |       |         |
|------------------------------|-------|---------|
| <b>Calculated Parameters</b> |       |         |
| Anion Sum                    | meq/L | 0.76    |
| Cation Sum                   | meq/L | 0.77    |
| Filter and HNO3 Preservation | N/A   | FIELD   |
| Hardness (CaCO3)             | mg/L  | 34.9    |
| Hardness (CaCO3)             | mg/L  | 34      |
| Ion Balance                  | N/A   | 1       |
| Nitrate (NO3)                | mg/L  | 0.062   |
| Nitrate plus Nitrite (N)     | mg/L  | 0.014   |
| Nitrite (NO2)                | mg/L  | <0.0099 |
| Total Dissolved Solids       | mg/L  | 37      |

|                           |      |     |
|---------------------------|------|-----|
| <b>Demand Parameters</b>  |      |     |
| Biochemical Oxygen Demand | mg/L | 100 |

|                                  |      |         |
|----------------------------------|------|---------|
| <b>Dissolved Metals by ICPMS</b> |      |         |
| Aluminum (Al)                    | mg/L | 0.00305 |
| Antimony (Sb)                    | mg/L | 0       |

|                 |      |          |           |           |           |
|-----------------|------|----------|-----------|-----------|-----------|
| Arsenic (As)    | mg/L | 0.00002  | 0.000132  | 0.000153  | 0.000101  |
| Barium (Ba)     | mg/L | 0.00002  | 0.0106    | 0.0108    | 0.0105    |
| Beryllium (Be)  | mg/L | 0.00001  | 0         | 0         | 0         |
| Bismuth (Bi)    | mg/L | 0.000005 | 0         | 0         | 0         |
| Boron (B)       | mg/L | 0.05     | 0         | 0         | 0         |
| Cadmium (Cd)    | mg/L | 0.000005 | 0         | 0         | 0         |
| Calcium (Ca)    | mg/L | 0.05     | 8.29      | 7.88      | 8.21      |
| Chromium (Cr)   | mg/L | 0.0001   | 0.00012   | 0.00012   | 0.00012   |
| Cobalt (Co)     | mg/L | 0.000005 | 0.0000173 | 0.0000175 | 0.0000176 |
| Copper (Cu)     | mg/L | 0.00005  | 0.000441  | 0.000438  | 0.000457  |
| Iron (Fe)       | mg/L | 0.001    | 0.0199    | 0.0189    | 0.0207    |
| Lead (Pb)       | mg/L | 0.000005 | 0         | 0.0000199 | 0.0000065 |
| Lithium (Li)    | mg/L | 0.0005   | 0         | 0         | 0         |
| Magnesium (Mg)  | mg/L | 0.05     | 3.27      | 3.31      | 3.37      |
| Manganese (Mn)  | mg/L | 0.00005  | 0.00768   | 0.0084    | 0.00873   |
| Molybdenum (Mo) | mg/L | 0.00005  | 0.00009   | 0.00008   | 0.000085  |
| Nickel (Ni)     | mg/L | 0.00002  | 0.00174   | 0.00183   | 0.00184   |
| Potassium (K)   | mg/L | 0.05     | 0.757     | 0.75      | 0.754     |
| Selenium (Se)   | mg/L | 0.00004  | 0         | 0         | 0         |
| Silicon (Si)    | mg/L | 0.1      | 0.463     | 0.45      | 0.48      |
| Silver (Ag)     | mg/L | 0.000005 | 0         | 0         | 0         |
| Sodium (Na)     | mg/L | 0.05     | 1.56      | 1.56      | 1.6       |
| Strontium (Sr)  | mg/L | 0.00005  | 0.0355    | 0.0353    | 0.0353    |
| Sulphur (S)     | mg/L | 10       | <10       | <10       | <10       |
| Thallium (Tl)   | mg/L | 0.000002 | 0         | 0         | 0         |
| Tin (Sn)        | mg/L | 0.0002   | 0         | 0         | 0         |
| Titanium (Ti)   | mg/L | 0.0005   | 0         | 0         | 0         |
| Uranium (U)     | mg/L | 0.000002 | 0.000196  | 0.000194  | 0.000206  |
| Vanadium (V)    | mg/L | 0.0002   | 0         | 0         | 0         |
| Zinc (Zn)       | mg/L | 0.0001   | 0.00175   | 0.00205   | 0.00196   |
| Zirconium (Zr)  | mg/L | 0.0001   | 0         | 0         | 0         |
| <b>Elements</b> |      |          |           |           |           |
| Calcium (Ca)    | mg/L | 0.3      | 7.8       | 7.9       | 8         |
| Iron (Fe)       | mg/L | 0.06     | <0.060    | <0.060    | <0.060    |
| Magnesium (Mg)  | mg/L | 0.2      | 3.4       | 3.4       | 3.4       |

|                               |           |          |          |          |          |
|-------------------------------|-----------|----------|----------|----------|----------|
| Manganese (Mn)                | mg/L      | 0.004    | 0.0059   | 0.0069   | 0.0071   |
| Mercury (Hg)                  | mg/L      | 0.000002 | 0        | 0        | 0        |
| Potassium (K)                 | mg/L      | 0.3      | 0.7      | 0.71     | 0.7      |
| Sodium (Na)                   | mg/L      | 0.5      | 1.8      | 1.8      | 1.8      |
| <b>Microbiological Param.</b> |           |          |          |          |          |
| Fecal Coliforms               | CFU/100mL | 1000     |          |          |          |
| <b>Misc. Inorganics</b>       |           |          |          |          |          |
| Conductivity                  | uS/cm     | 1        | 76       | 76       | 77       |
| Hardness (CaCO3)              | mg/L      | 0.5      | 33.4     | 33.7     | 34.2     |
| Organic Carbon (C)            | mg/L      | 0.5      | 1.7      | 1.6      | 2        |
| Solids                        | mg/L      | 5        | <2.5     | <2.5     | <2.5     |
| Solids                        | mg/L      | 10       | 52       | 64       | 68       |
| pH                            | N/A       | 7.83     | 7.83     | 7.83     | 7.85     |
| <b>Nutrients</b>              |           |          |          |          |          |
| Ammonia (N)                   | mg/L      | 0.05     | <0.050   | <0.050   | 0.055    |
| Inorganic Carbon (C)          | mg/L      | 0.5      | 7.1      | 7.2      | 7.3      |
| Nitrate (N)                   | mg/L      | 0.003    | 0.013    | 0.014    | 0.014    |
| Nitrite (N)                   | mg/L      | 0.003    | <0.0030  | <0.0030  | <0.0030  |
| Orthophosphate (P)            | mg/L      | 0.003    | <0.0030  | <0.0030  | <0.0030  |
| Phosphorus (P)                | mg/L      | 0.003    | 0.006    | 0.004    | 0.005    |
| Total Kjeldahl Nitrogen       | mg/L      | 2.5      |          |          |          |
| <b>Physical Properties</b>    |           |          |          |          |          |
| Turbidity                     | NTU       | 0.1      | 0.36     | 0.51     | 0.73     |
| <b>Total Metals by ICPMS</b>  |           |          |          |          |          |
| Aluminum (Al)                 | mg/L      | 0.0002   | 0.00898  | 0.00587  | 0.00813  |
| Antimony (Sb)                 | mg/L      | 0.00002  | 0        | 0        | 0        |
| Arsenic (As)                  | mg/L      | 0.00002  | 0.000136 | 0.000147 | 0.000131 |
| Barium (Ba)                   | mg/L      | 0.00002  | 0.0107   | 0.0107   | 0.0111   |
| Beryllium (Be)                | mg/L      | 0.00001  | 0        | 0        | 0        |
| Bismuth (Bi)                  | mg/L      | 0.000005 | 0        | 0        | 0        |
| Boron (B)                     | mg/L      | 0.05     | 0        | 0        | 0        |

|                 |      |          |           |           |           |           |
|-----------------|------|----------|-----------|-----------|-----------|-----------|
| Cadmium (Cd)    | mg/L | 0.000005 | 0         | 0         | 0         | 0         |
| Calcium (Ca)    | mg/L | 0.05     | 8.27      | 8.16      | 8.22      | 8.22      |
| Chromium (Cr)   | mg/L | 0.0001   | 0.00017   | 0.00016   | 0.00016   | 0.00016   |
| Cobalt (Co)     | mg/L | 0.000005 | 0.0000424 | 0.0000488 | 0.0000511 | 0.0000511 |
| Copper (Cu)     | mg/L | 0.00005  | 0.000498  | 0.000504  | 0.000519  | 0.000519  |
| Iron (Fe)       | mg/L | 0.001    | 0.0439    | 0.0441    | 0.0459    | 0.0459    |
| Lead (Pb)       | mg/L | 0.000005 | 0.0000155 | 0.0000109 | 0.0000139 | 0.0000139 |
| Lithium (Li)    | mg/L | 0.0005   | 0         | 0         | 0         | 0         |
| Magnesium (Mg)  | mg/L | 0.05     | 3.45      | 3.52      | 3.48      | 3.48      |
| Manganese (Mn)  | mg/L | 0.00005  | 0.00991   | 0.0124    | 0.0125    | 0.0125    |
| Molybdenum (Mo) | mg/L | 0.00005  | 0.000083  | 0.00007   | 0.00008   | 0.00008   |
| Nickel (Ni)     | mg/L | 0.00002  | 0.00202   | 0.00208   | 0.00206   | 0.00206   |
| Potassium (K)   | mg/L | 0.05     | 0.767     | 0.784     | 0.768     | 0.768     |
| Selenium (Se)   | mg/L | 0.00004  | 0         | 0         | 0         | 0         |
| Silicon (Si)    | mg/L | 0.1      | 0.493     | 0.504     | 0.516     | 0.516     |
| Silver (Ag)     | mg/L | 0.000005 | 0         | 0         | 0         | 0         |
| Sodium (Na)     | mg/L | 0.05     | 1.6       | 1.65      | 1.61      | 1.61      |
| Strontium (Sr)  | mg/L | 0.00005  | 0.0348    | 0.034     | 0.0363    | 0.0363    |
| Sulphur (S)     | mg/L | 10       | <10       | <10       | <10       | <10       |
| Thallium (Tl)   | mg/L | 0.000002 | 0         | 0         | 0         | 0         |
| Tin (Sn)        | mg/L | 0.0002   | 0         | 0         | 0         | 0         |
| Titanium (Ti)   | mg/L | 0.0005   | 0         | 0         | 0         | 0         |
| Uranium (U)     | mg/L | 0.000002 | 0.000207  | 0.000196  | 0.000225  | 0.000225  |
| Vanadium (V)    | mg/L | 0.0002   | 0         | 0         | 0         | 0         |
| Zinc (Zn)       | mg/L | 0.0001   | 0.00249   | 0.00131   | 0.00126   | 0.00126   |
| Zirconium (Zr)  | mg/L | 0.0001   | 0         | 0         | 0         | 0         |

## **SWQ-07 North and South Side**

|              |              |              |
|--------------|--------------|--------------|
| Sample ID    | JER-SWQ-07-N | JER-SWQ-07-S |
| Maxxam ID    | DT4445       | DT4446       |
| Date Sampled | 16/06/2012   | 16/06/2012   |

| Parameter                        | Units | RDL     |         |
|----------------------------------|-------|---------|---------|
| <b>Anions</b>                    |       |         |         |
| Alkalinity (PP as CaCO3)         | mg/L  | 0.5     | <0.50   |
| Alkalinity (Total as CaCO3)      | mg/L  | 0.5     | 48      |
| Bicarbonate (HCO3)               | mg/L  | 0.5     | 58      |
| Carbonate (CO3)                  | mg/L  | 0.5     | <0.50   |
| Chloride (Cl)                    | mg/L  | 1       | 7.7     |
| Hydroxide (OH)                   | mg/L  | 0.5     | <0.50   |
| Sulphate (SO4)                   | mg/L  | 1       | 39      |
| <b>Calculated Parameters</b>     |       |         |         |
| Anion Sum                        | meq/L | N/A     | 2.1     |
| Cation Sum                       | meq/L | N/A     | 2.2     |
| Filter and HNO3 Preservation     | N/A   | N/A     | FIELD   |
| Hardness (CaCO3)                 | mg/L  | 0.5     | 66.9    |
| Hardness (CaCO3)                 | mg/L  | 0.5     | 65      |
| Ion Balance                      | N/A   | 0.01    | 1       |
| Nitrate (NO3)                    | mg/L  | 0.013   | 11      |
| Nitrate plus Nitrite (N)         | mg/L  | 0.003   | 2.4     |
| Nitrite (NO2)                    | mg/L  | 0.0099  | 0.057   |
| Total Dissolved Solids           | mg/L  | 10      | 130     |
| <b>Demand Parameters</b>         |       |         |         |
| Biochemical Oxygen Demand        | mg/L  | 100     |         |
| <b>Dissolved Metals by ICPMS</b> |       |         |         |
| Aluminum (Al)                    | mg/L  | 0.0002  | 0.00987 |
| Antimony (Sb)                    | mg/L  | 0.00002 | 0.00012 |



|                 |      |          |           |           |
|-----------------|------|----------|-----------|-----------|
| Arsenic (As)    | mg/L | 0.00002  | 0.000263  | 0.000254  |
| Barium (Ba)     | mg/L | 0.00002  | 0.0299    | 0.0308    |
| Beryllium (Be)  | mg/L | 0.00001  | 0         | 0         |
| Bismuth (Bi)    | mg/L | 0.000005 | 0         | 0         |
| Boron (B)       | mg/L | 0.05     | 0         | 0         |
| Cadmium (Cd)    | mg/L | 0.000005 | 0         | 0         |
| Calcium (Ca)    | mg/L | 0.05     | 13.8      | 13.7      |
| Chromium (Cr)   | mg/L | 0.0001   | 0.00014   | 0.00017   |
| Cobalt (Co)     | mg/L | 0.000005 | 0.0000545 | 0.0000476 |
| Copper (Cu)     | mg/L | 0.00005  | 0.00123   | 0.00109   |
| Iron (Fe)       | mg/L | 0.001    | 0.0453    | 0.0415    |
| Lead (Pb)       | mg/L | 0.000005 | 0.0000414 | 0.0000324 |
| Lithium (Li)    | mg/L | 0.0005   | 0.00119   | 0.00136   |
| Magnesium (Mg)  | mg/L | 0.05     | 6.97      | 6.92      |
| Manganese (Mn)  | mg/L | 0.00005  | 0.0101    | 0.0103    |
| Molybdenum (Mo) | mg/L | 0.00005  | 0.00379   | 0.00387   |
| Nickel (Ni)     | mg/L | 0.00002  | 0.00302   | 0.00307   |
| Potassium (K)   | mg/L | 0.05     | 6.34      | 6.32      |
| Selenium (Se)   | mg/L | 0.00004  | 0.000145  | 0.000144  |
| Silicon (Si)    | mg/L | 0.1      | 0.208     | 0.27      |
| Silver (Ag)     | mg/L | 0.000005 | 0         | 0         |
| Sodium (Na)     | mg/L | 0.05     | 12.4      | 12.4      |
| Strontium (Sr)  | mg/L | 0.00005  | 0.271     | 0.279     |
| Sulphur (S)     | mg/L | 10       | 12        | 12        |
| Thallium (Tl)   | mg/L | 0.000002 | 0.00001   | 0.0000105 |
| Tin (Sn)        | mg/L | 0.0002   | 0         | 0         |
| Titanium (Ti)   | mg/L | 0.0005   | 0         | 0         |
| Uranium (U)     | mg/L | 0.000002 | 0.0103    | 0.0108    |
| Vanadium (V)    | mg/L | 0.0002   | 0.00021   | 0.00041   |
| Zinc (Zn)       | mg/L | 0.0001   | 0.00337   | 0.00196   |
| Zirconium (Zr)  | mg/L | 0.0001   | 0         | 0         |
| <b>Elements</b> |      |          |           |           |
| Calcium (Ca)    | mg/L | 0.3      | 13        | 13        |
| Iron (Fe)       | mg/L | 0.06     | <0.060    | <0.060    |
| Magnesium (Mg)  | mg/L | 0.2      | 7.8       | 7.9       |

|                |      |          |         |         |
|----------------|------|----------|---------|---------|
| Manganese (Mn) | mg/L | 0.004    | <0.0040 | <0.0040 |
| Mercury (Hg)   | mg/L | 0.000002 | 0       | 0       |
| Potassium (K)  | mg/L | 0.3      | 6.6     | 6.7     |
| Sodium (Na)    | mg/L | 0.5      | 15      | 16      |

#### Microbiological Param.

|                 |           |      |  |  |
|-----------------|-----------|------|--|--|
| Fecal Coliforms | CFU/100mL | 1000 |  |  |
|-----------------|-----------|------|--|--|

#### Misc. Inorganics

|                    |       |      |      |      |
|--------------------|-------|------|------|------|
| Conductivity       | uS/cm | 1    | 220  | 220  |
| Hardness (CaCO3)   | mg/L  | 0.5  | 65.1 | 65.9 |
| Organic Carbon (C) | mg/L  | 0.5  | 2.8  | 2.5  |
| Solids             | mg/L  | 5    | <2.5 | <2.5 |
| Solids             | mg/L  | 10   | 160  | 150  |
| pH                 | N/A   | 7.94 |      | 7.97 |

#### Nutrients

|                         |      |       |         |         |
|-------------------------|------|-------|---------|---------|
| Ammonia (N)             | mg/L | 0.05  | <0.050  | 0.062   |
| Inorganic Carbon (C)    | mg/L | 0.5   | 11      | 10      |
| Nitrate (N)             | mg/L | 0.003 | 2.4     | 2.5     |
| Nitrite (N)             | mg/L | 0.003 | 0.017   | 0.019   |
| Orthophosphate (P)      | mg/L | 0.003 | <0.0030 | <0.0030 |
| Phosphorus (P)          | mg/L | 0.003 | 0.012   | 0.008   |
| Total Kjeldahl Nitrogen | mg/L | 2.5   |         |         |

#### Physical Properties

|           |     |     |     |     |
|-----------|-----|-----|-----|-----|
| Turbidity | NTU | 0.1 | 1.2 | 1.1 |
|-----------|-----|-----|-----|-----|

#### Total Metals by ICPMS

|                |      |          |          |          |
|----------------|------|----------|----------|----------|
| Aluminum (Al)  | mg/L | 0.0002   | 0.0278   | 0.0351   |
| Antimony (Sb)  | mg/L | 0.00002  | 0.000121 | 0.000121 |
| Arsenic (As)   | mg/L | 0.00002  | 0.000297 | 0.000286 |
| Barium (Ba)    | mg/L | 0.00002  | 0.0309   | 0.0315   |
| Beryllium (Be) | mg/L | 0.00001  | 0        | 0        |
| Bismuth (Bi)   | mg/L | 0.000005 | 0        | 0        |
| Boron (B)      | mg/L | 0.05     | 0        | 0        |

|                 |      |          |           |           |
|-----------------|------|----------|-----------|-----------|
| Cadmium (Cd)    | mg/L | 0.000005 | 0         | 0         |
| Calcium (Ca)    | mg/L | 0.05     | 14.1      | 13.9      |
| Chromium (Cr)   | mg/L | 0.0001   | 0.00024   | 0.00066   |
| Cobalt (Co)     | mg/L | 0.000005 | 0.0000953 | 0.000191  |
| Copper (Cu)     | mg/L | 0.00005  | 0.00122   | 0.00135   |
| Iron (Fe)       | mg/L | 0.001    | 0.0804    | 0.122     |
| Lead (Pb)       | mg/L | 0.000005 | 0.0000621 | 0.0000813 |
| Lithium (Li)    | mg/L | 0.0005   | 0.00118   | 0.00119   |
| Magnesium (Mg)  | mg/L | 0.05     | 7.69      | 7.92      |
| Manganese (Mn)  | mg/L | 0.00005  | 0.022     | 0.0238    |
| Molybdenum (Mo) | mg/L | 0.00005  | 0.00377   | 0.00391   |
| Nickel (Ni)     | mg/L | 0.00002  | 0.00355   | 0.00528   |
| Potassium (K)   | mg/L | 0.05     | 6.48      | 6.64      |
| Selenium (Se)   | mg/L | 0.00004  | 0.000146  | 0.000154  |
| Silicon (Si)    | mg/L | 0.1      | 0.269     | 0.378     |
| Silver (Ag)     | mg/L | 0.000005 | 0         | 0         |
| Sodium (Na)     | mg/L | 0.05     | 13.4      | 13.7      |
| Strontium (Sr)  | mg/L | 0.00005  | 0.273     | 0.276     |
| Sulphur (S)     | mg/L | 10       | 13        | 12        |
| Thallium (Tl)   | mg/L | 0.000002 | 0.0000099 | 0.0000107 |
| Tin (Sn)        | mg/L | 0.0002   | 0         | 0         |
| Titanium (Ti)   | mg/L | 0.0005   | 0.00113   | 0.00166   |
| Uranium (U)     | mg/L | 0.000002 | 0.0109    | 0.0111    |
| Vanadium (V)    | mg/L | 0.0002   | 0         | 0         |
| Zinc (Zn)       | mg/L | 0.0001   | 0.00217   | 0.00185   |
| Zirconium (Zr)  | mg/L | 0.0001   | 0         | 0         |

## Dustfalls

| ALS                                     |                      | Sample ID    |
|-----------------------------------------|----------------------|--------------|
| 7/24/2012                               | ALS                  | ALS ID       |
| Multiple Work Orders                    | 7/24/2012            | Date Sampled |
| Analyte                                 | Multiple Work Orders | LOR          |
|                                         |                      |              |
| Total Dustfall (mg/100cm2/30days)       | mg                   | 8            |
| Total Fixed Dustfall (mg/100cm2/30days) | mg                   | 5            |
| Aluminum (Al)-Total                     | mg/dm2.day           | 0.000016     |
| Antimony (Sb)-Total                     | mg/dm2.day           | 0.0000016    |
| Arsenic (As)-Total                      | mg/dm2.day           | 0.0000016    |
| Barium (Ba)-Total                       | mg/dm2.day           | 0.0000008    |
| Beryllium (Be)-Total                    | mg/dm2.day           | 0.000008     |
| Bismuth (Bi)-Total                      | mg/dm2.day           | 0.000008     |
| Boron (B)-Total                         | mg/dm2.day           | 0.00016      |
| Cadmium (Cd)-Total                      | mg/dm2.day           | 0.0000008    |
| Calcium (Ca)-Total                      | mg/dm2.day           | 0.00032      |
| Chromium (Cr)-Total                     | mg/dm2.day           | 0.000008     |

|                      |                      |                      |                      |                      |
|----------------------|----------------------|----------------------|----------------------|----------------------|
| PKDF - S             | PKDF - E             | PKDF - SE            | PKDF - W             | FIELD BLANK          |
| L1166501-1           | L1166501-2           | L1166501-3           | L1166501-4           | L1166501-5           |
| 6/14/2012 4:30:00 PM | 6/14/2012 4:30:00 PM | 6/14/2012 4:30:00 PM | 6/14/2012 4:30:00 PM | 6/14/2012 4:30:00 PM |
| Dustfall             | Dustfall             | Dustfall             | Dustfall             | Dustfall             |
| 14.1                 | 44.1                 | 38                   | <8.0                 | <8.0                 |
| 11.5                 | 13.9                 | 12.8                 | <5.0                 | <5.0                 |
| 0.000133             | 0.000068             | 0.000104             | 0.000031             | <0.000017            |
| <0.0000016           | <0.0000017           | <0.0000017           | <0.0000016           | <0.0000017           |
| <0.0000016           | <0.0000017           | <0.0000017           | <0.0000016           | <0.0000017           |
| 0.0000151            | 0.00000795           | 0.00000408           | 0.00000201           | <0.00000084          |
| <0.0000082           | <0.0000083           | <0.0000084           | <0.0000080           | <0.0000084           |
| <0.0000082           | <0.0000083           | <0.0000084           | <0.0000080           | <0.0000084           |
| <0.00016             | <0.00017             | <0.00017             | <0.00016             | <0.00017             |
| <0.00000082          | <0.00000083          | <0.00000084          | <0.00000080          | <0.00000084          |
| 0.00226              | 0.00234              | 0.00127              | 0.00042              | <0.00033             |
| <0.0000082           | <0.0000083           | <0.0000084           | <0.0000080           | <0.0000084           |

|                       |                         |            |             |             |             |             |             |
|-----------------------|-------------------------|------------|-------------|-------------|-------------|-------------|-------------|
| Cobalt (Co)-Total     | mg/dm <sup>2</sup> .day | 0.0000016  | <0.0000016  | <0.0000017  | <0.0000017  | <0.0000016  | <0.0000017  |
| Copper (Cu)-Total     | mg/dm <sup>2</sup> .day | 0.0000016  | 0.0000138   | 0.0000269   | 0.0000339   | 0.0000126   | 0.0000025   |
| Iron (Fe)-Total       | mg/dm <sup>2</sup> .day | 0.00048    | <0.00049    | <0.00050    | <0.00051    | <0.00048    | <0.00050    |
| Lead (Pb)-Total       | mg/dm <sup>2</sup> .day | 0.0000008  | <0.00000082 | <0.00000083 | <0.00000084 | 0.00000085  | <0.00000084 |
| Lithium (Li)-Total    | mg/dm <sup>2</sup> .day | 0.00008    | <0.000082   | <0.000083   | <0.000084   | <0.000080   | <0.000084   |
| Magnesium (Mg)-Total  | mg/dm <sup>2</sup> .day | 0.00008    | 0.00203     | 0.00163     | 0.00107     | 0.000223    | <0.000084   |
| Manganese (Mn)-Total  | mg/dm <sup>2</sup> .day | 0.0000008  | 0.0000136   | 0.0000501   | 0.0000316   | 0.00000167  | <0.00000084 |
| Molybdenum (Mo)-Total | mg/dm <sup>2</sup> .day | 0.0000008  | <0.00000082 | <0.00000083 | <0.00000084 | <0.00000080 | <0.00000084 |
| Nickel (Ni)-Total     | mg/dm <sup>2</sup> .day | 0.000008   | 0.000034    | 0.0000125   | <0.000084   | 0.000014    | <0.000084   |
| Phosphorus (P)-Total  | mg/dm <sup>2</sup> .day | 0.0048     | <0.0049     | <0.0050     | <0.0051     | <0.0048     | <0.0050     |
| Potassium (K)-Total   | mg/dm <sup>2</sup> .day | 0.0008     | <0.00082    | 0.00616     | 0.00458     | <0.00080    | <0.00084    |
| Selenium (Se)-Total   | mg/dm <sup>2</sup> .day | 0.000016   | <0.000016   | <0.000017   | <0.000017   | <0.000016   | <0.000017   |
| Silicon (Si)-Total    | mg/dm <sup>2</sup> .day | 0.0008     | <0.00082    | <0.00083    | <0.00084    | <0.00080    | <0.00084    |
| Silver (Ag)-Total     | mg/dm <sup>2</sup> .day | 0.00000016 | <0.00000016 | <0.00000017 | <0.00000017 | <0.00000016 | <0.00000017 |
| Sodium (Na)-Total     | mg/dm <sup>2</sup> .day | 0.0008     | <0.00082    | 0.00174     | 0.00126     | <0.00080    | <0.00084    |
| Strontium (Sr)-Total  | mg/dm <sup>2</sup> .day | 0.00000016 | 0.0000125   | 0.0000094   | 0.0000053   | 0.0000024   | <0.0000017  |
| Thallium (Tl)-Total   | mg/dm <sup>2</sup> .day | 0.00000016 | <0.00000016 | <0.00000017 | <0.00000017 | <0.00000016 | <0.00000017 |
| Tin (Sn)-Total        | mg/dm <sup>2</sup> .day | 0.00000016 | <0.00000016 | <0.00000017 | <0.00000017 | <0.00000016 | <0.00000017 |
| Titanium (Ti)-Total   | mg/dm <sup>2</sup> .day | 0.00016    | <0.00016    | <0.00017    | <0.00017    | <0.00016    | <0.00017    |

|                    |                         |            |            |             |             |             |             |
|--------------------|-------------------------|------------|------------|-------------|-------------|-------------|-------------|
| Uranium (U)-Total  | mg/dm <sup>2</sup> .day | 0.00000016 | 0.00000032 | <0.00000017 | <0.00000017 | <0.00000016 | <0.00000017 |
| Vanadium (V)-Total | mg/dm <sup>2</sup> .day | 0.000016   | <0.000016  | <0.000017   | <0.000017   | <0.000016   | <0.000017   |
| Zinc (Zn)-Total    | mg/dm <sup>2</sup> .day | 0.000016   | <0.000016  | 0.00008     | 0.000056    | 0.000029    | <0.000017   |

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**Oztek Remediated Water**

| ALS                  |       | Sample ID    | OZTEK BERM           |
|----------------------|-------|--------------|----------------------|
| 7/24/2012            |       | ALS ID       | L1169859-1           |
| Multiple Work Orders |       | Date Sampled | 6/28/2012 7:00:00 AM |
| Analyte              | Units | LOR          | Water                |
| Benzene              | mg/L  | 0.0005       | <0.00050             |
| Ethylbenzene         | mg/L  | 0.0005       | <0.00050             |
| Toluene              | mg/L  | 0.0005       | <0.00050             |
| o-Xylene             | mg/L  | 0.0005       | <0.00050             |
| m+p-Xylene           | mg/L  | 0.0005       | <0.00050             |
| Xylenes              | mg/L  | 0.00071      | <0.00071             |
| F1(C6-C10)           | mg/L  | 0.1          | <0.10                |
| F1-BTEX              | mg/L  | 0.1          | <0.10                |
| F2 (>C10-C16)        | mg/L  | 0.25         | <0.25                |
| F3 (C16-C34)         | mg/L  | 0.25         | 0.5                  |
| F4 (C34-C50)         | mg/L  | 0.25         | <0.25                |

## APPENDIX E: Internal Site Inspections



### Shear Diamonds

#### Internal Inspection Report Form

LUP # N2011C0009

KTL311C015

WL # 2AM-JER1119-Type A

Date: June 10, 2012

Inspected By: Kyle Conway & Pete Fournier

Indicate:      **A – Acceptable,**

**U – Unacceptable,**

**N/A – Not applicable**

#### Hazardous Materials Storage

##### Drums and Tanks:

**Notes** – leaks, leaks mitigated, drums at 9 and 3.

|                                                 |   |                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tank farm                                       | U | There is a leaning tank in the South berm. Flex pipes on tank 11 and 12 should be replaced. Some of the supports appear to be warped.                                                                                                                                                                                                          |
| Vehicle fueling station<br>(Inside and outside) | U | Strong smell of diesel within fuel transfer station. Fresh pads have been placed. A majority of the soil has been cleaned up outside, drummed, and relocated to the HWTa. An empty drum has been placed outside with cover for minor spill containment.                                                                                        |
| HWTa                                            | A | Drums and oil cubes have been organized. Empty drums have been relocated to area 1 lay down. Half and quarter full drums have been married together and reorganized by contents. New signs have been posted indicating contents within the HWTa.<br><br>128 empty drums and 72 used tires have been back hauled this week. <b>(Photos 1-5)</b> |
| By Generator                                    | A | No issues with the tank.                                                                                                                                                                                                                                                                                                                       |
| Helicopter Landing                              | A | All drums are properly sealed and placed at 9:00-3:00.                                                                                                                                                                                                                                                                                         |
| Airport                                         | A | No leaks present at the airstrip day tanks or Jet A fuel drums. Drums are in secondary containment berms.                                                                                                                                                                                                                                      |



|             |   |                                         |
|-------------|---|-----------------------------------------|
| Signage     | A | Signage has been replaced and reposted. |
| MSDS Sheets | A | Present where needed.                   |
| Spill Kits  | A | Present where required.                 |

|                                     |                                    |                              |
|-------------------------------------|------------------------------------|------------------------------|
| <b>Resp. Party: Enviro Services</b> | <b>Site Manager: Not Available</b> | <b>Env tech: Kyle Conway</b> |
|-------------------------------------|------------------------------------|------------------------------|

### Secondary Containment:

**Notes** – leaks, water or ice, breaches, holes, slumping, erosion.

|                         |   |                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tank farm               | U | Both phase 1 and 2 are contaminated. Phase 1 has a considerable amount of diesel contaminated water stored within. There is also 75 drums of oil contaminated water from a previous spill clean-up that will be treated with the Oztec. Oztec remediation unit will be commissioned by weeks end and contaminated water will be treated and samples will be sent out for analysis. <b>(Photos 6-10)</b> |
| Reclaim Area            | A | Water level is high. We have put a dewatering pump in place to direct water to cell A of PKCA and will be running 24 hrs.                                                                                                                                                                                                                                                                               |
| Vehicle fueling station | A | Spills are frequent here. Drums have been put in place for immediate containment of contaminated soil. Spill pallets will be placed beneath fuel nozzles holders. Previous spills have been cleaned up.                                                                                                                                                                                                 |
| HWTA                    | U | Damage to berm liner. Most of the flooded water has evaporated. Remaining water is contaminated with both oil and diesel which will be treated with Oztec remediation unit.                                                                                                                                                                                                                             |
| By Generator            | A | Evidence of historical spills. Very small amount of water contained within will need to be pumped out and treated.                                                                                                                                                                                                                                                                                      |
| Helicopter Landing      | A | A few supports need to be replaced on berm. Water is slowly being treated with filter units.                                                                                                                                                                                                                                                                                                            |
| Airport                 | A | Fuel hoses need to be drained and put away. Spills from winter fuel transfers have been dug up, drummed, and relocated to the HWTA for future remediation. Still presence of a previous spill outside of the Wacker genset that will need to be dug up and relocated to the HWTA. Water contained within berms will need to be pumped out and treated with Oztec. <b>(Photo 11)</b>                     |

|               |   |                                                                                                                     |
|---------------|---|---------------------------------------------------------------------------------------------------------------------|
| Spill Pallets | A | Most of the spill pallets are in good shape. More have been put in place in areas where small spills tend to occur. |
|---------------|---|---------------------------------------------------------------------------------------------------------------------|

|                                     |                                    |                     |
|-------------------------------------|------------------------------------|---------------------|
| <b>Resp. Party: Enviro Services</b> | <b>Site Manager: Not Available</b> | <b>Env tech: KC</b> |
|-------------------------------------|------------------------------------|---------------------|

## General

## Notes

|                  |   |                                                                                                                                      |
|------------------|---|--------------------------------------------------------------------------------------------------------------------------------------|
| Chemical Storage | A | Chemical storage area is clean and organized.                                                                                        |
| Signage          | A | Proper signs present to indicate which chemicals are present.                                                                        |
| MSDS Sheets      | A | MSDS present.                                                                                                                        |
| Spill Kits       | A | Spill kits present where required. Contents of each should be inspected regularly. Spill kits at airstrip will need to be topped up. |

|                                     |                                    |                     |
|-------------------------------------|------------------------------------|---------------------|
| <b>Resp. Party: Enviro Services</b> | <b>Site Manager: Not Available</b> | <b>Env tech: KC</b> |
|-------------------------------------|------------------------------------|---------------------|

## Waste Disposal Storage

## Notes

|                   |     |                                                                                                                                                                                                                                                                |
|-------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WWTP              | A   | Clean and in working order. Kept well organized.                                                                                                                                                                                                               |
| Incineration Area | A   | Door is in poor condition, does not close properly. A chain and carabineer have been put in place to make sure that door remains closed. Waste disposal around camp has improved significantly however, the shop and process plant are still areas of concern. |
| Landfill          | N/A | Landfill site has yet to be approved.                                                                                                                                                                                                                          |

|                                     |                                    |                     |
|-------------------------------------|------------------------------------|---------------------|
| <b>Resp. Party: Enviro Services</b> | <b>Site Manager: Not Available</b> | <b>Env tech: KC</b> |
|-------------------------------------|------------------------------------|---------------------|

## Truck Shop

## Notes

|           |   |                                                                                                                    |
|-----------|---|--------------------------------------------------------------------------------------------------------------------|
| Oil Cubes | U | There are cubes and drums outside of truck shop that need to be brought inside or placed in secondary containment. |
|-----------|---|--------------------------------------------------------------------------------------------------------------------|

|                   |   |                                                                                                                                                                                                               |
|-------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waste Oil Traps   | A | Waste oil traps are at an acceptable level.                                                                                                                                                                   |
| Central Grate     | A | Grate is at an acceptable level.                                                                                                                                                                              |
| Oil Burner Stacks | A | Burner is no longer in use.                                                                                                                                                                                   |
| Waste Storage     | A | Waste disposal is a working progress here. More care needs to be taken when disposing of items making sure they end up in the appropriate receptacles. A lot of non-burnable waste is generated in this area. |
| Powerhouse Area   | U | A good majority of small spills have been dug up, drummed, and relocated to the HWT. There are areas where clean-up will need to continue from previous spills. <b>(Photos 12-14)</b>                         |
| Parking Lot       | U | The vehicle line-up area needs considerable attention. Vehicles that were left out over the winter may not have been properly decommissioned and evidence of oil is present. <b>(Photo 15-17)</b>             |

|                                               |                                    |                     |
|-----------------------------------------------|------------------------------------|---------------------|
| <b>Resp. Party: Enviro Services/Mechanics</b> | <b>Site Manager: Not Available</b> | <b>Env tech: KC</b> |
|-----------------------------------------------|------------------------------------|---------------------|

#### Water Supply – Carat Lake

**Notes –** slumping, erosion, siltation.

|                       |   |                                                |
|-----------------------|---|------------------------------------------------|
| Pump House            | A | No issues present.                             |
| Causeway              | A | Slight erosion on north side.                  |
| Pumps                 | A | Pumps functioning.                             |
| Flow Measuring Device | A | All flow meters around site function properly. |
| Intake                | A | No issues present.                             |
| Treatment             | A | Chlorine levels are acceptable.                |

|                                          |                                    |                     |
|------------------------------------------|------------------------------------|---------------------|
| <b>Resp. Party: Enviro/Site Services</b> | <b>Site Manager: Not Available</b> | <b>Env tech: KC</b> |
|------------------------------------------|------------------------------------|---------------------|

#### East, Southeast, and West Dams. PKCA.

**Notes –** FPK dispersion.

|                                 |   |                                                                                                                                                                                                                                                                                                                       |
|---------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tire Wall Inspection            | A | Additional tires have been put in place spanning over the east dam. Work on this will continue as resources permit. <b>(Photo 18)</b>                                                                                                                                                                                 |
| FPK (contained within PKCA)     | U | There have been measures recently put in place to aid in mitigation. We have put a 4" pump at Cell B/C of the PKCA to pump water to both the process plant for operations and through a series of spigots surrounding the PKCA. We have also been utilizing the turret on our fire truck to further saturate the FPK. |
| Inspect tundra surrounding dams | U | Major cleanup has taken place and will need to continue. Silt fences and silt curtains have been put in place to prevent migration of fines into Southeast Lake and Ash Lake.                                                                                                                                         |

|                                     |                                    |                     |
|-------------------------------------|------------------------------------|---------------------|
| <b>Resp. Party: Enviro Services</b> | <b>Site Manager: Not Available</b> | <b>Env tech: KC</b> |
|-------------------------------------|------------------------------------|---------------------|

#### Drill Sites

#### Notes

|                     |     |                                |
|---------------------|-----|--------------------------------|
| Water Sources       | n/a | We are not currently drilling. |
| Drill Site Areas    | n/a | We are not currently drilling. |
| Drill Sumps         | n/a | We are not currently drilling. |
| Erosion             | n/a | We are not currently drilling. |
| Flow Measure Device | n/a | We are not currently drilling. |
| Debris              | n/a | We are not currently drilling. |

|                                     |                                    |                     |
|-------------------------------------|------------------------------------|---------------------|
| <b>Resp. Party: Enviro Services</b> | <b>Site Manager: Not Available</b> | <b>Env tech: KC</b> |
|-------------------------------------|------------------------------------|---------------------|

#### General Conditions

#### Notes

|                         |   |                                                                                                                                                                                           |
|-------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Posting and Signage's   | A | New signs have been created and reposted. This is a working progress.                                                                                                                     |
| Litter around buildings | A | There has been an effort to clean up around site. Litter and cigarette butts have been collected in most areas. A large wood pile has been placed in area 1 for a future burn pit pending |

|                                     |   |                                                                                                                                                                                                                                                                            |
|-------------------------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     |   | approval from our regulators.                                                                                                                                                                                                                                              |
| Records and Reporting               | A | Everything has been properly recorded and reported to the appropriate parties.                                                                                                                                                                                             |
| Proper waste disposal bins in place | A | People need to be a little more conscientious when disposing of any waste. Proper receptacles are in place and labeled however, not all of the waste items are making it into the correct locations. General awareness needs to be reiterated. This is a working progress. |

|                              |                             |              |
|------------------------------|-----------------------------|--------------|
| Resp. Party: Enviro Services | Site Manager: Not Available | Env tech: KC |
|------------------------------|-----------------------------|--------------|

## PHOTOS

Photo 1 - HWTa



Photo 2 - HWTa





Photo 3 - HWTa





**Photo 4 - HWTa**



**Photo 5 - HWTa**





**Photo 6 – Phase 2 Fuel Farm**

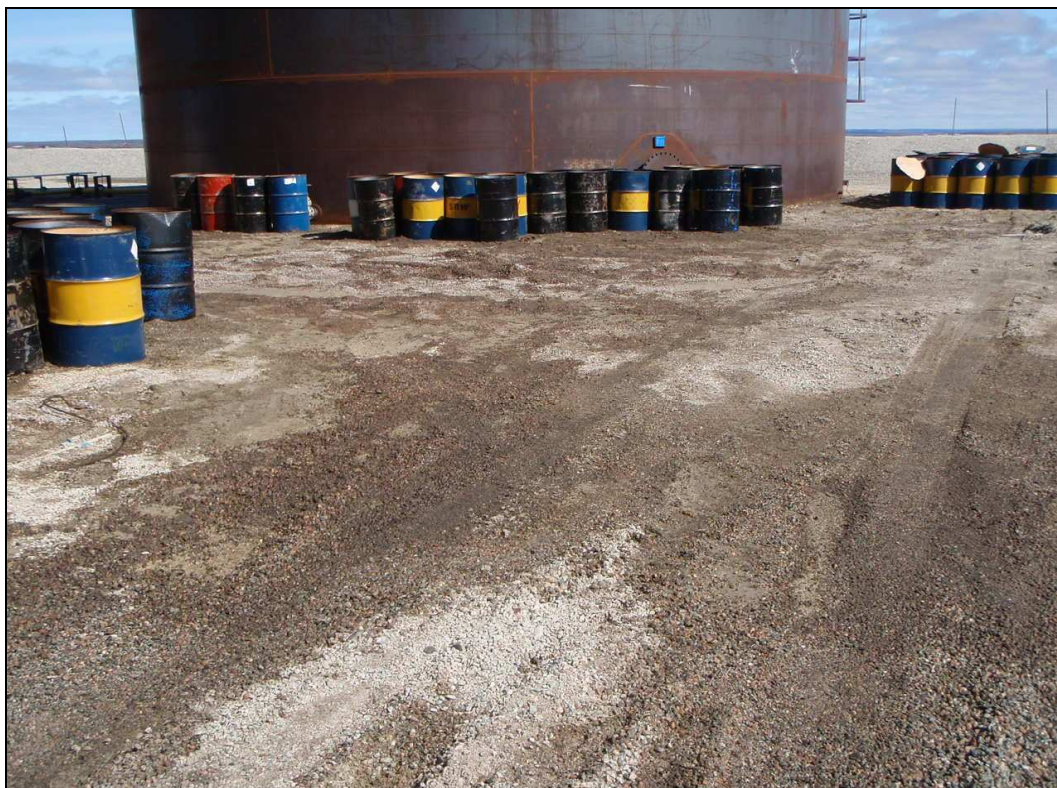


**Photo 7 - Phase 1 Fuel Farm**





**Photo 8 – Phase 2 Fuel Farm**



**Photo 9 - Phase 1 Fuel Farm**





**Photo 10 – Oztec Water Remediation Unit**



**Photo 11 – Airstrip Secondary Containment Berm**





**Photo 12 – Generator Housing**



**Photo 13 – Generator Housing**



**Photo 14 – Generator Housing**





**Photo 15 – Truck Shop Parking Area**



**Photo 16 – Truck Shop Parking Area**



**Photo 17 – Truck Shop Parking Area**



**Photo 18 – East and Southeast Dam Tirewall**





