ISO 9001:2000
FS 87377

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URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT

ENVIRONMENTAL BASELINE REPORT
FOR FEASIBILITY STUDY
(REF. NO. NB101-00222/1-2)

Rev. No.	Revision	Date	Approved
0	Issued in Final	December 15, 2005	KB.

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URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT

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EXECUTIVE SUMMARY

Various environmental baseline studies were completed for the Shakespeare Project in 2004 and 2005. N.A.R. Environmental Consultants Inc. (NAR) undertook several formal and informal desktop reviews to provide input on environmental permitting and present and future environmental management issues for the Preliminary Feasibility Study. In August 2004, several specific technical tasks were implemented by NAR to determine baseline conditions both within the physical limits of the project and the zone of potential impact, notably the receiving water environment (Agnew Lake).

The field program was expanded in early to mid 2005 to include the collection of benthic macroinvertebrate community and sediment quality data from three stations in Agnew Lake, installation of several groundwater monitoring wells and collection and testing of groundwater samples, acid rock drainage testing of waste rock and tailings samples and the installation of an on-site weather station. The surface water quality and quantity monitoring program continued. In early fall 2005 terrestrial habitat and heritage studies were completed for the project site.

Surface Water

In general, most surface water parameters tested for were well below Provincial Water Quality Objectives (PWQO) and Metal Mining Effluent Regulations (MMER). Some of the surface water samples collected on site (UM-SW-1 through UM-SW-6) exceeded the PWQO for aluminum, ammonia (as N), cadmium, cobalt, copper, iron and zinc. In general the pH values were slightly acidic for the samples collected from on-site locations, ranging from 4.57 to 7.40. There were single sample exceedances for PWQO for lead (location UM-SW-4), nickel (location UM-SW-3A), silver (location UM-SW-5) and vanadium (location UM-SW-1). The only parameter to exceed MMER was pH where values were slightly acidic as indicated above.

For samples collected from Agnew Lake, including where John's Creek flows into the lake, only aluminum (location JC-FF-b), ammonia (as N), cadmium (locations UM-AL-REF-b and UM-AL-FF-b), copper and pH (location JC-FF-b) exceeded PWQO limits. For samples collected from the three embayments, only ammonia (as N) exceeded the PWQO limit. There were no exceedances of MMER for any of these samples.

Flow monitoring is carried out at surface water monitoring location UM-SW-3, in Spellman's Cove. Average recorded flows ranged from zero in August 2004 and September 2004 to approximately 0.16 m^3/s in April 2005. Data collection is ongoing.

Groundwater

A total of seventeen groundwater monitoring wells were installed in 2005. Hydraulic conductivities (K) estimated from the rising head tests completed in the wells ranged from 3.4 x 10^{-6} cm/s in MW-05-01 to 3.1 x 10^{-4} cm/s in MW-05-07 (average of approximately 7 x 10^{-5} cm/s). These values are typical for near surface bedrock and the overburden soils encountered at site.

Groundwater samples were collected in August and September 2005. Some of the groundwater samples (MW-05-01 through MW-05-17) exceeded the PWQO for aluminum, ammonia (as N), arsenic, cadmium, cobalt, copper, iron, total cyanide, tungsten and zinc. It should be noted that for some of the samples the method detection limit for total cyanide was greater than the PWQO. The pH values were slightly acidic for almost half of the samples collected, with lower values ranging from 4.91 to 6.43. There were single sample exceedances for PWQO for lead (MW-05-15), mercury (MW-05-03) and uranium (MW-05-01) and two samples exceeded for nickel (MW-05-01 and MW-05-14) and silver (MW-05-05 and MW-05-15).

Sediment

Sediment samples were collected by NAR from the three surface water monitoring locations in Agnew Lake in October 2004 and from locations in Stumpy Bay, Spellman's Cove and Long Bay in May 2005. Results were compared to the Provincial Sediment Quality Guidelines (PSQG) which consist of lowest effect and severe effect levels for various parameters. For some or all of the samples collected the lowest effect levels were exceeded for percent organic, arsenic, cadmium, chromium, copper, lead, manganese, nickel, total kjeldahl nitrogen and zinc. In addition, for some of these samples the severe effect level was exceeded for manganese and total kjeldahl nitrogen.

Terrestrial Habitat

A terrestrial habitat assessment was completed by Maret Tae, R.P.Bio., in the early fall of 2005. The report concludes that the project site exhibits *vegetation typical of the landscape of the north shore of Lake Huron. Forest habitat is primarily Transitional Boreal/Great Lakes-St. Lawrence Forest. Close to half the site is covered in very shallow soil with bedrock outcrops with Shallow Soil vegetation community dominated by sometimes stunted jack pine and red oak. The site also has a small amount of swamp and marsh habitat, and is adjacent to a large open water marsh to the northwest on Sutherland Creek.* Recommendations were made to conduct vegetation surveys throughout the growing season in order to better document the presence or absence of significant plant species at the project site.

The terrestrial habitat assessment also included mammals, birds and herpetiles. The report concluded that the project site exhibits a variety of wildlife habitat, both upland and wetland, typical of the landscape of the north shore of Lake Huron. The presence of the cliffs and the adjacent Agnew Lake are valuable features for wildlife such as raptors. However, due to the timing and duration of the assessment, it was recommended that additional wildlife surveys, such as amphibian and reptile surveys, waterfowl, raptor and spring songbird surveys, mid summer mist netting of bats and reporting of on-site wildlife sightings on an ongoing basis be conducted in order to provide more complete inventories of the wildlife in and around the project site. In 2004 Ministry of Natural Resources (MNR) Values Maps were reviewed for the project site area by NAR. No areas of nesting, breeding or significant bird habitat were identified by NAR.

Aquatic Habitat

NAR provided information on some fish spawning areas, in particular Northern Pike and Walleye, based on their review of MNR Values Maps. However, due to the drawdown of Agnew Lake caused by the operating of the hydropower dam, which can vary water levels in the lake each year by as much as 3 to 6 m, NAR's assessment concluded that *fisheries resources in Agnew Lake are generally limited by the loss of littoral habitat and the associated benthic productivity.*

Benthic samples were collected from three locations in Agnew Lake by NAR in the spring of 2005, as well as from Spellman's Cove, Stumpy Bay and Long Bay. NAR's report stated that *in general, benthic macroinvertebrate communities at both the lake and embayment stations were dominated by worms, midge and clams. Results were typical of unimpacted shield lakes where numbers of organisms and taxa diversity are typically low. Communities in the embayments are also subject to stress through the annual seasonal draw-down* caused by the operation of the hydropower dam.

A field inspection was conducted by NAR in August 2005 on a series of ponds located north of the open pits. In their report, NAR stated that *the observational data collected during the site inspection support that ponds downstream of the proposed waste rock and tailings dump are transitory, and do not support a fishery. As such, these ponds are not fish habitat as defined by the Fisheries Act.* Also NAR reported that *there was no evidence of undisturbed wetlands which supported unique plant assemblages or rare, threatened or endangered wildlife habitat.*

Air and Noise

No air and noise studies have been completed at the site. A scope of work was developed to complete these studies as part of the permitting phase of the project.

Waste Characterization

Modified static Acid Base Accounting and Net Acid Generation tests for the mine rock have indicated the potential for acid generation. Leach test results have determined that most of the parameters, with the exception of pH, for all of the mine rock samples tested reported at concentrations within MMER limits. Humidity cell tests (kinetic tests) were in the 22nd week of testing of a 40 week testing program at the time of writing this report. The kinetic test results for the first 20 weeks of testing show a general decrease in pH from 7.97 (week 0) to 6.23 (week 20) and sulphate concentrations have shown an increasing trend. These kinetic test results indicate a potential for acid generation for the mine rock. Final results are pending.

Generally the results from the testing carried out on the sulphide tailings (F19 tailings) indicated that they have a strong potential for acid generation and may leach nickel and zinc. Humidity cell tests on the F19 tailings were in the 22nd week of testing of a 40 week testing program at the time of writing this report. The kinetic test results for the first 20 weeks of testing show a general decrease in pH from 8.03 (week 0) to 6.70 (week 20) and sulphate concentrations have steadily increased from 6.5 mg/L (week 0) to 61 mg/L (week 20). These kinetic test results indicate that the F19 tailings have a potential for acid generation. Final results are pending.

Results for the sulphide reduced tailings (F30 tailings) indicated acid generation is unlikely. However, results from the TCLP testing indicated the F30 tailings may have the potential to leach zinc. Humidity cell tests on the F30 tailings were in the 17^{th} week of testing of a 20 week testing program at the time of writing this report. The kinetic test results for the first 15 weeks of testing show a consistent near neutral pH and sulphate concentrations have shown a steady decrease from 33 mg/L (week 0 and 1) to 1.2 mg/L (week 12). These kinetic test results indicate acid generation is unlikely for the F30 tailings. Final results are pending.

<u>Meteorology</u>

The climate in the Shakespeare Property area is characterized by moderately long, cold winters and shorter, warm summers and is typical of continental conditions. A weather station was installed on site in March 2005 to monitor local weather conditions including rainfall, temperature and wind. During the period of record, from March 17 through November 16, 2005, temperatures ranged from -12.3 °C in March to 33.2 °C in July. Total monthly rainfall ranged from 0 mm in March to 89.4 mm in September. A wind rose plot was developed using the recorded wind speeds and directions. As evidenced by the predominantly east and west wind directions shown on the wind rose plot, the wind data recorded by the weather station may be influenced by the location of the cleared corridor for the access road to the project site. The predominantly east and west directions may also be a result of the fact that data has not currently been collected over the winter months.

<u>Heritage Study</u>

Stage 1 and Stage 2 archaeological and heritage impact assessments were completed for the project site by Horizon Archaeology in early fall 2005. Based on the studies completed, they concluded that due to the changes in the water level of Agnew Lake and the inaccessibility of the rocky ridges, the likelihood of discovering cultural remains appeared low. *The original shoreline would have been a considerable distance further away than is the case today. The lack of appreciable soil deposits also limited the usefulness of this area…the test pit strategy employed by Horizon Archaeology failed to uncover any signs of cultural activity, nor even locate areas where probability modelling would indicate special need be given.* And their report stated that, *in the opinion of Horizon Archaeology, there are no concerns related to the destruction of cultural materials by the continued development of this project.*

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SECTION 1.0 - INTRODUCTION

This environmental baseline report has been prepared to fulfill the requirements of the Bankable Feasibility Study currently being completed for the URSA Major Minerals Incorporated (URSA Major) Shakespeare Project. The Shakespeare Project is located in Shakespeare Township, on the north side of Agnew Lake, approximately 75 km southwest of Sudbury, Ontario as shown on Figure 1.1.

If the project advances to operations, the site will consist of two open pits with corresponding on-site mill, waste rock and tailings depositories and other associated components as shown on Figure 1.2. The two pits are adjacent to each other and may ultimately form one pit. Exploration drilling has been ongoing since 2002 and has delineated a significant mineral resource containing nickel, copper, cobalt, platinum, palladium and gold.

N.A.R. Environmental Consultants Inc. (NAR) was retained by URSA Major in 2004 to provide both environmental permitting and management services for the Shakespeare Project for the Prefeasibility Study. For the purpose of that report, NAR undertook several formal and informal desktop reviews to provide input on environmental permitting and present and future environmental management issues.

In August 2004, several specific technical tasks were implemented by NAR to determine baseline conditions both within the physical limits of the project and the zone of potential impact, notably the receiving water environment (Agnew Lake).

In early 2005, Knight Piésold Ltd. (Knight Piésold) was retained by URSA Major to provide similar services for the BFS, with the understanding that NAR would be hired directly by Knight Piésold to continue with the baseline programs they had initiated in 2004.

The field program was expanded in early to mid 2005 to include the collection of benthic macroinvertebrate community and sediment quality data from three stations in Agnew Lake, installation of several groundwater monitoring wells and collection and testing of groundwater samples, acid rock drainage testing of mine rock and tailings samples and the installation of an on-site weather station. The surface water quality and quantity monitoring program continued. In early fall 2005 terrestrial habitat and heritage studies were completed for the project site.

The following sections summarize the baseline studies completed to date.

SECTION 2.0 - BASELINE STUDIES

2.1 HYDROLOGY/HYDROGEOLOGY

2.1.1 Regional Surface Flows

The Spanish River flows south from Biscotasi Lake, becomes Agnew Lake which flows east, and then flows southwest, past Espanola, to discharge into the North Channel of Lake Huron. Agnew Lake was created because the Spanish River in that area was dammed for hydroelectric power generation.

A number of small streams drain the project area as shown on Figure 1.2. These have been classified geomorphically as Order 1 or intermittent streams (Micon 2004).

2.1.2 Surface Water Quality

Surface water quality monitoring was initiated by NAR in 2004 as part of the baseline studies for the project. URSA Major has been monitoring surface water quality at several on-site stream locations while NAR has collected samples from reference, near-field and far-field stations located on Agnew Lake as well as from John's Creek outlet, Spellman's Cove, Stumpy Bay and Long Bay. The surface water sampling locations are shown on Figures 1.2 and 2.1. The Agnew Lake sampling locations are labelled UM-AL-REF, UM-AL-NF and UM-AL-FF. The John's Creek locations are labelled JC-NF and JC-FF and the embayment locations are labelled SB, SP and LB for Stumpy Bay, Spellman's Cove and Long Bay, respectively. The on-site sampling locations are labelled UM-SW-1 through 6.

The baseline surface water quality results are summarized on Table 2.1 with the field notes and analytical reports provided in Appendix A1. Results were compared to Provincial Water Quality Objectives (PWQO) and the federal Metal Mining Effluent Regulations (MMER). In general, most parameters tested were well below PWQO and MMER limits. Some of the surface water samples collected on site (UM-SW-1 through UM-SW-6) exceeded the PWQO limit for aluminum, ammonia (as N), cadmium, cobalt, copper, iron and zinc. In general the pH values were slightly acidic for the samples collected from on-site locations, ranging from 4.57 to 7.40. There were single sample exceedances for PWQO for lead (location UM-SW-4), nickel (location UM-SW-3A), silver (location UM-SW-5) and vanadium (location UM-SW-1). The only parameter to exceed MMER was pH where values were slightly acidic as indicated above.

For samples collected from Agnew Lake, including where John's Creek flows into the lake, only aluminum (location JC-FF-b), ammonia (as N), cadmium (locations UM-AL-REF-b and UM-AL-FF-b), copper and pH (location JC-FF-b) exceed the PWQO limits. There were no exceedances of MMER for these samples.

For samples collected from the three embayments, only ammonia (as N) exceeded the PWQO limit. There were no exceedances of MMER for these samples.

It should be noted the above water quality results are from the pre-production phase and should be considered as background values.

2.1.3 Flow Monitoring

In 2004 a culvert and data logging flow meter were installed by NAR on one of the sub-catchments within the Shakespeare Project area. The location of the flow monitoring station corresponds to the location of surface water sampling location UM SW-3. The flow monitoring location is shown on Figures 1.2 and 2.1.

Flow monitoring is being conducted at UM SW-3 through the use of a Star Flow meter estimating flows through a 910 mm (36 inch) diameter corrugated steel culvert. This intermittent creek drains the watershed which includes a large portion of the Shakespeare Project area, including the open pits. Monitoring records for the period from August 18, 2004 through November 15, 2005 were provided by NAR. The data are summarized on Table 2.2 while the daily data are provided in Appendix A2. Average recorded flows range from 0 m^3/s in August and September 2004 to approximately 0.16 m^3/s in April 2005. Data collection is ongoing.

2.1.3.1 Groundwater Quality and Quantity

A total of seventeen groundwater monitoring wells were installed on site in 2005 and their locations are shown on Figure 1.2. Details of the well installation program are provided in Appendix B with a summary provided on Table 2.3. Recorded groundwater depths ranged from 0.75 m above surface in MW-05-08 (artesian conditions) to 13.79 m below surface in MW-05-15.

Rising head tests were conducted in all of the wells in order to estimate the hydraulic conductivity (permeability) of the overburden soil or bedrock adjacent to the screened interval of each well. Hydraulic conductivities (K) calculated from these tests ranged from 3.4×10^{-6} cm/s in MW-05-01 to 3.1×10^{-4} cm/s in MW-05-07 (average of approximately 7×10^{-5} cm/s). These values are typical for near surface bedrock and the overburden soils encountered at site.

A single vertical drillhole, U-03-66, was completed in the area of the proposed bulk sample. The primary purpose of this hole was to confirm the depth to groundwater and the geology of the bulk sample area. Groundwater was measured in this drillhole at a depth of approximately 1.2 m. No water quality sampling was conducted in this hole as no monitoring well was installed.

To date, one partial set and one complete set of groundwater quality samples have been collected. The baseline groundwater quality results are summarized on Table 2.4 with the field notes and analytical reports provided in Appendix A3. Results were compared to PWQO and in general, most parameters tested were well below PWQO limits. Some of the groundwater samples collected on site (MW-05-01 through MW-05-17) exceeded the PWQO for aluminum, ammonia (as N), arsenic, cadmium, cobalt, copper, iron, total cyanide, tungsten and zinc. It should be noted that for some of the samples the method detection limit for total cyanide was greater than the PWQO. The pH values were slightly acidic for almost half of the samples collected, with lower values ranging from 4.91 to 6.43. There were single sample exceedances for PWQO for lead (MW-05-15), mercury (MW-05-03) and uranium (MW-05-01) and two samples exceeded for nickel (MW-05-01 and MW-05-14) and silver (MW-05-05 and MW-05-15).

Groundwater quality results for QA/QC samples are summarized on Table 2.5. In general lab results for the metals and general parameters were very similar for duplicate samples. The one exception was the total suspended solids results for well MW-05-16. This may be due to the original sample being collected when the water in the well was still turbulent after purging the well.

It should be noted that the above water quality results are from the pre-production phase and should be considered as background values.

2.2 SEDIMENT

Sediment samples were collected by NAR from the three surface water monitoring locations in Agnew Lake in October 2004 and from locations in Stumpy Bay, Spellman's Cove and Long Bay in May 2005. The Agnew Lake sampling locations are labelled UM-AL-REF, UM-AL-NF and UM-AL-FF, while the embayment locations are labelled SB, SP and LB for Stumpy Bay, Spellman's Cove and Long Bay, respectively. All locations are shown on Figure 2.1. The results are summarized on Table 2.6 and the analytical reports are included in Appendix A1. There is additional information included in NAR's report (Appendix C).

Results were compared to the Provincial Sediment Quality Guidelines (PSQG) which consist of lowest effect and severe effect levels for various parameters. For the samples collected from Agnew Lake, the lowest effect levels for percent organic, arsenic, cadmium, chromium, copper, lead, manganese, nickel, total kjeldahl nitrogen and zinc were exceeded for some or all samples collected. All three far field samples exceeded the severe effect level for percent organic, while two of the reference and two of the far field samples exceeded the severe effect level for manganese.

For the samples collected from the embayments, the lowest effect levels were exceeded for percent organic, arsenic, cadmium, chromium, copper, lead, manganese, nickel, total kjeldahl nitrogen and zinc for some or all samples collected. One or more samples from each embayment exceeded the severe effect level for manganese while one sample from Spellman's Cove and two from Stumpy Bay exceeded the severe effect level for total kjeldahl nitrogen.

These sediment quality results are from the pre-production phase and are representative of background values.

2.3 TERRESTRIAL PLANT AND ANIMAL LIFE

2.3.1 Vegetation

Local vegetation, as described by Micon in the Prefeasibility Study, is summarized below.

The property is covered in relatively dense bush consisting of coniferous and deciduous bushes and small and large trees. The timber resources consist mostly of second growth birch, poplar, oak, maple, jackpine and spruce.

A forest resource inventory was completed by NAR (Maureen Kershaw) in 2004 for some of the project area, in particular for potential haulage road options. A copy of this report is provided in Appendix D. Based on the information in this report, vegetation in and around the site may be described as mature white pine, mixed wood forests (white and yellow birch, soft maple, eastern hemlock and spruce) and red oak-white pine and mixed hardwood forests.

A terrestrial habitat assessment was completed by Maret Tae, R.P.Bio., in the early fall of 2005. A copy of the report is provided in Appendix E. The report concludes that the project site *exhibits vegetation typical of the landscape of the north shore of Lake Huron. Forest habitat is primarily Transitional Boreal/Great Lakes-St. Lawrence Forest. Close to half the site is covered in very shallow soil with bedrock outcrops with Shallow Soil vegetation community dominated by sometimes stunted jack pine and red oak. The site also has a small amount of swamp and marsh habitat, and is adjacent to a large open water marsh to the northwest on Sutherland Creek.* Recommendations were made to conduct vegetation surveys throughout the growing season in order to better document the presence or absence of significant plant species at the project site.

2.3.2 Birds and Mammals

Ministry of Natural Resources (MNR) Values Maps were reviewed for the project site area by NAR in 2004. Figure 2.1 provides information on the location of moose feeding and wintering grounds. No areas of nesting, breeding or significant bird habitat were identified by NAR.

The terrestrial habitat assessment completed by Maret Tae also included mammals, birds and herpetiles. The report concluded that the project site exhibits a variety of wildlife habitat, both upland and wetland, typical of the landscape of the north shore of Lake Huron. The presence of the cliffs and the adjacent Agnew Lake are valuable features for wildlife such as raptors. However, due to the timing and duration of the assessment, it was recommended that additional wildlife surveys, such as amphibian and reptile surveys, waterfowl, raptor and spring songbird surveys, mid summer mist netting of bats, and reporting of on-site wildlife sightings on an ongoing basis be conducted in order to provide more complete inventories of the wildlife in and around the project site.

2.4 AQUATIC PLANT AND ANIMAL LIFE

2.4.1 Fisheries

Figure 2.1 provides information on some fish spawning areas, in particular Northern Pike and Walleye. This information was provided by NAR and is based on MNR Values Maps.

A general assessment of fisheries and fish habitat was completed by NAR in 2005 to address the presence or absence of fish populations in the project site area. In particular, habitat descriptions of the three embayment areas were completed in the spring of 2005. Details of this work are provided in Appendix C. Also included in NAR's report are the results of a Fall Walleye Index Netting (FWIN) study completed for the MNR by Laurentian University in 1998 and 1999.

Due to the drawdown of Agnew Lake caused by the operating of the hydropower dam, which can vary water levels in the lake each year by as much as 3 to 6 m, NAR's assessment concluded that *fisheries resources in Agnew Lake are generally limited by the loss of littoral habitat and the associated benthic productivity.*

2.4.2 Benthic Surveys

Benthic samples were collected from three locations in Agnew Lake by NAR in the spring of 2005, as well as from Spellman's Cove, Stumpy Bay and Long Bay. Results are provided in Appendix C.

In their report NAR concluded that *in general, benthic macroinvertebrate communities at both the lake and embayment stations were dominated by worms, midge and clams. Results were typical of unimpacted shield lakes where numbers of organisms and taxa diversity are typically low. Communities in the embayments are also subject to stress through the annual seasonal draw-down* caused by the operation of the hydropower dam.

2.4.3 Project Site Ponds

NAR conducted a field inspection of a series of ponds located north of the open pits in August 2005. These ponds were inspected because they are located downstream of the proposed waste rock and tailings dump. At the time of the inspection in August 2005, however, only one of the ponds existed, most likely due to the very dry weather which occurred throughout the summer.

Details of NAR's findings are provided in Appendix C. In their report NAR states that *the observational data collected during the site inspection support that ponds downstream of the proposed waste rock and tailings dump are transitory, and do not support a fishery. As such, these ponds are not fish habitat as defined by the Fisheries Act.* NAR also reported that *there was no evidence of undisturbed wetlands which supported unique plant assemblages or rare, threatened or endangered wildlife habitat.*

2.5 AIR AND NOISE STUDIES

No air and noise studies have been completed at the site. A scope of work was developed to complete these studies as part of the permitting phase of the project.

2.6 WASTE CHARACTERIZATION

The waste characterization program was implemented based the Guidelines for the Prediction of Acid Rock Drainage (ARD) and Metal Leaching for Mines in British Columbia (which the Ministry of Northern Development and Mines (MNDM) has adopted by regulation under the Ontario Mining Act). The amount of testing conducted was for a Feasibility Study and not for final project permitting.

2.6.1 Mine Rock

The testing on potential mine rock (waste rock) was completed on core samples collected from the project site during the exploration drilling. The initial phase of leach tests and Acid Base Accounting (ABA) tests were completed by Testmark Laboratories Ltd. (Testmark) in September 2004. Results of these tests are included in the Prefeasibility Study and in the Closure Plan for Advanced Exploration for the Shakespeare Project.

The remaining environmental characterization of the mine rock was completed or is ongoing by SGS Lakefield Research Limited (SGS). Testing completed by SGS included:

- US EPA toxicity characteristic leach procedure (TCLP) method 1311 on 16 samples
- US EPA synthetic precipitation leach procedure (SPLP) method 1312 on 16 samples
- Modified static ABA tests on 10 samples
- Net Acid Generation (NAG) tests on 10 samples

Testing that is ongoing by SGS includes:

- Humidity Cell testing (kinetic ABA tests) on 4 individual samples and 3 composite samples

The mine rock samples tested were representative of the major bedrock units found in the proposed open pit at the Shakespeare Project site and included:

- Quartz Gabbro
- Disseminated Sulphide Mineralization
- Footwall Gabbro
- Hanging Wall Quartzite

Results from the TCLP tests completed on the mine rock samples revealed that all parameters, with the exception of pH, reported at concentrations within the MMER limits.

Results from the SPLP tests determined that all parameters reported at values within the MMER limits for the mine rock samples.

The modified static ABA test results for the Quartz Gabbro samples, the Disseminated Sulphide Mineralization sample, the Footwall Gabbro sample and the Hanging Wall Quartzite samples all indicated the potential for acid generation.

The NAG test results for the Quartz Gabbro samples, the Disseminated Sulphide Mineralization sample and the Hanging Wall Quartzite samples were indicative of the potential for acid generation. The NAG test result for the Footwall Gabbro sample suggested a slight possibility for the potential to generate acid.

Humidity cell tests (kinetic tests) were in the 22nd week of testing of a 40 week testing program at the time of writing this report. The kinetic test results for the first 20 weeks of testing show a general decrease in pH from 7.97 (week 0) to 6.23 (week 20) and sulphate concentrations have shown an increasing trend. These kinetic test results indicate the mine rock has a potential for acid generation. Final results are pending. Interim results of the leachate quality from the humidity cell tests indicate that all the parameters are within the MMER limits.

Details of the interim results from SGS are included in Appendix F.

2.6.2 Tailings

Environmental characterization of tailings samples generated from metallurgical testing of ore from the Shakespeare Project was completed or is ongoing by SGS to identify the ARD potential and the metal leaching characteristics of the tailings samples. Testing completed by SGS included:

- Mineralogical examination
- Rietveld XRD analyses
- Whole rock analyses
- ICP-OES/MS strong acid digest trace metal scans
- Modified ABA tests
- NAG tests
- US EPA TCLP method 1311
- US EPA SPLP method 1312

Testing ongoing by SGS includes:

- Humidity Cell testing (kinetic ABA tests)
- Supernatant aging tests
- Daphnia magna LC50 acute lethality tests

The tailings samples tested included:

- Combined flotation tailings (F19 - flotation tailings pulp)
- Rougher tailings (F30 - sulphur reduced rougher flotation tailings)

Generally the results from the testing carried out on F19 tailings indicated that they have a strong potential for acid generation and may leach nickel and zinc. Results for the F30 tailings testing indicated acid generation is unlikely. However, results from the TCLP testing indicated the F30 tailings may have the potential to leach zinc.

Humidity cell tests (kinetic tests) on the F19 tailings were in the 22nd week of testing of a 40 week testing program at the time of writing this report. The kinetic test results for the first 20 weeks of testing show a general decrease in pH from 8.03 (week 0) to 6.70 (week 20) and sulphate concentrations have steadily increased from 6.5 mg/L (week 0) to 61 mg/L (week 20). These kinetic test results indicate that the F19 tailings have a potential for acid generation. Final results are pending.

Humidity cell tests on the F30 tailings were in the 17th week of testing of a 20 week testing program at the time of writing this report. The kinetic test results for the first 15 weeks of testing show a consistent near neutral pH and sulphate concentrations have shown a steady decrease from 33 mg/L (week 0 and 1) to 1.2 mg/L (week 12). These kinetic test results indicate that acid generation is unlikely for the F30 tailings. Final results are pending.

Details of the interim results from SGS are included in Appendix F.

2.7 METEOROLOGICAL DATA

The climate in the Shakespeare Property area is characterized by moderately long, cold winters and shorter, warm summers and is typical of continental conditions. The area experiences a wide variation in temperature throughout the year. In winter months, the temperature may drop below -20°C for extended periods. In the summer, the maximum daily temperature may reach over 25°C for extended periods. The daily mean temperatures typically fall below freezing from December through March. Precipitation in the region is characterized as moderate and is generally distributed evenly throughout the year, with only minor seasonal trends. However, the wettest months generally occur from May to October.

The estimated average annual total precipitation is 899 mm, with 657 mm falling as rain and 242 mm falling as water equivalent to snow. This is based on the Canadian Climate Normals for the meteorological station located at the Sudbury airport, approximately 85 km northeast of the site, for the period from 1971 through 2000.

Evaporation data are not collected at the Sudbury airport. The evaporation data from Amos, Quebec, approximately 380 km northeast of the site, may be used in the future for design purposes. The recorded average annual evaporation for Amos is 746 mm (Environment Canada, 1968 - 1992).

A weather station was installed on site by Knight Piésold on March 16, 2005 to monitor local weather conditions including rainfall, temperature and wind. The location of the weather station is shown on Figure 1.2.

During the period of record, from March 17 through November 16, 2005, temperatures ranged from -12.3 °C in March to 33.2 °C in July. Total monthly rainfall ranged from 0 mm in March to 89.4 mm in September. Table 2.7 and Figures 2.2 through 2.4 provide summaries of the temperature, rainfall and wind data collected while details are included in Appendix G.

Figure 2.3 shows a wind rose developed using the wind speeds and corresponding directions recorded on site while Figure 2.4 shows the distribution of wind speeds. As evidenced by the predominantly east and west directions of the wind on the wind rose plot, the wind data recorded by the weather station may be influenced by the location of the cleared corridor for the access road to the project site. The predominantly east and west directions may also be a result of the fact that data has not yet been collected over the winter months.

2.8 HERITAGE STUDY

Stage 1 and Stage 2 archaeological and heritage impact assessments were completed for the project site by Horizon Archaeology in early fall 2005. Based on the studies completed, they concluded that due to the changes in the water level of Agnew Lake and the inaccessibility of the rocky ridges, the likelihood of discovering cultural remains appeared low. *The original shoreline would have been a considerable distance further away than is the case today. The lack of appreciable soil deposits also limited the usefulness of this area…the test pit strategy employed by Horizon Archaeology failed to uncover any signs of cultural activity, nor even locate areas where probability modelling would indicate special need be given.* And their report stated that, *in the opinion of Horizon Archaeology, there are no concerns related to the destruction of cultural materials by the continued development of this project.* Further details of the heritage study are included in Appendix H.

SECTION 3.0 - REFERENCES

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4. Micon International Limited. Ursa Major Minerals Incorporated - Preliminary Feasibility Study for the Shakespeare Mineral Deposit, Shakespeare Township, Ontario. Volume 1. Toronto: Micon International Limited, 2004.

5. N.A.R. Environmental Consultants Inc. Ursa Major Access Corridor. Prepared by Kershaw, Maureen. Sudbury: N.A.R. Environmental Consultants Inc., 2004.

6. Ontario. Ministry of Environment and Energy. Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario. Prepared by Persaud, D., Jaagumagi, R., and Hayton, A. Queen's Printer for Ontario, 1993.

7. Ontario. Ministry of the Environment and Energy. Water Management Policies, Guidelines, Provincial Water Quality Objectives of the Ministry of Environment and Energy, Province of Ontario. Province of Ontario, 1994, reprinted February 1999.

SECTION 4.0 - CERTIFICATION

This report was prepared, reviewed and approved by the undersigned.

Prepared by:

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TABLE 2.1

URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT

ENVIRONMENTAL BASELINE REPORT FOR FEASIBILITY STUDY

SUMMARY OF SURFACE WATER QUALITY RESULTS

Surface Water Sample Location – UM-SW-1

Parameter	Units	Criteria PWQO	Criteria MMER	18-Oct-05	20-Sep-05	17-Jun-05	18-May-05	27-Apr-05	4-Apr-05	15-Mar-05	11-Feb-05	10-Jan-05	19-Nov-04	21-Oct-04
Field Air Temperature	°C			9	17	13	16	5	8	-2	-1	-3	3	8
Field Water Sample Temperature	°C			9	14	12	13	3	1	0.5	0	1	4	6
Field D/O	mg/L			2.5	4.5	2.5	5.5	9	7	4	6	5.5	4.5	3.5
Aluminum	µg/L	15 (for pH 4.5 to 5.5)		266	398	201	266	276	280	284	293	287	298	405
		75 (for pH 6.5 to 9.0)												
Ammonia (as N)	mg/L	0.02		0.013	0.040	0.040	0.03	0.038	0.022	0.044	0.06	0.0085	0.035	0.18
Antimony	µg/L	20		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	µg/L	5	1000	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Barium	µg/L			21	50	11	18	15	15	20	19	18	17	25
Beryllium	µg/L	11 (for hardness as $CaCO_3$ <75 mg/L)		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	µg/L	1,100 (for hardness as $CaCO_3$ >75 mg/L)												
Bismuth	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron	µg/L	200		5.1	70	5.5	4.3	<2	<2	<2	3.8	5.2	4.1	<2
Cadmium	µg/L	0.1 (for hardness as $CaCO_3$ < 100 mg/L)		0.30	0.65	0.12	0.15	0.29	0.17	0.13	0.17	0.12	0.13	0.5
	µg/L	0.5 (for hardness as $CaCO_3$ >100 mg/L)												
Calcium	µg/L			1,000	3,500	1,100	1,100	950	970	1,100	960	1,000	1,200	2,200
Cerium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cesium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	mg/L			0.81	0.6	<0.2	0.28	<0.2	0.28	0.53	0.33	0.48	0.4	0.53
Chromium [6]	µg/L	8.9		<1	2.0	<1	<1	<1	<1	1.5	1.6	<1	<1	<1
Cobalt	µg/L	0.9		26.5	27.9	39.4	15.5	8.5	8.7	17.9	12.4	13.8	17.4	35.2
Conductivity	µS/cm			31	53	25	24.99	22.24	23.02	26.63	25.88	24.61	26.24	39
Copper	µg/L	1 (for Hardness as $CaCO_3$ <20 mg/L)	600	<1	<1	<1	<1	<1	2.2	2.2	<1	<1	<1	2
	µg/L	5 (for Hardness as $CaCO_3$ >20 mg/L)												
Dissolved Organic Carbon	mg/L			3.8	4.2	4.3	1.2	5.8	5.7	5.0	7.7	5.3	7.2	9
Europium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoride	mg/L			0.012	0.034	<0.01	0.013	<0.01	0.028	0.034	0.052	0.040	0.015	0.013
Gallium	µg/L			<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Iron	µg/L	300		72	54	990	220	54	40	340	26	100	210	1,300
Lanthanum	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	µg/L	1 (for Alkalinity as $CaCO_3$ <30 mg/L)	400	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	µg/L	3 (for Alkalinity as $CaCO_3$ 30-80 mg/L)												
	µg/L	5 (for Alkalinity as $CaCO_3$ >80 mg/L)												
Lithium	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Magnesium	µg/L			260	1,350	380	330	290	300	340	320	330	390	809
M-Alkalinity as $CaCO_3$ (pH 4.5)	mg/L			<10	<10	<10	<10	<10	<10	<10	2.5	1.3	<10	<10
Manganese	µg/L			370	567	770	251	118	137	317	226	263	329	803
Mercury	µg/L	0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	µg/L	40		<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1
Nickel	µg/L	25	1000	8	11	4.6	7	6	5.1	5.2	5.1	6.4	6.8	10
Niobium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrate (as N)	mg/L			<0.1	0.2	<0.1	<0.1	<0.1	<0.1	0.11	0.1	<0.1	<0.1	<0.1
Nitrite (as N)	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH	pH	6.5 - 8.5	6.0-9.5	4.44	4.77	4.82	4.87	4.78	4.81	4.09	4.80	4.83	4.82	5.04
Phosphorus	µg/L			<50		<50	<50	<50	<50	<50	<50	<50	<50	<50
Potassium	mg/L													
Rubidium	µg/L			<1	1.5	1.5	1.3	1.1	1.4	1.3	1.2	1.3	1.3	1.6
Scandium	µg/L			<1	5	1.2	<1	<1	<1	<1	<1	1.4	<1	1.2
Selenium	µg/L	100		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium	µg/L													
Strontium	µg/L			8.9	32	7.7	8	6.9	6.8	8.2	7.7	8.9	8.8	14
Sulphate	mg/L			7.7	17	7.4	6.7	4.2	6.9	7.2	7.2	6.7	7	14
Thallium	µg/L	0.3		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thorium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tin	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Titanium	µg/L			<1	4.3	1.1	<1	<1	<1	<1	<1	1.7	<1	1
Total Dissolved Solids	mg/L			36	<30	55	<30	<30	34	83	<30	<30	67	<20
Total Hardness (as CaCO3)	mg/L			3.6	14.3	4.4	4.2	3.6	3.7	4.1	3.7	3.9	4.6	8.9
Total Kjeldahl Nitrogen	mg/L			0.27	0.40	0.18	0.22	0.24	0.24	0.71	0.25	0.19	0.12	0.24
Total Phosphorus (as P)	mg/L			0.027	0.014	0.046	0.026	0.012	0.015	0.025	0.014	0.013	0.012	0.017
Total Suspended Solids	mg/L		30	<6	<6	<6	<6	<6	<6	7	<6	<6	<6	10
True Colour	TCU			12	<4	10	7.5	14	9.8	<4	9	9	13	21
Tungsten	µg/L	30		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Turbidity	NTU			0.22	0.8	1.1	0.42	0.28	0.35	1.2	0.22	0.26	0.48	0.73
Uranium	µg/L	5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	µg/L	6		<1	7.4	<1	<1	<1	<1	<1	<1	<1	<1	<1
Yttrium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	20	1000	21	33	17	19	18	23	61	22	23	22	30
Zirconium	µg/L	4		<1	<1	<1	<1	<1	1.5	<1	<1	<1	<1	<1

Surface Water Sample Location – UM-SW-2

Parameter	2-Nov-05	18-May-05	27-Apr-05	4-Apr-05	15-Mar-05	11-Feb-05	10-Jan-05	19-Nov-04	4-Nov-04
Field Air Temperature	4	21	7	8	0	-1	-3	4	5
Field Water Sample Temperature	7	12	4	1	1	0	1	5	5
Field D/O	4.5	7	9	10	5.5	9	11	5	6
Aluminum	268	251	306	298	229	291	307	330	332
Ammonia (as N)	0.06	0.027	0.013	0.012	0.02	0.063	0.0074	0.0071	0.016
Antimony	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	<1	<1	<1	<1	<1	<1	<1	<1	<1
Barium	18	10	14	14	14	14	17	18	20
Beryllium	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bismuth	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron	4.5	3.7	<2	<2	<2	3.9	3.2	<2	2.2
Cadmium	0.25	0.1	<0.1	<0.1	<0.1	0.12	0.15	0.15	0.1
Calcium	2,200	1,700	1,600	1,400	1,500	1,500	1,700	2,200	2,000
Cerium	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cesium	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	1.4	0.36	0.23	0.31	0.37	0.3	0.33	0.57	0.63
Chromium [6]	<1	<1	<1	<1	<1	1.1	<1	<1	<1
Cobalt	7.7	5.3	3.1	3.2	4.5	4.5	5.3	7.6	7.5
Conductivity	28	24.22	25.07	25.78	26.15	20.40	26.35	29.31	30.89
Copper	<1	<1	<1	1.5	1	<1	<1	<1	1.3
Dissolved Organic Carbon	4.1	1.9	8.2	4.8	5	0.9	5.3	0.3	7.5
Europium	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoride	<0.01	<0.01	0.016	0.02	0.023	0.029	0.038	0.017	0.017
Gallium	<1	<1	<1	<1	<1	<1	<1	<1	<1
Iron	<20	<20	35	29	<20	<20	<20	<20	30
Lanthanum	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lithium	<5	<5	<5	<5	<5	<5	<5	<5	<5
Magnesium	408	410	370	380	413	401	420	583	481
M-Alkalinity as $CaCO_3$ (pH 4.5)	<10	<10	<10	<10	<10	3.8	1.3	<10	<10
Manganese	112	68	48	54	45	54	66	106	115
Mercury	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	6.4	5.2	4.2	4.6	4.2	4.6	4.8	7.5	5.9
Niobium	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrate (as N)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite (as N)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH	4.32	5.11	4.79	4.79	5.04	4.92	4.88	4.92	4.84
Phosphorus		<60	<50	<60	<50	<50	<50	<50	<50
Potassium									
Rubidium	<1	<1	1	<1	<1	<1	<1	<1	<1
Scandium	<1	<1	<1	<1	<1	<1	1.4	<1	1.1
Selenium	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium									
Strontium	11	8.9	8	7.5	8.0	9.2	10	13	11
Sulphate	7.1	6.7	5.2	7.4	7.6	7.1	7.1	8.1	7.8
Thallium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thorium	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tin	<1	<1	<1	<1	<1	<1	<1	<1	<1
Titanium	<1	<1	1.8	1.1	<1	<1	1.8	<1	<1
Total Dissolved Solids	<30	<30	<30	40	54	<30	<30	84	31
Total Hardness (as CaCO3)	7.4	6	5.5	5.1	5.5	5.4	6	8	6.9
Total Kjeldahl Nitrogen	0.057	0.28	0.2	0.22	0.38	0.25	0.16	0.15	0.21
Total Phosphorus (as P)	0.043	0.017	0.012	0.013	0.023	0.014	0.013	0.015	0.021
Total Suspended Solids	<6	7	<6	<6	<6	<6	<6	8	3
True Colour	<4	8.4	34	29	4.7	13	11	9	17
Tungsten	<1	<1	<1	<1	<1	<1	<1	<1	<1
Turbidity	<0.2	0.22	0.84	0.55	1.1	0.58	<0.2	0.24	<0.2
Uranium	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	<1	<1	<1	<1	<1	<1	<1	<1	<1
Yttrium	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	21	20	25	28	21	19	20	25	22
Zirconium	<1	<1	<1	2.6	1.5	<1	<1	<1	<1

Surface Water Sample Location – UM-SW-3

Parameter	18-Oct-05	20-Sep-05	18-Aug-05	17-Jun-05	18-May-05	27-Apr-05	4-Apr-05	15-Mar-05	11-Feb-05	10-Jan-05	19-Nov-04	4-Nov-04	21-Oct-04	21-Sep-04	17-Aug-04
Field Air Temperature	9	19	22	14	14	7	9	0	-1	-4	4	5	7	7	17
Field Water Sample Temperature	9	10	10	15	13	4	0.5	0.5	0	0	3	3	5	5	14
Field D/O	4.5	5.5	4.5	4.5	9	9	10	9	8	9	9	8	7	7	6
Aluminum						239	106	111	102	124	137	160			
	56	152	89	122	126								67	69	77
Ammonia (as N)	0.0084	0.02	0.032	0.08	0.042	0.037	0.044	0.11	0.1	0.010	<0.002	0.0002	0.062	0.022	0.058
Antimony	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	<1	1.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Barium	13	20	15	15	11	12	11	14	11	12	13	14	15	9.7	9.7
Beryllium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bismuth	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron	7.1	28	8.4	7.4	3.8	<2	<2	<2	5.1	4.4	2.3	3.5	<2	8.1	7.5
Cadmium	<0.1	0.22	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.14	<0.1	0.11	<0.1	<0.1	<0.1
Calcium	5,900	6,330	7,280	6,480	3,700	2,500	2,400	4,200	3,400	3,100	3,900	3,800	7,000	6,700	5,620
Cerium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cesium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	1	1.3	<0.2	<0.2	0.25	<0.2	0.37	0.51	0.45	0.57	0.81	0.81	1.2	0.75	0.84
Chromium [6]	<1	1.2	1	<1	<1	<1	<1	<1	1.3	<1	<1	<1	<1	<1	<1
Cobalt	0.31	0.65	0.57	2.6	0.96	0.92	1.2	0.96	0.54	0.63	0.57	0.71	0.38	1.6	0.80
Conductivity	58	78	87	57	35.86	25.83	31.05	45	38.63	34.30	38.33	37.66	59.7	61.1	52
Copper	2.6				1.9	1.3	3.6	3	3.8	2.4	3.8	4.1			2.4
		2.6	2.0	2.3									2.7	<1	
Dissolved Organic Carbon	8	13	8.5	13	2.8	12	4.7	5.7	7.2	6.5	8.4	10	9.3	8.4	11
Europium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoride	<0.01	0.013	<0.01	<0.01	0.011	<0.01	0.011	0.023	0.012	0.011	<0.01	<0.01	<0.01	<0.01	0.022
Gallium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Iron	88	220	230	880	150	87	78	120	29	71	100	120	110	240	430
Lanthanum	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lithium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	10
Magnesium	1,210	2,180	1,900	1,590	974	681	834	1,120	903	797	1,010	874	1,870	1,670	1,330
M-Alkalinity as $CaCO_3$ (pH 4.5)	14	21	14	27	11	<10	<10	11	7.5	7.5	<10	<10	<10	17	16
Manganese	9.5	32	39	260	47	33	43	60	23	27	25	30	29	226	118
Mercury	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	9.8	12	8.5	14	10	8.7	7.7	8.1	8.1	8.4	9.7	12	7.7	6.5	9.7
Niobium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrate (as N)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.14	0.11	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite (as N)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH	6.91	6.63	6.53	6.62	6.54	6.1	6.30	6.45	6.39	6.18	6.41	6.27	6.58	6.9	7.12
Phosphorus	<50		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Potassium															
Rubidium	2.1	3.2	1	1.2	<1	1.2	1.1	1	<1	1.1	<1	1.3	1.3	1.1	1
Scandium	<1	3.0	<1	<1	<1	1.2	1.1	1.4	1	1.8	<1	1	<1	<1	<1
Selenium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium															
Strontium	25	35	30	24	15	11	10	10	16	14	16	16	24	26	22
Sulphate	7.9	18	12	2.6	8.2	4.7	6.9	7.4	7.5	7.1	8.5	9	16	6.9	5
Thallium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thorium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tin	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Titanium	2	8.9	3.1	3.1	2.4	3.7	4.3	2.6	2.4	2.7	1.4	2.6	1.4	2.8	4
Total Dissolved Solids	<30	31	59	45	63	32	30	67	30	61	47	46	44	60	55
Total Hardness (as CaCO3)	10.7	22.3	20	23.2	13.2	9.1	8.5	15	12.1	11	13.8	12.6	26.2	23.7	19.5
Total Kjeldahl Nitrogen	0.46	0.93	0.43	0.4	0.42	0.33	0.31	0.23	0.28	0.31	0.24	0.3	0.38	0.33	0.5
Total Phosphorus (as P)	0.03	0.014	0.030	0.045	0.023	0.023	0.02	0.028	0.021	0.021	0.018	0.021	0.019	0.018	0.035
Total Suspended Solids	<6	<6	<6	8	<6	<6	<6	<6	<6	<6	<6	<3	<3	3	<3
True Colour	32	35	34	63	35	48	27	18	22	34	39	40	28	47	70
Tungsten	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Turbidity	0.98	3.3	2.9	3.4	1.7	3.6	4.1	2.2	0.71	0.85	1.6	0.87	1.1	2.3	5.5
Uranium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	<1	2.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Yttrium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	7	8.8	8	8.7	9.8	9.7	12	15	15	17	14	20	8.8	4.2	6.8
Zirconium	<1	<1	<1	<1	<1	<1	2.2	<1	<1	<1	<1	<1	<1	<1	<1

I:\101-00222-1\Assignment\Report\Report 2. Rev 0\[Tables 2.1 and 2.4 and 2.5.xls]Table 2.1 (1)
13-Dec-05

Notes:
1. PWQO refers to the "Water Management Policies, Guidelines, Provincial Water Quality Objectives of the Ministry of Environment and Energy, Province of Ontario, July 1994, reprinted February 1999."
2. MMER - Metal Mining Effluent Regulations, June 2002.
3. Bolded values indicate results exceeded PWQO values
4. Underlined values indicate results exceeding the MMER values.
5. Bolded and Underlined values indicate results exceeding both the PWQO and MMER values
6. PWQO for trivalent chromium used
7. Blank cells indicate no data available
8. Testing by Testmark Laboratories Ltd.

NB101-00222/1-2
Revision 0
December 15, 2005

Knight Piésold
CONSULTING

TABLE 2.1

URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT

ENVIRONMENTAL BASELINE REPORT FOR FEASIBILITY STUDY

SUMMARY OF SURFACE WATER QUALITY RESULTS

Surface Water Sample Location

Parameter	Units	Criteria		UM-SW-3A														
Date Sampled		PWQO	MMER	18-Oct-05	20-Sep-05	18-Aug-05	17-Jun-05	18-May-05	27-Apr-05	4-Apr-05	15-Mar-05	11-Feb-05	10-Jan-05	19-Nov-04	4-Nov-04	21-Oct-04	17-Aug-04	15-Jul-04
Field Air Temperature	°C			9	17	21	10	19	7	10	2	-1	-3	5	3	10	17	NA
Field Water Sample Temperature	°C			9	14	15	15	11	4	0.5	1	1	1	4	4	8	13	NA
Field D/O	mg/L			3.5	3	<1	1.5	4.5	9	11	4.5	7	9	5	6	2.5	NA	NA
Aluminum	µg/L	15 (for pH 4.5 to 6.5)		121	144	224	222	143	212	143	122	144	156	191	216	166	178	335
		75 (for pH 6.5 to 9.0)																
Ammonia (as N)	mg/L	0.02		0.02	0.076	0.1	0.060	0.020	0.023	0.047	0.036	0.059	0.0027	0.0065	0.01	0.03	0.032	0.015
Antimony	µg/L	20		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	µg/L	5	1000	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Barium	µg/L			15	32	28	23	14	9.4	8.5	13	12	13	13	15	17	17	13
Beryllium	µg/L	11 (for hardness as $CaCO_3$ <75 mg/L)		<1	1.7	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	µg/L	1,100 (for hardness as $CaCO_3$ >75 mg/L)																
Bismuth	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron	µg/L	200		<2	21	<2	5.7	5	2.3	<2	<2	<2	4.3	2.1	3.9	<2	<2	<1
Cadmium	µg/L	0.1 (for hardness as $CaCO_3$ < 100 mg/L)		0.21	0.29	0.29	0.18	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.13	0.11	<0.1
	µg/L	0.5 (for hardness as $CaCO_3$ >100 mg/L)																
Calcium	µg/L			3,700	4,500	6,300	5,610	4,000	2,700	2,300	3,700	3,400	3,300	3,500	3,500	4,900	4,400	3,100
Cerium	µg/L			<1	<1	1.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1.1
Cesium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	mg/L			1.4	1.2	0.7	0.57	0.35	0.26	0.53	0.76	0.58	0.69	0.88	0.9	1.5	0.6	0.75
Chromium [6]	µg/L	8.9		<1	2.3	3.5	<1	<1	<1	<1	<1	1.3	<1	<1	<1	<1	<1	<1
Cobalt	µg/L	0.9		10.7	34.2	48.2	21	0.5	0.46	0.85	0.25	0.24	0.27	0.35	0.33	0.97	10.3	1.8
Conductivity	µS/cm			38	67	60	48	34.43	25.52	20.53	30.9	33.23	31.32	34.45	34.21	40.1	38	
Copper	µg/L	1 (for Hardness as $CaCO_3$ <20 mg/L)	600	3.7	3.6	21	6.5	2.4	2.3	3.8	2.9	3	3.3	4.5	5.6	5.1	8.3	5.5
	µg/L	5 (for Hardness as $CaCO_3$ >20 mg/L)																
Dissolved Organic Carbon	mg/L			7.9	6.4	10	7.9	2.2	11	5.3	6.5	7.4	6.8	9.6	11	9.5	14	17
Europium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoride	mg/L			<0.01	0.012	<0.01	0.01	<0.01	<0.01	0.012	0.011	0.027	0.014	0.013	<0.01	0.014	0.024	0.01
Gallium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Iron	µg/L	300		450	820	300	490	<20	28	<20	<20	<20	<20	<20	50	39	350	93
Lanthanum	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	µg/L	1 (for Alkalinity as $CaCO_3$ <30 mg/L)	400	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	µg/l	3 (for Alkalinity as $CaCO_3$ 30-80 mg/L)																
	µg/L	5 (for Alkalinity as $CaCO_3$ >80 mg/L)																
Lithium	µg/L			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Magnesium	µg/L			628	1430	1,200	1,130	807	567	496	734	727	864	729	715	1,030	804	548
M-Alkalinity as $CaCO_3$ (pH 4.5)	mg/L			<10	21	27	31	13	<10	<10	<10	7.5	6.3	<10	<10	<10	15	8.8
Manganese	µg/L			274	952	1840	681	8.4	7.6	19	1.9	2.4	4	3.3	5	10	509	49
Mercury	µg/L	0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	µg/L	40		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	µg/L	25	1000	15	24	28	19	9.9	8.1	6.5	7.8	8.8	9.2	9.7	12	11	10	13
Niobium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrate (as N)	mg/L			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite (as N)	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH	pH	6.5 - 8.5	6.5-9.5	6.40	5.94	6.11	5.98	6.13	6.28	6.26	6.09	6.07	5.97	5.93	6.04	5.97	6.47	6.43
Phosphorus	µg/L			<50		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Potassium	mg/L																	
Rubidium	µg/L			2	3.3	2.8	3.2	1.5	1.5	1.4	<1	<1	1.1	<1	1.3	1.2	1.9	1.2
Scandium	µg/L			<1	3.5	1.6	1.4	<1	<1	<1	1.1	1.7	2	<1	1.1	1.3	1.3	<1
Selenium	µg/L	100		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	µg/L	0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1
Sodium	µg/L				26													
Strontium	µg/L			14		23	19	13	9	7.6	11	11	13	12	13	15	16	9.7
Sulphate	mg/L			1.7	13	3.1	0.83	4.9	4.2	5.4	6.8	6.3	6.3	7	6.7	6.8	0.51	1.4
Thallium	µg/L	0.3		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thorium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tin	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Titanium	µg/L			<1	5	2.8	3.1	<1	2	1.7	1	1	1.4	<1	1.1	1.2	2.4	1.9
Total Dissolved Solids	mg/L			45	<30	39	57	<30	40	<30	55	33	48	85	55	40	48	32
Total Hardness (as CaCO3)	mg/L			11.9	17	20.8	18.7	13.3	9.1	7.9	12.2	11.5	11	11.8	11.7	16.5	14.3	9.9
Total Kjeldahl Nitrogen	mg/L			0.43	0.57	0.32	0.27	0.23	0.29	0.23	0.17	0.36	0.23	0.21	0.27	0.26	0.34	0.31
Total Phosphorus (as P)	mg/L			0.031	0.014	0.043	0.057	0.018	0.015	0.019	0.026	0.017	0.017	0.015	0.021	0.024	0.036	0.03
Total Suspended Solids	mg/L		30	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	9	<3	<3	8	<3
True Colour	TCU			30	15	35	31	21	58	29	14	20	35	30	45	27	43	72
Tungsten	µg/L	30		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Turbidity	NTU			0.39	0.92	1.4	1.1	0.87	0.79	1	1.5	0.26	0.23	0.4	0.24	1.3	14	1
Uranium	µg/L	5		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	µg/L	6		<1	2.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Yttrium	µg/L			<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	µg/L	20	1000	11	37	27	21	12	9.5	9.5	13	9	15	15	14	16	17	11
Zirconium	µg/L	4		<1	<1	<1	<1	<1	<1	2.1	9.6	1.7	<1	<1	<1	<1	<1	<1

Parameter	UM-SW-4							
Date Sampled	18-May-05	27-Apr-05	4-Apr-05	15-Mar-05	11-Feb-05	10-Jan-05	19-Nov-04	21-Oct-04
Field Air Temperature	14	6	6	-1	-2	-4	4	5
Field Water Sample Temperature	8	5	0.5	0.5	0	1	4	6
Field D/O	11	11	11	11	12	10	8	9
Aluminum	430	418	398	418	453	431	485	500
Ammonia (as N)	0.027	0.025	0.016	0.040	0.053	0.0065	0.0040	0.09
Antimony	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	<1	<1	<1	<1	<1	<1	<1	<1
Barium	18	16	15	16	17	18	18	22
Beryllium	<1	<1	<1	<1	<1	<1	<1	<1
Bismuth	<1	<1	<1	<1	<1	<1	<1	<1
Boron	<2	<2	<2	<2	<2	2.4	<2	<2
Cadmium	0.19	0.15	<0.1	0.24	0.25	0.18	0.18	0.24
Calcium	1,000	820	800	840	910	700	960	1,300
Cerium	<1	<1	<1	<1	<1	<1	<1	<1
Cesium	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	0.24	<0.2	<0.2	0.26	<0.2	0.28	0.44	0.65
Chromium [6]	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt	9.3	7.2	7.4	9.5	9.9	10.9	11.4	16.4
Conductivity	27.77	26.88	26.03	27.74	27.9	27.97	30.74	31.93
Copper	<1	<1	<1	<1	<1	<1	<1	<1
Dissolved Organic Carbon	0.6	7.6	3.6	3.8	4.1	3.3	4.8	4.6
Europium	<1	<1	<1	<1	<1	<1	<1	<1
Fluoride	0.013	0.01	0.019	0.05	0.027	0.031	0.024	0.03
Gallium	<1	<1	<1	<1	<1	<1	<1	<1
Iron	<20	<20	<20	<20	<20	<20	<20	<20
Lanthanum	<1	<1	<1	<1	<1	<1	<1	<1
Lead	<1	<1	<1	20	<1	<1	<1	<1
Lithium	<5	<5	<5	<5	<5	<5	<5	<5
Magnesium	420	320	350	370	400	350	400	501
M-Alkalinity as $CaCO_3$ (pH 4.5)	<10	<10	<10	<10	2.5	<1	<10	<10
Manganese	116	104	109	124	130	140	137	198
Mercury	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	7.3	5.8	5.3	6.4	6.4	7.4	7.7	9.4
Niobium	<1	<1	<1	<1	<1	<1	<1	<1
Nitrate (as N)	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite (as N)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH	4.95	4.8	4.05	4.07	4.64	4.58	4.57	4.81
Phosphorus	<50	<50	<50	<50	<50	<50	<50	<50
Potassium								
Rubidium	<1	<1	<1	<1	<1	<1	<1	<1
Scandium	1.3	<1	<1	<1	1.4	1.7	<1	1.4
Selenium	<1	<1	<1	<1	<1	<1	<1	<1
Silver	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium								
Strontium	8.7	7.4	6.9	7.8	8.5	8.8	8.8	10
Sulphate	8.5	8.3	8.1	8.9	8.1	8.1	7.9	9
Thallium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thorium	<1	<1	<1	<1	<1	<1	<1	<1
Tin	<1	<1	<1	<1	<1	<1	<1	<1
Titanium	<1	<1	<1	<1	<1	<1	<1	1
Total Dissolved Solids	<30	<30	<30	59	<30	<30	48	39
Total Hardness (as CaCO3)	4.3	3.4	3.4	3.6	3.9	3.4	4	5.2
Total Kjeldahl Nitrogen	0.12	0.17	0.13	0.1	0.17	0.17	0.1	0.26
Total Phosphorus (as P)	0.02	0.013	0.015	0.021	0.016	0.016	0.017	0.026
Total Suspended Solids	<6	<6	<6	<6	<6	<6	10	<3
True Colour	7.5	17	8	<4	5	6	9	<4
Tungsten	<1	<1	<1	<1	<1	<1	<1	<1
Turbidity	0.27	0.58	0.57	0.58	0.43	<0.2	0.41	<0.2
Uranium	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	<1	<1	<1	<1	<1	<1	<1	<1
Yttrium	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	33	25	26	35	26	33	30	33
Zirconium	<1	<1	1.8	1.9	2.2	<1	<1	<1

Parameter	UM-SW-5															UM-SW-6
Date Sampled	18-Oct-05	20-Sep-05	18-Aug-05	14-Jul-05	17-Jun-05	18-May-05	27-Apr-05	4-Apr-05	15-Mar-05	11-Feb-05	10-Jan-05	19-Nov-04	21-Oct-04	21-Sep-04	17-Aug-04	2-Nov-05
Field Air Temperature	8	19	24	25	14	17	7	9	1	-2	-3	4	6	6	17	1
Field Water Sample Temperature	10	16	15	20	12	9	5	0.5	1	0	1	4	6	6	13	5
Field D/O	5.5	4.5	5.5	5	5.5	9	9	11	11	9	9	9	9	9	5	11
Aluminum	83	87	101	269	177	111	213	145	174	185	215	194	221	204	185	423
Ammonia (as N)	0.04	0.097	0.14	0.17	0.082	0.018	0.022	0.039	0.18	0.18	0.054	0.037	0.13	0.16	0.2	0.054
Antimony	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Barium	22	31	17	16	13	15	15	13	13	14	17	11	10	8.5	11	20
Beryllium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bismuth	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron	4.3	15	3.9	4.2	4.3	3.1	<2	<2	<2	<2	2.3	2.4	<2	3.8	3.1	5.4
Cadmium	0.27	0.23	<0.1	<0.1	0.23	0.11	<0.1	<0.1	<0.1	<0.1	0.14	0.11	<0.1	<0.1	<0.1	0.17
Calcium	2,100	2,300	2,000	1,600	1,300	1,100	1,200	1,100	1,200	1,400	1,300	1,200	1,200	1,200	1,100	3,800
Cerium	<1	<1	<1	1.6	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cesium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	0.24	0.52	0.25	0.5	0.2	<0.2	<0.2	0.35	0.65	0.46	0.62	0.5	<0.2	0.4	0.33	0.63
Chromium [6]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt	4.5	6.8	7.1	12.5	4.4	2.1	2.9	3.6	2.4	3.3	4	3.4	4	0.7	8.6	3.4
Conductivity	34	47	32	24	21	19.63	27.9	20.25	24.78	24.00	22.8	20.71	16.59	17.18	17	43
Copper	<1	<1	<1	2.1	<1	<1	<1	<1	3.2	<1	<1	<1	<1	<1	2.1	1.9
Dissolved Organic Carbon	3.9	2.7	2.9	20	7	0.63	5.8	3.2	6.2	6.1	5.6	8.5	8.1	10	12	17
Europium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoride	<0.01	0.014	<0.01	<0.01	0.012	<0.01	<0.01	0.017	0.02	0.018	0.032	0.026	<0.01	0.026	0.011	0.014
Gallium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Iron	<20	210	1100	8420	870	54	300	57	670	330	270	340	530	2,140	1,200	390
Lanthanum	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lithium	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Magnesium	641	1,240	709	652	500	380	414	370	442	490	447	437	421	413	300	1,410
M-Alkalinity as $CaCO_3$ (pH 4.5)	<10	<10	<10	200	<10	<10	<10	<10	<10	2.5	2.5	<10	<10	<10	<10	<10
Manganese	194	287	331	636	167	54	71	116	61	87	112	107	133	386	373	97
Mercury	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	5.4	6.4	4.5	9.1	3.2	3.7	4	3.4	3.6	4	5.4	3.9	4.3	5	6	7.2
Niobium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nitrate (as N)	<0.1	1.3	<0.1	<0.1	0.13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite (as N)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH	5.39	5.47	5.76	5.91	5.65	5.32	5.11	5.3	5.82	5.59	5.3	5.21	5.4	6.10	6.07	6.12
Phosphorus	<50		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	
Potassium																
Rubidium	1.7	3	2.5	3.4	1.7	<1	1.1	1.3	1.6	1.6	1.3	1.2	1.2	2.2	2.2	1.1
Scandium	<1	2.8	1.1	1.1	<1	<1	<1	<1	<1	1.3	1.3	<1	<1	<1	<1	<1
Selenium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Silver	<0.1	0.12	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sodium		25														
Strontium	18		15	12	9	8.9	9.2	8.2	9.5	11	12	8.9	7.7	7.9	7.7	24
Sulphate	10	11	8.2	3	4.1	6.3	5.3	6	5.8	5.9	6.1	4.3	4.2	1.8	1.9	11
Thallium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Thorium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Tin	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Titanium	<1	4.9	2.2	3.7	1.9	<1	2.1	1.8	1.8	1.3	2	1.4	2.6	2.7	1.8	3.8
Total Dissolved Solids	<30	<30	57	66	60	40	<30	31	55	<30	34	35	<20	20	42	70
Total Hardness (as CaCO3)	7.0	10.9	8.1	7.1	6.3	4.3	4.7	4.2	4.9	5.6	5.1	4.9	4.8	4.7	4.3	15.2
Total Kjeldahl Nitrogen	0.53	0.7	0.33	0.81	0.3	0.31	0.22	0.27	0.45	0.46	0.41	0.28	0.37	0.52	0.50	0.26
Total Phosphorus (as P)	0.032	0.003	0.032	0.040	0.024	0.006	0.012	0.015	0.022	0.019	0.021	0.013	0.012	0.020	0.035	0.036
Total Suspended Solids	<6	<6	<6	13	<6	<6	7	<6	<6	<6	<6	<6	<3	<3	<3	<6
True Colour	11	5.6	23	62	26	11	10	12	39	40	45	71	100	160	140	83
Tungsten	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Turbidity	1.3	1.3	7	11	1.1	0.45	5.3	1.3	0.06	0.81	0.5	1.3	14	13	5.4	0.09
Uranium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	<1	1.1	<1	1.4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Yttrium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Zinc	23	24	13	15	17	15	10	18	18	8.2	22	15	12	6.5	14	31
Zirconium	<1	<1	<1	3.5	<1	<1	<1	<1	<1	1.2	<1	<1	<1	1	<1	<1

I:\101-00222-1\Assignment\Report\Report 2, Rev 0\[Tables 2.1 and 2.4 and 2.5.xls]Table 2.1 (2)
13-Dec-05

Notes:
1. PWQO refers to the "Water Management Policies, Guidelines, Provincial Water Quality Objectives of the Ministry of Environment and Energy, Province of Ontario. July 1994, reprinted February 1999."
2. MMER - Metal Mining Effluent Regulations, June 2002
3. Bolded values indicate results exceeded PWQO values
4. Underlined values indicate results exceeding the MMER values.
5. Bolded and Underlined values indicate results exceeding both the PWQO and MMER values
6. PWQO for trivalent chromium used.
7. Blank cells indicate no data available.
8. Testing by Testmark Laboratories Ltd.

Knight Piésold
CONSULTING

TABLE 2.1

URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT

ENVIRONMENTAL BASELINE REPORT FOR FEASIBILITY STUDY

SUMMARY OF SURFACE WATER QUALITY RESULTS

Parameter	Units	Criteria		Surface Water Sample Location																		
		PWQO	MMER	LB	SP	SB	JC-FF		JC-NF		UM-AL-REF				UM-AL-NF				UM-AL-FF			
				-	-	-	s	b	s	b	-	-	s	b	-	-	s	b	-	-	s	b
Date Sampled				5-May-05	4-May-05	4-May-05	20-Aug-04	20-Aug-04	20-Aug-04	20-Aug-04	4-May-05	6-Oct-04	19-Aug-04	19-Aug-04	5-May-05	6-Oct-04	19-Aug-04	19-Aug-04	5-May-05	7-Oct-04	19-Aug-04	19-Aug-04
Field Air Temperature	°C			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Water Sample Temperature	°C			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field D/O	mg/L			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	µg/L	15 (for pH 4.5 to 6.5)						71														
		75 (for pH 6.5 to 9.0)					35		64	39		24	29	31		23	28	35		23	34	32
Ammonia (as N)	mg/L	0.02		**0.054**	**0.05**	**0.12**	**0.044**	**0.024**	**0.027**	**0.04**	**0.055**	**0.022**	**0.034**	**0.025**	**0.058**	**0.049**	**0.06**	**0.023**	**0.054**	**0.043**	**0.052**	**0.045**
Antimony	µg/L	20					<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Arsenic	µg/L	5	1000				<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Barium	µg/L						5 7	7	5.8	6.9		5.5	5.3	5.6		5.5	5 5	6.1		5.6	6	5.6
Beryllium	µg/L	11 (for hardness as $CaCO_3$ <75 mg/L)					<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
	µg/L	1,100 (for hardness as $CaCO_3$ >75 mg/L)																				
Bismuth	µg/L						<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Boron	µg/L	200					2 4	<2	<2	2.4		2 9	2.3	2.2		2.2	<2	<2		<2	2.7	2.2
Cadmium	µg/L	0.1 (for hardness as $CaCO_3$ < 100 mg/L)					<0.1	<0.1	<0.1	<0.1		<0.1	<0 1	**0.35**		<0 1	<0.1	<0.1		<0.1	<0.1	**0.13**
	µg/L	0.5 (for hardness as $CaCO_3$ >100 mg/L)																				
Calcium	µg/L			3,000	3,200	3,000	4,200	3,600	4,700	6,060	3,200	4,700	3,900	4,100	3,200	4,700	4,000	4,200	2,800	4,500	4,300	3,800
Cerium	µg/L						<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Cesium	µg/L						<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Chloride	mg/L			0.86	0.94	0.91	1.1	0.95	0 97	1.4	1	1.1	2 3	1.5	0.93	1	1.2	1.1	0.86	1	1.1	1.3
Chromium [6]	µg/L	8.9					<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Cobalt	µg/L	0.9					<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	0.2		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1
Conductivity	µS/cm			33.58	33.93	33.99	41	36	41	53	34.3	42.8	40	41	35.07	42.4	40	41	33.97	42.4	41	41
Copper	µg/L	1 (for Hardness as $CaCO_3$ <20 mg/L)	600				<1	**1.4**	**2.3**			<1	<1	**2.3**		<1	<1	**1.2**		**1.7**	<1	**1.9**
	µg/L	5 (for Hardness as $CaCO_3$ >20 mg/L)								1.1												
Dissolved Organic Carbon	mg/L																					
Europium	µg/L						<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Fluoride	mg/L																					
Gallium	µg/L						<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Iron	µg/L	300					46	180	43	140		76	73	87		55	68	140		57	76	110
Lanthanum	µg/L						<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Lead	µg/L	1 (for Alkalinity as $CaCO_3$ <30 mg/L)	400				<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
	µg/L	3 (for Alkalinity as $CaCO_3$ 30-80 mg/L)																				
	µg/L	5 (for Alkalinity as $CaCO_3$ >80 mg/L)																				
Lithium	µg/L						<5	<5	<5	<5		<5	<5	<5		<5	<5	<5		<5	<5	<5
Magnesium	µg/L			880	881	869	1,200	967	1,160	1,290	915	1,300	1,180	1,150	919	1,290	1,130	1,160	811	1,270	1,200	1,080
M-Alkalinity as $CaCO_3$ (pH 4.5)	mg/L			<10	<10	<10	<10	<10	<10	11	<10	13	<10	<10	<10	12	<10	10	<10	10	<10	10
Manganese	µg/L						7.6	69	8.5	20		16	18	30		21	34	98		17	35	93
Mercury	µg/L	0.2					<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0 1	<0.1		<0.1	<0.1	<0.1
Molybdenum	µg/L	40					<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Nickel	µg/L	25	1000				<1	1.4	3.4	1.2		<1	<1	2.7		<1	<1	1.1		<1	1.1	2
Niobium	µg/L						<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Nitrate (as N)	mg/L			<0.1	<0.1	<0.1	<0.1	0.14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite (as N)	mg/L			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pH	pH	6.5 - 8.5	6.0-9.5	6.89	6.87	6.91	7.04	**6.44**	7.17	7.26	6.93	7.23	7 4	6.99	6.94	7.16	7.05	6.9	6.89	7.14	6.97	6.75
Phosphorus	µg/L						<50	<50	<50	<50		<50	<50	<50		<50	<50	<50		<50	<50	<50
Potassium	mg/L																					
Rubidium	µg/L						1.2	1.1	1.2	1.1		1.2	<1	1.1		1.2	1	1.1		1.1	1.2	1.1
Scandium	µg/L						<1	<1	<	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Selenium	µg/L	100					<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Silver	µg/L	0.1					<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1
Sodium	mg/L																					
Strontium	µg/L						18	15	19	31		20	16	16		18	16	17		18	18	16
Sulphate	mg/L			4.7	4.7	4.8	5.4	5.4	5.3	5.8	4.8	4.9	6.2	5.2	4.7	4.8	5.3	5.6	4.8	4.9	5.4	5.5
Thallium	µg/L	0.3					<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1	<0.1
Thorium	µg/L						<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Tin	µg/L						<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Titanium	µg/L						1.3	1.9	1.3	2.1		<1	<1	<1		<1	1	<1		<1	<1	1.1
Total Dissolved Solids	mg/L			53	56	44	47	47	50	55	44	41	43	40	56	41	37	35	38	43	46	52
Total Hardness (as CaCO3)	mg/L			11.1	11.6	11.1	15.5	13	16 4	20.5	11.7	17.1	14.7	15	11.8	16.9	14.7	15.2	10.3	16.4	15.6	13.9
Total Kjeldahl Nitrogen	mg/L			0.24	0.25	0.32	0.27	0.33	0.24	0.3	0.22	0.31	0.33	0.33	0.41	0.3	0.31	0.36	0.41	0.29	0.38	0.28
Total Phosphorus (as P)	mg/L						0.018	0.021	0.016	0.022		0.0073	0.016	0.016		0.0083	0.016	0.16		0.0091	0.017	0.018
Total Suspended Solids	mg/L		30	<6	<6	<6	<3	<3	<3	<3	<6	<3	<3	<3	<6	<3	<3	<3	<6	<3	<3	<3
True Colour	TCU																					
Tungsten	µg/L	30					<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Turbidity	NTU			1.1	1.6	1.2					1				1				1.3			
Uranium	µg/L	5					<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Vanadium	µg/L	6					<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Yttrium	µg/L						<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1
Zinc	µg/L	20	1000				2.1	5.8	7.6	3.8		<1	1.7	20		<1	1.4	3.7		<1	1.4	9.1
Zirconium	µg/L	4					<1	<1	<1	<1		<1	<1	<1		<1	<1	<1		<1	<1	<1

I:\101-00222-1\Assignment\Report\Report 2, Rev 0\[Tables 2.1 and 2.4 and 2.5.xls]Table 2.1 (3)
13-Dec-05

Notes:
1. PWQO refers to the "Water Management Policies, Guidelines, Provincial Water Quality Objectives of the Ministry of Environment and Energy, Province of Ontario, July 1994, reprinted February 1999."
2. MMER - Metal Mining Effluent Regulations, June 2002.
3. Bolded values indicate results exceeded PWQO values.
4. Underlined values indicate results exceeding the MMER values
5. Bolded and Underlined values indicate results exceeding both the PWQO and MMER values.
6. PWQO for trivalent chromium used
7. Blank cells indicate no data available
8. Testing by Testmark Laboratories Ltd.

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TABLE 2.2

URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT

ENVIRONMENTAL BASELINE REPORT FOR FEASIBILITY STUDY

SUMMARY OF FLOW MONITORING RESULTS

Flow Parameter		Date															
		Aug-04 (1)	Sep-04	Oct-04	Nov-04	Dec-04	Jan-05	Feb-05	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05 (2)
Flow Depth (m)	min	0.0000	0.0000	0.0000	0.0630	0.0470	0.0565	0.0366	0.0185	0.2041	0.0605	0.0000	0.0000	0.0000	0.0226	0.0000	0.0437
	max	0.0094	0.0525	0.2261	0.3370	0.1660	0.5206	0.1027	0.0814	2.1214	0.3142	0.0920	0.0756	0.1647	0.1337	0.0756	0.3571
	mean	0.0039	0.0058	0.0618	0.1106	0.0895	0.1487	0.0643	0.0323	0.7725	0.1287	0.0268	0.0036	0.0291	0.0474	0.0037	0.1704
Velocity (m/s)	min	0.0000	0.0000	0.0000	0.4960	0.3370	0.2238	0.2552	0.0000	0.2321	0.0991	0.0000	0.0000	0.0000	0.0407	0.0000	0.0690
	max	0.0000	0.0443	0.9233	1.2330	0.8660	0.8170	0.5245	0.5696	0.9686	0.5035	0.3578	0.2359	0.3967	0.2990	0.2359	0.7732
	mean	0.0000	0.0048	0.2010	0.6464	0.4990	0.4852	0.3837	0.1997	0.4224	0.3112	0.0591	0.0089	0.0591	0.0982	0.0098	0.3527
Flow (m^3/s)	min	0.0000	0.0000	0.0000	0.0119	0.0043	0.0069	0.0026	0.0000	0.0344	0.0022	0.0000	0.0000	0.0000	0.0002	0.0000	0.0011
	max	0.0000	0.0007	0.1167	0.2709	0.0705	0.1938	0.0225	0.0174	0.5655	0.0803	0.0138	0.0105	0.0383	0.0196	0.0105	0.1951
	mean	0.0000	0.0000	0.0097	0.0384	0.0192	0.0395	0.0090	0.0029	0.1599	0.0216	0.0013	0.0003	0.0019	0.0022	0.0004	0.0531

I:1101-00222-1\Assignment\Report\Report 2, Rev 0\[Table 2.2 - Monthly Average Flows.xls]Monthly Avg
13-Dec-05

Notes:

1. Aug-04 averages based on August 18 - August 31 flow results.
2. Nov-05 averages based on November 1 - November 15 flow results.
3. August 2004 to January 2005 raw data was provided by N.A.R. Environmental Consultants Inc. (NAR), flows were estimated by Knight Piésold Ltd.
4. January to November 2005 data was provided by NAR.
5. Flow monitoring data are based on automatic instrumentation in the field. Data collection is ongoing.
6. Depths from August 10, 2005 to November 15, 2005 were extrapolated by NAR from historical velocity readings.
7. Minimum, maximum and mean values are based on average daily data.

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TABLE 2.3

URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT

ENVIRONMENTAL BASELINE REPORT FOR FEASIBILITY STUDY

SUMMARY OF GROUNDWATER MONITORING WELLS

Well Name	URSA Name	Proposed Site Name	Northing (m)	Easting (m)	Elevation (topo) (m)	Well Completion Date	Overburden Depth (m)	Drillhole Depth (m)	Well Tip Depth (m)	Well Stickup (m)	Groundwater Depth and Elevation			Permeability	
											Date	Depth BGS (m)	Elevation (m)	Date	K (cm/s)
MW-05-01	SWMW-U-03-01	WMS-13	5,132,944	435,545	267	15-Mar-05	14.63	14.63	7.84	1.03	20-Sep-05	1.07	266.46	18-Mar-05	3.4E-06
MW-05-02	SWMW-U-03-02	WMS-09	5,133,372	436,378	290	16-Mar-05	1.50	31.10	29.81	1.07	20-Sep-05	3.76	287.31	23-Mar-05	3.0E-05
MW-05-03	SWMW-U-03-03	WMS-06	5,132,989	437,027	266	17-Mar-05	9.45	9.45	7.63	1.03	20-Sep-05	2.63	264.15	18-Mar-05	1.7E-05
MW-05-04	SWMW-U-03-04	WMS-02	5,133,775	437,582	328	20-Mar-05	2.10	10.10	8.77	1.14	21-Sep-05	0.41	328.73	21-Mar-05	1.3E-04
MW-05-05	SWMW-U-03-05	WMS-03	5,134,346	437,633	339	21-Mar-05	0.30	10.10	8.85	1.16	20-Sep-05	2.20	338.26	23-Mar-05	2.0E-04
MW-05-06	SWMW-U-03-06	WMS-08	5,133,929	436,583	366	1-Apr-05	0.00	49.50	48.77	1.32	20-Sep-05	9.18	357.64	4-Aug-05	1.3E-05
MW-05-07	SWMW-U-03-07	WMS-05	5,132,993	435,960	272	28-Jun-05	8.80	8.80	7.90	0.80	20-Sep-05	3.12	269.18	28-Jun-05	3.1E-04
MW-05-08	SWMW-U-03-08	WMS-01	5,133,782	437,802	306	7-Jul-05	0.92	9.76	8.53	0.75	21-Sep-05	-0.75	307.75	7-Jul-05	5.0E-06
MW-05-09	SWMW-U-03-09	WMS-07	5,135,377	437,149	284	12-Jul-05	1.37	9.76	7.93	0.91	21-Sep-05	1.70	283.01	12-Jul-05	8.3E-05
MW-05-10	SWMW-U-03-10	WMS-04	5,135,256	437,987	334	15-Aug-05	0.00	9.76	7.93	1.00	21-Sep-05	dry	-	-	-
MW-05-11	SWMW-U-03-11	WMS-10	5,134,697	436,377	293	17-Aug-05	2.44	9.76	7.62	1.03	22-Sep-05	0.59	293.44	8-Sep-05	7.7E-05
MW-05-12	SWMW-U-03-12	WMS-11	5,134,465	436,166	303	19-Aug-05	0.00	9.45	8.23	0.82	22-Sep-05	0.96	302.86	22-Sep-05	6.2E-05
MW-05-13	SWMW-U-03-13	WMS-14	5,134,432	436,554	307	20-Aug-05	0.60	9.76	8.53	1.04	22-Sep-05	0.22	307.82	22-Sep-05	2.7E-05
MW-05-14	SWMW-U-03-14	WMS-15	5,135,120	437,100	325	27-Aug-05	0.15	9.76	8.84	1.13	21-Sep-05	3.00	322.63	21-Sep-05	9.9E-05
MW-05-15	SWMW-U-03-15	WMS-04B	5,135,256	437,987	334	31-Aug-05	0.00	20.73	19.66	1.06	21-Sep-05	13.79	321.27	21-Sep-05	4.7E-06
MW-05-16	SWMW-U-03-16	WMS-17	5,134,893	437,891	334	2-Sep-05	0.00	9.30	8.69	0.87	21-Sep-05	3.44	331.43	21-Sep-05	6.5E-06
MW-05-17	SWMW-U-03-17	WMS-13	5,134,642	437,905	350	7-Sep-05	0.00	8.84	8.23	1.20	21-Sep-05	4.70	346.50	21-Sep-05	1.5E-05

I:\101-00222-1\Assignment\Report\Report 2, Rev 0\[Table 2.3 Well Summary.xls]Table 2.3 -Well Summary
13-Dec-05

Notes:

1. Northing and Easting coordinates are in NAD83 datum, zone 17T.
2. Depth BGS means Below Ground Surface. A negative depth indicates artesian condition.
3. K refers to coefficient of permeability (hydraulic conductivity). K data measured using a rising head test and K calculated by the Hvorslev method.

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TABLE 2.4

URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT

ENVIRONMENTAL BASELINE REPORT FOR FEASIBILITY STUDY

SUMMARY OF GROUNDWATER QUALITY RESULTS

Parameter	Units	Criteria PWQO	MW-05-01		MW-05-02		MW-05-03		MW-05-04		MW-05-05		MW-05-06		MW-05-07		MW-05-08		MW-05-09		MW-05-11	MW-05-12	MW-05-13	MW-05-14	MW-05-15	MW-05-16	MW-05-17
Date Sampled			21-Sep-05	2-Aug-05	21-Sep-05	2-Aug-05	21-Sep-05	2-Aug-05	21-Sep-05	3-Aug-05	21-Sep-05	2-Aug-05	21-Sep-05	3-Aug-05	21-Sep-05	2-Aug-05	21-Sep-05	3-Aug-05	21-Sep-05	3-Aug-05	22-Sep-05	22-Sep-05	22-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05
Field PH	pH		8.37	8.22	7.48	7.91	8.68	8.22	6.50	7.26	5.84	6.0	6.1	6.88	7.40	8.2	6.70	6.87	7.18	7.05	6.24	6.59	7.15	6.22	6.22	6.47	6.09
Field Conductivity	µS/cm		358	310	260	220	205	180	55	60	20	27	45	30	100	55	60	75	144	135	57	147	92	60	105	70	40
Acidity	mg/L		< 2	2.5	< 2	8.8	< 2	3.8	< 2	18	12.0	21	< 2	10	< 2	20	< 2	11	< 2	10	< 2	< 2	< 2	< 2	< 2	19.0	9.0
Alkalinity	mg/L		291		120		210		12		< 2		9		44		31		68		18	49	42	8	24	14	11
Aluminum	mg/L	0.015 (for pH 4.5 to 6.5) 0.075 (for pH 6.5 to 9.0)	0.006	0.036	< 0.004	0.002	0.015	0.040	**0.019**	0.008	**0.181**	**0.347**	**0.031**	**0.017**	0.018	0.017	0.004	0.009	< 0.004	0.004	**0.080**	**0.127**	< 0.004	**0.094**	**4.670**	**0.024**	**0.047**
Ammonia (as N)	mg/L	0.02		**0.324**		**0.055**		**0.355**		**0.033**		**0.036**		**0.025**		0.017		**0.064**		**0.100**							
Antimony	mg/L	0.02	< 0.0004		< 0.0004		< 0.0004		< 0.0004		< 0.0004		< 0.0004		< 0.0004		< 0.0004		< 0.0004		< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Arsenic	mg/L	0.005	**0.0090**	**0.0120**	**0.0080**	**0.0140**	< 0.005	**0.0080**	< 0.005	0.0016	< 0.005	<0.001	< 0.005	<0.001	< 0.005	<0.001	< 0.005	<0.001	< 0.005	<0.001	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Barium	mg/L		0.030		0.004		0.019		0.005		0.015		0.007		0.005		0.004		0.006		0.005	0.018	0.008	0.015	0.017	0.010	0.004
Beryllium	mg/L mg/L	0.011 (for hardness as $CaCO_3$ <75 mg/L) 1.1 (for hardness as $CaCO_3$ >75 mg/L)	< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Bismuth	mg/L		< 0.0003		< 0.0003		< 0.0003		< 0.0003		< 0.0003		< 0.0003		< 0.0003		< 0.0003		< 0.0003		< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Boron	mg/L	0.2	0.044		0.020		0.039		0.005		< 0.005		< 0.005		0.006		0.006		< 0.005		0.007	0.007	0.007	0.015	0.006	0.006	0.005
Cadmium	mg/L mg/L	0.0001 (for hardness as $CaCO_3$ < 100 mg/L) 0.0005 (for hardness as $CaCO_3$ >100 mg/L)	< 0.0001	< 0.0001	< 0.0001	<0.0001	< 0.0001	**0.00014**	< 0.0001	<0.0001	< 0.0001	**0.00015**	< 0.0001	<0.0001	< 0.0001	<0.0001	< 0.0001	**0.00025**	< 0.0001	<0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	**0.0002**	**0.0002**
Calcium	mg/L		38.9	45.7	43.5	48.0	25.7	14.5	4.0	3.7	1.7	1.4	3.8	3.6	7.9	9.1	8.3	7.3	22.7	17.9	3.3	12.4	10.0	3.5	0.0	4.0	4.0
Cerium	mg/L																										
Cesium	mg/L																										
Chloride	mg/L																										
Chromium [3]	mg/L	0.0080	< 0.001		< 0.001		< 0.001		< 0.001		< 0.001		< 0.001		< 0.001		< 0.001		< 0.001		< 0.001	0.001	< 0.001	< 0.001	0.002	< 0.001	< 0.001
Cobalt	mg/L	0.0000	< 0.0003		**0.0911**		< 0.0003		**0.0063**		**0.0090**		**0.0116**		**0.0036**		**0.0244**		0.0004		**0.0038**	**0.0005**	**0.0011**	**0.0184**	**0.0045**	**0.0114**	**0.0414**
Conductivity	µS/cm		320	340	250	253	230	241	51	49	29	25	40	48	100	100	76	71	150	150	65	98	92	70	110	81	53
Copper	mg/L mg/L	0.001 (for Hardness as $CaCO_3$ <20 mg/L) 0.005 (for Hardness as $CaCO_3$ >20 mg/L)	0.0013	0.0034	< 0.0008	<0.001	< 0.0008	0.0015	**0.0017**	**0.0024**	**0.0186**	**0.017**	**0.0113**	**0.014**	0.0025	0.0026	0.0012	0.0034	< 0.0008	0.0017	**0.0036**	< 0.0008	< 0.0008	**0.018**	**0.0154**	**0.0045**	**0.007**
Dissolved Organic Carbon	mg/L																										
Europium	mg/L																										
Fluoride	mg/L																										
Gallium	mg/L																										
Iron	mg/L	0.3	< 0.02	0.09	**0.43**	<0.02	0.03	<0.02	**2.09**	**1.50**	0.04	0.13	0.06	<0.02	0.13	0.20	**1.61**	**1.50**	**0.44**	**0.32**	0.09	**10.40**	**2.31**	**0.92**	**0.80**	**5.26**	**0.95**
Lanthanum	mg/L																										
Lead	mg/L mg/L mg/L	0.001 (for Alkalinity as $CaCO_3$ <30 mg/L) 0.003 (for Alkalinity as $CaCO_3$ 30-80 mg/L) 0.005 (for Alkalinity as $CaCO_3$ >80 mg/L)	< 0.0002	<0.001	< 0.0002	<0.001	< 0.0002	<0.001	< 0.0002	<0.001	< 0.0002	<0.001	< 0.0002	<0.001	< 0.0002	<0.001	< 0.0002	<0.001	< 0.0002	<0.001	< 0.0002	< 0.0002	< 0.0002	0.0002	**0.005**	< 0.0002	0.0002
Lithium	mg/L		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Magnesium	mg/L		7.720	7.24	5.44	5.38	5.59	3.38	2.12	1.97	0.65	0.50	1.73	1.64	2.31	2.46	2.38	2.25	4.10	4.18	1.34	4.05	2.49	1.02	0.20	1.20	1.14
M-Alkalinity as $CaCO_3$ (pH 4.5)	mg/L			170		110		110		14		<10		12		37		27		80							
Manganese	mg/L		0.049		0.141		0.045		0.127		0.047		0.028		0.451		0.186		0.376		0.060	0.177	0.201	0.069	0.042	0.273	0.354
Mercury	µg/L	0.2	< 0.1	<0.1	< 0.1	<0.1	**0.3**	<0.1	< 0.1	<0.1	< 0.1	<0.1	< 0.1	<0.1	< 0.1	<0.1	< 0.1	<0.1	0.1	<0.1	< 0.0001	< 0.0001	< 0.0001	< 0.1	< 0.1	< 0.1	< 0.1
Molybdenum	mg/L	0.04	0.0116	0.0074	0.0011	<0.001	0.0148	**0.0510**	< 0.0003	<0.001	< 0.0003	0.0013	< 0.0003	<0.001	0.0014	0.0018	0.001	<0.001	0.0007	<0.001	0.0004	0.0006	0.0015	0.0022	0.0005	0.0004	0.0008
Nickel	mg/L	0.025	0.002	**2.40**	0.006	0.007	0.002	0.0024	0.006	0.006	0.014	0.015	0.019	0.015	0.018	0.016	0.009	0.009	0.002	0.0017	0.003	< 0.001	0.002	**0.030**	0.010	0.012	0.023
Niobium	mg/L																										
Nitrate (as N)	mg/L																										
Nitrite (as N)	mg/L																										
NH3+NH4	mg/L		0.70		0.20		0.40		0.20		0.20		0.30		0.20		0.40		0.20		0.50	0.70	0.20	< 0.1	0.20	0.40	0.40
pH	pH	6.5 - 8.5	8.38	8.35	7.44	7.39	8.13	7.85	**5.97**	**5.81**	**5.17**	**4.91**	**6.11**	**5.97**	6.93	6.60	6.61	6.43	7.18	6.94	**6.38**	6.54	7.14	**5.96**	8.16	6.00	**5.92**
Phosphorus	mg/L																										
Potassium	mg/L		1.14		1.20		1.79		0.76		0.62		1.05		0.81		1.40		1.71		0.60	2.01	2.66	3.54	1.40	2.18	1.52
Rubidium	[illegible]																										
Scandium	mg/L																										
Selenium	mg/L	0.1	< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Silver	mg/L	0.0001	< 0.0001		< 0.0001		< 0.0001		< 0.0001		**0.0014**		< 0.0001		< 0.0001		< 0.0001		< 0.0001		< 0.0001	< 0.0001	< 0.0001	0.0001	**0.0003**	< 0.0001	< 0.0001
Sodium	mg/L		25.30		3.46		18.70		0.87		0.87		0.81		1.75		1.12		1.80		8.41	1.97	1.79	4.14	21.90	4.33	1.03
Strontium	mg/L		0.174		0.072		0.115		0.012		0.010		0.013		0.030		0.021		0.041		0.023	0.038	0.036	0.021	0.005	0.033	0.018
Sulphate	mg/L		11.0	4.3	11.0	12.0	11.0	13.0	9.5	11.0	7.4	8.0	9.3	9.0	7.0	6.8	6.3	7.1	9.8	11.0	11.0	1.1	5.6	16.0	27.0	11.0	10.0
Thallium	mg/L	0.0003	< 0.0002		< 0.0002		< 0.0002		< 0.0002		< 0.0002		< 0.0002		< 0.0002		< 0.0002		< 0.0002		< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Thorium	mg/L																										
Tin	mg/L		< 0.001		< 0.001		< 0.001		< 0.001		< 0.001		< 0.001		< 0.001		< 0.001		< 0.001		< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Titanium	mg/L		< 0.003		< 0.003		< 0.003		< 0.003		< 0.003		< 0.003		< 0.003		< 0.003		< 0.003		< 0.003	< 0.003	< 0.003	< 0.003	0.006	< 0.003	< 0.003
Total Cyanide [7]	mg/L	0.005	< 0.006	<0.001	< 0.002	<0.001	< 0.006	<0.001	< 0.006	<0.001	< 0.002	<0.001	< 0.002	<0.001	< 0.002	<0.001	< 0.002	<0.001	< 0.002	<0.001	< 0.006	< 0.006	< 0.006	< 0.002	< 0.002	< 0.006	< 0.006
Total Dissolved Solids	mg/L		220	320	189	160	146	490	43	130	43	<50	< 30	64	69	59	< 30	60	91	80	97	120	180	97	249	74	63
Total Hardness (as $CaCO_3$)	mg/L		129.0	144.0	131.0	142.0	87.3	50.2	18.8	17.3	7.0	5.6	16.7	15.7	29.1	32.8	30.5	27.0	73.6	61.9	13.8	47.6	35.1	13.0	2.3	14.9	14.6
Total Kjeldahl Nitrogen	mg/L																										
Total Phosphorus (as P)	mg/L																										
Total Suspended Solids	mg/L		44000	36,900	< 2	32	18,700	10,800	986	1,100	916	720	12	280	28,500	21,400	138	830	54	600	3,210	328	2,540	1,980	7	2,680	5,900
True Colour	TCU																										
Tungsten	mg/L	0.03	0.0019		0.0018		0.0024		0.0017		0.0079		0.0073		**0.1090**		0.0047		0.0007		0.0232	0.0018	0.002	**0.1330**	**0.0416**	0.0165	0.0016
Turbidity	NTU																										
Uranium	mg/L	0.005	**0.0147**		0.0008		0.0023		0.0005		0.0008		0.0002		< 0.0002		< 0.0002		0.0017		< 0.0002	0.0005	< 0.0002	0.0096	0.0699	0.0004	0.0002
Vanadium	mg/L	0.006	0.004		0.002		0.002		< 0.0009		< 0.0009		< 0.0009		< 0.0009		< 0.0009		< 0.0009		< 0.0009	0.0019	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
Yttrium	mg/L		< 0.0001		< 0.0001		< 0.0001		< 0.0001		0.0004		0.0002		0.0002		< 0.0001		0.0002		0.0002	0.0006	< 0.0001	0.0005	0.0062	0.0005	0.0003
Zinc	mg/L	0.02	0.003	0.007	< 0.001	0.0058	0.002	0.0028	0.012	0.014	0.014	0.014	0.009	0.017	0.015	0.011	**0.037**	**0.883**	0.002	0.0075	**0.031**	0.003	0.018	**0.035**	**0.021**	**0.051**	**0.069**
Zirconium	mg/L	0.004																									

Notes:

1. PWQO refers to the "Water Management Policies, Guidelines, Provincial Water Quality Objectives of the Ministry of Environment and Energy, Province of Ontario, July 1994, reprinted February 1999."
2. Bolded values indicate results exceeded PWQO values
3. PWQO for trivalent chromium used.
4. Blank cells indicate no data available
5. Summer testing by Testmark Laboratories Ltd.
6. Fall testing completed by SGS Lakefield Research.
7. Normally SGS uses a method detection limit for total cyanide of 0.002 mg/L. However there was some matrix interference for some samples that resulted in elevated reporting limits to 0.006 mg/L.

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TABLE 2.5

URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT

ENVIRONMENTAL BASELINE REPORT FOR FEASIBILITY STUDY

SUMMARY OF QA/QC FOR GROUNDWATER QUALITY RESULTS

Parameter	Units	Criteria	Well Number					
		PWQO	MW-05-06		MW-05-18		MW-05-04	
			Original	Replicate	Original	Replicate	Original	Replicate
Date Sampled			21-Sep-05	21-Sep-05	21-Sep-05	21-Sep-05	3-Aug-05	3-Aug-05
Acidity	mg/L		< 2	< 2	19	14	18	20
Alkalinity	mg/L		9	10	14	7		
Aluminum	mg/L	0.015 (for pH 4.5 to 6.5) 0.075 (for pH 6.5 to 9.0)	**0.031**	**0.030**	**0.024**	**0.018**	0.0075	0.0033
Ammonia (as N)	mg/L	0.02					**0.033**	**0.082**
Antimony	mg/L	0.02	< 0.0004	< 0.0004	< 0.0004	< 0.0004		
Arsenic	mg/L	0.01	< 0.005	< 0.005	< 0.005	< 0.005	0.0016	0.0015
Barium	mg/L		0.0070	0.0070	0.0100	0.0100		
Beryllium	mg/L mg/L	0.011 (for hardness as $CaCO_3$ <75 mg/L) 1.1 (for hardness as $CaCO_3$ >75 mg/L)	< 0.005	< 0.005	< 0.005	< 0.005		
Bismuth	mg/L		< 0.0003	< 0.0003	< 0.0003	< 0.0003		
Boron	mg/L	0.2	< 0.005	< 0.005	0.006	0.006		
Cadmium	mg/L mg/L	0.0001 (for hardness as $CaCO_3$ < 100 mg/L) 0.0005 (for hardness as $CaCO_3$ >100 mg/L)	< 0.0001	< 0.0001	**0.0002**	**0.0002**	<0.0001	<0.0001
Calcium	mg/L		3.82	3.85	4.00	4.09	3.70	3.10
Cerium	mg/L							
Cesium	mg/L							
Chloride	mg/L							
Chromium [3]	mg/L	0.0089	< 0.001	< 0.001	< 0.001	< 0.001		
Cobalt	mg/L	0.0009	**0.0116**	**0.0118**	**0.0114**	**0.0127**		
Conductivity	µS/cm		46	47	81	65	49	46
Copper	mg/L mg/L	0.001 (for Hardness as $CaCO_3$ <20 mg/L) 0.005 (for Hardness as $CaCO_3$ >20 mg/L)	**0.0113**	**0.0104**	**0.0045**	**0.0026**	**0.0024**	<0.001
Dissolved Organic Carbon	mg/L							
Europium	mg/L							
Fluoride	mg/L							
Gallium	mg/L							
Iron	mg/L	0.3	0.1	0.1	**5.3**	**5.0**	**1.5**	**1.4**
Lanthanum	µg/L							
Lead	mg/L mg/L mg/L	0.001 (for Alkalinity as $CaCO_3$ <30 mg/L) 0.003 (for Alkalinity as $CaCO_3$ 30-80 mg/L) 0.005 (for Alkalinity as $CaCO_3$ >80 mg/L)	< 0.0002	< 0.0002	< 0.0002	< 0.0002	<0.001	<0.001
Lithium	mg/L		< 0.005	< 0.005	< 0.005	< 0.005		
Magnesium	mg/L		1.73	1.75	1.20	1.22	1.97	1.74
M-Alkalinity as $CaCO_3$ (pH 4.5)	mg/L						0.014	0.014
Manganese	mg/L		0.0281	0.0287	0.2730	0.3010		
Mercury	µg/L	0.2	< 0.1	< 0.1	< 0.1	0.10	<0.1	<0.1
Molybdenum	mg/L	0.04	< 0.0003	< 0.0003	0.0004	0.0005	<0.001	<0.001
Nickel	mg/L	0.025	0.019	0.017	0.012	0.013	0.006	0.0051
Niobium	mg/L							
Nitrate (as N)	mg/L							
Nitrite (as N)	mg/L							
NH3+NH4	mg/L		0.30	0.20	0.40	0.40		
pH	pH	6.5 - 8.5	**6.11**	**6.01**	**6.00**	**5.49**	**5.81**	**5.75**
Phosphorus	mg/L							
Potassium	mg/L		1.05	1.05	2.18	2.21		
Rubidium	mg/L							
Scandium	mg/L							
Selenium	mg/L	0.1	< 0.005	< 0.005	< 0.005	< 0.005		
Silver	mg/L	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001		
Sodium	mg/L		0.8100	0.8000	4.3300	4.4300		
Strontium	mg/L		0.0129	0.013	0.0333	0.0343		
Sulphate	mg/L		9.3	9.3	11.0	11.0	11.0	11.0
Thallium	mg/L	0.0003	< 0.0002	< 0.0002	< 0.0002	< 0.0002		
Thorium	mg/L							
Tin	µg/L		< 0.001	< 0.001	< 0.001	< 0.001		
Titanium	mg/L		< 0.003	< 0.003	< 0.003	< 0.003		
Total Cyanide	mg/L	0.005	< 0.002	< 0.002	< 0.006	< 0.006	<0.001	<0.001
Total Dissolved Solids	mg/L		< 30	< 30	74	83	130	<30
Total Hardness (as $CaCO_3$)	mg/L		16.7	16.8	14.9	15.2	17.3	14.9
Total Kjeldahl Nitrogen	mg/L							
Total Phosphorus (as P)	mg/L							
Total Suspended Solids	mg/L		12	18	2680	727	1100	1000
True Colour	TCU							
Tungsten	mg/L	0.030	0.0073	0.0076	0.0165	0.0188		
Turbidity	NTU							
Uranium	mg/L	0.005	0.0002	< 0.0002	0.0004	0.0003		
Vanadium	mg/L	0.006	< 0.0009	< 0.0009	< 0.0009	< 0.0009		
Yttrium	mg/L		0.0002	0.0002	0.0005	0.0005		
Zinc	mg/L	0.02	0.009	0.010	0.0510	0.0510	0.014	0.0083
Zirconium	mg/L	0.004						

I:\101-00222-1\Assignment\Report\Report 2, Rev 0\[Tables 2.1 and 2.4 and 2.5.xls]Table 2.5
13-Dec-05

Notes:
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2. **Bolded** values indicate results exceeded PWQO values.
3. PWQO for trivalent chromium used.
4. Blank cells indicate no data available.
5. Summer testing by Testmark Laboratories Ltd.
6. Fall testing by SGS Lakefield Research.
7. Normally SGS uses a method detection limit for total cyanide of 0.002 mg/L. However there was some matrix interference for some samples that resulted in elevated reporting limits to 0.006 mg/L.

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TABLE 2.6

URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT

ENVIRONMENTAL BASELINE REPORT FOR FEASIBILITY STUDY

SUMMARY OF SEDIMENT QUALITY RESULTS

Parameter	Units	PSQG		Sediment Sample Locations at Agnew Lake																		
		LEL	SEL	SB			SP			LB			UM-AL-REF			UM-AL-NF			UM-AL-FF		
				1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Date Sampled				4-May-05	4-May-05	4-May-05	4-May-05	4-May-05	4-May-05	5-May-05	5-May-05	5-May-05	7-Oct-04	7-Oct-04	7-Oct-04	6-Oct-04	6-Oct-04	6-Oct-04	6-Oct-04	6-Oct-04	6-Oct-04
% Carbonate	%																				1.63
% Moisture	%			82.2	78.8	85.9	82.4	66.9	72.7	71.7	76.5	68.1	77.4	76.1	75.2	70.8	70.5	79.6	73.9	77.9	66.7
% Organic	%	1	10	9.17	5.88	7.98	4.4	3	3.3	4.3	3.8	3	9.47	9.35	9.16	8.87	8.49	**11.8**	**20.7**	**12.9**	**10.8**
Aluminum	µg/g			12700	11500	10300	12600	7430	9830	9760	11700	9760	13,300	12,200	12,500	14,400	13,400	16,500	10,000	17,800	15,900
Antimony	µg/g			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Arsenic	µg/g	6	33	6.3	5.2	6.6	13	2.4	1.9	4.4	6.2	3.5	3.6	0.99	2.2	1.1	1.8	2.1	11	9.4	5.4
Barium	µg/g			111	123	132	151	69.6	92.7	52.8	112	78.6	116	112	129	74.1	80.8	85.6	90.3	110	79.4
Beryllium	µg/g			0.83	0.77	0.69	0.88	<0.5	<0.5	<0.5	0.66	<0.5	0.84	0.61	0.72	0.54	0.61	0.72	<0.5	0.62	<0.5
Bismuth	µg/g			0.59	0.59	<0.5	0.56	<0.5	<0.5	<0.5	0.56	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.63	<0.5
Boron	µg/g												6.8	5.6	3.4	5.3	4.8	4.7	3	1.1	<1
Cadmium	µg/g	0.6	10	1.4	1.4	1.2	1.4	0.51	0.68	0.43	0.9	0.51	1	0.9	1.1	0.57	0.64	0.89	0.97	1.2	0.49
Calcium	µg/g			3120	3270	3130	3210	2200	2540	2570	2960	2870	3,280	3,100	3,270	2,850	2,960	3,070	3,220	2,920	2,300
Cerium	µg/g			80.3	78.2	69.4	83.9	52.1	61.5	58.2	81.3	68.9	75	72	73	68	72	77	58	77	54
Cesium	µg/g			1.1	1.2	1	0.99	0.6	0.72	0.65	0.94	0.75	1	0.87	0.92	0.79	0.88	0.82	1.1	1.1	0.88
Chromium	µg/g	26	110	37	38	31	36	22	25	23	34	27	40	36	40	33	34	37	23	35	27
Cobalt	µg/g	50		19.3	20	18.8	28.2	9.96	11.1	8.76	18.3	12.6	18.6	16.8	19.7	11.7	11.8	12.6	10.9	18.6	9.97
Copper	µg/g	16	110	39	41	29	34	19	22	18	35	24	31	29	35	24	29	33	25	36	19
Europium	µg/g			1	0.93	0.93	0.99	<0.5	0.58	0.52	0.81	0.61	0.95	0.83	0.89	0.65	0.71	0.77	0.63	0.78	0.56
Gallium	µg/g			7.6	8.2	7	7.9	5.1	5.5	4.9	7.2	5.8	7.5	6.9	7.7	6.2	6.8	6.7	5.5	7.5	8
Iron	µg/g			36000	28000	32000	65000	17000	21000	18000	36000	17000	36,000	30,000	33,000	24,000	22,000	40,000	18,800	29,000	22,000
Lanthanum	µg/g			48	43	43	46	22	27	24	38	28	48	41	44	31	33	36	30	40	29
Lead	µg/g	31	250	56.7	60	40	45	21	32	22	49.9	29	38	36	42	27	35	46	31	46	25
Lithium	µg/g			12	13	11	12	8.2	9.6	7.8	11	9.9	14	13	14	12	12	12	7.2	12	8.1
Magnesium	µg/g			4900	4970	4310	5530	3180	3910	3200	4760	3940	5,860	5,660	5,720	5,790	6,090	5,850	2,680	4,460	3,120
Manganese	µg/g	460	1,100	726	**1,530**	**2,000**	**2,500**	945	**1,400**	617	**1,780**	621	1,020	**1,280**	**2,130**	420	478	543	**1,170**	**1,110**	666
Mercury	µg/g	0.2	2	0.12	0.096	0.1	0.11	<0.05	<0.05	<0.05	0.089	<0.05	0.14	<0.05	0.079	<0.05	<0.05	<0.05	0.076	0.17	0.14
Molybdenum	µg/g			1.4	1.8	1.3	1.6	0.75	0.87	0.88	1.5	0.82	1.4	1.1	1.4	0.89	0.94	1.1	1.4	1.9	1.7
Nickel	µg/g	16	75	48	52.6	41	58.4	24	36	21	48	32	40	37	41	28	35	40	28	46	21
Niobium	µg/g			3.8	3.7	2.8	3.2	2.8	2.5	3.1	3.6	3.4	2.8	2.3	2.5	2.6	2.5	2.6	1.3	2.6	2.7
Phosphorus	µg/g			1300	850	1900	1300	480	1100	800	1000	860	1,000	770	900	680	720	870	590	1,000	800
Rubidium	µg/g			12	14	11	11	7.7	8.8	8.8	11	9.8	11	11	12	11	11	11	8.2	11	8.5
Scandium	µg/g			5.1	4.6	4.2	4.9	2.7	3.1	2.9	4.1	3.3	4.2	3.8	4	3.2	3.4	3.6	1.8	3.6	2.3
Selenium	µg/g			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	1.3	1
Silver	µg/g			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	µg/g			18	19	18	19	12	14	16	17	17	16	15	16	14	14	14	18	19	16
Thallium	µg/g			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Thorium	µg/g			21	19	15	23	12	15	15	24	19	12	13	13	9.7	10	12	3.4	8.8	5.3
Tin	µg/g			1.8	2.1	1.3	1.7	0.95	0.99	0.89	1.6	1.1	1.3	1.1	1.4	1.2	1.4	1.6	1	1.6	1.2
Titanium	µg/g			1070	1010	796	1100	763	995	1060	999	1120	888	818	853	933	991	872	357	684	820
Total Kjeldahl Nitrogen	µg/g	550	4,800	**6,000**	4,300	**5,500**	**4,900**	2,400	2,300	2,600	3,000	2,000	698	572	700	632	597	703	708	755	749
Tungsten	µg/g			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Uranium	µg/g			8.2	7.5	7.4	8.1	3.2	3.7	3.1	5.8	3.6	8	6.9	7	4.5	5	5.4	4	5.9	4.8
Vanadium	µg/g			53.2	55.6	44	57.6	33	36	33	51.5	39	55	46	53	40	45	64	34	51	45
Yttrium	µg/g			12	12	11	12	5.9	6.9	6.8	10	7.3	12	10	11	7.9	8.2	8.9	6.7	9.9	6.8
Zinc	µg/g	120	820	150	160	110	200	65.2	87.7	53.6	130	73.3	140	130	140	110	120	160	100	140	74
Zirconium	µg/g			12	6.4	3.3	13	5.7	3.3	5.5	5.8	4.8	8.3	6.6	6	7.1	5.9	6.6	14	11	10

I:\101-00222-1\Assignment\Report\Report 2. Rev 0\[Table 2.6 - Sediment Testing Tables.xls]Table 2.6
13-Dec-05

Notes:
1. Blank cells indicate no data available.
2. Criteria based on Provincial Sediment Quality Guidelines (PSQG), From: MOE, 1993. Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario.
3. LEL = Lowest Effect Level, SEL = Severe Effect Level.
4. Underlined values exceed LEL.
5. Bold values exceed SEL.

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TABLE 2.7

URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT

ENVIRONMENTAL BASELINE REPORT FOR FEASIBILITY STUDY

SUMMARY OF METEOROLOGICAL DATA

Month	Mean Max Temperature (°C)	Mean Temperature (°C)	Mean Min Temperature (°C)	Extreme Max Temperature (°C)	Extreme Min Temperature (°C)	Total Rainfall (mm/month)	Direction of Max Wind Gust (degrees)	Speed of Max Wind Gust (km/h)
March	5.71	-0.14	-6.17	13.32	-12.29	0.00	348.2	38.74
April	12.02	6.15	0.82	24.4	-3.37	2.94	341.2	41.41
May	16.46	10.86	4.77	27.12	-4.33	17.60	278	41.41
June	24.91	19.24	13.74	31.12	8.63	26.80	271	47.42
July	26.17	20.34	14.40	33.17	7.03	75.22	273.8	38.07
August	23.89	18.66	13.66	30.71	9.03	89.22	280.8	52.77
September	21.38	15.92	10.65	29.5	2.89	89.42	143.2	44.08
October	12.84	8.65	5.19	20.80	2.16	37.80	275.2	36.74
November	7.10	3.12	-0.32	8.45	-0.67	72.01	276.6	55.44

I:\101-00222-1\Assignment\Report\Report 2, Rev 0\[Table 2.7 and App G Met Data.xls]Monthly Summary
13-Dec-05

Notes:
1. Rainfall data was recorded from April 5, 2005 to November 16, 2005. All other data was recorded from March 17, 2005 to November 16, 2005.
2. Data recorded by an on-site HOBO meteorological station.

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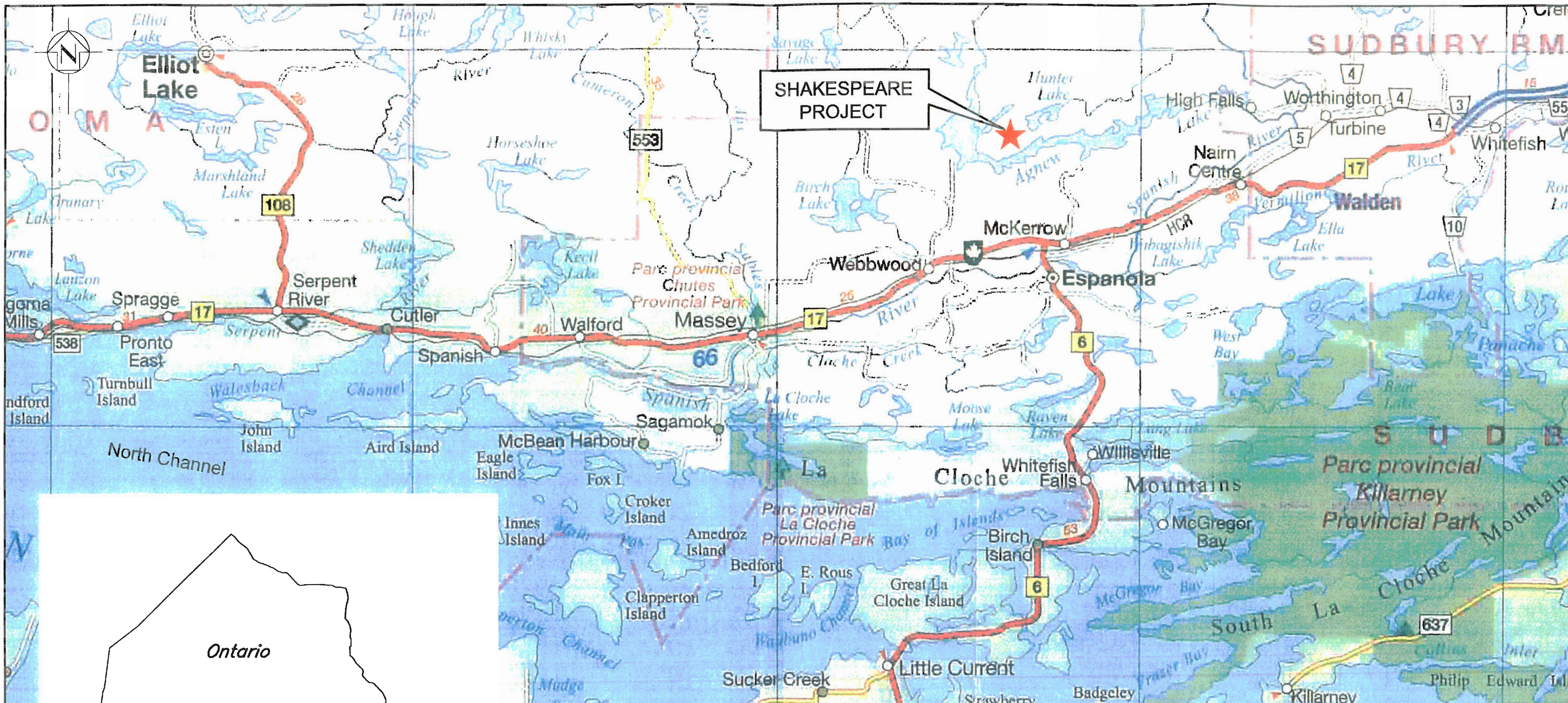
Revision 0
December 15, 2005



N.T.S.

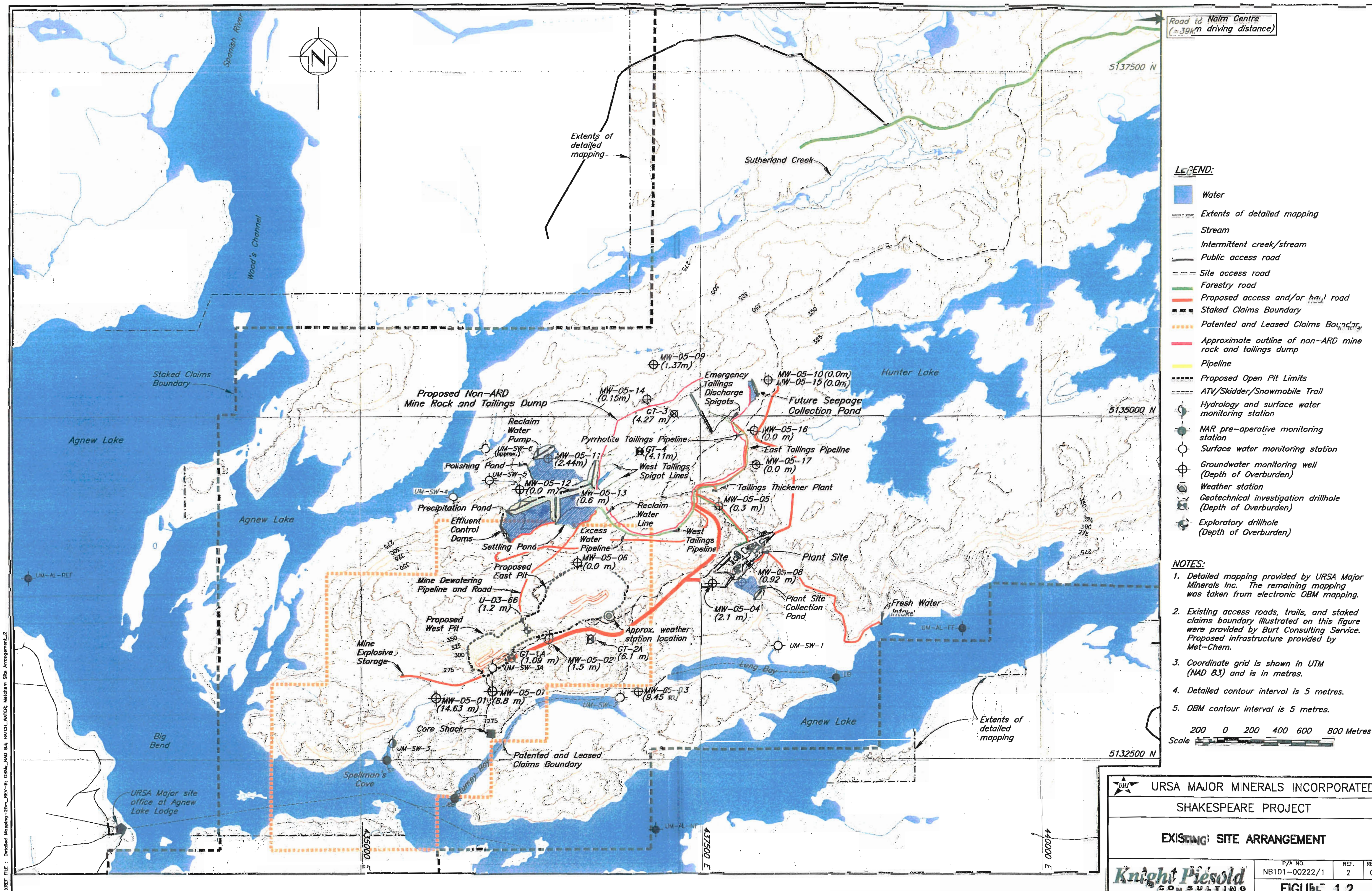
LEGEND:

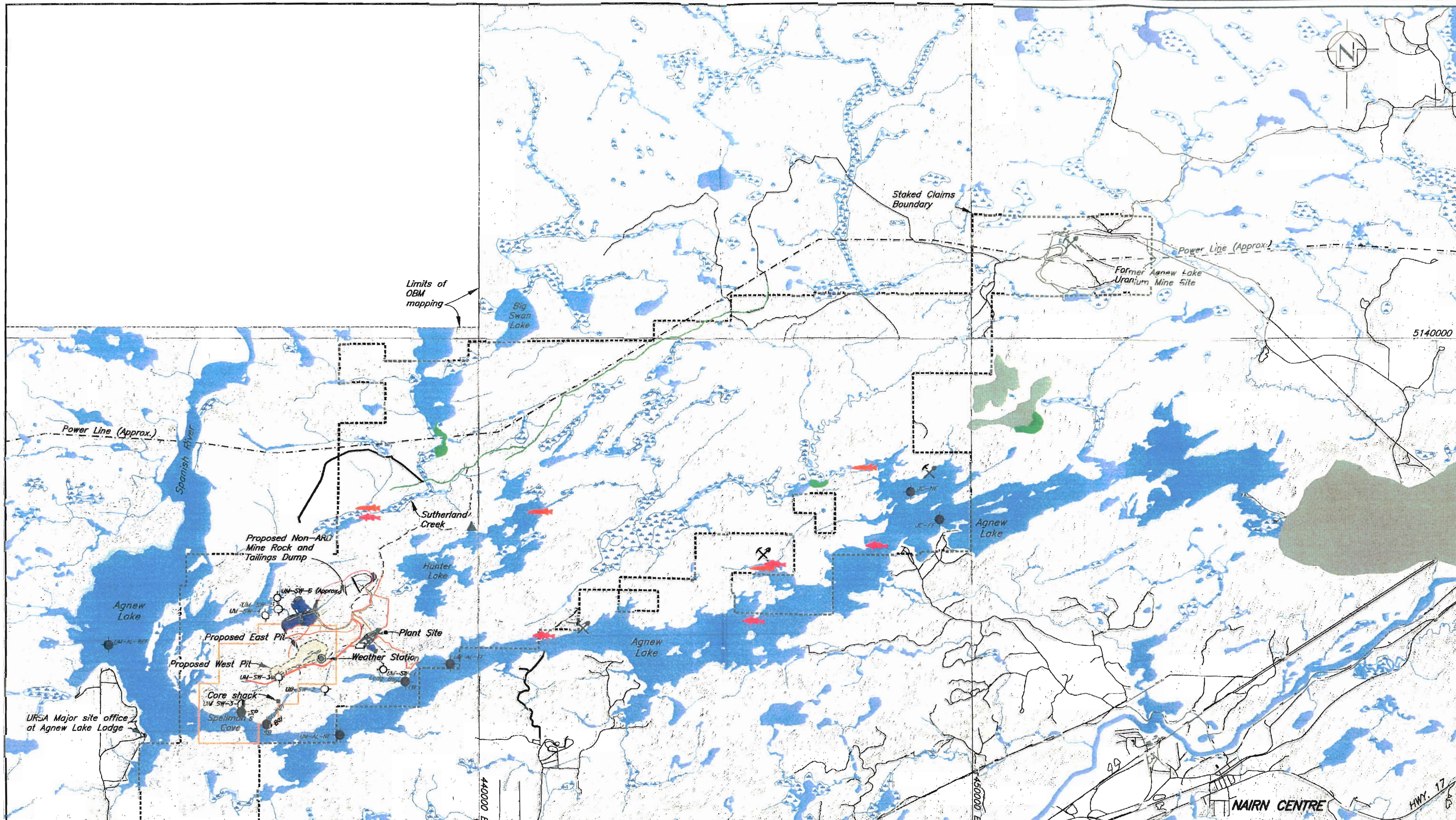
- Highlands
- Lowlands
- Park Limits

NOTE:

1. Mapping taken from MapArt Publishing Ontario Road Map.
2. This figure is not to scale.

URSA MAJOR MINERALS INCORPORATED			
SHAKESPEARE PROJECT			
PROJECT SITE LOCATION			
Knight Piésold CONSULTING	P/A NO. NB101-00222/1	REF. 2	REV. 0
	FIGURE 1.1		


Road to Nairn Centre (≈39km driving distance)
5137500 N
5135000 N
5132500 N
435000 E
437500 E
440000 E
Spanish River
Wood's Channel
Extents of detailed mapping
Sutherland Creek
Staked Claims Boundary
Agnew Lake
Hunter Lake
Proposed Non-ARD Mine Rock and Tailings Dump
MW-05-09 (1.37m)
MW-05-14 (0.15m)
Emergency Tailings Discharge Spigots
MW-05-10 (0.0m)
MW-05-15 (0.0m)
Future Seepage Collection Pond
GT-3 (4.27 m)
MW-05-16 (0.0 m)
Reclaim Water Pump
Pyrrhotite Tailings Pipeline
East Tailings Pipeline
GT-4 (4.11m)
MW-05-11 (2.44m)
Polishing Pond
UM-SW-6 (Approx.)
UM-SW-5
West Tailings Spigot Lines
MW-05-17 (0.0 m)
MW-05-12 (0.0 m)
MW-05-13 (0.6 m)
Tailings Thickener Plant
UM-SW-4
Precipitation Pond
Reclaim Water Line
MW-05-05 (0.3 m)
Effluent Control Dams
Excess Water Pipeline
West Tailings Pipeline
Settling Pond
MW-05-06 (0.0 m)
Plant Site
Proposed East Pit
MW-05-08 (0.92 m)
Mine Dewatering Pipeline and Road
U-03-66 (1.2 m)
UM-AL-REF
Plant Site Collection Pond
MW-05-04 (2.1 m)
Fresh Water Intake
Proposed West Pit
Approx. weather station location
UM-AL-FF
Mine Explosive Storage
GT-1A (1.09 m)
MW-05-02 (1.5 m)
GT-2A (6.1 m)
UM-SW-1
UM-SW-3A
Long Bay
MW-05-01 (14.63 m)
MW-05-07 (8.8 m)
MW-05-03 (9.45 m)
Core Shack
UM-SW-3
Big Bend
Spellman's Cove
Patented and Leased Claims Boundary
URSA Major site office at Agnew Lake Lodge
UM-AL-NF
LEGEND:
Water
Extents of detailed mapping
Stream
Intermittent creek/stream
Public access road
Site access road
Forestry road
Proposed access and/or haul road
Staked Claims Boundary
Patented and Leased Claims Boundary
Approximate outline of non-ARD mine rock and tailings dump
Pipeline
Proposed Open Pit Limits
ATV/Skidder/Snowmobile Trail
Hydrology and surface water monitoring station
NAR pre-operative monitoring station
Surface water monitoring station
Groundwater monitoring well (Depth of Overburden)
Weather station
Geotechnical investigation drillhole (Depth of Overburden)
Exploratory drillhole (Depth of Overburden)
NOTES:
1. Detailed mapping provided by URSA Major Minerals Inc. The remaining mapping was taken from electronic OBM mapping.
2. Existing access roads, trails, and staked claims boundary illustrated on this figure were provided by Burt Consulting Service. Proposed infrastructure provided by Met-Chem.
3. Coordinate grid is shown in UTM (NAD 83) and is in metres.
4. Detailed contour interval is 5 metres.
5. OBM contour interval is 5 metres.
Scale 200 0 200 400 600 800 Metres
URSA MAJOR MINERALS INCORPORATED
SHAKESPEARE PROJECT
EXISTING SITE ARRANGEMENT
Knight Piésold CONSULTING
P/A NO. NB101-00222/1
REF. 2
REV. 0
FIGURE 1.2



LEGEND:

Water	Moose Aquatic Feeding Zone
Northern Pike Spawning Site	
Walleye Spawning Site	
Hydrology and surface water monitoring station	
Surface water monitoring station	
NAR pre-operative monitoring stations	
Weather station (Approximate location)	

- Moose Aquatic Wintering Area
- Road
- Trail/old logging road
- Public access road
- Proposed access and/or haul road
- Forestry road
- Site access road
- Proposed Open Pit Limits
- Staked Claims Boundary
- Wetland
- Trapper's Cabin
- Historic Mine Site
- Power Line (Approximate location)
- Approximate outline of non-ARD mine rock and tailings dump

750 0 750 1500 2250 3000 3750
Scale — Metres

NOTES:

1. Mapping taken from electronic OBM.
2. Coordinate grid shown is UTM (NAD 83).
3. Contour interval is 5 metres.
4. URSA Major staked claims boundary, access and forestry roads provided by Burt Consulting Services. Proposed infrastructure provided by Met-Chem.
5. Animal habitat information, historic mine sites, and trappers cabin location provided by N.A.R. Environmental Consultants Inc. (taken from MNR Values Maps).
6. Groundwater monitoring wells, drillholes and some infrastructure not shown for clarity. Refer to Figure 1.2 for further details.

URSA MAJOR MINERALS INCORPORATED

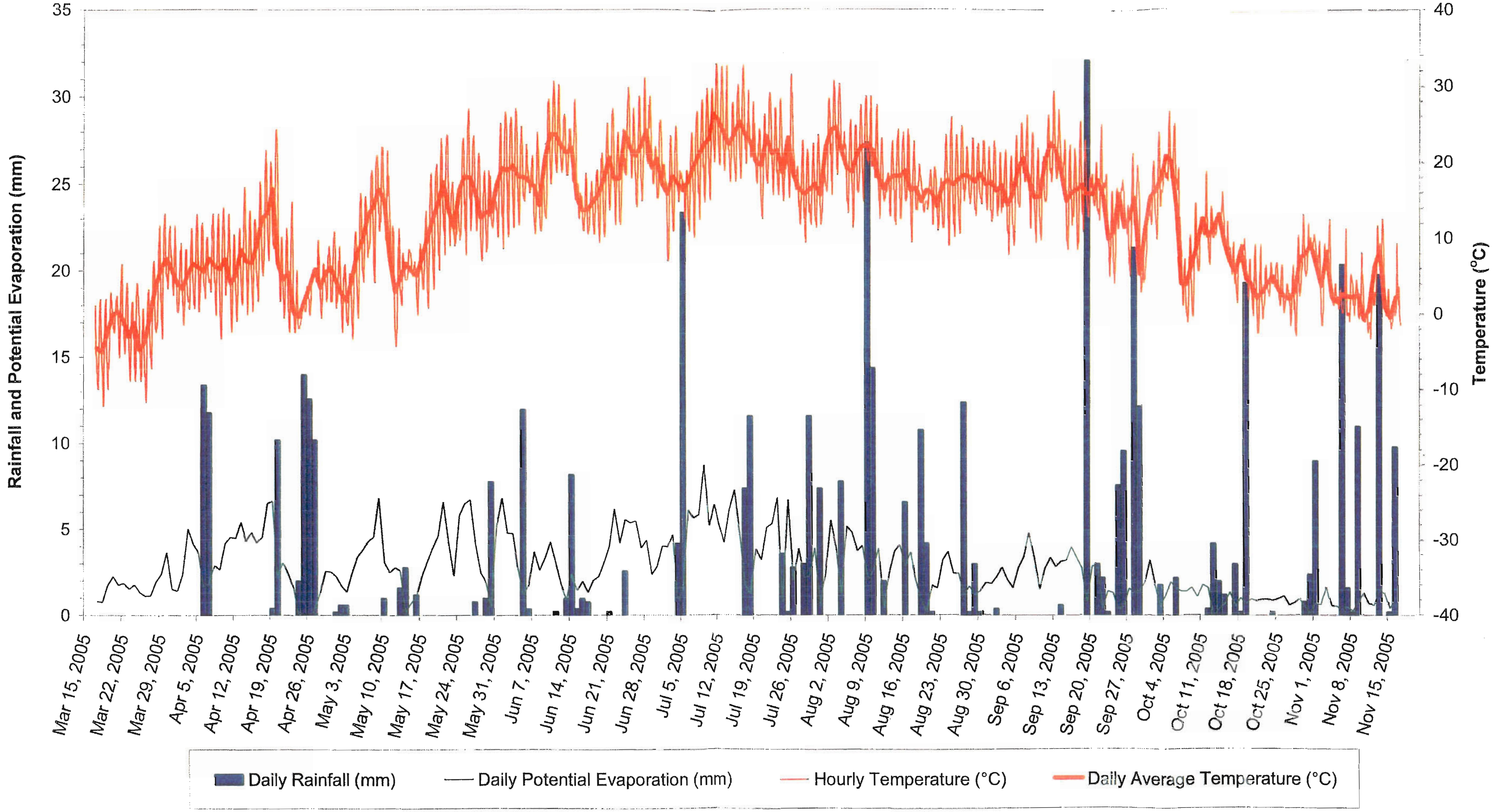
SHAKESPEARE PROJECT

REGIONAL PLAN

Knight Piésold CONSULTING

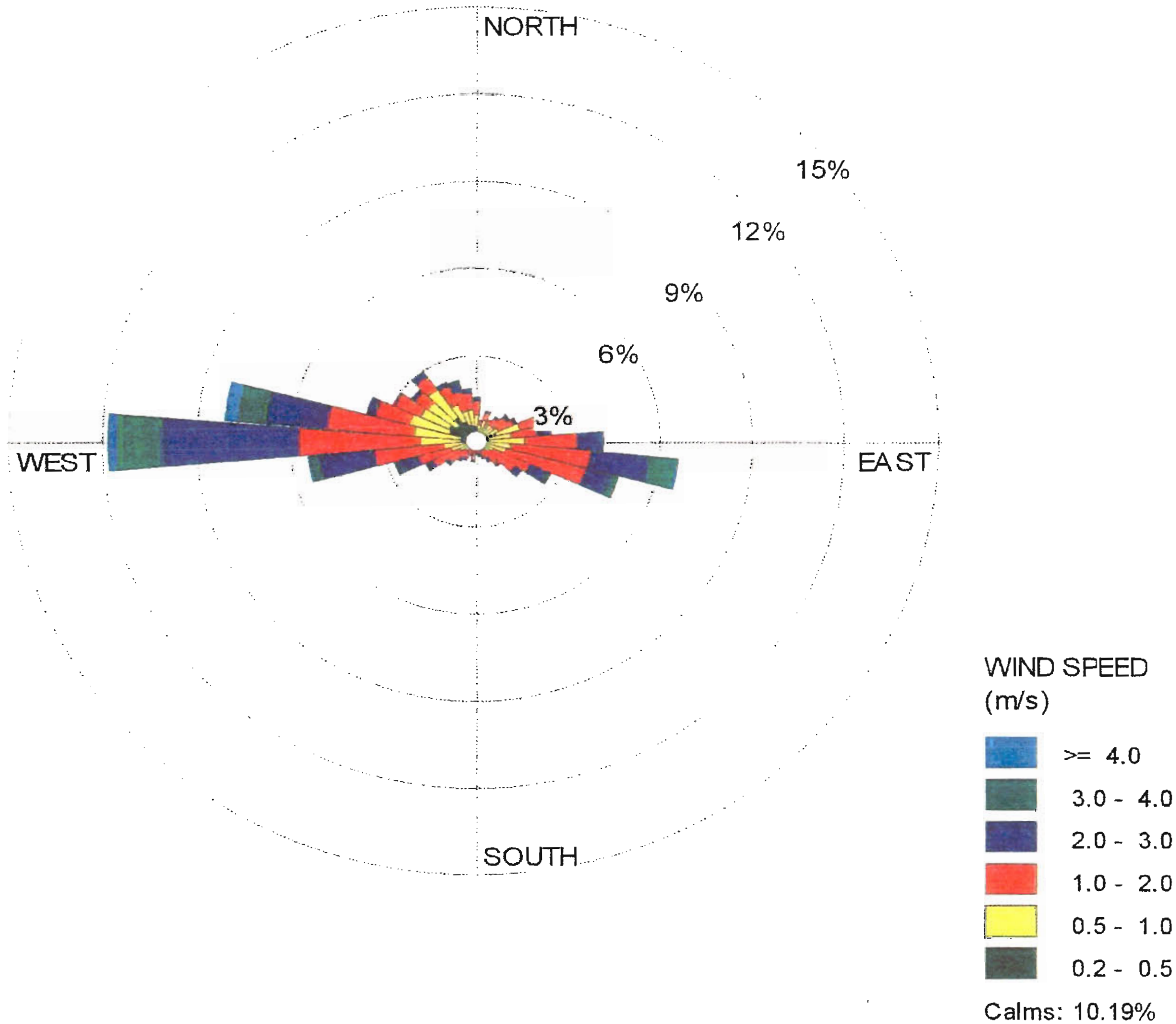
P/A NO.	REF.	REV.
NB101-00222/1	2	0

FIGURE 2.1



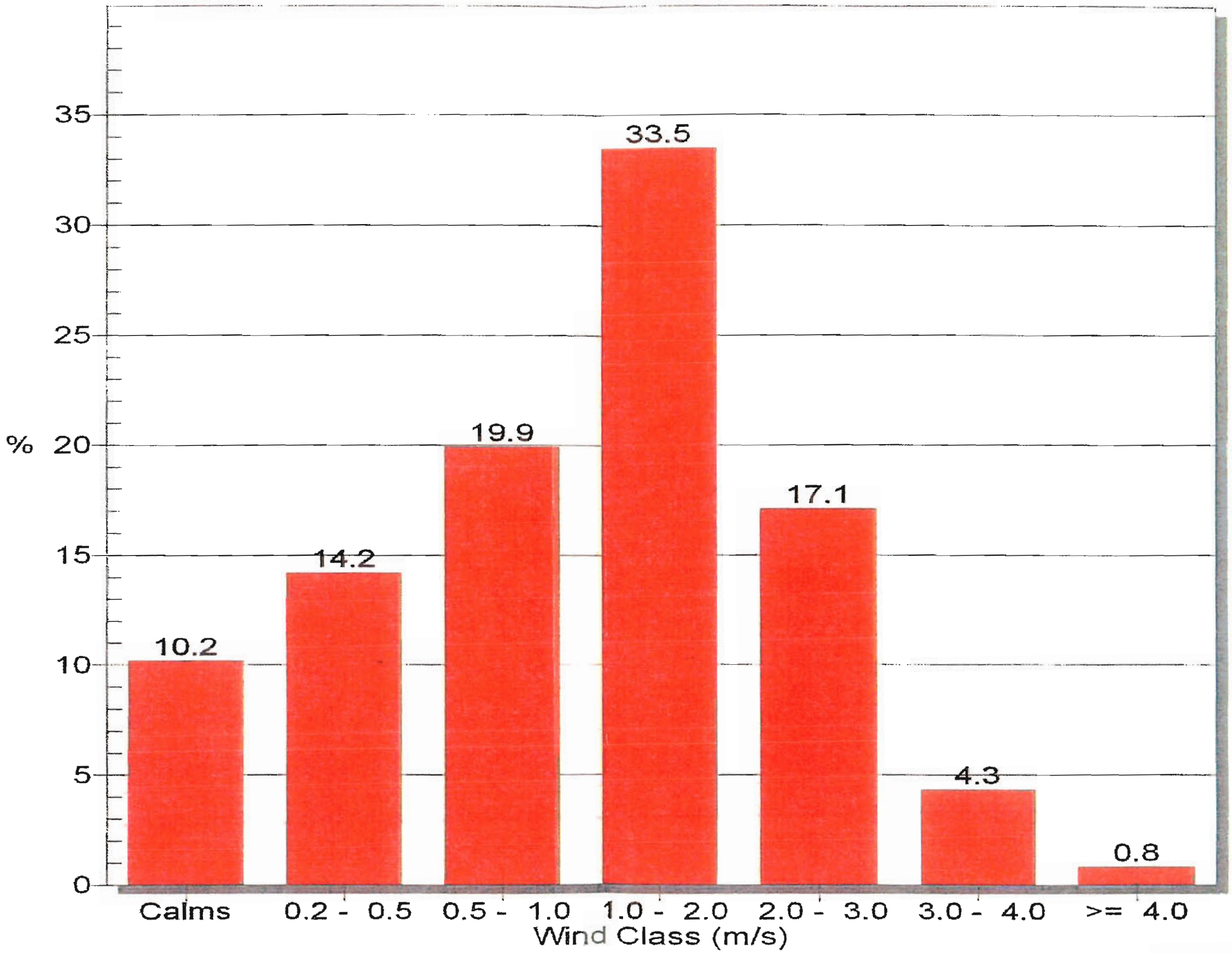
Notes:
1. Data recorded by an on-site HOBO meteorological station from March 17, 2005 to November 16, 2005.
2. Daily rainfall is total amount of rain recorded each day.
3. Daily Potential Evaporation is total amount of potential evaporation estimated each day using Penman's equation.
4. Hourly Temperature is the average temperature recorded throughout the hour (readings taken every 10 minutes).
5. Daily Average Temperature is the average of all the hourly temperatures as per Note 3.

URSA MAJOR MINERALS INCORPORATED			
SHAKESPEARE PROJECT			
METEOROLOGICAL DATA RAINFALL, POTENTIAL EVAPORATION AND TEMPERATURE			
Knight Piésold CONSULTING	P/A NO. NB101-00222/1	REF. 2	REV 0
	FIGURE 2.2		



Note:
1. Hourly wind data recorded on site from March 17, 2005 to November 16, 2005.

URSA MAJOR MINERALS INCORPORATED			
SHAKESPEARE PROJECT			
METEOROLOGICAL DATA **WIND ROSE PLOT**			
Knight Piésold CONSULTING	P/A NO. NB101-00222/1	REF. 2	REV. 0
	FIGURE 2.3		



Note:
1. Hourly wind data recorded on site from March 17, 2005 to November 16, 2005.

URSA MAJOR MINERALS INCORPORATED

SHAKESPEARE PROJECT

METEOROLOGICAL DATA
WIND CLASS FREQUENCY DISTRIBUTION

Knight Piésold CONSULTING

P/A NO.	REF.	REV.
NB101-00222/1	2	0

FIGURE 2.4