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March 31, 2006

Ms. Dionne Filiatrault
Director Technical Services
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Mr. Spencer Dewar
Manager Land Administration
Indian and Northern Affairs Canada
P.O. Box 100
Iqaluit, NU X0A 0H0

RE: Response to Technical Review Comments on Lupin TCA A&R Plan

Dear Ms. Filiatrault and Mr. Dewar,

Kinross has reviewed the comments submitted to the Water Board in response to our submission of the Abandonment and Restoration Plan for the Lupin Tailings Containment Area. Responses to the technical comments submitted by INAC, Acres International Ltd (on behalf of the NWB), Nunavut Department of Environment, DFO, KIA, and Environment Canada are provided in the attached document. Dr. Igor Holubec contributed the responses to NWB, INAC and GN Department of Environment. Appendix 1 contains the supporting tables and figures that are referred to in the text. Reports on the geotechnical and geochemical considerations of seepage water which will emanate from the cells following closure (Appendix 2), and on the post-closure water management plan (Appendix 3), will follow next week.

Yours truly,
signed by

Michael Tansey
Reclamation Manager, Lupin Mine

cc: Shawn Healey Mark Ioli

KINROSS
Gold Corporation

SUPPLEMENT TO
LUPIN TAILINGS CONTAINMENT AREA 2005 ABANDONMENT AND RESTORATION PLAN

WATER LICENCE NWB1LUP0008

LUPIN MINE, Nunavut

Response to the Technical Review Comments from:

- Nunavut Water Board (NWB)
- Kitikmeot Inuit Association (KIA)
- Environment Canada
- Indian and Northern Affairs Canada (INAC)
- Govt. of Nunavut, Department of Environment (GN)
- Department of Fisheries and Oceans (DFO)

Submitted: March 31, 2006

1.0 INAC Review Comments

1.1 Approach to A&R Plan

The Lupin TCA A&R plan is based on the following concepts:

1) Permafrost will thaw at Lupin within 100 years and there is a need to design the tailings cover for both the permafrost and non-permafrost conditions.
2) As long as permafrost is present at the site, take advantage of the cold temperatures to minimize the active layer by keeping the saturation close to the surface and keep the shallow annual thaw zone in the tailings saturated to prevent oxidation.
3) Provide a cover design that will keep the tailings predominantly saturated even when climate warming will thaw the permafrost.
4) Provide a design that will minimize the erosion rate of the cover and containment structures so that the natural environment is capable of accepting the 'slow erosion' that may occur over the 'long-term' (assumed that long-term means more than 100 years).

This approach is based on three principles:

1) Climate warming is occurring and the rate of air temperature rise is much greater in northern Canada and will accelerate in the latter part of this century.
2) The 'Precautionary Principle' that was declared by the UN (1992) and accepted by Canada and ruled to be valid by the Canadian Supreme Court Judgement (2001).
3) While 'long-term' A&R design is required by all Territories, none has provided guidelines to its time frame. However, others are starting to suggest that the time frame could be 200 to 500 years (Newmont Australia), 1,000 years for a cover system and a 10,000-year period by the Canadian nuclear Safety Commission (MEND 2.21.4, 2004).

1.2 Concerns

INAC concerns are addressed in the following sections.

1.3 Water Balance

The INAC letter correctly stated that there is an error in the Lupin water balance calculation. The water balance used the total TCA area to calculate the runoff instead of the land area.

Water balance calculations are calibration exercises where reasonable parameters are assumed to develop a correlation to field observations. The purpose is to understand the water balance at the site during operation and develop a model that can be employed to predict water flow after closure.

The water balance has been recalculated using corrected estimated land and water areas during different stages of the TCA life and taking into consideration the water that was displaced in lakes that were filled with tailings. However, in order to obtain a reasonable model that would portray the extra accumulated water in Pond 2, the assumed runoff had to be increased from 0.60 to 0.75 for the land area and the evaporation was decreased from 280mm to 240mm. Both of

these changes are within reasonable values.

The recalculated water balance is attached in Appendix 1. The corrections made virtually no impact to the final outcome.

The reviewers correctly identified an error in Table 9.5. In the previous report values for nickel were the repeats of Zinc. A revised table is given below.

Revised Table 9-5. Water quality in Cell 1 ponded water (2004).

NWB License			*Measurements*		
Parameter	**Units**	**Max Avg.**	**13-Jun-04**	**13-Jul-04**	**8-Aug-04**
Arsenic	mg/L	0.500	0.116	0.0258	0.0204
Copper	mg/L	0.150	0.006	0.03	0.044
Cyanide	mg/L	0.800			0.002
Lead	mg/L	0.1000	0.0016	0.0018	0.0015
Nickel	mg/L	0.2000	0.032	0.150	0.234
Zinc	mg/L	0.400	0.063	0.134	0.172
pH			4.08	3.51	3.68

1.4 Porewater Seepage

The closure design concepts may not have been sufficiently clear but the assumption was always that after the tailings thaw there will be minor seepage through the tailings. The position was taken that the full depth of tailings thaw may not occur until about 200 years from the present and that because it is difficult to predict all the variables for such a length of time, minor water contamination would be acceptable as long as the total TCA water discharge was within the discharge limits.

This general approach was suggested by MEND 2.32.4 (2004, Design, Construction and Performance Monitoring of Cover Systems for Waste Rock and Tailings). The key is to prevent the cover system from failing in the short term. The objective is for the cover system to "fail" gradually over geologic time such that the natural environment is capable of accepting the incremental "failure".

A detailed analysis of the loading from the groundwater seepage through the thawed tailings and the impact of the total water volume as measured at future smaller Pond 2 is attached to this document as Appendix 2. The final water quality measured in Pond 2 will be acceptable for the following reasons:

- Cover material is gravelly sand with some silt. The cover was observed in test pits excavated to the tailings interface to be moist with the moisture content of the sand/gravel being measured between 7.2 and 9.8 percent. The sand/gravel would have a low permeability to oxygen even when not fully saturated.
- Lupin's ore was ground to a small size resulting in the tailings being about 73 percent silt size. The sandy silt tailings gradation is well graded and has a very low hydraulic

conductivity, ranging from 1E-05 to 5E-05 cm/s. The hydraulic conductivity will maintain high moisture content at its surface even if the groundwater level dropped periodically below the sand/gravel cover and result in a small rate of seepage (flow) through the tailings. Any contamination from the tailings surface would be filtered through the long path of the remaining saturated tailings and the sand/gravel dam/buttress zone.

- Seepage water exiting from the sand/gravel dam/buttress zone would be greatly diluted by the surface runoff water within the TCA.

1.5 Soil Cover Design

The issues presented under this heading are similar to the ones discussed in Section 1.4. We agree with INAC's concern because of the following:

1) Closure design for long-term periods is a relatively novel concept in Northern Canada;
2) All evidence points that permafrost will not be available for permafrost encapsulation in most of Northern Canadian mainland in about 30 to 110 years, and
3) Contaminated seepage from the TCA has to be minor so that the immediate TCA can manage and will not impact the environment past the TCA.

The Lupin A&R plan was aware of the above issues. A seepage study was recently carried out to evaluate the effects of increased seepage due to permafrost degradation. The results of the study, contained in Appendix 2, show that the effects of the seepage are manageable.

1.6 Water Cover Design

Comment: *Approximately 50% of the area to be reclaimed is proposed to be reclaimed under a water cover.*

Response: The water cover referred to in the TCA cover design is not meant to be a pond or lake cover. It refers to a water saturated zone within the sand/gravel cover material. It is proposed to apply a saturated zone cover over nearly 100% of the tailings. While Holubec (2003 reference in TCA closure plan) suggested a saturated zone of 0.3m, <u>any</u> depth of water over the tailings will provide an adequate oxygen barrier. There are very small areas adjacent to Cell 3 and adjacent to N Dam that may extend into adjacent bodies of water. These areas will also be covered with sand/gravel and, at the bases of present dams, will also be covered with coarse waste rock to prevent erosion by waves, ice flows and/or ice plugging.

Comment: *The A&R Plan does not provide a detailed water balance sensitivity assessment of possible changes in the depth of water cover due to dry or wet years.*

Response: The proposed <u>saturated zone cover</u> is not as sensitive to annual precipitation changes as a strictly <u>water cover</u>. The moisture within the sand/gravel above the saturated zone greatly reduces the water loss due to evaporation. Monitoring of saturated zone thickness over three years showed a range of 0.16m to 0.64m saturated zone thickness in the perimeter of Cell 1. It is unlikely that a dry year would reduce the saturated zone to zero. As stated in the Golder (2004a) report

contained in the TCA A&R submission," *(water balance) results indicate that the cumulative surface moisture deficit in two consecutive summer months is unlikely to exceed 50 mm. Given the proposed cover thickness of 1 m, the probability of drying out the entire cover is considered low"*. Further, climate change predictions associated with global warming suggest that precipitation will increase with time.

1.7 Contingency Planning

Closure design of the TCA is a long-term design that assumes that permafrost will thaw and that erosion will gradually erode both the tailings buttresses and covers. The main principle is that the erosion over geological time will be slow in which the environment will be able to absorb the released contaminants and tailings.

The tailings cells will be provided with a generously wide discharge channel through bedrock and the earlier dams (Appendix 3). The buttress will be reinforced with sizeable rock covers to minimize the rate of erosion of these zones.

1.8 Monitoring Program

Up to the present time, Lupin has studied and monitored more extensively than is required under the License. The reason for this was to understand the water quality and permafrost conditions in greater detail to develop a technically sound A&R Plan.

The present monitoring program will be continued and a post-closure monitoring program has been prepared for approval by the Water Board, based on the recommendations of Environment Canada. The proposed post-closure monitoring program is attached to this document (Appendix 1).

The purpose of the monitoring program is to document the environmental improvement obtained over the duration of the reclamation period and demonstrate that the chosen A&R Plan is appropriate for this site and to satisfy long-term environmental safety of the site. Any problems identified through the monitoring data will be addressed as needed.

1.9 Climate Change

Comment: *Kinross has not provided adequate robustness in the plan if the climate predictions are incorrect. Kinross should provide better justification for its assumption of loss of permafrost and its contingencies if the assumption is incorrect.*

Response: If the climate 'warming' predictions are not correct, the tailings will be encapsulated in permafrost for all but 3 months of the year, when a shallow annual thaw depth of about 0.3m will be present. Tailings within this 0.3m deep thawed zone will experience minimum oxidation, if any, because the tailings will remain saturated and the overlying moist sand/gravel cover will provide oxidation protection.

Additional information on climate warming is given below:

Canada joined member and observer nations of the Arctic Council to present a statement on climate change in the Arctic region to the United Nations Climate Change Conference in Montreal On December 9, 2005 (Canada 2005). The statement draws the attention of the global community to the fact that the Arctic is now experiencing some of the most rapid and severe climate change on Earth. (Environment Canada Press release, www.ec.gc.ca/press/2005/051209-n-e.htm).

A comprehensive review of various studies on global warming and its causes was made by Lomborg (2001). While his arguments centre around what and how much should be done to combat the effects of global warming, he does not question its existence. An important study to support climate warming is a study of the world's ocean temperature change made by Barnette et al (2001) that showed the heat content of all major oceans has been increasing since 1955. The continuing long-term effect of greenhouse gases on air temperatures will continue for some time. Two science studies advance the view that, even if we stop producing greenhouse gases immediately, the global temperature will continue to increase (reported by Spencer, 2005).

During the last 10 years numerous studies have clearly demonstrated that global warming is occurring and that the Arctic is warming at about twice the worldwide rate. The most recent authoritative study was commissioned by the Arctic Council, a high-level intergovernmental forum comprised of five northern nations and six indigenous peoples; three of these being Canadian. This study (Hassol, 2004) concluded that human activities have increased the concentration of carbon dioxide, methane and other greenhouse gases that has led the global warming. Furthermore, the Arctic is warming more rapidly than the remainder of the world and much larger changes are projected.

In respect to the above study, Dr. Correll (2004) testified before a United States Senate committee that "The Artic is now experiencing some of the most rapid and severe climate change on Earth. Over the next 100 years, climate change is expected to accelerate, contributing to major physical, ecological, social, and economic changes, which have already begun."

A news item on BBC (Jan 5, 2006) quoting recent research indicates that studies of rapid rises in global temperature over the past 55 million years indicate that the effect of the present climate warming could last thousands of years.

Recent results obtained from the Community Climate System Model version 3 (Lawrence, 17 Dec 2005) show that near-surface (top 3.4 metres) permafrost will largely disappear over the next century. Deeper permafrost, which can extend down more than 1600 metres, will be largely unaffected by global warming due to the thermal inertia related to deep frozen soils.

1.10 Responses to miscellaneous comments given in INAC review document.

Pg 10 - Previous Reclamation Approaches.
The Lupin reclamation plan has evolved over the years in parallel with the development of guidelines, technology and the continual monitoring of tailings area data. The 1984 reclamation plan was still fairly undeveloped, as there were no guidelines or legislation dealing with reclamation at that time, and the monitoring of Lupin tailings data was in its infancy. The closure

concept adopted by the 1996 reclamation plan was significantly more detailed. The plan at that time was to encapsulate the higher elevation tailings cells within permafrost and water saturated soils and to maintain water cover on low lying tails and existing ponds, very similar to what the 2005 plan espouses. The implication of global warming was not as appreciated 10 years ago and a soil cover depth of 2 metres was put forward as sufficient to maintain the tails in a frozen state. With the current thinking on the accelerated degradation of the permafrost, the 2-metre soil depth becomes a moot point, and an alternative for providing an effective long-term oxidation barrier is now proposed.

Pg 10 - Climate Change.
Extrapolation of the air temperature from Lupin is only one piece of information on climate warming. The Contwoyto Lake weather station is only one of few stations in northern NT and NU that have air temperature data for a period of 50 to 60 years. The air temperature rate of increase varies across NT and NU. The more northerly stations show a larger rate of air temperature rise than the southern NT and NU locations.

The temperature rise obtained from Lupin is consistent with information from Norman Wells and Inuvik and also with climate modeling done by Environment Canada (CCCma Sep 2005). The mean annual air temperatures from Lupin were interpreted using linear trend lines for all the data and for data from 1985 to 2004 to provide a range of values.

Pg 11 - Dam Stability.
INAC notes that a number of minor concerns were raised from time to time under the professional annual geotechnical inspections. INAC note that these concerns should continue to be identified and responded to on an on-going basis and that any implications regarding long-term stability should be incorporated into the A&R Plan.

It is noted that the majority of the minor concerns were related to the toe of K Dam whose main zone was constructed from esker sand that are covered with various thickness of mine rock. The concerns were related to erosion of the dam toe where the mine rock riprap was thin.

These concerns at K Dam and other dams will be removed by:

1) Water will not be butting against the dams after the closure plan is completed because the lowering of water levels in Ponds 1 and 2 will make it retreat from the dam toe.
2) All remaining dams will have added non-PAG rock buttresses added to the downstream slope.
3) There will be no dams per se after the closure plan is completed because none of the present dams will be containing water.

Pg 11 - Soil Cover Design. Section 7.1 General
Re: sensitivity to climate change.

All the indications are that climate change will increase precipitation. This should increase the thickness of the saturation zone.

Re: the ability of the saturated granular cover to support vegetation, contradiction in Sections 5.1 and 6.6.

There is no contradiction, but likely it is not well explained. Cell 1 monitoring, supported by published information, has shown that a cover thickness of about 1m developed natural vegetation due to proximity of a water saturation zone. In Section 6.6 of Kinross A&R Report (2005) it was stated that research has shown that there is a lack of success in introducing new vegetation species to northern or alpine climates or using other growth enhancements. It is suggested that the local esker will bring along sufficient seeds and nutrients to start re-vegetation on its own.

7.2 Porewater expulsion Section 5.4, para. 4.

The Golder (2004) study considered present conditions and does not apply for the long-term conditions. On the long-term period, all tailings will thaw and pore water seepage will develop. The impact of this seepage has been assessed and the study is appended to this report.

Remaining points were discussed earlier. However, we agree with the concerns raised. Finite element seepage analyses have been conducted to show what the flow geometry will look like and predict the seepage/flow magnitude. Seepage chemistry has also been considered to predict the loading reaching Pond 2 and its effect on the overall water quality. This report is attached to this document as Appendix 2.

Pg 13 - Water Quality.
Error was addressed earlier.
Water quality evaluations for the long-term with no frozen tailings have been made. The study is appended to this report.

Pg 13 - 7.5 Ability to maintain saturated conditions.

More detailed discussion on the maintenance and risk of not having a saturated zone in the sand/gravel cover is included in the attached seepage study report. The unlikely scenario that the saturated zone in the cover material may dry for short periods was assumed in the study.

It should be pointed out that the proposed cover will not be a zoned “dry” cover used over PAG waste rock that needs a zone to maintain a saturation zone. Some designs have capillary breaks, etc.

Pg 15 - Alternatives

An ice lens approach is not valid for long-term conditions, considering climate warming.

Pg 16 - Design of Spillways.

The closure plan proposes to provide discharge channels to decant water from the individual tailings cells, breach J Dam and provide a major discharge channel from Pond 2. While the design will be based on capacity of the channel to handle maximum probable flow, the channels will be designed with geometry greater than required to exclude plugging the channel by rock

spalling from the channel walls. Details on post-closure water management are provided in Appendix 3.

2.0 NWB (Acres International Limited) Review Comments

2.1 Saturated Sand/gravel Material Cover Concept

2.1.1 Saturation Zone Depth of the Sand/gravel Material

Comment: *The reports did not establish how the saturation zone depths were estimated from the various conditions and parameters.*

Response: The saturation depths were measured by means of water monitoring wells and test pits. Their locations were selected to obtain representative information for various conditions and parameters.

Comment: *The A&R Plan established that the saturation zone depth should be maintained at 0.3m. above the cover/tailings interface to ensure that it will act as an oxidation barrier. No discussion or explanation was provided on what would happen to the tailings if the saturation depth is less than 0.3m.*

Response: Holubec Consulting Inc. (Holubec 2003) suggested a saturated zone of 0.3 m. However, any depth of cover saturation over the tailings will provide an adequate oxygen barrier to prevent oxidation.

This is based on a stagnant water cover design concept investigated by Li et al (1997) and column testing by CANMET (MEND 5.4.2d, 2001) demonstrating that in absence of water movement, even a small depth of water greatly inhibits oxidation.

Additional studies have been conducted which demonstrate that, even if the water level drops below the tailings surface, the resulting seepage will produce very small contaminant loading that can be easily absorbed within the TCA watershed. The details of this study are attached to this document in Appendix 2.

2.1.2 Potential for Lateral Pore Water Flow through the Active Layer and Over the Crest of the Frozen Dam

Comment: *Section 5.4 of the A&R Plan, p.23, indicated that there is a potential for lateral pore water flow through the active layer and over the crest of the frozen dam core.*

Response: The edge of the Cell 1 tailings cover adjacent to the 3D dam crest was raised by 1m to 1.5m (depending on local elevation) in the fall of 2004 to raise the permafrost surface adjacent to the dam crest to prevent seepage of pore water over the top of the frozen core. The frozen containment will be effective only so long as permafrost conditions exist.

A seepage, water balance and water quality study (Appendix 2) has been

conducted which demonstrates that after the permafrost thaws, estimated to be between 30 to 110 years, and seepage through the tailings occurs, the resulting contamination can be absorbed by the total water volume within the TCA without being harmful to the environment.

2.1.3 Potential Drainage of Thawed Water Within the Relatively Porous Sand/Gravel Cover, Resulting in Reduced Saturation Zone Depth.

- Comments made in this section have been generally answered in Sections 2.1.1 and 2.1.2. In summary:
    - Reports quoted in MEND 5.4.2d (2001) indicate that <u>any</u> depth of water will provide a barrier.
    - It was known that there are many variables in the Lupin cells that control the saturation zone. As a result, extensive field measurements of the saturation zone were conducted by means of water well pipes and test pits that cover most of the conditions. In these, the smallest saturation level measured was 0.16m. This is well within the depth requirements to provide a barrier during the permafrost period.

2.1.4 Climatic and Hydrologic Conditions

Most of the answers for the above are given in previous sections. Some additional points:

- Climate models predict that the precipitation will increase in northern Canada.
- As stated earlier, the tailings closure design was assessed for thawed conditions and the impact of seepage water on the environment. This condition will see the surface of the saturation drop into the tailings for short periods of time at local areas.

2.1.5 Erosion Protection for the Cover Materials

Comment: *Available site photos on the <u>perimeter dams</u> inspection report showed that <u>some erosion gullies</u> were developed along the slope of the dams after some severe rainfall events. There is no detail discussion ….in regards to potential erosion of the cover materials….*

Response: Erosion at the toe of the dams is a different issue than erosion of the sand/gravel cover. The erosion at the dam toes occurred at locations where water butted against the dam slope and there was limited erosion protection at the dam toe.

The local dam toe erosion is being handled in the A&R by lowering the pond water levels so that water does not butt against the tailings embankments (since these will not function as dams anymore) and by adding thick rockfill buttress on the tailings embankment slopes.

Long-term erosion is minimized at the tailings cells by the fact that the covers are at slopes of about 1%, the length the surface drainage path is short and the surface water from each cell will be discharged through a channel blasted through rock.

Performance observation of Cell 1a, that started to be covered in 1988, has not shown any surface erosion due to water or wind of the cover.

Comment: *Considerations should be made whether there will be long-term potential erosion of the cover materials, and whether an erosion protection blanket is required over the sand/gravel material.*

Response: It should be noted that any cover material will potentially erode over the long-term. As reported in Appendix 3 of the 2005 Abandonment and Restoration Plan, the gravely sand make-up of the cover material is physically stable and chemically inert. The Nanisivik closure plan included a 0.25 metre thick cap of sand and gravel to be placed on top of the shale cover for the purpose of erosion protection. As the Lupin cover is 4 times as thick, it will provide significant erosion protection.

2.2 Detail of Reclamation Activities

2.2.1 General

The concepts and designs for the abandonment and restoration of the TCA were provided in the Kinross 2004 Final Abandonment and Restoration Plan, Lupin Mine, February 2005. Restoration plans requiring engineering design will be provided to the NWB for review and approval well in advance of implementation. Buttress construction on the downstream faces of the dams will simply consist of adding a layer of nominal 15-20cm sized non-PAG waste rip rap to attain a slope of at least 2.5h:1v.

The Lupin A&R presents new approaches to tailings restoration that are needed because of the consideration of climate warming and the Precautionary Principle (UN 1992) adopted by Canada. It also needs to be noted that many regulations call for long-term design, but none have provided guidelines as to what long-term means.

2.2.2 Reclamation Schedule

The TCA reclamation and monitoring schedule is included in Appendix 1 in this report.

2.2.3 Water Quality, Breaching of Dams and Spillway Construction

Proposed plans for the breaching of dams and drainage channel design and construction are attached to this report (Appendix 3), and subject to NWB review and approval. The closure plan does not envision any spillways since these are associated with water reservoirs and dams and are used to control the water level. It is planned to provide permanent discharge channels that will not require any control or maintenance, will function under the most extreme water flows and not be blocked by natural rock slope spalling.

2.2.4 Post Monitoring

The monitoring plan for the TCA (water quality, thermistor, geotechnical, cover saturation) is included with this report. It should be noted, that it is not planned to monitor the saturation zone for more than 2 years after the cover installations are completed since the Closure Plan is to be valid even with permafrost thawing and periodic saturation surface falling below the base of the

sand/gravel cover. Currently existing thermistors will continue to be monitored for the 5-year duration, as long as they are providing useable data.

3.0 Nunavut Department of Environment Review Comments

3.1 General Comments

3.1.1 Objectives and timing

Comment: *The intended outcomes of A&R Plan are not stated.*

Response: The design for the A&R Plan for the tailings containment area (TCA) is to reclaim this site to be environmentally stable during the time that permafrost exists, and to ensure minimal and acceptable environmental impact for the long-term period after the permafrost thaws.

3.1.2 Post Closure Monitoring.

Comment: *There is no information in the A&R Plan in regard to post closure monitoring.*

Response: The duration of post closure monitoring was well documented in the A&R Plan. See sections 8.3.3 and 8.3.4. It is planned to complete the monitoring program after 5 years of monitoring following completion of the reclamation of the TCA (2007 to 2011). Details of the monitoring program are included in this document.

Comment: *Ensure appropriate water quality monitoring program is developed*

Response: The present monitoring program will be continued and a post-closure monitoring program has been prepared for approval by the Water Board, based on the recommendations by Environment Canada. The proposed post-closure monitoring program is attached to this document.

Comment: *Re-establish natural vegetation*

Response: Studies of vegetation in permafrost regions have shown that natural vegetation re-establishes with time but the important condition for vegetation is the availability of water. Visual observation of the Lupin tailings cover completed in the 1980's supports this fact. The largest concentrations of vegetation have developed in low-lying areas where the thickness of the sand/gravel cover is 1m. On the other hand, areas with cover thickness of 1.5m or greater were sparsely vegetated as compared to the thinner cover areas. This demonstrates one of the beneficial parts of the proposed 1m sand/gravel cover.

Comment: *Performance of the cover, earth buttresses and dams should be monitored over time.*

Response: The TCA reclamation program is designed to produce a long-term stable environment that will not show any noticeable changes over short periods of time (50 years or more). It is planned to monitor the TCA for several years to show that there are no erosion prone areas. The stable environment will be produced by:

- Reclaimed tailings cells with small surface areas that will not accumulate appreciable surface water flow that has a potential for increased erosion.
- Decant excess cell surface water by developing wide channels blasted through bedrock.
- Buttresses will be constructed of coarse quarried rock.
- Dams, that otherwise would require inspection and monitoring, will be eliminated by re-establishing them as earth embankments that will not have water impounded against them.

Comment: *Post closure maintenance, responsibility and reporting.*

Response: Extra armouring to be provided to the earth embankments, as well as flattened slopes, will substantially reduce erosion action. The closure design is based on the concept that maintenance will not be necessary. The owner of the Lupin site will continue to be responsible for monitoring and reporting activities. Reporting will be done to the NWB as per the current licence. Timelines for reclamation and monitoring activities are provided in Appendix 1.

Comment: *Climate Change*

Response: As mentioned in the replies to INAC and Acres review comments, an extensive review was made of the most recent climate change reports and accordingly a design concept of the saturated zone sand/gravel cover was chosen. The closure design will be applicable for both the 'short-term' of less than 100 years when permafrost encapsulation is present and the 'long-term', over 100 years, after the permafrost thaws and subject to long-term (hundreds of years) erosion.

It is anticipated that there could be a minimal and manageable environmental impact after the tailings thaw and a slow rate erosion of the tailings containment areas takes place. The impact of the tailings thawing on the water quality within the TCA, before it is discharged into the greater environment, is presented in Appendix 2.

Response to Specific Comments

Page 3; Paragraph 3: The graph on Figure 2-1 was interpreted liberally and with some judgment that resulted in the 30 years instead of 20 years. There are great fluctuations in the mean annual air temperatures.
Page 5; Figure 2-2. The thawing index was calculated from 1982 to 2002 daily temperature records from Lupin weather station.
Page 11; Paragraph 1. This was only a general statement with detailed water quality data given in other documents.
Page 15; Paragraph 1. The liner in the dams was introduced into the dam geometry to contain water during the first few years of dam operation when water butted against the dams. Once permafrost developed within the dam core and the upstream side of the dam was filled with tailings, the liner does not serve any purpose. When the permafrost thaws in 30 to 100 years, the liner even if it is intact, will be of no use since seepage will take place through the underlying bedrock.

Page 43. The stability of the earth structures is much greater than needed in the thawed structure and foundations. These structures will not contain groundwater seepage. A study is being done to demonstrate that the groundwater seepage will only minimally impact the resulting TCA water quality and that this water can be released.
Page 25, Paragraph 1. It is reasonable not to be too specific with the information given by the two linear trends because of the great fluctuations of the mean annual air temperature and the changing of the air temperature trends. It was not deemed necessary to quote more exact temperature warming rates because the TCA closure design is primarily based on thawed conditions and the exact time when this occurs will not change the design concepts or results.
Page 31; Paragraph 2. The flows will be shown on updated Figure 2-7.
Page 31; Paragraph 3. Groundwater flows have minimal contribution to the water balance because of the slow flow velocity through the thawed zone.
Page 31; Paragraph 3. The mine site and the TCA are completely different water management system and do not impact on each other. The exception is the pumping of tailings slurry during the operation phase that was taken into consideration. The tailings line is now decommissioned.
Page 33; Paragraph 1. The meaning of "relative small erosion" refers to erosion in geological time that every earth, rockfill and even bedrock experiences over a long time. This erosion cannot be prevented. One way of combating the effect of erosion is to cause the release of any contaminants to be slow, or at such a rate, that minor contamination is released which the environment can manage.
Page 42. Dams will only be breached after the majority of water is released and water quality information shows that the environment will not be harmed after the final breach. All discharged water will meet applicable MMER discharge criteria at SNP station 925-10
Page 44; Paragraph 6&7. No erosion features are anticipated in the next 100 years due to the fact that all of the earth structures have very conservative factors of safety against instability, surface water control measures (drainage channels) will be constructed to inhibit erosion of the cell cover material, and the thick rockfill zone over the former dams will inhibit erosion of these structures.
Page 48; Paragraph 2. All these concerns have been accounted for in the design.
Page 52; Paragraph 3. Table 8-2 and Figure 8-2 were introduced to show the great impact of the groundwater level within the cover on the thickness of the active layer. A general assumption (1) on page 52 was that the groundwater surface was at or near the base of the sand/gravel at the thermistor locations, which is close to field observations that at greater cover depths the water level was lower. If this assumption is accepted, Figure 8-2 shows that a thicker cover results in a greater active layer because the important parameter governing active layer development, ice/water, is located deeper. Therefore just increasing the cover thickness does not have as a beneficial effect as is normally believed.

4.0 DFO Review Comments

Comment: *A&R Report is lacking in up-to-date information related to fish and fish habitat.*
Response: As per MMER requirements, Lupin mine compiled a historical report of EEM information in 2003. The report contains detailed information on surveys and studies conducted on fish and fish habitat in the Lupin area between 1978 and 1996. Nine copies of this 2-volume report were provided to the Regional Director

of Environmental Protection, Prairie and Northern Region, Environment Canada in December 2003. As the DFO is a member of the Technical Advisory Panel, it was assumed that Environment Canada would distribute a copy to DFO at that time. Environment Canada has since sent a copy of the report to Ms. Gordanier (December 2005). As well, an EEM Field Study was conducted during this past summer. A copy of the report will be sent to DFO when it has been released.

Comment: *No schedule of activities for closure of the TCA was included in the A&R Plan.*
Response: See the Tailings Containment Area Reclamation Schedule provided in Appendix 1 of this document.

Comment: *Kinross requested to examine whether fish are still present in waterbodies downstream of the TCA and during what seasons.*
Response: Fish are present in the waterbodies downstream of the TCA. Details of the fish population and habitat are contained in the 2003 Lupin EEM Historical Report, provided to the DFO.

Comment: *Clarify why fish were not included as potential receptors in the 2004 TCA Ecological Risk Assessment Study.*
Response: The 2004 TCA Ecological Risk Assessment Study was focused on the potential risks to wildlife health due to exposure to food, water, and incidental soil ingestion, and risks to human health through ingestion of caribou that could be exposed to metals and cyanide from the TCA. The study was limited to the area within the confines of the TCA, since that would be the "worst case" area for potential contamination. As Ponds 1 and 2 do not contain fish, fish were not included as potential receptors. The health of fish exposed to TCA effluent is documented in the studies contained in the 2003 Lupin EEM Historical Report.

Comment: *Kinross to provide maps and plans for road and watercrossing locations and details of road alignments that transect waterbodies containing fish.*
Response: None of the roads in the TCA, powder magazine road, or road to the Fingers Lake esker transect any waterbodies containing fish. All roads were constructed on high ground and do not cross any fish bearing streams. Culverts, generally composed of 2 or 3 6-inch diameter steel pipes, were placed under the roads in a few strategic locations to prevent spring runoff from washing out the road.

Comment: *DFO requests detailed plans, specifications, and schedule for the drainage channel (spillway) to be constructed in the location of Dam 1A and its effects on the stability of the Seep Creek channel.*
Response: Construction of this drainage channel is now scheduled to occur in the summer of 2007. Proposed plans for the breaching of dams and drainage channel design and construction are attached to this report (Appendix 3), subject to NWB review and approval. The change in flow regime as a result of the construction of the drainage channel will have far less impact on the stability of the Seep Creek channel than is currently experienced during the approximately 50 days of siphon discharge. The Lupin water licence permits up to 70,000 cubic metres per day of

effluent discharge, after July 15 of each year. Natural discharge of spring meltwater through the drainage channel will start earlier in the year and take place at a much lower flow rate.

Comment: *DFO requests information on blasting activities that would be required for quarrying and whether any fish bearing watercourses are in the vicinity of the quarry.*

Response: Blasting will be required to excavate the quarry, but all blasts will be directed towards the north northeast, within the confines of the TCA. The closest fish-bearing waterbody to the quarry location is Lori Lake, approximately 400 metres to the southwest. Please refer to the map of the TCA, located in Appendix 1 of this document. Lori Lake will not be affected by blasting in the quarry because of distance and it is located in the opposite direction from the throw of the blasts. Pond 2 is located approximately 300 metres to the north, but it is devoid of fish.

Comment: *DFO requests details on what is required to dismantle and remove the tails line.*

Response: The tails line is composed of 20-foot long sections of 8-inch diameter steel pipe which are bolted together using victaulic clamps. The pipe is insulated with 2 inches of molded foam insulation, surrounded by sheets of aluminum cladding. In some sections, the line is set atop wooden cribbing in order to maintain a designed gentle grade sloping towards the TCA. From July to October 2005, the entire line was continuously flushed with fresh water, with the discharge going into Cell 4. As a result, the line is now clean of any contamination. The tailings line was decommissioned at the end of October 2005 and has been unused since that time. Dismantling the line will simply involve undoing the bolts between each 20-foot length of pipe and loading each length of pipe, including the insulation wrapping, onto a truck for transport back to the minesite. Disposal of the pipe lengths will be in the mine landfill. The sections of wooden cribbing will be unbolted, removed to the minesite and burnt.

5.0 Environment Canada Review Comments

5.1 Section 1.1 Saturated Granular Cover

Comment: *EC unclear as to whether all the exposed tailings covered to date have been covered with a saturated granular cover and requests clarification as to the variation in the depth of cover previously placed.*

Response: Ongoing tailings restoration conducted since 1988 has resulted the covering of almost all exposed tailings with 1.0 metres of saturated granular cover. A small area in the northwest corner of Cell 1 was initially covered with a layer of waste mine development rock, then covered with 1.0 metres of saturated granular cover. In all other areas, the saturated granular cover directly overlies the tailings. Approximately 250,000 square metres of exposed tailings in the TCA remains to be covered, as seen on the TCA map in Appendix 1. This remaining area will be covered during the summer of 2007.

It was reported in the A&R Plan that between 0.5 to 2.0 metres of granular cover had been placed on some cells. In 1988, when ongoing restoration of the exposed tailings began, a 0.5-metre thick granular layer was placed on Cell 1A. In 1995, another 0.5 metre granular layer was added to this cell, resulting in a total of 1.0 metres cover. Similarly, a 50m x 50m test section on Cell 1 was built up to a 2.0 metre depth. All exposed tailings in the Lupin TCA that have been covered to date have been capped with a minimum of 1.0 metres of granular cover.

Comment: *It is necessary to know the height of the frozen core within the dams to verify the assumption that there will be limited lateral pore water flow through the active layer and over the crest of the frozen core of the dam.*

Response: As indicated on page 9 of this report, the edge of the Cell 1 tailings cover adjacent to the 3D dam crest was raised by 1m to 1.5m (depending on local elevation) in the fall of 2004 to raise the permafrost surface adjacent to the dam crest to prevent seepage of pore water over the top of the frozen core. The frozen containment will be effective only so long as permafrost conditions exist. A seepage, water balance and water quality study has been conducted which demonstrates that after the permafrost thaws, estimated to be between 30 to 110 years, and seepage through the tailings will occur, the resulting contamination can be absorbed by the total water volume within the TCA without being harmful to the environment." This seepage study is included as Appendix 2 in this document.

5.2 Section 1.2 TCA Infrastructure

Comment: *No information is presented in the Plan regarding the removal of the arsenic treatment plant and the potential contamination of adjacent soils or the concrete pad inside the building.*

Response: Prior to 1996, ferric sulphate was added to the water of Pond 1 as it was being siphoned into Pond 2. As was stated in the A&R Plan, the plant has been inactive since 1996 and all components were flushed after use. Prior to demolition, the structure and tanks will be rewashed, with the wash water disposed of in the adjacent Cell 4. The surrounding rock pad will be sampled and any contaminated soil will be transported to the mine site and disposed of in the underground stopes.

Comment: *Information is needed on potential contamination and treatment of tailings dump stations.*

Response: As was stated in the A&R Plan, the small amount of residual tailings in the 2 dump stations will be removed to the TCA. Only small portions of both dump stations have been subject to tailings exposure. The waste rock berms surrounding the dump stations will be dozed over the former tails area, both to provide a minimum of 1.0 metre thick cover and to contour the area consistent with the surrounding topography. In the unlikely event that there is not enough waste rock in the berms to provide a minimum 1.0 metres of cover, a granular cap will be added. Potential acid generation from the area constituting the dump stations will be minimized or eliminated since any exposed tailings will have been removed to the TCA and the areas covered with at least 1.0 metres of cover.

5.3 Section 1.3 Water Quality

Comment: *Current TCA A&R Plan does not provide sufficient detail on pore water quality in wells in esker cover, test pits in the cover, ponded water in Cell 1, Pond 1 or Pond 2.*

Response: Results of water quality analyses from various sampling stations located in Cell 1 wells, Pond 1, Pond 2, and Pond 2 discharge (SNP 925-10) are attached to this document in Appendix 1. An updated summary table showing the progression of water quality from the covered Cell 1 to Pond 1 to Pond 2 to final discharge, during the period 1991 to 2005, is as follows:

Water Quality of Emergent Cover Material Pore Water - 1991-2005 Summary

Parameter	Units	NWB Licence		Wells	Pond 1	Pond 2	925-10
		Max Avg	Max Grab				discharge
Arsenic	mg/L	0.500	1.000	1.8217	0.5929	0.0363	0.0167
Cadmium	mg/L	n/a	n/a	0.00316	0.00032	0.00035	0.00027
Copper	mg/L	0.150	0.300	0.170	0.141	0.026	0.010
Cyanide	mg/L	0.800	1.600	0.023	0.332	0.031	0.036
Lead	mg/L	0.100	0.200	0.0504	0.0051	0.0043	0.0035
Nickel	mg/L	0.200	0.400	1.562	0.082	0.090	0.082
Zinc	mg/L	0.400	0.800	0.493	0.128	0.285	0.232
TSS	mg/L	15.0	30.0	n/a	4.6	2.5	1.5
pH	mg/L	6.0 to 9.5	6.0 to 9.5	4.82	7.50	6.46	6.83

It can be seen that concentrations of arsenic, cadmium, copper, lead, nickel and zinc are all at considerably lower concentrations by the time discharge takes place.

Comment: *Environment Canada requests information regarding what monitoring was completed during 2005.*

Response: Monitoring of water quality during the period of effluent discharge in 2005 was as per the requirements of Schedule 1 of the water licence. The results of the monitoring are reported in the monthly reports to the Nunavut Water Board, which are available on their ftp site for public viewing. All monitoring required under MMER was also carried out in 2005 and submitted to Environment Canada.

Comment: *Environment Canada states that the saturated granular cover program was initiated in 2003 and recommends a 10-year monitoring program to assess its performance, i.e. extend the Closure Phase monitoring program to 2013.*

Response: Water quality analyses of the pore water in the covered cells were initiated in 2003, when the wells were established. However, as was described in the TCA A&R Plan, the saturated granular cover technique was initiated in 1988, when 0.5 metres of esker cover was placed on Cell 1A. Another 0.5 metres of esker cover was placed on Cell 1A in 1995, as well as 1.0 metres of cover on Cell 1 and over the majority of Cell 2. The data that can be seen in the attached tables of water quality analyses from Ponds 1 and 2 (Appendix 1) extend back to 1991. Monitoring of the TCA water quality has already been carried out for 15 years

since a granular cover was first placed on the exposed tails.

Comment: *Environment Canada recommends that Kinross develop a more concrete plan for monitoring activities within the Reclamation and Closure phases.*

Response: Reclamation phase water sampling (2005 – 2006) will be as per the requirements for the parameters and frequencies outlined in Schedule 1 of water licence NWB1LUP0008. Biological, effluent and water quality monitoring as per MMER requirements will also be carried out. Environment Canada has recommended that Closure phase water sampling be conducted monthly during periods of open water at SNP 925-10 and 925-20 (i.e. July, August, September), and once per year at SNP 925-22, -24 and -25, for a number of parameters. Kinross agrees to these recommendations, and the proposed monitoring plan is attached in Appendix 1. As mentioned in the previous comment, EC also recommends that the duration of sampling take place for 7 years, from 2007 to 2103, with a provision that sampling frequency be decreased if results warrant. Kinross maintains that closure sampling until 2011 is sufficient, considering that we already have 15 years of post-cover water quality data. Sampling frequency will be re-assessed throughout. Since monitoring will only be done during periods of open water, we propose that an annual report would be sufficient for reporting results of the monitoring.

6.0 Kitikmeot Inuit Association Review Comments

Comment: *The rationale for not revegetating the esker cover of the TCA requires more investigation.*

Response: The fact that the surrounding tundra has plentiful and diverse vegetation shows that natural processes are successful in the area and that the esker cover will revegetate on its own with time. Natural revegetation is already evident on Cells 1 and 2, particularly in the lower lying areas.

The comment about research from Ekati indicating that it is possible to revegetate with seed from local seedlings is misleading. This research has provided answers to the kind of soil amendment required to promote growth and how to establish an initial plant cover directly on processed kimberlite test plots. However, success at developing a permanent and large-scale adaptive native cover for the sites has not been resolved. Moreover, the physical and chemical makeup of processed kimberlite is significantly different from that of esker sand, making a side-by-side comparison inappropriate for this application.

Comment: *The period of post-closure monitoring (5 years) is too short and the objectives of the monitoring unclear.*

Response: Environment Canada recommends a 7-year post Closure monitoring period but, as mentioned above, Kinross maintains that our proposed sampling period to 2011 is sufficient, considering that we already have 15 years of post-cover water quality data. Wildlife use of the TCA has never been formally documented prior to or

during mine production, so no baseline data on species or population exists on which to compare any future wildlife monitoring.

The goal of the TCA restoration is "to prevent progressive degradation and to enhance the natural recovery of the areas affected by mining" *(Guidelines for Abandonment and Restoration Planning in the Northwest Territories, 1990).* The objectives of the monitoring program are, through the collection of specific measurable criteria, to show that this goal has been met. Post-closure monitoring will measure the effectiveness of the reclamation activities and provide the means of assessing when the stated goal has been reached. As stated in the TCA A&R Plan submission and in the above response to Environment Canada comments, water quality of the Pond discharge and surrounding lakes will be monitored as per Environment Canada recommendations for frequency and parameters. Monitoring the thermal conditions of the tails and earthworks will be conducted at the same time.

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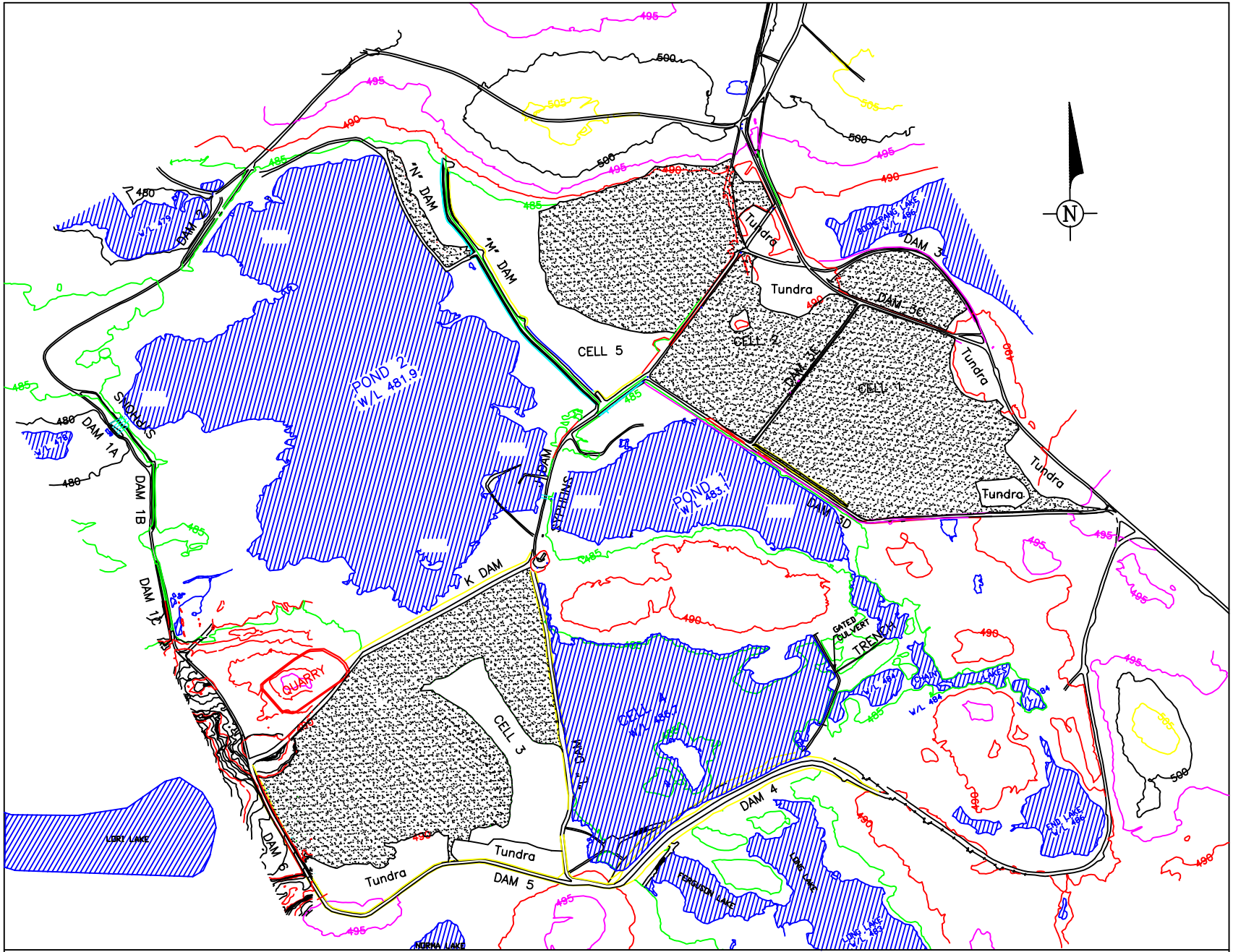
APPENDIX 1

- Map - Lupin Mine TCA 2005
- Lupin TCA Reclamation and Monitoring Schedule
- Lupin TCA Water Sample Analyses of Covered Cells (2002-2005)
- Lupin TCA Water Sample Analyses of Pond 1 (1991-2005)
- Lupin TCA Water Sample Analyses of Pond 2 (1991-2005)
- Lupin TCA Water Sample Analyses Effluent Discharge (1992-2005)
- Covered Cell Water Level Measurements (2002-2005)



Lupin Mine TCA 2005	MAP SCALE 0 50 100 200 METERS	No.	DATE	MADE BY	DESCRIPTION	KINROSS GOLD CORPORATION LUPIN MINE	LUPIN MINE TAILINGS AREA
		1	Oct/03	CMT	Updated Cell 5a, 5b		
		2	Jun/04	CMT	Pond 1,2 water levels		
		3	Aug/04	CMT	Cell 4 water		
		4	Sep/04	CMT	2004 Tails cover		
		5	Sep/05	CMT	2005 Tails cover		
	2005 Lupin TCA.dwg	DATE	DRAWN BY	CHECKED	APPROVED	OFFICE: LUPIN; DEPARTMENT: DEVELOPMENT	MAP INDEX NUMBER; SCALE; DRAWING NUMBER

LUPIN TAILINGS CONTAINMENT AREA

RECLAMATION SCHEDULE

TASK	Sub-task	2006 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2007 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
STUDIES																									
	Pore Water Seepage Quality/Quantity																								
	EEM Field Study - Preliminary Report																								
	EEM Field Study - Final Report																								
TAILINGS COVER																									
	Cell 3																								
	Cell 5																								
	Demobilize																								
QUARRY																									
	Mobilize																								
	Drill / Blast																								
	Muck / Place rip-rap on dams																								
	Demobilize																								
DRAINAGE CHANNELS																									
	Design for Pond 2 Discharge																								
	Design for Cells 1, 3, 5																								
	Construct drainage channels																								
POND 2 DISCHARGE																									
	Lime pond																								
	Prepare syphons																								
	Collect bioassay																								
	Effluent discharge																								
SOILS ABATEMENT																									
	Drop Raises into Crown Pillar																								
	Construct dump stations																								
	Soils Disposal to U/G																								
	Cover dumps with clean sand																								
DEMOLITION																									
	Mobilization																								
	TCA - As Treatment Plant																								
	TCA - Tailings line																								
	TCA - Syphons																								
	TCA - Cell 4 culvert																								
	Demobilize																								
SNP SAMPLING - WATER LICENCE																									
	SNP 925-01				A												A								
	SNP 925-10																			D	D				
	SNP 925-14						M	M											M	M	M	M			
	SNP 925-20																			W	W				
	SNP 925-21																			W	W				
	SNP 925-22																			W	W				
	SNP 925-24																			W	W				
	SNP 925-25																			W	W				
GEOTHECHNICAL MONITORING																									
	Perimeter Dam Inspection (Water Licence)							A												A					
	Thermistor Monitoring	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M			
	Water level in covered cells (wells)							M	M	M										M	M	M			
SNP 925-10 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn																								
	TSS, pH, Alk, Hard, NH_3																								
	ICP-MS Scan																								
	Acute Lethality																								
SNP 925-20 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn																								
	TSS, pH, Alk, Hard, NH_3																								
SNP 925-22 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn																								
	TSS, pH, Alk, Hard, NH_3																								
SNP 925-24 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn																								
	TSS, pH, Alk, Hard, NH_3																								
SNP 925-25 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn																								
	TSS, pH, Alk, Hard, NH_3																								

LUPIN TAILINGS CONTAINMENT AREA

RECLAMATION SCHEDULE

TASK	Sub-task	2008 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2009 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
STUDIES																									
	Pore Water Seepage Quality/Quantity																								
	EEM Field Study - Preliminary Report																								
	EEM Field Study - Final Report																								
TAILINGS COVER																									
	Cell 3																								
	Cell 5																								
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DEMOLITION																									
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	TCA - As Treatment Plant																								
	TCA - Tailings line																								
	TCA - Syphons																								
	TCA - Cell 4 culvert																								
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	SNP 925-22																								
	SNP 925-24																								
	SNP 925-25																								
GEOTHECHNICAL MONITORING																									
	Perimeter Dam Inspection (Water Licence)																								
	Thermistor Monitoring							M	M	M										M	M	M			
	Water level in covered cells (wells)							M	M	M										M	M	M			
SNP 925-10 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn							M	M	M										M	M	M			
	TSS, pH, Alk, Hard, NH_3							M	M	M										M	M	M			
	ICP-MS Scan								A												A				
	Acute Lethality								A												A				
SNP 925-20 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn							M	M	M										M	M	M			
	TSS, pH, Alk, Hard, NH_3							M	M	M										M	M	M			
SNP 925-22 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn								A												A				
	TSS, pH, Alk, Hard, NH_3								A												A				
SNP 925-24 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn								A												A				
	TSS, pH, Alk, Hard, NH_3								A												A				
SNP 925-25 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn								A												A				
	TSS, pH, Alk, Hard, NH_3								A												A				

LUPIN TAILINGS CONTAINMENT AREA

RECLAMATION SCHEDULE

TASK	Sub-task	2010 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2011 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
STUDIES																									
	Pore Water Seepage Quality/Quantity																								
	EEM Field Study - Preliminary Report																								
	EEM Field Study - Final Report																								
TAILINGS COVER																									
	Cell 3																								
	Cell 5																								
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	TCA - Cell 4 culvert																								
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	SNP 925-24																								
	SNP 925-25																								
GEOTHECHNICAL MONITORING																									
	Perimeter Dam Inspection (Water Licence)																								
	Thermistor Monitoring							M	M	M										M	M	M			
	Water level in covered cells (wells)							M	M	M										M	M	M			
SNP 925-10 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn							M	M	M										M	M	M			
	TSS, pH, Alk, Hard, NH_3							M	M	M										M	M	M			
	ICP-MS Scan								A												A				
	Acute Lethality								A												A				
SNP 925-20 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn							M	M	M										M	M	M			
	TSS, pH, Alk, Hard, NH_3							M	M	M										M	M	M			
SNP 925-22 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn								A												A				
	TSS, pH, Alk, Hard, NH_3								A												A				
SNP 925-24 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn								A												A				
	TSS, pH, Alk, Hard, NH_3								A												A				
SNP 925-25 SAMPLING - CLOSURE																									
	As, Cd, Cu, CN, Pb, Ni, Zn								A												A				
	TSS, pH, Alk, Hard, NH_3								A												A				

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES OF COVERED CELLS

Sampling Station	< (less than) Date	NWB Log No.	Analyte: / Units:	pH	TSS mg/L	Cyanide mg/L	Arsenic mg/L	Cadmium mg/L	Copper mg/L	Lead mg/L	Nickel mg/L	Zinc mg/L	Alkalinity mg/L	Hardness mg/L	Conduct. uM/cm
			Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150	0.1000	0.2000	0.400			
			Max Grab:	6.0 to 9.5	30.0	1.600	1.0000	n/a	0.300	0.2000	0.4000	0.800			
WC1-2 Cell 1	14-Sep-02	20229		3.96		0.002	0.0046	0.00295	0.312	0.0250	1.3200	0.624			
	28-Jul-03	30010					3.9700		0.224	0.1450	1.4300	0.472			
	8-Aug-04	40030				0.004	7.9300	0.00492	0.410	0.3150	2.5800	1.660			
	18-Jul-05	51051		3.36		0.026	2.1200	0.00248	0.300	0.0535	1.5500	0.783	5	548	1260
	15-Aug-05	51116		3.34		0.010	3.3900	0.00283	0.263	0.0536	1.7800	0.884	5	551	1320
WC1-4	3-Aug-02	20119		5.40	1.0	0.028	0.0084	0.00296	0.167	0.0097	1.1500	0.437	5	685	1380
Cell 1	14-Sep-02	20230		5.70		0.058	0.0035	0.00209	0.192	0.0062	0.8480	0.322			
	28-Jul-03	30012					0.0005		0.001	0.0009	0.0005	0.001			
	8-Aug-04	40034		4.98	69.0	0.034	0.0510	0.00261	0.118	0.0088	1.2300	0.383	5	658	1340
	15-Aug-05	51117		4.85		0.010	0.0464	0.00322	0.192	0.0055	1.6700	0.511	5	599	1230
WC1-5	3-Aug-02	20120		5.07	1.0	0.002	0.0121	0.00719	0.206	0.0124	3.0600	0.692	5	1140	2010
Cell 1	14-Sep-02	20231		5.02		0.004	0.0146	0.00832	0.247	0.0154	3.5100	0.911			
	28-Jul-03	30013					0.3850		0.125	0.0154	2.6100	0.472			
	28-Jul-03	30018		4.22		0.002	7.0100								
	4-Jul-04	40015		4.22		0.004	1.1200	0.00519	0.266	0.0487	4.0300	0.706	5	1410	2400
	8-Aug-04	40033		4.44	823.0	0.002	1.3700	0.00861	0.287	0.0740	4.1600	0.757	5	1700	2800
	18-Jul-05	51052		4.17		0.004	0.1730	0.00491	0.116	0.0058	3.5800	0.694	51	1440	2290
	15-Aug-05	51118		4.13		0.002	0.0473	0.00706	0.372	0.0031	3.9200	0.777	23	1790	2420
WC1-6	3-Aug-02	20121		5.76	1.0	0.080	0.0030	0.00044	0.006	0.0011	0.0222	0.046	7	167	370
Cell 1	14-Sep-02	20232		5.85		0.002	0.0037	0.00033	0.006	0.0021	0.0148	0.035			
	28-Jul-03	30014					12.2000		0.182	0.3340	0.1340	0.204			
	28-Jul-03	30019		5.84		0.002	5.3200								
	4-Jul-04	40017		5.23		0.004	4.1800	0.00062	0.066	0.0923	0.0494	0.068	5	214	470
	8-Aug-04	40032		5.45	3780.0	0.034	6.6500	0.00095	0.148	0.1860	0.0976	0.172	5	174	403
	18-Jul-05	51053		5.28		0.038	4.3600	0.00072	0.118	0.1080	0.0930	0.156	5	260	545
	15-Aug-05	51119		6.04		0.004	0.0806	0.00037	0.006	0.0055	0.0249	0.076	5	166	388

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES OF COVERED CELLS

Sampling Station	< (less than) Date	NWB Log No.	Analyte: / Units:	pH	TSS mg/L	Cyanide mg/L	Arsenic mg/L	Cadmium mg/L	Copper mg/L	Lead mg/L	Nickel mg/L	Zinc mg/L	Alkalinity mg/L	Hardness mg/L	Conduct. uM/cm
			Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150	0.1000	0.2000	0.400			
			Max Grab:	6.0 to 9.5	30.0	1.600	1.0000	n/a	0.300	0.2000	0.4000	0.800			
WC1-7	28-Jul-03	30015					0.6350		0.022	0.0192	0.0334	0.075			
Cell 1	28-Jul-03	30020		4.73		0.144	1.4500								
	4-Jul-04	40018		4.37		0.036	0.2020	0.00019	0.023	0.0103	0.0248	0.120	5	17.5	110
	18-Jul-05	51054		4.55		0.034	1.3400	0.00187	0.120	0.0344	0.5660	0.264	5	131	301
	15-Aug-05	51120		4.14		0.020	0.3470	0.00474	0.394	0.0101	3.8300	0.958	20	722	1430
WC1-8	3-Aug-02	20122		4.54	1.0	0.082	0.0136	0.00169	0.084	0.0059	0.7680	0.268	5	275	629
Cell 1	14-Sep-02	20233		4.93		0.002	0.0189	0.00198	0.042	0.0025	1.1100	0.298			
	28-Jul-03	30016					3.5700		0.094	0.0638	1.1200	0.270			
	28-Jul-03	30021				0.022	0.9450								
	8-Aug-04	40035		4.08	742.0	0.008	2.8100	0.00289	0.132	0.0400	1.3700	0.384	5	485	1110
	18-Jul-05	51055		4.44		0.026	1.3200	0.00235	0.083	0.0287	1.1700	0.402	48	348	740
	15-Aug-05	51121		4.14		0.008	0.2060	0.00238	0.09	0.0059	1.1000	0.397	16	355	818
Pad1-N	18-Jul-05	51049		4.74		0.020	1.2900	0.00432	0.150	0.0393	2.4800	0.950	5	820	1550
Cell 1	15-Aug-05	51114		4.88		0.034	1.0700	0.00509	0.186	0.0246	2.9300	1.110	5	865	1700
Pad1-S	4-Jul-04	40013		4.76		0.016	2.1400	0.00338	0.452	0.1300	2.0000	0.764	5	626	1200
Cell 1	18-Jul-05	51050		5.98		0.020	0.8770	0.00307	0.221	0.0338	2.0900	0.645	16	971	1610
	15-Aug-05	51115		6.96		0.022	1.1100	0.00221	0.146	0.0329	1.8100	0.607	49	1000	1790
WC3-1	18-Jul-05	51064		4.11		0.024	0.3560	0.00255	0.214	0.0068	1.2000	0.355	16	437	872
Cell 3															
	Average			**4.82**	**677.3**	**0.023**	**1.8217**	**0.00316**	**0.170**	**0.0504**	**1.5617**	**0.493**	**12**	**663**	**1232**

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 1

Sampling Station	Pond 1 < (less than) Date	NWB Log No.	Analyte: Units:	Temp °C	pH	TSS mg/L	Cyanide mg/L	Arsenic mg/L	Cadmium mg/L	Copper mg/L	Hg ug/L	Lead mg/L	Nickel mg/L	Fe mg/L	Zinc mg/L	Alkalinity mg/L	Hardness mg/L	Conduct. uM/cm
			Max Grab:		6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
			Max Avg:		6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
103	27-Jun-1994	94-139			7.75	6.3	0.451	0.6200		0.210		0.0040	0.0500		0.138	50	192	1060
	24-Jun-1997	97-105			7.28			0.0340		0.103		0.0040	0.0680		0.104	26	128	614
	6-Jul-1997	97-133			7.59	3.6	0.086	0.0690		0.091		0.0040	0.0925		0.086	45	170	828
	10-Jul-1997	97-143			7.49	3.0	0.094	0.0650		0.060		0.0040	0.0775		0.059	43	160	1016
	18-Jul-1997	97-167			7.50	1.8		0.0520		0.083		0.0040	0.0890		0.063	20	166	989
	24-Jul-1997	97-192			7.53	2.6		0.1160		0.070		0.0040	0.0788		0.058	43	164	983
	29-Jul-1997	97-217			7.62			0.0650										980
	19-Jul-2000	20038			7.28			0.0223									111	549
	19-Jul-2000	20039			7.30			0.0222									112	553
	4-Aug-2001	10025			7.15	1.0	0.187	0.0465	0.00060	0.027		0.0020	0.0730		0.077	20	147	602
	1-Sep-2001	10034			7.53			0.1340	0.00060	0.139		0.0020	0.1060		0.096	36	184	881
	8-Aug-2004	40045	shore		7.80	3.0	0.024	0.0710	0.00014	0.068		0.0007	0.0955		0.277	45	206	1210
	26-Jun-2005	51010	shore		5.82	2.0	0.032	0.0236	0.00013	0.014		0.0033	0.0732		0.191	7	156	636
	10-Sep-2005	51154	shore		7.57		0.022	0.0394	0.00001	0.033		0.0004	0.1030	0.3	0.221	25	198	1080
104	1-Feb-1991				8.03	7.4	1.750	3.2000		0.135		0.0040	0.028		0.220		204	2150
	25-Feb-1991				8.07	7.4	1.540	3.2200		0.115		0.0040	0.028		0.170		216	2500
	30-Mar-1991				7.98	5.9	1.680	3.1400		0.101		0.0040	0.020		0.172		236	2550
	23-Apr-1991				8.12	11.0	1.949	3.4800		0.109		0.0100	0.025		0.178		240	2650
	26-Jun-1991				7.92	2.2	0.211	1.2400		0.059		0.0040	0.015		0.060		88	1075
	4-Jul-1991				7.99	7.0	0.169	1.2400		0.046		0.0040	0.005		0.050		92	950
	15-Jul-1991				8.06	5.6	0.180	1.2000		0.041		0.0040	0.013		0.056		95	1000
	5-Aug-1991				7.93	2.4	0.054	1.2200		0.033		0.0040	0.010		0.020		98	1150
	5-Sep-1991				8.01	5.4	0.105	1.1200		0.090		0.0080	0.021		0.039		111	1200
	23-Oct-1991				7.90	6.4	0.068	1.2000		0.081			0.030		0.026		120	1200
	20-Nov-1991				7.76	2.8	0.059	1.2700		0.096		0.0040	0.033		0.036		138	1590
	8-Jan-1992				7.69	1.8	0.099	1.5700		0.096		0.0040	0.038		0.025		163	1890
	11-Feb-1992				7.60	0.6	0.080	1.7400		0.099		0.0040	0.048		0.030		178	2050
	11-Mar-1992				7.67	2.0	0.060	1.6400		0.096		0.0040	0.040		0.034	198	197	2190
	7-Apr-1992	196			7.60	2.0	0.072	1.5200		0.096		0.0040	0.038		0.029	209	206	2280
	23-Jun-1992				7.42	42.6	2.175	1.3200		0.683		0.0350	0.093		0.334		112	1022
	2-Jul-1992	387			7.79	10.4	3.530	1.3000		0.919		0.0040	0.126		0.390	85	102	1056
	7-Jul-1992	396			7.89	10.4	1.790	1.5600		0.971		0.0200	0.118		0.343		106	1074
	15-Jul-1992	436			7.89	9.1	1.730	1.4400		0.893		0.0040	0.145		0.323	91	104	1118
	12-Aug-1992	495			7.58	4.8	0.998	1.4800		0.565		0.0040	0.095		0.250	91	120	1305
	3-Nov-1992	612			7.63	4.4	0.223	1.0900		0.195		0.0040	0.074		0.068	105	186	1730
	23-Nov-1992	618			7.65	6.0	0.198									77	146	1804
	8-Dec-1992	620			7.71	2.6	0.223	1.1800		0.208		0.0040	0.068		0.074	108	148	1839
	8-Jan-1993	93-001			7.89	7.0	0.222	0.8200				0.0050	0.071		0.083	129	157	1281
	9-Feb-1993	93-005			7.66	4.4	0.197	1.1200		0.030		0.0050	0.083		0.065	143	160	1599
	25-Mar-1993	93-017			7.48	2.0	0.207	1.0600		0.201		0.0040	0.080		0.064	141	168	
	29-Apr-1993	93-030			7.73	3.2	0.183	1.1400		0.178		0.0040	0.071		0.061	148	172	

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 1

Pond 1		Analyte:	Temp	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Fe	Zinc	Alkalinity	Hardness	Conduct.
		Units:	°C		mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uM/cm
Sampling	< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
Station	**Date**	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	8-Jun-1993	93-053		7.80	1.1	0.172	1.2400		0.175		0.0090	0.088		0.050	11	119	1500
	26-Jun-1993	93-101		7.24	9.8	0.189	0.2200		0.064		0.0040	0.025		0.034	18	64	300
	26-Jun-1993	93-102		7.20	15.6	0.183	0.2100		0.064		0.0040	0.025		0.036	17	64	305
	10-Jul-1993	93-127		7.52	2.6	0.069	0.5600		0.101		0.0040	0.044		0.025	17	62	750
	10-Jul-1993	93-128		7.54	3.0	0.070	0.5800		0.099		0.0060	0.044		0.029	17	62	790
	28-Jul-1993	93-183		7.47	5.3	0.041	0.5600		0.076		0.0390	0.033		0.038	66	116	850
	28-Jul-1993	93-184		7.50	3.7	0.039	0.5200		0.075		0.0390	0.041		0.037	64	110	849
	27-Aug-1993	93-248		7.59	5.0	0.101	0.4950		0.079		0.0040	0.052		0.031	72	195	1009
	27-Aug-1993	93-249		7.62	4.8	0.117	0.4850		0.073		0.0080	0.054		0.027	72	192	1014
	27-Sep-1993	93-261		7.67	4.5	0.078	1.2200		0.089		0.0040	0.059		0.029	72	188	1125
	2-Nov-1993	93-284		7.62	3.2	0.085	1.1200		0.058		0.0050	0.066		0.031	58	186	1197
	1-Dec-1993	93-295		7.48	3.8	0.058	1.0400		0.075		0.0080	0.063		0.023	82	212	1284
	2-Jan-1994	94-004		7.64	9.0	0.066	1.0350		0.074		<0.004	0.055		0.029	86	218	1202
	6-Feb-1994	94-020		7.69	6.4	0.068	1.2200		0.058		0.0040	0.064		0.023	91	224	1169
	29-Mar-1994	94-056		7.56	7.8	0.073	1.2000		0.045		0.0050	0.046		0.031	91	256	1378
	5-May-1994	94-068		7.30	4.8	0.067	1.2000		0.061		0.0050	0.059		0.034	110	254	1550
	27-Jun-1994	94-135		7.32	8.5	0.584	0.6700		0.215		0.0060	0.053		0.133	65	189	1050
	5-Jul-1994	94-153		7.54	3.6		0.7200		0.224		0.0100	0.065		0.201	60	198	1075
	12-Jul-1994	94-177		7.72		0.259	0.7600		0.125		0.0050	0.063		0.084	260	256	1077
	19-Jul-1994	94-200		7.61	1.8	0.236	0.5500		0.148		0.0050	0.070		0.108	58	208	1100
	27-Jul-1994	94-227		7.24	2.1	0.175	0.4000		0.131		0.0040	0.060		0.085	55	200	1118
	17-Aug-1994	94-249		7.46	16.0	0.096			0.111		0.0060	0.071		0.173	55	209	1158
	28-Sep-1994	94-280		7.51	1.9	0.078	0.6400		0.110		0.0040	0.073		0.166	109	269	1296
	17-Nov-1994	94-288		7.65	2.0	0.116	0.9100		0.121		0.0060	0.100		0.201	107	228	1471
	22-Dec-1994	94-298		7.39	1.6	0.113	0.9400		0.126		0.0040	0.111		0.153	116	238	1647
	26-Jan-1995	95-002		7.52	0.6	0.117	0.9300		0.133		0.0090	0.113		0.160	120	277	1633
	28-Feb-1995	95-012		7.32	1.4	0.124	0.9400		0.135		0.0040	0.120		0.189	116	272	1791
	29-Mar-1995	95-032		7.26	1.6	0.118	0.9000		0.193		0.0060	0.125		0.236	106	294	1923
	19-Apr-1995	95-041		7.44	2.4	0.106	0.8100		0.150		0.0140	0.126		0.228	146	304	1942
	25-May-1995	95-058		7.17	2.0	0.100	1.0300		0.156		0.0040	0.129		0.193	38	327	1919
	8-Jul-1995	95-120		7.51	5.0	0.230	0.4300		0.194		0.0060	0.073		0.224	61	210	1023
	14-Jul-1995	95-132		7.30	10.7	0.168	0.4000		0.204		0.0040	0.073		0.216	57	255	1110
	30-Jul-1995	95-176		7.61	9.8	0.090	0.2200		0.129		0.0040	0.086		0.195	51	260	1140
	10-Aug-1995	95-209		7.19	6.9	0.267	0.3100		0.123		0.0040	0.084		0.188	56	252	1155
	14-Sep-1995	95-241		7.23	4.8	0.239	0.8700		0.424		0.0040	0.153		0.481	51	257	1394
	1-Nov-1995	95-248		7.77	3.2	0.174	0.8200		0.418		0.0040	0.163		0.423	62	242	1406
	2-Dec-1995	95-271		7.71	3.8	0.338	0.6300		0.330		0.0080	0.154		0.334	89	263	1552
	12-Jan-1996	96002		7.37	2.6	0.259	0.7500		0.408		0.0040	0.158		0.330	94	256	1610
	24-Feb-1996	96025		7.46	1.8	0.270	0.7100		0.351		0.0050	0.163		0.295		253	1542
	26-Jun-1996	96089		7.25	6.4	0.650			0.260		0.0040	0.060		0.140		94	661
	3-Jul-1996	96108		7.25	10.0	0.339	0.0775		0.248		0.0040	0.076		0.184		111	719
	10-Jul-1996	96127		7.49	6.0	0.416	0.1800		0.255		0.0040	0.084		0.220		132	906
	17-Jul-1996	96148		7.20	5.4	0.322	0.1500		0.251		0.0040	0.089		0.176		308	720
	24-Jul-1996	96174		7.34	3.0	0.167	0.1850		0.225		0.0040	0.091		0.193		336	1068
	30-Jul-1996	96198		7.32	3.6	0.206	0.2400		0.200		0.0040	0.098		0.180		197	1051
	8-Aug-1996	96223		7.37	0.6				0.133		0.0040	0.075		0.136	54	198	1223

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 1

Pond 1		Analyte:	Temp	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Fe	Zinc	Alkalinity	Hardness	Conduct.
		Units:	°C		mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uM/cm
Sampling	< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
Station	**Date**	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	16-Aug-1996	96240		7.65		0.197			0.193		0.0040	0.098		0.142			1278
	17-Aug-1996	96242		7.62					0.151		0.0040	0.079		0.100			1266
	25-Aug-1996	96253		7.80	7.6		0.5750		0.261		0.0040	0.113		0.148	78	250	1285
	29-Aug-1996	96256		7.74	3.2	0.151	0.5691		0.280		0.0040	0.111		0.135	86	265	1286
	7-Sep-1996	96267		7.36	5.0	0.300	0.3800		0.280		0.0040	0.115		0.220	63	260	1243
	19-Oct-1996	96284		7.47	2.6	0.270	0.1799		0.185		0.0000	0.113		0.179	57	244	1230
	17-Nov-1996	96293		7.44	2.2	0.257	0.1120		0.088		0.0000	0.128		0.069	59	223	1337
	9-Feb-1997	97-002		7.19		0.368	0.0818		0.164		0.0040	0.130		0.158	73	258	1610
	21-Feb-1997	97-014		7.12		0.138	0.0928		0.160		0.0040	0.138		0.149	74	305	1574
	7-Apr-1997	97-026		7.27	4.0	0.065	0.0880		0.117		0.0063	0.125		0.089	79	240	1650
	6-May-1997	97-040		7.25	2.3	0.209	0.1240		0.154		0.0063	0.154		0.121	55	270	1641
	27-May-1997	97-055		7.30			0.1250		0.124		0.0040	0.119		0.138		215	1123
	6-Jun-1997	97-066		6.84			0.0540		0.025		0.0040	0.026		0.049			209
	15-Jun-1997	97-092		7.03	2.0		0.0130		0.015		0.0040	0.040		0.107	12		618
	17-Jun-1997	97-097	shore	7.20	2.4				0.024		0.0080	0.059		0.106	20	5	813
	24-Jun-1997	97-104		7.42			0.0790		0.118		0.0040	0.086		0.100	40	162	856
	6-Jul-1997	97-134		7.59	4.0		0.0650		0.094		0.0040	0.091		0.089	45	170	827
	10-Jul-1997	97-144		7.50	3.6	0.068	0.0870		0.064		0.0040	0.079		0.065	45	164	1002
	18-Jul-1997	97-168		7.51	3.4		0.0540		0.080		0.0040	0.079		0.065	45	166	968
	24-Jul-1997	97-193		7.62	2.6		0.1040		0.065		0.0040	0.081		0.054	40	165	996
	29-Jul-1997	97-218		7.62			0.0700										972
	7-Jul-1998	98009					0.3590	0.00050	0.044		0.0030	0.094		0.051			
	5-Oct-1998	98025				0.022	0.3020	0.00050	0.065		0.0020	0.111		0.125			
	28-Mar-1999	99003			2.0	0.045	0.2150	0.00050	0.068		0.0020	0.140		0.172			
	25-Jul-1999	99014					0.0989	0.00050	0.029		0.0020	0.096		0.108			
	5-Sep-1999	99023		7.18		0.020	0.0900	0.00050	0.030		0.0210	0.116		0.136			825
	2-Mar-2000	20002		6.94			0.0300	0.00060	0.038		0.0040	0.137		0.230			
	25-Apr-2000	20005		6.92			0.0400	0.00060	0.038		0.0040	0.148		0.241			
	19-Jul-2000	20040					0.0227										
	19-Jul-2000	20041					0.0132										
	21-Jul-2000	20044		7.08		0.058	0.0203	0.00060	0.017		0.0020	0.066		0.001		117	566
	9-Nov-2000	20175				1.030	0.0900	0.00060	0.068		0.0030	0.104		0.109			
	12-Apr-2001	10002		7.05		0.288	0.1110	0.00060	0.066		0.0020	0.122		0.123	38	285	1220
	4-Aug-2001	10026		7.18	1.0	0.183	0.0469	0.00060	0.026		0.0020	0.080		0.085	22	147	599
	1-Sep-2001	10035		7.56		1.870	0.1340	0.00060	0.135		0.0020	0.104		0.097	35	186	851
	3-Feb-2002	20002		7.48		0.680	0.0876	0.00060	0.051		0.0020	0.117		0.092	52		1210
	4-Feb-2002	20004		8.50			0.0781	0.00060	0.045		0.0020	0.106		0.056			
	12-Apr-2002	20006		7.14	1.0	0.270	0.0919	0.00050	0.045		0.0050	0.123		0.084	54		1310
	5-Jul-2002	20023		7.53	1.0	0.390	0.0932	0.00004	0.030		0.0026	0.067		0.051	46	176	901
	5-Jul-2002	20027		7.54	1.0	0.270	0.1000	0.00007	0.032		0.0033	0.071		0.063	45	176	901
	16-Jul-2002	20065		7.58	1.0	0.024	0.0933	0.00005	0.028		0.0018	0.068		0.052	40	200	867
	16-Jul-2002	20066		7.51	1.0	0.022	0.0939	0.00005	0.028		0.0018	0.066		0.052	42	201	866
	16-Jul-2002	20067		7.51	1.0	0.022	0.0928	0.00004	0.028		0.0018	0.066		0.057	44	201	877

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 1

Pond 1		Analyte:	Temp	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Fe	Zinc	Alkalinity	Hardness	Conduct.
		Units:	°C		mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uM/cm
Sampling	< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
Station	**Date**	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	24-Jul-2002	20087		7.56	1.0	0.022	0.0891	0.00005	0.025		0.0017	0.070		0.050	37	180	892
	24-Jul-2002	20088		7.55	1.0	0.022	0.0896	0.00005	0.025		0.0016	0.069		0.052	42	184	896
	24-Jul-2002	20089		7.56	1.0	0.022	0.0921	0.00005	0.026		0.0019	0.070		0.056	37	184	892
	8-Aug-2002	20140		7.43	1.0	0.022	0.0851	0.00006	0.026		0.0069	0.079		0.093	36	188	904
	12-Oct-2003	30031		7.60	2.0	0.026	0.0583	0.00014	0.027		0.0006	0.098		0.064			
	13-Jul-2004	40025	shore	7.65		0.720	0.0726	0.00015	0.150		0.0007	0.085		0.284	36	164	971
	8-Aug-2004	40046	shore	7.77	3.0	0.110	0.0666	0.00013	0.070		0.0006	0.091		0.262	47	207	1210
	26-Jun-2005	51008	shore	7.16	11.0	0.530	0.0506	0.00010	0.071		0.0015	0.072		0.189	21	120	653
	10-Sep-2005	51155	shore	7.46		0.020	0.0329	0.00010	0.030		0.0003	0.104	0.200	0.221	24	201	1080
	Average	**Pond 1**		**7.50**	**4.6**	**0.332**	**0.5929**	**0.00032**	**0.141**		**0.0051**	**0.082**	**0.250**	**0.128**	**66**	**187**	**1185**

Sample Station Locations:

103 Pond 1, south end, off Dam 3D
7289472N
487943E

104 Pond 1, by J Dam syphon intake
7289490N
487400E

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 2

Sampling Station	Pond 2 Date	NWB Log No.	Analyte:	Temp	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Fe	Zinc	Alkalinity	Hardness	Conduct.
			Units:	°C		mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm
	< (less than)		Max Grab:		6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
			Max Avg:		6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
101	2-Jul-1992	384			6.56	0.8	0.008	0.0140		0.013		0.0040	0.061		0.203	5	102	687
	7-Jul-1992	393			6.52	2.0	0.005	0.0105		0.046		0.0040	0.081		0.334		140	966
	27-Jul-1992	465			6.61	1.4	0.022	0.0200		0.032		0.0040	0.096		0.353		157	1090
	12-Aug-1992	492			7.03	0.8	0.012	0.0330		0.024		0.0040	0.090		0.290		126	1168
	19-Aug-1992	512			7.20	1.8	0.016	0.0395		0.013		0.0040	0.089		0.269	11	163	1168
	30-Aug-1994	94-271			6.94	4.4	0.005	0.1430		0.004		0.0040	0.060		0.165	15	208	970
	8-Aug-2004	40043	shore		7.13	7.0		0.0348	0.00021	0.019		0.0005	0.091		0.218	9	224	934
102	1-Feb-1991				6.46	2.2	0.030	0.2500		0.042		0.0040	0.095		0.230		232	1600
	25-Feb-1991				6.48	1.2	0.026	0.2580		0.045		0.0040	0.110		0.262		252	1900
	23-Apr-1991				6.27	1.4	0.032	0.2140		0.055		0.0040	0.122		0.292		286	2100
	26-Jun-1991				6.65	1.8	0.020	0.0940		0.026		0.0040	0.060		0.183		130	1000
	4-Jul-1991				6.93	2.4	0.016	0.0990		0.024		0.0040	0.053		0.173		136	920
	15-Jul-1991				6.89	3.4	0.010	0.1120		0.031		0.0040	0.075		0.204		138	910
	5-Aug-1991				5.86	2.6	0.010	0.1460		0.054		0.0040	0.078		0.245		140	1000
	5-Sep-1991				6.14	1.6	0.011	0.0900		0.060		0.0040	0.096		0.296		142	1110
	23-Oct-1991				5.07	0.8	0.014	0.0740		0.099			0.095		0.389		158	1120
	20-Nov-1991				4.66	1.2	0.005	0.0520		0.144		0.0040	0.118		0.529		186	1450
	8-Jan-1992				4.46	0.4	0.021	0.0440		0.176		0.0040	0.155		0.688		223	1730
	11-Feb-1992				4.40	0.4	0.018	0.0380		0.201		0.0040	0.205		0.823		256	1940
	11-Mar-1992				4.36	1.0	0.014	0.0340		0.216		0.0040	0.213		1.034		270	2020
	7-Apr-1992	195			4.33	0.4	0.014	0.0320		0.184		0.0040	0.195		0.949		292	2160
	7-May-1992	207			4.18	0.8	0.021	0.0360		0.249		0.0040	0.275		1.229		300	1890
	2-Jul-1992	385			6.77	0.8	0.007	0.0090		0.012		0.0040	0.059		0.198	6	104	688
	7-Jul-1992	394			6.62	0.9	0.034	0.0100		0.038		0.0040	0.084		0.331		138	947
	7-Jul-1992	395			6.66	0.6	0.038	0.0090		0.039		0.0040	0.084		0.334		138	942
	15-Jul-1992	434			6.62	1.0	0.010	0.0160		0.034		0.0040	0.100		0.366		148	1046
	15-Jul-1992	435			6.64	0.8	0.009	0.0150		0.039		0.0040	0.105		0.374		149	1043
	27-Jul-1992	466			6.65	1.4	0.023	0.0170		0.036		0.0040	0.093		0.370		155	1097
	27-Jul-1992	467			6.66	1.0	0.012	0.0180		0.034		0.0040	0.096		0.358		154	1095
	12-Aug-1992	493			7.02	0.8	0.037	0.0270		0.021		0.0040	0.088		0.298		160	1162
	12-Aug-1992	494			7.01	0.6	0.021	0.0280		0.023		0.0040	0.085		0.295	17	160	1155
	19-Aug-1992	513			7.06	1.4	0.070	0.0300		0.009		0.0040	0.089		0.284	11	162	1163
	19-Aug-1992	514			7.01	1.0	0.100	0.0290		0.009		0.0040	0.091		0.314	11	164	1161
	3-Nov-1992	611			6.71	1.2	0.020	0.0270		0.030		0.0040	0.091		0.323	10	187	1498
	8-Dec-1992	619			6.77	1.3	0.001	0.0360		0.015		0.0040	0.100		0.336	12	201	1590
	9-Feb-1993	93-004			6.37	3.4	0.013	0.0250				0.0040	0.120		0.365	18	212	1596
	25-Mar-1993	93-016			6.02	3.8	0.007	0.0080		0.044		0.0040	0.138		0.421	4	216	
	29-Apr-1993	93-029			6.33	5.2	0.027	0.0325		0.035		0.0040	0.134		0.469	7	271	
	8-Jun-1993	93-052			6.24	0.9	0.020	0.0360		0.030		0.0040	0.145			11	262	1200
	26-Jun-1993	93-100			6.90	3.8	0.028	0.0300		0.006		0.0040	0.040		0.121	18	98	445
	1-Jul-1993	93-112			7.04	1.3	0.020	0.0275		0.011		0.0050	0.053		0.146	16	110	455
	1-Jul-1993	93-113			6.30	6.0	0.019	0.0430		0.001		0.0050	0.110		0.351	13	211	910
	10-Jul-1993	93-125			7.02	0.8	0.038	0.0285		0.016		0.0050	0.071		0.204	20	132	850
	10-Jul-1993	93-126			6.96	1.6	0.041	0.0265		0.016		0.0050	0.071		0.204	15	198	820

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 2

Pond 2		Analyte:	Temp	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Fe	Zinc	Alkalinity	Hardness	Conduct.
		Units:	°C		mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm
Sampling	< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
Station	**Date**	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	28-Jul-1993	93-181		6.94	1.8	0.035	0.0580		0.006		0.0080	0.075		0.221	12	160	911
	28-Jul-1993	93-182		6.85	39.0	0.054	0.0280		0.020		0.0450	0.077		0.256	11	160	908
	27-Aug-1993	93-246		7.08	1.3	0.013	0.0520		0.001		0.0040	0.059		0.174	20	174	858
	27-Aug-1993	93-247		7.12	1.6	0.012	0.0520		0.001		0.0040	0.060		0.177	18	173	863
	27-Sep-1993	93-260		6.58	3.9	0.015	0.2880		0.005		0.0040	0.060		0.166	11	171	914
	2-Nov-1993	93-283		6.51	4.8	0.025	0.1500		0.001		0.0050	0.074		0.224	10	189	1067
	1-Dec-1993	93-294		6.11	1.8	0.024	0.1190		0.023		0.0050	0.085		0.274	7	202	1187
	2-Jan-1994	94-003		6.05	8.8	0.024	0.1227		0.024		0.0040	0.078		0.311	7	219	1056
	6-Feb-1994	94-019		6.17	4.9	0.041	0.1580		0.015		0.0040	0.089		0.303	9	212	1102
	29-Mar-1994	94-055		5.95	3.6	0.045	0.1280		0.023		0.0040	0.076		0.364	5	272	1211
	5-May-1994	94-067		5.43	2.0	0.023	0.1140		0.029		0.0050	0.096		0.299	35	27	1383
	27-Jun-1994	94-134		6.41	6.4	0.014	0.0420		0.007		0.0090	0.053		0.213	20	157	869
	27-Jun-1994	94-140		6.82	4.8	0.005	0.0410		0.005		0.0040	0.045		0.173	23	175	870
	5-Jul-1994	94-152		7.07	10.0		0.0430		0.009		0.0100	0.055		0.186		175	892
	12-Jul-1994	94-175		7.15		0.024	0.0510		0.005		0.0040	0.063		0.201	5	192	873
	12-Jul-1994	94-176		7.09		0.005	0.0540		0.005		0.0050	0.065		0.251	40	182	890
	19-Jul-1994	94-198		6.56	4.4	0.011	0.0560		0.008		0.0080	0.065		0.240	5	187	898
	19-Jul-1994	94-199		6.82	1.6	0.011	0.0380		0.008		0.0040	0.065		0.223	5	190	902
	27-Jul-1994	94-225		6.14	2.2	0.005	0.0450		0.011		0.0050	0.060		0.250	5	183	902
	27-Jul-1994	94-226		6.24	1.4	0.005	0.0390		0.009		0.0040	0.063		0.250	5	181	904
	17-Aug-1994	94-248		6.66	5.3	0.018	0.0490		0.011		0.0040	0.061		0.205	10	200	978
	17-Aug-1994	94-249		7.02	0.2	0.008	0.0410		0.009		0.0040	0.064		0.190	10	202	985
	30-Aug-1994	94-266		6.75	2.8	0.025	0.0440		0.001		0.0050	0.063		0.165	20	208	957
	28-Sep-1994	94-279		6.84	1.6	0.024	0.0400		0.008		0.0040	0.053		0.186	24	214	1042
	17-Nov-1994	94-287		6.68	0.2	0.015	0.0290		0.010		0.0050	0.080		0.241	6	236	1107
	22-Dec-1994	94-297		6.13	0.4	0.017	0.0295		0.026		0.0040	0.098		0.303	6	241	1241
	26-Jan-1995	95-001		5.71	3.2	0.015	0.0290		0.034		0.0040	0.104		0.370	3	238	1252
	28-Feb-1995	95-011		5.59	1.8	0.024	0.0345		0.043		0.0040	0.133		0.444	4	265	1484
	29-Mar-1995	95-031		4.67	1.4	0.022	0.0375		0.043		0.0040	0.130		0.471	4	346	1568
	19-Apr-1995	95-040		4.83	1.4	0.023	0.0455		0.046		0.0080	0.138		0.530	3	354	1612
	25-May-1995	95-057		5.08	2.2	0.017	0.0200		0.045		0.0040	0.138		0.508	5	361	1471
	8-Jul-1995	95-119		6.76	1.2	0.022	0.0180		0.013		0.0050	0.064		0.236	10	261	915
	8-Jul-1995	95-124		6.79	1.8	0.023	0.0180		0.013		0.0080	0.068		0.240	9	255	913
	14-Jul-1995	95-131		6.78	1.2	0.039	0.0090		0.020		0.0050	0.069		0.230	9	260	927
	14-Jul-1995	95-136		6.77	0.8	0.030	0.0100		0.011		0.0050	0.075		0.226	9	266	932
	30-Jul-1995	95-175		6.39	1.4	0.027	0.0095		0.014		0.0040	0.094		0.205	9	306	904
	30-Jul-1995	95-180		6.40	1.6	0.024	0.0080		0.011		0.0040	0.066		0.298	9	294	889
	10-Aug-1995	95-208		6.53	0.8	0.022	0.0110		0.013		0.0040	0.069		0.269	8	293	966
	10-Aug-1995	95-213		6.54	1.0	0.023	0.0135		0.013		0.0040	0.073		0.268	8	279	947
	14-Sep-1995	95-240		6.55	1.2	0.020	0.0185		0.010		0.0040	0.083		0.230	8	281	998
	14-Sep-1995	95-245		6.53	0.8	0.023	0.0215		0.009		0.0040	0.080		0.236	8	280	1003
	1-Nov-1995	95-247		6.26	0.8	0.037	0.0220		0.014		0.0040	0.093		0.220	9	269	1050
	2-Dec-1995	95-270		5.66	1.4	0.046	0.0080		0.023		0.0050	0.111		0.359	5	276	1207
	12-Jan-1996	96001		5.38	1.6	0.011	0.0195		0.030		0.0040	0.116		0.381	4	265	1282
	24-Feb-1996	96024		5.40	1.0	0.013	0.0270		0.038		0.0040	0.135		0.440		249	1304
	24-Mar-1996	96033				0.010											

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 2

Pond 2		Analyte:	Temp	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Fe	Zinc	Alkalinity	Hardness	Conduct.
		Units:	°C		mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm
Sampling	< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
Station	**Date**	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	26-Jun-1996	96088		6.35	1.8	0.014	0.0066		0.013		0.0040	0.071		0.235		205	947
	26-Jun-1996	96093		6.50	1.2	0.009			0.013		0.0040	0.066		0.213		189	891
	3-Jul-1996	96107		7.05	0.4	0.025	0.0082		0.013		0.0040	0.064		0.186		182	888
	3-Jul-1996	96112		6.96	0.2	0.032	0.0073		0.011		0.0040	0.063		0.195		186	900
	10-Jul-1996	96126		7.23	0.8	0.017	0.0072		0.005		0.0040	0.071		0.218		200	1005
	10-Jul-1996	96131		6.95	0.2	0.014	0.0062		0.005		0.0040	0.070		0.213		208	990
	17-Jul-1996	96147		6.54	0.4	0.013	0.0122		0.002		0.0040	0.007		0.191		212	941
	17-Jul-1996	96153		6.62	0.6	0.014	0.0122		0.013		0.0040	0.068		0.255		212	971
	24-Jul-1996	96173		6.52	0.4	0.005	0.0081		0.010		0.0040	0.076		0.264		221	1007
	24-Jul-1996	96179		6.53	0.2	0.014	0.0078		0.005		0.0040	0.074		0.258		227	1020
	30-Jul-1996	96197		6.20	0.8	0.021	0.0086		0.002		0.0040	0.079		0.250		221	1022
	30-Jul-1996	96203		6.24	1.0	0.023	0.0088		0.005		0.0040	0.083		0.258		223	1023
	9-Aug-1996	96224		6.20	0.5	0.009			0.002		0.0040	0.065		0.260	4	226	1055
	29-Aug-1996	96255		7.39	0.8	0.006	0.0070		0.008		0.0040	0.065		0.123	24	221	1080
	29-Aug-1996	96261		7.41	1.0	0.007	0.0077		0.008		0.0040	0.058		0.118	24	231	1086
	7-Sep-1996	96266		7.08	0.6	0.000	0.0068		0.009		0.0040	0.065		0.130	15	216	1067
	7-Sep-1996	96272		6.81	0.2	0.001	0.0073		0.008		0.0040	0.065		0.118	12	216	1073
	19-Oct-1996	96283		6.52	0.2	0.020	0.0124		0.002		0.0000	0.059		0.116	13	244	1121
	17-Nov-1996	96292		6.49	0.4	0.019	0.0060		0.010		0.0000	0.074		0.149	5	247	1206
	9-Feb-1997	97-001		6.50		0.020	0.0038		0.011		0.0040	0.089		0.225	9	296	1439
	21-Feb-1997	97-013		5.76		0.021	0.0035		0.112		0.0040	0.094		0.236	12	252	1471
	7-Apr-1997	97-025		5.76		0.023	0.0093		0.031		0.0100	0.113		0.268	9	330	1564
	6-May-1997	97-039		5.88	2.5	0.025	0.0058		0.028		0.0038	0.114		0.260	10	341	1574
	15-Jun-1997	97-093		7.10	1.6		0.0210		0.007		0.0040	0.025		0.083	4		331
	17-Jun-1997	97-098	shore	6.98	1.6		0.0250		0.015		0.0040	0.050		0.114	15	2	686
	28-Jun-1997	97-113		7.10	1.6		0.0090		0.013		0.0040	0.075		0.153		227	1080
	28-Jun-1997	97-114		6.97	2.2		0.0104		0.008		0.0040	0.074		0.164		227	1050
	6-Jul-1997	97-135		7.19	15.4	0.014	0.0115		0.016		0.0040	0.073		0.154	17	225	912
	6-Jul-1997	97-139		7.15	0.8	0.014	0.0068		0.013		0.0040	0.073		0.171	16	226	929
	10-Jul-1997	97-142		7.24	0.4	0.019	0.0130		0.009		0.0040	0.063		0.130	13	230	1129
	10-Jul-1997	97-148		7.15	1.0	0.020	0.0130		0.006		0.0040	0.064		0.126	16	228	1112
	18-Jul-1997	97-165		6.96	1.0		0.0130		0.013		0.0040	0.078		0.153	13	234	1079
	18-Jul-1997	97-166		6.98	1.2		0.0160		0.010		0.0040	0.070		0.150	15	225	1078
	24-Jul-1997	97-190		7.04	0.8		0.0108		0.008		0.0040	0.071		0.136	10	229	1078
	24-Jul-1997	97-191		7.04	1.0		0.0088		0.010		0.0040	0.071		0.111	9	230	1085
	29-Jul-1997	97-216		7.07			0.0154										1069
	14-Apr-1998	98002		4.56	1.0	0.006		0.00170	0.092		0.0070	0.234		0.532			
	7-Jul-1998	98008					0.0099	0.00050	0.011		0.0020	0.103		0.225			
	5-Oct-1998	98024				0.061	0.0128	0.00220	0.040		0.0020	0.121		0.291			
	28-Mar-1999	99002			1.0	0.052	0.0114	0.00070	0.054		0.0020	0.183		0.500			
	25-Jul-1999	99013					0.0037	0.00050	0.026		0.0020	0.121		0.318			
	5-Sep-1999	99022		6.56		0.028	0.0100	0.00050	0.005		0.0060	0.111		0.278			883
	2-Mar-2000	20001		5.14			0.0033	0.00060	0.027		0.0040	0.167		0.449			
	25-Apr-2000	20006		6.46			0.0100	0.00110	0.008		0.0050	0.081		0.396			
	7-Jul-2000	20017				0.014	0.0047	0.00060	0.007		0.0020	0.110		0.245			

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 2

Sampling Station	Pond 2 Date	NWB Log No.	Analyte: / Units:	Temp °C	pH	TSS mg/L	Cyanide mg/L	Arsenic mg/L	Cadmium mg/L	Copper mg/L	Hg ug/L	Lead mg/L	Nickel mg/L	Fe mg/L	Zinc mg/L	Alkalinity mg/L	Hardness mg/L	Conduct. uS/cm
	< (less than)		Max Grab:		6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
	Date	**Log No.**	Max Avg:		6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	9-Nov-2000	20174					0.012	0.0065	0.00060	0.023		0.0030	0.128		0.326			
	12-Apr-2001	10001			4.97		0.006	0.0143	0.00060	0.023		0.0020	0.179		0.496	5	349	1290
	4-Aug-2001	10024			6.48	1.0	0.173	0.0066	0.00060	0.010		0.0020	0.109		0.248	10	229	814
	1-Sep-2001	10033			6.71		0.087	0.0087	0.00060	0.010		0.0020	0.109		0.243	6	215	821
	3-Feb-2002	20001			5.68		0.058	0.0060	0.00060	0.019		0.0020	0.144		0.353	8		1110
	4-Feb-2002	20003			8.50			0.0064	0.00060	0.017		0.0020	0.131		0.253			
	12-Apr-2002	20005			5.37	1.0	0.018	0.0073	0.00050	0.024		0.0020	0.163		0.378	5		1200
	5-Jul-2002	20020			7.08	2.0	0.078	0.0076	0.00022	0.008		0.0004	0.884		0.203	12	217	835
	5-Jul-2002	20024			7.05	1.0	0.082	0.0074	0.00021	0.008		0.0005	0.084		0.020	11	220	841
	8-Jul-2002	20029			7.34	1.0	0.084	0.0072	0.00019	0.008		0.0005	0.084		0.203	36	217	836
	16-Jul-2002	20056			1.45	1.0	0.002	0.0074	0.00020	0.010		0.0002	0.081		0.195	5	247	15800
	16-Jul-2002	20057			7.38	1.0	0.002	0.0073	0.00021	0.007		0.0002	0.080		0.195	12	252	815
	16-Jul-2002	20058			6.93	1.0	0.002	0.0074	0.00023	0.008		0.0002	0.080		0.198	12	236	807
	12-Oct-2003	30030	shore		6.56	2.0	0.018	0.0619	0.00019	0.007		0.0010	0.091		0.178			
	13-Jul-2004	40022	shore		7.17		0.250	0.0136	0.00022	0.027		0.0002	0.0809		0.186	14	203	834
	8-Aug-2004	40044	shore		7.29	2.0	0.180	0.0132	0.00020	0.018		0.0002	0.0831		0.207	12	221	924
	26-Jun-2005	51011	shore		5.57	2.0	0.030	0.0285	0.00015	0.016		0.0018	0.0859		0.229	6	185	740
	29-Jun-2005	51024	shore			2.0		0.0185	0.00013	0.015	0.05	0.0019	0.0820		0.211			
	12-Aug-2005	51111	shore		5.71	3.0	0.026	0.0096	0.00014	0.014		0.0004	0.0991	0.2	0.265	5	211	879
	14-Aug-2005	51112	shore		7.06	3.0	0.002	0.0159	0.00001	0.018		0.0007	0.0990	0.8	0.254	9	208	947
	15-Aug-2005	51113	shore		5.50	3.0	0.024	0.0136	0.00021	0.015		0.0007	0.0931	0.4	0.258	5	212	875
	16-Aug-2005	51122	shore		5.22	11.0	0.028	0.0138	0.00017	0.015		0.0006	0.0988	0.3	0.260	5	216	881
	17-Aug-2005	51130	shore		5.47	3.0	0.030	0.0096	0.00015	0.015		0.0006	0.1020	0.2	0.273	5	215	888
	18-Aug-2005	51131	shore		5.54		0.038	0.0092	0.00015	0.015		0.0004	0.1040	0.2	0.275	5	214	842
	19-Aug-2005	51132	shore		5.50		0.040	0.0088	0.00017	0.015		0.0004	0.1030	0.2	0.265	5	212	844
	20-Aug-2005	51133	shore		5.54		0.046	0.0091	0.00015	0.015		0.0004	0.1030	0.2	0.267	5	217	847
	21-Aug-2005	51134	shore		5.90		0.040	0.0040	0.00012	0.013		0.0001	0.1010	0.1	0.258	5	217	860
	22-Aug-2005	51135	shore		5.90		0.036	0.0051	0.00012	0.013		0.0002	0.1030	0.1	0.272	5	215	868
	23-Aug-2005	51136	shore		5.91		0.040	0.0042	0.00013	0.013		0.0001	0.1020	0.1	0.264	5	217	865
	24-Aug-2005	51142	shore		5.95		0.042	0.0082	0.00011	0.014		0.0005	0.1080	0.2	0.256	5	217	872
	26-Aug-2005	51144	shore		6.42	3.0	0.044	0.0094	0.00013	0.013		0.0005	0.1020	0.1	0.263	5	218	917
	28-Aug-2005	51145	shore		6.23	22.0	0.040	0.0582	0.00010	0.016		0.0013	0.1030	0.7	0.270	5	216	926
	30-Aug-2005	51146	shore		6.10	6.0	0.032	0.0100	0.00022	0.015		0.0015	0.1040	0.1	0.272	7	215	935
	1-Sep-2005	51147	shore		6.19	2.0	0.024	0.0078	0.00008	0.012		0.0002	0.0970	0.1	0.270	5	210	912
	3-Sep-2005	51151	shore		6.03	3.0	0.024	0.0072	0.00008	0.013		0.0003	0.0968	0.1	0.268	5	208	911
	5-Sep-2005	51152	shore		6.00	3.0	0.024	0.0071	0.00008	0.013		0.0002	0.0962	0.1	0.265	5	207	911
105	8-Jan-1992				4.98	0.6	0.015	0.0430		0.161		0.0040	0.135		0.585		216	1678
	11-Feb-1992				5.00	7.8	0.029	0.1500		0.186		0.0040	0.163		0.678		238	1823
	11-Mar-1992				5.10	0.8	0.016	0.1300		0.191		0.0040	0.160		0.829		254	1953
	2-Jul-1992	388			6.70	2.9	0.015	0.0235		0.032		0.0040	0.067		0.210	7	108	735
	7-Jul-1992	397			6.88	3.6	0.048	0.0400		0.117		0.0040	0.086		0.279		144	967
	15-Jul-1992	437			6.56	1.6	0.045	0.0220		0.053		0.0040	0.098		0.369		157	1086
	12-Aug-1992	496			7.89	1.6	0.037	0.1480		0.033		0.0040	0.065		0.163		156	1192

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 2

Pond 2		Analyte:	Temp	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Fe	Zinc	Alkalinity	Hardness	Conduct.
		Units:	°C		mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm
Sampling	< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
Station	**Date**	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	19-Aug-1992	515		8.80	15.3	0.810	0.3680		0.148		0.0040	0.056		0.144	70	171	1283
	3-Nov-1992	613		6.84	1.4	0.017	0.0310		0.010		0.0040	0.096		0.286	20	134	1470
	8-Dec-1992	621		6.80	2.3	0.015	0.0440		0.015		0.0040	0.095		0.321	15	199	1572
	8-Jan-1993	93-002		6.69	1.3	0.014	0.0300		0.205		0.0040	0.101		0.375	39	214	1084
	9-Feb-1993	93-006		6.70	6.6	0.019	0.0330		0.021		0.0040	0.095		0.360	24	221	1599
	25-Mar-1993	93-018		6.35	2.6	0.010	0.0000		0.031		0.0040	0.113		0.346	18	217	
	29-Apr-1993	93-031		6.88	4.0	0.011	0.0380		0.030		0.0040	0.114		0.419	21	269	
	8-Jun-1993	93-054		6.42	3.1	0.016	0.0490		0.028		0.0040	0.128		0.400	96	252	1200
	26-Jun-1993	93-103		7.32	2.4	0.020	0.0340		0.009		0.0040	0.043		0.124	23	105	480
	1-Jul-1993	93-114		6.85	1.1	0.023	0.0280		0.011		0.0040	0.060		0.181	21	134	600
	10-Jul-1993	93-129		7.09	2.0	0.009	0.0310		0.011		0.0040	0.071		0.199	20	124	850
	28-Jul-1993	93-185		6.92	1.7	0.009	0.0600		0.007		0.0370	0.074		0.222	13	162	915
	27-Aug-1993	93-250		7.20	1.3	0.014	0.0545		0.001		0.0040	0.058		0.155	21	174	872
	27-Sep-1993	93-262		6.87	2.4	0.018	0.6000		0.005		0.0050	0.063		0.170	12	172	925
	2-Nov-1993	93-285		6.49	1.2	0.017	0.1360		0.001		0.0080	0.073		0.200	12	190	993
	1-Dec-1993	93-296		6.37	2.8	0.015	0.1210		0.013		0.0050	0.070		0.213	9	210	1107
	2-Jan-1994	94-005		6.58	9.8	0.012	0.1193		0.016		0.0040	0.073		0.289	13	211	1008
	6-Feb-1994	94-021		6.42	3.1	0.022	0.1460		0.013		0.0040	0.084		0.310	12	215	1051
	29-Mar-1994	94-057		5.98	7.4	0.023	0.1680		0.025		0.0050	0.074		0.386	7	259	1238
	5-May-1994	94-069		5.56	2.8	0.011	0.1080		0.036		0.0050	0.091		0.331	10	262	1363
	27-Jun-1994	94-136		6.48	3.1	0.013	0.0470		0.007		0.0080	0.050		0.215	18	175	871
	5-Jul-1994	94-154		6.86	8.2		0.0460		0.009		0.0100	0.058		0.229	13	184	887
	12-Jul-1994	94-178		6.93		0.011	0.0500		0.005		0.0050	0.063		0.204	50	188	886
	19-Jul-1994	94-201		6.68	1.0	0.009	0.0380		0.010		0.0040	0.068		3.150	5	189	902
	27-Jul-1994	94-228		6.03	1.4	0.046	0.2130		0.039		0.0080	0.068		0.283	5	187	918
	17-Aug-1994	94-250		7.37	7.8	0.019	0.0430		0.009		0.0040	0.059		0.195	10	211	1006
	30-Aug-1994	94-267		6.76	4.2	0.013	0.0410		0.001		0.0050	0.063		0.153	16	212	969
	28-Sep-1994	94-281		6.60	1.4	0.016	0.0370		0.013		0.0040	0.065		0.171	15	223	1037
	17-Nov-1994	94-289		6.86	0.6	0.023	0.0310		0.010		0.0050	0.075		0.229	9	222	1082
	22-Dec-1994	94-299		6.15	1.1	0.015	0.0290		0.024		0.0050	0.088		0.293	5	236	1185
	26-Jan-1995	95-003		5.86	1.2	0.017	0.0320		0.026		0.0040	0.098		0.343	4	286	1224
	28-Feb-1995	95-013		5.51	0.4	0.024	0.0275		0.033		0.0040	0.110		0.424	4	294	1394
	29-Mar-1995	95-033		5.22	0.4	0.021	0.0310		0.038		0.0040	0.118		0.436	3	276	1487
	19-Apr-1995	95-042		5.38	4.8	0.019	0.0420		0.020		0.0090	0.119		0.468	2	257	1559
	8-Jul-1995	95-121		6.89	1.6	0.016	0.0150		0.011		0.0080	0.066		0.248	10	252	920
	14-Jul-1995	95-133		6.85	1.0	0.020	0.0100		0.015		0.0050	0.071		0.234	9	270	942
	30-Jul-1995	95-177		6.51	2.6	0.040	0.0460		0.014		0.0040	0.074		0.288	9	269	910
	10-Aug-1995	95-210		6.51	1.1	0.022	0.0145		0.013		0.0040	0.074		0.249	9	278	961
	14-Sep-1995	95-242		6.68	1.2	0.021	0.0160		0.011		0.0040	0.089		0.234	7	274	1004
	1-Nov-1995	95-249		6.53	1.0	0.037	0.0215		0.013		0.0040	0.089		0.224	9	265	1069
	2-Dec-1995	95-272		6.15	1.0	0.038	0.0062		0.018		0.0090	0.096		0.326	6	259	1169
	12-Jan-1996	96003		5.63	1.6	0.010	0.0160		0.029		0.0040	0.114		0.366	4	282	1257
	24-Feb-1996	96026		5.81	1.4	0.013	0.0255		0.038		0.0040	0.121		0.396		268	1290
	26-Jun-1996	96090		6.71	1.6	0.012			0.005		0.0040	0.053		0.175		250	803
	3-Jul-1996	96109		6.90	1.6	0.020	0.0068		0.013		0.0040	0.066		0.195		187	911

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 2

Sampling Station	Pond 2 Date	NWB Log No.	Analyte: Units:	Temp °C	pH	TSS mg/L	Cyanide mg/L	Arsenic mg/L	Cadmium mg/L	Copper mg/L	Hg ug/L	Lead mg/L	Nickel mg/L	Fe mg/L	Zinc mg/L	Alkalinity mg/L	Hardness mg/L	Conduct. uS/cm
	< (less than)		Max Grab:		6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
	Date	**Log No.**	Max Avg:		6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	10-Jul-1996	96128			6.92	0.4	0.018	0.0085		0.008		0.0040	0.074		0.228		216	1038
	17-Jul-1996	96149			6.56	1.0	0.007	0.0124		0.002		0.0040	0.069		0.194		213	942
	24-Jul-1996	96175			6.07	2.0	0.020	0.0054		0.008		0.0040	0.076		0.275		232	1036
	30-Jul-1996	96199			6.38	2.4	0.028	0.0080		0.003		0.0040	0.084		0.258		215	1010
	29-Aug-1996	96257			7.63	0.8	0.020	0.0079		0.010		0.0040	0.058		0.123	26	224	1070
	7-Sep-1996	96268			7.06	0.0	0.007	0.0058		0.009		0.0040	0.066		0.125	13	220	1080
	19-Oct-1996	96285			6.99	1.6	0.035	0.0174		0.006		0.0013	0.059		0.121	6	229	1090
	17-Nov-1996	96294			6.93	0.2	0.026	0.0060		0.013		0.0025	0.071		0.137	5	241	1190
	9-Feb-1997	97-003			6.85		0.151	0.0088		0.001		0.0040	0.065		0.070	33	312	1365
	21-Feb-1997	97-015			6.24		0.016	0.0058		0.016		0.0040	0.093		0.230	12	299	1434
	7-Apr-1997	97-027			6.09	2.0	0.020	0.0109		0.031		0.0040	0.108		0.259	10	325	1541
	6-May-1997	97-041			6.01	0.0	0.031	0.0049		0.022		0.0038	0.115		0.263	10	338	1541
	28-Jun-1997	97-115			7.03	2.2		0.0094		0.008		0.0040	0.075		0.156		222	1050
	6-Jul-1997	97-136			7.13	19.6	0.017			0.016		0.0040	0.075		0.211	16	230	910
	10-Jul-1997	97-145			7.10	0.8	0.016	0.0230		0.009		0.0040	0.066		0.138	16	228	1115
	18-Jul-1997	97-169			7.08	0.8		0.0140		0.010		0.0040	0.078		0.153	15	226	1066
	24-Jul-1997	97-194			7.04	1.6		0.0110		0.010		0.0040	0.075		0.253	11	230	1081
	29-Jul-1997	97-219			7.11			0.0262										1046
	12-Oct-2003	30032			6.62	2.0	0.022	0.0625	0.00019	0.006		0.0009	0.093		0.187			
	23-Jun-2004	22			6.64	1.0		0.0144	0.00011	0.005		0.0002	0.045		0.113	5	106	428
	13-Jul-2004	40024			7.33		0.440	0.0312	0.00017	0.050		0.0005	0.083		0.204	17	200	882
	8-Aug-2004	40047	shore		7.27	2.0	0.260	0.0129	0.00018	0.017		0.0001	0.079		0.197	12	221	925
	26-Jun-2005	51009	shore		7.00	2.0	0.470	0.0336	0.00001	0.069		0.0010	0.081		0.186	18	110	620
	10-Sep-2005	51156	shore		5.84		0.020	0.0329	0.00010	0.016		0.0004	0.105	0.3	0.272	5	214	919
106	8-Jan-1992				4.42	0.4	0.035	0.0410		0.171		0.0040	0.155		0.665		217	1705
	11-Feb-1992				4.38	1.0	0.017	0.0380		0.194		0.0040	0.190		0.778		240	1843
	11-Mar-1992				4.36	0.6	0.016	0.0370		0.204		0.0040	0.205		1.009		265	1985
	7-Apr-1992	197			4.35	1.0	0.011	0.0310		0.229		0.0040	0.220		1.076		280	2090
	7-May-1992	208			4.11	0.5	0.030	0.0370		0.241		0.0040	0.245		1.196		300	1890
	7-Jul-1992	398			6.74	1.0	0.030	0.0090		0.037		0.0040	0.081		0.326		138	940
	15-Jul-1992	438			6.70	0.6	0.029	0.0160		0.039		0.0040	0.098		0.381		146	1046
	27-Jul-1992	468			6.55	1.0	0.005	0.0160		0.031		0.0040	0.091		0.360		155	1095
	12-Aug-1992	497			6.86	1.0	0.014	0.0260		0.020		0.0040	0.088		0.310		156	1163
	19-Aug-1992	516			7.06	1.4	0.090	0.0320		0.009		0.0040	0.094		0.294	11	164	1159
	3-Nov-1992	614			6.86	1.2	0.014	0.0300		0.010		0.0040	0.010		0.298	15	185	1483
	8-Dec-1992	622			6.60	1.6		0.0300		0.040		0.0040	0.115		0.416	16	208	1644
	9-Feb-1993	93-007			6.38	3.0	0.015	0.0270		0.026		0.0040	0.120		0.355	16	225	1815
	25-Mar-1993	93-019			6.14	0.8	0.007	0.0180		0.041		0.0040	0.138		0.446	16	269	
	29-Apr-1993	93-032			6.56	2.4	0.018	0.0245		0.048		0.0040	0.146		0.049	14	276	
	1-Jul-1993	93-115			7.04	1.1	0.018	0.0280		0.009		0.0040	0.048		0.144	11	112	480
	10-Jul-1993	93-130			6.98	0.8	0.023	0.0270		0.011		0.0060	0.076		0.219	10	113	820
	28-Jul-1993	93-186			6.90	2.3	0.008	0.0640		0.009		0.0400	0.077		0.231	14	162	919

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 2

Pond 2		Analyte:	Temp	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Fe	Zinc	Alkalinity	Hardness	Conduct.
		Units:	°C		mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm
Sampling	< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
Station	**Date**	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	27-Aug-1993	93-251		7.24	1.1	0.016	0.0570		0.001		0.0040	0.055		0.179	19	175	871
	27-Sep-1993	93-263		6.91	2.2	0.023	0.2400		0.006		0.0060	0.063		0.155	11	170	922
	2-Nov-1993	93-286		6.78	1.2	0.024	0.1420		0.001		0.0050	0.074		0.200	10	192	1008
	1-Dec-1993	93-297		6.22	4.4	0.010	0.1130		0.013		0.0040	0.065		0.191	9	210	1094
	2-Jan-1994	94-006		6.34	5.4	0.009	0.1633		0.016		0.0060	0.075		0.269	12	212	1009
	6-Feb-1994	94-022		6.13	6.2	0.035	0.1390		0.020		0.0040	0.094		0.340	10	226	1019
	29-Mar-1994	94-058		5.97	1.6	0.042	0.1340		0.048		0.0100	0.079		0.371	8	279	1229
	5-May-1994	94-070		5.37	3.5	0.020	0.1150		0.031		0.0040	0.096		0.326	13	259	1330
	27-Jun-1994	94-137		6.79	3.8	0.016	0.0480		0.010		0.0110	0.055		0.283	18	174	879
	5-Jul-1994	94-155		6.85	2.0		0.0450		0.009		0.0100	0.063		0.226	10	183	887
	12-Jul-1994	94-179		6.87		0.010	0.0520		0.005		0.0040	0.063		0.209	10	186	887
	19-Jul-1994	94-202		6.68	1.6	0.006	0.0420		0.008		0.0040	0.068		0.280	5	186	896
	27-Jul-1994	94-229		6.20	1.9	0.010	0.0420		0.009		0.0040	0.060		0.245	5	182	907
	17-Aug-1994	94-251		6.75	1.0	0.040	0.0390		0.009		0.0040	0.066		0.215	10	197	971
	30-Aug-1994	94-268		6.81	3.0	0.014	0.0400		0.001		0.0050	0.060		0.163	15	207	972
	28-Sep-1994	94-282		6.85	1.4	0.018	0.0410		0.010		0.0040	0.058		0.189	19	231	994
	17-Nov-1994	94-290		6.75	7.8	0.026	0.0290		0.010		0.0040	0.080		0.231	8	228	1061
	22-Dec-1994	94-300		6.04	1.4	0.017	0.0290		0.024		0.0040	0.090		0.308	2	240	1172
	26-Jan-1995	95-004		5.70	0.2	0.019	0.0260		0.030		0.0040	0.101		0.343	4	286	1219
	28-Feb-1995	95-014		5.48	0.6	0.022	0.0305		0.038		0.0040	0.118		0.419	5	298	1374
	29-Mar-1995	95-034		4.66	0.5	0.021	0.0320		0.040		0.0040	0.125		0.471	4	346	1511
	19-Apr-1995	95-043		4.83	1.2	0.034	0.0380		0.030		0.0100	0.133		0.503	1	326	1560
	25-May-1995	95-059		5.20	1.8	0.012	0.0175		0.046		0.0080	0.149		0.530	5	350	1513
	8-Jul-1995	95-122		6.81	1.2	0.017	0.0185		0.010		0.0050	0.066		0.250	10	271	917
	14-Jul-1995	95-134		6.82	1.1	0.017	0.0100		0.014		0.0050	0.070		0.244	9	276	937
	30-Jul-1995	95-178		6.40	1.6	0.027	0.0090		0.010		0.0040	0.071		0.254	9	286	912
	10-Aug-1995	95-211		6.11	1.2	0.022	0.0130		0.013		0.0040	0.073		0.271	9	264	937
	14-Sep-1995	95-243		6.60	1.0	0.020	0.0200		0.011		0.0040	0.081		0.234	8	272	991
	1-Nov-1995	95-250		6.43	1.0	0.037	0.0210		0.014		0.0050	0.088		0.220	8	274	1040
	2-Dec-1995	95-273		5.97	0.4	0.029	0.0095		0.020		0.0130	0.101		0.323	5	268	1186
	12-Jan-1996	96004		5.58	1.2	0.008	0.0200		0.026		0.0040	0.106		0.373	5	281	1255
	24-Feb-1996	96027		5.62	1.8	0.013	0.0295		0.038		0.0040	0.129		0.423		274	1284
	26-Jun-1996	96091		6.55	0.4	0.009	0.0115		0.008		0.0038	0.060		0.200		200	855
	3-Jul-1996	96110		6.90	1.3	0.016	0.0078		0.013		0.0040	0.065		0.196		185	896
	10-Jul-1996	96129		6.80	0.4	0.027	0.0079		0.005		0.0040	0.071		0.219		208	1035
	17-Jul-1996	96150		6.73	0.2	0.013	0.0132		0.013		0.0040	0.071		0.261		213	965
	24-Jul-1996	96176		6.42	0.2	0.013	0.0090		0.008		0.0040	0.073		0.258		221	1029
	30-Jul-1996	96200		6.33	3.8	0.026	0.0138		0.002		0.0040	0.085		0.246		224	1025
	29-Aug-1996	96258		7.29	0.6	0.009	0.0051		0.020		0.0040	0.063		0.133	20	224	1070
	7-Sep-1996	96269		7.03	0.4	0.006	0.0067		0.009		0.0040	0.065		0.123	14	218	1082
	19-Oct-1996	96286		6.70	0.0	0.026	0.0135		0.006		0.0000	0.060		0.124	12	237	1109
	17-Nov-1996	96295		6.68	0.4	0.021	0.0062		0.010		0.0013	0.073		0.140	16	247	1197
	9-Feb-1997	97-004		6.13		0.033	0.0047		0.009		0.0040	0.088		0.215	11	290	1417
	21-Feb-1997	97-016		6.08		0.024	0.0035		0.014		0.0040	0.090		0.218	7	299	1455
	7-Apr-1997	97-028		5.98	0.8	0.016	0.0095		0.030		0.0040	0.109		0.254	11	317	1549

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 2

Sampling Station	Pond 2 Date	< (less than) NWB Log No.	Analyte: Units:	Temp °C	pH	TSS mg/L	Cyanide mg/L	Arsenic mg/L	Cadmium mg/L	Copper mg/L	Hg ug/L	Lead mg/L	Nickel mg/L	Fe mg/L	Zinc mg/L	Alkalinity mg/L	Hardness mg/L	Conduct. uS/cm
			Max Grab:		6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
			Max Avg:		6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	6-May-1997	97-042			5.96	0.5	0.026	0.0052		0.022		0.0040	0.116		0.264	11	333	1562
	28-Jun-1997	97-116			6.97	2.0		0.0076		0.009		0.0040	0.075		0.160		224	1060
	6-Jul-1997	97-137			7.18	1.0	0.014	0.0124		0.016		0.0040	0.080		0.191	15	235	899
	10-Jul-1997	97-146			7.18	0.6	0.018	0.0109		0.008		0.0040	0.066		0.131	17	244	1105
	18-Jul-1997	97-170			7.02	0.8		0.0130		0.013		0.0040	0.073		0.153	14	227	1064
	24-Jul-1997	97-195			7.04	6.4		0.0375		0.006		0.0040	0.070		0.243	10	231	1080
	29-Jul-1997	97-220			7.00			0.0178										1046
	28-Mar-1999	99004				1.0	0.037	0.0249	0.00100	0.056		0.0040	0.177		0.475			
	12-Apr-2002	20007			5.47	1.0	0.018	0.0067	0.00050	0.024		0.0020	0.155		0.352	5		1190
	5-Jul-2002	20021			7.10	2.0	0.082	0.0084	0.00021	0.007		0.0005	0.086		0.196	13	217	836
	5-Jul-2002	20025			7.10	3.0	0.090	0.0080	0.00023	0.007		0.0006	0.010		0.188	12	224	838
	16-Jul-2002	20059			6.91	3.0	0.092	0.0074	0.00020	0.010		0.0002	0.079		0.196	12	238	805
	16-Jul-2002	20060			6.90	3.0	0.090	0.0074	0.00019	0.008		0.0002	0.080		0.197	13	243	807
	16-Jul-2002	20061			6.90	1.0	0.090	0.0079	0.00021	0.009		0.0002	0.079		0.198	13	243	809
	12-Oct-2003	30033			6.62	2.0	0.018	0.0543	0.00019	0.005		0.0008	0.091		0.175			
	13-Jul-2004	40020	shore		7.10		0.320	0.0131	0.00019	0.028		0.0002	0.081		0.184	11	200	829
	8-Aug-2004	40048	shore		7.30	2.0		0.0128	0.00020	0.020		0.0002	0.086		0.207	11	223	926
107	8-Jan-1992				4.95	0.4	0.025	0.0450		0.161		0.0040	0.135		0.585		208	1647
	11-Feb-1992				4.87	0.8	0.012	0.0420		0.179		0.0040	0.158		0.672		230	1781
	11-Mar-1992				4.92	1.2	0.010	0.0410		0.184		0.0040	0.163		0.874		247	1903
	7-Apr-1992	198			4.93	1.0	0.041	0.0330		0.196		0.0040	0.168		0.906		258	1955
	2-Jul-1992	389			7.08	0.9	0.013	0.0205		0.012		0.0040	0.058		0.195	8	108	691
	7-Jul-1992	399			6.61	0.0	0.010	0.0090		0.039		0.0040	0.079		0.329		140	958
	7-Jul-1992	400			6.57	8.2	0.014	0.0090		0.039		0.0040	0.079		0.331		142	960
	15-Jul-1992	439			6.67	0.4	0.009	0.0120		0.043		0.0040	0.103		0.384		152	1080
	15-Jul-1992	440			6.61	0.8	0.016	0.0140		0.043		0.0040	0.103		0.389	5	151	1080
	27-Jul-1992	469			6.72	1.2	0.005	0.0170		0.034		0.0040	0.096		0.358		156	1098
	27-Jul-1992	470			6.65	3.2	0.007	0.0160		0.036		0.0040	0.091		0.360		154	1099
	12-Aug-1992	498			6.99	0.8	0.036	0.0300		0.021		0.0040	0.083		0.293		160	1158
	12-Aug-1992	499			6.93	1.0	0.033	0.0320		0.024		0.0040	0.088		0.290		160	1155
	19-Aug-1992	517			7.15	1.6	0.090	0.0310		0.008		0.0040	0.091		0.289	11	163	1165
	19-Aug-1992	518			7.15	1.2	0.090	0.0320		0.009		0.0040	0.089		0.284	11	162	1164
	8-Dec-1992	623			6.88	3.6	0.025	0.0810		0.033		0.0040	0.093		0.319	3	189	1555
	8-Jan-1993	93-003			6.57	2.0	0.012	0.0380		0.015		0.0140	0.099		0.385	27	209	1079
	9-Feb-1993	93-008			6.72	1.4	0.016	0.0370		0.024		0.0040	0.088		0.340	23	219	1459
	25-Mar-1993	93-020			6.37	0.4	0.011	0.0210		0.036		0.0040	0.115		0.346	19	244	
	29-Apr-1993	93-033			6.71	4.0	0.028	0.0455		0.033		0.0040	0.116		0.394	22	248	
	1-Jul-1993	93-116			7.07	1.0	0.015	0.0270		0.009		0.0050	0.053		0.159	19	113	500
	1-Jul-1993	93-117			6.58	0.9	0.021	0.0315		0.014		0.0050	0.065		0.239	19	167	735
	10-Jul-1993	93-131			6.98	1.8	0.012	0.0325		0.009		0.0060	0.081		0.198	19	114	850
	10-Jul-1993	93-132			6.96	1.4	0.018	0.0295		0.011		0.0060	0.079		0.188	19	165	850
	28-Jul-1993	93-187			6.97	1.7	0.010	0.0640		0.006		0.0400	0.075		0.242	16	162	914
	28-Jul-1993	93-188			6.85	0.8	0.014	0.0590		0.007		0.0300	0.077		0.228	14	162	918

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 2

Pond 2		Analyte:	Temp	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Fe	Zinc	Alkalinity	Hardness	Conduct.
		Units:	°C		mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm
Sampling	< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
Station	**Date**	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	27-Aug-1993	93-252		7.27	1.5	0.009	0.0545		0.001		0.0040	0.058		0.176	20	174	876
	27-Aug-1993	93-253		7.23	1.4	0.013	0.0335		0.001		0.0040	0.055		0.149	19	176	868
	27-Sep-1993	93-264		6.76	2.0	0.020	0.2400		0.011		0.0050	0.061		0.181	11	173	923
	1-Dec-1993	93-298		6.05	3.2	0.009	0.1240		0.018		0.0050	0.075		0.243	9	196	1022
	2-Jan-1994	94-007		6.21	12.2	0.019	0.1427		0.024		0.0040	0.078		0.304	12	216	1376
	6-Feb-1994	94-023		6.19	8.7	0.014	0.1430		0.013		0.0040	0.084		0.305	11	211	1244
	29-Mar-1994	94-059		6.04	7.0	0.020	0.1250		0.020		0.0080	0.076		0.354	7	256	1240
	5-May-1994	94-071		5.35	2.0	0.018	0.1090		0.029		0.0040	0.089		0.299	10	261	1345
	27-Jun-1994	94-138		6.64	1.4	0.022	0.0470		0.007		0.0040	0.058		0.220	15	175	880
	27-Jun-1994	94-141		7.03	3.6	0.034			0.010		0.0040	0.053		0.200	25	197	896
	5-Jul-1994	94-156		6.83	2.6		0.0430		0.011		0.0080	0.060		0.216	10	186	887
	5-Jul-1994	94-157		6.94			0.1400		0.009		0.0100	0.063		0.221	18	181	900
	12-Jul-1994	94-180		6.70		0.008	0.0470		0.003		0.0050	0.060		0.196	40	188	886
	12-Jul-1994	94-181		7.53		0.014	0.0570		0.003		0.0040	0.060		0.209	20	196	897
	19-Jul-1994	94-203		6.61	3.2	0.005	0.0410		0.005		0.0040	0.065		0.240	5	186	900
	19-Jul-1994	94-204		6.95	1.4	0.009	0.0480		0.008		0.0040	0.070		0.248	8	187	898
	27-Jul-1994	94-230		6.58	2.6	0.008	0.0450		0.009		0.0050	0.065		0.255	5	184	900
	27-Jul-1994	94-231		6.45	2.3	0.008	0.0440		0.009		0.0040	0.083		0.250	5	185	904
	17-Aug-1994	94-252		7.25	2.4	0.013	0.0410		0.011		0.0040	0.064		0.178	15	200	990
	17-Aug-1994	94-253		7.56	0.8	0.028	0.0370		0.011		0.0040	0.056		0.168	15	200	988
	30-Aug-1994	94-269		6.82	1.6	0.019	0.0380		0.001		0.0050	0.060		0.160	15	207	968
	28-Sep-1994	94-283		6.74	1.3	0.019	0.0420		0.010		0.0040	0.060		0.181	16	219	1006
	22-Dec-1994	94-301		6.07	0.8	0.116	0.0290		0.021		0.0040	0.093		0.308	5	244	1170
	26-Jan-1995	95-005		5.89	0.4	0.020	0.0250		0.029		0.0040	0.100		0.340	4	287	1215
	28-Feb-1995	95-015		5.62	0.4	0.022	0.0255		0.033		0.0040	0.108		0.414	4	276	1306
	29-Mar-1995	95-035		5.30	0.6	0.021	0.0355		0.035		0.0040	0.115		0.424	5	344	1501
	19-Apr-1995	95-044		5.32	2.2	0.035	0.0410		0.021		0.0080	0.123		0.473	1	324	1544
	25-May-1995	95-060		5.37	129.2	0.014	0.0200		0.064		0.0090	0.144		0.530	8	335	1509
	8-Jul-1995	95-123		6.79	2.0	0.020	0.0170		0.011		0.0080	0.069		0.241	10	265	915
	8-Jul-1995	95-125		6.84	1.6	0.021	0.0175		0.010		0.0040	0.066		0.238	9	261	919
	14-Jul-1995	95-135		6.87	0.8	0.040	0.0110		0.013		0.0040	0.071		0.225	9	283	932
	14-Jul-1995	95-137		6.86	0.8	0.033	0.0110		0.016		0.0040	0.071		0.238	9	277	936
	30-Jul-1995	95-179		6.44	2.2	0.038	0.0110		0.009		0.0040	0.070		0.280	9	281	900
	30-Jul-1995	95-181		6.46	1.8	0.031	0.0115		0.010		0.0040	0.070		0.275	9	285	895
	10-Aug-1995	95-212		6.52	1.8	0.027	0.0125		0.013		0.0040	0.070		0.230	8	275	985
	10-Aug-1995	95-214		6.60	1.2	0.025	0.0130		0.011		0.0040	0.074		0.240	9	280	957
	14-Sep-1995	95-244		6.59	1.0	0.023	0.0165		0.009		0.0040	0.083		0.226	6	269	1013
	14-Sep-1995	95-246		6.61	1.0	0.024	0.0205		0.011		0.0040	0.081		0.229	7	273	996
	2-Dec-1995	95-274		6.14	5.2	0.033	0.0500		0.018		0.0040	0.105		0.330	5	266	1201
	12-Jan-1996	96005		5.58	1.8	0.011	0.0185		0.030		0.0040	0.105		0.375	4	280	1246
	24-Feb-1996	96028		5.65	1.4	0.012	0.0310		0.038		0.0040	0.125		0.415		279	1199
	24-Mar-1996	96037				0.013											
	26-Jun-1996	96092		6.75	2.0	0.013			0.005		0.0050	0.053		0.166		169	780
	26-Jun-1996	96094		6.72	0.4		0.0072		0.008		0.0040	0.050		0.160		163	769
	3-Jul-1996	96111		6.85	2.4	0.021	0.0077		0.015		0.0050	0.068		0.195		186	902
	3-Jul-1996	96113		6.93	0.4	0.017	0.0079		0.011		0.0075	0.063		0.186		185	889

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 2

Pond 2		Analyte:	Temp	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Fe	Zinc	Alkalinity	Hardness	Conduct.
		Units:	°C		mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm
Sampling	< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
Station	**Date**	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			
	10-Jul-1996	96130		6.93	1.0	0.020	0.0069		0.008		0.0040	0.073		0.223		203	1007
	10-Jul-1996	96132		6.80	0.6	0.015	0.0066		0.005		0.0040	0.073		0.218		213	1005
	17-Jul-1996	96151		6.60	1.2	0.011	0.0124		0.011		0.0040	0.065		0.261		212	971
	17-Jul-1996	96152		6.61	1.2	0.011	0.0114		0.011		0.0040	0.066		0.259		212	971
	24-Jul-1996	96177		6.38	0.8	0.018	0.0064		0.008		0.0040	0.075		0.265		223	1038
	24-Jul-1996	96178		6.43	0.6	0.018	0.0065		0.010		0.0040	0.079		0.270		222	1030
	30-Jul-1996	96201		6.24	3.2	0.023	0.0092		0.003		0.0040	0.080		0.253		222	1030
	30-Jul-1996	96202		6.28	0.8	0.030	0.0090		0.003		0.0040	0.083		0.250		220	1028
	29-Aug-1996	96259		7.61	0.8	0.014	0.0080		0.010		0.0040	0.058		0.115	24	233	1080
	29-Aug-1996	96260		7.58	0.9	0.007	0.0085		0.010		0.0040	0.056		0.124	25	220	1036
	7-Sep-1996	96270		7.00	0.4	0.002	0.0079		0.009		0.0040	0.064		0.113	14	216	1073
	7-Sep-1996	96271		7.11	0.4	0.006	0.0076		0.008		0.0040	0.061		0.118	15	216	1077
	19-Oct-1996	96287		6.63	0.0	0.044	0.0071		0.009		0.0000	0.063		0.126	15	232	1090
	17-Nov-1996	96296		6.56	2.0	0.029	0.0060		0.010		0.0025	0.075		0.142	12	240	1180
	9-Feb-1997	97-005		5.93		0.022	0.0036		0.009		0.0040	0.089		0.216	12	287	1418
	21-Feb-1997	97-017		5.98		0.026	0.0024		0.014		0.0040	0.093		0.223	14	300	1428
	7-Apr-1997	97-029		6.06	1.8	0.019	0.0079		0.028		0.0040	0.110		0.258	9	315	1525
	6-May-1997	97-043		5.94	0.0	0.023	0.0055		0.023		0.0040	0.114		0.275	9	329	1540
	28-Jun-1997	97-117		7.00	3.2		0.0086		0.009		0.0040	0.073		0.158		223	1050
	28-Jun-1997	97-118		6.94	2.4		0.0110		0.010		0.0040	0.069		0.156		222	1070
	6-Jul-1997	97-138		7.19	2.4	0.018	0.0106		0.013		0.0040	0.073		0.204	15	235	911
	6-Jul-1997	97-140		7.18	1.8		0.0100		0.014		0.0039	0.073		0.170	15		913
	10-Jul-1997	97-147		7.22	0.6	0.020	0.0131		0.009		0.0040	0.066		0.129	16	227	1107
	10-Jul-1997	97-149		7.16	1.2	0.022	0.0123		0.005		0.0040	0.063		0.126	20	222	1112
	18-Jul-1997	97-171		7.05	1.0		0.0130		0.013		0.0040	0.075		0.149	16	225	1064
	18-Jul-1997	97-172		7.03	0.4		0.0100		0.010		0.0040	0.075		0.158	15	225	1050
	24-Jul-1997	97-196		7.05	0.8		0.0098		0.008		0.0040	0.068		0.251	9	229	1088
	24-Jul-1997	97-197		7.00	0.8		0.0102		0.006		0.0040	0.069		0.268	10	229	1067
	29-Jul-1997	97-221		6.93			0.0212										1044
	29-Jul-1997	97-222		6.90			0.0202										1045
	2-Mar-2000	20003		5.11			0.0031	0.00060	0.030		0.0020	0.165		0.454			
	25-Apr-2000	20004		4.93			0.0100	0.00070	0.030		0.0030	0.177		0.487			
	12-Apr-2001	10003		5.16		0.012	0.0070	0.00060	0.021		0.0020	0.160		0.427	5	324	1210
	4-Aug-2001	10027		6.54	1.0	0.187	0.0089	0.00060	0.010		0.0020	0.108		0.248	12	231	794
	1-Sep-2001	10036		6.70			0.0079	0.00060	0.009		0.0020	0.107		0.238	6	216	801
	5-Jul-2002	20022		7.12	1.0	0.084	0.0078	0.00021	0.008		0.0006	0.087		0.200	19	222	841
	5-Jul-2002	20026		7.12	2.0	0.092	0.0082	0.00021	0.008		0.0006	0.082		0.190	12	219	840
	16-Jul-2002	20062		6.89	2.0	0.012	0.0075	0.00018	0.008		0.0002	0.081		0.199	13	243	819
	16-Jul-2002	20063		6.91	1.0	0.012	0.0078	0.00023	0.007		0.0002	0.079		0.304	12	247	814
	16-Jul-2002	20064		6.89	9.0	0.006	0.0083	0.00021	0.009		0.0005	0.081		0.208	11	247	813
	Average	**Pond 2**		**6.46**	**2.5**	**0.031**	**0.0363**	**0.00035**	**0.026**	**0.05**	**0.0043**	**0.090**	**0.237**	**0.285**	**12**	**219**	**1119**

LUPIN TAILINGS CONTAINMENT AREA - WATER SAMPLE ANALYSES POND 2

Pond 2			Analyte:	Temp	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Fe	Zinc	Alkalinity	Hardness	Conduct.
			Units:	°C		mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm
Sampling	< (less than)	NWB	Max Grab:		6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400		0.800			
Station	**Date**	**Log No.**	Max Avg:		6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200		0.400			

Sample Station Locations:

101 Pond 2, 150m offshore from K Dam
7289370N
486896E

102 Pond 2, 100m offshore from Dam 1A syphons intake
7289875N
486196E

105 Pond 2, 150m offshore from J Dam syphons (off breakwater)
7289685N
487070E

106 Pond 2, 150m offshore from Dam 2
4290290N
486458E

107 Pond 2, middle of pond
4289880N
486700E

LUPIN TAILINGS EFFLUENT DISCHARGE - SNP 925-10

925-10		Analyte:	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Zinc	Alkalinity	Hardness	Conduct.
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uM/cm
< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400	0.800			
Date	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200	0.400			
24-Aug-92	550		7.09		0.042	0.0320		0.015		0.0040	0.090	0.266		162	1301
25-Aug-92	551		7.20		0.026	0.0380		0.013		0.0040	0.085	0.261	20	166	1293
26-Aug-92	552		7.22		0.028	0.0360		0.013		0.0040	0.085	0.254	15	168	1303
27-Aug-92	555		7.32		0.021	0.0370		0.010		0.0040	0.080	0.254	20	168	1308
28-Aug-92	556		7.32		0.027	0.0340		0.006		0.0040	0.081	0.259	15	168	1335
29-Aug-92	557		7.31		0.023	0.0380		0.018		0.0040	0.086	0.274	15	168	1330
30-Aug-92	558		7.28		0.018	0.0340		0.010		0.0040	0.084	0.266		170	1345
31-Aug-92	565		7.19		0.019	0.0370		0.009		0.0040	0.084	0.284		167	1288
01-Sep-92	567		7.11		0.022	0.0360		0.010		0.0040	0.084	0.271		168	1320
02-Sep-92	568		7.29		0.025	0.0360		0.006		0.0040	0.086	0.276		169	1342
03-Sep-92	569		7.32		0.019	0.0330		0.013		0.0040	0.076	0.284		167	1329
05-Sep-92	571		7.14		0.041	0.0370		0.008		0.0040	0.079	0.256		169	1331
06-Sep-92	572		7.07		0.019	0.0320		0.008		0.0040	0.084	0.261		169	1346
07-Sep-92	573		7.25		0.027	0.0320		0.010		0.0040	0.076	0.264		169	1324
08-Sep-92	574		7.10		0.020	0.0500		0.009		0.0040	0.089	0.254		170	1328
09-Sep-92	589		7.06			0.0330		0.014		0.0040	0.080	0.260		169	1334
10-Sep-92	590		7.07		0.017	0.0340		0.011		0.0050	0.078	0.258		169	1326
11-Sep-92	591		7.15		0.014	0.0330		0.014		0.0040	0.073	0.255		168	1328
12-Sep-92	592		7.08		0.013	0.0320		0.011		0.0040	0.075	0.260		181	1340
13-Sep-92	593		7.11		0.014	0.0520		0.011		0.0040	0.075	0.268		169	1326
14-Sep-92	595		7.07		0.020	0.0360		0.011		0.0040	0.073	0.260		173	1322
15-Jul-93	93-146		7.06		0.027	0.0440		0.020		0.0080	0.076	0.235	20	80	800
16-Jul-93	93-147		7.10		0.030	0.0460		0.020		0.0080	0.074	0.219	20	75	800
17-Jul-93	93-148		7.12		0.023	0.0470		0.023		0.0080	0.070	0.211	20	80	800
18-Jul-93	93-149		7.14		0.030	0.0460		0.013		0.0080	0.066	0.209	18	78	800
19-Jul-93	93-150		7.13		0.019	0.0480		0.023		0.0080	0.071	0.214	19	77	600
20-Jul-93	93-151		7.17		0.030	0.0460		0.025		0.0080	0.074	0.211	15	78	700
21-Jul-93	93-162		7.06		0.021	0.0720		0.009		0.0050	0.056	0.175	15	158	863
21-Jul-93	93-164														
23-Jul-93	93-174		7.09		0.008	0.0500		0.009		0.0200	0.002	0.226	15	158	916
24-Jul-93	93-175		7.07		0.020	0.0640		0.006		0.0200	0.077	0.215	13	160	913
25-Jul-93	93-176		7.20		0.016	0.0740		0.011		0.0200	0.083	0.235	13	157	870
26-Jul-93	93-177		7.04		0.024	0.0690		0.008		0.0200	0.088	0.259	19	156	907
27-Jul-93	93-178		6.91		0.037	0.0600		0.006		0.0200	0.080	0.222	11	158	905
15-Jul-94	94-184		6.82		0.015	0.0480		0.003		0.0040	0.058	0.214	5	184	895
16-Jul-94	94-185		6.81		0.012	0.0500		0.008		0.0040	0.065	0.200	5	186	877

LUPIN TAILINGS EFFLUENT DISCHARGE - SNP 925-10

925-10		Analyte:	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Zinc	Alkalinity	Hardness	Conduct.
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uM/cm
< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400	0.800			
Date	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200	0.400			
17-Jul-94	94-186		6.68		0.010	0.0500		0.008		0.0040	0.065	0.198	5	188	884
18-Jul-94	94-187		6.35		0.012	0.0417		0.008		0.0040	0.063	0.200	5	210	877
19-Jul-94	94-205		6.59		0.009	0.0330		0.005		0.0040	0.068	0.245	5	190	898
20-Jul-94	94-207		6.79		0.011	0.0450		0.005		0.0040	0.070	0.220	5	188	897
21-Jul-94	94-208		6.82		0.012	0.0420		0.005		0.0040	0.070	0.283	5	192	889
22-Jul-94	94-209		6.53		0.011	0.0430		0.005		0.0040	0.070	0.240	5	188	884
23-Jul-94	94-210		6.38		0.009	0.0380		0.003		0.0040	0.068	0.230	5	186	880
24-Jul-94	94-211		6.37		0.010	0.0420		0.001		0.0040	0.070	0.228	5	180	884
25-Jul-94	94-212		6.38		0.013	0.0440		0.003		0.0040	0.068	0.263	5	188	878
26-Jul-94	94-213		6.45		0.012	0.0430		0.003		0.0040	0.070	0.253	5	220	913
27-Jul-94	94-214		6.75		0.010	0.0390		0.001		0.0040	0.068	0.228	5	210	907
28-Jul-94	94-233		6.47		0.013	0.0410		0.016		0.0050	0.073	0.253		184	901
15-Jul-95	95-148		6.75		0.033	0.0075		0.018		0.0040	0.068	0.238	11		922
16-Jul-95	95-149		6.71		0.036	0.0090		0.020		0.0050	0.068	0.231	9		919
17-Jul-95	95-150		6.76		0.023	0.0100		0.020		0.0050	0.068	0.223	10		928
18-Jul-95	95-151		6.72		0.032	0.0095		0.019		0.0040	0.073	0.241	10		915
19-Jul-95	95-153		6.71		0.039	0.0085		0.021		<0.004	0.066	0.234	9		938
20-Jul-95	95-154		6.82		0.044	0.0130		0.019		0.0040	0.068	0.240	11		911
21-Jul-95	95-155		6.79		0.026	0.0115		0.014		<0.004	0.075	0.248	11		927
22-Jul-95	95-157		6.78		0.036	0.0120		0.018		<0.004	0.076	0.249	11		926
23-Jul-95	95-167		6.67		0.017	0.0095		0.010		<0.004	0.075	0.254	9		927
24-Jul-95	95-168		6.64		0.017	0.0095		0.018		<0.004	0.074	0.263	10		916
25-Jul-95	95-169		6.61		0.009	0.0070		0.014		<0.004	0.079	0.251	11		944
26-Jul-95	95-170		6.60		0.021	0.0065		0.014		<0.004	0.078	0.248	10		915
27-Jul-95	95-171		6.57		0.020	0.0065		0.018		<0.004	0.074	0.248	10		892
28-Jul-95	95-172		6.53		0.025	0.0060		0.013		<0.004	0.078	0.243	11		940
30-Jul-95	95-173		6.50		0.026	0.0060		0.018		<0.004	0.074	0.241	10		905
30-Jul-95	95-174		6.42		0.018	0.0060		0.014		<0.004	0.081	0.238	10		891
31-Jul-95	95-182		6.35		0.017	0.0070		0.009		<0.004	0.071	0.268	9		932
01-Aug-95	95-183		6.37		0.014	0.0100		0.008		<0.004	0.066	0.250	10		941
15-Jul-96	96145		6.83		0.012	0.0153		0.004		0.0040	0.071	0.193		211	988
16-Jul-96	96146		6.53		0.009	0.0110		0.004		0.0040	0.074	0.203		209	981
17-Jul-96	96154		6.52		0.024	0.0138		0.002		0.0040	0.068	0.261		210	968
18-Jul-96	96156		6.57		0.012	0.0164		0.005		0.0040	0.068	0.275		211	1015
19-Jul-96	96157		6.70		0.005	0.0074		0.010		0.0040	0.083	0.295		211	1009
20-Jul-96	96158		6.67		0.012	0.0071		0.019		0.0040	0.079	0.265		216	1001
21-Jul-96	96169		6.23		0.014	0.0087		0.008		0.0040	0.073	0.258		219	988

LUPIN TAILINGS EFFLUENT DISCHARGE - SNP 925-10

925-10		Analyte:	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Zinc	Alkalinity	Hardness	Conduct.
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uM/cm
< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400	0.800			
Date	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200	0.400			
22-Jul-96	96170		6.36		0.015	0.0086		0.005		0.0040	0.076	0.258		219	1024
23-Jul-96	96171		6.44		0.010	0.0087		0.005		0.0040	0.069	0.253		222	1008
24-Jul-96	96172		6.48		0.011	0.0083		0.005		0.0040	0.069	0.265		220	1014
25-Jul-96	96181		6.47		0.022	0.0086		0.008		0.0040	0.069	0.263		223	1002
26-Jul-96	96182		6.74		0.010	0.0079		0.008		0.0040	0.073	0.273		213	1036
27-Jul-96	96193		6.06		0.016	0.0076		0.005		0.0040	0.075	0.273		219	953
28-Jul-96	96194		6.89		0.008	0.0079		0.003		0.0040	0.088	0.250		220	980
29-Jul-96	96195		6.89		0.013	0.0086		0.003		0.0040	0.084	0.250		222	979
30-Jul-96	96196		6.33		0.010	0.0099		0.003		0.0040	0.085	0.255		219	1028
31-Jul-96	96205		6.62		0.030	0.0121		0.008		0.0040	0.083	0.265		222	1023
01-Aug-96	96206		6.85		0.017	0.0118		0.005		0.0040	0.084	0.250	5	214	1000
02-Aug-96	96207		6.11		0.010	0.0116		0.008		0.0040	0.088	0.273	8	223	1014
03-Aug-96	96208		6.05		0.022	0.0124		0.005		0.0040	0.091	0.270	3	220	979
04-Aug-96	96219		6.16		0.060	0.0117		0.003		0.0050	0.083	0.265	5	228	1002
05-Aug-96	96220		5.92		0.019	0.0140		0.002		0.0040	0.068	0.258	5	227	1062
06-Aug-96	96221		6.21		0.025	0.0132		0.002		0.0040	0.060	0.261	6	235	956
07-Aug-96	96222		5.70		0.005	0.0122		0.002		0.0040	0.073	0.258	4	218	966
15-Jul-97	97-161		7.14		0.017	0.0100		0.015		0.0040	0.075	0.165	20	1055	1055
16-Jul-97	97-162		7.24		0.021	0.0100		0.015		0.0040	0.070	0.219	16	229	1084
17-Jul-97	97-163		7.15			0.0110		0.015		0.0040	0.073	0.160	16	230	1090
18-Jul-97	97-164		7.01			0.0120		0.013		0.0040	0.074	0.169	14	228	1073
19-Jul-97	97-173		6.92			0.0150		0.010		0.0040	0.074	0.158	17	229	1050
20-Jul-97	97-184		7.05			0.0110		0.013		0.0040	0.075	0.158	15	227	1029
21-Jul-97	97-185		7.11			0.0150		0.010		0.0040	0.074	0.163	15	224	1028
22-Jul-97	97-187		6.99			0.0148		0.011		0.0040	0.073	0.143	16	228	1036
23-Jul-97	97-188		7.05			0.0102		0.009		0.0040	0.073	0.149	13	230	1056
24-Jul-97	97-189		7.06			0.0126		0.009		0.0040	0.071	0.145	8	224	1095
25-Jul-97	97-200		7.21			0.0156		0.013		0.0040	0.074	0.149	15	225	1094
26-Jul-97	97-211		7.06			0.0146		0.009		0.0040	0.073	0.243	13	225	1071
27-Jul-97	97-212		7.02			0.0147		0.010		0.0040	0.076	0.243	12	231	1088
28-Jul-97	97-213		7.14			0.0144		0.013		0.0040	0.070	0.243	15	230	1083
29-Jul-97	97-215		7.12			0.0172							8	230	1092
30-Jul-97	97-223		7.25			0.0216									1090
15-Jul-00	20030		7.27	0.6	0.016	0.0061	0.00060	0.003		0.0020	0.103	0.239	10	227	
16-Jul-00	20031		7.29	0.7	0.016	0.0053	0.00060	0.005		0.0020	0.110	0.253	11	227	
16-Jul-00	20032		7.20	0.4	0.018	0.0060	0.00060	0.006		0.0020	0.113	0.266	12	227	
16-Jul-00	20033		7.23	0.5	0.022	0.0061	0.00060	0.005		0.0020	0.104	0.239	12	229	

LUPIN TAILINGS EFFLUENT DISCHARGE - SNP 925-10

925-10		Analyte:	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Zinc	Alkalinity	Hardness	Conduct.
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uM/cm
< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400	0.800			
Date	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200	0.400			
17-Jul-00	20034		7.18	0.6	0.024	0.0062	0.00060	0.006		0.0020	0.104	0.241	10	230	
18-Jul-00	20036		7.27	0.2	0.014	0.0055		0.007				0.244		228	
19-Jul-00	20037		6.92	0.7	0.014	0.0054		0.007				0.243		226	
20-Jul-00	20042		7.08	0.4	0.014	0.0051		0.008				0.242		229	
21-Jul-00	20043		7.06	0.6	0.016	0.0058		0.006				0.243		229	
22-Jul-00	20045		7.14	0.5	0.012	0.0050		0.007				0.258		232	
23-Jul-00	20052		7.20	0.3	0.016	0.0053		0.007				0.255		228	
24-Jul-00	20053		7.00	0.4	0.014	0.0055	0.00060	0.007		0.0020	0.109	0.252	10	234	
24-Jul-00	20054		6.88	0.3	0.016	0.0052	0.00060	0.007		0.0020	0.108	0.250	13	235	
24-Jul-00	20055		6.89	0.6	0.016	0.0047	0.00060	0.007		0.0020	0.105	0.246	10	243	
25-Jul-00	20058		7.17	0.3	0.032	0.0052		0.008				0.290		235	
26-Jul-00	20059		7.19	0.9	0.028	0.0050		0.009				0.253		229	
27-Jul-00	20062		7.19	0.6	0.028	0.0045		0.007				0.247		227	
28-Jul-00	20063		7.26	1.1	0.012	0.0045		0.007				0.256		228	
29-Jul-00	20064		7.25	0.5	0.012	0.0032		0.005				0.255		228	
30-Jul-00	20073		7.20	0.5	0.016	0.0041		0.007				0.303		224	
31-Jul-00	20074		7.22	1.2	0.012	0.0039	0.00060	0.007		0.0210	0.113	0.255	8	232	
01-Aug-00	20075		7.04	1.1	0.018	0.0057		0.008				0.271		224	
02-Aug-00	20076		6.98	1.2	0.020	0.0050		0.006				0.260		222	
03-Aug-00	20077		7.04	0.8	0.016	0.0053		0.006				0.271		220	
04-Aug-00	20078		7.03	0.7	0.020	0.0056		0.008				0.276		224	
05-Aug-00	20079		7.80		0.018	0.0044		0.009				0.258		256	
06-Aug-00	20087		7.12	0.4	0.018	0.0044		0.005				0.252		232	
07-Aug-00	20088		7.07	0.7	0.018	0.0047	0.00060	0.009		0.0020	0.117	0.270	8	258	
07-Aug-00	20089		7.01	0.8	0.020	0.0048	0.00060	0.006		0.0020	0.120	0.275	8	255	
07-Aug-00	20090		7.02	0.9	0.020	0.0051	0.00060	0.006		0.0020	0.111	0.256	8	257	
08-Aug-00	20091		7.12	1.3	0.018	0.0066		0.007				0.248		230	
09-Aug-00	20092		7.07	1.3	0.018	0.0100		0.006				0.247		222	
10-Aug-00	20093		7.01	1.5	0.016	0.0121		0.006				0.244		228	
11-Aug-00	20094		7.15	1.1	0.016	0.0119		0.005				0.240		227	
12-Aug-00	20095		7.13	1.3	0.018	0.0099		0.009				0.245		230	
13-Aug-00	20103		7.09	1.0	0.016	0.0066		0.009				0.248		238	
14-Aug-00	20104		7.20	1.2	0.016	0.0069	0.00060	0.008		0.0020	0.102	0.260	7	236	
15-Aug-00	20107		7.13	0.9	0.016	0.0060		0.009				0.252			
16-Aug-00	20108		7.16	1.4	0.014	0.0057		0.006				0.263		222	
17-Aug-00	20109		7.15	1.2	0.014	0.0062		0.011				0.242		220	
18-Aug-00	20110		7.07	1.0	0.016	0.0076		0.007				0.240		222	
19-Aug-00	20111		7.00	0.9	0.014	0.0064		0.008				0.241		229	
20-Aug-00	20117		6.50	0.8	0.014	0.0077		0.005				0.245			

LUPIN TAILINGS EFFLUENT DISCHARGE - SNP 925-10

925-10		Analyte:	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Zinc	Alkalinity	Hardness	Conduct.
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uM/cm
< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400	0.800			
Date	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200	0.400			
21-Aug-00	20118		6.90	0.5	0.014	0.0057	0.00060	0.007		0.0020	0.107	0.245	7	244	
21-Aug-00	20119		6.90	1.1	0.012	0.0057	0.00060	0.006		0.0020	0.111	0.306	6	242	
21-Aug-00	20120		6.87	0.9	0.012	0.0045	0.00060	0.009		0.0020	0.114	0.250	6	243	
22-Aug-00	20124		6.79	0.7	0.002	0.0115		0.008				0.260		221	
23-Aug-00	20125		6.95	0.6	0.002	0.0091		0.007				0.252		223	
24-Aug-00	20126		6.67	1.3	0.002	0.0084		0.009				0.261		224	
25-Aug-00	20129		6.94	0.8	0.002	0.0111		0.008				0.268		216	
26-Aug-00	20130		6.69	0.8	0.002	0.0133		0.009				0.276		222	
27-Aug-00	20138		6.51	1.5	0.002	0.0092		0.008				0.255		222	
28-Aug-00	20139		6.63	0.9	0.002	0.0100	0.00060	0.008		0.0020	0.118	0.261		217	
29-Aug-00	20140		6.49	0.7	0.016	0.0053		0.009				0.253		231	
30-Aug-00	20142		6.61	0.7	0.014	0.0049		0.012				0.257			
31-Aug-00	20143		6.66	0.8	0.016	0.0049		0.010				0.261			
01-Sep-00	20144		6.58	0.8	0.016	0.0051		0.006				0.254			
02-Sep-00	20152		6.53	1.2	0.016	0.0061	0.00060	0.011		0.0020	0.111	0.258	5	239	
15-Jul-02	20046		7.01	1.0	0.004	0.0149	0.00019	0.012		0.0005	0.081	0.191	20	245	858
16-Jul-02	20055		6.68	1.0	0.002	0.0075		0.007				0.194			
17-Jul-02	20068		6.97	1.0	0.006	0.0087		0.014				0.206			
18-Jul-02	20069		7.17	1.0	0.008	0.0070		0.007				0.185			853
19-Jul-02	20070		7.12	1.0	0.012	0.0071		0.007				0.185			851
19-Jul-02	20071		7.18	1.0	0.014	0.0070		0.007				0.187			851
19-Jul-02	20072		7.19	1.0	0.012	0.0069		0.007				0.184			844
20-Jul-02	20073		7.19	1.0	0.022	0.0111		0.010				0.225			880
21-Jul-02	20074		7.00	1.0	0.018	0.0071		0.007				0.190			866
22-Jul-02	20075		7.20	1.0	0.014	0.0069	0.00017	0.007		0.0002	0.078	0.186	10	233	878
23-Jul-02	20077		6.90	1.0	0.098	0.0074		0.007				0.196			855
24-Jul-02	20086		6.93	1.0	0.104	0.0073		0.007				0.194			853
25-Jul-02	20090		7.05	1.0	0.096	0.0078		0.007				0.201			843
26-Jul-02	20091		7.16	1.0	0.140	0.0076		0.008				0.205			852
27-Jul-02	20092		7.14	1.0	0.132	0.0079		0.007				0.213			846
28-Jul-02	20093		7.14	1.0	0.136	0.0085		0.007				0.209			847
29-Jul-02	20094		7.10	2.0	0.144	0.0121	0.00022	0.007		0.0003	0.087	0.209	13	243	840
29-Jul-02	20095		7.06	2.0	0.136	0.0105	0.00021	0.006		0.0002	0.085	0.205	10	245	841
29-Jul-02	20096		7.00	1.0	0.130	0.0112	0.00024	0.007		0.0003	0.088	0.213	9	245	849
30-Jul-02	20098		6.91	5.0	0.092	0.0109		0.007				0.207			
31-Jul-02	20099		6.79	2.0	0.080	0.0800		0.006				0.206			
01-Aug-02	20108		6.85	2.0	0.076	0.0085		0.006				0.204			
02-Aug-02	20110		6.74	1.0	0.062	0.0080		0.006				0.197			

LUPIN TAILINGS EFFLUENT DISCHARGE - SNP 925-10

925-10		Analyte:	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Zinc	Alkalinity	Hardness	Conduct.
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uM/cm
< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400	0.800			
Date	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200	0.400			
03-Aug-02	20111		6.86	1.0	0.060	0.0099		0.006				0.200			
04-Aug-02	20118		6.55	1.0	0.080	0.0071		0.004				0.173			
05-Aug-02	20123		6.85	2.0	0.082	0.0104	0.00019	0.006		0.0006	0.089	0.197	9	228	847
06-Aug-02	20124		6.98	1.0	0.104	0.0115		0.006				0.201			
07-Aug-02	20133		6.75	1.0	0.092	0.0132		0.006				0.201			
08-Aug-02	20134		6.89	1.0	0.092	0.0123		0.007				0.247			
09-Aug-02	20135		6.83	1.0	0.098	0.0157		0.006				0.195			
10-Aug-02	20136		6.77	1.0	0.088	0.0145		0.006				0.194			
11-Aug-02	20137		6.73	2.0	0.080	0.0146		0.006				0.195			
12-Aug-02	20138		6.95	1.0	0.078	0.0108	0.00018	0.006		0.0004	0.084	0.193	10	218	855
12-Aug-02	20141		6.33	1.0	0.074	0.0132	0.00017	0.005		0.0003	0.083	0.190	9	223	881
12-Aug-02	20142		6.64	1.0	0.070	0.0131	0.00016	0.005		0.0004	0.084	0.195	8	222	880
13-Aug-02	20143		6.98	2.0	0.080	0.0149		0.005				0.177			
14-Aug-02	20144		7.07	1.0	0.084	0.0160		0.006				0.173			
15-Aug-02	20153		6.61	2.0	0.086	0.0162		0.006				0.189			
16-Aug-02	20155		6.73	1.0	0.088	0.0160		0.007				0.186			
17-Aug-02	20156		6.77	1.0	0.088	0.0179		0.007				0.181			
18-Aug-02	20157		6.84	2.0	0.088	0.0195		0.008				0.176			
19-Aug-02	20164		7.12	2.0	0.086	0.0196	0.00020	0.008		0.0006	0.081	0.181	5	224	884
19-Aug-02	20165		7.18	1.0	0.092	0.0194	0.00018	0.007		0.0004	0.082	0.176	5	223	885
19-Aug-02	20166		7.21	2.0	0.090	0.0187	0.00018	0.008		0.0005	0.080	0.177	5	223	885
20-Aug-02	20168		7.23	2.0	0.080	0.0201		0.007				0.186			
21-Aug-02	20177		6.95	2.0	0.076	0.0207		0.006				0.187			
22-Aug-02	20178		7.60	3.0	0.078	0.0200		0.006				0.192			
23-Aug-02	20179		6.99	2.0	0.080	0.0198		0.013				0.176			
24-Aug-02	20180		7.01	2.0	0.078	0.0183		0.007				0.175			
25-Aug-02	20181		7.00	1.0	0.066	0.0184		0.018				0.186			
26-Aug-02	20182		7.03	3.0	0.080	0.0182	0.00016	0.006		0.0003	0.018	0.172	11	226	874
26-Aug-02	20183		6.95	2.0	0.078	0.0185	0.00016	0.034		0.0003	0.080	0.173	10	227	879
26-Aug-02	20184		6.94	1.0	0.066	0.0182	0.00016	0.007		0.0003	0.088	0.169	10	228	877
27-Aug-02	20186		7.12	1.0	0.060	0.0179		0.006				0.195			
28-Aug-02	20196		6.94	1.0	0.066	0.0171		0.010				0.183			
29-Aug-02	20197		6.95	2.0	0.066	0.0198		0.006				0.189			
30-Aug-02	20198		6.94	1.0	0.070	0.0191		0.008				0.187			
31-Aug-02	20199		7.10	1.0	0.072	0.0180		0.006				0.177			
01-Sep-02	20201		7.13	2.0	0.064	0.0178		0.006				0.191			
02-Sep-02	20202		7.01	1.0	0.072	0.0180	0.00016	0.006		0.0003	0.080	0.185	27	226	10
02-Sep-02	20203		6.98	1.0	0.068	0.0175	0.00018	0.006		0.0003	0.078	0.181	15	229	9
02-Sep-02	20204		6.98	1.0	0.052	0.0177	0.00019	0.005		0.0003	0.079	0.182	10	231	10

LUPIN TAILINGS EFFLUENT DISCHARGE - SNP 925-10

925-10		Analyte:	pH	TSS	Cyanide	Arsenic	Cadmium	Copper	Hg	Lead	Nickel	Zinc	Alkalinity	Hardness	Conduct.
		Units:		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	uM/cm
< (less than)	NWB	Max Grab:	6.0 to 9.5	30.0	1.600	1.0000		0.300		0.2000	0.400	0.800			
Date	**Log No.**	Max Avg:	6.0 to 9.5	15.0	0.800	0.5000	n/a	0.150		0.1000	0.200	0.400			
03-Sep-02	20205		6.99	1.0	0.086	0.0163		0.006				0.172			
04-Sep-02	20206		6.94	2.0	0.048	0.0162		0.006				0.171			
05-Sep-02	20207		6.95	2.0	0.062	0.0199		0.008				0.169			
06-Sep-02	20216		6.83	2.0	0.058	0.0171		0.006				0.172			
07-Sep-02	20217		6.91	1.0	0.054	0.0174	0.00019	0.007		0.0003	0.082	0.171			
15-Jul-05	51045		6.69	20.0	0.046	0.0110	0.00009	0.014	0.00010	0.0004	0.090	0.232	6	210	878
16-Jul-05	51046		6.66	3.0	0.046	0.0087	0.00011	0.014	0.00010	0.0004	0.089	0.235	5	240	876
17-Jul-05	51047		6.67	2.0	0.048	0.0076	0.00011	0.014	0.00010	0.0003	0.092	0.244	5	212	875
18-Jul-05	51048		6.64	2.0	0.044	0.0074	0.00011	0.014	0.00010	0.0005	0.092	0.242	6	220	877
19-Jul-05	51056		6.64	2.0	0.044	0.0086	0.00010	0.015	0.00010	0.0003	0.092	0.246	5	221	801
20-Jul-05	51065		6.28	2.0	0.040	0.0096	0.00009	0.015	0.00010	0.0004	0.095	0.263	5	214	819
21-Jul-05	51066		6.55	2.0	0.042	0.0116	0.00009	0.014	0.00010	0.0004	0.098	0.266	7	217	839
22-Jul-05	51067		6.48	2.0	0.042	0.0102	0.00011	0.014	0.00010	0.0004	0.097	0.262	5	217	840
23-Jul-05	51068		6.44	3.0	0.042	0.0100	0.00010	0.014	0.00010	0.0003	0.101	0.261	7	214	839
24-Jul-05	51069		6.41	2.0	0.038	0.0089	0.00012	0.014	0.00010	0.0003	0.096	0.251	7	218	837
25-Jul-05	51070		6.36	2.0	0.036	0.0088	0.00010	0.014	0.00010	0.0003	0.099	0.252	5	215	840
26-Jul-05	51071		6.36	2.0	0.036	0.0088	0.00010	0.014	0.00010	0.0003	0.099	0.259	6	219	839
27-Jul-05	51080		6.39	2.0	0.040	0.0146	0.00010	0.015	0.00010	0.0005	0.096	0.251	5	216	847
28-Jul-05	51082		6.40	3.0	0.040	0.0082	0.00011	0.013	0.00010	0.0002	0.097	0.254	5	212	810
29-Jul-05	51083		6.30	3.0	0.040	0.0087	0.00010	0.014	0.00010	0.0003	0.099	0.266	5	220	809
30-Jul-05	51084		6.26	2.0	0.044	0.0096	0.00013	0.014	0.00010	0.0004	0.099	0.259	5	216	812
31-Jul-05	51085		6.22	2.0	0.044	0.0089	0.00012	0.077	0.00010	0.0024	0.096	0.296	5	216	818
01-Aug-05	51086		6.18	2.0	0.040	0.0109	0.00012	0.014	0.00010	0.0004	0.100	0.265	5	211	819
02-Aug-05	51087		6.14	3.0	0.040	0.0118	0.00011	0.014	0.00010	0.0040	0.099	0.260	5	210	812
03-Aug-05	51095		6.07	3.0	0.036	0.0096	0.00016	0.015	0.00010	0.0004	0.101	0.279	5	208	827
04-Aug-05	51096		5.99	3.0	0.038	0.0090	0.00010	0.014	0.00010	0.0003	0.100	0.255	5	222	872
05-Aug-05	51097		5.95	2.0	0.036	0.0092	0.00011	0.014	0.00010	0.0003	0.099	0.251	5	217	874
06-Aug-05	51098		5.91	2.0	0.034	0.0098	0.00011	0.014	0.00010	0.0004	0.100	0.255	5	221	881
07-Aug-05	51099		5.87	3.0	0.032	0.0095	0.00011	0.014	0.00010	0.0003	0.100	0.262	5	221	880
08-Aug-05	51100		5.75	2.0	0.030	0.0111	0.00012	0.014	0.00010	0.0004	0.097	0.251	5	217	866
09-Aug-05	51101		5.71	3.0	0.028	0.0100	0.00013	0.014	0.00010	0.0004	0.098	0.259	5	217	865
10-Aug-05	51109		5.66	2.0	0.028	0.0100	0.00014	0.016	0.00010	0.0004	0.098	0.271	5	217	863
11-Aug-05	51110		5.90	2.0	0.028	0.0091	0.00014	0.048	0.00010	0.0004	0.097	0.259	5	209	880
Average	**SNP 925-10**		**6.83**	**1.5**	**0.036**	**0.0167**	**0.00027**	**0.010**	**0.00010**	**0.0035**	**0.082**	**0.232**	**10**	**214**	**950**

COVERED CELL WATER LEVEL MEASUREMENTS

Length of all pipes = 60.00 inches All measurements in inches
Note:WC-5* - Depth to tails estimated. Hole kept collapsing.
Note: WC-6** - Dug by hand until started collapsing, then inserted pipe. Cover thickness estimated.

		1-Aug-02	3-Aug-02	27-Aug-02	10-Jul-03	28-Jul-03	11-Jun-04	4-Jul-04	1-Aug-04	8-Aug-04	9-Sep-04	10-Sep-04	26-Jun-05	18-Jul-05	15-Aug-05	8-Sep-05	Average Depth of Water
WC1-1																	
Cover Depth (in)	46.00																
Pipe above ground (in)	20.00																
Pipe below ground (in)	40.00																
Depth to water, from top of pipe		60.00	60.00	60.00		58.00		55.00		59.75	59.00	Pipe Removed					
Depth of water in pipe		0.00	0.00	0.00		2.00		5.00		0.25	1.00						1.18
Depth to water below surface		>40.00	>40.00	>40.00		38.00		35.00		39.75	39.00						
WC1-2																	
Cover Depth (in)	42.00																
Pipe above ground (in)	24.00																
Pipe below ground (in)	36.00																
Depth to water, from top of pipe		58.00	59.75	56.00		56.00		53.50		54.75	47.00			51.00	53.00		
Depth of water in pipe		2.00	0.25	4.00		4.00		6.50		5.25	13.00			9.00	7.00		5.67
Depth to water below surface		34.00	35.75	32.00		32.00		29.50		30.75	23.00			27.00	29.00		
WC1-3																	
Cover Depth (in)	38.50																
Pipe above ground (in)	27.50																
Pipe below ground (in)	32.50																
Depth to water, from top of pipe		58.50	59.75	56.75		59.50		53.00		59.75	55.50			56.00	57.00		
Depth of water in pipe		1.50	0.25	3.25		0.50		7.00		0.25	4.50			4.00	3.00		2.69
Depth to water below surface		31.00	32.25	29.25		32.00		25.50		32.25	28.00			28.50	29.50		
WC1-4																	
Cover Depth (in)	51.00																
Pipe above ground (in)	15.00																
Pipe below ground (in)	45.00																
Depth to water, from top of pipe		53.00	54.00	46.00		53.50		41.00		49.50	37.00			48.50	43.00		
Depth of water in pipe		7.00	6.00	14.00		6.50		19.00		10.50	23.00			11.50	17.00		12.72
Depth to water below surface		38.00	39.00	31.00		38.50		26.00		34.50	22.00			33.50	28.00		
WC1-5																	
Cover Depth (in)	46.00																
Pipe above ground (in)	26.00																
Pipe below ground (in)	34.00																
Depth to water, from top of pipe		36.00	37.00	27.75		40.75		40.50		39.00	26.00			41.50	32.00		
Depth of water in pipe		24.00	23.00	32.25		19.25		19.50		21.00	34.00			18.50	28.00		24.39
Depth to water below surface		10.00	11.00	1.75		14.75		14.50		13.00	0.00			15.50	6.00		
WC1-6																	
Cover Depth (in)	40.00																
Pipe above ground (in)	32.00																
Pipe below ground (in)	28.00																
Depth to water, from top of pipe		50.00	51.00	41.00		53.25		46.00		52.50	42.50			47.00	49.00		
Depth of water in pipe		10.00	9.00	19.00		6.75		14.00		7.50	17.50			13.00	11.00		11.97
Depth to water below surface		18.00	19.00	9.00		21.25		14.00		20.50	10.50			15.00	17.00		
WC1-7																	
Cover Depth (in)	48.50											53.00					
Pipe above ground (in)	14.25											7.00					
Pipe below ground (in)	45.75											53.00					
Depth to water, from top of pipe		59.00	59.00	58.75		56.00		43.50		59.50	58.25	51.00	38.00	47.00	44.00		
Depth of water in pipe		1.00	1.00	1.25		4.00		16.50		0.50	1.75	9.00	22.00	13.00	16.00		15.00
Depth to water below surface		44.75	44.75	44.50		41.75		29.25		45.25	44.00	44.00	31.00	40.00	37.00		

COVERED CELL WATER LEVEL MEASUREMENTS

Length of all pipes = 60.00 inches All measurements in inches

Note:WC-5* - Depth to tails estimated. Hole kept collapsing.

Note: WC-6** - Dug by hand until started collapsing, then inserted pipe. Cover thickness estimated.

		1-Aug-02	3-Aug-02	27-Aug-02	10-Jul-03	28-Jul-03	11-Jun-04	4-Jul-04	1-Aug-04	8-Aug-04	9-Sep-04	10-Sep-04	26-Jun-05	18-Jul-05	15-Aug-05	8-Sep-05	Average Depth of Water
WC1-8																	
Cover Depth (in)	42.00																
Pipe above ground (in)	24.00																
Pipe below ground (in)	36.00																
Depth to water, from top of pipe		51.00	52.00	44.00		53.00		51.00		53.50		44.00		52.00	46.00		
Depth of water in pipe		9.00	8.00	16.00		7.00		9.00		6.50		16.00		8.00	14.00		9.94
Depth to water below surface		27.00	28.00	20.00		29.00		27.00		29.50		20.00		28.00	22.00		
WC1-9																	
Cover Depth (in)	39.50																
Pipe above ground (in)	26.50																
Pipe below ground (in)	33.50																
Depth to water, from top of pipe		59.00	59.75	58.75		58.75		55.00		59.75	56.25			57.00	56.00		
Depth of water in pipe		1.00	0.25	1.25		1.25		5.00		0.25	3.75			3.00	4.00		1.97
Depth to water below surface		32.50	33.25	32.25		32.25		28.50		33.25	29.75			30.50	29.50		
Pad - N																	
Cover Depth (in)	>32.00											>41.00					
Pipe above ground (in)	28.00				Installed							19.00					
Pipe below ground (in)	32.00											41.00					
Depth to water, from top of pipe					60.00	60.00	40.25	57.00	60.00	60.00		49.00		53.00	53.00		
Depth of water in pipe					0.00	0.00	19.75	3.00	0.00	0.00		11.00		5.50	7.00		8.25
Depth to water below surface					>32.00	>32.00	12.25	29.00	>32.00	>32.00		30.00		34.00	26.50		
Pad - S																	
Cover Depth (in)	>28.00											>35.00					
Pipe above ground (in)	32.00				Installed							25.00					
Pipe below ground (in)	28.00											35.00					
Depth to water, from top of pipe					60.00	60.00	35.00	55.50	60.00	58.50		46.00		49.00	49.00		
Depth of water in pipe					0.00	0.00	25.00	4.50	0.00	1.50		14.00		9.50	11.00		11.75
Depth to water below surface					>28.00	>28.00	3.00	23.50	>28.00	26.50		21.00		24.00	22.50		
WC3-1												Installed					
Cover Depth (in)	48.00																
Pipe above ground (in)	16.00																
Pipe below ground (in)	44.00																
Depth to water, from top of pipe												60.00		49.00		47.50	
Depth of water in pipe												0.00		11.00		12.50	11.75
Depth to water below surface												>48.00		33.00		31.50	