

August 1, 2014

Yukon Zinc Corp.  
#701 – 475 Howe Street  
Vancouver, British Columbia  
V6C 2B3

**Robin McCall**  
**Wolverine Mine Environmental Superintendent**

Dear Mr. McCall:

**Wolverine Mine Tailings Facility**  
**2014 Annual Tailings Facility Physical Inspection**

## **1 INTRODUCTION**

### **1.1 General**

This letter report presents the findings from the annual Dam Safety Inspection (DSI) of the Wolverine Tailings Facility as required by Quartz Mining License QML-0006. The inspection was carried out on June 10 to June 12, 2014 by Mr. Lowell Constable of Klohn Crippen Berger Ltd. (KCB). This report includes a summary of the stability and status of inspected structures, and provides recommendations for remedial action where necessary. Recommendations made in this report are compiled in Table 5.1 at the end of the letter.

The starter dam for the Wolverine tailings facility was constructed in 2009 and 2010 and was commissioned in October 2009. The main facility components that were constructed in 2009 include:

- a 19 m high homogeneous earthfill dam constructed with borrow material excavated from the impoundment area;
- a 40 mil LLDP geomembrane liner over the impoundment area. The liner is anchored into the dam crest and perimeter of the impoundment in a ditch backfilled with soil; and
- Diversion Ditch A and Diversion Ditch B, which direct non-contact runoff water around the impoundment.

The main facility components that were constructed in 2010 include:

- the reclaim pump barge and access ramp;
- tailings delivery pipelines and water reclaim pipelines;
- starter dam emergency spillway;
- seepage recovery pond dyke and water pump-back system; and

- monitoring instrumentation.

The dam was raised in 2012 to the Stage 2 crest elevation (El. 1313.5 m). The main facility components that were constructed in 2012 include:

- a 6 m high downstream dam raise;
- a 60-mil LLDPE liner on the raised impoundment;
- relocated Diversion A, to direct non-contact surface water around the impoundment; and
- riprap lined emergency spillway.

The tailings impoundment has been accumulating water from runoff, mine discharge, and the sewage treatment plant since October 2009. Tailings have been discharged to the impoundment since September 2010. The tailings solids volume at the time of the site visit was approximately 444,100 m<sup>3</sup>. This was taken from reported tailings tonnages provided by YZC at an assumed *in situ* density of 1.6 t/m<sup>3</sup>. The volume of water at the time of the site visit was approximately 405,600 m<sup>3</sup>, based on the total volume estimated from the pond elevation and the as-built stage-storage curve.

## 1.2 Dam Classification

The Canadian Dam Association Dam Safety Guidelines (CDA 2007) were adopted to confirm the classification of the tailings facility for seismic and flood protection criteria. The selected dam classification, based on the dam break analysis and assessment of consequences of failure is "High" to "Very High", and the criteria for Very High has been selected for design. The use of the Very High rating provides additional security for the long term performance of the tailings facility after closure.

The impoundment is designed to safely route the 1:10,000 year return period flood through the Stage 2 spillway located in the west flank of the dam. During operations, the tailings facility will also store the 1:200 year return-period flood event, without the release of water. The design earthquake is a 1:10,000 year return period, with a peak ground acceleration of 0.22 g. The minimum geotechnical factors of safety during operations are 1.5 for static stability and 1.1 for pseudo-static stability.

## 1.3 Documentation

The main documentation for the Wolverine Tailings Facility includes:

- Yukon Zinc Corp., Wolverine Project, Tailings Facility, *Operations, Maintenance and Surveillance (OMS) Manual*, V2010-01, August 2010.
- Klohn Crippen Berger Ltd. (2009). *Wolverine Project - Tailings and Related Infrastructure Design and Construction Plan*, V2009-02. Vancouver: Klohn Crippen Berger Ltd.
- Klohn Crippen Berger Ltd. (2010). *Wolverine Project – Starter Tailings Storage Facility – 2009 Civil Works Construction Summary Report*. Vancouver: Klohn Crippen Berger Ltd.

- Klohn Crippen Berger Ltd. (2011a). 2010 Civil Works Addendum to *Starter Tailings Storage Facility – 2009 Civil Works Construction Summary Report*. Vancouver: Klohn Crippen Berger Ltd.
- Klohn Crippen Berger Ltd. (2011b). *Annual Tailings Facility Physical Inspection*.
- Klohn Crippen Berger Ltd. (2012). *2012 Civil Works Construction Summary Report*. Vancouver: Klohn Crippen Berger Ltd.
- Yukon Water Board. (2007, October 4). Type A Water Use Licence QZ04-065. Whitehorse, YT, Canada.

YZC provided KCB with Monthly Impoundment Monitoring Reports which conform to Operations, Maintenance and Surveillance (OMS) Manual requirements.

The OMS Manual was last updated in July 2010, before the facility was raised to its current crest elevation. A review of the OMS Manual and update if required is recommended.

## **2 SITE INSPECTION OBSERVATIONS**

A walkover inspection of the facility was carried out during the June 10 to June 12 site visit. Observations of various components of the facility were made and these are documented in the following sections for record purposes. Weather during the walkover was sunny. Select photos of the facilities are provided in Appendix I.

### **2.1 Dam**

- The dam is in good condition and there are no signs of settlement, cracking or slope movement. Some minor cracks were observed around the reclaim line on the dam crest, likely due to surficial settlement due to local loading.
- In 2011 there had been clear seepages along the toe of the starter dam), observed and noted in the 2011 Annual Tailings Facility Inspection Report. The seepages were buried during the 2011 dam raise and have not reappeared.

### **2.2 Stage 2 Dam Emergency Spillway**

The spillway would only be used during an extreme event (e.g. >200 year flood) when the impoundment is near full storage capacity. The spillway is located within natural ground. The spillway outlet consists of a riprap lined channel through the dam crest.

Currently the spillway channel reports to the east ditch along the Mine Haul Road. The closure spillway design extends the flow channel across the Mine Haul Road to report to the existing catch basin above Go Creek. YZC will extend the spillway to the catch basin for closure.

## 2.3 Impoundment Area and LLDPE Geomembrane Liner

- The liner was generally in good condition, with the exception discussed in item 2 and 3 below. YZC inspects the liner for defects as a part of routine surveillance as laid out in the OMS. Defects are not considered a concern provided they are small and patched when they are found.
- The north slope of the impoundment had slumped affecting the anchoring of the liner. During the DSI the length of the liner affected by the slump was approximately 3 meters along the anchor trench. Since then site has reported the condition is worsening. It is probable that water from Diversion Ditch A is seeping to the toe of the impoundment slope and causing the instability. KCB recommended that Diversion Ditch A be lined to cut off this seepage path and that tailings be placed in the north end of the impoundment to shore up the toe of the impoundment slope. This remedial work is underway.
- Cracking observed along the crest at the north end of the impoundment in 2013 had reopened as a part of the instability described in Item 2 above. Cracks ranged from 1 mm to 10 cm wide and ran approximately 100 m parallel to the crest of the impoundment slope. KCB recommends that the cracks be covered with plastic in the short term to prevent direct water ingress while the remedial works to Diversion Ditch A are completed. Once Diversion Ditch A is lined, the cracked area can be regraded and recompacted to close the cracks. This area should be monitored regularly during weekly and monthly inspections and after major storm events or seismic events.

## 2.4 Liner Underdrains

The liner underdrains, which consist of a French drain with a perforated pipe under the liner and two solid pipes under the dam, are performing as designed. There was no inflow into the underdrains at the upstream end of the impoundment Ditch A and the underdrain inlet.

The flow out of the underdrains daylighting downstream of the seepage dam is approximately 7 L/s, similar to flows observed during the 2013 DSI.

The purpose of the underdrains was to relieve uplift pressure on the liner during construction. As the impoundment becomes full, and the weight of water and tailings increases, the requirement for the underdrain diminishes and they will be decommissioned at a later stage of operations.

## 2.5 Seepage Recovery Pond and Dyke

The seepage recovery pond is a contingency structure which was installed to provide further security against the very low risk of impoundment seepage. The dam is formed by the mine access road and extreme flood flows are routed through a spillway culvert through the dam. Since construction of the TSF, water collected in the seepage recovery pond is currently pumped back to the tailings impoundment. The seepage impoundment area consists of an irregular pond partially shaped by areas excavated for construction of the main dam and the natural topography. No water quality data was reviewed but YZC reports that water in the seepage collection pond meets release targets but is still pumped back into the tailings impoundment at an average rate of 900 m<sup>3</sup> per month.

The spillway culverts in the seepage pond exits into a rockfill channel-stilling area, which flows towards Go Creek. The rockfill appeared to be in good condition and will function to control erosion during extreme events.

Seepage collection ditches along the toe of the dam fill were dry. No seepage was observed from any of the dam faces or abutments.

## 2.6 Diversion Ditch A and Diversion Ditch B

Diversion Ditch B had no observed flow in the channel east of the tailings impoundment. The soils in the base of the ditch and along the slope that the ditch traverses are relatively pervious and most slope runoff appears to infiltrate into the slope. The ditch exits into a culvert, which extends down the slope towards the toe of the seepage dam, where it outlets into a rockfill stilling basin. The stilling basin was in good condition. ~0.1 L/s was observed coming out of the culvert on the downstream end.

Diversion Ditch A was in good condition. Coconut mats had been used to limit sediments in 2013 had been removed because they had partially blocked the culverts and water had built up in the ditch to as much as 1 m deep. During the 2014 DSi the ditch was flowing at approximately 20 cm deep. The ditch exits into a culvert and rockfill stilling basin. The stilling basin was in good condition. The flow into the stilling basin was ~2 L/s.

## 2.7 Other Infrastructure

The tailings water reclaim pump barge, pumps and reclaim water lines have been installed and are readily accessible with a ramp down the upstream slope of the dam. Short stretches of the outer reclaim pipe wall had been damaged by equipment during relocation during the 2012 construction, but there was no indication reported by YZC that the damage was limiting the performance of the pipeline.

The tailings delivery pipelines were in place to the northwest side of the impoundment.

The tailings water reclaim pump barge and pumps are in place at the south end of the impoundment. A thick conveyor liner has been placed under the ramp to protect the geomembrane liner. No areas of liner damage were observed. The design called for relocation of the reclaim barge closer to the final spillway, and relocation of the tailings deposition spigots to the crest of the main dam, in order to gradually move the pond away from the dam face and closer to the spillway for closure. The relocation will be undertaken at the earliest opportunity.

Construction of a water treatment plant has been delayed, and as such the impoundment is currently storing more water than anticipated. Since the current volume of tailings is less than anticipated the overall current storage volume is close to what was predicted by the design water balance. YZC is in process of designing the water treatment plant for construction and commissioning in the next year.

## 2.8 Waste Rock Pad

North of the tailings facility is a temporary lined waste rock storage pad. The diversion ditches were dry but appeared to be functional. The service layer above the liner which had not been covered by waste rock was washed out and loose. Since the waste rock is currently being removed and complete removal of the stockpile is planned over the next year, remediation of the reduced service layer is not required, provided care is taken during operations near the liner, and any damage to the liner is repaired.

## 3 INSTRUMENTATION

Instrumentation for the dam consists of piezometers, survey pins and inclinometers. Groundwater monitoring wells, upstream and downstream of the tailings facility, continue to be monitored.

Piezometers were installed in both the dam foundation and the damfill. In general, piezometric levels in the foundation are about 2 m below the foundation elevation. Piezometric levels in the dam fill are about 2 m above the foundation level. Elevated groundwater levels in April, May and June are due to seasonal changes, and there appears to be a pattern to these fluctuations over the past 3 years. All water levels are within parameters required for stability (i.e. below "yellow trigger" levels defined in the OMS Manual), with the exception of a spike in pore water pressure reading in May and June, 2012 in PZ-10-03. This spike coincided with the beginning of fill placement for the Stage 2 Dam raise, and it is likely, given the subsequent drop off in water level, that the spike was due to a pore water response to initial fill placement. The piezometer data is presented in Appendix II.

Inclinometers were installed in the downstream slope of the dam. Both inclinometers have been damaged. YZC is considering installation of alternate slope monitoring array technology in the inclinometer casing to re-establish monitoring this location. KCB has no objections to this approach, but recommends the survey monuments specified in the design be installed around the crest of the dam to provide some monitoring of slope movement. The inclinometer data collected to date has not indicated any significant slope movement. The inclinometer data is presented in Appendix III.

## 4 WATER BALANCE

The water balance was reviewed and updated with as-built data from the Monthly Monitoring Reports and updated forecasts regarding production and water treatment. The water balance indicates that if the water treatment plant is operational by May, 2015, the pond elevation can be managed by treating at an average rate of  $14 \text{ m}^3/\text{hr}$  for 6 months out of the year. This will allow YZC to manage release times to best take advantage of natural high flow periods to limit the impact of introducing additional flows.

The updated water balance is presented in Appendix IV.

## 5 CONCLUSIONS AND RECOMMENDATIONS

The tailings facility is performing as expected. The dam structure appears stable and no indicators of concerns were observed.

The main recommendations of this review are summarized in Table 5.1. Deadlines for action on the recommendations have been categorized as:

- (A) requiring attention within 3 months; or
- (B) requiring attention within 12 months.

**Table 5.1      Table of Recommendations from 2013 Dam Safety inspection**

Recommendation	Deadline for Action
Continue to operate the facility as described in the Operation, Maintenance and Surveillance Manual V2010-01. Include regular monitoring of the slumping and cracking at the north end as a part of regular surveillance of the facility.	B
Conduct remedial works on Diversion Ditch A and on cracked and slumped area at north end of the impoundment.	A
Finalize design for and construct water treatment plant.	B
Install survey pins around dam crest and include in monthly monitoring.	B
Assess alternatives for relocating the reclaim barge and put a plan in place for this work.	B
Review OMS Manual and Update as required	B
The next Dam Safety Inspection should be in 1 year.	B

## 6 CLOSING

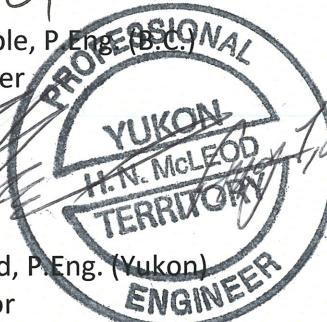
This report is an instrument of service of Klohn Crippen Berger Ltd. The report has been prepared for the exclusive use of Yukon Zinc Corp. (Client) for the specific application to the Wolverine Mine Tailings Facility. The report's contents may not be relied upon by any other party without the express written permission of Klohn Crippen Berger. In this report, Klohn Crippen Berger has endeavoured to comply with generally-accepted professional practice common to the local area. Klohn Crippen Berger makes no warranty, express or implied.

Yours truly,

**KLOHN CRIPPEN BERGER LTD.**

*Pul Cat*

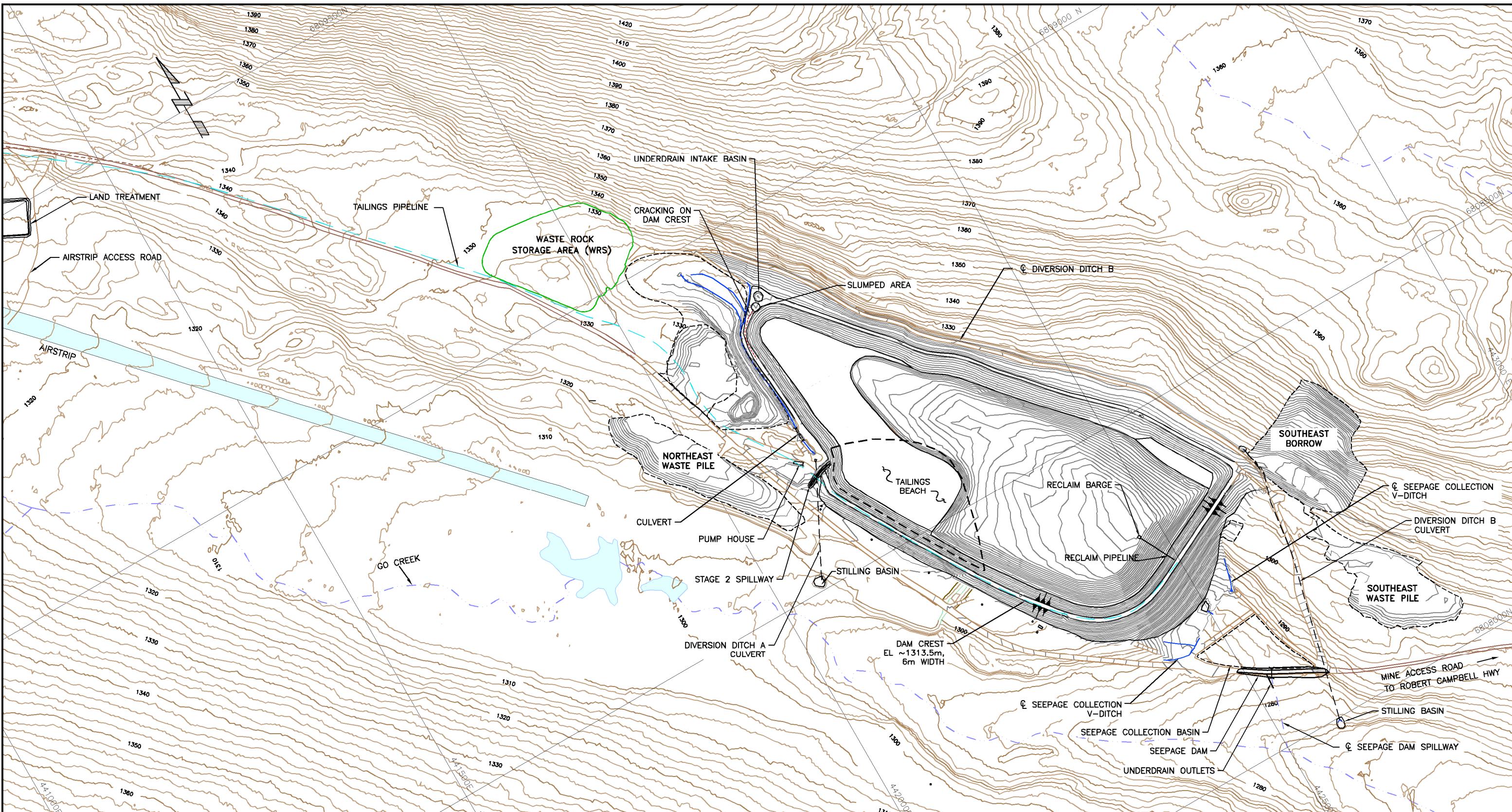
Lowell Constable, P.Eng. (BC)  
Project Manager



Harvey McLeod, P.Eng. (Yukon)  
Project Director

LC: jcp

Attachments: Figure 1 - Plan of 2014 Site Visit Observations  
Appendix I - Photo Record  
Appendix II - Piezometric Water Levels  
Appendix III – Inclinometer Readings  
Appendix IV – Water Balance  
Appendix V – 2014 Dam Safety Inspection Checklist



NOTES  
 1. NOT ALL CULVERTS HAVE BEEN SHOWN.  
 2. ALL ELEVATIONS IN METRES.

NOT FOR CONSTRUCTION

0 200 m

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PROJECT	PROCESS	CML	MECH.	STRUCT.	PIPE	SERVICES	ELECT.	INSTR.	NO	DESCRIPTION	BY	DATE
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PROJECT	PROCESS	CML	MECH.	STRUCT.	PIPE	SERVICES	ELECT.	INSTR.	NO	DESCRIPTION	BY	DATE
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PROJECT	PROCESS	CML	MECH.	STRUCT.	PIPE	SERVICES	ELECT.	INSTR.	NO	DESCRIPTION	BY	DATE
										ISSUE/REVISIONS		

SECTION:	FILENAME:	PROJECT NUMBER	DRAWING NUMBER	REV.
SCALE:				
DESIGN BY LC	AUG 15/13			
DRAWN BY OL	AUG 15/13			
CHECK BY HM				
APP BY: HM	AUG 15/13			

<b>Yukon Zinc</b> <small>CORPORATION</small> <small>WOLVERINE PROJECT</small> <small>2014 ANNUAL INSPECTION</small> <small>TAILINGS STORAGE FACILITY PLAN</small>			
 <b>Klohn Crippen Berger</b>			

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**APPENDIX I**  
**Photo Record**

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## Appendix I Photo Record



**Photo 1      Dam crest and downstream face**



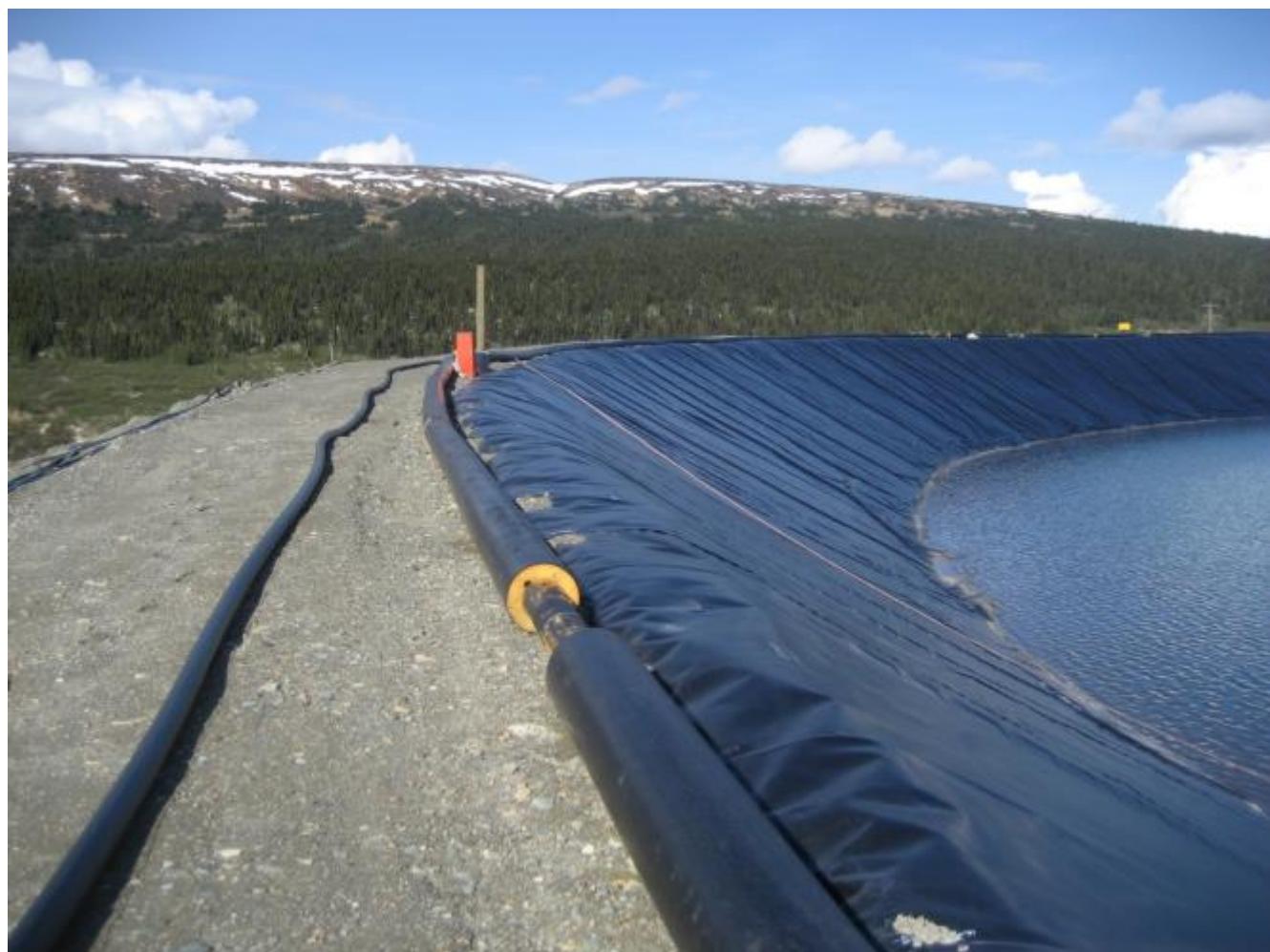
**Photo 2      View from west side of impoundment, looking south**



**Photo 3      View from west side of impoundment, looking east**



**Photo 4      View from west side of impoundment, looking north**



**Photo 5      Reclaim Line and upstream dam face**



**Photo 6      Reclaim Barge**



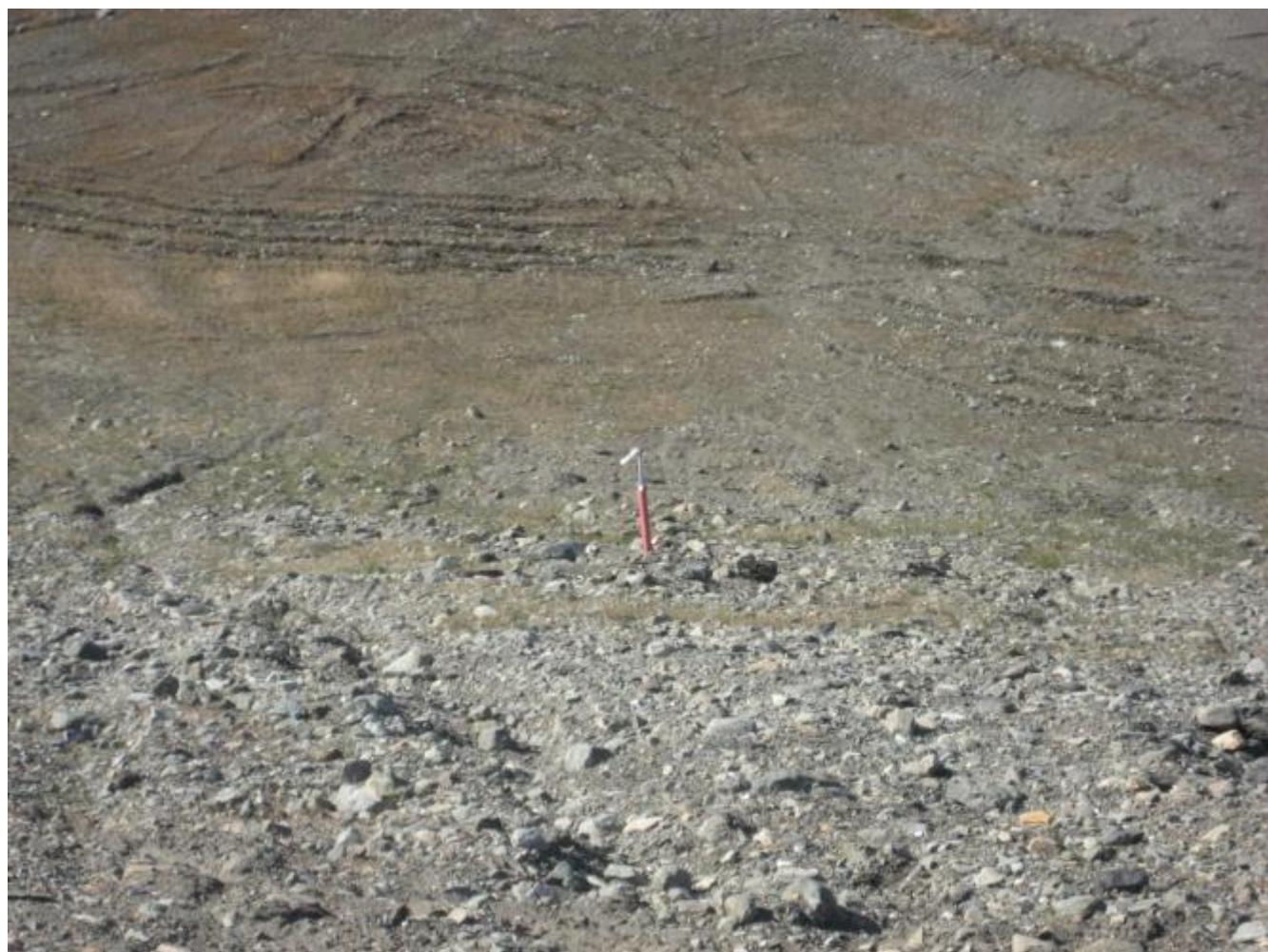
**Photo 7      Tailings deposition in northwest corner**



**Photo 8      Tailings Beach from east side of impoundment looking west**



**Photo 9      Impoundment from east abutment looking north**



**Photo 10      Inclinometer IN-10-02**



**Photo 11      Toe of West arm of dam**



**Photo 12      Toe of Southeast arm of dam**



**Photo 13      Underdrain inlet north of impoundment**



**Photo 14      Underdrain outlet**



**Photo 15      Downstream of underdrain outlet**



**Photo 16      Spillway taken from Mine Access Road**



**Photo 17      Diversion B looking downstream**



**Photo 18      Diversion B culvert inlet**



**Photo 19      Diversion B culvert outlet**



**Photo 20      Diversion A**



**Photo 21      Diversion A culvert inlet**



**Photo 22      Diversion A culvert outlet**



**Photo 23      Cracks at North End of impoundment**



**Photo 24      Cracks at north end of impoundment on crest**



**Photo 25      Slumping in north end of impoundment**



**Photo 26      Cracks around slumping area**



**Photo 27      Slump at north end of impoundment from dam**



**Photo 28      Seepage Collection Basin**



**Photo 29      Seepage Collection Basin Spillway**



**Photo 30      Waste Rock Storage Pile**



**Photo 31      Waste Rock Seepage Collection**

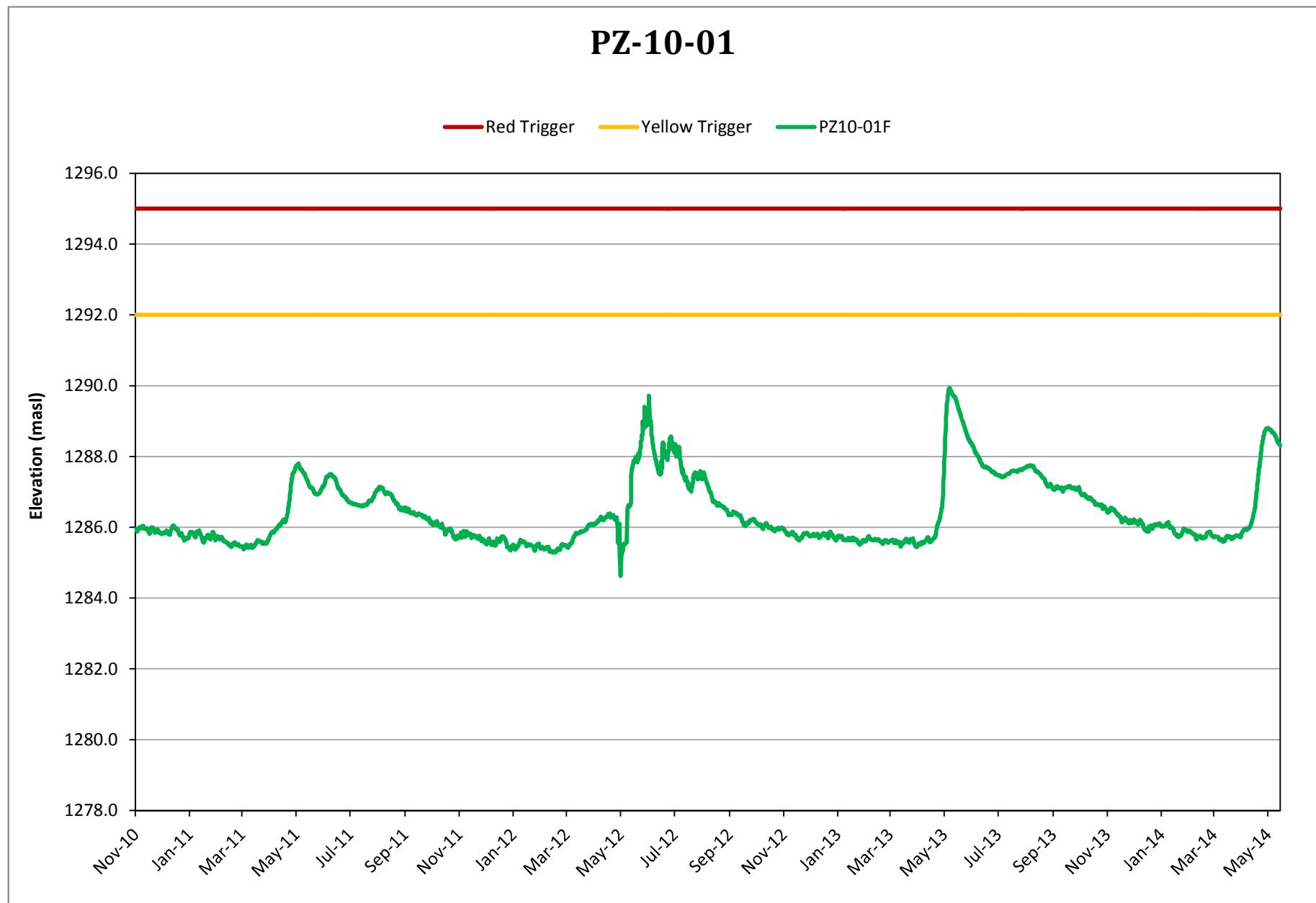


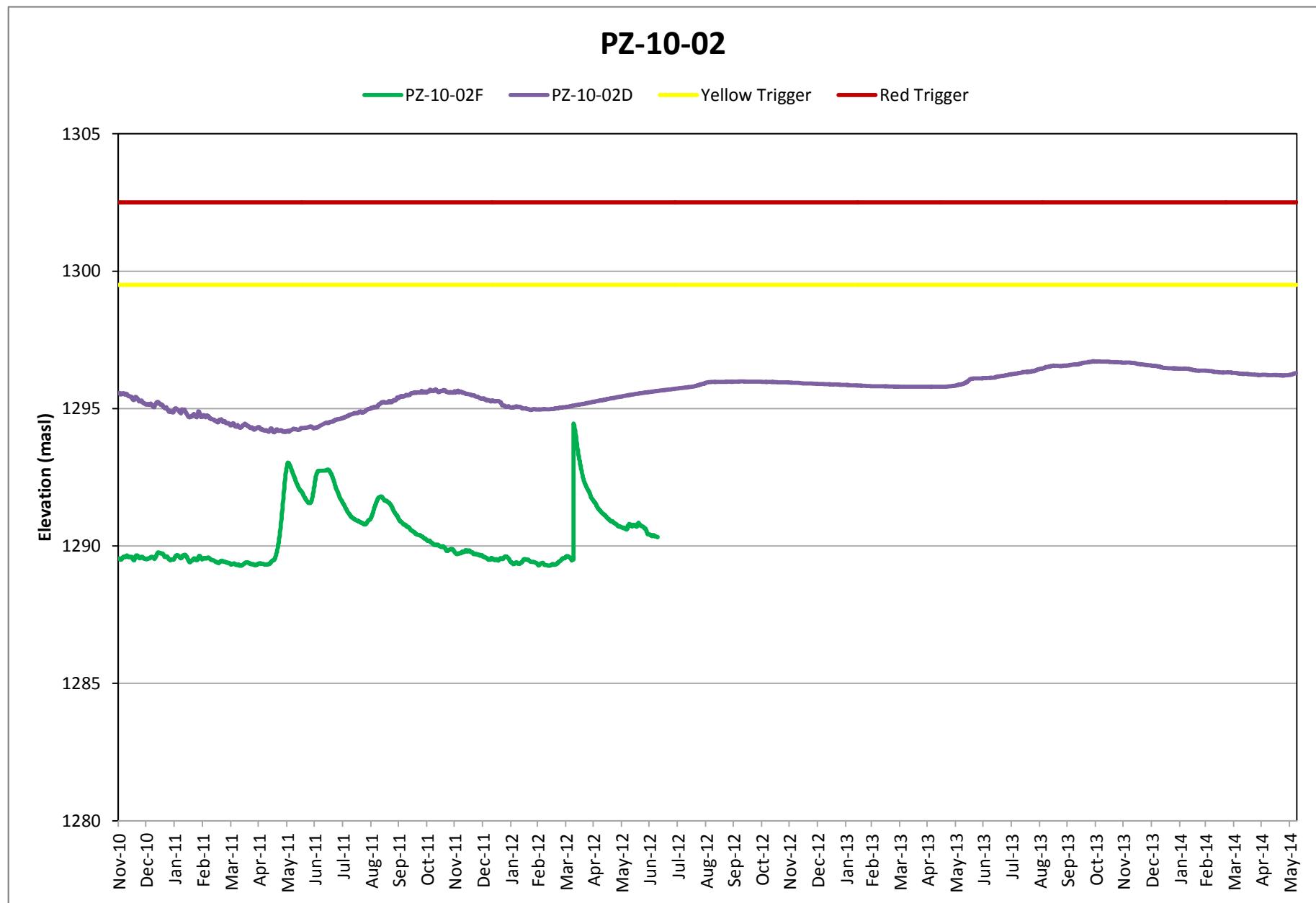
**Photo 32      Waste Rock Seepage and Underdrain outlets**

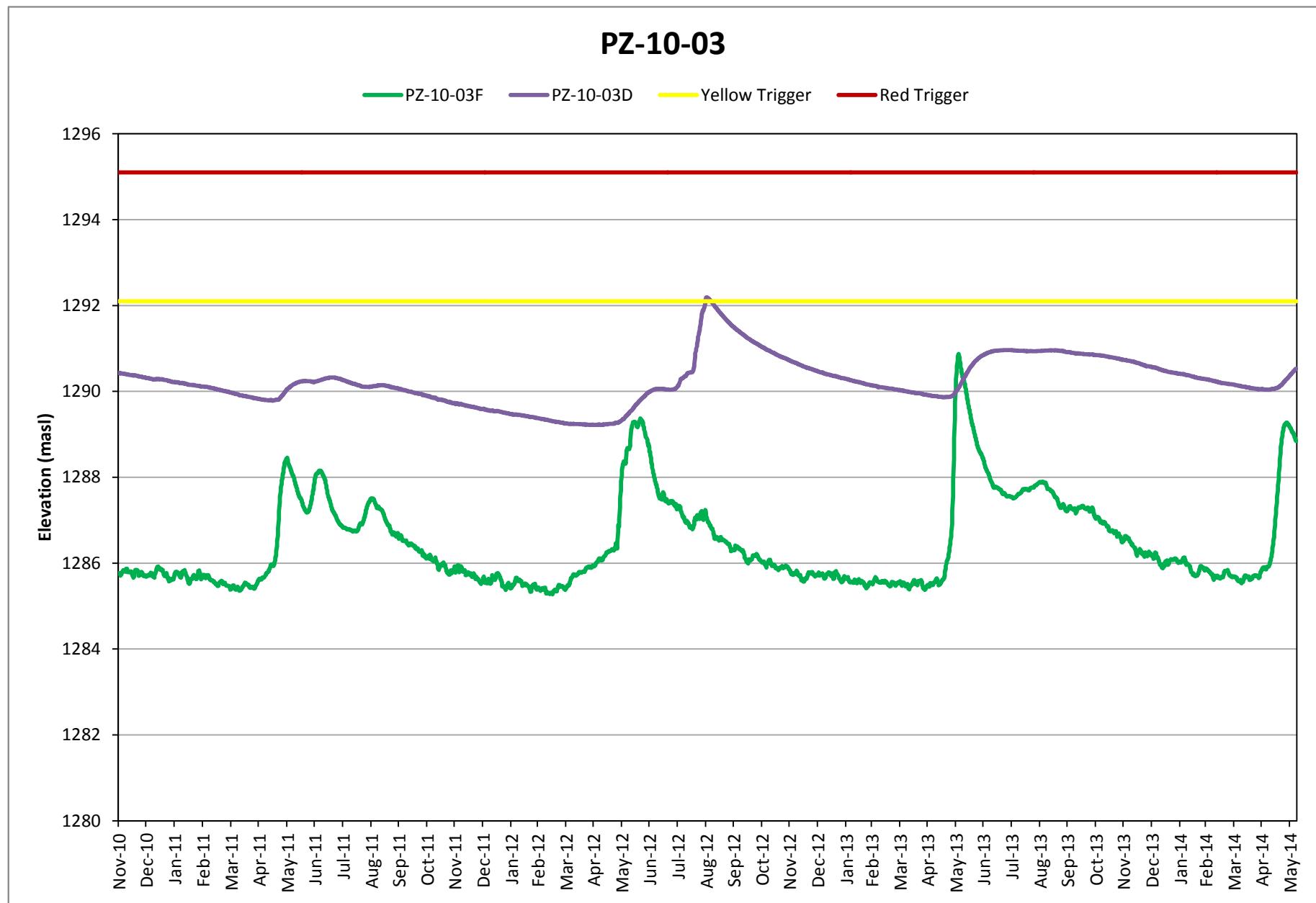
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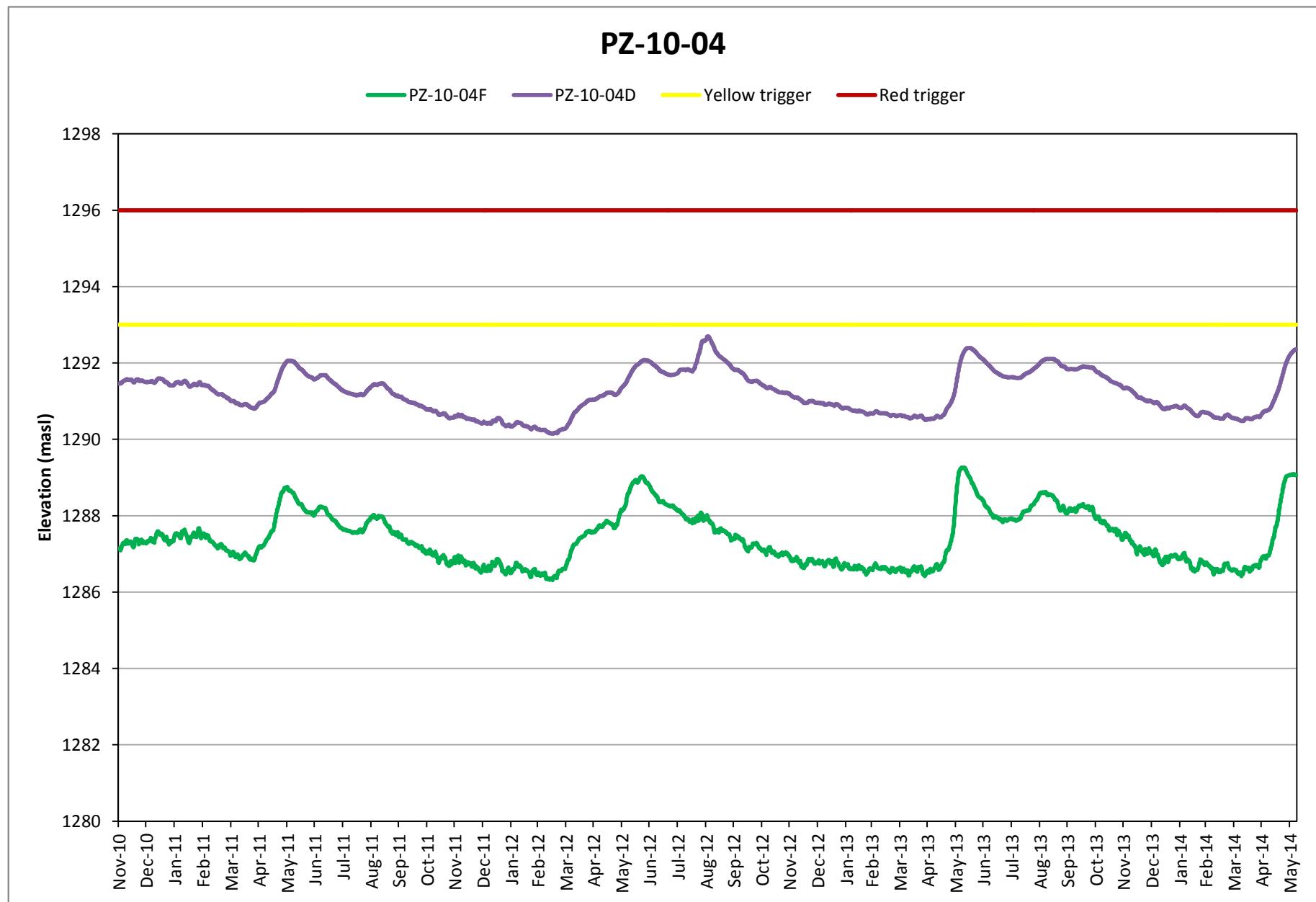
**APPENDIX II**  
**Piezometric Water Levels**

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## APPENDIX III

### Inclinometer Readings

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RST Digital Inclinometer Data				RST Digital Inclinometer Data				RST Digital Inclinometer Data				RST Digital Inclinometer Data							
File Version	2.2			File Version	2.2			File Version	2.2			File Version	2.2						
File Type	Digital Inclinometer			File Type	Digital Inclinometer			File Type	Digital Inclinometer			File Type	Digital Inclinometer						
Site	TAILINGS DAM			Site	TAILINGS DAM			Site	TAILINGS DAM			Site	TAILINGS DAM						
Borehole	IN10-01			Borehole	IN10-01			Borehole	IN10-01			Borehole	IN10-01						
Probe Serial#	DP06420000			Probe Serial#	DP06420000			Probe Serial#	DP06420000			Probe Serial#	DP06420000						
Reel Serial#	DR11930000			Reel Serial#	DR11930000			Reel Serial#	DR11930000			Reel Serial#	DR11930000						
Reading Date(m/d/y)	06/01/2011 10:18:26			Reading Date(m/d/y)	07/04/2011 11:58:38			Reading Date(m/d/y)	09/07/2011 10:16:53			Reading Date(m/d/y)	08/23/2012 7:35:36						
Depth	-13.5	-0.5	Depth	-13.5	-0.5	Depth	-13.5	-0.5	Depth	-25	-0.5	Depth	-25	-0.5	Depth				
Interval	0.5		Interval	0.5		Interval	0.5		Interval	0.5		Interval	0.5		Interval				
Depth Units	meters		Depth Units	meters		Depth Units	meters		Depth Units	meters		Depth Units	meters		Depth Units				
Reading Units	meters		Reading Units	meters	Reading Units	meters	Reading Units	meters	Reading Units	meters	Reading Units	meters	Reading Units	meters	Reading Units				
Operator			Operator		Operator		Operator		Operator		Operator		Operator		Operator				
Comment:			Comment:		Comment:		Comment:		Comment:		Comment:		Comment:		Comment:				
Comment End:			Comment End:		Comment End:		Comment End:		Comment End:		Comment End:		Comment End:		Comment End:				
Offset Correction	0		Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction				
Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-	Depth				
-0.5	0.03549719	-0.03484	-0.00044	0.00152	-0.5	-0.03277902	-0.00198	0.003351	-0.035486	-0.5	0.03684534	-0.00286189	-0.00157251	-0.035073	-0.5	0.2644787	-0.263826	-0.039963	0.040553
-1	0.02959396	-0.02889	-0.00355	0.004268	-1	-0.02575174	-0.00481	0.004691	-0.028627	-1	0.03064328	-0.00520407	-0.00421596	-0.03975	-1	0.2633183	-0.262579	-0.03975	0.040726
-1.5	0.01618515	-0.01617	-0.00122	0.002106	-1.5	-0.0112382	-0.00294	-0.00019	-0.0155	-1.5	0.01724242	-0.0023579	-0.00189857	-0.013927	-1.5	0.2465453	-0.245933	-0.036788	0.036972
-2	0.00541703	-0.00458	0.003651	-0.00324	-2	-0.00533758	0.003481	-0.00195	-0.005247	-2	0.00597843	0.00311221	0.00321947	-0.005267	-2	0.2209121	-0.220221	-0.033191	0.03314
-2.5	0.00774799	-0.00696	0.000624	-9.5E-05	-2.5	-0.00814819	0.000785	0.000941	-0.007312	-2.5	0.00788357	0.00051606	0.00062805	-0.007561	-2.5	0.2122052	-0.211373	-0.029576	0.030814
-3	0.00869598	-0.00791	-0.00137	0.001842	-3	-0.00773835	-0.00134	0.002234	-0.008194	-3	0.00885866	-0.00131236	-0.00145419	-0.00816	-3	0.2006788	-0.200079	-0.03033	0.030147
-3.5	0.00764286	-0.00674	-0.00203	0.002501	-3.5	-0.00670413	-0.00189	0.002492	-0.0071	-3.5	0.00775447	-0.00196087	-0.00209352	-0.007126	-3.5	0.1617234	-0.160807	-0.029086	0.02984
-4	0.00655298	-0.00574	-0.00189	0.002301	-4	-0.00555293	-0.00169	0.002166	-0.006036	-4	0.00669529	-0.00176738	-0.00183402	-0.005853	-4	0.1463327	-0.145789	-0.031244	0.03092
-4.5	0.00531532	-0.00469	-0.00116	0.00213	-4.5	-0.00404134	-0.00153	0.002406	-0.004693	-4.5	0.00548341	-0.0015107	-0.00163974	-0.004689	-4.5	0.1326445	-0.131769	-0.024853	0.024763
-5	0.00258903	-0.00175	-0.00163	0.002158	-5	-0.001607	-0.00149	0.002087	-0.001993	-5	0.00257662	-0.00157502	-0.00178374	-0.00192	-5	0.1184334	-0.118564	-0.020735	0.023881
-5.5	0.00117924	-0.00033	0.00018	0.000214	-5.5	-0.00020902	0.000338	-0.00072	-0.000606	-5.5	0.00253933	0.00024245	-0.00168629	-0.000555	-5.5	0.1168787	-0.115398	-0.023495	0.03661
-6	0.00067715	0.000149	0.002656	-0.00222	-6	-0.00057452	0.002834	-0.00215	-6.36E-05	-6	0.00122692	0.00283278	0.00015837	-6E-05	-6	0.1595054	-0.15639	-0.049575	0.068024
-6.5	-0.00084669	0.001706	0.002741	-0.00232	-6.5	0.00198169	0.002824	-0.00266	0.001594	-6.5	0.00071888	0.0027921	0.00258431	0.001555	-6.5	0.1764502	-0.190842	-0.02417	0.078703
-7	-0.00157433	0.002307	0.004002	-0.00365	-7	0.00231279	0.004301	-0.0039	0.002178	-7	-0.00159324	0.00419577	0.00397	0.00213	-7	0.1799327	-0.189665	-0.098745	0.083569
-7.5	-0.0019792	0.002741	0.005498	-0.00507	-7.5	0.00312999	0.004753	-0.00483	0.003685	-7.5	-0.00185139	0.00575885	0.00555828	0.002571	-7.5	0.1630579	-0.17407	-0.087042	0.075715
-8	-0.00450982	0.005366	0.003584	-0.00309	-8	0.00540544	0.004381	-0.00326	0.005389	-8	-0.0044892	0.00373999	0.00353981	0.00505	-8	0.1294781	-0.128295	-0.022684	0.022939
-8.5	-0.00488626	0.005681	0.004691	-0.00433	-8.5	0.00540274	0.005827	-0.00442	0.004745	-8.5	-0.0049078	0.00487652	0.00472243	0.005667	-8.5	0.12518	-0.124939	-0.018989	0.017547
-9	-0.00393315	0.00476	0.006089	-0.00573	-9	0.0045731	0.006287	-0.00583	0.004483	-9	-0.00395238	0.00618817	0.00598978	0.004568	-9	0.1026617	-0.101815	-0.010091	0.0112
-9.5	-0.00281408	0.003628	0.008076	-0.00766	-9.5	0.00365276	0.008317	-0.00766	0.003406	-9.5	-0.00283752	0.00814804	0.00801293	0.003721	-9.5	0.07582869	-0.075343	-0.016763	0.016985
-10	-0.00009548	0.000809	0.009516	-0.00918	-10	0.00078289	0.009845	-0.00916											

RST Digital Inclinometer Data					RST Digital Inclinometer Data					RST Digital Inclinometer Data					RST Digital Inclinometer Data					RST Digital Inclinometer Data															
File Version		2.2			File Version		2.2			File Version		2.2			File Version		2.2			File Version		2.2			File Version		2.2								
File Type	Digital Inclinometer	Site	TAILINGS DAM	Borehole	File Type	Digital Inclinometer	Site	TAILINGS DAM	Borehole	File Type	Digital Inclinometer	Site	TAILINGS DAM	Borehole	File Type	Digital Inclinometer	Site	TAILINGS DAM	Borehole	File Type	Digital Inclinometer	Site	TAILINGS DAM	Borehole	File Type	Digital Inclinometer	Site	TAILINGS DAM							
Probe Serial#	DP06420000	Probe Serial#	DP06420000	Reel Serial#	DR11930000	Probe Serial#	DP06420000	Reel Serial#	DR11930000	Probe Serial#	DP06420000	Reel Serial#	DR11930000	Probe Serial#	DP06420000	Reel Serial#	DR11930000	Reading Date(m/d/y)	05/13/2013	Reading Date(m/d/y)	05/13/2013	Reading Date(m/d/y)	06/30/2013	Reading Date(m/d/y)	06/30/2013	Depth	-25	Depth	-25	Depth	-25	Depth	-25	Depth	-25
Reading Date(m/d/y)	10/13/2012	11:33:16	12/12/2012	15:31:56	Reading Date(m/d/y)	01/16/2013	17:08:05	01/16/2013	17:08:05	Reading Date(m/d/y)	01/16/2013	17:08:05	01/16/2013	17:08:05	Reading Date(m/d/y)	01/16/2013	17:08:05	01/16/2013	17:08:05	Reading Date(m/d/y)	01/16/2013	17:08:05	01/16/2013	17:08:05	Reading Date(m/d/y)	01/16/2013	17:08:05	01/16/2013	17:08:05						
Depth	-25	-0.5	Depth	-25	-0.5	Depth	-25	-0.5	Depth	-25	-0.5	Depth	-25	-0.5	Depth	-25	-0.5	Depth	-25	Depth	-25	Depth	-25	Depth	-25	Depth	-25	Depth	-25						
Interval	0.5	0.5	Interval	0.5	Interval	0.5	Interval	0.5	Interval	0.5	Interval	0.5	Interval	0.5	Interval	0.5	Interval	0.5	Interval	0.5	Interval	0.5	Interval	0.5	Interval	0.5	Interval	0.5	Interval	0.5					
Depth Units	meters	Reading Units	meters	Operator	Comment:	Comment:	Comment:	Comment:	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0					
Operator	Comment:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:	Comment End:							
Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0	Offset Correction	0						
Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-						
-0.5	0.2752143	-0.2746643	-0.039348	0.040008	-0.5	0.2755904	-0.27506	-0.0388	0.039668	-0.5	-0.2747057	0.040985	0.038494	0.269764	-0.5	0.3123006	-0.30587	-0.03343	0.034095	-0.5	0.3134685	-0.30588	-0.03303	0.033598	-0.5	0.3127659	-0.30543	-0.03241	0.032935						
-1	0.2697984	-0.2691209	-0.039524	0.040141	-1	0.2698145	-0.26911	-0.03915	0.039848	-1	-0.2690597	0.040473	0.038836	0.264627	-1	0.2850646	-0.28433	-0.03164	0.032194	-1	0.2863542	-0.30586	-0.0315	0.032776	-1	0.2863542	-0.30586	-0.0315	0.032776						
-1.5	0.246401	-0.2455954	-0.036283	0.036972	-1.5	0.2465341	-0.24567	-0.0375	0.036865	-1.5	-0.2455629	0.028221	0.0363679	0.246425	-1.5	0.2371694	-0.23635	-0.02759	0.028174	-1.5	0.2371694	-0.23635	-0.02759	0.028174	-1.5	0.2371694	-0.23635	-0.02759	0.028174						
-2	0.2206132	-0.2199429	-0.032967	0.032842	-2	0.2206083	-0.21988	-0.03257	0.032724	-2	-0.2197203	0.032891	0.032518	0.220377	-2	0.230039	-0.22915	-0.02625	0.027476	-2	0.230039	-0.22915	-0.02625	0.027476	-2	0.230039	-0.22915	-0.02625	0.027476						
-2.5	0.212056	-0.2111975	-0.029478	0.030586	-2.5	0.2120381	-0.21112	-0.02922	0.030507	-2.5	-0.2110544	0.030549	0.029973	0.211674	-2.5	0.2107186	-0.20996	-0.02993	0.029864	-2.5	0.2107186	-0.20996	-0.02993	0.029864	-2.5	0.2107186	-0.20996	-0.02993	0.029864						
-3	0.2003444	-0.1997859	-0.030184	0.029976	-3	0.2004098	-0.19978	-0.02987	0.029875	-3	-0.1996874	0.025119	0.029645	0.2001	-3	0.1630027	-0.16202	-0.02938	0.030261	-3	0.2119958	-0.22937	-0.02999	0.026749	-3	0.2119958	-0.22937	-0.02999	0.026749						
-3.5	0.1609747	-0.1599877	-0.028984	0.02965	-3.5	0.1610645	-0.16002	-0.02874	0.029554	-3.5	-0.1600015	0.026486	0.029157	0.160027	-3.5	0.1461772	-0.14542	-0.03063	0.030969	-3.5	0.1664463	-0.21122	-0.03034	0.029597	-3.5	0.1664463	-0.21122	-0.03034	0.029597						
-4	0.1459556	-0.1453721	-0.031193	0.030893	-4	0.1459559	-0.14534	-0.03093	0.030759	-4	-0.1452963	0.030556	0.030412	0.146177	-4	0.1315055	-0.13105	-0.02402	0.024233	-4	0.1463614	-0.16536	-0.03065	0.030994	-4	0.1463614	-0.16536	-0.03065	0.030994						
-4.5	0.1317569	-0.1309067	-0.024898	0.024785	-4.5	0.1317757	-0.13084	-0.02463	0.024686	-4.5	-0.1308149	0.021858	0.02454	0.133501	-4.5	0.1176289	-0.11655	-0.02111	0.018704	-4.5	0.1320006	-0.14564	-0.02329	0.030398	-4.5	0.1320006	-0.14564	-0.02329	0.030398						
-5	0.1178318	-0.116734	-0.020407	0.019236	-5	0.117756	-0.11664	-0.02053	0.019065	-5	-0.1165707	0.01907	0.018817	0.117315	-5	0.1164255	-0.11531	-0.02378	0.031432	-5	0.1131607	-0.13081	-0.02028	0.023927	-5	0.1131607	-0.13081	-0.02028	0.023927						
-5.5	0.1164481	-0.1151595	-0.023417	0.035568	-5.5	0.1163676	-0.11531	-0.02329	0.033833	-5.5	-0.1152385	0.021086	0.033614	0.115319	-5.5	0.1597193	-0.16448	-0.05049	0.040986	-5.5	0.1188887	-0.11209	-0.02135	0.018104	-5.5	0.1188887	-0.11209	-0.02135	0.018104						
-6	0.1594478	-0.162186	-0.049914	0.054171	-6	0.159243	-0.15779	-0.0497	0.067321	-6	-0.1578438	0.033601	0.066328	0.160047	-6	0.1751916	-0.18194	-0.010273	0.092221	-6	0.1568623	-0.11873	-0.04663	0.026818	-6	0.1568623	-0.11873	-0.04663	0.026818						
-6.5	0.1774905	-0.2033967	-0.10052	0.034464	-6.5	0.1775451	-0.18214	-0.10227	0.039038	-6.5	-0.1820744	0.09692	0.092886	0.182581	-6.5	0.1790719	-0.18452	-0.0995	0.090649	-6.5	0.1799125	-0.15223	-0.01012	0.066317	-6.5	0.1799125	-0.15223	-0.01012	0.066317						
-7	0.1817839	-0.2039681	-0.096524	0.036871	-7	0.180082	-0.18476	-0.09841	0.090477	-7	-0.1846705	0.08784	0.090327	0.186341	-7	0.1602831	-0.18084	-0.08964	0.072247	-7	0.1834098	-0.19332	-0.09937	0.084622	-7	0.1834098	-0.19332	-0.09937	0.084622						
-7.5	0.1620275	-0.182353	-0.086747	0.041036	-7.5	0.164974	-0.17038	-0.08255	0.082547	-7.5	-0.1701308	0.06539	0.083059	0.175514	-7.5	0.1290455	-0.12955	-0.02191	0.009256	-7.5	0.1635515	-0.19041	-0.08594	0.086846	-7.5	0.1635515	-0.19041	-0.08594	0.086846						
-8	0.1290407	-0.1077177	-0.022496	0.073929	-8	0.1290487	-0.1278	-0.02228	0.022729	-8	-0.1277462	0.08391	0.022421	0.097012	-8	0.1246092	-0.12493	-0.01808	0.009254	-8	0.1290921	-0.17708	-0.02024	0.060094	-8	0.1290921	-0.17708	-0.02024	0.060094						
-8.5	0.1248607	-0.1018491	-0.018582	0.071745	-8.5	0.1248695	-0.12443	-0.01834	0.017523	-8.5	-0.1243025	0.080217	0.017519	0.093319	-8.5	0.1020781	-0.10171	-0.01059	0.01166	-8.5	0.1243872	-0.12855	-0.01792	0.018195	-8.5	0.1243872	-0.12855	-0.01792	0.018195						
-9	0.1023163	-0.08016751	-0.009889	0.059137	-9	0.1023069	-0.10137	-0.00972	0.011011	-9	-0.1012815	0.062687	0.010736	0.079257	-9	0.075543	-0.07629	-0.01644	0.006645	-9	0.1018924	-0.12452	-0.00992	0.011411	-9	0.1018924	-0.12452	-0.00992	0.011411						
-9.5	0.07575792	-0.0654823	-0.016674	0.040138	-9.5	0.07576249	-0.07512	-0.01658	0.017131	-9.5	-0.07501658	0.054749	0.016799	0.057276	-9.5	0.05151587	-0.05136	-0.01253	0.007312	-9.5	0.0746281	-0.07524	-0.017524	0.008396	-9.5	0.0746281	-0.07524	-0.017524	0.008396						
-10	0.05167773	-0.04495163	-0.006322	0.022194	-10	0.0391255	-0.03876	-0.00622	0.00647	-10	-0.03867544	0.028244	0.004999	0.025424	-10	0.02643885	-0.02461	-0.003978	0.0064																

RST Digital Inclinometer Data					RST Digital Inclinometer Data					RST Digital Inclinometer Data					RST Digital Inclinometer Data					RST Digital Inclinometer Data				
File Version	2.2																							
File Type	Digital Inclinometer				File Type	Digital Inclinometer				File Type	Digital Inclinometer				File Type	Digital Inclinometer				File Type	Digital Inclinometer			
Site	TAILINGS DAM				Site	TAILINGS DAM				Site	TAILINGS DAM				Site	TAILINGS DAM				Site	TAILINGS DAM			
Borehole	IN10-01				Borehole	IN10-01				Borehole	IN10-01				Borehole	IN10-01				Borehole	IN10-01			
Probe Serial#	DP06420000				Probe Serial#	DP06420000				Probe Serial#	DP06420000				Probe Serial#	DP06420000				Probe Serial#	DP06420000			
Reel Serial#	DR11930000				Reel Serial#	DR11930000				Reel Serial#	DR11930000				Reel Serial#	DR11930000				Reel Serial#	DR11930000			
Reading Date(m/d/y)	07/28/2013				Reading Date(m/d/y)	08/28/2013				Reading Date(m/d/y)	09/21/2013				Reading Date(m/d/y)	10/27/2013				Reading Date(m/d/y)	11/23/2013			
Depth	-25 -0.5				Depth	-25 -0.5				Depth	-25 -0.5				Depth	-25 -0.5				Depth	-25 -0.5			
Interval	0.5				Interval	0.5				Interval	0.5				Interval	0.5				Interval	0.5			
Depth Units	meters				Depth Units	meters				Depth Units	meters				Depth Units	meters				Depth Units	meters			
Reading Units	meters				Reading Units	meters				Reading Units	meters				Reading Units	meters				Reading Units	meters			
Operator					Operator					Operator					Operator					Operator				
Comment:					Comment:					Comment:					Comment:					Comment:				
Comment End:					Comment End:					Comment End:					Comment End:					Comment End:				
Offset Correction	0				Offset Correction	0				Offset Correction	0				Offset Correction	0				Offset Correction	0			
Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-
-0.5	0.3134861	-0.30589	-0.03296	0.0339	-0.5	0.31347	-0.3059	-0.03279	0.033871	-0.5	0.3134747	-0.30589	-0.03216	0.033352	-0.5	0.3134807	-0.3059	-0.03209	0.033411	-0.5	0.3135073	-0.3059	-0.03262	0.033099
-1	0.3128611	-0.30586	-0.03236	0.03305	-1	0.3129046	-0.30587	-0.03232	0.033025	-1	0.3128818	-0.30587	-0.03184	0.032654	-1	0.3128135	-0.30587	-0.03183	0.032896	-1	0.3128729	-0.30587	-0.03156	0.032369
-1.5	0.28635	-0.28564	-0.03136	0.031768	-1.5	0.2862851	-0.28554	-0.03145	0.03137	-1.5	0.2861486	-0.2854	-0.03108	0.031424	-1.5	0.2860534	-0.28527	-0.03104	0.031487	-1.5	0.2860183	-0.28548	-0.03128	0.031085
-2	0.2374173	-0.23656	-0.02739	0.028093	-2	0.237422	-0.23655	-0.02742	0.027942	-2	0.2373687	-0.23648	-0.0272	0.02789	-2	0.2373908	-0.23648	-0.02711	0.027946	-2	0.2374371	-0.23667	-0.02725	0.028108
-2.5	0.2302726	-0.22953	0.02583	0.026878	-2.5	0.2302957	-0.22958	0.02587	0.02675	-2.5	0.2302879	-0.2295	-0.02547	0.026638	-2.5	0.2302851	-0.22951	-0.02556	0.026654	-2.5	0.2302735	-0.22967	-0.02588	0.026703
-3	0.2120626	-0.21137	-0.02961	0.029878	-3	0.2120222	-0.21125	-0.02967	0.02978	-3	0.2119295	-0.21123	-0.02942	0.029592	-3	0.2118602	-0.21111	-0.02951	0.029679	-3	0.2116891	-0.21117	-0.02973	0.029642
-3.5	0.1663943	-0.16548	-0.03033	0.031143	-3.5	0.166274	-0.16533	-0.03042	0.03108	-3.5	0.1661968	-0.16532	-0.03026	0.030868	-3.5	0.1661599	-0.16525	-0.03036	0.031105	-3.5	0.1660207	-0.16533	-0.03049	0.031038
-4	0.1463802	-0.14573	-0.03054	0.03056	-4	0.1463802	-0.14571	-0.03052	0.030557	-4	0.1463592	-0.14568	-0.03037	0.03043	-4	0.1463247	-0.14566	-0.03044	0.030515	-4	0.1462659	-0.14578	-0.03052	0.030427
-4.5	0.1321366	-0.13098	-0.02348	0.024077	-4.5	0.1321724	-0.13095	-0.02343	0.024011	-4.5	0.1320825	-0.13095	-0.02306	0.023932	-4.5	0.1320646	-0.13089	-0.02302	0.023915	-4.5	0.1319136	-0.13089	-0.02326	0.024046
-5	0.1132469	-0.11222	-0.01999	0.018179	-5	0.1132496	-0.11224	-0.02062	0.024203	-5	0.1132777	-0.11226	-0.02069	0.018141	-5	0.1131914	-0.11231	-0.01736	0.018124	-5	0.1133124	-0.11242	-0.01998	0.0

RST Digital Inclinometer Data						RST Digital Inclinometer Data						RST Digital Inclinometer Data								
File Version	2.2					File Version	2.2					File Version	2.2							
File Type	Digital Inclinometer					File Type	Digital Inclinometer					File Type	Digital Inclinometer							
Site	TAILINGS DAM					Site	TAILINGS DAM					Site	TAILINGS DAM							
Borehole	IN10-01					Borehole	IN10-01					Borehole	IN10-01							
Probe Serial#	DP06420000					Probe Serial#	DP06420000					Probe Serial#	DP06420000							
Reel Serial#	DR11930000					Reel Serial#	DR11930000					Reel Serial#	DR11930000							
Reading Date(m/d/y)	01/14/2014					Reading Date(m/d/y)	02/15/2014					Reading Date(m/d/y)	03/12/2014							
Depth	16:00:27					Depth	12:18:14					Depth	16:00:36							
Interval	-25					Interval	-25					Interval	-25							
Depth Units	meters					Depth Units	meters					Depth Units	meters							
Reading Units	meters					Reading Units	meters					Reading Units	meters							
Operator						Operator						Operator								
Comment:						Comment:						Comment:								
Comment End:						Comment End:						Comment End:								
Offset Correction	0					Offset Correction	0					Offset Correction	0							
Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-	Depth	Face A+	Face A-	Face B+	Face B-	Face A+	Face A-	Face B+	Face B-		
-0.5	0.3136524	-0.30599	-0.03686	0.037441		-0.5	0.3136696	-0.30601	-0.03707	0.037894	-0.5	0.3136709	-0.30601	-0.03774	0.038204	-0.5	0.3135825	-0.30595	-0.03571	0.035701
-1	0.3135105	-0.30592	-0.03441	0.034727		-1	0.3135862	-0.30595	-0.03569	0.035289	-1	0.3135866	-0.30595	-0.03571	0.035701	-1	0.2858366	-0.28523	-0.03109	0.031422
-1.5	0.2859445	-0.28537	-0.03136	0.031017		-1.5	0.2859477	-0.28529	-0.03104	0.031332	-1.5	0.2858366	-0.28523	-0.03109	0.031422	-1.5	0.2372701	-0.23649	-0.02746	0.027863
-2	0.2374095	-0.23659	-0.02731	0.028161		-2	0.2373898	-0.23657	-0.02702	0.027849	-2	0.2372701	-0.23649	-0.02746	0.027863	-2	0.2302421	-0.22956	-0.02561	0.026607
-2.5	0.230306	-0.22956	-0.02571	0.026867		-2.5	0.2302421	-0.22956	-0.02571	0.026867	-2.5	0.2301827	-0.22946	-0.02575	0.026612	-2.5	0.2112101	-0.21085	-0.02949	0.029583
-3	0.2112101	-0.21085	-0.02971	0.029799		-3	0.2112101	-0.21085	-0.02971	0.029799	-3	0.2112101	-0.21082	-0.02966	0.029761	-3	0.1659162	-0.16512	-0.03034	0.031119
-3.5	0.1659162	-0.16512	-0.03034	0.031119		-3.5	0.1657981	-0.16499	-0.03033	0.030902	-3.5	0.1658164	-0.16518	-0.03034	0.030984	-3.5	0.1462071	-0.14559	-0.03037	0.030396
-4	0.1462071	-0.14559	-0.03034	0.03095		-4	0.1462022	-0.14559	-0.03039	0.030512	-4	0.1462071	-0.14555	-0.03037	0.030396	-4	0.131704	-0.13075	-0.02321	0.02397
-4.5	0.131704	-0.13075	-0.02321	0.02397		-4.5	0.1317018	-0.13063	-0.02303	0.023904	-4.5	0.1313167	-0.13061	-0.02295	0.023891	-4.5	0.1133339	-0.11242	-0.02003	0.017964
-5	0.1133339	-0.11242	-0.01976	0.018075		-5	0.1133339	-0.11242	-0.02003	0.017964	-5	0.1131764	-0.11234	-0.01736	0.018034	-5	0.1186621	-0.11789	-0.02186	0.018262
-5.5	0.1186621	-0.11789	-0.02186	0.018262		-5.5	0.1191175	-0.11914	-0.02166	0.025976	-5.5	0.1191182	-0.11849	-0.02007	0.029907	-5.5	0.1570003	-0.16199	-0.0472	0.031382
-6	0.1570003	-0.16199	-0.0472	0.031382		-6	0.1581475	-0.15751	-0.04354	0.057242	-6	0.157276	-0.152	-0.04811	0.067952	-6	0.1868894	-0.18319	-0.09936	0.0104615
-6.5	0.1868894	-0.18319	-0.09936	0.0104615		-6.5	0.1797988	-0.18624	-0.010598	0.095813	-6.5	0.1763152	-0.18625	-0.010979	0.095903	-6.5	0.1888767	-0.18703	-0.09424	0.092494
-7	0.1888767	-0.18703	-0.09424	0.092494		-7	0.1804865	-0.18714	-0.01028	0.092404	-7	0.1824778	-0.18689	-0.01003	0.092384	-7	0.1684304	-0.16844	-0.07761	0.081926
-7.5	0.1684304	-0.16844	-0.07761	0.081926		-7.5	0.1454457	-0.16778	-0.01175	0.082073	-7.5	0.1636744	-0.16807	-0.0864	0.082057	-7.5	0.1290334	-0.12807	-0.02199	0.021868
-8	0.1290334	-0.12807	-0.02199	0.021868		-8	0.129118	-0.12966	-0.0218	0.011435	-8	0.1207888	-0.12986	-0.048273	0.007349	-8	0.1244222	-0.12402	-0.01768	0.017105
-8.5	0.1244222	-0.12402	-0.01768	0.017105		-8.5	0.1242207	-0.12458	-0.0174	0.009476	-8.5	0.1156896	-0.12459	-0.044388	0.009075	-8.5	0.1018231	-0.10095	-0.00954	0.010447
-9	0.1018231	-0.10095	-0.00954	0.010447		-9	0.1016168	-0.10137	-0.00947	0.001023	-9	0.09218975	-0.10136	-0.038658	4.59E-05	-9	0.07444			

RST Digital Inclinometer Data				RST Digital Inclinometer Data				RST Digital Inclinometer Data				RST Digital Inclinometer Data																																																																																																																																																																																																			
File Version	2.2	File Version	2.2	File Version	2.2	File Version	2.2	File Version	2.2	File Version	2.2	File Version	2.2	File Version	2.2																																																																																																																																																																																																
File Type	Digital Inclinometer	File Type	Digital Inclinometer	File Type	Digital Inclinometer	File Type	Digital Inclinometer	File Type	Digital Inclinometer	File Type	Digital Inclinometer	File Type	Digital Inclinometer	File Type	Digital Inclinometer																																																																																																																																																																																																
Site	TAILINGS DAM	Site	TAILINGS DAM	Site	TAILINGS DAM	Site	TAILINGS DAM	Site	TAILINGS DAM	Site	TAILINGS DAM	Site	TAILINGS DAM	Site	TAILINGS DAM																																																																																																																																																																																																
Borehole	IN10-02	Borehole	IN10-02	Borehole	IN10-02	Borehole	IN10-02	Borehole	IN10-02	Borehole	IN10-02	Borehole	IN10-02	Borehole	IN10-02																																																																																																																																																																																																
Probe Serial#	DP06420000	Probe Serial#	DP06420000	Probe Serial#	DP06420000	Probe Serial#	DP06420000	Probe Serial#	DP06420000	Probe Serial#	DP06420000	Probe Serial#	DP06420000	Probe Serial#	DP06420000																																																																																																																																																																																																
Reel Serial#	DR11930000	Reel Serial#	DR11930000	Reel Serial#	DR11930000	Reel Serial#	DR11930000	Reel Serial#	DR11930000	Reel Serial#	DR11930000	Reel Serial#	DR11930000	Reel Serial#	DR11930000																																																																																																																																																																																																
Reading Date(m/d/y)	06/01/2011 10:03:28	Reading Date(m/d/y)	07/04/2011 11:48:07	Reading Date(m/d/y)	09/07/2011 10:06:07	Reading Date(m/d/y)	08/23/2012 7:05:31	Reading Date(m/d/y)		Reading Date(m/d/y)		Reading Date(m/d/y)		Reading Date(m/d/y)																																																																																																																																																																																																	
Depth	-15 -0.5	Depth	-15 -0.5	Depth	-15 -0.5	Depth	-15 -0.5	Depth	-15 -0.5	Depth	-10 -0.5	Depth	-10 -0.5	Depth	-10 -0.5																																																																																																																																																																																																
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Depth	Face A+ Face A- Face B+ Face B-	Depth	Face A+ Face A- Face B+ Face B-	Depth	Face A+ Face A- Face B+ Face B-	Depth	Face A+ Face A- Face B+ Face B-	Depth	Face A+ Face A- Face B+ Face B-	Depth	Face A+ Face A- Face B+ Face B-	Depth	Face A+ Face A- Face B+ Face B-	Depth	Face A+ Face A- Face B+ Face B-																																																																																																																																																																																																
-0.5	-0.00241169 0.00339 0.012339 -0.01178	-0.5	-0.00430749 -0.01208 0.012651 -0.00355	-0.5	-0.00583816 0.01547 0.015933 0.006279	-0.5	-0.0023192 -0.23202 -0.0643 0.06463	-0.5	-0.0031789 0.00395 0.011984 -0.01171	-1	-0.00350436 -0.01214 0.01237 -0.0033	-1	-0.002264163 -0.22604 -0.06431 0.063976	-1	-0.00448572 0.005258 0.013 -0.01267	-1.5	-0.00421251 -0.01271 0.013299 -0.00437	-1.5	-0.00429449 0.013697 0.013546 0.004745	-1.5	-0.002140903 -0.21451 -0.06254 0.057037	-2	-0.00450316 0.005319 0.01968 -0.0191	-2	-0.00442568 -0.01897 0.01957 -0.00441	-2	-0.00451677 0.019654 0.019654 0.004962	-2	-0.002121653 -0.21149 -0.05838 0.05432	-2.5	-0.0049488 0.005726 0.020258 -0.01993	-2.5	-0.00491237 -0.01965 0.020147 -0.00493	-2.5	-0.00494129 0.020477 0.020477 0.005576	-2.5	-0.002069767 -0.20709 -0.06059 0.055155	-3	-0.00472657 0.005486 0.018574 -0.01806	-3	-0.00493752 -0.0178 0.020192 -0.00473	-3	-0.00470458 0.018617 0.018491 0.005343	-3	-0.002190463 -0.21909 -0.05911 0.053756	-3.5	-0.00468653 0.005496 0.017723 -0.0172	-3.5	-0.00470375 -0.0171 0.017642 -0.00459	-3.5	-0.00475943 0.01796 0.017667 0.005297	-3.5	-0.00223327 -0.22393 -0.05816 0.04963	-4	-0.0044427 0.005182 0.016886 -0.01651	-4	-0.0044219 -0.01639 0.01682 -0.00442	-4	-0.00442861 0.017143 0.016834 0.005001	-4	-0.00213751 -0.21445 -0.054 0.044587	-4.5	-0.00413776 0.004996 0.015851 -0.01544	-4.5	-0.00413384 -0.01517 0.015804 -0.00444	-4.5	-0.00415501 0.01611 0.015818 0.00478	-4.5	-0.001902593 -0.19018 -0.05307 0.045204	-5	-0.00438674 0.005193 0.014844 -0.01436	-5	-0.00430256 -0.01417 0.01479 -0.00454	-5	-0.00431741 0.01495 0.014809 0.004858	-5	-0.001828448 -0.18171 -0.04406 0.052472	-5.5	-0.00583168 0.006544 0.014453 -0.01414	-5.5	-0.00582394 -0.01397 0.014417 -0.00585	-5.5	-0.00584656 0.014639 0.014422 0.006213	-5.5	-0.002288324 -0.23771 -0.05783 0.071135	-6	-0.00798527 0.008828 0.013692 -0.01331	-6	-0.00796657 -0.01303 0.013643 -0.00818	-6	-0.00799013 0.013806 0.013674 0.008579	-6	-0.002110338 -0.2105 -0.08871 0.088119	-6.5	-0.01134704 0.012209 0.012422 -0.01198	-6.5	-0.01132138 -0.01178 0.012361 0.001155	-6.5	-0.01132635 0.01256 0.012344 0.0011955	-6.5	-0.001585943 -0.16082 -0.0892 0.084839	-7	-0.01363224 0.01437 0.011833 -0.01155	-7	-0.01352065 -0.01131 0.011864 -0.00137	-7	-0.01362349 0.012029 0.011807 0.014235	-7	-0.001458759 -0.15403 -0.10424 0.089525	-7.5	-0.01416566 0.014984 0.011143 -0.01073	-7.5	-0.01414583 -0.01043 0.011089 -0.01449	-7.5	-0.01418436 0.011322 0.011118 0.014816	-7.5	-0.001490021 -0.15681 -0.09828 0.080708	-8	-0.01342628 0.014313 0.010543 -0.01006	-8	-0.01340649 -0.00984 0.010472 -0.01372	-8	-0.01340985 0.010699 0.010502 0.014147	-8	-0.001406154 -0.1461 -0.08429 0.070897	-8.5	-0.01313701 0.014021 0.012001 -0.01147	-8.5	-0.01313723 -0.01128 0.01193 -0.01336	-8.5	-0.01314912 0.012183 0.011966 0.013673	-8.5	-0.001091129 -0.11186 -0.07139 0.064657	-9	-0.01247086 0.013123 0.015301 -0.01495	-9	-0.01245778 -0.01479 0.015227 -0.0126	-9	-0.01247553 0.01548 0.015275 0.012803	-9	-0.0008783096 -0.09284 -0.06686 0.057275	-9.5	-0.01177471 0.012649 0.015469 -0.01505	-9.5	-0.0117772 -0.01484 0.015371 -0.01203	-9.5	-0.01181073 0.015689 0.015401 0.012453	-9.5	-0.0006829032 -0.07456 -0.06248 0.048961	-10	-0.01153688 0.012227 0.015021 -0.0147	-10	-0.01152348 -0.01465 0.014951 -0.01146	-10	-0.01152749 0.015339 0.015014 0.012089	-10	-0.0006730075 -0.0706 -0.04489 0.034831	-10.5	-0.01136489 0.012251 0.014413 -0.01405	-10.5	-0.01133007 -0.01363 0.014323 -0.01139	-10.5	-0.01136118 0.014666 0.014408 0.012025	-11	-0.01136445 0.01221 0.013034 -0.01268	-11	-0.01135688 -0.01254 0.012959 -0.0113	-11	-0.01137858 0.013327 0.013031 0.011961	-11	-0.00061137887 -0.012235 0.012564 -0.01209	-11.5	-0.01139534 0.01196 0.01247 -0.01148	-11.5	-0.01140646 0.012777 0.012518 0.012022	-11.5	-0.00061139534 -0.012151 0.012227 -0.01178	-12	-0.01153112 0.011879 0.011656 -0.01109	-12	-0.01151587 -0.01101 0.011576 -0.01128	-12	-0.01152937 0.011801 0.011655 0.012063	-12	-0.00061153112 -0.012127 0.012027 -0.01172	-12.5	-0.01161823 0.01258 0.009093 -0.00876	-12.5	-0.01161698 -0.0085 0.00899 -0.012	-12.5	-0.01161279 0.009198 0.009058 0.01236	-12.5	-0.00061161823 -0.012158 0.012058 -0.01177	-13	-0.01222567 0.012898 0.008163 -0.00785	-13	-0.01220954 -0.0077 0.008086 -0.01225	-13	-0.01221634 0.00842 0.008169 0.012775	-13	-0.00061222567 -0.012188 0.012088 -0.01181	-13.5	-0.0119145 0.01277 0.007604 -0.00723	-13.5	-0.01193501 -0.00698 0.007492 -0.01217	-13.5	-0.01193

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**APPENDIX IV**  
**Water Balance**

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## WOLVERINE TAILINGS FACILITY WATER BALANCE - AVERAGE CLIMATE CONDITIONS

UPDATE FOR 2013 ANNUAL REVIEW

DATA		% Solids			100 yr wet 795 mm 100 yr dry 279 mm																					
		Transport	Starter	Final																						
Tailings production	18.9%	74%	79%		0.105	0.13																				
Paste production	74.1%	74.1%	74.9%		0.053	0.036																				
					0.084	0.104																				
As Built Input					0.751																					
					% Diversion ditch seepage	25%																				
					Preproduction % Diversion Water	75%																				
					Assume full diversion but 75% of precip. To allow for dry year																					
Mine Year					1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3				
Calendar Year	2009	2009	2009	2009	2009	2010	2010	2010	2010	2010	2011	2011	2011	2011	2011	2011	2011	2011	2011	2011	2012	2012				
Month	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr				
Mean Monthly Temperature	11	8	2	-7	-10	-18	-15	-16	-12	-8	2	9	11	8	2	-7	-10	-18	-15	2	9	11				
Monthly percent of annual precip.	14%	11%	10%	9%	8%	8%	8%	6%	5%	4%	7%	11%	14%	11%	10%	9%	8%	7%	6%	5%	4%	3%	2%			
Monthly Precipitation (mm)	77.7	62.3	57.1	48.8	46.7	47.4	42.8	33.2	26.5	20.0	42.3	65.3	77.7	62.3	57.1	48.8	46.7	42.8	33.2	26.5	20.0	42.3	65.3			
Average monthly runoff (% of annual)	17%	9%	9%	6%	3%	1%	0%	0%	1%	1%	19%	35%	17%	9%	6%	3%	1%	0%	1%	1%	0%	1%	0%	0%		
Monthly Evaporation (mm)	90	61.5	32	14.5	6	2	5	4.5	9.5	21	72	86.5	90	61.5	32	14.5	6	2	5	9.5	21	72	86.5	90		
Incremental ice thickness on pond (m)	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Tailings to TSF (tpd)												0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Tailings to paste (tpd)												0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
<b>Water Inputs (m³/hr)</b>																										
Tailings water	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Paste plant overflow	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Balance of process plant	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Climate																										
Direct precipitation	10.96	8.79	8.32	6.89	6.80	6.69	6.03	5.18	3.74	2.92	5.97	9.52	10.96	8.79	8.32	6.89	6.69	6.03	5.18	3.74	2.92	5.97	9.52			
Runoff from unlined area	1.27	1.02	0.97	0.12	0.00	0.00	0.00	0.00	0.03	0.05	0.69	1.10	1.27	1.02	0.97	0.12	0.00	0.00	0.00	0.03	0.05	0.69	1.10			
Snowmelt runoff from unlined area	1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	1.24	1.28	1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	1.24	1.28	1.24			
Seepage from diversion ditch	16.87	8.93	8.96	5.89	3.49	0.99	0.00	0.00	1.03	18.86	11.97	5.62	2.98	2.99	1.96	1.16	0.33	0.00	0.00	0.00	0.00	0.00	0.00			
Seepage reclaim	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
<b>Subtotal: All Inputs</b>	30	19	18	13	10	8	12	11	10	31	29	22	19	18	17	17	61	153	160	159	148	42	169	145		
<b>Water Losses (m³/hr)</b>																										
Tailing voids	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55	3.45	5.01	4.44	7.49	0.59	8.31		
Water reclaim to process plant	0.00	0.00	0.00	0.00	4.000	7.000	8.400	9.400	10.300	11.400	16.000	22,000	26,000	30,000	60,000	61,000	62,000	62,000	51.29	147.84	141.37	137.19	164.39	7.67	180.51	
Climate																			63,000	64,000	65,000	66,000	68,000	68,000	68,000	
Estimated pond area (m²)																										
Pond evapor.	0.00	0.00	0.00	0.00	0.03	0.02	0.06	0.06	0.13	0.33	1.55	2.64	3.15	2.48	2.67	1.19	0.52	0.17	0.42	0.42	0.80	1.87	6.29	8.23		
Seepage	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
<b>Subtotal: All Losses</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<b>Net water surplus (deficit)</b>																										
Discharge period water surplus	30	19	18	13	10	8	12	11	10	31	27	25	19	18	16	15	15	7	0	11	10	-33	25	-26	12	
Actual water treatment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Incremental pond volume (m³)	-	-	-	-	-	5,698	8,911	7,472	7,176	7,265	23,222	19,604	18,235	14,031	13,075	12,149	11,520	11,457	11,500	4,816	130	7,733	7,734	(23,857)	18,527	19,385
Seasonal pond volume (m³)</td																										

## WOLVERINE TAILINGS FACILITY WATER BALANCE

#### WOLVERINE WARRIOR STRONG UPDATE FOR 2013 ANNUAL REVIEW

Mine Year	3	3	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	0	0	0	0				
Calendar Year	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2012	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2013	2014	2014	2014	2014	2014	2014	2014	2014				
Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct			
Mean Monthly Temperature	-12	-8	2	9	11	8	2	-7	-10	-18	-15	-16	-12	-8	2	9	11	8	2	-7	-10	-18	-15	-16	-12	-8	2	9	11	8	2	-7			
Monthly percent of annual precip.	5%	4%	7%	11%	14%	11%	10%	9%	8%	6%	5%	4%	7%	11%	14%	11%	10%	8%	8%	6%	5%	4%	7%	11%	14%	11%	10%	8%	5%	4%	7%				
Monthly Precipitation (mm)	26.5	20.0	42.3	65.3	77.7	62.3	57.1	48.8	46.7	47.4	42.8	33.2	26.5	20.0	42.3	65.3	77.7	62.3	57.1	48.8	46.7	47.4	42.8	33.2	26.5	20.0	42.3	65.3	77.7	62.3	57.1	48.8			
Average monthly runoff (% of annual)	0%	1%	19%	35%	17%	9%	9%	6%	3%	1%	0%	0%	1%	19%	35%	17%	9%	9%	6%	3%	1%	0%	0%	1%	19%	35%	17%	9%	9%	6%	3%	1%			
Monthly Evaporation (mm)	9.5	21	72	86.5	90	61.5	32	14.5	6	2	5	4.5	9.5	21	72	86.5	90	61.5	32	14.5	6	2	5	4.5	9.5	21	72	86.5	90	61.5	32	14.5			
Incremental ice thickness on pond (m)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Tailings to TSF (tpd)	805.8	1044.6	822.1	542.3	413.7	641.8	652.1	711.2	857.0	859.5	752.3	810.8	1055.4	715.7	811.2	1068.6	710.5	426.6	489.7	616.4	448.9	597.6	347.6	500.0	657.9	557.5	533.3	533.3	533.3	533.3	533.3				
Tailings to paste (tpd)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
<b>Water Inputs (m³/hr)</b>																																			
Tailings water	149.52	206.30	177.68	162.57	143.92	180.70	148.87	153.30	152.65	149.17	147.62	152.61	201.95	196.82	183.60	180.94	140.49	103.46	101.81	125.83	107.66	85.87	59.99	121.6	120.5	113.60	102.62	106.04	102.62	102.62	106.04	102.62	106.04	102.62	
Paste plant overflow	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Balance of process plant	12.01	25.33	16.71	23.44	16.57	19.44	15.76	14.79	15.44	16.44	11.32	9.93	8.68	34.44	14.90	15.00	15.07	15.13	14.82	12.50	6.56	12.83	15.5	17.1	32.86	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	8.55	
Direct precipitation	4.64	3.61	7.39	11.78	13.57	10.88	10.31	8.53	8.42	8.28	7.47	6.41	4.64	3.61	3.79	11.78	13.57	10.88	10.31	8.53	8.42	8.28	7.47	6.41	4.64	3.61	3.79	11.78	13.57	10.88	10.31	8.55	8.55		
Runoff from unlined area	0.02	0.03	0.47	0.75	0.86	0.69	0.66	0.08	0.00	0.00	0.00	0.00	0.02	0.03	0.47	0.75	0.86	0.69	0.66	0.08	0.00	0.00	0.00	0.02	0.03	0.47	0.75	0.86	0.69	0.66	0.08	0.00	0.00		
Snowmelt runoff from unlined area	0.00	0.29	0.84	0.87	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Seepage from diversion ditch	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
Seepage reclaim	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
<b>Subtotal: All Inputs</b>	167	237	204	200	177	213	177	178	178	175	167	170	216	212	228	210.2	172	131	129	150	130	102	81	144	143	151	127	141	133	127	130	123			
<b>Water Losses (m³/hr)</b>																																			
Tailing voids	11.80	15.29	12.03	7.94	6.06	9.40	9.55	10.41	12.55	12.58	11.01	11.87	15.45	10.48	11.88	15.64	10.40	6.25	7.17	9.02	6.57	8.75	5.09	7.32	9.63	8.16	7.81	7.81	7.81	7.81	7.81	7.81	7.81	7.81	
Water reclaim to process plant	153.84	203.26	165.84	154.78	138.00	174.32	139.50	148.24	140.34	156.35	153.33	180.83	186.78	186.53	171.93	165.58	130.28	97.33	94.77	116.97	121.18	96.68	54.99	114.4	111.0	105.59	100.8	104.2	100.8	104.2	100.8	104.2	100.8		
<b>Estimated pond area (m²)</b>																																			
Pond evapor.	1.33	3.03	10.06	12.49	12.58	8.60	4.62	2.03	0.87	0.28	0.70	0.70	1.33	3.03	10.06	12.49	12.58	8.60	4.62	2.03	0.87	0.28	0.70	0.70	1.33	3.03	10.06	12.49	12.58	8.60	4.62	2.03			
Seepage	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
<b>Subtotal: All Losses</b>	168	223	189	176	158	193	155	162	155	170	166	194	205	201	195	194.7	154	113	108	129	130	107	62	123	118	120	125	122	118	118	118	112			
<b>Net water surplus (deficit)</b>	-1	14	15	24	19	19	22	16	23	5	1	-24	12	11	33	16	18	21	21	0	-5	20	21	20	34	7	15	11	9	12	11				
<b>Discharge period water surplus</b>	0.0	0.0	29.5	29.5	29.5	29.5	29.5	29.5	0.0	0.0	0.0	0.0	0.0	0.0	19.9	19.9	19.9	19.9	19.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
<b>Actual water treatment</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
<b>Incremental pond volume (m³)</b>	(576)	10,065	11,267	17,428	14,236	14,436	15,784	11,923	16,390	3,475	1,014	(16,424)	8,720	7,601	24,455	11,182	13,030	13,341	15,366	15,799	(27)	(3,724)	14,519	14,182	15,094	24,203	5,566	11,154	8,098	6,335	8,599	8,258			
<b>Seasonal pond volume (m³)</b>	226,360	236,425	247,692	265,120	279,356	293,792	309,577	321,500	337,890	341,365	342,379	325,955	334,675	342,277	366,732	377,914	390,944	404,285	419,651	435,450	435,423	431,700	446,219	460,401	475,495	499,698	505,264	516,419	524,516	530,851	539,450	547,708			
<b>Overall Mass Balance</b>																																			
Tailings Input (Tonnes)	24,980	31,338	25,484	16,268	12,825	19,895	19,563	22,046	25,710	26,646	23,322	22,702	32,718	21,470	25,148	32,057	22,025	13,225	14,692	19,109	13,468	18,527	10,775	14,000	20,394	16,726	16,533	16,000	16,533	16,000	16,533	16,000	16,533		
Cumulative Tailings Tonnage (tonnes)	189,694	221,033	246,517	262,785	275,610	295,505	315,068	337,114	362,824	389,470	412,792	435,494	468,212	489,682	514,830	546,887	568,912	582,137	596,829	615,938	629,406	647,933	658,708	672,708	693,102	726,361	758,895	775,428	807,961						
Tailings Input (m³)	15,613	19,587	15,928	10,168	8,016	12,434	12,227	13,779	16,069	16,654	14,576	14,189	20,449	13,419	15,718	16,266	11,766	9,183	11,943	8,417	11,579	6,734	8,750	12,746	10,454	10,333	10,333	10,000	10,333	10,333	10,333	10,333	10,333		
Cumulative Tailings Volume (m³)	118,559	138,145	154,073	164,240	172,256	184,690	196,917	210,696	226,765	243,419	257,995	272,184	292,632	306,051	321,769	341,804	355,570	363,836	373,018	384,961	393,379	404,958	411,692	420,442	433,189	443,643	453,976	463,976	474,309	484,643	494,643	504,976			
Total Volume (Waste + Water) (m³)	344,919	374,571	401,765	429,361	451,612	478,483	506,494	532,196	564,655	584,784	600,374	598,139	627,308	648,328	668,501	719,719	746,514	768,121	792,669	808,441	828,802	836,658	857,911	880,843	908,684	924,341	934,341	959,240	980,394	998,826	1,015,494	1,034,093	1,052,684		
Check total volume waste + water (m³)	344,919	374,571	401,765	429,361	451,612	478,483	506,494	532,196	564,655	584,784	600,374	598,139	627,308	648,328	668,501	719,719	746,514	768,121	792,669	808,441	828,802	836,658	857,911	880,843	908,684	924,341	934,341	959,240	980,394	998,826	1,015,494	1,034,093	1,052,684		

## WOLVERINE TAILINGS FACILITY WATER BALANCE

UPDATE FOR 2013 ANNUAL REVIEW

	Mine Year		0	0	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	3				
	Calendar Year		2014	2014	2015	2015	2015	2015	2015	2015	2015	2015	2015	2015	2016	2016	2016	2016	2016	2016	2016	2016	2016	2016	2017	2017	2017				
	Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
	Mean Monthly Temperature	-10	-18	-15	-16	-12	-8	2	9	11	8	2	-7	-10	-18	-15	-12	-8	2	9	11	8	2	-7	-10	-18	-15	-16	-12	-12	
	Monthly percent of annual precip.	8%	8%	8%	6%	5%	4%	7%	11%	14%	11%	10%	9%	8%	8%	6%	5%	4%	7%	11%	14%	11%	10%	8%	8%	8%	8%	6%	6%	5%	
	Monthly Precipitation (mm)	46.7	47.4	42.8	33.2	26.5	20.0	42.3	65.3	77.7	62.3	57.1	48.8	46.7	47.4	42.8	33.2	26.5	20.0	42.3	65.3	77.7	62.3	57.1	48.8	46.7	47.4	42.8	33.2	26.5	26.5
	Average monthly runoff (% of annual)	3%	1%	0%	0%	0%	1%	19%	35%	17%	9%	9%	6%	3%	1%	0%	0%	1%	19%	35%	17%	9%	9%	3%	1%	0%	0%	0%	0%	0%	
	Monthly Evaporation (mm)	6	2	5	4.5	9.5	21	72	86.5	90	61.5	32	14.5	6	2	5	4.5	9.5	21	72	86.5	90	61.5	32	14.5	6	2	5	4.5	9.5	
	Incremental ice thickness on pond (m)	0.3	0.4	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.1	0.1		
	Tailings to TSF (tpd)	533.3	533.3	628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5	630.2	630.2	630.2	630.2	630.2	630.2	630.2	630.2	630.2	630.2	630.2	630.2	628.5	628.5	628.5		
	Tailings to paste (tpd)	0.0	0.0	698.4	698.4	698.4	698.4	698.4	698.4	698.4	698.4	698.4	698.4	698.4	700.3	700.3	700.3	700.3	700.3	700.3	700.3	700.3	700.3	700.3	700.3	700.3	698.4	698.4	698.4		
<b>Water Inputs (m³/hr)</b>																															
	Tailings water	106.04	102.62	112.37	112.37	112.37	112.37	112.37	112.37	112.37	112.37	112.37	112.37	112.37	112.68	112.68	112.68	112.68	112.68	112.68	112.68	112.68	112.68	112.68	112.68	112.68	112.68	112.68	112.68	112.68	
	Paste plant overflow	0.00	0.00	114.69	114.69	114.69	114.69	114.69	114.69	114.69	114.69	114.69	114.69	114.69	115.01	115.01	115.01	115.01	115.01	115.01	115.01	115.01	115.01	115.01	115.01	115.01	115.01	115.01	115.01	115.01	
	Balance of process plant	8.55	8.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55		
	Direct precipitation	8.42	8.28	7.47	6.41	4.64	3.61	7.39	11.78	13.57	10.88	10.31	8.42	8.28	7.47	6.41	4.64	3.61	7.39	11.78	13.57	10.88	10.31	8.53	8.42	8.28	7.47	6.41	4.64		
	Climate	Runoff from unlined area	0.00	0.00	0.00	0.00	0.02	0.03	0.47	0.75	0.86	0.69	0.66	0.08	0.00	0.00	0.02	0.03	0.47	0.75	0.86	0.69	0.66	0.08	0.00	0.00	0.00	0.00	0.00		
	Snowmelt runoff from unlined area	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.84	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
	Seepage from diversion ditch	1.16	0.33	0.00	0.00	0.00	0.34	6.29	11.97	5.62	2.98	2.99	1.96	0.33	0.00	0.00	0.34	6.29	11.97	5.62	2.98	2.99	1.96	1.16	0.33	0.00	0.00	0.00			
	Seepage reclaim	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
	<b>Subtotal: All Inputs</b>	125	121	248	247	245	245	256	266	262	255	255	251	250	249	248	246	246	256	267	262	256	255	252	251	250	248	247	245		
<b>Water Losses (m³/hr)</b>																															
	Tailing voids	7.81	7.81	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23	9.23
	Water reclaim to process plant	104.2	100.8	227.07	227.07	227.07	227.07	227.07	227.07	227.07	227.07	227.07	227.07	227.07	227.69	227.69	227.69	227.69	227.69	227.69	227.69	227.69	227.69	227.69	227.69	227.69	227.69	227.69	227.69	227.69	
	<b>Estimated pond area (m²)</b>																														
	Climate	Pond evapor.	0.87	0.28	0.70	0.70	1.33	3.03	10.06	12.49	12.58	8.60	4.62	2.03	0.87	0.28	0.70	1.33	3.03	10.06	12.49	12.58	8.60	4.62	2.03	0.87	0.28	0.70	0.70	1.33	
	Seepage	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
	<b>Subtotal: All Losses</b>	114	110	238	238	239	240	247	250																						

## WOLVERINE TAILINGS FACILITY WATER BALANCE

UPDATE FOR 2013 ANNUAL REVIEW

	Mine Year	(With diversions)																													
		3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5					
Calendar Year	2017	2017	2017	2017	2017	2017	2017	2017	2018	2018	2018	2018	2018	2018	2018	2018	2018	2018	2019	2019	2019	2019	2019	2019	2019						
	Month	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr					
	Mean Monthly Temperature	-8	2	9	11	8	2	-7	-10	-15	-16	-12	-8	2	9	11	8	2	-7	-10	-15	-16	-12	-8	2	9	11				
	Monthly percent of annual precip.	4%	7%	11%	14%	11%	10%	9%	8%	8%	6%	5%	4%	7%	11%	14%	11%	10%	8%	8%	6%	5%	4%	7%	11%	14%	11%				
	Monthly Precipitation (mm)	20.0	42.3	65.3	77.7	62.3	57.1	48.8	46.7	47.4	42.8	33.2	26.5	20.0	42.3	65.3	77.7	62.3	57.1	48.8	46.7	47.4	42.8	33.2	26.5	20.0	42.3	65.3			
	Average monthly runoff (% of annual)	1%	19%	35%	17%	9%	9%	6%	3%	1%	0%	1%	0%	1%	19%	35%	17%	9%	9%	6%	3%	1%	0%	1%	0%	1%	19%	35%	17%		
	Monthly Evaporation (mm)	21	72	86.5	90	61.5	32	14.5	6	2	5	4.5	9.5	21	72	86.5	90	61.5	32	14.5	6	2	5	4.5	9.5	21	72	86.5	90		
	Incremental ice thickness on pond (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0		
	Tailings to TSF (tpd)	628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5	628.5	513.4	513.4	513.4	513.4	513.4	513.4	513.4	513.4	513.4	513.4	513.4	513.4	513.4	383.6	383.6	383.6	383.6				
	Tailings to paste (tpd)	698.4	698.4	698.4	698.4	698.4	698.4	698.4	698.4	698.4	505.3	505.3	505.3	505.3	505.3	505.3	505.3	505.3	505.3	505.3	505.3	505.3	505.3	505.3	505.3	505.3	505.3	505.3			
<b>Water Inputs (m³/hr)</b>																															
	Tailings water	112.37	112.37	112.37	112.37	112.37	112.37	112.37	112.37	112.37	91.79	91.79	91.79	91.79	91.79	91.79	91.79	91.79	91.79	91.79	91.79	91.79	91.79	68.58	68.58	68.58	68.58				
	Paste plant overflow	114.69	114.69	114.69	114.69	114.69	114.69	114.69	114.69	114.69	82.98	82.98	82.98	82.98	82.98	82.98	82.98	82.98	82.98	82.98	82.98	82.98	82.98	82.98	82.98	82.98	82.98	82.98			
	Balance of process plant	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	12.55	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78	3.78		
	Direct precipitation	3.61	7.39	11.78	13.57	10.88	8.53	8.42	8.28	7.47	6.41	4.64	3.61	7.39	11.78	13.57	10.88	10.31	8.53	8.42	8.28	7.47	6.41	4.64	3.61	7.39	11.78	13.57	10.88		
	Climate	Runoff from unlined area	0.03	0.47	0.75	0.86	0.69	0.66	0.08	0.00	0.00	0.00	0.02	0.03	0.47	0.75	0.86	0.69	0.66	0.08	0.00	0.00	0.02	0.03	0.47	0.75	0.86	0.69	0.00		
	Snowmelt runoff from unlined area	0.29	0.84	0.87	0.84	0.00	0.00	0.00	0.00	0.00	0.29	0.84	0.87	0.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.84	0.87	0.84	0.00			
	Seepage from diversion ditch	0.34	6.29	11.97	5.62	2.98	2.99	1.96	1.16	0.33	0.00	0.00	0.34	6.29	11.97	5.62	2.98	2.99	1.96	1.16	0.33	0.00	0.00	0.34	6.29	11.97	5.62	2.98			
	Seepage reclaim	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
	<b>Subtotal: All Inputs</b>	245	256	266	262	255	255	251	250	249	196	193	193	203	214	209	203	202	199	198	197	164	163	161	161	171	182	177	171		
<b>Water Losses (m³/hr)</b>																															
	Tailing voids	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.20	9.20	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	7.52	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62	5.62		
	Water reclaim to process plant	227.07	227.07	227.07	227.07	227.07	227.07	227.07	227.07	227.07	174.77	174.77	174.77	174.77	174.77	174.77	174.77	174.77	174.77	174.77	151.56	151.56	151.56	151.56	151.56	151.56	151.56	151.56	151.56		
	<b>Estimated pond area (m²)</b>																														
	Climate	Pond evapor.	3.03	10.06	12.49	12.58	8.60	4.62	2.03	0.87	0.28	0.70	1.33	3.03	10.06	12.49	12.58	8.60	4.62	2.03	0.87	0.28	0.70	1.33	3.03	10.06	12.49	12.58	8.60		
	Seepage	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
	<b>Subtotal: All Losses</b>	240	247	250	250	246	242	239	238	238	184	185	193	196	196	192	188	185	184	159	161	161	161	171	171	167					
<b>Net water surplus (deficit)</b>		5	8	16	1																										

**WOLVERINE TAILINGS FACILITY WATER BALANCE**  
UPDATE FOR 2013 ANNUAL REVIEW

Mine Year Calendar Year	5 2019	5 2019	5 2019	5 2019	Closure 2020											
	Month	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Mean Monthly Temperature	2	-7	-10	-18	-15	-16	-12	-8	2	9	11	8	2	-7	-10	-18
Monthly percent of annual precip.	10%	9%	8%	8%	8%	6%	5%	4%	7%	11%	14%	11%	10%	9%	8%	8%
Monthly Precipitation (mm)	57.1	48.8	46.7	47.4	42.8	33.2	26.5	20.0	42.3	65.3	77.7	62.3	57.1	48.8	46.7	47.4
Average monthly runoff (% of annual)	9%	6%	3%	1%	0%	0%	0%	1%	19%	35%	17%	9%	9%	6%	3%	1%
Monthly Evaporation (mm)	32	14.5	6	2	5	4.5	9.5	21	72	86.5	90	61.5	32	14.5	6	2
Incremental ice thickness on pond (m)	0.0	0.0	0.3	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4
Tailings to TSF (tpd)	383.6	383.6	383.6	383.6												
Tailings to paste (tpd)	505.3	505.3	505.3	505.3												
<b>Water Inputs (m³/hr)</b>																
Tailings water	68.58	68.58	68.58	68.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paste plant overflow	82.98	82.98	82.98	82.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Balance of process plant	3.78	3.78	3.78	3.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Climate</b>																
Direct precipitation	10.31	8.53	8.42	8.28	7.47	6.41	4.64	3.61	7.39	11.78	13.57	10.88	10.31	8.53	8.42	8.28
Runoff from unlined area	0.66	0.08	0.00	0.00	0.00	0.00	0.02	0.03	0.47	0.75	0.86	0.69	0.66	0.08	0.00	0.00
Snowmelt runoff from unlined area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.84	0.84	0.00	0.00	0.00	0.00	0.00	0.00
Seepage from diversion ditch	2.99	1.96	1.16	0.33	0.00	0.00	0.00	0.34	6.29	11.97	5.62	2.98	2.99	1.96	1.16	0.33
Seepage reclaim	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<b>Subtotal: All Inputs</b>	170	167	166	165	8	7	6	5	16	26	22	16	15	12	11	10
<b>Water Losses (m³/hr)</b>																
Tailing voids	5.62	5.62	5.62	5.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water reclaim to process plant	151.56	151.56	151.56	151.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Estimated pond area (m²)</b>																
<b>Climate</b>																
Pond evapor.	4.62	2.03	0.87	0.28	0.70	0.70	1.33	3.03	10.06	12.49	12.58	8.60	4.62	2.03	0.87	0.28
Seepage	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
<b>Subtotal: All Losses</b>	163	160	159	158	2	2	2	4	11	13	14	10	6	3	2	1
<b>Net water surplus (deficit)</b>	7	7	7	6	7	6	3	1	5	13	8	6	9	9	9	8
<b>Discharge period water surplus</b>	10.3	10.3	0.0	0.0	0.0	0.0	0.0	0.0	13.9	13.9	13.9	13.9	13.9	13.9	0.0	0.0
<b>Actual water treatment</b>	24.3	24.3	0.0	0.0	0.0	0.0	0.0	0.0	13.9	13.9	13.9	13.9	13.9	13.9	0.0	0.0
<b>Incremental pond volume (m³)</b>	(12,071)	(13,057)	4,957	4,831	5,038	3,843	2,477	898	(6,676)	(736)	(4,144)	(5,907)	(3,291)	(3,984)	6,279	6,196
<b>Seasonal pond volume (m³)</b>	258,084	245,028	249,985	254,816	259,853	263,696	266,173	267,071	260,395	259,659	255,516	249,609	246,318	242,334	248,613	254,809
<b>Overall Mass Balance</b>																
Tailings Input (Tonnes)	11,507	11,890	11,507	11,890	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Tailings Tonnage (tonnes)	1,821,451	1,833,341	1,844,848	1,856,739	1,856,739	1,856,739	1,856,739	1,856,739	1,856,739	1,856,739	1,856,739	1,856,739	1,856,739	1,856,739	1,856,739	1,856,739
Tailings Input (m³)	7,192	7,432	7,192	7,432	-	-	-	-	-	-	-	-	-	-	-	-
Cumulative Tailings Volume (m³)	1,138,407	1,145,838	1,153,030	1,160,462	1,160,462	1,160,462	1,160,462	1,160,462	1,160,462	1,160,462	1,160,462	1,160,462	1,160,462	1,160,462	1,160,462	1,160,462
Total Volume (Waste + Water) (m³)	1,396,491	1,390,866	1,403,015	1,415,277	1,420,315	1,424,158	1,426,635	1,427,533	1,420,857	1,420,121	1,415,977	1,410,071	1,406,779	1,402,796	1,409,074	1,415,271
Check total volume waste + water (m³)	1,396,491	1,390,866	1,403,015	1,415,277	1,420,315	1,424,158	1,426,635	1,427,533	1,420,857	1,420,121	1,415,977	1,410,071	1,406,779	1,402,796	1,409,074	1,415,271

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**APPENDIX V**  
**2014 Dam Safety Inspection Checklist**

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**TAILINGS DAM INSPECTION REPORT**  
**Wolverine Tailings Dam**

All parts of inspection sheet should be completed. Adverse conditions should be described. Additional information may be put on attached pages.

<b>PROJECT NO.</b>	M09234A09		<b>INSPECTION DATE</b>	June 11-12, 2014
<b>DAM NO.</b>	Wolverine Tailings Dam		<b>LOCATION</b>	Yukon Territory
<b>PERSONNEL</b>				
Engineer	Lowell Constable		Others	
Company Representative	Andrea Kenward			
<b>WEATHER</b>				
	Current	Last 3 Days	Last 2 Weeks	
Dry	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Frost	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Rain	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Heavy Rain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>STATUS OF DISPOSAL FACILITY</b>				
Active	<input checked="" type="checkbox"/>	Closed	<input type="checkbox"/>	Notes:
<b>DAM INFORMATION</b>				
Pond Elevation	1306.32 m (last measured April 28, 2014)		Freeboard	
Crest Elevation	1313.5 m		Distance from Ponds to Crest	
<b>DAM CONSTRUCTION METHOD</b>				
Upstream	<input type="checkbox"/>			
Centreline	<input type="checkbox"/>			
Downstream	<input checked="" type="checkbox"/>			
<b>LOCAL CONSTRUCTION ACTIVITIES</b>				
Spigotting	<input checked="" type="checkbox"/>			
Cycloning	<input type="checkbox"/>			
End Discharge	<input type="checkbox"/>			
Dam Raising	<input type="checkbox"/>			
Other	<input type="checkbox"/>			
<b>REASON FOR INSPECTION</b>				
Routine	<input checked="" type="checkbox"/>		Annual Dam Safety Inspection	
Special Condition	<input type="checkbox"/>			
<b>NOTES</b>				

**TAILINGS DAM INSPECTION REPORT**  
**Wolverine Tailings Dam**

**Upstream Slope / Tailings Beach**

No.	Item	Chkd	Condition		
			Rating *	Remarks / Description	Photograph No.
1.	Slope Protection	N	N	Upstream slope lined	5, 6, 7, 8
2.	Surface Erosion	Y	S	None observed	
3.	Surface Settlements/ Depressions	Y	S		
4.	Sinkholes	Y	S		
5.	Cracks/Movements	Y	S		
6.	Debris	Y	S		
7.	Vegetation	Y	S		
8.	Evidence of High Water Table	Y	S		
9.	Other Unusual Conditions	Y	S		

**Notes:**  
Tailings deposition is in progress. Protective mat under spigot had been moved by the tailings flow, but spigot location is changing within next 3 months.  
Some slumping in the impoundment slope under the liner in the north end, likely due to connection of seepage from Diversion Ditch A and toe of impoundment. Remediation planning is underway. (Photos 23- 27)

(If space insufficient, continue on separate sheet)

\* Legend

S = Satisfactory. Will fulfill intended purpose.

F = Fair. Will fulfill intended purpose. Maintenance or further study required.

P = Poor. May not fulfill intended purpose. Repair or modification required.

U = Unsatisfactory. Will not fulfill purpose. Repair or modification required.

N = Not inspected.

**TAILINGS DAM INSPECTION REPORT**  
**Wolverine Tailings Dam**

**Dam Crest**

No.	Item	Chkd	Condition		
			Rating *	Remarks / Description	Photograph No.
1.	Surface Cracks (a) Transverse (b) Longitudinal	Y	S		1, 5
2.	Settlements/Depressions	Y	S		
3.	Sinkholes	Y	S		
4.	Lateral Movements	Y	S	No visible signs of movement. Surface monuments still to be installed.	
5.	Surface Protections	Y	S		
6.	Erosion	Y	S		
7.	Vegetation	Y	S		
8.	Animal Burrows	N	N		

Notes:

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**TAILINGS DAM INSPECTION REPORT**  
**Wolverine Tailings Dam**

**Downstream Dam Slope**

No.	Item	Chkd	Condition		
			Rating *	Remarks / Description	Photograph No.
1.	Slope Protection	Y	S		1, 11, 12,
2.	Surface Erosion	Y	S		
3.	Surface Settlements/ Depressions	Y	S		
4.	Sinkholes	Y	S		
5.	Cracks/Slope Movements	Y	S		
6.	Seepage/Wet Areas	Y	S		
7.	Animal Burrows	Y	S		
8.	Vegetation	Y	F	Grass starting to take hold. Expect it to improve between now and closure of the facility.	
9.	Slope Angle	Y	S		
10.	Other Unusual Conditions	Y	S		

Notes:

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**TAILINGS DAM INSPECTION REPORT**  
**Wolverine Tailings Dam**

**Left Abutment – At Spillway**

<b>No.</b>	<b>Item</b>	<b>Chkd</b>	<b>Condition</b>		
			<b>Rating *</b>	<b>Remarks / Description</b>	<b>Photograph No.</b>
1.	Surface Condition	Y	S		9
2.	Vegetation and Debris	Y	S		
3.	Slope Protection	Y	S		
4.	Movements	Y	S		
5.	Erosion	Y	S		
6.	Seepage/Wet Areas	Y	S		
7.	Other Unusual Conditions	Y	S		

**Notes:**  
 Spillway is aligned along left abutment.

(If space insufficient, continue on separate sheet)

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**TAILINGS DAM INSPECTION REPORT**  
**Wolverine Tailings Dam**

**Right Abutment**

No.	Item	Chkd	Condition		
			Rating *	Remarks / Description	Photograph No.
1.	Surface Condition	Y	S		
2.	Vegetation and Debris	Y	S		
3.	Slope Protection	Y	S		
4.	Movements	Y	S		
5.	Erosion	Y	S		
6.	Seepage/Wet Areas	Y	S		
7.	Other Unusual Conditions	Y	S		
Notes:        (If space insufficient, continue on separate sheet)					

\* Legend

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N = Not inspected.

**TAILINGS DAM INSPECTION REPORT**  
**Wolverine Tailings Dam**

**Toe Drainage and Seepage Collection Ditches / Ponds**

No.	Item	Chkd	Condition		
			Rating *	Remarks / Description	Photograph No.
1.	Seepage/Wet Areas	Y	S		12 (Toe Drainage) 28, 29
2.	Signs of Instability	Y	S		
3.	Vegetation	Y	S		
4.	Other Unusual Conditions	Y	S		

Notes:

(If space insufficient, continue on separate sheet)

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**TAILINGS DAM INSPECTION REPORT**  
**Wolverine Tailings Dam**

**Instrumentation**

No.	Item	Chkd	Condition		
			Rating *	Remarks / Description	Photograph No.
1.	Piezometers	Y	S		
2.	Standpipes	N	N	Standpipes/monitoring wells need caps and locks to prevent damage from unauthorized persons.	
3.	Survey Monuments	N	N	None present Should be installed this year.	
4.	Inclinometers	Y	U	Inclinometers non-functional. Remediation planning in progress.	10
5.	Relief Wells	N	N	None present	
6.	Weirs	N	N	None present	
7.	Other	N	N		

Notes:

(If space insufficient, continue on separate sheet)

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U = Unsatisfactory. Will not fulfill purpose. Repair or modification required.

N = Not inspected.

**TAILINGS DAM INSPECTION REPORT**  
**Wolverine Tailings Dam**

**Spillway**

<b>No.</b>	<b>Item</b>	<b>Chkd</b>	<b>Condition</b>		
			<b>Rating *</b>	<b>Remarks / Description</b>	<b>Photograph No.</b>
1.	Slope Protection	Y	S		16
2.	Surface Erosion	Y	S		
3.	Surface Settlements/ Depressions	Y	S		
4.	Sinkholes	Y	S		
5.	Cracks/Movements	Y	S		
6.	Debris	Y	S		
7.	Vegetation	Y	S		
8.	Evidence of High Water Table	Y	S		
9.	Other Unusual Conditions	Y	S		
Notes:					
(If space insufficient, continue on separate sheet)					

\* Legend

S = Satisfactory. Will fulfill intended purpose.

F = Fair. Will fulfill intended purpose. Maintenance or further study required.

P = Poor. May not fulfill intended purpose. Repair or modification required.

U = Unsatisfactory. Will not fulfill purpose. Repair or modification required.

N = Not inspected.

N/A = Not Applicable.