Independent Expert Engineering Investigation and Review Panel

Report on Mount Polley Tailings Storage Facility Breach

Appendix F: DRAWINGS

**Drawing F1:** Pre-breach Piezometer and Inclinometer Locations

**Drawing F2:** Pre-breach Piezometer and Inclinometer Locations in Breach Area

**Drawing F3:** Instrumentation Sections Near Breach Area

**Drawing F4:** Instrumentation Sections Near Breach Area

**Drawing F5:** Seepage Collection Elements Near Breach Area

**Drawing F6:** Inclinometer SI01-02 Log and Notes

**Drawing F7:** Inclinometer SI01-02 Monitoring Results
PRE-BREACH PIEZOMETER AND INCLINOMETER LOCATIONS

NOTES:
1. REFERENCES CAN BE FOUND IN SUMMARY TABLES IN ATTACHMENT 1.

MOUNT POLLEY INDEPENDENT EXPERT ENGINEERING INVESTIGATION AND REVIEW PANEL

DECEMBER 23, 2014

PJW D. VAN ZYL

DWG. No. DATE
F1
LEGEND:
- PIEZOMETER
- SLOPE INCLINOMETER
- PIEZOMETER (NOT READ SINCE END OF CONSTRUCTION 2013)

NOTES:
1. REFERENCES CAN BE FOUND IN SUMMARY TABLES IN ATTACHMENT 2.
2. CROSS-SECTIONS "D" AND "G" ARE AMEC SECTION LOCATIONS.
3. CROSS-SECTIONS "1" AND "4" ARE PANEL SECTION LOCATIONS.

Drawing F2: Pre-Breach Piezometer and Inclinometer Locations in Breach Area

PRE-BREACH PIEZOMETER AND INCLINOMETER LOCATIONS IN BREACH AREA

MOUNT POLLEY INDEPENDENT EXPERT ENGINEERING INVESTIGATION AND REVIEW PANEL

DECEMBER 23, 2014
POST BREACH GROUND PROFILE (AUGUST 05, 2014)

PRE BREACH GROUND PROFILE (AUGUST 21, 2013)

PRE CONSTRUCTION GROUND PROFILE

LEGEND:
- PIEZOMETER
- PIEZOMETER (NOT READ SINCE END OF CONSTRUCTION 2013 OR EARLIER)

NOTES:
1. REFERENCES CAN BE FOUND IN SUMMARY TABLES IN ATTACHMENT 2.
2. UPSTREAM DRAIN ELEVATION = 946.3 m.
NOTES:
1. DRAINAGE DITCH INFORMATION TAKEN FROM STAGE 2 AS-BUILT DWG. "11162-10-120 REV. 1" (MP00088).
2. TOE DRAIN INFORMATION TAKEN FROM STAGE 3C AS-BUILT DWG. "11162-10-120 REV. 1" (MP00888).
3. OUTLET DRAIN INFORMATION TAKEN FROM STAGE 2C AS-BUILT DWG. "11162-10-120 REV. 1" (MP00888).

LEGEND:
- DRAINAGE DITCH
- TOE DRAIN
- OUTLET DRAIN

DRAWING F5: SEEPAKE COLLECTION ELEMENTS NEAR BREACH AREA

MOUNT POLLEY INDEPENDENT EXPERT ENGINEERING INVESTIGATION AND REVIEW PANEL

DATE: JANUARY 06, 2015

DRAWN BY: PJW

APPROVED: NAK

D. VAN ZYL
1. “HOWEVER, INCLINOMETER SI01-02 IS SHOWING SLIGHT DEVIATIONS (LESS THAN 3 mm) AT AN APPROXIMATE DEPTH OF 10 m BELOW GROUND IN THE LACRUSTINE SILTS. THIS IS BEING CLOSELY MONITORED BY MPMC WHO HAVE INCREASED THE MONITORING FREQUENCY OF THE INCLINOMETERS TO WEEKLY. MPMC HAS ALSO EXPANDED THE BUTTRESS AT THE MAIN EMBANKMENT AS A RESULT OF THE MEASURED DISPLACEMENTS IN SI01-02. THE EXPANSION OF THE BUTTRESS APPEARS TO HAVE BEEN EFFECTIVE AS NO ADDITIONAL DISPLACEMENTS HAVE BEEN MEASURED IN INCLINOMETER SI01-02”. (MP00034, 2009 ANNUAL INSPECTION REPORT - FOR STAGE 6A, KP).

2. STAGE 6A BUTTRESS TO EL. 918 m, TOP OF STAGE 6A EL. 954 m - ORIGINAL SURFACE ELEVATION OF BORING FOR INCLINOMETER INSTALLATION EL. 917.3 m. EMBANKMENT HEIGHT ABOUT 37 m WHEN FIRST MOVEMENT OBSERVED.

3. SI01-02 WAS RE-INITIALIZED JUNE 29, 2013 AFTER EXTENDING THE CASING 2.9 m. “PRIOR TO THE EXTENSION, DISPLACEMENT WAS NOTED TO BE 5 mm OVER 6 MONTHS. AFTER THE EXTENSION THROUGH THE REST OF 2013, DISPLACEMENT WAS NOTED TO BE ABOUT 4 mm”. (MP00044, 2013 AS-BUILT AND ANNUAL REVIEW REPORT, AMEC).

4. TOP ELEVATION OF EMBANKMENT EL. 967 m ACCORDING TO PAGE 5 OF REPORT MP00044. ON DRAWING 2013AB.03 - MAIN EMBANKMENT AS-BUILT SECTION A 92+060 TOP ELEVATION IS SHOWN AS 966 m. ON DRAWING 2013AB.04 - PERIMETER EMBANKMENT SECTION D (3+990) TOP ELEVATION IS SHOWN AS 967 m WITH THE NOTE ‘2013 AS-BUILT CREST ELEVATION VARIES’. A SIMILAR NOTE IS INCLUDED ON THE DRAWING FOR THE SOUTH EMBANKMENT.

5. TOP OF BUTTRESS SEEMS TO BE AT ABOUT EL. 926 m IN MINE EMBANKMENT SECTION A. EMBANKMENT HEIGHT ABOUT 41 m ABOVE BUTTRESS WHEN THE MOVEMENT OCCURRED.
Drawing F7: Inclinometer SI01-02 Monitoring Results

Total number of readings: 64
Readings from February 2007 to December 2009

MOUNT POLLEY MINING CORPORATION
MOUNT POLLEY MINE
DOWN HOLE INCLINOMETER
DISPLACEMENT SI01-02

FIGURE B.1

INCLINOMETER SI01-02
MONITORING RESULTS

MOUNT POLLEY INDEPENDENT EXPERT ENGINEERING INVESTIGATION AND REVIEW PANEL

D. VAN ZYL
JANUARY 06, 2015