

ADDENDUM

COMPLIANCE AND OPERATIONAL MONITORING PLAN

GROUND WATER DISCHARGE PERMIT PERMIT NO. UGW350011 (April 2013)

1.0 INTRODUCTION

This addendum presents planned changes to the Compliance and Operational Monitoring Plan at the tailings impoundment (Appendix B of UGW350011) to address the construction and operation of Phase I of the proposed Tailings Expansion Project (TEP). The TEP includes the proposed expansion of the tailings impoundment to the northeast (Northeast Expansion) and the raising of the North Impoundment. This addendum addresses proposed changes only. These changes will be incorporated into the Compliance and Operational Monitoring Plan following final design of the proposed TEP. This addendum addresses monitoring changes (Section 2), background monitoring (Section 3), routine monitoring (Section 4), and surveying of new monitoring points (Section 5). All monitoring changes will be in accordance with procedures in the State-approved Groundwater Characterization and Monitoring Plan (GCMP).

2.0 MONITORING CHANGES

Proposed monitoring changes include: (1) monitoring well abandonment and replacement, (2) discontinuance of lysimeter monitoring, and (3) toe ditch sampling modification. The locations of proposed changes are shown on Figure 1 and listed on Table 1. The following discusses the proposed changes.

2.1 Monitoring Well Abandonment and Replacement

Two compliance monitoring well nests consisting of a total of four individual wells (NET1381A, NET1381B, NE1385A, and NET1385B) will require plugging and abandonment prior to construction of the proposed Northeast Expansion. These wells are located on the northeast perimeter of the North Impoundment (Figure 1) and are within the footprint of the proposed Northeast Expansion. In addition to these four compliance wells, there are six to seven other Kennecott-owned monitoring well nests within the general area of the proposed Northeast Expansion not currently part of the current permit compliance monitoring program that may require plugging and abandonment depending on the final footprint of the Northeast Expansion. The need to plug and abandon these wells will be further assessed during the design of the proposed Northeast Expansion. The plugging and abandonment of all wells will be coordinated through the GCMP program. Plugging and abandonment will be conducted in accordance with Utah regulations (R655-4-14).

In addition to Kennecott-owned wells that may require plugging and abandonment, there are potentially six or fewer historical monitoring wells associated with the closed Salt Lake County Landfill located near the south boundary of the proposed Northeast Expansion that may be

affected by future construction. Kennecott will work with Salt Lake County on identifying the location and construction of these historical wells, so that the effects of the proposed Northeast Expansion on these wells can be properly evaluated.

To replace the two permit well nests that will be plugged and abandoned, four well nests, consisting of a total of eight individual wells, will be installed around the perimeter of the proposed Northeast Expansion. These well nests are temporarily identified as TEP-1, TEP-2, TEP-3, and TEP-4 on Figure 1 and Table 1, but will be re-named in accordance with the GCMP well numbering scheme when they are installed. The replacement wells are located so that the currently approved well spacing of at least one well (or nest) per mile of embankment is maintained. Because the length of the embankment perimeter will increase following the construction of the proposed Northeast Expansion, the two well nests to be abandoned are replaced by four. It is possible that Kennecott-owned well nests that currently exist near the perimeter of the proposed Northeast Expansion may not be affected by the construction and could be used as compliance monitoring wells for UGW350011. The use of these wells to replace permit well nests that will be abandoned will be evaluated before installing new monitoring wells.

Each replacement well nest will consist of one well screened in the Shallow Aquifer and one well screened in the upper portion of the Principal Aquifer. An “A” and “B” suffix will be included in the final well identification number for the Shallow Aquifer and Principal Aquifer wells, respectively, consistent with other wells in the permit monitoring program.

The Shallow Aquifer well screen will be placed in the thickest sand layer or sequence encountered below the uppermost clay layer in the Bonneville Clay, which exists from approximately ground surface to a depth ranging from 3 to 15 feet or more, and above a depth of approximately 35 feet below ground surface (bgs). The depth to groundwater is expected to be approximately 2 feet below ground surface at these locations.

The Principal Aquifer well in each well nest will be installed in the first significant sand layer (approximately 2 feet thick or more) in the depth interval from 35 to 70 feet bgs. The Principal Aquifer well may be under flowing artesian conditions.

The wells will be installed in conformance with with EPA RCRA Groundwater Monitoring Technical Enforcement Guidance Document, 1986, OSWER-9950.1, Section 3.5, in accordance with UGW350011. Documentation of the well completion will be provided to Utah Department of Water Quality (UDWQ) within 60 days of well installation.

2.2 Discontinuance of Lysimeter Monitoring

Sampling of water accumulation in the eight lysimeters located on the South Impoundment (Figure 1) every five years will be discontinued. Sample production from the lysimeters is unreliable due to their completion depth in unsaturated or partially saturated tailings material, and the sample objective of assessing acidification potential in the surficial tailings is achieved more reliably through annual surface sampling of the tailings material (see Appendix A of UGW350011, Assessment of Acidification Potential, Kennecott Tailings Impoundment, January 2011).

The lysimeters will be left in place and available for other monitoring purposes, as needed. Two lysimeters, TLL4128 and TLL4129 (Figure 1), will require abandonment prior to raising the North Impoundment. The lysimeters are completed in the tailing material from depths ranging from 2 to 20 feet bgs, and do not require special well abandonment procedures. Replacement lysimeters will be installed in the South Impoundment tailing material as close to the original locations as possible.

2.3 Toe Ditch Sample Location Modification

One toe ditch sampling location, TLP1436, will be covered by the proposed Northeast Expansion embankment. This location will be relocated as close to the original location as possible.

3.0 BACKGROUND MONITORING

Groundwater Protection Levels are established for UGW350011 using existing background water quality on a well-by-well basis. The four replacement monitoring well nests will be Class III groundwater, consistent with the wells they are replacing. Groundwater protection levels for the replacement monitoring wells will be established following the collection of twelve consecutive quarterly samples over a period of three years to establish baseline conditions that account for seasonality.

The collection of groundwater samples for background monitoring will be in accordance with the Compliance and Operational Monitoring Plan (Appendix B of UGW350011).

Background monitoring of the toe ditch sample location is not required.

4.0 ROUTINE MONITORING

Following the establishment of baseline conditions (Section 3), the four new monitoring well nests will be sampled semiannually, consistent with the sample schedule for the wells they are replacing. The new toe ditch sampling location will be sampled quarterly, consistent with the location it is replacing.

The collection of groundwater samples for routine monitoring will be in accordance with the Compliance and Operational Monitoring Plan (Appendix B of UGW350011).

5.0 SURVEYING

Following new well installation and relocation of the toe ditch sampling point, the monitoring points will be surveyed by a Utah licensed surveyor. The survey will be tied into the 2012 re-survey of the UGW350011 monitoring locations. For each well location, the survey will include ground surface elevation, casing top elevation (i.e., groundwater elevation measurement point) and northing-easting in state planar coordinates. The survey will be performed in accordance with Standard Operating Procedures developed for the 2012 re-survey of the UGW350011 monitoring locations.