M/035/0002
cc: Leslie

Rio Tinto

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Kelly L. Payne, P.G.
Manager - Environment

RECEIVED
OCT 03 2013
DIV. OF OIL, GAS & MINING

27 September 2013

VIA EMAIL AND US MAIL

Mr. Paul Baker
Utah Department of Natural Resources
Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

Subject: Summary of 13 September 2013 Storm Event at Bingham Canyon Mine

Dear Mr. Baker:

Kennecott Utah Copper LLC (KUC) submits the following information in response to the "Division Directive" dated 17 September 2013. The directive requested a summary of the storm event on 13 September 2013. By responding to the Division Directive and submitting the following information, KUC is not waiving, and does not waive, any rights or defenses it may have to object to, refute, or otherwise challenge the issuance of the Division Directive, any statement or allegation in the Division Directive, or any future action that the Division may take in response to the storm event on 13 September 2013 or any information submitted by KUC in response to the Division Directive. In fact, KUC expressly reserves any and all rights, defenses, and objections it may have to challenge the Division Directive or any future Division action.

Storm Summary

On 13 and 14 September 2013, the Bingham Canyon Mine area experienced high intensity rainfall events. Notably, on 13 September precipitation gages located on top of the east and south mine waste rock dumps (stations named Castro, Code 51, and Keystone; Figure 1) received between 2.6 and 3.6 inches of rain in approximately two hours beginning about 12:30 PM MDT. The storm event on 14 September delivered rainfall 0.5 to 0.6 inches of rain in 30 minutes at the Castro station and the lower elevation Copper monitor. Fifteen minute rainfall totals for all KUC monitors during these events are reported in Table 1 (note that times indicated on this table are MST).

KUC's meteorological monitoring network is maintained by a third party, Meteorological Solutions Inc. (MSI), Salt Lake City. MSI performed inspection and calibration of the network in late July 2013. MSI also conducted a post-storm inspection and calibration. MSI reports that all sensors are providing measurement outputs to their respective data acquisition systems accurately and well within manufacturer and EPA recommended tolerances. KUC thus has high confidence in the rainfall totals for these storm events.

The US National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) Precipitation Frequency Estimates for the Bingham Canyon Mine area (NOAA Atlas 14; utilizing the NWS Bingham Canyon gage, elevation 6010 feet AMSL, period of record 1940-1974) indicate that a 2-hour, 100-year storm total is 1.97 inches, suggesting that the storm total received on 13 September was well in excess of this recurrence frequency.

Storm Runoff

The size and intensity of this storm caused stormwater and sediment runoff from the mine waste dumps to overwhelm sedimentation basins in the Olsen, Castro, South Saints Rest, Saints Rest, and Yosemite drainages in the Butterfield Creek basin. From all of these drainages, except Castro, contact stormwater and sediment derived from mine waste rock dumps flowed to Butterfield Creek, where the water and sediment flows combined with high water and sediment flows from native areas of Butterfield Canyon; from the Castro drainage there may have been a release of contact stormwater only.

Butterfield Creek is diverted near the mouth of Butterfield Canyon into the Herriman Irrigation Company distribution system. KUC observed during the storm event that sediment-laden water with a color characteristic of mine waste rock dump sediment reached the Herriman Irrigation Company system. Subsequently, KUC has mapped distinctively waste-rock colored sediment deposited on several agricultural properties that receive Herriman Irrigation Company water. KUC is in the process of mapping the extent of mine waste rock-colored sediments, collecting sediment samples, and working with affected landowners to determine appropriate next steps. KUC notes that the fine-grained fraction of mine waste rock sediment can contain concentrations of lead slightly above a previously established residential standard for the Herriman area, but are expected to be below standards for agricultural and recreational use. Thus, we do not anticipate any immediate risk to human health associated with waste rock dump sediment runoff.

Due to the loss of stormwater and sediment collection capacity from the storm event of 13 September, rainfall on the morning of Saturday, 14 September 2013 caused additional offsite runoff of contact stormwater and mine waste rock sediment into Butterfield Creek and the Herriman Irrigation Company system. KUC is working to restore stormwater and sediment collection capacity; this is expected to require a number of weeks.

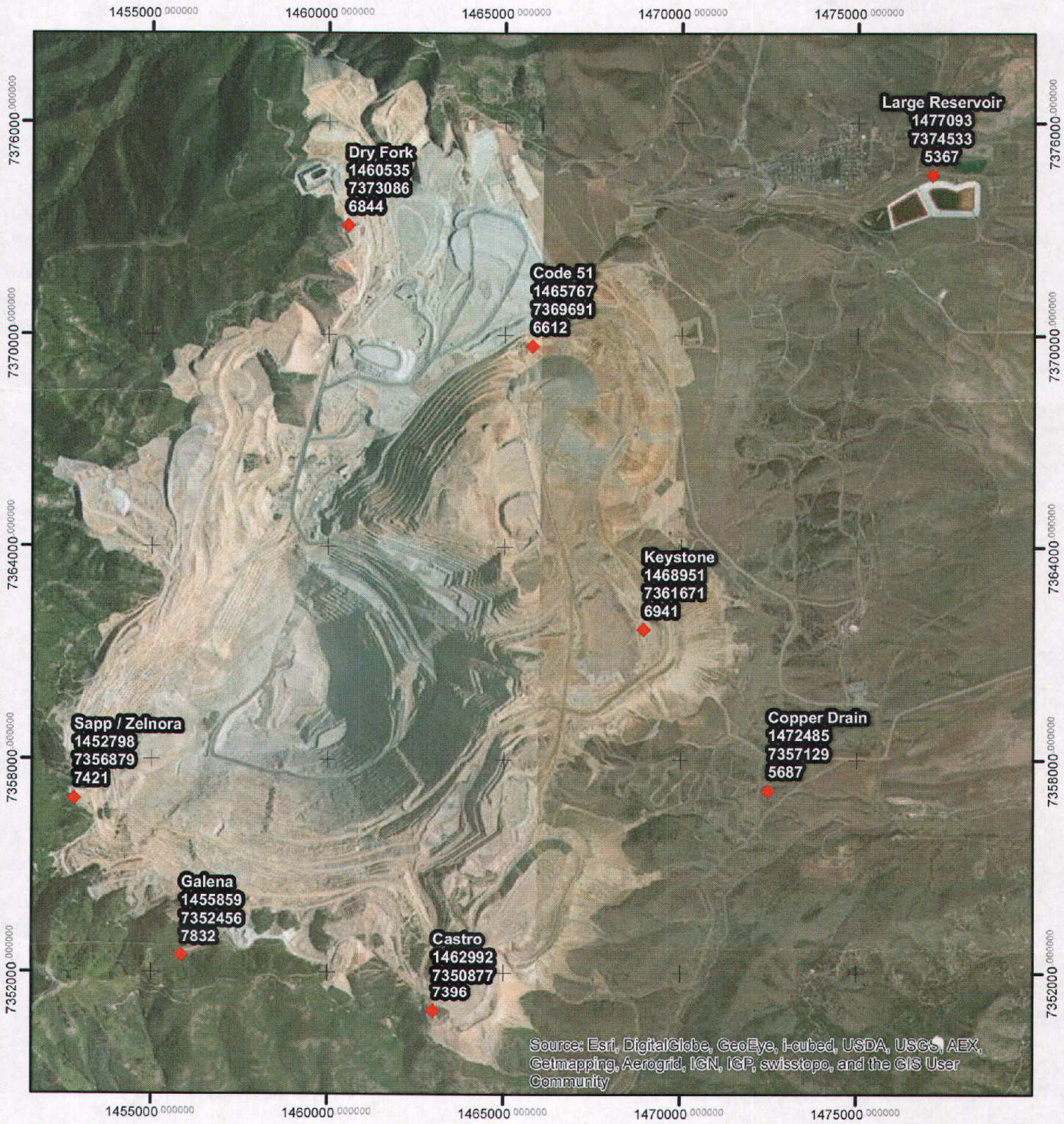
During this storm event, the sedimentation basins in Keystone, Lost Creek, North Copper and Copper drainages were also overwhelmed by stormwater and mine waste rock sediment. Stormwater and sediment overflow from Keystone reported to the ECS and secondary containment area (Upper Lined Canal), which eventually reports to the Bingham reservoir system that is part of the storm and sediment collection system. The cutoff walls for Lost Creek, North Copper and Copper were overtopped by the stormwater and sediment.

Regards,

Kelly L Payne, P.G.
Manager – Environment

Enclosures

cc: Mike George, DEQ-Storm Water, via email
Douglas Bacon, DEQ-DERR, via email
Dan Hall, DEQ-DWQ, via email
Kim Shelley, DEQ-DWQ, via email
Brett Wood, Herriman City, via email



Met Stations Location
SP83 East
SP83 North
Elevation

0 2,000 4,000
Feet

N

Designed By: JI	Rio Tinto **KENNECOTT UTAH COPPER** ENVIRONMENTAL	**FIGURE 1**
Drawn by: JI		**LOCATION OF BINGHAM CANYON MINE METEORLOGICAL STATIONS**
Project Eng:	Dwg No.: BCM_MET STATIONS LOC	
Project Manager:	Project: CALIBRATION REPORT	

Table 1 15-Minute Rain Totals for Bingham Canyon Mine Area Meterological Monitoring Stations

Mine Precipitation (inches)	Castro	Code51	Copper	Galena	Keystone	LargeRes	Sapp
9/13/2013 11:00	0	0	0	0	0	0	0
9/13/2013 11:15	0	0.3	0	0.05	0	0	0
9/13/2013 11:30	0.06	0.61	0	0.23	0.01	0	0
9/13/2013 11:45	0.06	0.28	0	0	0.26	0.37	0.02
9/13/2013 12:00	0.38	0.29	0	0.02	0.82	0.18	0
9/13/2013 12:15	0.28	0.35	0.29	0.11	0.87	0.32	0.22
9/13/2013 12:30	0.38	0.34	0.37	0.1	0.69	0.28	0.18
9/13/2013 12:45	0.69	0.18	0.38	0.07	0.3	0.44	0.16
9/13/2013 13:00	0.43	0.12	0.21	0.06	0.29	0.31	0.03
9/13/2013 13:15	0.33	0.07	0.21	0	0.23	0.13	0
9/13/2013 13:30	0.16	0.03	0.14	0.01	0.12	0.05	0
9/13/2013 13:45	0.06	0	0.03	0	0.02	0.03	0
9/13/2013 14:00	0	0.01	0	0	0	0.01	0.01
9/13/2013 14:15	0	0	0.02	0.01	0	0.01	0
9/13/2013 14:30	0	0	0	0	0.01	0	0
9/13/2013 14:45	0	0	0	0	0	0.01	0
9/13/2013 15:00	0	0.01	0	0	0	0	0
9/13/2013 15:15	0	0	0.01	0	0	0	0
9/13/2013 15:30	0	0	0	0	0	0	0
Daily Total 9/13/2013	***2.83***	***2.59***	***1.66***	***0.66***	***3.62***	***2.14***	***0.62***

Mine Precipitation (inches)	Castro	Code51	Copper	Galena	Keystone	LargeRes	Sapp
9/14/2013 10:00	0	0	0	0	0	0	0
9/14/2013 10:15	0	0	0.07	0.09	0	0	0.03
9/14/2013 10:30	0.07	0.1	0.15	0.02	0	0	0
9/14/2013 10:45	0.07	0.38	0.41	0.07	0.02	0	0
9/14/2013 11:00	0.08	0.03	0.1	0.06	0.04	0.02	0
9/14/2013 11:15	0.01	0	0.01	0.01	0.01	0.14	0.01
9/14/2013 11:30	0	0.02	0.01	0	0	0.02	0
9/14/2013 11:45	0.01	0.02	0	0.06	0.01	0.03	0.03
9/14/2013 12:00	0	0	0	0.11	0	0.03	0.05
9/14/2013 12:15	0	0	0	0	0.03	0.02	0.01
9/14/2013 12:30	0.02	0.02	0.03	0	0	0	0
9/14/2013 12:45	0	0	0	0	0.02	0	0
9/14/2013 13:00	0.02	0	0.01	0	0	0.01	0
9/14/2013 13:15	0.01	0.02	0	0	0.01	0	0.02
9/14/2013 13:30	0	0	0	0	0	0	0
9/14/2013 13:45	0	0	0	0	0.01	0	0
9/14/2013 14:00	0	0	0	0	0	0	0
9/14/2013 14:15	0	0	0.01	0	0	0	0
9/14/2013 14:30	0	0.01	0	0	0	0	0
9/14/2013 14:45	0	0	0	0	0	0	0
Daily Total 9/14/2013	***0.29***	***0.60***	***0.80***	***0.42***	***0.15***	***0.27***	***0.15***