KCB Consultants Ltd.

May 14, 2020

Resolution Copper Mining LLC
P.O. Box 1944
Superior, Arizona
85273

Ms. Victoria Peacey
Senior Manager - Permitting and Approvals

Dear Ms. Peacey:

Skunk Camp TSF PFS-A
Response to March 18, 2020 letter from BGC Re: Resolution Copper Project EIS - Assessment of Surface Faulting Investigations at the Skunk Camp TSF Location
Doc. # CCC.03-81600-EX-LTR-00016 – Rev. 0

This letter is in response to questions posed by BGC Engineering USA Ltd in their March 18, 2020 letter entitled "Resolution Copper Project EIS –Assessment of Surface Faulting Investigations at the Skunk Camp TSF Location". The surface geology, site investigations, and traces of known and inferred faults are shown on Figure 1.

Question:

> *Seek additional information from KCB regarding the 15-ft-wide shear zone they mapped near Haley Spring. The field notes for waypoints collected at/near the shear zone do not mention the shear zone or geomorphic and stratigraphic observations that could be used as evidence against Quaternary-activity of this structure. Do other locations along the projected strike exist to evaluate this structure?*

Response:

The Ransome Fault is a Tertiary extensional fault exposed in the Precambrian and Paleozoic rocks of the Dripping Springs Mountains, where it bounds a down-dropped graben to the west (Cornwall et al. 1971, Spencer and Richards 1998). The fault trace was interpreted by KCBCL (2019) to be slightly west of the trace mapped by Cornwall et al. (1971) and Spencer and Richards (1998). The exposure was poorly defined and the fault location was inferred from the juxtaposition of exposed intact rock units; Mescal Limestone to the west, and Dripping Spring Quartzite to the east. Between was an area with no intact rock exposure, interpreted to be fault damaged by the surface exposure of mixed lithology subangular rock fragments in a weakly cemented fine sand and silt matrix (Figure 2). The steep east facing surface topography did not reflect downward to the west movement along the normal fault, suggesting the current topography is largely driven by downwards incision of drainages and not obviously affected by vertical displacements along the Ransome Fault. No trace or evidence of the fault could be seen in the onlapping Tertiary (Gila) Conglomerate or the ridge capping Quaternary Pediment to the north of the Precambrian basement.

KCB Consultants Ltd.
2 North Central Avenue, 18th Floor ▪ Phoenix Arizona 85004 ▪ USA
t 602.283.1006 ▪ www.kcbconsultants.com

At location 8 (all DH and RC holes ending in 8, e.g. DH19-8B), geophysical line SL-4 was completed across the trace of the Dripping Spring Fault as mapped by Cornwall et al. (1971) (Figure 3). Some variations in resistivity were seen in the lower layer, that were thought could be evidence of faulting. However, no evidence of faulting or sharp variation of lithology were observed in drilling, and no surface escarpments were seen (Figure 3). Based on the resistivity profile DH19-8B crossed the potential fault at 250 ft depth, but no evidence of faulting was seen in the core or televiewer profiles. KCBCL and LCI have found no evidence of faulting in Tertiary or younger sediments, including along the projected strike of the Ransome Fault, and on the inferred position of the Dripping Springs Fault, including at angled hole DH19-8B. This evaluation has included field visits, aerial photographs review, and review of PhotoSat derived topography with approximate 3 ft cell size.

Figure 1 Skunk Camp Site Investigation Plan

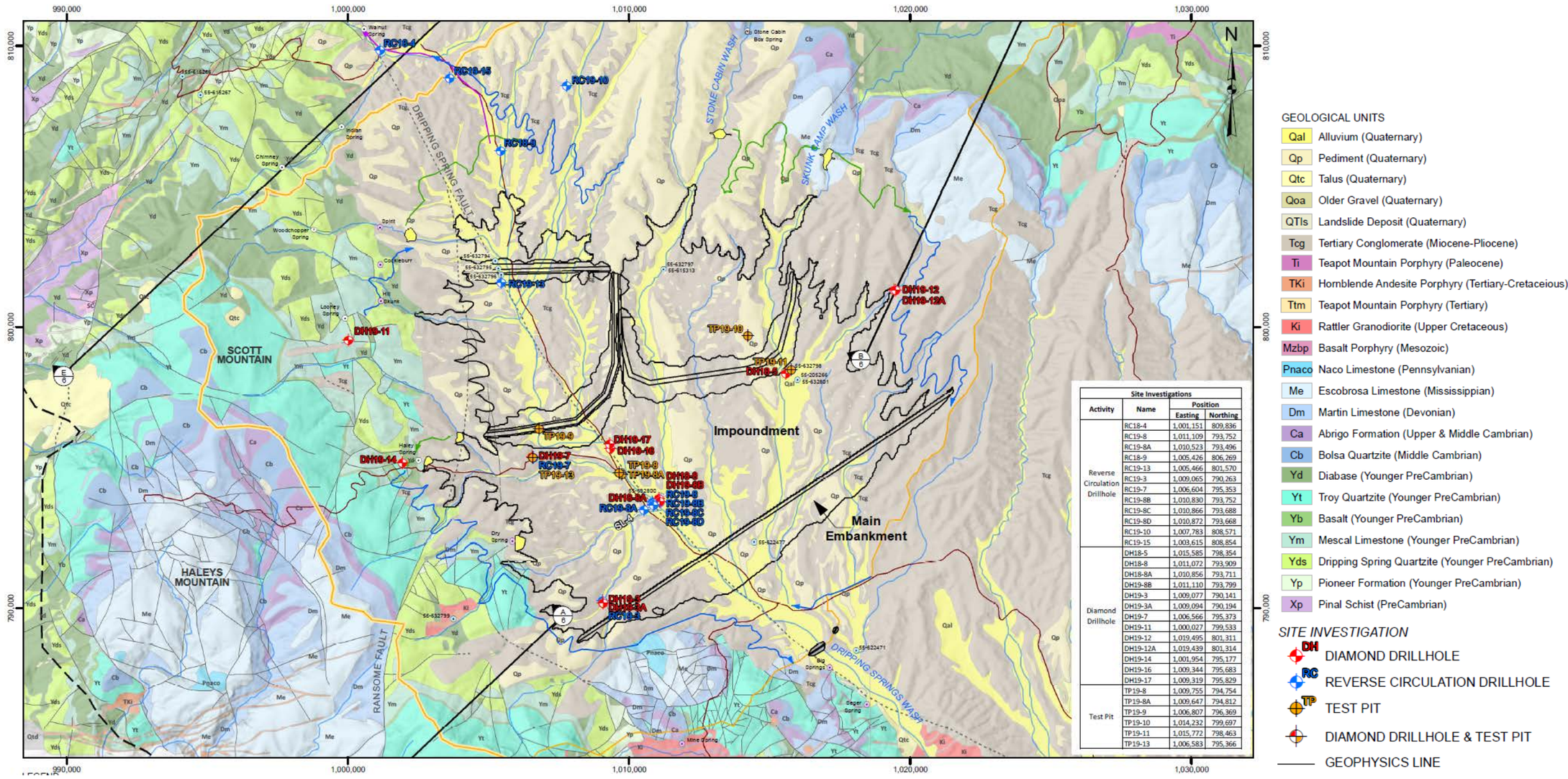


Figure 2 Inferred position of the Ransome Fault. View to north from MP19-57 towards MP19-60

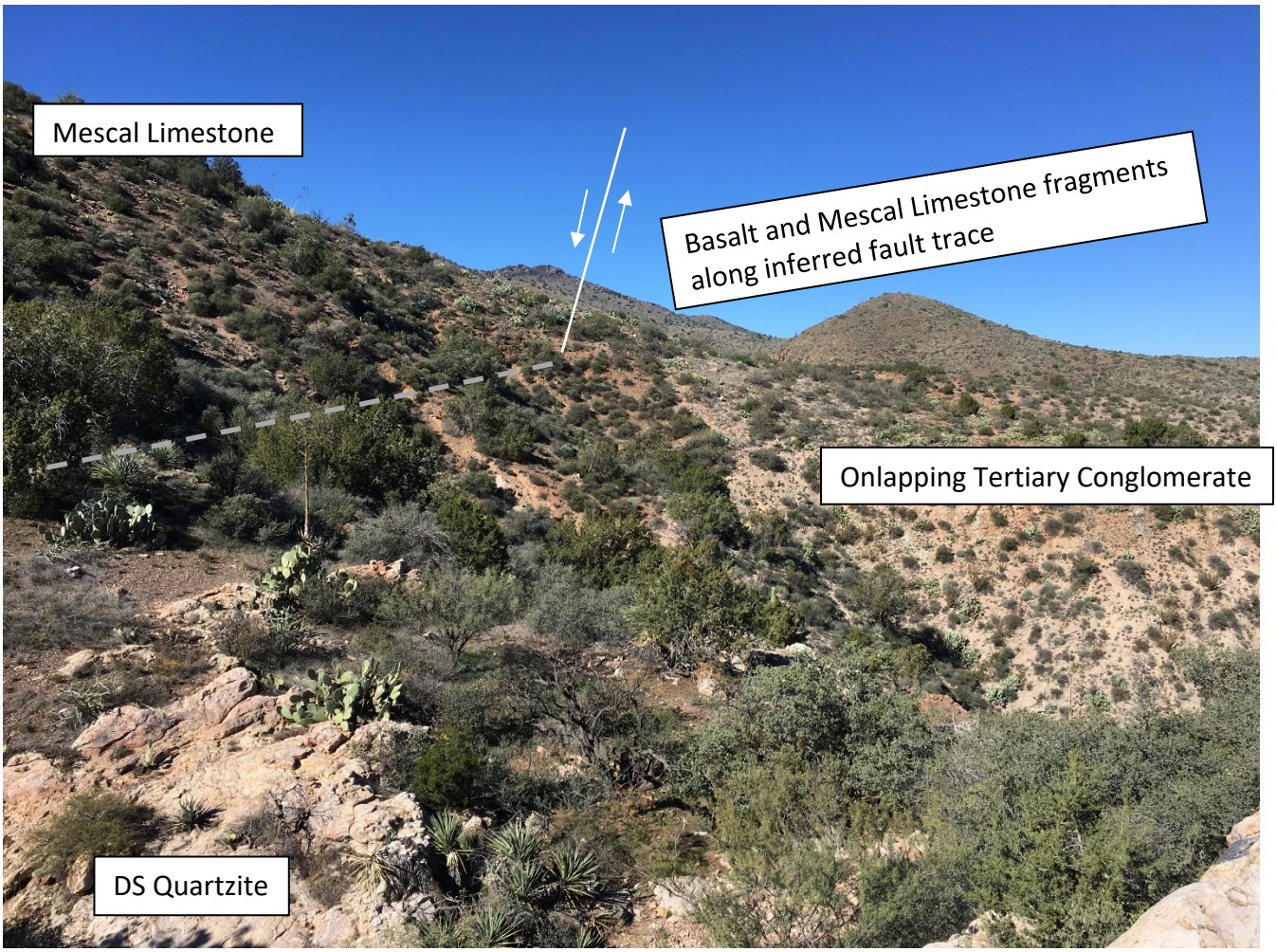


Figure 3 Flat Topography at SL-4 along Dripping Springs Wash

Question:

> *Seek additional information from KCB about the limited evidence for Tertiary faulting they report (KCB, 2019; page 114), based on thickened Tertiary deposits against the Dripping Springs Mountains. How and where did KCB map the thickness of the Tertiary units, and how does the apparent change in thickness relate to mapped (or unmapped) faults? Did their field evaluation overlap the area they would expect to find faulting associated with the thickened deposit?*

Response:

In their discussion of structure, Cornwall et al. (1971) describe a diamond drill hole 800 ft east of basement rocks, that penetrated over 2,900 ft in “fanglomerate sediments” (Tertiary Conglomerate). On this basis, Cornwall et al. inferred the presence of a steep normal fault, referred to by KCBCL as the Dripping Spring Fault, bounding the western edge of the Tertiary basin. This hole is shown on their map at the northern edge of the Sonora Quadrangle. Cornwall et al. (1971) also describe a churn hole at the southern edge of the Sonora Quadrangle 900 ft east of basement rocks, which penetrated 1,470 ft in fanglomerate sediments (Tertiary Conglomerate). This was taken as supporting evidence of a steep normal fault (Dripping Spring Fault) bounding the western edge of the Tertiary basin (Figure 1 and Cornwall et al. 1971).

The northern area (2,900 ft hole) was visited by KCBCL and LCI to search for evidence of faulting, but no surface expression or exposure could be found related to faulting in Tertiary or Quaternary sediments, consistent with findings by Spencer and Richards (1998). A desktop review of aerial photographs and PhotoSat topography of the trace of the Dripping Spring Fault within the project area of the proposed project has been carried out. Field mapping of the fault trace covered all but an area of private land south of the proposed TSF.

Holes drilled in 2018 and 2019 also provide information on the thickness of Tertiary Conglomerate (KCBCL 2019). The results are not conclusive but are consistent with Tertiary Conglomerate being thicker to the east of the Dripping Spring Fault (>1,000 ft), and thinner to the west of it (<1,000 ft).

Holes west of Dripping Spring Fault, but east of Ransome Fault found the following thicknesses of Tertiary Conglomerate (Figure 1):

- DH19-3A: 860 ft – terminated in Martin Limestone
  - Similar total thickness of Tertiary Conglomerate as DH19-17, equidistant between Ransome Fault and Dripping Spring Fault
- DH19-17: 828 ft – terminated in Rattler Granodiorite.
  - Assumed to be west of the Dripping Spring Fault based on the limited thickness of Tertiary Conglomerate (<1,000 ft).

Holes east of Dripping Spring Fault found the following thicknesses of Tertiary Conglomerate (Figure 1):

- DH19-12: 635 ft – terminated in Escabrosa Limestone
  - The basal contact is SW dipping Escabrosa Limestone. This thickness is consistent with an 18° dip to the SW. If this dip is projected to the inferred position of the Dripping Spring Fault, the thickness of Tertiary Conglomerate could be greater than 4,000 ft above the footwall. This is consistent with the greater than 2,900 ft thickness reported by Cornwall et al. (1971).
- RC19-15: greater than 985 ft – terminated in Tertiary Conglomerate
  - Consistent with a greater thickness (>1,000 ft) of Tertiary Conglomerate east of the Dripping Spring Fault.

Question:

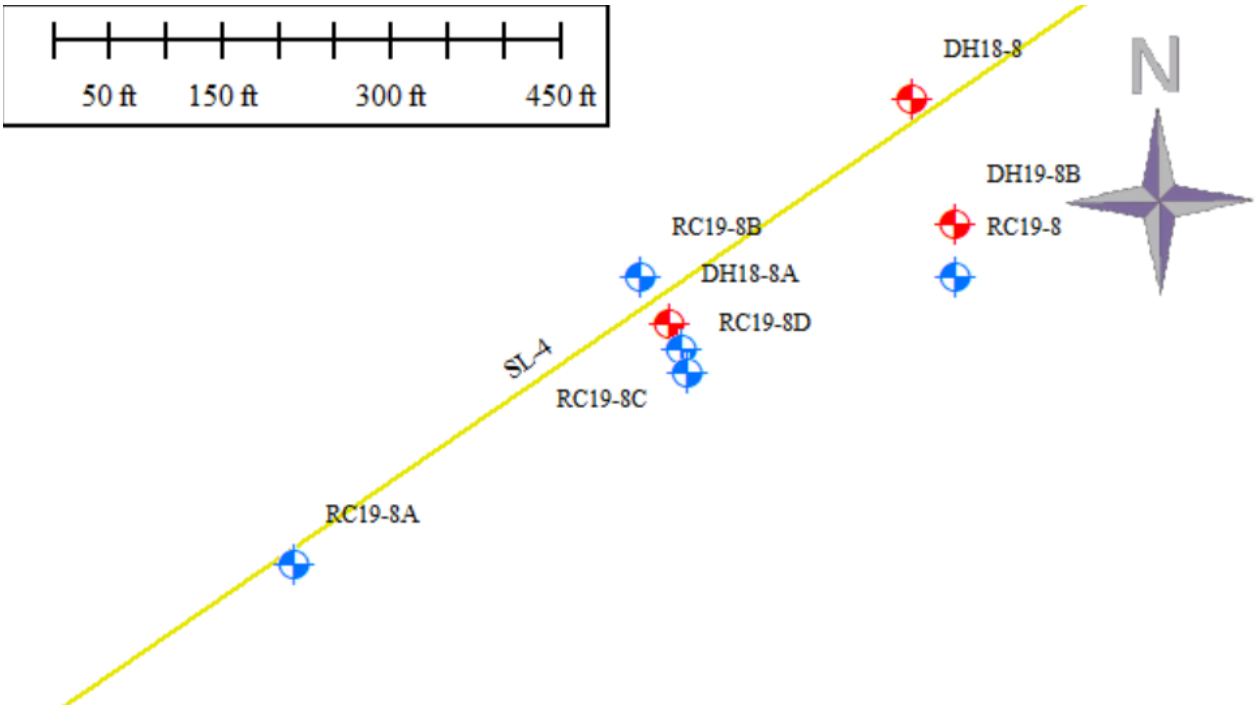
> *Seek additional information from KCB regarding the inconsistences between their stratigraphic interpretations from boreholes and the seismic refraction and electrical resistivity geophysical survey data. If Resolution Copper is planning to use the 2D geophysical data collected by KCB (2019) for any application other than the fault study it will be important to discuss the data and their interpretations with KCB. Their interpretation of p-wave velocities for alluvium and Tertiary bedrock appears to disagree with stratigraphic picks from their boreholes.*

Response:

Refraction found highly weathered Tertiary Conglomerate and alluvium had similar P-wave velocities where Tertiary Conglomerate is exposed at the surface and could be used to constrain the interpretation of the geophysics. Alluvium was found to lie within relatively steep sided channels running oblique to the alignment of the geophysical survey. Overall the combination of geophysical methods was useful for defining the alignment of thickest alluvium for positioning drill holes.

The geophysical methods used were not considered effective in locating potential faults within Tertiary Conglomerate. Drill core and downhole televiewer found intact sandstone across the anomaly zone at 250 ft in DH19-8B. The source of the anomaly is not known, but our experience with resistivity has found the results at depth are increasingly noisy and affected by variations in shallower zones.

Figure 4 Inset of SL-4 and Surrounding Drill Holes



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Yours truly,

KCB CONSULTANTS LTD.

Chris Kowalchuk, P.Geo. (BC)
Engineering Geologist

CK:dl

REFERENCES

Cornwall, H.R., Banks, N.R., and Phillips, C.H. 1971. Geologic map of the Sonora quadrangle, Pinal and Gila Counties, Arizona. U.S. Geological Survey, Map GQ-1021, 1:24:000 scale.

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Richards, S.M. and Spencer, J.E. 1998. Compilation geologic map of the Ray-Superior area, central Arizona. Arizona Geological Survey, Report 98-10. 50 p., 3 plates, 1:24,000 scale.