TETRA TECH EBA

OQM | Organizational Quality Management Program

November 21, 2014

CONFIDENTIAL
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Cassiar Gold Corporation
China Minerals Mining Corporation
Suite 1100 – 1111 Melville Street
Vancouver, BC V6E 3V6

ISSUED FOR USE

Via Email: patfong@chinamineralsmining.com

Attention: Ms. Patricia Fong

Subject: Report on Dam Safety Inspection
Tailings Storage Facility – Cassiar Gold Mine
near Jade City, BC

1.0 EXECUTIVE SUMMARY

The Cassiar Gold Mine (formerly Table Mountain Gold Mine) is located about two kilometres southwest of Jade City, BC adjacent to the Stewart Cassiar Highway. It last operated in 1997 and has been in care and maintenance since then. The most recent available site inspection/annual report was completed by Knight Piesold in 2009, and this document was the primary resource for the Dam Safety Inspection (DSI) completed on October 28/14 by Tetra Tech EBA and reported herein.

The failure consequence category of the tailings dams at this site have previously been assessed as LOW, per the Canadian Dam Association (CDA) Guidelines (2007). No visible changes were noted to the downstream environment that would result in a change to this classification. In addition, no Dam Safety Review (DSR) was available for Tetra Tech EBA to examine prior to the site visit, but a DSR is not required for a low consequence dam, per CDA Guidelines.

There have not been significant changes to the site since the 2009 inspection, there is no instrumentation installed in any of the structures, and there were no significant changes to dam stability or surface water control noted during the inspection. The site was snow covered at the time of the inspection, but not sufficiently deep to hinder observations.

The one recommendation made from the site inspection is to remove all woody vegetation that is growing on the crest and upper sideslopes of the tailings storage facility berms – this may create potential seepage paths should the facility become operational again in the future.

2.0 BACKGROUND

The mine site is located approximately two kilometres from Jade City, BC as shown on Figure 1. There are two tailings storage facilities (TSF 1 and TSF 2) at the site, with slurry tailings contained within generally rectangular earthfill embankments. Figures 2 and 3 show the locations of these facilities on the property.

TSF 1 was the original tailings facility, developed and filled with tailings to its final (present) configuration in 1987. TSF 2 was constructed in three phases, and completed in 1997.

A small volume of tailings was deposited in the first and second phases of construction, with only a thin veneer in the third phase.

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The only source of water inflow to the TSF structures is rainfall and snowmelt. There is a small riprap lined spillway from TSF 1, and a small (~300 mm diameter) steel pipe outlet set at a freeboard of about one metre in the Phase 1 and 2 pond, with no outlet from the Phase 3 pond of TSF 2.

As Knight Piesold completed the most recent analysis of the structures, and appear to have construction records in their files, it has been assumed that they are the Engineer of Record for these structures.

The site is presently in care and maintenance, with no regular monitoring or water sampling being completed. There is a small trickle (estimated < 2 L/s) through the spillway from TSF 1. Only water is being discharged – no tailings were observed in the discharge.

3.0 WORK COMPLETED

Richard Trimble and Justin Pigage visited the site on October 28/14, with assistance from two local residents (Charlotte Lebel and a local geologist) who guided us to the property and provided some background information.

4.0 OBSERVATIONS

4.1 TSF 1

There was a small volume of ponded water within TSF 1 hydraulically connected to a small riprap lined spillway (estimated dimensions 6 m top, 1 m base, 1.5 m high) at the east end of the facility. There was minimal flow (estimated < 2 L/s) flowing at the time of the inspection – see Photos 1 and 2. Knight Piesold estimated the spillway capacity to be about 5 m3/s which is in excess of the 1-in-200 year 24-hour storm precipitation of 53 mm.

Photo 1: Upstream view of spillway inlet at TSF 1 (October 28/14)

Photo 2: Downstream view of spillway from TSF 1 (October 28/14)

The flatter drier portions of TSF 1 exhibited signs of testpits, presumably for testing residual gold content.

The south end of TSF 1 contained an incomplete culvert installation (see Figure 2 and Photo 3) probably for water management purposes. As this end of the pond is a couple metres higher than the existing spillway, it will likely never convey water. It is recommended that this partially installed culvert be removed and the embankment closed off and repaired at abandonment.

Photo 3: Incomplete culvert installation at south end of TSF 1 (October 28/14)

One oversteep section was noted on the west side of TSF 1, next to the road to the mine. This oversteep section was previously noted in the Knight Piesold report, and should be flattened or stabilized with a toe berm if TSF 1 is to impound significant volumes of water in the future.

Photo 4: Oversteep section of berm along west side of TSF 1 (October 28/14)

Although vegetation was minimal along the crest of TSF 1, any woody vegetation (primarily willows) should be cut down and have their root bulbs pulled out to minimize the potential for future seepage paths. Some minor earthfill and compaction will be required for some of the larger trees, and riprap must be repaired/replaced if disturbed during this process.

4.2 TSF 2

The containment berms for Phases 1 and 2; and Phase 3 of TSF 2 were noted to be well constructed and stable, with no signs of erosion, slumping, animal burrows or significant tension cracks. It is possible that there may have been minor tension cracks not visible under the snow cover, but this is considered unlikely.

Significant pine tree growth was noted on one section of the berm (see Photo 5) – with some trees up to 100 mm butt diameter. These should be cut down and have their root bulbs pulled out to minimize the potential for future seepage paths, should the facility become operational again. Some minor earthfill and compaction will be required after removal of some of the larger trees.

Photo 5: Pine tree growth on crest of south leg, Phase 1 and 2 berm of TSF 2 (October 28/14)

The existing ~300 mm diameter outlet pipe in Phase 2 of TSF 2 is too small to be of any use for water management and should be removed prior to future operation or abandonment. If future operation is planned, a properly designed spillway should be constructed in undisturbed ground near the south abutment.

5.0 RECOMMENDATIONS AND CONCLUSIONS

There are no significant stability issues observed during the Dam Safety Inspection, and the observations/recommendations presented in the 2009 Knight Piesold report are still applicable.

As time and materials permit, the following recommendations for improvement and enhancing future stability should be considered:

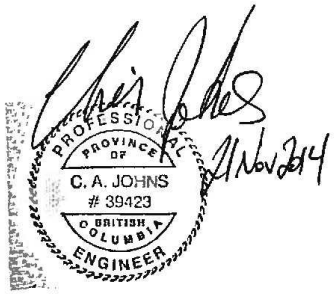
1. The emergency spillway at the south end of TSF 1 is incomplete and the culvert materials are on site. It looks as though construction was started and then abandoned. The elevation of TSF base at this corner (976 m) is about two metres above the limits of ponded water (and the invert of the spillway at 974 m) so will likely not see water in the current operating condition. As noted in the 2009 inspection, this should be closed off and repaired during closure and reclamation activities.
2. Assuming that the tailings storage facilities will be used again in the future, remove woody vegetation on the crests and the top 3 m of sideslopes on both TSF 1 and TSF 2, ensuring that the roots are pulled out with heavy equipment. Re-compact the surface after root removal to fill in the depressions. Roots are potential conduits for uncontrolled seepage, and vegetation growth generally inhibits visual inspection. Some earthfill and compaction may be required for some of the larger trees, particularly on TSF 2.
3. As suggested by Knight Piesold, the existing ~300 mm outlet pipe in Phase 2 of TSF 2 is too small to be of any use for water management and should be removed prior to future operation or abandonment. If future operation is planned, a properly designed spillway should be constructed in undisturbed ground in the south abutment.
4. If future operation is planned, Phase 3 of TSF 2 will also require a properly designed emergency spillway, or discharge back to Phase 2 using a combined spillway.
5. It is understood that water quality testing on the discharge from TSF 1 has been completed, but this information was not provided to Tetra Tech EBA for review.

6.0 CLOSURE

This report and its contents are intended for the sole use of the Cassiar Gold Corporation/China Minerals Mining Corporation and their agents. Tetra Tech EBA Inc. does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than Cassiar Gold Corporation/China Minerals Mining Corporation or for any Project other than the site described herein. Any such unauthorized use of this report is at the sole risk of the user. Use of this report is subject to the terms and conditions stated in the attached General Conditions.

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech EBA Inc.



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APPENDIX A
TETRA TECH EBA'S GENERAL CONDITIONS

GENERAL CONDITIONS

GEOTECHNICAL REPORT

This report incorporates and is subject to these “General Conditions”.

1.0 USE OF REPORT AND OWNERSHIP

This geotechnical report pertains to a specific site, a specific development and a specific scope of work. It is not applicable to any other sites nor should it be relied upon for types of development other than that to which it refers. Any variation from the site or development would necessitate a supplementary geotechnical assessment.

This report and the recommendations contained in it are intended for the sole use of EBA’s Client. EBA does not accept any responsibility for the accuracy of any of the data, the analyses or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than EBA’s Client unless otherwise authorized in writing by EBA. Any unauthorized use of the report is at the sole risk of the user.

This report is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of EBA. Additional copies of the report, if required, may be obtained upon request.

2.0 ALTERNATE REPORT FORMAT

Where EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed EBA’s instruments of professional service), only the signed and/or sealed versions shall be considered final and legally binding. The original signed and/or sealed version archived by EBA shall be deemed to be the original for the Project.

Both electronic file and hard copy versions of EBA’s instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except EBA. EBA’s instruments of professional service will be used only and exactly as submitted by EBA.

Electronic files submitted by EBA have been prepared and submitted using specific software and hardware systems. EBA makes no representation about the compatibility of these files with the Client’s current or future software and hardware systems.

3.0 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, EBA has not been retained to investigate, address or consider and has not investigated, addressed or considered any environmental or regulatory issues associated with development on the subject site.

4.0 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems and methods employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgmental in nature as to both type and condition. EBA does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

5.0 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

6.0 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. EBA does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

7.0 PROTECTION OF EXPOSED GROUND

Excavation and construction operations expose geological materials to climatic elements (freeze/thaw, wet/dry) and/or mechanical disturbance which can cause severe deterioration. Unless otherwise specifically indicated in this report, the walls and floors of excavations must be protected from the elements, particularly moisture, desiccation, frost action and construction traffic.

8.0 SUPPORT OF ADJACENT GROUND AND STRUCTURES

Unless otherwise specifically advised, support of ground and structures adjacent to the anticipated construction and preservation of adjacent ground and structures from the adverse impact of construction activity is required.

9.0 INFLUENCE OF CONSTRUCTION ACTIVITY

There is a direct correlation between construction activity and structural performance of adjacent buildings and other installations. The influence of all anticipated construction activities should be considered by the contractor, owner, architect and prime engineer in consultation with a geotechnical engineer when the final design and construction techniques are known.

10.0 OBSERVATIONS DURING CONSTRUCTION

Because of the nature of geological deposits, the judgmental nature of geotechnical engineering, as well as the potential of adverse circumstances arising from construction activity, observations during site preparation, excavation and construction should be carried out by a geotechnical engineer. These observations may then serve as the basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein.

11.0 DRAINAGE SYSTEMS

Where temporary or permanent drainage systems are installed within or around a structure, the systems which will be installed must protect the structure from loss of ground due to internal erosion and must be designed so as to assure continued performance of the drains. Specific design detail of such systems should be developed or reviewed by the geotechnical engineer. Unless otherwise specified, it is a condition of this report that effective temporary and permanent drainage systems are required and that they must be considered in relation to project purpose and function.

12.0 BEARING CAPACITY

Design bearing capacities, loads and allowable stresses quoted in this report relate to a specific soil or rock type and condition. Construction activity and environmental circumstances can materially change the condition of soil or rock. The elevation at which a soil or rock type occurs is variable. It is a requirement of this report that structural elements be founded in and/or upon geological materials of the type and in the condition assumed. Sufficient observations should be made by qualified geotechnical personnel during construction to assure that the soil and/or rock conditions assumed in this report in fact exist at the site.

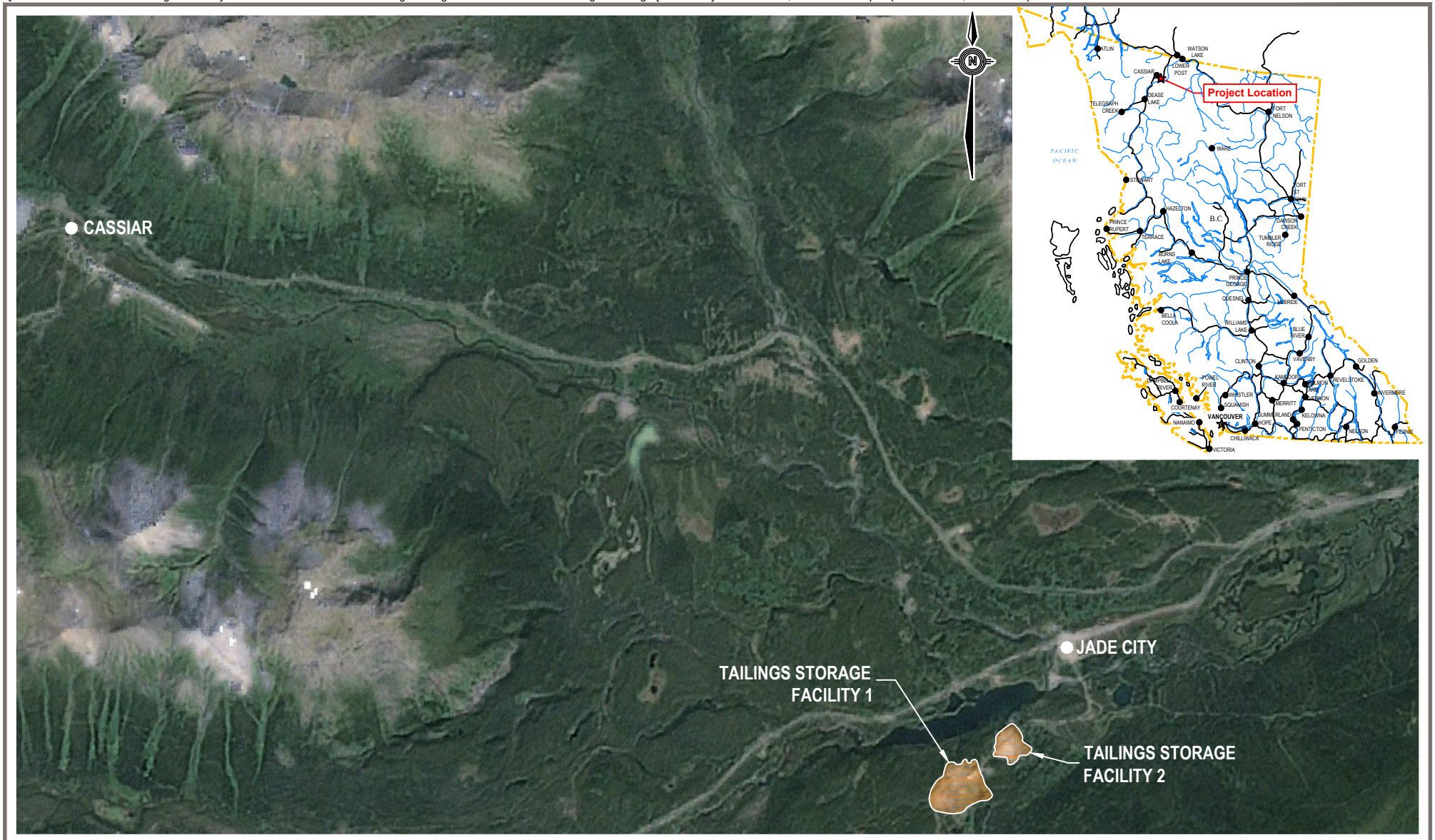
13.0 SAMPLES

EBA will retain all soil and rock samples for 30 days after this report is issued. Further storage or transfer of samples can be made at the Client's expense upon written request, otherwise samples will be discarded.

14.0 INFORMATION PROVIDED TO EBA BY OTHERS

During the performance of the work and the preparation of the report, EBA may rely on information provided by persons other than the Client. While EBA endeavours to verify the accuracy of such information when instructed to do so by the Client, EBA accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

Q:\Whitehorse\Data\0201drawings\Jade City\V15103110-01 Cassiar Gold Tailings Storage Facilities\V15103110-01 Fig.1-R0.dwg [FIGURE 1] November 13, 2014 - 5:09:05 pm (BY: BUCHAN, CAMERON)



CLIENT

CASSIAR GOLD CORPORATION

CASSIAR GOLD MINE TAILINGS FACILITY NEAR JADE CITY, BC

SITE LOCATION PLAN

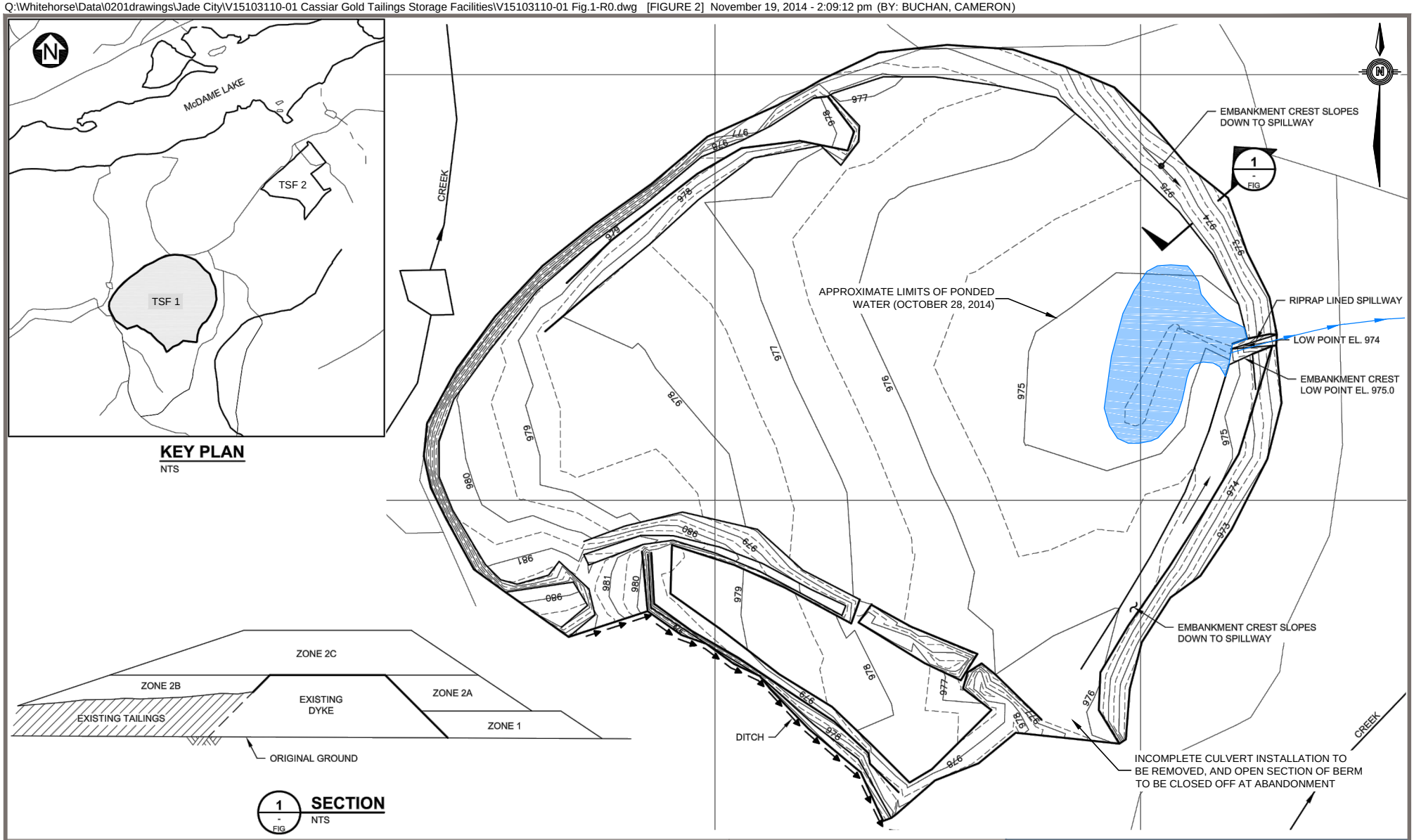
TETRA TECH

PROJECT NO.	DWN	CKD	REV
V15103110-01	CB	JRT	0

OFFICE	DATE
EBA-WHSE	November 13, 2014

Figure 1

Q:\Whitehorse\Data\0201drawings\Jade City\V15103110-01 Cassiar Gold Tailings Storage Facilities\V15103110-01 Fig.1-R0.dwg [FIGURE 2] November 19, 2014 - 2:09:12 pm (BY: BUCHAN, CAMERON)



NOTE

COPIED FROM ORIGINAL PLAN VA101-81/5 BY KNIGHT PIÉSOLD CONSULTING (FROM 2009 SITE INVESTIGATION AND ANNUAL REPORT)

0 100m

Scale: 1:2,500 @ 8.5"x11"

CLIENT

CASSIAR GOLD CORPORATION

CASSIAR GOLD MINE TAILINGS FACILITY
NEAR JADE CITY, BC

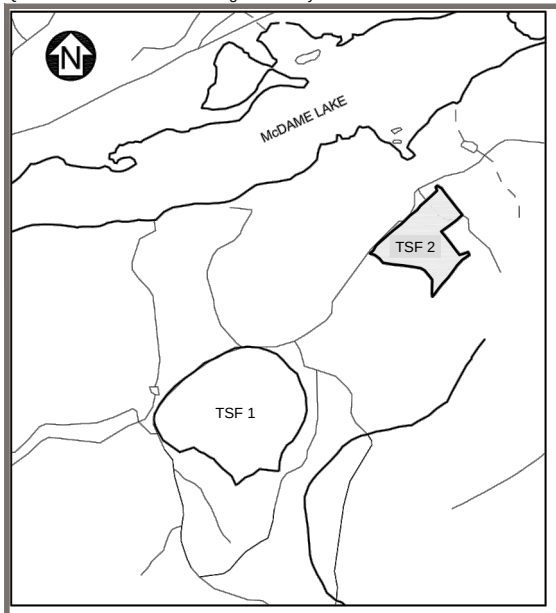
SITE PLAN
TAILINGS STORAGE FACILITY 1

TETRA TECH

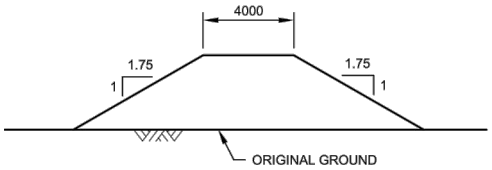
PROJECT NO.	DWN	CKD	REV
V15103110-01	CB	JRT	0

OFFICE	DATE
EBA-WHSE	November 13, 2014

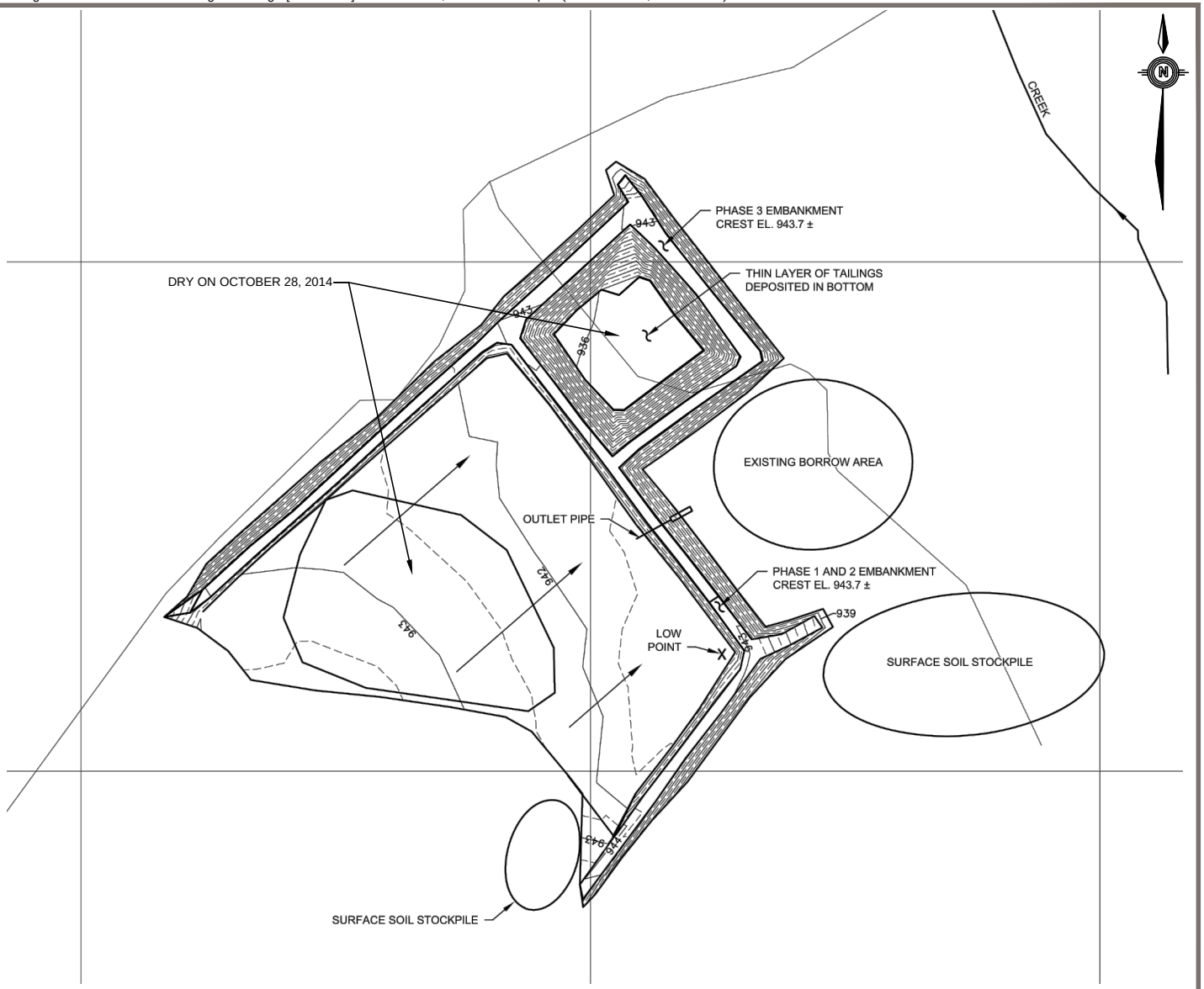
Figure 2



KEY PLAN
NTS



TYPICAL EMBANKMENT SECTION
NTS



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(FROM 2009 SITE INVESTIGATION AND ANNUAL REPORT)

0 100m
Scale: 1:2,500 @ 8.5"x11"

CLIENT
CASSIAR GOLD CORPORATION

CASSIAR GOLD MINE TAILINGS FACILITY
NEAR JADE CITY, BC

SITE PLAN
TAILINGS STORAGE FACILITY 2

TETRA TECH

PROJECT NO.	DWN	CKD	REV
V15103110-01	CB	JRT	0

OFFICE	DATE
EBA-WHSE	November 13, 2014

Figure 3