

YUKON WATER BOARD

Pursuant to the *Waters Act* and *Waters Regulation*, the Yukon Water Board hereby grants a Type A water licence for a Quartz mining undertaking to:

Sa Dena Hes Operating Corp.
c/o Teck Metals Ltd.
3300-550 Burrard Street
Vancouver, BC V6C 0B3

APPLICATION: QZ09-093

LICENCE NUMBER: QZ99-045

AMENDMENT: This licence shall be deemed to be amendment #2 of QZ99-045

LICENCE TYPE: A **UNDERTAKING:** Quartz mining

WATER MANAGEMENT AREA: 02 Yukon

LOCATION: Wells on the upper False Canyon Creek drainage area and from the North Creek Impoundment, Mount Hundere Area, Yukon

MAP CO-ORDINATES: MAX Latitude: 60° 42' 21" N MAX Longitude: 129° 11' 38" W
MIN Latitude: 60° 18' 31" N MIN Longitude: 128° 34' 08" W

PURPOSE: To obtain, store, divert, alter, and return a flow of water and to deposit a waste for a Quartz Mining Undertaking.

QUANTITY OF WATER: A maximum quantity of 4,091.5 cubic meters per day

EFFECTIVE DATE: The effective date of this licence shall be the date on which the signature of the Chairperson of the Yukon Water Board is affixed.

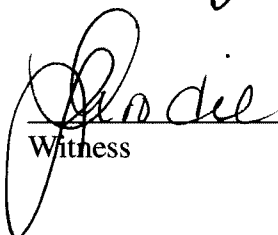
EXPIRY DATE: December 31, 2015

This licence shall be subject to the restrictions and conditions contained herein and to the restrictions and conditions contained in the *Waters Act* and the *Waters Regulation* made thereunder.


This Licence is deemed to be an amendment of Water Use Licence QZ99-045.

Approved this 27th day of

January, 2010.



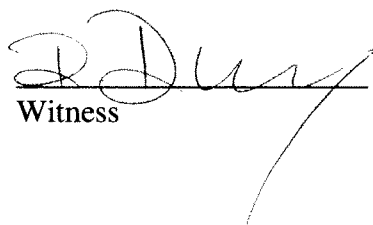
Witness




Minister, Executive Council Office
GOVERNMENT OF YUKON

Issued this 29 day of

JANUARY, 2010.



Witness



Chairperson
YUKON WATER BOARD

PART A – GENERAL CONDITIONS

1. Definitions

“Act” means *Waters Act* and any amendments thereto.

“Application” means Water Use Application QZ99-045 and QZ09-093 including any additional submissions and/or revisions submitted to the Yukon Water Board by the Licensee, up to the date of the Board’s decision.

“Board” means the Yukon Water Board.

“Decommissioning Plan” means the report entitled “Cominco Ltd., Sä Dena Hes Mine, Detailed Decommissioning and Reclamation Plan”, dated February 2000 and prepared by Access Mining Consultants Ltd. and SRK Consulting, and any revision.

“Regulation” means the *Waters Regulation* made under the Act.

“SRK C104105” means the report entitled “C104105, Construction Report Remedial Work Sä Dena Hes Mine, Yukon Territory”, dated November 1994 and prepared by Steffen, Robertson and Kirsten (Canada) Inc., which was submitted to the Board on December 28, 1994.

“SRK 60616” means the report entitled “Report 60616, Mt. Hundere Development Water Licence Application”, dated July 1990 and prepared by Steffen Robertson and Kirsten (B.C.) Inc., which was submitted to the Board on July 27, 1990 as part of water use application IN90-002.

“Waste” means any substance as defined in the Act.

Other Laws

2. No term of this licence limits the application of any other Federal, Territorial, First Nation or Municipal Legislation.
3. All work authorized by this licence shall occur on property that the Licensee has the right to enter upon and use for that purpose.

Correspondence

4. Where any direction, notice, order, or report under this licence is required to be in writing, it shall be given:
 - a) To the Licensee, if delivered, faxed or mailed by registered mail to the following address:

Sa Dena Hes Operating Corporation
c/o Teck Cominco Metals Ltd.
600-200 Burrard Street
Vancouver, B.C. V6C 3L7 Fax: (604) 685-3066

and shall be deemed to have been given to the Licensee on the day it was delivered or faxed, or seven (7) days after the day it was mailed, as the case may be.

- b) To the Board, if delivered, faxed or sent by registered mail to the following address:

Yukon Water Board
Suite 106, 419 Range Road
Whitehorse, Yukon Y1A 3V1 Fax: (867) 456-3890

and shall be deemed to have been given to the Board on the day it was delivered or faxed, or seven (7) days after the day it was mailed, as the case may be.

Non-Compliance

5. In the event that the Licensee fails to comply with any provision or condition of this licence, the Board may, with the approval of the Minister and subject to the Act, cancel the licence.

Deleterious Substances

6. Subject to the provisions of this licence, deleterious substances shall be used, transported, stored and disposed of in such a manner that they are not deposited in, or allowed to be deposited in, any waters.

Term of Licence

7. The term of this licence is from the effective date to December 31, 2015.

Reports

8. All reports required to be submitted to the Board will be unbound and reproducible by standard photocopier, accompanied by one electronic copy on a CD/DVD.
9. The Licensee shall provide to the Board 5 additional copies of all reports. The additional copies may be either 5 bound paper copies or 5 electronic copies on individual CDs/DVDs.

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10. Electronic copies shall be IBM compatible in one of the following formats: Word 97 - 2003, Excel 97 - 2003 workbooks, or Adobe .pdf format. Water quality results must be presented in Excel 97-2003 .xls format.

Annual Reports

11. Annual reports shall be submitted to the Board by the Licensee. Reports shall cover each calendar year and shall be submitted to the Board on or before March 31 of the next year. The first report shall cover the calendar year 2001 and shall include the reporting requirements for licence QZ97-025 for the year 2001.
12. Annual reports shall include the information required by this licence and by the Regulations, including, but not necessarily limited to:
- a) all water quantities used during the year with a summary and an interpretation of any trends or variations in the data; and
 - b) summaries of all data generated as a result of the monitoring requirements of this licence, including analysis and interpretation of the summaries and a discussion of any variances from base line conditions or from previous years' data; and
 - c) a detailed record of any major maintenance work carried out on the waste dumps, diversion works, water treatment plant or any other aspect of works on the property which may have an impact on water; and
 - d) during temporary closure, a closure status report that includes a discussion of planned future operations, and
 - e) during temporary closure, documentation of activities carried out under the requirements of Maintenance Activities During Temporary Closure, and
 - f) an identification of any recommendations from the annual physical monitoring inspections, or from the most recent five year dam safety review, that were either not implemented, or that did not comply with the schedule proposed in the report, or in the review, including an explanation of why the recommendation was not implemented.

Spills and Unauthorized Discharges

13. The Licensee shall keep the spill contingency plan current. Any revisions to the plan shall be delivered to the Board within ten days of the revision.
14. The Licensee shall immediately contact the 24-hour Yukon Spill Report telephone number (867) 667-7244 and implement the most recent spill contingency plan that has been filed with the Board, should a spill or an unauthorized discharge occur. A detailed written report

on any such event, including but not limited to, dates, quantities, parameters, causes and other relevant details and explanations, shall be delivered to the Board not later than ten days after its occurrence.

15. All personnel shall be trained in procedures to be followed and the equipment to be used in the containment of a spill.

Hazardous Materials Storage

16. A complete inventory of chemicals, fuels, oils, lubricants and other hazardous materials, including but not limited to mill process reagents, explosives and ore concentrates, and their locations, shall be maintained by the Licensee.

PART B - DESIGN AND CONSTRUCTION

Submissions

17. The Licensee shall submit to the Board final detailed design construction drawings, specifications and quality assurance/quality control procedures for the construction of any facilities or structures authorized by this licence, but shall not begin construction until such time as the Board has notified the Licensee to proceed. These facilities and structures shall include, but not be limited to:
 - a) water supply systems;
 - b) wastewater transportation, treatment and disposal systems;
 - c) impoundments;
 - d) drainage works;
 - e) spillways;
 - f) stream training works;
 - g) diversions; and
 - h) any works associated with the implementation of the Decommissioning Plan.
18. The design of all structures and facilities associated with the project shall be carried out using sound engineering practices and shall be completed and sealed by a Professional Engineer licensed to practice in Yukon.
19. The final detailed design construction drawings, specifications and quality assurance/quality control procedures submitted to the Board shall be consistent with the preliminary designs in the Application. Each submission to the Board shall be accompanied by a design report prepared and sealed by the Professional Engineer responsible for the work. The report shall contain a statement by the Professional Engineer confirming that the designs are consistent with, or indicating where the designs differ from, the preliminary designs in the Application.

20. At least ten days prior to the proposed date of commencement of construction of any structure or facility, the Licensee shall submit to the Board a written notification, together with a detailed construction schedule and the name and contact number(s) of the construction superintendent.
21. During construction, where site conditions require minor design modifications, the Licensee shall notify the Board, in advance of implementation, of the details of any modifications or variations from final detailed designs, specifications and quality assurance/quality control procedures previously submitted to the Board. The notice shall include an explanation of the reasons for the change and an assessment of the potential impact. The notice shall be sealed by a Professional Engineer licensed to practice in Yukon.
22. As-constructed (record) drawings and construction reports for all structures and facilities shall be submitted to the Board within ninety days of the completion of construction. Each submission shall be sealed by a Professional Engineer licensed to practice in Yukon.
23. All instream earthworks, diversions, ditches, spillways and any other water-related structures shall be designed and constructed to accommodate the peak instantaneous 200-year return period flood.
24. During the term of this licence, including any period of temporary closure, the Licensee shall maintain all works in good order in accordance with sound engineering and environmental practices.

New Developments

25. The Licensee may develop and mine the Gribbler Ridge ore deposit and any other ore deposit which is found within the False Canyon Creek drainage upstream of stations MH-20 and MH-21 providing that:
 - a) the method of mining does not substantially differ from the methods employed at the deposits included in the Application; and
 - b) the nature of the deposit does not substantially differ from the nature of the deposits described in the Application; and
 - c) at least six months prior to the commencement of any mining the Licensee submits to the Board:
 - i) a detailed waste disposal plan and an assessment of the acid generating potential of the deposit which is to be developed, and

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- ii) final detailed design and construction drawings, specifications and quality assurance/quality control procedures for any new structures required for mining or waste disposal; and
 - iii) a plan for any additions to the surveillance network program.
26. If at any time during the term of the licence any deposits are to be developed for mining where associated works have any potential to affect water quality within any drainage except the False Canyon Creek drainage, then the Licensee shall not proceed with such mining without first applying for and receiving an amendment to this licence.

PART C - OPERATING CONDITIONS

Water Use

27. The Licensee is hereby authorised to:
- a) withdraw water at a total maximum combined rate of 4091.5 m³ per day from wells in the Upper False Canyon Creek drainage area, from the North Creek impoundment and from the reclaim pond; and
 - b) use said water for quartz mining purposes,
- all as described in the Application and subject to the terms of this licence.
28. The maximum combined rate of water withdrawal from wells in the Upper False Canyon Creek drainage area and from the North Creek Impoundment shall not exceed 44 m³ per hour.

Waste Deposit

29. Mill waste shall be discharged through a slurry pipeline into a tailings pond in the uppermost drainage of False Canyon Creek as outlined in SRK 60616.
30. Water from the tailings pond shall be released to the reclaim pond according to the plan described in SRK 60616, Section 5.2.5.3.
31. Effluent from the reclaim pond shall be discharged into Upper False Canyon Creek only during the periods of highest flow or runoff between April 15 and October 15 of each year. In no case shall the periods of discharge exceed a cumulative total of ninety days. In no case shall the discharge exceed a rate of 228 m³ per hour or a quantity of 490,000 m³ per year.

- 32. Waste dumps and other mine workings shall be constructed such that all water draining from them reports to the False Canyon Creek drainage and that no water draining from them reports to the Tom Creek drainage.
- 33. Collected runoff from the Jewelbox Hill dumps shall be discharged to Upper False Canyon Creek and collected run-off from the North Hill dumps shall discharge into tributaries of False Canyon Creek.
- 34. All sewage shall be directed to an onsite, in-ground sewage treatment and disposal system.
- 35. Excess water from the Burnick 1200 Portal shall be piped from the portal, over the waste dump and directly into the North Hill Settlement Basin.

PART D - EFFLUENT QUALITY STANDARDS

- 36. All waste discharges shall meet the following effluent quality standards:

PARAMETER	CONCENTRATION
Suspended Solids	50 mg/l
pH	not less than 6.0
Colour	20 PT-CO Units
Turbidity	15 Jackson Turbidity Units
Floating Solids	None
Floating oils or grease	None Visible

- 37. The results of grab sample analysis of any waste discharge shall meet the following standards:

PARAMETER	CONCENTRATION
Ammonia (as total N)	3.50 mg/L
Arsenic (dissolved)	0.05 mg/L
Cadmium (total)	0.02 mg/L
Copper (total)	0.20 mg/L
Cyanide (as total CN)	0.5 mg/L

PARAMETER	CONCENTRATION
Cyanide (as WAD CN) *	0.2 mg/L
Lead (total)	0.20 mg/L
Selenium (total)	0.05 mg/L
Silver (total)	0.10 mg/L
Zinc (total)	0.50 mg/L

* Analysis for weak acid dissociable cyanide (WAD CN) is a requirement of this licence only in the event that results of analysis for total CN exceed a concentration of 0.2 mg/L. If total CN concentration exceeds 0.2 mg/L then analyses are required for both WAD CN and Total CN.

- 38. The effluent quality standards shall be met at all points of entry to all receiving waters.
- 39. Any discharge to False Canyon Creek shall meet a bioassay standard of a 96 hour LC₅₀ of 100%.

PART E - MONITORING AND SURVEILLANCE

Implementation of Study Plans

- 40. Where this licence requires the Licensee to submit plans, the Licensee shall not implement the plan until notified by the Board to do so. This requirement also applies to the Operation, Maintenance and Surveillance Manual, to a quality assurance/quality control program for any internal testing laboratory.

Surveillance Network Program

- 41. The Licensee shall compile data relating to the surveillance network program into a monthly report. The report shall be submitted to the Board within thirty (30) days of the end of each month for which the report is compiled.
- 42. The Licensee shall comply with the Surveillance Network Program attached as Appendix A, Appendix B and Appendix C hereto, and shall comply with all provisions for sampling, sample preservation, reporting and analysis specified in this licence.
- 43. All data collection and analysis shall be conducted in accordance with the most current edition of Standard Methods for the Examination of Water and Waste Water, prepared and published jointly by the American Water Works Association and the Water Pollution

Control Federation.

44. The Licensee may use an internal testing laboratory providing that a quality assurance/quality control program for the laboratory has first been submitted to the Board.
45. During any period of temporary closure, the Licensee shall comply with the Surveillance Network Program contained in Appendix C of this licence.

Physical Monitoring Program

46. All earthworks and water retaining structures including, but not limited to, open pits, waste dumps, ditches, dams, dykes, weirs and appurtenances shall be inspected by July 31 of each year of this licence by a Professional Engineer licenced to practice in Yukon. The results of the inspection, including all problems identified, remedial measures proposed, and remedial measures implemented, shall be compiled in a report that shall be submitted to the Board in September of each year.
47. The Licensee shall establish and implement an internal monitoring program for all earthworks. The program shall, at a minimum, incorporate the recommendations itemized in SRK C104105. The results of the internal monitoring program, including all problems identified, remedial measures proposed, and remedial measures implemented, shall be compiled and submitted to the Board as part of the Annual Report.
48. The Licensee shall complete a dam safety review for all water retaining structures, including but not limited to dams, dykes, weirs and appurtenances at least once every five years, with the first review to be completed no later than 2003. The review shall be conducted in accordance with the Dam Safety Guidelines (Canadian Dam Association, 1999).
49. Prior to November 30 of the year in which a dam safety review is completed, the Licensee shall submit a report on the review to the Board. The report shall be prepared in accordance with the recommendations contained in the Dam Safety Guidelines and shall include at a minimum:
 - a) documentation of the dam safety review process, procedures, activities and results;
 - b) any recommendations for maintenance, operation, surveillance, reporting and/or emergency preparedness;
 - c) documentation of actions taken on the recommendations of previous dam safety reviews and annual inspection reports; and
 - d) the planned response to each recommendation in the dam safety review report, including schedules for completion.

50. Details of any maintenance, inspection and/or surveillance activities undertaken in the previous year in relation to dam safety shall be included in the Annual Report.

Instrumentation and Monitoring of Dams

51. The tailings and reclaim dams shall be monitored by the use of instrumentation with piezometers, settlement markers and seepage collection as part of a program to ensure long term stability as set out in SRK 60616, Section 3.6.11. In addition, existing piezometers at the toe of the north dam, at the toe of the south dam, at the toe of the reclaim dam and downstream of the toe of the reclaim dam, shall be monitored.
52. Piezometer and seepage observations shall be made monthly. Settlement marker surveys shall be carried out annually in July to coincide with the Physical Monitoring Program.
53. The information collected as part of the Instrumentation and Monitoring of Dams shall be submitted to the Board in September of each year as part of the report on the Physical Monitoring Program.

Fisheries Monitoring Program

54. A fisheries monitoring program shall be conducted at sites MH-13; MH-18 and MH-20, MH-24. The sample locations shall be marked in the field in a manner that ensures that replicate surveys can be made.
55. The Licensee shall survey sites MH-13, MH-18, MH-20 and MH-24 once every two years in the month of September, beginning in 2002, to establish:
- a) a generalized stream bed and substrate characterization and to identify changes since the previous sampling, and
 - b) through generally accepted methodology, a catch per unit effort and the general implications of any changes observed as compared to prior sampling periods.
56. The results of the Fish Monitoring Program shall be included in the Annual Report.

Benthic Invertebrate Monitoring

57. Benthic invertebrate monitoring shall be conducted at sites MH-13, MH-14, MH-18, MH-19, and MH-24.
58. The Licensee shall collect three replicate samples in the month of August of every second year, beginning in 2002, from each of sites MH-13, MH-14, MH-18, MH-19, and MH-24 using the Surber sampling technique, and accepted preservation, enumerative and

identification procedures.

59. Sample collection, identification, enumeration and data interpretation shall be performed by an individual having qualifications, expertise and experience in the subject.
60. Water Sampling shall be conducted at each of the collection sites during the sample period. Analyses will include: pH; hardness; alkalinity; sulphate; total suspended solids; total ammonia; total and dissolved metals: copper, iron, lead and zinc; and water temperature.
61. Results of the benthic invertebrate monitoring and the water sampling and analysis shall be included in the Annual Report.

Sediment Monitoring

62. Sediment Monitoring shall be conducted at sites MH-13, MH-14, MH-18, MH-19, and MH-24.
63. The timing of the Sediment Monitoring shall coincide with the Benthic Invertebrate Monitoring program. Triplicate samples shall be collected at each of the five sites indicated in the Benthic Invertebrate Monitoring program.
64. Each sample shall be passed through a 100 mesh (0.15 mm) stainless steel sieve and the portion passing through the sieve will be analysed for total metals (ICP scan). The results shall be included in the Annual Report.

Geochemical Assessment Program

65. a) Within four months of the effective date of this licence, the Licensee shall submit to the Board a plan for a Geochemical Assessment Program to evaluate and identify potential long-term impacts and potential mitigation of:
 - i) existing or potential discharges from the Main Zone 1380 Portal, the Jewelbox 1408 Portal, the Jewelbox 1250 Portal and the Burnick 1200 Portal, and an assessment of whether water that drains into the Jewelbox pit drains into the Main Zone 1380 Portal;
 - ii) methods for maintaining unrestricted flow from the Burnick 1200 Portal and the Main Zone open pit after closure;
 - iii) tailings pore water chemistry, including monitoring and assessment of flow paths and attenuation processes, and the potential use of location DP7 as a representative site for characterizing the tailings and their pore water chemistry; and

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- iv) the attenuation of zinc, lead and cadmium in the Main Zone 1380 Portal discharge by carbonates and/or other secondary mineral precipitates in Camp Creek soils and/or other attenuation processes contributing to the removal of metals along the flow path; and
 - b) The plan for the Geochemical Assessment Program shall include: methods and frequency of sampling; parameters to be analyzed; data evaluation methods; reporting methods; and any other details of the studies to be carried out.
66. The Licensee shall implement the Geochemical Assessment Program when notified by the Board to do so.
67. If potential for long term impacts are identified as a result of implementing the Geochemical Assessment Program, then the Licensee shall develop and implement an impact mitigation plan. The plan should include, but not necessarily be limited to, an expansion of the surveillance network program to include monitoring of the discharges and receiving waters immediately upstream and downstream of the likely reporting zones for the discharges. The implementation shall be reported in the Annual Report.
68. Based on an elevation survey, the Licensee shall submit as part of the Annual Report for the year 2002, data on piezometric elevations and potential flow patterns in the tailings management facility.

Surface Water Hydrology Program

69. Within six months of the effective date of this licence, the Licensee shall submit to the Board a plan to monitor surface water hydrology and verify design flood estimates for critical water conveyances and retaining structures, and shall implement the plan when instructed to do so by the Board. The plan shall include a schedule for reporting data and conclusions to the Board.

North Tailings Dam Seepage Monitoring

70. Within six months of the effective date of this licence, the Licensee shall submit to the Board a plan for a study program to assess, evaluate and report on seepage discharge conditions from the North Tailings Dam and shall implement the plan when instructed to do so by the Board.

Operation, Maintenance and Surveillance Manual

71. No later than April 30, 2004, the Licensee shall submit to the Board an operation, maintenance and surveillance manual ("OMS Manual") that documents procedures for safe operation, maintenance and surveillance of all dams and appurtenances. The Licensee shall prepare the OMS Manual in accordance with the Dam Safety Guidelines (Canadian Dam

Association, January 1999) and shall provide an updated manual when the results of the annual dam safety inspections and/or the five year dam safety reviews recommend that an update is necessary. The OMS Manual shall include, but not be limited to:

- a) procedures for operation, maintenance and surveillance that are consistent with the recommendations contained in the Dam Safety Guidelines; and
- b) a program for recording and reporting inspection and maintenance activities.

PART F - DECOMMISSIONING AND RECLAMATION

72. All waste discharges after the cessation of mining shall meet the effluent quality standards specified in this Licence.

Temporary Closure

73. Temporary Closure shall be the cessation of mining and/or discharge of waste from milling operations, for a period of four years or less.
74. On the effective date of this licence, the undertaking shall be deemed in continuation of temporary closure.
75. The Licensee shall notify the Board when mining and/or discharge of waste from milling begins, and at the beginning of any subsequent period of Temporary Closure.

Maintenance Activities During Temporary Closure

76. During Temporary Closure, the Licensee shall:
- a) maintain the site under the care of a full-time, on-site caretaker;
 - b) maintain the main access road in a manner such that heavy equipment can be taken to the site on short notice;
 - c) maintain facilities and structures and undertake all monitoring in accordance with the requirements of this licence; and
 - d) maintain all major fixed equipment, including power generation, concentrator and camp facilities and ensure that these are intact and on-site.
77. On the third anniversary of the commencement of any period of temporary closure, the Licensee shall submit to the Board a temporary closure report that documents the status of

all facilities on the site, evaluates the effects of temporary closure on the receiving environment, examines any deviations from predicted performance of facilities, and evaluates the effectiveness of mitigation put in place.

Permanent Closure

78. If all of the requirements described in this licence in the section entitled "Maintenance Activities During Temporary Closure" are carried out, then Permanent Closure shall be deemed to commence January 29, 2013. If the mine resumes mining and discharge of waste prior to January 28, 2013, then Permanent Closure shall commence four years from the date of cessation of mining and/or discharge of waste from milling operations. If any of the requirements described in this licence in the section entitled "Maintenance Activities During Temporary Closure" are not carried out, then the undertaking shall be deemed to be in Permanent Closure.
79. Except as otherwise required by this licence, upon Permanent Closure the Licensee shall implement the Decommissioning Plan.
80. Except as otherwise required by this licence, the Licensee shall undertake the works and activities described in the Decommissioning Plan in accordance with the schedule described in the section of the Decommissioning Plan entitled "Closure Measures Implementation Plan, Table 4-2" or its subsequent updates.
81. For the first three years after the commencement of Permanent Closure, the Licensee shall submit twice yearly decommissioning and reclamation status reports to the Board that describe ongoing decommissioning and reclamation activities, including any deviation from the schedule described in the section of the Decommissioning Plan entitled "Closure Measures Implementation Plan, Table 4-2" or its subsequent updates. The reports shall be submitted on March 30 and November 30 of each year.
82. The Licensee shall submit final detailed designs, specifications and quality assurance/quality control procedures, sealed by a Professional Engineer licenced to practice in Yukon, for all of the structures described in the Decommissioning Plan and for each of the following facilities and works, but shall not begin construction until such time as the Board has notified the Licensee to proceed:
 - a) upgrade work for the tailings dams and appurtenances including stability analyses to corroborate the likely physical integrity of the tailings dams upon decommissioning;
 - b) the placement of erosion-resistant materials for surfacing of the south tailings dam;
 - c) permanent spillways for the tailings facility, including the details of type and application of permanent material to be used for separation of rip-rap and sub-grade;

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- d) all spillways and diversions; and
 - e) the confluence of any spillway or channel with Camp Creek, including detailed designs for velocity control.
83. a) The Licensee shall submit an update to the Decommissioning Plan, to the Board, by January 28, 2010 and every two years thereafter, on or before January 28 of that year, unless mine operations resume.
- b) The Licensee shall submit an update to the Decommissioning Plan to the Board within two years of the resumption of mine operations, and every two years thereafter.
- c) The updated plan shall be consistent with the site decommissioning and reclamation goals described in the Decommissioning Plan, and shall also address the following:
- i. relevant advances in technology;
 - ii. changes to the Canadian Environmental Quality Guidelines (CCME);
 - iii. any relevant additional information that has been acquired through site monitoring; and
 - iv. a review of the estimated costs of decommissioning.
- d) The Licensee shall submit to the Board any reports prepared by third party consultants and any additional correspondence or reports received by the Licensee from the Yukon government, pertaining to the Decommissioning Plan and any material contained within that plan.
84. Any update to the Decommissioning Plan shall be deemed to be a revision of the plan when the Licensee is notified of that by the Board.

APPENDIX A

**SURVEILLANCE NETWORK PROGRAM
SCHEDULE OF WATER QUALITY MONITORING SITES**

- MH-1: Tailings Pond Outflow - discharge from the tailings pond, through the decant tower, to the reclaim pond or if no discharge, the pond water.
- MH-2: Tailings North Dam Seepage - water accumulating within the seepage collection system located immediately below the downstream face of the north tailings dam.
- MH-3: Camp Creek Pond Outflow - discharge from a sedimentation pond developed on Camp Creek which drains the Jewelbox 1250 Portal and Main Zone Waste Dump.
- MH-4: Alternate Site - Lower Camp Creek - on Camp Creek located immediately above the West Interceptor Ditch; this is an alternative site to be sampled only when there is no discharge from MH-3.
- MH-5: Portal Creek - a small intermittent stream which drains the East face of Jewelbox Hill, immediately below the 1450 exploration portal, to False Canyon Creek; discharge from a sedimentation pond, located immediately above the mine access road servicing the portal, Jewelbox Waste Dump and mill site drainage located immediately above the mine access road.
- MH-6a: Reclaim Pond Outflow - discharge from the reclaim pond through the overflow spillway.
- MH-6b: Reclaim Pond - To be monitored as an alternative to MH-6a only when there is no discharge from the reclaim pond.
- MH-7: Reclaim Pond Seepage - water accumulating within the seepage collection system located immediately below the downstream face of the reclaim dam.
- MH-8: Burnick Creek - a small intermittent drainage south of the Burnick pit and portal sites which will consolidate drainage within a sediment pond from those sites as well as Burnick pit access road runoff; the drainage contributes to the upper end of Tributary E, east fork, of False Canyon Creek.
- MH-9: Burnick West Pond Outflow - discharge from a small sediment pond, which collects drainage from the west and north faces of the Burnick Dump and drains to the upper end of Tributary E, west fork, of False Canyon Creek.
- MH-10: Burnick East Pond Outflow - discharge from a small sediment pond, which collects drainage from the east face of the Burnick Dump, to a branch of Tributary E, west fork, of False Canyon Creek.

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- MH-11: An established station on upper False Canyon Creek within one kilometre of and downstream of the Portal Creek confluence.
- MH-12: Tributary E, east fork - of False Canyon Creek, approximately 2 kilometres downstream of the north tailings dam, above the confluence with a small tributary flowing north from a small lake through a swamp which is located approximately 2 kilometres east of the tailings pond.
- MH-13: The main channel of False Canyon Creek, approximately 10 kilometres downstream of the reclaim pond, upstream of the confluence of a tributary which flows north from a small lake.
- MH-14: The main channel of False Canyon Creek, approximately 20 kilometres downstream of the reclaim pond just upstream of the confluence with Tributary E.
- MH-15: Tributary E, west fork, upstream of the confluence with Tributary E, east fork, approximately six kilometres downstream of the North Hill development.
- MH-16: The main channel of False Canyon Creek, downstream of the confluence of Tributary D, approximately 22 kilometres downstream of the reclaim pond.
- MH-18: On the lower end of Tributary E, approximately one kilometre above the confluence with False Canyon Creek, some ten kilometres northeast of the mill site.
- MH-19: On the main channel of False Canyon Creek, approximately four kilometres downstream of the Tributary D confluence.
- MH-20: On the main channel of False Canyon Creek, approximately 13 kilometres upstream of the mouth and immediately above the Tributary B confluence.
- MH-21 On Tributary B, above confluence with the main branch of False Canyon Creek.
- MH-22: Burnick 1200 Portal discharge, the end of pipe discharge point into the North Hill Settlement Basin.
- MH-23: North Creek immediately downstream of the impoundment.
- MH-24: The east tributary that joins False Canyon Creek just downstream of MH-13.
- MH-25: The Main Zone 1380 Portal discharge.

APPENDIX B
Surveillance Network Program During Normal Operations

Station Parameter	MH-1	MH-2	MH-3	MH-4 *	MH-5	MH-6a	MH-6b **	MH-7	MH-8	MH-9	MH-10	MH-11	MH-12	MH-13 ****	MH-14 ****	MH-15	MH-16	MH-18 ****	MH-19 ****	MH-22	MH-23 ***	MH-24 ****	MH-25
pH (field)	W^	M	M	M	M	W	M	M	M	M	M	W	Q	Q	Q	Q	Q			M	M		M
Flow Rate	W^	M	M	M	M	C	C	M	M	M	M	C	Q	Q	Q	Q	Q			M	M		M
Temperature	W^	M	M	M	M	W	M	M	M	M	M	W	Q	Q	Q	Q	Q			M	M		M
Conductivity	W^	M	M	M	M	W	M	M	M	M	M	W	Q	Q	Q	Q	Q			M	M		M
Alkalinity	W^	M	M	M	M	W	M	M	M	M	M	W	Q	Q	Q	Q	Q			M	M		M
Turbidity			W+		W+				W+	W+	W+									W+			W+
pH (lab)	W^	M	M	M	M	W	M	M	M	M	M	W	Q	Q	Q	Q	Q			M	M		M
Total Suspended Solids	W^		M	M	M	W	M	M	M	M	M	W								M	M		M
Dissolved Solids	W^		M	M	M	W	M	M	M	M	M	W								M	M		M
Copper - total	W^		M	M	M	W	M	M	M	M	M	W								M	M		M
Lead - total	W^		M	M	M	W	M	M	M	M	M	W								M	M		M
Zinc - total	W^		M	M	M	W	M	M	M	M	M	W								M	M		M
Zinc - dissolved	W^		M	M	M	W	M	M	M	M	M	W								M	M		M
ICP scan - total	W^	M	M	M	M	M	M	M	M	M	M	W	Q	Q	Q	Q	Q			M	M		M
ICP scan - dissolved				M								W	Q	Q	Q	Q	Q						
Ammonia - total	W^	M	M	M	M	W	M	M	M	M	M	W				Q				M	M		M
Sulphate	W^		M	M	M	W	M	M	M	M	M	W								M	M		M
Hardness	W^	M	M	M	M	W	M	M	M	M	M	W	Q	Q	Q	Q	Q			M	M		M
Cyanide - total	W^	M				W	M	M				W	Q	Q	Q	Q	Q						
Bioassay - LCS0						Q	Q																
Benthic Invertebrates															2A	2A			2A				2A
Sediments															2A	2A			2A				2A

NOTES TO APPENDIX B

Legend	
Q	Quarterly
M	Monthly
W	Weekly
C	Continuous
2A	Every two years, with three replicate samples in the month of August
^	Weekly while discharging, otherwise monthly. After 6 months of data during discharge has been accumulated, monitoring frequency will be as dictated by the "Metal Mine Liquid Effluent Regulations and Guidelines", April 1977.
+	When there is a discharge from the sedimentation pond.
*	To be monitored as an alternative site to MH-3 only when there is no discharge from the camp Creek Sediment Pond.
**	To be monitored as an alternative site to MH-6a only when there is no discharge from the reclaim pond.
***	To be monitored during the first year of operations only.
****	In addition to the monitoring specified in the table, sampling shall also be carried out for pH, hardness, alkalinity, sulphate, total suspended solids, total ammonia, total and dissolved metals (ICP scan: copper, iron, lead and zinc) and temperature at the same time as the Benthic Invertebrate monitoring.

APPENDIX C
Surveillance Network Program During Temporary Closure*

Station Parameter	MH-1	MH-2	MH-3	MH-4 *	MH-5	MH-6a	MH-6b **	MH-7	MH-8	MH-9	MH-10	MH-11	MH-13 ****	MH-14 ****	MH-16	MH-22	MH-25
pH (field)	Q	M	M	Q	M	M	Q	M	M	M	M	M	Q	Q	Q	M	M
Flow Rate	Q	M	M	Q	M	M	Q	M	M	M	M	M/C	Q	Q	Q	M	M
Temperature	Q	M	M	Q	M	M	Q	M	M	M	M	M	Q	Q	Q	M	M
Conductivity	Q	M	M	Q	M	M	Q	M	M	M	M	M	Q	Q	Q	M	M
Alkalinity	Q	M	M	Q	M	M	Q	M	M	M	M	M	Q	Q	Q	M	M
pH (lab)	Q	M	M	Q	M	M	Q	M	M	M	M	M	Q	Q	Q	M	M
Total Suspended Solids	Q	M	M	Q	M	M	Q	M	M	M	M	M	Q	Q	Q	M	M
Dissolved Solids	Q	M	M	Q	M	M	Q	M	M	M	M	M	Q	Q	Q	M	M
JCP scan - total	Q	M	M	Q	M	M	Q	M	M	M	M	M	Q	Q	Q	M	M
Ammonia - total	Q	M	M	Q	M	M	Q	M	M	M	M	M	Q	Q	Q	M	M
Sulphate	Q	M	M	Q	M	M	Q	M	M	M	M	M	Q	Q	Q	M	M
Hardness	Q	M	M	Q	M	M	Q	M	M	M	M	M	Q	Q	Q	M	M
Cyanide - total	Q	M				M	Q	M		M	M	M	Q	Q	Q		
Bioassay - LC50						Q	Q										

NOTES TO APPENDIX C

Legend: Q = Quarterly M = Monthly M/C = Minimum monthly or continuous flow, year round

* = For the purposes of this surveillance program only, the mine will not be deemed to be in Temporary Closure until one year from the date that milling of ore ceases.

** = To be monitored as an alternative site to MH-3 only when there is no discharge from the Camp Creek Sediment Pond.

*** = To be monitored as an alternative site to MH-6a only when there is no discharge from the reclaim pond.

YUKON WATER BOARD REASONS FOR DECISION

WATER USE APPLICATION QZ09-093
Amendment #2 to Water Use Licence QZ99-045
Sa Dena Hes Operating Corp.
False Canyon

On October 20, 2009 the Yukon Water Board (“the Board”) received an application for amendment #2 to type A water use licence QZ99-045.

In making licensing decisions pertaining to this application, the Board took into account the *Waters Act*, *Waters Regulation*, the application, recommendations from the interveners, the Licensee’s response to interventions, the Boards standard licence requirements and the Boards Guidelines.

Background

Water Use Licence QZ99-045 authorizes Sa Dena Hes Operating Corp. (“the Licensee”) to maintain the mine site in a temporary closure status or to go into production of copper and zinc.

In licence QZ99-045 the Licensee is required to submit a Detailed Decommissioning and Reclamation Plan on January 28, 2010. The Licensee is also required to start Final Decommissioning and Reclamation of the site on January 28, 2010.

As part of application QZ09-093, the Licensee proposed to amend the conditions pertaining to temporary closure by extending the date for temporary closure to be the same time as the expiry of the current Licence, December 31, 2015.

Currently, and as required by licence QZ99-045, over 5 million dollars, in security, is being held by the Government of Yukon. The Licensee proposed to have this section of the licence removed and for the security to be held and maintained under the Quartz Mining Licence.

Requirement for a Public Hearing

The *Waters Act* sets out a requirement to hold a public hearing on all type A applications. In response to the public notice, the Board received interventions from the following parties:

Yukon Conservation Society;
Government of Yukon- Energy, Mines and Resources, Mineral Resources Branch; and
Liard First Nation.

All parties indicated that a public hearing was not requested. The Licensee responded to the Government of Yukon intervention and also provided written permission for the Board to proceed with deliberations on the application without holding a public hearing.

The Board determined that the public hearing will not be required for this application.

Licence changes

Amendment #2 of Water Use Licence QZ99-045 includes an administrative update of the entire licence in order to bring the licence conditions up to current licensing requirements.

Extension to Temporary Closure Status

The Licensee proposed to extend temporary closure because they believe it may become profitable to operate within the next few years. By maintaining temporary closure, the site will be in a condition that will allow start-up. If the Board did not agree with extending the temporary closure and decommissioning commenced, the Licensee has argued in the application that to re-open the mine site from a reclaimed condition would not be economically feasible and the mine site might never be opened again.

Government of Yukon, Mineral Resources Branch recommended to the Board that an extension to the temporary closure should not exceed January 28, 2013. The rationale provided by Government of Yukon indicated that if the temporary closure status was extended to the expiry of the licence, Government of Yukon would have limited ability to ensure that the site was decommissioned and reclaimed for the purposes of permanent closure as set out in the Detailed Decommissioning and Reclamation Plan (“DDRP”). Government of Yukon further supported the recommendation stating that an extension for three years would allow sufficient time to either seek a new licence in support of production and development or proceed to an orderly permanent closure.

Government of Yukon also recommended that an updated DDRP should be supplied every two years for an update to the temporary closure status.

The Licensee responded to the intervention in agreement with the recommendation from Government of Yukon.

The Board agreed that an extension of the temporary closure status would be acceptable and would allow sufficient time for the Licensee to either begin permanent closure or to apply for a renewal Licence allowing production of the site.

Clause 78 was removed and replaced by:

78. If all of the requirements described in this licence in the section entitled “Maintenance Activities During Temporary Closure” are carried out, then Permanent Closure shall be deemed to commence January 29, 2013. If the mine resumes mining and discharge of waste

prior to January 28, 2013, then Permanent Closure shall commence four years from the date of cessation of mining and/or discharge of waste from milling operations. If any of the requirements described in this licence in the section entitled "Maintenance Activities During Temporary Closure" are not carried out, the undertaking shall be deemed to be in Permanent Closure.

and

Clause 83 a) was removed and replaced by:

83. a) The Licensee shall submit an update to the Decommissioning Plan to the Board by January 28, 2010 and every two years thereafter, on or before January 28 of that year, unless mine operations resume.

Security Requirements

As part of the Licensee's proposed amendments to Water Use Licence QZ99-045, the Licensee requested that the security requirement be removed in order that security be held under the Quartz Mining Licence.

In the Application, the Licensee stated that the Quartz Mining Licence gives Minerals Branch the ability to reassess the condition of the mine periodically and to adjust the security amount required. The security amount may be raised or lowered in order to accommodate the actual cost of reclamation for the current or future time periods, and also to periodically assess the state of the site. It may also be adjusted according to whether the site has undergone some reclamation, or the site has done work that would require additional reclamation expenses; the amount of security could be adjusted up or down to reflect the current requirements at that time.

The signed Quartz Mining Licence was supplied by the Licensee for the Board's consideration. The Board reviewed the following security requirements:

Paragraph 19 of the Quartz Mining Licence (QML-004)

- 19.1. The Licensee must furnish and maintain security with the Minister in the amount of \$7,691,770 no later than February 26th, 2010.
- 19.2. The Licensee agrees that the amount of security set out in paragraph 19.1 of this License will be reviewed by the Minister each time the Licensee submits an updated Detailed Decommissioning and Reclamation Plan as set out in paragraph 15 of this License.

- 19.3. The Licensee acknowledges that as provided for in s.4 of the *Security Regulation*, the Minister may periodically review the amount of security furnished and maintained by the Licensee, and may amend the amount of security to a greater or lesser amount than that identified in paragraph 19.1 of this License, based upon each Detailed Decommissioning and Reclamation Plan submitted by the Licensee as set out in paragraph 15 of this License and the criteria set out in s.3 of the *Security Regulation*.
- 19.4. When the Minister determines that additional security must be provided as set out in paragraph 19.3 of this License, the Licensee must furnish and maintain with the Minister the additional amount of security required within 60 days of receiving written notice from the Minister of the increase, provided that the Minister has, prior to issuing the notice, given the Licensee an opportunity to be heard respecting the need for the amount of security.
- 19.5. The Licensee acknowledges that the written notice of the Minister referred to in paragraph 19.4 of this License will, upon issuance, amend paragraph 19.1 of this License with respect to the amount of security and the requirement to furnish and maintain security in accordance with the payment schedule included in the notice will be considered a requirement of this License as of the date of the notice.

In addition to the QML-004 security requirements, Government of Yukon, Mineral Resources Branch submitted a detailed report on the cost estimate for reclamation reported in the Detailed Decommissioning and Reclamation Plan prepared by SteveJan Consultants Inc. This report listed issues with the cost estimate and proposed an increased security amount of \$7,691,770. The Licensee responded to the SteveJan Consultants report by commenting on all the stated, outstanding, issues outlined in the report. The Licensee accepted the changes in the cost analysis proposed in the SteveJan Consultants report.

The Board agreed with the security amount required under QML-004 and that further security requirements would not be required at this time. The Board removed the section of the Water Use Licence that pertained to security.

In making this decision, the Board concluded that it had acted with due diligence and considered both the detailed security analysis, as presented by Government of Yukon, as well as the Licensee's response, to incorporate all water related aspects of the mine site.

However, in order to remain informed of any future changes or information pertaining to security for this mine site, the Board decided that the Licensee will supply the Board with any costing

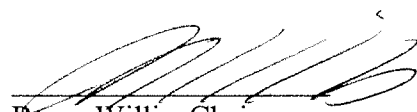
analysis reports, along with any third party reports that deal either with releasing portions of the security or with any increase to the amount of security required by Government of Yukon. To ensure that this is met, the following clause has been added to the Water Use Licence:

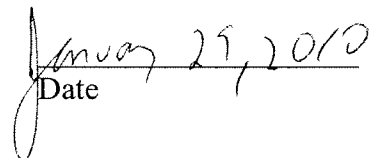
Clause 83

- c) The updated plan shall be consistent with the site decommissioning and reclamation goals described in the Decommissioning Plan, and shall also address the following:
- i. relevant advances in technology;
 - ii. changes to the Canadian Environmental Quality Guidelines (CCME);
 - iii. any relevant additional information that has been acquired through site monitoring; and
 - iv. a review of the estimated costs of decommissioning.
- d) The Licensee shall submit to the Board any reports prepared by third party consultants and any additional correspondence or reports received by the Licensee from the Yukon government, pertaining to the Decommissioning Plan and any material contained within that plan.

Conclusion:

The Board approved the issuance of amendment #2 to water use licence QZ99-045, subject to the Minister's approval, to remove the security requirements from the licence and to extend the temporary closure status until January 28, 2013.


Bruce Willis, Chairperson
YUKON WATER BOARD


Date