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November 28, 2014

Darryl Cann
Licensing Officer
Yukon Water Board Secretariat
Suite 106 - 419 Range Road,
Whitehorse, YT Y1A 3V1

Dear Sir;

**Re: Sa Dena Hes Mine Water Licence QZ99-045 – Submission of Decommissioning
and Reclamation Summary Report – November 2014**

As required in Part F, Section 81 of the Sa Dena Hes Water Licence, please find enclosed one unbound copy of the Decommissioning and Reclamation status report for work conducted from April to October 2014 at the Sa Dena Hes Mine. This report will be uploaded to WATERLINE.

If you have any questions regarding the enclosed information, please contact me.

Regards,

A handwritten signature in blue ink that appears to read "munger".

Michelle Unger,
Senior Environmental Scientist
Teck Resources Limited

Enclosures:

SDH Decommissioning and Reclamation Status Report – November 2014

CC:

Erin Dowd - Energy, Minerals and Lands
Justin Hooper- Natural Resources Officer, Compliance Monitoring and Inspections
Chief D. Morris – Liard First Nation
Chief B. Ladue – Ross River Dena Council
Sarah Newton - LFN Manager of Lands and Resources
Terry Szabo – LFNDC
Gerry Murdoch- Teck Resources
Bruce Donald – Teck Resources

Sä Dena Hes Mine
Decommissioning and Reclamation Status Report - November 2014
Yukon Water Licence QZ99-045 and Quartz Mining License QML-0004

November 28, 2014

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1.0 INTRODUCTION

A Joint Venture consisting of Teck Metals Ltd. (25%), Teck Resources Limited (25%) and Pan-Pacific Metal Mining Corporation (50%) (wholly-owned subsidiary of Korea Zinc) purchased the Sä Dena Hes Mine from Coopers and Lybrand Ltd. the appointed Court Receiver, in March 1994. Teck recently has done some corporate realignment and Teck Resources Limited now holds 50% of the Joint Venture and continues to manage the mine under an Agreement with the Joint Venture Partners.

Teck initiated Permanent Closure of the Sä Dena Hes Mine in September 2013. This reclamation status report is being submitted in accordance with the Water Licence, Part F, Section 81, as well as the QML Audit and Financial Security Requirement letter dated October 21st, 2013.

The scheduled closure activities as outlined in the *Detailed Decommissioning and Reclamation Report, July 2013* (DDRP, 2013) were initiated in October 2013 and continued from May 2014 – October 2014. A substantial amount of work was completed in 2014 with some remaining activities scheduled for 2015.

2.0 REGULATORY ACTIVITIES

The following is a summary of the regulatory activities that have occurred in 2014 including submissions and approvals. Note that reviews by the Liard First Nation are further discussed in Section 3.0 below.

2.1. Detailed Decommissioning and Reclamation Plan

As required by the Licences, annual monitoring/reclamation reports were submitted to the Water Board Secretariat and Energy, Minerals and Resources on March 26, 2014. Additional studies were also submitted as required under Section 6.3 of the Quartz Mining Licence on March 31, 2014 and April 15, 2014. The studies included the following:

- Waste Rock Dump Stability Assessment, Sä Dena Hes Project;
- Sä Dena Hes Mine: Burnick and Jewelbox Crown Pillar Stability Assessment;
- Sä Dena Hes – Potential for Evaporite Salt Formation on Tailings Cap;
- Sä Dena Hes Mine Closure – 2013 Analytical Data Summary for Soil Assessment Work, prepared by Golder Associates Ltd.;
- Sä Dena Hes Mine Closure: 2013 Analytical Data Summary for Hydrogeological Assessment Work, prepared by Golder Associates Ltd.;
- Sä Dena Hes Mine – Water Quality Monitoring Plan and Data Report, prepared by SRK Consulting;
- Sä Dena Hes Mine - Data Report in Support of the Human Health and Ecological Risk Assessments (HHERA) prepared by Azimuth Consulting Group;
- Sä Dena Hes Mine - Interim Results of the Ecological Risk Assessment (ERA) to Guide Closure Planning (DRAFT), prepared by Azimuth Consulting Group; and
- Sä Dena Hes Mine – Human Health Risk Assessment (HHRA), prepared by Azimuth Consulting Group.

Subsequent to the submissions, a technical advisory committee meeting with Yukon Government, Liard First Nation and Ross River Dena Council was conducted to present the findings of the studies and to discuss the proposed changes to the DDRP, which address the study results in Whitehorse on May 7th. Following the meeting and third party review by the Yukon Government's consultant (Hemmera), the QML was amended on July 18th to modify the DDRP as required and be submitted by November 1st. On October 31st an extension letter for the DDRP submission was requested by Teck due to the outstanding environmental studies that were conducted during the 2014 decommissioning work. The final DDRP will be issued April 30, 2015.

Minor changes to the TMF Design Decommissioning Design Report were also submitted to the Water Board in early April.

A site inspection and security audit was conducted by Mineral Resources Branch, Department of Energy, Mines and Resources on October 7th with a follow up call to discuss their findings. Subsequent to the meetings, the Department of Energy, Mines and Resources notified Teck it will be reducing security requirements to \$4,941,849 based on the 2014 reclamation completed.

2.2. Post Reclamation Monitoring Licencing

In October, the Water Board and Mineral Resources Branch, Department of Energy, Mines and Resources, provided letters indicating that an assessment by the Yukon Environmental and Socio-economic Assessment Board is required and a decision document issued before the licences can be amended to allow post-closure activities beyond 2015. A project application was submitted to YESAB on October 22nd. The Watson Lake Designated Office of the YESAB extended the period for determining the adequacy of the project proposal until December 1, 2014.

3.0 FIRST NATION ENGAGEMENT

Teck has been working with the Liard First Nation (LFN) leadership and LFN Development Corporation (LFNDC) to ensure the Sä Dena Hes Mine Reclamation and Closure Project ('Project') is able to provide benefits to the local communities, with a specific focus on the Liard First Nation and other members of the Kaska Collaboration Agreement.

The following is a description of initiatives and funding that Teck has undergone with the LFN in 2014:

- For the duration of the site work, Teck supported the training and hiring of three LFN environmental monitors (EMs) to conduct daily site monitoring, weekly sampling, community/elder committee engagement, and reporting. The work included training and mentoring throughout the field season by Summit Environmental and Deno Cho Environmental and Remediation Inc. from Ross River (100% FN owned). The EMs or other LFN labourers also provided support to other environmental consultants when on site conducting environmental investigations (e.g., soil, groundwater, surface water sampling) as well as with the collection of willow and alder seeds.
- An Elder's Committee was also supported by Teck for the purposes of engaging with the community to discuss the reclamation progress and end land use, review

updates to the environmental studies, and support the environmental monitors. Meetings with the Elders were conducted on Jan. 22nd, June 19th, July 24th, and Oct. 23rd. A site visit was originally part of the plan but was cancelled due to lead exposure concerns following WCB shutting down the site on July 17, 2014.

- Teck approved a monthly LFN Governance fund with the intent to support the LFN with additional costs incurred as a direct results of the project.

Based on the meetings conducted and feedback received, the Elders were glad to see the EMs on site during the decommissioning activities and learning environmental monitoring skills. The Elders have requested site access be maintained, have access to traditional trails in the area, and allow a cultural camp. The location of the camp and primary access has been discussed to be in the vicinity of the mine site however the exact locations remain under discussion. Signage of areas that are potentially unsafe have been requested and will be further discussed with LFN in 2015.

The primary concerns of the LFN during the 2014 project included the burial of demolition materials and health and safety concerns due to the WCB stop work order received on July 17th due to the potential high blood lead levels in the mill demolition workers. To address the landfill concerns, Teck met with the Elders on July 24th to further discuss. The LFN requested to have the landfill materials removed from site or placed in a concrete tomb. Teck supported the LFN EMs to collect water samples from water draining from the area, and retained Keyeh Nejeh Golder to conduct an environmental assessment at the landfill facility to ensure that there are no impacts and for monitoring purposes. Four monitoring wells were installed to groundwater and sampled in September. The final report is currently in progress.

The concerns regarding the lead dust were also addressed as part of the WCB order with the contractors on site getting blood tests conducted. No health issues were identified with contractor's working beyond the mill site. Note that JDS Silver was the contractor for the mill demolition and Teck does not have access to their information. Personal dust exposure monitoring of Teck's contractor's work areas was conducted which confirmed that there were no unacceptable lead dust exposures. In addition, a Standard Operating Procedure (SOP) was developed and site safety orientations were improved to discuss lead dust and appropriate protective measures for the workers on site.

Teck worked with LFN and LFNDC on the awarding of the site contracts. LFNDC requested Teck to add wording to the tenders for the "Use of Local Resources" and a recommendation that the contractors request a "Welcoming Letter" from the LFN. A meeting was conducted with LFN Chief Morris and Council on March 25, 2014 in Watson Lake to discuss the project and contracts. During the tender review process LFNDC was given the opportunity to rank their preferred contractors based on relationships and partnerships.

Two LFN contractors (Iyon Kechika and Magun Contracting) were direct awarded the hourly support work for the site. The Electrical Contract was also a joint venture with Canadian Industrial Power and Control and Eagle Path LP. The Mountain Works Contract was provided to a Watson Lake contractor who hired LFN employees. The tailings decommissioning contract was awarded to Cobalt Contracting whom a number of staff consisted of Kaska members.

On average the LFN site employment from May to October 2014 was 53% of all man-hours worked on-site, whether working directly for First Nations Contractors, working in a sub-contracting capacity for general contractors, or directly employed by the general contractors.

4.0 DECOMMISSIONING ACTIVITIES

Decommissioning work began on site on April 19, 2014 and ended on October 14, 2014. Teck retained AMEC to manage the project, which includes having a Construction Manager to manage all on site activities. A summary of the work has been prepared by AMEC and is attached in Attachment A. The as-built records are currently being prepared and will be submitted in the March 2015 Reclamation Summary report. Before and after photos of the main site features are included in Attachment B.

The key activities completed in 2014 include the following and are discussed in more detail in Attachment A:

- Mill Dismantling and Removal conducted by JDS Silver from May 1 to August 10.
 - Hazardous building materials were identified and removed from site which included materials containing asbestos (such as window putty) and mercury (such as vapour light bulbs, PCB fluorescent light ballasts, fire extinguishers, smoke detectors, and fire alarms). Residual lead concentrate was consolidated and hauled to the ventilation shafts on Jewelbox Hill for disposal. Other materials such as reagents, oils, solvents, lubricants, etc., were treated, properly packaged, and disposed of off site in accordance with applicable territorial regulations.
 - Over the period of May 12, 2014 to August 2, 2014, JDS hauled a total of 222 loose loads of demolition debris from the mill site to a designated disposal area within the onsite landfill using a rock truck with a 22 m³ truck capacity, for a total of approximately 4,884 m³. The materials included demolition debris such as cladding, insulation, piping, concrete, rebar, wood, glass, drywall, bolts, steel, cinder blocks and conduit. Once JDS was finished removing the mill, the deposition zones were capped with a minimum of 1.0 m of clean fill, re-contoured and shaped to promote positive drainage.
 - Teck retained a contractor to reshape and cap the mill site with clean materials once the infrastructure had been removed.
- Decommissioning of dam structures and capping of tailings area.
 - The decommissioning included de-watering the Reclaim and South Ponds. Active pumping occurred from May 15 to August 4, 2014 with a cumulative discharge volume of 163,002 m³.
 - Once the ponds were drained the South and Reclaim dams were removed and their fill was either stockpiled or used for capping.
 - Deconstruction of the South and Reclaim Dams
 - The rip rap quarry was developed from km 17 of the main site access road and produced 5,492 m³ of materials for new drainage channels.

- The new Camp Creek channel was grubbed, excavated, and riprap placed in the channel according to approved designs.
 - Construction of sediment and erosion control systems.
- Decommissioning of mine workings
 - Removal of buildings, equipment, core racks and core.
 - Permanent sealing of mine workings including Jewelbox 1250, 1408, Main Zone 1380, Burnick 1200 and 1300 portals, and the Jewellbox Ventilation Raises.
 - Infilling of Jewelbox and Main Zone open pits.
 - Reshaping of waste rock dumps at both Burnick and Jewelbox.
- Decommissioning and removal of electrical infrastructure.
- Landfill preparation and deposition was also conducted for disposal of debris associate with other portions of the mine site such as core box materials, exploration camp structures, and miscellaneous debris. Over the period of June 12, 2014 to October 3, 2014, Lyon Kechika Contracting hauled a total of 248 loose loads of debris to the landfill using a tandem-axle dump truck with a 10 m³ capacity, for a total of approximately 2,480 m³. All deposition cells have been surveyed. At the end of 2014, all cells were all capped with a minimum of 1 m of clean fill.
- Removal of special waste materials encountered throughout the property. A summary of the items that were removed from site and transported to a licensed facility for disposal (not including JDS Silver's items) are included in Attachment C. In summary, fuel and fuel tanks, contaminated water from the fuel containment berms, contaminated soil from contractor spills, used oil, and miscellaneous items not permitted for disposal on site were removed from site.
- Collection of alder and willow seeds was conducted and sent to a nursery for planting in 2015/2016.
- General site clean up.

5.0 ENVIRONMENTAL STUDIES

5.1. Surface Water Quality Monitoring

The water quality monitoring requirements for the Sä Dena Hes Venture are set out in Part F 'Monitoring and Surveillance' (or "SNP") of the Water Licence QZ99-045. Water sampling data is reported monthly to the Yukon Territory Water Board in accordance with the Water Licence, Part F, Section 44. The annual report will be submitted by March 2014.

Additional monitoring was also conducted during the Tailings Dam Decommissioning as per the Environmental Monitoring Plan and was also reported monthly. This included daily and weekly sampling at five locations as described below in Table 1 and shown in Figure 1.

Table 1: Closure Monitoring Locations

Sampling Location	Description	Monitoring
MH-01B	Tailings Ponded Water	Tailings Water
MH-02	North Dam Seepage	Tailings Water
MH-04	Upper Camp Creek	Mill Run-off
MH-06A/B	Reclaim Pond Spillway/Ponded Water	Reclaim Pond
MH-28A	Camp Creek above Portal Creek	New location located in Camp Creek approx. 100 m downstream from the Reclaim dam but above Portal Creek.

Figure 1: Monitoring Locations



The daily monitoring included field turbidity, temperature, conductivity, and pH measurements. Water samples were collected weekly and were analyzed for pH, conductivity, alkalinity, hardness, sulphate, TSS, TDS, and total and dissolved metals. A total of 13 weekly sample sets were collected during the decommissioning phase. Four weekly samples were not collected and/or analyzed due to logistical issues.

In summary the results were as follows:

- All stations experienced at least one turbidity exceedance (> 15 NTU) during the work program. The turbidity field measurements at the compliance point (MH-28A) had nine exceedances and occurred during moderate to heavy precipitation

- events. Sediment and erosion control measures were implemented throughout the construction season to try and minimize or prevent future events.
- All analytical samples were within the acceptable concentrations with the exception of elevated concentrations of TSS which were observed at MH-04 on July 23 and MH-06A on Sept. 16.

5.2. Hydrogeological Study

In 2013, a hydrogeological study was conducted by Keyeh Nejeh Golder Associates to assess if contamination is migrating from the Areas of Potential Environmental Concern towards receiving environments. The assessment was conducted to determine the direction and rate of groundwater flow, identify potential receiving environments, and assess travel times for potential contaminant pathways. A total of 13 monitoring wells (MW13-01 to MW13-13) were installed and were monitored twice in 2014 to obtain seasonal data. The hydrogeological report is currently being developed.

As previously discussed in Section 3.0, four monitoring wells were installed in 2014 to conduct an environmental assessment at the landfill facility to confirm that there are no groundwater impacts and for future monitoring purposes. The monitoring wells were installed and sampled in September. The final report is currently in progress.

5.3. Human Health and Ecological Risk Assessment

In 2012, Teck retained Azimuth Consulting Group to conduct a Human Health and Ecological Risk Assessment for the closure of the mine site. An updated Problem Formulation and draft Terrestrial Risk Assessment were provided to the regulator agencies and Liard First Nation in October 2014. Additional field sampling was conducted in 2014 including sampling vegetation ground invertebrates, flying insects, small mammals, water and sediment, and soil sampling. The final results of the risk assessment will be available by March 2015 for final approvals of the DDRP.

As part of the Risk Assessment process, the final post-remedial soil conditions are being documented by Golder Associates. The areas that were re-shaped in 2014 were characterized and will be used to determine if additional capping is required as per the DDRP.

6.0 GEOTECHNICAL INSPECTIONS

The annual geotechnical inspection was carried out on July 8th and 9th, 2014 by Peter Healey, Division Head, Geo-Environmental Engineering of SRK Consulting. The annual report is currently in progress.

7.0 SCHEDULE

There are no major changes to the schedule that was submitted in 2013. The major works remaining for 2015 include final capping of the mill and landfill areas, road decommissioning, and seeding and planting.

ATTACHMENT 1

**AMEC 2014 Reclamation Activities and
As-Built Summary Memo**



Memo

To **Michelle Unger, Teck** File no **TE133102**
From **Chris Jeffrey, AMEC** cc **Gerry Murdoch, Teck**
John Pugh, AMEC
Brandon Turcotte, AMEC
Lise Weismann, AMEC
Stanley Gillis, AMEC

November 20, 2014

Subject Sä Dena Hes Mine Decommissioning & Reclamation - 2014 Reclamation Activities and As-Built Report Summary Memo

This memo is intended to provide a summary of the work completed in 2014 as part of the overall Sä Dena Hes Mine Decommissioning & Reclamation Project. It should be noted that a more comprehensive 2014 reclamation activities and as-built report is being prepared for Teck Resources Ltd. (Teck) and this memo has been prepared for the purpose of preparing a bi-annual report to be submitted to regulators by Teck. It is also understood that the forthcoming 2014 reclamation activities and as-built report will be referenced in Teck's submission to the regulators which will state that further information will be provided in Teck's subsequent submission. It should be noted that as-built drawings from various site features will be appended to the 2014 reclamation activities and as-built report.

The following provides summary level as-built details of the work completed as part of the SDH 2014 reclamation activities.

General

The 2014 decommissioning and reclamation activities associated with the Sä Dena Hes (SDH) Mine Decommissioning and Reclamation Project, at the SDH Mine in the Yukon Territory, were carried out between April 19, 2014 and October 14, 2014.

Key decommissioning and reclamation activities included:

- Tailings Management Area (TMA) Decommissioning
 - (i) Dewatering of South Pond and Reclaim Pond;
 - (ii) Deconstruction of South Dam and Reclaim Dam;
 - (iii) Construction of drainage channels through TMA and relocation of Camp Creek;
 - (iv) Quarry operations at km 17 of the main site access road;
 - (v) Cover construction across areas of exposed tailings;
 - (vi) Demolition of decant water control structure and decant pipeline;
 - (vii) Construction of sediment and erosion control systems.
 - Mountain Works
 - (i) Permanent portal closures
 - (ii) Infilling of open pits;
 - (iii) Reshaping of waste rock dumps;
 - (iv) Permanent sealing of ventilation raises;
 - (v) Removal of shops, shacks, ventilation equipment, core racks and core.

- Electrical Decommissioning
 - (i) Removal of electrical cable;
 - (ii) Removal of electrical poles and associated components;
 - (iii) Removal of pad mounted and pole mounted transformers;
 - (iv) Removal of electrical panels from site pump shacks.
- Tank Decommissioning
 - (i) Removal of liquid tanks associated with former mining operations;
 - (ii) Dewatering of AST tank containment dyke and removal of associated liner.
- Other Works including:
 - (i) Access and site road maintenance;
 - (ii) Concrete breaking at mill site;
 - (iii) Mill site capping and shaping;
 - (iv) Removal of water supply, tailings and siphon pipeline;
 - (v) Landfill maintenance;
 - (vi) Decommissioning of groundwater monitoring wells;
 - (vii) Installation of erosion protection materials;
 - (viii) Construction of helipads for future site monitoring;
 - (ix) Demolition of Exploration Camp infrastructure and other small shacks;
 - (x) Reclamation of North Creek Dyke;
 - (xi) General site clean-up.

Other activities (site tours, installation of monitoring wells, surveying, consultation activities, seed collection program, site infrastructure work, etc.) also took place at the site during the 2014 work period. These activities are also briefly discussed in this memo.

The following sections describe the decommissioning activities that took place at various site locations.

Tailings Management Area (TMA) Decommissioning

The TMA consisted primarily of three earth structures (North Dam, South Dam, and Reclaim Dam), two water impoundments (South Pond and Reclaim Pond), tailings deposition zones (North Tailings Pond, South Tailings Zone), and a section of channel known as the Camp Creek Diversion Channel. This diversion channel was constructed prior to the commencement of mining operations in the 1990's to divert Camp Creek to the west of the TMA and keep water out of the facility.

The TMA Decommissioning works were carried out per SRK Consulting (SRK) design. The works were completed by Cobalt Construction Ltd. (Cobalt) and construction began on May 14, 2014. The objective of the TMA Decommissioning works was to dewater the impoundments behind the South Dam and Reclaim Dam structures, remove both structures, construct a cover across exposed tailings areas, restore the natural (pre-mining operations) alignment of Camp Creek through the Reclaim Pond area, and construct channels through the TMA to allow the passage of surface drainage water through the facility. A sediment retaining structure (SRS) was also established. A spillway was constructed through the SRS to allow the passage of water upon allowing sediment to be retained in the pond upstream of the spillway.

Dewatering

Dewatering of the impoundments behind the Reclaim Pond and South Pond were of ultimate importance to the successful execution of the project. The existing water license (Water License Number QZ99-045) stipulates the following: "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."

Under these parameters, dewatering was carried out using a six inch submersible pump beginning with dewatering of the Reclaim Pond. The Reclaim Pond was dewatered first to allow construction activities to take place on three fronts once completed. Concurrently, deconstruction of the Reclaim Dam, channel construction through the former Reclaim Pond, and dewatering of the South Pond was taking place.

For pumping operations, the submersible pump intake was placed in the pond using a floating raft to support the pump. The pumping system was powered by a generator set up near the pumping location. Water discharge was monitored by two personnel at all times and water was released under controlled pumping into the lower end of camp creek below the reclaim dam through a diffuser. Pumping was monitored using a Grey line Instruments PDFM 5.0 portable Doppler flow meter. The dewatering pipeline included a gate valve for adjustments that were required based on flow meter readings. For dewatering of the South Pond, a 200 mm HDPE pipeline was installed along the east bank of the former Reclaim Pond to carry the South Pond water around the Reclaim Area to discharge it into Camp Creek.

Initial pumping timeframe estimates from SRK were in the range of 47 to 50 days to complete the dewatering of both impoundments. However, freshet inflows continued steadily early in the pumping campaign causing an increase in pumping days required to complete dewatering. However, pumping was completed within permitted timeframes. A total of 47.84 days were pumped from the Reclaim Pond and a total of 31.88 days were pumped from the South Pond for a combined total of 79.72 days of dewatering. A total of 251,326 m³ of water were discharged from the Reclaim Pond between the dates of May 14, 2014 and July 1, 2014 and a total of 163,002 m³ were discharged from the South Pond between the dates of July 2, 2014 and August 4, 2014 for a combined total of 414,328 m³ of water discharged during the TMA Decommissioning works. Pumping was declared completed on August 4, 2014.

Dam Deconstruction

Dam deconstruction closely followed dewatering operations. Excavation of the Reclaim Dam took place between July 2 and August 27. Material from the excavation of the Reclaim Dam was primarily placed in Borrow Pit "G" (located just west of the Reclaim Dam). Some of the Reclaim Dam material was also used for capping zones in the former Reclaim Pond that were identified by Golder Associates Ltd. (Golder) as requiring capping due to elevated metals concentrations. Excavation of the Reclaim Dam was carried out in multiple cuts to restore original ground elevations. Overall, 86,171 m³ of material were excavated from the Reclaim Dam.

Deconstruction of the South Dam took place between July 31 and September 19. Excavated dam material was placed as cover material across the North Tailings Pond, South Tailings Areas, and grassy area north of the South Pond tailings beach. Excavation was conducted in multiple cuts to restore original ground elevations. A sediment retaining structure (SRS) was constructed by

leaving in place a berm from the upstream toe of the former dam. A rock lined spillway overlying nonwoven geotextile was constructed through the SRS. The spillway was constructed to accommodate a 1 in 1000 year discharge event. The SRS has a crest elevation of 1087.7 m and the spillway through the SRS has an invert elevation of 1086.7 m. The upstream face of the SRS is built at 2H:1V and the downstream slope is constructed at 2.5H:1V. The crest across the SRS is 4 m in width. Overall, 140,846 m³ of material was excavated from the South Dam. Saturated conditions near the base of the former South Dam were encountered during excavation of the South Drainage Channel. Seepage from the sediment retaining pond upstream of the SRS as well as from the east abutment of the former dam entered the channel construction work area. Saturated conditions were encountered, however seepage water was collected and pumped back up into the sediment retaining structure during construction in this area.

Channel Construction

Three rip rap lined drainage channels were constructed within the TMA as part of the TMA decommissioning activities. The first drainage channel, known as the "South Drainage Channel", was constructed from the SRS spillway through the former South Dam and south to a convergence with the second newly constructed channel known as the "Camp Creek Drainage Channel". The Camp Creek Drainage Channel was constructed from the upstream end of the Camp Creek Diversion Channel through the former Reclaim Pond area and connects with Camp Creek roughly 100 m south of the former Reclaim Dam. The third drainage channel, known as the "North Drainage Channel", was constructed along the east side of the former South Pond and serves to convey water from the north tailings areas through the former South Pond area and discharges into the sediment retaining pond.

The Camp Creek Drainage Channel upper tie in was originally designed to connect with the Camp Creek Diversion Channel roughly 113 m upstream of the constructed tie in. It was decided to tie in the new channel at roughly Station 0+820 using a smooth hydraulic transition to avoid abrupt angles in the channel. The tie in at this location avoided disturbing established natural vegetation cover upstream of this location in the diversion channel. Less clearing was required causing less overall disturbance. Additionally, this also meant a reduction in the amount of rip rap required for channel construction. The proposed channel upstream of the constructed tie in also posed a challenge as a portion of the channel would have actually been in "fill" rather than "cut".

At the lower tie in, the Camp Creek Drainage Channel was connected roughly 25 m above the designed tie in to Camp Creek. The channel was tied in at this location to avoid, as much as possible, aligning the channel through soft subgrade caused by a beaver dam and pond that were removed as part of the works. The alignment of the lower tie in was subtly altered to the west to avoid this soft area. The channel was tied in to Camp Creek to aesthetically connect the channels, providing a natural appearance. Constructing the additional 25 m of channel would have necessitated an additional diversion of water through undisturbed land.

The following lengths of channels were constructed:

- South Drainage Channel: 212 m;
- Camp Creek Drainage Channel: 805 m;
- North Drainage Channel: 285 m.

All drainage channels were excavated, lined with nonwoven geotextile, and covered with rip rap to provide erosion protection.

Rip rap for construction of drainage channels was obtained from two sources. The first source was from a rock quarry established at km 17 of the SDH main access road. SRK (Project Designer) carried out a testing program prior to 2014 to determine the quality of the rock from a material, quantity and environmental perspective. Geochemical analysis of bedrock samples determined the quarry rock was acceptable as quarried rip rap. The quarry design plan included the construction of silt fences, sedimentation catchments, and other environmental considerations which were implemented during the extraction of rock. The second source was from the toe buttresses of the South Dam and Reclaim Dam. At the rock quarry, a series of blasts took place to produce rock. A total of 5,492 m³ of rock was hauled from the rock quarry and a total of 3,592 m³ of rock was reclaimed from the toe buttresses, for a total of 9,084 m³ of rock. In addition to construction of the drainage channels, 294 m³ of rock from this quantity was used for construction of a rock cofferdam in the former South Pond. This cofferdam was constructed to improve the stability of the South Pond and prevent migration of tailings material from the South Pond into the sediment retaining pond during cover construction across this area.

Cover Construction

The final main construction activity associated with the TMA Decommissioning works was the cover construction across areas of exposed tailings. These areas (North Pond and South Pond) were capped with soil from dam excavation activities to prevent wind erosion, to minimize the impact of dust, and to provide growth medium over the tailings for future re-vegetation. The cover is also to reduce surface ponding and promote runoff of non-contact water. Cover construction was established by placing a minimum 0.5 m lift of dam material across exposed tailings. In addition to the areas of exposed tailings, cover was constructed across zones in the former Reclaim Pond area to cover zones delineated to have elevated metals concentrations. Over the course of construction, 155,081 m² of area within the limits of the TMA were covered with dam fill material. Within the South Pond, due to saturated conditions, tailings from the pond bottom were pushed into a small zone as cover construction proceeded. This zone is referred to as the "deep tailings zone" and cover construction across this area could only be carried out by placing the material across the area using an excavator due to the soft conditions rather than pushing material using a bulldozer.

Decant Tower Demolition

A concrete decant structure and associated culverts that were in the South Dam were demolished as part of the TMA decommissioning activities. To dispose of the concrete structure, it was blasted using explosives and segments were hauled to the on-site landfill for deposition. The culvert segments were also removed from the dam during excavation and were crushed and hauled to the landfill for burial.

Construction of Sediment and Erosion Control Measures

Sediment and erosion control was implemented throughout the construction season. Challenges were encountered with the control of sediment migration, particularly during periods of moderate to heavy precipitation. Mitigative measures taken to control these issues included installation of sediment fencing and hay bales within the Reclaim Pond area, and at the lower end of the Camp Creek Drainage Channel near the lower tie-in. As work progressed and the new channels were being constructed, extra silt fencing and hay bales were installed along the edges of the drainage channels.

The compliance point for the allowable Turbidity of <15 NTU was established for construction at MH28-A, which was located at the lower end of Camp Creek, just before it intersects with Portal Creek. During the construction period (May 16, 2014 to October 9, 2014), nine exceedances (i.e.

Turbidity > 15 NTU) occurred at this compliance point. Mitigative measures were deployed to address the exceedances including installation of sediment fencing and hay bales. During the final months, frequent precipitation caused several of these exceedances. Cobalt installed several additional control measures during this period including installation of rills running perpendicular to the slopes, additional silt fencing, hay bales, and diversions of surface runoff where possible. Additionally, all areas on and around the reclaim pond and south pond areas were seeded in October, in an effort to promote vegetation growth, to further assist with sediment and erosion control.

TMA Decommissioning activities were substantially completed on October 9, 2014.

Mountain Works

Mining operations at the SDH Mine described in Section 2 were carried out in two mountainous zones of the site known as Jewelbox and Burnick. Mining operations within the Jewelbox Zone included underground and open pit mining while mining within the Burnick Zone included only underground mining.

The Mountain Works reclamation activities generally consisted of permanent sealing of mine workings, reshaping of waste rock dumps, infilling of open pits, and construction of permanent reinforced concrete caps over ventilation raises. The Mountain Works were carried out by KPI Northern Ltd. / 16142 Yukon Inc. (KPI) and work began on June 16, 2014.

Jewelbox Hill is located immediately west of the mill complex. As part of the closure activities at Jewelbox Hill, three portal closures, two open pit infills, construction of two ventilation raise caps, and reshaping of four waste rock dumps were carried out. Burnick Hill is located roughly 4 km north of the mill complex. As part of the closure activities at Burnick, three portal closures were carried out in addition to reshaping of two waste rock dumps.

Portal Closures

The Jewelbox 1250 portal only extended 3 m into the mountain. An excavator used material from the adjacent waste rock dump to seal the portal and contour the seal to a 2H:1V slope. Fencing above the portal opening was also removed and the seal was blended into the surrounding terrain. The portal access road was left in place as it extends beyond the portal to provide additional access to a groundwater monitoring well.

The Jewelbox 1380 portal has historical drainage water exiting the portal opening which drains into the mountain via cracks in the bedrock at the base of the Main Zone Open Pit. A french drain with geotextile cover was installed to promote the continued draining of portal drainage into the mountain. Material for the french drain was sourced from the Main Zone Waste Rock Dump and was screened to a +100 mm sizing. Two ventilation pipes were installed upon completion of the French drain, separated by a vertical spacing of 1 m. The HDPE pipes were installed approximately 5 m into the portal opening using an excavator. The pipes extended out past the slope of the waste rock dump. The ends of the pipes were capped with a wire mesh to minimize blockage. The pipes were bedded with fine-grained material from the SDH gravel pit to protect them from being damaged during the open pit infilling process.

The Jewelbox 1408 portal had previously been sealed with a non-engineered plug. The plug was removed using an excavator going in as far as safely possible. Material to be used for the plug was sourced from the Jewelbox 1408 Waste Rock Dump and screened to +100 mm. Two HDPE ventilation pipes were installed approximately 9 m into the portal opening using an excavator. The pipes were separated by a vertical distance of 1 m and covered using the plug material. The pipes extended out from the plug and were cut off from where they were found protruding from the reshaped slope. The ends of the pipes were capped with a wire mesh prevent blockage. After the pipes were installed the remaining +100 mm material was used to plug the portal and re-shape the plug slope to 2H:1V.

The Burnick 1200 portal had previously been sealed with a non-engineered plug. The plug was removed using an excavator going in as far as safely possible. Material to be used for the plug was sourced from the Burnick 1200 Waste Rock Dump. Plug material was screened to +100 mm. Two HDPE ventilation pipes were installed approximately 9 m into the portal opening using an excavator. The pipes were separated by a vertical distance of 1 m and covered using the plug material. The pipes extended out from the plug and were cut off from where there were found protruding from the reshaped slope. The ends of the pipes were capped with a wire mesh to prevent blockage. After the pipes were installed the remaining +100 mm material was used to plug the portal and re-shape the plug slope 2H:1V.

The Burnick 1200 ventilation portal was sealed with ventilation and heating units from operation. These units were removed using an excavator and hauled off-site by KPI. Rock material to be used for the plug was sourced from the Burnick 1200 Waste Rock Dump screened to +100 mm. Two HDPE ventilation pipes were installed approximately 9 m into the portal opening using an excavator. The pipes were separated by a vertical distance of 1 m and covered using the plug material. The pipes extended out from the plug and were cut off from where there were found protruding from the reshaped slope. The ends of the pipes were capped with a wire mesh to prevent blockage. After the pipes were installed the remaining +100 mm material was used to plug the portal and re-shape the plug slope to 2H:1V.

Existing water drainage from the Burnick portals was retained. A section of HDPE pipe was installed to allow the continued drainage of water following reclamation activities.

The Burnick 1300 portal had previously been sealed with a non-engineered plug. The plug was removed using an excavator going in as far as safely possible. Material to be used for the plug was sourced from the Burnick 1300 Waste Rock Dump screened to +100 mm. Two HDPE ventilation pipes were installed approximately 9 m into the portal opening using an excavator. The pipes were separated by a vertical distance of 1 m and covered using the plug material. The pipes extended out from the plug and were cut off from where there were found protruding from the reshaped slope. The ends of the pipes were capped with a wire mesh to prevent blockage. After the pipes were installed the remaining +100 mm material was used to plug the portal and re-shape the plug slope to 2H:1V.

Waste Rock Dump Reshaping

Waste rock dump reshaping was carried out to reduce the steepness of slopes and increase of the stability of the disturbed areas. The general procedure for waste rock dump reshaping involved excavators pulling up the slope and depositing material above for reshaping using bulldozers. This reshaping effort included covering newly constructed portal seals at all portal

locations except for the Jewelbox 1380 portal closure which was covered during the infilling of the Main Zone Open Pit. Once the waste rock dump reshaping was completed, the only visual indication of a portal beneath the surface is the portal ventilation/drainage pipes protruding from the waste rock dump reshaped slopes.

At the Jewelbox 1250 Waste Rock Dump an excavator was able to reshape the waste rock dump without assistance due to the small footprint. The reshaping effort was blended into the portal seal for the Jewelbox 1250 portal. No ventilation/drainage pipes had been required in the portal beneath for this particular portal. At the 1408 Waste Rock Dump, bulldozers were first used to create benches for the excavators to travel on and pull up material. Additional considerations were given for the reshaping of the 1408 Waste Rock Dump as Golder had identified zones of hydrocarbon contamination that required the area to be covered rather than excavated and then reshaped. These zones were capped with material from lower portions of the waste rock dump and the cover was tied into the reshaping effort of the overall waste rock dump. Some of the Main Zone Waste Rock Dump material was used to infill the Main Zone open pit, with an excavator loading material into a rock truck for transport to the Main Zone open pit. The remainder of the waste dump was then shaped with bulldozers. The Jewelbox Waste Rock Dump was used to infill the Jewelbox open pit.

For the final product at Jewelbox Hill, the 1408, Main Zone and Jewelbox Waste Rock Dumps were blended together using bulldozers. The bulldozers were also able to reshape the area so that the waste rock dumps now tie into the original slope. An access road to the monitoring well located in the 1408 waste rock dump area was left in place to allow for continued sampling. Additionally, an access road remains below the Main Zone Open Pit to the former Exploration Camp location.

The two waste rock dumps reshaped at Burnick were the 1200 Waste Rock Dump and the 1300 Waste Rock Dump and these were reshaped using the same procedure as Jewelbox with ventilation / drainage pipes from the 1200 portal, 1200 ventilation portal and 1300 portal protruding from the reshaped slopes. At Burnick 1200, Golder had identified zones of hydrocarbon contamination in the waste rock dump and these zones were covered with material from lower portions of the waste rock dump and the cover was tied into the overall waste rock dump reshaping effort.

Open Pit Infilling

There were two open pits infilled on Jewelbox Hill, the Jewelbox Open Pit and Main Zone Open Pit. The Jewelbox Open Pit was filled by using a bulldozer to rip and push material from the Jewelbox Waste Rock Dump. The open pit was infilled and blended into the adjacent reshaped waste rock dump slopes. Additionally, material from the sediment ponds on Jewelbox Hill were also deposited into the Jewelbox open pit and covered with fill material. Although the infill was tied into the surrounding terrain, a minor vertical bedrock face remains near the southwestern extent of the former open pit.

At the Main Zone Open Pit, the initial infill was done by pushing material adjacent to the 1380 portal into the open pit. Once this material was exhausted, the infill procedure consisted of an excavator pulling material from the Main Zone Waste Rock Dump and loading it into a rock truck. The rock truck transported the material to the plateau above the open pit where it was pushed into the open pit with a bulldozer. The final product of the Main Zone Open Pit infill has left a vertical face along the southern and western faces of the open pit. However, the open pit was infilled such that it achieved substantial tie-in with the surrounding geography. Slopes were cut down as much as safely possible to blend them into the open pit footprint. The ventilation pipes

installed as part of the Jewelbox 1380 portal plug were protected from the infilling process and extend through the open pit bottom out to the side of the mountain as previously described. The roads built to access the dumping site were decommissioned after the Main Zone Open Pit was infilled.

Ventilation Raise Closures

Two ventilation raises on Jewelbox Hill were permanently sealed. These were the Jewelbox 1408 Ventilation Raise and the Jewelbox Summit Ventilation Raise. Both ventilation raises required access roads to be built using an excavator to allow access for construction of reinforced concrete caps over both raises. These roads were decommissioned once all work was completed. Prior to installation of the caps, concentrate material from the mill site, core material, ore material, and contaminated concrete were deposited into the raises prior to permanent covers being constructed.

The Jewelbox 1408 Ventilation Raise had been temporarily closed with a piece of culvert. This was removed and concentrate material was placed in the ventilation raise and covered with local borrow material. The Jewelbox Summit Ventilation Raise had been temporarily sealed with a chain link fence across wooden supports which was removed prior to filling the raise. The remaining concentrate and contaminated concrete and core material were placed in the Jewelbox Summit Ventilation Raise.

Once both ventilation raises were filled with concentrate and other material, formwork was constructed and a minimum 30 MPa (28 day specified strength) reinforced concrete cap was placed. The concrete was mixed on site using delivered materials using KPI's Reimer volumetric cement mix truck. The concrete was tested for 28 day strength and the results were 32.4 MPa for the Jewelbox 1408 Ventilation Raise and 31.5 MPa for the Jewelbox Summit Ventilation Raise. A ventilation pipe was installed in each cap, which were buried after 7 days of curing time.

Removal of Shacks, Ventilation Equipment, Core racks and Core

Wooden shacks from Burnick 1300 and Jewelbox Summit were removed from site by KPI using a skid. Rather than demolish these structures and place them in the landfill, KPI chose to salvage the shacks. Additionally, the ventilation equipment from the Burnick 1200 ventilation portal was removed from site to KPI's laydown yard in Watson Lake.

Core shacks and core located on Jewelbox Hill and Burnick Hill were dismantled and disposed of. This activity is described in further sections of this memo.

The Mountain Works reclamation activities were substantially completed on October 1, 2014.

Electrical Decommissioning

During mining operations in the 1990's, power was distributed to various portions of the site by means of a 6 km long overhead power line system. The system also included associated power poles, transformers, and electrical panels found in various pump shacks around the site.

The electrical decommissioning activities generally consisted of extracting and removing poles from site, removing four transformers from site, spooling and removing all electrical cable, and removing electrical panels from site shacks. The General Contractor carrying out the electrical decommissioning activities was Canadian Industrial Power & Control Ltd. (CIPC). The electrical decommissioning work began on July 3, 2014.

Depending on the location of the power pole one of two methods was selected for removal of electrical wires. When possible, a Genie S-65 man lift was used to raise two technicians, who were safely tied off, to the top of the pole and disconnect the wires and hardware. Pulleys were used to slowly lower the wires to the ground. If the pole was not accessible by the man lift, CIPC technicians had to climb the poles. This required them to be safely tied off to the pole and have climbing shoes on. Once the technician had reached the top of the pole they would follow the same procedure of lowering the cable to the ground. Once the cable was on the ground it was spooled by hand by CIPC technicians. The cable was laid out safely along the road to prevent kinking during spooling activities.

Cables were removed from the following site locations:

- Jewelbox 1408 to the Mill Site;
- Around the Mill Site;
- Short Access Road;
- Dump Road, from Short Access Road to the Dump;
- Dump to the Gravel Pit;
- Access Road off the Short Access Road;
- Wooded area between the Short Access Road and the Reclaim Pond;
- Reclaim Dam;
- North Creek Dyke.

Electrical panels were removed from the following locations:

- North Creek Dyke pump shack;
- Lower North Creek pump shack;
- Reclaim Dam pump shack.

A total of 160 poles were taken down by CIPC and removed from site (all poles on site were removed with the exception of the pole near the Reclaim Dam west abutment which contains a migratory osprey and fledglings). An excavator was used to extract the poles. The poles were strapped to the excavator bucket for vertical extraction. Prior to extraction, the excavator removed some of the soil around the bottom of the pole to assist with the removal. Once the poles were hoisted they were gently laid down alongside the access road. All cross pieces and corresponding hardware were removed once the poles were safely on the ground. Resulting holes were infilled by the excavator prior to moving to the next pole. Poles were stockpiled at various locations for future off-site transport. The poles were removed from site on logging trucks.

As part of the electrical decommissioning works, four transformers (two above ground and two pad mounted) were decommissioned. The following transformers were decommissioned:

- Lower North Creek (above ground transformer);
- North Creek Dyke (above ground transformer);
- North Creek Dyke Pump Shack (pad mounted transformer);
- Reclaim Dam Pump Shack (pad mounted transformer).

The transformers were tested for polychlorinated biphenyls (PCBs) on August 3, 2014. Results were received on September 4, 2014 confirming no PCBs were present in the transformers. CIPC hauled the transformers off site on September 9, 2014. CIPC also removed and salvaged electrical boxes and panels from pump shacks located at Lower North Creek, North Creek Dyke, and the Reclaim Dam.

The poles, power lines, transformers, and electrical panels were all salvaged and will be reused in a First Nation community in the Yukon. The Electrical Decommissioning reclamation activities were substantially completed on September 10, 2014.

Tank Decommissioning

As part of the reclamation activities, several on-site tanks associated with former mining operations were decommissioned. Tanks not associated with the sale of the mill infrastructure were decommissioned as part of the Tank Decommissioning works. The work was carried out by KPI. Two on-site tanks fell outside of the mill infrastructure footprint; one at Burnick Hill; and one just east of the mill site. The tank on Burnick Hill was located at the north end of the Burnick 1200 site near the location of an old shop. The other tank was located east of the mill site within a containment berm.

The tank from Burnick Hill was removed on June 17, 2014. The tank was loaded onto a flatbed truck using an excavator and removed from site to KPI's Watson Lake laydown area.

The tank just east of the Mill Site was removed on August 8, 2014. The tank was loaded onto a flatbed truck using an excavator and removed from site to KPI's Watson Lake laydown area. On August 2, 2014 KPI pumped the ponded water from the containment berm into a containment truck. The water was transported to KPI's licensed facility for disposal. Approximately 20,000 L of water was pumped from the dyke. KPI also removed the liner from the containment berm into a box truck. The liner was transported to KPI's licensed facility for disposal. The area below the tank and liner was reshaped by an excavator after removal.

Other Activities

A number of other work activities were completed throughout the execution of the larger work packages described above. The following sections briefly describe these other activities:

Mill Concrete Breaking / Capping / Reshaping

In order to carry out capping and shaping operations of the mill area, a portion of the concrete foundations and walls from the former mill infrastructure were crumbled and brought down to an elevation that would allow capping operations to take place without requiring a substantial amount of fill or create steep slopes. Concrete breaking was carried out using an excavator with hydraulic hammer attachment. The main concrete work involved bringing down walls from the former coarse ore bin and from the vertical crusher deck wall.

Capping operations began once concrete breaking was completed. An excavator was used to load fill material from the former camp facilities area into tandem trucks. The trucks hauled the material to the mill site which was spread across the concrete foundations using a bulldozer. In addition to importing material from the former camp facilities area, bulldozers were used to knock steep slopes down around the mill area and tie them into the newly constructed cover across the mill site.

Cover construction across the mill foundations was completed to a minimum 1 m thickness. In some areas, much more than 1 m of material was used to cap the mill site. The material was placed in such a manner as to promote drainage from the area and the cover was constructed with subtle undulations to slow the velocity of water shedding from the mill area. Drainage from the surface of the cover was promoted generally to the south and to the north. Once the material haul from the former camp facilities was completed, bulldozers worked at shaping the camp area and tied it into the newly constructed cover across the mill site for aesthetic purposes.

Road Maintenance

The SDH main access road and site access roads were shared by multiple contractors. Road maintenance on the main access road and site access roads was carried out throughout the season. Beginning in April, two graders and a bulldozer were used to widen the road which was plowed by the site caretaker throughout the winter. The graders and bulldozer worked to clear snow off the main access road and site access roads such that two way traffic could pass.

During the months of May and June, the access roads saw heavy traffic from all Contractors and road conditions deteriorated in some locations. Tandem trucks were used to haul gravel sourced from the gravel pit below the landfill for road repairs. A grader continued to work on the roads and a static roller was also mobilized to provide assistance in maintaining the roads.

Throughout the remainder of the summer, road maintenance continued in the form of grading and watering the roads on an as needed basis. Two water trucks were used during the summer months to aid in the suppression of dust along site access roads. Water for dust suppression was sourced from three locations on site. The primary draw point was North Creek Dyke. Other draw points were along the SDH main access road. These draw points were located at km 4.2 and km 19.7 of the main access road.

The following quantities of water were drawn from the three locations:

- North Creek Dyke: 4,213 m³;
- Km 19.7: 2,411 m³;
- Km 4.2: 53 m³.

Landfill Activities

Landfill activities continued during the 2014 season. A total of 7,364 m³ of loose material were transported to the landfill in 2014 and compacted into cells. Concurrent landfill operations were carried out to accept permitted mill debris to the landfill by the mill purchaser as well as other miscellaneous site debris by other Contractors.

The following sources of site debris were hauled for deposition in the on-site landfill:

- Permitted mill debris;
- Materials from site boneyard;
- Small shacks and structures;
- Core boxes and core racks;
- Steel water pipeline;
- Concrete from water decant structure;
- Pump house debris.

Combined with the 2013 landfill operations, which saw 7042 m³ of loose material hauled to the landfill, a total of approximately 14,406 m³ of material has been hauled to the landfill to date and compacted into deposition cells.

During landfill operations associated with the deposition of mill infrastructure, surface water was draining into deposition zones causing constant dewatering of the cells to be required to allow deposition. The surface water appeared to be water coming from mountain runoff caused by spring melt and precipitation. The water continued to drain into the landfill area throughout the summer. To mitigate the water draining into deposition zones, a surface water drainage channel was constructed through the landfill to shed this water from the landfill zone and keep it out of the deposition cells. The drainage channel was constructed through an alignment of the landfill that did not contain buried debris. Currently, the channel discharges into a 150 mm diameter steel cross culvert pipe which was installed beneath the access road that runs along the east side of the landfill. The water then discharges to the north toward Lower North Creek. The drainage path has been effective in promoting drainage. In 2015, it will be confirmed that the drainage channel is performing adequately.

Once the mill purchaser had completed their landfill activities, Teck-hired Contractor Iyon Kechika Contracting (IKC) was engaged to cap these zones with a minimum 1.0 m of clean fill from the gravel pit below the landfill. Additionally, in conjunction with capping activities, IKC completed contouring and shaping activities across these areas to promote positive drainage. IKC also placed the minimum 1.0 m of capping material across their own deposition cells associated with general site clean-up activities with the final shaping also promoting surface drainage toward the new water drainage channel.

During the excavation of the Camp Creek Drainage Channel associated with the TMA Decommissioning works, a significant quantity of native organic material was excavated from the upper portion of the channel alignment following clearing and grubbing operations. This material was stockpiled by the TMA decommissioning Contractor. Following the completion of capping and contouring of the landfill cover, Cobalt hauled approximately 1,671 m³ of organic material (based on load counts) to the landfill and dumped the material in rows across the landfill site. The material was not spread. This material will be tilled into the cover in 2015 and seeded as part of the final reclamation activities at the landfill site.

Golder Associates Ltd. (Golder) also lead a program to install four new groundwater monitoring wells within the landfill footprint.

North Creek Dyke

North Creek Dyke is located south of the landfill/borrow area. The dyke crest formerly contained a pump shack equipped with electrical panels and pumps as part of the water supply line for former mining operations. Outside the pump shack was a pole-mounted transformer and power line, also associated with the former water supply line, which were removed as part of the electrical decommissioning work. The electrical panels inside the pump shack were also removed as part of these works. Once the pumps and electrical panels had been removed from the pump shack, the shack was demolished by IKC and rubble was crushed and hauled to the landfill for deposition. Segments of HDPE water supply pipeline also ran along the dyke and these were extracted and hauled off-site.

North Creek Dyke itself contained culverts within the dyke which provided drainage through the structure. The culverts were aging and were to be removed as part of the reclamation activities. One primary drainage culvert was located at a low elevation in the dyke and three overflow culverts were located at a higher elevation through the dyke. Construction of a new rip rap lined channel through the dyke was completed and included excavating and removing all of the culverts out of the dam. The culverts were crushed and hauled to the landfill for deposition. A channel was constructed through the dyke with 2H:1V side slopes and a 2 m wide base. The channel was lined with non-woven geotextile and rip rap material was placed on top.

Pipeline Works

Some of the HDPE and steel water and tailings pipeline from various site locations had been extracted from alongside site roads in 2013. However, the pipeline extraction was completed in 2014. Roughly 7,981 m of pipeline were extracted over the course of the two seasons and sections were stockpiled at various site locations. Mountain Works Contractor KPI salvaged the pipeline by bringing a logging truck to site and loading the pipe onto the truck and hauling it to their laydown yard in Watson Lake. A minor amount of pipe remains stockpiled on site for potential use in 2015.

Core Shacks and Racks

Core racks and core remaining from previous exploration at the property were located in three locations:

- Exploration Camp;
- Ridge just east of the Mill Site;
- Remote ridge near Burnick 1300.

For the first two core rack locations listed above, the core was separated from the racks and stockpiled. The core shack, boxes, and rack material was crushed using an excavator, loaded into tandem trucks, and hauled to the landfill for deposition. The core was hauled to the Jewelbox vent shafts for deposition.

For the core shacks at the remote ridge near Burnick 1300, these were crushed and buried in place. Due to safety considerations, trucks could not access this location to haul core rack debris to the landfill and core material to Jewelbox. This work was completed by the Mountain Works Contractor.

Rolled Erosion Control Blanket Installation

As part of the winterization of the site, erosion protection measures were deployed across regraded areas of the site including the mill area and portions of the TMA. The primary erosion protection measure was the installation of rolled erosion control blankets (RECBs) across the Mill Area and Reclaim Pond.

Each roll of RECB consists of 86 m² of coverage (this correlates to roughly 75 m² of coverage with overlap taken into consideration). Overall, 160 rolls of blanket were deployed. The majority of these (120) rolls were deployed on steep slopes of the reshaped mill area. The other 40 were deployed in steeply sloped locations of the Reclaim Pond, alongside the Camp Creek Drainage Channel along the southern side of the channel.

The following coverage (area assuming overlap) was achieved:

- Mill Area: 9,000 m²;
- Reclaim Pond: 3,000 m².

Groundwater Monitoring Well Decommissioning

Groundwater monitoring wells that will not be used as part of the long term monitoring program at the SDH site were decommissioned. These wells all contained only steel casings and no PVC casings were discovered. Ten of these wells were decommissioned over the course of the season. Decommissioning logs have been prepared for all wells. The general procedure for decommissioning of the wells was as follows:

- Confirm diameter and depth of well;
- Create a plug using bentonite. Plug was allowed to sit overnight for effectiveness;
- Excavate around the wellhead to approximately 2 m below grade;
- Cut steel casing so top of well is approximately 1 m below grade;
- Fill well with clean sand to approximately 3 m below top of pipe;
- Fill remaining volume with bentonite-cement grout to the top of the casing;
- Backfill the excavated area with excavated material.

Helipad Construction

Helipads were constructed for purposes of conducting surface water sampling during the winter months when site access via the main access road will not be possible. The helipads were constructed to a minimum size of 15 m x 17 m. Construction of the helipads was completed by bulldozer and was typically an exercise of levelling a pad across an existing open area. Helipads were constructed to facilitate sampling at the following locations:

- MH-01;
- MH-02;
- MH-04;
- MH-05;
- MH-11;
- MH-22.

Exploration Camp Demolition

Demolition of the Exploration Camp was carried out involving the demolition of all structures and hauling of debris material to the landfill. Core was separated from racks and hauled to Jewelbox for deposition as described previously. Core shack and box material was crushed and hauled to the landfill. Upon completion of the demolition activities, the Exploration Camp area was regraded.

Site Visits

Over the course of the 2014 decommissioning season, Teck Consultants frequented the site to carry out various tasks associated with the overall project. SRK visited the site to completed surface water sampling and design engineer visits. Golder visited the site to manage the installation of groundwater monitoring wells as well as conduct various soil sampling programs. Azimuth Consulting Group visited the site to carry out biological investigations. LFNDC environmental monitors also conducted daily site monitoring, in particular daily surface water sampling.

Laberge Environmental Services also conducted multiple visits to site to collect seeds from various native plants to germinate at an off-site nursery. The germinated plants will be used for re-vegetation efforts in 2015.

Energy, Mines and Resources made several visits to site to carry out inspections of environmental compliance.

Closing

We trust that the information contained in this memo is sufficiently detailed for Teck's next submission to the Government of Yukon. Should further information or clarification be required, please do not hesitate to contact the undersigned.

Sincerely,

**AMEC Environment & Infrastructure,
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ATTACHMENT 2

Photographs





Photo 1: View of Reclaim Pond prior to decommissioning



Photo 2: Reclaim Pond after decommissioning



Photo 3: Burnick portal and waste dump before closure



Photo 4: Burnick portal and waste dump after closure



Photo 5: Mill before dismantling



Photo 6: Mill after dismantling and re-shaping



Photo 7: View of Jewelbox and Main Zone Open Pits before filling



Photo 8: Jewelbox Open Pits after filling



Photo 9: View of Mill and Tailings Management Facility before decommissioning



Photo 10: View of Mill and Tailings Management Facility after decommissioning

ATTACHMENT 3

Special Waste Disposal Items

Northern Environmental Services
Sa Dena Hes Manifest of Items Received – Updated November 26, 2014

This document is to confirm receipt of the items listed below. Items have been removed from the Sa Dena Hes mine site and transported to the Northern Environmental Services / 16142 YT Inc. licensed facility in Watson Lake.

Item Description	Quantity	Origin	Processed At
Fuel Tank	1	Burnick 1200 Area	Watson Lake Facility
Fuel Tank	1	Mill Site Area	Watson Lake Facility
Fuel Containment Liner	2	Mill Site Area	Watson Lake Facility
Gasoline, litres	24,200	Mill site fuel tanks	Watson Lake Facility
Diesel, litres	11,890	Mill site fuel tanks	Watson Lake Facility
Contaminated Water, litres	195,500	Fuel containment berms	Watson Lake Facility
Steel Pylons with concrete bases	13	Mill Site Area	Watson Lake Facility
Wood Shacks, Insulated	2	Burnick Mountain	Watson Lake Facility
Fuel Pumps and Fittings	2	Mill Site, Main Gate	Watson Lake Facility
Sediment Pond Liner	1	Jewelbox 1408	Watson Lake Facility
Used Pipe, truck loads	1	Various Locations	Watson Lake Facility
Oil Drum	1	Burnick Mountain	Watson Lake Facility
Used Oil, Litres	80	Burnick Mountain	Watson Lake Facility
Contaminated Soil, Cubic Meters	6	Mill Site, Coolant Spill, Aug 25	Watson Lake Facility
Contaminated Soil, Cubic Meters	3	Outside Main Gate, June 5	Watson Lake Facility
Contaminated Soil, Cubic Meters	1	Burnick 1200, July 11	Watson Lake Facility
Contaminated Soil, Cubic Meters	14	Burnick/Dump Road, July 26	Watson Lake Facility
Contaminated Soil, Cubic Meters	4	Outside Main Gate, Sep 2	Watson Lake Facility
5 Gallon Plastic Pail	1	Mill Site Area	Watson Lake Facility
45 Gallon Plastic Drum	5	Mill Site Area	Watson Lake Facility
Loader Tire	6	Dump Area	Watson Lake Facility
Truck Tire	6	Dump Area	Watson Lake Facility
Heavy Truck Tire	4	Dump Area	Watson Lake Facility
Fire Extinguisher	5	Mill Site Area	Watson Lake Facility
Battery	5	Mill Site Area	Watson Lake Facility
Large Gas Cylinder	7	Mill Site Area	Watson Lake Facility
20 Lb Gas Cylinder	3	Mill Site Area	Watson Lake Facility
20 L Pail toluene	1	Dump Area	Watson Lake Facility
Pail Soil/Sorbent Materials	1	Generator Shack	Watson Lake Facility
Heater Units / Support Structures	2	Burnick 1200 Area	Watson Lake Facility
Miscellaneous Construction Waste, 30 yard Bin	1	Mill Site area	Watson Lake Facility
1600L Oil Cube	1	Behind KPI Laydown Area	Watson Lake Facility
Oil Sludge, Litres	20	Mill Site Area, in Drum	Watson Lake Facility
Diesel Sludge, Litres	85	Mill Site Area, in Drum	Watson Lake Facility
Contaminated Oil, Litres	400	Mill Site Area, in Drum	Watson Lake Facility

Northern Environmental Services
Watson Lake, YT

November 26 2014

The Watson Lake facility is licensed under the following permits:

Waste Management Permit #: 81-049

Land Treatment Facility Permit #: 24-037