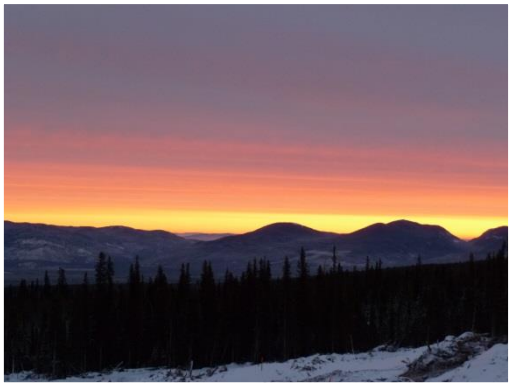
Appendix 5.1.2.1B
Watershed Modelling Report

NEW GOLD INC.
BLACKWATER GOLD PROJECT





WATERSHED MODELLING REPORT

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EXECUTIVE SUMMARY

The Blackwater Gold Project is a proposed gold and silver mine located approximately 112 km southwest of Vanderhoof in central British Columbia. Proposed mine facilities consist of an Open Pit, Tailings Storage Facility (TSF), waste rock dumps, low grade ore stockpile, and supporting mine infrastructure. Proposed mine facilities will be located primarily in the Davidson Creek watershed. Supporting infrastructure includes an airstrip, access road, transmission line, and a water supply line from Tatelkuz Lake.

Knight Piésold Ltd. (KPL) was requested by New Gold Inc. (New Gold) to provide estimates of surface water and groundwater flows in the vicinity of the proposed Blackwater Gold Project (the Project). To fulfill this request, a Baseline watershed model was developed for the Project to assess pre-mine surface and groundwater flows within surrounding watersheds. The Baseline model was then modified to develop four Mine Life models that were used to assess potential effects of the mine development on hydrologic conditions during four phases of mine development: Construction, End of Mine, Closure, and Post-Closure. Results of the watershed modelling will be used to inform hydrogeological modelling and engineering design as well as for the environmental assessment of the Project.

The watershed model included estimates of precipitation, evapotranspiration, and sublimation, which were used to determine the net water available for groundwater recharge and surface water runoff within the modelled area. The division of available water between groundwater recharge and runoff was determined by calibrating the Baseline model to available long-term streamflow values between 1991 and 2012. The calibration took into consideration characteristics of the streamflow response during both wet periods and low flow conditions, which allowed monthly streamflow, groundwater flow, and the groundwater component of streamflow (baseflow) leaving a catchment to be estimated. Monthly streamflows for the 1991-2012 period were estimated using the model at 15 node locations surrounding the Project site and at one regional hydrology station.

Monthly streamflows were estimated during different phases of the mine life using the Mine Life watershed models. Surface water and groundwater flows were estimated for each of the four phases of mine development at the same node locations considered in the Baseline model. Quantitative comparisons of streamflow during each mine phase were completed relative to baseline flows.

The mine plan includes the supply of freshwater pumped from Tatelkuz Lake to Davidson Creek to augment streamflows for the purpose of meeting in-stream flow needs (IFN) for fish during mine operations and closure. To simulate these mitigated streamflows, the Mine Life models were updated to include a monthly freshwater supply to Davidson Creek. Mitigated streamflows were assessed for End of Mine and Closure conditions.

Estimates of the percent TSF seepage discharging in each receiving stream were determined for End of Mine, Closure, and Post-Closure conditions. The percent TSF seepage in the receiving stream is provided for both the unmitigated and mitigated (IFN supply) scenarios.

In order to better understand the potential hydrologic and environmental effects of the Project during its various phases, return period wet and dry year monthly flows and annual 7-day low flow statistics were developed for each of the watershed model nodes. Wet and dry monthly flows were developed

for return periods of 2 to 50 years and 7-day low flow estimates were generated for return periods of 10 and 20 years. Statistics were calculated for baseline conditions, the four phases of mine life, and for the mitigated End of Mine and Closure scenarios that include IFN water supply.

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ABBREVIATIONS

AET ..... actual evapotranspiration
AMEC.....AMEC Earth and Environmental
EC .....Environment Canada
ECD ..... Environmental Control Dam
IFN .....in-stream flow needs
KPL .....Knight Piésold Ltd.
masl .....meters above sea level
NSE..... Nash-Sutcliffe efficiency
PET ..... potential evapotranspiration
the Project..... Blackwater Gold Project
TSF ..... tailings storage facility
WSC..... Water Survey of Canada

1 – INTRODUCTION

The Blackwater Gold Project is a proposed gold and silver mine located approximately 112 km southwest of Vanderhoof in central British Columbia (Figure 1.1). Proposed mine facilities consist of an Open Pit, Tailings Storage Facility (TSF), waste rock dumps, low grade ore stockpile, and supporting mine infrastructure. Proposed mine facilities will be located primarily in the Davidson Creek watershed and the headwaters of the Creek 661 watershed. Supporting infrastructure include an airstrip, access road, transmission line, and a water supply line from Tatelkuz Lake.

Knight Piésold Ltd. (KPL) was requested by New Gold Inc. (New Gold) to provide estimates of surface water and groundwater flows in the vicinity of the proposed Blackwater Gold Project (the Project). To fulfill this request, a Baseline watershed model was developed for the Project to assess pre-mine surface and groundwater flows within surrounding watersheds. The Baseline model was then modified to assess potential effects of the mine development on hydrologic conditions. Based on the model results, flow statistics were calculated to support fisheries habitat loss assessment work as well as aid in developing mine operation strategies.

The primary objectives of the watershed modelling were to: 1) improve the understanding of the site hydrologic parameters and hydrogeological setting surrounding the project area, and 2) assess potential effects of the planned mine development and operations on surface water and groundwater flow conditions in the Project area. For the potential effects assessments, the Baseline model was modified to represent four phases of mine development:

- Construction (Year –2)
- End of Mine (Year 17)
- Closure (Year 20; mine operations have ended but the Open Pit and/or TSF are not full), and
- Post-Closure (the Open Pit and TSF are discharging water via the spillway).

The watershed model included estimates of precipitation, evapotranspiration, and sublimation, which were used to determine the net water available for groundwater recharge and surface water runoff within the modelled area. The division of available water between groundwater recharge and runoff was determined by calibrating the model to available streamflow records. The calibration took into consideration characteristics of the streamflow response during both wet periods and low flow conditions, which allowed streamflow, groundwater flow, and the groundwater component of streamflow (baseflow) leaving a catchment to be estimated.

Results of the Baseline and Mine Life watershed models will be used to inform hydrogeological modelling and engineering design as well as for the environmental assessment of the Project.

1.1 SCOPE OF WORK

The Scope of Work for this study included:

- Developing a Baseline watershed model to assess pre-mine hydrologic conditions at the Blackwater Project site. Average monthly and average annual streamflows at the Blackwater Project site were assessed at 15 locations (nodes) using the Baseline model. The locations of these nodes, in addition to the node representing the Water Survey of Canada (WSC) Van Tine Creek station (WSC 08JA014), are shown on Figure A.1 (Appendix A). The long-term streamflow record at the regional Van Tine Creek station was used in the calibration of the Baseline model. Calibration results are presented in Appendix B.
- Modifying the Baseline model to simulate hydrologic conditions during four key phases of mine life (Construction, End of Mine, Closure, and Post-Closure). Streamflows were estimated at the

15 project node locations for each of these phases. General arrangements for each phase of mine life are presented in Appendix C. Streamflow results of all watershed models are presented in Appendices D through H.

- Simulating flow mitigation scenarios during End of Mine and Closure conditions in Davidson Creek that include the addition of fresh water to meet instream flow needs (IFN). Mitigated flow results for End of Mine and Closure scenarios are presented in Appendix F2 and Appendix G2, respectively.
- Estimating streamflows at two nodes, 15-CC and H5, which are located on Chedakuz Creek beyond the extent of the watershed model study area. Details of the calculation of H5 and 15-CC streamflows are presented in Section 5, and results are presented for each phase of mine life in Appendix D through Appendix H.
- Calculation of flow statistics, including wet and dry monthly return period (1 in 5 year through 1 in 50 year) flows and 1 in 10 year and 1 in 20 year, 7-day low flows. Details of the stream flow statistics are presented in Section 5.

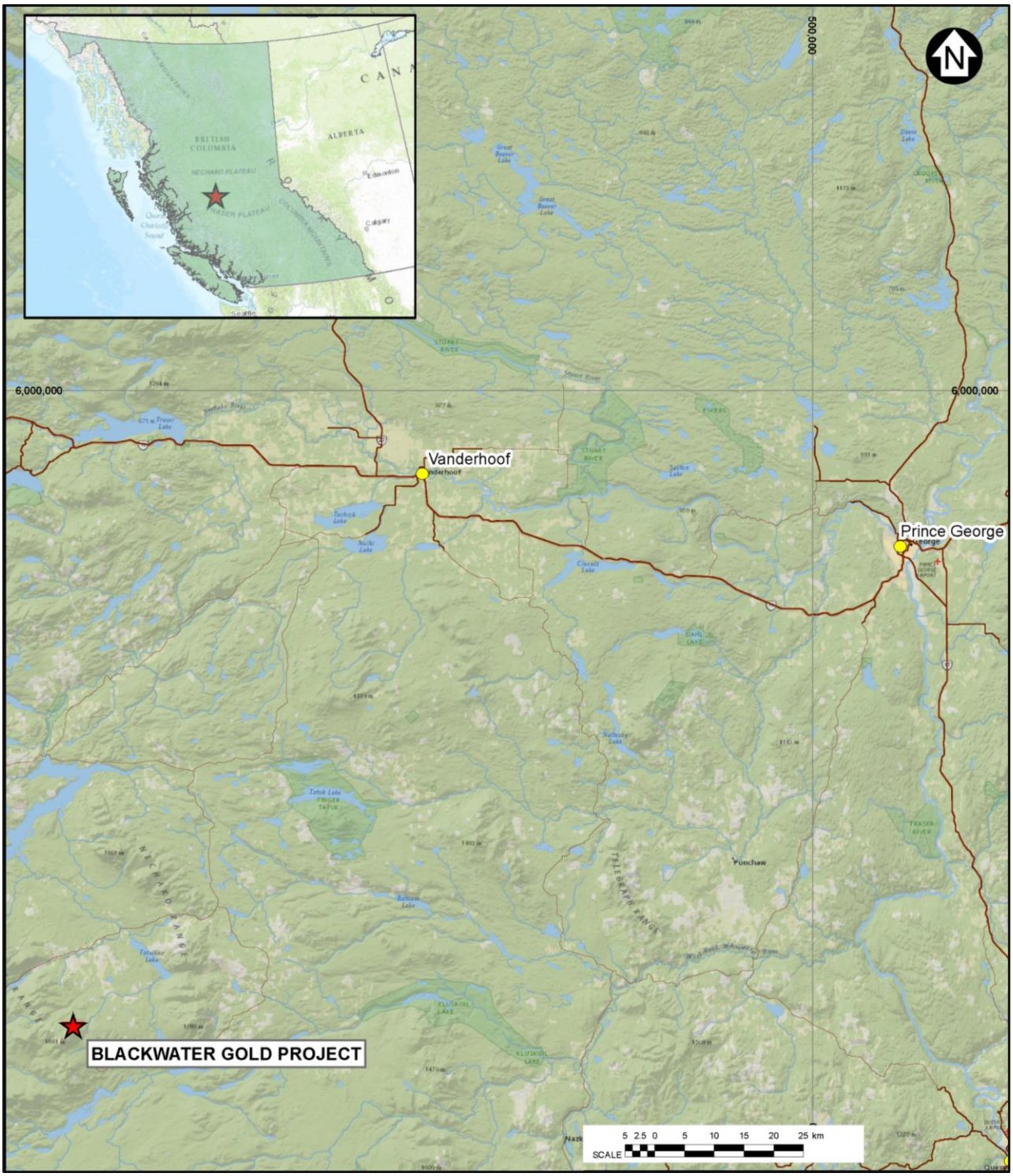

Figure 1.1 Project Location Map

2 – MODELLING APPROACH

2.1 GENERAL

A month-to-month water balance modelling approach commonly used for hydrologic evaluations (see Alley, 1984; Steenhuis and Van der Molen, 1986) was selected to evaluate surface water and groundwater flows in the Project area. The watershed model was developed in spreadsheet format, which provided a simple and transparent technique that allowed input and output flexibility in process selection and representation of mine facilitates. The watershed model was a semi-distributed (or quasi-distributed) parameter model; the study area was divided into sub-catchments within which groundwater and surface water flows were modelled. Spatial variability of climate due to differences in elevation was provided within each sub-catchment. Adjacent sub-catchments were linked together to allow surface and groundwater flows to be routed to downstream sub-catchments. The watershed model was simulated with a monthly time step.

The watershed model included representation of all aspects of the hydrologic cycle. The hydrologic processes considered in the model are presented in the schematic diagram shown on Figure 2.1, and include:

- Precipitation, which was distributed between rainfall and snowfall according to temperature
- Snow accumulation and melt
- Sublimation, which was modelled at a specified rate during snow accumulation
- Rainfall and snowmelt, which were distributed amongst:
  - Surface runoff
  - Recharge to groundwater
  - Evapotranspiration, which was modelled after the Thornthwaite Method (1948)
- Groundwater recharge (a combination of meteoric recharge and stream leakage), which was accumulated in groundwater storage
- Groundwater storage
- Groundwater discharge, which was determined according to a linear relationship based on the amount of water in storage
- Surface water detention in small ponds and wetlands, which was modelled using a linear reservoir assumption, and
- Inflow from up-gradient sub-catchments, including surface runoff and groundwater flow.

Long-term monthly precipitation and temperature values for the project area were estimated based on regional climate data. Regional climate data correlates well with available concurrent precipitation and temperature data from the study area. Precipitation and temperature values were adjusted for site specific elevation (lapse rate and orographic) effects.

Model results were adjusted to provide a match to low flows, which represent the groundwater contribution to streamflows (baseflows), while still providing a good match to high flows, long-term streamflow mass balance, and the streamflow distribution. The Blackwater Project watershed model was initially calibrated to 16 years (1991 to 2006) of streamflow reported at the regional WSC Van Tine gauging station (WSC 08JA014). The watershed model was then calibrated to long-term synthetic streamflow records developed for Project hydrologic stations H1 and H2, which are presented in the Project Hydrometeorology Report (KPL, 2013b).

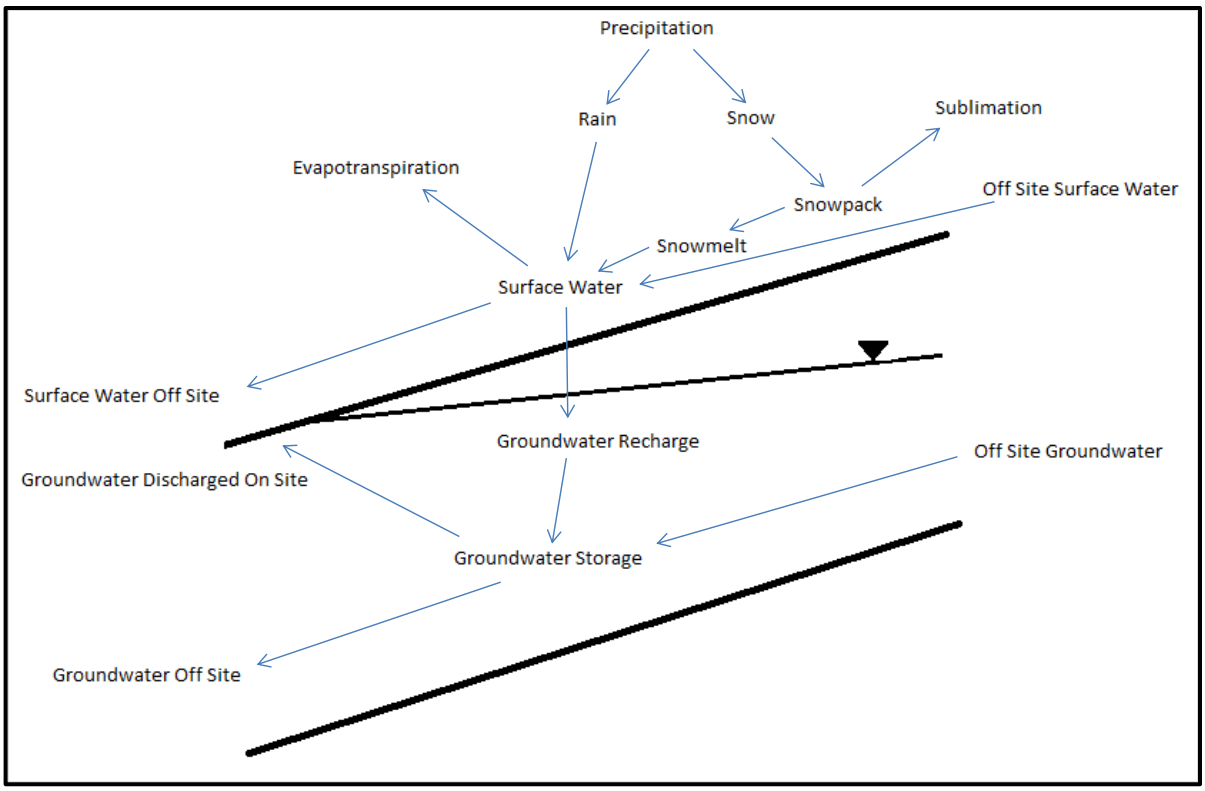

Figure 2.1 Water Balance Component Diagram

2.2 CATCHMENT DISCRETIZATION

The Blackwater Project study area includes the drainage areas for Davidson Creek, Turtle Creek, Creek 661 and Creek 705 (Figure A.1). These watersheds were divided into 15 sub-catchments based on topographic controls on drainage and the locations of streamflow gauging stations. The Van Tine Creek watershed was also included in the water balance model. The WSC Van Tine Creek gauging station (WSC 08JA014) is located approximately 40 km northwest of the Project.

Each of the 16 sub-catchments were further discretized by elevation using 305 m elevation bands, starting at 915 m above sea level (masl) and ending at 2,135 masl. Representative climate conditions (temperature and precipitation) were calculated based on the average elevation for each band. The calculated elevation band areas for each sub-catchment are presented in Table 2.1. The primary data inputs specified in each modelled sub-catchment included:

- Sub-catchment area (specified by 305 m elevation bands)
- Monthly precipitation (falling as both rain and snow)
- Monthly average temperature, and
- Aquifer transmissivity, width, and hydraulic gradient at the hydrology station (discharge location for each sub-catchment).

Table 2.1 Calculated Sub-Catchment Areas by Elevation Band

		masl				Total Sub-catchment Area	Total Contributing Area
	Lower Bound Elevation	915	1,220	1,525	1,830		
	Upper Bound Elevation	1,220	1,525	1,830	2,135		
	Average Elevation	1,068	1,373	1,678	1,983		
		km^2				km^2	km^2
Turtle Creek	**H3**	0.71	7.62	0.62	0.00	8.96	8.96
	H6	32.05	12.57	1.04	0.00	45.65	54.61
	1-TC	9.32	0.00	0.00	0.00	9.32	63.94
Davidson Creek	**11-DC**	0.00	2.24	0.42	0.00	2.66	2.66
	H2	0.84	31.86	8.99	0.02	41.70	44.36
	H4B	14.71	2.32	0.00	0.00	17.03	61.39
	4-DC	8.96	0.00	0.00	0.00	8.96	70.35
	1-DC	5.86	0.00	0.00	0.00	5.86	76.21
Creek 661	**H1**	0.57	7.07	1.22	0.00	8.87	8.87
	1-505659	2.12	10.40	1.98	0.00	14.50	14.50
	1-661	13.78	18.82	0.29	0.00	32.89	56.25
Creek 705	**6-705**	0.00	2.98	1.02	0.00	4.01	4.01
	4-705	0.00	9.14	1.17	0.00	10.31	14.32
	H7	4.82	20.66	2.31	0.00	27.79	42.11
	1-705	3.14	0.00	0.00	0.00	3.14	45.25
Van Tine Creek	**WSC 08JA014**	67.83	71.04	10.68	0.31	149.85	149.85

2.3 CLIMATE INPUTS

Primary meteorological inputs to the model were long-term monthly temperature and precipitation values. The data set was generated by correlating available project site temperature and precipitation data with concurrent regional data from the Environment Canada (EC) station at Vanderhoof (1098D90) and the BC Forest Service Wildfire Management Branch station at Kluskus (Kluskus). The correlations were then applied to the associated long-term records to produce long-term synthetic temperature and precipitation records for the Project site. The Vanderhoof station is located approximately 112 km north of the project site at an elevation of 674 masl, and its climate record is available from 1970 to 2012. Kluskus is located approximately 34 km from the project site at an elevation of 1,137 masl, and its climate record is available for spring, summer, and fall months from 1991 to 2012.

Two project climate stations are in operation at the site: one climate station was installed in July 2011 at an elevation of 1,050 masl (Blackwater Low) and the second station was installed in July 2012 at an elevation of 1,470 masl (Blackwater High). The Blackwater High station is similar in elevation to the proposed main project facilities and consequently 1,470 masl has been adopted as the Project reference elevation.

The following sections summarize the climate data set that was input to the watershed model. Additional details regarding the calculation of long-term temperature and precipitation values are provided in the Project Hydrometeorology Report (KPL 2013b).

2.3.1 Temperature

Temperature data from the onsite Blackwater High station were correlated to the Vanderhoof temperature data record using linear regression. Separate relationships were derived for winter (November through March) and non-winter (April through October) periods. A comparison of average monthly temperatures for the non-winter period indicate that Blackwater High is on average 4°C cooler than Vanderhoof (-4°C/796 m = -5°C/1,000 m), which corresponds closely with the standard lapse rate (decrease in surface temperature with elevation) of -6.5°C/1,000 m. During the winter period, the calculated average monthly temperature at the Blackwater High station can exceed those at the Vanderhoof station, indicating that thermal inversions have an influence on Project temperatures in the winter. The winter temperature regression supports field observations of temperature inversions; however, at this time, a more detailed analysis of the temperature inversions is not possible due to minimal site specific data.

The long-term temperature data series input to the water balance model consists of monthly average temperatures from the Blackwater High station for April to December 2012, and temperature data linearly correlated with the Vanderhoof station from 1984 to March 2012. Gaps in the Vanderhoof data record were filled using long-term mean monthly temperature values. Temperature within each elevation band in the water balance was adjusted using a lapse rate of -6.5°C/1,000 m of elevation.

2.3.2 Precipitation

Long-term precipitation values for the Project site were calculated using one approach for spring, summer, and fall values and another for winter values. The long-term spring, summer, and fall precipitation series was generated by correlating precipitation values from the Kluskus station with concurrent values from the Blackwater Low station using a double mass curve (DMC) analysis, and then applying these correlations to the long-term data for Kluskus. A similar DMC analysis was used to correlate the short-term concurrent Blackwater Low and Blackwater High precipitation records, and these correlations were applied to the synthesized long-term precipitation values for Blackwater Low to generate corresponding spring, summer, and fall precipitation values for Blackwater High. The Kluskus station has an available precipitation record for the months of April to October from 1991 to 2012. Gaps in the spring, summer, and fall precipitation data record were filled with the long-term mean monthly values for the appropriate month.

Monthly precipitation values for winter months were estimated using the combined average monthly precipitation values from long-term records measured at three regional EC stations: Vanderhoof (1970 to 2012), Fraser Lake (1969 to 2007) and Ootsa (1956 to 2007). The Fraser Lake (109C0LF) and Ootsa (1085835) stations are both located approximately 100 km from the Project site. Further detail on the calculation of winter precipitation is presented in the Project Hydrometeorology Report (KPL, 2013b).

Average annual precipitation at the Project reference elevation (1,470 m), calculated between 1998 and 2012, is 640 mm. The period from 1998 to 2012 was selected because it had the most complete record available and required very little infilling; therefore, data over the time period was believed to most accurately represent actual conditions. To account for orographic effects of precipitation in the project area a non-linear relationship between precipitation and elevation was adopted as follows.

$$P = P_s\, a^{(E-E_s)/100}$$

where, P is the monthly precipitation at the selected elevation

P_s = the monthly precipitation at the Project reference elevation
A = the orographic factor
E = elevation of middle of elevation band (m), and
E_s = reference elevation of the Project (1,470 m).

Precipitation was adjusted using an orographic factor of 8% for winter months (November through April) and 2% in summer. The rationale for applying different winter and summer orographic rates is based on a general understanding of the drivers of regional precipitation patterns, with frontal storm systems that produce stronger orographic precipitation effects dominant in winter and convective storm systems prevalent during the spring and summer.

2.4 WATER BALANCE

2.4.1 Snow and Rain

The distribution of precipitation between snowfall and rainfall assumed that all precipitation fell as rain if the average monthly temperature was greater than 3°C and fell as snow if the average monthly temperature was below -1°C. The proportion of precipitation falling as rain or snow varied linearly for average monthly temperatures between 1°C and 3°C.

2.4.2 Sublimation

Sublimation is complex and requires tabulation of a number of variables for a rigorous determination. In this analysis, sublimation was modelled at an assumed rate of 0.57 mm/day, which is consistent with KPL's experience for estimating sublimation for numerous locations throughout northern British Columbia and the Yukon. The snowpack was assumed to sublimate at the set rate until no snow remained on the ground.

2.4.3 Snowpack and Snowmelt

The required meteorological parameters required to accurately estimate snowmelt are not available on a long-term monthly basis for this site. Accordingly, a simple temperature index method was adopted for this model. The first order estimate of the potential snowmelt was calculated using the equation:

Monthly snowmelt (mm) = 80(T-1)

where, T is the monthly average temperature in degrees Celsius.

The actual monthly snowmelt was calculated as the lesser of the potential snowmelt and the available snow after considering losses to sublimation.

2.4.4 Evapotranspiration

Potential evapotranspiration (PET) was calculated following the Thornthwaite (1948) method. First, the PET for each month was estimated based on the corresponding average monthly temperature. Next, the unadjusted rate was adjusted to account for the number of days in the month and the number of hours in a day between sunrise and sunset, which varies by latitude. Typically, PET represents the evapotranspiration for a full vegetation cover on relatively flat tilled ground with no shortage of water. The AET was limited by the water available each month. For example, if the sum of snowmelt and rainfall in a given month was less than the PET, then the AET was less than the

PET. Evapotranspiration was also limited by the soil moisture condition. Below the soil moisture capacity of the soil, the PET was reduced linearly with soil moisture as follows:

Adjusted evapotranspiration = $(S_2 + S_1)\, f\, (PET)/(2S_m)$

where

S_m is soil moisture capacity (assigned as 200 mm across the site)

S_1 is soil moisture at the beginning of the month

S_2 is soil moisture at the end of the month

PET is the calculated full PET, and

f is the PET reduction factor for non-ideal conditions for evapotranspiration (assigned as 0.6 for natural catchments).

Open water was assumed to evaporate at the full PET. Mined surfaces with exposed bedrock and exposed waste rock dumps do not have a soil cover and were specified with limited soil moisture capacity (1 mm) and a low PET reduction factor (0.4).

2.4.5 Soil Water

The monthly soil water balance was calculated assuming the soil profile could retain moisture from month to month. A maximum soil moisture retention of 200 mm was assumed to represent average site conditions. Consideration of sublimation, snowmelt, rainfall, and AET allowed for an estimation of water available for infiltration and runoff. The soil moisture was calculated for the end of each month (S_2) based on the following formula:

$$S_2 = W + S_1 - (S_2 + S_1)\, f\, (PET)/(2S_m)$$

where, W is sum of rainfall and snowmelt for the month

(other terms defined previously)

Solving for S_2

$$S_2 = (W + S_1(1 - f\, (PET)/(2S_m))/(1 + f\, (PET)/(2S_m))$$

Knowing the soil moisture at the beginning and the end of the month provided an estimate of the soil moisture change.

2.4.6 Water Available for Recharge and Runoff

The water available for groundwater recharge and runoff (V) was calculated by subtracting monthly evapotranspiration and soil moisture change from the sum of rainfall and snowmelt (W):

$$V = W - f(PET)(S_2 + S_1)/ (2S_m) - (S_2 - S_1)$$

This unit value of available water was multiplied by the area for each elevation band in each sub-catchment to provide input to the water balance calculation.

2.5 SUB-CATCHMENT FLOW DISTRIBUTION

2.5.1 Groundwater Recharge

Groundwater recharge of the water available for runoff and recharge was estimated to account for the effects of variable surface conditions, soil permeability, and available storage capacity on recharge rates. Groundwater recharge was only allowed when evaporation and soil moisture requirements were met. Recharge therefore did not occur during the summer when the soil was not fully saturated or in the winter when the ground was covered by snow. The infiltration rate (I) within a sub-catchment was a specified parameter that was varied during calibration and was set equal to the available water up to a volume equal to the product of an infiltration rate and the sub-catchment area (k_1A). For wetter months, a fraction (k_2) of the remaining available water was also infiltrated ($k_2(V - k_1A)$). Therefore:

For precipitation less than or equal to k_1A

$I\ (m^3/month) = V$

For precipitation greater than k_1A

$I\ (m^3/month) = k_1A + k_2(V - k_1A)$

$= k_2V + k_1A(1 - k_2)$

This procedure provided an estimate of groundwater recharge that is relevant at the time scale of the monthly water balance. Interflow and groundwater flow along very short paths was considered to be part of the surface water component with this monthly time increment. Available water that was not recharged remained as surface water.

2.5.2 Groundwater Storage and Discharge

Groundwater storage and discharge within each sub-catchment were represented using a linear reservoir model. Water was released from groundwater storage at a rate determined by the product of the average volume of water in storage ($Z_1/2 + Z_2/2$) and a discharge factor (j). Monthly discharge (D) was set equal to:

$D = j(Z_1/2 + Z_2/2)$.

Month-to-month storage was accounted within each sub-catchment and groundwater discharge increased with increasing storage. The volume of water in storage was the sum of the storage in the preceding month (Z_1) plus the volume of water entering the system (I) minus the quantity discharged:

$$Z_2 = Z_1 + I - D$$

$$= Z_1 + I - j(Z_1/2 + Z_2/2)$$

Solving for Z_2:

$$Z_2 = (I + Z_1(1-jZ_1/2))/(1 + jZ_1/2)$$

The water entering the system included groundwater recharge (meteoric recharge and channel leakage) and groundwater flow contributed from the upstream sub-catchment. Water released from groundwater storage within the sub-catchment was either routed to the next sub-catchment downstream as groundwater or discharged within the sub-catchment and routed downstream as surface water flow.

The maximum allowable groundwater flow leaving the sub-catchment as subsurface flow was estimated using Darcy's Law, which calculates groundwater flow as the product of transmissivity, width, and hydraulic gradient values estimated at a location beneath the hydrology station.

The volume of groundwater released from storage in excess of the groundwater flow offsite was added to the surface water leaving the catchment. Groundwater storage and flow rates were calibrated primarily using streamflows during the low flow season. For a given volume of recharge, a discharge factor lower in value resulted in larger accumulated storage and a more uniform groundwater discharge rate.

2.5.3 Surface Water Detention and Storage

The volume of water reporting to the surface water component was estimated as the difference between water available for runoff and recharge and the volume of groundwater recharge. Some of the surface water component was manifested as runoff during a month and the remainder was detained as surface storage in small-scale detention features, such as small ponds or as interflow. Within this watershed methodology, surface water detention features were managed using the same linear reservoir model as groundwater storage and discharge. However, the discharge factor for release from surface water storage was typically higher than for release from groundwater storage.

2.5.4 Waste Rock Dump Infiltration, Storage, and Discharge

Available water (V) applied to a waste rock dump was proportioned as runoff or infiltration into the waste rock dump as storage in the saturated and unsaturated rock mass. Water that infiltrated into exposed waste rock dumps was managed in the same way as groundwater recharge on natural ground, but with a lower value specified for soil moisture capacity (1 mm). Waste rock dump surfaces that are reclaimed with a soil cover were assumed to have the same soil moisture retention capacity as the natural catchment.

Water was specified to discharge from a waste rock dump as toe discharge (either as seeps or broad discharge over an area) or as groundwater recharge to the footprint beneath the dump. The relationship between toe discharge and groundwater recharge was dependent on the surface properties of the underlying ground.

2.6 CALIBRATION METHOD

The watershed model was calibrated to:

- Measured flows from the WSC Van Tine Creek gauging site (08JA014)
- Long-term synthetic flows for gauge H1 on Creek 661; and

- Long-term synthetic flows for gauge H2 on Davidson Creek.

The calibration included:

- Adjustment of the long-term synthetic site precipitation record so that the “measured” and predicted total mass of water passing the gauging site were similar. This resulted in assigning a precipitation factor of 0.96 to H1 and H2 and a factor of 0.96 for Van Tine Creek.
- Selection of groundwater recharge and discharge factors and surface water detention and discharge factors to best synthesize the distribution of “measured” flows.
- Examination of the average monthly hydrograph to verify that the seasonal variations were represented.

The objective of the calibration was to develop a representative long-term climate and flow record. The imperfect correlation between the adopted synthetic precipitation record for the site and the actual precipitation across the site limits the potential to accurately model flow on a month-to-month basis. Wet and dry trends are reproduced within the region. The main objective of the calibration is therefore to provide a representative distribution of flows, so that wet and dry periods are correctly identified.

3 – BASELINE WATERSHED MODEL

3.1 DESCRIPTION

The Baseline watershed model was developed to estimate long-term surface water and groundwater flows in the Blackwater Project area, to better constrain estimates of hydrometeorological parameters, and to assess groundwater/surface water interactions.

The Baseline model simulates flows for the period from 1984 to 2012. The first seven years of the modelling period had limited historical climate data and therefore used average monthly precipitation values to develop snowpack and establish storage within the groundwater and surface water reservoirs. Basic model parameters were calibrated at a regional site using regional climate and streamflow data for the period of 1991 to 2012, and then site-specific calibration was completed using long-term synthesized site climate values and long-term synthesized flows for gauging stations H1 and H2.

The study area was divided into 16 sub-catchments that corresponded with the catchments of established stream gauging and water quality stations. Fifteen of the modelled sub-catchments are located within the Project area and one catchment corresponds to the contributing area draining to the WSC Van Tine Creek gauging station (WSC 08JA014). Sub-catchment locations are shown on Figure A.1 (Appendix A). A description of the site specific calibration process for the Baseline watershed model is provided below.

3.2 MODEL DEVELOPMENT

Development of the Baseline model was a multi-step process, which included the following:

- Calibration to long-term regional streamflows. The model was initially calibrated to match measured streamflows at the WSC Van Tine Creek gauging station (WSC 08JA014). The Van Tine Creek station has an available streamflow record from September 1974 to May 2006 and is the closest regional station with a long-term record of streamflow. The model was calibrated to Van Tine Creek station streamflows between the years of 1991 and 2006; the calibration period represents the years with available concurrent historic precipitation and streamflow records.
- Refinement of parameter values within the Project area to improve the match between modelled streamflows and long-term synthetic streamflows at hydrologic stations H1 and H2 (KPL, 2013b). Long-term synthetic streamflow values at stations H1 and H2 were developed by correlating streamflows measured at these stations in 2011 and 2012 with reported streamflows at the WSC Dean River station (WSC 08FC003). The Dean River station is located approximately 67 km from the Project site and is the only regional gauging station that is currently active within a 200 km distance of the Project. Further information on the calculation of the synthetic streamflow values is presented in KPL (2013b).
- Specifying model parameters for sub-catchments without long-term synthetic streamflow records. The 13 remaining sub-catchments were assigned suitable parameter values based on the results of the model calibration to long-term streamflows and considering sub-catchment specific characteristics such as the relative surface exposure of glaciofluvial sand and gravel deposits and the proportion of area with moderate to steep slopes, as well as estimates of the transmissivity, hydraulic gradient, and width of the aquifer beneath each hydrology station. Streamflow measurements were available at hydrologic stations H3, H4B, H6, and H7 for portions of 2011 and 2012, which were used to help validate the selected model parameter values.

Surficial geology was determined from terrain mapping conducted by KPL (2013a) within the mine site area and supplemented by surficial geology maps by the Geologic Survey of Canada (Plouffe and Levson, 2001, 2002). Information obtained during site investigations was additionally used to estimate the extent of permeable deposits and the ability of the subsurface to convey groundwater flow. Surficial geology across the Project site consists primarily of till and glaciofluvial deposits, with the surface area of permeable deposits generally increasing with distance downstream. Where mapped glaciofluvial deposits cross sub-catchment boundaries at locations other than beneath the gauging station, the potential for groundwater flow between sub-catchments was evaluated. In those cases, the potential for groundwater flow across sub-catchment boundaries was determined based on the difference in topography between the two adjacent sub-catchments.

Groundwater and surface water recharge and discharge parameters were adjusted to obtain a match between the monthly simulated and measured (or synthetic) streamflow records. The fit between modelled and observed streamflows was optimized to provide a good match to:

- Monthly mean streamflows
- Long-term mean monthly streamflows
- Cumulative mass balances, and
- Flow distributions.

A discussion of model calibration to streamflows in Van Tine Creek and at hydrologic stations H1 and H2 is presented below. Figures showing the matches between modelled and measured (or synthetic) streamflows are provided in Appendix B. Model calibrated groundwater recharge parameters and estimated aquifer properties beneath gauging stations are listed in Table 3.1 for all sub-catchments.

Table 3.1 Assigned and Calibrated Model Parameters by Sub-Catchment

	Sub-Catchment	K1 Factor[1]	K2 Factor[2]	Unit Discharge	Aquifer Transmissivity (T)[3]	Aquifer Width (w)[3]	Slope of Hydraulic Gradient at Discharge Point[3]	Estimated Cover with Sands and Gravels
		(m)	(%)		(m^2/day)	(m)	(%)	(%)
Turtle Creek	**H3**	7	2	0.30	86	1	9	0
	H6	30	9	0.10	86	1000	1	50
	1-TC	60	18	0.07	86	1600	0.5	90
Davidson Creek	**11-DC**	25	8	0.12	86	400	3	30
	H2	38	11	0.07	86	1250	1	30
	H4B	40	12	0.20	86	400	2	60
	4-DC	15	5	0.07	86	700	2	20
	1-DC	50	15	0.07	86	500	0.5	70
Creek 661	**H1 (upper)[4]**	40	12	0.12	86	470	2	20
	H1 (lower)[4]	70	21	0.10	104	510	2	20
	1-505659	15	5	0.12	173	300	2	20
	1-661	18	5	0.10	86	350	3	25
Creek 705	**6-705**	10	3	0.30	86	300	1	20
	4-705	10	3	0.30	86	400	3	15
	H7	10	3	0.30	86	500	2	15
	1-705	25	8	0.10	86	800	0.6	30
Van Tine Creek	**WSC 08JA014**	9	3	0.30	86	250	1	15

NOTES:

1. K1 FACTOR REPRESENTS THE FIRST QUANTITY OF AVAILABLE WATER TO RECHARGE GROUNDWATER.
2. K2 FACTOR REPRESENTS THE PROPORTION OF REMAINING AVAILABLE WATER TO RECHARGE GROUNDWATER.
3. TRANSMISSIVITY, WIDTH, AND HYDRAULIC GRADIENT ARE ESTIMATES OF THE AQUIFER PROPERTIES AT THE SURFACE WATER DISCHARGE LOCATION.
4. THE UPPER AND LOWER PORTIONS OF THE H1 SUB-CATCHMENT WERE MODELLED SEPERATELY.

3.2.1 Van Tine Creek Sub-Catchment

Mapped surficial geology in the Van Tine Creek catchment consists largely of till with glaciofluvial deposits primarily limited to the creek valley. The match between simulated and measured streamflows at the Van Tine Creek gauging station is shown on Figure B.1 through Figure B.3. In general, modelled streamflows provide a good match to measured mean monthly streamflows, cumulative streamflows, and the flow distribution. The good calibration to the regional data reflected by these plots indicates that the input parameters such as precipitation and temperature are well constrained in terms of total volumes and distribution.

In addition to evaluating the goodness of fit between the measured and simulated streamflows using visual inspection, the fit to data at the regional station was also assessed using the statistical Nash-Sutcliffe efficiency (1970) method (NSE). Visual inspection provides useful insight into the adequacy of the results; however, statistical measures provide a more objective approach that complements the visual inspection. The NSE is a commonly adopted statistical measure used in hydrology and was considered appropriate for this analysis. A NSE value of 0.71 was calculated based on monthly measured and calculated streamflows for the Van Tine Creek catchment.

The performance rating for NSE values (Moriaisi et al, 2006) is defined below:

- Very good: 0.75 < NSE < 1.00

- Good: 0.65 < NSE < 0.75
- Satisfactory: 0.50 < NSE < 0.65, and
- Unsatisfactory: NSE < 0.50.

The NSE performance rating is considered Good for the model calibration to the Van Tine Creek recorded hydrograph.

3.2.2 H2 Sub-Catchment

The H2 gauging station is located on Davidson Creek. Figures displaying the matches between simulated and synthetic streamflows at the H2 gauging station are shown on Figure B.4 through Figure B.6. The match between the modelled and synthetic flows, in terms of both flow distributions and cumulative streamflows between 1992 and 2000, are good. Comparison of modelled and synthetic cumulative streamflows indicates that the model is unable to replicate the annual variability of the synthetic streamflow record between 2000 and 2007, particularly during the freshet. Comparison of simulated flows and measured streamflows in 2011 and 2012 also indicates that the model underestimates freshet streamflows in spring 2011 but provides a good match to low flows during both years (Figure B.6).

The discrepancy between the measured and calculated streamflows, especially during the spring months, is likely a result of the precipitation values used in the model. Challenges with estimating winter precipitation values at the site resulted in the use of mean monthly values determined on the basis of records from three nearby regional stations, which provide a representation of the long-term average winter conditions rather than those for each winter period. As a result, the calculated snowpack in the model is very similar each year and doesn't accurately model the true variability of winter snowpack at the site, and the associated variability of freshet runoff. For example, in 2011 the snowpack reported at the closest regional snow survey station, Mount Swannell (1B06), was higher than average, but this larger snowpack and the effect it had on 2011 flow conditions was not accounted for in the simulated 2011 streamflow series. Accordingly, the 2011 measured freshet flows are notably higher than the model simulated values (Figure B.6). As a result of this modelling constraint, the simulated flows for the freshet period (May and June) show less variability than would be expected, but provide good estimates of long-term average conditions.

The match between simulated and synthetic streamflows was focused on obtaining the best fit to winter low flows, since the effects of mine development are expected to be greatest during low flow conditions and accurate representation of low flows is most desirable for the effects assessment. Despite the model limitation in matching the variability in freshet flows, the match between the simulated and synthetic flow duration curves indicates that the occurrence of high and low flows in the simulated record is well represented overall by the modelled flows. The watershed modelling results are not used for peak flow assessments, and accordingly the limitations of the freshet modelling are not relevant to the peak flow estimates for the Project.

3.2.3 H1 Sub-Catchment

The H1 streamflow gauge is located on Creek 661. Surficial geology across the H1 sub-catchment consists primarily of till with bedrock outcrops in higher elevations and a narrow band of glaciofluvial sediments adjacent to the stream in the middle to lowland portions of the sub-catchment. Initial model calibration to streamflows at node H1 proved difficult and initiated a field reconnaissance, which consisted of walking the upper and the lower portions of the stream feeding the H1 hydrologic station. Results of the field reconnaissance identified that:

- The H1 gauging station is located upstream of a confluence between a tributary and Creek 661, and not downstream of the confluence as previously thought.
- A wetland approximately 2 km long is present within the headlands of the H1 watershed and is drained by tributaries located at either end of the wetland. One tributary flows northeast toward the H1 station and the other tributary flows southwest to Blackwater Creek.

Based on the findings of the field reconnaissance, the drainage area contributing to the H1 station was revised from 27.0 km^2 to 8.9 km^2, resulting in a MAUR of 3.8 L/s/km^2.

During the calibration process, the best fit between observed and simulated data was obtained by assigning different parameter values to the upper and lower portions of the H1 sub-catchment (Table 3.1). The watershed model assumes that groundwater flows leaving the H1 sub-catchment amount to 28 L/s, with 14 L/s exiting beneath the H1 gauging station, 12 L/s crossing to the Creek 661 watershed at a location not beneath the H1 station, and an additional 2 L/s crossing to the Blackwater River catchment from the headwaters of the H1 sub-catchment (Figure B.10).

The matches between simulated and synthetic streamflows at the H1 gauging station are shown on Figure B.7 through Figure B.9. These results are similar to the calibration results at node H2, with the discrepancy between the modelled and measured freshet flows likely the result of using mean monthly winter precipitation values in the model.

3.3 BASELINE MODEL RESULTS

3.3.1 Climate Results

The long-term temperature time series used in the watershed model has a mean annual value of 2.2°C. The mean annual precipitation from 1998 to 2012 was estimated to be about 640 mm at the Project site elevation, with an equal proportion of precipitation falling as snow and as rain. The calculated mean annual potential evapotranspiration (PET) over the same period was estimated at 470 mm. This value is consistent with the long-term annual PET value estimated by KPL (2013e), and approximates the range of 500 to 600 mm indicated by the map of annual lake evaporation of Canada (NRC 1995). The calculated average actual evapotranspiration (AET) was estimated at approximately 280 mm at the Project elevation. Average groundwater recharge across the modelled areas was estimated as 11% of total precipitation.

3.3.2 Streamflow Results

Using the calibrated Baseline watershed model, mean monthly surface water flows were calculated for each sub-catchment from January 1998 to December 2012. Mean monthly streamflows leaving each sub-catchment are summarized on Table D.1. Average annual streamflows and groundwater flows leaving each sub-catchment are shown on Figure B.10. Locations where groundwater flow was predicted to flow across a sub-catchment boundary at a location other than beneath the gauging station are also shown on Figure B.10. Sample results from the Baseline model, provided for the most downstream node in each modelled watershed, include:

- The mean annual streamflow at node 1-DC on Davidson Creek was estimated to be 403 L/s. Mean monthly high and low flows ranged from 1,104 L/s in May to 184 L/s in March.
- The mean annual streamflow at node 1-661 on Creek 661 was estimated to be 283 L/s. Mean monthly high and low flows ranged from 934 L/s in May to 82 L/s in March.
- The mean annual streamflow at node 1-705 on Creek 705 was estimated to be 258 L/s. Mean monthly high and low flows ranged from 1,218 L/s in May to 30 L/s in February.

- The mean annual streamflow at node 1-TC on Turtle Creek was estimated to be 277 L/s. Mean monthly high and low flows ranged from 764 L/s in May to 128 L/s in February.

4 – MINE LIFE MODELS

To assess potential effects of the Blackwater Project on pre-development hydrologic conditions, the Baseline watershed model was modified to represent four key phases of project development. Mine Life models were developed to represent:

- Construction (Year –2)
- End of Mine (Year 17)
- Closure (Year 20; mine operations have ended but the Open Pit and/or TSF are not full), and
- Post-Closure (the Open Pit and TSF are discharging water via the spillway).

Results from the Mine Life models along with the methodology and assumptions used to develop the models are presented in the sections that follow.

Using the Mine Life watershed models, monthly streamflows were estimated at the same 15 nodes located within the Project study area that were considered in the Baseline watershed model. Streamflows at the Van Tine Creek station were not calculated with the Mine Life models. Streamflows at node H5 on Chedakuz Creek and node 15-CC at the outlet of Tatelkuz Lake were calculated external to the watershed models and further details of this are presented in Section 5. A description of the statistical analysis completed to assess dry and wet flows is also provided in Section 5.

4.1 CONSTRUCTION (YEAR -2)

4.1.1 Description

The Baseline watershed model was modified to represent the planned mine layout during the construction phase (Year -2) of mine development. The mine layout represented in the Construction model is shown on Figure C.1 and discretization of the modelled sub-catchments is shown on Figure A.2. The project facilities during the construction phase exist entirely within the Davidson Creek and Creek 661 watersheds. The following mine facilities and structures that influence water flow paths and timing were assumed to exist in the Construction model:

1. Coffer dam at 11-DC: The coffer dam will effectively reverse surface flow from the headwaters of Davidson Creek towards Creek 705. Considering the increase in surface water levels within the 11-DC sub-catchment, a portion of groundwater was assumed to flow from the 11-DC sub-catchment to the Creek 705 watershed at node 6-705. An equal amount of groundwater flow was assumed to contribute to the Davidson Creek and Creek 705 watersheds from the 11-DC sub-catchment.
2. Site C Main Dam under construction: A sediment control pond downstream of the Site C Main Dam will collect all surface water and the water will be pumped back upstream of the Site C Main Dam. Groundwater flow was assumed to pass this point at natural rates.
3. Water interception ditches around construction facilities: Ditches will be cut into the natural ground to direct surface flow around the plant site, sand and gravel borrow source areas, the truck shop, laydown areas, and camp construction areas, and deliver it to sediment control ponds. Where these construction facilities will straddle natural catchment boundaries, surface flow will be directed to the sub-catchment with the sediment control pond. Groundwater recharge within the footprint of construction facilities will contribute to areas defined by the associated natural sub-catchment boundaries.
4. Additional coffer dams, sediment control dams, and the fresh water reservoir on Davidson Creek: These structures were assumed to be built by Year -2 and surface water and groundwater flows were assumed to pass structures at natural rates.

4.1.2 Construction Model Flow Results

Calculated average monthly and average annual streamflows representing the construction phase of mine life are provided in Table E.1. Results of the Construction model indicate that flows will differ from the natural flow regime, including:

- Davidson Creek: The average annual streamflow at H2 node in Davidson Creek was estimated to decrease by 65 L/s from 281 L/s to 216 L/s. The decrease is attributed to the redirection of streamflows from the 11-DC sub-catchment to Creek 705 and collection of all surface water at the sediment control pond downstream of the Site C Main Dam. The magnitude of decrease in streamflows is similar at all downstream nodes (64 L/s), except for a slight (<1 L/s) increase in streamflow provided at node H4B attributed to re-routing of surface water flow at sediment control ponds.
- Creek 661: Change in average annual streamflows along Creek 661 are predicted to be minimal (<2 L/s) and are attributed to the construction of and re-routing of surface water by sediment control ponds.
- Creek 705: Average annual streamflows at all nodes on Creek 705 are predicted to increase by 14 L/s, which is attributed to the contribution of surface water and groundwater flows from the 11-DC sub-catchment.
- Turtle Creek: Streamflow estimates along Turtle Creek remain unchanged from Baseline flows.
- Predicted changes in mean monthly winter low flows (December through March) include:
  - Decreases of approximately 15% at node 1-DC on Davidson Creek
  - Minor change (approximately 1%) at nodes on Creek 661, and
  - An approximate increase of 10% at node 1-705 on Creek 705.

4.2 END OF MINE (YEAR 17)

4.2.1 Description

The End of Mine model represents the end of mine operations (Year 17) with the planned mine layout as shown on Figure C.2. The End of Mine model estimates streamflows in each sub-catchment shown on Figure A.3. The project facilities at the End of Mine phase exist entirely within the Davidson Creek and Creek 661 watersheds. The following mine facilities and structures that affect water flow paths and timing were assumed to exist in the End of Mine model:

1. Maximum build-out of the Open Pit: The Open Pit will act as a groundwater sink, capturing groundwater flow from the surrounding area. Surface water runoff from upslope areas and precipitation on the Open Pit also contribute water to the Open Pit. Groundwater inflows contributed from each sub-catchment surrounding the Open Pit was estimated based on the proportion of that sub-catchment within an assumed radius of influence of 2 km. Average annual inflows to the Open Pit specified in the End of Mine model were estimated as 41 L/s, with a maximum monthly average inflow rate up to 49 L/s. Pit inflows include a groundwater contribution from the Blackwater River watershed of approximately 8 L/s.
2. Maximum build-out of the TSF: The TSF is comprised of two adjacent sites, Site C and Site D, as shown on Figure C.2. The TSF restricts streamflows within the upper portion of the Davidson Creek sub-catchment and is filling during the End of Mine phase. Natural ground is replaced with ponds, beaches, wetland, and dam faces. Infiltration rates and evapotranspiration rates are affected. Additionally, the heads produced by the ponding water behind the facility affect groundwater flow directions and rates. Key assumptions associated with the TSF in the End of Mine model include:

- The Site C West Dam continues to block surface water flows at node 11-DC, redirecting surface water flows to Creek 705.
- Seepage through the Site C Main Dam contributes to the supernatant pond at Site D.
- Seepage through the Site D Main Dam is captured in an interception trench and within the surface waters held behind the Environmental Control Dam (ECD). Collected water is pumped back to the TSF supernatant pond.
- All groundwater and surface water flows are captured by the interception trench and the ECD, respectively. In the End of Mine model, 0.2 L/s of TSF seepage is assumed to bypass the ECD and contribute to downstream streamflow based on the results of preliminary numerical (SEEP/W) modelling (Ref. No. VA13-01001; KPL, 2013c). An updated TSF seepage assessment (KPL, 2013d) was subsequently completed, which indicated that 1.5 L/s of TSF seepage is predicted to bypass the ECD and contribute to the downstream environment. This update would increase the predicted seepage rate to 1.5 L/s in the End of Mine model, resulting in a streamflow increase of 1.3 L/s at all model node locations on Davidson Creek. While not a large difference, the use of 0.2 L/s rather than 1.5 L/s results in conservative low flows. Streamflow estimates provided in Appendix F are based on the preliminary unrecovered seepage rate of 0.2 L/s.

3. Maximum build-out of waste rock dumps and low grade ore stockpile: The waste rock dumps and low grade ore stockpile are not fully reclaimed at the End of Mine phase. Infiltration rates to the waste rock dumps are higher than on natural ground and evapotranspiration is lower than on natural ground. Key assumptions associated with each waste rock dump and stockpile include:
   - East and West Dumps:
     - Dump construction consists of approximately equal portions of waste rock and till during the first eight years of operations, and solely waste rock after Year 8. Based on this composition, 10% of the water available for recharge and runoff (“available water”) is assumed to runoff the dump facilities and 80% is estimated to infiltrate the dump and discharge along the base of the dump or within the shallow subsurface. The remaining 10% of the available water is estimated to recharge groundwater.
     - Runoff and toe discharge from the west dump is collected by ditches surrounding the dump and is routed to surface water within the H2 catchment. Runoff and toe discharge from the east dump contribute to surface flows within sub-catchment 1-505659.
     - Under the influence of water table drawdown associated with pit dewatering, 80% of groundwater recharge beneath the west dump and 100% of groundwater recharge beneath the east dump is assumed to flow to the Open Pit. The remaining groundwater recharge from the west dump (20%) is assumed to contribute to groundwater flows in the sub-catchment defined by the H2 node and which are captured by the ECD.
   - Low grade ore stockpile:
     - The low grade ore stockpile is comprised entirely of rock and contains an underdrain system.
     - Approximately 5% of the water available for recharge and runoff (“available water”) is assumed to runoff dump facilities and 90% is estimated to infiltrate the dump and discharge along the base of the dump or within the shallow subsurface. The remaining 5% of the available water is estimated to recharge groundwater.
     - Runoff and toe discharge from the low grade ore stockpile is routed to surface water within the H2 sub-catchment. Approximately 60% of the water contributing to groundwater recharge from the low grade ore stockpile flows to the Open Pit, while the remainder contributes to the H2 sub-catchment.

- Groundwater and surface water contributions from the west dump and low grade ore stockpile that contribute to the H2 sub-catchment are assumed to be captured by the interception trench and the ECD and then pumped to TSF Site D.

4. **Streamflow estimates in Davidson Creek do not include inputs from a freshwater supply mitigation system that will provide water to Davidson Creek immediately downstream of the H2 node location (downstream of the ECD).**

4.2.2 End of Mine Model Flow Results

The End of Mine model represents the condition of maximum disturbed surface area during mine operations. Results for the End of Mine model are provided in Table F1.1. Results of the End of Mine model indicate that flows will differ from the natural flow regime, including:

- Davidson Creek: Average annual streamflows on Davidson Creek at nodes downstream of node H2 (H4B, 4-DC, 1-DC) were estimated to decrease from baseline conditions by 299 L/s. The decrease is attributed to construction of the TSF and the associated ECD and groundwater interception trench, which prevent flows from passing the H2 station.
- Creek 661: Average annual streamflows are predicted to decrease by 2 L/s within the H1 sub-catchment due to groundwater inflows to the Open Pit. Average annual streamflow in the 1-505659 sub-catchment is estimated to decrease by 21 L/s due to groundwater inflows to the Open Pit and a reduction in surface drainage area associated with construction of the Open Pit and the southern portion of the TSF. A similar streamflow reduction was calculated for downstream node 1-661.
- Creek 705: Streamflow estimates along Creek 705 remain unchanged from Construction flows.
- Turtle Creek: Streamflow estimates along Turtle Creek remain unchanged from Baseline flows.
- Predicted changes in mean monthly winter low flows (December through March) include:
  - Decreases of 70-75% at node 1-DC on Davidson Creek
  - Decreases up to approximately 5%, 10%, and 65% at nodes 1-661, 1-505659, and H1, respectively, on Creek 661; and
  - An approximate increase of 10% at node 1-705 on Creek 705.

4.3 CLOSURE

4.3.1 Description

The Closure model represents the planned mine layout at the start of Closure (Year 20), as shown on Figure C.3. The Closure model estimates of streamflows in each sub-catchment are shown on Figure A.4. The project facilities during Closure exist entirely within the Davidson Creek and Creek 661 watersheds. The project facilities and layout at Closure are generally the same as at End of Mine, but with the following key differences:

1. Water from the TSF is pumped to the Open Pit: The TSF is full and water is pumped to the Open Pit to expedite pit filling and the creation of a Pit Lake.
2. The TSF spillway is constructed but not operational: At Closure, the TSF spillway is constructed but not yet receiving flow from the TSF. Once the TSF is full and spilling, the spillway will route flow from the TSF supernatant pond to the downstream end of a constructed wetland on Davidson Creek. Construction of the spillway channel affects the natural drainage in this area. Water that would normally flow from sub-catchment 1-505659 towards Creek 661 is now redirected towards Davidson Creek, including 25% of the toe discharge and runoff from the east waste rock dump. The spillway channel efficiency is assumed to be 80%, with 20% lost to groundwater outside the study area.

3. Reclamation of waste rock dump surfaces and the TSF beach is in progress: Model parameters that influence infiltration to and evapotranspiration from these facilities are adjusted to reflect soil cover and/or immature vegetation cover. Of the available water, the estimated proportion of runoff and infiltration at these facilities includes:
   - East and west dumps: Runoff comprises 35%, toe discharge comprises 55%, and groundwater recharge comprises 10%.
   - Low grade ore stockpile: Runoff comprises 35%, toe discharge comprises 60%, and groundwater recharge comprises 5%.
4. **Streamflow estimates in Davidson Creek do not include inputs from a freshwater supply mitigation system that will provide water to Davidson Creek immediately downstream of the H2 node location (downstream of the ECD).**

4.3.2 Closure Model Flow Results

Mean monthly streamflow results from the Closure model are provided in Table G1.1. Results of the Closure model indicate that at the beginning of closure flows will differ from previous conditions, including:

- Davidson Creek: Average annual streamflows on Davidson Creek at nodes downstream of node H2 were estimated to decrease from baseline conditions by 287 L/s, but increase from end of mine conditions by 12 L/s. This increase is attributed to construction of the tailings spillway channel, which is not operational but re-directs a portion of drainage from the 1-505659 sub-catchment.
- Creek 661: Average annual streamflows within the H1 sub-catchment remain unchanged from end of mine conditions. Average annual streamflows in 1-505659 sub-catchment are estimated to decrease by 36 L/s from baseline conditions and 14 L/s from end of mine conditions. The change in estimated streamflows from end of mine conditions is attributed to a loss of contributing area associated with construction of the tailings spillway channel.
- Creek 705: Streamflow estimates along Creek 705 remain unchanged from Construction flows.
- Turtle Creek: Streamflow estimates along Turtle Creek remain unchanged from Baseline flows.
- Predicted changes in mean monthly winter low flows (December through March) include:
  - Decreases of approximately 70-75% at 1-DC
  - Decreases up to 10%, 40%, and 65% at nodes 1-661, 1-505659, and H1 respectively, on Creek 661; and
  - An approximate increase of 10% at node 1-705 on Creek 705.

4.4 POST-CLOSURE

4.4.1 Description

The Post-Closure model represents the mine layout as shown on Figure C.4. The Post-Closure model represents conditions when the TSF and Open Pit are full and spilling. The Post-Closure model estimates streamflows in each sub-catchment shown on Figure A.5. The project facilities and layout at Post-Closure are generally the same as at Closure, but with the following key differences:

1. Reclamation of facility areas will be complete: All construction areas, waste rock dumps, and TSF beaches were assumed to be reclaimed with a vegetation cover and/or wetland. Parameters that affect infiltration and evapotranspiration were adjusted to reflect a mature vegetation cover.
2. Pit Lake will be full and spilling water to the TSF: Water from the TSF supernatant pond will no longer be pumped to the Open Pit. The Pit Lake was treated as a pond in the watershed model

(direct precipitation and evaporation at the AET rate occur). Average annual groundwater inflows contributing to the Pit Like from along the pit high wall were estimated to be 10 L/s in the Post-Closure model, with a maximum monthly average inflow rate up to 15 L/s.

3. The TSF seepage interception trench and the ECD are decommissioned: Groundwater and surface water flow downstream of the locations of the former structures unrestricted. TSF seepage rates specified in the Post-Closure model are based on the numerical model (SEEP/W) TSF seepage assessment presented in the Project Waste and Water Management Report (KPL, 2013d) and include:
   - 53.5 L/s seepage through the Site D Main Embankment, of which 52 L/s is assumed to discharge to surface and 1.5 L/s is assumed to flow downstream to the H4B sub-catchment as groundwater, and
   - 1.5 L/s seepage through the Site D South Abutment, of which 1.2 L/s is assumed to discharge to surface within the area defined by the TSF spillway catchment and 0.3 L/s is assumed to flow downstream to the 1-505659 sub-catchment as groundwater.
4. The TSF supernatant pond will be spilling water to Davidson Creek: The TSF supernatant pond water will spill uncontrolled via the constructed spillway channel. The spillway channel efficiency was assumed to be 80%, with 20% loss to groundwater outside the study area. Incorporating channel losses in the watershed model results in conservative low flow estimates in Davidson Creek. Additional engineering measures could be undertaken to reduce or prevent the losses and increase flows in Davidson Creek.
5. Approximately 25% of toe discharge and runoff from the east waste rock dump was assumed to contribute surface flows to the TSF spillway channel; the remaining 75% contributes surface flows to sub-catchment 1-505659.

4.4.2 Post-Closure Model Flow Results

Mean monthly streamflow results from the Post-Closure model are provided in Table H.1. Results of the Post-Closure model indicate that flows will differ from baseline conditions, as follows:

- Davidson Creek: Average annual streamflows in Davidson Creek at nodes downstream of node H2 were estimated to decrease by 42 L/s from baseline conditions. Streamflows in Post-Closure increase from streamflows at Closure due to surface flows from the TSF. Changes in streamflows during Post-Closure relative to Baseline are attributed to seepage from the TSF, channel leakage from the TSF spillway channel, increased evapotranspiration from the TSF supernatant ponds and Pit Lake, change in contributing area draining to Davidson Creek, and more consistent drainage of water through waste rock dumps which serves to increase winter low flow contributions.
- Creek 661: Streamflows within the H1 sub-catchment in Post-Closure are predicted to negligibly change from baseline streamflows; however, groundwater flows leaving the catchment are predicted to decrease. Streamflows within the 1-505659 sub-catchment are estimated to decrease by 35 L/s from Baseline conditions, with negligible changes from Closure conditions. Changes in predicted streamflows for 1-505659 during Post-Closure conditions relative to Baseline conditions are primarily attributed to a change in contributing drainage area due to the Open Pit and TSF embankment and spillway channel areas.
- Creek 705: Streamflow estimates along Creek 705 remain unchanged from Construction flows.
- Turtle Creek: Streamflow estimates along Turtle Creek remain unchanged from Baseline flows.
- Predicted changes in mean monthly winter low flows (December through March) include:
   - Decreases of approximately 10-15% at 1-DC on Davidson Creek

- Negligible change at node H1, decreases up to 5% at node 1-661, and decreases up to 35% at node 1-505659 on Creek 661, and
- An approximate increase of 10% at node 1-705 on Creek 705.

4.5 STREAMFLOW MITIGATION DURING END OF MINE AND CLOSURE CONDITIONS

A fresh water supply system will provide a constant source of fresh water to Davidson Creek to mitigate streamflow reductions as well as provide flows required for mill operations. The fresh water will be sourced from Tatelkuz Lake, which is located approximately 20 km northeast of the mine site. Water will be conveyed via pipeline to the fresh water reservoir on Davidson Creek shown on Figures C.2 and C.3. The water will supply plant fresh water needs, camp water supply, and mitigate flow reductions in lower Davidson Creek.

Target IFN flows for Davidson Creek were developed in conjunction with AMEC Earth and Infrastructure (AMEC, September 2013). The IFN values are considered to be a constant demand on the system and are variable throughout the year. The IFN values are shown in Table 4.1.

The mitigated scenario was simulated using the End of Mine and Closure watershed models. Within each model, supply water for IFN was added to Davidson Creek at the fresh water reservoir located immediately downstream of node H2. Additionally, a flow of 120 m^3/hr was assumed from Tatelkuz Lake to the mine site during operations and closure, affecting flows at 15-CC and H5. Results of the mitigated End of Mine and Closure scenarios are presented in Appendix F2 and Appendix G2, respectively. The net effect on predicted streamflows for each mitigated case is an increase in flow at all nodes on Davidson Creek that is directly proportional to the IFN addition. Streamflows summarized at node H2 in Appendix F2 and Appendix G2 include the IFN water supply, which is added to Davidson Creek immediately downstream of the H2 node location. ▲R1

Table 4.1 Davidson Creek Instream Flow Needs

Month	IFN (L/s)
December – April	125
May	570
June	560
July	240
August	150
September - November	115

4.6 TSF SEEPAGE TO STREAMFLOW

Estimates of the percent TSF seepage discharging in each receiving stream are provided in Appendix I for End of Mine, Closure, and Post-Closure conditions. The percent TSF seepage in the receiving stream is provided for both the unmitigated and mitigated (IFN supply) scenarios for End of Mine and Closure conditions. The tables include mean monthly and average annual flow predictions.

For End of Mine and Closure conditions, the TSF seepage values presented in Appendix I assume that 0.2 L/s seepage passes the ECD (KPL, 2013c), and that all other seepage from the TSF is captured by the ECD and groundwater interception trench system. TSF seepage is assumed to discharge to surface upstream of node H4B. The 0.2 L/s of TSF seepage is based on the results of preliminary numerical (SEEP/W) modelling (KPL, 2013c). An updated TSF seepage assessment (KPL, 2013d) indicated that 1.5 L/s of TSF seepage is predicted to bypass the ECD and contribute to the downstream environment. Using the updated seepage rate of 1.5 L/s in the End of Mine and Closure models (not presented on Appendix I tables) would result in increases in the calculated percentages of TSF seepage in streamflow; however, the updated percentages of TSF seepage in streamflow remain below 10% at all the nodes on Davidson Creek.

In the Post-Closure Model, the ECD and groundwater interception trench are decommissioned and 53.5 L/s of seepage is assumed to seep through the Site D Main Embankment, and an additional 1.5 L/s is assumed to seep through the Site D southern abutment (KPL, 2013d). Of this seepage, 53.2 L/s is assumed to discharge to surface on Davidson Creek before node H2 and an additional 1.5 L/s is assumed to discharge to surface before node H4B. Theoretically, an additional 0.3 L/s is assumed to seep beneath the southern abutment and discharge to Creek 661. Additional geotechnical investigation will be conducted and engineering mitigation measures will be implemented to prevent seepage to Creek 661. Seepage beneath the southern abutment is not expected to occur until late in the mine life.

5 – STREAMFLOW STATISTICAL ANALYSIS

5.1 OVERVIEW

To better understand the hydrologic and environmental impacts during the various phases of the Project, wet and dry along with 7-day low flow statistics were developed for each of the Watershed Model nodes. The statistical analyses were used to support fisheries habitat loss assessment work being completed by AMEC, as well as aid in mine operation strategies.

5.2 CALCULATION OF STREAMFLOW ALONG CHEDAKUZ CREEK

Two nodes, 15-CC and H5, which are located at the outlet of Tatelkuz Lake and approximately 3.5 km downstream on Chedakuz Creek, respectively, were outside the boundaries of the Watershed Model and thus their flow series' were calculated in a different manner. A long-term synthetic streamflow series was developed for node H5 as part of the Project Hydrometeorology Report (KPL, 2013b). This long-term streamflow string was generated through frequency paired regression analysis with the WSC Dean Creek regional station. A detailed discussion on the method of frequency paired regression can be found in KPL (2013b). Streamflows at node 15-CC were determined by pro-rating streamflow at node H5 by drainage area; a methodology that was deemed appropriate due to the proximity of the two stations and their similar drainage characteristics. In the Closure and Post Closure scenarios, streamflow estimates from the watershed model assume an 80% TSF spillway efficiency. Losses from the TSF spillway contribute to a catchment outside of the watershed model boundary that drains to Tatelkuz Lake. Calculated streamflows at the 15-CC and H5 nodes include this 20% loss in TSF spillway flows for the Closure and Post Closure scenarios. ▲R1

5.3 DETERMINATION OF WET AND DRY FLOWS AND 7-DAY LOW FLOWS

Statistical analyses were undertaken using the Baseline and Mine Life watershed model results to determine return period wet and dry monthly flows and 7-day annual low flows at model nodes located at the outlet of each sub-catchment (Figure A.1).

An excel-based model was created to calculate the return period wet and dry flows for each respective node. The model assumed a lognormal distribution to determine events ranging from a 1 in 50 year dry to a 1 in 50 year wet flow scenario. In instances where a lognormal distribution was not appropriate for the distribution of monthly values, the statistical software @Risk was run in order to determine a more suitable distribution. The distributions selected from @Risk were primarily Inverse Gaussian, Exponential, or Extreme Value. The distribution was selected based on how well it fit the data and how reasonable the results were in terms of the extrapolation of the upper and lower tails of the distribution.

The watershed models were operated on a monthly time-step, so 10 and 20 year return period 7-day values were developed by conducting frequency analyses on annual monthly low flow values and then multiplying the results by 7-day to monthly ratios. The 7-day to monthly ratios were determined using long-term WSC Van Tine Creek flow records and represent the mean of the annual ratios of 7-day low flow to monthly low flow.

5.4 RESULTS

Results of the statistical analysis are provided in Appendices D through H for Baseline and each of the Mine Life models. Corresponding results for the End of Mine and Closure mitigated scenarios are provided in Appendix F2 and Appendix G2, respectively.

6 – CONCLUSIONS

Activities during the life of the Blackwater Project are expected to affect streamflows in Davidson Creek, Creek 661, Creek 705, and Chedakuz Creek. The Open Pit will serve as a groundwater sink, resulting in decreased streamflows in Creek 661 during Operations and Closure. Construction of the TSF and associated Environmental Control Dam (ECD) and groundwater interception trench will cut-off surface water and groundwater flows to downstream Davidson Creek during Operations and Closure. With such a cut-off in operation, any mining operations upstream of the trench during Operations and Closure, such as development of the Open Pit and subsequent groundwater inflows, will have no incremental effect on the downstream hydrology in Davidson Creek. Runoff from the TSF Site D Main Dam and the vast majority of seepage will be collected at this cut-off and pumped back to the TSF. Redirecting streamflow from the 11-DC sub-catchment upslope of the TSF in the Davidson Creek headwaters to the Creek 705 headwaters is predicted to result in a marginal increase in streamflows along Creek 705. An increase in Creek 705 streamflows is predicted to begin during Construction and last through Post-Closure. Turtle Creek streamflows are predicted to remain unchanged during mine development.

Predicted streamflow changes in Davidson Creek and Creek 661 during each phase of mine development include:

- Construction: Changes to average annual streamflows and mean monthly low flows (December through March) are predicted to decrease by approximately 15% at 1-DC in Davidson Creek and to be negligible to minor (less than 3%) at nodes on Creek 661.
- End of Mine and Closure:
    - The mine plan includes a freshwater mitigation system that will supply water to Davidson Creek during operations and closure. Modelling was conducted for End of Mine and Closure conditions for a mitigated scenario that includes the freshwater supply to Davidson Creek and an unmitigated scenario without freshwater supply. The mitigated scenario assumed pumping of water from Tatelkuz Lake to meet biologically determined flow needs with a temporal variance based on the life history requirements of fish species in Davidson Creek (AMEC, 2013). The freshwater was supplied to Davidson Creek immediately downstream of the ECD during the End of Mine and Closure phases of the mine life. Results of the two modelling scenarios indicate:
        - Unmitigated flow scenario: Average annual streamflows at node 1-DC in Davidson Creek are predicted to decrease by approximately 75% at End of Mine and Closure without flow mitigation. Mean monthly winter low flows at 1-DC are predicted to decrease by approximately 70-75% at End of Mine and Closure.
        - Mitigated flow scenario: Average annual streamflows at 1-DC in Davidson Creek with freshwater mitigation are predicted to decrease by approximately 25% at End of Mine and 20% at Closure. Simulation results suggest that mean monthly winter low flows at node 1-DC are predicted to decrease by up to 15% at End of Mine and Closure.
    - Average annual streamflows at node 1-661 in Creek 661 are predicted to decrease 10-15% at End of Mine and Closure. Reductions to mean monthly winter low flows at node 1-661 are predicted to be less than 5% at End of Mine and less than 10% at Closure.
- Post-Closure: Average annual streamflows are predicted to decrease approximately 10% at node 1-DC in Davidson Creek and node 1-661 on Creek 661 in Post-Closure.

7 – REFERENCES

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8 – CERTIFICATION

This report was prepared, reviewed and approved by the undersigned.

Prepared:

Brendan Worrall, E.I.T.
Staff Engineer

Prepared:

Cindy Starzyk, Ph.D.
Senior Hydrogeologist

Reviewed:

Rod Smith, P.Eng.
Specialist Engineer

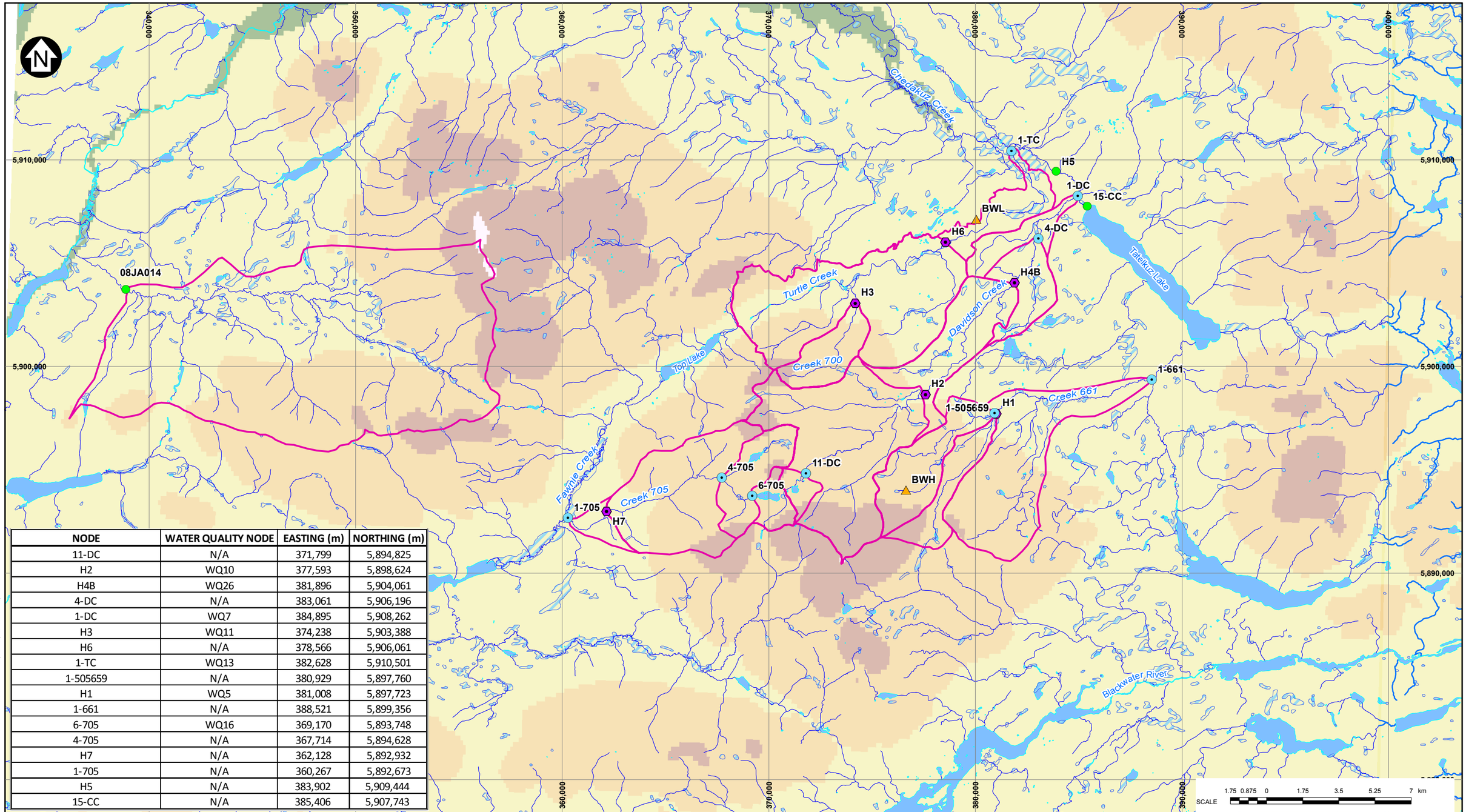
Approved:

Ken Brouwer, P.Eng.
President

APPENDIX A

MODEL SUB-CATCHMENT DISCRETIZATIONS

(Pages A-1 to A-4)



NODE	WATER QUALITY NODE	EASTING (m)	NORTHING (m)
11-DC	N/A	371,799	5,894,825
H2	WQ10	377,593	5,898,624
H4B	WQ26	381,896	5,904,061
4-DC	N/A	383,061	5,906,196
1-DC	WQ7	384,895	5,908,262
H3	WQ11	374,238	5,903,388
H6	N/A	378,566	5,906,061
1-TC	WQ13	382,628	5,910,501
1-505659	N/A	380,929	5,897,760
H1	WQ5	381,008	5,897,723
1-661	N/A	388,521	5,899,356
6-705	WQ16	369,170	5,893,748
4-705	N/A	367,714	5,894,628
H7	N/A	362,128	5,892,932
1-705	N/A	360,267	5,892,673
H5	N/A	383,902	5,909,444
15-CC	N/A	385,406	5,907,743

LEGEND:

- CLIMATOLOGY STATION
- HYDROLOGY STATION/WATERSHED MODEL NODE
- NODE NOT INCLUDED IN WATERSHED MODEL
- WATERSHED MODEL NODE
- RIVER
- CATCHMENT BOUNDARY
- LAKE
- WETLAND

ELEVATION BAND (M)

- < 915
- 915-1220
- 1220-1525
- 1525-1830
- > 1830

NOTES:

1. BASE MAP: CANADA DEM GEOBASE.
2. COORDINATE GRID IS IN METRES.
COORDINATE SYSTEM: NAD 1983 UTM ZONE 10N.
3. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:175,000 FOR 11x17 (TABLOID) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.

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0	10OCT'13	ISSUED WITH REPORT	DMW	AMD	CAS	KJB

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NEW GOLD INC.

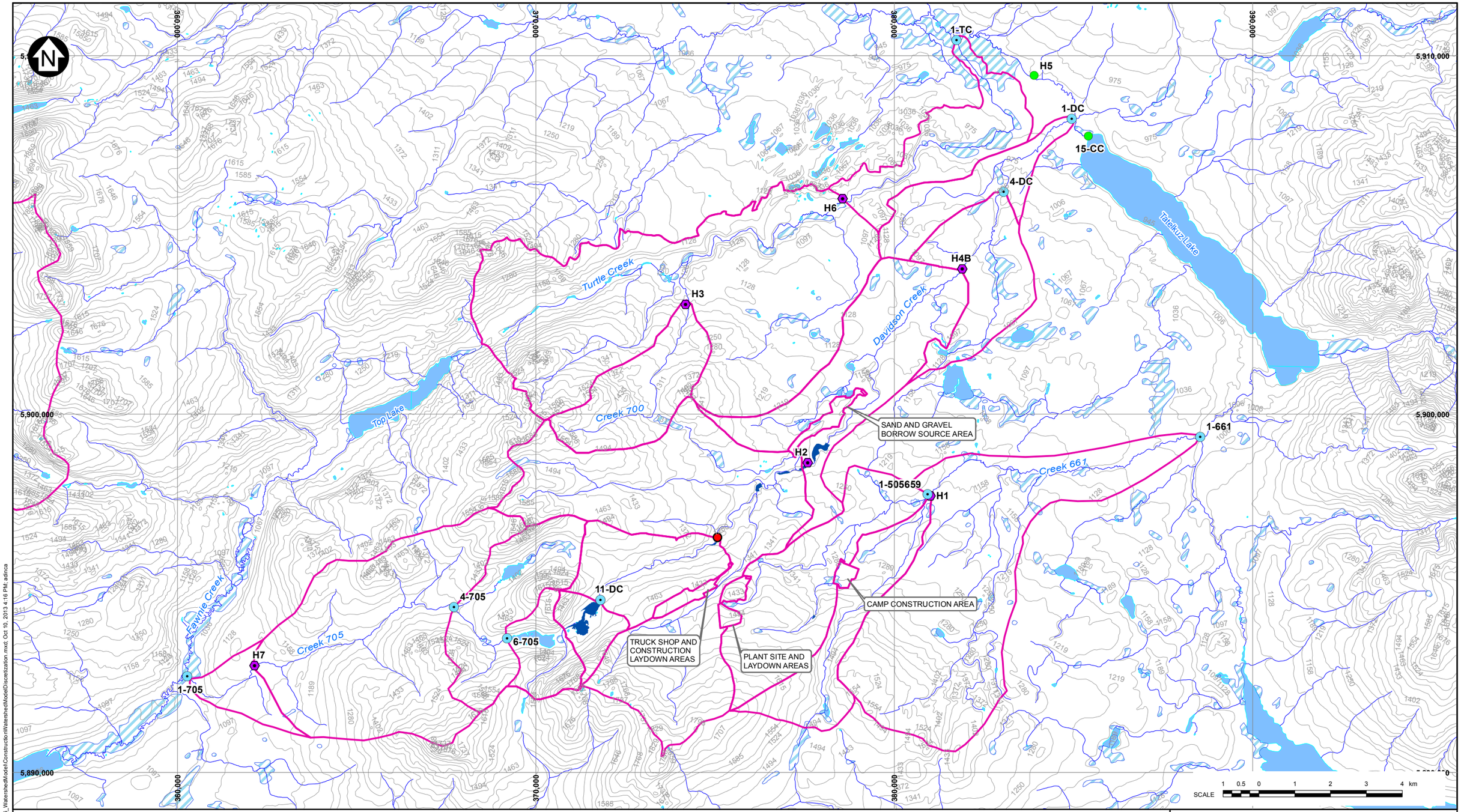
BLACKWATER GOLD PROJECT

BASELINE WATERSHED MODEL DISCRETIZATION

Knight Piésold CONSULTING

P/A NO. VA101-457/6 | REF NO. 6

FIGURE A.1 | REV 0



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LEGEND:

- HYDROLOGY STATION/WATERSHED MODEL NODE
- NODE NOT INCLUDED IN WATERSHED MODEL
- WATERSHED MODEL NODE
- CONSTRUCTION SEDIMENT CONTROL DAM
- RIVER
- CONTOUR (m)
- CATCHMENT BOUNDARY
- LAKE
- WETLAND
- POND
- MINE FACILITY

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	10OCT'13	ISSUED WITH REPORT	DMW	AMD	CAS	KJB

NOTES:

1. BASE MAP: BC NTS MAPS.
2. COORDINATE GRID IS IN METRES.
COORDINATE SYSTEM: NAD 1983 UTM ZONE 10N.
3. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:100,000 FOR 11x17 (TABLOID) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.
4. CONTOUR INTERVAL IS IN METRES AND WAS CONVERTED FROM FEET.

NEW GOLD INC.

BLACKWATER GOLD PROJECT

CONSTRUCTION WATERSHED MODEL DISCRETIZATION

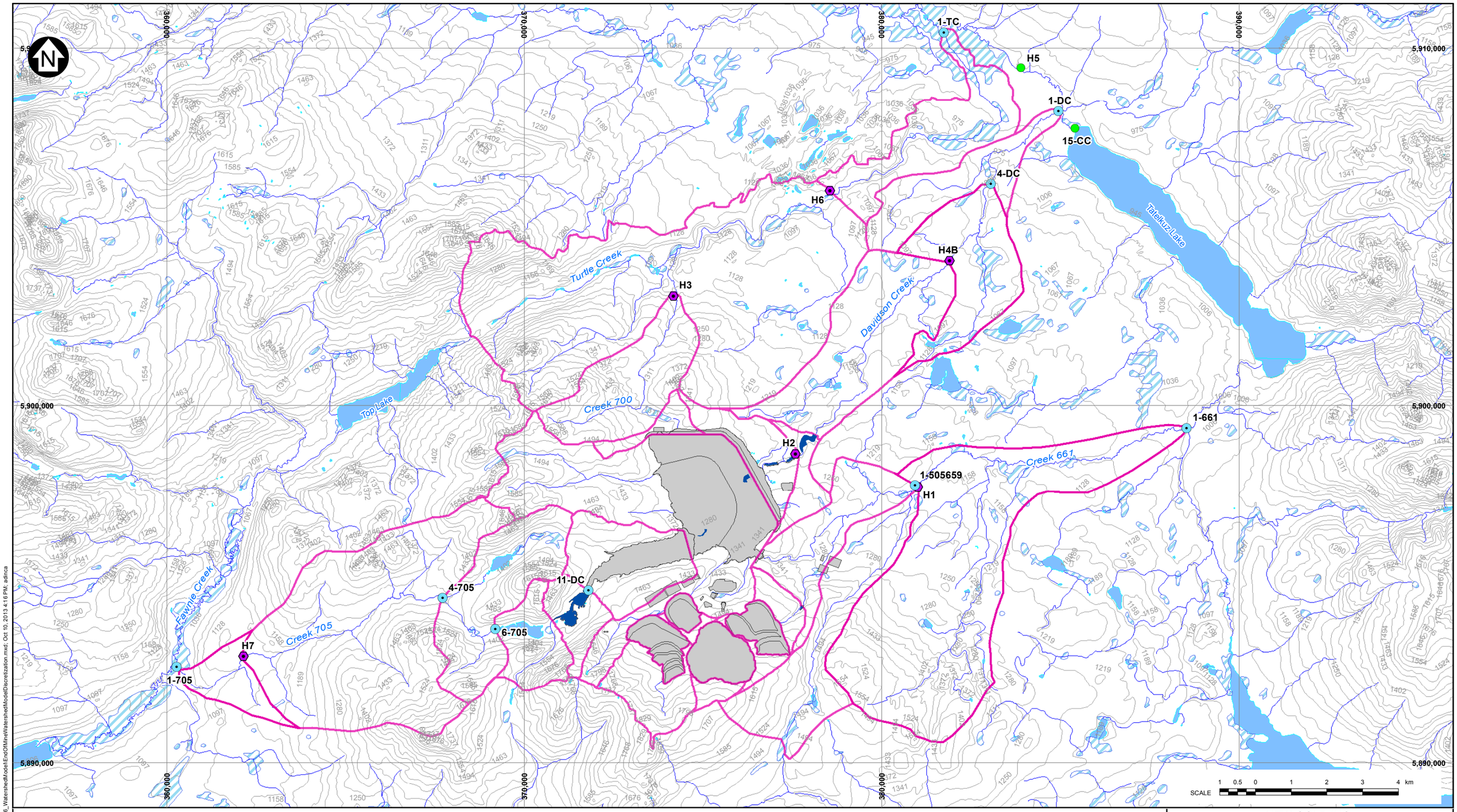
Knight Piésold CONSULTING

P/A NO. VA101-457/6

REF NO. -

FIGURE A.2

REV 0



LEGEND:

- HYDROLOGY STATION/WATERSHED MODEL NODE
- NODE NOT INCLUDED IN WATERSHED MODEL
- WATERSHED MODEL NODE
- RIVER
- CONTOUR (m)
- CATCHMENT BOUNDARY
- LAKE
- WETLAND
- POND
- MINE FACILITY

NOTES:

1. BASE MAP: BC NTS MAPS.
2. COORDINATE GRID IS IN METRES.
COORDINATE SYSTEM: NAD 1983 UTM ZONE 10N.
3. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:100,000 FOR 11x17 (TABLOID) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.
4. CONTOUR INTERVAL IS IN METRES AND WAS CONVERTED FROM FEET.

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0	10OCT'13	ISSUED WITH REPORT	DMW	AMD	CAS	KJB

NEW GOLD INC.

BLACKWATER GOLD PROJECT

END OF MINE WATERSHED MODEL DISCRETIZATION

Knight Piésold CONSULTING

P/A NO. VA101-457/6 | REF NO. 6

FIGURE A.3 | REV 0

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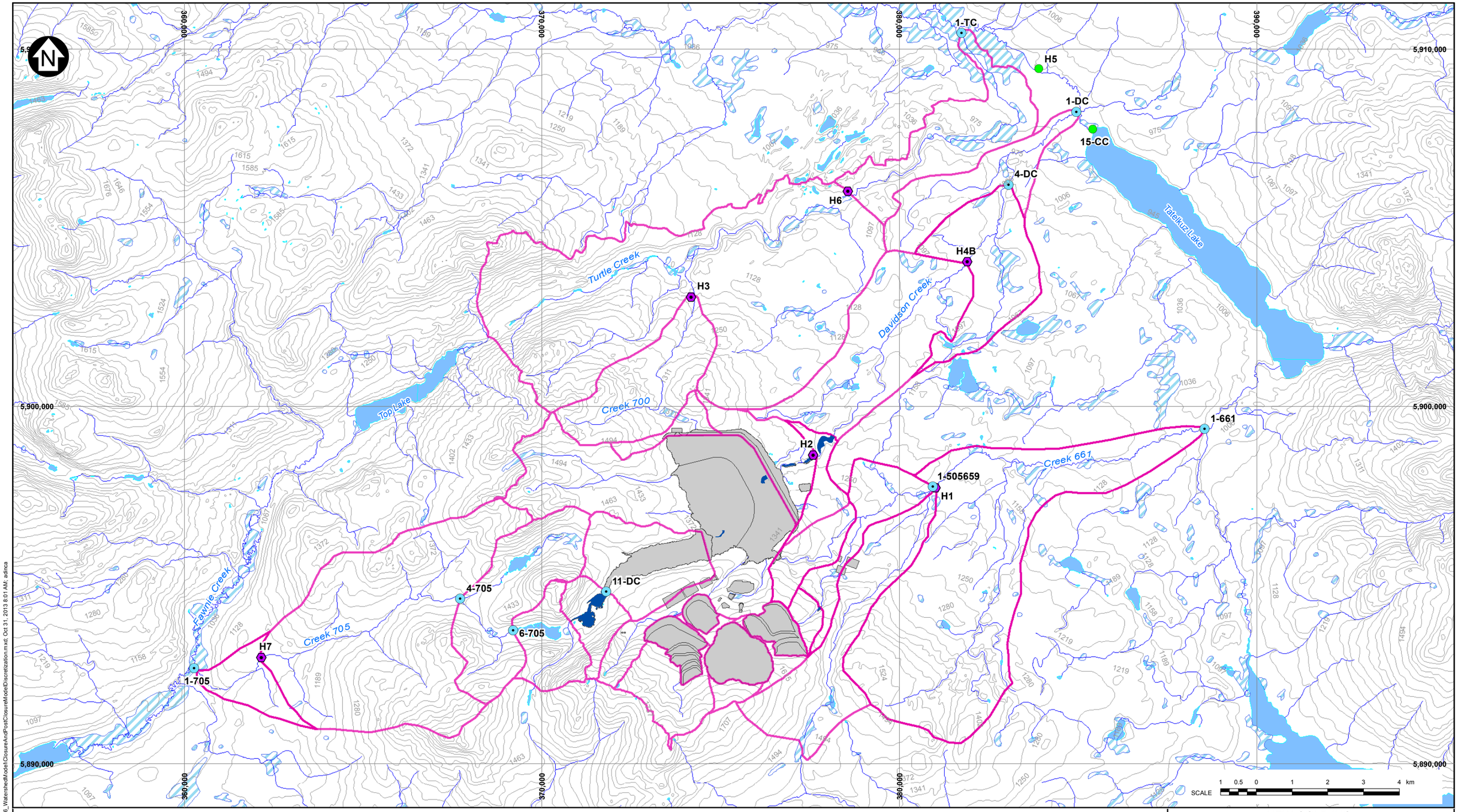

LEGEND:

- HYDROLOGY STATION/WATERSHED MODEL NODE
- NODE NOT INCLUDED IN WATERSHED MODEL
- WATERSHED MODEL NODE
- RIVER
- CONTOUR (m)
- CATCHMENT BOUNDARY
- LAKE
- WETLAND
- POND
- MINE FACILITY

NOTES:

1. BASE MAP: BC NTS MAPS.
2. COORDINATE GRID IS IN METRES.
   COORDINATE SYSTEM: NAD 1983 UTM ZONE 10N.
3. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:100,000 FOR 11x17 (TABLOID) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.
4. CONTOUR INTERVAL IS IN METRES AND WAS CONVERTED FROM FEET.

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	10OCT'13	ISSUED WITH REPORT	DMW	AMD	CAS	KJB

NEW GOLD INC.

BLACKWATER GOLD PROJECT

CLOSURE AND POST-CLOSURE WATERSHED MODEL DISCRETIZATION

Knight Piésold CONSULTING

P/A NO. VA101-457/6 | REF NO. 6

FIGURE A.4 | REV 0

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APPENDIX B

BASELINE MODEL CALIBRATION RESULTS

(Pages B-1 to B-11)

Knight Piésold CONSULTING

TABLE B.1

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED AVERAGE MONTHLY STREAMFLOWS - BASELINE CONDITIONS

Print Oct/11/13 13:57:51

	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Van Tyne
	H3	**H6**	**1-TC**	**11-DC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**WSC**
January	6	112	143	0	133	168	174	203	6	12	97	2	5	27	41	152
February	4	99	128	0	123	152	156	185	4	9	85	1	2	17	30	111
March	4	102	130	0	115	145	156	184	3	8	82	1	1	16	31	195
April	52	325	368	8	204	297	362	404	20	60	293	18	74	252	282	1617
May	226	710	764	49	816	964	1053	1104	117	289	934	130	437	1181	1218	3152
June	185	550	596	46	834	949	991	1033	122	275	852	75	238	670	694	2115
July	49	225	263	11	318	391	406	441	38	89	307	29	85	222	239	791
August	21	159	194	3	191	246	254	286	16	36	162	12	33	100	114	379
September	18	143	176	1	163	210	216	247	11	26	134	9	23	80	94	396
October	31	168	201	2	166	215	229	260	11	37	169	12	38	131	146	619
November	27	165	199	2	160	210	227	258	11	34	164	10	33	116	132	534
December	10	126	158	0	141	183	192	223	8	17	114	4	11	46	61	238
Annual Average	53	241	277	10	281	345	369	403	31	75	283	25	82	239	258	861

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\B Calibration results\superceded\[Appendix B Calibration Results.xlsx]TABLE B.1

NOTES:
1. STREAMFLOWS ARE IN L/S.

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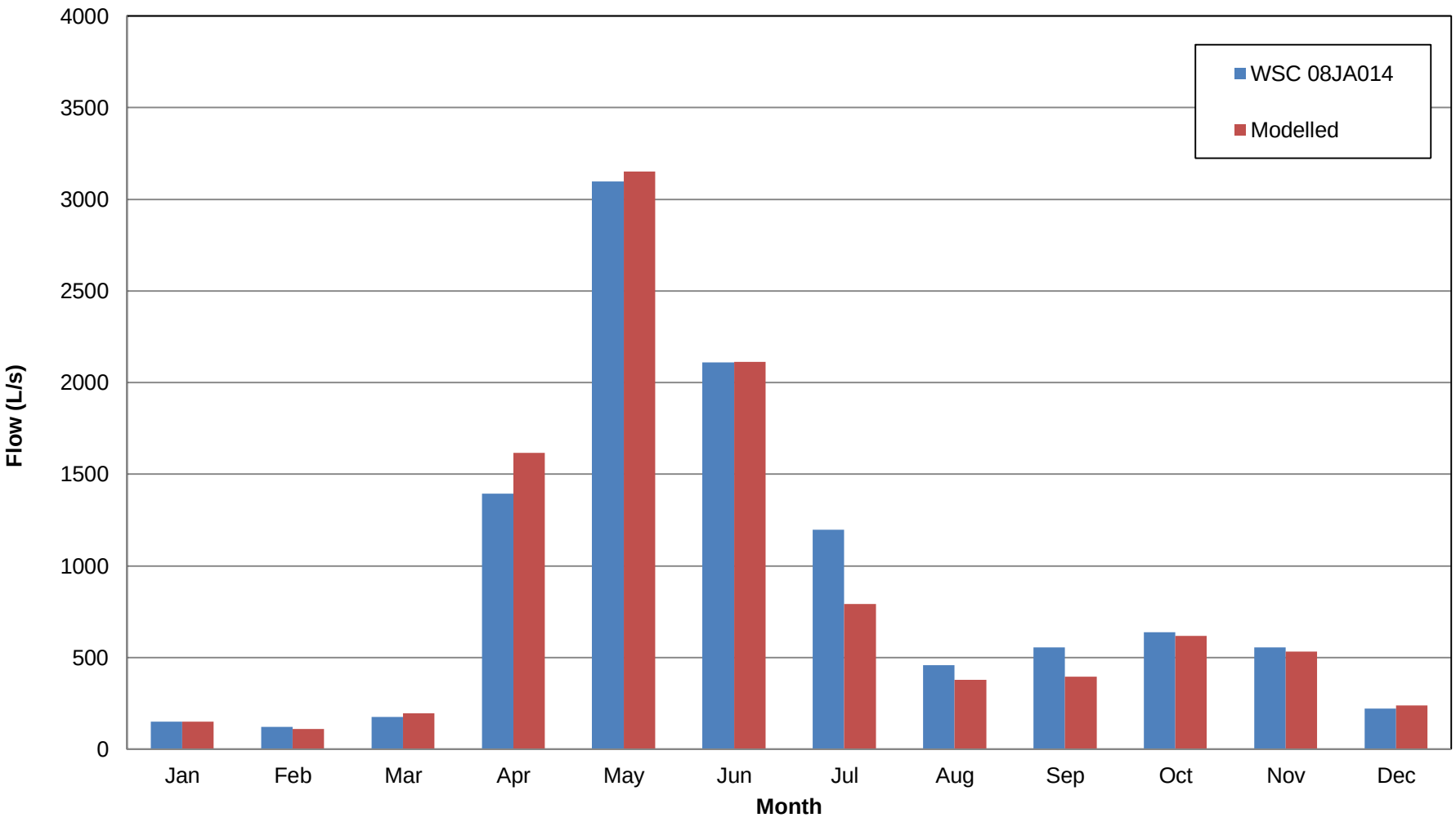

NOTES:
1. STREAMFLOWS REPRESENT LONG-TERM MEAN MONTHLY VALUES CALCULATED BETWEEN 1991 AND 2006.

NEW GOLD LTD.

BLACKWATER GOLD PROJECT

MODELLED VERSUS MEASURED VAN TINE CREEK MEAN MONTHLY STREAMFLOWS

Knight Piésold CONSULTING

P/A NO. VA101-457/6

REF. NO. 6

FIGURE B.1

REV A

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
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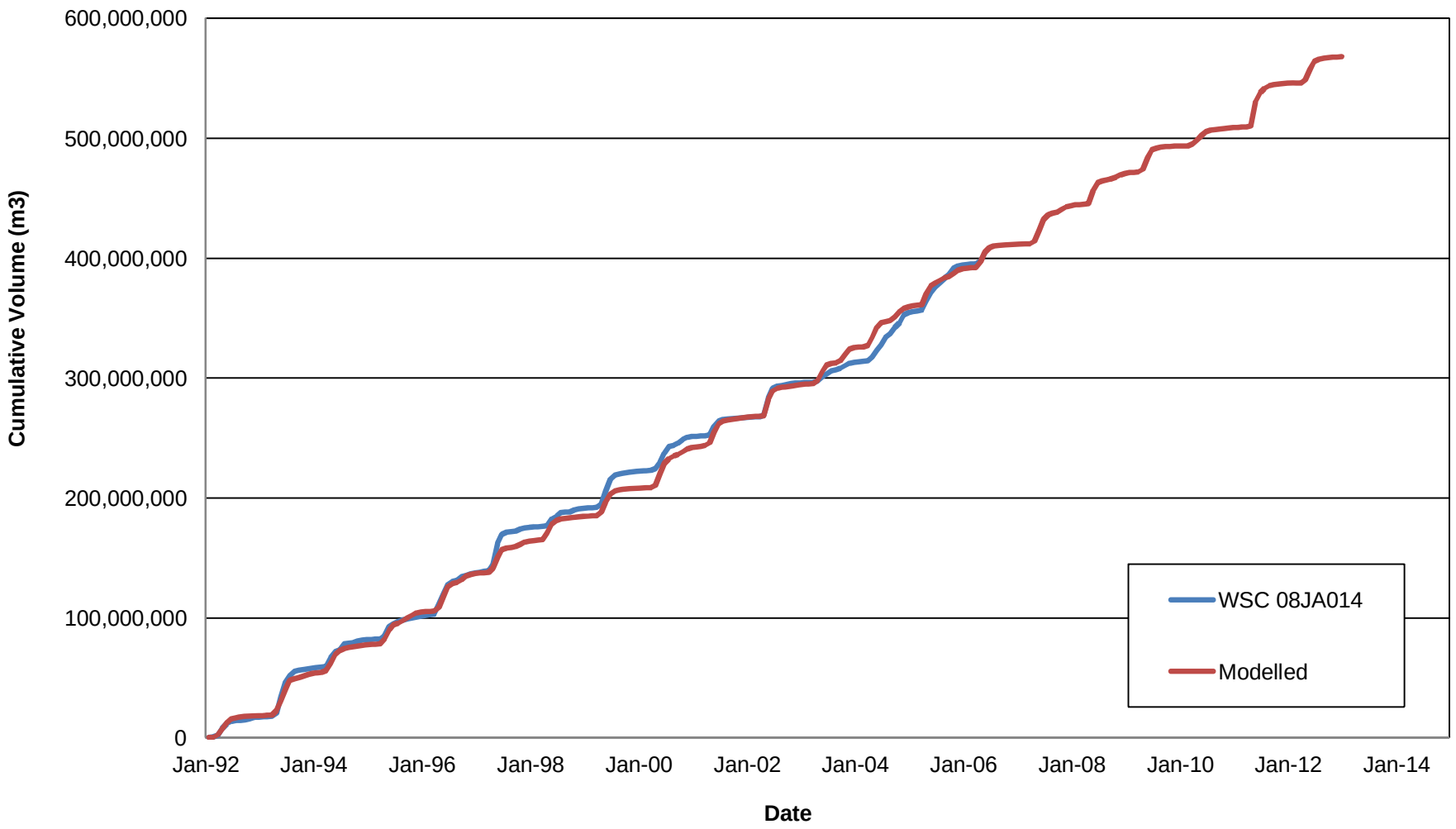

NOTES:

1. THE MEASURED STREAMFLOW RECORD AT VAN TINE CREEK STATION EXTENDS TO MAY 2006.
2. THE CUMULATIVE STREAMFLOW RECORD STARTS IN 1992 SINCE 1991 IS NOT A FULL YEAR OF RECORD.

NEW GOLD LTD.

BLACKWATER GOLD PROJECT

MODELLED VERSUS MEASURED VAN TINE CREEK CUMULATIVE STREAMFLOWS

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P/A NO. VA101-457/6

REF. NO. 6

FIGURE B.2

REV A

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
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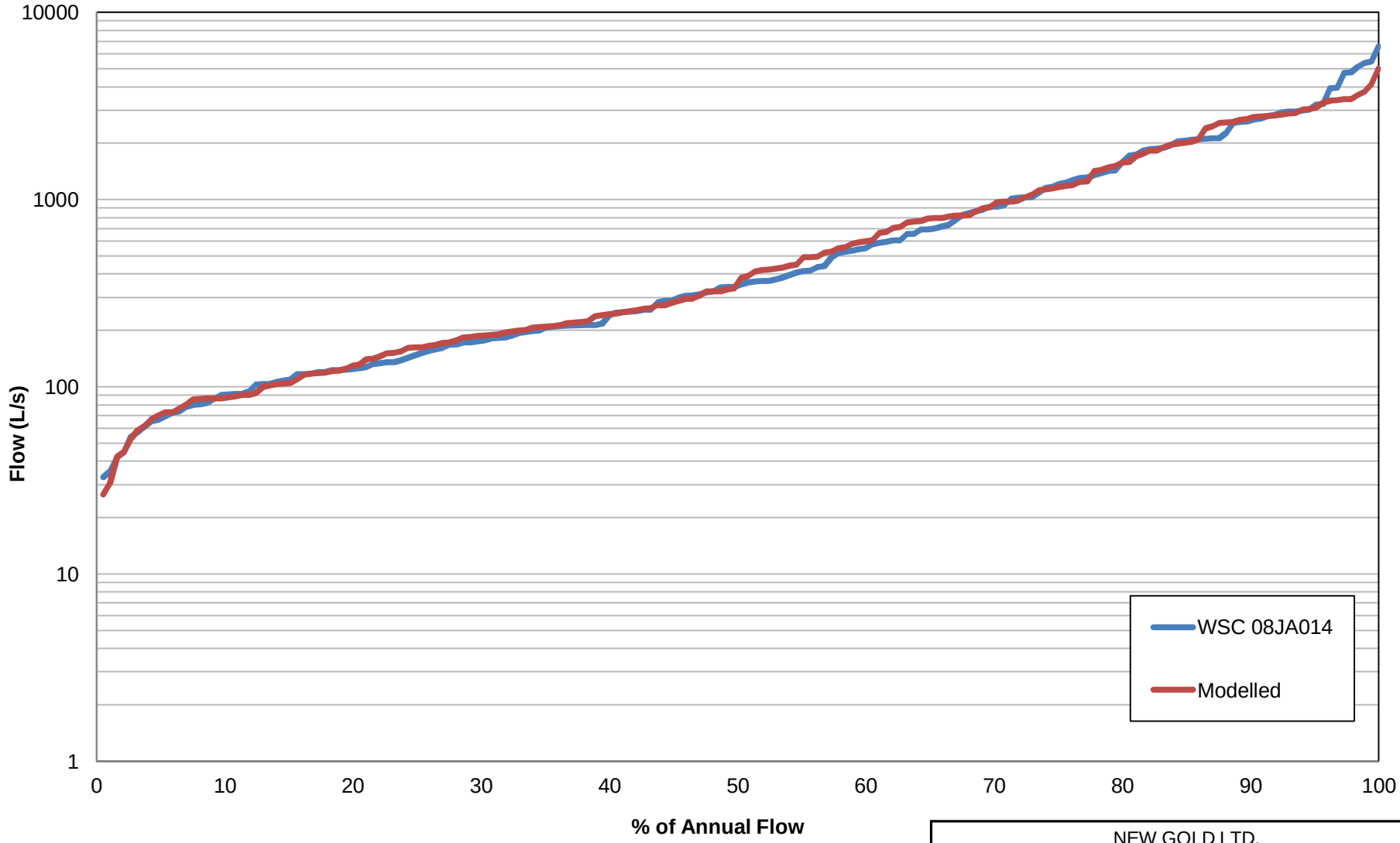


NOTES:

1. THE FLOW DISTRIBUTION USES MONTHLY MEAN STREAMFLOW S FROM 1991 TO 2006.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
A	01JAN'13	ISSUED WITH LETTER	CAS	RS	KJB

NEW GOLD LTD.

BLACKWATER GOLD PROJECT

MODELLED VERSUS MEASURED VAN TINE CREEK FLOW DISTRIBUION

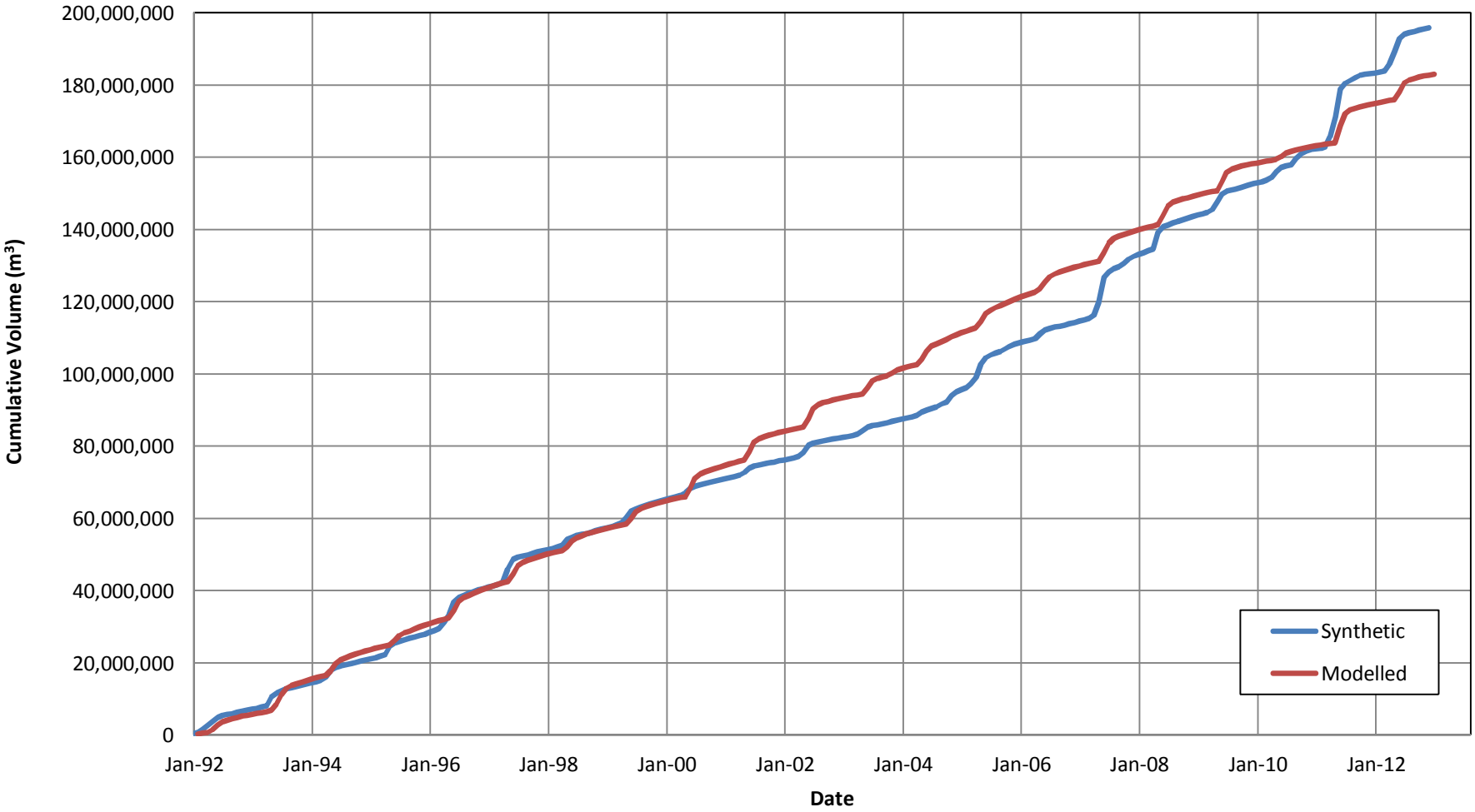
Knight Piésold CONSULTING

P/A NO. VA101-457/6

REF. NO. 6

FIGURE B.3

REV A



NOTES:

1. SYNTHETIC DATA REPRESENTS THE LONG-TERM STREAMFLOW RECORD PRESENTED IN THE BLACKWATER PROJECT HYDROMETEOROLOGY REPORT (KPL, 2013B).

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
A	01OCT'13	ISSUED WITH REPORT	CAS	RS	KJB

NEW GOLD INC.

BLACKWATER GOLD PROJECT

MODELLED VERSUS SYNTHETIC H2 CUMULATIVE STREAMFLOWS

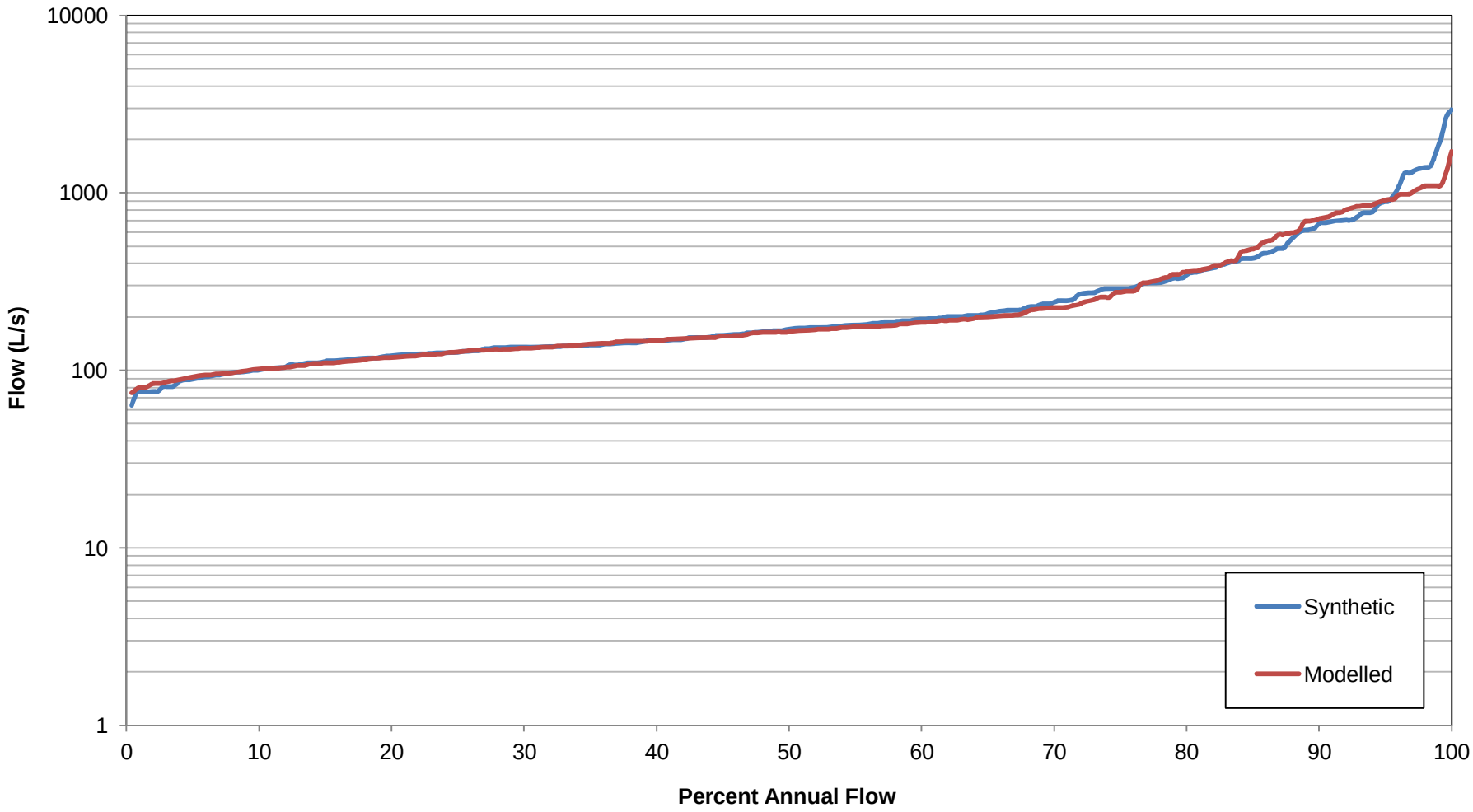
Knight Piésold CONSULTING

P/A NO. VA101-457/6

REF. NO. 6

FIGURE B.4

REV A



NOTES:

1. SYNTHETIC DATA REPRESENTS THE LONG-TERM STREAMFLOW RECORD PRESENTED IN THE BLACKWATER GOLD PROJECT HYDROMETEOROLOGY REPORT (KPL, 2013B).

NEW GOLD INC.

BLACKWATER GOLD PROJECT

MODELLED VERSUS SYNTHETIC H2 FLOW DISTRIBUTION

Knight Piésold CONSULTING

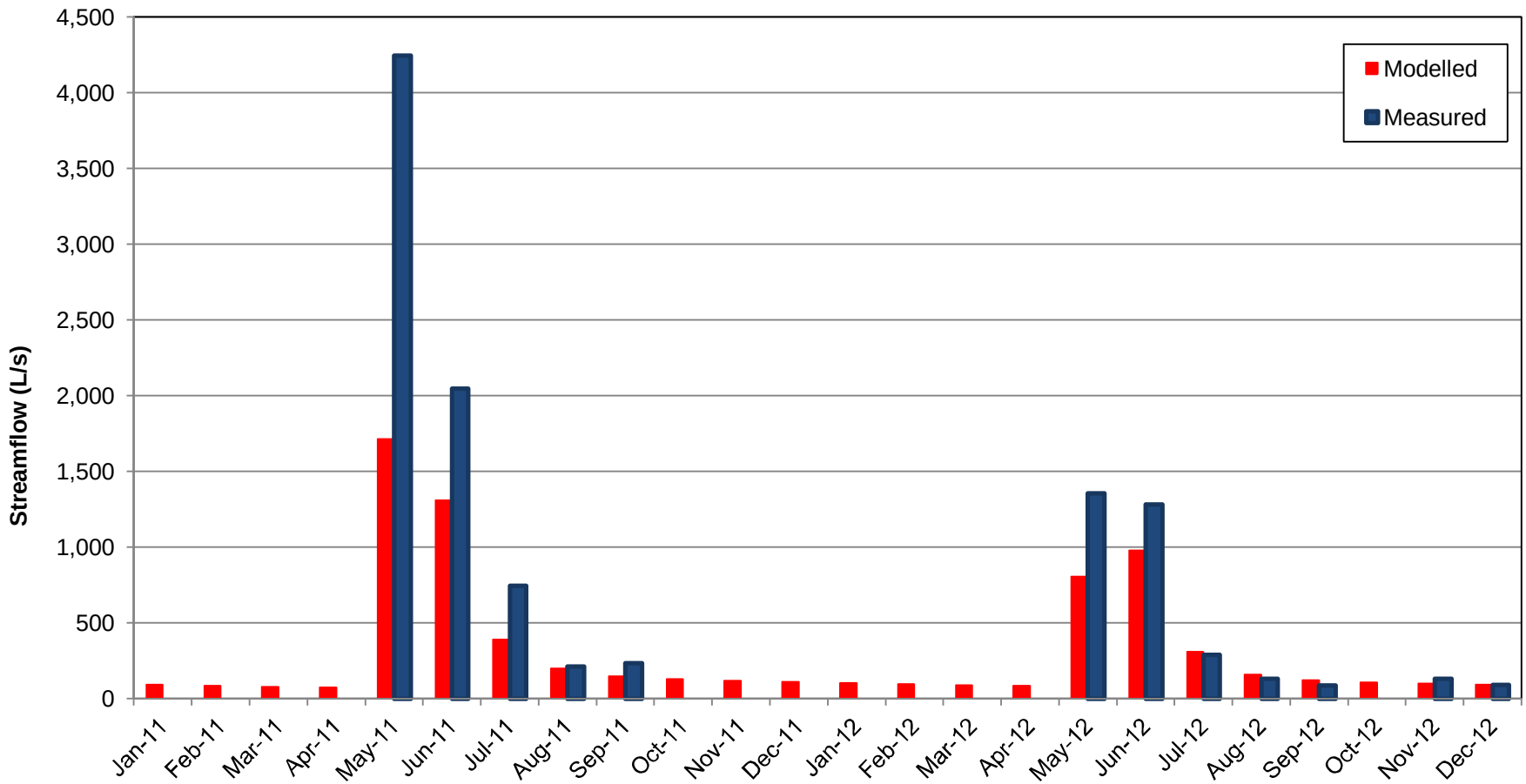
P/A NO. VA101-457/6

REF. NO. 6

FIGURE B.5

REV A

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
A	01OCT'13	ISSUED WITH REPORT	CAS	RS	KJB



NEW GOLD INC.

BLACKWATER GOLD PROJECT

MODELLED VERSUS MEASURED H2 STREAMFLOWS

Knight Piésold CONSULTING

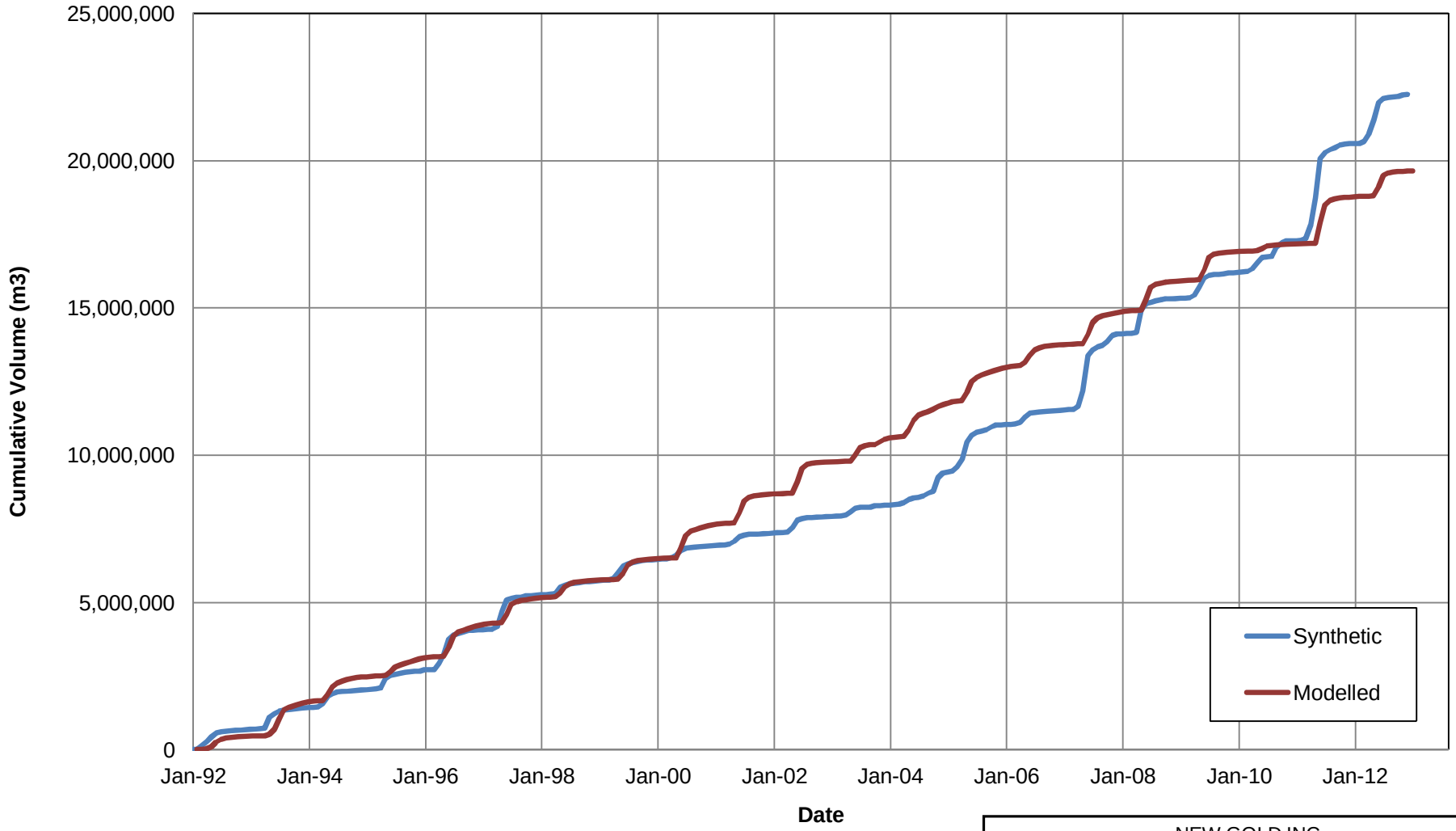
P/A NO. VA101-457/6

REF. NO. 6

FIGURE B.6

REV A

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
A	01OCT'13	ISSUED WITH REPORT	CAS	RS	KJB



NOTES:
1. SYNTHETIC DATA REPRESENTS THE LONG-TERM STREAMFLOW RECORD PRESENTED IN THE BLACKWATER GOLD PROJECT HYDROMETEOROLOGY REPORT (KPL, 2013B).

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
A	01OCT'13	ISSUED WITH REPORT	CAS	RS	KJB

NEW GOLD INC.

BLACKWATER GOLD PROJECT

MODELLED VERSUS SYNTHETIC H1 CUMULATIVE STREAMFLOWS

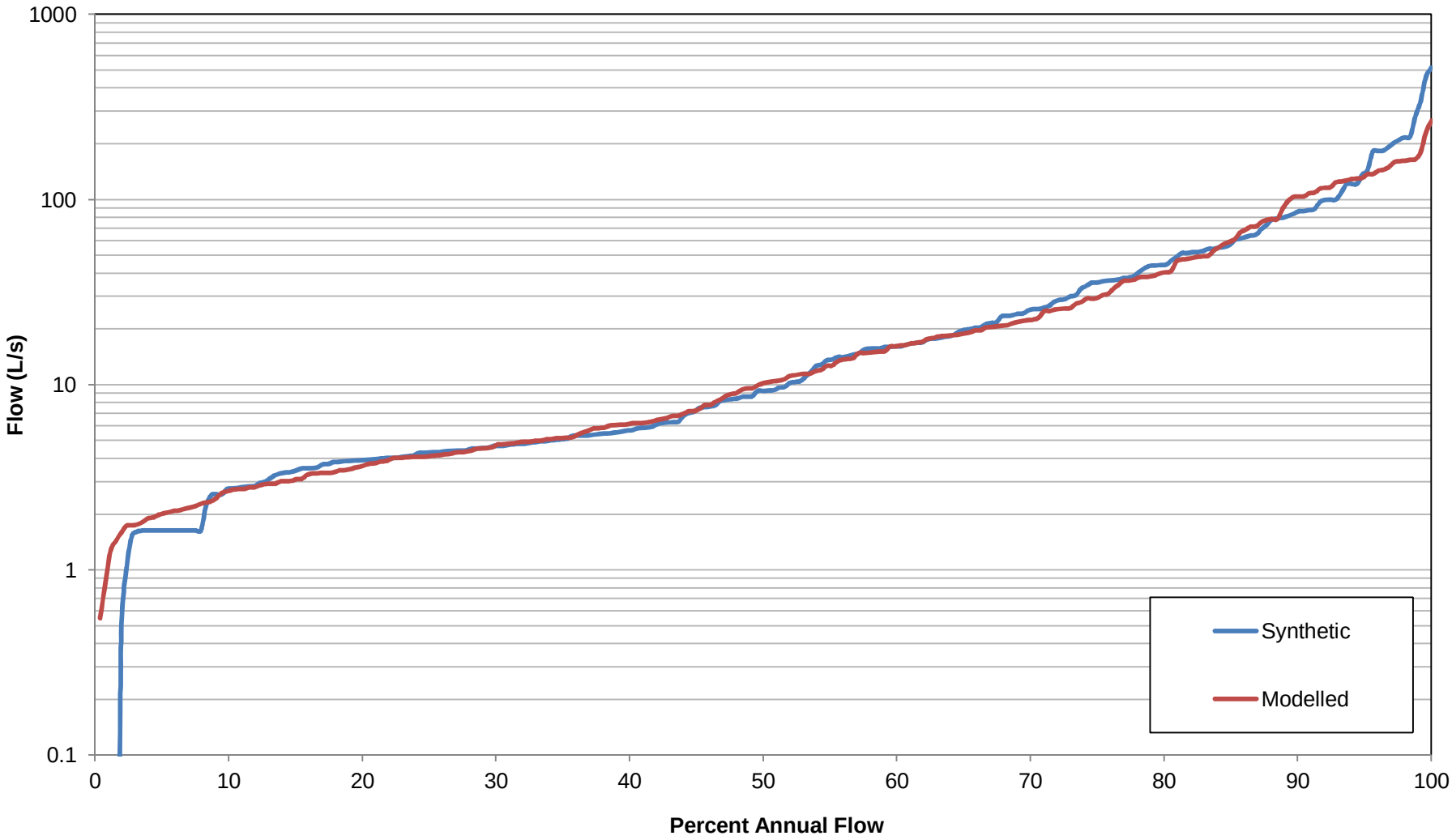
Knight Piésold CONSULTING

P/A NO. VA101-457/6

REF. NO. 6

FIGURE B.7

REV A



NOTES:
1. SYNTHETIC DATA REPRESENTS THE LONG-TERM STREAMFLOW RECORD PRESENTED IN THE BLACKWATER GOLD PROJECT HYDROMETEOROLOGY REPORT (KPL, 2013B).

NEW GOLD INC.

BLACKWATER GOLD PROJECT

MODELLED VERSUS SYNTHETIC H1 FLOW DISTRIBUTION

Knight Piésold CONSULTING

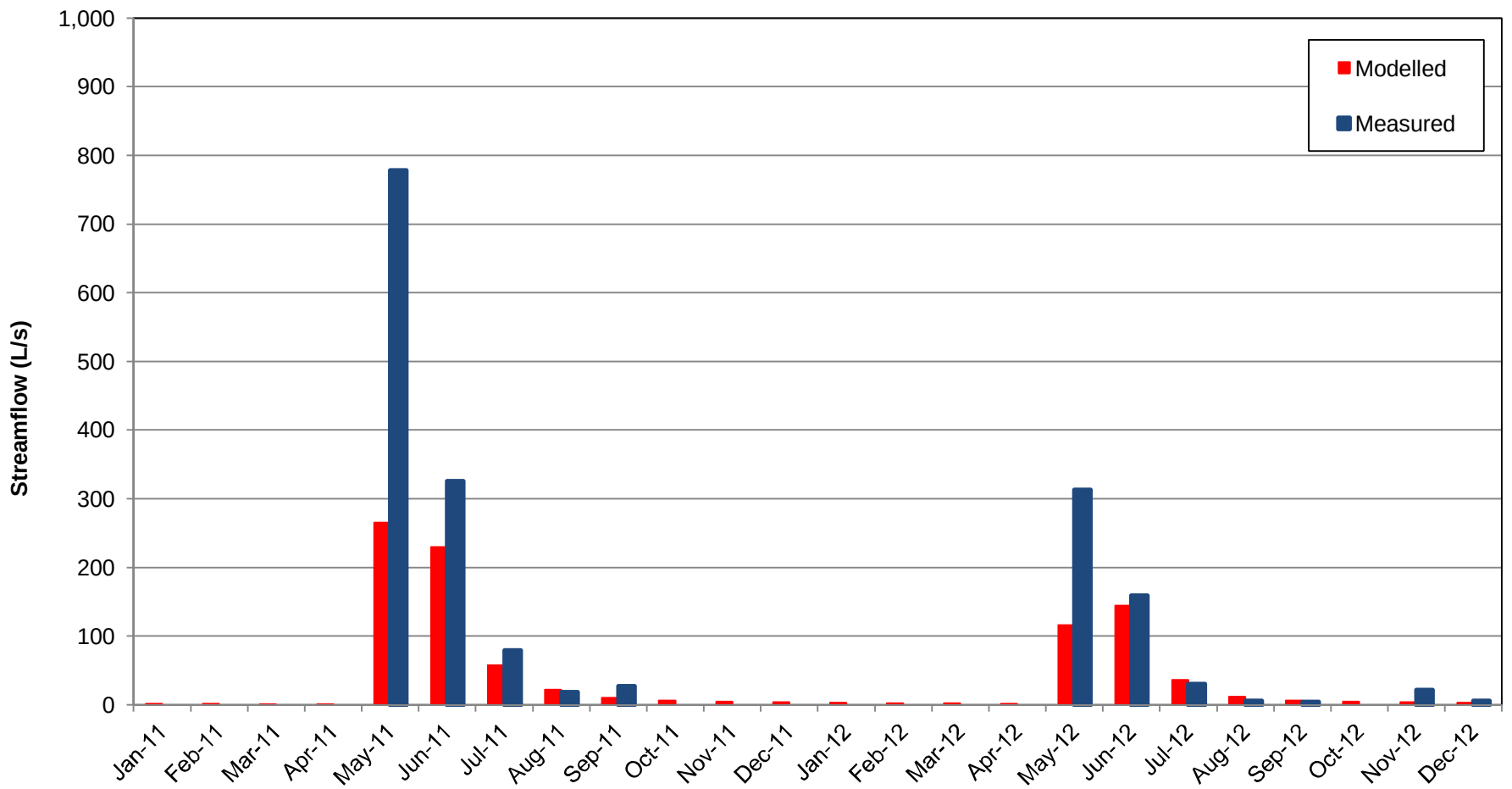
P/A NO. VA101-457/6

REF. NO. 6

FIGURE B.8

REV A

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
A	01OCT'13	ISSUED WITH REPORT	CAS	RS	KJB



REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
A	01OCT'13	ISSUED WITH REPORT	CAS	RS	KJB

NEW GOLD INC.

BLACKWATER GOLD PROJECT

MODELLED VERSUS MEASURED H1 STREAMFLOWS

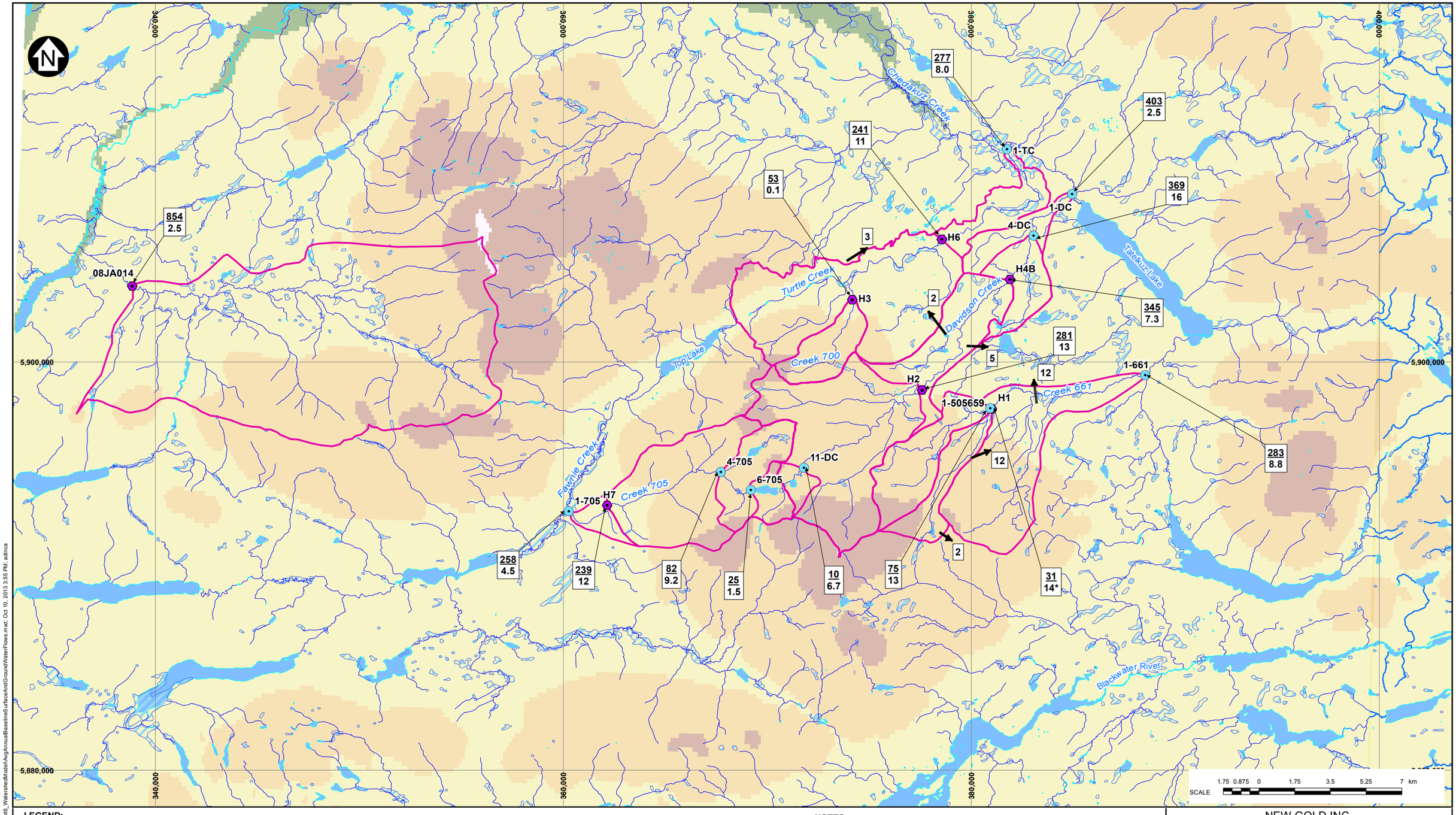
Knight Piésold CONSULTING

P/A NO. VA101-457/6

REF. NO. 6

FIGURE B.9

REV A



LEGEND:

- HYDROLOGY STATION/WATERSHED MODEL NODE
- WATERSHED MODEL NODE
- RIVER
- 200 SURFACE WATER FLOW (l/s) / 1.5 GROUNDWATER FLOW (l/s)
- GROUNDWATER FLOW ACROSS SUB-CATCHMENT BOUNDARY (l/s)
- GROUNDWATER FLOW IS NOT LIMITED TO THE AREA IMMEDIATELY BENEATH THE GAUGING STATION
- CATCHMENT BOUNDARY
- LAKE
- WETLAND

ELEVATION BAND (M)

- < 915
- 915-1220
- 1220-1525
- 1525-1830
- > 1830

NOTES:

1. BASE MAP: CANADA DEM GEOBASE.
2. COORDINATE GRID IS IN METRES.
   COORDINATE SYSTEM: NAD 1983 UTM ZONE 10N.
3. THIS FIGURE IS PRODUCED AT A NOMINAL SCALE OF 1:175,000 FOR 11x17 (TABLOID) PAPER. ACTUAL SCALE MAY DIFFER ACCORDING TO CHANGES IN PRINTER SETTINGS OR PRINTED PAPER SIZE.
4. GROUNDWATER FLOWS ARE REPORTED TO 2 SIGNIFICANT FIGURES.

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	10OCT'13	ISSUED WITH REPORT	DMW	AMD	CAS	KJB

NEW GOLD INC.

BLACKWATER GOLD PROJECT

AVERAGE ANNUAL BASELINE SURFACE WATER AND GROUNDWATER FLOWS

Knight Piésold CONSULTING

P/A NO. VA101-457/6 | REF NO. 6

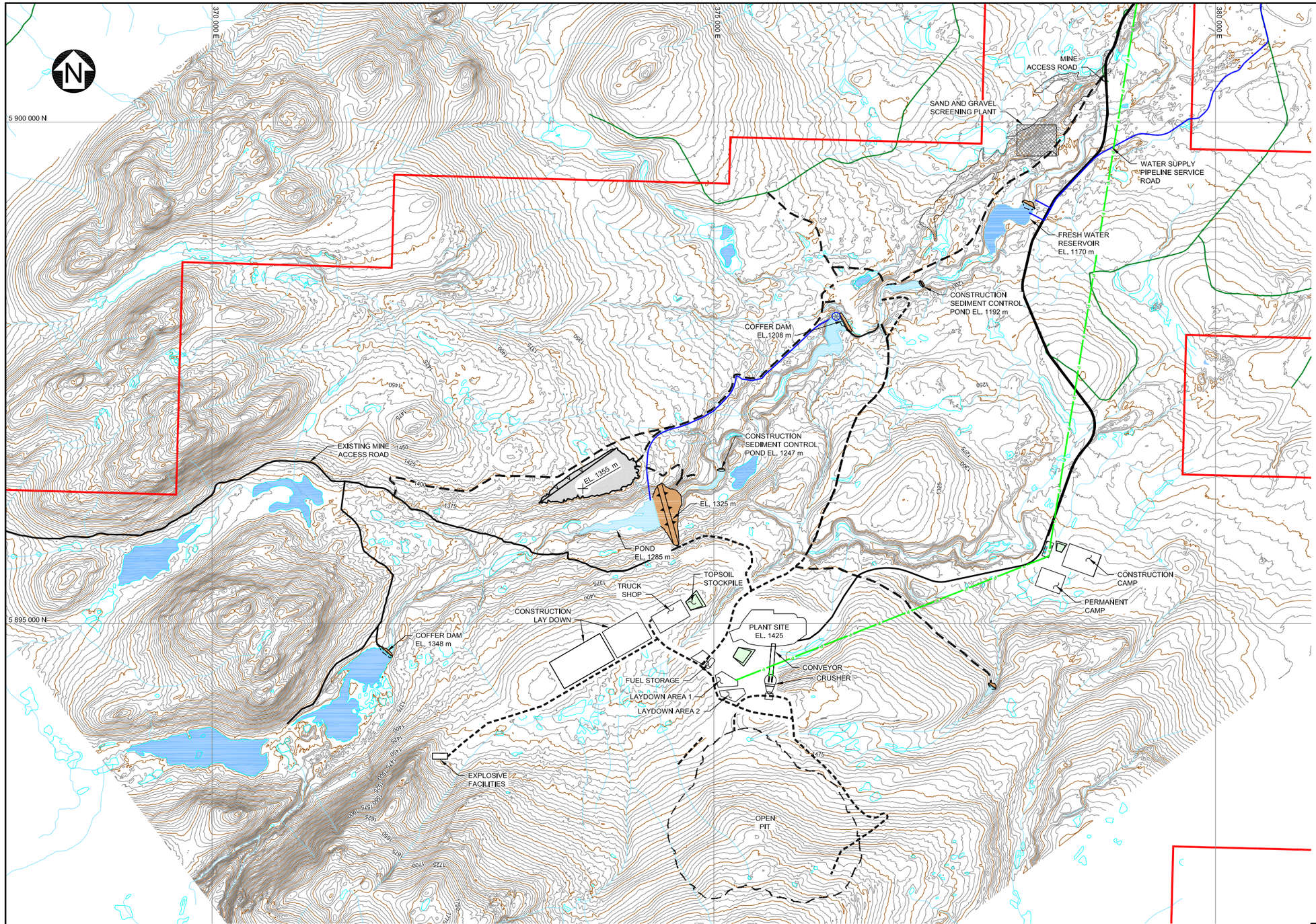
FIGURE B.10 | REV 0

SAVED: M:\101\100\457\06\AGIS\Figs\Report6_WatershedModel\AvgAnnualBaselineSurfaceAndGroundWaterFlows.mxd; Oct 10, 2013 3:55 PM; adinca

APPENDIX C

GENERAL ARRANGEMENTS

(Pages C-1 to C-4)



LEGEND:

- POND
- EMBANKMENT FILL
- TOPSOIL
- BORROW AREA (ZONES S, C, AND ROCKFILL)
- PUMPSTATION
- CONSTRUCTION HAUL ROAD
- MINE HAUL ROAD
- MINE ACCESS ROAD
- PIPELINE SERVICE ROAD
- TRANSMISSION LINE
- NEW GOLD PROPERTY BOUNDARY

NOTES:

1. CONTOUR INTERVAL IS 5 METRES.
2. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

SCALE A 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	04NOV'13	ISSUED WITH REPORT	DDF	AN	CAS	KJB

NEW GOLD INC

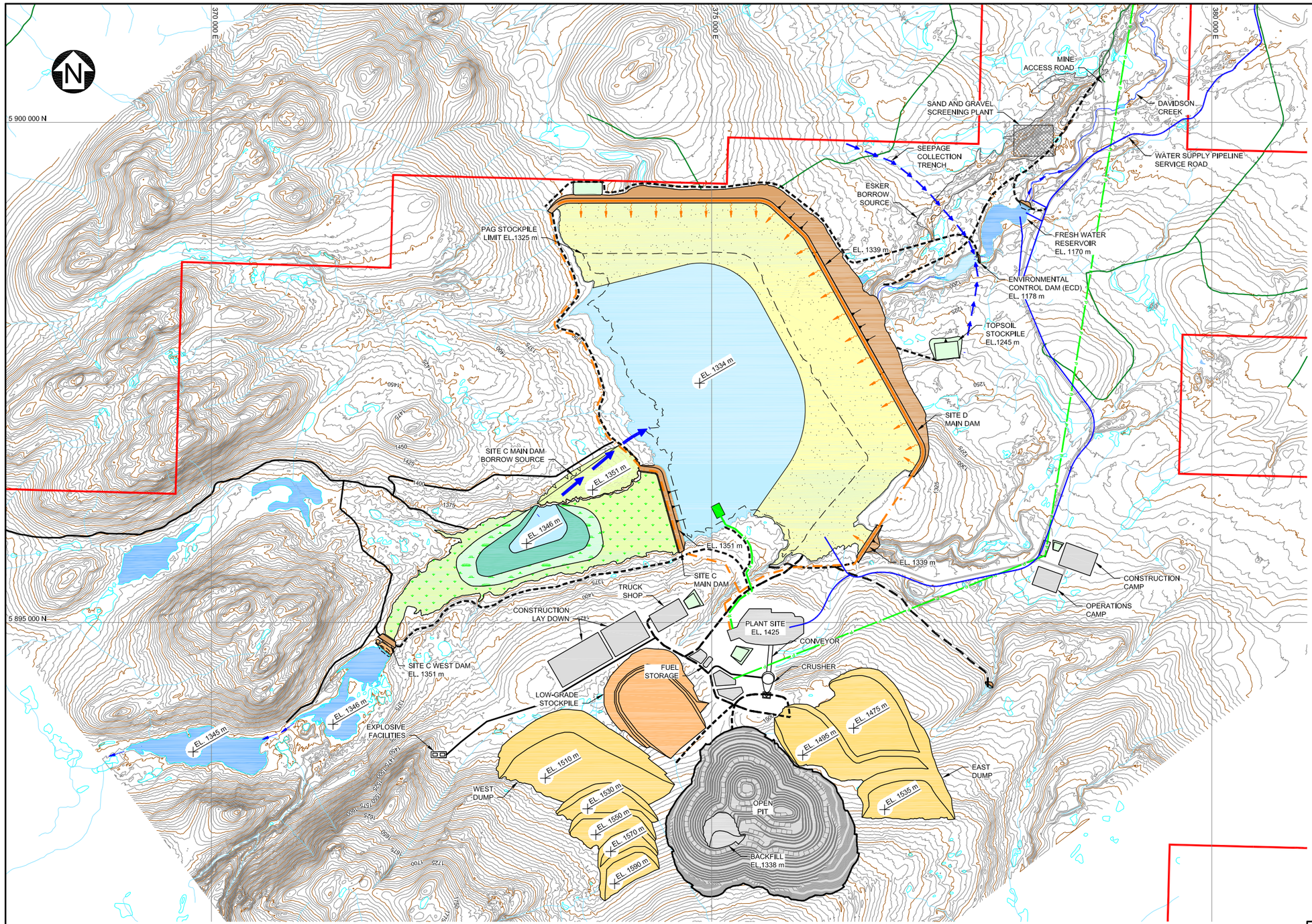
BLACKWATER GOLD PROJECT

GENERAL ARRANGEMENT CONSTRUCTION (END OF YEAR -2) PLAN

Knight Piésold CONSULTING

P/A NO. VA101-457/6 | REF NO. 6

FIGURE C.1 | REV 0



LEGEND:

- UPLAND BEACH
- BOG / WETLAND AREA
- EMERGENT VEGETATION WETLAND
- UPLAND SLOPE
- TAILINGS BEACH
- POND
- EMBANKMENT FILL
- PAG WASTE ROCK
- NAG WASTE ROCK / OVERBURDEN
- LOW-GRADE ORE
- TOPSOIL
- RECLAIM SYSTEM
- WATER SUPPLY PUMPSTATION
- CONSTRUCTION HAUL ROAD
- MINE HAUL ROAD
- MINE ACCESS ROAD
- PIPELINE SERVICE ROAD
- FRESH WATER FLOW DIRECTION
- WATER RECLAIM PIPELINE
- NEW GOLD PROPERTY BOUNDARY
- TRANSMISSION LINE
- SPILLWAY
- SEEPAGE COLLECTION TRENCH
- TAILINGS PIPELINE
- TAILINGS DEPOSITION

NOTES:

1. CONTOUR INTERVAL IS 5 METRES.
2. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

SCALE A: 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	04NOV'13	ISSUED WITH REPORT	DDF	AN	CAS	KJB

NEW GOLD INC

BLACKWATER GOLD PROJECT

GENERAL ARRANGEMENT
END OF MINE (YEAR 17)
PLAN

Knight Piésold CONSULTING

P/A NO. VA101-457/6 | REF NO. 6

FIGURE C.2 | REV 0

370 000 E
375 000 E
380 000 E
5 900 000 N
5 895 000 N

MINE ACCESS ROAD
CONTINGENCY WETLAND AREA
WATER SUPPLY PIPELINE SERVICE ROAD
EXPOSED TAILINGS BEACH COVERED WITH 1m OF OVERBURDEN
PAG STOCKPILE LIMIT
FRESH WATER RESERVOIR EL. 1170 m
ENVIRONMENTAL CONTROL DAM (ECD) EL. 1178 m
OVERFLOW SPILLWAY
EL. 1351 m
EL. 1346 m
EMERGENCY SPILLWAY CONSTRUCTED BUT NOT OPERATIONAL
PIT INFLOW DEFLECTION BERM
PLANT SITE
LOW-GRADE STOCKPILE
EL. 1510 m
EL. 1530 m
EL. 1550 m
EL. 1570 m
EL. 1590 m
WEST DUMP
EL. 1475 m
EL. 1495 m
EL. 1535 m
EAST DUMP
PIT LAKE EL. 1255 m

LEGEND:

- UPLAND BEACH
- UPLAND SLOPE
- BOG / WETLAND AREA
- EMERGENT VEGETATION WETLAND
- POND
- ROCK SLOPES
- RECLAIM SYSTEM
- MINE ACCESS ROAD
- PIPELINE SERVICE ROAD
- WATER RECLAIM PIPELINE
- TRANSMISSION LINE
- DIVERSION CHANNEL
- SEEPAGE COLLECTION TRENCH
- SPILLWAY

NOTES:

1. CONTOUR INTERVAL IS 5 METRES.
2. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

SCALE A 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	04NOV'13	ISSUED WITH REPORT	DDF	AN	CAS	KJB

NEW GOLD INC

BLACKWATER GOLD PROJECT

GENERAL ARRANGEMENT CLOSURE (END OF YEAR 20) PLAN

Knight Piésold CONSULTING

P/A NO. VA101-457/6 | REF NO. 6

FIGURE C.3 | REV 0

370 000 E
375 000 E
380 000 E
5 900 000 N
5 895 000 N
MINE ACCESS ROAD
CONTINGENCY WETLAND AREA
EXPOSED TAILINGS BEACH COVERED WITH 1m OF OVERBURDEN
PLUNGE POOL
PAG STOCKPILE LIMIT
DOWNSTREAM WETLAND AREA
OUTLET CHANNEL TO DAVIDSON CREEK
OVERFLOW SPILLWAY
EL. 1351 m
EL. 1346 m
SPILLWAY
PIT INFLOW DEFLECTION BERM
PLANT SITE
LOW-GRADE STOCKPILE
EL. 1510 m
EL. 1530 m
EL. 1550 m
EL. 1570 m
EL. 1590 m
WEST DUMP
OUTLET CHANNEL TO TSF
PIT LAKE
EL. 1495 m
EL. 1475 m
EL. 1535 m
EAST DUMP

LEGEND:

- UPLAND BEACH
- UPLAND SLOPE
- BOG / WETLAND AREA
- EMERGENT VEGETATION WETLAND
- POND
- ROCK SLOPES
- MINE ACCESS ROAD
- DIVERSION CHANNEL
- SEEPAGE COLLECTION TRENCH
- SPILLWAY

NOTES:

1. CONTOUR INTERVAL IS 5 METRES.
2. DIMENSIONS ARE IN MILLIMETRES AND ELEVATIONS ARE IN METRES, UNLESS NOTED OTHERWISE.

SCALE A 400 200 0 400 800 1200 1600 2000 m

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D
0	04NOV'13	ISSUED WITH REPORT	DDF	AN	CAS	KJB

NEW GOLD INC

BLACKWATER GOLD PROJECT

GENERAL ARRANGEMENT POST CLOSURE PLAN

Knight Piésold CONSULTING

P/A NO. VA101-457/6 | REF NO. 6

FIGURE C.4 | REV 0

SAVED: M:\1\01\00457\06\A\Acad\FIGS\B87_r0_ 11/4/2013 32832 PM - WLAHODA PRINTED: 11/4/2013 32832 PM - WLAHODA
XREF FILES: IMAGE FILES:

APPENDIX D

PREDICTED BASELINE STREAMFLOWS

(Pages D-1 to D-6)

Knight Piésold CONSULTING

TABLE D.1

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED AVERAGE MONTHLY STREAMFLOWS - BASELINE CONDITIONS

Print Oct/11/13 14:09:53

	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Van Tyne	Chedakuz	
	H3	**H6**	**1-TC**	**11-DC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**WSC**	**H5**	**15-CC**
January	6	112	143	0	133	168	174	203	6	12	97	2	5	27	41	153	1434	954
February	4	99	128	0	123	152	156	185	4	9	85	1	2	17	30	110	1416	942
March	4	102	130	0	115	145	155	184	3	8	82	1	1	16	31	165	1609	1071
April	52	325	368	8	204	297	362	404	20	60	293	18	74	252	282	1215	3047	2027
May	226	710	764	49	816	964	1053	1104	117	289	934	130	437	1181	1218	3533	6464	4301
June	185	550	596	46	834	949	991	1033	122	275	852	75	238	670	694	2244	5880	3913
July	49	225	263	11	318	391	406	441	38	89	307	29	85	222	239	766	2721	1811
August	21	159	194	3	191	246	254	286	16	36	162	12	33	100	114	385	1607	1070
September	18	143	176	1	163	210	216	247	11	26	134	9	23	80	94	330	1688	1123
October	31	168	201	2	166	215	229	260	11	37	169	12	38	131	146	548	1662	1106
November	27	165	199	2	160	210	227	258	11	34	164	10	33	116	132	517	2015	1341
December	10	126	158	0	141	183	192	223	8	17	114	4	11	46	61	237	1602	1066
Annual Average	53	241	277	10	281	345	369	403	31	75	283	25	82	239	258	854	2595	1727

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\D Baseline results\[Tables D-1 to D-5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES ARE AVERAGE MONTHLY STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT 101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE D.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - BASELINE CONDITIONS

Print Oct/11/13 16:02:32

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Van Tyne	Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	WSC	H5	15-CC
Jan/1998	8	130	161	0	141	182	188	218	5	17	112	3	6	39	53	207	1344	895
Feb/1998	6	118	148	0	132	167	173	202	4	13	102	2	2	27	40	167	1324	881
Mar/1998	6	116	146	0	124	161	167	196	4	12	98	1	1	25	40	189	1582	1053
Apr/1998	129	573	620	22	378	514	592	639	48	154	610	41	172	559	594	2038	1657	1103
May/1998	179	685	739	34	580	746	839	891	76	242	801	85	274	786	825	2801	4754	3164
Jun/1998	68	262	303	15	390	472	497	534	40	123	343	58	152	362	383	1180	2325	1547
Jul/1998	21	162	199	3	221	277	288	321	20	44	176	17	46	120	136	420	2097	1396
Aug/1998	11	132	167	1	174	217	224	255	11	23	127	7	16	58	72	238	1017	677
Sep/1998	8	115	147	0	156	190	195	225	6	16	106	4	6	35	49	165	892	593
Oct/1998	7	105	135	0	146	174	178	207	5	14	96	3	5	31	44	151	1358	904
Nov/1998	8	97	125	0	137	161	165	193	4	12	90	2	4	28	41	154	1623	1080
Dec/1998	6	87	113	0	127	147	151	177	3	9	81	1	1	19	32	125	1507	1003
Jan/1999	4	76	101	0	118	134	136	162	3	7	72	1	1	13	24	91	1478	984
Feb/1999	3	67	91	0	110	122	124	149	2	4	65	0	0	8	19	67	1508	1003
Mar/1999	3	62	85	0	102	114	115	140	2	3	59	0	0	5	17	73	1621	1079
Apr/1999	56	310	342	4	117	198	262	299	3	59	278	15	57	222	251	1245	2207	1468
May/1999	207	591	629	37	593	714	792	834	77	250	830	103	368	998	1031	3038	4136	2752
Jun/1999	202	447	482	43	727	811	831	865	103	273	794	89	288	813	831	2601	5131	3414
Jul/1999	61	215	249	12	317	381	390	421	39	104	305	45	124	302	317	976	2288	1522
Aug/1999	17	144	176	2	204	255	260	289	20	36	155	13	34	95	108	323	1734	1154
Sep/1999	9	122	151	0	172	213	217	245	12	19	114	5	12	47	60	187	1479	984
Oct/1999	6	107	134	0	156	189	192	219	7	13	95	3	4	28	41	131	1521	1012
Nov/1999	4	95	121	0	144	172	174	200	5	10	84	1	1	19	31	104	1756	1168
Dec/1999	3	85	110	0	134	157	158	184	4	8	76	1	1	13	24	85	1647	1096
Jan/2000	2	75	98	0	124	142	143	168	3	5	67	0	0	7	18	62	1424	947
Feb/2000	2	66	88	0	115	129	130	154	3	3	60	0	0	3	14	45	1417	943
Mar/2000	1	61	82	0	107	120	120	144	2	2	54	0	0	1	12	53	1378	917
Apr/2000	7	153	180	0	102	156	209	239	2	4	101	0	0	29	54	714	1930	1284
May/2000	231	643	677	51	856	954	1028	1063	125	274	900	150	512	1351	1381	3774	2566	1708
Jun/2000	273	688	726	67	1095	1200	1240	1274	164	389	1170	94	316	926	946	3291	3662	2437
Jul/2000	94	301	339	20	417	516	542	576	53	150	467	48	151	408	426	1479	2191	1458
Aug/2000	41	210	247	4	226	311	323	356	25	54	215	22	68	187	204	705	1206	803
Sep/2000	34	190	225	1	186	260	269	301	18	35	163	16	50	148	164	579	1102	733
Oct/2000	42	205	241	0	179	256	283	316	17	45	208	16	54	183	201	825	1209	804
Nov/2000	43	222	262	0	177	265	301	337	16	49	225	16	54	190	210	909	1682	1119
Dec/2000	16	186	226	0	164	245	264	299	11	29	158	7	20	81	100	412	1397	930
Jan/2001	9	162	199	0	153	218	229	263	7	21	130	4	8	47	64	256	1322	880
Feb/2001	6	144	178	0	142	195	204	237	5	17	114	2	3	30	46	183	1283	854
Mar/2001	6	135	169	0	133	181	190	222	5	14	107	2	2	26	42	177	1295	862
Apr/2001	9	290	342	0	127	242	325	375	4	16	170	1	1	51	88	897	1624	1081
May/2001	226	682	741	49	851	1002	1099	1155	124	274	919	144	502	1318	1359	3387	2622	1745
Jun/2001	237	591	635	60	1032	1135	1163	1203	159	338	1046	83	268	777	799	2686	3638	2421
Jul/2001	52	255	296	13	359	437	450	486	46	98	346	34	91	228	245	789	2001	1331
Aug/2001	16	182	219	2	203	264	273	307	18	38	176	10	26	85	101	323	1277	850
Sep/2001	9	156	191	0	163	213	220	252	9	23	130	5	9	48	63	208	952	634
Oct/2001	9	146	179	0	150	194	201	232	6	19	116	3	7	43	57	246	957	637
Nov/2001	9	139	171	0	141	182	189	220	5	17	110	3	6	40	54	273	1330	885
Dec/2001	7	124	155	0	130	165	171	201	4	14	99	2	2	27	41	197	1331	886
Jan/2002	5	109	139	0	121	148	154	182	3	11	88	1	1	19	32	141	1292	860
Feb/2002	4	97	125	0	112	134	139	166	3	8	79	0	0	12	25	104	1328	884
Mar/2002	3	86	112	0	104	122	126	152	2	6	70	0	0	7	19	76	1267	843
Apr/2002	4	92	118	0	98	123	137	164	2	5	70	0	0	11	24	200	1588	1057
May/2002	287	933	988	60	902	1077	1175	1227	143	342	1125	154	569	1602	1640	4980	3549	2362
Jun/2002	248	990	1054	62	1095	1311	1419	1478	180	372	1320	88	282	807	851	2816	5853	3895
Jul/2002	52	268	310	13	361	453	481	520	47	106	378	40	101	234	255	764	2058	1370
Aug/2002	15	144	181	3	192	248	258	292	15	34	154	11	27	79	95	294	1113	741
Sep/2002	8	116	150	1	151	192	198	230	6	18	100	4	9	41	55	185	1042	693
Oct/2002	8	107	139	0	137	173	178	208	5	14	88	3	6	36	50	191	1041	693
Nov/2002	9	105	137	0	129	164	170	200	4	12	85	3	5	36	49	240	1290	858
Dec/2002	7	98	129	0	119	153	158	187	3	10	78	2	2	26	39	221	1276	849
Jan/2003	5	86	115	0	111	137	141	170	3	7	69	1	1	17	31	161	1249	831
Feb/2003	4	76	103	0	103	124	128	155	2	5	62	0	0	11	24	119	1208	804
Mar/2003	3	67	93	0	95	112	115	142	2	3	55	0	0	6	19	88	1296	862
Apr/2003	19	305	362	0	94	203	292	344	2	18	183	1	3	78	116	1057	1670	1112
May/2003	168	546	611	35	617	767	873	932	79	211	706	103	332	872	915	2753	2875	1913
Jun/2003	176	372	411	42	742	822	846	883	98	242	708	66	227	675	695	2096	3316	2207
Jul/2003	33	168	202	9	259	313	321	352	25	63	225	18	57	154	169	494	1667	1109
Aug/2003	10	125	156	2	148	190	193	223	9	22	114	7	16	54	66	211	984	655
Sep/2003	36	148	178	2	137	176	179	207	6	39	124	18	51	150	162	591	944	628
Oct/2003	121	429	465	14	275	368	422	455	29	138	453	49	171	514	541	1957	1274	848
Nov/2003	106	452	492	15	308	422	487	523	36	137	505	43	155	471	501	1758	1598	1063
Dec/2003	23	187	224	3	188	258	275	308	17	43	200	13	41	120	137	426	1419	944
Jan/2004	9	135	169	1	153	205	211	243	9	21	123	5	12	47	62	187	1284	855
Feb/2004	6	115	148	0	139	179	183	213	6	14	99	2	3	26	39	122	1253	834
Mar/2004	12	133	167	0	132	184	214	245	6	14	109	3	5	46	64	434	1402	933
Apr/2004	171	589	631	31	522	648	727	763	78	196	735	65	290	870	901	2581	2048	1363
May/2004	235	711	758	51	843	991	1055	1094	127	317	985	105	326	917	947	3107	2736	1820
Jun/2004	90	308	352	24	544	640	660	698	69	167	439	72	191	461	481	1435	1990	1324
Jul/2004	23	190	232	5	258	331	341	377	29	53	210	20	52	132	149	423	1749	1164
Aug/2004	16	166	205	1	194	253	260	295	19	29	155	10	25	79	94	331	1557	1036
Sep/2004	71	249	289	8	246	314	337	372	26	86	313	32	102	307	324	1167	2675	1780
Oct/2004	103	313	358	11	275	364	410	448	33	120	422	43	147	447	467	1709	1925	1281
Nov/2004	54	262	309	4	225	322	360	400	27	68	293	23	78	246	268	1025	4666	3105
Dec/2004	18	213	259	1	200	286	304	344	21	36	194	9	28	100	119	444	2748	1829
Jan/2005	10	184	227	0	183	253	265	303	15	25	156	5	12	56	74	272	2112	1405
Feb/2005	7	164	204	0	171	227	238	274	11	20	135	3	5	36	54	195	2052	1365
Mar/2005	10	159	198	0	162	215	226	261	8	19	128	3	6	40	57	224	2699	1796
Apr/2005	204	752	799	39	686	838	910	958	108	244	906	95	395	1152	1186	3431	5106	3398
May/2005	230	841	892	50	838	1016	1101	1152	137	317	1100	88	275	780	818	2652	8927	5941
Jun/2005	53	280	326	13	365	454	480	521	48	111	375	48	117	268	290	812	5238	3486

Knight Piésold CONSULTING

TABLE D.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - BASELINE CONDITIONS

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Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Van Tyne	Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	WSC	H5	15-CC
Jul/2005	47	222	267	6	258	326	341	379	30	70	236	29	83	223	241	821	2482	1652
Aug/2005	45	208	251	4	235	295	306	343	26	60	206	24	73	207	224	794	1683	1120
Sep/2005	15	160	200	1	212	260	270	305	19	33	158	9	25	81	97	306	1568	1044
Oct/2005	55	229	270	5	219	278	309	346	20	69	278	21	71	235	254	975	2512	1672
Nov/2005	61	254	298	6	224	297	335	373	22	78	311	23	82	265	286	1117	2315	1541
Dec/2005	17	181	224	1	204	269	287	324	16	35	180	8	24	84	103	381	1859	1237
Jan/2006	8	153	193	0	189	241	253	289	11	22	137	4	7	40	57	209	1575	1048
Feb/2006	5	136	173	0	176	219	228	262	7	17	116	2	2	25	41	146	1392	926
Mar/2006	4	123	159	0	164	200	209	242	5	14	104	1	1	18	33	119	1385	921
Apr/2006	109	555	614	17	347	485	572	626	38	134	553	34	133	453	491	1822	1903	1266
May/2006	195	709	775	39	694	867	969	1030	89	268	853	100	313	882	925	3019	3900	2595
Jun/2006	105	313	359	27	599	683	711	752	71	178	480	69	207	519	540	1534	3402	2264
Jul/2006	22	175	216	6	283	340	352	388	29	53	210	18	51	127	143	392	1732	1153
Aug/2006	9	141	178	1	205	248	256	290	16	23	139	6	13	47	62	180	1099	732
Sep/2006	5	123	158	0	179	214	220	252	10	15	113	2	3	25	39	118	921	613
Oct/2006	4	111	145	0	164	194	199	230	6	11	99	1	1	17	31	107	1071	713
Nov/2006	3	101	133	0	152	178	183	213	5	9	90	0	1	12	25	100	1633	1086
Dec/2006	2	89	119	0	141	162	166	195	4	6	80	0	0	7	20	73	1530	1018
Jan/2007	2	79	107	0	131	147	150	178	4	4	72	0	0	3	15	53	1528	1017
Feb/2007	1	70	97	0	122	135	137	164	3	2	64	0	0	0	12	38	1513	1007
Mar/2007	1	64	89	0	113	125	126	153	2	1	58	0	0	0	11	41	1697	1129
Apr/2007	4	246	296	0	106	199	281	329	2	3	133	0	0	28	62	773	3058	2035
May/2007	207	638	697	48	821	959	1058	1114	116	257	861	142	477	1238	1279	3445	8524	5672
Jun/2007	281	613	655	68	1108	1208	1243	1281	161	385	1137	98	329	963	984	3407	15880	10567
Jul/2007	106	305	344	24	472	560	583	618	59	165	507	53	168	458	474	1613	4407	2933
Aug/2007	24	185	221	5	226	295	305	338	22	47	201	14	43	120	136	428	2680	1784
Sep/2007	19	166	201	1	176	235	242	274	14	25	140	9	24	80	95	360	2042	1359
Oct/2007	49	207	243	0	175	241	260	292	15	46	201	18	60	197	212	852	3274	2179
Nov/2007	48	214	252	0	175	245	268	301	15	51	217	18	63	208	224	860	3133	2085
Dec/2007	16	168	204	0	162	222	233	266	10	26	146	8	23	82	98	349	2267	1508
Jan/2008	9	145	178	0	150	199	207	238	6	18	118	4	9	46	61	211	1907	1269
Feb/2008	6	128	159	0	140	179	185	215	5	14	104	2	3	29	43	150	1860	1238
Mar/2008	5	119	149	0	130	166	172	201	4	11	95	1	1	21	35	137	1829	1217
Apr/2008	6	114	143	0	123	157	163	192	4	10	91	1	1	22	36	153	1959	1303
May/2008	229	736	770	53	915	1035	1096	1132	131	300	949	162	525	1390	1419	4064	10711	7128
Jun/2008	228	805	845	61	1094	1243	1317	1357	165	349	1131	72	246	729	762	2530	4721	3142
Jul/2008	39	230	268	13	348	422	442	477	41	84	322	18	57	154	173	515	1847	1229
Aug/2008	17	146	181	2	187	239	248	280	14	29	149	9	23	69	85	323	1563	1040
Sep/2008	15	129	162	0	152	195	201	232	8	18	112	7	18	60	74	311	1394	928
Oct/2008	29	142	175	0	145	188	194	225	7	23	116	10	33	112	127	500	1400	932
Nov/2008	34	164	200	0	146	203	226	258	7	27	132	12	40	139	155	744	1880	1251
Dec/2008	16	149	186	0	138	197	224	257	6	21	125	6	18	78	95	500	1728	1150
Jan/2009	10	129	163	0	128	176	187	219	5	16	111	4	8	48	64	244	1575	1048
Feb/2009	7	114	146	0	119	158	165	196	4	13	100	2	3	32	47	165	1561	1038
Mar/2009	5	101	131	0	110	142	148	178	3	10	89	1	1	22	36	120	1587	1056
Apr/2009	8	280	336	0	104	213	298	350	3	11	164	1	1	49	86	853	2728	1815
May/2009	239	706	770	55	885	1035	1137	1196	130	284	950	156	534	1396	1439	3554	5788	3851
Jun/2009	232	573	615	61	1064	1158	1184	1223	162	344	1058	72	249	743	764	2530	6091	4053
Jul/2009	43	217	254	13	335	403	413	447	40	88	318	20	62	171	187	580	2716	1807
Aug/2009	13	150	184	3	171	224	230	262	13	30	150	7	16	59	74	236	1225	815
Sep/2009	7	127	159	1	131	174	178	208	7	16	108	3	5	31	44	149	1056	703
Oct/2009	5	112	142	0	116	150	154	183	5	11	91	2	2	20	33	106	1141	759
Nov/2009	3	99	127	0	107	134	137	165	4	8	80	1	1	13	25	77	1859	1237
Dec/2009	2	88	114	0	98	121	122	149	3	5	71	0	0	7	19	56	1552	1033
Jan/2010	2	78	102	0	91	108	110	136	3	3	63	0	0	3	14	40	1507	1003
Feb/2010	1	69	92	0	84	98	99	124	2	2	56	0	0	0	11	29	1514	1008
Mar/2010	3	186	219	0	79	148	212	250	2	3	103	0	0	16	45	661	1496	996
Apr/2010	52	276	315	4	96	194	273	316	3	44	204	14	58	199	233	1196	2546	1694
May/2010	120	261	295	19	320	383	401	434	26	139	338	60	190	516	534	1489	4596	3058
Jun/2010	86	214	245	18	372	421	426	456	35	126	305	57	163	415	428	1196	3878	2581
Jul/2010	21	134	163	4	182	221	222	250	11	39	149	16	42	113	126	373	1738	1156
Aug/2010	9	109	137	1	134	164	165	192	5	18	107	5	11	47	59	197	1043	694
Sep/2010	6	96	122	0	118	143	143	169	4	12	92	3	4	29	40	147	6154	4095
Oct/2010	8	91	115	0	114	135	135	160	3	11	88	4	6	35	46	175	3776	2513
Nov/2010	9	86	108	0	109	127	127	152	3	10	83	4	7	37	47	184	2353	1566
Dec/2010	7	75	96	0	101	115	115	139	2	8	74	2	2	24	34	135	1747	1163
Jan/2011	5	65	85	0	93	105	105	127	2	5	66	1	1	16	26	98	957	637
Feb/2011	4	57	76	0	87	96	96	117	1	3	58	1	1	10	20	72	1016	676
Mar/2011	3	50	68	0	80	87	87	108	1	2	52	0	0	6	15	53	1799	1197
Apr/2011	3	63	84	0	75	96	116	139	1	1	55	0	0	10	24	302	12192	8113
May/2011	436	1317	1404	111	1714	1962	2105	2175	266	600	1831	258	883	2421	2473	7587	22585	15028
Jun/2011	275	1291	1392	74	1308	1613	1763	1844	229	414	1531	84	288	854	912	2995	15395	10245
Jul/2011	82	339	386	18	391	514	549	592	58	131	470	37	121	328	352	1204	8344	5552
Aug/2011	54	204	242	6	201	282	294	328	22	71	248	27	84	238	255	925	3740	2488
Sep/2011	15	137	172	1	150	210	215	246	10	26	135	9	24	76	91	305	1588	1056
Oct/2011	8	116	148	0	132	179	183	213	6	15	103	4	8	38	52	177	1292	859
Nov/2011	5	101	132	0	121	159	161	190	5	10	89	2	2	23	37	122	1556	1035
Dec/2011	4	90	118	0	112	142	144	172	4	7	79	1	1	15	28	89	949	632
Jan/2012	3	79	106	0	103	128	129	155	3	5	70	0	0	9	21	64	957	637
Feb/2012	2	70	95	0	96	115	116	141	3	3	62	0	0	5	17	47	1017	677
Mar/2012	1	62	85	0	89	104	104	129	2	1	55	0	0	2	13	34	1799	1197
Apr/2012	7	282	339	0	84	193	282	334	2	4	149	0	0	42	80	969	3487	2320
May/2012	207	645	712	48	805	958	1065	1125	116	257	863	144	479	1242	1286	3344	8684	5779
Jun/2012	227	505	542	58	980	1066	1089	1125	145	316	945	74	247	730	749	2548	7674	5107
Jul/2012	46	196	228	12	311	372	378	408	36	81	285	24	69	184	198	653	3502	2330
Aug/2012	15	134	164	2	160	206	208	237	12	28	133	8	21	68	81	268	2190	1457
Sep/2012	8	113	141	0	123	160	161	188	6	15	96	4	7	37	49	170	1504	1001
Oct/2012	6	99	125	0	109	139	139	165	5	10	81	2	2	23	35	121	1178	784
Nov/2012	4	87	112	0	100	124	124	149	4	7	71	1	1	15	26	88	1558	1037
Dec/2012	3	77	100	0	92	111	111	136	3	5	63	0	0	9	20	64	1080	719

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\D Baseline results\[Tables D-1 to D-5.xlsx]Table 4

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED STREAMFLOW VALUES WERE OBTAINED FROM THE BASELINE WATERSHED MODEL AND REPRESENT MONTHLY MEAN STREAMFLOWS FROM 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREPD	CHKD	APP'D
0	09SEP13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE D.3

NEW GOLD INC.
BLACKWATER GOLD PROJECT

DRY RETURN PERIOD FLOWS - BASELINE CONDITIONS

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Dry Return Period Flows (L/s)																		
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	WSC	H5	15-CC
January																		
1 in 50 year	1.4	52.6	72.1	0.0	57.9	80.1	91.9	113.5	1.3	2.3	48.2	0.0	0.0	1.9	10.9	34.8	908.4	604.5
1 in 20 year	1.8	60.6	81.9	0.0	90.4	103.0	103.5	126.6	1.7	3.1	54.9	0.0	0.0	2.7	13.8	45.2	990.8	659.3
1 in 10 year	2.3	68.6	91.7	0.0	97.9	113.9	115.1	139.5	2.1	4.0	61.6	0.0	0.0	4.0	17.0	57.0	1070.1	712.0
1 in 5 year	3.0	79.8	105.2	0.0	107.9	128.7	130.9	157.1	2.7	5.5	70.8	0.1	0.1	6.9	21.9	75.7	1175.2	782.0
February																		
1 in 50 year	1.0	46.5	64.8	0.0	52.8	73.0	83.7	104.7	1.1	1.2	43.5	0.0	0.0	0.1	8.7	25.6	941.3	626.4
1 in 20 year	1.3	53.5	73.6	0.0	83.9	93.9	94.1	116.5	1.4	1.7	49.3	0.0	0.0	0.1	10.9	33.1	1017.6	677.1
1 in 10 year	1.7	60.6	82.4	0.0	90.8	103.7	104.4	128.1	1.7	2.3	55.1	0.0	0.0	0.3	13.3	41.6	1090.5	725.6
1 in 5 year	2.2	70.5	94.5	0.0	100.0	116.9	118.4	143.7	2.2	3.3	63.0	0.0	0.0	1.7	16.8	55.0	1186.3	789.4
March																		
1 in 50 year	0.8	40.3	57.7	0.0	50.4	69.8	80.0	100.3	0.9	0.5	40.5	0.0	0.0	0.0	7.8	27.7	1059.0	704.7
1 in 20 year	1.1	47.7	67.0	0.0	57.1	79.0	90.6	112.4	1.1	0.8	46.2	0.0	0.0	0.0	9.9	31.8	1146.6	763.0
1 in 10 year	1.4	55.4	76.5	0.0	84.2	100.7	101.1	124.3	1.3	1.2	51.9	0.0	0.0	0.2	12.3	38.9	1230.4	818.7
1 in 5 year	1.9	66.4	90.0	0.0	93.0	113.0	115.6	140.6	1.7	1.9	59.9	0.0	0.0	1.5	15.9	54.4	1340.7	892.1
April																		
1 in 50 year	0.9	60.9	81.1	0.0	34.2	67.2	90.2	112.1	0.6	0.6	34.4	0.0	0.0	9.4	21.5	145.6	823.8	548.2
1 in 20 year	1.6	81.6	105.9	0.0	46.0	86.7	115.1	140.6	0.8	1.2	49.1	0.0	0.0	11.7	25.5	209.1	1029.5	685.0
1 in 10 year	2.8	105.7	134.1	0.0	59.9	108.9	142.8	171.9	1.0	2.3	67.3	0.0	0.0	15.0	31.0	288.3	1254.7	834.9
1 in 5 year	5.5	144.9	178.8	0.0	82.6	143.5	185.7	219.6	1.5	4.8	98.7	0.0	0.0	21.9	42.2	426.3	1596.4	1062.3
May																		
1 in 50 year	123.9	338.7	376.8	21.6	373.9	461.1	503.4	540.0	38.1	148.6	438.6	59.6	185.9	516.7	542.0	1632.9	1441.4	959.1
1 in 20 year	138.7	388.7	429.9	25.2	431.8	528.7	577.3	616.8	46.7	168.1	504.7	68.9	217.5	601.3	629.0	1882.2	1863.6	1240.1
1 in 10 year	153.2	439.2	483.3	28.8	490.7	597.0	652.0	694.1	56.0	187.6	571.7	78.2	250.0	688.0	717.9	2135.2	2341.0	1557.7
1 in 5 year	173.1	509.6	557.3	33.9	573.3	692.1	756.1	801.4	69.8	214.4	665.3	91.4	296.1	810.6	843.3	2489.7	3090.1	2056.3
June																		
1 in 50 year	50.8	166.1	194.3	11.9	308.0	364.3	373.3	402.5	30.8	96.1	250.3	48.7	125.5	289.7	307.2	848.5	1461.9	972.8
1 in 20 year	64.1	205.5	237.4	15.1	369.5	434.0	446.1	478.2	39.4	116.4	311.8	52.9	141.5	338.2	357.3	1013.9	1860.4	1238.0
1 in 10 year	78.8	248.2	283.5	18.8	434.2	506.9	522.5	557.1	49.0	137.9	379.0	56.9	157.4	388.1	408.5	1187.5	2304.2	1533.3
1 in 5 year	101.3	312.4	352.0	24.4	528.6	612.5	633.4	671.1	63.8	169.6	480.6	62.1	179.3	458.9	481.0	1439.5	2989.9	1989.6
July																		
1 in 50 year	14.5	127.7	158.4	2.7	184.2	226.6	229.7	258.8	13.9	33.2	135.4	11.1	30.7	80.8	92.7	256.6	990.0	658.8
1 in 20 year	18.0	142.1	174.4	3.5	204.2	251.1	255.8	286.2	16.7	39.7	157.5	13.2	36.8	96.9	110.1	312.1	1183.9	787.8
1 in 10 year	21.9	156.2	190.0	4.3	223.7	275.2	281.3	312.9	19.7	46.5	180.0	15.4	43.4	114.0	128.2	371.3	1387.5	923.3
1 in 5 year	27.7	175.3	210.8	5.7	250.1	307.6	315.9	348.8	23.9	56.4	211.8	18.6	52.9	138.8	154.4	458.7	1683.3	1120.1
August																		
1 in 50 year	5.4	103.6	131.9	0.5	135.6	169.3	171.0	198.3	6.4	14.8	96.7	3.6	7.5	29.1	38.8	119.3	668.7	445.0
1 in 20 year	6.8	112.4	142.0	0.7	144.8	181.9	184.4	212.7	7.6	17.4	106.5	4.4	9.7	36.1	47.1	146.7	783.9	521.6
1 in 10 year	8.4	120.8	151.6	0.9	153.4	193.9	197.2	226.4	8.8	20.1	116.2	5.4	12.1	43.8	55.8	176.2	902.5	600.6
1 in 5 year	10.8	131.9	164.2	1.2	164.7	209.5	213.9	244.2	10.6	24.0	129.0	6.7	16.0	55.3	68.7	220.4	1071.5	713.0
September																		
1 in 50 year	2.8	85.2	111.5	0.1	106.7	118.3	135.7	161.0	3.2	8.1	68.3	1.4	3.2	14.1	22.1	71.5	501.2	333.5
1 in 20 year	3.8	94.0	121.6	0.1	115.7	147.6	148.2	174.7	4.0	10.0	77.2	1.9	3.7	18.8	28.3	92.8	618.3	411.4
1 in 10 year	5.0	102.5	131.4	0.2	124.3	158.8	160.3	187.8	4.9	12.0	86.2	2.5	4.3	24.4	35.2	117.0	744.9	495.6
1 in 5 year	7.0	113.9	144.3	0.3	135.8	173.7	176.4	205.2	6.1	15.0	98.5	3.4	5.5	33.4	46.1	155.0	934.5	621.8
October																		
1 in 50 year	1.4	57.3	78.4	0.0	88.3	90.4	103.7	126.2	1.9	3.8	41.9	0.1	0.5	6.3	11.2	103.4	636.9	423.8
1 in 20 year	2.3	69.4	92.9	0.0	99.4	104.6	119.9	144.2	2.5	5.5	53.3	0.8	0.9	10.1	16.9	107.8	756.5	503.4
1 in 10 year	3.5	82.2	107.9	0.0	110.3	119.0	136.4	162.3	3.3	7.6	66.0	1.3	1.6	15.4	24.4	114.1	881.4	586.5
1 in 5 year	5.9	101.0	129.7	0.0	125.2	157.5	159.6	187.5	4.6	11.3	85.6	2.2	3.3	25.7	37.9	127.0	1061.7	706.5
November																		
1 in 50 year	1.2	50.2	69.1	0.0	56.6	78.3	89.8	110.5	1.4	2.8	37.3	0.5	0.5	4.3	9.1	32.2	946.1	629.6
1 in 20 year	1.9	61.9	83.4	0.0	91.1	92.6	106.2	129.0	1.9	4.2	48.1	0.6	0.7	7.3	14.0	50.4	1086.4	722.9
1 in 10 year	3.0	74.6	98.6	0.0	102.0	107.5	123.3	148.0	2.6	6.0	60.3	0.8	0.9	11.5	20.5	75.0	1228.1	817.2
1 in 5 year	5.0	93.6	121.0	0.0	117.0	145.3	147.8	174.9	3.8	9.2	79.3	1.2	1.5	20.0	32.6	121.7	1425.9	948.9
December																		
1 in 50 year	1.4	54.3	73.7	0.0	56.9	78.7	90.3	111.4	1.3	2.7	45.2	0.0	0.0	5.2	10.5	35.3	898.1	597.6
1 in 20 year	2.0	63.4	84.9	0.0	65.4	90.5	103.8	126.7	1.8	3.8	53.5	0.0	0.0	6.5	14.2	48.8	1001.1	666.2
1 in 10 year	2.6	72.7	96.2	0.0	98.9	116.8	117.5	142.0	2.3	5.0	62.0	0.0	0.0	8.6	18.5	65.2	1102.4	733.6
1 in 5 year	3.8	86.0	112.1	0.0	110.5	134.2	136.7	163.1	3.2	7.0	74.3	0.2	0.3	13.2	25.6	92.8	1239.6	824.9

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\D Baseline results\[Tables D-1 to D-5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT 101-457/6-6	BW	CMB	KJB

Knight Piésold
CONSULTING

TABLE D.4

NEW GOLD INC.
BLACKWATER GOLD PROJECT

WET RETURN PERIOD FLOWS - BASELINE CONDITIONS

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Wet Return Period Flows (L/s)

	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	WSC	H5	15-CC
January																		
1 in 50 year	19	215	259	0	203	286	304	341	16	43	177	7	18	97	117	482	2171	1445
1 in 20 year	15	187	228	0	186	256	270	306	12	32	156	6	15	74	92	371	1991	1325
1 in 10 year	12	165	204	0	172	231	243	277	10	25	139	5	12	58	75	294	1843	1227
1 in 5 year	9	142	177	0	156	205	214	246	8	18	121	4	9	41	58	222	1678	1117
February																		
1 in 50 year	13	191	232	0	189	256	270	305	11	40	152	3	5	49	80	341	2059	1370
1 in 20 year	10	166	204	0	172	229	241	275	9	28	134	3	4	41	64	264	1905	1268
1 in 10 year	8	146	182	0	159	208	217	250	7	21	120	2	4	35	53	210	1778	1183
1 in 5 year	6	126	159	0	145	184	191	223	6	14	105	2	3	28	42	159	1634	1087
March																		
1 in 50 year	15	219	259	0	178	241	278	315	9	45	152	3	5	45	88	539	2352	1565
1 in 20 year	11	185	223	0	162	217	245	281	7	29	133	2	4	39	69	419	2173	1446
1 in 10 year	9	159	196	0	150	197	220	254	6	19	119	2	3	33	56	328	2025	1347
1 in 5 year	6	133	166	0	136	176	192	225	5	12	103	2	2	28	43	237	1858	1236
April																		
1 in 50 year	447	1143	1176	41	675	878	1038	1091	179	622	1214	95	403	1869	2011	5523	7729	5143
1 in 20 year	240	853	901	35	502	680	814	870	88	313	851	74	314	1100	1147	3846	6184	4115
1 in 10 year	138	659	711	29	385	542	656	712	44	170	621	58	243	569	664	2789	5074	3377
1 in 5 year	70	481	534	20	280	411	504	557	19	81	424	37	161	249	334	1886	3988	2654
May																		
1 in 50 year	384	1350	1416	99	1588	1822	1994	2053	296	513	1796	253	898	2372	2419	6805	19033	12665
1 in 20 year	343	1176	1241	85	1375	1589	1739	1798	242	454	1561	219	768	2038	2084	5904	14721	9796
1 in 10 year	310	1041	1104	74	1210	1407	1539	1598	202	407	1378	193	668	1781	1826	5204	11719	7798
1 in 5 year	275	897	958	63	1036	1214	1328	1384	162	356	1184	165	564	1512	1555	4463	8878	5908
June																		
1 in 50 year	524	1410	1452	136	1915	2113	2233	2270	361	657	2278	111	420	1374	1401	5076	16458	10952
1 in 20 year	415	1139	1189	107	1596	1774	1869	1911	283	543	1828	102	372	1177	1204	4248	12933	8606
1 in 10 year	338	943	995	86	1358	1519	1595	1640	228	458	1504	95	334	1026	1053	3627	10442	6948
1 in 5 year	263	749	801	66	1116	1257	1316	1361	175	372	1186	87	294	868	895	2992	8047	5355
July																		
1 in 50 year	130	373	416	34	519	637	675	711	87	199	614	64	193	505	521	1832	5966	3970
1 in 20 year	104	335	378	27	468	575	606	643	72	166	529	54	161	420	438	1506	4989	3320
1 in 10 year	86	305	347	21	427	525	551	588	62	142	462	46	137	358	376	1266	4257	2833
1 in 5 year	68	272	313	16	382	470	491	527	51	117	393	38	112	294	313	1025	3509	2335
August																		
1 in 50 year	57	234	277	8	262	348	365	401	36	76	257	30	99	255	268	952	3297	2194
1 in 20 year	45	216	257	6	245	324	338	374	31	64	233	25	76	205	221	774	2813	1872
1 in 10 year	37	201	241	5	231	304	316	351	26	56	214	20	61	170	186	644	2443	1625
1 in 5 year	28	184	222	4	215	281	292	326	22	47	192	16	46	134	151	515	2057	1369
September																		
1 in 50 year	60	227	267	5	241	312	330	365	28	64	236	30	136	261	266	978	4125	2745
1 in 20 year	44	206	245	3	222	287	302	337	22	52	208	22	84	195	208	754	3344	2226
1 in 10 year	34	189	227	2	207	267	279	313	18	44	187	17	53	151	167	598	2776	1847
1 in 5 year	24	170	206	1	190	244	254	287	15	35	163	12	30	110	128	452	2213	1472
October																		
1 in 50 year	175	390	431	21	288	388	446	482	39	154	470	72	358	640	688	2747	3590	2389
1 in 20 year	109	322	364	7	256	342	386	422	28	106	369	44	184	425	457	1794	3022	2011
1 in 10 year	71	272	313	2	231	305	339	375	22	77	298	28	102	301	318	1230	2594	1726
1 in 5 year	42	221	260	1	203	266	290	324	16	51	230	17	50	180	204	776	2153	1433
November																		
1 in 50 year	167	414	459	11	288	415	485	523	41	155	481	74	328	630	678	2891	3791	2523
1 in 20 year	102	336	380	2	254	358	410	448	29	104	373	42	145	410	442	1848	3302	2197
1 in 10 year	66	278	322	1	227	313	353	391	22	73	297	24	66	290	302	1242	2921	1944
1 in 5 year	39	222	262	0	198	267	295	330	15	47	226	12	25	166	190	766	2516	1674
December																		
1 in 50 year	39	257	304	2	230	334	367	405	26	64	243	15	37	158	215	930	2673	1778
1 in 20 year	28	220	264	0	207	294	319	356	19	47	205	12	32	122	159	672	2398	1595
1 in 10 year	21	192	233	0	189	262	282	318	15	35	177	10	29	95	122	503	2177	1449
1 in 5 year	15	162	200	0	169	228	243	277	11	25	148	7	24	68	88	354	1936	1288

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\D Baseline results\[Tables D-1 to D-5.xlsx]Table 4

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

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TABLE D.5

NEW GOLD INC.
BLACKWATER GOLD PROJECT

7 DAY LOW FLOWS - BASELINE CONDITIONS

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7 Day Low Flows (L/s)																		
Return Period	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Van Tyne	Chedakuz	
	H3	**H6**	**1-TC**	**11-DC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**WSC**	**H5**	**15-CC**
1 in 10 Year	0.9	43.1	59.1	0.0	63.7	75.4	75.7	93.6	0.8	0.8	41.0	0.0	0.0	8.5	9.1	26.0	704.7	468.9
1 in 20 Year	0.7	41.0	56.0	0.0	60.7	71.6	71.8	89.1	0.6	0.4	39.8	0.0	0.0	7.9	8.5	21.8	690.3	459.4

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\D Baseline results\[Tables D-1 to D-5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

APPENDIX E

PREDICTED CONSTRUCTION CONDITIONS STREAMFLOWS

(Pages E-1 to E-7)

Knight Piésold CONSULTING

TABLE E.1

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED AVERAGE MONTHLY STREAMFLOWS - CONSTRUCTION CONDITIONS

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	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**11-DC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
January	6	112	143	-	101	138	143	173	5	12	97	6	8	31	45	1403	954
February	4	99	128	-	93	123	128	156	4	9	85	4	5	20	33	1388	942
March	4	102	130	-	87	119	129	157	3	8	82	4	4	19	34	1582	1071
April	52	325	368	-	145	239	304	346	19	63	296	29	85	262	292	2991	2030
May	226	710	764	-	623	771	860	910	115	302	945	183	490	1233	1271	6281	4312
June	185	550	596	-	654	769	811	852	120	284	858	124	288	719	744	5705	3919
July	49	225	263	-	251	324	339	374	37	88	306	44	100	237	254	2654	1810
August	21	159	194	-	148	204	212	244	16	36	161	18	39	106	121	1565	1069
September	18	143	176	-	126	174	180	211	11	26	133	14	28	85	99	1651	1123
October	31	168	201	-	127	176	190	221	11	38	170	18	44	136	152	1624	1106
November	27	165	199	-	121	173	189	220	11	34	165	16	39	121	137	1978	1341
December	10	126	158	-	108	151	160	190	7	17	113	8	15	50	65	1570	1066
Annual Average	53	241	277	-	216	280	304	339	30	77	285	39	96	253	272	2533	1729

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\E Construction results\[Tables E-1 to E-5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT CONSTRUCTION FLOW CONDITIONS.
3. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO SURFACE WATER FLOW PASSES THE SEDIMENT CONTROL POND FOR THE SITE C MAIN DAM. GROUNDWATER IS ASSUMED TO FLOW PAST THIS POINT.
4. ESTIMATED VALUES ARE AVERAGE MONTHLY STREAMFLOWS FROM THE CONSTRUCTION WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold
CONSULTING

TABLE E.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - CONSTRUCTION CONDITIONS

Print Oct/11/13 14:21:05

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/1998	8	130	161	-	106	148	154	184	5	17	112	7	10	43	57	1310	894
Feb/1998	6	118	148	-	99	135	141	170	4	13	102	6	6	30	44	1292	881
Mar/1998	6	116	146	-	92	130	137	166	4	12	98	5	5	29	43	1552	1053
Apr/1998	129	573	620	-	255	392	470	517	46	162	617	66	197	584	619	1542	1110
May/1998	179	685	739	-	453	618	711	763	74	250	807	123	311	824	863	4633	3170
Jun/1998	68	262	303	-	348	430	455	492	40	123	343	77	171	381	402	2283	1547
Jul/1998	21	162	199	-	180	236	247	280	19	43	176	25	53	127	143	2056	1395
Aug/1998	11	132	167	-	135	179	186	217	11	23	127	12	21	63	77	979	676
Sep/1998	8	115	147	-	119	154	160	189	6	16	106	8	11	39	53	856	593
Oct/1998	7	105	135	-	110	140	144	173	5	14	96	7	9	35	47	1324	904
Nov/1998	8	97	125	-	103	129	132	160	4	12	90	6	8	32	45	1590	1080
Dec/1998	6	86	113	-	96	117	120	147	3	9	81	5	5	23	35	1477	1003
Jan/1999	4	76	101	-	88	106	108	134	3	7	73	4	4	16	28	1450	984
Feb/1999	3	67	91	-	82	96	97	123	2	5	65	3	3	11	22	1481	1003
Mar/1999	3	62	85	-	76	89	90	115	2	3	59	3	3	8	19	1597	1079
Apr/1999	56	310	342	-	84	165	229	266	3	61	280	21	64	228	257	2177	1471
May/1999	207	591	629	-	439	560	638	680	76	262	839	143	408	1038	1072	3992	2762
Jun/1999	202	446	482	-	574	657	677	711	101	282	800	136	335	859	877	4983	3421
Jul/1999	61	215	249	-	274	339	348	379	38	103	303	61	140	318	333	2244	1521
Aug/1999	17	144	176	-	161	213	218	248	19	35	154	19	41	101	114	1691	1153
Sep/1999	9	122	151	-	131	173	177	205	12	19	113	10	17	52	64	1439	984
Oct/1999	6	107	134	-	118	152	155	182	7	13	95	7	8	32	45	1483	1012
Nov/1999	4	95	121	-	108	137	139	165	5	10	84	5	5	23	35	1721	1168
Dec/1999	3	85	110	-	100	124	126	151	4	8	76	4	4	16	28	1614	1096
Jan/2000	2	75	98	-	92	112	113	137	3	5	68	3	3	11	22	1393	948
Feb/2000	2	66	88	-	85	101	101	125	3	3	60	3	3	6	17	1388	943
Mar/2000	1	61	82	-	79	93	94	117	2	2	55	2	2	3	14	1352	917
Apr/2000	7	153	180	-	75	129	182	213	2	4	101	3	3	32	57	1904	1284
May/2000	231	643	677	-	647	744	818	853	122	289	912	204	566	1405	1435	2368	1720
Jun/2000	273	688	726	-	842	945	985	1019	161	403	1180	163	386	996	1016	3417	2447
Jul/2000	94	301	339	-	330	428	454	488	52	151	466	71	174	432	450	2103	1458
Aug/2000	41	210	247	-	176	261	272	306	25	53	214	30	76	195	212	1155	802
Sep/2000	34	189	225	-	144	218	227	259	18	35	162	21	55	153	169	1059	732
Oct/2000	42	205	241	-	137	214	241	275	16	46	208	20	58	187	206	1167	805
Nov/2000	43	222	262	-	135	223	259	294	16	49	225	20	58	194	215	1640	1119
Dec/2000	16	186	226	-	125	205	225	260	11	28	158	11	24	86	104	1357	929
Jan/2001	9	162	199	-	115	181	193	227	7	21	129	8	13	51	68	1285	879
Feb/2001	6	144	178	-	107	161	170	203	5	16	114	6	7	34	50	1249	854
Mar/2001	6	135	169	-	100	149	158	190	5	14	107	6	6	30	46	1263	862
Apr/2001	9	290	342	-	95	211	293	344	4	16	170	5	5	54	91	1593	1081
May/2001	226	682	741	-	638	789	886	942	121	289	932	197	555	1371	1412	2422	1757
Jun/2001	237	591	635	-	776	879	907	947	156	351	1055	146	332	841	863	3392	2430
Jul/2001	52	255	296	-	274	353	366	402	46	98	345	51	107	245	262	1916	1330
Aug/2001	16	182	219	-	158	221	230	263	18	38	175	17	33	92	108	1233	849
Sep/2001	9	155	191	-	128	179	186	218	9	23	129	9	14	53	67	918	633
Oct/2001	9	146	179	-	117	163	170	201	6	19	116	8	11	47	61	925	637
Nov/2001	9	138	171	-	109	152	159	190	5	17	110	7	10	44	58	1300	885
Dec/2001	7	124	155	-	101	137	143	173	4	14	99	5	5	31	45	1303	886
Jan/2002	5	109	139	-	93	122	128	156	3	11	88	4	4	22	35	1266	860
Feb/2002	4	97	125	-	86	110	114	142	3	8	79	3	3	15	28	1304	884
Mar/2002	3	86	112	-	80	99	103	130	2	6	71	3	3	10	22	1244	843
Apr/2002	4	92	118	-	75	101	115	142	2	5	71	2	2	14	27	1567	1057
May/2002	287	933	988	-	658	833	931	983	140	361	1140	216	631	1665	1703	3320	2377
Jun/2002	248	990	1054	-	819	1034	1142	1201	176	386	1330	154	348	872	916	5587	3905
Jul/2002	52	268	310	-	287	378	406	445	46	106	378	56	117	250	272	1983	1369
Aug/2002	15	144	181	-	153	209	220	253	15	34	153	17	33	85	101	1074	740
Sep/2002	8	116	150	-	120	163	169	200	6	17	100	8	13	45	60	1012	693
Oct/2002	8	106	139	-	109	146	150	181	5	13	88	7	10	40	53	1014	693
Nov/2002	9	105	137	-	102	138	144	174	4	12	84	6	8	39	53	1264	858
Dec/2002	7	98	129	-	94	128	134	163	3	10	78	5	5	29	43	1252	849
Jan/2003	5	86	115	-	87	115	119	147	3	7	69	4	4	21	34	1226	831
Feb/2003	4	76	103	-	81	103	107	134	2	5	62	3	3	14	27	1187	804

Knight Piésold
CONSULTING

TABLE E.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - CONSTRUCTION CONDITIONS

Print Oct/11/13 14:21:05

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Mar/2003	3	67	93	-	75	93	96	122	2	3	55	2	2	9	21	1277	863
Apr/2003	19	305	362	-	73	183	272	324	2	18	183	4	5	81	118	1651	1112
May/2003	168	546	611	-	479	628	735	794	77	220	713	140	370	910	953	2744	1921
Jun/2003	176	372	411	-	577	656	680	717	96	251	714	112	272	721	740	3156	2213
Jul/2003	33	168	202	-	201	256	264	295	25	62	224	30	69	166	180	1609	1108
Aug/2003	10	125	156	-	116	158	162	191	9	22	114	11	21	58	71	952	654
Sep/2003	36	148	178	-	107	147	150	178	6	39	124	22	56	154	167	915	629
Oct/2003	121	429	465	-	201	294	348	381	28	143	457	66	188	532	558	1203	852
Nov/2003	106	452	492	-	224	337	402	438	35	141	508	62	174	490	520	1516	1066
Dec/2003	23	187	224	-	143	213	230	264	17	43	199	20	48	127	144	1374	943
Jan/2004	9	135	169	-	119	171	178	209	9	20	123	9	17	52	66	1250	854
Feb/2004	6	115	148	-	108	150	153	184	6	13	99	6	7	30	43	1223	833
Mar/2004	12	133	167	-	102	154	184	216	6	13	108	6	8	50	68	1373	933
Apr/2004	171	589	631	-	359	483	562	599	76	207	744	100	324	904	935	1891	1371
May/2004	235	711	758	-	651	798	862	901	124	328	993	159	380	972	1002	2551	1829
Jun/2004	90	308	352	-	475	571	590	628	68	166	438	100	219	490	509	1920	1323
Jul/2004	23	190	232	-	212	285	295	331	29	53	209	29	61	142	158	1702	1163
Aug/2004	16	166	205	-	153	214	221	256	18	28	155	15	30	84	100	1517	1035
Sep/2004	71	249	289	-	189	257	280	316	25	89	315	44	115	320	337	2620	1782
Oct/2004	103	313	358	-	209	298	344	383	32	124	425	59	163	462	483	1862	1284
Nov/2004	54	262	309	-	173	269	307	347	27	69	293	31	87	255	276	4614	3105
Dec/2004	18	213	259	-	154	241	259	298	20	36	193	15	34	105	125	2702	1828
Jan/2005	10	184	227	-	141	212	224	262	15	25	155	10	17	61	79	2070	1405
Feb/2005	7	164	204	-	131	189	199	235	10	20	134	8	10	41	58	2013	1365
Mar/2005	10	159	198	-	124	178	189	224	8	19	128	8	11	45	61	2662	1796
Apr/2005	204	752	799	-	483	635	707	755	105	258	917	139	438	1196	1230	4914	3409
May/2005	230	841	892	-	637	816	901	952	134	330	1110	143	330	835	873	8736	5950
Jun/2005	53	280	326	-	327	416	442	483	47	112	374	66	135	286	308	5199	3485
Jul/2005	47	222	267	-	207	277	291	329	30	70	236	39	93	233	251	2433	1652
Aug/2005	45	208	251	-	182	243	254	291	25	61	207	33	81	215	233	1632	1120
Sep/2005	15	160	200	-	164	214	223	259	19	32	157	15	31	87	103	1521	1043
Oct/2005	55	229	270	-	166	225	257	293	20	71	280	30	81	244	264	2461	1673
Nov/2005	61	254	298	-	168	241	280	318	22	80	313	34	92	275	297	2262	1542
Dec/2005	17	181	224	-	156	222	239	276	16	35	179	14	30	90	109	1810	1236
Jan/2006	8	153	193	-	144	198	210	245	11	22	136	9	12	45	62	1531	1047
Feb/2006	5	136	173	-	134	178	188	222	7	17	116	7	7	30	45	1351	926
Mar/2006	4	123	159	-	124	162	171	204	5	14	104	5	6	22	37	1346	921
Apr/2006	109	555	614	-	237	376	463	517	37	141	559	55	155	474	512	1800	1272
May/2006	195	709	775	-	540	713	816	876	88	277	860	143	357	926	969	3754	2603
Jun/2006	105	313	359	-	502	587	615	656	71	180	481	100	239	551	572	3308	2265
Jul/2006	22	175	216	-	226	284	297	333	29	53	209	28	61	137	154	1675	1152
Aug/2006	9	140	178	-	159	204	211	245	16	23	138	11	19	52	67	1054	731
Sep/2006	5	123	158	-	137	173	179	211	10	15	113	7	8	29	43	881	613
Oct/2006	4	111	145	-	125	156	161	193	6	11	99	5	6	22	35	1034	713
Nov/2006	3	101	133	-	115	142	147	177	5	9	90	4	4	16	29	1597	1087
Dec/2006	2	89	119	-	107	128	132	161	4	6	81	4	4	11	23	1497	1018
Jan/2007	2	79	107	-	98	116	119	147	4	4	72	3	3	6	18	1497	1017
Feb/2007	1	70	97	-	91	106	108	135	3	2	64	2	2	3	14	1484	1007
Mar/2007	1	64	89	-	85	97	99	125	2	1	58	2	2	2	13	1670	1129
Apr/2007	4	246	296	-	79	173	254	303	2	3	133	2	2	29	64	3032	2035
May/2007	207	638	697	-	625	762	861	917	114	270	872	192	527	1289	1329	8338	5683
Jun/2007	281	613	655	-	853	951	987	1025	158	400	1148	168	400	1034	1055	15635	10579
Jul/2007	106	304	344	-	370	457	481	516	58	166	508	79	195	485	502	4305	2933
Aug/2007	24	184	221	-	175	245	254	287	22	46	199	22	51	129	144	2629	1782
Sep/2007	19	166	201	-	136	196	203	234	14	25	139	14	29	85	100	2001	1358
Oct/2007	49	207	243	-	135	201	220	253	15	47	202	22	64	201	216	3235	2179
Nov/2007	48	214	252	-	134	205	227	261	15	52	217	22	67	212	228	3093	2085

Knight Piésold CONSULTING

TABLE E.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - CONSTRUCTION CONDITIONS

Print Oct/11/13 14:21:05

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Dec/2007	16	168	204	-	124	185	196	228	10	26	145	12	27	86	102	2228	1508
Jan/2008	9	145	178	-	114	164	172	203	6	18	117	8	13	50	65	1872	1269
Feb/2008	6	128	159	-	106	146	153	183	5	14	104	6	7	33	47	1827	1238
Mar/2008	5	119	149	-	98	135	141	170	4	11	95	5	5	25	39	1798	1217
Apr/2008	6	114	143	-	92	127	133	162	4	10	91	5	5	26	40	1929	1303
May/2008	229	736	770	-	710	829	891	927	129	313	959	218	581	1446	1475	10517	7138
Jun/2008	228	805	845	-	851	1000	1074	1114	162	361	1140	136	310	793	826	4487	3151
Jul/2008	39	230	268	-	267	341	362	396	40	84	321	34	74	170	189	1765	1228
Aug/2008	17	146	181	-	143	196	205	237	13	28	148	15	29	76	91	1519	1039
Sep/2008	15	129	162	-	116	160	167	198	8	18	112	12	22	64	78	1359	928
Oct/2008	29	142	175	-	111	154	161	192	7	23	117	14	37	116	130	1367	932
Nov/2008	34	164	200	-	111	168	191	223	7	27	132	15	44	142	159	1846	1251
Dec/2008	16	149	186	-	104	164	190	224	6	21	125	10	22	82	99	1694	1149
Jan/2009	10	129	163	-	96	145	156	188	5	16	111	7	12	52	68	1544	1048
Feb/2009	7	114	146	-	89	129	137	167	4	13	100	6	6	35	50	1532	1038
Mar/2009	5	101	131	-	82	115	122	151	3	10	89	4	4	25	39	1561	1056
Apr/2009	8	280	336	-	78	187	273	325	3	11	164	4	4	52	89	2703	1816
May/2009	239	706	770	-	668	818	920	978	127	300	963	214	592	1454	1497	5583	3864
Jun/2009	232	573	615	-	807	901	927	966	158	356	1066	136	313	807	828	5842	4061
Jul/2009	43	217	254	-	254	323	333	367	39	87	316	36	78	187	203	2634	1805
Aug/2009	13	150	184	-	131	185	191	222	13	30	149	13	22	65	79	1185	815
Sep/2009	7	127	159	-	100	144	149	179	7	16	108	7	8	35	48	1027	703
Oct/2009	5	112	142	-	89	124	128	157	5	11	92	5	5	23	36	1115	759
Nov/2009	3	99	127	-	81	110	113	141	4	8	81	4	4	16	28	1835	1237
Dec/2009	2	88	114	-	75	98	100	127	3	6	71	3	3	10	22	1530	1033
Jan/2010	2	78	102	-	69	88	89	115	3	4	63	2	2	5	17	1486	1003
Feb/2010	1	69	92	-	64	79	79	104	2	2	56	2	2	2	13	1495	1008
Mar/2010	3	186	219	-	59	129	193	231	2	3	103	1	1	17	46	1478	996
Apr/2010	52	276	315	-	69	166	246	288	3	46	207	21	64	205	239	2521	1697
May/2010	120	261	295	-	269	331	350	382	26	144	343	81	212	538	555	4549	3063
Jun/2010	86	214	245	-	319	368	373	402	34	128	306	78	184	435	449	3826	2582
Jul/2010	21	134	163	-	146	186	187	215	11	39	149	22	48	120	132	1702	1156
Aug/2010	9	109	137	-	103	135	135	162	5	17	107	9	15	51	62	1013	694
Sep/2010	6	96	122	-	90	116	116	142	4	12	92	6	7	32	44	6127	4095
Oct/2010	8	91	115	-	86	108	108	134	3	11	87	7	9	38	49	3750	2512
Nov/2010	9	86	108	-	83	102	102	126	3	10	83	7	10	40	50	2328	1566
Dec/2010	7	75	96	-	76	92	92	115	2	8	74	5	5	27	37	1724	1163
Jan/2011	5	65	85	-	70	83	83	105	2	5	66	4	4	19	29	935	637
Feb/2011	4	57	76	-	65	75	75	97	1	3	58	3	3	13	23	996	676
Mar/2011	3	50	68	-	60	68	68	89	1	2	52	2	2	8	18	1780	1197
Apr/2011	3	63	84	-	56	77	98	121	1	2	55	2	2	12	26	12173	8113
May/2011	436	1317	1404	-	1312	1559	1702	1772	260	625	1851	371	996	2534	2586	22202	15049
Jun/2011	275	1291	1392	-	993	1296	1446	1528	225	429	1542	159	364	930	988	15089	10255
Jul/2011	82	339	386	-	296	416	452	494	56	131	469	58	142	349	373	8246	5552
Aug/2011	54	204	242	-	154	233	245	279	22	72	248	36	93	247	264	3691	2488
Sep/2011	15	137	172	-	116	176	181	213	10	26	134	13	28	81	96	1553	1056
Oct/2011	8	116	148	-	102	150	154	183	6	14	102	8	11	42	56	1262	859
Nov/2011	5	101	132	-	93	132	135	163	5	10	88	5	6	27	40	1529	1035
Dec/2011	4	90	118	-	86	117	119	147	4	7	78	4	4	19	31	924	631
Jan/2012	3	79	106	-	79	105	106	132	3	5	70	3	3	12	24	934	637
Feb/2012	2	70	95	-	73	94	94	120	3	3	62	3	3	7	19	996	677
Mar/2012	1	62	85	-	67	84	84	109	2	1	55	2	2	4	15	1779	1197
Apr/2012	7	282	339	-	64	174	263	315	2	4	149	2	2	44	82	3468	2320
May/2012	207	645	712	-	616	769	876	936	114	270	873	194	530	1293	1336	8506	5789
Jun/2012	227	504	542	-	752	837	860	896	142	328	954	135	308	791	810	7454	5115
Jul/2012	46	195	228	-	240	301	307	337	36	81	283	39	84	199	213	3429	2329
Aug/2012	15	134	164	-	124	172	173	202	11	27	133	13	26	74	86	2155	1457
Sep/2012	8	113	141	-	96	134	134	162	6	15	96	7	10	41	52	1478	1001
Oct/2012	6	99	125	-	85	116	116	142	5	10	81	5	5	26	38	1155	784
Nov/2012	4	87	112	-	77	103	103	128	4	7	71	4	4	18	29	1537	1037
Dec/2012	3	77	100	-	71	92	92	116	3	5	63	3	3	12	23	1061	719

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\E Construction results\[Tables E-1 to E-5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT CONSTRUCTION FLOW CONDITIONS.
3. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO SURFACE WATER FLOW PASSES THE SEDIMENT CONTROL POND FOR THE SITE C MAIN DAM. GROUNDWATER IS ASSUMED TO FLOW PAST THIS POINT.
4. ESTIMATED STREAMFLOW VALUES WERE OBTAINED FROM THE CONSTRUCTION WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE E.3

NEW GOLD INC.
BLACKWATER GOLD PROJECT

DRY RETURN PERIOD FLOWS - CONSTRUCTION CONDITIONS

29/08/2013 11:40

Dry Return Period Flows (L/s)																
	H3	H6	1-TC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January																
1 in 50 year	1.4	52.6	72.1	62.5	72.8	79.8	94.1	1.3	2.4	48.4	1.9	2.4	4.0	12.9	886.2	604.4
1 in 20 year	1.8	60.6	81.9	68.5	82.0	86.8	105.4	1.7	3.2	55.0	2.3	3.0	4.8	16.1	967.1	659.2
1 in 10 year	2.3	68.6	91.7	74.2	91.1	94.3	116.6	2.1	4.1	61.7	2.7	3.7	6.2	19.6	1045.0	712.0
1 in 5 year	3.0	79.8	105.2	81.9	103.6	105.3	131.9	2.8	5.6	70.9	3.4	5.0	9.3	25.0	1148.4	782.0
February																
1 in 50 year	1.0	46.5	64.8	57.9	66.2	72.0	86.6	1.1	1.3	43.7	1.5	1.6	1.9	10.5	919.7	626.4
1 in 20 year	1.3	53.5	73.6	63.4	74.3	78.2	96.8	1.4	1.8	49.5	1.8	2.1	2.8	12.9	994.8	677.2
1 in 10 year	1.7	60.6	82.4	68.7	82.4	84.9	106.7	1.7	2.4	55.2	2.2	2.7	4.1	15.5	1066.6	725.7
1 in 5 year	2.2	70.5	94.5	75.7	93.5	94.6	120.3	2.2	3.5	63.1	2.7	3.7	6.3	19.4	1161.0	789.4
March																
1 in 50 year	0.8	40.3	57.7	53.4	64.4	66.9	81.6	0.9	0.6	40.6	1.1	1.2	1.7	9.4	1035.3	704.8
1 in 20 year	1.1	47.7	67.0	58.6	72.2	73.9	92.2	1.1	0.9	46.3	1.3	1.7	2.6	11.7	1122.1	763.1
1 in 10 year	1.4	55.4	76.5	63.6	79.9	81.3	102.8	1.3	1.4	52.1	1.6	2.2	3.7	14.4	1205.3	818.8
1 in 5 year	1.9	66.4	90.0	70.2	90.4	92.1	117.3	1.7	2.1	60.0	2.1	3.1	5.7	18.3	1314.8	892.2
April																
1 in 50 year	0.9	60.9	81.1	27.0	59.9	81.8	104.1	0.2	0.7	34.3	0.4	1.4	4.3	10.6	790.5	549.5
1 in 20 year	1.6	81.6	105.9	35.7	76.2	103.1	129.0	0.4	1.3	49.0	0.7	2.6	7.9	17.8	991.2	686.6
1 in 10 year	2.8	105.7	134.1	45.9	94.4	126.7	156.0	0.7	2.4	67.2	1.2	4.6	13.7	28.1	1211.6	836.7
1 in 5 year	5.5	144.9	178.8	62.3	122.5	162.9	196.7	1.4	5.0	98.8	2.4	9.0	26.9	49.0	1547.2	1064.4
May																
1 in 50 year	123.9	338.7	376.8	297.6	384.7	427.5	463.7	37.7	154.8	444.2	85.5	212.9	543.3	568.6	1334.5	965.5
1 in 20 year	138.7	388.7	429.9	341.1	437.7	486.8	525.9	46.1	175.2	511.0	98.4	248.1	631.6	659.2	1738.4	1247.6
1 in 10 year	153.2	439.2	483.3	385.1	491.0	546.4	588.0	55.2	195.6	578.7	111.4	284.1	721.8	751.7	2198.4	1566.2
1 in 5 year	173.1	509.6	557.3	446.3	564.6	628.9	673.7	68.7	223.6	673.3	129.6	335.2	849.4	882.0	2925.6	2066.0
June																
1 in 50 year	50.8	166.1	194.3	279.2	333.7	340.9	369.7	30.6	95.7	249.9	64.5	141.3	305.6	322.9	1393.8	974.1
1 in 20 year	64.1	205.5	237.4	326.7	389.2	399.6	431.1	39.0	116.5	311.8	73.0	161.3	357.9	376.8	1778.2	1239.7
1 in 10 year	78.8	248.2	283.5	375.5	446.1	460.2	494.1	48.4	138.8	379.5	81.4	181.5	411.9	432.1	2207.3	1535.5
1 in 5 year	101.3	312.4	352.0	445.0	526.7	546.6	583.4	63.0	171.8	482.0	92.9	209.5	488.6	510.6	2872.0	1992.5
July																
1 in 50 year	14.5	127.7	158.4	149.2	192.4	195.4	224.4	13.7	32.7	134.6	18.0	37.3	87.5	99.5	950.4	658.1
1 in 20 year	18.0	142.1	174.4	164.6	212.4	216.8	247.2	16.4	39.2	156.6	21.2	44.6	104.7	117.9	1139.2	787.0
1 in 10 year	21.9	156.2	190.0	179.6	231.8	237.8	269.3	19.3	46.0	179.1	24.5	52.2	122.8	137.1	1338.1	922.4
1 in 5 year	27.7	175.3	210.8	199.8	257.8	266.1	298.9	23.5	55.9	210.8	29.2	63.3	149.2	164.8	1627.6	1119.2
August																
1 in 50 year	5.4	103.6	131.9	105.0	139.8	141.5	168.7	6.3	14.5	96.2	7.1	10.7	32.5	42.4	638.7	444.5
1 in 20 year	6.8	112.4	142.0	112.2	150.3	152.8	181.1	7.5	17.1	106.0	8.4	13.4	40.0	51.1	751.0	521.1
1 in 10 year	8.4	120.8	151.6	119.0	160.4	163.7	192.8	8.7	19.7	115.6	9.8	16.5	48.2	60.3	867.2	600.0
1 in 5 year	10.8	131.9	164.2	127.8	173.5	177.9	208.2	10.5	23.6	128.5	11.8	21.1	60.3	73.8	1033.1	712.4
September																
1 in 50 year	2.8	85.2	111.5	82.4	112.1	116.8	137.3	3.2	7.9	67.9	3.0	3.7	16.3	24.4	478.4	333.4
1 in 20 year	3.8	94.0	121.6	89.4	121.8	125.6	149.0	4.0	9.8	76.9	4.4	5.1	21.6	31.1	592.3	411.2
1 in 10 year	5.0	102.5	131.4	96.1	131.1	134.5	160.2	4.8	11.8	85.8	5.7	6.9	27.6	38.5	715.9	495.4
1 in 5 year	7.0	113.9	144.3	104.8	143.5	146.5	174.9	6.1	14.8	98.1	7.5	9.9	37.2	49.9	901.8	621.6
October																
1 in 50 year	1.4	57.3	78.4	68.9	89.2	90.8	107.3	1.9	3.7	41.6	1.9	3.4	7.5	12.7	611.3	423.9
1 in 20 year	2.3	69.4	92.9	77.2	101.2	104.0	122.7	2.5	5.4	53.0	2.7	5.2	11.9	18.9	728.2	503.6
1 in 10 year	3.5	82.2	107.9	85.4	113.1	117.1	138.1	3.3	7.5	65.7	3.8	7.6	17.8	26.8	850.5	586.8
1 in 5 year	5.9	101.0	129.7	96.6	129.7	134.8	159.6	4.6	11.2	85.4	5.6	11.9	29.1	41.3	1027.6	706.8
November																
1 in 50 year	1.2	50.2	69.1	62.5	76.5	84.7	93.3	1.4	2.8	37.1	1.6	2.6	5.5	10.5	919.4	629.7
1 in 20 year	1.9	61.9	83.4	70.6	88.8	99.0	109.1	2.0	4.2	48.0	2.3	4.1	9.0	15.9	1057.4	723.1
1 in 10 year	3.0	74.6	98.6	78.8	101.3	113.8	125.4	2.6	6.0	60.2	3.2	6.1	13.9	23.0	1197.2	817.4
1 in 5 year	5.0	93.6	121.0	90.0	119.0	134.8	148.5	3.8	9.2	79.3	4.7	9.8	23.5	35.9	1392.5	949.1
December																
1 in 50 year	1.4	54.3	73.7	62.1	73.3	84.3	92.9	1.3	2.8	45.4	1.8	2.8	5.4	12.4	875.7	597.6
1 in 20 year	2.0	63.4	84.9	68.9	83.8	96.3	106.1	1.8	3.8	53.6	2.3	3.8	7.9	16.5	976.9	666.1
1 in 10 year	2.6	72.7	96.2	75.5	94.3	108.3	119.4	2.3	5.1	62.1	2.9	5.1	10.9	21.2	1076.5	733.5
1 in 5 year	3.8	86.0	112.1	84.4	109.0	125.0	137.8	3.2	7.1	74.3	3.8	7.2	16.3	28.8	1211.6	824.8

M:\1\01\00457\06\A\Data\Task 1002 - Baseline Watershed Model\Construction Model\Construction Statistical Analysis\[Construction Wet and Dry Flows_rev A.xlsm]@ Risk Check

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE E.4

NEW GOLD INC.
BLACKWATER GOLD PROJECT

WET RETURN PERIOD FLOWS - CONSTRUCTION CONDITIONS

29/08/2013 11:41

Wet Return Period Flows (L/s)																
	H3	H6	1-TC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January																
1 in 50 year	19	215	259	156	240	268	295	16	42	177	14	29	105	120	2130	1445
1 in 20 year	15	187	228	142	213	232	264	12	32	155	12	21	81	96	1952	1325
1 in 10 year	12	165	204	131	192	204	238	10	25	138	10	16	63	79	1807	1226
1 in 5 year	9	142	177	119	169	176	211	8	18	120	8	12	45	62	1644	1117
February																
1 in 50 year	13	191	232	144	213	235	263	11	38	152	11	13	110	118	2023	1370
1 in 20 year	10	166	204	131	190	205	236	9	27	134	9	10	74	79	1870	1268
1 in 10 year	8	146	182	121	171	181	214	7	20	120	7	8	51	57	1744	1183
1 in 5 year	6	126	159	110	151	156	189	6	14	105	6	7	33	46	1603	1087
March																
1 in 50 year	15	219	259	135	203	246	279	9	41	152	10	12	101	108	2324	1565
1 in 20 year	11	185	223	123	181	213	247	7	27	133	8	9	67	73	2144	1446
1 in 10 year	9	159	196	113	164	187	222	6	19	119	7	8	47	59	1997	1347
1 in 5 year	6	133	166	103	145	160	194	5	12	103	5	6	30	46	1830	1236
April																
1 in 50 year	447	1143	1176	458	673	842	897	144	649	1231	239	1125	2177	2328	7669	5147
1 in 20 year	240	853	901	346	529	668	724	75	326	862	125	474	1170	1251	6116	4119
1 in 10 year	138	659	711	269	427	543	598	42	177	628	70	220	674	709	5003	3380
1 in 5 year	70	481	534	198	329	423	475	21	84	427	35	87	345	407	3918	2657
May																
1 in 50 year	384	1350	1416	1173	1409	1579	1641	288	538	1815	349	990	2465	2512	19007	12667
1 in 20 year	343	1176	1241	1023	1238	1386	1447	235	475	1577	303	849	2120	2167	14590	9803
1 in 10 year	310	1041	1104	907	1104	1235	1294	197	426	1393	268	741	1855	1900	11538	7809
1 in 5 year	275	897	958	782	960	1073	1130	158	372	1197	230	628	1576	1620	8669	5920
June																
1 in 50 year	524	1410	1452	1352	1563	1685	1731	352	694	2307	222	536	1496	1523	16095	10972
1 in 20 year	415	1139	1189	1155	1340	1437	1484	276	570	1849	196	469	1277	1305	12615	8622
1 in 10 year	338	943	995	1005	1169	1248	1295	222	478	1519	176	417	1110	1138	10163	6961
1 in 5 year	263	749	801	848	990	1051	1097	171	386	1196	154	361	936	963	7811	5364
July																
1 in 50 year	130	373	416	401	518	555	592	85	200	614	92	222	533	550	5869	3970
1 in 20 year	104	335	378	363	469	501	537	71	167	528	78	186	446	464	4896	3319
1 in 10 year	86	305	347	333	430	456	493	60	143	462	68	159	380	399	4168	2832
1 in 5 year	68	272	313	299	386	408	444	50	117	392	57	131	313	332	3427	2334
August																
1 in 50 year	57	234	277	204	290	307	343	36	76	256	39	106	264	277	3250	2193
1 in 20 year	45	216	257	191	270	284	320	30	64	232	33	85	214	230	2764	1871
1 in 10 year	37	201	241	180	253	266	300	26	56	213	28	69	178	195	2394	1625
1 in 5 year	28	184	222	168	234	244	278	21	46	192	24	54	142	159	2009	1368
September																
1 in 50 year	60	227	267	186	258	278	312	27	65	236	30	108	265	272	4087	2745
1 in 20 year	44	206	245	171	238	253	287	22	53	209	25	77	201	214	3301	2225
1 in 10 year	34	189	227	160	221	232	267	18	44	187	21	57	157	173	2731	1847
1 in 5 year	24	170	206	146	202	210	245	14	35	163	18	40	116	134	2168	1472
October																
1 in 50 year	175	390	431	216	317	352	411	37	159	474	72	279	728	779	3545	2390
1 in 20 year	109	322	364	192	279	306	359	28	109	372	50	166	462	465	2976	2012
1 in 10 year	71	272	313	174	250	270	319	21	78	300	37	104	309	326	2548	1727
1 in 5 year	42	221	260	154	218	233	276	15	52	231	25	59	189	212	2109	1434
November																
1 in 50 year	167	414	459	215	341	413	451	40	159	483	66	277	739	790	3746	2523
1 in 20 year	102	336	380	190	294	347	385	29	106	374	46	159	454	485	3257	2198
1 in 10 year	66	278	322	170	258	298	335	21	74	298	33	97	295	309	2877	1944
1 in 5 year	39	222	262	149	219	247	283	15	48	226	22	53	174	197	2473	1674
December																
1 in 50 year	39	257	304	175	281	314	352	25	63	241	24	76	228	243	2628	1778
1 in 20 year	28	220	264	158	246	271	309	19	46	204	19	50	157	163	2355	1595
1 in 10 year	21	192	233	144	218	238	274	14	35	176	15	34	113	126	2137	1448
1 in 5 year	15	162	200	129	189	203	238	11	25	147	11	22	75	93	1899	1288

M:\1\01\00457\06\A\Data\Task 1002 - Baseline Watershed Model\Construction Model\Construction Statistical Analysis\[Construction Wet and Dry Flows_rev A.xlsm]Dry Summary Table

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE E.5

NEW GOLD INC.
BLACKWATER GOLD PROJECT

7 DAY LOW FLOWS - CONSTRUCTION CONDITIONS

29/08/2013 11:49

7 Day Low Flows (L/s)																
Return Period	Turtle Creek			Davidson Creek				Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
1 in 10 Year	0.9	43.1	59.1	48.0	59.5	59.8	77.7	0.8	0.9	41.1	1.1	3.7	9.8	10.5	677.7	468.8
1 in 20 Year	0.7	41.0	56.0	45.6	56.3	56.4	73.6	0.6	0.6	39.9	0.9	3.5	9.1	9.8	662.4	459.2

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NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

APPENDIX F

PREDICTED END OF MINE CONDITIONS STREAMFLOWS

Appendix F1 Unmitigated End of Mine Scenario
Appendix F2 Mitigated End of Mine Scenario

APPENDIX F1

UNMITIGATED END OF MINE SCENARIO

(Pages F1-1 to F1-7)

Knight Piésold CONSULTING

TABLE F1.1

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED AVERAGE MONTHLY STREAMFLOWS - END OF MINE CONDITIONS

Print Jun/26/13 11:01:57

	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**11-DC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
January	6	112	143	-	-	21	27	56	4	11	94	6	8	31	45	1284	951
February	4	99	128	-	-	16	20	49	2	8	82	4	5	20	33	1278	940
March	4	102	130	-	-	19	29	58	1	7	80	4	4	19	34	1480	1068
April	52	325	368	-	-	78	143	185	18	50	281	29	85	262	292	2815	2015
May	226	709	764	-	-	127	216	267	116	212	855	183	490	1233	1271	5548	4222
June	185	550	596	-	-	90	132	174	121	170	746	124	288	719	744	4915	3807
July	49	225	263	-	-	48	64	98	37	60	277	44	100	237	254	2349	1781
August	21	159	194	-	-	34	41	73	15	28	152	18	39	106	121	1386	1060
September	18	143	176	-	-	27	33	64	9	22	128	14	28	85	99	1499	1117
October	31	168	201	-	-	29	44	75	10	30	161	18	44	136	152	1468	1098
November	27	165	199	-	-	32	49	80	9	28	157	16	39	121	137	1830	1334
December	10	126	158	-	-	26	35	65	6	16	110	8	15	50	65	1442	1063
Annual Average	53	241	277	-	-	46	70	104	29	54	261	39	96	253	272	2274	1705

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\F EOM results\Appendix F1\[Tables F-1 to F-5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO GROUNDWATER FLOW PASSES THE INTERCEPTION DITCH AT THE ENVIRONMENTAL CONTROL DAM AND AN ENVIRONMENTAL CONTROL DAM SEEPAGE OF 0.2 L/S.
3. STREAMFLOW ESTIMATES IN DAVIDSON CREEK DO NOT INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE WATER TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM).
4. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT END OF MINE FLOW CONDITIONS.
5. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES ARE OUTSIDE THE SCOPE OF THE WATERSHED MODEL

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold
CONSULTING

TABLE F1.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - END OF MINE CONDITIONS

Print Jun/12/13 11:44:22

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/1998	8	130	161	-	-	25	32	61	2	12	105	7	10	43	57	1181	888
Feb/1998	6	118	148	-	-	22	28	56	2	9	95	6	6	30	44	1172	874
Mar/1998	6	116	146	-	-	24	31	59	1	7	91	5	5	29	43	1439	1046
Apr/1998	129	573	620	-	-	111	189	236	45	113	568	66	197	584	619	1212	1060
May/1998	179	685	739	-	-	136	228	280	75	163	721	123	311	824	863	4064	3084
Jun/1998	68	262	303	-	-	60	85	122	40	66	286	77	171	381	402	1856	1489
Jul/1998	21	162	199	-	-	38	49	82	19	30	162	25	53	127	143	1845	1382
Aug/1998	11	132	167	-	-	28	35	66	10	18	122	12	21	63	77	823	672
Sep/1998	8	115	147	-	-	21	26	56	6	12	102	8	11	39	53	718	589
Oct/1998	7	105	135	-	-	15	20	48	2	12	93	7	9	35	47	1197	901
Nov/1998	8	97	125	-	-	12	16	44	1	13	89	6	8	32	45	1473	1079
Dec/1998	6	86	113	-	-	9	12	39	1	10	81	5	5	23	35	1368	1002
Jan/1999	4	76	101	-	-	6	8	34	0	8	72	4	4	16	28	1350	983
Feb/1999	3	67	91	-	-	3	5	30	0	7	65	3	3	11	22	1389	1004
Mar/1999	3	62	85	-	-	3	4	28	0	6	60	3	3	8	19	1511	1080
Apr/1999	56	310	342	-	-	65	129	166	0	49	266	21	64	228	257	2062	1456
May/1999	207	591	629	-	-	104	182	225	77	184	762	143	408	1038	1072	3459	2684
Jun/1999	202	446	482	-	-	64	84	118	103	172	692	136	335	859	877	4282	3312
Jul/1999	61	215	249	-	-	39	48	79	38	64	264	61	140	318	333	1905	1482
Aug/1999	17	144	176	-	-	28	33	62	19	27	145	19	41	101	114	1497	1144
Sep/1999	9	122	151	-	-	21	24	53	11	17	111	10	17	52	64	1283	981
Oct/1999	6	107	134	-	-	15	18	45	6	13	93	7	8	32	45	1345	1010
Nov/1999	4	95	121	-	-	12	14	40	2	11	82	5	5	23	35	1594	1166
Dec/1999	3	85	110	-	-	9	10	36	1	9	74	4	4	16	28	1498	1095
Jan/2000	2	75	98	-	-	5	6	31	1	7	67	3	3	11	22	1286	947
Feb/2000	2	66	88	-	-	3	3	27	0	6	60	3	3	6	17	1290	942
Mar/2000	1	61	82	-	-	2	2	26	0	5	55	2	2	3	14	1261	918
Apr/2000	7	153	180	-	-	47	100	130	0	10	105	3	3	32	57	1824	1288
May/2000	231	643	677	-	-	96	170	205	122	217	839	204	566	1405	1435	1647	1646
Jun/2000	273	688	726	-	-	89	128	163	163	239	1019	163	386	996	1016	2399	2286
Jul/2000	94	301	339	-	-	65	91	125	52	99	413	71	174	432	450	1688	1405
Aug/2000	41	210	247	-	-	52	64	97	25	43	203	30	76	195	212	935	791
Sep/2000	34	189	225	-	-	44	52	85	18	31	158	21	55	153	169	880	728
Oct/2000	42	205	241	-	-	49	76	109	16	40	201	20	58	187	206	995	798
Nov/2000	43	222	262	-	-	61	96	132	15	42	216	20	58	194	215	1469	1111
Dec/2000	16	186	226	-	-	56	76	111	11	24	153	11	24	86	104	1203	924
Jan/2001	9	162	199	-	-	45	56	90	6	17	124	8	13	51	68	1144	874
Feb/2001	6	144	178	-	-	35	45	77	2	12	107	6	7	34	50	1116	847
Mar/2001	6	135	169	-	-	32	41	73	2	10	99	6	6	30	46	1139	855
Apr/2001	9	290	342	-	-	103	186	236	1	16	167	5	5	54	91	1483	1078
May/2001	226	682	741	-	-	144	241	298	123	214	858	197	555	1371	1412	1704	1684
Jun/2001	237	591	635	-	-	87	114	155	158	216	923	146	332	841	863	2467	2298
Jul/2001	52	255	296	-	-	49	63	98	46	71	318	51	107	245	262	1585	1303
Aug/2001	16	182	219	-	-	35	44	77	17	29	165	17	33	92	108	1037	839
Sep/2001	9	155	191	-	-	26	33	66	8	18	124	9	14	53	67	760	628
Oct/2001	9	146	179	-	-	23	30	62	4	16	111	8	11	47	61	781	632
Nov/2001	9	138	171	-	-	22	29	60	2	13	104	7	10	44	58	1164	879
Dec/2001	7	124	155	-	-	18	24	54	2	10	93	5	5	31	45	1178	880
Jan/2002	5	109	139	-	-	13	18	47	1	7	83	4	4	22	35	1151	854
Feb/2002	4	97	125	-	-	9	13	41	0	6	75	3	3	15	28	1199	880
Mar/2002	3	86	112	-	-	6	9	36	0	5	68	3	3	10	22	1148	840
Apr/2002	4	92	118	-	-	13	27	54	0	4	68	2	2	14	27	1476	1054
May/2002	287	933	988	-	-	140	238	290	140	264	1043	216	631	1665	1703	2531	2280
Jun/2002	248	990	1054	-	-	174	282	341	179	257	1204	154	348	872	916	4601	3780
Jul/2002	52	268	310	-	-	68	96	135	47	77	349	56	117	250	272	1644	1340
Aug/2002	15	144	181	-	-	39	49	82	14	24	143	17	33	85	101	893	730
Sep/2002	8	116	150	-	-	27	33	64	5	15	96	8	13	45	60	872	689
Oct/2002	8	106	139	-	-	22	26	57	2	14	86	7	10	40	53	888	691
Nov/2002	9	105	137	-	-	22	27	57	1	12	82	6	8	39	53	1145	856
Dec/2002	7	98	129	-	-	20	26	55	1	10	76	5	5	29	43	1142	847
Jan/2003	5	86	115	-	-	15	19	48	0	8	68	4	4	21	34	1125	829
Feb/2003	4	76	103	-	-	10	14	41	0	7	61	3	3	14	27	1094	803
Mar/2003	3	67	93	-	-	7	10	36	0	5	55	2	2	9	21	1191	863
Apr/2003	19	305	362	-	-	96	185	237	0	23	185	4	5	81	118	1567	1114
May/2003	168	546	611	-	-	135	242	301	76	153	644	140	370	910	953	2182	1851
Jun/2003	176	372	411	-	-	61	85	122	97	146	610	112	272	721	740	2457	2109
Jul/2003	33	168	202	-	-	31	39	70	23	41	201	30	69	166	180	1361	1085
Aug/2003	10	125	156	-	-	20	24	53	6	17	106	11	21	58	71	806	647
Sep/2003	36	148	178	-	-	18	21	49	4	26	109	22	56	154	167	771	613
Oct/2003	121	429	465	-	-	65	119	152	28	98	412	66	188	532	558	929	806
Nov/2003	106	452	492	-	-	84	149	185	36	102	468	62	174	490	520	1223	1027
Dec/2003	23	187	224	-	-	46	64	97	16	35	191	20	48	127	144	1199	935

Knight Piésold CONSULTING

TABLE F1.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - END OF MINE CONDITIONS

Print Jun/12/13 11:44:22

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/2004	9	135	169	-	-	32	38	70	9	17	119	9	17	52	66	1107	850
Feb/2004	6	115	148	-	-	24	28	58	4	11	94	6	7	30	43	1092	829
Mar/2004	12	133	167	-	-	35	65	97	3	11	103	6	8	50	68	1248	928
Apr/2004	171	589	631	-	-	94	173	210	78	152	691	100	324	904	935	1450	1318
May/2004	235	711	758	-	-	110	174	214	126	209	876	159	380	972	1002	1747	1712
Jun/2004	90	308	352	-	-	70	89	128	68	84	355	100	219	490	509	1337	1241
Jul/2004	23	190	232	-	-	52	61	98	29	36	192	29	61	142	158	1452	1146
Aug/2004	16	166	205	-	-	41	48	83	18	26	152	15	30	84	100	1341	1032
Sep/2004	71	249	289	-	-	47	70	106	25	64	290	44	115	320	337	2385	1757
Oct/2004	103	313	358	-	-	64	110	149	32	88	390	59	163	462	483	1592	1248
Nov/2004	54	262	309	-	-	72	110	150	27	55	279	31	87	255	276	4402	3091
Dec/2004	18	213	259	-	-	65	83	122	20	29	186	15	34	105	125	2520	1821
Jan/2005	10	184	227	-	-	52	64	102	14	20	150	10	17	61	79	1904	1399
Feb/2005	7	164	204	-	-	41	52	88	10	15	129	8	10	41	58	1860	1359
Mar/2005	10	159	198	-	-	38	49	84	7	13	121	8	11	45	61	2516	1790
Apr/2005	204	752	799	-	-	120	193	240	107	197	858	139	438	1196	1230	4340	3350
May/2005	230	841	892	-	-	142	227	278	136	223	1005	143	330	835	873	7958	5846
Jun/2005	53	280	326	-	-	68	93	134	48	76	339	66	135	286	308	4816	3450
Jul/2005	47	222	267	-	-	50	64	102	30	47	213	39	93	233	251	2182	1628
Aug/2005	45	208	251	-	-	42	54	91	25	41	186	33	81	215	233	1410	1100
Sep/2005	15	160	200	-	-	33	42	78	18	24	149	15	31	87	103	1332	1034
Oct/2005	55	229	270	-	-	41	73	109	20	52	260	30	81	244	264	2257	1653
Nov/2005	61	254	298	-	-	53	92	130	21	58	290	34	92	275	297	2051	1520
Dec/2005	17	181	224	-	-	48	66	103	16	26	170	14	30	90	109	1627	1227
Jan/2006	8	153	193	-	-	38	50	85	11	16	129	9	12	45	62	1363	1040
Feb/2006	5	136	173	-	-	30	40	74	6	11	109	7	7	30	45	1196	919
Mar/2006	4	123	159	-	-	25	34	67	3	8	96	5	6	22	37	1201	913
Apr/2006	109	555	614	-	-	116	203	257	37	99	517	55	155	474	512	1498	1230
May/2006	195	709	775	-	-	143	246	306	89	176	761	143	357	926	969	3084	2503
Jun/2006	105	313	359	-	-	61	89	130	71	93	395	100	239	551	572	2695	2179
Jul/2006	22	175	216	-	-	38	50	86	28	34	190	28	61	137	154	1411	1133
Aug/2006	9	140	178	-	-	28	35	69	15	18	133	11	19	52	67	873	726
Sep/2006	5	123	158	-	-	21	27	59	9	14	111	7	8	29	43	727	611
Oct/2006	4	111	145	-	-	17	23	54	5	13	99	5	6	22	35	895	713
Nov/2006	3	101	133	-	-	14	19	49	2	11	90	4	4	16	29	1469	1087
Dec/2006	2	89	119	-	-	10	14	43	2	9	81	4	4	11	23	1379	1018
Jan/2007	2	79	107	-	-	7	10	37	1	8	72	3	3	6	18	1388	1018
Feb/2007	1	70	97	-	-	4	6	33	0	6	65	2	2	3	14	1383	1008
Mar/2007	1	64	89	-	-	3	4	31	0	5	59	2	2	2	13	1576	1131
Apr/2007	4	246	296	-	-	86	167	216	0	12	139	2	2	29	64	2950	2041
May/2007	207	638	697	-	-	134	233	289	114	206	806	192	527	1289	1329	7644	5618
Jun/2007	281	613	655	-	-	83	118	156	160	236	986	168	400	1034	1055	14604	10416
Jul/2007	106	304	344	-	-	56	79	114	58	106	448	79	195	485	502	3844	2874
Aug/2007	24	184	221	-	-	40	50	82	22	38	191	22	51	129	144	2415	1774
Sep/2007	19	166	201	-	-	33	40	71	13	26	140	14	29	85	100	1839	1358
Oct/2007	49	207	243	-	-	39	58	91	14	40	194	22	64	201	216	3065	2172
Nov/2007	48	214	252	-	-	45	67	101	14	42	207	22	67	212	228	2922	2074
Dec/2007	16	168	204	-	-	38	49	82	9	22	140	12	27	86	102	2077	1503
Jan/2008	9	145	178	-	-	30	38	69	5	15	113	8	13	50	65	1734	1264
Feb/2008	6	128	159	-	-	23	29	59	2	10	97	6	7	33	47	1698	1231
Mar/2008	5	119	149	-	-	21	27	57	2	7	89	5	5	25	39	1678	1210
Apr/2008	6	114	143	-	-	20	26	55	1	6	84	5	5	26	40	1816	1297
May/2008	229	736	770	-	-	89	151	187	130	222	870	218	581	1446	1475	9687	7049
Jun/2008	228	805	845	-	-	113	187	227	164	214	996	136	310	793	826	3456	3007
Jul/2008	39	230	268	-	-	53	73	108	40	57	294	34	74	170	189	1450	1201
Aug/2008	17	146	181	-	-	35	44	76	13	25	144	15	29	76	91	1354	1036
Sep/2008	15	129	162	-	-	27	33	65	6	19	112	12	22	64	78	1226	927
Oct/2008	29	142	175	-	-	27	33	64	5	21	114	14	37	116	130	1237	929
Nov/2008	34	164	200	-	-	39	62	95	5	24	128	15	44	142	159	1713	1247
Dec/2008	16	149	186	-	-	43	69	103	3	17	120	10	22	82	99	1568	1144

Knight Piésold CONSULTING

TABLE F1.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - END OF MINE CONDITIONS

Print Jun/12/13 11:44:22

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/2009	10	129	163	-	-	33	45	77	2	12	106	7	12	52	68	1427	1043
Feb/2009	7	114	146	-	-	26	34	64	1	9	94	6	6	35	50	1423	1033
Mar/2009	5	101	131	-	-	20	26	56	1	6	84	4	4	25	39	1459	1051
Apr/2009	8	280	336	-	-	99	185	236	0	14	165	4	4	52	89	2616	1817
May/2009	239	706	770	-	-	145	248	306	127	224	888	214	592	1454	1497	4837	3790
Jun/2009	232	573	615	-	-	80	106	145	161	210	924	136	313	807	828	4879	3919
Jul/2009	43	217	254	-	-	41	52	85	39	59	289	36	78	187	203	2325	1778
Aug/2009	13	150	184	-	-	28	34	65	10	22	140	13	22	65	79	1019	806
Sep/2009	7	127	159	-	-	20	25	55	4	12	103	7	8	35	48	897	698
Oct/2009	5	112	142	-	-	15	18	47	2	9	88	5	5	23	36	1002	756
Nov/2009	3	99	127	-	-	10	13	41	1	8	79	4	4	16	28	1733	1235
Dec/2009	2	88	114	-	-	7	9	36	1	6	70	3	3	10	22	1438	1032
Jan/2010	2	78	102	-	-	4	5	31	0	5	63	2	2	5	17	1402	1002
Feb/2010	1	69	92	-	-	2	2	27	0	4	57	2	2	2	13	1418	1008
Mar/2010	3	186	219	-	-	61	126	163	0	7	105	1	1	17	46	1412	998
Apr/2010	52	276	315	-	-	85	165	208	0	36	193	21	64	205	239	2427	1683
May/2010	120	261	295	-	-	39	58	90	25	85	283	81	212	538	555	4197	3003
Jun/2010	86	214	245	-	-	25	30	59	34	69	247	78	184	435	449	3424	2523
Jul/2010	21	134	163	-	-	17	19	47	10	27	137	22	48	120	132	1522	1144
Aug/2010	9	109	137	-	-	12	13	40	3	15	102	9	15	51	62	885	688
Sep/2010	6	96	122	-	-	9	9	35	1	13	91	6	7	32	44	6018	4093
Oct/2010	8	91	115	-	-	6	6	31	1	14	88	7	9	38	49	3648	2513
Nov/2010	9	86	108	-	-	4	4	28	0	13	83	7	10	40	50	2230	1566
Dec/2010	7	75	96	-	-	2	2	25	0	10	75	5	5	27	37	1634	1164
Jan/2011	5	65	85	-	-	0	0	23	0	8	67	4	4	19	29	854	638
Feb/2011	4	57	76	-	-	0	0	22	0	7	61	3	3	13	23	923	678
Mar/2011	3	50	68	-	-	0	0	21	0	6	54	2	2	8	18	1715	1200
Apr/2011	3	63	83	-	-	10	30	53	0	5	57	2	2	12	26	12107	8114
May/2011	436	1317	1404	-	-	209	352	421	263	434	1661	371	996	2534	2586	20662	14859
Jun/2011	275	1290	1391	-	-	251	401	483	229	279	1395	159	364	930	988	13897	10108
Jul/2011	82	339	386	-	-	94	129	172	57	93	430	58	142	349	373	7884	5513
Aug/2011	54	204	242	-	-	57	69	103	21	54	229	36	93	247	264	3495	2469
Sep/2011	15	137	172	-	-	40	46	77	10	25	132	13	28	81	96	1416	1054
Oct/2011	8	116	148	-	-	30	34	64	4	16	102	8	11	42	56	1142	859
Nov/2011	5	101	132	-	-	23	26	54	2	12	87	5	6	27	40	1419	1034
Dec/2011	4	89	118	-	-	17	19	47	1	10	78	4	4	19	31	823	631
Jan/2012	3	79	105	-	-	12	14	40	1	8	70	3	3	12	24	841	637
Feb/2012	2	70	95	-	-	8	9	34	0	6	62	3	3	7	19	910	677
Mar/2012	1	62	85	-	-	5	5	30	0	5	56	2	2	4	15	1701	1198
Apr/2012	7	282	339	-	-	99	187	239	0	16	159	2	2	44	82	3402	2330
May/2012	207	645	712	-	-	145	252	312	113	204	807	194	530	1293	1336	7815	5722
Jun/2012	227	504	542	-	-	70	93	129	144	195	823	135	308	791	810	6556	4985
Jul/2012	46	195	228	-	-	34	40	71	36	58	260	39	84	199	213	3139	2305
Aug/2012	15	134	164	-	-	22	24	52	9	23	125	13	26	74	86	1997	1449
Sep/2012	8	113	141	-	-	15	16	43	3	14	92	7	10	41	52	1355	997
Oct/2012	6	99	125	-	-	11	11	37	2	11	79	5	5	26	38	1048	782
Nov/2012	4	87	112	-	-	7	7	32	1	9	70	4	4	18	29	1440	1036
Dec/2012	3	77	100	-	-	4	4	28	0	7	62	3	3	12	23	972	718

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\F EOM results\Appendix F1\[Tables F-1 to F-5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO GROUNDWATER FLOW PASSES THE INTERCEPTION DITCH AT THE ENVIRONMENTAL CONTROL DAM AND AN ENVIRONMENTAL CONTROL DAM SEEPAGE OF 0.2 L/S.
3. STREAMFLOW ESTIMATES IN DAVIDSON CREEK DO NOT INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE WATER TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM).
4. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT END OF MINE FLOW CONDITIONS.
5. ESTIMATED STREAMFLOW VALUES WERE OBTAINED FROM THE END OF MINE WATERSHED MODEL.
6. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES ARE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE F1.3

NEW GOLD INC.
BLACKWATER GOLD PROJECT

DRY RETURN PERIOD FLOWS - END OF MINE CONDITIONS

Print Oct/11/13 16:04:47

Dry Return Period Flows (L/s)															
	H3	H6	1-TC	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January															
1 in 50 year	1.4	52.6	72.1	0.2	0.8	20.1	0.0	4.5	49.0	1.9	2.4	4.0	12.9	796.6	604.0
1 in 20 year	1.8	60.5	81.9	0.3	2.2	24.2	0.0	5.3	55.3	2.3	3.0	4.8	16.1	872.1	658.5
1 in 10 year	2.3	68.5	91.7	0.7	4.2	28.6	0.0	6.2	61.6	2.7	3.7	6.2	19.6	945.1	710.9
1 in 5 year	3.0	79.8	105.2	2.8	8.0	34.9	0.0	7.4	70.2	3.4	5.0	9.3	25.0	1042.2	780.4
February															
1 in 50 year	1.0	46.5	64.8	0.2	0.2	18.3	0.0	4.0	45.3	1.5	1.6	1.9	10.5	832.7	625.8
1 in 20 year	1.3	53.5	73.6	0.2	0.3	21.8	0.0	4.6	50.6	1.8	2.1	2.8	12.9	903.4	676.3
1 in 10 year	1.7	60.6	82.4	0.4	0.5	25.6	0.0	5.2	55.9	2.2	2.7	4.1	15.5	971.2	724.4
1 in 5 year	2.2	70.5	94.5	1.7	2.3	31.0	0.0	6.0	63.1	2.7	3.7	6.3	19.4	1060.6	787.8
March															
1 in 50 year	0.8	40.2	57.7	0.2	0.2	15.1	0.0	3.6	42.5	1.1	1.2	1.7	9.4	940.2	701.9
1 in 20 year	1.1	47.6	67.0	0.2	0.3	19.1	0.0	4.1	47.8	1.3	1.7	2.6	11.7	1024.5	760.2
1 in 10 year	1.4	55.3	76.5	0.4	0.8	23.5	0.0	4.6	53.1	1.6	2.2	3.7	14.4	1105.6	816.0
1 in 5 year	1.9	66.4	90.0	1.6	2.6	30.3	0.0	5.3	60.3	2.1	3.1	5.7	18.3	1213.1	889.4
April															
1 in 50 year	0.9	60.9	81.1	11.5	24.2	48.0	0.0	1.9	35.6	0.4	1.4	4.3	10.6	674.3	539.5
1 in 20 year	1.6	81.6	105.9	16.1	33.2	61.2	0.0	3.1	50.2	0.7	2.6	7.9	17.8	858.0	675.3
1 in 10 year	2.8	105.7	134.1	21.7	43.9	76.0	0.0	4.9	68.2	1.2	4.6	13.7	28.1	1062.5	824.1
1 in 5 year	5.5	144.9	178.8	31.2	61.7	98.8	0.0	8.6	98.9	2.4	9.0	26.9	49.0	1378.5	1050.2
May															
1 in 50 year	123.9	338.7	376.8	56.1	88.5	123.5	36.8	100.4	385.0	85.5	212.9	543.3	568.6	917.5	913.2
1 in 20 year	138.7	388.6	429.9	65.4	104.5	142.6	45.3	115.2	446.4	98.4	248.1	631.6	659.2	1242.4	1186.4
1 in 10 year	153.2	439.1	483.3	74.8	121.0	162.0	54.4	130.3	509.1	111.4	284.1	721.8	751.7	1625.9	1496.5
1 in 5 year	173.1	509.6	557.3	88.3	144.8	189.2	68.1	151.3	597.4	129.6	335.2	849.4	882.0	2256.0	1985.5
June															
1 in 50 year	50.8	166.0	194.3	27.1	32.8	56.6	30.2	51.7	204.3	64.5	141.3	305.6	322.9	982.7	915.5
1 in 20 year	64.1	205.4	237.4	33.6	41.8	69.1	38.7	64.0	257.5	73.0	161.3	357.9	376.8	1292.4	1171.0
1 in 10 year	78.8	248.2	283.5	40.5	51.9	82.4	48.2	77.5	316.2	81.4	181.5	411.9	432.1	1648.3	1456.9
1 in 5 year	101.3	312.4	352.0	51.0	67.4	102.2	62.9	97.7	406.0	92.9	209.5	488.6	510.6	2216.3	1901.0
July															
1 in 50 year	14.5	127.7	158.4	20.3	22.9	49.6	13.1	22.5	123.8	18.0	37.3	87.5	99.5	764.4	643.1
1 in 20 year	18.0	142.0	174.4	23.8	27.6	56.4	15.9	26.8	143.6	21.2	44.6	104.7	117.9	929.9	769.9
1 in 10 year	21.9	156.2	190.0	27.4	32.5	63.1	18.7	31.4	163.9	24.5	52.2	122.8	137.1	1106.6	903.3
1 in 5 year	27.7	175.3	210.8	32.6	39.7	72.4	23.0	38.1	192.4	29.2	63.3	149.2	164.8	1367.7	1097.2
August															
1 in 50 year	5.4	103.6	131.9	14.1	15.7	42.0	3.9	12.2	92.3	7.1	10.7	32.5	42.4	511.8	439.5
1 in 20 year	6.8	112.3	142.0	16.6	18.7	46.7	5.0	14.2	101.5	8.4	13.4	40.0	51.1	611.6	515.4
1 in 10 year	8.4	120.7	151.6	19.1	21.9	51.2	6.2	16.3	110.4	9.8	16.5	48.2	60.3	716.4	593.8
1 in 5 year	10.8	131.8	164.2	22.7	26.5	57.4	8.1	19.2	122.3	11.8	21.1	60.3	73.8	868.6	705.4
September															
1 in 50 year	2.8	85.2	111.5	9.9	10.4	34.8	1.4	7.8	66.6	3.0	3.7	16.3	24.4	383.7	329.9
1 in 20 year	3.8	93.9	121.6	11.9	12.8	39.0	2.0	9.4	75.1	4.4	5.1	21.6	31.1	483.9	407.3
1 in 10 year	5.0	102.4	131.4	13.9	15.5	43.2	2.6	11.1	83.6	5.7	6.9	27.6	38.5	594.5	491.1
1 in 5 year	7.0	113.8	144.3	16.9	19.4	48.9	3.7	13.5	95.2	7.5	9.9	37.2	49.9	763.9	616.7
October															
1 in 50 year	1.4	57.3	78.4	6.0	9.2	24.6	0.7	4.5	42.5	1.9	3.4	7.5	12.7	503.6	419.6
1 in 20 year	2.3	69.4	92.9	7.9	12.1	30.0	1.0	6.2	53.5	2.7	5.2	11.9	18.9	608.9	498.6
1 in 10 year	3.5	82.2	107.9	10.1	15.5	35.8	1.4	8.2	65.7	3.8	7.6	17.8	26.8	720.6	581.0
1 in 5 year	5.9	101.0	129.7	13.6	20.9	44.3	2.1	11.6	84.3	5.6	11.9	29.1	41.3	884.7	700.1
November															
1 in 50 year	1.2	50.1	69.1	3.5	5.3	19.8	0.2	3.8	37.5	1.6	2.6	5.5	10.5	808.3	625.4
1 in 20 year	1.9	61.9	83.4	5.1	7.8	25.2	0.3	5.3	48.1	2.3	4.1	9.0	15.9	937.7	718.2
1 in 10 year	3.0	74.6	98.6	7.1	10.8	31.3	0.6	7.1	59.8	3.2	6.1	13.9	23.0	1069.7	812.1
1 in 5 year	5.0	93.6	121.0	10.6	16.2	40.8	1.1	10.2	78.1	4.7	9.8	23.5	35.9	1255.8	943.1
December															
1 in 50 year	1.4	54.3	73.7	1.8	1.9	19.2	0.0	4.3	45.5	1.8	2.8	5.4	12.4	781.0	596.1
1 in 20 year	2.0	63.4	84.9	2.8	3.1	23.8	0.0	5.4	53.4	2.3	3.8	7.9	16.5	875.8	664.4
1 in 10 year	2.6	72.7	96.2	4.2	4.7	28.9	0.0	6.6	61.6	2.9	5.1	10.9	21.2	969.6	731.5
1 in 5 year	3.8	85.9	112.1	6.8	8.0	36.6	0.2	8.5	73.3	3.8	7.2	16.3	28.8	1097.4	822.4

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\F EOM results\Appendix F1\[Tables F-1 to F-5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES ARE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.
3. H2 IS NOT SHOWN AS ANY WATER REPORTING TO THAT NODE IS ASSUMED TO BE PUMPED BACK INTO THE TSF.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE F1.4

NEW GOLD INC.
BLACKWATER GOLD PROJECT

WET RETURN PERIOD FLOWS - END OF MINE CONDITIONS

Print Oct/11/13 16:04:47

Wet Return Period Flows (L/s)															
	H3	H6	1-TC	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January															
1 in 50 year	19	215	259	62	88	131	16	24	165	14	29	105	120	1977	1437
1 in 20 year	15	187	228	52	71	109	12	20	147	12	21	81	96	1806	1318
1 in 10 year	12	165	204	44	57	92	10	18	132	10	16	63	79	1667	1221
1 in 5 year	9	142	177	35	42	75	7	15	115	8	12	45	62	1511	1112
February															
1 in 50 year	13	191	232	51	89	110	9	16	139	11	13	110	118	1888	1363
1 in 20 year	10	166	204	42	75	92	7	14	124	9	10	74	79	1740	1262
1 in 10 year	8	146	182	35	64	78	5	12	112	7	8	51	57	1619	1178
1 in 5 year	6	126	159	27	53	65	4	11	100	6	7	33	46	1482	1083
March															
1 in 50 year	15	219	259	53	94	159	6	13	138	10	12	101	108	2228	1564
1 in 20 year	11	185	223	46	77	125	4	11	123	8	9	67	73	2044	1444
1 in 10 year	9	159	196	40	65	102	4	10	111	7	8	47	59	1894	1345
1 in 5 year	6	133	166	33	50	79	2	9	98	5	6	30	46	1726	1234
April															
1 in 50 year	447	1143	1176	339	449	551	120	328	1130	239	1125	2177	2328	7582	5138
1 in 20 year	240	854	901	242	352	432	90	196	801	125	474	1170	1251	5959	4105
1 in 10 year	138	659	711	179	284	349	66	124	590	70	220	674	709	4812	3364
1 in 5 year	70	481	534	125	225	268	38	71	407	35	87	345	407	3709	2640
May															
1 in 50 year	384	1350	1416	260	468	523	296	402	1703	349	990	2465	2512	19265	12644
1 in 20 year	343	1176	1241	223	396	453	241	351	1468	303	849	2120	2167	14228	9733
1 in 10 year	310	1041	1104	195	342	399	200	310	1288	268	741	1855	1900	10872	7716
1 in 5 year	275	897	958	165	286	342	160	267	1097	230	628	1576	1620	7835	5816
June															
1 in 50 year	524	1410	1452	230	377	417	363	446	2087	222	536	1496	1523	15405	10850
1 in 20 year	415	1139	1189	186	295	342	283	360	1656	196	469	1277	1305	11713	8482
1 in 10 year	338	943	995	154	238	287	227	298	1348	176	417	1110	1138	9184	6818
1 in 5 year	263	749	801	122	183	231	174	236	1050	154	361	936	963	6830	5225
July															
1 in 50 year	130	373	416	101	148	178	87	134	551	92	222	533	550	5474	3921
1 in 20 year	104	335	378	86	123	157	72	113	475	78	186	446	464	4499	3275
1 in 10 year	86	305	347	75	104	140	61	96	416	68	159	380	399	3781	2791
1 in 5 year	68	272	313	63	85	122	50	79	354	57	131	313	332	3059	2298
August															
1 in 50 year	57	234	277	70	93	121	45	56	239	39	106	264	277	3065	2179
1 in 20 year	45	216	257	60	78	109	35	48	218	33	85	214	230	2565	1858
1 in 10 year	37	201	241	52	66	99	28	42	200	28	69	178	195	2190	1613
1 in 5 year	28	184	222	44	55	88	22	36	181	24	54	142	159	1806	1358
September															
1 in 50 year	60	227	267	61	85	110	37	50	223	30	108	265	272	3944	2739
1 in 20 year	44	206	245	51	69	98	27	41	198	25	77	201	214	3127	2219
1 in 10 year	34	189	227	43	57	88	20	35	178	21	57	157	173	2545	1840
1 in 5 year	24	170	206	36	46	78	14	29	156	18	40	116	134	1981	1466
October															
1 in 50 year	175	390	431	96	147	180	49	109	432	72	279	728	779	3389	2373
1 in 20 year	109	322	364	73	112	148	33	79	343	50	166	462	465	2803	1997
1 in 10 year	71	272	313	57	87	124	23	60	279	37	104	309	326	2368	1713
1 in 5 year	42	221	260	42	65	100	14	43	218	25	59	189	212	1929	1422
November															
1 in 50 year	167	414	459	148	188	230	75	107	447	66	277	739	790	3589	2511
1 in 20 year	102	336	380	102	147	180	41	77	349	46	159	454	485	3094	2187
1 in 10 year	66	278	322	73	118	145	24	57	281	33	97	295	309	2712	1934
1 in 5 year	39	222	262	49	91	112	13	40	215	22	53	174	197	2310	1665
December															
1 in 50 year	39	257	304	92	140	172	26	42	229	24	76	228	243	2469	1771
1 in 20 year	28	220	264	74	113	138	21	34	195	19	50	157	163	2201	1589
1 in 10 year	21	192	233	69	99	114	16	28	169	15	34	113	126	1989	1443
1 in 5 year	15	162	200	43	58	90	12	22	142	11	22	75	93	1757	1284

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\F EOM results\Appendix F1\[Tables F-1 to F-5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES ARE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.
3. H2 IS NOT SHOWN AS ANY WATER REPORTING TO THAT NODE IS ASSUMED TO BE PUMPED BACK INTO THE TSF.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE F1.5

NEW GOLD INC.
BLACKWATER GOLD PROJECT

7 DAY LOW FLOWS - END OF MINE CONDITIONS

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7 Day Low Flows (L/s)															
Return Period	Turtle Creek			Davidson Creek			Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
1 in 10 Year	0.9	43.1	59.1	0.5	0.7	17.8	0.0	3.4	42.9	1.1	3.7	9.8	10.5	571.3	465.6
1 in 20 Year	0.7	41.0	56.0	0.0	0.0	16.4	0.0	3.2	42.0	0.9	3.5	9.1	9.8	555.6	456.2

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\F EOM results\Appendix F1\[Tables F-1 to F-5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES ARE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.
3. H2 IS NOT SHOWN AS ANY SEEPAGE REPORTING TO THIS NODE IS ASSUMED TO BE PUMPED BACK TO THE TSF.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

APPENDIX F2

MITIGATED END OF MINE SCENARIO

(Pages F2-1 to F2-7)

Knight Piésold CONSULTING

TABLE F2.1

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED AVERAGE MONTHLY STREAMFLOWS - END OF MINE CONDITIONS
MITIGATED SCENARIO

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	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**11-DC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
January	6	112	143	-	125	146	152	181	4	11	94	6	8	31	45	1251	793
February	4	99	128	-	125	141	145	174	2	8	82	4	5	20	33	1245	782
March	4	102	130	-	125	144	154	183	1	7	80	4	4	19	34	1447	910
April	52	325	368	-	125	203	268	310	18	50	281	29	85	262	292	2782	1857
May	226	709	764	-	570	697	786	837	116	212	855	183	490	1233	1271	5515	3619
June	185	550	596	-	560	650	692	734	121	170	746	124	288	719	744	4882	3214
July	49	225	263	-	240	288	304	338	37	60	277	44	100	237	254	2316	1508
August	21	159	194	-	150	184	191	223	15	28	152	18	39	106	121	1353	877
September	18	143	176	-	115	142	148	179	9	22	128	14	28	85	99	1466	969
October	31	168	201	-	115	144	159	190	10	30	161	18	44	136	152	1435	950
November	27	165	199	-	115	147	164	195	9	28	157	16	39	121	137	1797	1186
December	10	126	158	-	125	151	160	190	6	16	110	8	15	50	65	1409	905
Annual Average	53	241	277	-	208	254	277	312	29	54	261	39	96	253	272	2241	1464

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\F EOM results\Appendix F2\[Tables F2.1 to F2.5.xlsx]Table 4

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO GROUNDWATER FLOW PASSES THE INTERCEPTION DITCH AT THE ENVIRONMENTAL CONTROL DAM AND AN ENVIRONMENTAL CONTROL DAM SEEPAGE OF 0.2 L/S.
3. STREAMFLOW ESTIMATES IN DAVIDSON CREEK INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE INSTREAM FLOW NEEDS TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM). REPORTED FLOWS AT THE H2 NODE INCLUDE THE INPUTS FROM THE MITIGATION SYSTEM.
4. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT END OF MINE FLOW CONDITIONS.
5. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	02OCT'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE F2.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - END OF MINE CONDITIONS
MITIGATED SCENARIO

Print Jun/12/13 11:44:22

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/1998	8	130	161	-	125	150	157	186	2	12	105	7	10	43	57	1148	730
Feb/1998	6	118	148	-	125	147	153	181	2	9	95	6	6	30	44	1139	716
Mar/1998	6	116	146	-	125	149	156	184	1	7	91	5	5	29	43	1406	888
Apr/1998	129	573	620	-	125	236	314	361	45	113	568	66	197	584	619	1179	902
May/1998	179	685	739	-	570	706	798	850	75	163	721	123	311	824	863	4031	2481
Jun/1998	68	262	303	-	560	620	645	682	40	66	286	77	171	381	402	1823	896
Jul/1998	21	162	199	-	240	278	289	322	19	30	162	25	53	127	143	1812	1109
Aug/1998	11	132	167	-	150	178	185	216	10	18	122	12	21	63	77	790	489
Sep/1998	8	115	147	-	115	136	141	171	6	12	102	8	11	39	53	685	441
Oct/1998	7	105	135	-	115	130	135	163	2	12	93	7	9	35	47	1164	753
Nov/1998	8	97	125	-	115	127	131	159	1	13	89	6	8	32	45	1440	931
Dec/1998	6	86	113	-	125	134	137	164	1	10	81	5	5	23	35	1335	844
Jan/1999	4	76	101	-	125	131	133	159	0	8	72	4	4	16	28	1317	825
Feb/1999	3	67	91	-	125	128	130	155	0	7	65	3	3	11	22	1356	846
Mar/1999	3	62	85	-	125	128	129	153	0	6	60	3	3	8	19	1478	922
Apr/1999	56	310	342	-	125	190	254	291	0	49	266	21	64	228	257	2029	1298
May/1999	207	591	629	-	570	674	752	795	77	184	762	143	408	1038	1072	3426	2081
Jun/1999	202	446	482	-	560	624	644	678	103	172	692	136	335	859	877	4249	2719
Jul/1999	61	215	249	-	240	279	288	319	38	64	264	61	140	318	333	1872	1209
Aug/1999	17	144	176	-	150	178	183	212	19	27	145	19	41	101	114	1464	961
Sep/1999	9	122	151	-	115	136	139	168	11	17	111	10	17	52	64	1250	833
Oct/1999	6	107	134	-	115	130	133	160	6	13	93	7	8	32	45	1312	862
Nov/1999	4	95	121	-	115	127	129	155	2	11	82	5	5	23	35	1561	1018
Dec/1999	3	85	110	-	125	134	135	161	1	9	74	4	4	16	28	1465	937
Jan/2000	2	75	98	-	125	130	131	156	1	7	67	3	3	11	22	1253	789
Feb/2000	2	66	88	-	125	128	128	152	0	6	60	3	3	6	17	1257	784
Mar/2000	1	61	82	-	125	127	127	151	0	5	55	2	2	3	14	1228	760
Apr/2000	7	153	180	-	125	172	225	255	0	10	105	3	3	32	57	1791	1130
May/2000	231	643	677	-	570	666	740	775	122	217	839	204	566	1405	1435	1614	1043
Jun/2000	273	688	726	-	560	649	688	723	163	239	1019	163	386	996	1016	2366	1693
Jul/2000	94	301	339	-	240	305	331	365	52	99	413	71	174	432	450	1655	1132
Aug/2000	41	210	247	-	150	202	214	247	25	43	203	30	76	195	212	902	608
Sep/2000	34	189	225	-	115	159	167	200	18	31	158	21	55	153	169	847	580
Oct/2000	42	205	241	-	115	164	191	224	16	40	201	20	58	187	206	962	650
Nov/2000	43	222	262	-	115	176	211	247	15	42	216	20	58	194	215	1436	963
Dec/2000	16	186	226	-	125	181	201	236	11	24	153	11	24	86	104	1170	766
Jan/2001	9	162	199	-	125	170	181	215	6	17	124	8	13	51	68	1111	716
Feb/2001	6	144	178	-	125	160	170	202	2	12	107	6	7	34	50	1083	689
Mar/2001	6	135	169	-	125	157	166	198	2	10	99	6	6	30	46	1106	697
Apr/2001	9	290	342	-	125	228	311	361	1	16	167	5	5	54	91	1450	920
May/2001	226	682	741	-	570	714	811	868	123	214	858	197	555	1371	1412	1671	1081
Jun/2001	237	591	635	-	560	647	674	715	158	216	923	146	332	841	863	2434	1705
Jul/2001	52	255	296	-	240	289	303	338	46	71	318	51	107	245	262	1552	1030
Aug/2001	16	182	219	-	150	185	194	227	17	29	165	17	33	92	108	1004	656
Sep/2001	9	155	191	-	115	141	148	181	8	18	124	9	14	53	67	727	480
Oct/2001	9	146	179	-	115	138	145	177	4	16	111	8	11	47	61	748	484
Nov/2001	9	138	171	-	115	137	144	175	2	13	104	7	10	44	58	1131	731
Dec/2001	7	124	155	-	125	143	149	179	2	10	93	5	5	31	45	1145	722
Jan/2002	5	109	139	-	125	138	143	172	1	7	83	4	4	22	35	1118	696
Feb/2002	4	97	125	-	125	134	138	166	0	6	75	3	3	15	28	1166	722
Mar/2002	3	86	112	-	125	131	134	161	0	5	68	3	3	10	22	1115	682
Apr/2002	4	92	118	-	125	138	152	179	0	4	68	2	2	14	27	1443	896
May/2002	287	933	988	-	570	710	808	860	140	264	1043	216	631	1665	1703	2498	1677
Jun/2002	248	990	1054	-	560	734	842	901	179	257	1204	154	348	872	916	4568	3187
Jul/2002	52	268	310	-	240	308	336	375	47	77	349	56	117	250	272	1611	1067
Aug/2002	15	144	181	-	150	189	199	232	14	24	143	17	33	85	101	860	547
Sep/2002	8	116	150	-	115	142	148	179	5	15	96	8	13	45	60	839	541
Oct/2002	8	106	139	-	115	137	141	172	2	14	86	7	10	40	53	855	543
Nov/2002	9	105	137	-	115	137	142	172	1	12	82	6	8	39	53	1112	708
Dec/2002	7	98	129	-	125	145	151	180	1	10	76	5	5	29	43	1109	689
Jan/2003	5	86	115	-	125	140	144	173	0	8	68	4	4	21	34	1092	671
Feb/2003	4	76	103	-	125	135	139	166	0	7	61	3	3	14	27	1061	645
Mar/2003	3	67	93	-	125	132	135	161	0	5	55	2	2	9	21	1158	705
Apr/2003	19	305	362	-	125	221	310	362	0	23	185	4	5	81	118	1534	956
May/2003	168	546	611	-	570	705	812	871	76	153	644	140	370	910	953	2149	1248
Jun/2003	176	372	411	-	560	621	645	682	97	146	610	112	272	721	740	2424	1516
Jul/2003	33	168	202	-	240	271	279	310	23	41	201	30	69	166	180	1328	812
Aug/2003	10	125	156	-	150	170	174	203	6	17	106	11	21	58	71	773	464
Sep/2003	36	148	178	-	115	133	136	164	4	26	109	22	56	154	167	738	465
Oct/2003	121	429	465	-	115	180	234	267	28	98	412	66	188	532	558	896	658
Nov/2003	106	452	492	-	115	199	264	300	36	102	468	62	174	490	520	1190	879
Dec/2003	23	187	224	-	125	171	189	222	16	35	191	20	48	127	144	1166	777

Knight Piésold CONSULTING

TABLE F2.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - END OF MINE CONDITIONS
MITIGATED SCENARIO

Print Jun/12/13 11:44:22

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/2004	9	135	169	-	125	157	163	195	9	17	119	9	17	52	66	1074	692
Feb/2004	6	115	148	-	125	149	153	183	4	11	94	6	7	30	43	1059	671
Mar/2004	12	133	167	-	125	160	190	222	3	11	103	6	8	50	68	1215	770
Apr/2004	171	589	631	-	125	219	298	335	78	152	691	100	324	904	935	1417	1160
May/2004	235	711	758	-	570	680	744	784	126	209	876	159	380	972	1002	1714	1109
Jun/2004	90	308	352	-	560	630	649	688	68	84	355	100	219	490	509	1304	648
Jul/2004	23	190	232	-	240	292	301	338	29	36	192	29	61	142	158	1419	873
Aug/2004	16	166	205	-	150	191	198	233	18	26	152	15	30	84	100	1308	849
Sep/2004	71	249	289	-	115	162	185	221	25	64	290	44	115	320	337	2352	1609
Oct/2004	103	313	358	-	115	179	225	264	32	88	390	59	163	462	483	1559	1100
Nov/2004	54	262	309	-	115	187	225	265	27	55	279	31	87	255	276	4369	2943
Dec/2004	18	213	259	-	125	190	208	247	20	29	186	15	34	105	125	2487	1663
Jan/2005	10	184	227	-	125	177	189	227	14	20	150	10	17	61	79	1871	1241
Feb/2005	7	164	204	-	125	166	177	213	10	15	129	8	10	41	58	1827	1201
Mar/2005	10	159	198	-	125	163	174	209	7	13	121	8	11	45	61	2483	1632
Apr/2005	204	752	799	-	125	245	318	365	107	197	858	139	438	1196	1230	4307	3192
May/2005	230	841	892	-	570	712	797	848	136	223	1005	143	330	835	873	7925	5243
Jun/2005	53	280	326	-	560	628	653	694	48	76	339	66	135	286	308	4783	2857
Jul/2005	47	222	267	-	240	290	304	342	30	47	213	39	93	233	251	2149	1355
Aug/2005	45	208	251	-	150	192	204	241	25	41	186	33	81	215	233	1377	917
Sep/2005	15	160	200	-	115	148	157	193	18	24	149	15	31	87	103	1299	886
Oct/2005	55	229	270	-	115	156	188	224	20	52	260	30	81	244	264	2224	1505
Nov/2005	61	254	298	-	115	168	207	245	21	58	290	34	92	275	297	2018	1372
Dec/2005	17	181	224	-	125	173	191	228	16	26	170	14	30	90	109	1594	1069
Jan/2006	8	153	193	-	125	163	175	210	11	16	129	9	12	45	62	1330	882
Feb/2006	5	136	173	-	125	155	165	199	6	11	109	7	7	30	45	1163	761
Mar/2006	4	123	159	-	125	150	159	192	3	8	96	5	6	22	37	1168	755
Apr/2006	109	555	614	-	125	241	328	382	37	99	517	55	155	474	512	1465	1072
May/2006	195	709	775	-	570	713	816	876	89	176	761	143	357	926	969	3051	1900
Jun/2006	105	313	359	-	560	621	649	690	71	93	395	100	239	551	572	2662	1586
Jul/2006	22	175	216	-	240	278	290	326	28	34	190	28	61	137	154	1378	860
Aug/2006	9	140	178	-	150	178	185	219	15	18	133	11	19	52	67	840	543
Sep/2006	5	123	158	-	115	136	142	174	9	14	111	7	8	29	43	694	463
Oct/2006	4	111	145	-	115	132	138	169	5	13	99	5	6	22	35	862	565
Nov/2006	3	101	133	-	115	129	134	164	2	11	90	4	4	16	29	1436	939
Dec/2006	2	89	119	-	125	135	139	168	2	9	81	4	4	11	23	1346	860
Jan/2007	2	79	107	-	125	132	135	162	1	8	72	3	3	6	18	1355	860
Feb/2007	1	70	97	-	125	129	131	158	0	6	65	2	2	3	14	1350	850
Mar/2007	1	64	89	-	125	128	129	156	0	5	59	2	2	2	13	1543	973
Apr/2007	4	246	296	-	125	211	292	341	0	12	139	2	2	29	64	2917	1883
May/2007	207	638	697	-	570	704	803	859	114	206	806	192	527	1289	1329	7611	5015
Jun/2007	281	613	655	-	560	643	678	716	160	236	986	168	400	1034	1055	14571	9823
Jul/2007	106	304	344	-	240	296	319	354	58	106	448	79	195	485	502	3811	2601
Aug/2007	24	184	221	-	150	190	200	232	22	38	191	22	51	129	144	2382	1591
Sep/2007	19	166	201	-	115	148	155	186	13	26	140	14	29	85	100	1806	1210
Oct/2007	49	207	243	-	115	154	173	206	14	40	194	22	64	201	216	3032	2024
Nov/2007	48	214	252	-	115	160	182	216	14	42	207	22	67	212	228	2889	1926
Dec/2007	16	168	204	-	125	163	174	207	9	22	140	12	27	86	102	2044	1345
Jan/2008	9	145	178	-	125	155	163	194	5	15	113	8	13	50	65	1701	1106
Feb/2008	6	128	159	-	125	148	154	184	2	10	97	6	7	33	47	1665	1073
Mar/2008	5	119	149	-	125	146	152	182	2	7	89	5	5	25	39	1645	1052
Apr/2008	6	114	143	-	125	145	151	180	1	6	84	5	5	26	40	1783	1139
May/2008	229	736	770	-	570	659	721	757	130	222	870	218	581	1446	1475	9654	6446
Jun/2008	228	805	845	-	560	673	747	787	164	214	996	136	310	793	826	3423	2414
Jul/2008	39	230	268	-	240	293	313	348	40	57	294	34	74	170	189	1417	928
Aug/2008	17	146	181	-	150	185	194	226	13	25	144	15	29	76	91	1321	853
Sep/2008	15	129	162	-	115	142	148	180	6	19	112	12	22	64	78	1193	779
Oct/2008	29	142	175	-	115	142	148	179	5	21	114	14	37	116	130	1204	781
Nov/2008	34	164	200	-	115	154	177	210	5	24	128	15	44	142	159	1680	1099
Dec/2008	16	149	186	-	125	168	194	228	3	17	120	10	22	82	99	1535	986

Knight Piésold CONSULTING

TABLE F2.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - END OF MINE CONDITIONS
MITIGATED SCENARIO

Print Jun/12/13 11:44:22

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/2009	10	129	163	-	125	158	170	202	2	12	106	7	12	52	68	1394	885
Feb/2009	7	114	146	-	125	151	159	189	1	9	94	6	6	35	50	1390	875
Mar/2009	5	101	131	-	125	145	151	181	1	6	84	4	4	25	39	1426	893
Apr/2009	8	280	336	-	125	224	310	361	0	14	165	4	4	52	89	2583	1659
May/2009	239	706	770	-	570	715	818	876	127	224	888	214	592	1454	1497	4804	3187
Jun/2009	232	573	615	-	560	640	666	705	161	210	924	136	313	807	828	4846	3326
Jul/2009	43	217	254	-	240	281	292	325	39	59	289	36	78	187	203	2292	1505
Aug/2009	13	150	184	-	150	178	184	215	10	22	140	13	22	65	79	986	623
Sep/2009	7	127	159	-	115	135	140	170	4	12	103	7	8	35	48	864	550
Oct/2009	5	112	142	-	115	130	133	162	2	9	88	5	5	23	36	969	608
Nov/2009	3	99	127	-	115	125	128	156	1	8	79	4	4	16	28	1700	1087
Dec/2009	2	88	114	-	125	132	134	161	1	6	70	3	3	10	22	1405	874
Jan/2010	2	78	102	-	125	129	130	156	0	5	63	2	2	5	17	1369	844
Feb/2010	1	69	92	-	125	127	127	152	0	4	57	2	2	2	13	1385	850
Mar/2010	3	186	219	-	125	186	251	288	0	7	105	1	1	17	46	1379	840
Apr/2010	52	276	315	-	125	210	290	333	0	36	193	21	64	205	239	2394	1525
May/2010	120	261	295	-	570	609	628	660	25	85	283	81	212	538	555	4164	2400
Jun/2010	86	214	245	-	560	585	590	619	34	69	247	78	184	435	449	3391	1930
Jul/2010	21	134	163	-	240	257	259	287	10	27	137	22	48	120	132	1489	871
Aug/2010	9	109	137	-	150	162	163	190	3	15	102	9	15	51	62	852	505
Sep/2010	6	96	122	-	115	124	124	150	1	13	91	6	7	32	44	5985	3945
Oct/2010	8	91	115	-	115	121	121	146	1	14	88	7	9	38	49	3615	2365
Nov/2010	9	86	108	-	115	119	119	143	0	13	83	7	10	40	50	2197	1418
Dec/2010	7	75	96	-	125	127	127	150	0	10	75	5	5	27	37	1601	1006
Jan/2011	5	65	85	-	125	125	125	148	0	8	67	4	4	19	29	821	480
Feb/2011	4	57	76	-	125	125	125	147	0	7	61	3	3	13	23	890	520
Mar/2011	3	50	68	-	125	125	125	146	0	6	54	2	2	8	18	1682	1042
Apr/2011	3	63	83	-	125	135	155	178	0	5	57	2	2	12	26	12074	7956
May/2011	436	1317	1404	-	570	779	922	991	263	434	1661	371	996	2534	2586	20629	14256
Jun/2011	275	1290	1391	-	560	811	961	1043	229	279	1395	159	364	930	988	13864	9515
Jul/2011	82	339	386	-	240	334	369	412	57	93	430	58	142	349	373	7851	5240
Aug/2011	54	204	242	-	150	207	219	253	21	54	229	36	93	247	264	3462	2286
Sep/2011	15	137	172	-	115	155	161	192	10	25	132	13	28	81	96	1383	906
Oct/2011	8	116	148	-	115	145	149	179	4	16	102	8	11	42	56	1109	711
Nov/2011	5	101	132	-	115	138	141	169	2	12	87	5	6	27	40	1386	886
Dec/2011	4	89	118	-	125	142	144	172	1	10	78	4	4	19	31	790	473
Jan/2012	3	79	105	-	125	137	139	165	1	8	70	3	3	12	24	808	479
Feb/2012	2	70	95	-	125	133	134	159	0	6	62	3	3	7	19	877	519
Mar/2012	1	62	85	-	125	130	130	155	0	5	56	2	2	4	15	1668	1040
Apr/2012	7	282	339	-	125	224	312	364	0	16	159	2	2	44	82	3369	2172
May/2012	207	645	712	-	570	715	822	882	113	204	807	194	530	1293	1336	7782	5119
Jun/2012	227	504	542	-	560	630	653	689	144	195	823	135	308	791	810	6523	4392
Jul/2012	46	195	228	-	240	274	280	311	36	58	260	39	84	199	213	3106	2032
Aug/2012	15	134	164	-	150	172	174	202	9	23	125	13	26	74	86	1964	1266
Sep/2012	8	113	141	-	115	130	131	158	3	14	92	7	10	41	52	1322	849
Oct/2012	6	99	125	-	115	126	126	152	2	11	79	5	5	26	38	1015	634
Nov/2012	4	87	112	-	115	122	122	147	1	9	70	4	4	18	29	1407	888
Dec/2012	3	77	100	-	125	129	129	153	0	7	62	3	3	12	23	939	560

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\F EOM results\Appendix F2\[Tables F2.1 to F2.5.xlsx]Table 4

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO GROUNDWATER FLOW PASSES THE INTERCEPTION DITCH AT THE ENVIRONMENTAL CONTROL DAM AND AN ENVIRONMENTAL CONTROL DAM SEEPAGE OF 0.2 L/S.
3. STREAMFLOW ESTIMATES IN DAVIDSON CREEK INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE INSTREAM FLOW NEEDS TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM). REPORTED FLOWS AT THE H2 NODE INCLUDE THE INPUTS FROM THE MITIGATION SYSTEM.
4. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT END OF MINE FLOW CONDITIONS.
5. ESTIMATED STREAMFLOW VALUES WERE OBTAINED FROM THE END OF MINE WATERSHED MODEL.
6. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	02OCT'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE F2.3

NEW GOLD INC.
BLACKWATER GOLD PROJECT

DRY RETURN PERIOD FLOWS - END OF MINE CONDITIONS
MITIGATED SCENARIO

Print Oct/11/13 16:11:27

	Dry Return Period Flows (L/s)															
	H3	H6	1-TC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January																
1 in 50 year	1.4	52.6	72.1	N/A	125.0	125.0	146.3	0.0	4.5	49.0	1.9	2.4	4.0	12.9	765.4	454.6
1 in 20 year	1.8	60.5	81.9	N/A	125.0	125.0	147.4	0.0	5.3	55.3	2.3	3.0	4.8	16.1	840.0	504.8
1 in 10 year	2.3	68.5	91.7	N/A	126.0	126.2	149.2	0.0	6.2	61.6	2.7	3.7	6.2	19.6	912.4	554.1
1 in 5 year	3.0	79.8	105.2	N/A	128.5	129.4	153.1	0.0	7.4	70.2	3.4	5.0	9.3	25.0	1008.9	620.5
February																
1 in 50 year	1.0	46.5	64.8	N/A	125.0	125.0	145.8	0.0	4.0	45.3	1.5	1.6	1.9	10.5	801.6	476.6
1 in 20 year	1.3	53.5	73.6	N/A	125.0	125.0	146.7	0.0	4.6	50.6	1.8	2.1	2.8	12.9	871.5	523.3
1 in 10 year	1.7	60.6	82.4	N/A	125.8	126.0	148.1	0.0	5.2	55.9	2.2	2.7	4.1	15.5	938.7	568.7
1 in 5 year	2.2	70.5	94.5	N/A	127.7	128.4	151.3	0.0	6.0	63.1	2.7	3.7	6.3	19.4	1027.5	629.2
March																
1 in 50 year	0.8	40.2	57.7	N/A	125.0	125.0	136.1	0.0	3.6	42.5	1.1	1.2	1.7	9.4	909.9	557.4
1 in 20 year	1.1	47.6	67.0	N/A	125.0	125.0	142.3	0.0	4.1	47.8	1.3	1.7	2.6	11.7	993.3	611.3
1 in 10 year	1.4	55.3	76.5	N/A	125.9	126.3	148.3	0.0	4.6	53.1	1.6	2.2	3.7	14.4	1073.7	663.6
1 in 5 year	1.9	66.4	90.0	N/A	128.1	129.7	156.6	0.0	5.3	60.3	2.1	3.1	5.7	18.3	1180.5	733.3
April																
1 in 50 year	0.9	60.9	81.1	N/A	131.7	153.0	166.9	0.0	1.9	35.6	0.4	1.4	4.3	10.6	654.3	443.0
1 in 20 year	1.6	81.6	105.9	N/A	133.8	160.9	187.5	0.0	3.1	50.2	0.7	2.6	7.9	17.8	834.8	563.9
1 in 10 year	2.8	105.7	134.1	N/A	137.4	178.7	207.9	0.0	4.9	68.2	1.2	4.6	13.7	28.1	1036.3	698.5
1 in 5 year	5.5	144.9	178.8	N/A	145.4	203.0	235.8	0.0	8.6	98.9	2.4	9.0	26.9	49.0	1348.4	906.6
May																
1 in 50 year	123.9	338.7	376.8	N/A	623.4	658.3	689.6	36.8	100.4	385.0	85.5	212.9	543.3	568.6	897.5	545.5
1 in 20 year	138.7	388.6	429.9	N/A	637.3	681.5	716.1	45.3	115.2	446.4	98.4	248.1	631.6	659.2	1218.3	748.1
1 in 10 year	153.2	439.1	483.3	N/A	649.9	702.8	740.5	54.4	130.3	509.1	111.4	284.1	721.8	751.7	1597.7	990.2
1 in 5 year	173.1	509.6	557.3	N/A	665.6	729.6	771.4	68.1	151.3	597.4	129.6	335.2	849.4	882.0	2222.8	1393.0
June																
1 in 50 year	50.8	166.0	194.3	N/A	587.8	593.8	623.9	30.2	51.7	204.3	64.5	141.3	305.6	322.9	961.6	524.4
1 in 20 year	64.1	205.4	237.4	N/A	594.2	602.7	633.8	38.7	64.0	257.5	73.0	161.3	357.9	376.8	1267.6	712.1
1 in 10 year	78.8	248.2	283.5	N/A	601.1	612.7	645.0	48.2	77.5	316.2	81.4	181.5	411.9	432.1	1619.8	934.2
1 in 5 year	101.3	312.4	352.0	N/A	611.5	628.2	662.4	62.9	97.7	406.0	92.9	209.5	488.6	510.6	2183.5	1300.1
July																
1 in 50 year	14.5	127.7	158.4	N/A	253.6	260.9	281.3	13.1	22.5	123.8	18.0	37.3	87.5	99.5	742.0	454.9
1 in 20 year	18.0	142.0	174.4	N/A	260.1	267.0	291.6	15.9	26.8	143.6	21.2	44.6	104.7	117.9	904.8	560.0
1 in 10 year	21.9	156.2	190.0	N/A	266.0	273.1	301.1	18.7	31.4	163.9	24.5	52.2	122.8	137.1	1079.0	673.4
1 in 5 year	27.7	175.3	210.8	N/A	273.4	281.4	313.0	23.0	38.1	192.4	29.2	63.3	149.2	164.8	1337.1	843.0
August																
1 in 50 year	5.4	103.6	131.9	N/A	160.5	161.8	189.3	3.9	12.2	92.3	7.1	10.7	32.5	42.4	487.0	299.2
1 in 20 year	6.8	112.3	142.0	N/A	164.8	167.2	195.5	5.0	14.2	101.5	8.4	13.4	40.0	51.1	584.4	362.2
1 in 10 year	8.4	120.7	151.6	N/A	168.7	172.1	201.2	6.2	16.3	110.4	9.8	16.5	48.2	60.3	687.0	429.2
1 in 5 year	10.8	131.8	164.2	N/A	173.6	178.2	208.3	8.1	19.2	122.3	11.8	21.1	60.3	73.8	836.7	527.8
September																
1 in 50 year	2.8	85.2	111.5	N/A	121.0	124.5	145.9	1.4	7.8	66.6	3.0	3.7	16.3	24.4	363.0	234.8
1 in 20 year	3.8	93.9	121.6	N/A	124.8	127.8	151.8	2.0	9.4	75.1	4.4	5.1	21.6	31.1	460.1	298.7
1 in 10 year	5.0	102.4	131.4	N/A	128.3	131.0	157.3	2.6	11.1	83.6	5.7	6.9	27.6	38.5	567.7	369.7
1 in 5 year	7.0	113.8	144.3	N/A	132.6	135.4	164.2	3.7	13.5	95.2	7.5	9.9	37.2	49.9	733.4	479.4
October																
1 in 50 year	1.4	57.3	78.4	N/A	121.1	121.1	146.1	0.7	4.5	42.5	1.9	3.4	7.5	12.7	479.8	310.6
1 in 20 year	2.3	69.4	92.9	N/A	123.1	123.4	149.2	1.0	6.2	53.5	2.7	5.2	11.9	18.9	582.5	378.4
1 in 10 year	3.5	82.2	107.9	N/A	125.3	126.1	152.8	1.4	8.2	65.7	3.8	7.6	17.8	26.8	691.9	450.9
1 in 5 year	5.9	101.0	129.7	N/A	128.9	130.8	158.7	2.1	11.6	84.3	5.6	11.9	29.1	41.3	853.1	558.2
November																
1 in 50 year	1.2	50.1	69.1	N/A	117.6	118.7	142.9	0.2	3.8	37.5	1.6	2.6	5.5	10.5	782.1	507.1
1 in 20 year	1.9	61.9	83.4	N/A	118.5	120.6	145.5	0.3	5.3	48.1	2.3	4.1	9.0	15.9	909.5	591.4
1 in 10 year	3.0	74.6	98.6	N/A	120.0	123.1	148.7	0.6	7.1	59.8	3.2	6.1	13.9	23.0	1039.8	677.9
1 in 5 year	5.0	93.6	121.0	N/A	123.3	127.5	154.4	1.1	10.2	78.1	4.7	9.8	23.5	35.9	1224.0	800.4
December																
1 in 50 year	1.4	54.3	73.7	N/A	125.4	126.0	149.3	0.0	4.3	45.5	1.8	2.8	5.4	12.4	751.2	453.2
1 in 20 year	2.0	63.4	84.9	N/A	126.1	128.0	152.0	0.0	5.4	53.4	2.3	3.8	7.9	16.5	844.7	515.2
1 in 10 year	2.6	72.7	96.2	N/A	127.5	130.3	155.2	0.0	6.6	61.6	2.9	5.1	10.9	21.2	937.4	577.4
1 in 5 year	3.8	85.9	112.1	N/A	130.4	134.4	160.6	0.2	8.5	73.3	3.8	7.2	16.3	28.8	1064.2	663.3

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\F EOM results\Appendix F2\[Tables F2.1 to F2.5.xlsx]Table 4

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.
3. NO DISTRIBUTION IS SHOWN FOR H2 AS FLOWS ARE CONTROLED BY THE FRESH WATER SUPPLY SYSTEM.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	02OCT'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE F2.4

NEW GOLD INC.
BLACKWATER GOLD PROJECT

WET RETURN PERIOD FLOWS - END OF MINE CONDITIONS
MITIGATED SCENARIO

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Wet Return Period Flows (L/s)																
	H3	H6	1-TC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January																
1 in 50 year	19	215	259	N/A	206	228	277	16	24	165	14	29	105	120	1949	1303
1 in 20 year	15	187	228	N/A	186	203	246	12	20	147	12	21	81	96	1776	1173
1 in 10 year	12	165	204	N/A	172	185	223	10	18	132	10	16	63	79	1635	1069
1 in 5 year	9	142	177	N/A	157	166	199	7	15	115	8	12	45	62	1478	955
February																
1 in 50 year	13	191	232	N/A	186	203	250	9	16	139	11	13	110	118	1857	1220
1 in 20 year	10	166	204	N/A	172	184	225	7	14	124	9	10	74	79	1708	1111
1 in 10 year	8	146	182	N/A	161	170	207	5	12	112	7	8	51	57	1586	1022
1 in 5 year	6	126	159	N/A	150	156	188	4	11	100	6	7	33	46	1449	924
March																
1 in 50 year	15	219	259	N/A	196	235	258	6	13	138	10	12	101	108	2196	1410
1 in 20 year	11	185	223	N/A	179	209	236	4	11	123	8	9	67	73	2011	1286
1 in 10 year	9	159	196	N/A	167	189	219	4	10	111	7	8	47	59	1861	1185
1 in 5 year	6	133	166	N/A	154	169	202	2	9	98	5	6	30	46	1693	1072
April																
1 in 50 year	447	1143	1176	N/A	396	468	537	120	328	1130	239	1125	2177	2328	7557	4999
1 in 20 year	240	854	901	N/A	333	416	478	90	196	801	125	474	1170	1251	5923	3927
1 in 10 year	138	659	711	N/A	286	375	431	66	124	590	70	220	674	709	4772	3170
1 in 5 year	70	481	534	N/A	239	330	380	38	71	407	35	87	345	407	3667	2443
May																
1 in 50 year	384	1350	1416	N/A	778	933	1008	296	402	1703	349	990	2465	2512	19309	13022
1 in 20 year	343	1176	1241	N/A	761	901	970	241	351	1468	303	849	2120	2167	14225	9495
1 in 10 year	310	1041	1104	N/A	746	873	938	200	310	1288	268	741	1855	1900	10847	7174
1 in 5 year	275	897	958	N/A	729	841	901	160	267	1097	230	628	1576	1620	7797	5099
June																
1 in 50 year	524	1410	1452	N/A	781	921	989	363	446	2087	222	536	1496	1523	15424	11324
1 in 20 year	415	1139	1189	N/A	743	850	910	283	360	1656	196	469	1277	1305	11700	8340
1 in 10 year	338	943	995	N/A	713	797	851	227	298	1348	176	417	1110	1138	9156	6357
1 in 5 year	263	749	801	N/A	683	745	792	174	236	1050	154	361	936	963	6792	4567
July																
1 in 50 year	130	373	416	N/A	327	368	404	87	134	551	92	222	533	550	5443	3667
1 in 20 year	104	335	378	N/A	319	352	389	72	113	475	78	186	446	464	4463	2979
1 in 10 year	86	305	347	N/A	312	338	377	61	96	416	68	159	380	399	3743	2477
1 in 5 year	68	272	313	N/A	303	324	363	50	79	354	57	131	313	332	3020	1979
August																
1 in 50 year	57	234	277	N/A	209	224	262	45	56	239	39	106	264	277	3040	2042
1 in 20 year	45	216	257	N/A	204	217	254	35	48	218	33	85	214	230	2534	1687
1 in 10 year	37	201	241	N/A	199	211	246	28	42	200	28	69	178	195	2155	1423
1 in 5 year	28	184	222	N/A	194	204	238	22	36	181	24	54	142	159	1770	1158
September																
1 in 50 year	60	227	267	N/A	165	189	218	37	50	223	30	108	265	272	3921	2627
1 in 20 year	44	206	245	N/A	160	178	209	27	41	198	25	77	201	214	3094	2066
1 in 10 year	34	189	227	N/A	156	169	202	20	35	178	21	57	157	173	2507	1669
1 in 5 year	24	170	206	N/A	151	160	193	14	29	156	18	40	116	134	1941	1287
October																
1 in 50 year	175	390	431	N/A	200	276	313	49	109	432	72	279	728	779	3364	2258
1 in 20 year	109	322	364	N/A	183	235	271	33	79	343	50	166	462	465	2771	1853
1 in 10 year	71	272	313	N/A	170	206	241	23	60	279	37	104	309	326	2333	1555
1 in 5 year	42	221	260	N/A	157	179	213	14	43	218	25	59	189	212	1892	1256
November																
1 in 50 year	167	414	459	N/A	227	342	381	75	107	447	66	277	739	790	3560	2375
1 in 20 year	102	336	380	N/A	201	272	311	41	77	349	46	159	454	485	3061	2037
1 in 10 year	66	278	322	N/A	182	226	264	24	57	281	33	97	295	309	2677	1777
1 in 5 year	39	222	262	N/A	162	186	222	13	40	215	22	53	174	197	2275	1505
December																
1 in 50 year	39	257	304	N/A	221	272	312	26	42	229	24	76	228	243	2442	1645
1 in 20 year	28	220	264	N/A	199	232	270	21	34	195	19	50	157	163	2171	1447
1 in 10 year	21	192	233	N/A	182	204	240	16	28	169	15	34	113	126	1957	1291
1 in 5 year	15	162	200	N/A	165	178	212	12	22	142	11	22	75	93	1723	1124

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\F EOM results\Appendix F2\[Tables F2.1 to F2.5.xlsx]Table 4

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.
3. NO DISTRIBUTION IS SHOWN FOR H2 AS FLOWS ARE CONTROLED BY THE FRESH WATER SUPPLY SYSTEM.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	02OCT'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

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TABLE F2.5

NEW GOLD INC.
BLACKWATER GOLD PROJECT

7 DAY LOW FLOWS - END OF MINE CONDITIONS
MITIGATED SCENARIO

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7 Day Low Flows (L/s)																
Return Period	Turtle Creek			Davidson Creek				Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
1 in 10 Year	0.9	43.1	59.1	N/A	120.6	121.0	145.3	0.0	3.4	42.9	1.1	3.7	9.8	10.5	545.6	349.3
1 in 20 Year	0.7	41.0	56.0	N/A	118.8	118.8	143.0	0.0	3.2	42.0	0.9	3.5	9.1	9.8	529.9	341.1

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\F EOM results\Appendix F2\[Tables F2.1 to F2.5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.
3. H2 DOES NOT HAVE RETURN PERIOD FLOWS AS THERE IS NO DISTRIBUTION DUE TO FLOWS BEING CONTROLED BY THE FRESH WATER SUPPLY SYSTEM.
4. FLOWS ALONG DAVIDSON CREEK HAVE NOT HAD THE VAN TINE CREEK FACTOR APPLIED AS THEY DO NOT BEHAVE AS A NATURAL DRAINAGE DUE TO THE FRESH WATER SUPPLY SYSTEM.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	02OCT'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

APPENDIX G

PREDICTED CLOSURE CONDITIONS STREAMFLOWS

Appendix G1 Unmitigated Closure Scenario
Appendix G2 Mitigated Closure Scenario

APPENDIX G1

UNMITIGATED CLOSURE SCENARIO

(Pages G1-1 to G1-7)

Knight Piésold CONSULTING

TABLE G1.1

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED AVERAGE MONTHLY STREAMFLOWS - CLOSURE CONDITIONS

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	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**11-DC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
January	6	112	143	-	-	22	28	57	4	8	91	6	8	31	45	1283	949
February	4	99	128	-	-	17	21	50	2	6	81	4	5	20	33	1277	938
March	4	102	130	-	-	19	30	58	1	6	80	4	4	19	34	1480	1068
April	52	325	368	-	-	91	156	198	18	41	273	29	85	262	292	2824	2007
May	226	709	764	-	-	189	278	329	116	167	811	183	490	1233	1271	5581	4178
June	185	550	596	-	-	133	176	217	121	111	688	124	288	719	744	4911	3748
July	49	225	263	-	-	61	76	110	37	40	258	44	100	237	254	2346	1762
August	21	159	194	-	-	38	46	78	15	19	144	18	39	106	121	1383	1052
September	18	143	176	-	-	30	36	67	9	15	121	14	28	85	99	1496	1110
October	31	168	201	-	-	35	49	80	10	20	151	18	44	136	152	1465	1088
November	27	165	199	-	-	37	54	85	9	19	148	16	39	121	137	1827	1325
December	10	126	158	-	-	28	37	67	6	11	106	8	15	50	65	1440	1058
Annual Average	53	241	277	-	-	58	82	117	29	39	247	39	96	253	272	2276	1690

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\G Closure results\Appendix G1\[Tables G1.1 to G1.5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO GROUNDWATER FLOW PASSES THE INTERCEPTION DITCH AT THE ENVIRONMENTAL CONTROL DAM AND AN ENVIRONMENTAL CONTROL DAM SEEPAGE OF 0.2 L/S.
3. STREAMFLOW ESTIMATES IN DAVIDSON CREEK DO NOT INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE WATER TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM).
4. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT CLOSURE FLOW CONDITIONS.
5. STREAMFLOWS IN DAVIDSON CREEK ASSUME TSF SPILLWAY CHANNEL IS CONSTRUCTED, BUT IS NOT OPERATIONAL AND IS ONLY THERE FOR EMERGENCY PURPOSES.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457-6	BW	CMB	KJB

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TABLE G1.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - CLOSURE CONDITIONS

Print Oct/11/13 16:16:09

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/1998	8	130	161	-	-	26	33	62	2	11	104	7	10	43	57	1181	887
Feb/1998	6	118	148	-	-	23	28	57	2	9	96	6	6	30	44	1173	875
Mar/1998	6	116	146	-	-	25	31	60	1	8	92	5	5	29	43	1441	1047
Apr/1998	129	573	620	-	-	145	223	270	45	90	544	66	197	584	619	1230	1037
May/1998	179	685	739	-	-	174	267	319	75	121	679	123	311	824	863	4070	3042
Jun/1998	68	262	303	-	-	70	95	132	40	51	271	77	171	381	402	1853	1475
Jul/1998	21	162	199	-	-	42	53	86	19	23	156	25	53	127	143	1842	1375
Aug/1998	11	132	167	-	-	30	37	68	10	15	118	12	21	63	77	822	668
Sep/1998	8	115	147	-	-	22	28	58	6	11	100	8	11	39	53	719	588
Oct/1998	7	105	135	-	-	17	21	50	2	10	91	7	9	35	47	1196	898
Nov/1998	8	97	125	-	-	13	17	45	1	9	85	6	8	32	45	1470	1075
Dec/1998	6	86	113	-	-	10	13	40	1	7	77	5	5	23	35	1366	999
Jan/1999	4	76	101	-	-	7	9	35	0	5	69	4	4	16	28	1348	980
Feb/1999	3	67	91	-	-	4	5	31	0	4	63	3	3	11	22	1387	1001
Mar/1999	3	62	85	-	-	3	4	29	0	3	58	3	3	8	19	1510	1078
Apr/1999	56	310	342	-	-	76	140	177	0	35	253	21	64	228	257	2062	1444
May/1999	207	591	629	-	-	160	238	281	77	148	728	143	408	1038	1072	3495	2650
Jun/1999	202	446	482	-	-	108	129	163	103	111	632	136	335	859	877	4278	3252
Jul/1999	61	215	249	-	-	51	59	90	38	46	247	61	140	318	333	1902	1465
Aug/1999	17	144	176	-	-	31	37	66	19	19	139	19	41	101	114	1495	1138
Sep/1999	9	122	151	-	-	23	26	55	11	12	107	10	17	52	64	1282	977
Oct/1999	6	107	134	-	-	17	20	47	6	9	91	7	8	32	45	1344	1007
Nov/1999	4	95	121	-	-	13	15	42	2	7	79	5	5	23	35	1592	1163
Dec/1999	3	85	110	-	-	10	11	37	1	5	72	4	4	16	28	1496	1092
Jan/2000	2	75	98	-	-	6	7	32	1	4	64	3	3	11	22	1285	944
Feb/2000	2	66	88	-	-	3	4	28	0	2	58	3	3	6	17	1288	940
Mar/2000	1	61	82	-	-	3	3	26	0	2	53	2	2	3	14	1260	916
Apr/2000	7	153	180	-	-	47	100	131	0	11	107	3	3	32	57	1827	1290
May/2000	231	643	677	-	-	164	238	273	122	179	803	204	566	1405	1435	1696	1610
Jun/2000	273	688	726	-	-	153	192	227	163	152	933	163	386	996	1016	2394	2200
Jul/2000	94	301	339	-	-	87	113	147	52	65	381	71	174	432	450	1682	1372
Aug/2000	41	210	247	-	-	59	71	104	25	28	189	30	76	195	212	930	777
Sep/2000	34	189	225	-	-	48	56	89	18	21	149	21	55	153	169	876	719
Oct/2000	42	205	241	-	-	54	81	115	16	28	190	20	58	187	206	991	786
Nov/2000	43	222	262	-	-	67	102	138	15	30	206	20	58	194	215	1466	1100
Dec/2000	16	186	226	-	-	59	78	113	11	19	148	11	24	86	104	1202	920
Jan/2001	9	162	199	-	-	46	58	92	6	14	123	8	13	51	68	1144	873
Feb/2001	6	144	178	-	-	36	46	78	2	12	107	6	7	34	50	1118	847
Mar/2001	6	135	169	-	-	33	42	74	2	10	101	6	6	30	46	1141	856
Apr/2001	9	290	342	-	-	104	186	237	1	21	173	5	5	54	91	1490	1085
May/2001	226	682	741	-	-	212	310	366	123	177	823	197	555	1371	1412	1753	1648
Jun/2001	237	591	635	-	-	144	172	212	158	136	844	146	332	841	863	2460	2219
Jul/2001	52	255	296	-	-	63	76	112	46	49	296	51	107	245	262	1581	1282
Aug/2001	16	182	219	-	-	39	48	81	17	20	158	17	33	92	108	1034	832
Sep/2001	9	155	191	-	-	28	35	67	8	13	119	9	14	53	67	757	623
Oct/2001	9	146	179	-	-	25	32	63	4	11	107	8	11	47	61	779	627
Nov/2001	9	138	171	-	-	23	30	61	2	10	101	7	10	44	58	1163	876
Dec/2001	7	124	155	-	-	19	25	55	2	8	91	5	5	31	45	1178	878
Jan/2002	5	109	139	-	-	14	19	48	1	6	82	4	4	22	35	1151	853
Feb/2002	4	97	125	-	-	10	14	42	0	5	74	3	3	15	28	1199	879
Mar/2002	3	86	112	-	-	6	10	37	0	3	66	3	3	10	22	1147	839
Apr/2002	4	92	118	-	-	14	27	55	0	3	67	2	2	14	27	1476	1054
May/2002	287	933	988	-	-	227	326	378	140	202	983	216	631	1665	1703	2580	2219
Jun/2002	248	990	1054	-	-	235	343	402	179	172	1120	154	348	872	916	4593	3695
Jul/2002	52	268	310	-	-	82	111	149	47	55	328	56	117	250	272	1641	1319
Aug/2002	15	144	181	-	-	43	53	86	14	17	136	17	33	85	101	892	724
Sep/2002	8	116	150	-	-	29	35	66	5	8	90	8	13	45	60	868	683
Oct/2002	8	106	139	-	-	23	28	58	2	6	79	7	10	40	53	883	684
Nov/2002	9	105	137	-	-	23	28	58	1	6	76	6	8	39	53	1141	850
Dec/2002	7	98	129	-	-	21	27	56	1	4	71	5	5	29	43	1138	842
Jan/2003	5	86	115	-	-	16	20	48	0	3	64	4	4	21	34	1122	825
Feb/2003	4	76	103	-	-	11	15	42	0	2	58	3	3	14	27	1092	800
Mar/2003	3	67	93	-	-	7	10	36	0	2	53	2	2	9	21	1189	861
Apr/2003	19	305	362	-	-	97	185	237	0	21	185	4	5	81	118	1567	1114
May/2003	168	546	611	-	-	179	285	344	76	132	625	140	370	910	953	2217	1832
Jun/2003	176	372	411	-	-	102	126	163	97	90	556	112	272	721	740	2454	2055
Jul/2003	33	168	202	-	-	41	49	80	23	25	187	30	69	166	180	1359	1071
Aug/2003	10	125	156	-	-	23	27	56	6	10	100	11	21	58	71	804	641
Sep/2003	36	148	178	-	-	23	26	54	4	15	99	22	56	154	167	768	603
Oct/2003	121	429	465	-	-	90	144	177	28	68	383	66	188	532	558	932	778
Nov/2003	106	452	492	-	-	107	172	209	36	67	435	62	174	490	520	1219	993
Dec/2003	23	187	224	-	-	53	70	104	16	24	180	20	48	127	144	1196	925

Knight Piésold
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TABLE G1.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - CLOSURE CONDITIONS

Print Oct/11/13 16:16:09

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/2004	9	135	169	-	-	34	41	73	9	12	115	9	17	52	66	1106	846
Feb/2004	6	115	148	-	-	25	29	60	4	9	93	6	7	30	43	1093	827
Mar/2004	12	133	167	-	-	36	66	98	3	12	105	6	8	50	68	1251	929
Apr/2004	171	589	631	-	-	142	220	257	78	117	657	100	324	904	935	1475	1284
May/2004	235	711	758	-	-	164	228	268	126	147	815	159	380	972	1002	1753	1650
Jun/2004	90	308	352	-	-	85	105	143	68	60	332	100	219	490	509	1332	1217
Jul/2004	23	190	232	-	-	56	66	102	29	25	182	29	61	142	158	1448	1136
Aug/2004	16	166	205	-	-	44	51	86	18	18	145	15	30	84	100	1337	1025
Sep/2004	71	249	289	-	-	59	82	118	25	44	270	44	115	320	337	2381	1737
Oct/2004	103	313	358	-	-	82	128	167	32	61	363	59	163	462	483	1588	1221
Nov/2004	54	262	309	-	-	81	119	159	27	40	265	31	87	255	276	4399	3077
Dec/2004	18	213	259	-	-	68	87	126	20	24	181	15	34	105	125	2519	1816
Jan/2005	10	184	227	-	-	54	66	104	14	18	148	10	17	61	79	1905	1397
Feb/2005	7	164	204	-	-	43	53	89	10	15	129	8	10	41	58	1862	1359
Mar/2005	10	159	198	-	-	40	50	85	7	14	122	8	11	45	61	2518	1791
Apr/2005	204	752	799	-	-	183	255	302	107	156	817	139	438	1196	1230	4377	3309
May/2005	230	841	892	-	-	197	282	333	136	148	931	143	330	835	873	7953	5771
Jun/2005	53	280	326	-	-	80	106	147	48	57	320	66	135	286	308	4813	3431
Jul/2005	47	222	267	-	-	57	72	110	30	34	199	39	93	233	251	2178	1615
Aug/2005	45	208	251	-	-	49	60	97	25	29	174	33	81	215	233	1407	1088
Sep/2005	15	160	200	-	-	36	45	81	18	19	143	15	31	87	103	1329	1029
Oct/2005	55	229	270	-	-	51	83	119	20	37	245	30	81	244	264	2255	1639
Nov/2005	61	254	298	-	-	65	103	141	21	42	274	34	92	275	297	2050	1504
Dec/2005	17	181	224	-	-	52	69	107	16	22	165	14	30	90	109	1628	1223
Jan/2006	8	153	193	-	-	40	52	87	11	15	129	9	12	45	62	1365	1040
Feb/2006	5	136	173	-	-	31	41	75	6	12	110	7	7	30	45	1199	920
Mar/2006	4	123	159	-	-	26	35	68	3	10	98	5	6	22	37	1205	916
Apr/2006	109	555	614	-	-	143	230	284	37	78	496	55	155	474	512	1510	1209
May/2006	195	709	775	-	-	189	292	352	89	144	728	143	357	926	969	3109	2471
Jun/2006	105	313	359	-	-	81	109	150	71	66	367	100	239	551	572	2693	2151
Jul/2006	22	175	216	-	-	44	56	92	28	26	182	28	61	137	154	1410	1125
Aug/2006	9	140	178	-	-	30	38	72	15	15	130	11	19	52	67	873	723
Sep/2006	5	123	158	-	-	22	29	61	9	11	109	7	8	29	43	726	609
Oct/2006	4	111	145	-	-	18	24	55	5	9	96	5	6	22	35	893	710
Nov/2006	3	101	133	-	-	15	20	50	2	7	86	4	4	16	29	1466	1083
Dec/2006	2	89	119	-	-	11	15	44	2	6	78	4	4	11	23	1376	1015
Jan/2007	2	79	107	-	-	7	10	38	1	4	69	3	3	6	18	1386	1015
Feb/2007	1	70	97	-	-	4	7	33	0	3	62	2	2	3	14	1381	1005
Mar/2007	1	64	89	-	-	3	5	31	0	2	57	2	2	2	13	1575	1128
Apr/2007	4	246	296	-	-	86	168	216	0	15	144	2	2	29	64	2955	2045
May/2007	207	638	697	-	-	196	295	351	114	174	776	192	527	1289	1329	7692	5588
Jun/2007	281	613	655	-	-	150	185	224	160	153	904	168	400	1034	1055	14607	10335
Jul/2007	106	304	344	-	-	81	104	139	58	69	412	79	195	485	502	3839	2837
Aug/2007	24	184	221	-	-	46	56	89	22	24	178	22	51	129	144	2410	1761
Sep/2007	19	166	201	-	-	36	42	74	13	16	131	14	29	85	100	1833	1349
Oct/2007	49	207	243	-	-	46	65	97	14	26	181	22	64	201	216	3061	2158
Nov/2007	48	214	252	-	-	52	75	108	14	28	194	22	67	212	228	2919	2062
Dec/2007	16	168	204	-	-	41	52	85	9	16	135	12	27	86	102	2075	1498
Jan/2008	9	145	178	-	-	31	39	70	5	12	111	8	13	50	65	1733	1262
Feb/2008	6	128	159	-	-	24	30	60	2	9	97	6	7	33	47	1698	1231
Mar/2008	5	119	149	-	-	22	28	58	2	8	90	5	5	25	39	1679	1211
Apr/2008	6	114	143	-	-	21	27	56	1	7	86	5	5	26	40	1818	1298
May/2008	229	736	770	-	-	152	213	249	130	185	833	218	581	1446	1475	9728	7012
Jun/2008	228	805	845	-	-	169	243	283	164	139	921	136	310	793	826	3451	2932
Jul/2008	39	230	268	-	-	65	86	121	40	38	275	34	74	170	189	1447	1182
Aug/2008	17	146	181	-	-	39	48	80	13	17	136	15	29	76	91	1351	1028
Sep/2008	15	129	162	-	-	29	36	67	6	12	105	12	22	64	78	1222	921
Oct/2008	29	142	175	-	-	30	37	68	5	14	106	14	37	116	130	1234	922
Nov/2008	34	164	200	-	-	43	66	99	5	16	121	15	44	142	159	1710	1240
Dec/2008	16	149	186	-	-	45	71	104	3	14	116	10	22	82	99	1566	1140
Jan/2009	10	129	163	-	-	35	46	78	2	11	104	7	12	52	68	1428	1041
Feb/2009	7	114	146	-	-	27	35	65	1	9	94	6	6	35	50	1424	1033
Mar/2009	5	101	131	-	-	21	27	56	1	7	85	4	4	25	39	1461	1052
Apr/2009	8	280	336	-	-	100	185	237	0	20	171	4	4	52	89	2623	1823
May/2009	239	706	770	-	-	216	318	377	127	186	850	214	592	1454	1497	4887	3752
Jun/2009	232	573	615	-	-	138	164	203	161	130	844	136	313	807	828	4872	3839
Jul/2009	43	217	254	-	-	55	65	99	39	38	269	36	78	187	203	2322	1758
Aug/2009	13	150	184	-	-	31	37	69	10	15	134	13	22	65	79	1017	799
Sep/2009	7	127	159	-	-	22	26	56	4	9	100	7	8	35	48	897	695
Oct/2009	5	112	142	-	-	16	19	48	2	7	86	5	5	23	36	1001	753
Nov/2009	3	99	127	-	-	11	14	42	1	5	76	4	4	16	28	1731	1232
Dec/2009	2	88	114	-	-	8	9	36	1	3	68	3	3	10	22	1435	1029

Knight Piésold CONSULTING

TABLE G1.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - CLOSURE CONDITIONS

Print Oct/11/13 16:16:09

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**11-DC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
Jan/2010	2	78	102	-	-	4	6	31	0	2	60	2	2	5	17	1400	1000
Feb/2010	1	69	92	-	-	2	2	28	0	1	55	2	2	2	13	1417	1007
Mar/2010	3	186	219	-	-	61	126	164	0	10	109	1	1	17	46	1416	1002
Apr/2010	52	276	315	-	-	96	175	218	0	27	185	21	64	205	239	2432	1676
May/2010	120	261	295	-	-	66	84	117	25	68	267	81	212	538	555	4215	2988
Jun/2010	86	214	245	-	-	40	45	74	34	45	224	78	184	435	449	3419	2500
Jul/2010	21	134	163	-	-	22	24	52	10	17	128	22	48	120	132	1519	1135
Aug/2010	9	109	137	-	-	14	15	42	3	10	97	9	15	51	62	884	684
Sep/2010	6	96	122	-	-	10	10	36	1	7	85	6	7	32	44	6014	4088
Oct/2010	8	91	115	-	-	7	7	32	1	6	81	7	9	38	49	3643	2506
Nov/2010	9	86	108	-	-	5	5	29	0	6	77	7	10	40	50	2226	1560
Dec/2010	7	75	96	-	-	3	3	26	0	4	69	5	5	27	37	1630	1158
Jan/2011	5	65	85	-	-	1	1	24	0	3	63	4	4	19	29	851	634
Feb/2011	4	57	76	-	-	1	1	23	0	3	57	3	3	13	23	921	675
Mar/2011	3	50	68	-	-	1	1	22	0	2	52	2	2	8	18	1713	1197
Apr/2011	3	63	83	-	-	10	31	54	0	2	55	2	2	12	26	12106	8113
May/2011	436	1317	1404	-	-	336	479	549	263	323	1551	371	996	2534	2586	20712	14749
Jun/2011	275	1290	1391	-	-	320	470	552	229	186	1303	159	364	930	988	13892	10016
Jul/2011	82	339	386	-	-	115	150	193	57	60	398	58	142	349	373	7879	5481
Aug/2011	54	204	242	-	-	68	79	114	21	34	210	36	93	247	264	3490	2450
Sep/2011	15	137	172	-	-	44	50	81	10	15	123	13	28	81	96	1411	1045
Oct/2011	8	116	148	-	-	32	36	66	4	10	96	8	11	42	56	1138	853
Nov/2011	5	101	132	-	-	24	27	56	2	7	83	5	6	27	40	1416	1030
Dec/2011	4	89	118	-	-	18	20	48	1	5	74	4	4	19	31	821	627
Jan/2012	3	79	105	-	-	13	14	41	1	3	66	3	3	12	24	839	633
Feb/2012	2	70	95	-	-	9	10	35	0	3	60	3	3	7	19	909	674
Mar/2012	1	62	85	-	-	6	6	30	0	2	54	2	2	4	15	1700	1196
Apr/2012	7	282	339	-	-	99	188	240	0	17	161	2	2	44	82	3405	2332
May/2012	207	645	712	-	-	205	312	372	113	170	774	194	530	1293	1336	7858	5690
Jun/2012	227	504	542	-	-	126	149	185	144	119	748	135	308	791	810	6551	4910
Jul/2012	46	195	228	-	-	47	54	84	36	35	239	39	84	199	213	3134	2284
Aug/2012	15	134	164	-	-	25	27	56	9	13	116	13	26	74	86	1994	1441
Sep/2012	8	113	141	-	-	17	18	45	3	7	86	7	10	41	52	1352	991
Oct/2012	6	99	125	-	-	12	12	38	2	4	73	5	5	26	38	1044	777
Nov/2012	4	87	112	-	-	8	8	33	1	3	65	4	4	18	29	1437	1031
Dec/2012	3	77	100	-	-	5	5	29	0	3	59	3	3	12	23	970	715

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\G Closure results\Appendix G1\[Tables G1.1 to G1.5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO GROUNDWATER FLOW PASSES THE INTERCEPTION DITCH AT THE ENVIRONMENTAL CONTROL DAM AND AN ENVIRONMENTAL CONTROL DAM SEEPAGE OF 0.2 L/S.
3. STREAMFLOW ESTIMATES IN DAVIDSON CREEK DO NOT INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE WATER TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM).
4. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT CLOSURE FLOW CONDITIONS.
5. STREAMFLOWS IN DAVIDSON CREEK ASSUME TSF SPILLWAY CHANNEL IS CONSTRUCTED, BUT IS NOT OPERATIONAL AND IS ONLY THERE FOR EMERGENCY PURPOSES.
6. ESTIMATED STREAMFLOW VALUES WERE OBTAINED FROM THE CLOSURE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE G1.3

NEW GOLD INC.
BLACKWATER GOLD PROJECT

DRY RETURN PERIOD FLOWS - CLOSURE CONDITIONS

11/10/2013 16:16

Dry Return Period Flows (L/s)															
	H3	H6	1-TC	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January															
1 in 50 year	1.4	52.6	72.1	1.0	1.0	20.6	0.0	1.4	45.9	1.9	2.4	4.0	12.9	794.4	600.6
1 in 20 year	1.8	60.6	81.9	1.1	1.1	24.8	0.0	1.9	52.2	2.3	3.0	4.8	16.1	870.0	655.1
1 in 10 year	2.3	68.6	91.7	1.5	1.7	29.2	0.0	2.5	58.4	2.7	3.7	6.2	19.6	943.1	707.6
1 in 5 year	3.0	79.8	105.2	3.6	4.4	35.7	0.0	3.5	67.1	3.4	5.0	9.3	25.0	1040.4	777.3
February															
1 in 50 year	1.0	46.5	64.8	0.9	0.9	18.7	0.0	1.1	42.5	1.5	1.6	1.9	10.5	831.6	623.5
1 in 20 year	1.3	53.5	73.6	0.9	0.9	22.3	0.0	1.4	48.0	1.8	2.1	2.8	12.9	902.4	674.1
1 in 10 year	1.7	60.6	82.4	1.1	1.2	26.1	0.0	1.9	53.3	2.2	2.7	4.1	15.5	970.2	722.4
1 in 5 year	2.2	70.5	94.5	2.3	2.9	31.6	0.0	2.6	60.7	2.7	3.7	6.3	19.4	1059.8	785.9
March															
1 in 50 year	0.8	40.3	57.7	0.8	1.1	15.5	0.0	0.9	40.1	1.1	1.2	1.7	9.4	941.2	702.0
1 in 20 year	1.1	47.7	67.0	0.8	1.1	19.5	0.0	1.3	45.6	1.3	1.7	2.6	11.7	1025.5	760.3
1 in 10 year	1.4	55.4	76.5	0.9	1.4	24.0	0.0	1.7	51.1	1.6	2.2	3.7	14.4	1106.6	816.0
1 in 5 year	1.9	66.4	90.0	2.2	3.1	30.8	0.0	2.4	58.6	2.1	3.1	5.7	18.3	1214.1	889.4
April															
1 in 50 year	0.9	60.9	81.1	11.3	21.1	47.7	0.0	1.5	36.7	0.4	1.4	4.3	10.6	679.9	534.8
1 in 20 year	1.6	81.6	105.9	16.3	25.1	61.5	0.0	2.8	51.4	0.7	2.6	7.9	17.8	864.4	669.8
1 in 10 year	2.8	105.7	134.1	22.5	32.1	77.2	0.0	4.5	69.2	1.2	4.6	13.7	28.1	1069.8	817.9
1 in 5 year	5.5	144.9	178.8	33.2	42.3	101.8	0.0	7.8	99.5	2.4	9.0	26.9	49.0	1386.7	1043.2
May															
1 in 50 year	123.9	338.7	376.8	89.8	123.3	158.4	36.8	81.4	368.7	85.5	212.9	543.3	568.6	938.6	889.5
1 in 20 year	138.7	388.7	429.9	103.2	143.4	181.5	45.3	93.1	426.9	98.4	248.1	631.6	659.2	1267.7	1158.4
1 in 10 year	153.2	439.2	483.3	116.8	164.0	204.9	54.4	104.8	486.1	111.4	284.1	721.8	751.7	1655.2	1464.4
1 in 5 year	173.1	509.6	557.3	135.7	193.2	237.4	68.1	121.0	569.5	129.6	335.2	849.4	882.0	2290.4	1948.1
June															
1 in 50 year	50.8	166.1	194.3	41.2	47.5	72.6	30.2	37.7	190.0	64.5	141.3	305.6	322.9	979.7	892.1
1 in 20 year	64.1	205.5	237.4	50.8	59.8	88.3	38.7	45.9	239.1	73.0	161.3	357.9	376.8	1289.0	1142.8
1 in 10 year	78.8	248.2	283.5	61.2	73.4	105.0	48.2	54.6	293.2	81.4	181.5	411.9	432.1	1644.3	1423.8
1 in 5 year	101.3	312.4	352.0	76.8	94.1	129.8	62.9	67.4	375.9	92.9	209.5	488.6	510.6	2211.7	1860.7
July															
1 in 50 year	14.5	127.7	158.4	25.1	27.8	54.7	13.1	15.9	117.7	18.0	37.3	87.5	99.5	762.5	634.0
1 in 20 year	18.0	142.1	174.4	29.5	33.4	62.3	15.9	18.8	136.1	21.2	44.6	104.7	117.9	927.7	759.4
1 in 10 year	21.9	156.2	190.0	34.0	39.3	70.0	18.7	21.9	154.8	24.5	52.2	122.8	137.1	1104.1	891.4
1 in 5 year	27.7	175.3	210.8	40.6	47.8	80.6	23.0	26.3	181.1	29.2	63.3	149.2	164.8	1364.8	1083.4
August															
1 in 50 year	5.4	103.6	131.9	15.9	17.6	43.8	3.9	8.4	89.3	7.1	10.7	32.5	42.4	510.5	435.6
1 in 20 year	6.8	112.4	142.0	18.7	21.0	48.8	5.0	9.7	97.7	8.4	13.4	40.0	51.1	610.1	511.0
1 in 10 year	8.4	120.8	151.6	21.6	24.5	53.7	6.2	11.1	105.9	9.8	16.5	48.2	60.3	714.7	588.7
1 in 5 year	10.8	131.9	164.2	25.6	29.5	60.3	8.1	13.1	116.8	11.8	21.1	60.3	73.8	866.6	699.5
September															
1 in 50 year	2.8	85.2	111.5	11.0	11.6	35.7	1.4	5.0	63.7	3.0	3.7	16.3	24.4	382.5	326.9
1 in 20 year	3.8	94.0	121.6	13.2	14.2	40.2	2.0	6.1	71.7	4.4	5.1	21.6	31.1	482.4	403.7
1 in 10 year	5.0	102.5	131.4	15.5	17.1	44.6	2.6	7.2	79.7	5.7	6.9	27.6	38.5	592.8	486.9
1 in 5 year	7.0	113.9	144.3	18.8	21.3	50.7	3.7	8.8	90.6	7.5	9.9	37.2	49.9	761.9	611.8
October															
1 in 50 year	1.4	57.3	78.4	4.2	6.0	24.2	0.7	2.4	40.6	1.9	3.4	7.5	12.7	502.1	414.5
1 in 20 year	2.3	69.4	92.9	5.9	8.6	29.9	1.0	3.4	51.0	2.7	5.2	11.9	18.9	607.2	492.8
1 in 10 year	3.5	82.2	107.9	8.1	11.7	36.1	1.4	4.7	62.5	3.8	7.6	17.8	26.8	718.7	574.6
1 in 5 year	5.9	101.0	129.7	11.8	17.1	45.4	2.1	6.8	80.0	5.6	11.9	29.1	41.3	882.5	692.8
November															
1 in 50 year	1.2	50.2	69.1	2.6	3.8	19.7	0.2	1.8	35.9	1.6	2.6	5.5	10.5	806.1	619.8
1 in 20 year	1.9	61.9	83.4	4.0	5.8	25.4	0.3	2.6	45.8	2.3	4.1	9.0	15.9	935.2	712.1
1 in 10 year	3.0	74.6	98.6	5.9	8.6	31.8	0.6	3.7	56.9	3.2	6.1	13.9	23.0	1067.1	805.4
1 in 5 year	5.0	93.6	121.0	9.5	13.7	41.8	1.1	5.6	74.2	4.7	9.8	23.5	35.9	1253.1	935.8
December															
1 in 50 year	1.4	54.3	73.7	2.4	2.5	19.6	0.0	1.7	43.0	1.8	2.8	5.4	12.4	778.9	592.7
1 in 20 year	2.0	63.4	84.9	3.6	3.9	24.4	0.0	2.3	50.6	2.3	3.8	7.9	16.5	873.7	660.7
1 in 10 year	2.6	72.7	96.2	5.2	5.8	29.6	0.0	3.1	58.6	2.9	5.1	10.9	21.2	967.4	727.7
1 in 5 year	3.8	86.0	112.1	8.1	9.4	37.6	0.2	4.3	69.9	3.8	7.2	16.3	28.8	1095.3	818.4

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\G Closure results\Appendix G1\[Tables G1.1 to G1.5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES ARE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE G1.4

NEW GOLD INC.
BLACKWATER GOLD PROJECT

WET RETURN PERIOD FLOWS - CLOSURE CONDITIONS

11/10/2013 16:16

Wet Return Period Flows (L/s)															
	H3	H6	1-TC	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January															
1 in 50 year	19	215	259	65	84	133	16	30	166	14	29	105	120	1979	1437
1 in 20 year	15	187	228	54	69	111	12	22	146	12	21	81	96	1807	1318
1 in 10 year	12	165	204	46	57	94	10	17	130	10	16	63	79	1667	1220
1 in 5 year	9	142	177	36	45	77	7	12	114	8	12	45	62	1511	1111
February															
1 in 50 year	13	191	232	53	67	111	9	24	141	11	13	110	118	1889	1364
1 in 20 year	10	166	204	43	55	93	7	17	126	9	10	74	79	1741	1262
1 in 10 year	8	146	182	36	45	80	5	13	113	7	8	51	57	1619	1178
1 in 5 year	6	126	159	19	27	66	4	9	99	6	7	33	46	1483	1082
March															
1 in 50 year	15	219	259	65	129	160	6	25	145	10	12	101	108	2228	1563
1 in 20 year	11	185	223	53	95	126	4	18	127	8	9	67	73	2045	1443
1 in 10 year	9	159	196	43	71	103	4	13	114	7	8	47	59	1895	1345
1 in 5 year	6	133	166	33	48	80	2	9	99	5	6	30	46	1727	1234
April															
1 in 50 year	447	1143	1176	433	523	621	120	221	1073	239	1125	2177	2328	7584	5129
1 in 20 year	240	853	901	301	405	481	90	147	767	125	474	1170	1251	5965	4095
1 in 10 year	138	659	711	218	316	383	66	99	569	70	220	674	709	4820	3354
1 in 5 year	70	481	534	147	226	291	38	60	396	35	87	345	407	3718	2630
May															
1 in 50 year	384	1350	1416	363	563	623	296	311	1605	349	990	2465	2512	19208	12625
1 in 20 year	343	1176	1241	316	484	544	241	272	1387	303	849	2120	2167	14222	9694
1 in 10 year	310	1041	1104	279	423	482	200	242	1218	268	741	1855	1900	10892	7669
1 in 5 year	275	897	958	240	360	416	160	209	1039	230	628	1576	1620	7872	5765
June															
1 in 50 year	524	1410	1452	339	481	518	363	269	1911	222	536	1496	1523	15407	10733
1 in 20 year	415	1139	1189	275	382	426	283	221	1518	196	469	1277	1305	11711	8378
1 in 10 year	338	943	995	228	311	358	227	186	1238	176	417	1110	1138	9180	6725
1 in 5 year	263	749	801	182	243	290	174	151	966	154	361	936	963	6825	5146
July															
1 in 50 year	130	373	416	128	173	203	87	87	506	92	222	533	550	5468	3886
1 in 20 year	104	335	378	108	145	178	72	74	437	78	186	446	464	4494	3244
1 in 10 year	86	305	347	94	123	159	61	63	384	68	159	380	399	3776	2764
1 in 5 year	68	272	313	79	101	138	50	53	329	57	131	313	332	3055	2274
August															
1 in 50 year	57	234	277	80	101	130	45	38	222	39	106	264	277	3059	2163
1 in 20 year	45	216	257	68	85	116	35	33	203	33	85	214	230	2560	1844
1 in 10 year	37	201	241	59	73	106	28	29	187	28	69	178	195	2185	1601
1 in 5 year	28	184	222	49	60	94	22	24	170	24	54	142	159	1802	1347
September															
1 in 50 year	60	227	267	68	91	117	37	34	210	30	108	265	272	3938	2726
1 in 20 year	44	206	245	57	74	104	27	28	186	25	77	201	214	3122	2207
1 in 10 year	34	189	227	48	62	93	20	24	168	21	57	157	173	2541	1830
1 in 5 year	24	170	206	40	50	82	14	19	147	18	40	116	134	1977	1457
October															
1 in 50 year	175	390	431	120	169	203	49	82	404	72	279	728	779	3385	2357
1 in 20 year	109	322	364	89	137	164	33	57	321	50	166	462	465	2799	1982
1 in 10 year	71	272	313	69	106	136	23	42	262	37	104	309	326	2365	1700
1 in 5 year	42	221	260	50	72	108	14	29	205	25	59	189	212	1926	1410
November															
1 in 50 year	167	414	459	169	210	252	75	85	420	66	277	739	790	3587	2499
1 in 20 year	102	336	380	116	163	196	41	58	329	46	159	454	485	3092	2175
1 in 10 year	66	278	322	83	130	156	24	41	265	33	97	295	309	2710	1923
1 in 5 year	39	222	262	55	81	119	13	27	203	22	53	174	197	2307	1655
December															
1 in 50 year	39	257	304	102	148	178	26	41	222	24	76	228	243	2468	1766
1 in 20 year	28	220	264	82	119	143	21	30	189	19	50	157	163	2200	1584
1 in 10 year	21	192	233	69	97	118	16	22	163	15	34	113	126	1987	1439
1 in 5 year	15	162	200	44	60	93	12	16	137	11	22	75	93	1755	1279

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\G Closure results\Appendix G1\[Tables G1.1 to G1.5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES ARE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE G1.5

NEW GOLD INC.
BLACKWATER GOLD PROJECT

7 DAY LOW FLOWS - CLOSURE CONDITIONS

11/10/2013 16:16

7 Day Low Flows (L/s)															
Return Period	Turtle Creek			Davidson Creek			Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
1 in 10 Year	0.9	43.1	59.1	0.9	1.1	18.2	0.0	1.2	41.0	1.1	3.7	9.8	10.5	571.2	464.0
1 in 20 Year	0.7	41.0	56.0	0.5	0.7	16.8	0.0	1.1	40.2	0.9	3.5	9.1	9.8	556.1	455.3

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\G Closure results\Appendix G1\[Tables G1.1 to G1.5.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES ARE OUTSIDE THE SCOPE OF THE WATERSHED MODEL

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

APPENDIX G2 ▲R1

MITIGATED CLOSURE SCENARIO

(Pages G2-1 to G2-7)

Knight Piésold
CONSULTING

TABLE G2.1

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED AVERAGE MONTHLY STREAMFLOWS - CLOSURE CONDITIONS
MITIGATED SCENARIO

Print Jan/16/14 11:40:55

	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**11-DC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
January	6	112	143	-	125	147	153	182	4	8	91	6	8	31	45	1250	791
February	4	99	128	-	125	142	146	175	2	6	81	4	5	20	33	1244	780
March	4	102	130	-	125	144	155	183	1	6	80	4	4	19	34	1447	910
April	52	325	368	-	125	216	281	323	18	41	273	29	85	262	292	2791	1853
May	226	709	764	-	570	759	848	899	116	167	811	183	490	1233	1271	5548	3591
June	185	550	596	-	560	693	736	777	121	111	688	124	288	719	744	4878	3166
July	49	225	263	-	240	301	316	350	37	40	258	44	100	237	254	2313	1492
August	21	159	194	-	150	188	196	228	15	19	144	18	39	106	121	1350	870
September	18	143	176	-	115	145	151	182	9	15	121	14	28	85	99	1463	963
October	31	168	201	-	115	150	164	195	10	20	151	18	44	136	152	1432	941
November	27	165	199	-	115	152	169	200	9	19	148	16	39	121	137	1794	1178
December	10	126	158	-	125	153	162	192	6	11	106	8	15	50	65	1407	901
Annual Average	53	241	277	-	208	266	290	324	29	39	247	39	96	253	272	2243	1453

M:\1\01\00457\06\A\Report\6 - Watershed model\Rev 0 - Copy\Appendices\G Closure results\Appendix G2\[Tables G2.1 to G2.5_Rev 1.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO GROUNDWATER FLOW PASSES THE INTERCEPTION DITCH AT THE ENVIRONMENTAL CONTROL DAM AND AN ENVIRONMENTAL CONTROL DAM SEEPAGE OF 0.2 L/S.
3. STREAMFLOW ESTIMATES IN DAVIDSON CREEK INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE INSTREAM FLOW NEEDS TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM).
4. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT CLOSURE FLOW CONDITIONS.
5. STREAMFLOWS IN DAVIDSON CREEK ASSUME TSF SPILLWAY CHANNEL IS CONSTRUCTED, BUT IS NOT OPERATIONAL AND IS ONLY THERE FOR EMERGENCY PURPOSES.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
1	16JAN'14	ISSUED WITH REPORT VA101-457/6-6	BW	CAS	KJB

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TABLE G2.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - CLOSURE CONDITIONS
MITIGATED SCENARIO

Print Jan/16/14 11:40:55

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/1998	8	130	161	-	125	151	158	187	2	11	104	7	10	43	57	1148	729
Feb/1998	6	118	148	-	125	148	153	182	2	9	96	6	6	30	44	1140	717
Mar/1998	6	116	146	-	125	150	156	185	1	8	92	5	5	29	43	1408	890
Apr/1998	129	573	620	-	125	270	348	395	45	90	544	66	197	584	619	1197	887
May/1998	179	685	739	-	570	744	837	889	75	121	679	123	311	824	863	4037	2449
Jun/1998	68	262	303	-	560	630	655	692	40	51	271	77	171	381	402	1820	884
Jul/1998	21	162	199	-	240	282	293	326	19	23	156	25	53	127	143	1809	1103
Aug/1998	11	132	167	-	150	180	187	218	10	15	118	12	21	63	77	789	486
Sep/1998	8	115	147	-	115	137	143	173	6	11	100	8	11	39	53	686	440
Oct/1998	7	105	135	-	115	132	136	165	2	10	91	7	9	35	47	1163	750
Nov/1998	8	97	125	-	115	128	132	160	1	9	85	6	8	32	45	1437	927
Dec/1998	6	86	113	-	125	135	138	165	1	7	77	5	5	23	35	1333	841
Jan/1999	4	76	101	-	125	132	134	160	0	5	69	4	4	16	28	1315	823
Feb/1999	3	67	91	-	125	129	130	156	0	4	63	3	3	11	22	1354	843
Mar/1999	3	62	85	-	125	128	129	154	0	3	58	3	3	8	19	1477	920
Apr/1999	56	310	342	-	125	201	265	302	0	35	253	21	64	228	257	2029	1288
May/1999	207	591	629	-	570	730	808	851	77	148	728	143	408	1038	1072	3462	2061
Jun/1999	202	446	482	-	560	668	689	723	103	111	632	136	335	859	877	4245	2670
Jul/1999	61	215	249	-	240	291	299	330	38	46	247	61	140	318	333	1869	1194
Aug/1999	17	144	176	-	150	181	187	216	19	19	139	19	41	101	114	1462	956
Sep/1999	9	122	151	-	115	138	141	170	11	12	107	10	17	52	64	1249	829
Oct/1999	6	107	134	-	115	132	135	162	6	9	91	7	8	32	45	1311	860
Nov/1999	4	95	121	-	115	128	130	157	2	7	79	5	5	23	35	1559	1016
Dec/1999	3	85	110	-	125	135	136	162	1	5	72	4	4	16	28	1463	934
Jan/2000	2	75	98	-	125	131	132	157	1	4	64	3	3	11	22	1252	786
Feb/2000	2	66	88	-	125	128	129	153	0	2	58	3	3	6	17	1255	782
Mar/2000	1	61	82	-	125	128	128	151	0	2	53	2	2	3	14	1227	758
Apr/2000	7	153	180	-	125	172	225	256	0	11	107	3	3	32	57	1794	1132
May/2000	231	643	677	-	570	734	808	843	122	179	803	204	566	1405	1435	1663	1024
Jun/2000	273	688	726	-	560	713	752	787	163	152	933	163	386	996	1016	2361	1623
Jul/2000	94	301	339	-	240	327	353	387	52	65	381	71	174	432	450	1649	1105
Aug/2000	41	210	247	-	150	209	221	254	25	28	189	30	76	195	212	897	596
Sep/2000	34	189	225	-	115	163	171	204	18	21	149	21	55	153	169	843	572
Oct/2000	42	205	241	-	115	169	196	230	16	28	190	20	58	187	206	958	640
Nov/2000	43	222	262	-	115	182	217	253	15	30	206	20	58	194	215	1433	954
Dec/2000	16	186	226	-	125	184	203	238	11	19	148	11	24	86	104	1169	762
Jan/2001	9	162	199	-	125	171	183	217	6	14	123	8	13	51	68	1111	715
Feb/2001	6	144	178	-	125	161	171	203	2	12	107	6	7	34	50	1085	689
Mar/2001	6	135	169	-	125	158	167	199	2	10	101	6	6	30	46	1108	698
Apr/2001	9	290	342	-	125	229	311	362	1	21	173	5	5	54	91	1457	927
May/2001	226	682	741	-	570	782	880	936	123	177	823	197	555	1371	1412	1720	1062
Jun/2001	237	591	635	-	560	704	732	772	158	136	844	146	332	841	863	2427	1640
Jul/2001	52	255	296	-	240	303	316	352	46	49	296	51	107	245	262	1548	1012
Aug/2001	16	182	219	-	150	189	198	231	17	20	158	17	33	92	108	1001	650
Sep/2001	9	155	191	-	115	143	150	182	8	13	119	9	14	53	67	724	476
Oct/2001	9	146	179	-	115	140	147	178	4	11	107	8	11	47	61	746	480
Nov/2001	9	138	171	-	115	138	145	176	2	10	101	7	10	44	58	1130	728
Dec/2001	7	124	155	-	125	144	150	180	2	8	91	5	5	31	45	1145	720
Jan/2002	5	109	139	-	125	139	144	173	1	6	82	4	4	22	35	1118	695
Feb/2002	4	97	125	-	125	135	139	167	0	5	74	3	3	15	28	1166	721
Mar/2002	3	86	112	-	125	131	135	162	0	3	66	3	3	10	22	1114	681
Apr/2002	4	92	118	-	125	139	152	180	0	3	67	2	2	14	27	1443	896
May/2002	287	933	988	-	570	797	896	948	140	202	983	216	631	1665	1703	2547	1638
Jun/2002	248	990	1054	-	560	795	903	962	179	172	1120	154	348	872	916	4560	3118
Jul/2002	52	268	310	-	240	322	351	389	47	55	328	56	117	250	272	1608	1050
Aug/2002	15	144	181	-	150	193	203	236	14	17	136	17	33	85	101	859	542
Sep/2002	8	116	150	-	115	144	150	181	5	8	90	8	13	45	60	835	535
Oct/2002	8	106	139	-	115	138	143	173	2	6	79	7	10	40	53	850	536
Nov/2002	9	105	137	-	115	138	143	173	1	6	76	6	8	39	53	1108	702
Dec/2002	7	98	129	-	125	146	152	181	1	4	71	5	5	29	43	1105	685
Jan/2003	5	86	115	-	125	141	145	173	0	3	64	4	4	21	34	1089	668
Feb/2003	4	76	103	-	125	136	140	167	0	2	58	3	3	14	27	1059	643
Mar/2003	3	67	93	-	125	132	135	161	0	2	53	2	2	9	21	1156	703
Apr/2003	19	305	362	-	125	222	310	362	0	21	185	4	5	81	118	1534	956
May/2003	168	546	611	-	570	749	855	914	76	132	625	140	370	910	953	2184	1240
Jun/2003	176	372	411	-	560	662	686	723	97	90	556	112	272	721	740	2421	1472
Jul/2003	33	168	202	-	240	281	289	320	23	25	187	30	69	166	180	1326	801
Aug/2003	10	125	156	-	150	173	177	206	6	10	100	11	21	58	71	771	458
Sep/2003	36	148	178	-	115	138	141	169	4	15	99	22	56	154	167	735	457
Oct/2003	121	429	465	-	115	205	259	292	28	68	383	66	188	532	558	899	636
Nov/2003	106	452	492	-	115	222	287	324	36	67	435	62	174	490	520	1186	851

Knight Piésold CONSULTING

TABLE G2.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - CLOSURE CONDITIONS
MITIGATED SCENARIO

Print Jan/16/14 11:40:55

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Dec/2003	23	187	224	-	125	178	195	229	16	24	180	20	48	127	144	1163	768
Jan/2004	9	135	169	-	125	159	166	198	9	12	115	9	17	52	66	1073	689
Feb/2004	6	115	148	-	125	150	154	185	4	9	93	6	7	30	43	1060	669
Mar/2004	12	133	167	-	125	161	191	223	3	12	105	6	8	50	68	1218	772
Apr/2004	171	589	631	-	125	267	345	382	78	117	657	100	324	904	935	1442	1138
May/2004	235	711	758	-	570	734	798	838	126	147	815	159	380	972	1002	1720	1061
Jun/2004	90	308	352	-	560	645	665	703	68	60	332	100	219	490	509	1299	628
Jul/2004	23	190	232	-	240	296	306	342	29	25	182	29	61	142	158	1415	864
Aug/2004	16	166	205	-	150	194	201	236	18	18	145	15	30	84	100	1304	843
Sep/2004	71	249	289	-	115	174	197	233	25	44	270	44	115	320	337	2348	1592
Oct/2004	103	313	358	-	115	197	243	282	32	61	363	59	163	462	483	1555	1078
Nov/2004	54	262	309	-	115	196	234	274	27	40	265	31	87	255	276	4366	2931
Dec/2004	18	213	259	-	125	193	212	251	20	24	181	15	34	105	125	2486	1659
Jan/2005	10	184	227	-	125	179	191	229	14	18	148	10	17	61	79	1872	1240
Feb/2005	7	164	204	-	125	168	178	214	10	15	129	8	10	41	58	1829	1202
Mar/2005	10	159	198	-	125	165	175	210	7	14	122	8	11	45	61	2485	1633
Apr/2005	204	752	799	-	125	308	380	427	107	156	817	139	438	1196	1230	4344	3166
May/2005	230	841	892	-	570	767	852	903	136	148	931	143	330	835	873	7920	5182
Jun/2005	53	280	326	-	560	640	666	707	48	57	320	66	135	286	308	4780	2841
Jul/2005	47	222	267	-	240	297	312	350	30	34	199	39	93	233	251	2145	1344
Aug/2005	45	208	251	-	150	199	210	247	25	29	174	33	81	215	233	1374	907
Sep/2005	15	160	200	-	115	151	160	196	18	19	143	15	31	87	103	1296	881
Oct/2005	55	229	270	-	115	166	198	234	20	37	245	30	81	244	264	2222	1493
Nov/2005	61	254	298	-	115	180	218	256	21	42	274	34	92	275	297	2017	1359
Dec/2005	17	181	224	-	125	177	194	232	16	22	165	14	30	90	109	1595	1066
Jan/2006	8	153	193	-	125	165	177	212	11	15	129	9	12	45	62	1332	882
Feb/2006	5	136	173	-	125	156	166	200	6	12	110	7	7	30	45	1166	763
Mar/2006	4	123	159	-	125	151	160	193	3	10	98	5	6	22	37	1172	758
Apr/2006	109	555	614	-	125	268	355	409	37	78	496	55	155	474	512	1477	1058
May/2006	195	709	775	-	570	759	862	922	89	144	728	143	357	926	969	3076	1879
Jun/2006	105	313	359	-	560	641	669	710	71	66	367	100	239	551	572	2660	1563
Jul/2006	22	175	216	-	240	284	296	332	28	26	182	28	61	137	154	1377	853
Aug/2006	9	140	178	-	150	180	188	222	15	15	130	11	19	52	67	840	540
Sep/2006	5	123	158	-	115	137	144	176	9	11	109	7	8	29	43	693	461
Oct/2006	4	111	145	-	115	133	139	170	5	9	96	5	6	22	35	860	562
Nov/2006	3	101	133	-	115	130	135	165	2	7	86	4	4	16	29	1433	935
Dec/2006	2	89	119	-	125	136	140	169	2	6	78	4	4	11	23	1343	857
Jan/2007	2	79	107	-	125	132	135	163	1	4	69	3	3	6	18	1353	857
Feb/2007	1	70	97	-	125	129	132	158	0	3	62	2	2	3	14	1348	847
Mar/2007	1	64	89	-	125	128	130	156	0	2	57	2	2	2	13	1542	970
Apr/2007	4	246	296	-	125	211	293	341	0	15	144	2	2	29	64	2922	1887
May/2007	207	638	697	-	570	766	865	921	114	174	776	192	527	1289	1329	7659	5000
Jun/2007	281	613	655	-	560	710	745	784	160	153	904	168	400	1034	1055	14574	9759
Jul/2007	106	304	344	-	240	321	344	379	58	69	412	79	195	485	502	3806	2570
Aug/2007	24	184	221	-	150	196	206	239	22	24	178	22	51	129	144	2377	1579
Sep/2007	19	166	201	-	115	151	157	189	13	16	131	14	29	85	100	1800	1202
Oct/2007	49	207	243	-	115	161	180	212	14	26	181	22	64	201	216	3028	2012
Nov/2007	48	214	252	-	115	167	190	223	14	28	194	22	67	212	228	2886	1915
Dec/2007	16	168	204	-	125	166	177	210	9	16	135	12	27	86	102	2042	1340
Jan/2008	9	145	178	-	125	156	164	195	5	12	111	8	13	50	65	1700	1105
Feb/2008	6	128	159	-	125	149	155	185	2	9	97	6	7	33	47	1665	1073
Mar/2008	5	119	149	-	125	147	153	183	2	8	90	5	5	25	39	1646	1053
Apr/2008	6	114	143	-	125	146	152	181	1	7	86	5	5	26	40	1785	1140
May/2008	229	736	770	-	570	722	783	819	130	185	833	218	581	1446	1475	9695	6425
Jun/2008	228	805	845	-	560	729	803	843	164	139	921	136	310	793	826	3418	2353
Jul/2008	39	230	268	-	240	305	326	361	40	38	275	34	74	170	189	1414	912
Aug/2008	17	146	181	-	150	189	198	230	13	17	136	15	29	76	91	1318	846
Sep/2008	15	129	162	-	115	144	151	182	6	12	105	12	22	64	78	1189	774
Oct/2008	29	142	175	-	115	145	152	183	5	14	106	14	37	116	130	1201	775
Nov/2008	34	164	200	-	115	158	181	214	5	16	121	15	44	142	159	1677	1093
Dec/2008	16	149	186	-	125	170	196	229	3	14	116	10	22	82	99	1533	983
Jan/2009	10	129	163	-	125	160	171	203	2	11	104	7	12	52	68	1395	884
Feb/2009	7	114	146	-	125	152	160	190	1	9	94	6	6	35	50	1391	875
Mar/2009	5	101	131	-	125	146	152	181	1	7	85	4	4	25	39	1428	894
Apr/2009	8	280	336	-	125	225	310	362	0	20	171	4	4	52	89	2590	1665
May/2009	239	706	770	-	570	786	888	947	127	186	850	214	592	1454	1497	4854	3166
Jun/2009	232	573	615	-	560	698	724	763	161	130	844	136	313	807	828	4839	3261
Jul/2009	43	217	254	-	240	295	305	339	39	38	269	36	78	187	203	2289	1488
Aug/2009	13	150	184	-	150	181	187	219	10	15	134	13	22	65	79	984	617
Sep/2009	7	127	159	-	115	137	141	171	4	9	100	7	8	35	48	864	547
Oct/2009	5	112	142	-	115	131	134	163	2	7	86	5	5	23	36	968	606

Knight Piésold CONSULTING

TABLE G2.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - CLOSURE CONDITIONS
MITIGATED SCENARIO

Print Jan/16/14 11:40:55

Date	Turtle Creek			Davidson Creek					Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Nov/2009	3	99	127	-	115	126	129	157	1	5	76	4	4	16	28	1698	1084
Dec/2009	2	88	114	-	125	133	134	161	1	3	68	3	3	10	22	1402	871
Jan/2010	2	78	102	-	125	129	131	156	0	2	60	2	2	5	17	1367	842
Feb/2010	1	69	92	-	125	127	127	153	0	1	55	2	2	2	13	1384	849
Mar/2010	3	186	219	-	125	186	251	289	0	10	109	1	1	17	46	1383	844
Apr/2010	52	276	315	-	125	221	300	343	0	27	185	21	64	205	239	2399	1520
May/2010	120	261	295	-	570	636	654	687	25	68	267	81	212	538	555	4182	2391
Jun/2010	86	214	245	-	560	600	605	634	34	45	224	78	184	435	449	3386	1910
Jul/2010	21	134	163	-	240	262	264	292	10	17	128	22	48	120	132	1486	863
Aug/2010	9	109	137	-	150	164	165	192	3	10	97	9	15	51	62	851	502
Sep/2010	6	96	122	-	115	125	125	151	1	7	85	6	7	32	44	5981	3941
Oct/2010	8	91	115	-	115	122	122	147	1	6	81	7	9	38	49	3610	2359
Nov/2010	9	86	108	-	115	120	120	144	0	6	77	7	10	40	50	2193	1412
Dec/2010	7	75	96	-	125	128	128	151	0	4	69	5	5	27	37	1597	1000
Jan/2011	5	65	85	-	125	126	126	149	0	3	63	4	4	19	29	818	476
Feb/2011	4	57	76	-	125	126	126	148	0	3	57	3	3	13	23	888	517
Mar/2011	3	50	68	-	125	126	126	147	0	2	52	2	2	8	18	1680	1039
Apr/2011	3	63	83	-	125	135	156	179	0	2	55	2	2	12	26	12073	7955
May/2011	436	1317	1404	-	570	906	1049	1119	263	323	1551	371	996	2534	2586	20679	14178
Jun/2011	275	1290	1391	-	560	880	1030	1112	229	186	1303	159	364	930	988	13859	9441
Jul/2011	82	339	386	-	240	355	390	433	57	60	398	58	142	349	373	7846	5213
Aug/2011	54	204	242	-	150	218	229	264	21	34	210	36	93	247	264	3457	2270
Sep/2011	15	137	172	-	115	159	165	196	10	15	123	13	28	81	96	1378	898
Oct/2011	8	116	148	-	115	147	151	181	4	10	96	8	11	42	56	1105	705
Nov/2011	5	101	132	-	115	139	142	171	2	7	83	5	6	27	40	1383	882
Dec/2011	4	89	118	-	125	143	145	173	1	5	74	4	4	19	31	788	469
Jan/2012	3	79	105	-	125	138	139	166	1	3	66	3	3	12	24	806	475
Feb/2012	2	70	95	-	125	134	135	160	0	3	60	3	3	7	19	876	517
Mar/2012	1	62	85	-	125	131	131	155	0	2	54	2	2	4	15	1667	1039
Apr/2012	7	282	339	-	125	224	313	365	0	17	161	2	2	44	82	3372	2174
May/2012	207	645	712	-	570	775	882	942	113	170	774	194	530	1293	1336	7825	5102
Jun/2012	227	504	542	-	560	686	709	745	144	119	748	135	308	791	810	6518	4331
Jul/2012	46	195	228	-	240	287	294	324	36	35	239	39	84	199	213	3101	2014
Aug/2012	15	134	164	-	150	175	177	206	9	13	116	13	26	74	86	1961	1259
Sep/2012	8	113	141	-	115	132	133	160	3	7	86	7	10	41	52	1319	844
Oct/2012	6	99	125	-	115	127	127	153	2	4	73	5	5	26	38	1011	629
Nov/2012	4	87	112	-	115	123	123	148	1	3	65	4	4	18	29	1404	883
Dec/2012	3	77	100	-	125	130	130	154	0	3	59	3	3	12	23	937	557

M:\1\01\00457\06\A\Report\6 - Watershed model\Rev 0 - Copy\Appendices\G Closure results\Appendix G2\[Tables G2.1 to G2.5_Rev 1.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO GROUNDWATER FLOW PASSES THE INTERCEPTION DITCH AT THE ENVIRONMENTAL CONTROL DAM AND AN ENVIRONMENTAL CONTROL DAM SEEPAGE OF 0.2 L/S.
3. STREAMFLOW ESTIMATES IN DAVIDSON CREEK INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE INSTREAM FLOW NEEDS TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM).
4. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT CLOSURE FLOW CONDITIONS.
5. STREAMFLOWS IN DAVIDSON CREEK ASSUME TSF SPILLWAY CHANNEL IS CONSTRUCTED, BUT IS NOT OPERATIONAL AND IS ONLY THERE FOR EMERGENCY PURPOSES.
6. ESTIMATED STREAMFLOW VALUES WERE OBTAINED FROM THE CLOSURE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
1	16JAN'14	ISSUED WITH REPORT VA101-457/6-6	BW	CAS	KJB

Knight Piésold CONSULTING

TABLE G2.3

NEW GOLD INC.
BLACKWATER GOLD PROJECT

DRY RETURN PERIOD FLOWS - CLOSURE CONDITIONS
MITIGATED SCENARIO

16/01/2014 11:40

Dry Return Period Flows (L/s)																
	H3	H6	1-TC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January																
1 in 50 year	1.4	52.6	72.1	N/A	125.0	125.0	147.1	0.0	1.4	45.9	1.9	2.4	4.0	12.9	763.2	451.4
1 in 20 year	1.8	60.6	81.9	N/A	125.7	125.7	148.2	0.0	1.9	52.2	2.3	3.0	4.8	16.1	837.9	501.7
1 in 10 year	2.3	68.6	91.7	N/A	126.8	127.1	150.0	0.0	2.5	58.4	2.7	3.7	6.2	19.6	910.3	551.0
1 in 5 year	3.0	79.8	105.2	N/A	129.4	130.3	154.0	0.0	3.5	67.1	3.4	5.0	9.3	25.0	1007.1	617.6
February																
1 in 50 year	1.0	46.5	64.8	N/A	125.1	125.1	146.5	0.0	1.1	42.5	1.5	1.6	1.9	10.5	800.4	474.5
1 in 20 year	1.3	53.5	73.6	N/A	125.6	125.6	147.3	0.0	1.4	48.0	1.8	2.1	2.8	12.9	870.4	521.3
1 in 10 year	1.7	60.6	82.4	N/A	126.5	126.7	148.8	0.0	1.9	53.3	2.2	2.7	4.1	15.5	937.7	566.8
1 in 5 year	2.2	70.5	94.5	N/A	128.4	129.1	152.0	0.0	2.6	60.7	2.7	3.7	6.3	19.4	1026.7	627.4
March																
1 in 50 year	0.8	40.3	57.7	N/A	125.0	125.0	145.2	0.0	0.9	40.1	1.1	1.2	1.7	9.4	910.9	557.6
1 in 20 year	1.1	47.7	67.0	N/A	125.5	125.5	146.3	0.0	1.3	45.6	1.3	1.7	2.6	11.7	994.3	611.6
1 in 10 year	1.4	55.4	76.5	N/A	126.5	126.9	148.3	0.0	1.7	51.1	1.6	2.2	3.7	14.4	1074.7	663.8
1 in 5 year	1.9	66.4	90.0	N/A	128.7	130.3	152.6	0.0	2.4	58.6	2.1	3.1	5.7	18.3	1181.4	733.5
April																
1 in 50 year	0.9	60.9	81.1	N/A	131.5	151.8	164.9	0.0	1.5	36.7	0.4	1.4	4.3	10.6	660.0	440.3
1 in 20 year	1.6	81.6	105.9	N/A	134.0	160.0	187.0	0.0	2.8	51.4	0.7	2.6	7.9	17.8	841.3	560.7
1 in 10 year	2.8	105.7	134.1	N/A	138.4	179.5	209.2	0.0	4.5	69.2	1.2	4.6	13.7	28.1	1043.6	694.9
1 in 5 year	5.5	144.9	178.8	N/A	147.9	206.5	239.7	0.0	7.8	99.5	2.4	9.0	26.9	49.0	1356.6	902.4
May																
1 in 50 year	123.9	338.7	376.8	N/A	651.7	689.3	722.0	36.8	81.4	368.7	85.5	212.9	543.3	568.6	918.6	531.7
1 in 20 year	138.7	388.7	429.9	N/A	671.5	717.7	753.4	45.3	93.1	426.9	98.4	248.1	631.6	659.2	1243.5	731.2
1 in 10 year	153.2	439.2	483.3	N/A	689.5	743.8	782.4	54.4	104.8	486.1	111.4	284.1	721.8	751.7	1627.1	970.1
1 in 5 year	173.1	509.6	557.3	N/A	712.2	777.0	819.2	68.1	121.0	569.5	129.6	335.2	849.4	882.0	2257.2	1368.8
June																
1 in 50 year	50.8	166.1	194.3	N/A	596.9	608.7	639.2	30.2	37.7	190.0	64.5	141.3	305.6	322.9	958.6	507.6
1 in 20 year	64.1	205.5	237.4	N/A	610.0	621.0	652.6	38.7	45.9	239.1	73.0	161.3	357.9	376.8	1264.1	690.9
1 in 10 year	78.8	248.2	283.5	N/A	622.9	634.6	667.4	48.2	54.6	293.2	81.4	181.5	411.9	432.1	1615.9	908.5
1 in 5 year	101.3	312.4	352.0	N/A	640.5	655.2	690.0	62.9	67.4	375.9	92.9	209.5	488.6	510.6	2178.9	1267.9
July																
1 in 50 year	14.5	127.7	158.4	N/A	257.0	265.8	294.1	13.1	15.9	117.7	18.0	37.3	87.5	99.5	740.1	447.7
1 in 20 year	18.0	142.1	174.4	N/A	265.0	272.9	302.5	15.9	18.8	136.1	21.2	44.6	104.7	117.9	902.6	551.6
1 in 10 year	21.9	156.2	190.0	N/A	272.3	279.9	310.6	18.7	21.9	154.8	24.5	52.2	122.8	137.1	1076.5	663.7
1 in 5 year	27.7	175.3	210.8	N/A	281.5	289.5	321.6	23.0	26.3	181.1	29.2	63.3	149.2	164.8	1334.2	831.5
August																
1 in 50 year	5.4	103.6	131.9	N/A	161.3	162.8	190.4	3.9	8.4	89.3	7.1	10.7	32.5	42.4	485.7	295.9
1 in 20 year	6.8	112.4	142.0	N/A	166.2	168.7	197.1	5.0	9.7	97.7	8.4	13.4	40.0	51.1	582.9	358.4
1 in 10 year	8.4	120.8	151.6	N/A	170.7	174.2	203.3	6.2	11.1	105.9	9.8	16.5	48.2	60.3	685.3	424.9
1 in 5 year	10.8	131.9	164.2	N/A	176.4	181.0	211.2	8.1	13.1	116.8	11.8	21.1	60.3	73.8	834.7	522.7
September																
1 in 50 year	2.8	85.2	111.5	N/A	120.9	125.6	145.8	1.4	5.0	63.7	3.0	3.7	16.3	24.4	361.8	232.3
1 in 20 year	3.8	94.0	121.6	N/A	125.2	129.0	152.3	2.0	6.1	71.7	4.4	5.1	21.6	31.1	458.6	295.6
1 in 10 year	5.0	102.5	131.4	N/A	129.2	132.4	158.2	2.6	7.2	79.7	5.7	6.9	27.6	38.5	566.0	366.1
1 in 5 year	7.0	113.9	144.3	N/A	134.2	137.2	165.8	3.7	8.8	90.6	7.5	9.9	37.2	49.9	731.3	475.1
October																
1 in 50 year	1.4	57.3	78.4	N/A	122.4	122.4	147.5	0.7	2.4	40.6	1.9	3.4	7.5	12.7	478.3	306.5
1 in 20 year	2.3	69.4	92.9	N/A	124.2	124.5	150.3	1.0	3.4	51.0	2.7	5.2	11.9	18.9	580.8	373.6
1 in 10 year	3.5	82.2	107.9	N/A	126.3	127.2	153.8	1.4	4.7	62.5	3.8	7.6	17.8	26.8	689.9	445.5
1 in 5 year	5.9	101.0	129.7	N/A	129.8	131.9	159.6	2.1	6.8	80.0	5.6	11.9	29.1	41.3	850.9	552.0
November																
1 in 50 year	1.2	50.2	69.1	N/A	118.7	118.7	141.9	0.2	1.8	35.9	1.6	2.6	5.5	10.5	779.8	502.3
1 in 20 year	1.9	61.9	83.4	N/A	119.7	119.7	143.7	0.3	2.6	45.8	2.3	4.1	9.0	15.9	907.0	586.1
1 in 10 year	3.0	74.6	98.6	N/A	121.4	122.0	146.6	0.6	3.7	56.9	3.2	6.1	13.9	23.0	1037.2	672.1
1 in 5 year	5.0	93.6	121.0	N/A	125.1	127.7	153.1	1.1	5.6	74.2	4.7	9.8	23.5	35.9	1221.2	794.0
December																
1 in 50 year	1.4	54.3	73.7	N/A	126.3	127.0	150.3	0.0	1.7	43.0	1.8	2.8	5.4	12.4	749.1	450.0
1 in 20 year	2.0	63.4	84.9	N/A	127.1	128.9	152.9	0.0	2.3	50.6	2.3	3.8	7.9	16.5	842.6	511.9
1 in 10 year	2.6	72.7	96.2	N/A	128.5	131.2	156.0	0.0	3.1	58.6	2.9	5.1	10.9	21.2	935.3	573.9
1 in 5 year	3.8	86.0	112.1	N/A	131.5	135.2	161.4	0.2	4.3	69.9	3.8	7.2	16.3	28.8	1062.1	659.7

M:\1\01\00457\06\A\Report\6 - Watershed model\Rev 0 - Copy\Appendices\G Closure results\Appendix G2\[Tables G2.1 to G2.5_Rev 1.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.
4. NO DISTRIBUTIONS ARE SHOWN FOR H2, AS FLOWS ARE CONTROLLED BY THE FRESH WATER SUPPLY SYSTEM.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
1	16JAN'14	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE G2.4

NEW GOLD INC.
BLACKWATER GOLD PROJECT

WET RETURN PERIOD FLOWS - CLOSURE CONDITIONS
MITIGATED SCENARIO

16/01/2014 11:40

Wet Return Period Flows (L/s)																
	H3	H6	1-TC	H2	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January																
1 in 50 year	19	215	259	N/A	208	230	279	16	30	166	14	29	105	120	1951	1304
1 in 20 year	15	187	228	N/A	188	205	248	12	22	146	12	21	81	96	1777	1173
1 in 10 year	12	165	204	N/A	174	186	224	10	17	130	10	16	63	79	1635	1068
1 in 5 year	9	142	177	N/A	159	168	201	7	12	114	8	12	45	62	1478	953
February																
1 in 50 year	13	191	232	N/A	188	204	251	9	24	141	11	13	110	118	1859	1221
1 in 20 year	10	166	204	N/A	173	186	227	7	17	126	9	10	74	79	1710	1112
1 in 10 year	8	146	182	N/A	162	172	208	5	13	113	7	8	51	57	1587	1023
1 in 5 year	6	126	159	N/A	151	157	189	4	9	99	6	7	33	46	1449	924
March																
1 in 50 year	15	219	259	N/A	198	236	287	6	25	145	10	12	101	108	2196	1410
1 in 20 year	11	185	223	N/A	181	210	253	4	18	127	8	9	67	73	2012	1286
1 in 10 year	9	159	196	N/A	168	190	228	4	13	114	7	8	47	59	1861	1185
1 in 5 year	6	133	166	N/A	155	170	203	2	9	99	5	6	30	46	1693	1072
April																
1 in 50 year	447	1143	1176	N/A	445	517	585	120	221	1073	239	1125	2177	2328	7559	4995
1 in 20 year	240	853	901	N/A	371	454	515	90	147	767	125	474	1170	1251	5929	3922
1 in 10 year	138	659	711	N/A	315	405	461	66	99	569	70	220	674	709	4780	3164
1 in 5 year	70	481	534	N/A	260	352	402	38	60	396	35	87	345	407	3677	2437
May																
1 in 50 year	384	1350	1416	N/A	880	1033	1107	296	311	1605	349	990	2465	2512	19249	13040
1 in 20 year	343	1176	1241	N/A	854	993	1061	241	272	1387	303	849	2120	2167	14219	9482
1 in 10 year	310	1041	1104	N/A	832	958	1022	200	242	1218	268	741	1855	1900	10867	7147
1 in 5 year	275	897	958	N/A	805	917	976	160	209	1039	230	628	1576	1620	7833	5065
June																
1 in 50 year	524	1410	1452	N/A	855	1013	1078	363	269	1911	222	536	1496	1523	15427	11242
1 in 20 year	415	1139	1189	N/A	810	929	987	283	221	1518	196	469	1277	1305	11699	8258
1 in 10 year	338	943	995	N/A	774	866	919	227	186	1238	176	417	1110	1138	9152	6281
1 in 5 year	263	749	801	N/A	737	802	849	174	151	966	154	361	936	963	6787	4500
July																
1 in 50 year	130	373	416	N/A	350	392	432	87	87	506	92	222	533	550	5437	3638
1 in 20 year	104	335	378	N/A	339	373	412	72	74	437	78	186	446	464	4458	2953
1 in 10 year	86	305	347	N/A	330	357	395	61	63	384	68	159	380	399	3738	2454
1 in 5 year	68	272	313	N/A	319	340	377	50	53	329	57	131	313	332	3016	1959
August																
1 in 50 year	57	234	277	N/A	218	233	270	45	38	222	39	106	264	277	3035	2028
1 in 20 year	45	216	257	N/A	212	225	261	35	33	203	33	85	214	230	2529	1675
1 in 10 year	37	201	241	N/A	206	218	253	28	29	187	28	69	178	195	2151	1413
1 in 5 year	28	184	222	N/A	200	210	244	22	24	170	24	54	142	159	1766	1148
September																
1 in 50 year	60	227	267	N/A	172	194	225	37	34	210	30	108	265	272	3914	2616
1 in 20 year	44	206	245	N/A	166	182	216	27	28	186	25	77	201	214	3088	2055
1 in 10 year	34	189	227	N/A	161	173	207	20	24	168	21	57	157	173	2502	1659
1 in 5 year	24	170	206	N/A	155	164	198	14	19	147	18	40	116	134	1937	1279
October																
1 in 50 year	175	390	431	N/A	232	310	345	49	82	404	72	279	728	779	3360	2244
1 in 20 year	109	322	364	N/A	203	256	292	33	57	321	50	166	462	465	2767	1841
1 in 10 year	71	272	313	N/A	183	219	255	23	42	262	37	104	309	326	2329	1544
1 in 5 year	42	221	260	N/A	164	186	220	14	29	205	25	59	189	212	1889	1246
November																
1 in 50 year	167	414	459	N/A	242	306	357	75	85	420	66	277	739	790	3557	2365
1 in 20 year	102	336	380	N/A	213	262	306	41	58	329	46	159	454	485	3058	2027
1 in 10 year	66	278	322	N/A	191	228	268	24	41	265	33	97	295	309	2675	1767
1 in 5 year	39	222	262	N/A	169	195	230	13	27	203	22	53	174	197	2272	1496
December																
1 in 50 year	39	257	304	N/A	226	282	321	26	41	222	24	76	228	243	2441	1641
1 in 20 year	28	220	264	N/A	202	238	276	21	30	189	19	50	157	163	2170	1443
1 in 10 year	21	192	233	N/A	185	208	244	16	22	163	15	34	113	126	1955	1287
1 in 5 year	15	162	200	N/A	167	180	215	12	16	137	11	22	75	93	1722	1120

M:\1\01\00457\06\A\Report\6 - Watershed model\Rev 0 - Copy\Appendices\G Closure results\Appendix G2\[Tables G2.1 to G2.5_Rev 1.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.
4. NO DISTRIBUTIONS ARE SHOWN FOR H2, AS FLOWS ARE CONTROLLED BY THE FRESH WATER SUPPLY SYSTEM.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
1	16JAN13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE G2.5

NEW GOLD INC.
BLACKWATER GOLD PROJECT

7 DAY LOW FLOWS - CLOSURE CONDITIONS
MITIGATED SCENARIO

16/01/2014 11:40

7 Day Low Flows (L/s)																
Return Period	Turtle Creek			Davidson Creek				Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**H2**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
1 in 10 Year	0.9	43.1	59.1	N/A	121.5	121.9	146.3	0.0	1.2	41.0	1.1	3.7	9.8	10.5	545.6	348.0
1 in 20 Year	0.7	41.0	56.0	N/A	120.0	120.0	144.2	0.0	1.1	40.2	0.9	3.5	9.1	9.8	530.4	340.6

M:\1\01\00457\06\A\Report\6 - Watershed model\Rev 0 - Copy\Appendices\G Closure results\Appendix G2\[Tables G2.1 to G2.5_Rev 1.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES WERE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.
4. NO DISTRIBUTIONS ARE SHOWN FOR H2, AS FLOWS ARE CONTROLLED BY THE FRESH WATER SUPPLY SYSTEM.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
1	16JAN14	ISSUED WITH REPORT VA1010457/6-6	BW	CMB	KJB

APPENDIX H ▲R1

PREDICTED POST-CLOSURE CONDITIONS STREAMFLOWS

(Pages H-1 to H-7)

Knight Piésold CONSULTING

TABLE H.1

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED AVERAGE MONTHLY STREAMFLOWS - POST CLOSURE CONDITIONS

Print Oct/11/13 15:23:26

	Turtle Creek			Davidson Creek							Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	WETLAND	POOL	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January	6	112	143	-	59	65	113	140	146	175	6	9	93	6	8	31	45	1414	962
February	4	99	128	-	58	64	106	127	131	160	4	7	83	4	5	20	33	1400	951
March	4	102	130	-	57	63	101	126	136	164	3	6	81	4	4	19	34	1598	1079
April	52	325	368	-	72	83	227	306	371	413	20	42	275	29	85	262	292	3073	2045
May	226	710	764	-	124	150	976	1091	1179	1230	117	167	813	183	490	1233	1271	6675	4386
June	185	550	596	-	119	144	652	731	773	815	122	112	688	124	288	719	744	5625	3876
July	49	225	263	-	74	85	211	261	276	311	38	41	259	44	100	237	254	2575	1794
August	21	159	194	-	63	71	122	161	168	200	16	19	145	18	39	106	121	1518	1066
September	18	143	176	-	61	68	130	161	168	199	11	15	122	14	28	85	99	1643	1127
October	31	168	201	-	62	69	160	194	208	239	11	21	153	18	44	136	152	1647	1112
November	27	165	199	-	62	69	138	175	192	223	11	19	150	16	39	121	137	1983	1344
December	10	126	158	-	60	66	120	151	160	191	8	11	107	8	15	50	65	1578	1074
Annual Average	53	241	277	-	72	83	255	303	327	361	31	39	248	39	96	253	272	2561	1735

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\H Post-closure results\[Tables H1 to H5 rC.xlsx]Table 1

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME THE INTERCEPTION DITCH IS DECOMISSIONED.
3. STREAMFLOW ESTIMATES LEAVING THE WETLAND ASSUME NO GROUNDWATER CONTRIBUTION OCCURS ALONG THE LENGTH OF THE WETLAND.
4. STREAMFLOW ESTIMATES ASSUME 80% TSF SPILLWAY CHANNEL EFFICIENCY WITH 20% LOSS TO A CATCHMENT OUTSIDE OF STUDY AREA.
5. 25% OF TOE DISCHARGE AND RUNOFF FROM EAST DUMP CONTRIBUTES FLOWS TO THE TSF SPILLWAY CHANNEL.
6. STREAMFLOW ESTIMATES IN DAVIDSON CREEK DO NOT INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM, WHICH IS ASSUMED TO BE DECOMMISSIONED.
7. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT POST CLOSURE FLOW CONDITIONS.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE H.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - POST CLOSURE CONDITIONS

Print Oct/11/13 15:23:26

Date	Turtle Creek			Davidson Creek							Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	WETLAND	POOL	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/1998	8	130	161	-	61	68	122	151	158	187	5	12	107	7	10	43	57	1322	903
Feb/1998	6	118	148	-	60	67	113	139	145	174	4	10	98	6	6	30	44	1304	889
Mar/1998	6	116	146	-	60	66	109	138	144	173	4	9	95	5	5	29	43	1567	1061
Apr/1998	129	573	620	-	103	124	463	564	643	689	48	90	546	66	197	584	619	1729	1124
May/1998	179	685	739	-	113	138	700	823	916	968	76	121	680	123	311	824	863	4851	3183
Jun/1998	68	262	303	-	73	84	297	359	384	421	40	52	272	77	171	381	402	2193	1529
Jul/1998	21	162	199	-	64	72	125	167	178	211	20	23	156	25	53	127	143	1980	1388
Aug/1998	11	132	167	-	61	68	85	118	124	156	11	15	119	12	21	63	77	914	673
Sep/1998	8	115	147	-	60	67	93	119	124	154	6	12	101	8	11	39	53	823	595
Oct/1998	7	105	135	-	59	65	142	163	167	196	5	10	93	7	9	35	47	1363	920
Nov/1998	8	97	125	-	58	64	112	130	133	161	4	9	88	6	8	32	45	1601	1089
Dec/1998	6	86	113	-	58	63	105	120	123	150	3	7	80	5	5	23	35	1488	1011
Jan/1999	4	76	101	-	57	62	98	110	112	138	3	6	71	4	4	16	28	1462	992
Feb/1999	3	67	91	-	56	61	92	101	103	128	2	4	64	3	3	11	22	1494	1011
Mar/1999	3	62	85	-	55	60	89	98	99	124	2	3	59	3	3	8	19	1613	1086
Apr/1999	56	310	342	-	64	72	139	208	272	309	3	36	255	21	64	228	257	2211	1463
May/1999	207	591	629	-	107	128	751	848	926	968	77	149	728	143	408	1038	1072	4324	2806
Jun/1999	202	446	482	-	111	132	694	751	771	805	103	111	632	136	335	859	877	5050	3393
Jul/1999	61	215	249	-	72	83	220	262	271	302	39	46	247	61	140	318	333	2146	1499
Aug/1999	17	144	176	-	63	71	123	155	161	190	20	20	139	19	41	101	114	1632	1151
Sep/1999	9	122	151	-	60	67	117	143	147	175	12	13	107	10	17	52	64	1415	990
Oct/1999	6	107	134	-	59	65	112	133	136	163	7	10	91	7	8	32	45	1473	1020
Nov/1999	4	95	121	-	58	64	109	126	128	155	5	8	81	5	5	23	35	1719	1177
Dec/1999	3	85	110	-	57	63	99	113	115	141	4	6	74	4	4	16	28	1611	1103
Jan/2000	2	75	98	-	56	61	97	108	109	134	3	4	66	3	3	11	22	1398	955
Feb/2000	2	66	88	-	56	60	94	103	103	127	3	3	60	3	3	6	17	1398	951
Mar/2000	1	61	82	-	55	59	92	100	100	124	2	2	55	2	2	3	14	1367	925
Apr/2000	7	153	180	-	55	60	87	141	194	224	2	11	108	3	3	32	57	1929	1298
May/2000	231	643	677	-	125	150	1044	1127	1201	1236	125	179	805	204	566	1405	1435	2868	1836
Jun/2000	273	688	726	-	142	174	928	1000	1039	1074	164	152	933	163	386	996	1016	3414	2389
Jul/2000	94	301	339	-	79	92	299	366	392	426	53	65	381	71	174	432	450	2008	1425
Aug/2000	41	210	247	-	66	75	188	245	257	290	25	29	190	30	76	195	212	1144	806
Sep/2000	34	189	225	-	63	71	130	179	188	221	18	21	149	21	55	153	169	1022	734
Oct/2000	42	205	241	-	63	71	185	239	266	299	17	28	190	20	58	187	206	1203	815
Nov/2000	43	222	262	-	63	71	158	224	260	295	16	31	206	20	58	194	215	1644	1122
Dec/2000	16	186	226	-	62	70	143	204	223	259	11	19	149	11	24	86	104	1365	938
Jan/2001	9	162	199	-	61	69	131	180	192	225	7	15	123	8	13	51	68	1294	889
Feb/2001	6	144	178	-	60	67	121	161	170	202	5	12	109	6	7	34	50	1258	863
Mar/2001	6	135	169	-	59	66	116	152	161	193	5	11	103	6	6	30	46	1275	871
Apr/2001	9	290	342	-	60	67	94	203	285	336	4	22	176	5	5	54	91	1598	1094
May/2001	226	682	741	-	127	153	1031	1162	1260	1316	124	178	823	197	555	1371	1412	2906	1868
Jun/2001	237	591	635	-	142	173	883	953	980	1021	159	136	844	146	332	841	863	3432	2397
Jul/2001	52	255	296	-	80	93	251	300	314	349	46	49	297	51	107	245	262	1855	1322
Aug/2001	16	182	219	-	65	74	126	164	173	207	18	21	158	17	33	92	108	1172	845
Sep/2001	9	155	191	-	62	69	118	149	156	188	9	13	120	9	14	53	67	891	636
Oct/2001	9	146	179	-	60	67	125	153	160	191	6	12	108	8	11	47	61	922	643
Nov/2001	9	138	171	-	60	66	119	146	153	184	5	11	103	7	10	44	58	1300	891
Dec/2001	7	124	155	-	59	65	111	134	140	170	4	9	94	5	5	31	45	1306	892
Jan/2002	5	109	139	-	58	64	103	121	126	155	3	7	84	4	4	22	35	1270	865
Feb/2002	4	97	125	-	57	62	96	111	115	143	3	5	76	3	3	15	28	1310	889
Mar/2002	3	86	112	-	56	61	91	102	106	132	2	4	68	3	3	10	22	1252	848
Apr/2002	4	92	118	-	56	61	89	108	122	149	2	4	69	2	2	14	27	1579	1062
May/2002	287	933	988	-	151	187	1105	1222	1320	1372	143	202	985	216	631	1665	1703	3784	2451
Jun/2002	248	990	1054	-	171	214	977	1121	1228	1288	180	172	1120	154	348	872	916	5654	3886
Jul/2002	52	268	310	-	82	97	261	327	356	394	47	55	328	56	117	250	272	1924	1360
Aug/2002	15	144	181	-	63	71	108	151	161	194	15	18	137	17	33	85	101	1009	733
Sep/2002	8	116	150	-	58	64	128	161	167	198	6	9	91	8	13	45	60	1017	700
Oct/2002	8	106	139	-	57	63	121	148	153	183	5	7	81	7	10	40	53	1024	700
Nov/2002	9	105	137	-	56	62	108	136	141	171	4	6	79	6	8	39	53	1267	864
Dec/2002	7	98	129	-	56	61	100	127	132	161	3	5	73	5	5	29	43	1255	854
Jan/2003	5	86	115	-	55	60	93	114	119	147	3	3	65	4	4	21	34	1230	835
Feb/2003	4	76	103	-	54	59	87	104	108	135	2	2	59	3	3	14	27	1193	808
Mar/2003	3	67	93	-	54	58	82	96	99	125	2	2	53	2	2	9	21	1285	867
Apr/2003	19	305	362	-	55	59	85	189	277	329	2	21	186	4	5	81	118	1666	1121
May/2003	168	546	611	-	93	109	725	858	964	1024	79	132	627	140	370	910	953	3042	1988
Jun/2003	176	372	411	-	102	121	500	557	581	618	98	91	556	112	272	721	740	2994	2150

Knight Piésold CONSULTING

TABLE H.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - POST CLOSURE CONDITIONS

Print Oct/11/13 15:23:26

Date	Turtle Creek			Davidson Creek							Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	WETLAND	POOL	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jul/2003	33	168	202	-	68	77	149	185	192	223	25	26	187	30	69	166	180	1520	1090
Aug/2003	10	125	156	-	59	66	98	124	128	157	9	10	102	11	21	58	71	914	651
Sep/2003	36	148	178	-	58	65	169	193	196	224	6	15	101	22	56	154	167	964	631
Oct/2003	121	429	465	-	78	91	330	396	449	483	29	69	384	66	188	532	558	1292	838
Nov/2003	106	452	492	-	83	98	282	365	430	466	36	68	435	62	174	490	520	1517	1040
Dec/2003	23	187	224	-	65	74	168	219	236	269	17	24	181	20	48	127	144	1384	948
Jan/2004	9	135	169	-	60	68	135	172	178	210	9	13	116	9	17	52	66	1260	863
Feb/2004	6	115	148	-	59	65	120	149	153	183	6	9	95	6	7	30	43	1232	843
Mar/2004	12	133	167	-	59	65	121	162	191	223	6	12	107	6	8	50	68	1393	946
Apr/2004	171	589	631	-	117	142	630	712	791	828	78	118	657	100	324	904	935	2156	1406
May/2004	235	711	758	-	130	160	963	1057	1121	1161	127	148	815	159	380	972	1002	2833	1852
Jun/2004	90	308	352	-	77	90	353	424	443	481	69	60	332	100	219	490	509	1733	1284
Jul/2004	23	190	232	-	65	74	144	200	209	246	29	26	183	29	61	142	158	1608	1154
Aug/2004	16	166	205	-	62	70	146	192	199	234	19	19	145	15	30	84	100	1504	1045
Sep/2004	71	249	289	-	65	74	252	303	327	362	26	44	271	44	115	320	337	2667	1782
Oct/2004	103	313	358	-	68	77	261	330	376	414	33	61	364	59	163	462	483	1878	1268
Nov/2004	54	262	309	-	67	76	197	273	311	351	27	41	265	31	87	255	276	4620	3107
Dec/2004	18	213	259	-	65	74	171	240	258	298	21	24	182	15	34	105	125	2715	1841
Jan/2005	10	184	227	-	64	73	155	211	223	261	15	18	149	10	17	61	79	2083	1419
Feb/2005	7	164	204	-	63	71	143	188	198	234	11	15	130	8	10	41	58	2026	1378
Mar/2005	10	159	198	-	62	70	145	187	198	233	8	14	123	8	11	45	61	2685	1810
Apr/2005	204	752	799	-	135	167	834	935	1008	1055	108	156	818	139	438	1196	1230	5282	3477
May/2005	230	841	892	-	151	187	838	956	1041	1092	137	149	932	143	330	835	873	8862	5935
Jun/2005	53	280	326	-	81	96	333	399	425	466	48	58	321	66	135	286	308	5189	3491
Jul/2005	47	222	267	-	68	78	240	292	307	345	30	34	200	39	93	233	251	2453	1657
Aug/2005	45	208	251	-	65	74	146	192	203	240	26	29	175	33	81	215	233	1567	1107
Sep/2005	15	160	200	-	63	71	142	179	188	224	19	19	144	15	31	87	103	1490	1047
Oct/2005	55	229	270	-	64	73	230	274	306	342	20	37	246	30	81	244	264	2516	1679
Nov/2005	61	254	298	-	65	74	190	247	285	323	22	43	276	34	92	275	297	2258	1534
Dec/2005	17	181	224	-	64	73	168	219	237	274	16	22	167	14	30	90	109	1820	1248
Jan/2006	8	153	193	-	63	71	153	194	206	242	11	15	130	9	12	45	62	1541	1061
Feb/2006	5	136	173	-	62	69	141	175	185	219	7	12	112	7	7	30	45	1361	940
Mar/2006	4	123	159	-	61	68	131	160	168	201	5	10	100	5	6	22	37	1356	934
Apr/2006	109	555	614	-	96	115	397	505	592	646	38	78	497	55	155	474	512	1937	1280
May/2006	195	709	775	-	107	130	840	973	1076	1136	89	144	729	143	357	926	969	4061	2649
Jun/2006	105	313	359	-	75	87	339	402	429	470	71	66	368	100	239	551	572	3072	2216
Jul/2006	22	175	216	-	67	76	157	199	211	247	29	26	183	28	61	137	154	1584	1146
Aug/2006	9	140	178	-	64	72	97	128	136	170	16	16	131	11	19	52	67	978	730
Sep/2006	5	123	158	-	62	70	129	154	160	192	10	12	110	7	8	29	43	873	625
Oct/2006	4	111	145	-	61	68	133	154	160	191	6	10	97	5	6	22	35	1046	727
Nov/2006	3	101	133	-	60	67	117	135	140	170	5	8	89	4	4	16	29	1602	1098
Dec/2006	2	89	119	-	59	65	112	127	131	160	4	6	80	4	4	11	23	1507	1030
Jan/2007	2	79	107	-	58	64	105	117	120	148	4	5	72	3	3	6	18	1508	1027
Feb/2007	1	70	97	-	58	63	99	108	110	137	3	3	65	2	2	3	14	1497	1017
Mar/2007	1	64	89	-	57	62	93	102	104	130	2	2	59	2	2	2	13	1683	1138
Apr/2007	4	246	296	-	57	63	82	174	255	304	2	15	145	2	2	29	64	3050	2052
May/2007	207	638	697	-	119	143	1036	1159	1258	1314	116	175	779	192	527	1289	1329	8865	5813
Jun/2007	281	613	655	-	136	165	948	1016	1052	1090	161	153	905	168	400	1034	1055	15653	10531
Jul/2007	106	304	344	-	81	94	287	344	367	402	59	69	412	79	195	485	502	4144	2886
Aug/2007	24	184	221	-	67	76	167	212	221	254	22	25	178	22	51	129	144	2597	1784
Sep/2007	19	166	201	-	64	72	156	194	200	232	14	16	131	14	29	85	100	2012	1371
Oct/2007	49	207	243	-	64	72	189	233	251	284	15	27	182	22	64	201	216	3275	2188
Nov/2007	48	214	252	-	64	73	161	211	233	267	15	29	195	22	67	212	228	3098	2085
Dec/2007	16	168	204	-	63	71	144	187	198	231	10	17	136	12	27	86	102	2240	1517
Jan/2008	9	145	178	-	62	69	132	166	174	205	6	12	112	8	13	50	65	1884	1279
Feb/2008	6	128	159	-	61	68	121	149	155	185	5	10	100	6	7	33	47	1839	1247
Mar/2008	5	119	149	-	60	67	112	138	144	174	4	8	92	5	5	25	39	1809	1225
Apr/2008	6	114	143	-	59	66	112	137	143	172	4	7	88	5	5	26	40	1948	1312
May/2008	229	736	770	-	129	158	1162	1235	1296	1333	131	185	834	218	581	1446	1475	11048	7264
Jun/2008	228	805	845	-	145	179	763	855	929	969	165	140	922	136	310	793	826	4269	3078
Jul/2008	39	230	268	-	79	92	207	259	280	314	41	38	276	34	74	170	189	1667	1211
Aug/2008	17	146	181	-	65	73	161	199	209	241	14	17	137	15	29	76	91	1534	1050
Sep/2008	15	129	162	-	61	68	103	135	141	173	8	13	107	12	22	64	78	1338	931
Oct/2008	29	142	175	-	61	68	150	182	188	219	7	14	108	14	37	116	130	1407	944
Nov/2008	34	164	200	-	61	68	140	184	207	240	7	17	122	15	44	142	159	1869	1259
Dec/2008	16	149	186	-	61	68	124	172	198	232	6	14	119	10	22	82	99	1710	1157

Knight Piésold CONSULTING

TABLE H.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED MONTHLY MEAN STREAMFLOWS - POST CLOSURE CONDITIONS

Print Oct/11/13 15:23:26

Date	Turtle Creek			Davidson Creek							Creek 661			Creek 705				Chedakuz	
	H3	H6	1-TC	11-DC	H2	WETLAND	POOL	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
Jan/2009	10	129	163	-	60	66	114	152	164	196	5	11	107	7	12	52	68	1559	1055
Feb/2009	7	114	146	-	59	65	105	137	144	175	4	9	96	6	6	35	50	1546	1045
Mar/2009	5	101	131	-	58	64	99	124	130	160	3	7	87	4	4	25	39	1576	1063
Apr/2009	8	280	336	-	58	64	88	192	278	330	3	20	173	4	4	52	89	2723	1831
May/2009	239	706	770	-	128	154	1091	1224	1326	1384	130	186	852	214	592	1454	1497	6113	3988
Jun/2009	232	573	615	-	143	174	770	833	859	898	162	131	844	136	313	807	828	5701	3988
Jul/2009	43	217	254	-	79	91	201	243	253	287	40	38	269	36	78	187	203	2534	1785
Aug/2009	13	150	184	-	64	72	86	118	124	156	13	16	136	13	22	65	79	1109	805
Sep/2009	7	127	159	-	60	67	89	115	119	149	7	10	102	7	8	35	48	997	702
Oct/2009	5	112	142	-	59	65	105	125	129	158	5	7	88	5	5	23	36	1122	765
Nov/2009	3	99	127	-	58	63	90	106	108	136	4	5	78	4	4	16	28	1834	1241
Dec/2009	2	88	114	-	57	62	84	96	98	125	3	4	69	3	3	10	22	1531	1036
Jan/2010	2	78	102	-	56	61	83	93	94	120	3	2	62	2	2	5	17	1495	1007
Feb/2010	1	69	92	-	55	60	81	89	90	115	2	1	56	2	2	2	13	1510	1013
Mar/2010	3	186	219	-	55	60	80	147	212	250	2	10	110	1	1	17	46	1507	1007
Apr/2010	52	276	315	-	59	65	144	236	315	358	3	27	188	21	64	205	239	2592	1698
May/2010	120	261	295	-	62	69	464	510	528	561	26	69	268	81	212	538	555	4752	3087
Jun/2010	86	214	245	-	61	68	240	271	276	305	35	45	224	78	184	435	449	3690	2543
Jul/2010	21	134	163	-	60	66	80	103	105	133	11	18	128	22	48	120	132	1602	1139
Aug/2010	9	109	137	-	59	65	70	88	89	116	5	10	100	9	15	51	62	961	688
Sep/2010	6	96	122	-	58	64	128	143	143	169	4	7	88	6	7	32	44	6165	4107
Oct/2010	8	91	115	-	57	63	117	129	129	154	3	7	83	7	9	38	49	3780	2522
Nov/2010	9	86	108	-	57	62	102	112	112	136	3	6	79	7	10	40	50	2344	1572
Dec/2010	7	75	96	-	56	61	95	103	103	126	2	5	71	5	5	27	37	1740	1168
Jan/2011	5	65	85	-	55	60	89	95	95	117	2	3	63	4	4	19	29	952	642
Feb/2011	4	57	76	-	54	59	83	88	88	110	1	3	57	3	3	13	23	1014	681
Mar/2011	3	50	68	-	54	58	79	82	82	103	1	2	52	2	2	8	18	1799	1203
Apr/2011	3	63	84	-	54	58	68	85	106	129	1	2	55	2	2	12	26	12184	8115
May/2011	436	1317	1404	-	202	252	1906	2078	2221	2291	266	323	1554	371	996	2534	2586	22838	15165
Jun/2011	275	1291	1392	-	197	251	993	1204	1354	1436	229	187	1304	159	364	930	988	14944	10203
Jul/2011	82	339	386	-	88	105	377	467	502	545	58	60	399	58	142	349	373	8294	5549
Aug/2011	54	204	242	-	65	74	129	190	202	236	22	34	210	36	93	247	264	3624	2464
Sep/2011	15	137	172	-	60	67	114	160	166	197	10	15	124	13	28	81	96	1539	1057
Oct/2011	8	116	148	-	58	64	101	138	142	171	6	10	98	8	11	42	56	1254	864
Nov/2011	5	101	132	-	57	63	101	130	133	161	5	7	86	5	6	27	40	1533	1042
Dec/2011	4	90	118	-	56	62	98	122	124	151	4	5	76	4	4	19	31	936	639
Jan/2012	3	79	106	-	55	60	94	113	114	141	3	4	68	3	3	12	24	950	644
Feb/2012	2	70	95	-	55	59	88	103	104	130	3	3	62	3	3	7	19	1012	684
Mar/2012	1	62	85	-	54	58	83	95	95	120	2	2	56	2	2	4	15	1797	1204
Apr/2012	7	282	339	-	55	60	91	197	286	338	2	17	162	2	2	44	82	3512	2341
May/2012	207	645	712	-	115	137	990	1127	1234	1294	116	171	777	194	530	1293	1336	8981	5906
Jun/2012	227	504	542	-	129	155	761	819	842	878	145	119	748	135	308	791	810	7382	5061
Jul/2012	46	195	228	-	74	85	165	202	208	238	36	35	239	39	84	199	213	3306	2304
Aug/2012	15	134	164	-	61	68	104	131	133	161	12	13	119	13	26	74	86	2109	1452
Sep/2012	8	113	141	-	58	64	74	95	96	123	6	7	88	7	10	41	52	1434	996
Oct/2012	6	99	125	-	57	62	96	113	113	139	5	5	76	5	5	26	38	1156	787
Nov/2012	4	87	112	-	56	61	86	99	99	124	4	3	67	4	4	18	29	1536	1039
Dec/2012	3	77	100	-	55	60	79	90	90	114	3	3	60	3	3	12	23	1061	721

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\H Post-closure results\[Tables H1 to H5 rC.xlsx]Table 2

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME THE INTERCEPTION DITCH IS DECOMISSIONED.
3. STREAMFLOW ESTIMATES LEAVING THE WETLAND ASSUME NO GROUNDWATER CONTRIBUTION OCCURS ALONG THE LENGTH OF THE WETLAND.
4. STREAMFLOW ESTIMATES ASSUME 80% TSF SPILLWAY CHANNEL EFFICIENCY WITH 20% LOSS TO A CATCHMENT OUTSIDE OF STUDY AREA.
5. 25% OF TOE DISCHARGE AND RUNOFF FROM EAST DUMP CONTRIBUTE FLOWS TO THE TSF SPILLWAY CHANNEL.
6. STREAMFLOW ESTIMATES IN DAVIDSON CREEK DO NOT INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM, WHICH IS ASSUMED TO BE DECOMMISSIONED.
7. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM WHICH IS A SURFACE WATER DIVIDE AT POST CLOSURE FLOW CONDITIONS.
8. ESTIMATED STREAMFLOW VALUES WERE OBTAINED FROM THE POST CLOSURE WATERSHED MODEL AND REPRESENT MONTHLY MEAN STREAMFLOWS FROM 1998 TO 2012.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE H.3

NEW GOLD INC.
BLACKWATER GOLD PROJECT

DRY RETURN PERIOD FLOWS - POST CLOSURE CONDITIONS

11/10/2013 15:23

Dry Return Period Flows (L/s)																		
	H3	H6	1-TC	H2	Wetland	Plunge Pool	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January																		
1 in 50 year	1.4	52.6	72.1	53.5	56.6	74.0	78.2	82.4	99.6	1.3	1.6	47.7	1.9	2.4	4.0	12.9	897.9	609.8
1 in 20 year	1.8	60.6	81.9	54.0	58.2	80.3	87.2	91.0	110.7	1.7	2.2	54.0	2.3	3.0	4.8	16.1	978.8	665.0
1 in 10 year	2.3	68.6	91.7	55.0	59.6	86.3	96.1	99.5	121.7	2.1	2.8	60.3	2.7	3.7	6.2	19.6	1056.8	718.3
1 in 5 year	3.0	79.8	105.2	56.2	61.4	94.2	108.1	111.0	136.4	2.7	3.8	69.0	3.4	5.0	9.3	25.0	1160.0	788.8
February																		
1 in 50 year	1.0	46.5	64.8	53.8	58.0	71.5	74.5	78.8	95.1	1.1	1.1	43.7	1.5	1.6	1.9	10.5	931.9	632.0
1 in 20 year	1.3	53.5	73.6	54.1	58.4	77.0	82.4	85.9	104.9	1.4	1.5	49.2	1.8	2.1	2.8	12.9	1007.1	683.2
1 in 10 year	1.7	60.6	82.4	54.6	59.1	82.3	90.1	93.0	114.4	1.7	2.0	54.7	2.2	2.7	4.1	15.5	1078.8	732.0
1 in 5 year	2.2	70.5	94.5	55.5	60.5	89.2	100.4	102.6	127.2	2.2	2.8	62.2	2.7	3.7	6.3	19.4	1173.2	796.3
March																		
1 in 50 year	0.8	40.3	57.7	53.5	57.0	67.4	72.8	82.6	89.1	0.9	1.0	40.9	1.1	1.2	1.7	9.4	1045.7	711.6
1 in 20 year	1.1	47.7	67.0	53.5	57.5	72.9	80.7	92.3	99.9	1.1	1.4	46.5	1.3	1.7	2.6	11.7	1133.3	770.2
1 in 10 year	1.4	55.4	76.5	53.7	58.2	78.1	88.4	101.7	110.6	1.3	1.8	52.1	1.6	2.2	3.7	14.4	1217.3	826.2
1 in 5 year	1.9	66.4	90.0	54.9	59.6	84.9	98.7	114.6	125.2	1.7	2.6	59.8	2.1	3.1	5.7	18.3	1327.9	900.0
April																		
1 in 50 year	0.9	60.9	81.1	53.5	54.2	68.7	86.3	101.5	123.2	0.6	1.7	37.4	0.4	1.4	4.3	10.6	829.8	555.2
1 in 20 year	1.6	81.6	105.9	53.5	54.3	71.0	95.7	116.7	141.8	0.8	2.8	52.2	0.7	2.6	7.9	17.8	1037.4	693.5
1 in 10 year	2.8	105.7	134.1	54.2	55.2	74.2	107.6	135.4	164.2	1.0	4.4	70.2	1.2	4.6	13.7	28.1	1264.7	844.8
1 in 5 year	5.5	144.9	178.8	56.4	57.6	80.8	129.3	167.6	201.7	1.5	7.7	100.8	2.4	9.0	26.9	49.0	1609.8	1074.3
May																		
1 in 50 year	123.9	338.7	376.8	70.7	80.9	492.7	566.4	611.9	649.0	38.1	81.9	369.5	85.5	212.9	543.3	568.6	1572.2	1009.4
1 in 20 year	138.7	388.7	429.9	78.6	90.9	559.5	640.0	691.7	731.4	46.7	93.5	427.7	98.4	248.1	631.6	659.2	2015.8	1298.7
1 in 10 year	153.2	439.2	483.3	86.3	100.7	626.4	713.3	771.1	813.3	56.0	105.2	487.1	111.4	284.1	721.8	751.7	2513.2	1624.3
1 in 5 year	173.1	509.6	557.3	96.8	114.2	718.6	814.1	880.3	925.5	69.8	121.5	570.6	129.6	335.2	849.4	882.0	3287.5	2132.8
June																		
1 in 50 year	50.8	166.1	194.3	54.3	65.0	208.4	247.9	257.1	285.6	30.8	38.1	190.5	64.5	141.3	305.6	322.9	1306.1	947.8
1 in 20 year	64.1	205.5	237.4	62.8	72.0	256.1	301.5	313.7	345.4	39.4	46.3	239.7	73.0	161.3	357.9	376.8	1679.9	1209.3
1 in 10 year	78.8	248.2	283.5	71.5	82.7	307.4	358.8	374.3	408.8	49.0	55.0	293.8	81.4	181.5	411.9	432.1	2100.4	1501.2
1 in 5 year	101.3	312.4	352.0	83.6	97.9	384.1	443.4	464.1	502.1	63.8	67.9	376.5	92.9	209.5	488.6	510.6	2756.9	1953.4
July																		
1 in 50 year	14.5	127.7	158.4	58.1	64.6	87.0	113.9	117.0	144.3	13.9	16.2	118.3	18.0	37.3	87.5	99.5	887.7	649.4
1 in 20 year	18.0	142.1	174.4	60.8	68.1	102.3	132.7	137.0	166.4	16.7	19.2	136.7	21.2	44.6	104.7	117.9	1070.4	777.2
1 in 10 year	21.9	156.2	190.0	63.4	71.4	118.2	152.0	157.6	188.7	19.7	22.3	155.5	24.5	52.2	122.8	137.1	1263.8	911.5
1 in 5 year	27.7	175.3	210.8	66.6	75.6	140.9	179.3	187.0	220.0	23.9	26.7	181.7	29.2	63.3	149.2	164.8	1547.1	1106.7
August																		
1 in 50 year	5.4	103.6	131.9	58.4	64.7	81.8	87.4	89.9	116.7	6.4	8.7	91.0	7.1	10.7	32.5	42.4	596.3	442.9
1 in 20 year	6.8	112.4	142.0	59.4	66.0	90.0	98.0	101.1	129.2	7.6	10.1	99.4	8.4	13.4	40.0	51.1	705.6	519.2
1 in 10 year	8.4	120.8	151.6	60.2	67.1	98.2	108.4	112.2	141.4	8.8	11.5	107.6	9.8	16.5	48.2	60.3	819.3	597.9
1 in 5 year	10.8	131.9	164.2	61.2	68.5	109.2	122.6	127.3	157.9	10.6	13.5	118.4	11.8	21.1	60.3	73.8	982.8	710.0
September																		
1 in 50 year	2.8	85.2	111.5	56.3	61.8	74.9	89.3	90.6	116.1	3.2	5.3	65.2	3.0	3.7	16.3	24.4	466.6	335.7
1 in 20 year	3.8	94.0	121.6	57.1	63.0	81.2	99.7	101.7	128.4	4.0	6.4	73.2	4.4	5.1	21.6	31.1	579.4	413.9
1 in 10 year	5.0	102.5	131.4	57.9	64.0	87.8	110.0	112.6	140.4	4.9	7.6	81.2	5.7	6.9	27.6	38.5	702.2	498.4
1 in 5 year	7.0	113.9	144.3	58.9	65.3	97.4	124.0	127.5	156.7	6.1	9.2	92.1	7.5	9.9	37.2	49.9	887.4	625.0
October																		
1 in 50 year	1.4	57.3	78.4	56.5	62.1	75.0	88.4	96.0	101.1	1.9	2.6	41.9	1.9	3.4	7.5	12.7	620.5	429.1
1 in 20 year	2.3	69.4	92.9	56.8	62.4	86.2	102.3	111.9	118.2	2.5	3.7	52.5	2.7	5.2	11.9	18.9	739.1	509.2
1 in 10 year	3.5	82.2	107.9	57.1	62.9	97.2	116.0	128.0	135.9	3.3	5.0	64.1	3.8	7.6	17.8	26.8	863.3	592.6
1 in 5 year	5.9	101.0	129.7	57.7	63.6	112.2	134.6	150.5	161.0	4.6	7.2	81.8	5.6	11.9	29.1	41.3	1043.0	712.9
November																		
1 in 50 year	1.2	50.2	69.1	55.7	60.9	72.3	80.9	86.4	90.1	1.4	1.9	37.4	1.6	2.6	5.5	10.5	921.7	632.8
1 in 20 year	1.9	61.9	83.4	56.0	61.3	81.0	90.0	101.0	106.2	1.9	2.8	47.5	2.3	4.1	9.0	15.9	1060.0	726.2
1 in 10 year	3.0	74.6	98.6	56.3	61.7	89.5	102.8	116.0	122.8	2.6	4.0	58.8	3.2	6.1	13.9	23.0	1200.1	820.6
1 in 5 year	5.0	93.6	121.0	56.9	62.5	101.2	120.2	137.3	146.7	3.8	6.0	76.3	4.7	9.8	23.5	35.9	1396.0	952.2
December																		
1 in 50 year	1.4	54.3	73.7	53.5	56.3	69.2	73.7	88.4	93.4	1.3	1.9	44.9	1.8	2.8	5.4	12.4	880.9	602.2
1 in 20 year	2.0	63.4	84.9	53.8	58.1	76.7	84.3	100.4	106.6	1.8	2.5	52.6	2.3	3.8	7.9	16.5	982.6	671.2
1 in 10 year	2.6	72.7	96.2	55.0	59.7	84.1	94.8	112.5	119.9	2.3	3.3	60.6	2.9	5.1	10.9	21.2	1082.7	739.0
1 in 5 year	3.8	86.0	112.1	56.5	61.8	94.1	109.5	129.2	138.3	3.2	4.6	72.0	3.8	7.2	16.3	28.8	1218.4	830.8

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\H Post-closure results\[Tables H1 to H5 rC.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES ARE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold
CONSULTING

TABLE H.4

NEW GOLD INC.
BLACKWATER GOLD PROJECT

WET RETURN PERIOD FLOWS - POST CLOSURE CONDITIONS

11/10/2013 15:23

Wet Return Period Flows (L/s)																		
	H3	H6	1-TC	H2	Wetland	Plunge Pool	H4B	4-DC	1-DC	H1	1-505659	1-661	6-705	4-705	H7	1-705	H5	15-CC
January																		
1 in 50 year	19	215	259	65	74	168	234	252	289	16	30	166	14	29	105	120	2136	1457
1 in 20 year	15	187	228	64	72	154	210	222	260	12	22	147	12	21	81	96	1960	1336
1 in 10 year	12	165	204	63	71	144	190	199	236	10	17	132	10	16	63	79	1815	1237
1 in 5 year	9	142	177	61	69	132	169	175	211	8	13	115	8	12	45	62	1654	1126
February																		
1 in 50 year	13	191	232	63	71	151	205	220	254	11	25	144	11	13	110	118	2032	1381
1 in 20 year	10	166	204	63	71	140	185	195	231	9	18	128	9	10	74	79	1880	1278
1 in 10 year	8	146	182	62	70	131	169	176	211	7	14	115	7	8	51	57	1755	1193
1 in 5 year	6	126	159	61	69	121	152	156	190	6	10	101	6	7	33	46	1614	1096
March																		
1 in 50 year	15	219	259	63	71	147	204	244	281	9	25	148	10	12	101	108	2347	1576
1 in 20 year	11	185	223	62	70	136	184	215	251	7	18	130	8	9	67	73	2165	1456
1 in 10 year	9	159	196	61	69	127	168	192	227	6	14	116	7	8	47	59	2016	1357
1 in 5 year	6	133	166	60	68	117	150	168	200	5	10	101	5	6	30	46	1848	1246
April																		
1 in 50 year	447	1143	1176	125	163	914	1168	1256	1284	179	295	1073	239	1125	2177	2328	7812	5181
1 in 20 year	240	853	901	108	134	653	834	938	983	88	176	768	125	474	1170	1251	6249	4148
1 in 10 year	138	659	711	95	112	458	610	717	769	44	111	571	70	220	674	709	5126	3405
1 in 5 year	70	481	534	82	91	256	416	514	568	19	64	398	35	87	345	407	4027	2678
May																		
1 in 50 year	384	1350	1416	205	260	1767	1933	2094	2156	296	311	1607	349	990	2465	2512	19079	12689
1 in 20 year	343	1176	1241	184	231	1556	1711	1853	1913	242	273	1389	303	849	2120	2167	14881	9862
1 in 10 year	310	1041	1104	168	209	1390	1535	1662	1721	202	242	1219	268	741	1855	1900	11936	7886
1 in 5 year	275	897	958	149	184	1211	1345	1456	1512	162	210	1041	230	628	1576	1620	9124	6006
June																		
1 in 50 year	524	1410	1452	233	360	1649	1773	1897	1927	361	269	1910	222	536	1496	1523	16361	10950
1 in 20 year	415	1139	1189	202	290	1342	1458	1555	1594	283	221	1518	196	469	1277	1305	12721	8583
1 in 10 year	338	943	995	177	238	1118	1225	1303	1346	228	186	1238	176	417	1110	1138	10174	6914
1 in 5 year	263	749	801	152	185	895	991	1051	1096	175	151	966	154	361	936	963	7751	5314
July																		
1 in 50 year	130	373	416	92	110	446	529	572	601	87	88	506	92	222	533	550	5817	3944
1 in 20 year	104	335	378	88	104	379	454	489	522	72	74	438	78	186	446	464	4824	3296
1 in 10 year	86	305	347	85	99	328	397	425	460	62	64	385	68	159	380	399	4086	2810
1 in 5 year	68	272	313	80	94	275	336	358	394	51	53	329	57	131	313	332	3337	2314
August																		
1 in 50 year	57	234	277	68	78	211	275	291	324	36	38	221	39	106	264	277	3234	2188
1 in 20 year	45	216	257	67	77	188	245	259	293	31	33	203	33	85	214	230	2733	1866
1 in 10 year	37	201	241	66	76	169	221	234	268	26	29	187	28	69	178	195	2354	1620
1 in 5 year	28	184	222	65	74	149	196	206	240	22	25	170	24	54	142	159	1962	1365
September																		
1 in 50 year	60	227	267	66	74	233	271	287	320	28	34	210	30	108	265	272	4108	2750
1 in 20 year	44	206	245	65	73	204	243	256	290	22	29	187	25	77	201	214	3308	2231
1 in 10 year	34	189	227	64	72	181	220	231	265	18	24	168	21	57	157	173	2730	1852
1 in 5 year	24	170	206	63	70	157	195	204	237	15	20	148	18	40	116	134	2160	1477
October																		
1 in 50 year	175	390	431	79	94	295	362	454	488	39	81	402	72	279	728	779	3598	2391
1 in 20 year	109	322	364	73	85	256	314	382	417	28	58	321	50	166	462	465	3020	2015
1 in 10 year	71	272	313	68	78	226	276	327	363	22	42	263	37	104	309	326	2586	1731
1 in 5 year	42	221	260	64	73	195	237	271	306	16	29	206	25	59	189	212	2140	1439
November																		
1 in 50 year	167	414	459	83	100	243	333	432	469	41	85	418	66	277	739	790	3755	2523
1 in 20 year	102	336	380	75	88	213	287	360	398	29	59	329	46	159	454	485	3265	2198
1 in 10 year	66	278	322	69	80	190	252	307	344	22	42	266	33	97	295	309	2884	1945
1 in 5 year	39	222	262	65	73	165	216	252	288	15	28	205	22	53	174	197	2480	1676
December																		
1 in 50 year	39	257	304	67	77	196	281	315	353	26	41	222	24	76	228	243	2639	1789
1 in 20 year	28	220	264	66	75	177	246	272	309	19	30	189	19	50	157	163	2366	1606
1 in 10 year	21	192	233	64	73	161	219	239	275	15	23	164	15	34	113	126	2148	1458
1 in 5 year	15	162	200	62	70	144	189	204	238	11	16	138	11	22	75	93	1908	1297

M:\1\01\00457\06\A\Report\6 - Watershed model\Appendix\H Post-closure results\[Tables H1 to H5 rC.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES ARE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	09SEP'13	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

Knight Piésold CONSULTING

TABLE H.5

NEW GOLD INC.
BLACKWATER GOLD PROJECT

7 DAY LOW FLOWS - POST CLOSURE CONDITIONS

16/01/2014 17:19

7 Day Low Flows (L/s)																		
Return Period	Turtle Creek			Davidson Creek						Creek 661			Creek 705				Chedakuz	
	H3	**H6**	**1-TC**	**H2**	**Wetland**	**Plunge Pool**	**H4B**	**4-DC**	**1-DC**	**H1**	**1-505659**	**1-661**	**6-705**	**4-705**	**H7**	**1-705**	**H5**	**15-CC**
1 in 10 Year	0.9	43.1	59.1	53.8	57.0	67.7	79.1	79.4	97.4	0.8	1.3	41.1	1.1	3.7	9.8	10.5	655.9	470.8
1 in 20 Year	0.7	41.0	56.0	53.5	56.6	66.4	77.5	77.6	94.9	0.6	1.1	40.1	0.9	3.5	9.1	9.8	636.4	460.9

M:\1\01\00457\06\A\Report\6 - Watershed model\Rev 0 - Copy\Appendices\H Post-closure results\[Tables H1 to H5 rD.xlsx]Table 5

NOTES:

1. STREAMFLOWS ARE IN L/S.
2. ESTIMATED VALUES WERE DETERMINED USING MONTHLY MEAN STREAMFLOWS FROM YEAR 1998 TO 2012.
3. H5 AND 15-CC WERE DEVELOPED USING DAILY SYNTHETIC DATA DEVELOPED FOR THE HYDROMET REV 1 REPORT AS THESE NODES ARE OUTSIDE THE SCOPE OF THE WATERSHED MODEL.
4. THE H2 NODE AND ALL NODES DOWNSTREAM ON DAVIDSON CREEK RECEIVE 53.5 L/s OF SEEPAGE FROM THE TSF.
5. AN ADDITIONAL 1.2 L/s BYPASSES THE H2 AND WETLAND NODES VIA THE TSF SPILLWAY AND CONTRIBUTES TO THE PLUNGE POOL AND ALL OTHER NODES DOWNSTREAM ON DAVIDSON CREEK.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
1	16JAN'14	ISSUED WITH REPORT VA101-457/6-6	BW	CMB	KJB

APPENDIX I

ESTIMATED PERCENT TSF SEEPAGE IN STREAMFLOW

(Pages I-1 to I-3)

Knight Piésold CONSULTING

TABLE I.1

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED PERCENT OF TSF SEEPAGE IN STREAMFLOW - END OF MINE CONDITIONS

Print Nov/21/13 15:57:47

	Flows (L/s)										Percent of TSF Seepage in Streamflow							
Unmitigated [3]	Davidson Creek [2]					Creek 661			Chedakuz Creek		Davidson Creek				Creek 661		Chedakuz	
	Seepage	**H2**	**H4B**	**4-DC**	**1-DC**	**Seepage**	**1-505659**	**1-661**	**15-CC**	**H5**	**H2**	**H4B**	**4-DC**	**1-DC**	**1-505659**	**1-661**	**H5**	**15-CC**
January	0.2	0	21	27	56	0	11	94	951	1284	-	0.9%	0.7%	0.4%	0.0%	0.0%	0.0%	0.0%
February	0.2	0	16	20	49	0	8	82	940	1278	-	1.2%	1.0%	0.4%	0.0%	0.0%	0.0%	0.0%
March	0.2	0	19	29	58	0	7	80	1068	1480	-	1.1%	0.7%	0.3%	0.0%	0.0%	0.0%	0.0%
April	0.2	0	78	143	185	0	50	281	2015	2815	-	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
May	0.2	0	127	216	267	0	212	855	4222	5548	-	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
June	0.2	0	90	132	174	0	170	746	3807	4915	-	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%
July	0.2	0	48	64	98	0	60	277	1781	2349	-	0.4%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%
August	0.2	0	34	41	73	0	28	152	1060	1386	-	0.6%	0.5%	0.3%	0.0%	0.0%	0.0%	0.0%
September	0.2	0	27	33	64	0	22	128	1117	1499	-	0.7%	0.6%	0.3%	0.0%	0.0%	0.0%	0.0%
October	0.2	0	29	44	75	0	30	161	1098	1468	-	0.7%	0.5%	0.3%	0.0%	0.0%	0.0%	0.0%
November	0.2	0	32	49	80	0	28	157	1334	1830	-	0.6%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%
December	0.2	0	26	35	65	0	16	110	1063	1442	-	0.8%	0.6%	0.3%	0.0%	0.0%	0.0%	0.0%
Annual Average	0.2	0	46	70	104	0	54	261	1705	2274	-	0.4%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%
Mitigated [4]																		
January	0.2	125	146	152	181	0	11	94	793	1251	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
February	0.2	125	141	145	174	0	8	82	782	1245	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
March	0.2	125	144	154	183	0	7	80	910	1447	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
April	0.2	125	203	268	310	0	50	281	1857	2782	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
May	0.2	570	697	786	837	0	212	855	3619	5515	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
June	0.2	560	650	692	734	0	170	746	3214	4882	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
July	0.2	240	288	304	338	0	60	277	1508	2316	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
August	0.2	150	184	191	223	0	28	152	877	1353	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
September	0.2	115	142	148	179	0	22	128	969	1466	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
October	0.2	115	144	159	190	0	30	161	950	1435	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
November	0.2	115	147	164	195	0	28	157	1186	1797	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
December	0.2	125	151	160	190	0	16	110	905	1409	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Annual Average	0.2	208	254	277	312	0	54	261	1464	2241	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%

M:\1\01\00457\06\A\Report\6 - Watershed model\Rev 0\Appendices\I TSF Seepage\[Tables I.1 to I.3 TSF Seepage.xlsx]Table I.1 EOM

NOTES:

1. STREAMFLOWS AND SEEPAGE RATES ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO SURFACE WATER FLOW PASSES THE ENVIRONMENTAL CONTROL DAM AND NO GROUNDWATER FLOW PASSES THE INTERCEPTION DITCH. SEEPAGE OF 0.2 L/S IS ASSUMED TO PASS THE ENVIRONMENTAL CONTROL DAM.
3. THE UNMITIGATED SCENARIO STREAMFLOW ESTIMATES IN DAVIDSON CREEK DO NOT INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE WATER TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM).
4. THE MITIGATED SCENARIO STREAMFLOW ESTIMATES IN DAVIDSON CREEK INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE INSTREAM FLOW NEEDS TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM). REPORTED FLOWS AT THE H2 NODE INCLUDE THE INPUTS FROM THE MITIGATION SYSTEM.
5. TSF SEEPAGE ESTIMATES ARE FROM KPL, 2013C (REF. No. VA13-01001). SEEPAGE IS ASSUMED TO DISCHARGE TO SURFACE DOWNSTREAM OF NODE H2.
6. - N/A, NO FLOW AT NODE.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21NOV'13	ISSUED WITH REPORT VA101-457/6-6	CAS	RS	KJB

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TABLE I.2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED PERCENT OF TSF SEEPAGE IN STREAMFLOW - CLOSURE CONDITIONS

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	Flows (L/s)										Percent of TSF Seepage in Streamflow							
Unmitigated [3]	Davidson Creek [2]					Creek 661			Chedakuz Creek		Davidson Creek				Creek 661		Chedakuz	
	Seepage	**H2**	**H4B**	**4-DC**	**1-DC**	**Seepage**	**1-505659**	**1-661**	**15-CC**	**H5**	**H2**	**H4B**	**4-DC**	**1-DC**	**1-505659**	**1-661**	**15-CC**	**H5**
January	0.2	0	22	28	57	0	8	91	949	1283	-	0.9%	0.7%	0.3%	0.0%	0.0%	0.0%	0.0%
February	0.2	0	17	21	50	0	6	81	938	1277	-	1.2%	0.9%	0.4%	0.0%	0.0%	0.0%	0.0%
March	0.2	0	19	30	58	0	6	80	1068	1480	-	1.0%	0.7%	0.3%	0.0%	0.0%	0.0%	0.0%
April	0.2	0	91	156	198	0	41	273	2007	2824	-	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
May	0.2	0	189	278	329	0	167	811	4178	5581	-	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
June	0.2	0	133	176	217	0	111	688	3748	4911	-	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
July	0.2	0	61	76	110	0	40	258	1762	2346	-	0.3%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%
August	0.2	0	38	46	78	0	19	144	1052	1383	-	0.5%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%
September	0.2	0	30	36	67	0	15	121	1110	1496	-	0.7%	0.6%	0.3%	0.0%	0.0%	0.0%	0.0%
October	0.2	0	35	49	80	0	20	151	1088	1465	-	0.6%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%
November	0.2	0	37	54	85	0	19	148	1325	1827	-	0.5%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%
December	0.2	0	28	37	67	0	11	106	1058	1440	-	0.7%	0.5%	0.3%	0.0%	0.0%	0.0%	0.0%
Annual Average	0.2	0	58	82	117	0	39	247	1690	2276	-	0.3%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%
Mitigated [4]																		
January	0.2	125	147	153	182	0	8	91	824	1283	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
February	0.2	125	142	146	175	0	6	81	813	1277	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
March	0.2	125	144	155	183	0	6	80	943	1480	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
April	0.2	125	216	281	323	0	41	273	1886	2824	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
May	0.2	570	759	848	899	0	167	811	3624	5581	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
June	0.2	560	693	736	777	0	111	688	3199	4911	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
July	0.2	240	301	316	350	0	40	258	1525	2346	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
August	0.2	150	188	196	228	0	19	144	903	1383	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
September	0.2	115	145	151	182	0	15	121	996	1496	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
October	0.2	115	150	164	195	0	20	151	974	1465	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
November	0.2	115	152	169	200	0	19	148	1211	1827	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
December	0.2	125	153	162	192	0	11	106	934	1440	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Annual Average	0.2	208	266	290	324	0	39	247	1486	2276	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%

M:\1\01\00457\06\A\Report\6 - Watershed model\Rev 0\Appendices\I TSF Seepage\[Tables I.1 to I.3 TSF Seepage.xlsx]Table I.2 Closure

NOTES:

1. STREAMFLOWS AND SEEPAGE RATES ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME NO SURFACE WATER FLOW PASSES THE ENVIRONMENTAL CONTROL DAM AND NO GROUNDWATER FLOW PASSES THE INTERCEPTION DITCH. SEEPAGE OF 0.2 L/S IS ASSUMED TO PASS BENEATH THE ENVIRONMENTAL CONTROL DAM.
3. THE UNMITIGATED SCENARIO STREAMFLOW ESTIMATES IN DAVIDSON CREEK DO NOT INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE WATER TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM).
4. THE MITIGATED SCENARIO STREAMFLOW ESTIMATES IN DAVIDSON CREEK INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE INSTREAM FLOW NEEDS TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM). REPORTED FLOWS AT THE H2 NODE INCLUDE THE INPUTS FROM THE MITIGATION SYSTEM.
5. TSF SEEPAGE ESTIMATES ARE FROM KPL, 2013C (REF. No. VA13-01001).
6. - N/A, NO FLOW AT NODE.

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21NOV'13	ISSUED WITH REPORT VA101-457/6-6	CAS	RS	KJB

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TABLE I.3

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED PERCENT OF TSF SEEPAGE IN STREAMFLOW - POST-CLOSURE CONDITIONS

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	Flows (L/s)											Percent of TSF Seepage in Streamflow							
	Davidson Creek [2]						Creek 661			Chedakuz Creek		Davidson Creek				Creek 661		Chedakuz	
Unmitigated [3]	**Seepage Prior to H2 [4]**	**Seepage After H2 [4]**	**H2**	**H4B**	**4-DC**	**1-DC**	**Seepage[5]**	**1-505659**	**1-661**	**15-CC**	**H5**	**H2**	**H4B**	**4-DC**	**1-DC**	**1-505659**	**1-661**	**15-CC**	**H5**
January	53.2	1.5	59	140	146	175	0.3	9	93	962	1414	90%	39%	38%	31%	3%	0.3%	0.0%	4%
February	53.2	1.5	58	127	131	160	0.3	7	83	951	1400	92%	42%	40%	33%	4%	0.4%	0.0%	4%
March	53.2	1.5	57	126	136	164	0.3	6	81	1079	1598	93%	42%	39%	32%	5%	0.4%	0.0%	3%
April	53.2	1.5	72	306	371	413	0.3	42	275	2045	3073	74%	17%	14%	13%	1%	0.1%	0.0%	2%
May	53.2	1.5	124	1091	1179	1230	0.3	167	813	4386	6675	43%	5%	5%	4%	0.2%	0.0%	0.0%	1%
June	53.2	1.5	119	731	773	815	0.3	112	688	3876	5625	45%	7%	7%	7%	0.3%	0.0%	0.0%	1%
July	53.2	1.5	74	261	276	311	0.3	41	259	1794	2575	72%	20%	19%	17%	1%	0.1%	0.0%	2%
August	53.2	1.5	63	161	168	200	0.3	19	145	1066	1518	84%	33%	32%	27%	2%	0.2%	0.0%	4%
September	53.2	1.5	61	161	168	199	0.3	15	122	1127	1643	87%	33%	32%	27%	2%	0.2%	0.0%	3%
October	53.2	1.5	62	194	208	239	0.3	21	153	1112	1647	86%	27%	26%	22%	1%	0.2%	0.0%	3%
November	53.2	1.5	62	175	192	223	0.3	19	150	1344	1983	86%	30%	28%	24%	2%	0.2%	0.0%	3%
December	53.2	1.5	60	151	160	191	0.3	11	107	1074	1578	89%	35%	33%	28%	3%	0.3%	0.0%	3%
Annual Average	53.2	1.5	72	303	327	361	0.3	39	248	1735	2561	73%	18%	16%	15%	1%	0.1%	0.0%	2%

M:\1\01\00457\06\A\Report\6 - Watershed model\Rev 0\Appendices\I TSF Seepage\[Tables I.1 to I.3 TSF Seepage.xlsx]Table I.3 PC

NOTES:

1. STREAMFLOWS AND SEEPAGE RATES ARE IN L/S.
2. STREAMFLOW ESTIMATES IN DAVIDSON CREEK ASSUME THAT THE ENVIRONMENTAL CONTROL DAM IS DECOMMISSIONED.
3. THE UNMITIGATED SCENARIO STREAMFLOW ESTIMATES IN DAVIDSON CREEK DO NOT INCLUDE INPUTS FROM THE FRESH WATER SUPPLY MITIGATION SYSTEM WHICH WILL PROVIDE WATER TO DAVIDSON CREEK IMMEDIATELY DOWNSTREAM OF THE H2 NODE LOCATION (ENVIRONMENTAL CONTROL DAM).
4. APPROXIMATELY 53.2 L/S TSF SEEPAGE IS ASSUMED TO SEEP THROUGH THE SITE D MAIN AND SOUTH EMBANKMENTS AND DISCHARGE TO SURFACE WATER CONTRIBUTING TO DAVIDSON CREEK UPSTREAM OF NODE H2. AN ADDITIONAL 1.5 L/S IS ASSUMED TO FLOW WITHIN THE SUBSURFACE AND DISCHARGE TO DAVIDSON CREEK UPSTREAM OF NODE H4B AND 0.3 L/S IS ASSUMED TO DISCHARGE TO CREEK 661 UPSTREAM OF 1-505659.
5. SEEPAGE TO CREEK 661 WILL BE PREVENTED AS A RESULT OF FURTHER SITE INVESTIGATION AND ENGINEERING DESIGN. THE PREDICTED SEEPAGE RATE OF 0.3 L/S IS SMALL IN RESPECT TO FLOWS IN CREEK 661.
6. SEEPAGE ESTIMATES ARE FROM THE PROJECT WASTE AND WATER MANAGEMENT REPORT (KPL, 2013D).

REV	DATE	DESCRIPTION	PREP'D	CHK'D	APP'D
0	21NOV'13	ISSUED WITH REPORT VA101-457/6-6	CAS	RS	KJB