TABLE 1

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED GROUNDWATER DISCHARGE TO STREAMFLOW IN SUB-CATCHMENT DAVIDSON CREEK

CALCULATE GROUNDWATER DISCHARGE AND % CHANGE IN GROUNDWATER DISCHARGE IN SUB-CATCHMENT

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		Node 11-DC		Node H2						Node H4B						Node 4-DC						Node 1-DC					
	MINE PHASE	Baseline	All other Phases[7]	Baseline	Construction (Yr -2)	Early Ops (Yr 3)[8]	Late Ops (Yr 14)[8]	Closure (Yr 20)[8]	Post-Closure (Yr 55)[8]	Baseline	Construction (Yr -2)	Early Ops (Yr 3)	Late Ops (Yr 14)	Closure (Yr 20)	Post-Closure (Yr 55)	Baseline	Construction (Yr -2)	Early Ops (Yr 3)	Late Ops (Yr 14)	Closure (Yr 20)	Post-Closure (Yr 55)	Baseline	Construction (Yr -2)	Early Ops (Yr 3)	Late Ops (Yr 14)	Closure (Yr 20)	Post-Closure (Yr 55)
A. Groundwater Discharge to Stream in Sub-Catchment (L/s)[1,2]	January	0	-	126	114	-	-	-	-	31	31	22	19	19	19	4	4	4	4	4	4	28	28	28	28	28	28
	February	0	-	120	107	-	-	-	-	26	26	18	15	15	15	3	3	3	3	3	3	28	27	27	27	27	27
	March	0	-	113	101	-	-	-	-	26	26	18	16	16	16	3	3	3	3	3	3	27	27	27	27	27	27
	April	0	-	117	103	-	-	-	-	44	44	35	32	32	32	5	5	5	5	5	5	30	30	30	30	30	30
	May	0.1	-	139	121	-	-	-	-	60	60	49	47	47	47	6	6	6	6	6	6	33	33	33	33	33	33
	June	0.3	-	158	136	-	-	-	-	58	58	47	44	44	44	6	6	6	6	6	6	33	33	33	33	33	33
	July	0.2	-	156	134	-	-	-	-	51	51	40	38	38	38	6	6	6	6	6	6	32	32	32	32	32	32
	August	0.1	-	150	128	-	-	-	-	44	44	33	31	31	31	5	5	5	5	5	5	31	31	31	31	31	31
	September	0.1	-	146	123	-	-	-	-	39	39	28	27	27	27	4	4	4	4	4	4	30	30	30	30	30	30
	October	0.2	-	146	123	-	-	-	-	40	40	29	28	28	28	5	5	5	5	5	5	30	30	30	30	30	30
	November	0.2	-	143	119	-	-	-	-	41	41	31	29	29	29	5	5	5	5	5	5	30	30	30	30	30	30
	December	0.04	-	134	112	-	-	-	-	37	37	27	25	25	25	5	5	5	5	5	5	30	30	30	30	30	30
	Annual Average	0.1	-	137	118	-	-	-	-	41	41	32	29	29	29	5	5	5	5	5	5	30	30	30	30	30	30
B. Change in the Groundwater Discharge to Stream in Sub-Catchment (%)[3]	January		-		-9%	100%	100%	100%	100%		0%	-27%	-36%	-36%	-36%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%
	February		-		-11%	100%	100%	100%	100%		-1%	-32%	-43%	-42%	-42%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%
	March		-		-10%	100%	100%	100%	100%		0%	-31%	-40%	-40%	-40%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%
	April		-		-11%	100%	100%	100%	100%		0%	-21%	-27%	-26%	-26%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%
	May		-		-13%	100%	100%	100%	100%		0%	-18%	-22%	-22%	-22%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%
	June		-		-14%	100%	100%	100%	100%		0%	-19%	-23%	-23%	-23%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%
	July		-		-14%	100%	100%	100%	100%		0%	-21%	-25%	-25%	-25%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%
	August		-		-15%	100%	100%	100%	100%		0%	-24%	-28%	-28%	-28%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%
	September		-		-15%	100%	100%	100%	100%		0%	-26%	-31%	-31%	-31%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%
	October		-		-16%	100%	100%	100%	100%		0%	-26%	-30%	-30%	-30%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%
	November		-		-16%	100%	100%	100%	100%		0%	-25%	-29%	-29%	-29%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%
	December		-		-17%	100%	100%	100%	100%		0%	-27%	-32%	-31%	-31%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%

CALCULATE % GROUNDWATER CONTRIBUTING TO TOTAL STREAMFLOW

C. Cumulative Groundwater Discharge to Stream (L/s)[4]	January	0	-	126	114	-	-	-	-	157	145	22	19	19	19	161	149	27	24	24	24	189	177	55	52	52	52
	February	0	-	120	107	-	-	-	-	146	133	18	15	15	15	149	136	21	18	18	18	177	164	49	46	46	46
	March	0	-	113	101	-	-	-	-	139	127	18	16	16	16	142	131	22	19	19	19	169	158	49	46	46	46
	April	0	-	117	103	-	-	-	-	161	147	35	32	32	32	166	152	40	37	37	37	196	183	70	68	68	68
	May	0.1	-	139	121	-	-	-	-	199	181	49	47	47	47	205	187	55	53	53	53	239	220	89	86	86	86
	June	0.3	-	158	136	-	-	-	-	215	194	47	44	44	44	221	200	53	50	50	50	255	233	86	83	84	84
	July	0.2	-	156	134	-	-	-	-	207	185	40	38	38	38	213	190	46	44	44	44	245	223	78	76	76	76
	August	0.1	-	150	128	-	-	-	-	194	171	33	31	31	31	199	176	38	36	36	36	230	207	69	67	67	67
	September	0.1	-	146	123	-	-	-	-	184	162	28	27	27	27	189	166	33	31	31	31	219	197	63	61	61	61
	October	0.2	-	146	123	-	-	-	-	185	162	29	28	28	28	190	167	34	32	32	32	220	197	64	63	63	63
	November	0.2	-	143	119	-	-	-	-	184	161	31	29	29	29	189	166	36	35	35	35	220	196	67	65	65	65
	December	0.04	-	134	112	-	-	-	-	171	148	27	25	25	25	176	153	32	30	30	30	206	183	61	60	60	60
	Annual Average	0.1	-	137	118	-	-	-	-	179	160	32	29	29	29	183	165	36	34	34	34	214	195	67	64	65	65
D. Surface Water Flow at Node (L/s)[1,2]	January	0.05	-	127	115	125	125	125	137	157	145	147	144	144	170	162	150	152	149	149	175	190	178	181	178	178	203
	February	0.009	-	120	107	125	125	125	136	146	133	143	140	140	161	148	136	146	144	144	165	176	164	174	171	171	192
	March	0.002	-	113	101	125	125	125	134	141	129	145	143	143	159	151	139	155	153	153	169	179	167	183	180	181	197
	April	8.1	-	214	174	120	169	108	163	309	270	207	264	205	350	380	341	278	335	276	421	424	385	322	378	320	465
	May	45	-	811	666	553	768	507	390	951	806	683	940	681	977	1,040	896	773	1,029	771	1,066	1,092	948	825	1,081	823	1,118
	June	44	-	822	683	545	655	506	399	920	781	633	778	630	714	960	821	672	818	670	754	1,001	862	713	858	711	795
	July	12	-	339	288	236	303	225	222	402	351	289	364	286	314	419	368	306	381	304	331	454	403	340	416	338	366
	August	2.7	-	187	159	149	211	146	160	233	205	185	247	183	209	241	212	192	254	190	216	272	244	224	286	222	247
	September	1.4	-	158	133	115	170	113	149	197	172	144	199	142	195	203	178	150	205	148	201	234	208	180	235	178	232
	October	1.9	-	159	132	115	111	111	148	201	173	146	144	144	220	213	186	158	156	156	232	243	216	188	186	187	263
	November	1.3	-	152	126	115	111	111	145	195	169	147	146	146	205	209	183	161	160	160	219	240	213	192	190	190	249
	December	0.3	-	137	113	125	124	124	140	174	150	152	150	150	185	181	158	160	158	158	192	211	187	189	188	188	222
	Annual Average	10	-	278	233	204	250	194	194	336	291	252	305	250	322	359	314	275	328	273	345	393	348	309	362	307	379
E. Percent Groundwater Contributing to Total Streamflow at Node (%)[5]	January	0%	-	100%	100%	-	-	-	-	100%	100%	15%	13%	13%	11%	99%	99%	17%	16%	16%	13%	99%	100%	30%	29%	29%	26%
	February	0%	-	100%	100%	-	-	-	-	100%	100%	12%	11%	11%	9%	100%	100%	14%	13%	13%	11%	100%	100%	28%	27%	27%	24%
	March	0%	-	100%	100%	-	-	-	-	99%	98%	13%	11%	11%	10%	94%	94%	14%	12%	13%	11%	95%	94%	27%	26%	26%	24%
	April	0%	-	55%	59%	-	-	-	-	52%	55%	17%	12%	16%	9%	44%	45%	14%	11%	14%	9%	46%	47%	22%	18%	21%	15%
	May	0%	-	17%	18%	-	-	-	-	21%	22%	7%	5%	7%	5%	20%	21%	7%	5%	7%	5%	22%	23%	11%	8%	10%	8%
	June	1%	-	19%	20%	-	-	-	-	23%	25%	7%	6%	7%	6%	23%	24%	8%	6%	8%	7%	25%	27%	12%	10%	12%	11%
	July	2%	-	46%	46%	-	-	-	-	51%	53%	14%	10%	13%	12%	51%	52%	15%	11%	14%	13%	54%	55%	23%	18%	23%	21%
	August	5%	-	80%	80%	-	-	-	-	83%	84%	18%	13%	17%	15%	82%	83%	20%	14%	19%	17%	84%	85%	31%	24%	30%	27%
	September	8%	-	92%	93%	-	-	-	-	93%	94%	20%	13%	19%	14%	93%	93%	22%	15%	21%	15%	94%	94%	35%	26%	34%	26%
	October	12%	-	92%	93%	-	-	-	-	92%	94%	20%	19%	19%	13%	89%	90%	22%	21%	21%	14%	91%	91%	34%	34%	34%	24%
	November	16%	-	94%	95%	-	-	-	-	94%	95%	21%	20%	20%	14%	91%	91%	23%	22%	22%	16%	92%	92%	35%	34%	34%	26%
	December	14%	-	98%	99%	-	-	-	-	99%	99%	18%	17%	17%	14%	97%	97%	20%	19%	19%	16%	98%	98%	32%	32%	32%	27%
F. % Change in Groundwater Contributing to Total Streamflow at Node[6]	January		-		0%	-	-	-	-		0%	-84%	-86%	-86%	-88%		0%	-82%	-83%	-83%	-86%		0%	-69%	-70%	-70%	-74%
	February		-		0%	-	-	-	-		0%	-87%	-89%	-89%	-91%		0%	-86%	-87%	-87%	-89%		0%	-72%	-73%	-73%	-76%
	March		-		0%	-	-	-	-		0%	-86%	-88%	-87%	-89%		0%	-80%	-82%	-82%	-83%		0%	-68%	-69%	-69%	-71%
	April		-		5%	-	-	-	-		3%	-35%	-40%	-36%	-43%		1%	-29%	-32%	-30%	-35%		1%	-24%	-28%	-25%	-32%
	May		-		1%	-	-	-	-		1%	-14%	-16%	-14%	-16%		1%	-13%	-15%	-13%	-15%		1%	-11%	-14%	-11%	-14%
	June		-		1%	-	-	-	-		1%	-16%	-18%	-16%	-17%		1%	-15%	-17%	-16%	-16%		2%	-13%	-16%	-14%	-15%
	July		-		0%	-	-	-	-		1%	-37%	-41%	-38%	-39%		1%	-36%	-39%	-36%	-37%		1%	-31%	-36%	-31%	-33%
	August		-		0%	-	-	-	-		1%	-65%	-70%	-66%	-68%		1%	-63%	-68%	-63%	-66%		1%	-53%	-61%	-54%	-57%
	September		-		1%	-	-	-	-		1%	-74%	-80%	-75%	-80%		1%	-71%	-78%	-72%	-77%		1%	-59%	-68%	-59%	-67%
	October		-		1%	-	-	-	-		1%	-72%	-73%	-73%	-80%		1%	-68%	-69%	-69%	-75%		1%	-56%	-57%	-57%	-67%
	November		-		1%	-	-	-	-		1%	-73%	-74%	-74%	-80%		0%	-68%	-69%	-69%	-75%		0%	-57%	-58%	-57%	-66%
	December		-		0%	-	-	-	-		0%	-81%	-82%	-82%	-85%		0%	-77%	-78%	-78%	-81%		0%	-65%	-66%	-66%	-71%

NOTES:

1. SURFACE WATER AND GROUNDWATER FLOW VALUES IN EACH SUB-CATCHMENT FOR ALL PHASES EXCEPT POST-CLOSURE ARE REPORTED IN APPENDICES E TO L OF THE LIFE OF MINE WATERSHED MODEL REPORT (KNIGHT PIESOLD LTD, 2016).
2. POST-CLOSURE STREAMFLOWS REPORTED IN TABLE C2 OF THE MEMO TITLED "REVISED WATERSHED MODEL IN SUPPORT OF WATER QUALITY ASSESSMENT', KP REF NO. VA17-01156 DATED JULY 12, 2017.
3. "B" CHANGE IN GROUNDWATER DISCHARGE TO SUB-CATCHMENT (%) = [MINE PHASE GROUNDWATER DISCHARGE (A) - BASELINE GROUNDWATER DISCHARGE (A)] / [BASELINE GROUNDWATER DISCHARGE (A)] x 100
4. "C" CUMULATIVE GROUNDWATER DISCHARGE VALUES REPRESENT THE SUM OF GROUNDWATER DISCHARGE TO STREAMFLOW WITHIN THE SUB-CATCHMENT AND ALL UPSTREAM SUB-CATCHMENTS.
5. "E" PERCENT GROUNDWATER DISCHARGE IN TOTAL STREAMFLOW = [CUMULATIVE MONTHLY GROUNDWATER FLOW AT NODE (C)] / [SURFACE WATER FLOW (D)] x100
6. "F" CHANGE IN GROUNDWATER CONTRIBUTING TO TOTAL STREAMFLOW (6) = [MINE PHASE PERCENT GROUNDWATER IN STREAMFLOW (E) - BASELINE PERCENT GROUNDWATER IN STREAMFLOW (E)] / [BASELINE PERCENT GROUNDWATER IN STREAMFLOW (E)] x 100
7. NODE LOCATION 11-DC IS LOCATED AT SITE C WEST DAM. NO SURFACE WATER OR GROUNDWATER FLOWS LEAVE SUB-CATCHMENT 11-DC TOWARD DAVIDSON CREEK AFTER THE COFFERDAM CONSTRUCTION AND LAKE 16 ENLARGEMENT IN CONSTRUCTION.
8. NO GROUNDWATER FLOW IS ESTIMATED TO PASS THE ENVIRONMENTAL CONTROL DAM AND SEEPAGE COLLECTION SYSTEM LOCATED IMMEDIATELY DOWNSTREAM OF NODE H2 AFTER THE SEEPAGE COLLECTION SYSTEM IS COMMISSIONED IN OPERATIONS. THE SEEPAGE COLLECTION SYSTEM IS OPERATIONAL THROUGH POST-CLOSURE.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
1	05DEC'18	ISSUED WITH VA18-02270	CAS	DDF

Knight Piésold CONSULTING

TABLE 2

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED GROUNDWATER DISCHARGE TO STREAMFLOW IN SUB-CATCHMENT CREEK 661

CALCULATE GROUNDWATER DISCHARGE AND % CHANGE IN GROUNDWATER DISCHARGE IN SUB-CATCHMENT

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MINE PHASE		Node H1 Baseline	Node H1 Construction (Yr -2)	Node H1 Early Ops (Yr 3)	Node H1 Late Ops (Yr 14)	Node H1 Closure (Yr 20)	Node H1 Post-Closure (Yr 55)	Node 1-505659 Baseline	Node 1-505659 Construction (Yr -2)	Node 1-505659 Early Ops (Yr 3)	Node 1-505659 Late Ops (Yr 14)	Node 1-505659 Closure (Yr 20)	Node 1-505659 Post-Closure (Yr 55)	Node 1-661 Baseline	Node 1-661 Construction (Yr -2)	Node 1-661 Early Ops (Yr 3)	Node 1-661 Late Ops (Yr 14)	Node 1-661 Closure (Yr 20)	Node 1-661 Post-Closure (Yr 55)
A. Groundwater Discharge to Stream in Sub-Catchment (L/s) [1,2]	January	5	5	3	3	3	5	11	11	9	9	9	8	76	76	77	77	77	76
	February	4	4	2	2	2	4	10	9	8	8	8	7	71	70	71	71	71	70
	March	3	3	1	1	1	3	9	8	7	7	7	7	67	67	68	68	68	68
	April	4	4	3	2	2	4	10	10	9	9	9	8	76	76	77	77	77	76
	May	10	10	9	9	9	10	15	14	13	13	13	11	93	93	94	94	94	93
	June	17	17	16	16	16	17	17	16	15	15	15	13	100	100	101	101	101	100
	July	15	15	15	14	14	15	16	16	14	15	15	13	96	96	97	97	97	96
	August	12	12	11	11	11	12	15	15	13	13	13	12	91	91	92	92	92	91
	September	10	10	9	9	9	10	14	14	12	12	12	11	88	88	88	88	88	88
	October	10	10	9	9	9	10	15	14	13	13	13	11	89	89	89	89	89	89
	November	10	10	8	8	8	10	14	14	12	13	13	11	89	89	90	89	90	89
	December	7	7	5	5	5	7	13	12	11	11	11	10	83	83	84	84	84	83
	Annual Average	9	9	8	7	8	9	13	13	11	11	11	10	85	85	86	86	86	85
B. Change in the Groundwater Discharge to Stream in Sub-Catchment (%) [3]	January		0%	-32%	-35%	-35%	0%		0%	-18%	-17%	-17%	-23%		0%	1%	1%	1%	0%
	February		-1%	-52%	-55%	-55%	-1%		-2%	-21%	-20%	-20%	-25%		-1%	0%	0%	0%	-1%
	March		0%	-64%	-67%	-67%	0%		-2%	-21%	-21%	-20%	-24%		0%	1%	1%	1%	0%
	April		1%	-42%	-45%	-45%	0%		-2%	-18%	-17%	-17%	-23%		0%	1%	1%	1%	0%
	May		1%	-12%	-14%	-13%	0%		-2%	-13%	-12%	-12%	-23%		0%	1%	1%	1%	0%
	June		1%	-3%	-4%	-4%	0%		-2%	-11%	-10%	-10%	-24%		0%	1%	1%	1%	0%
	July		1%	-4%	-5%	-4%	0%		-3%	-12%	-11%	-11%	-23%		0%	1%	1%	1%	0%
	August		1%	-8%	-9%	-9%	0%		-4%	-13%	-12%	-12%	-23%		0%	1%	1%	1%	0%
	September		1%	-11%	-12%	-12%	0%		-5%	-14%	-13%	-13%	-23%		0%	1%	1%	1%	0%
	October		1%	-13%	-14%	-13%	0%		-5%	-14%	-13%	-13%	-23%		0%	1%	1%	1%	0%
	November		1%	-16%	-17%	-17%	0%		-6%	-15%	-14%	-13%	-23%		0%	1%	1%	1%	0%
	December		1%	-24%	-25%	-25%	0%		-7%	-16%	-15%	-15%	-23%		0%	1%	1%	1%	0%

CALCULATE % GROUNDWATER CONTRIBUTING TO TOTAL STREAMFLOW

C. Cumulative Groundwater Discharge to Stream (L/s) [4]	January	5	5	3	3	3	5	11	11	9	9	9	8	92	92	89	89	89	90
	February	4	4	2	2	2	4	10	9	8	8	8	7	84	83	80	80	80	81
	March	3	3	1	1	1	3	9	8	7	7	7	7	79	79	76	76	76	77
	April	4	4	3	2	2	4	10	10	9	9	9	8	91	90	88	88	88	88
	May	10	10	9	9	9	10	15	14	13	13	13	11	118	118	115	115	116	114
	June	17	17	16	16	16	17	17	16	15	15	15	13	134	134	132	132	132	130
	July	15	15	15	14	14	15	16	16	14	15	15	13	128	127	126	126	126	124
	August	12	12	11	11	11	12	15	15	13	13	13	12	119	118	116	116	116	115
	September	10	10	9	9	9	10	14	14	12	12	12	11	112	112	110	110	110	109
	October	10	10	9	9	9	10	15	14	13	13	13	11	114	113	111	111	111	110
	November	10	10	8	8	8	10	14	14	12	13	13	11	113	112	110	110	110	110
	December	7	7	5	5	5	7	13	12	11	11	11	10	103	102	100	100	100	100
	Annual Average	9	9	8	7	8	9	13	13	11	11	11	10	107	107	104	104	105	104
D. Surface Water Flow at Node (L/s) [1,2]	January	5	5	3	3	3	5	12	12	10	10	9	9	94	94	91	91	91	91
	February	4	4	2	2	2	4	10	9	8	8	8	7	84	83	81	80	81	82
	March	3	3	1	1	1	3	9	9	7	7	7	7	82	82	79	79	79	80
	April	20	19	17	17	17	20	70	73	68	45	45	43	319	322	316	291	292	292
	May	107	104	102	102	102	107	290	299	240	138	139	133	903	909	850	744	748	746
	June	114	111	111	110	111	114	258	265	213	123	124	119	799	803	751	659	662	659
	July	39	38	38	37	37	39	88	89	69	44	44	42	314	314	295	269	270	268
	August	17	17	16	16	16	17	33	33	27	21	21	19	161	161	154	148	148	147
	September	11	11	10	10	10	11	26	25	21	17	17	16	136	136	131	127	127	127
	October	12	11	10	10	10	12	34	34	30	23	23	21	163	163	158	151	151	150
	November	11	11	9	9	9	11	29	29	26	21	21	19	154	154	151	145	145	144
	December	7	7	6	6	6	7	16	15	14	13	13	12	112	111	108	107	107	107
	Annual Average	29	28	27	27	27	29	73	74	61	39	39	37	277	278	264	241	242	241
E. Percent Groundwater Contributing to Total Streamflow at Node (%) [5]	January	99%	99%	99%	99%	99%	99%	95%	95%	94%	97%	97%	96%	98%	98%	98%	98%	98%	98%
	February	100%	100%	100%	100%	100%	99%	99%	99%	98%	99%	99%	98%	100%	100%	100%	100%	100%	99%
	March	100%	100%	100%	100%	100%	100%	97%	97%	97%	97%	97%	97%	96%	96%	96%	96%	96%	96%
	April	22%	23%	15%	14%	14%	22%	15%	14%	13%	19%	19%	19%	28%	28%	28%	30%	30%	30%
	May	10%	10%	9%	9%	9%	10%	5%	5%	5%	9%	9%	8%	13%	13%	14%	15%	15%	15%
	June	15%	15%	15%	15%	15%	15%	7%	6%	7%	12%	12%	11%	17%	17%	18%	20%	20%	20%
	July	39%	40%	39%	39%	39%	39%	18%	18%	21%	33%	33%	30%	41%	41%	43%	47%	47%	46%
	August	73%	73%	71%	71%	71%	73%	46%	44%	49%	65%	65%	62%	74%	74%	75%	79%	79%	79%
	September	89%	90%	89%	89%	89%	90%	56%	54%	58%	72%	72%	70%	82%	82%	84%	86%	86%	86%
	October	88%	90%	89%	89%	89%	88%	43%	41%	42%	56%	56%	54%	70%	69%	70%	73%	73%	73%
	November	89%	91%	90%	89%	90%	90%	50%	47%	47%	60%	60%	58%	73%	73%	73%	76%	76%	76%
	December	97%	97%	97%	96%	96%	97%	81%	80%	79%	87%	87%	86%	92%	92%	92%	93%	93%	93%
F. % Change in Groundwater Contributing to Total Streamflow at Node [6]	January		0%	0%	0%	0%	0%		0%	-1%	2%	2%	1%		0%	0%	0%	0%	0%
	February		0%	0%	0%	0%	-1%		0%	0%	0%	0%	-1%		0%	0%	0%	0%	-1%
	March		0%	0%	0%	0%	0%		0%	-1%	0%	0%	-1%		0%	0%	0%	0%	0%
	April		1%	-7%	-8%	-8%	0%		-1%	-2%	5%	5%	4%		0%	-1%	2%	2%	2%
	May		0%	-1%	-1%	-1%	0%		0%	0%	4%	4%	3%		0%	1%	2%	2%	2%
	June		0%	0%	0%	0%	0%		0%	1%	6%	6%	4%		0%	1%	3%	3%	3%
	July		1%	0%	-1%	-1%	0%		-1%	2%	14%	14%	11%		0%	2%	6%	6%	6%
	August		1%	-1%	-2%	-1%	0%		-1%	3%	19%	19%	16%		0%	2%	5%	5%	5%
	September		1%	0%	0%	0%	0%		-2%	2%	16%	16%	15%		0%	1%	4%	4%	4%
	October		2%	1%	1%	1%	0%		-2%	-1%	13%	13%	11%		0%	0%	4%	4%	4%
	November		2%	0%	0%	0%	0%		-2%	-3%	11%	11%	9%		0%	0%	3%	3%	3%
	December		0%	-1%	-1%	-1%	0%		-1%	-2%	6%	6%	5%		0%	0%	1%	1%	1%

\\KPL\VA-Pr\B1\01\00457\24\A\Correspondence\VA18-02270 - Groundwater Discharge to Streamflow (r1)\[Tables 1 to 3 - Groundwater Contribution to Streamflow_r1.xlsx]Creek 661 (r1)

NOTES:

1. SURFACE WATER AND GROUNDWATER FLOW VALUES IN EACH SUB-CATCHMENT FOR ALL PHASES EXCEPT POST-CLOSURE ARE REPORTED IN APPENDICES E TO L OF THE LIFE OF MINE WATERSHED MODEL REPORT (KNIGHT PIESOLD LTD, 2016).
2. POST-CLOSURE STREAMFLOWS REPORTED IN TABLE C2 OF THE MEMO TITLED "REVISED WATERSHED MODEL IN SUPPORT OF WATER QUALITY ASSESSMENT", KP REF NO. VA17-01156 DATED JULY 12, 2017.
3. "B" CHANGE IN GROUNDWATER DISCHARGE TO SUB-CATCHMENT (%) = [MINE PHASE GROUNDWATER DISCHARGE (A) - BASELINE GROUNDWATER DISCHARGE (A)] / [BASELINE GROUNDWATER DISCHARGE (A)] x 100
4. "C" CUMULATIVE GROUNDWATER DISCHARGE VALUES REPRESENT THE SUM OF GROUNDWATER DISCHARGE TO STREAMFLOW WITHIN THE SUB-CATCHMENT AND ALL UPSTREAM SUB-CATCHMENTS.
5. "E" PERCENT GROUNDWATER DISCHARGE IN TOTAL STREAMFLOW = [CUMULATIVE MONTHLY GROUNDWATER FLOW AT NODE (C)] / [SURFACE WATER FLOW (D)] x100
6. "F" CHANGE IN GROUNDWATER CONTRIBUTING TO TOTAL STREAMFLOW (6) = [MINE PHASE PERCENT GROUNDWATER IN STREAMFLOW (E) - BASELINE PERCENT GROUNDWATER IN STREAMFLOW (E)] / [BASELINE PERCENT GROUNDWATER IN STREAMFLOW (E)] x 100

REV	DATE	DESCRIPTION	PREP'D	RVW'D
1	05DEC'18	ISSUED WITH VA18-02270	CAS	DDF

TABLE 3

NEW GOLD INC.
BLACKWATER GOLD PROJECT

ESTIMATED GROUNDWATER DISCHARGE TO STREAMFLOW IN SUB-CATCHMENT CREEK 705

CALCULATE GROUNDWATER DISCHARGE AND % CHANGE IN GROUNDWATER DISCHARGE IN SUB-CATCHMENT

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	MINE PHASE	Node 6-705					Node 4-705					Node H7					Node 1-705				
		Baseline	Construction [7]	EOM [7]	Closure [7]	Post-Closure [7]	Baseline	Construction	EOM	Closure	Post-Closure	Baseline	Construction	EOM	Closure	Post-Closure	Baseline	Construction	EOM	Closure	Post-Closure
A. Groundwater Discharge to Stream in Sub-Catchment (L/s) [1,2]	January	2	5	5	5	5	2	2	2	2	2	22	22	22	22	22	14	14	14	14	14
	February	1	4	4	4	4	0	0	0	0	0	15	15	15	15	15	13	13	13	13	13
	March	1	4	4	4	4	0	0	0	0	0	14	14	14	14	14	13	13	13	13	13
	April	2	5	5	5	5	2	2	2	2	2	26	26	26	26	26	14	14	14	14	14
	May	5	8	8	8	8	7	8	8	8	8	51	51	51	51	51	16	16	16	16	16
	June	7	11	11	11	11	13	13	13	13	13	62	62	62	62	62	16	16	16	16	16
	July	7	10	10	10	10	11	11	11	11	11	54	54	54	54	54	15	15	15	15	15
	August	5	9	9	9	9	8	8	8	8	8	45	45	45	45	45	14	14	14	14	14
	September	4	8	8	8	8	6	6	6	6	6	38	38	38	38	38	14	14	14	14	14
	October	5	8	8	8	8	6	7	7	7	7	39	39	39	39	39	14	14	14	14	14
	November	4	8	8	8	8	6	6	6	6	6	38	38	38	38	38	14	14	14	14	14
	December	3	6	6	6	6	3	3	3	3	3	29	29	29	29	29	14	14	14	14	14
	Annual Average	4	7	7	7	7	5	5	5	5	5	36	36	36	36	36	14	14	14	14	14
B. Change in the Groundwater Discharge to Stream in Sub-Catchment (%) [3]	January		192%	192%	192%	192%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%
	February		307%	307%	307%	307%		1%	1%	1%	1%		0%	0%	0%	0%		0%	0%	0%	0%
	March		375%	375%	375%	375%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%
	April		177%	177%	177%	177%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%
	May		62%	62%	62%	62%		1%	1%	1%	1%		0%	0%	0%	0%		0%	0%	0%	0%
	June		45%	45%	45%	45%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%
	July		53%	53%	53%	53%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%
	August		70%	70%	70%	70%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%
	September		83%	83%	83%	83%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%
	October		82%	82%	82%	82%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%
	November		89%	89%	89%	89%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%
	December		133%	133%	133%	133%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%

CALCULATE % GROUNDWATER CONTRIBUTING TO TOTAL STREAMFLOW

C. Cumulative Groundwater Discharge to Stream (L/s) [4]	January	2	5	5	5	5	4	7	7	7	7	26	29	29	29	29	39	43	43	43	43
	February	1	4	4	4	4	1	5	5	5	5	17	20	20	20	20	30	33	33	33	33
	March	1	4	4	4	4	1	4	4	4	4	15	18	18	18	18	28	31	31	31	31
	April	2	5	5	5	5	3	6	6	6	6	30	33	33	33	33	44	47	47	47	47
	May	5	8	8	8	8	12	15	15	15	15	63	66	66	66	66	79	82	82	82	82
	June	7	11	11	11	11	20	24	24	24	24	82	86	86	86	86	98	101	101	101	101
	July	7	10	10	10	10	18	21	21	21	21	72	76	76	76	76	87	91	91	91	91
	August	5	9	9	9	9	13	17	17	17	17	58	62	62	62	62	72	76	76	76	76
	September	4	8	8	8	8	10	14	14	14	14	49	53	53	53	53	63	66	66	66	66
	October	5	8	8	8	8	11	15	15	15	15	50	54	54	54	54	64	68	68	68	68
	November	4	8	8	8	8	10	14	14	14	14	49	52	52	52	52	63	67	67	67	67
	December	3	6	6	6	6	6	10	10	10	10	35	39	39	39	39	49	53	53	53	53
	Annual Average	4	7	7	7	7	9.2	13	13	13	13	45	49	49	49	49	60	63	63	63	63
D. Surface Water Flow at Node (L/s) [1,2]	January	2.1	5.7	5.7	5.7	5.7	4.5	8.1	8.1	8.1	8.1	27	31	31	31	31	41	45	45	45	45
	February	1.1	4.4	4.4	4.4	4.4	1.5	4.8	4.8	4.8	4.8	17	20	20	20	20	30	33	33	33	33
	March	0.8	3.8	3.8	3.8	3.8	1.2	4.1	4.1	4.1	4.1	16	19	19	19	19	31	34	34	34	34
	April	18	29	29	29	29	74	85	85	85	85	252	262	262	262	262	282	292	292	292	292
	May	130	183	183	183	183	437	490	490	490	490	1,181	1,233	1233	1233	1233	1,218	1,271	1271	1271	1271
	June	75	124	124	124	124	238	288	288	288	288	670	719	719	719	719	694	744	744	744	744
	July	29	44	44	44	44	85	100	100	100	100	222	237	237	237	237	239	254	254	254	254
	August	12	18	18	18	18	33	39	39	39	39	100	106	106	106	106	114	121	121	121	121
	September	8.6	14	14	14	14	23	28	28	28	28	80	85	85	85	85	94	99	99	99	99
	October	12	18	18	18	18	38	44	44	44	44	131	136	136	136	136	146	152	152	152	152
	November	10	16	16	16	16	33	39	39	39	39	116	121	121	121	121	132	137	137	137	137
	December	4.0	8.0	8.0	8.0	8.0	11	15	15	15	15	46	50	50	50	50	61	65	65	65	65
	Annual Average	25	39	39	39	39	82	96	96	96	96	239	253	253	253	253	258	272	272	272	272
E. Percent Groundwater Contributing to Total Streamflow at Node (%) [5]	January	88%	94%	94%	94%	94%	78%	87%	87%	87%	87%	93%	94%	94%	94%	94%	95%	96%	96%	96%	96%
	February	95%	99%	99%	99%	99%	87%	96%	96%	96%	96%	98%	98%	98%	98%	98%	99%	99%	99%	99%	99%
	March	99%	100%	100%	100%	100%	96%	99%	99%	99%	99%	94%	95%	95%	95%	95%	92%	93%	93%	93%	93%
	April	9%	16%	16%	16%	16%	5%	7%	7%	7%	7%	12%	12%	12%	12%	12%	16%	16%	16%	16%	16%
	May	4%	4%	4%	4%	4%	3%	3%	3%	3%	3%	5%	5%	5%	5%	5%	6%	6%	6%	6%	6%
	June	10%	9%	9%	9%	9%	9%	8%	8%	8%	8%	12%	12%	12%	12%	12%	14%	14%	14%	14%	14%
	July	23%	23%	23%	23%	23%	21%	21%	21%	21%	21%	32%	32%	32%	32%	32%	36%	36%	36%	36%	36%
	August	45%	50%	50%	50%	50%	39%	43%	43%	43%	43%	58%	58%	58%	58%	58%	63%	63%	63%	63%	63%
	September	52%	61%	61%	61%	61%	44%	50%	50%	50%	50%	61%	62%	62%	62%	62%	67%	67%	67%	67%	67%
	October	38%	46%	46%	46%	46%	29%	33%	33%	33%	33%	38%	39%	39%	39%	39%	44%	45%	45%	45%	45%
	November	41%	51%	51%	51%	51%	31%	37%	37%	37%	37%	42%	43%	43%	43%	43%	48%	49%	49%	49%	49%
	December	69%	80%	80%	80%	80%	56%	66%	66%	66%	66%	76%	77%	77%	77%	77%	81%	82%	82%	82%	82%
F. % Change in Groundwater Contributing to Total Streamflow at Node [6]	January		7%	7%	7%	7%		9%	9%	9%	9%		1%	1%	1%	1%		0%	0%	0%	0%
	February		3%	3%	3%	3%		9%	9%	9%	9%		0%	0%	0%	0%		0%	0%	0%	0%
	March		1%	1%	1%	1%		3%	3%	3%	3%		1%	1%	1%	1%		1%	1%	1%	1%
	April		7%	7%	7%	7%		3%	3%	3%	3%		1%	1%	1%	1%		0%	0%	0%	0%
	May		1%	1%	1%	1%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%
	June		-1%	-1%	-1%	-1%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%
	July		0%	0%	0%	0%		1%	1%	1%	1%		-1%	-1%	-1%	-1%		-1%	-1%	-1%	-1%
	August		5%	5%	5%	5%		3%	3%	3%	3%		0%	0%	0%	0%		0%	0%	0%	0%
	September		9%	9%	9%	9%		6%	6%	6%	6%		1%	1%	1%	1%		0%	0%	0%	0%
	October		9%	9%	9%	9%		5%	5%	5%	5%		1%	1%	1%	1%		1%	1%	1%	1%
	November		10%	10%	10%	10%		5%	5%	5%	5%		1%	1%	1%	1%		1%	1%	1%	1%
	December		11%	11%	11%	11%		9%	9%	9%	9%		1%	1%	1%	1%		1%	1%	1%	1%

\\KPL\VA-Prj\B1\01\004572\4\A\Correspondence\VA18-02270 - Groundwater Discharge to Streamflow (r1)\[Tables 1 to 3 - Groundwater Contribution to Streamflow_r1.xlsx]Creek 661 (r1)

NOTES:

1. SURFACE WATER FLOW VALUES IN EACH SUB-CATCHMENT ARE REPORTED BY PHASE IN APPENDICES D TO H OF THE BLACKWATER WATERSHED MODELLING REPORT (APPENDIX 5.1.2.1B OF THE APPLICATION; KNIGHT PIESOLD LTD, 2014).
2. GROUNDWATER VALUES WERE CALCULATED FROM THE WATERSHED MODEL PRESENTED IN THE BLACKWATER WATERSHED MODELLING REPORT (KNIGHT PIESOLD LTD, 2014). VALUES PREVIOUSLY REPORTED IN KP MEMO "GROUNDWATER CONTRIBUTION TO STREAMFLOW IN THE PROJECT AREA DURING ALL MINE PHASES" DATED MARCH 26, 2018 (KP REF. NO VA18-00506).
3. "B" CHANGE IN GROUNDWATER DISCHARGE TO SUB-CATCHMENT (%) = [MINE PHASE GROUNDWATER DISCHARGE (A) - BASELINE GROUNDWATER DISCHARGE (A)] / [BASELINE GROUNDWATER DISCHARGE (A)] x 100
4. "C" CUMULATIVE GROUNDWATER DISCHARGE VALUES REPRESENT THE SUM OF GROUNDWATER DISCHARGE TO STREAMFLOW WITHIN THE SUB-CATCHMENT AND ALL UPSTREAM SUB-CATCHMENTS.
5. "E" PERCENT GROUNDWATER DISCHARGE IN TOTAL STREAMFLOW = [CUMULATIVE MONTHLY GROUNDWATER FLOW AT NODE (C)] / [SURFACE WATER FLOW (D)] x100
6. "F" CHANGE IN GROUNDWATER CONTRIBUTING TO TOTAL STREAMFLOW (6) = [MINE PHASE PERCENT GROUNDWATER IN STREAMFLOW (E) - BASELINE PERCENT GROUNDWATER IN STREAMFLOW (E)] / [BASELINE PERCENT GROUNDWATER IN STREAMFLOW (E)] x 100
7. INCREASE IN GROUNDWATER DISCHARGE IN 6-705 SUB-CATCHMENT (A) ATTRIBUTED TO RE-ROUTING OF FLOWS IN THE 11-DC SUB-CATCHMENT FROM DAVIDSON CREEK TO CREEK 705.

REV	DATE	DESCRIPTION	PREP'D	RVW'D
1	05DEC'18	ISSUED WITH VA18-02270	CAS	DDF