Appendix 8-A

Interaction of Project Components and Activities with Proposed Valued Components

HARPER CREEK PROJECT

Application for an Environmental Assessment Certificate/ Environmental Impact Statement

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| Auxiliary electricity - diesel generators | | | | | |
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| Power line and site distribution line construction: vegetation clearing, access, poles, | | | | | |
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| | conductors, tie-in Plant construction: mill building, mill feed conveyor, truck shop, warehouse, substation, and pipelines Primary crusher and overland feed conveyor installation Employment and labour Procurement of goods and services Aggregate sources/ borrow sites: drilling, blasting, extraction, hauling, crushing Clearing vegetation, stripping and stockpiling topsoil and overburden, soil salvage handling and storage Earth moving: excavation, drilling, grading, trenching, backfilling Rail load-out facility upgrade and site preparation New TMF access road construction: widening, clearing, earth moving, culvert installation using non-PAG material Road upgrades, maintenance and use: haul and access roads Coarse ore stockpile construction Non-PAG Waste Rock Stockpile construction PAG and Non-PAG Low-grade ore stockpiles foundation construction PAG Waste Rock stockpiles foundation construction Coffer dam and South TMF embankment construction Construction camp construction, operation, and decommissioning Traffic delivering equipment, materials and personnel to site Waste management: garbage, incinerator and sewage waste facilities Ditches, sumps, pipelines, pump systems, reclaim system and snow clearing/stockpiling | Hazardous materials storage, transport, and off-site disposal Image: Construction of fish habitat offsetting sites On-site equipment and vehicle use: heavy machinery and trucks Image: Construction of fish habitat offsetting sites On-site equipment and vehicle use: heavy machinery and trucks Image: Construction of fish habitat offsetting sites On-site equipment and vehicle use: heavy machinery and trucks Image: Construction of fish habitat offsetting sites Open pit development - drilling, blasting, hauling and dumping Image: Construction of fish habitat offsetting sites Open pit development - drilling, blasting, hauling and dumping Image: Construction: Construction: vegetation clearing, access, poles, conductors, tie-in Power line and site distribution line construction: vegetation clearing, access, poles, conductors, tie-in Image: Construction: Construction: vegetation clearing, access, poles, conductors, trie-in Primary crusher and overland feed conveyor installation Image: Construction: Construction: Construction of Construction, hauling, crushing Clearing vegetation, stripping and stockpiling topsoil and overburden, soil salvage handling and storage Image: Construction image: Construction image: Construction image: Construction image: Construction: widening, clearing, earth moving, culvert installation using non-PAG material Image: Construction image: Co | Hazardous materials storage, transport, and off-site disposal Image: Construction of fish habitat offsetting sites On-site equipment and vehicle use: heavy machinery and trucks Image: Construction of fish habitat offsetting sites On-site equipment and vehicle use: heavy machinery and trucks Image: Construction of fish habitat offsetting sites Open pit development - drilling, 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Category Construction	Project Components and Activities	Revenue and Taxes	Community Growth	Visual Quality	Traffic	Forestry	Agriculture	Commercial Interests	Recreational Land Use	Water Licences	Recreational Water Use	Private Land	Current Use of Lands and Resources for Traditional Purposes	Archaeology	Paleontology	Historical Use	Cultural heritage Humm Hoolth	Air Quality	Drinking Water Quality	Noise and Vibration	Country Foods	Worker Safety and Health	Recreational or Aesthetic Features Physical Activity	, Healthy Living	Community Health
	Concrete batch plant installation, operation and decommissioning							Г														<u>г</u>			
Concrete production Dangerous goods and hazardous materials	Hazardous materials storage, transport, and off-site disposal									_		$\left \right $						_	+			⊢ −+	\rightarrow	+	
Dangerous goods and hazardous materials	Spills and emergency management									_		$\left \right $						_	+			⊢ −+	\rightarrow	+	
Environmental management and monitoring	Construction of fish habitat offsetting sites	_								_	-							_	+			⊢ −+	-+	+	
0 0	On-site equipment and vehicle use: heavy machinery and trucks	_	+			$\left \right $		\vdash		_		\vdash		$\left - \right $					+			<u> </u>	$\rightarrow \rightarrow$	+	
Equipment Explosives	Explosives storage and use		-	$\left - \right $		$\left \right $		\vdash		_		+		$\left \right $	\vdash		-+	+	+-		\vdash	<u> </u>	-+	+	
Fuel supply, storage and distribution	1 0	_								_	-							_	+			⊢ −+	-+	+	
	Fuel supply, storage and distribution Open pit development - drilling, blasting, hauling and dumping		-	$\left - \right $		$\left \right $		\vdash				+		$\left - \right $	\vdash			+	+-	$\left \right $	\vdash	-+	-+-	+ - +	
Open pit	Process and potable water supply, distribution and storage	_								_		$\left \right $						_	+			⊢ −+	-+	+	
Potable water supply		_				$ \vdash $			_	_		\vdash		$\left \right $				_	+			⊢ −+	-+-	+	
Power supply	Auxiliary electricity - diesel generators	_				$ \vdash $			_	_		\vdash		$\left \right $				_	+			⊢ −+	-+-	+	
	Power line and site distribution line construction: vegetation clearing, access, poles, conductors, tie-in																					(
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Processing	Plant construction: mill building, mill feed conveyor, truck shop, warehouse, substation,																					(
	and pipelines	_						\vdash		_		\vdash				_		_	+			⊢−−+	\rightarrow	+	
D	Primary crusher and overland feed conveyor installation	_				$\left \right $			_	_		\vdash		$\left \right $				_	+			⊢ −+	-+-	+	
Procurement and labour	Employment and labour	_				$\left \right $			_	_		\vdash		$\left \right $				_	+			⊢ −+	-+-	+	
Durain at Cita danual annu an t	Procurement of goods and services									_		$\left \right $						_	+			⊢ −+	\rightarrow	+	
Project Site development	Aggregate sources/ borrow sites: drilling, blasting, extraction, hauling, crushing	_				$ \vdash $			_	_		\vdash		$\left \right $				_	+			⊢ −+	-+-	+	
	Clearing vegetation, stripping and stockpiling topsoil and overburden, soil salvage handling and storage																								
	Earth moving: excavation, drilling, grading, trenching, backfilling																					\square			
Rail load-out facility	Rail load-out facility upgrade and site preparation																					\square			
Roads	New TMF access road construction: widening, clearing, earth moving, culvert installation using non-PAG material																								
	Road upgrades, maintenance and use: haul and access roads																							+	
Stockpiles	Coarse ore stockpile construction	1									1								1			-+	—	+	
	Non-PAG Waste Rock Stockpile construction																		1					+	
	PAG and Non-PAG Low-grade ore stockpiles foundation construction																		1			-+			
	PAG Waste Rock stockpiles foundation construction																		1			-+			
Tailings management	Coffer dam and South TMF embankment construction		+								<u> </u>								+			\rightarrow		+	
6 6	Tailings distribution system construction		+								<u> </u>								+			\rightarrow		+	
Temporary construction camp	Construction camp construction, operation, and decommissioning	1									1						-+	1	+			-+	$\neg \neg$	++	
Traffic	Traffic delivering equipment, materials and personnel to site	1								+	1						+	+	+			-+	$\neg \neg$	++	
Waste disposal	Waste management: garbage, incinerator and sewage waste facilities	1									1						-+	1	+			-+	$\neg \neg$	++	
Water management	Ditches, sumps, pipelines, pump systems, reclaim system and snow clearing/stockpiling	1									1						-+	1	+			-+	$\neg \neg$	++	
~	Water management pond, sediment pond, diversion channels and collection channels	1									1						-+	1	1			-+	$\neg \neg$	++	
	construction																					(I			
Operations 1	1								- 1	1										1					
Concentrate transport	Concentrate transport by road from mine to rail loadout																		\top					\top	
Dangerous goods and hazardous materials	Explosives storage and use	1								+	1						+	+	+			-+	$\neg \neg$	++	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Hazardous materials storage, transport, and off-site disposal	+							-+		1							+	+					+ +	
	Spills and emergency management	+	1								1							+-	+			-+	+	+ +	
	n determined that the Project component or activity could notentially interact with the VC.	-						<u> </u>		1		<u> </u>						1		1					

		Climate	Air Quality	loise	eochemistry	roundwater Quality	roundwater Quantity	ırface Water Quality	urface Water Quantity	diments	Hydrology	ısn ish Habitat	nthic Invertebrates	eriphyton	re Plants	cological Communities at Risk	Vetlands	Old-growth Forest	ock Outcrops	raditional Use Plants	rrestrial Invertebrates	mphibians Lizzatora Biado	ligratory birds		ur-bearers	arge Mammals	ngulates	mployment and Income usiness Opportunities
Category	Project Components and Activities	CI	Air	No	Ge	gr	Gr	Sur	Sur	Sed	Hy	Fis]	Ber	Per	Rar	Eco	We	016	Roc	Tra	Ter	Am	WIN 16 A	Raf	Fur	Lar	C ⁿ	Em
Operations 1 (cont'd)																												
Environmental management and monitoring	Fish habitat offsetting site monitoring and maintenance																											
Equipment fleet	Mine site mobile equipment (excluding mining fleet) and vehicle use								\neg													+		+	-		+	
Fuel supply, storage and distribution	Fuel storage and distribution												-									+				+	+	+-+
Mining	Mine pit operations: blast, shovel and haul								-				-									+		-		-	+-	+
Ore processing	Ore crushing, milling, conveyance and processing		\vdash		\vdash	-+	\rightarrow	\rightarrow	\rightarrow				+			\vdash			\rightarrow	-+	\rightarrow	+	-	+		+	+	++-
Potable water supply	Process and potable water supply, distribution and storage		\vdash		\vdash	-+	-+	\rightarrow	\rightarrow	-+						\vdash			\rightarrow	-+	\rightarrow	+	-	+-	+-	+	+	++
Power supply	Backup diesel generators		\vdash		\vdash	-+	-+	-+	\rightarrow	-+						\vdash			\rightarrow		-+	+				+	+	++-
i ower suppry	Electrical power distribution		\vdash		\vdash		-+	\rightarrow	\rightarrow	-+						\vdash			\rightarrow		\rightarrow	+				+	+	+-+
Processing	Plant operation: mill building, truck shop, warehouse and pipelines		\vdash		\vdash		-+		-+							\vdash	_		\rightarrow			+	-				+-	+++
Processing Procurement and labour			\vdash		\vdash	\rightarrow	\rightarrow	\rightarrow	\rightarrow			_				\vdash			\rightarrow			+	+				+	++-
Procurement and labour	Employment and labour					_		_													_	+	_	_	_	_	+	+
	Procurement of goods and services				\vdash								_			\vdash			\rightarrow	\rightarrow		\rightarrow		_		_	—	+-+
Rail load-out facility	Rail-load out activity (loading of concentrate; movement of rail cars on siding)				\vdash	\rightarrow	\rightarrow		\rightarrow	\rightarrow	-+					\vdash			\rightarrow	\rightarrow		\rightarrow		_			<u> </u>	+-+
Reclamation and decommissioning	Progressive mine reclamation																					\rightarrow				_	<u> </u>	+
Stockpiles	Construction of Non-PAG tailings beaches						\rightarrow		\rightarrow										\rightarrow	$ \rightarrow $		\rightarrow		_			\perp	\downarrow
	Construction of PAG and Non-PAG low-grade ore stockpile																											
	Non-PAG waste rock stockpiling																											
	Overburden stockpiling																											
Tailings management	Reclaim barge and pumping from TMF to Plant Site																											
	South TMF embankment construction																											
	Sub-aqueous deposition of PAG waste rock into TMF																											
	Tailings transport and storage in TMF																											
	Treatment and recycling of supernatant TMF water																											
Traffic	Traffic delivering equipment, materials and personnel to site												-									-				+	<u> </u>	
Waste disposal	Waste management: garbage and sewage waste facilities												-									+				+	+	+-+
Water management	Monitoring and maintenance of mine drainage and seepage					\rightarrow			\rightarrow				+			\vdash			\rightarrow	\rightarrow		+		+		+	+-	++-
	Surface water management and diversions systems including snow stockpiling/clearing								-				-				-					+		-		-	+-	+
Operations 2 Includes the Operations 1 non-m	ining Project Components and Activities, with the addition of these activities:								1	1				1					1				1					<u> </u>
Processing	Low-grade ore crushing, milling and processing					Т														Т							T	
Reclamation and decommissioning	Partial reclamation of Non-PAG waste rock stockpile		\vdash		\vdash		-+	-+	-+							\vdash	-		-+		-+	+	+	+-			+	++
Accumuton and accommissioning	Partial reclamation of TMF tailings beaches and embankments		\vdash		\vdash		-+	-+	-+							\vdash			-+			+					+	++-
Tailings management	Construction of North TMF embankment and beach		\vdash		\vdash	\rightarrow	\rightarrow	\rightarrow	\rightarrow							\vdash			\rightarrow	-+	\rightarrow	+	+	+-		+	+	+
	Deposit of low-grade ore tailings into open pit	-	\vdash		\vdash		-+	\rightarrow	\rightarrow			_				\vdash			\rightarrow		\rightarrow	+	+				+	+-+
Wator management			\vdash		\vdash		-+		-+							\vdash	_		\rightarrow			+	-				+-	++
Water management	Surface water management																											
Closure														1														
Environmental management and monitoring	Environmental monitoring including surface and groundwater monitoring	-	\vdash		\vdash		\rightarrow	\rightarrow	\rightarrow						<u> </u>	\vdash			\rightarrow			\rightarrow	_		_		+	++
	Monitoring and maintenance of mine drainage, seepage, and discharge		\square		\vdash		\rightarrow		\rightarrow			-	_		<u> </u>	\vdash			\rightarrow			\perp		_	_	_	<u> </u>	+
	Reclamation monitoring and maintenance				\vdash		$ \rightarrow $		$ \rightarrow $							\vdash			$ \rightarrow $			\perp				_	<u> </u>	+
Open pit	Filling of open pit with water and storage of water as a pit lake				\square											\square						\perp					\perp	-
Procurement and labour	Employment and labour																										\perp	\square
	Procurement of goods and services																											
Reclamation and decommissioning	Decommissioning of rail concentrate loadout area																											
	Partial decommissioning and reclamation of mine site roads			_		_		_															_					

, ,																							lres		
												pi la										th	ecreational or Aesthetic Featur hysical Activity		
								so .	se		Jse	s an ion;							lity			Vorker Safety and Health	heti	1 7	
		es	ommunity Growth					rest	creational Land U vigable Waters		creational Water Us	vate Land rrent Use of Lands a sources for Traditio							Qua	oise and Vibration		ld F	est	1	
		Tax	ro	A				ommercial Interes	ecreational Land avigable Waters	s	Vat	f La Tra			0	, ave	ч Ч		er (orat	Ś	y an	or A /ity	ealthy Living	
		pu	ty C	sual Quality			e	alI	Wa	nce	الما ا	nd se o for	Δ	6	Us(ultural herita	Iuman Health	у)rinking Water	Vil	ountry Foods	fety	ecreational or A hysical Activity	ealthy Living	~
		le a	uni	Qu		λ	griculture	erci	ble	ater Licenc	tion	rivate Land urrent Use (esources fo	poses haeology	loonfolom	istorical Us		H	Air Quality	ng	pui	y F	r Sa	tion I A	y Li	
		ent	um	lal	raffic	orestry	icul	Jun (reat iga	er l	real	ate ren our	pos hae		tori	hura	nan	Qu	ıki	se a	ntr	lker	real sice	Ith	
Category	Project Components and Activities	kev	Con	/isı	[raf	ore	Agr	Con	keci Vav	Vat	Seci	²riv ⊂urr ≷ese	^{urj}		list		Iur	\ir	Drin	Voi	Cou	Voi	keci 7hy	Hea	
Operations 1 (cont'd)		, H					1						I					ł							
Environmental management and monitoring	Fish habitat offsetting site monitoring and maintenance																								_
Equipment fleet	Mine site mobile equipment (excluding mining fleet) and vehicle use			-		<u> </u>				+				+		-							-	++	—
Fuel supply, storage and distribution	Fuel storage and distribution			1	<u> </u>	<u> </u>				+						-								++	_
Mining	Mine pit operations: blast, shovel and haul									1															
Ore processing	Ore crushing, milling, conveyance and processing					<u> </u>				+															_
Potable water supply	Process and potable water supply, distribution and storage			1	<u> </u>	1	1							+								\rightarrow	+	++	_
Power supply	Backup diesel generators			1	<u> </u>	1	1							+								\rightarrow	+	++	-
11 7	Electrical power distribution			1	<u> </u>	<u> </u>				+						-								++	_
Processing	Plant operation: mill building, truck shop, warehouse and pipelines			1										+		-								++	—
Procurement and labour	Employment and labour			1	<u> </u>	<u> </u>				+						-								++	_
	Procurement of goods and services					<u> </u>				+															-
Rail load-out facility	Rail-load out activity (loading of concentrate; movement of rail cars on siding)					<u> </u>				+															-
Reclamation and decommissioning	Progressive mine reclamation			1										+		-								++	—
Stockpiles	Construction of Non-PAG tailings beaches			1										+		-								++	—
1	Construction of PAG and Non-PAG low-grade ore stockpile					<u> </u>				+															-
	Non-PAG waste rock stockpiling					<u> </u>				+															_
	Overburden stockpiling					<u> </u>				+															_
Tailings management	Reclaim barge and pumping from TMF to Plant Site					<u> </u>				+															-
0 0	South TMF embankment construction					<u> </u>				+															-
	Sub-aqueous deposition of PAG waste rock into TMF									1															
	Tailings transport and storage in TMF																								_
	Treatment and recycling of supernatant TMF water									1															
Traffic	Traffic delivering equipment, materials and personnel to site																								_
Waste disposal	Waste management: garbage and sewage waste facilities					<u> </u>				+															_
Water management	Monitoring and maintenance of mine drainage and seepage									1															
C C	Surface water management and diversions systems including snow stockpiling/clearing																								_
Operations 2 Includes the Operations 1 non-m	nining Project Components and Activities, with the addition of these activities:		1					··				<u>.</u>												<u> </u>	_
Processing	Low-grade ore crushing, milling and processing																								_
Reclamation and decommissioning	Partial reclamation of Non-PAG waste rock stockpile																								_
	Partial reclamation of TMF tailings beaches and embankments																								_
Tailings management	Construction of North TMF embankment and beach																								_
	Deposit of low-grade ore tailings into open pit																								_
Water management	Surface water management																								_
Closure																				·					_
Environmental management and monitoring	Environmental monitoring including surface and groundwater monitoring													Т											_
- 0	Monitoring and maintenance of mine drainage, seepage, and discharge													\top									1		_
	Reclamation monitoring and maintenance													\top											_
Open pit	Filling of open pit with water and storage of water as a pit lake													\top									1		_
Procurement and labour	Employment and labour													\top									1		_
	Procurement of goods and services													\top											_
Reclamation and decommissioning	Decommissioning of rail concentrate loadout area																								_
-	Partial decommissioning and reclamation of mine site roads																								_
		4	-			-				-							-							<u> </u>	_

Category Closure (<i>cont'd</i>)	Project Components and Activities	Climate	Air Quality	Noise Conchemistry	Groundwater Ouality	Groundwater Quantity	Surface Water Quality	Surface Water Quantity	Sediments	Hydrology	Fish Fish Habitat	Benthic Invertebrates	Periphyton	Rare Plants	Ecological Communities at Risk	weutanus Old-growth Forest	Rock Outcrops	Traditional Use Plants	Terrestrial Invertebrates	Amphibians	Migratory Birds Raptors	Bats	Fur-bearers	Large Mammals	Ungulates	Employment and Income Business Opportunities
Reclamation and decommissioning	Decommissioning and removal of plant site, processing plant and mill, substation, conveyor,																					\neg				
0	primary crusher, and ancillary infrastructure (e.g., explosives facility, truck shop)																									
	Decommissioning of diversion channels and distribution pipelines						-					-										+-				+-
	Decommissioning of reclaim barge						-					+					-					+				+-
	Reclamation of Non-PAG LGO stockpile, overburden stockpile and Non-PAG waste rock stockpile																					T				
	Reclamation of TMF embankments and beaches																									
	Removal of contaminated soil																									
	Use of topsoil for reclamation																									
Stockpiles	Storage of waste rock in the non-PAG waste rock stockpile																									
Tailings management	Construction and activation of TMF closure spillway																									
	Maintenance and monitoring of TMF																									
	Storage of water in the TMF and groundwater seepage																									
	Sub-aqueous tailing and waste rock storage in TMF																									
	TMF discharge to T-Creek																									
Waste disposal	Solid waste management																									
Post-Closure																										
Environmental management and monitoring	Environmental monitoring including surface and groundwater monitoring																									$\neg \neg$
	Monitoring and maintenance of mine drainage, seepage, and discharge																									
	Reclamation monitoring and maintenance																									
Open pit	Construction of emergency spillway on open pit																									
	Storage of water as a pit lake																									
Procurement and labour	Procurement of goods and services																									
Stockpiles	Storage of waste rock in the non-PAG waste rock stockpile																									
Tailings management	Storage of water in the TMF and groundwater seepage																									
	Sub-aqueous tailing and waste rock storage																									
	TMF discharge																									

Category Closure <i>(cont'd)</i>	Project Components and Activities	Revenue and Taxes	Community Growth	Visual Quality	Traffic	Forestry	Agriculture	Commercial Interests Recreational Land Use	Navigable Waters	Water Licences	Recreational Water Use	Private Land Current Use of Lands and Resources for Traditional Purposes	Archaeology	Paleontology	Historical Use	Cultural heritage	Human Health Air Oualitv	Drinking Water Quality	Noise and Vibration	 Country Foods	Worker Safety and Health	Recreational or Aesthetic Features	rhysical Activity Haalthy I iving	Healthy Living Community Health
Reclamation and decommissioning	Decommissioning and removal of plant site, processing plant and mill, substation, conveyor,																							
0	primary crusher, and ancillary infrastructure (e.g., explosives facility, truck shop)																							
	Decommissioning of diversion channels and distribution pipelines	<u> </u>							+									+		-				+
	Decommissioning of reclaim barge																	+						
	Reclamation of Non-PAG LGO stockpile, overburden stockpile and Non-PAG waste rock																							
	stockpile																							
	Reclamation of TMF embankments and beaches																							
	Removal of contaminated soil																							
	Use of topsoil for reclamation																							
Stockpiles	Storage of waste rock in the non-PAG waste rock stockpile																							
Tailings management	Construction and activation of TMF closure spillway																							
	Maintenance and monitoring of TMF																							
	Storage of water in the TMF and groundwater seepage																							
	Sub-aqueous tailing and waste rock storage in TMF																							
	TMF discharge to T-Creek																							
Waste disposal	Solid waste management																							
Post-Closure																								
Environmental management and monitoring	Environmental monitoring including surface and groundwater monitoring																							
	Monitoring and maintenance of mine drainage, seepage, and discharge																							
	Reclamation monitoring and maintenance																							
Open pit	Construction of emergency spillway on open pit																							
	Storage of water as a pit lake																							
Procurement and labour	Procurement of goods and services																							
Stockpiles	Storage of waste rock in the non-PAG waste rock stockpile																							
Tailings management	Storage of water in the TMF and groundwater seepage																							
	Sub-aqueous tailing and waste rock storage																							
	TMF discharge																							