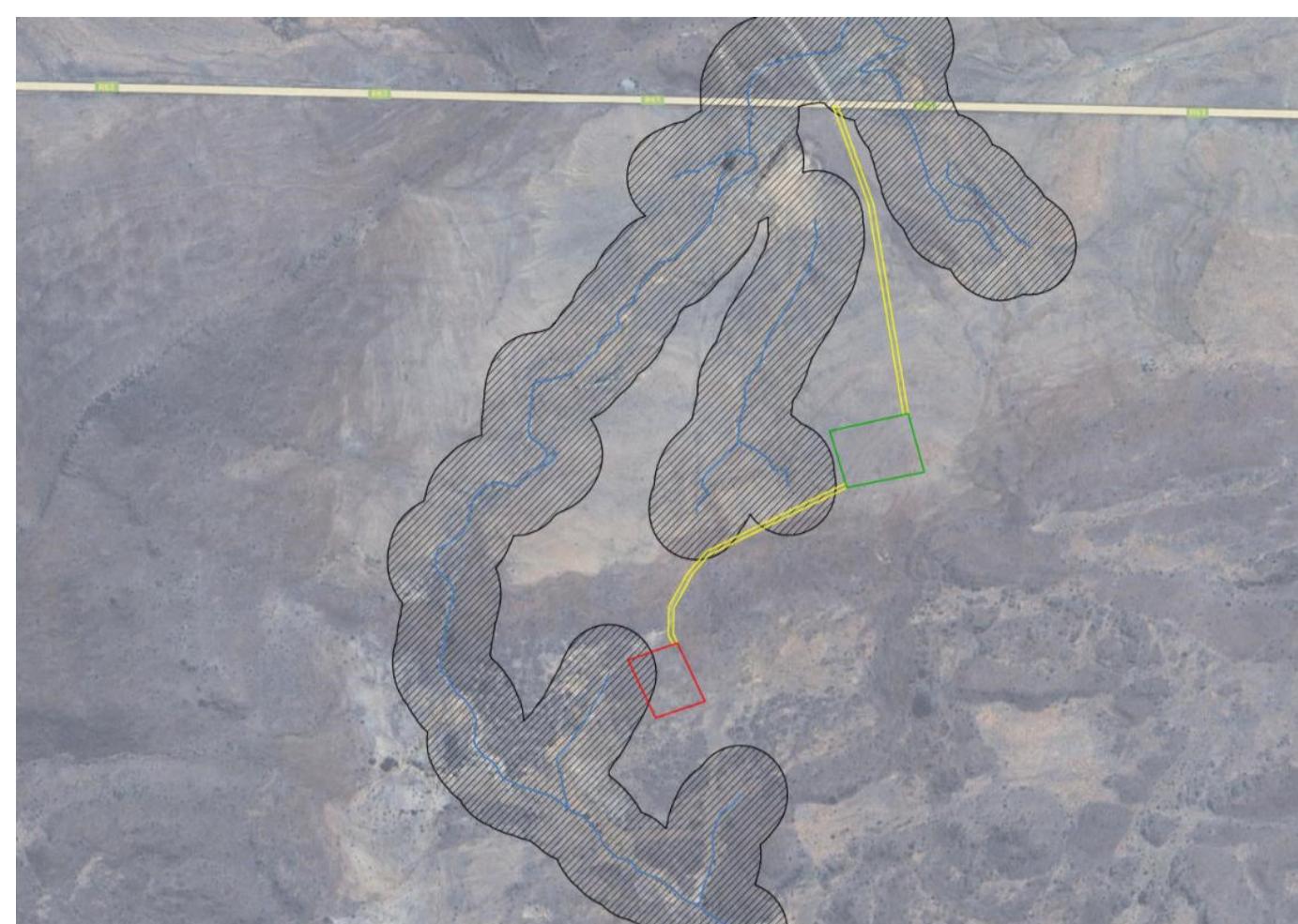


PROJECT: Power Construction Impofu Vingerfontein Quarry

RISK ASSESSMENT MATRIX for Section 21 (c) and (i) Water Use activities (version 2.1.1)

POTENTIALLY AFFECTED WATERCOURSE/S				
Watercourse number	Watercourse name	Watercourse type	PES	EIS
(1)	HGM 1 - Minor drainage lines within 100m of quarry and associated activities such as layodwm and access road	River / Natural channel	B	High
(2)				
(3)				
(4)				
(5)				
(6)				
(7)				
(8)				
(9)				
(10)				



DETAILED PROJECT SPECIFICATIONS:

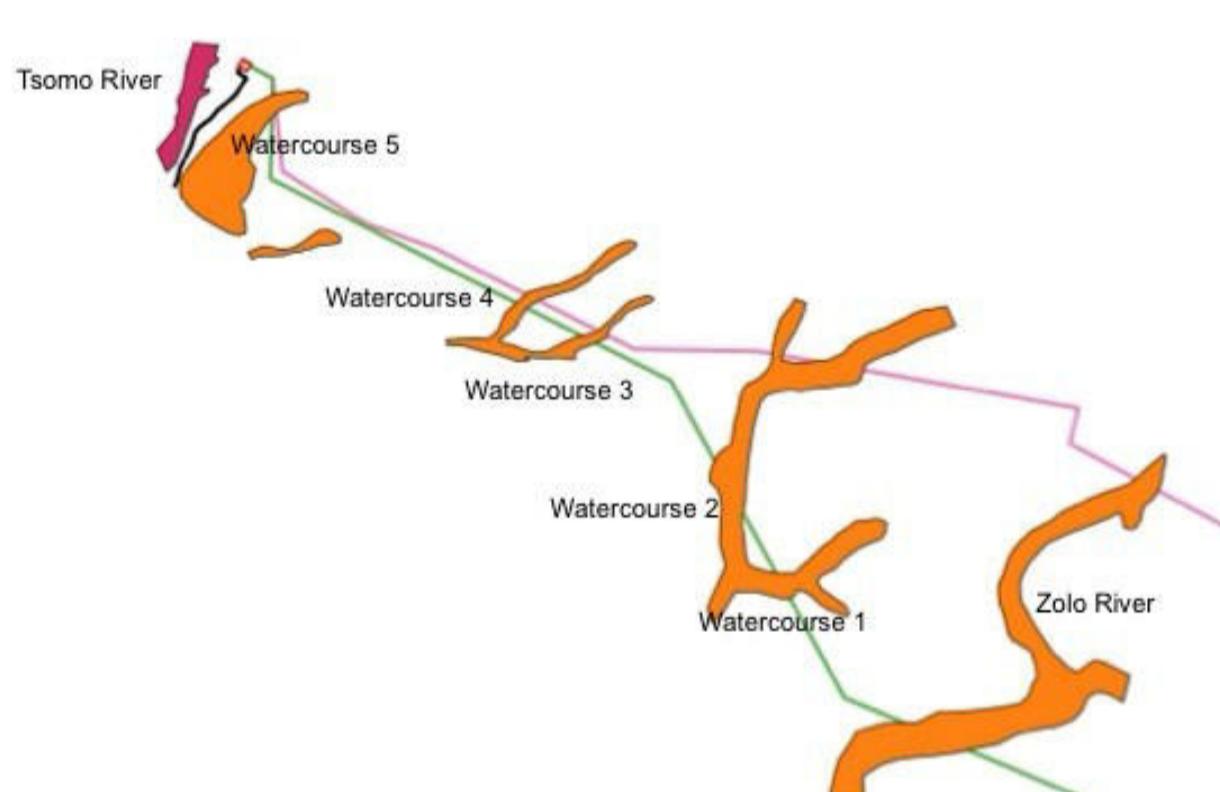
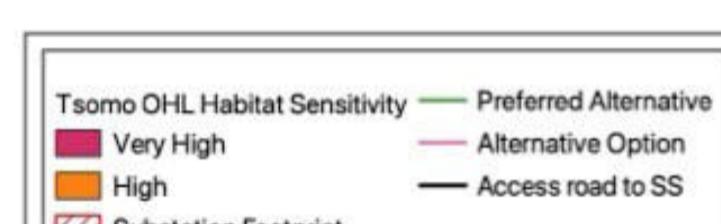
Include detailed project description, including all proposed control measures to prevent/minimise impacts on watercourses

The proposed activitess include the establishment of a quarry for the production of gravel / sand /stone needed for construction - access will be via track off the R63

Clear & Grub Vegetation in Roadway "Corridor"
 Strip 150mm of Topsoil and stockpile in 2 No windrows either side of the proposed roadway.
 Cut to level and Compact insitu Roadbed material.
 Import and process gravel material to construct temporary roadway 5.0m wide riding surface.
 Replace topsoil alongside newly constructed gravel roadway and ensure there is sufficient drainage so as not to cause ponding.
 Periodic maintenance (Wet Blade & Compact) of the gravel roadway will be carried out to ensure a smooth riding surface for vehicles into and out of the envisaged borrow pit.

No access tracks through any watercourses all activities only with the regulated zones (100m)

Chemicals used for construction must be stored safely on site and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early.



0 1 2 km



PROJECT:

Power Construction Impofu Vingerfontein Quarry

RISK ASSESSMENT MATRIX for Section 21 (c) and (i) Water Use activities - Version 2.1.1

Name of Assessor: Dr Brian Colloty

SACNASP Registration Number: 400268/07

Signature: 

Date: 01-Dec-25

Risk to be scored for all relevant phases of the project (factoring in specified control measures). MUST BE COMPLETED BY SACNASP PROFESSIONAL MEMBER REGISTERED IN AN APPROPRIATE FIELD OF EXPERTISE.

Phase	Activity	Impact	Potentially affected watercourses			Intensity of Impact on Resource Quality					Overall Intensity (max = 10)	Spatial scale (max = 5)	Duration (max = 5)	Severity (max = 20)	Importance rating (max = 5)	Consequence (max = 100)	Likelihood (Probability) of impact	Significance (max = 100)	Risk Rating	Confidence level								
			Name/s	PES	Ecological Importance	Abiotic Habitat (Drivers)		Biota (Responses)																				
						Hydrology	Water Quality	Geomorph	Vegetation	Fauna																		
PRE-CONSTRUCTION (DESIGN)	Upgrade of existing track) and site establishment (access control & machinery delivered to site)	Disturbance and clearing of vegetation outside of any watercourses for site establishment, but will create temporary compacted areas that may affect runoff	HGM 1 & 2	B	High	0	0	0	0	0	0	1	1	2	4	8	20%	1.6	L	High								
CONSTRUCTION	Excavation (shallow) of materials, processing and transport to site	Disturbance and clearing of terrestrial vegetation as mining commences. stripped as required. Plant and associated machinery will be used to excavate, process and transport the resources to site. However all works will take place outside any of the watercourses	HGM 1 & 2	B	High	0	0	0	0	0	0	1	1	2	4	8	20%	1.6	L	High								
		Changes to local hydrology to runoff generated by hard surfaces, however with proper stormwater management, as well as no direct connection occurs with the watercourses so this impact is unlikely. This and the borrow-pits don't generate stormwater runoff	HGM 1 & 2	B	High	0	0	0	0	0	0	1	1	2	4	8	20%	1.6	L	High								
		Direct and Indirect accidental spills near aquatic systems due to mining activities mostly from the plant and machines use. Water quality may be affected by various mining activities which include oil and fuel spills, and can influence dissolved oxygen, levels of pH, nitrate, phosphate, total solid, total suspended solids, total dissolved solids, turbidity and	HGM 1 & 2	B	High	0	0	0	0	0	0	1	1	2	4	8	20%	1.6	L	High								
		Loss of any aquatic species of concern, i.e. listed or protected aquatic plant or animal species however none will be impacted upon	HGM 1 & 3	B	High	0	0	0	0	0	0	1	1	2	4	8	20%	1.6	L	High								
OPERATIONAL	Same as the above as this is a mining operation	As above	HGM 1 & 2	B	High	0	0	0	0	0	0	1	1	2	4	8	20%	1.6	L	High								

RISK RATING TABLES [for Risk Assessment Matrix (version 2.0): Section 21 (c) and (i) Water Use Authorisation]

TABLE 1 – ECOLOGICAL IMPORTANCE OF AFFECTED WATERCOURSE/S

What is the ecological importance of the watercourse/s, based on the criteria and guidelines provided below?*

Low EIS; OESAs; presence of species/habitats of Least Concern on the IUCN Red List or on a regional/national Red List and/or species which are common and widespread and/or habitats of low conservation interest	Low = 2
Medium EIS; ESAs; presence of species/habitats listed as VU or NT on the IUCN Red List; or listed as VU or NT on a regional/national Red List	Moderate = 3
High EIS; CBA2; presence of species/habitats listed as EN or CR on the IUCN Red List; or listed as EN or CR on a regional/national Red List	High = 4
Very high EIS; CBA1, NFEPA; presence of species/habitats listed as EN or CR on the IUCN Red List; or listed as EN or CR on a regional/national Red List; KBA or IBA	Very high = 5

* EIS=Ecological Importance and Sensitivity; OESA=Other Ecological Support Areas; IUCN=International Union for Conservation of Nature; ESA=Ecological Support Areas; VU=Vulnerable; NT=Near Threatened; EN=Endangered; CR=Critically Endangered; CBA=Critical Biodiversity Area; NFEPA=National Freshwater Priority Area; KBA=Key Biodiversity Area; IBA=Important Bird Area.

TABLE 2- INTENSITY OF IMPACT

What is the intensity of the impact on the resource quality (hydrology, water quality, geomorphology, biota)?

Negative Impacts	
Negligible / non-harmful; no change in PES	0
Very low / potentially harmful; negligible deterioration in PES (<5% change)	+1
Low / slightly harmful; minor deterioration in PES (<10% change)	+2
Medium / moderately harmful; moderate deterioration in PES (>10% change)	+3
High / severely harmful; large deterioration in PES (by one class or more)	+4
Very high / critically harmful; critical deterioration in PES (to E/F or F class)	+5
Positive Impacts	
Negligible; no change in PES	0
Very low / potentially beneficial; negligible improvement in PES (<5% change)	-1
Low / slightly beneficial; minor improvement in PES (<10% change)	-2
Medium / moderately beneficial; moderate improvement in PES (>10% change)	-3
Highly beneficial; large improvement in PES (by one class or more) and/or increase in protection status	-4
Very highly beneficial; improvement to near-natural state (A or A/B class) and/or major increase in protection status	-5

NOTE: Positive Impacts must be given a negative Intensity Score

*PES of affected watercourses must be considered when scoring Impact Intensity

TABLE 3 – SPATIAL SCALE (EXTENT) OF IMPACT

How big is the area that the activity is impacting on relative to the size of the impacted watercourse/s

Very small portion of watercourse/s impacted (<10% of extent)	1
Moderate portion of watercourse/s impacted (10-60% of extent)	2
Large portion of watercourse/s impacted (60-80%)	3
Most or all of watercourse/s impacted (>80%)	4
Impacts extend into watercourses located well beyond the footprint of the activities	5

TABLE 4 – DURATION OF IMPACT

How long does the activity impact on the resource quality?

Transient (One day to one month)	1
Short-term (a few months to 5 years) OR repeated infrequently (e.g. annually) for one day to one month	2
Medium-term (5 – 15 years)	3
Long-term (ceases with operational life)	4
Permanent	5

TABLE 5 – LIKELIHOOD OF THE IMPACT

What is the probability that the activity will impact on the resource quality?

Improbable / Unlikely	20%
Low probability	40%
Medium probability	60%
Highly probable	80%
Definite / Unknown	100%

TABLE 6: RISK RATING CLASSES

RATING	CLASS	MANAGEMENT DESCRIPTION
1 – 29	(L) Low Risk OR (+) Positive (++) Highly positive	Acceptable as is or with proposed mitigation measures. Impact to watercourses and resource quality small and easily mitigated, or positive.
30 – 60	(M) Moderate Risk	Risk and impact on watercourses are notable and require mitigation measures on a higher level, which costs more and require specialist input. Licence required.
61 – 100	(H) High Risk	Watercourse(s) impacts by the activity are such that they impose a long-term threat on a large scale and lowering of the Reserve. Licence required.

A low risk class must be obtained for all activities to be considered for a GA

TABLE 7: CALCULATIONS AND MAXIMUM VALUES

Intensity = Maximum Intensity Score (negative value for positive impact)	MAX = 5
Severity = Intensity + Spatial Scale + Duration (<Intensity - Spatial Scale - Duration) for positive impact)	MAX = 15 (MIN = -15 for +ve impacts)
Consequence = Severity X Importance rating	MAX = 75
Significance/Risk = (Consequence X Likelihood) X (100/75)	MAX = 100