Ernest Henry: feasibility report.

Name: Class: Date:

One report per team. Fill in each box as you finish its screen: the data, your team's decision and the evidence behind it. Write your recommendation on page 4.

SCREEN 1 The problem

a Team members and roles:

ROLE	NAME
Geologist	
Mining engineer	
Metallurgist	
Environmental scientist	
Community and approvals officer	

b What does the team need to find out before it can recommend anything?

SCREEN 2 Where is the ore?

a Drill log:

HOLE	ORE FROM (M)	ORE TO (M)	COPPER (%)	GOLD (G/T)	NOTES

b Decision: do we know enough about the ore body to estimate how much there is? Why?

SCREEN 3 Is it worth it?

a From the calculator:

	RESOURCE	RESERVE
Ore (million t)		
Copper grade (%)		
Gold grade (g/t)		
Value per tonne of ore ($)		
Our cost per tonne ($)		
Margin per tonne ($)		

b At what cost per tonne would the reserve stop paying, at the prices in the calculator?

c Decision: is the deposit worth a full feasibility study? Why?

SCREEN 4 How to mine it

a Pit model: at what depth to the ore does the waste pass 10 m^3 for each m^3 of ore?

b Decision: open cut, underground, or both? Why?

SCREEN 5 How to process it

a Separating the minerals:

MINERAL	PROPERTY USED	SEPARATION METHOD
Chalcopyrite		
Magnetite		
Coarse gold		
Ilmenite		
Rutile and zircon		

b Decision: our processing plan, and where the concentrate goes. Why?

SCREEN 6 Land, water and air

a Impacts at this site:

SPHERE	IMPACT	EVIDENCE (ERNEST HENRY, MOUNT MORGAN OR MARY KATHLEEN)
Atmosphere		
Hydrosphere		
Biosphere		

b Decision: the biggest risk at this site, and why.

SCREEN 7 How will you know?

a Trigger values and the release:

INDICATOR	TRIGGER VALUE	DOWNSTREAM MEDIAN	UPSTREAM MEDIAN	ACTION
Electrical conductivity				
Turbidity				
Dissolved oxygen				

b Settling pond: how long should the water stay in the pond, and why?

c Decision: what our plan does when a trigger value is passed, and what we will monitor.

SCREEN 8 Who else has a say?

a People and permits:

GROUP OR PERMIT	WHAT THEY NEED OR REQUIRE	OUR COMMITMENT
Mitakoodi and Mayi peoples		
Landholders		
The town		
Mining lease and environmental authority		

b Decision: what we commit to before applying for a mining lease. Why?

SCREEN 9 How it ends

a Decision: what our closure plan promises, and who pays. Use Mary Kathleen, Mount Morgan or Minjerribah as evidence.

SCREEN 10 Our recommendation

a Tick one: ☐ Mine it as planned ☐ Mine it, with conditions ☐ Do not mine it

b Our recommendation, with the three strongest pieces of evidence from the study:

c What happened at Ernest Henry? Which of our decisions would we change, and why?