



## OMAN GREEN AWARDS 2011

### NOMINATION FORM

#### Instructions for completing the nomination form:

1. Please use a separate Nomination Form for each award category.
2. You may attach extra paper as necessary
3. In the event you attach photographs, Statistical Tables and Reports to support your nomination they should be clearly labeled and marked
4. Please note that it is mandatory to provide two independent referees for the Nomination to be considered.

#### Organization Details:

*Organization Name* MAWARID MINING LLC

*Organization Type (Business/NGO/Gov)* BUSINESS

*Website* [www.mawaridmining.com](http://www.mawaridmining.com)

*Location /Address* PO BOX 2749, PC 112, RUWI  
PO BOX 476, PC 321, SOHAR

**Award Category** The Green Innovation Award

#### Project Details:

*Project Title* \_ Tailings Storage facility (TSF)

*Location of Project* Lasail Village in Liwa

*One Line Description of Project* Tailings Storage facility (TSF) was prepared for storage of the Tailings from the Lasail copper concentrator.



### ***Effectiveness***

*What were your goals?*

The objective was 2 fold

1. To reduce dependence on external water resources as much as possible. A key element in the design of Tailings facility is the recovery of process water for reuse in the concentrator.
2. To prevent water table contamination

*How have you measured your success?*

1. Helped reduce dependence on external water consumption. Below is a graph that illustrates the same
2. All samples tested on a regular basis verified that there was no contamination of underground water.



Tailings dam is monitored in monthly basis and a fence is installed around to prevent entry of man and animals.

#### Tailings Dam Rehabilitation:

- On completion of tailings dam, the land form will be shaped in order to divert any future rainfall falling on the impounded to diversion channels away from the impound area.
- Vegetation will be applied on the top of the tailing and it is expected that further seeding of vegetation cover will occur naturally from nearby grasses.
- Monitoring will continue until such time as water samples meet the required standards.

## ***Innovation & Creativity***

*How were innovative methods, strategies or ideas applied?*

Mawarid Mining had a dedicated team of engineers, environmental specialists & hydrological consultants on this project. This Team looked at the suitable site that minimizes any negative impact that may arise. They looked at the best design where minimum energy consumption is required; hence, the use of water decant system was applied to make use of the Gravity forces to drive segregated water outside the dam into the return water ponds

The tailings storage facility has been

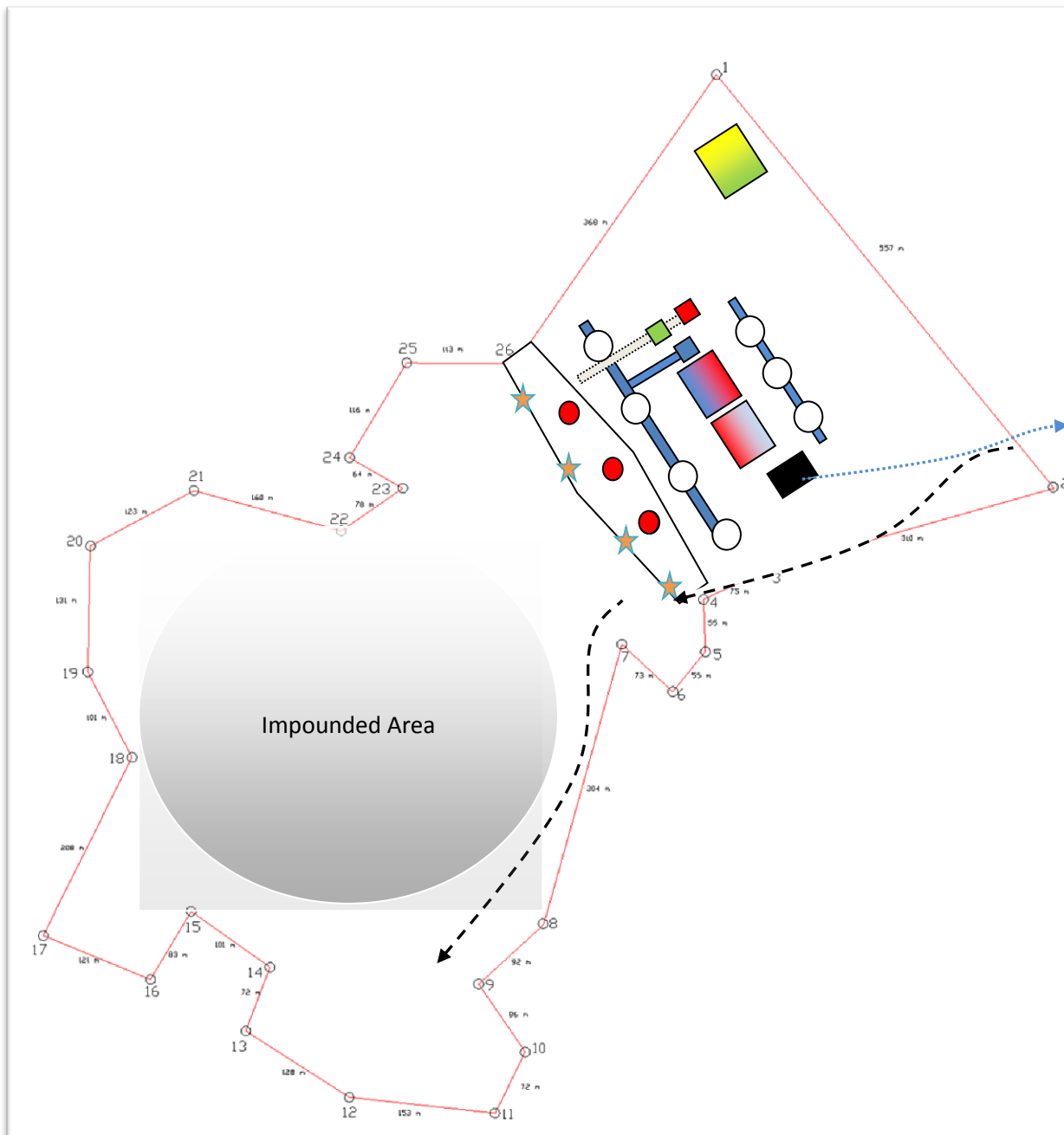
- Located at a suitable site that minimizes potentially negative impacts
- Lined with a 2 & 1.5 mm thick HDPE liner to prevent seepage of process water into the ground.









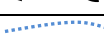

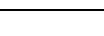


Key aspects of the tailings design and operation includes:

- 20m high earth compacted wall.
- Doubled line HDPE on the dam wall with geofabric membrane feeding “no-fines” concrete
- Collection system in the event a failure in the wall liner occurs
- Moisture sensors
- Three dam wall Piezometers
- Below liner drainage and leak detection called “Tell Tale System” which provides visual detection of leakage
- Above liner drainage system
- 1 x 30m x 30m HDPE Lined Return Water Pond, and additional
- 1 x 20m x 20m Concrete Lined Return Water Pond
- 2 x Tailings Lines
- 1 x Return water Line
- 1 x spigot line
- Power line and substation
- Pump Housing
- Under liner drainage inspection sump
- Over liner drainage inspection sump
- Interception Trench and Inspection sump
- Three downstream monitoring bores “ MW1, MW2 & MW4”
- Spillway designed for over flow emergencies such as flooding.
- Fencing







	Moisture Sensor		Interception Trench
	Peizometer		Interception Sump
	Above Liner Drainage Sump		Interception Inspection
	Below Liner Drainage Sump		Power Station
	Tailings Line		Return Water Pond
	Return Water Line		Return Water Pump
			

## ***Impact***

*How has the project/initiative/work motivated others to contribute to a greener Oman*

**Tailings Storage facility (TSF)**, is a motivation hub for schools students at the region. Schools regular visits are an eye opener for future generations on the importance of Environment in general and water conservation in particular. Also, it adds on to the idea that industries can happen and be profitable without harming their surroundings.

This facility is also a pride to the Ministry of Environment and Climate Affairs is the sense that they were the approval party and monitoring checking authority.

## ***Originality and Leadership***

How has the nominee demonstrated vision, foresight and persistence?

The fact that this project was part of our vision and foresight is evident from the fact that it was built along with the start of our operations in that region and not as an afterthought later.

Being a new project of its kind and for the scale of land required it was not easy to get a buy in from the local community and authorities. However, after a persisting approach to convince all on the benefits of such facility; Mawarid Mining managed to get the go ahead and aggressively proceeded into accomplishing this vision.

## ***Continuity & Sustainability***

*How sustainable is the initiative carried out?*

The facility is a real thing now and we take pride in reserving the use of water in the region. Yet we keep a close monitoring program to make sure our vision is walked through top the end.



Explain how it will be effective in the long term

The long term effects are 2 fold

1. As long as the operation is continuing in that region, it will have least possible effects on the natural resources
2. It will ensure uncontaminated water even if we cease to operate on that region



