

RAPU-RAPU POLYMETALLIC PROJECT MINE REHABILITATION

Rapu-Rapu Minerals, Inc.
Rapu-Rapu Processing, Inc

By:
ENGR. ROGELIO E. CORPUS



PRESENTATION OUTLINE

Project Overview

FMRDP Accomplishment

Current Site Status

Regulatory & Social Responsibility

Conclusion

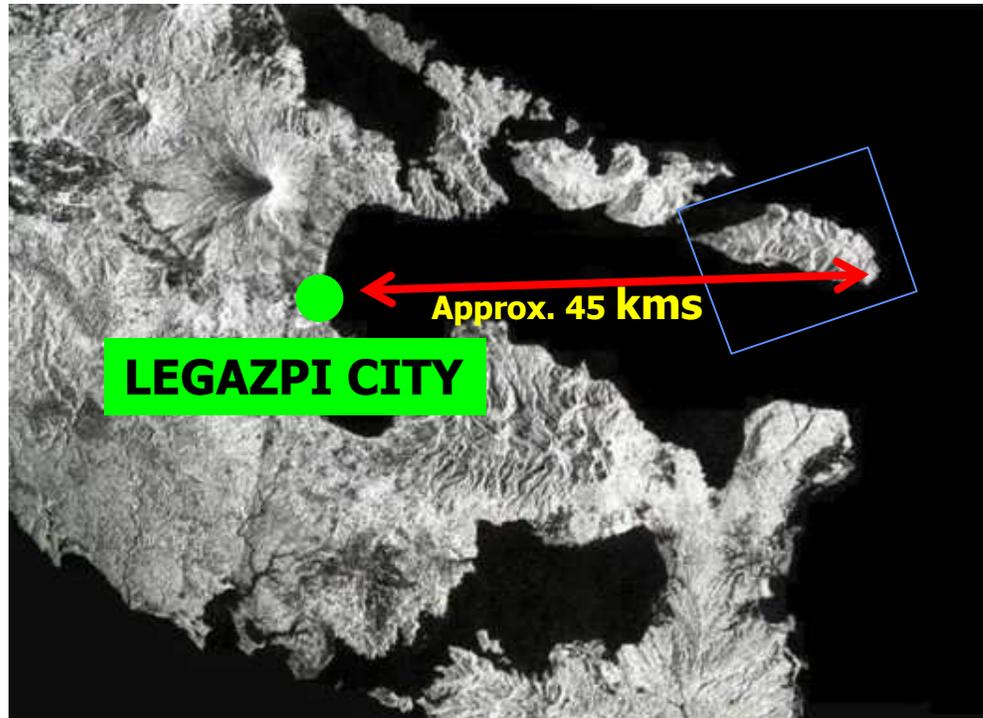


PRESENTATION OUTLINE

- 1 Project Overview
- 2 FMRDP Accomplishment
- 3 Current Site Status
- 4 Regulatory & Social Responsibility
- 5 Conclusion



LOCATION AND ACCESSIBILITY



RAPU-RAPU ISLAND

MINE DEVELOPMENT AREA (180 Hectares)

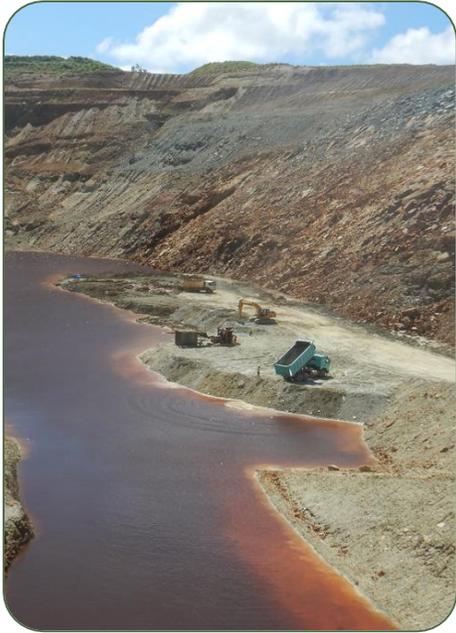


PRESENTATION OUTLINE

- 1 Project Overview
- 2 FMRDP Accomplishment
- 3 Current Site Status
- 4 Regulatory & Social Responsibility
- 5 Conclusion



LAND RECONFIGURATION / RECONTOURING



Backfilling of Open pit
up to 95mRL



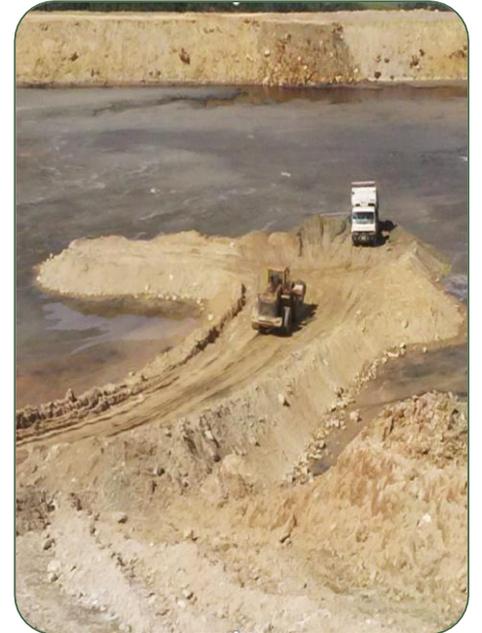
Reconfiguration of
North wall Open pit
to flatter slope



Rehabilitation of Old
SP#1 at
Environmental area

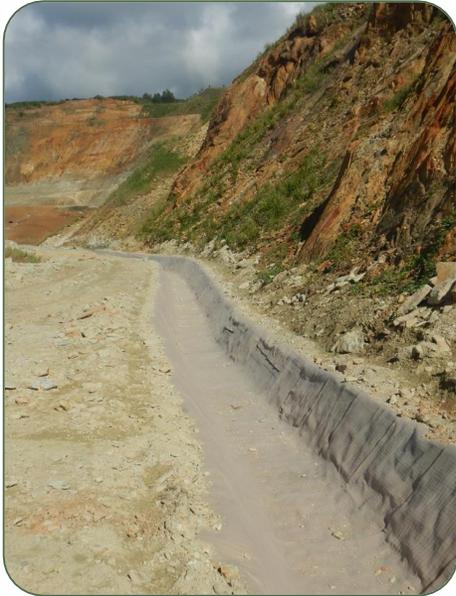


Re-sloping/grading
the embankment of
TSF



Covering the TSF
stored Tailings
surface

DRAINAGE SYSTEM



Geo-con matted ditch prominent in Open pit wall



Geotextile matted ditch prominent at TSF embankment



Open Drain Channel to discharge in-pit water



Concrete canal constructed in all areas with prominent flow of water

WATER TREATMENT FACILITY



Bioreactor

- provides organic carbon and alkali by mixing organic materials with limestone, and removes heavy metals by **Sulfate Reducing Bacteria (SRB)**



Settling Pond

- oxidizes mine drainage by providing oxygen and precipitate heavy metals as hydroxides.



Wetland

- helps remove concentration of heavy metals and neutralize acidic water through its microbial function and plant uptake

CLAY FOR ENCAPSULATION & TOPSOIL FOR VEGETATION



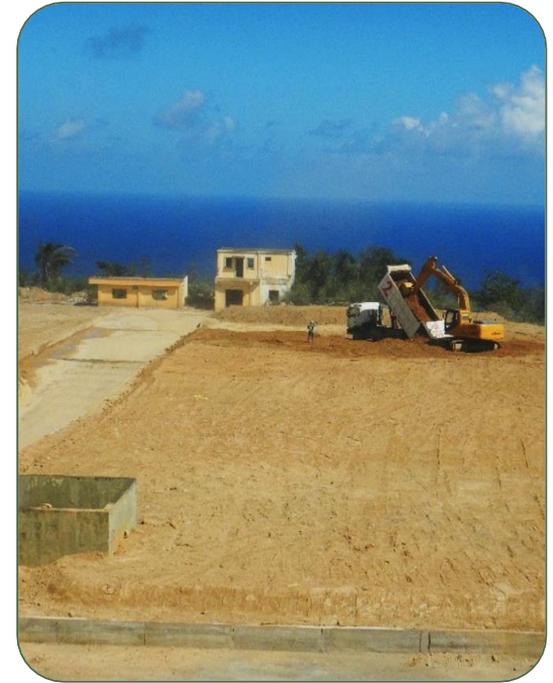
Open pit bottom



Upper and Lower
Tailings Storage Facility



ROMPad Area



Process Plant Area

VEGETATION / PLANTATION



gentle rocky slope as creeping media of plants



Hy



lan

ing to gentle slope



f r

with ladder to unsafe slope

occasionally, some to unsafe slope

Planting various kind of tree-species such as nurse trees (mostly Agoho, Ipil ipil, Madre de Cacao etc.), food and livelihood source trees and other plants that can be beneficial to the community

RECENT ACCOMPLISHMENT

(FINDINGS OF 3rd PARTY AUDITOR)

UPPER
RELIABLE
CAPACITY
TENDRILS
STORAGE
SITE
FACILITY

Poor soil fertility
-highly acidic
-nutrient deficiency

Planting nutrient-fixing
Encapsulating open areas
with clay and topsoil
plants



Agoho



Ipil-ipil



Madre de Cacao



Centrosema



Brachiaria

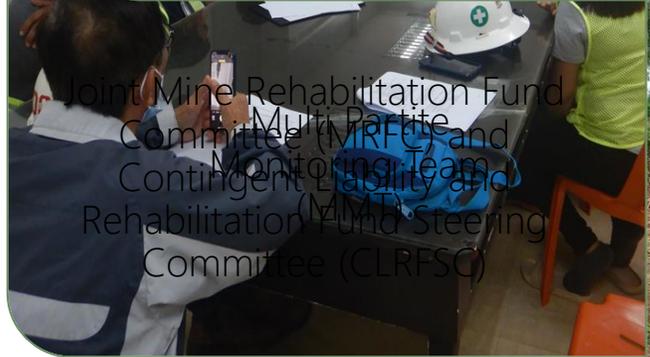


Calopogonium



Reeds

MONITORING & REPORTING



Joint Mine Rehabilitation Fund
 Multi-Partite
 Committee (MRF-C) and
 Monitoring Team
 Contingent Liability and
 Rehabilitation Fund Steering
 Committee (CLRFS-C)

Contingent Liability
 Rehabilitation, Safety
 Environment
 and Steering
 Committee
 (CLRFS-C)

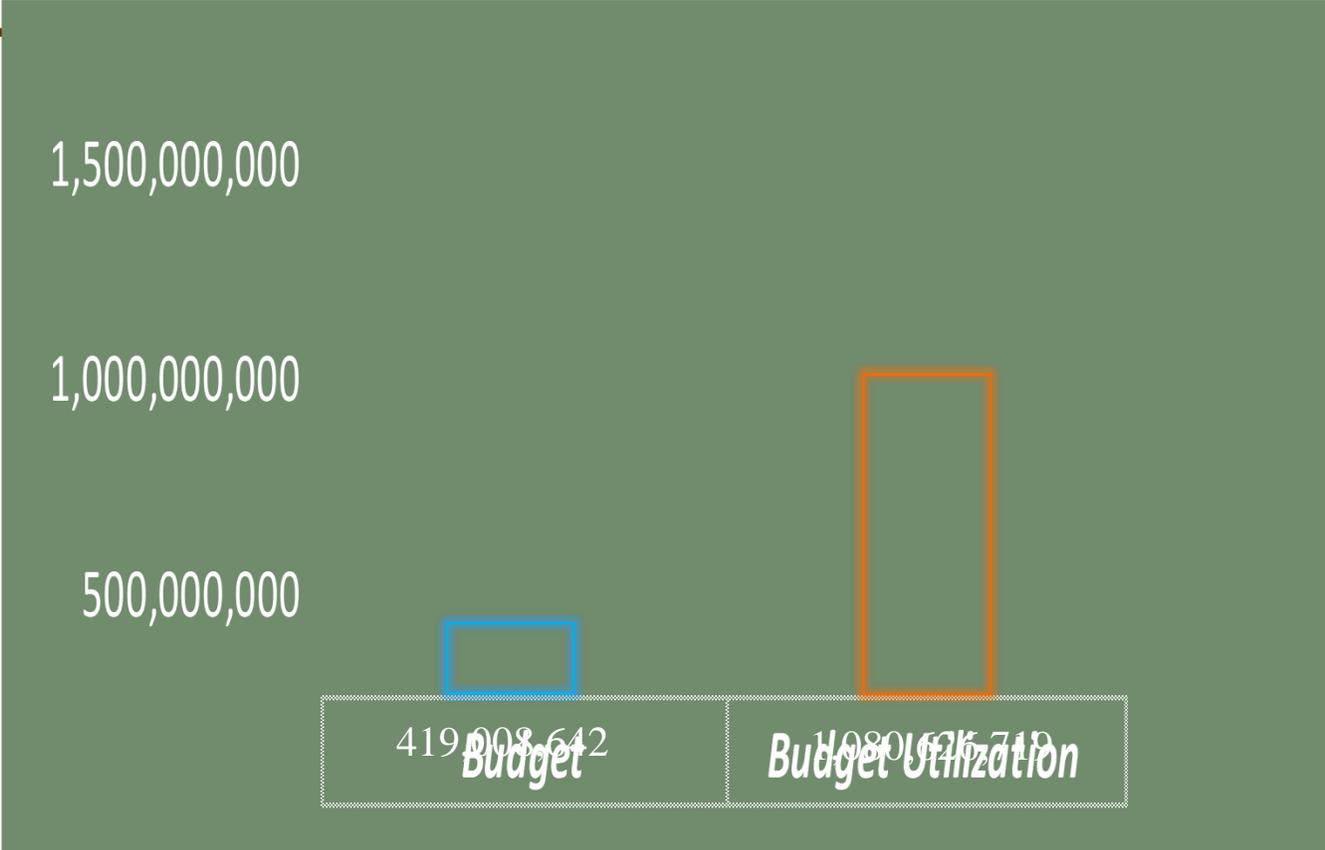
Reporting

Progress/Quality Monitoring

Expert Inspection

FMRDP BUDGET & BUDGET UTILIZATION

- Revisions of RRPP Final Mine Rehabilitation and Decommissioning Plan (FMRDP) had increased the budget from 157 M to 419 M.
- And to date, the total spent amount by the company for the FMRDP implementation has reached over 1 Billion or more than 2 times the set budget



PRESENTATION OUTLINE

- 1 Project Overview
- 2 FMRDP Accomplishment
- 3 Current Site Status
- 4 Regulatory & Social Responsibility
- 5 Conclusion



OPEN PIT

Pit bottom : constructed with main canal, with growing vegetation and plantation, established with circumferential base-berms (B-100 and 105mRL) serving as buttress of upper walls

East side : constructed with Open Drain Channel to where the concrete canal from West pit passes through and with well growing vegetation

North side : flatter benches, toe lines established with Geo-con matted ditches, and with growing vegetation/plantation



AFTER | BEFORE

UPPER TAILINGS STORAGE FACILITY

Embankment : with fully grown vegetation and few-trees, established with Geo-textile and Geo-con matted ditches in each toelines and constructed with main concrete canal

Flat area: with fully grown vegetation and plantation



LOWER TAILINGS STORAGE FACILITY

Embankment : with fully grown vegetation and few-trees, established with Geo-textile and Geo-con matted ditches in each toelines and constructed with main concrete canal

Flat area: with fully grown vegetation and plantation



ROMPAD & PROCESS PLANT AREA

Rompad : with growing vegetation/
plantation and constructed with main
concrete canal and circumferential
Geotextile-matted ditch

Process Plant: with fully grown
vegetation and plantation



ENVIRONMENTAL AREA

Constructed with

Water Treatment Facility

- Bioreactors
- Settling Pond
- Wetlands



AFTER | BEFORE

PRESENTATION OUTLINE

- 1 Project Overview
- 2 FMRDP Accomplishment
- 3 Current Site Status
- 4 Regulatory & Social Responsibility
- 5 Conclusion



SDMP Budget Utilization

- The total shared budget of RRPP for the Social Development and Management Program (SDMP) is Php 225,902,206.39.

YEAR (Operation)	DISBURSEMENT	YEAR (Rehabilitation)	DISBURSEMENT
2005	3,850,000.00	2014-2015	12,415,740.40
2006	5,493,000.00	2016	5,381,641.00
2007	11,400,000.00	2017	2,964,644.49
2008	14,300,000.00	2018	2,488,371.48
2009	13,855,000.00	2019	1,791,950.24
2010	16,053,000.00	2020	5,319,526.66
2011	20,672,000.00	2021	3,305,302.68
2012	56,700,000.00	2022	6,749,590.18
2013	31,681,000.00	2023	6,216,013.36
TOTAL	<u>174,004,000.00</u>	2024	5,265,425.90
		TOTAL	<u>51,898,206.39</u>

TOTAL Php 225,902,206.39

Development of Host and Neighboring Communities (DHNC)

- Supported 441 preparatory & secondary students and 128 tertiary & taking vocational course students from Direct and Indirect impact Barangays

INFRASTRUCTURES
 (Chapel, School, Water supply, Sanitation, etc.)
 HUMAN RESOURCE DEVELOPMENT & INSTITUTION BUILDING



4 Regulatory & Social Responsibility

Development of Mining Technology and Geosciences

- Supported 60 scholars (2013-14) at Bicol University and Partido State University as host institutions

Scholarship awarding and MOA signing with 2 Universities offering Mining Engineering Course



4 Regulatory & Social Responsibility

Information, Education and Communication

Orientations and dialogs with the surrounding communities and visitors at site



COMMUNITY DEVELOPMENT ASSISTANCE PROGRAM (CDAP)

- Corporate Social Responsibility (CSR) Beyond Compliance
- Supported a total of 2,281 scholars

CDAP BAKAWAN (Mangrove Reforestation)

First reforestation under the National Greening Program 2011 of President Aquino
Renovation and Construction of schools buildings and scholarship programs



BUILDINGS/FACILITIES

- Rapu-Rapu Community College
- Basketball court in Rapu-Rapu National High School
- Repair of Mananao Elementary School

CDAP FIAT (Feeding Infants And Toddlers)

Community Based People's Relief Feeding Programs for YAHWEH

Renovation and Construction of Chapels in other communities

REPAIRED CHAPELS

- Chapel of Acal
- Chapel of Mananao.
- Chapel of the Saints in Bacacay, Albay
- Chapel of Viga
- Chapel of Buenavista



PRESENTATION OUTLINE

- 1 Project Overview
- 2 FMRDP Accomplishment
- 3 Current Site Status
- 4 Regulatory & Social Responsibility
- 5 Conclusion



Conclusion

Through the implementation of comprehensive rehabilitation strategies, we have addressed the environmental impacts of mining activities focusing on soil restoration, water quality improvement, biodiversity enhancement and safety.

RRPP will be a show case for the mine rehabilitation using the Bioreactor Technology in combination with the encapsulation strategy to control the generation of the acid mine drainage caused by the sulphide materials.

Moving forward, continued collaboration with the stakeholders, including government agencies and local communities will be essential. By prioritizing ecological restoration and sustainable practices, we aim to transform the site into a model for responsible mining and rehabilitation, contributing to both the environment and the local economy.



Statement of Philippine President, Pres. Ferdinand Marcos, Jr. during the PMIEA Awarding in Malacañang Palace :

“I encourage you to be ambassadors of ***Responsible Mining***. Share your experiences and best practices, not only with your peers but with the next generation of miners, engineers and environmentalists, he said”.

A 200 page Coffee Table Book will be prepared by RRMI/RRPI as a way of sharing our Rapu-Rapu Project Mining and Rehabilitation experiences.