



### Final Conference With MGB on Offshore Mining Guidelines in Reply to their Technical Queries

PREPARED BY:



**ENGR. TAKAZO TOYOSHIMA / JESUS VEROCEL** APRIL 2016





To determine MGB query pertaining to the following:

- Safe Distance or limits from shore line for Offshore and Onshore.
- Concerns on Coastal Erosion
- Sediments Transition
- Effects on aquatic life, tide and/or current direction due to displacement of sand during offshore mining



operation.

- Corporate Social Responsibility and Community

Development



## Per actual experiences of our Experts and Okinawa Kaido of Japan (differential pressure suction system designer), the following are their opinions:





# Safe limits from Shore line for Offshore Mining to avoid erosion





Safe limit or distance from shoreline should be set in order to any of such safety apprehension.

As mentioned in our part 1 by Dr. Felipe Calderon PHD., that a buffer of 500 meters from shore to offshore mining operation is already scientifically enough to safely conduct mining operation without the perceived threats to our shorelines, while the 200 meters buffer onshore is a safe distance already to protect the onshore community, if any.



In Japan, per Engr. Takazo Toyoshima, there is no such buffer zone adapted by its mining policy. On the spot determination is highly dependent on project site situation.



Coastal erosion which is the effect of wearing away and/or removal of land or sand from beaches on the shore line caused by wave action, tidal currents, wave currents and wind.

In this case, once our siphon vessel starts operation and the displacement of sand and saltwater in the process creates craters in the sea bottom which is feared to increase the probability of erosion on the shoreline.



Extensive technical discussions on Coastal erosions have been presented in Part 1 of the Environmentally Safe and Effective Offshore Mining of Minerals.



As mentioned in our part 1 by Dr. Felipe Calderon PHD., that NO aquatic life exist in areas where abundance of Minerals such as Iron ore, Iron Sand and/or PGM and the likes exist.

Also, as per Engr. Takazo Toyoshima, the sand displacement volume conducted during the operation is neglible due to the volume and size of area of operation. Hence, can not affect the flow of current and



tide.

Furthermore, it was likewise emphasized therewith that those offshore mining minerals are not part of the Ocean as they were just deposited offshore by gushing waters from the tall and highly mineralized mountains, hence, removing them through scientific methods and procedures will not cause any environmental or ecological hazards.





As per our Engr. Takazo Toyoshima, corals and aquatic life proliferates in the sea bed but requires sunlight to propagate.

Sunlight can only reach a depth of 10 meters.



Hence, as a standard, the areas below 10 meters depth and/or NO corals and presence of aquatic life within such areas can offshore mining operations be allowed.



#### Sediment Transport





Sediment Transport is the movement of solid particles (sediment) due to gravity acting on the sediment and/or the movement of fluid in which the sediment is enclosed.

In this case, once our siphon vessel starts operation and the return of sand and saltwater after first magnetic separation is made on board. Said sand are then subjected to under current which will be displaced further in the sea bottom from our drop point.





Transition of Sediments can be eliminate by utilizing pollution prevention curtain in the intake as well as exhaust or return line of our offshore siphon vessel.

This is applicable to all offshore Mining operations for minerals like Iron ore, PGM and other related minerals harvested from the sea bed.



See samples on the succeeding slides.



#### Pollution Prevention Curtain:









Vertical Type



## Vertical Type







# Free Standing Type

**JTECH** DEV'T & INNOVATIONS CORP.





## Free Standing Type







## Vertical up and down type







#### Float part Float Float Joint Curtain part

Vertical Up and Down Type

Section A - A











#### Vertical Ups and Downs type







## Vertical type













#### Vertical Intermediate Float type







## Vertical Ups and Downs type











# Wear type (Grid Type)







# Wear type (Rubberize Cloth Type)







## Wear type (Rubberize Cloth Type)



Curtain Only

Curtain and Float Cover type



# **Rectifying Effect**



Wide flow rate become uniform flow, velocity is reduced and pollutant particles stop spreading by placing a curtain and to settle within the area of the curtain



# **Rectifying Effect**



Pollutant particles that did not settle to reach precipitation is accelerated by being retained in curtain entourage.



# Effects on Aquatic Life, tide or Current Direction Due to displacement of Sand during Offshore Mining





# **Corporate Social Responsibility** (CSR) and Community Development Programs Have to be included in **Offshore Mining Operation and** Policy





Offshore Mining corporations should have their own corporate Social responsibility and Community Development programs that addresses the effects of their operations on the environment and social well being not only of their and the community where they are operating.

Their efforts should go beyond what are required by the regulators or environmentalist groups.





## Conclusion of experts:

Finally, adherence to all existing guidelines, adherence to these operational guidelines and a keen and forceful CSR and Community Development program can provide us with environmentally safe, community friendly and effective mining for mineral resources of the country. PROVIDED, all guidelines contained herewith are strictly followed and implemented by the prospective offshore mining operator/s, governing bodies (MARINA/DENR), by the industry and by independent private sector watchdogs.





Engr. Takazo Toyoshima



Jesus Verocel