Certificate and Consent of Accredited Competent Person for Publication of Excerpt of the Report and Compliance Statement with the Philippine Mineral Reporting Code

Pursuant to the requirements of the PSE's Consolidated Listing and Disclosure Rules, as amended or supplemented, and PMRC 2007 Edition

Report name

SUPPLEMENTAL REPORT on the Results of Exploration and Mineral Resource Estimates for JDVC Resources Corporation prepared by CP Rafael R. Liwanag dated 15 August 2015

Prepared for JDVC Resources Corporation

On magnetite sand deposits within the 1,897.0242 hectares of offshore area covered by MPSA 338-010-II-OMR Amended A located at Municipalities of Buguey and Gonzaga, Province of Cagayan

Prepared on 30 April 2021

The information in this report that relates to the re-assessment of the Exploration Results and Mineral Resources Estimate is based on the information compiled and assessed by Mr. Rafael R. Liwanag, an Accredited Competent Person in Geology and member of the Geological Society of the Philippines. From the time such report was prepared on 15 August 2015, the area coverage of MPSA 338-010-II-OMR has undergone parcelization and relinquishment such that the tenement holding of JDVC Resources Corporation (JDVC) has been modified into MPSA 338-010-II-OMR Amended A covering an area of 1,897.0242 hectares as duly approved by the Department of Environment and Natural Resources (DENR) upon the recommendation of the Mines and Geosciences Bureau (MGB).

In adherence to absolute transparency, the company felt the need to review the Mineral Resource Estimates and delineate the mineral deposits occurring within the amended MPSA.

I, Ramon N. Santos, an Accredited Competent Person in Geology, a member of the Geological Society of the Philippines, and with sufficient experience relevant to the style of mineralization was commissioned by JDVC to study and prepare this Supplementary Report that will clearly define and estimate the Mineral Resource within MPSA 338-010-II-OMR Amended A.

As preparer of the report above cited, I consent to the release and public filing of this report, extracts here from, or a summary of this report for the purposes of JDVC's compliance with pertinent regulations and requirements.

I certify that I am an independent consultant of JDVC Resources Corporation and I do not hold any corporate position in the company, nor any shares, options and/or warrants, tenement rights, which may have a bearing on the disclosure.

Issued this 6th day of May 2021 in Quezon City, Metro Manila.

Ramon N. Santos
Accredited Competent Person in Geology
ACP Accreditation No. 14-05-02
PRC Registration No. 00834

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Page No. 48
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Series of 2021

SUPPLEMENTAL REPORT

on

the Results of Exploration and Mineral Resource Estimates
for JDVC Resources Corporation
prepared by CP Rafael R. Liwanag
dated 15 August 2015

covering 1,897.0242 hectares of offshore area
denominated as MPSA 338-010-II-OMR Amended A
located at Municipality of Gonzaga, Province of Cagayan

Prepared for
JDVC Resources Corporation

By Ramon N. Santos
Accredited Competent Person in Geology

May 2021

Executive Summary

This technical report was commissioned by JDVC Resources Corporation (JDVC) to provide more detailed description and estimation of the mineral resource of the magnetite sand deposits within the 1,897.0242 hectares defined as MPSA 338-2010-II-OMR-Amended A as supplement to the PMRC Report prepared in August 2015 by ACP Rafael R. Liwanag, which covered 4,999.2358 hectares of explored portion of the original 14,240 hectares held by JDVC under MPSA 338-2010-II-OMR. Due to the approval of the parcelasation and relinquishment of certain portion of the original mining tenement, MPSA 338-2010-II-OMR-Amended A was finally defined in the official records of the MGB-DENR to cover an area of 1,897.0242 hectares.

MPSA 338-2010-II-OMR-Amended A is located at least 15 kilometers offshore near the boundaries of the municipal waters of Buguey, Gonzaga and Sta Ana, Cagayan Province. Upon acquisition of the property in 2011, JDVC implemented a systematic exploration program consisting of geophysical surveys involving magnetic anomaly mapping, seismic reflection profiling and bathymetric survey followed by confirmatory diamond drilling at 2,000m spacing.

The seismic reflection survey involved 270 survey points along the generally North-South traverse lines which are 500m apart and East-West traverses at 1,000m spacing. The data obtained were used to establish the profiles of the underlying seabed and determine the consistency of the magnetite bearing horizons.

The bathymetric survey using a dual frequency Teledyne Echotrac MK-III high precision echo sounder consisted of 452 line-kilometers traverse, supplemented by additional discrete bathymetric measurements. The bathymetric contours and 3-D rendering of the seabed were obtained using Surfer V.11 software.

The diamond drilling program completed eleven (11) drill holes with depth ranging from 5m to 22 m but only six (6) are located inside MPSA 338-2010-II-OMR Amended A. The estimation of the Minerals Resource used the physical analysis of the cores from these six drill holes conducted at the Petrolab facility of the Mines and Geosciences Bureau (MGB) using Dings David Tube (DDT) to separate the magnetic fraction.

The conventional polygon method was used in the recalculation of the minerals resources as it is deemed as the most practical and applicable in the given situation where the data are derived only from six (6) drill holes. This is also the method used in the PMRC Report of ACP Raffy Liwanag and by the Validation Team of MGB, thus using the same method will enable the comparison of the three estimates of the Mineral Resource.

The indicated Mineral Resource was estimated by constructing polygons around drill holes to measure the amount of ore within the area of influence of the samples. The polygons boundaries were defined by straight lines representing the perpendicular bisector between drill hole pairs, boundary lines of the tenement, and arc segment limiting the area of influence of the samples to 1,500m. However, in one instance, contour lines were used to clip the boundaries of the polygon in the area that is steeply dipping.

The estimate of the volume of the Indicated Mineral Resource in this study is about 1% higher than the estimate of the MGB Validating Team and 5% lower that the estimate of ACP Liwanag. Thus the estimated Indicated Mineral Resource reported in this study is in conformity with the previous estimations done by ACP Liwanag and the MGB Validating Team. The differences are acceptable considering that all these are only estimates that have inherent variability. In addition, the variance could be attributable in the dissimilarity in the design of the polygons, differences in the software used to measure the areas of influence and assumptions applied. For instance, ACP Liwanag did not apply any cut-off grade on the premise that selective mining is not feasible while the MGB validating Team applied a 5%MF cut off grade and 90% recovery.

The implementing rules and regulation of PMRC 2007 provides that zero cut off grade is not allowed in the estimation of mineral resources; hence this writer supports the use of the 5%MF cut-off grade. However, the application of a recovery factor should be based on mining plan and operational parameters and more suitable in the estimation of the Ore/Mineral Reserves rather than Mineral Resource that relies mainly on geologic information and confidence.

Applying the same specific gravity of ore of 1.69 on the volume of magnetite sand deposits derived from the conventional polygon method, this study arrived at an estimated Indicated Mineral Resource of 527 Million DMT of magnetite deposits containing an average of 26% Magnetic Fraction. Some of the mineral resource previously included as Indicated Mineral Resource in the PMRC report of ACP Liwanag but have been determined as beyond a maximum 'area of influence' of samples at 1,500m radius, have been re-classified as Inferred Mineral Resource in this report on the basis of the interpreted seismic profiles that consistently indicate the continuity of the magnetite bearing horizons. The estimated Inferred Mineral Resource is 26 Million metric tons with average grade of 23% MF.

Based on the foregoing, it is the conclusion in this report that the estimated Indicated Mineral Resource of magnetite sand deposits within the 1,897.0242 hectares covered MPSA 338-2010-II-OMR-Amended A amounts to 575 Million DMT containing an average grade of 26% MF. The Inferred Mineral Resource is estimated at 23 Million DMT with average grade of 23%MF.

It is worth mentioning that the available drill holes data did not provide any indication on the bottom limit of the magnetite deposits. It is therefore recommended that in the succeeding exploration works intended to upgrade the current estimated Indicated and Inferred Mineral Resource either into Measured Mineral Resource or Ore/Mineral Reserves, the in-fill drilling program should be designed to reach the deeper horizons, possibly down to the acoustic basement.

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1. INTRODUCTION

1.1. Purpose for which this Report was Prepared

This technical report was commissioned by JDVC Resources Corporation (JDVC) as represented by Mr. Alejandro Cruz-Herrera to provide more detailed description and estimation of the mineral resource of the magnetite sand deposits within the 1,897.0242 hectares defined as MPSA 338-2010-II-OMR-Amended A. This Report is not intended to supersede the report on the results of explorations and mineral resources estimation prepared in August 2015 by Mr. Rafael R. Liwanag, an accredited Competent Person in Geology, which covered 4,999.2358 hectares of explored portion of the original 14,240 hectares held by JDVC under MPSA 338-2010-II-OMR. However, due to the parcelasation of the whole PMSA area and relinquishment of certain portion of the mining tenement, the holdings of JDVC was reduced to MPSA 338-2010-II-OMR-Amended A that has an area of 1,897.0242 hectares. The purpose of this report is to clarify and validate the Mineral Resources contained within this smaller area of MPSA 338-2010-II-OMR-Amended A.

1.2. Location and Accessibility of the Project Area

The area covered by MPSA 338-2010-II-OMR-Amended A is the eastern segment of the original MPSA 338-2010-II-OMR. **Figure 1** shows the location of the original MPSA with respect to the municipal waters of the closest municipalities. MPSA 338-2010-II-OMR-Amended A is indicated by the dark boundaries located near the municipal waters of Buguey, Gonzaga and Sta Ana.

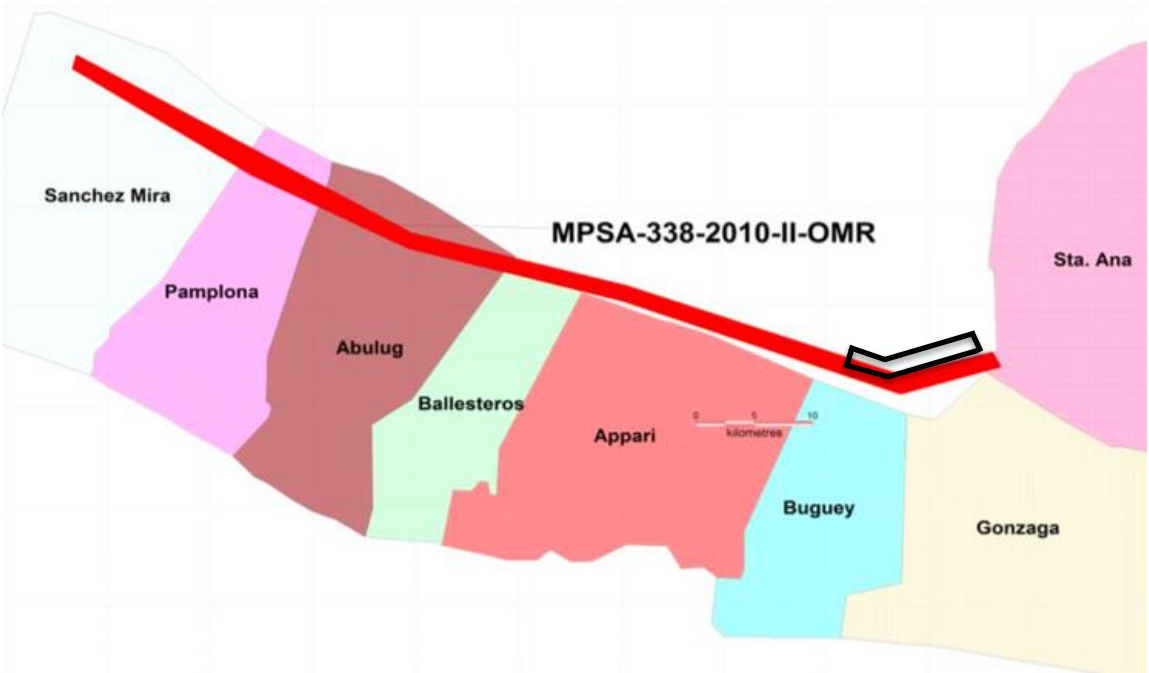


Figure 1. Location Map of MPSA 338-2010-II-OMR.

With respect to the nearest coastlines and major landmarks such as Port Sta Ana, the distances as measured by Google Earth are provided in Figure 2. As can be seen, the tenement area is at least 15km away from the nearest coastline of Cagayan Province.

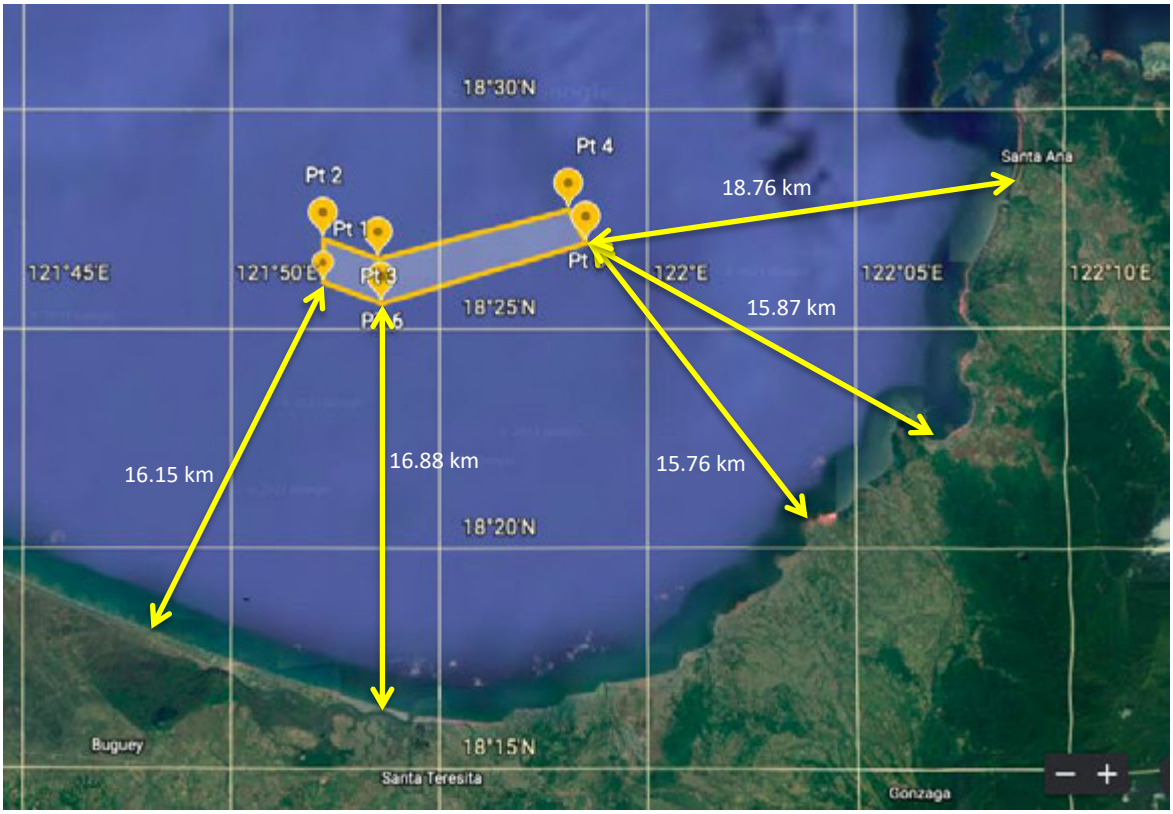


Figure 2. Proximity of the Tenement area to the coastline.

Motorized boat or any marine vessel can reach the tenement area. Travel to the portion of the tenement area directly from the nearest coastline usually takes 1.5 hours. Aparri and the adjacent municipalities of Buguey and Gonzaga are accessible from Manila via commercial airlines to Tuguegarao City and thence by land via private cars, express utility vans (EUV) or buses. Travel time from Tuguegarao is 2 to 3 hours. Tuguegarao is 483 kilometers from Manila and is connected though the Maharlika Highway, also known as the Cagayan Valley Road that runs parallel to Cagayan Rover. There are commercial buses that travel directly from Manila to Aparri on a regular basis. Travel by land either by commercial buses or private car from Manila usually takes 12 to 14 hours.

1.3. Disclaimers and Limitation of the Technical Report

Although this report involves the re-assessment of the estimated mineral resources within the modified MPSA 338-2010-II-OMR-Amended A, it is not the coverage to this study to re-check and validate the integrity and accuracy of the available exploration data. Both ACP Liwanag and the Validating Team of MGB have already accomplished that.

In the course of reviewing the previous reports, diligent efforts were made to search for additional data pertaining to the tenement. Unfortunately no additional data was found that could augment the limited exploration data, hence this assessment is constrained to use same data set used by ACP Liwanag and the MGB Validation Team.

The quality of the information, conclusions and estimates contained herein is consistent with the intended level of accuracy as set out in this report, as well as the circumstances and constraints under which this report was prepared.

This report contains the professional opinion of the consultant as to the matters set out herein, using his professional judgment and acting in accordance with the standard of care and skill normally exercised by professional consultants providing similar services in similar circumstances and comparable locations. No other expressed or implied warranty is made as to the professional advice contained in this report.

In addition, it is recognised that the passage of time affects the information and assessment provided in this Document. The opinions expressed herein are based upon information that existed at the time of the production of the Document. It should be understood that opinions on the actual conditions at the time of the study couldn't be used to assess the effect of any subsequent changes in the quality of the site, or its surroundings, or any laws or regulations.

This Document was prepared for sole use by JDVC and is confidential to it and its professional advisers. Any use which a third party makes of this Document, or any reliance on or decisions to be made based on it, is the responsibility of such third parties. The writer of this report accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this Document.

2. TENEMENT AND MINERAL RIGHTS

2.1. Description of Mineral Rights

The mining tenement currently held by JDVC Resources Corporation is a Mining Production Sharing Agreement (MPSA) with the Republic of the Philippines denominated as MPSA No. 338-2010-II-OMR-Amended A covering an area of 1,897.0242 hectares. The MPSA (exploration) was approved on June 9, 2010 and has a validity period of 25-years, renewable for a like period. The technical descriptions of the corner points bounding the MPSA area are shown in **Table 1** while the plot using Google Earth is shown in **Figure 3**.

Table 1 –Corner Points of MPSA No. 338-2010-II-OMR-Amended A.

Corner Points	Latitude	Longitude
1	18° 26' 03.97"	121° 52' 12.97"
2	18° 27' 02.73"	121° 52' 13.07"
3	18° 26' 36.24"	121° 53' 32.28"
4	18° 27' 42.84"	121° 58' 06.24"
5	18° 26' 57.48"	121° 58' 31.44"

6	18° 25’ 35.04”	121° 53’ 36.96”

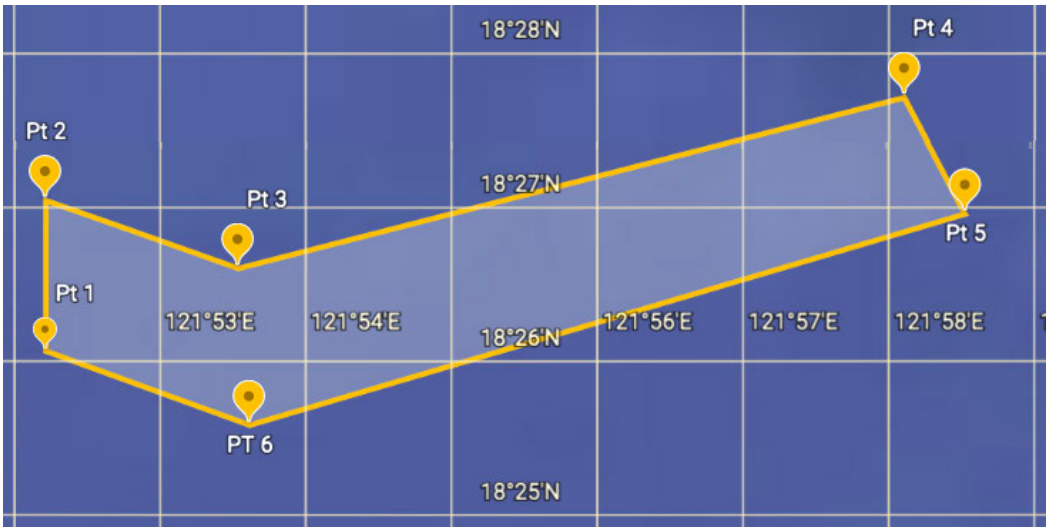


Figure 3. Plot of the corners defining the MPSA area.

The Tenement area is about 11 kilometers in length with average width of 1.7 kilometers. The distances between the corner points of the MPSA 338-2010-II-OMR-Amended A are summarized in **Table 2**.

Table 2. Dimensions of the MPSA boundaries

Boundary Segment	Distance, meters
Pt 1 to Pt 2	1,800
Pt 2 to Pt 3	2,463
Pt 3 to Pt 4	8,306
Pt 4 to Pt 5	1,579
Pt 5 to Pt 6	8,990
Pt 6 to Pt 1	2,620
Pt 3 to Pt 6	1,892

2.2. History of Mineral Rights

On 9 June 2010, MPSA 338-2010-II-OMR covering an area of 14,240 hectares located in Sanchez Mira, Pamplona, Abulug, Ballesteros, Aparri, Buguey and Gonzaga, Province of Cagayan was issued to Bo Go Resources Mining Corporation (BGRMC).

By virtue of a Deed of Assignment (DOA), the MPSA was transferred to JDVC Resources Corporation (JDVC) on 25 November 2011. The DOA was registered at MGB Regional Office II on 27 January 2012 and approved by the then DENR Secretary Ramon Paje on 25 January 2013.

On 2 May 2016, JDVC issued a DOA over a portion of the PMSA area containing 2,400 hectares to San Lorenzo Mines, Incorporated. The DENR approved the DOA on 20 May 2016

and naming that portion as MPSA No. 338-2010-II-OMR-Amended B. The remaining area was renamed as MPSA No. 338-2010-II-OMR-Amended A.

Shortly thereafter, on 25 May 2016, JDVC filed a partial Declaration of Mining Project Feasibility (DMPF) over 4,999.2358 hectares within MPSA No. 338-2010-II-OMR-Amended A. The partial DMPF is based on the Report on the Results of Mineral Exploration and Mineral Resources Estimates prepared by accredited Competent Person in Geology, Mr. Rafael R. Liwanag dated 15 August 2015.

Then on 29 June 2016, JDVC issued a DOA in favor of Catagayan Iron Sand Mining Resources Corporation (CISMRC) over 3,263 hectares, another DOA for Catagayan Mining Resources (Phils.), Incorporated (CMRPI) over 1,453 hectares, and another DOA for Cagayan Ore Metal Mining Exploration Corporation (COMMEC) for 2,173 hectares, all within MPSA No. 338-2010-II-OMR-Amended A. MGB Regional Office No. II forwarded the three DOAs to MGB Central Office on 20 December 2016.

In the meantime, on 14 March 2017, JDVC relinquished 3,161.8392 hectares to the government.

On 1 August 2017, MGB CO returned the three (3) DOAs to MGB Regional Office NO. II for revision. Consequently on 9 August 2017, the area coverage of the DOAs were changed from 3,263 hectares to 3,182.7840 hectares for Catagayan Iron Sand Mining Resources Corporation; from 1,453 hectares to 1,448.5057 hectares for Catagayan Mining Resources (Phils.), Incorporated; and from 2,173 hectares to 2,149.8469 hectares for Cagayan Ore Metal Mining Exploration Corporation. The three DOAs were duly registered with the MGB R-II on 2 April 2018.

The partial declaration of Mining Project Feasibility was finally approved on 6 August 2019.

The MGB R-II then forwarded the DOAs to MGB CO on 23 June 2020 and on 14 July 2020, MGB Director Moncano recommended to DENR Secretary the approval of the three DOAs. Finally, the DENR Secretary approved the DOAs on 25 November 2020 and redefined and subdivided MPSA 338-2010-II-OMR-Amended A into:

Holder	MPSA No.	Area, has.
JDVC Res. Corp.	MPSA 338-2010-II-OMR-Amended A	1,897.0242
CISMRC	MPSA 338-2010-II-OMR-Amended C	3,182.7840
CMR(Phils.), Inc.	MPSA 338-2010-II-OMR-Amended D	1,448.5057
COMMEC	MPSA 338-2010-II-OMR-Amended E	2,149.8469

Thus, effective on 25 November 2020, the area coverage of MPSA 338-2010-II-OMR-Amended A has been reduced officially to 1,897.0242 hectares.

3. MINERAL EXPLORATION

3.1. Previous Exploration Works

As cited by ACP Raffy Liwanag in his Comprehensive Report (2015), various entities have undertaken exploration works over the area and vicinities. The first documented exploration activity was an offshore survey undertaken in 1969 by Anglo-Philippine Oil and Mining Corporation that resulted in the confirmation of the presence of magnetite sand deposits. From 1971 to 1979 the Mines and Geosciences Bureau (MGB) conducted mineral verification surveys of Sanchez Mira, Ballesteros and Gonzaga. The studies resulted in the verification of the occurrence of magnetite deposits, characterization of the profile, determination of the thickness of the magnetite–bearing layers and delineation of the potential magnetite sand accumulations.

When BGRMC was granted the original Exploration Permit under MPSA 338-2010-II-OMR, the initial geological exploration it conducted consisted of underwater sampling by scuba divers that obtained samples of the seabed surface by manual digging using shovel. The company also undertook random sampling at the beaches and reportedly diamond drilling. Unfortunately the results of such exploration program cannot be found in the available literature. Apparently the activities produced favorable results that motivated BGRMC to proceed in converting the EP to an MPSA.

3.2. Exploration Works by JDVC

After the property was transferred to JDVC in 2011, a more systematic exploration program was implement that consisted of geophysical surveys involving magnetic anomaly mapping, seismic reflection profiling and bathymetric survey; exploratory diamond drilling at 4,000m spacing and confirmatory drilling at 2000m spacing.

The seismic reflection survey involved 270 survey points along the generally North-South traverse lines which are 500m apart and East-West traverses at 1,000m spacing (**Figure 4**). The data obtained were used to establish the profiles of the underlying seabed and project the possible consistency of the magnetite bearing horizons.

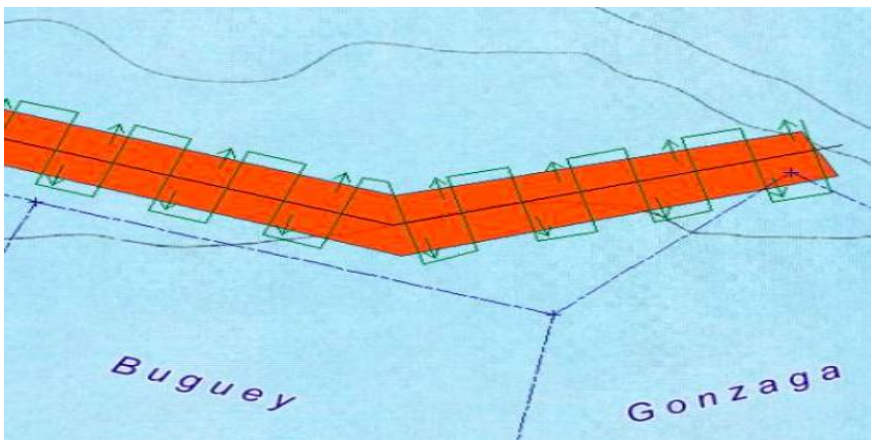


Figure 4. Traverse lines of the Seismic Reflection and Bathymetric surveys.

The bathymetric survey was conducted using a dual frequency Teledyne Echotrac MK-III high precision echo sounder set at frequencies of 200 KHz and 33 KHz. The traverse consisted of 452 line-kilometers that were supplemented by additional discrete bathymetric measurements. The bathymetric contours and 3-D rendering of the seabed were obtained using Surfer V.11 software. **Figure 5** shows the submarine topography of the area covered by MPSA 338-2010-II-OMR Amend A.

The diamond drilling program was designed based on the results of the geophysical surveys. A total of eleven (11) drill holes were completed with depth ranging from 5m to 22 m. Only six (6) of the drill holes are located inside the 1,897 hectares of MPSA 338-2010-II-OMR Amended A. The other five (5) shallow holes are located outside the 1897-hectare property of JDVC but inside the original 4,999-hectare exploration area.

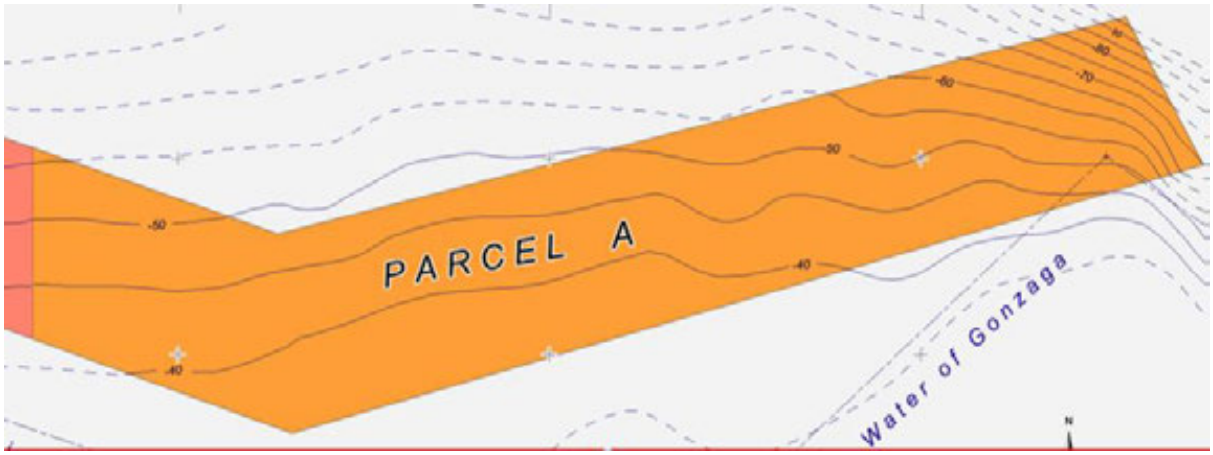


Figure 5. Bathymetric map of MPSA 338-2010-II-OMR Amended A.

4. MINERAL DEPOSIT DATA AND INTERPRETATION

4.1. Interpretation of Seismic Reflection Data

The interpretation of the seismic reflection data showed that the unconsolidated sediments deposited over the tenement area could be subdivided into four (4) units designated as Unit 1, Unit 2, Unit 3 and Unit 4. Unit 1 is the topmost layer and therefore the youngest unit, which is still subjected to sea current that results to dispersal farther away from the shoreline. Units 2, 3 and 4 are remnants of older layers that have undergone winnowing in the geologic past that may have resulted concentration of heavy minerals thus enrichment of the mineral content. Unit 4 is the lowest unit that overlays the acoustic basement surface. It was deduced in the seismic interpretation that the most promising seismo-stratigraphic units for magnetite sand accumulation are Unit 2 and Unit 3. An Idealized profile of the seabed is shown in **Figure 6**.

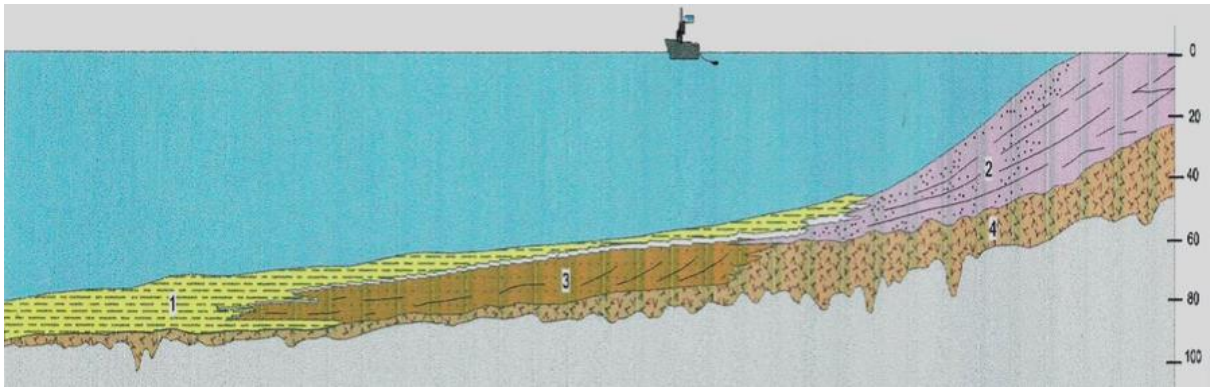


Figure 6. Idealized profile of the seabed showing the seismo-stratigraphic layers.

The seismo-stratigraphic interpretation also not only identified and delineated the potential exploration target, but it also yielded the thickness of the potential magnetite bearing layers. Based on the mathematical computation of the vertical extent or thickness of the units, it was estimated that the average thickness of Unit 1 is 6.8m while the combined Units 2 and 3 have average vertical extent of 19.0m for a total of 25.8 m. Unfortunately the diamond drilling did not reached this projected depth. The deepest hole is only 22m.

Perhaps the more important information derived from the seismic reflections survey are the interpreted seismic profiles that demonstrate the continuity of the seismo-strata. These are useful basis in predicting the continuity of the layers and will boost the confidence in the estimation of the mineral resource. Based on **Figure 7** that shows the profile lines, Seismic Profiles on Lines 26, 28, 30, 32 and 34 can be used to project the lateral extent of the magnetite bearing horizons within MPSA 338-2010-II-OMR Amended A.

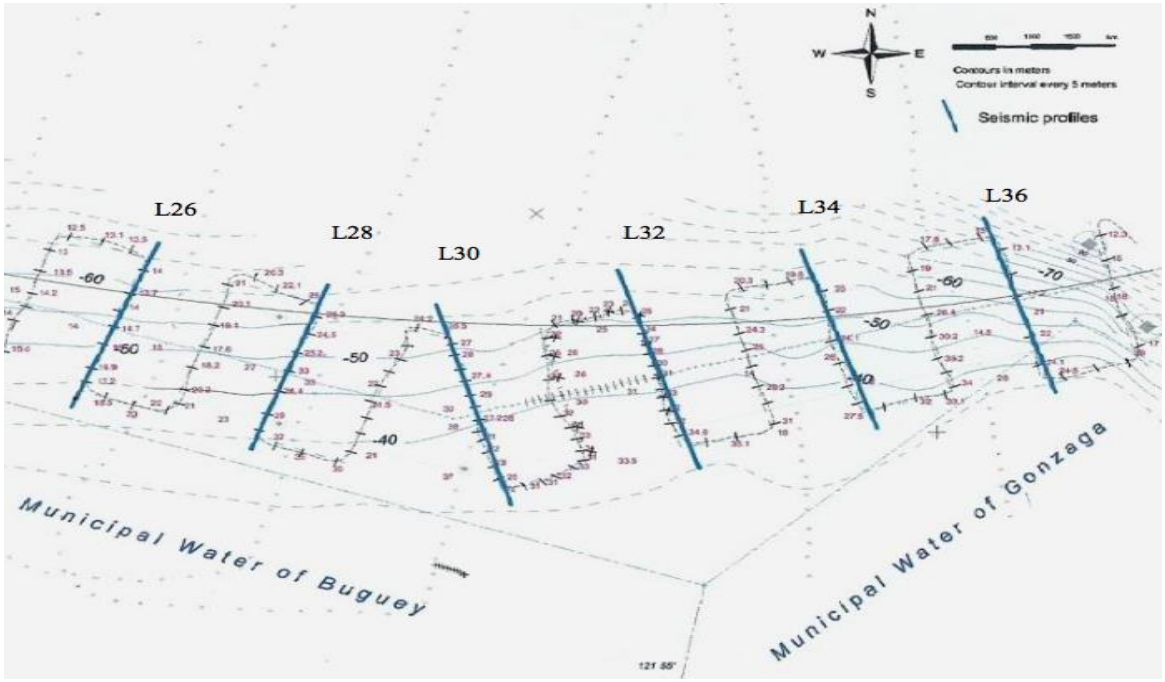


Figure 7. Plot of the seismic profile lines.

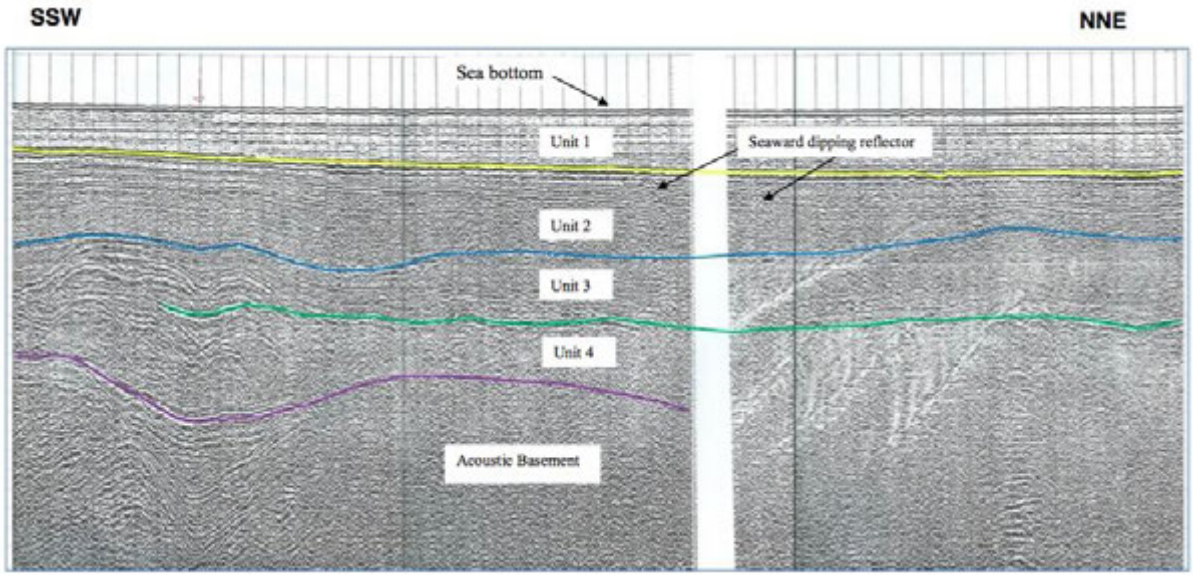


Figure 8. Seismic Profile Line 26.

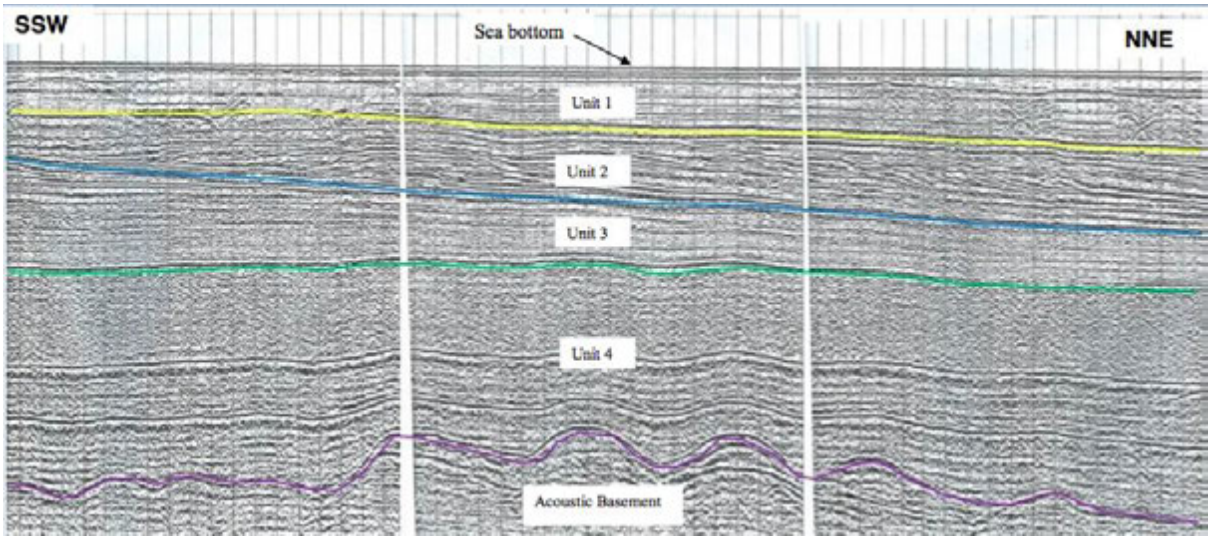


Figure 9. Seismic Profile Line 28.

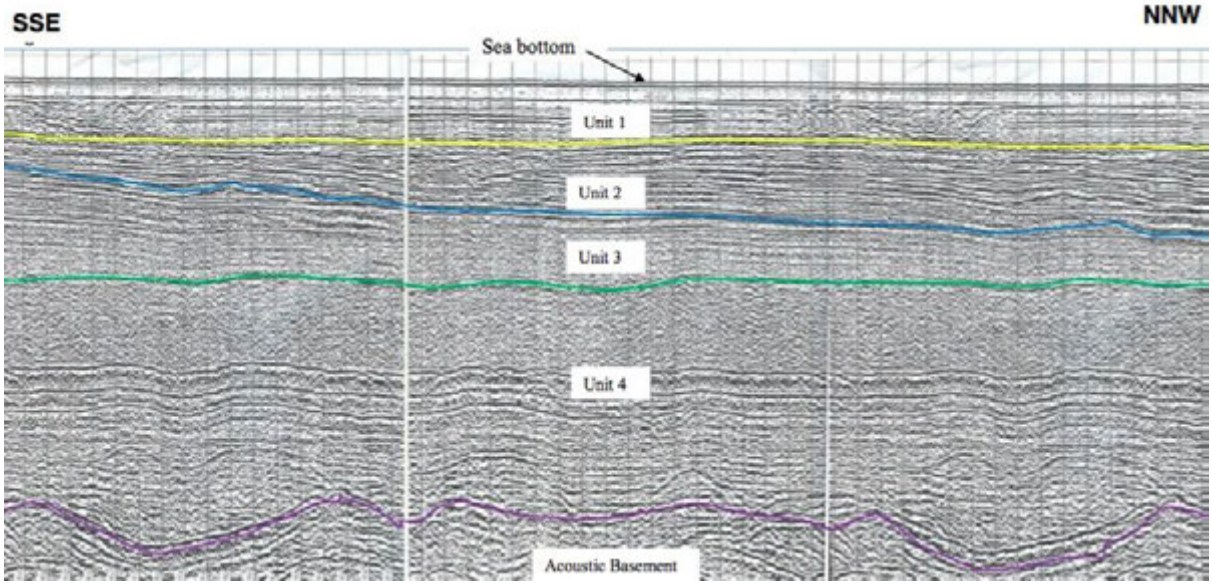


Figure 10. Seismic Profile Line 30.

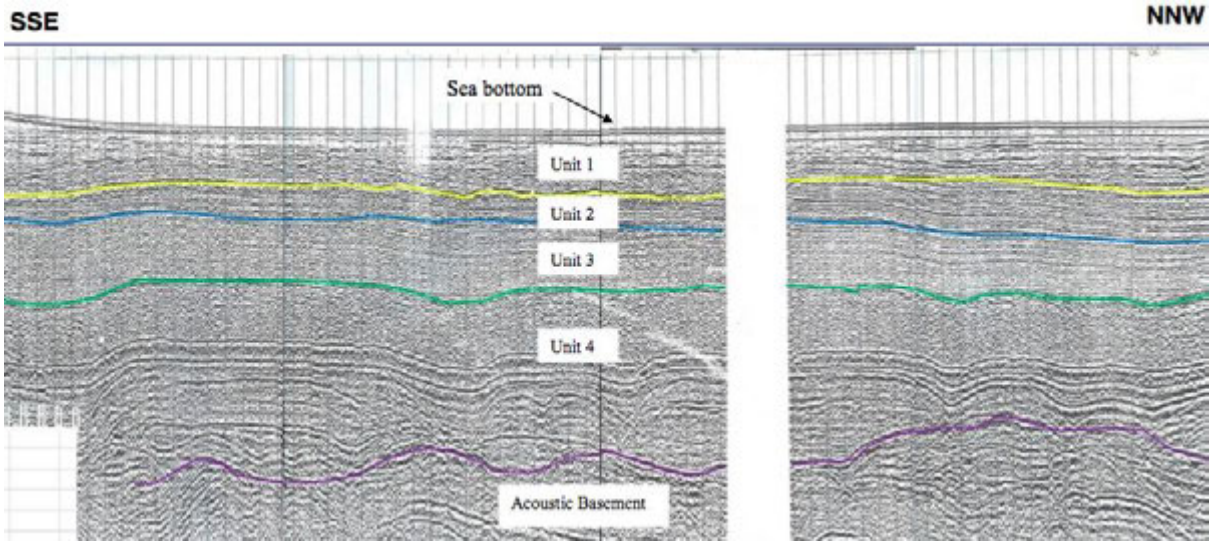


Figure 11. Seismic Profile Line 32.

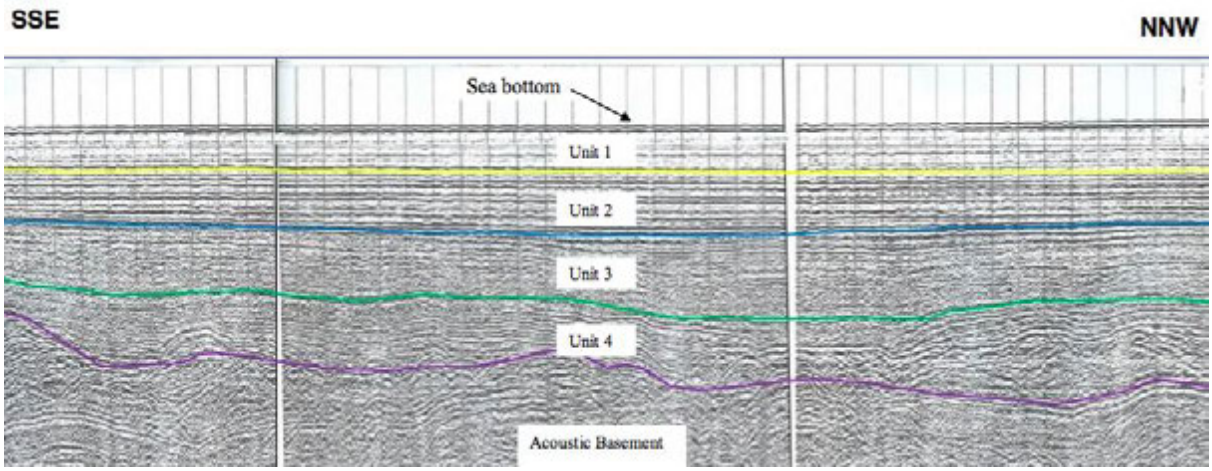


Figure 12. Seismic Profile Line 34.

The seismic profiles in Lines 26, 28, 30 32 and 34 provide clear indications that Unit 1 is almost uniformly spread throughout the whole tenement. Units 2 and 3 have more variable thickness but nevertheless continuous over the whole area.

4.2. Results and Interpretation of Diamond Drilling Data

Six drill holes were driven within the area coverage of MPSA 338-2010-II-OMR Amended A, namely: GN18, GN30, GN33, GN48, GN58 and GN68. The locations of the drill holes are shown in **Figure 13**. GN18 is 1,765m from GN 30, and GN 30 is 1,340m from GN 33. The distance between GN 33 and GN 48 is 1,947m. GN 58 is 1,729m from GN 48 and 1,724m to GN 68. These confirm that the spacing between the drill holes are less than 2,000 m, hence the mineral resource that will be computed within the polygons at each drill holes can be classified as Indicated Mineral Resource in conformity with the assumptions of ACP Liwanag and MGB Validating Team and supported by the seismic reflection data.

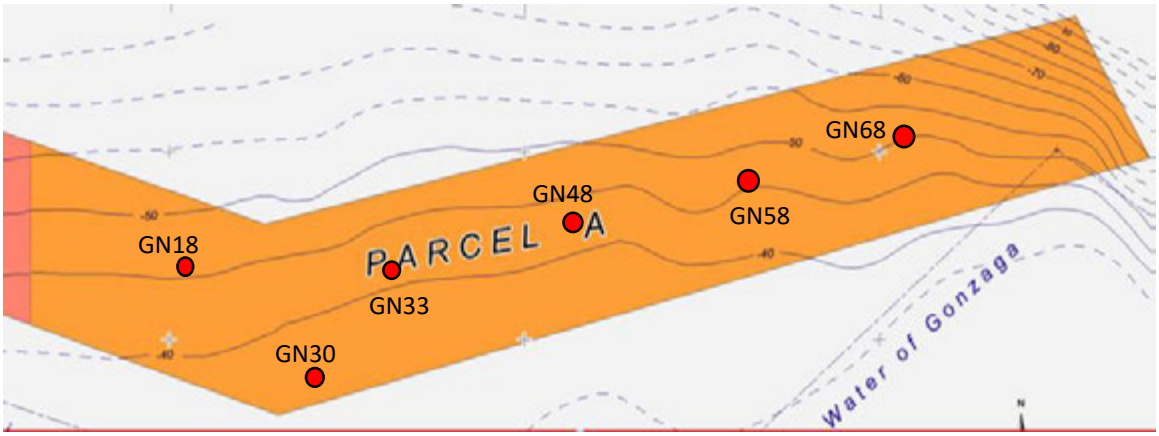


Figure 13. Plot of the six drill holes.

The drill cores consisting mostly of sand and silt were composited at 5m intervals to produce each sample. The samples were sent to the laboratory of Intertek Testing Services Philippines, Inc. (Intertek) for sample preparation and chemical analysis using Panalytical Axios Wavelength Disperse X-ray Fluorescence (WDXRF). After the sample preparation, the samples are homogenized and quartered. A quarter was used for the chemical analysis of 24 elements and compounds using XRF. The other splits were saved for Mines and Geosciences Bureau (MGB) for physical analysis using Dings David Tube (DDT) to separate the magnetic fraction and analysis of Fe content and for JDVC's safekeeping for future reference. The results of the laboratory analyses relevant to the estimation of the mineral resource are summarized below.

Table 3. Results of the analysis of drill core samples

Drill hole	Interval	% MF	% Fe
GN18	0-5	26.58	62.05
	5-10	43.87	61.53
	10-15	24.89	60.45
	15-20	12.58	62.58
GN30	0-5	3.23	59.69
	5-10	21.01	61.80
	10-15	20.71	61.38
GN33	0-5	22.56	62.53
	5-10	41.89	61.52
	10-15	23.63	61.23
	15-20	11.65	62.03
GN48	0-5	24.87	60.58
	5-10	46.55	62.12
	10-15	25.41	62.35
	15-20	12.66	60.09
GN58	0-5	24.94	60.50
	5-10	47.29	61.49
	10-15	27.89	60.37
	15-20	10.24	61.78
GN68	0-5	26.98	60.38
	5-10	43.15	62.58
	10-15	23.89	61.06
	15-20	13.56	61.74
	20-22	18.86	60.53

After applying the cut off grade of 5%MF, the drilling data set useful for the estimation of the mineral resource consists of only 23 sample values, which is not sufficient (statistically significant) to make a meaningful statistical analysis. Nevertheless the plot of the sample values grouped at 5%MF intervals is shown in **Figure 14** while the basic statistical parameters are provided in **Table 4**.

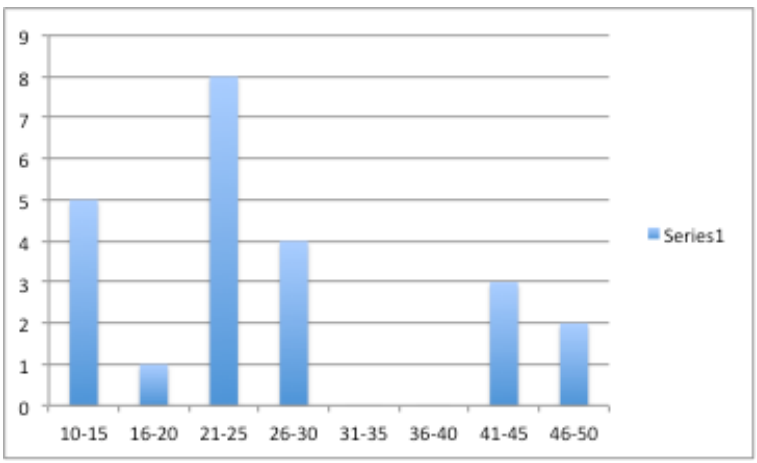


Figure 14. Plot of drilling data/sample values (i.e. %MF)

If the data set will be subjected to univariate analysis, the descriptive statistics are as follows:

Table 4. Descriptive Statistics of the whole data set

Statistical Parameters	**All data**
Number of Samples	23
Min. Value	10.24
Max. Value	47.29
Mean	25.90
Median	24.87
Variance	129.23
Standard Deviation	11.37
Range	37.05

The graph appears to show two populations – one ranging from 10%MF to 30% MF and the other group ranging from 40%MF to 50%MF with a break in between. This may mean two distinct geologic domains within the magnetite sand deposits. However, this is inconclusive and may simply be due to insufficient data. The parameters for central tendency – **Mean** and **Median** values indicate normal distribution. The indicators of Dispersion are **Range** and **Standard Deviation**.

The drill hole data were re-arranged and displayed side by side to provide a crude depiction of the spatial (horizontal and vertical) relations among the drill holes (**Table 5**). GN18 is the westernmost drill hole while GN68 is located farthest to the east.

Table 5. Drill hole logs showing % MF.

Drill Hole No and approximate collar elevation					
GN18 -45m	GN30 -38m	GN33 -41m	GN48 -42m	GN58 -45m	GN68 -50m
	3.23				
26.58	21.01	22.56	24.87	24.94	
43.87	20.71	41.89	46.55	47.29	26.98
24.89	???	23.63	25.41	27.89	43.15
12.58		11.65	12.66	10.24	23.89
					13.56
					18.86

Table 5 shows perceptible mineralization domains - the top layer (shaded in yellow) may correspond to the interpreted seismo-stratigraphic Unit 1 and the underlying layer (shaded in pink) may correspond to Units 2 and 3. Following that interpretation, it is very noticeable that the lateral consistency of the grade is remarkable. Statistical analysis of each layers reveal the following characteristics:

Table 6. Basic Statistical parameters of each layer/domains.

Statistical Parameters	Top layer	Mid Layer	Lower layer
Number of Samples	7	10	6
Min. Value	20.71	23.63	10.24
Max. Value	26.98	47.29	18.86
Mean	23.95	34.85	13.26
Median	24.87	34.89	12.62
Variance	6.50	108.25	8.80
Standard Deviation	2.55	10.40	2.97
Range	6.27	23.66	8.62

Each domain yielded narrower range and smaller standard deviation. The Mean and Median are very close indicating good central tendency, hence normal distributions. Again, as a word of caution, there is insufficient data at the moment to support the conclusions.

5. ESTIMATION OF MINERAL RESOURCES

5.1. Estimation of Indicated Mineral Resource using the Polygon Method

The conventional polygon method was used in the recalculation of the minerals resources as it is deemed as the most practical and applicable in the given situation where the data are derived only from six (6) drill holes (**Figure 13**). This is also the method used in the PMRC Report of ACP Raffy Liwanag and by the Validation Team of MGB, thus using the same method will enable the comparison of the three estimates of the Mineral Resource.

5.1.1 Construction of the Polygons

The following limitations/parameters were used to define the sides of the polygons:

1. Although the seismic profiles indicate the continuity of the subsurface strata below the seabed within and beyond the tenement area, the area of influence of the samples was assumed at 1,500m for the purpose of estimating Indicated Mineral Resource. Beyond the 1,500m radius, the Mineral Resource is considered as Inferred.

2. The area of influence of the samples is also considered as halfway to the nearest samples or drill holes if the shortest distance between these sample pairs is less than 3,000m. All the six (6) drill holes have distances less than 2,000m, hence some of the sides of the polygons are defined by the perpendicular bisector of the straight line connecting nearby pairs of drill holes.

3. Since the estimation of the mineral resource is confined within the MPSA area, the boundary lines of the tenement were also used clip the polygons.

4. In areas where the extent of the tenement boundaries are more than 1,500m from the nearest drill hole, the side of the polygon is a configured as an arc defined by a radius of 1,500m from the collar of the drill holes.

5. Except in the steeply dipping portion of the seabed (such as in the northeastern end of the MPSA area), the effect of the marine topography is disregarded. This is similar to the 'unfolding ' or 'unwarping' methods used by modern specialized computer applications such as Gemcom and Surpac in estimating mineral resources and ore reserves. However in this study, the topography at the steep northeastern edge of the property has to be accounted in consideration of the mineability of the deposit and/or possible truncation of the magnetite bearing beds. Thus the polygon defined around drill hole GN68 is partly bounded by contour lines.

In summary the polygons boundaries are defined by straight lines representing the perpendicular bisector between drill hole pairs, boundary lines of the tenement, and arc segment limiting the area of influence of the samples to 1,500m. However, in one instance, contour lines were used to clip the boundaries of the polygon in the area that is steeply dipping.

5.1.2 Construction of the Polygons

Drill hole GN18 is located in the western portion of the tenement. Its exact location is defined by coordinates is 18° 26' 19.9572" Latitude and 121° 53' 0.4992" Longitude. The sides of the polygon consist of the perpendicular bisector with GN 30 and GN33, boundaries of the tenement and the arc defined by a radius of 1,500m. The area is estimated at 3.81 sq. km. or 3.81 M sq.m.

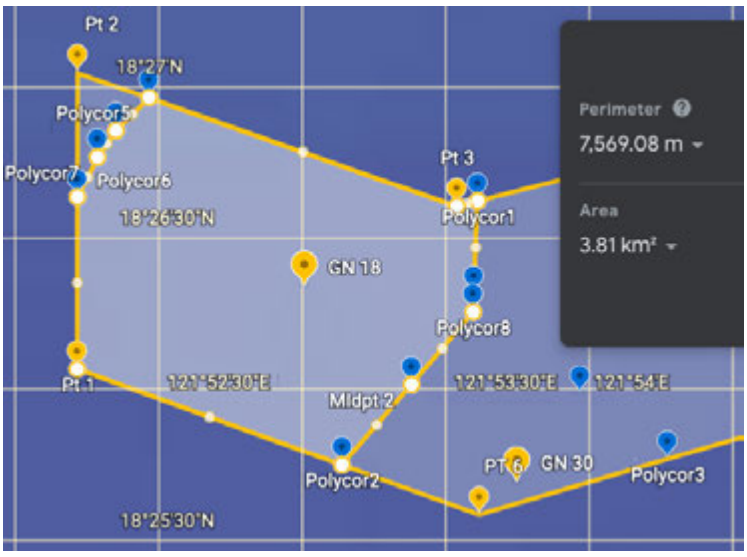


Figure 15. Polygon construction at GN 18.

5.1.3 Polygon surrounding GN30

The perpendicular bisector with GN 33 and GN 18 and the two southern boundaries of the tenement bound the polygon for drill hole GN30. The estimated area of this polygon is 1.24 sq. km. or 1.24M sq.m.

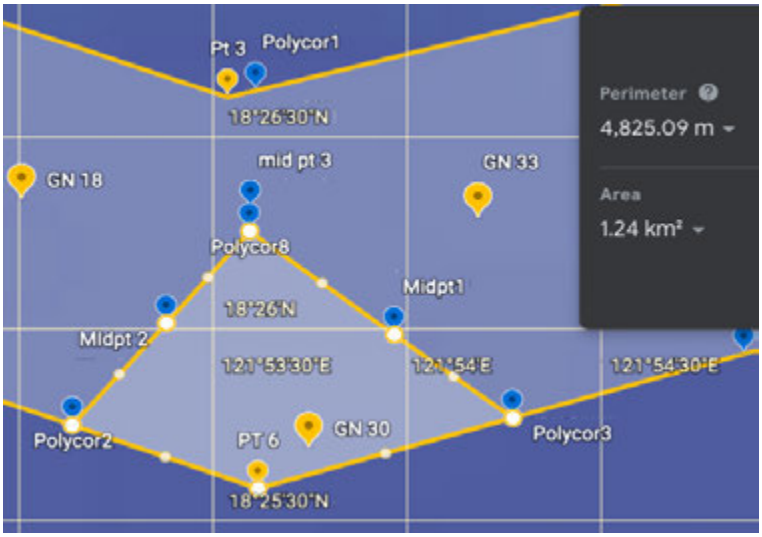


Figure 16. Polygon construction at GN 30.

5.1.4 Polygon surrounding GN33

For drill hole GN33, the perpendicular bisectors with GN18, GN30 and GN48 and segments of the property boundaries define the polygon representing the area on influence of the samples in this hole. The plane area is estimated at 3.0 sq km or 3.0M sq m.

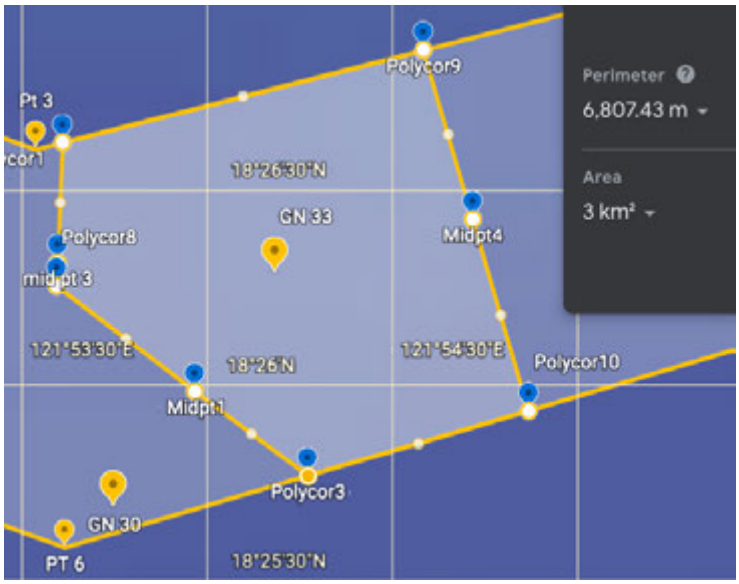


Figure 17. Polygon construction at GN 33.

5.1.5 Polygon surrounding GN48

The polygon around drill hole GN48 has four (4) sides – two are perpendicular bisectors with GN33 and GN58, and the other two sides are boundaries of the tenement. The estimated area is 3.21 sq km or 3.21 M sq m.

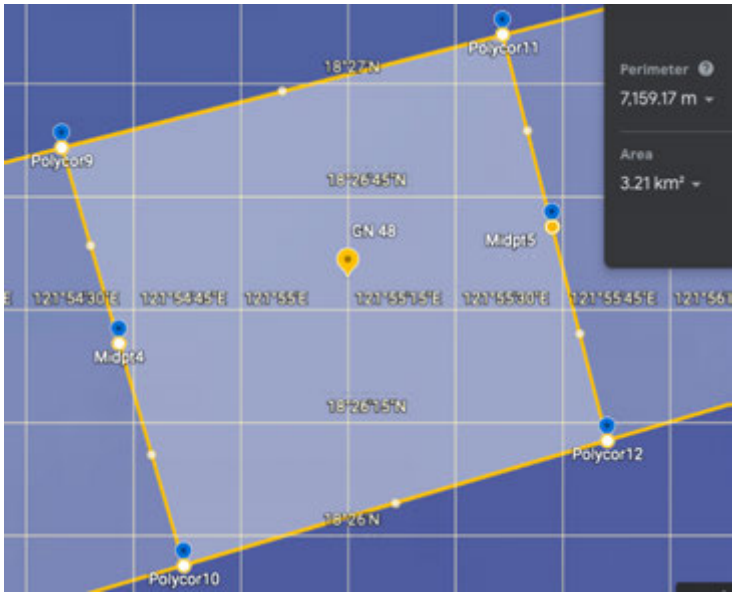


Figure 18. Polygon construction at GN 48.

5.1.6 Polygon surrounding GN58

Similarly the polygon for drill hole GN58 is four-sided. The sides are perpendicular bisector with GN48 and GN68, northern and southern boundaries of the MPSA area. The calculated area is 2.91 sq km or 2.91M sq m.

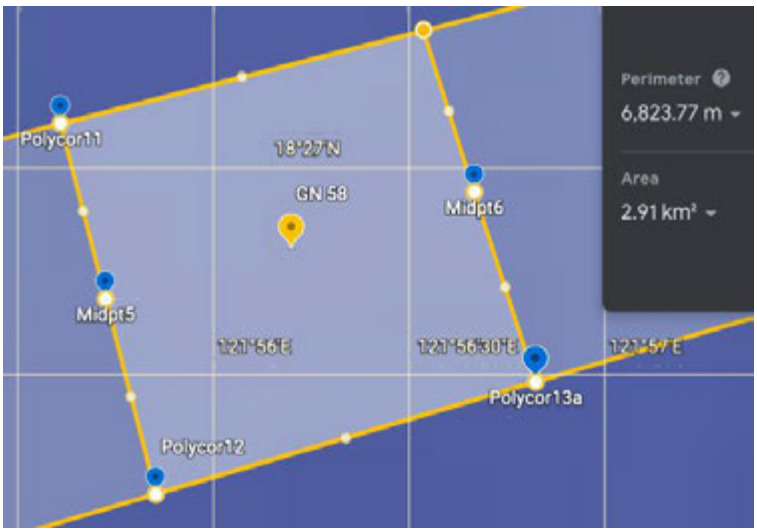


Figure 19. Polygon construction at GN 58.

5.1.7 Polygon surrounding GN68

GN68 is the easternmost drill hole located near the steeply dipping seabed at the edge of the tenement area. The assumption of unfolding may no longer be tenable hence the polygon for each layer is delimited by the contour lines. The sides of the polygons are the perpendicular bisector with GN58, boundaries of the tenement, the arc segment based on 1,500m radius, and the contour lines at 5m intervals from the hole collar elevation.

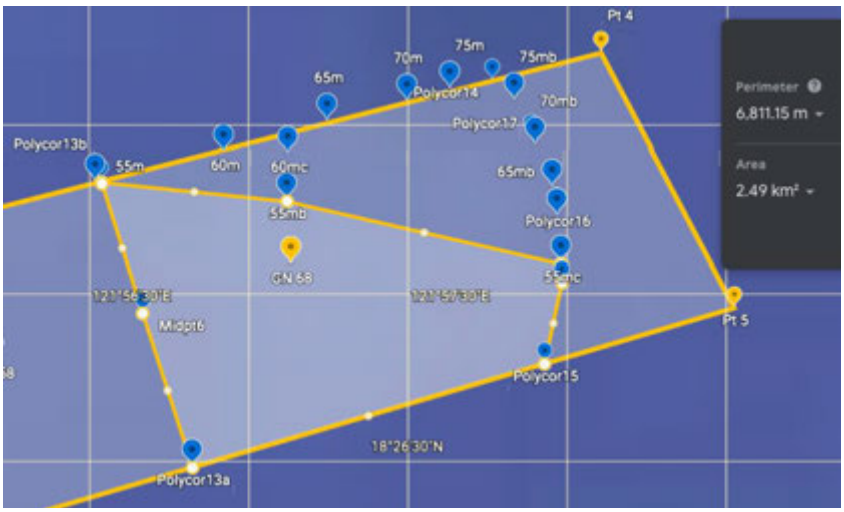


Figure 20. Polygon construction at GN 68 at Level -55m.

The area of the top polygon bounded by contour line at approximately 55m depth is 2.49 sq km or 2.49M sq m.

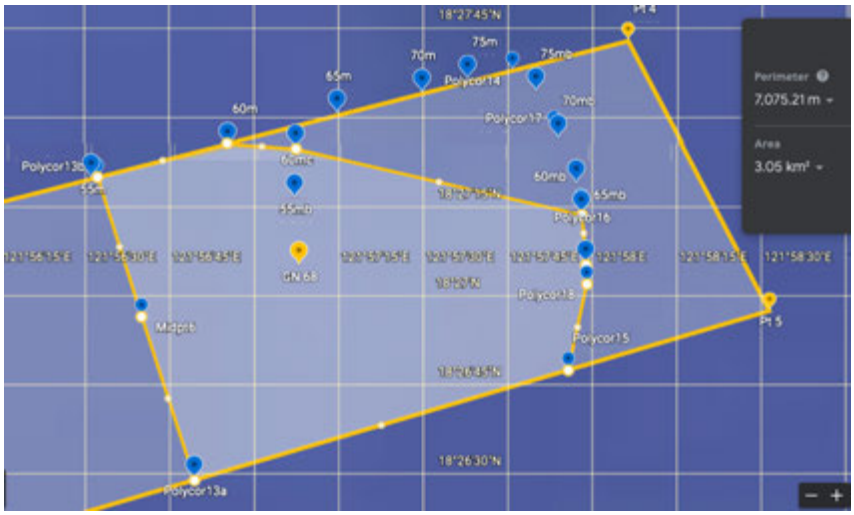


Figure 21. Polygon construction at GN 68 at Level -60m.

The underlying polygon defined partly by 60m-depth contour line has an area of 3.05 sq km or 3.05M sq m.

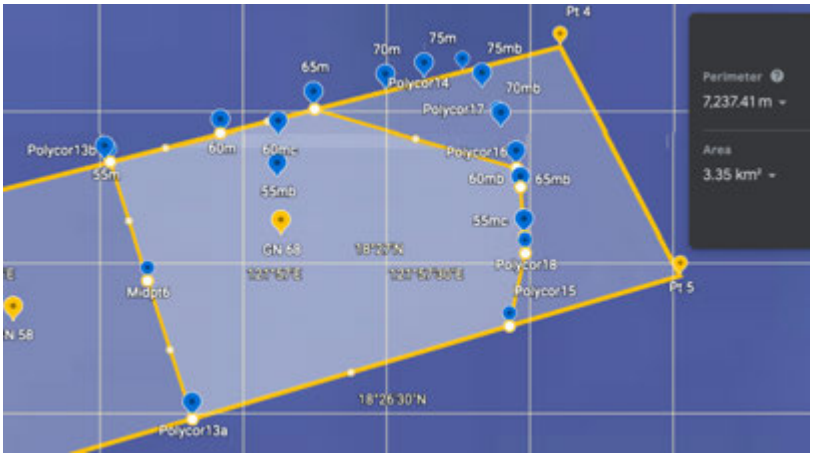


Figure 22. Polygon construction at GN 68 at Level -65m.

The polygon at 65m contour line has an area of 3.35 sq km or 3.35M sq m.

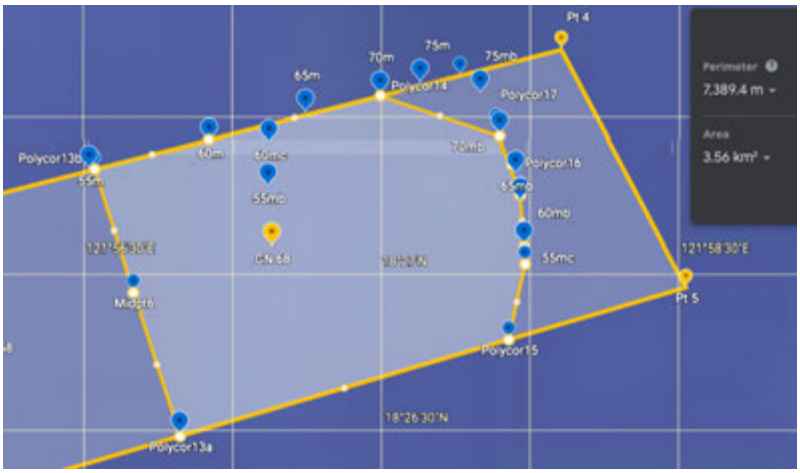


Figure 23. Polygon construction at GN 68 at Level -70m.

At depth of 70m, the polygon has an area of 3.56 sq km equivalent to 3.56M sq m.

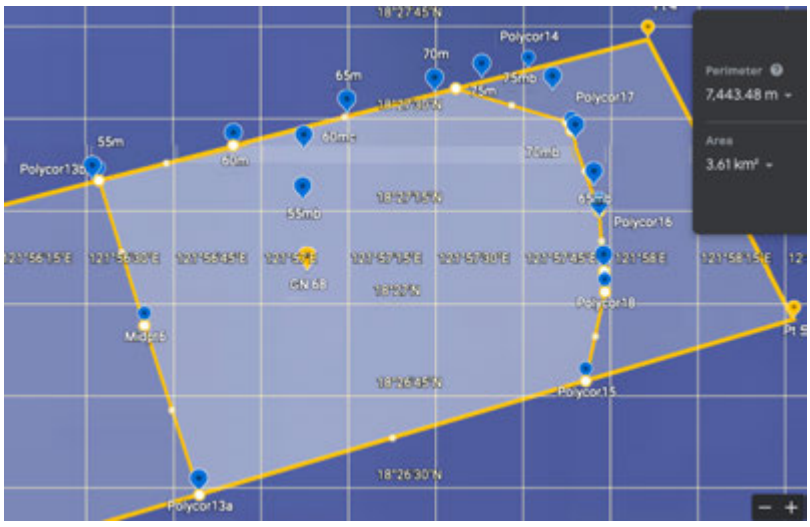


Figure 24. Polygon construction at GN 68 at Level -72m.

The polygon at approximately 72m depth contain an area of 3.61 sq km equal to 3.61M sq m.

In summary, the volume of the Indicated Mineral Resource can be computed as follows:

Table 7. Volume calculation of the Indicated Mineral Resource

Drill hole	Interval	Area, sq km	Volume, cu m
GN18	0-5	3.82	19,100,000
	5-10	3.82	19,100,000
	10-15	3.82	19,100,000
	15-20	3.82	19,100,000
GN30	0-5	Below cut off grade	
	5-10	1.24	6,200,000
	10-15	1.24	6,200,000
GN33	0-5	3.00	15,000,000
	5-10	3.00	15,000,000
	10-15	3.00	15,000,000
	15-20	3.00	15,000,000
GN48	0-5	3.21	16,050,000
	5-10	3.21	16,050,000
	10-15	3.21	16,050,000
	15-20	3.21	16,050,000
GN58	0-5	2.91	14,550,000
	5-10	2.91	14,550,000
	10-15	2.91	14,550,000
	15-20	2.91	14,550,000
GN68	0-5	2.49	12,450,000
	5-10	3.05	15,250,000
	10-15	3.35	16,750,000
	15-20	3.56	17,800,000
	20-22	3.61	7,220,000
		Total	**340,670,000**

5.2. Estimation of the volume of Inferred Mineral Resource

The potential mineral resource in areas within the tenement but outside the polygons are classified in this report as Inferred Mineral Resource for being beyond the 1,500m area of influence of samples used in estimating Indicated Mineral Resources. These areas occur in the northwestern edge (more than 1,500m away from GN18) and northeastern end of the tenement area (beyond 1,500m from GN68). These are illustrated in **Figures 25** to **26.**

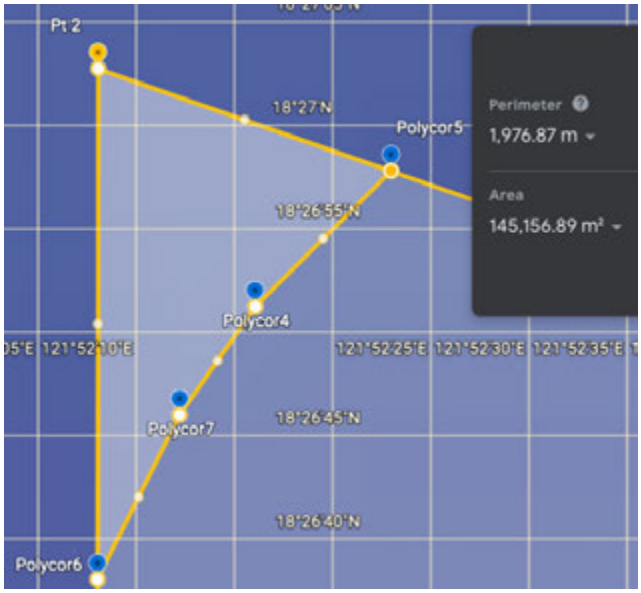
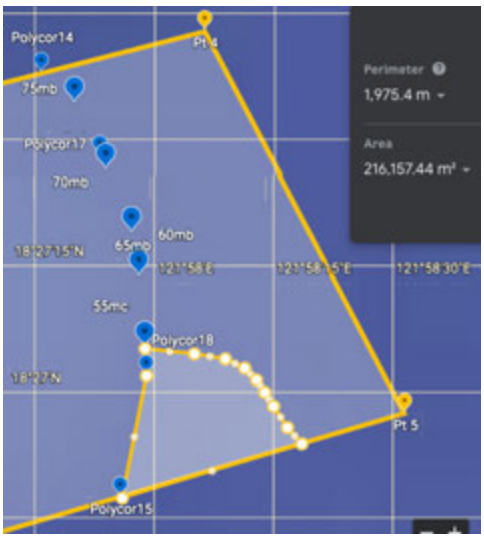
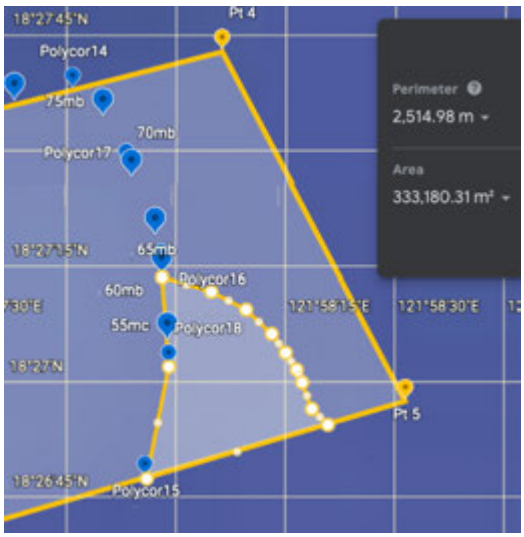


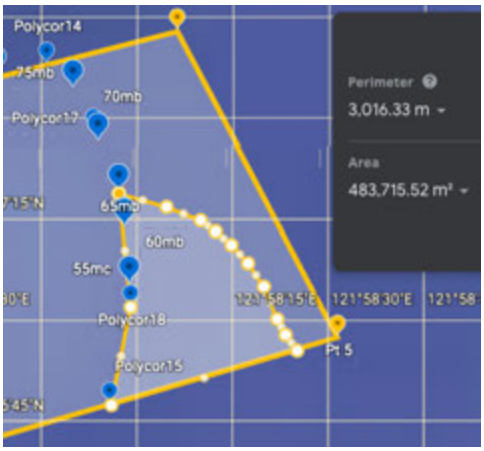
Figure 25. Area of Inferred Mineral Resource from GN18.



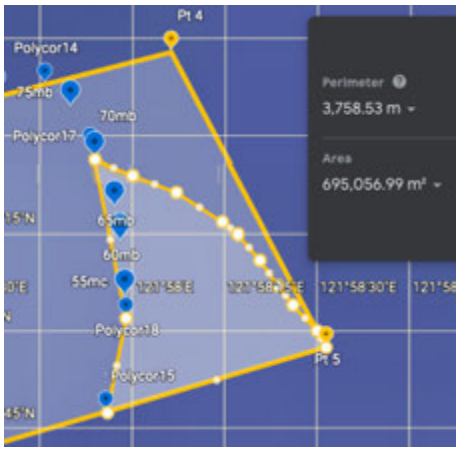
(a)



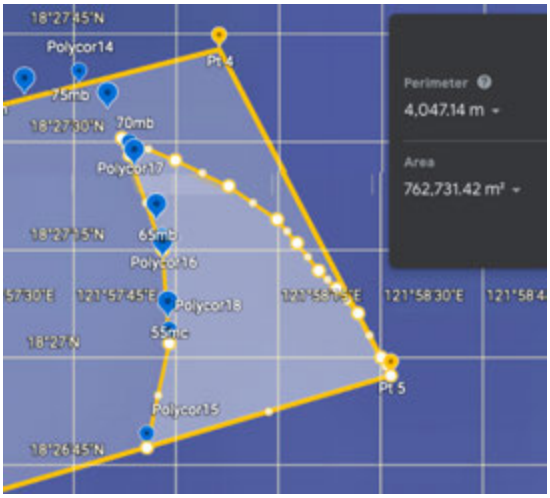
(b)



(c)



(d)



(e)

Figure 26. Areas of Inferred Mineral Resource in relation to GN68 at various elevations i.e. (a). -55m, (b) -60m, (c). -65m, (d). -70m and (e). -72m.

The summary of the estimated volume of Inferred Mineral Resources is given in the following table.

Table 8. Estimation of the volume of Inferred Mineral Resource

Drill hole	Interval	Area, sq m	Volume, cu m
GN18	0-5	145,157	725,784
	5-10	145,157	725,784
	10-15	145,157	725,784
	15-20	145,157	725,784
GN68	0-5	216,157	1,080,787
	5-10	333,180	1,665,902
	10-15	483,716	2,418,578
	15-20	695,057	3,475,285
	20-22	762,731	3,813,657
		Total Volume =	**15,357,346**

5.3. Comparison of the Volume Calculations

It would be interesting to compare the basic results of three independent estimations of the Mineral Resource over the same area using the same methodology. This can provide a very strong confirmation of the estimated mineral resource. The various estimations of the Indicated Mineral Resource are presented in **Table 9** for comparison.

Table 9. Comparison of the Volume Estimation of the Indicated Mineral Resource

Drill hole	Interval m	ACP RNSantos	ACP RRLiwanag	MGB
		Volume Calculations, cu m		
GN18	0-5	19,100,000	14,134,499	25,410,145
	5-10	19,100,000	21,167,829	25,410,145
	10-15	19,100,000	22,232,822	25,410,145
	15-20	19,100,000	13,339,693	25,410,145
GN30	0-5	below cut-off	6,260,619	below cut-off
	5-10	6,200,000	11,600,679	6,262,075
	10-15	6,200,000	7,183,350	6,262,075
GN33	0-5	15,000,000	11,977,837	12,067,221
	5-10	15,000,000	16,404,741	12,067,221
	10-15	15,000,000	18,130,900	12,067,221
	15-20	15,000,000	19,433,900	12,067,221
GN48	0-5	16,050,000	13,066,734	15,734,912
	5-10	16,050,000	15,073,203	15,734,912
	10-15	16,050,000	15,950,498	15,734,912
	15-20	16,050,000	17,519,498	15,734,912
GN58	0-5	14,550,000	11,252,573	14,360,439
	5-10	14,550,000	14,792,032	14,360,439
	10-15	14,550,000	14,510,689	14,360,439
	15-20	14,550,000	18,284,781	14,360,439
GN68	0-5	12,450,000	10,862,507	12,373,778
	5-10	15,250,000	14,539,174	12,373,778
	10-15	16,750,000	19,498,537	12,373,778
	15-20	17,800,000	22,483,264	12,373,778
	20-22	7,220,000	9,150,511	4,949,511
Total Volume, cu m		**340,670,000**	**358,850,871**	**337,259,644**

As can be deduced in the table, the estimate of the volume of the Indicated Mineral Resource in this study is about 1% higher than the estimate of the MGB Validating Team and 5% lower that the estimate of ACP Liwanag. It should be noted that the MGB Validation team actually calculated **569,968,798.83 DMT** with average grade of **26.51%MF** from the volume measurement but applied a 90% recovery in the final reporting of the "total raw offshore magnetite sand resource of **512,971,918.94** DMT with weighted average grade of **26.51%MF"**.

5.4. Estimated Mineral Resources

Using the conventional polygon method of estimating mineral resources and applying the same specific gravity of ore at 1.69, this study arrived at an estimated Indicated Mineral Resource of 527 Million DMT of magnetite deposit containing an average of 26% Magnetic Fraction. The detailed estimation is presented in **Table 10**. By applying a maximum 'area of influence' of samples at 1,500m radius, some of the mineral resource previously included as Indicated Mineral Resource in the PMRC report of ACP Liwanag, have been re-classified as

Inferred Mineral Resource in this report on the basis of the interpreted seismic profiles that consistently indicate the continuity of the magnetite bearing horizons. The estimated Inferred Mineral Resource is 26 Million metric tons with average grade of 23% MF. Detailed breakdown of the estimates is given in **Table 11**.

Table 10. Estimated Indicated Mineral Resource

Drill hole	Interval	Area, sq km	Volume, cu m	% MF
GN18	0-5	3.82	19,100,000	26.58
	5-10	3.82	19,100,000	43.87
	10-15	3.82	19,100,000	24.89
	15-20	3.82	19,100,000	12.58
GN30	0-5	Below cut off grade		3.23
	5-10	1.24	6,200,000	21.01
	10-15	1.24	6,200,000	20.71
GN33	0-5	3.00	15,000,000	22.56
	5-10	3.00	15,000,000	41.89
	10-15	3.00	15,000,000	23.63
	15-20	3.00	15,000,000	11.65
GN48	0-5	3.21	16,050,000	24.87
	5-10	3.21	16,050,000	46.55
	10-15	3.21	16,050,000	25.41
	15-20	3.21	16,050,000	12.66
GN58	0-5	2.91	14,550,000	24.94
	5-10	2.91	14,550,000	47.29
	10-15	2.91	14,550,000	27.89
	15-20	2.91	14,550,000	10.24
GN68	0-5	2.49	12,450,000	26.98
	5-10	3.05	15,250,000	43.15
	10-15	3.35	16,750,000	23.89
	15-20	3.56	17,800,000	13.56
	20-22	3.61	7,220,000	18.86
	Total Volume, cu m =		**340,670,000**	**26.27**
	Tonnage, DMT =		**575,732,300**	**26.27**

Table 11. Estimated Inferred Mineral Resource

Drill hole	Interval	Area, sq m	Volume, cu m	% MF
GN18	0-5	145,157	725,784	26.58
	5-10	145,157	725,784	43.87
	10-15	145,157	725,784	24.89
	15-20	145,157	725,784	12.58
GN68	0-5	216,157	1,080,787	26.98
	5-10	333,180	1,665,902	43.15
	10-15	483,716	2,418,578	23.89

15-20	695,057	3,475,285	13.56
20-22	762,731	3,813,657	18.86
	Total Volume =	**15,357,346**	**23.19**
	Tonnage, DMT =	**25,953,915**	**23.19**

6. INTERPRETATION AND CONCLUSIONS

The estimated Indicated Mineral Resource reported in this study is in conformity with the previous estimations done by ACP Liwanag and the MGB Validating Team. The differences are acceptable considering that all these are only estimates that have inherent variability. In addition, the variance could be attributable in the dissimilarity in the design of the polygons, differences in the software used to measure the areas of influence and assumptions applied For instance, ACP Liwanag did not apply any cut-off grade on the premise that selective mining is not possible while the MGB validating Team applied a 5%MF cut off grade and 90% recovery.

The implementing rules and regulation of PMRC 2007 provides that zero cut off grade is not allowed in the estimation of mineral resources; hence this writer supports the use of the 5%MF cut-off grade. However, the application of a recovery factor should be based on mining plan and operational parameters and more suitable in the estimation of the Mineral Reserves rather than Mineral Resource that relies mainly on geologic information and confidence.

Based on the foregoing, it is the conclusion in this report that the estimated Indicated Mineral Resource of magnetite sand deposits within the 1,897.0242 hectares covered MPSA 338-2010-II-OMR-Amended A amounts to 575 Million DMT containing an average grade of 26% MF. The Inferred Mineral Resource is estimated at 23 Million DMT with average grade of 23%MF.

It is worth mentioning that the available drill holes data did not provide any indication on the bottom limit of the magnetite deposits. It is therefore recommended that in the succeeding exploration works intended to upgrade the current estimated Indicated and Inferred Mineral Resource either into Measured Mineral Resource or Ore/Mineral Reserves, the in-fill drilling program should be designed to reach the deeper horizons, possibly down to the acoustic basement.

Prepared by:

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Accredited Competent Person in Geology
ACP Accreditation No. 14-05-02

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