Affidavit of Daniel Dakiniewicz

WAD 37 of 2022

Federal Court of Australia

District Registry: Western Australia

Division: General

YINDJIBARNDI NGURRA ABORIGINAL CORPORATION RNTBC

Applicant

STATE OF WESTERN AUSTRALIA & ORS

Respondents

Affidavit of:	**Daniel Dakiniewicz**
Address:	Level 2, 87 Adelaide Terrace, East Perth WA 6004
Occupation:	Manager Operations Planning Solomon
Date:	1 March 2024

Filed on behalf of (name & role of party) FMG Pilbara Pty Ltd, Pilbara Energy (Generation) Pty Ltd, Pilbara Energy Company Pty Ltd, Pilbara Gas Pipeline Pty Ltd and The Pilbara Infrastructure Pty Ltd

Prepared by (name of person/lawyer) Mark van Brakel

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Contents

I, Daniel Dakiniewicz, care of Level 2, 87 Adelaide Terrace, East Perth, Manager Operations Planning Solomon, make oath and say as follows:

1. I am employed by FMG Personnel Services Pty Ltd, a subsidiary of Fortescue Metals Group Limited (**FMGL**) as Manager Operations Planning Solomon. FMGL is the holding company of a number of related companies including the 2nd to 6th Respondents (**FMG Respondents**) in this case (together **FMG**).

2. I am authorised to make this affidavit on behalf of the FMG Respondents.

3. Unless otherwise stated, the facts contained in this affidavit are within my own knowledge and are true.

Background

4. In 2005, I obtained a master's degree in Open Cut and Underground Mining Engineering from Wroclaw University of Technology, Poland.

5. In June 2011, I commenced employment with FMG in Western Australia as an Operations Planning Engineer. Since that time, I have worked at FMG in various capacities and seniority levels as an engineer focussing on operations planning.

6. In my current role as Manager Operations Planning Solomon, I manage and supervise FMG's Operations Planning team at FMG's Solomon Hub mine.

7. The Operations Planning team is responsible for the planning and scheduling functions of the Solomon Hub mine. This commenced with the mine's early development phase (i.e., the zero-to-two-year pre-production period of the mine), and continued when production commenced. In relation to production, the Operations Planning team is primarily concerned with the planning and scheduling of proposed expansions of the mine.

8. To carry out its functions, the Operations Planning team has responsibility for matters such as mine pit design, defining material types to be extracted from the mine, as well as forecasting production at the mine. To this end, personnel within the Operations Planning team have expertise in areas such as mine planning, geology, geotechnical engineering, surveying, ore control and laboratory services.

9. In my capacity as an operations planning engineer at FMG, I have access to various FMG systems and databases that the Operations Planning team uses as part of its planning and scheduling functions for the Solomon Hub mine. This includes certain systems that contain mine related information such as the quantities of ore extracted from the mine, including within defined parameters. I describe my use of these systems in the below sections of my affidavit.

Purpose and overview of this affidavit

10. I have been requested to investigate whether FMG extracted ore on Yindjibarndi country from mining tenement M47/1411, which is a tenement forming part of FMG's Solomon Hub mining project.

11. To do this, I undertook the following steps:

    11.1 First, I obtained the boundary data of each of the mining tenement M47/1411 and the Yindjibarndi native title area, and overlaid the two to determine any areas of overlap from a topographical 'plan' (i.e., two dimensional) perspective.

    11.2 Second, I obtained survey information available for the areas of overlap (essentially showing the 'before and after' topography levels of the area) to determine the depth of FMG's excavation of materials within the area, so as to generate volumes of material excavated within the area.

    11.3 Third, I obtained three-dimensional information via FMG's 'block model' as to the composition of ore and waste within the material that had been excavated in the area.

    11.4 Finally, I reviewed and interpreted the results from this process to determine whether ore had been excavated and sold to the market from the areas of overlap.

12. I set out the above steps in further detail in the following sections of this affidavit.

Determination of relevant boundaries of tenement M47/1411 on Yindjibarndi country

13. In order to complete my assessment, I first determined the extent of any overlap in area between tenement M47/1411 and the Yindjibarndi native title area.

14. To do this, I obtained data relating to the boundaries of those areas from FMG's Geographic Information System (**GIS**) database. The GIS database contains information about spatial areas relevant to FMG's mining operations. This includes information about the boundaries of FMG's mining tenements and relevant native title areas.

15. For this purpose, I directed a member of the Operations Planning team to produce GIS files containing data of the boundaries of tenement M47/1411 and the Yindjibarndi native title area.

16. In response to this direction, I was provided access by a member of the Operations Planning team to two GIS data files, one being the M47/1411 tenement boundary, and the other being the Yindjibarndi native title area. The GIS files I accessed were in '.dxf' format, which is a type of vector file that can be imported or exported by various 3D modelling programs, and which contains spatial boundary data for areas such as mining tenements and native title areas that is taken from FMG's GIS database.

    Annexed and marked "DD-1" is a true copy of the GIS data file containing the M47/1411 tenement boundary.

    Annexed and marked "DD-2" is a true copy of the GIS data file containing the Yindjibarndi native title area.

17. In order to establish any areas of overlap between tenement M47/1411 and the Yindjibarndi native title area, I inputted the two GIS files into the 'Vulcan' software that FMG uses. As an operations planning engineer, I have used Vulcan frequently over the course of my employment at FMG.

18. Vulcan is a program used by FMG's geologists, mining engineers and surveyors in the Operations Planning team to transform spatial data into 3D models. The Operations Planning team generally uses Vulcan to generate designs for mining pits, waste dumps and other mining infrastructure for the Solomon Hub mine. However, Vulcan can also be used to generate quantities of reserves, including iron ore reserves, within areas of FMG's mining projects.

19. I am aware from my review of the two files that I accessed via the electronic network folder that one of the '.dxf' files contained GIS boundary data for tenement M47/1411, while the other contained GIS boundary data for the Yindjibarndi native title area.

20. By inputting the '.dxf' files into Vulcan, I generated an image of the boundaries of tenement M47/1411 and the Yindjibarndi native title area. I have reproduced this image at *Figure 1* below. I have added my own labels and arrows to the drawing separately as shown on *Figure 1*.

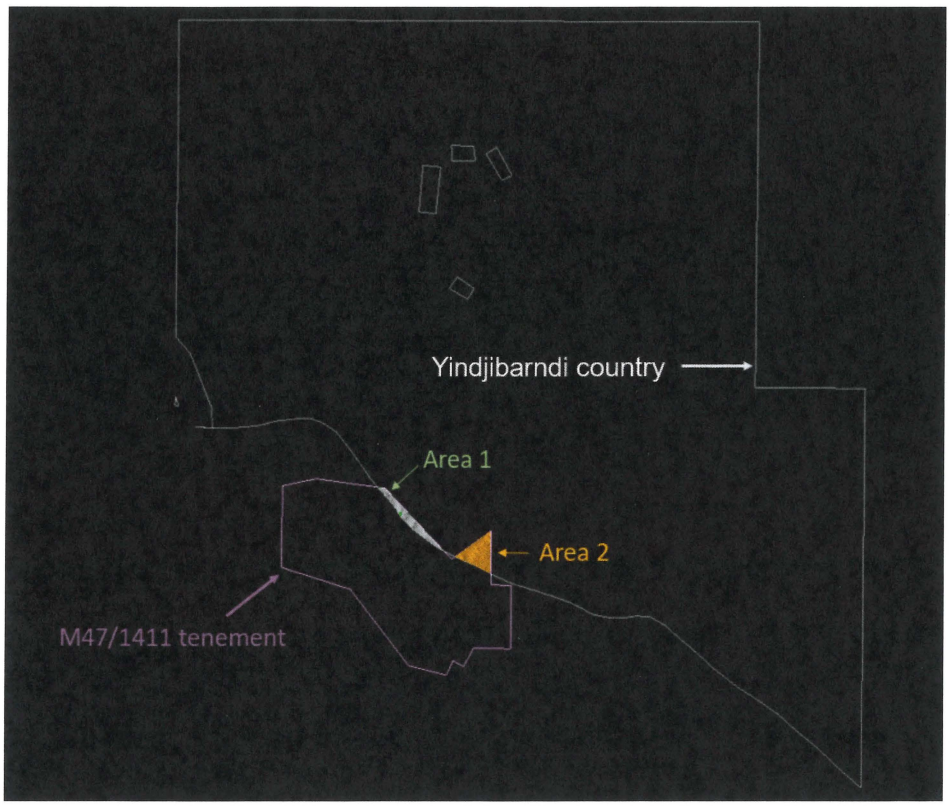


Figure 1: Screen capture of image produced from Vulcan software showing areas of overlap between tenement M47/1411 and Yindjibarndi country

21. As shown of *Figure 1* above, the boundary of tenement M47/1411 is represented in purple, while the boundary of the Yindjibarndi native title area is represented in white. The areas of overlap between the two boundaries are represented as 'Area 1' and 'Area 2', which I have marked on the image myself (**Areas of Overlap**).

Determination of quantities of material extracted from Areas of Overlap

22. In order to determine the quantity of any material extracted from within the Areas of Overlap, I directed a member of the Operations Planning team to obtain the data that identified the original topography of the Areas of Overlap.

23. The original topography is the topography of an area before any mining operations are undertaken by FMG in that area. The information is recorded by FMG from surveys taken of the area before any mining excavation has taken place, and is stored by FMG in folders on an electronic network drive.

24. In response to my direction, I was provided access by a member of the Operations Planning team to a "surface file" for the area known as Valley of Queens, which is an area of land within the broader Solomon Hub project. The Areas of Overlap are within the Valley of Queens. The file I was given access to was in Vulcan data file format (i.e., '.00t' format).

    Annexed and marked "DD-3" is a true copy of the Vulcan data file containing the "original topography" surface area for the Valley of Queens area.

25. I then directed a member of the Operations Planning team to obtain data that identified the latest "mined to" surface area of the Areas of Overlap.

26. The "mined to" surface area of the mine is the topography of an area as it has been excavated by FMG at a particular point in time. It is based on survey data collected and retained by FMG.

27. In response to this direction, I was provided access by a member of the Operations Planning team to an electronic folder containing two Vulcan data files of the "mined to" surface area for the Valley of Queens area, covering both Area 1 and Area 2 respectively. From my review of the files, the data was taken from the most recent survey data at the time, which was dated 20 December 2023.

    Annexed and marked "DD-4" are true copies of the two Vulcan data files containing the "mined to" surface area for the Valley of Queens area.

28. By inputting the GIS and Vulcan data files described at paragraphs 16, 24 and 27 above, the Vulcan program produced four surface files constrained to the boundaries, original

topography and "mined to" surface of the Areas of Overlap, each in Vulcan data file format (i.e., '.00t' format).

Annexed and marked "DD-5" are true copies of the four Vulcan data files constrained to the boundaries, original topography and "mined to" surface of the Areas of Overlap.

Distinction between 'ore' and 'waste' material

29. In order to determine what material it wishes to extract and process for sale, FMG broadly distinguishes the material it extracts from the Solomon Hub mine between 'ore' and 'waste' where (at the time it is extracted):

    29.1 'ore' comprises the mining product that FMG considers has the potential to generate economic benefit (i.e., that has the qualities that make it saleable to third parties); and

    29.2 'waste' comprises the material that FMG considers does not have potential economic benefit and, subject to minor exceptions, is not further processed or sold to third parties.

30. FMG distinguishes between 'ore' and 'waste' based on whether the material is above a designated 'cut-off grade' (in which case it is considered 'ore'), or below it (in which case it is considered 'waste'). Depending on market conditions (being essentially the current and forecast price of the relevant mineral, such as iron ore), FMG may change the relevant cut-off grade from time to time. Each quarter, the Operations Planning team makes the assessment to determine what is ore and what is waste based on the product that FMG determines it will produce at the time.

Determination of ore extracted from Areas of Overlap

31. To determine the quantities of any 'ore' and 'waste' extracted by FMG from within the Areas of Overlap, I used FMG's "Block Model" data.

32. Block Models comprise a computerised 3D representation of the geological inventories that can be extracted at FMG's mines. In essence, FMG undertakes sample drilling across the project prior to any excavation of material. Such sample drilling is typically spaced out across the project area in approximately 25m x 25m squares.

33. Through that sample drilling, FMG identifies information about the content of the minerals in the relevant project area, including the density, the type of mineral and its grade. Based on the sample drill data, FMG's geologists generate computerised 3D 'Blocks' of approximately 25m x 25m x 3m (the dimensions of the blocks may vary depending on spacing of the sample drilling and the depth applied), with each block containing DNA-like data of the mineral content within it based on the sample drilling.

34. The Block Model data for each block is stored on a database called ANVIL that can be extracted and used by FMG for various purposes. As I explain further below, this includes assisting FMG to make decisions as to which parts of the mine area should be mined (and how to most efficiently mine them) based on characteristics such as ore content and grade.

35. I directed a member of the Operations Planning team to provide me with the Block Model for the Valley of Queens area from the ANVIL database.

36. In response to that direction, I was provided access by a member of the Operations Planning team to an electronic folder containing the Block Model for the Valley of Queens area, which is in '.bmf' format. As this file is over 10GB, I have not annexed it to my affidavit.

37. In order to determine the quantities of any ore and / or waste that has been extracted from within the Areas of Overlap, I imported the four Vulcan data files that I referred to at paragraph 28 (being the files marked as annexure "DD-5") and the Block Model data files into the Vulcan software. I then directed the system to '*generate the reserves*' for the Areas of Overlap, which in simple terms is an instruction to the computer program to prepare a report of the minerals, including their grades and quantities, that were within the designated area prior to extraction.

38. Following the above, the Vulcan programme produced two separate reports for Area 1 and Area 2. I exported the results in '.csv' file format.

Annexed and marked "DD-6" is a true copy of the reserves report produced from Vulcan with respect to Area 1.

Annexed and marked "DD-7" is a true copy of the reserves report produced from Vulcan with respect to Area 2.

39. These reports identify the composition of the material in the blocks within the volume of material extracted from the Areas of Overlap. I describe the data produced below.

Assessment

Area 1

40. The Block Model data identified that the material contained within the blocks localised within Area 1 constituted 'waste' only. This is demonstrated by the result "*wste*" (which refers to 'waste') in Column B of the spreadsheet at Annexure DD-6, and that this is the only result produced by the report. The source of the Block Model data is the '.bmf' file identified in Column A of the spreadsheet. This is the same '.bmf' file that I refer to at paragraph 36 above.

41. On this basis, none of the Blocks within Area 1 contained material above the relevant cut-off grade at the time of excavation to constitute 'ore'.

Area 2

42. The Block Model data identified 24,594 tonnes of waste contained in blocks localised within Area 2. This is demonstrated by the result for "*wste*" (which, again, refers to 'waste') in Column B of the spreadsheet at Annexure DD-7, and the associated quantity in cell T6. The source of the Block Model data is the '.bmf' file identified in Column A of the spreadsheet. Again, this is the same '.bmf' file that I refer to at paragraph 36 above.

43. The Block Model data also identified 3 tonnes of mineralised waste contained in blocks localised within Area 2. This is demonstrated by the result for "*sade*" (which refers to 'sub-grade detrital', being material that is, from a cut-off grade perspective, close to ore but not considered ore) in Column B of the spreadsheet at Annexure DD-7, and the associated quantity in cell T7.

44. The Block Model data also identified 29 tonnes of ore contained in blocks localised within Area 2. This is demonstrated by results for "*babm*", "*bade*" and "*sobm*" (which refer to 'blendable ore bedded', 'blendable ore detrital', and 'standard ore detrital', respectively) in Column B of the spreadsheet at Annexure DD-7, and associated results in cells T2, T3 and T4 identifying a combined quantity of 29 tonnes.

45. For the following reasons, and based on my experience as an operations planning engineer at FMG, I consider it unlikely that this amount of 29 tonnes (or any portion of that amount) was ever extracted as 'ore' by FMG, and rather I believe it was removed from the area as 'waste' only.

46. First, based on data from Vulcan, the 29 tonnes of ore identified in the blocks in Area 2 have never been 'blocked out' as ore by FMG's Geology team.

47. The 'block out' process is carried out by FMG's geologists in Vulcan. In essence, the geologists create (larger) 'blocks' from the individual blocks forming a block model of a particular area of the mine to determine whether and how that area should be productively mined by FMG's excavation teams. This is generally based on the location and grades of ore within the larger block generated as part of the block out process.

48. In this regard, the block out process forms part of the excavation plan for each mining area. This process occurs for any area of the Solomon Hub mine that is to be ultimately excavated for ore or waste, and assists FMG's excavation teams to more efficiently mine ore in the area.

49. For this purpose, an area will be 'blocked out' as 'ore' if an FMG geologist recognises that the block contains ore suitable for productive mining. If the geologist does not assess the block as such, the block will not be blocked out as ore and the area will generally not be mined by FMG's excavation team, or will be mined as waste only. To this end, the block out process assists FMG to ensure it is worthwhile undertaking mining of ore in a particular area of the mine based on whether there is a sufficient volume of ore that can be efficiently extracted. In this regard, it is an exercise of economies of scale in terms of matching the planning and cost of the excavation to the gain that is achieved by removal of the material.

50. On 15 February 2024, I directed Shashi Rajah-Kanagasabai, Senior Geologist, to confirm whether any part of Area 2 had been 'blocked out' as ore from the geology records stored in the Vulcan directory. On the same day, Shashi advised me, and I verily believe, that nothing in Area 2 had been blocked out as ore and that there was only waste identified in Area 2 after the block out process.

51. Second, I also directed Shashi to conduct a review of FMG's records of all mining transactions in Area 2. FMG's mining transaction records are stored on the "Snowflake system", which records the time, composition, source, destination and volume of each truck load of material taken by FMG at the Solomon Hub mine.

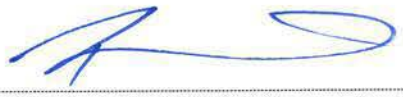
52. Each truck load will only comprise of a single material type, in that ore and waste are not combined in one truck load.

53. Shashi advised me, and I verily believe and reviewed his findings, that based on his review of the records on the Snowflake system, there are no reported transactions in which a truck load classified as ore has been taken from Area 2.

Sworn by Daniel Dakiniewicz)
at Perth)
in the State of Western Australia)
on 1 March 2024)

Signature of deponent

Before me:



Signature of witness

IRENE YEN-LINA KUO

a legal practitioner who has held
a practice certificate for at least
2 years and who holds a current
practice certificate.

"DD-1"

WAD 37 of 2022

Federal Court of Australia

District Registry: Western Australia

Division: General

YINDJIBARNDI NGURRA ABORIGINAL CORPORATION RNTBC

Applicant

STATE OF WESTERN AUSTRALIA & ORS

Respondents

This is the annexure marked **DD-1** referred to in the affidavit of Daniel Dakiniewicz sworn on 1 March 2024.

Signature of witness

IRENE YEN-LING KHO

a legal practitioner who has held
a practice certificate for at least
2 years and who holds a current
practice certificate.

The annexure marked "DD-1" referred to in the affidavit of Daniel Dakiniewicz is in '.dxf' file format and cannot be converted into a format that can be included within a PDF document. The annexure will be provided by email.

"DD-2"

WAD 37 of 2022

Federal Court of Australia

District Registry: Western Australia

Division: General

YINDJIBARNDI NGURRA ABORIGINAL CORPORATION RNTBC

Applicant

STATE OF WESTERN AUSTRALIA & ORS

Respondents

This is the annexure marked **DD-2** referred to in the affidavit of Daniel Dakiniewicz sworn on 1 March 2024.

Signature of witness

IRENE YEN-LING KUO

a legal practitioner who has held
a practice certificate for at least
2 years and who holds a current
practice certificate.

The annexure marked "DD-2" referred to in the affidavit of Daniel Dakiniewicz is in '.dxf' file format and cannot be converted into a format that can be included within a PDF document. The annexure will be provided by email.

"DD-3"

WAD 37 of 2022

Federal Court of Australia

District Registry: Western Australia

Division: General

YINDJIBARNDI NGURRA ABORIGINAL CORPORATION RNTBC

Applicant

STATE OF WESTERN AUSTRALIA & ORS

Respondents

This is the annexure marked **DD-3** referred to in the affidavit of Daniel Dakiniewicz sworn on 1 March 2024.

Signature of witness

IRENE YEN-LING KUO

a legal practitioner who has held
a practice certificate for at least
2 years and who holds a current
practice certificate.

The annexure marked "DD-3" referred to in the affidavit of Daniel Dakiniewicz is in '.00t' file format and cannot be converted into a format that can be included within a PDF document. The annexure will be provided by email.

"DD-4"

WAD 37 of 2022

Federal Court of Australia

District Registry: Western Australia

Division: General

YINDJIBARNDI NGURRA ABORIGINAL CORPORATION RNTBC

Applicant

STATE OF WESTERN AUSTRALIA & ORS

Respondents

This is the annexure marked **DD-4** referred to in the affidavit of Daniel Dakiniewicz sworn on 1 March 2024.

Signature of witness

IRENE YEN-LING KUO

a legal practitioner who has held
a practice certificate for at least
2 years and who holds a current
practice certificate.

The annexure marked "DD-4" referred to in the affidavit of Daniel Dakiniewicz is in '.00t' file format and cannot be converted into a format that can be included within a PDF document. The annexure will be provided by email.

"DD-5"

WAD 37 of 2022

Federal Court of Australia

District Registry: Western Australia

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YINDJIBARNDI NGURRA ABORIGINAL CORPORATION RNTBC

Applicant

STATE OF WESTERN AUSTRALIA & ORS

Respondents

This is the annexure marked **DD-5** referred to in the affidavit of Daniel Dakiniewicz sworn on 1 March 2024.

Signature of witness

IRENE YEN-LING KUO

a legal practitioner who has held
a practice certificate for at least
2 years and who holds a current
practice certificate.

The annexure marked "DD-5" referred to in the affidavit of Daniel Dakiniewicz is in '.00t' file format and cannot be converted into a format that can be included within a PDF document. The annexure will be provided by email.

"DD-6"

WAD 37 of 2022

Federal Court of Australia

District Registry: Western Australia

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YINDJIBARNDI NGURRA ABORIGINAL CORPORATION RNTBC

Applicant

STATE OF WESTERN AUSTRALIA & ORS

Respondents

This is the annexure marked **DD-6** referred to in the affidavit of Daniel Dakiniewicz sworn on 1 March 2024.

Signature of witness

IRENE YEN-LING KUO

a legal practitioner who has held
a practice certificate for at least
2 years and who holds a current
practice certificate.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
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2	vq_MM_12p5x12p5x4_2YP_FY24Q2_20230911r001.bml	wste	[redacted]																	13,683.24		

"DD-7"

WAD 37 of 2022

Federal Court of Australia

District Registry: Western Australia

Division: General

YINDJIBARNDI NGURRA ABORIGINAL CORPORATION RNTBC

Applicant

STATE OF WESTERN AUSTRALIA & ORS

Respondents

This is the annexure marked **DD-7** referred to in the affidavit of Daniel Dakiniewicz sworn on 1 March 2024.

Signature of witness

IRENE YEN-LING KUO

a legal practitioner who has held
a practice certificate for at least
2 years and who holds a current
practice certificate.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	SOURCE	S_ORE_TYPE	FE	SI	AL	TI	MN	P	CA	K2O	MGO	NA	S	LOI 371	LOI 650	LOI 1000	H2O	DEN	TOTAL_VOLUME	TOTAL_MASS	FULL_BLOCK_NUMBER	PARTIAL_BLOCK_NUMBER
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NOTICE OF FILING

Details of Filing

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Registry:	WESTERN AUSTRALIA REGISTRY - FEDERAL COURT OF AUSTRALIA

Registrar

Important Information

This Notice has been inserted as the first page of the document which has been accepted for electronic filing. It is now taken to be part of that document for the purposes of the proceeding in the Court and contains important information for all parties to that proceeding. It must be included in the document served on each of those parties.

The date of the filing of the document is determined pursuant to the Court's Rules.