

CONE

MINE EXPLORATION



Posse Project

Belo Horizonte – Brazil

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This presentation was based on a report that complies with disclosure and reporting requirements set forth in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' of December 2004 (the JORC Code) as prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Mineral Council of Australia (JORC).

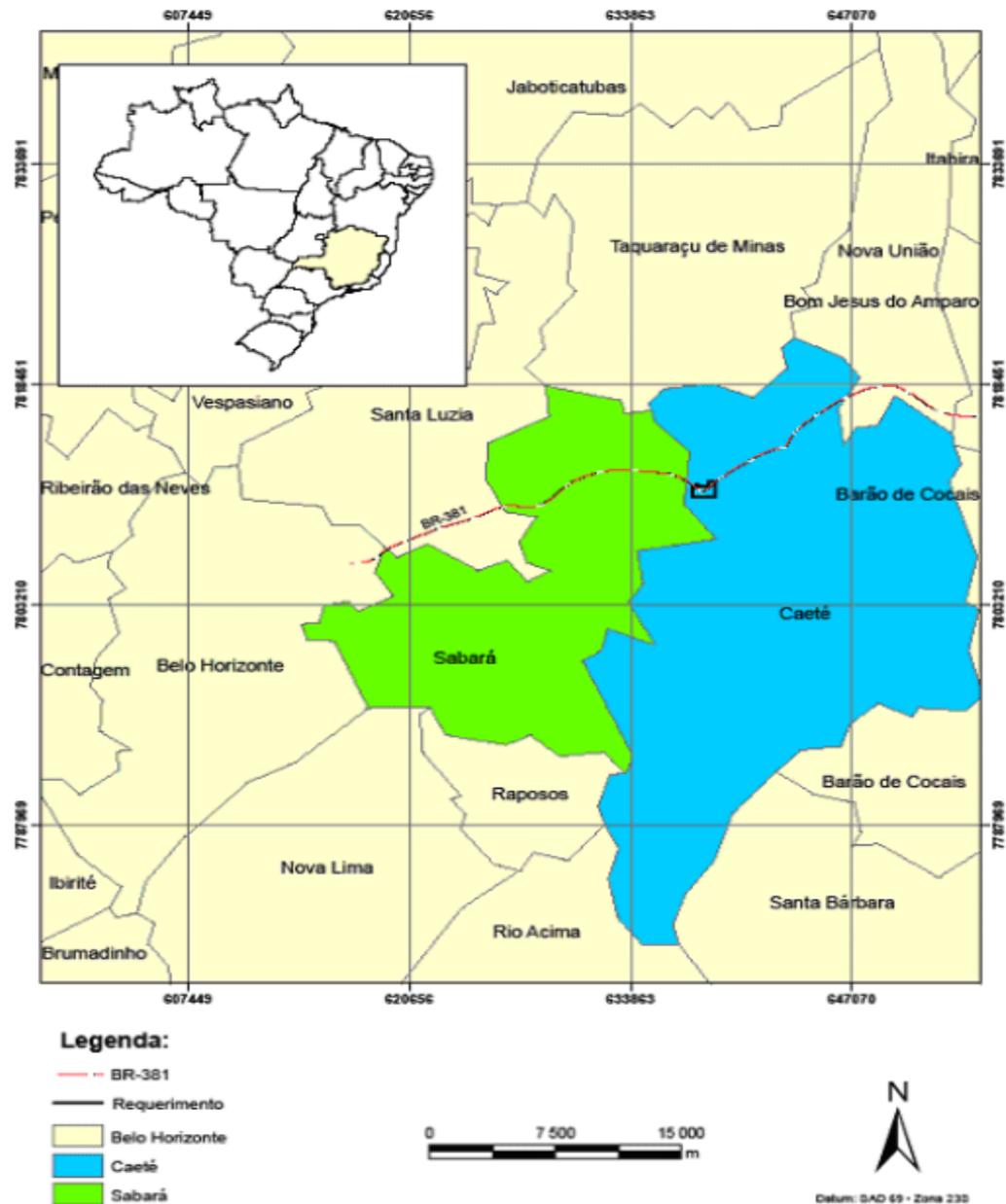


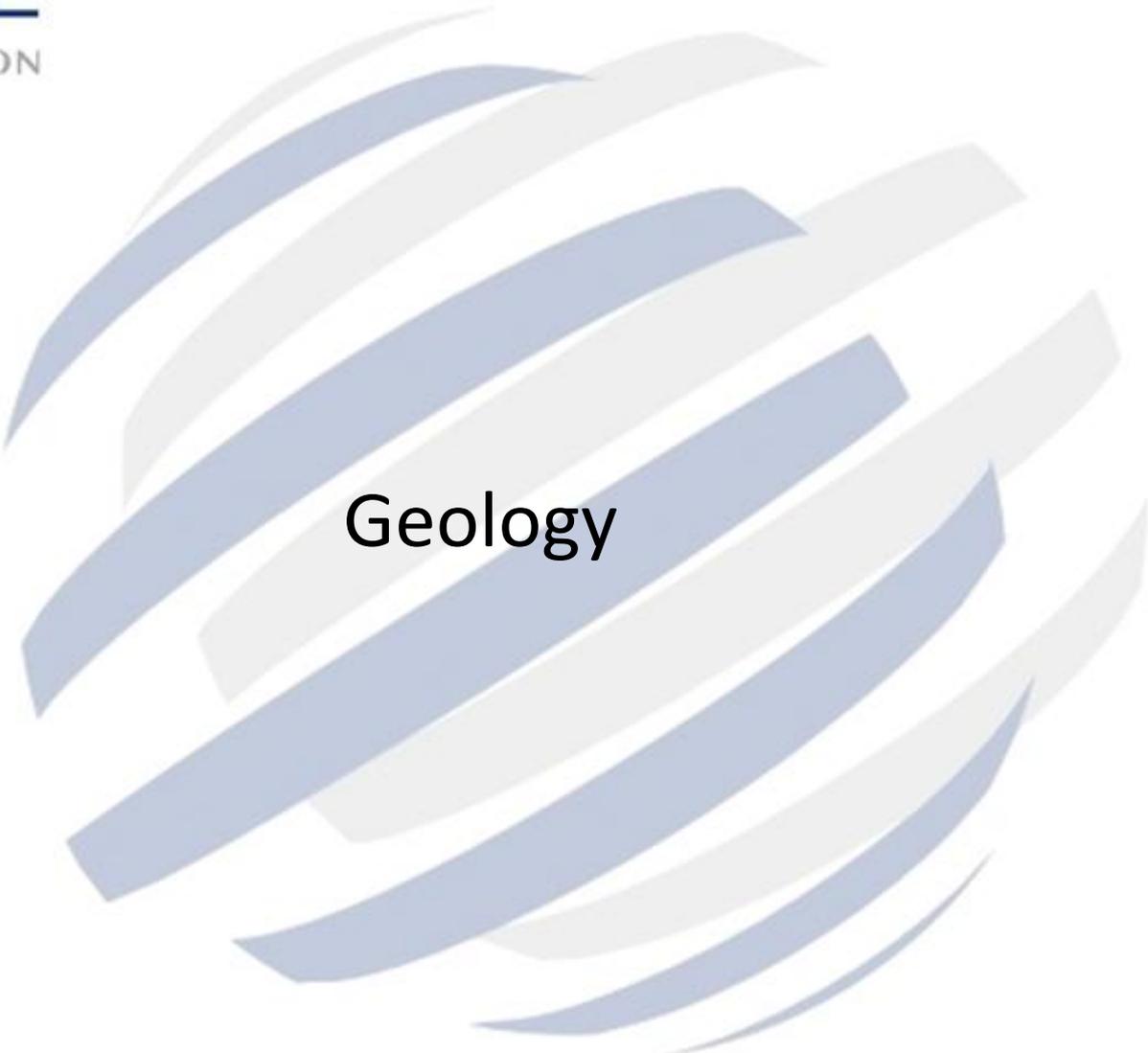
Location

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The Posse iron ore deposit is located approximately 30 km from Belo Horizonte in the Caeté region of Minas Gerais state, Brazil.



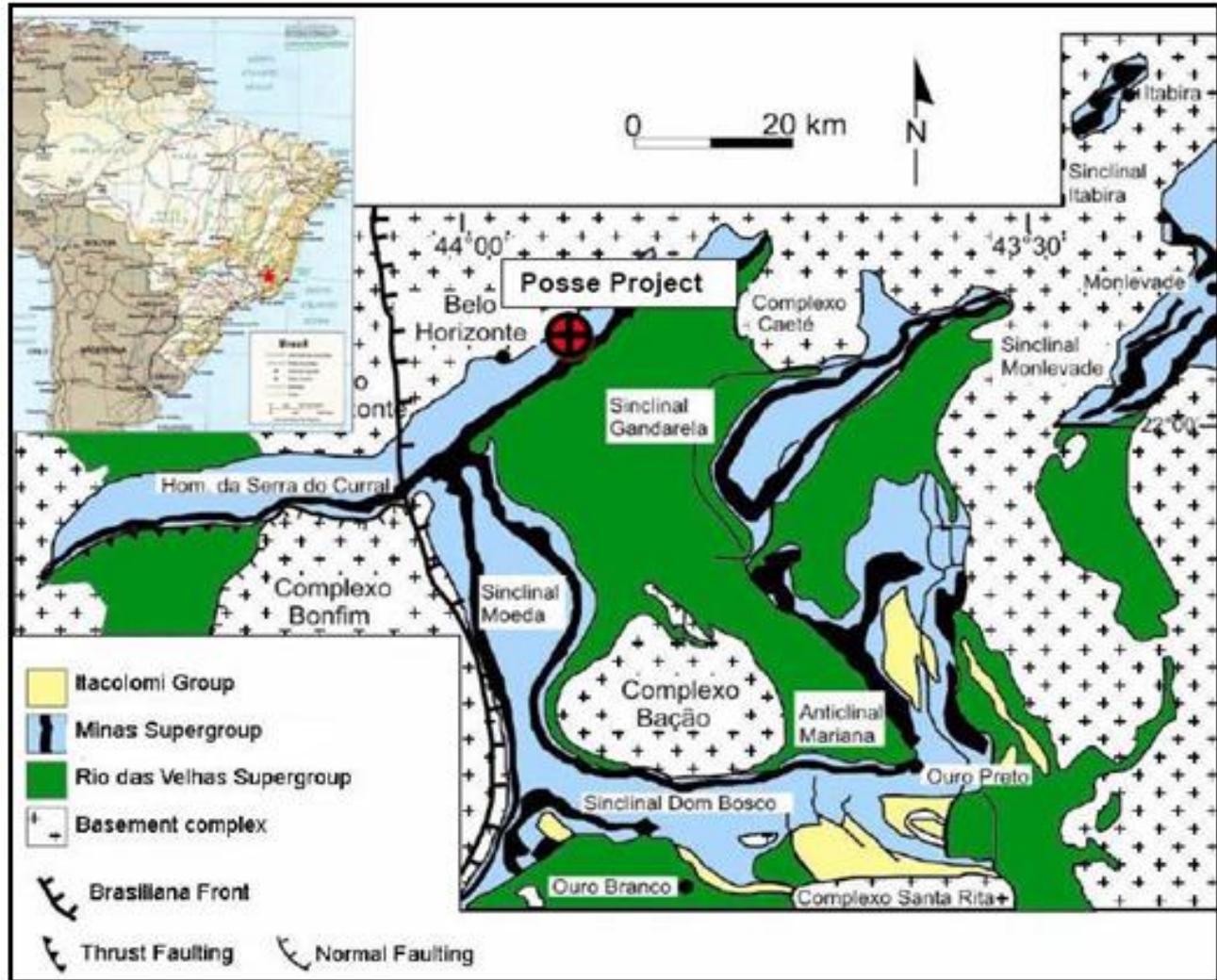


Geology

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The Posse Project is situated on Quadrilátero Ferrífero of the Craton São Francisco (Almeida, 1977), Minas Supergroup. The main iron ore deposits in the Quadrilátero are located in the Cauê Formation. It is composed of metamorphosed Banded Iron Formation (BIF) referred to as Itabirite. The Posse itabirite is composed of compact rich itabirite (IRC), compact low grade itabirite (IPC), friable rich itabirite (IRF) and friable poor itabirite (IPF).



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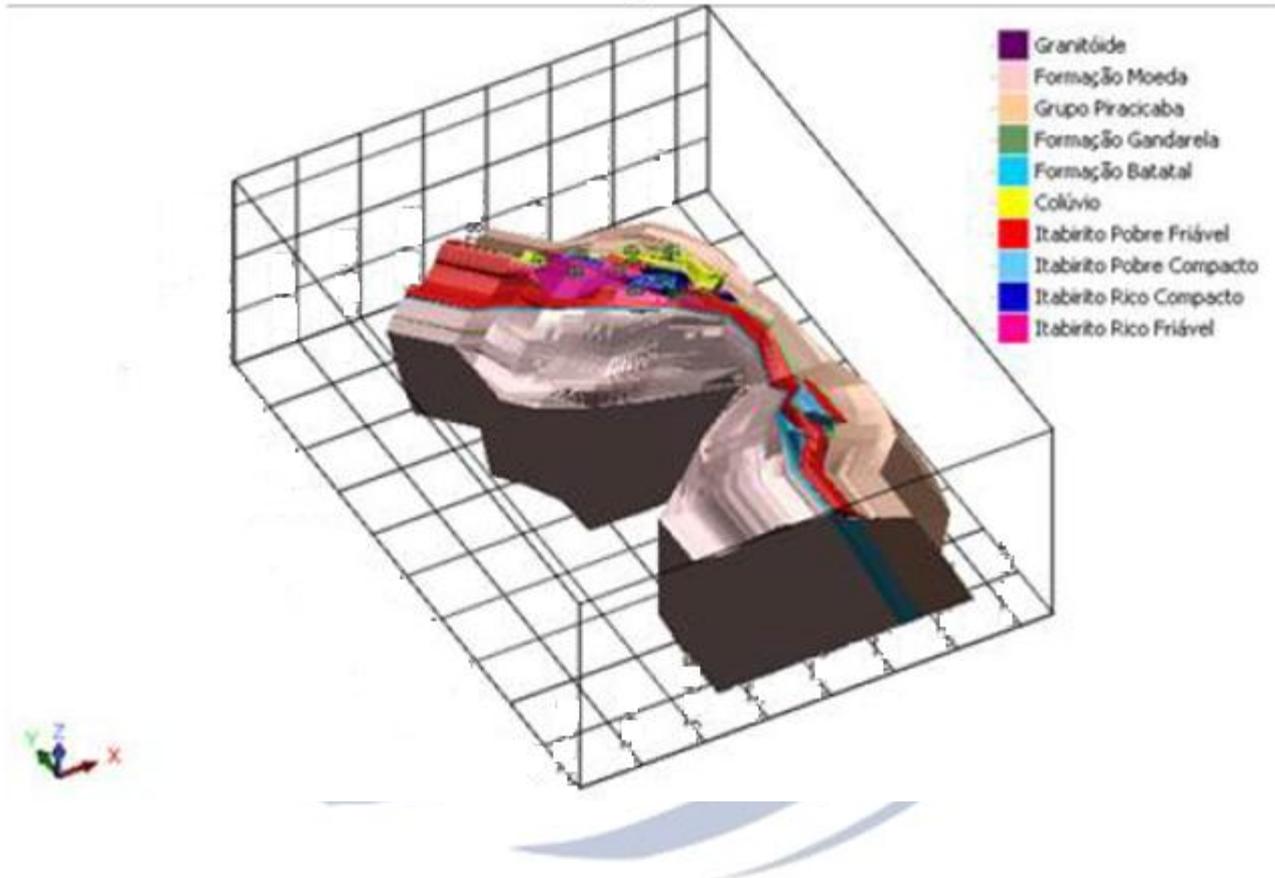


The drilled section of the mineralization is approximately 300 m long, has a horizontal width of up to 80 m and is over 100 m deep. This section corresponds to the northern limb of an antiform fold, delineated within the itabirite layer. Overall, the dip of the fold axes is 45° to 60° to the northeast.

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3D Geological Model



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Brief History

Evidence of previous mining activities is present in the Posse Project area. According to local residents, nearby road construction companies exploited the near surface itabirite to use as road basement.



The Resource Data

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Mean Analysis – Composite Grades

Lithology	Attribute	Mean	Variance	Std. Dev.	CV	Conut	Minimum	Maximum
IPC	Fe (%)	41.65	27.16	5.21	13%	15	32.10	50.61
	SiO ₂ (%)	38.35	39.24	6.26	16%	15	26.76	46.80
	Al ₂ O ₃ (%)	0.44	0.07	0.26	59%	15	0.18	1.32
	Mn (%)	0.12	0.02	0.13	107%	15	0.02	0.59
	P (%)	0.020	0.000	0.008	34%	15	0.010	0.041
	LOI (%)	0.57	0.29	0.53	94%	15	0.08	2.10
IPF	Fe (%)	42.06	24.55	4.95	12%	70	18.30	51.81
	SiO ₂ (%)	33.99	28.21	5.31	16%	70	21.76	44.59
	Al ₂ O ₃ (%)	2.19	9.39	3.06	140%	70	0.21	16.46
	Mn (%)	0.25	0.10	0.32	130%	70	0.01	1.61
	P (%)	0.020	0.000	0.010	64%	70	0.005	0.060
	LOI (%)	1.70	3.95	1.99	117%	70	0.14	10.84
IRC	Fe (%)	58.54	61.24	7.83	13%	27	42.76	68.50
	SiO ₂ (%)	13.83	114.01	10.68	77%	27	0.94	36.03
	Al ₂ O ₃ (%)	1.22	1.21	1.10	90%	27	0.35	4.96
	Mn (%)	0.19	0.06	0.24	130%	27	0.02	1.07
	P (%)	0.020	0.000	0.009	47%	27	0.005	0.043
	LOI (%)	0.72	0.60	0.78	107%	27	0.07	3.19
IRF	Fe (%)	55.14	27.77	5.27	10%	47	33.92	65.43
	SiO ₂ (%)	16.44	59.09	7.69	47%	47	3.10	38.49
	Al ₂ O ₃ (%)	2.11	2.11	1.45	69%	47	0.53	7.04
	Mn (%)	0.38	0.24	0.49	127%	47	0.01	2.09
	P (%)	0.01	0.000	0.011	77%	47	0.005	0.057
	LOI (%)	1.53	0.93	0.96	63%	47	0.39	3.80

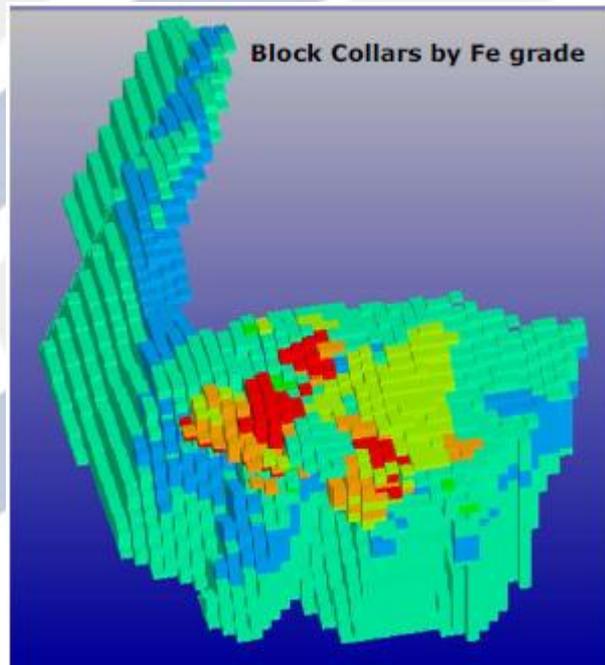
Classification	Analyzed Elements						
	Fe%	SiO ₂ %	Al ₂ O ₃ %	P%	CaO%	Mn%	LOI %
Itabirite with Compact Hematite bands	67.6	2.90	0.76	< 0.01	0.04	0.01	0.43
Friable Itabirite	42.6	37.90	1.26	< 0.01	0.03	0.01	0.74
Hematite friável	68.6	2.06	0.40	< 0.01	0.04	0.01	0.30
Friable Itabirite	58.8	14.30	0.76	< 0.01	0.03	0.34	0.75
Compact Hematite	68.6	0.96	0.42	0.06	0.13	0.40	0.49
Compact Hematite	68.3	2.82	0.42	0.01	0.05	0.02	0.22
Friable Itabirite	48.9	31.30	0.46	< 0.01	0.02	0.04	0.27
Compact Hematite in contact with dolomite	69.7	0.51	0.39	0.04	0.10	0.15	0.44
Friable Itabirite	49.6	29.30	0.58	0.01	0.02	0.05	0.43
Friable Itabirite	40.2	42.70	0.49	< 0.01	0.02	0.05	0.25
Friable Itabirite	46.9	32.60	0.46	< 0.01	0.05	0.05	0.36
Compact Hematite	69.0	2.03	0.35	0.04	0.10	0.01	0.18
Friable hematite in contact with dolomite	68.4	0.57	1.06	< 0.01	0.04	0.14	1.12
Friable Itabirite	46.3	34.40	0.60	< 0.01	0.03	< 0.01	0.36
Friable hematite with lens of compact hematite	68.7	1.88	0.50	0.01	0.04	0.02	0.47
Compact Hematite	69.1	1.88	0.53	0.01	0.05	0.01	0.37
Friable Itabirite	50.4	27.40	1.12	< 0.01	0.02	0.02	0.68
Compact Hematite	69.9	0.59	0.45	0.03	0.07	0.01	0.29
Friable Itabirite	49.2	30.20	0.66	< 0.01	0.02	0.01	0.32
Compact Hematite	67.6	2.27	0.74	0.04	0.10	< 0.01	0.55
Compact Hematite	68.3	1.01	0.85	0.03	0.08	0.01	0.70
Friable Itabirite Rich	68.8	1.81	0.36	0.03	0.04	0.01	0.64
Friable hematite with lens of compact itabirite	39.8	43.80	0.37	< 0.01	0.02	0.05	0.63

Mineralised Zones	Tonnes (Mt)	Fe (%)	SiO ₂ (%)	Al ₂ O ₃ (%)	Mn (%)	P (%)	LOI (%)
IPC	28.47	42.88	36.51	0.47	0.15	0.026	0.64
IPF	5.42	41.82	34.56	1.94	0.27	0.018	1.63
IRC	0.80	57.54	15.36	1.20	0.20	0.020	0.65
IRF	1.34	55.03	16.78	2.15	0.31	0.015	1.47
Total	36.02	43.50	35.02	0.77	0.18	0.024	0.82

The total Resource has been estimated at 36.02 Mt with average grade of 43.5% Fe.

Volume

A 3D block model was constructed for resource estimation purposes, based on a 50mE x 50mN x 10mRL (east x north x RL) parent block size and 12.5mE x 12.5mN x 5mRL (east x north x RL) minimum block size:



Volumetric Block Model Validation

Materials	Vol. Wireframes (Mm3)	Vol. Block Model (Mm3)	Comparison
Formação Moeda	39.40	41.20	95.6%
Formação Batatal	1.96	1.85	106.0%
Formação Gandarela	3.02	2.74	110.4%
Grupo Piracicaba	13.18	12.52	105.3%
Granitóide	1.17	1.11	105.4%
Colúvio	0.04	0.05	92.3%
<i>Sub-Total Waste</i>	<i>58.78</i>	<i>59.46</i>	<i>98.9%</i>
IPC	9.88	9.85	100.4%
IPF	3.24	3.08	105.2%
IRC	0.26	0.23	109.9%
IRF	0.59	0.59	99.9%
<i>Sub-Total Mineralization</i>	<i>13.97</i>	<i>13.75</i>	<i>101.6%</i>
Total	72.75	73.21	99.4%

The Posse iron project represents a relatively small-medium scale but prospective iron ore deposit.



Concentration Tests

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Magnetic Separation

The equipment used on these tests is the G340 – MINIMAG. It has the same operational characteristics of the larger size equipments, what allows high reliability projections.

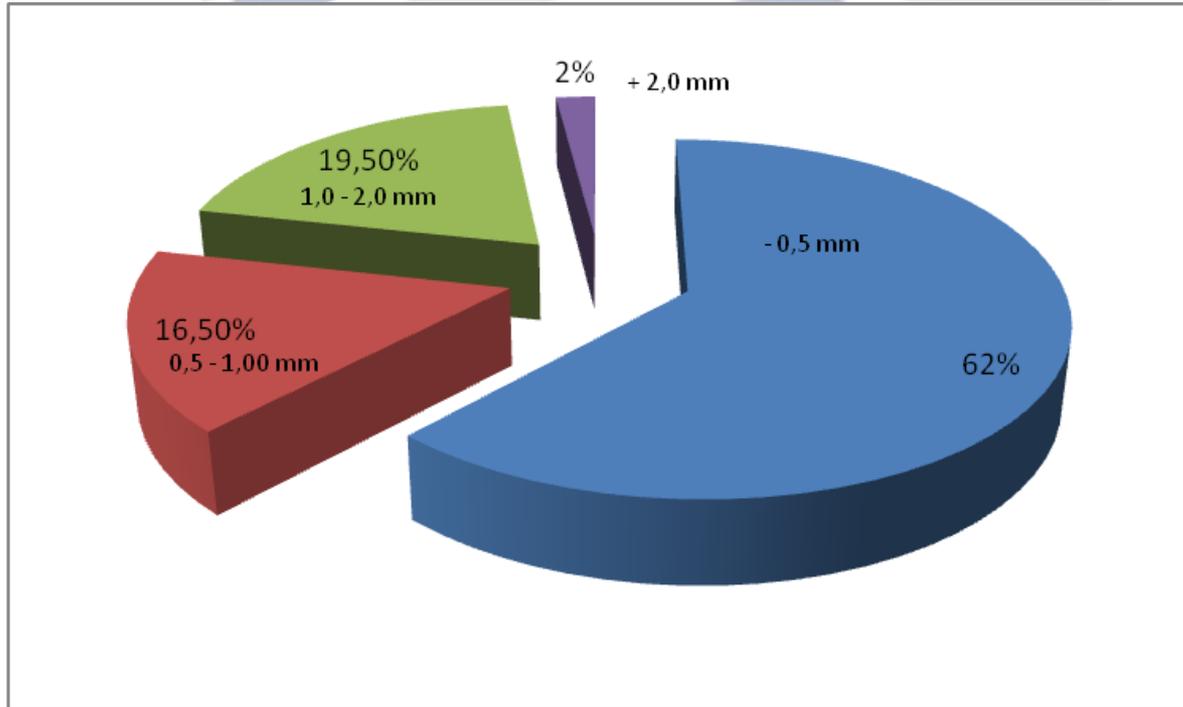
With the results it was observed the existence of magnetite in the iron ore.



The first phase of these test consist on the magnetic separation using a LIMS with the objective of removing the magnetite from the fraction (- 2mm) of the material. Obtaining the following products:

- NPO +12,7mm -15,8mm
- Hematitinha +6,3mm -12,7mm
- Sinterfeed +2,0mm -6,3mm
- Dewatered Magnetic Concetrated -2,0mm
- Dewatered Reject -2,0mm

Granulometry Partition – First Phase



The non magnetic material (LIMS reject) was sent for tests of high intensity magnetic separation. The second phase is divided in Rougher, Scavenger and Cleaner Stages and used the GX-2000 separator model in an industrial installation. The rejects, considering their iron grade, may recycle following the mass balance.

Analysis Result

Number	2315	2324	2327	2328	2329
	Reject	Concentrated	Reject	Reject	Concentrated
	CL	RG	RG	SC	SC
Date	18/4/2011	18/4/2011	18/4/2011	18/4/2011	18/4/2011
Fe:	58,38	62,82	56,08	44,17	60,41
SiO₂:	14,68	7,84	17,96	35,02	12,32
AL₂O₃:	0,79	1,57	0,72	0,59	0,55
P:	0,017	0,014	0,015	0,015	0,014
Mn:	0,23	0,19	0,20	0,20	0,19
PPC:	0,64	0,36	0,65	0,81	0,30

Number	2330	2331	2332	2333
	Feed	Concentrated	Feed	Reject
	RG	CL	CL	CL
Date	18/4/2011	18/4/2011	18/4/2011	18/4/2011
Fe:	61,33	64,87	62,39	47,72
SiO ₂ :	10,64	6,03	9,66	29,98
AL ₂ O ₃ :	0,82	0,59	0,50	0,75
P:	0,013	0,014	0,013	0,013
Mn:	0,22	0,19	0,19	0,24
PPC:	0,42	0,31	0,19	0,51

The final concentrated on these tests (union of the products of the first and second phase) presented the following grades:

Fe – 63,70%

SiO₂ – 7,37%

Under 1mm was considered to be concentrated.



Mining Plans

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Average Grade

Products	Mass (t)	Fe (%)	SiO2 (%)	Al2O3 (%)	P (%)	Mn (%)	PPC (%)
Granulated	441 372	63.41	7.08	1.08	0.019	0.19	0.62
Sinter Feed Thick	320 649	62.45	7.43	1.38	0.013	0.29	1.14
Sinter Feed Thin	324 549	58.52	12.23	1.78	0.014	0.45	1.43
Pellet Feed	449 539	47.88	25.59	2.60	0.018	0.41	1.84

Considering 9.6 Mt of mineable reserve and 300 working days per year, it is indicated as an appropriated anual production the value of 800 kt of ROM and a daily production of 2.8 kt. It would result in 16 years of activity.

Parameters used for the armhole operation

- Bank height – 10 m
- Verge Width – 7 m (3 firsts periods) and 4 m (Final Situation)
- Face angle – 50 degrees
- Ramp width – 10 m
- Max ramp inclination – 10%

Parameters of the ore and the waste

- Ore Density: 2.6 g/cm³
- Ore Blistering: 30%
- Waste Density: 2.3 g/cm³
- Waste Blistering: 30%

Possible Mining ROM

First Month – 30 kt/month

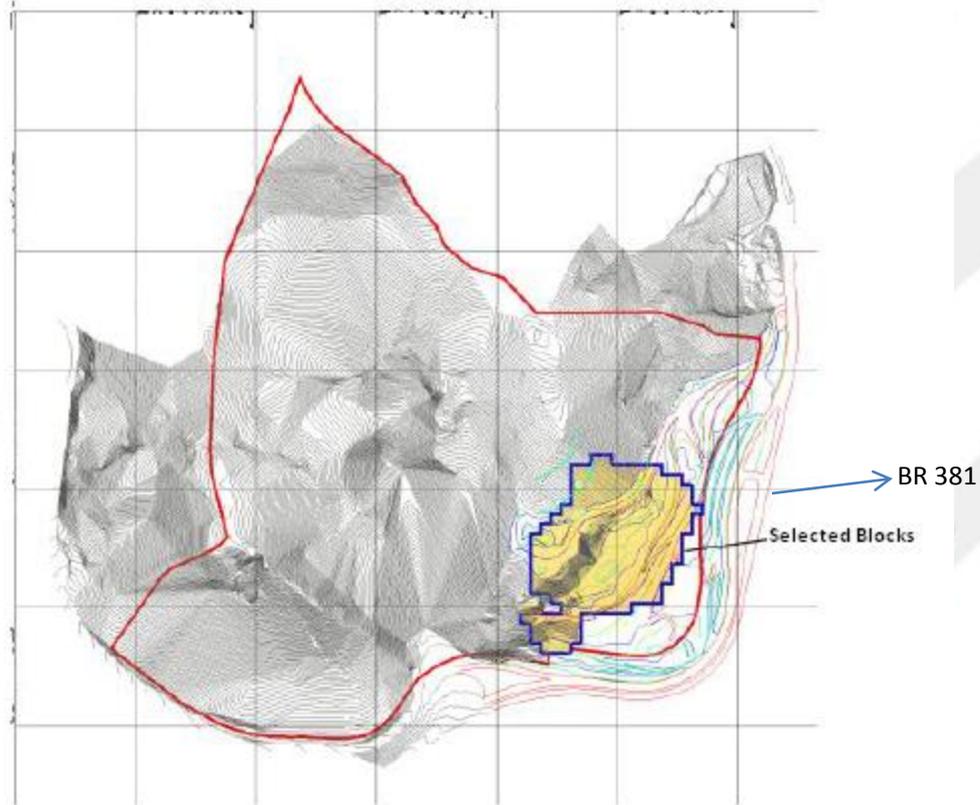
Second to Sixth Month – 60 kt/month

Seventh to Twelfth Month – 40 kt/month

Twelfth to Twenty-Fourth Month – 60 kt/month

It is indicated for the first 3 years a production of 300 ktpa, and for the last 12 years a production of 800 ktpa.

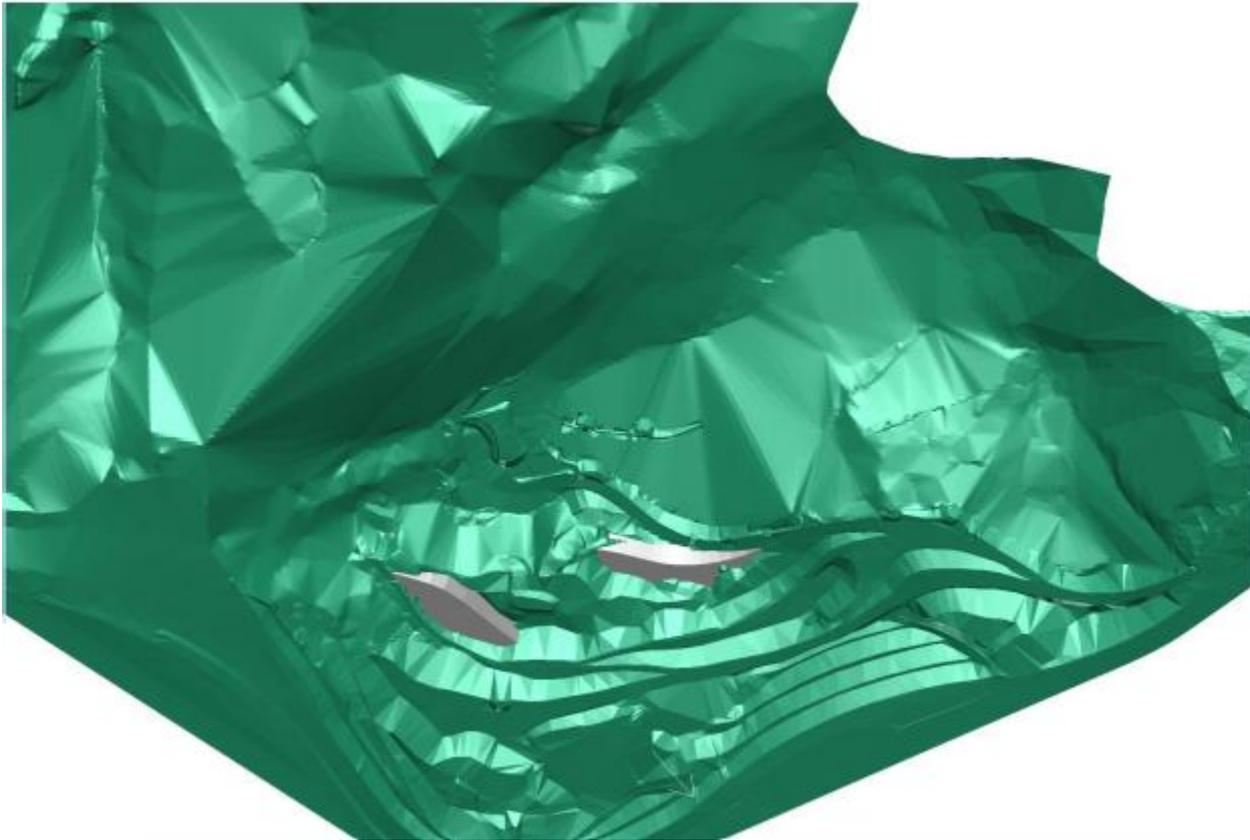
Base Situation



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Mining and Waste Dump – First Month



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Mining and Waste Dump – Seventh Month



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Mining and Waste Dump – Twelfth Month



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Mining and Waste Dump – Twenty-Fourth Month



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Waste Dump - Final

- Bank height – 20m
- Verge Width – 5m
- Face angle – 35 degrees
- Area – 5 hectare
- Volume - 525.000m³

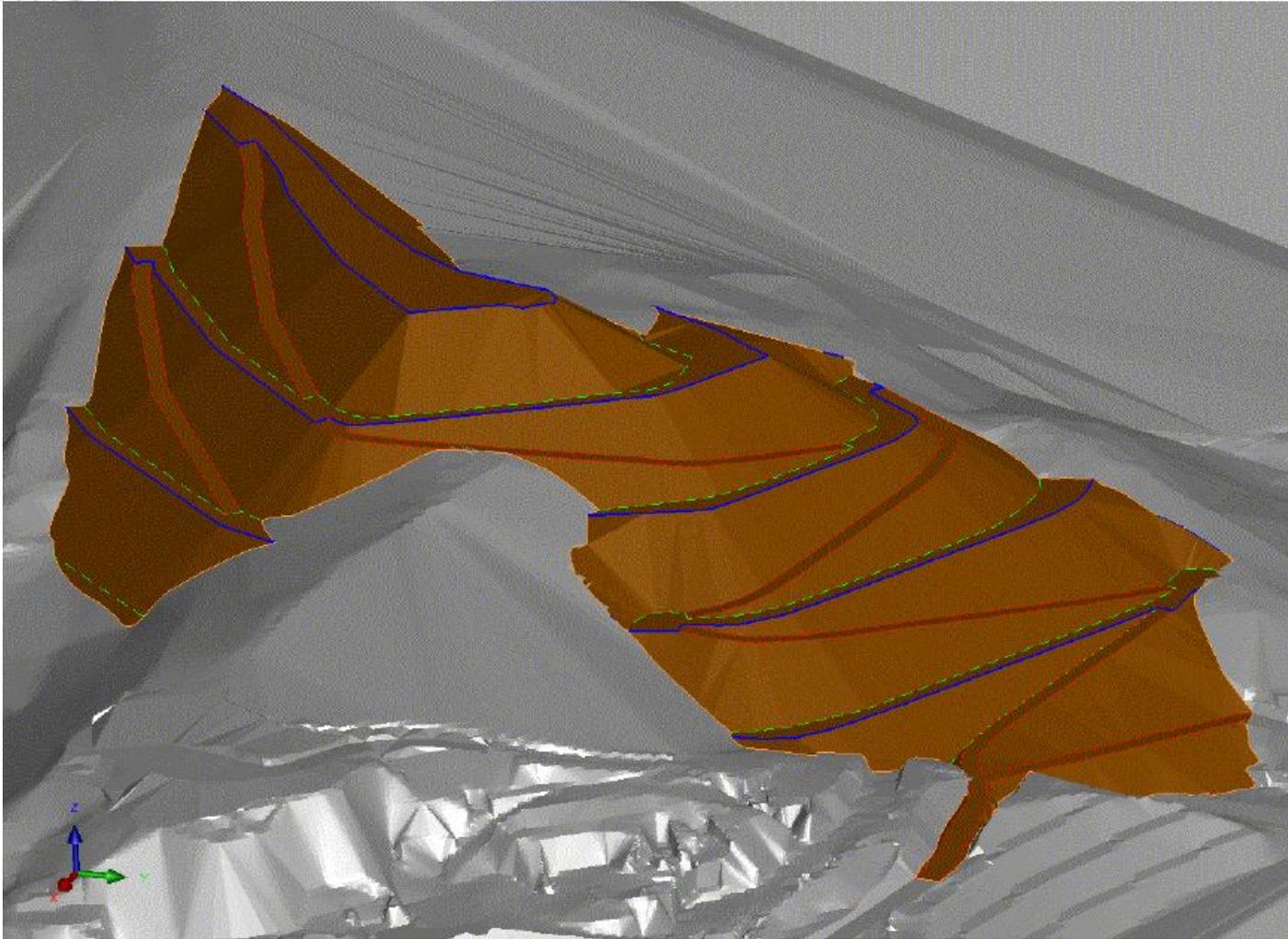
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Waste Dump - Final

- Periferical canals should be constructed to collect and direct pluvial water. The drainage shall have verges with 2% of inclination in the transverse way, directed for the base of the bank, and 1% directed for the center of the pile to the topography intersection line.
- After the filling of each bank until the final projected form, the verges should be covered with layers of lateritic compacted soil and the slopes between verges should be reforested with appropriate plants.
- To minimize the pluvial water effects, the external limit of each verge shall be protected with stools.

Waste Dump - Final



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		Period	-	Total
Ore	IRC Ind.		Ton.	432.969
	IRC Inf.		Ton.	39.845
	IRF Ind.		Ton.	790.999
	IRF Inf.		Ton.	21.187
	Ore		Ton.	1.285.000
	Waste Total	IPC + IPF	Ton.	727.671
		Waste Franco	Ton.	168.801
		Waste Total	Ton.	896.472
	Move Total		Ton.	2.181.472
	Total REM		-	0,70
	Granulated		Ton.	374.334
	DMT (Ore)		m	425,0
	DMT (Waste)		m	341,8
Quality ROM	Fe		%	56,61
	SiO2		%	15,08
	Al2O3		%	1,93
	P		%	0,017
	Mn		%	0,20
	LOI		%	1,25
Recovery Products	Granulated		%	29%
	Sinter Thick		%	21%
	Sinter Thin		%	21%
	Pellet Feed		%	30%

- Physical availability: 80%
- Utilization: 85%
- Truck Capacity: 22 t
- Bulldozer Capacity: 2.5 m³
- Income: 68%
- 26 days per month and 16 hours per day

This plan results in the mining of 1285 kt Itabirite with the recovery of 29% granulated, 42% thin and thick sinter and 30% Pellet-feed.

Monthly mass to be moved

Month	Ore	Waste	Total
1	32.735	0	32.735
2	59.078	54.203	113.281
3	59.078	54.203	113.281
4	59.078	54.203	113.281
5	59.078	54.203	113.281
6	59.078	54.203	113.281
7	38.681	41.643	80.325
8	38.681	41.643	80.325
9	38.681	41.643	80.325
10	38.681	41.643	80.325
11	38.681	41.643	80.325
12	58.728	32.096	90.824
13	58.728	32.096	90.824
14	58.728	32.096	90.824
15	58.728	32.096	90.824
16	58.728	32.096	90.824
17	58.728	32.096	90.824
18	58.728	32.096	90.824
19	58.728	32.096	90.824
20	58.728	32.096	90.824
21	58.728	32.096	90.824
22	58.728	32.096	90.824
23	58.728	32.096	90.824
24	58.728	32.096	90.824
Total	1.285.000	896.472	2.181.472

Average Distance of Transportation - DMT

		Total
DMT (Ore)	m	425,0
DMT (Waste)	m	341,8

Frente 01		Ore				Waste					
Ton	Distance (m)	Speed km/h		Time (min)		Ton	Distance (m)	Speed km/h		Time (min)	
		To go	Return	To go	Return			Ida	volta	Ida (cheio)	volta
32.735	350	20	26	1,1	0,8	-	0	15	20	-	-
59.078	435	20	26	1,3	1,0	54.203	282	15	20	1,1	0,8
59.078	435	20	26	1,3	1,0	54.203	282	15	20	1,1	0,8
59.078	435	20	26	1,3	1,0	54.203	282	15	20	1,1	0,8
59.078	435	20	26	1,3	1,0	54.203	282	15	20	1,1	0,8
59.078	435	20	26	1,3	1,0	54.203	282	15	20	1,1	0,8
38.681	470	20	26	1,4	1,1	41.643	415	15	20	1,7	1,2
38.681	470	20	26	1,4	1,1	41.643	415	15	20	1,7	1,2
38.681	470	20	26	1,4	1,1	41.643	415	15	20	1,7	1,2
38.681	470	20	26	1,4	1,1	41.643	415	15	20	1,7	1,2
38.681	470	20	26	1,4	1,1	41.643	415	15	20	1,7	1,2
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0
58.728	445	20	26	1,3	1,0	32.096	675	15	20	2,7	2,0

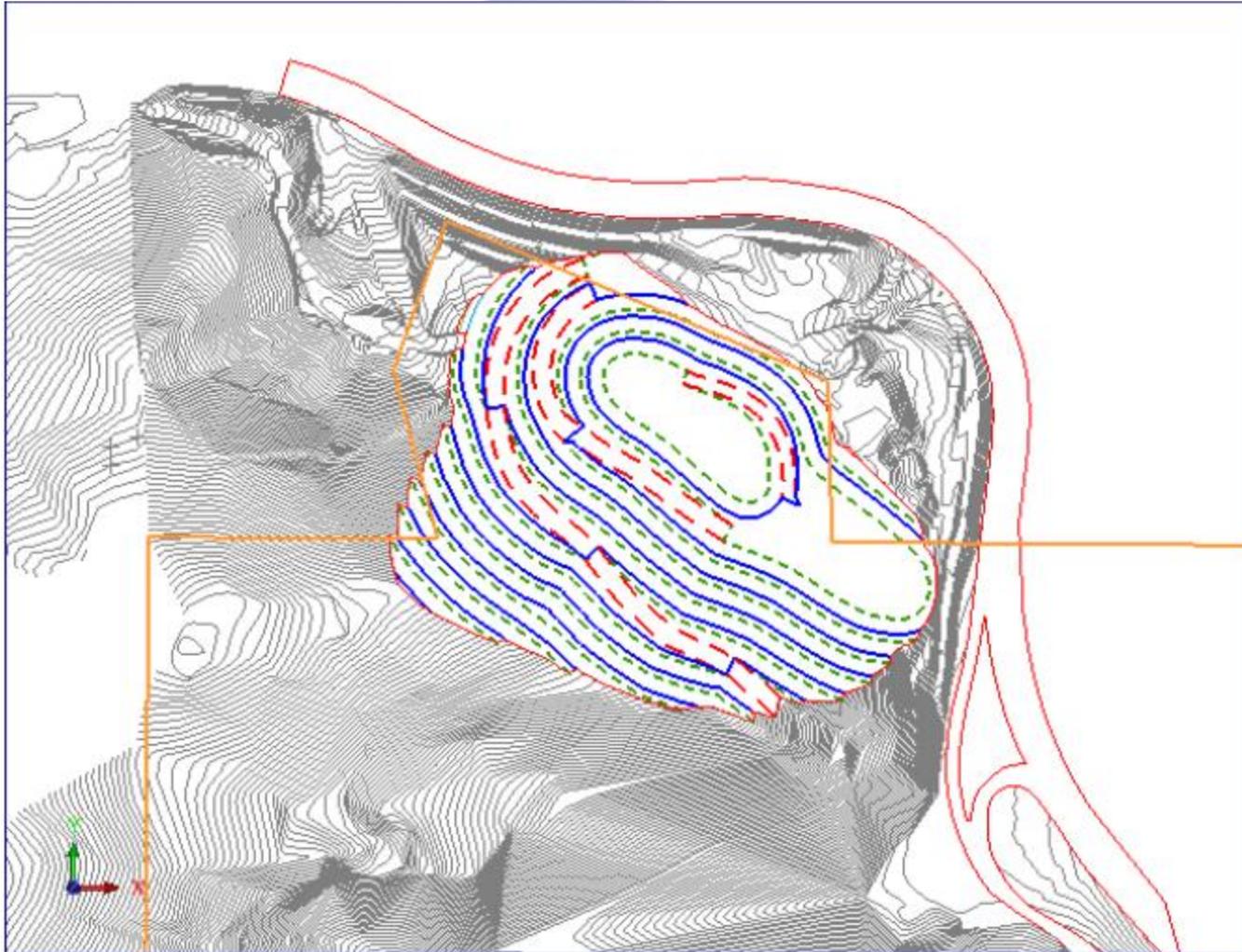
	Bulldozer	Loader	Truck
Hours/month	Ore 263	263	263
	Waste 263	263	263

Fixed Cycle Time(s)	Manouver Load	Wait (s)	Manouver Unload (s)	Load Time (s)		Fixed Time (s)	
				Ore	Waste	Ore	Waste
	30	40	90	165	157	325	317

Production Bulldozer (t/h)		Production Bulldozer (t/mês)	
Ore	307		86.901
Waste	431		121.954

Production Loader (t/h)		Production Loader (t/mês)	
Ore	307		86.901
Waste	366		103.480

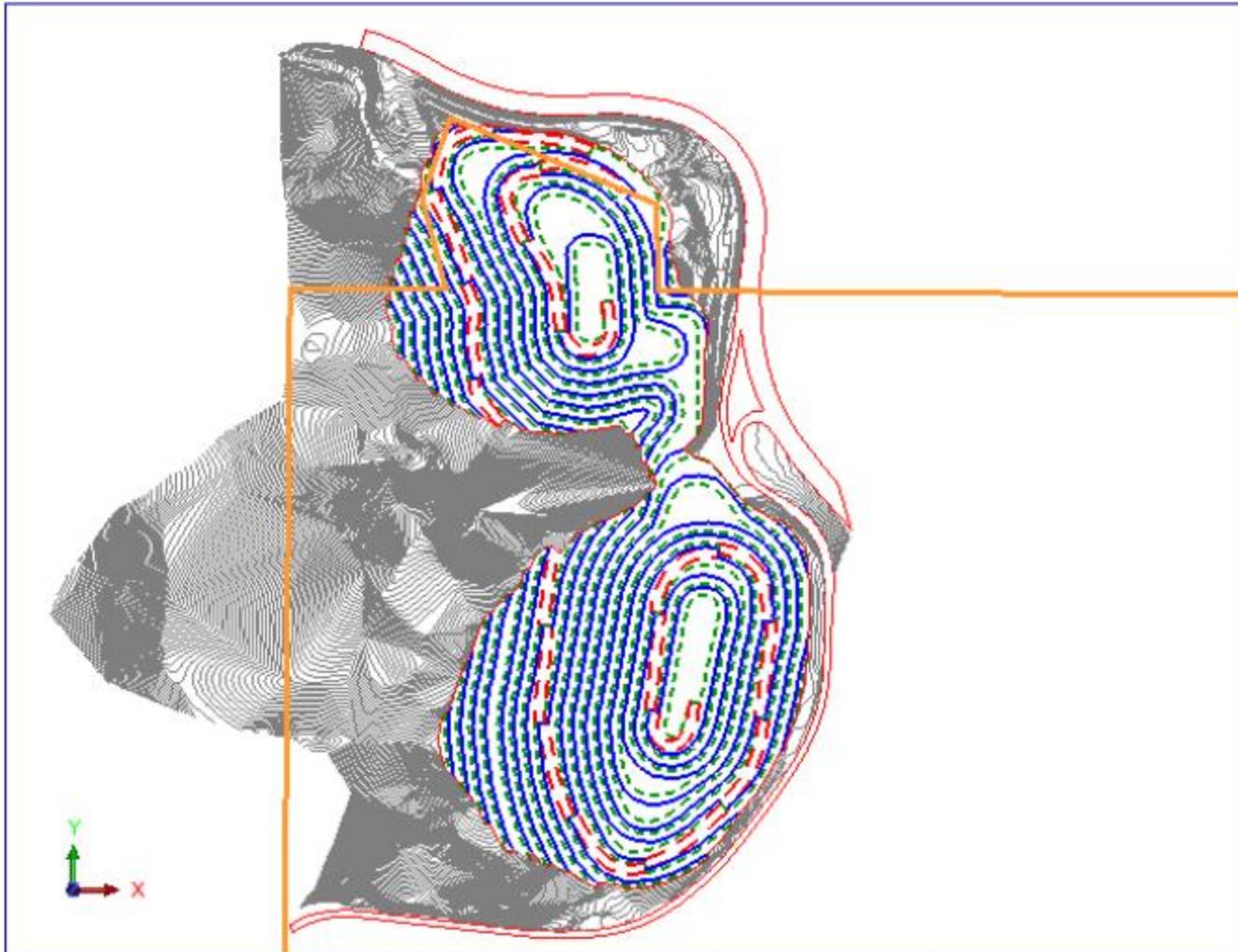
Mining and Waste Dump – First Three Years



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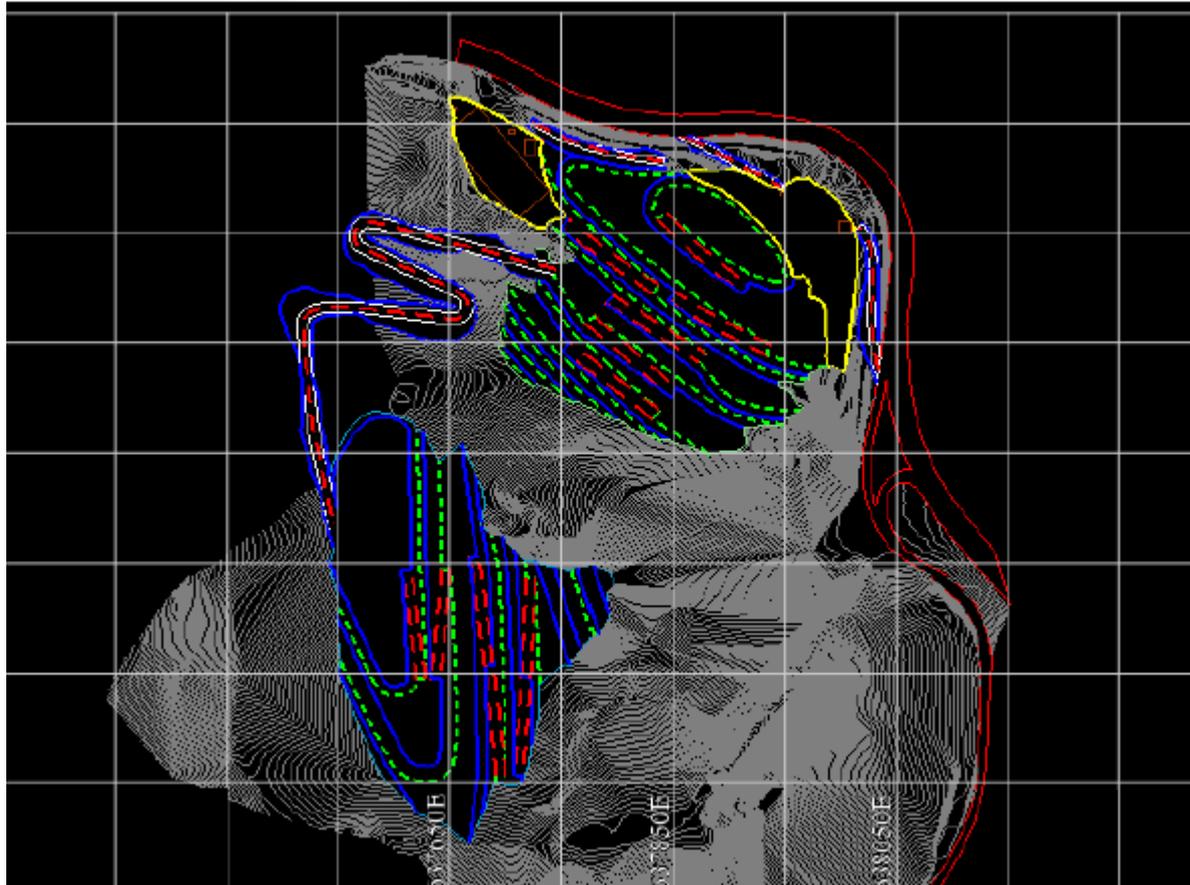
Mining and Waste Dump – Final



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Operational access road in 3 years



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Mineral Processing

- **Crushing and Screening Project:** It is indicated a plant for the production of granulated and hematitinha in a scale of 600.000 t/year of ROM. The production of thick sinter feed need a special screen of 1 mm.
- **Location:** It shall be constructed northwest of the final armhole, near the highway, so it will reduce the avarage transport distance. The concentration industry shall be installed in the same location to not be necessary the construction of a tunnel under the highway.
- The available area for the plant is 15000 m².
- The plant must have, at least, for the first three years, the following equipments:
 - 1 Vibratory Feeder;
 - 1 Jaws Crusher (primary);
 - 6 Conveyor Belt;
 - 1 Jaws or cone crusher (secondary);
 - 1 Inclined Vibratory Screen;
 - 1 Diesel Generator.

Financial

- CAPEX :
 - Acquisition:
 - 300 ktpa: R\$ 5 365 500.00
 - 600 ktpa: R\$ 8 199 500.00
 - Infrastructure: R\$ 1 692 900.00
- OPEX: Considering that the mine has a small size, the opex using outsourced fleet is quite reduced.
 - Labor: R\$ 1 123 726.80
 - Operational: R\$ 5 586 737.25

Financial

Cash flow:

- Own fleet (first 3 years): R\$ 13 776 998.00
- Outsourced fleet (first 3 years): R\$ 4 989 920

Considering an attractive price of R\$ 73,00/t for the pellet feed, the enterprise would remunerate with about R\$ 30 000 000.00 in present value.

In these indicated values of the financial plan it is included the construction of a diesel generator and fuel storage for the energy supply of the first three years.

Financial

Mining cost for ore and waste: R\$ 5/t

Mineral processing cost (crushing): R\$ 11/t

Products' sell price: R\$ 100/t for granulated, R\$ 65/t for thick sinter.

Mining recovery: 100%

Logistic

The area already has all the transportation infrastructure. The only roads and access that need to be constructed are those for the transport of ore and waste from the mine to the waste dump and to the mineral processing plant.

Fe analysis

Standard Results – Fe (%)

Std.	Order	Fraction Size F1		Fraction Size F2		Fraction Size F3		Fraction Size F4	
		Fe ₂ O ₃	Fe						
\$IPT123	7/8/2007	92.70	64.90	92.90	65.00	93.60	65.50	93.40	65.40
\$IPT123	7/8/2007	93.50	65.40	93.50	65.40	93.60	65.40	93.70	65.50
\$IPT123	17/8/2007	94.10	65.80	93.80	65.60	93.00	65.10	93.90	65.70
\$IPT123	6/9/2007	92.40	64.60	93.00	65.10	93.50	65.40	93.20	65.20
\$IPT123	5/11/2007	93.20	65.20	93.10	65.10	92.80	64.90	92.90	65.00
\$IPT123	7/11/2007	93.60	65.40	93.10	65.10	92.80	64.90	92.80	64.90
\$IPT123	22/11/2007	94.20	65.90	93.40	65.30	93.00	65.00	92.40	64.60

Fraction Size 1 (> 8.0mm)

Fraction Size 2 (> 1.0mm and < 8.0mm)

Fraction Size 3 (> 0.15mm and < 1.0mm)

Fraction Size 4 (> 0.15mm)

below summarises the standard utilised by SGS.

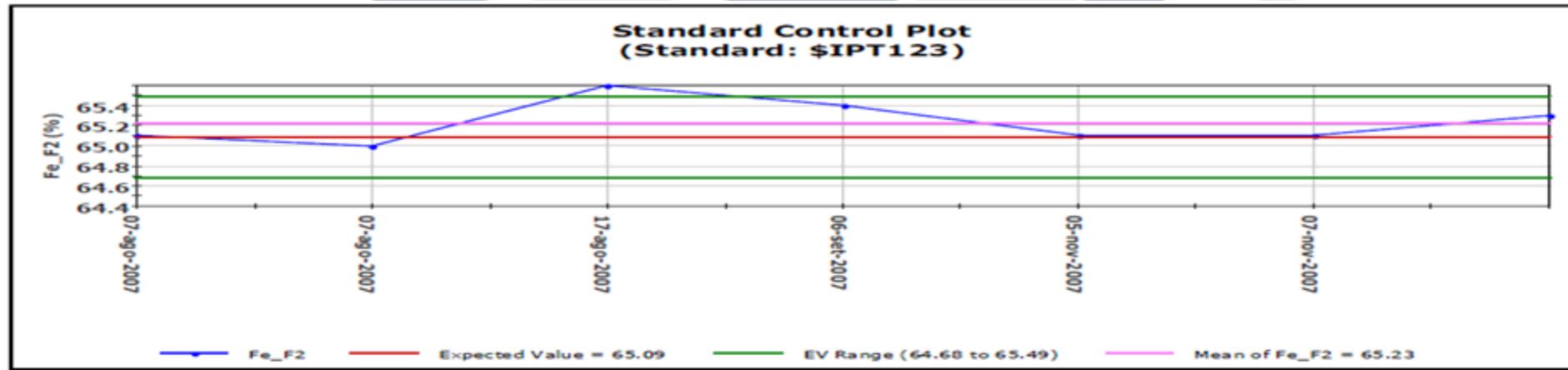
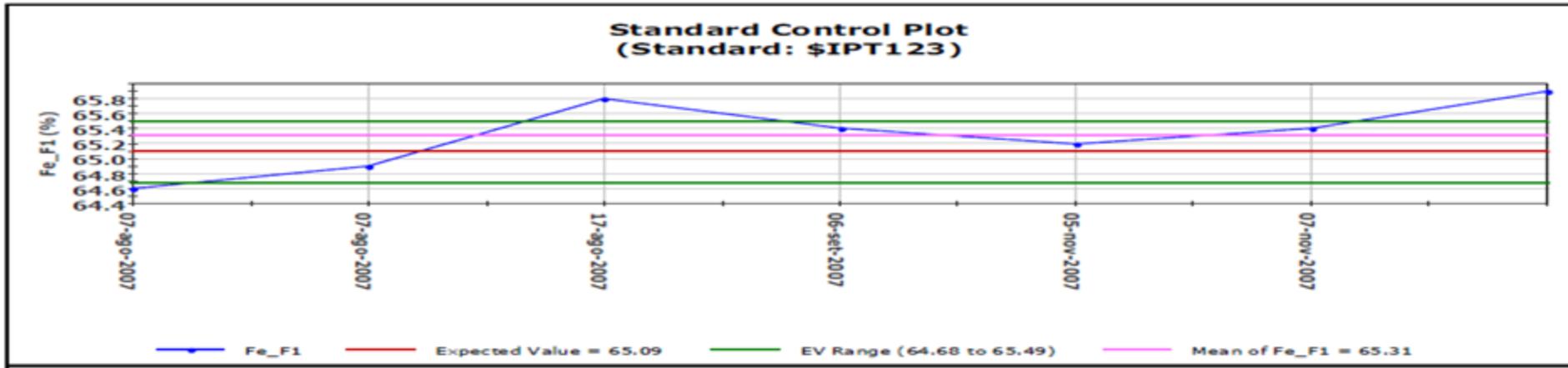
Standard Details

Standard	Expected Value	Min	Max	Text Id	Element
Fe 9308 123 IPT	93.080002	92.5	93.650002	FeM(XR)	Fe2O3

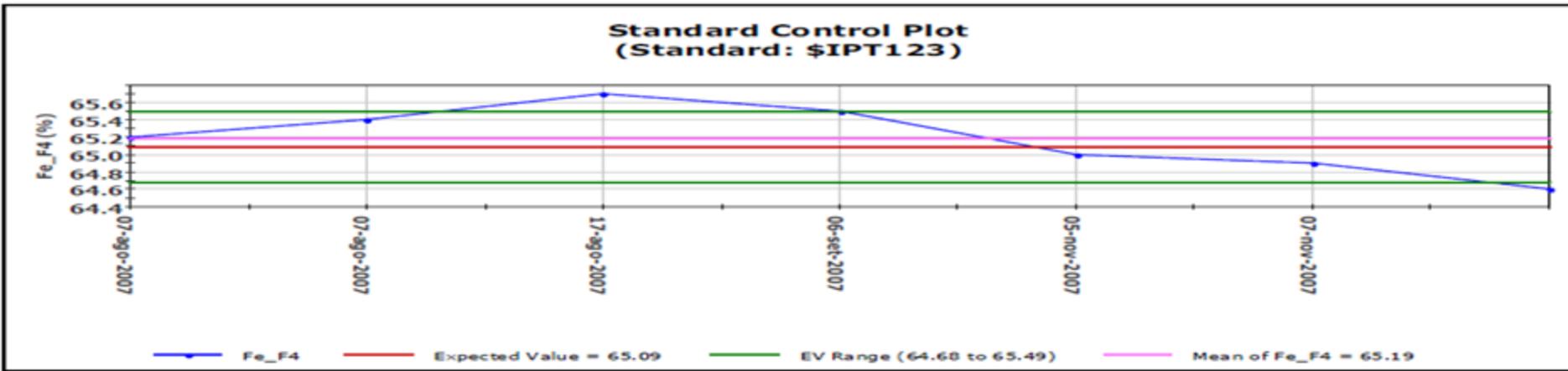
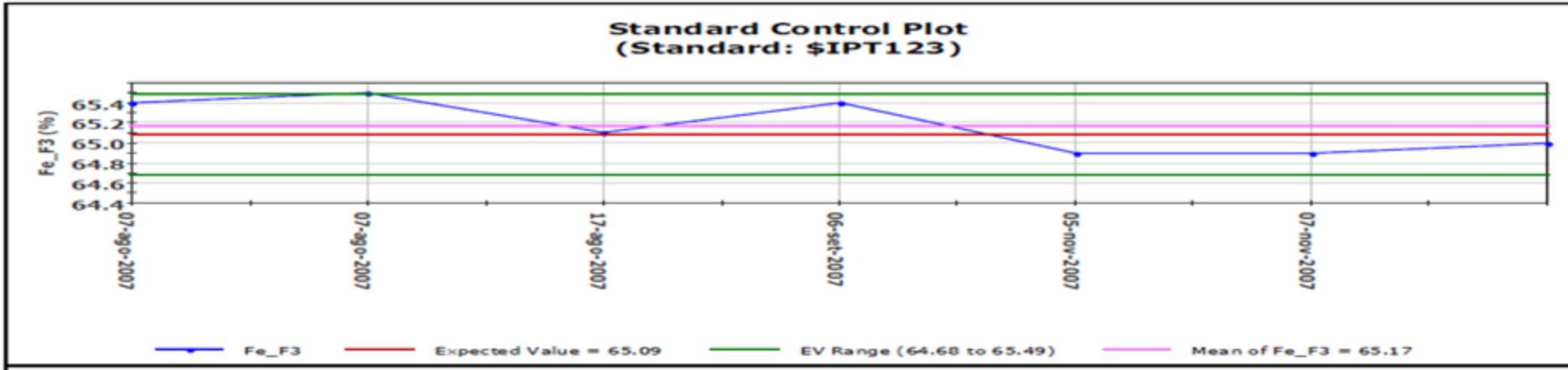
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Fe analysis



Fe analysis



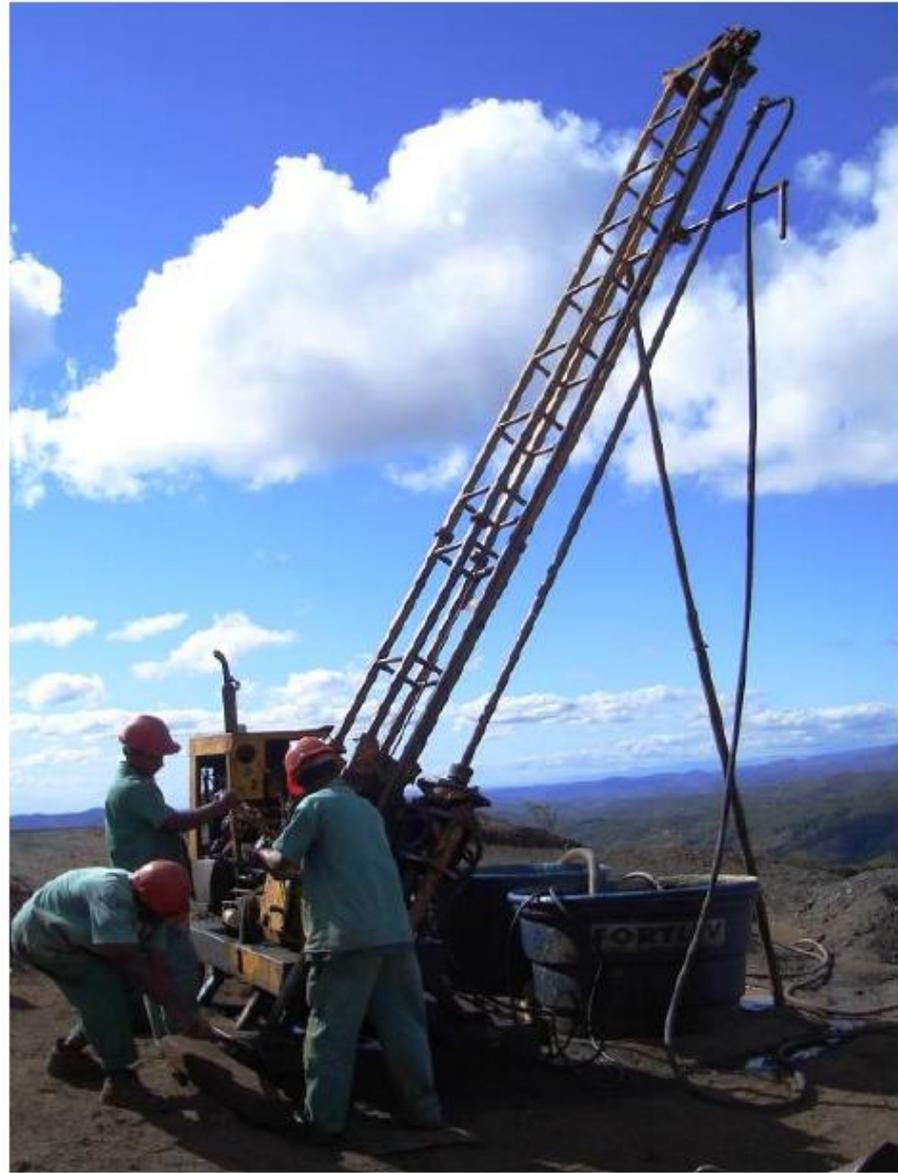
Fe analysis

Summary of the Access Database

Number of Drillholes	11
Number of meters	852.6
Number of Samples (with assay results)	242
Number of Field Duplicate Samples for QAQC	15
Number of Laboratory Duplicate Samples for QAQC	10
Number of Laboratory Replicate Samples for QAQC	10
Number of Standard Samples for QAQC	7
Number of Blank Samples for QAQC	4

QAQC - Quality assurance and quality control.

Fe analysis



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Local Photos

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Suggestions for Improvements

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- Further studies are indicated, because it is possible to find additional iron mineralization in a depth of 80 to 100m below fresh rock.
- To complete a scoping study to evaluate the likely mining scenario. Given that the Posse Project is located within close proximity to established iron ore mining and infrastructure will increase the current support for economic extraction.
- Pending the above exercise the current resource data has a number of limitations that could be improved by:
 - Infill drilling to increase the geological and domain model.
 - New resource estimation using the Ordinary Kriging method (after the infill drilling campaign).
 - Additional 'in situ' dry bulk density sampling both 'in situ' material and diamond core.
 - To improve on the current QAQC program and check the sample collection methodology.