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COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

FOSFATO DE PATOS DE MINAS Relatório de Pesquisa

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2.10 - Quantidade e unidade
 2.11 - Cálculo das Reservas



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1 - INTRODUÇÃO

A importância do problema alimentar na atual conjuntura mundial, responde pelo interesse e pelo destaque que em seu programa de "METAS PRIORITÁRIAS", o Governo Federal dedicou ao desenvolvimento do Setor Agropecuário, determinando providências, para consegui-lo a curto prazo.

Evidencia-se a urgência das medidas preconizadas pelo Governo, em face do incontido incremento demográfico e da análise do panorama vigente no mundo atual, onde se revela crítico o problema da produção de alimentos. (1º Plano Nacional de Desenvolvimento - Setor Agricultura - Abastecimento - Lei nº 5.727 de 04.11.71).

Entretanto para incentivar a produção agrícola e aumentar a produtividade da terra, necessário se torna aumentar a capacidade de produzir fertilizantes, já que entre ambos interdepende relação de causa e efeito.

Nessa ordem de idéias prevê o Governo investimento de 1,3 bilhão de cruzeiros, através de empresas setoriais para tornar o País autosuficiente na produção de adubos.

Ressalte-se que o próprio Governo, através da empresa "Financiamento a Insumos Básicos S/A (FIBAS)", pretende participar do plano. Releva ainda notar, que órgãos governamentais, responsáveis pelo setor, enfatizam a dificuldade de simples implantação de uma política subsídios, dada a violenta oscilação de preço desses insumos no mercado internacional, fato que tem dificultado a obtenção de elementos eficazes para um adequado equacionamento da política de

produção, comercialização e importação de adubos.

Vale notar, que nesse contexto de "METAS ESTRATÉGICAS SETORIAIS", o campo de atuação, no âmbito mineral, do Ministério das Minas e Energia se atém, primordialmente, à identificação e à avaliação econômica de áreas geologicamente favoráveis, a jazimentos de bens minerais primários, que atendam às necessidades do Setor Agrícola, concorrendo para aumentar a produtividade da terra, e a proceder a estudos tecnológicos de beneficiamento do fosfato, de forma a aumentar a eficiência do seu aproveitamento.

Atenta a esses fatos, a CPRM procedeu a uma análise preliminar do problema nacional de fertilizantes, enfeixando-a num relatório intitulado "Fosfato no Brasil - Problemas e Perspectivas".

Nesse relatório focaliza o grau de dependência do nosso setor agrícola, de fontes externas de abastecimento em fertilizantes fosfatados. Procura ainda indicar, em face do contexto geológico brasileiro e de estudos já procedidos anteriormente, áreas favoráveis a prospecção e pesquisa de depósitos fosfáticos.

A região da serra da Mata da Corda em Minas Gerais, onde se situam os municípios de Patos de Minas e Coromandel, mereceu prioridade de investigação, em virtude da existência de adequados condicionantes geológicos, análogos a áreas já estudadas da Série Bambuí e do conhecimento da presença de teores anômalos em fósforo, em vários tipos de rochas regionais.

Procurou-se, no estudo que se segue, alinhar elementos sobre a jazida de fosfato de Patos de Minas, de

modo a permitir um juízo adequado de suas possibilidades , em face do grau de conhecimento adquirido através dos trabalhos de pesquisa até agora realizados.

O fosfato, matéria prima imprescindível ao desenvolvimento da espécie humana, é como frizou o Presidente Frankilin D. Roosevelt "a espinha dorsal da civilização". Sua importância tem levado governos de todo o mundo a investir elevadas quantias em sua prospecção, pesquisa e na sua aquisição e formação de estoques, destinados a suprir suas indústrias de adubos.

Note-se que o Brasil importou em 1973 100 milhões de dólares em fertilizantes inorgânicos fosfatados e que a previsão para o ano de 1974 foi de 237 milhões de dólares.

Tal situação resulta da política altista dos fornecedores de matéria prima, que elevaram drasticamente - em 400% o preço do fósforo, a partir de janeiro de 1974. Esse fato de grave repercussão no desenvolvimento agrícola - que o Governo pretende conduzir, provoca desequilíbrio global na evolução do setor, acentua a já pesada incidência na pauta de importação, além de reprimir a aplicação intensiva e extensiva de fertilizantes em geral, necessária a consecução da produtividade objetivada. Se a situação já é hoje preocupante, com relação ao dispêndio de divisas com os diversos tipos de fertilizantes, em 1980 o consumo poderá chegar a 2,8 milhões de ton, o que representa em preços de hoje US\$ 950 milhões em divisas.

Uma idéia da importância do estudo a pesquisa de jazidas de fosfato como a de Patos de Minas, decorre da análise do comportamento do mercado de fosfato no Brasil e

no mundo, do conhecimento de seus principais produtores, consumidores e das perspectivas brasileiras, dos algarismos representativos de suas reservas, produção e consumo atuais. Exclui-se o caso da pesquisa, objeto deste relatório, que provavelmente indicará a maior e melhor jazida brasileira.

1.1 - Produção e Consumo Mundial de Fosfato

Os minerais de fósforo ocorrem na natureza em:

- ✓ - jazidas sedimentares, de origem marinha, sob forma de fosforito;
- ✓ - jazidas relacionadas com atividades magnéticas sob a forma de apatita;
- ✓ - jazidas de concentração residual e enriquecimento secundário, onde se destacam as bauxitas fosforosas;
- ✓ - depósitos denominados guanos, que são acumulações de fosfato de cálcio, provenientes de dejectos de aves.

As jazidas de fosfato se distribuem pelo mundo todo, estando as maiores e de maior produção concentradas no Continente Africano, Ásia e América do Norte, como se vê no Quadro I.

QUADRO I

PRODUÇÃO DE ROCHA FOSFÁTICA (1000 t)

PAÍSES	1971	1972	1973
USA	32.277	37.040	37.450
URSS	19.866	19.750	21.290
Marrocos	12.013	14.468	16.564
Tunísia	3.162	3.387	3.473
China	2.200	2.600	2.750
Nauru	1.867	1.340	2.323
Togo	1.715	1.928	2.272
Senegal	1.543	1.425	1.752
África do Sul	1.226	1.450	1.300
Saara Espanhol	-	150	696
Outros	8.838	5.693	6.890
TÓTAL NO MUNDO	84.707	89.231	96.760

FONTE: Industrial Minerals - Novembro de 1974

Dos países produtores, apenas a China e África do Sul não exportam fosfato, ao passo que a produção de Marrocos, Togo, Tunísia, Senegal e Nauru é quase toda ela exportada.

Os dados quanto ao consumo de fosfato do mundo estão bastante defasados dos dados de produção. Para se ter uma idéia do consumo, o Quadro II fornece dados referentes a 1967:

QUADRO II
CONSUMO DE FOSFATO NO MUNDO EM 1967 (1000 t)

PAÍSES	1.000 t
USA	25.312
França	3.176
Austrália	2.882
Alemanha Ocidental	2.571
Japão	2.567
Canadá	2.068
Itália	1.900
China	1.837
Bélgica	1.448
Nova Zelândia	1.395
TOTAL	45.156

FONTE: Report of the Seminar; Raguin - Fosbucrar, Argel
Nero. Warin

Sendo o setor agrícola o maior e mais importante consumidor de fosfato, o Quadro III dá idéia do consumo de fosfato em vários países, por hectare cultivável, com predominância de dados do ano de 1967.

Deve-se levar em conta que em 1967, quando o Brasil apresentava um consumo de 5,06 kg/ha de P_2O_5 , o Estado de São Paulo já consumia 19,50 kg de P_2O_5 por hectare cultivável, quase quatro vezes a média do Brasil, incluindo o Estado de São Paulo:

QUADRO III
CONSUMO DE P_2O_5 POR HECTARE CULTIVÁVEL

PAÍSES	ANO	kg/ha
Nova Zelândia	1967	351,50
Holanda	1965	118,63
França	1966	67,47
Taiwan	1967	42,83
Itália	1967	30,53
Israel	1967	28,66
Iugoslávia	1967	21,47
USA	1964	17,99
Espanha	1967	16,36
Chile	1965	13,98
URSS	1967	7,01
Brasil	1967	5,06
Índia	1965	0,83

FONTE: Instituto de Economia Agrícola - Secretaria da Agricultura, SP - Março/1971

A reserva mundial que em 1968 era de aproximadamente 65 bilhões de toneladas de rochas fosfáticas, sendo hoje mais de 80 bilhões de toneladas, com o Quadro IV - mostrando as maiores reservas, sem levar em conta as da Rússia e China Continental, cujas reservas são desconhecidas:

QUADRO IV

PRINCIPAIS RESERVAS ESTIMADAS DE ROCHAS FOSFÁTICAS

PAÍSES	TEOR EM P_2O_5	RESERVAS EM 1.000 t
Marrocos	29,0	45.000.000
USA	18,0	15.000.000
	30,0	8.000.000
Tunísia	26,5	11.000.000
Argélia	25,0	2.000.000
Saara Espanhol	31,0	1.600.000
	20,1	100.000

FONTE: Report of the Seminar; Raguin - Fosbucrar, Argel

1.2 - Fosfato no Brasil

1.2.1 - Reservas de minério fosfático

As principais jazidas de fosfato brasileiras até a pouco conhecidas são relacionadas à atividade magmática, tendo como mineral principal a apatita muito rica em

fluor, o que vem atestar a origem metassomática-pneumatolítica, como é o caso de Araxá, Tapira, Salitre em Minas Gerais e de Jacupiranga, em São Paulo. Com menos destaque tem-se a fosforita de Pernambuco, de origem sedimentar marinha.

As reservas brasileiras, avaliadas em 1972 pelo Departamento Nacional da Produção Mineral - DNPM, são mostradas no Quadro V:

QUADRO V
RESERVAS BRASILEIRAS DE MINÉRIO FOSFÁTICO (1.000 t)

UNIDADE DA FEDERAÇÃO	RESERVA MEDIDA	RESERVA INDICADA	RESERVA INFERIDA	TEOR MÉDIO EM P ₂ O ₅
Minas Gerais	91.820	-	-	22,0%
Ceará	8.841	13.653	17.800	7,7%
Pernambuco	23.782	10.005	11.972	21,0%
São Paulo	50.516	31.685	22.000	16,%
Paraíba	7	-	-	35,0%
TOTAL	174.966	55.343	51.772	-

FONTE: Anuário Mineral Brasileiro - 1973 - MME - DNPM

1.2.2 - Produção de minério fosfático

A produção brasileira de minério fosfático está muito aquém da demanda, obrigando o país a onerosas importações. Ressalte-se também o fato de que as jazidas sendo principalmente associadas a rochas vulcânicas, apresentam uma série de problemas inerentes a sua origem. Assim é que o minério de Araxá que apresenta um teor médio de 22%

em P_2O_5 , apresenta um baixo grau de solubilidade, em torno de 6%, o que torna muito restrito o uso de apatita "in natura", não muito recomendável, principalmente quando se tratar de cultura de curto ciclo. No caso de São Paulo, o teor médio da jazida é baixo e o é também a solubilidade, obrigando a onerosos trabalhos de tratamento para uma melhor concentração do fosfato, de modo a tornar o minério comercial, isto é, com teores superiores a 66% de BPL (Bone Phosphate Lime) ou seja, 66% de fosfato tricálcio $(PO_4)_2Ca_3$, onde 1% de P_2O_5 corresponde a 2,185% de fosfato tricálcio.

Segundo dados fornecidos pelo Departamento Nacional da Produção Mineral - DNPM, a produção de minério fosfático em 1972 foi de (Quadro VI):

QUADRO VI
PRODUÇÃO BRASILEIRA DE MINÉRIO FOSFÁTICO EM 1972

UNIDADE DA FEDERAÇÃO	PRODUÇÃO (1.000 t)	EQUIVALENTE EM 1.000 t de P_2O_5
Minas Gerais	214,6	-
Pernambuco	10,6	-
São Paulo	1.544,0	-
TOTAL	1.769,2	103,9

FONTE: Anuário Mineral Brasileiro - 1973 - MME - DNPM

1.2.3 - Consumo Brasileiro de Fertilizantes Fosfáticos

O consumo de fertilizantes fosfáticos no Brasil era em 1967 de 5,06 kg de P_2O_5 por hectare cultivável,

apresentando o Estado de São Paulo uma média de 19,50 kg/ha em razão de seu alto desenvolvimento agrícola, tornando-o responsável pelo consumo de 60 a 66% do total de fertilizante consumido no Brasil.

Estudos realizados por Jubert Sanches Cibantos e Donald W. Lorson sobre a demanda de fertilizantes em São Paulo, usando um modelo tradicional de demanda, tendo como variáveis:

- consumo total de N, P_2O_5 e K_2O em toneladas
- índice de preços deflacionados dos fertilizantes
- índice da área cultivada em hectares
- índice de rendimento das culturas, retardado de um ano
- índice de preços deflacionados das culturas, retardado de um ano
- tempo em anos
- termo de erro

Como modelo de ajustamento foi usado de Nerlove, com as seguintes variáveis:

- nível de equilíbrio desejado, ou a longo prazo do uso de fertilizantes
- coeficientes de demanda a longo prazo de fertilizantes
- coeficientes de ajustamento

Feitos os estudos de regressão para três períodos 1949/60, 1949/71 e 1966/71, chegaram a seguinte conclusão: "Vimos pelos resultados do modelo de ajustamento que o preço é importante na demanda de fertilizantes e que os agricultores paulistas são sensíveis a mudanças nos preços de seus insumos. Nenhuma das outras variáveis testadas, pre

ços recebidos das culturas, rendimentos das culturas ou área cultivada foram estatisticamente significativas ou contribuíram para a explicação dessas equações".

Em face a esses estudos e a conjuntura internacional em que o preço das rochas fosfáticas tem subido assustadoramente, como mostra o Quadro VII, é necessário que se parta para uma solução interna tentando obter o produto a preços mais baixos, evitando a evasão de divisas e crises no setor agrícola, que é um dos esteios da nossa balança comercial, responsável pela grande parte da pauta de exportação.

QUADRO VII

PREÇOS EM U\$/t CURTA DE ROCHAS FOSFÁTICAS EM 1974.

PAÍSES	% BPL	1º de Janeiro	30 de Junho	1º de Julho
USA (Preço Fob na Flórida)	66-68	9,90	20,00	37,00
	70-72	11,50	24,00	47,00
	74-75	13,10	27,50	55,50
	76-77	14,50	30,00	63,00
MARROCOS (Preço Fob em Sati)	75-77	14,50	42,00	63,00

FONTE: Industrial Minerals - Novembro de 1974

O consumo de fertilizantes fosfáticos no Brasil apresenta uma distribuição bastante irregular, acompanhando aproximadamente a distribuição da renda nacional por zona, o que é bastante lógico em face aos preços dos insumos e ao grau de desenvolvimento da região. O Quadro VIII fornece dados de consumo aparente de fertilizantes fosfáticos no Brasil, no ano de 1973:

QUADRO VIII
CONSUMO APARENTE DE FERTILIZANTES FOSFÁTICOS NO BRASIL, POR REGIÃO EM 1972
(EXCLUSIVE PRODUTOS ANIMAIS E TORTAS OLEAGINOSAS)

PRODUTO	% EM P ₂ O ₅	NORTE	CENTRO	SUL	BRASIL	PROCEDÊNCIA DO PRODUTO
Superfosfato Simples	20	26.905	780.033	73.917	880.855	Nacional
Superfosfato Simples	20	4.000	10	11.272	15.282	Importado
Superfosfato Concentrado	30	-	86.000	3.000	89.000	Nacional
Superfosfato Concentrado	26	-	579	-	579	Nacional
Superfosfato Triplo	46	-	13.197	101.458	111.670	Nacional
Superfosfato Triplo		61.751	216.667	218.398	491.816	Importado
Fosfato Bi-Cálcico	30	551	-	-	551	Nacional
Fosfato Bi-Cálcico	40	6.040	-	-	6.040	Importado
Escória Thomaz	18	-	3.490	22.072	25.562	Importado
Termo Fosfato	18	854	65.059	199	66.112	Nacional
Fosfato Di-Amônio		-	89.820	24.343	114.163	Nacional
Fosfato Di-Amônio		38.459	86.570	230.358	355.387	Importado
Fosfato Rhenania	25	-	10	-	10	Importado

FONTE: Sindicato da Indústria de Adubos e Colas no Estado de São Paulo

Analisando a produção de rochas fosfáticas do Brasil e seu consumo, vê-se que os fertilizantes fosfáticos tornam-se uma das pesadas partes da pauta de importação, superada atualmente apenas pela do petróleo. O Quadro IX dá uma idéia de evolução da importação brasileira de fertilizantes fosfáticos até 1973.

QUADRO IX

EVOLUÇÃO DA IMPORTAÇÃO BRASILEIRA DE FERTILIZANTES FOSFÁTICOS NO PERÍODO DE 1967 - 1973

ANOS	1.000 t	U\$ 1.000
1967	401	14.723
1968	573	20.963
1969	579	21.331
1970	913	34.191
1971	1.187	42.475
1972	2.070	100.220
1973	1.672	102.234

Em 1973 a importação de produtos fosfáticos - foi de maior significância no tocante ao fosfato bruto, 20 supertriplo e ao fosfato de amônio, como mostra o Quadro X:

QUADRO X
IMPORTAÇÃO BRASILEIRA DE PRODUTOS FOSFÁTICOS EM 1973

P R O D U T O	P A Í S E S											TOTAL TON	TOTAL EM US\$ 1.000
	USA	MARROCOS	TUNÍSIA	ESPANHA	SAHARA ESPANHOL	MÉXICO	VENEZUELA	PORTUGAL	FRANÇA	BÉLGICA	OUTROS		
Fosfato Natural Bruto	567.582	201.094	66.580	21.000	41.790	-	-	-	-	-	-	808.046	17.785
Supertriplo	278.238	50.105	48.381	-	-	52.626	36.580	5.016	-	-	20.388	491.332	44.124
Fosfato Simples	-	-	-	-	-	-	-	12.000	4.672	-	10	16.682	368
Ácido Fosfórico	16.564	-	-	13.849	-	63.520	-	-	-	-	7.264	101.167	10.366
Fosfato Di-Amônio	304.879	-	-	809	-	-	27.494	-	-	-	80	333.162	37.772
Fosfato Rhenania	-	-	-	-	-	-	-	-	20	-	-	20	3
Escoria Thomaz	-	-	-	-	-	-	-	-	-	15.721	6.497	22.218	1.099
TOTAL	1.167.263	251.199	114.961	35.658	41.790	116.146	64.074	17.016	4.692	15.721	34.239	1.862.727	112.517

FONTE: Sindicato de Adubos e Colas no Estado de São Paulo

Dados recentes fornecidos pelo Sindicato das Indústrias de Adubos e Colas, no Estado de São Paulo, permitem comparar as importações de 1973 e 1974, feitas através dos portos de Santos, Recife e Paranaguá (Quadro XI):

QUADRO XI
IMPORTAÇÃO DE FOSFATOS NO BRASIL (TON)
 (Portos de Santos, Recife, Paranaguá)

PRODUTO	1973	1974
Fosfato Natural Bruto	789.249	1.036.150
Superfosfato Simples	-	72.866
Superfosfato Triplo	198.649	265.802
Escoria Thomaz	1.500	3.500
Fosfato Rhenanio	7.675	8.175
Fosfato Di-Amônio	79.027	152.358
Fosfato Novo-Amônio	809	-
Ácido Fosfórico	36.906	53.337
TOTAL	1.113.815	1.592.228

FONTE: Sindicato da Indústria de Adubos e Colas, no Estado de São Paulo

O Quadro XII destaca os principais fornecedores de fertilizantes fosfáticos para o Brasil e o Quadro XIII dá os principais importadores brasileiros:

QUADRO XII

PRINCIPAIS FORNECEDORES DE FERTILIZANTES POSFÁTICOS EM 1974

(Toneladas)

PORTO DE SANTOS

PRODUTOS (t) FORNECEDORES	POSPATO NATURAL	SUPERPOSPA- TO SIMPLES	SUPERTRI- PLO	POSPATO DI-AMÔNIO	ÁCIDO POSPÓRICO	POSPATO RHENANIA	ESCÓRIA THOMAZ
Office Cherifien (Marrocos)	478.660	-	-	-	-	-	-
Phosrock (Flórida)	314.819	-	-	-	-	-	-
I.C.E.C. (Unclesan-Gela)	40.852	10.498	20.327	21.139	5.524	-	-
Woo & Dickson (Flórida)	-	37.395	24.446	25.005	-	-	-
Interore (USA)	-	-	5.029	18.477	-	-	-
Transamônia (Espanha)	34.288	-	5.005	-	-	-	-
Pillete (USA - Flórida)	19.660	-	24.522	-	-	-	-
Agric. & Ind. (USA - Flórida)	39.067	-	-	4.170	-	-	-
Kearney (Boca Grande)	11.205	-	8.442	3.832	-	-	-
F. Español (Espanha)	-	-	-	-	24.430	-	-
Texas Gulf (USA)	-	-	-	-	23.333	-	-
Kali Chem	-	-	-	-	-	7.675	-
THOMAZ	-	-	-	-	-	-	1.000
Outros	69.736	10.575	110.897	38.488	-	500	2.500
TOTAL	1.008.337	58.368	198.645	111.161	53.337	8.175	3.500

FONTE: Sindicatos de Adubos e Colas no Estado de São Paulo

QUADRO XIII

PRINCIPAIS IMPORTADORES DE FERTILIZANTES FOSFÁTICOS PELO PORTO DE SANTOS EM 1974

PRODUTO IMPORTADORES	FOSFATO NATURAL BRUTO	SUPERFOSFATO SIMPLES	SUPER-TRIPLO	FOSFATO DI-AMÔNIO	ÁCIDO FOSFÓRICO	ESCÓRIA THOMAZ	FOSFATO RHEMANIA	TOTAL
Ultrafertil	174.018	-	45.472	-	-	-	-	219.490
Quinbrasil	93.780	-	23.246	-	-	-	-	117.026
Copetras	119.200	-	-	-	18.442	-	-	217.642
Copas	37.104	12.577	21.467	7.592	-	-	-	78.740
IAP	5.000	9.746	-	4.203	-	-	-	18.949
Benzenex	10.366	8.659	11.320	1.813	-	-	-	32.158
Solorrico	10.366	5.809	9.964	1.813	-	-	-	27.952
Fertitase	107.812	-	-	-	3.896	-	-	111.708
Fertiplan	5.213	-	18.626	9.409	3.624	-	-	36.871
Indag	89.644	-	-	-	1.996	-	-	91.640
Manah	22.475	-	-	2.100	-	-	-	24.575
Itau	40.480	2.100	8.283	7.319	-	-	-	58.682
Fosfanil	34.221	-	-	-	-	-	-	84.221
Ferticap	75.904	-	-	-	1.996	-	-	77.900
Elekeiroz	36.956	4.294	4.977	5.940	-	-	-	52.197
Cotia	-	3.816	12.012	8.290	-	-	-	24.118
Mitsui	10.993	4.550	7.696	5.460	-	-	-	28.699
Luchsinger	-	-	-	-	23.383	-	-	23.383
Vianna	305	1.546	2.093	2.318	-	1.000	675	7.937
Castilho	-	-	100	-	-	-	1.500	1.600
Pinhal	-	2.735	4.193	4.644	-	-	600	12.172
Outros	4.470	2.536	29.199	17.625	-	-	4.900	58.730
TOTAL	1.008.337	58.368	198.648	79.025	53.337	1.000	7.675	1.406.390

FONTE: Sindicato de Adubos e Colas no Estado de São Paulo

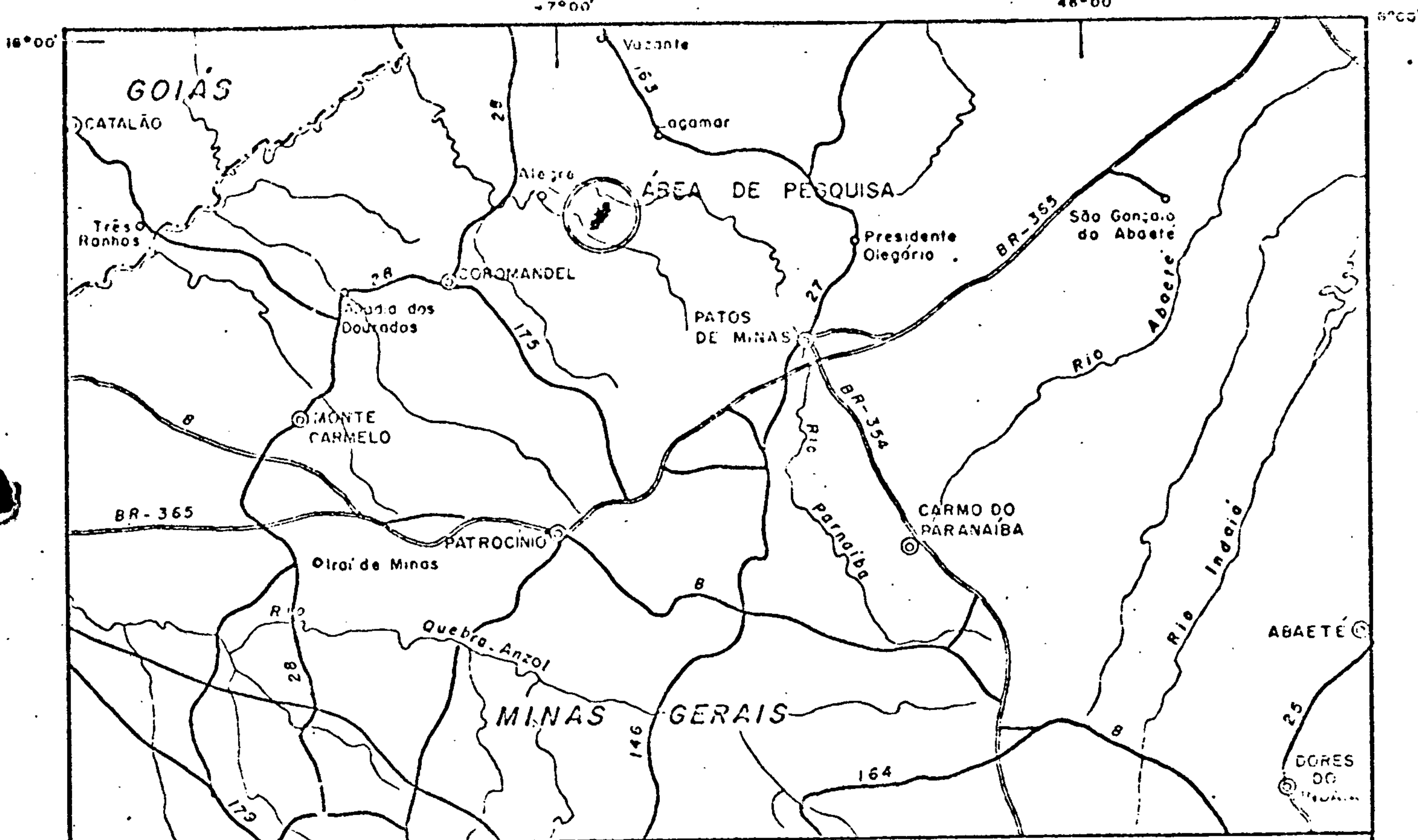
2 - FOSFATO DE PATOS DE MINAS

2.1 - Histórico

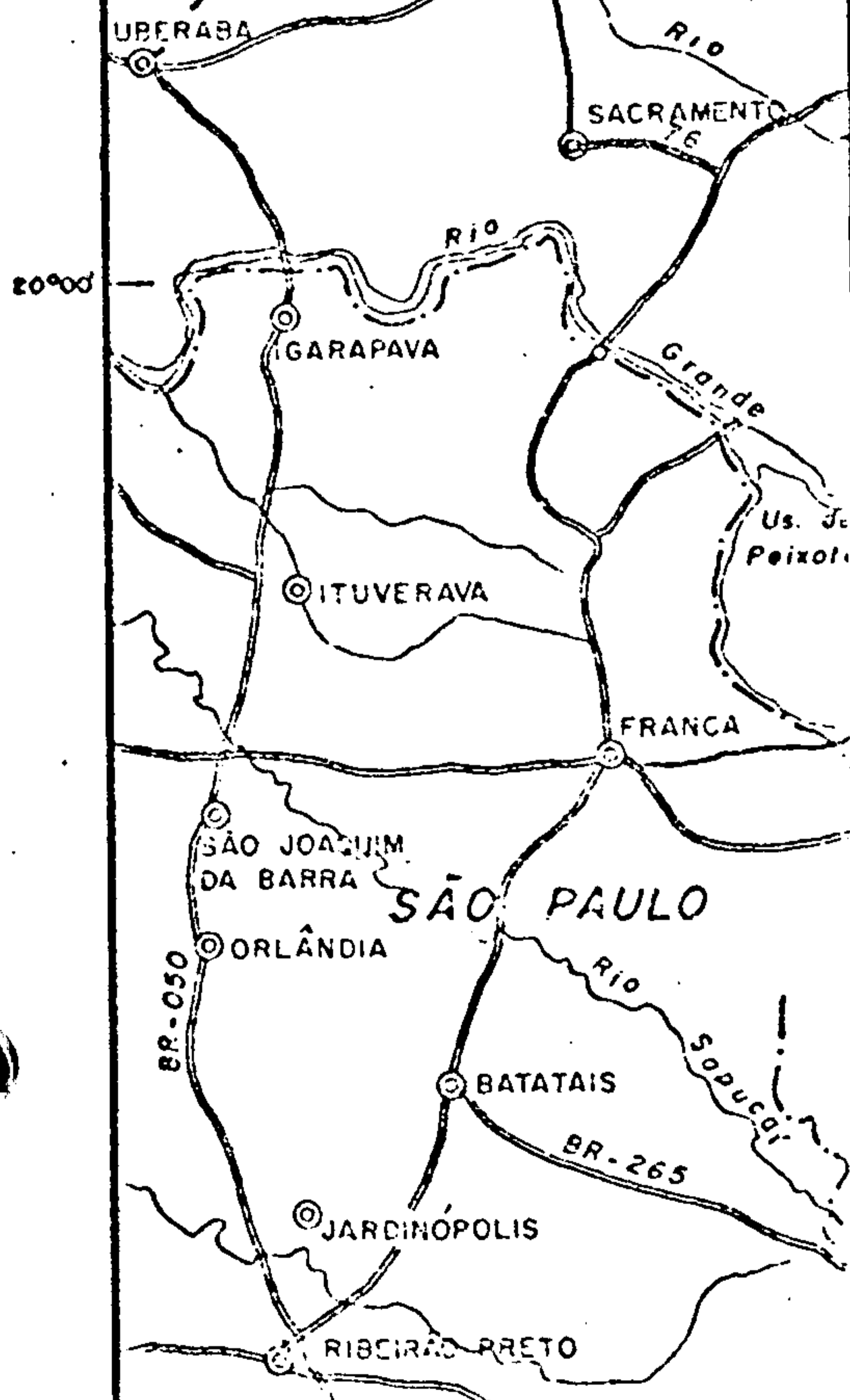
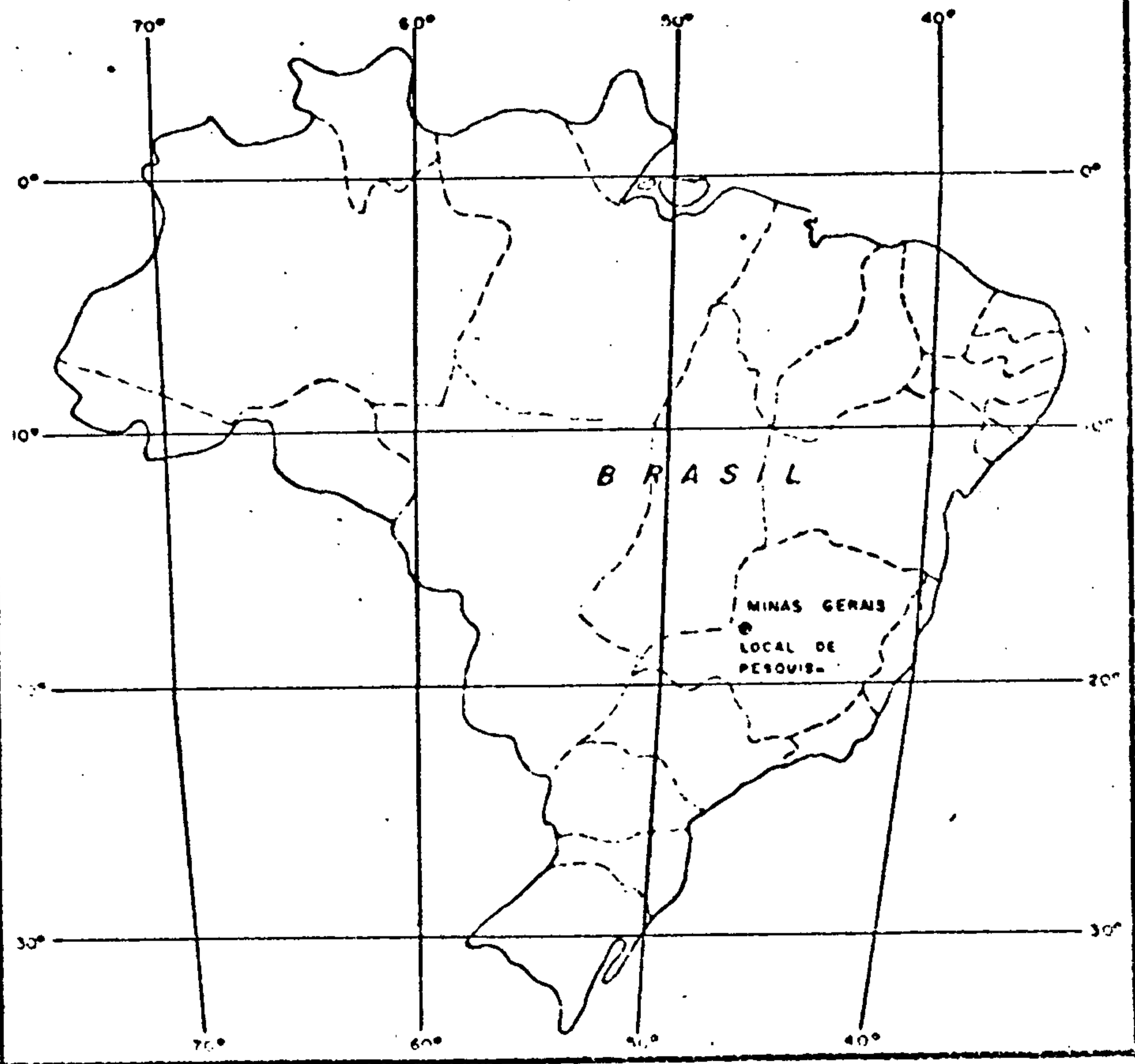
Em 1970 o Departamento Nacional da Produção Mineral terminou a pesquisa de rochas fosfáticas na região de Cedro do Abaeté, quando a equipe contava com a orientação dos Professores Djalma Guimarães, Benedito Paulo Alves e Jair Carvalho da Silva, e chegava-se à conclusão de que o depósito era pequeno e difíceis suas condições de aproveitamento econômico, embora a rocha fosfática apresentasse boas características quanto ao teor médio e a solubilidade. Não se caracterizou uma grande jazida, contudo formou-se uma equipe especializada em pesquisa de fosfato e a idéia de que o Grupo Bambuí, com extensão de mais de 1.000.000 de km², apresenta condicionantes geológicos favoráveis a existência de ocorrências fosfáticas. Coube a um integrante dessa equipe de pesquisa, o Engenheiro de Minas Adamir Gonçalves Chaves, Chefe do Setor de Pesquisas Próprias da Agência Belo Horizonte da CPRM, descobrir a jazida de fosfato de Patos de Minas, ora em pesquisa, e cujos resultados até agora conhecidos já a define como uma das grandes jazidas do Brasil.

2.2 - Localização e Vias de Acesso

As três áreas em pesquisa, denominadas A-1, A-2 e A-3, respectivamente com 1.585, 1.740 e 420 hectares, situam-se nos locais denominados Rocinha e Pirubinhas, no distrito, município e comarca de Patos de Minas, Estado de Minas Gerais, em terrenos pertencentes a João Gonçalves



MAPA DE LOCALIZAÇÃO



Companhia de Pesquisa de Recursos Minerais — CPRM

Agência B. H.

PROJETO PATOS DE MINAS

MAPA DE LOCALIZAÇÃO E DE SITUAÇÃO

- PAVIMENTADA
- INDETERMINADA
- BR-365 - FEDERAL
- 78 - ESTADUAL

ESCALA

1 : 500.000

FONTE

MAPA GEOGRÁFICO 1:500.000 - DER - M. G.

PRÓDIMA

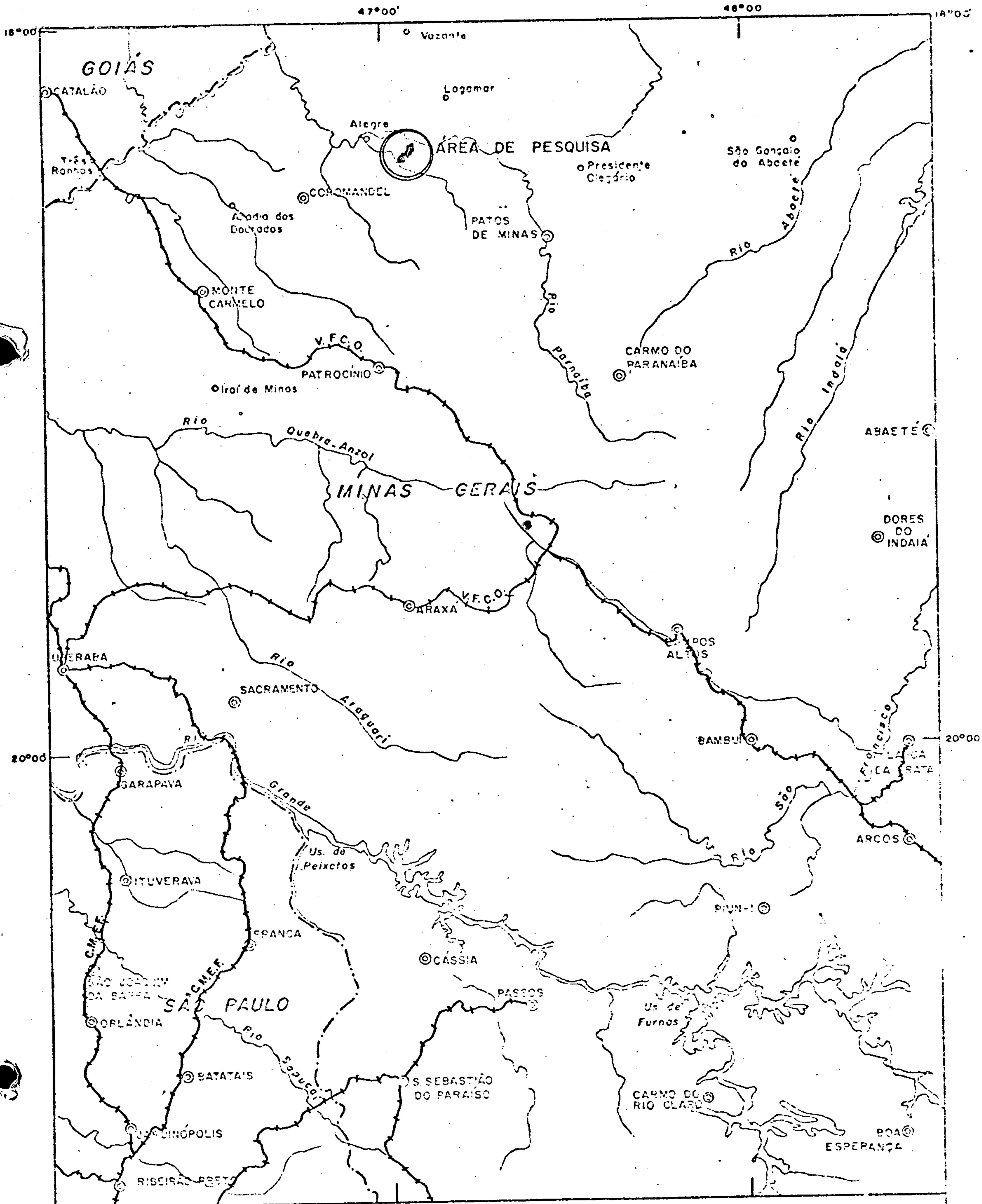
I

das Chagas Primo, Canuto Caixeta Carvalho, Sebastião Caixeta Nunes, Luiza Maria de Jesus, Dersílio Pereira da Cunha, Delmiro Manoel de Souza, Dilson José de Souza, Ubaldo Silva, Geraldo Vaz e outros (Prancha I).

As áreas podem ser atingidas através do seguinte roteiro:

ROTEIRO	Km	TIPO DE RODOVIA
Belo Horizonte - Entrocamento com a BR-354 - (Estalagem)	254	BR-262 (asfaltada)
Estalagem - Patos de Minas	140	BR-354 (asfaltada)
Patos de Minas - áreas-requeridas	68	Estrada Patos-Coromandel, via Boassara (encascalhada, com condições precárias de tráfego, em época de chuva)
TOTAL	462	

A estrada de ferro que passa mais próximo da área é a da Rede Ferroviária Federal S/A - REFESA, que liga Belo Horizonte-Brasília, com bitola de 1 metro e tendo na estação de Patrocínio o ponto mais próximo, em linha reta, da região de Pirubinhas (Prancha II). Essa ferrovia faz em Ibiá conexão com o ramal que vai para Araxá. De Araxá a linha segue para Uberaba, de onde um ramal vai para Uberlândia-Araguari, conectando em Goiandira com a linha Belo Horizonte-Brasília. Dois outros ramais partem de Uberaba e vão a Ribeirão Preto, via Itaverava e outro via Rifaina.



Companhia de Pesquisa de Recursos Minerais — CPRM

Agência B. H.

PROJETO PATOS DE MINAS

MAPA FERROVIÁRIO

ESCALA

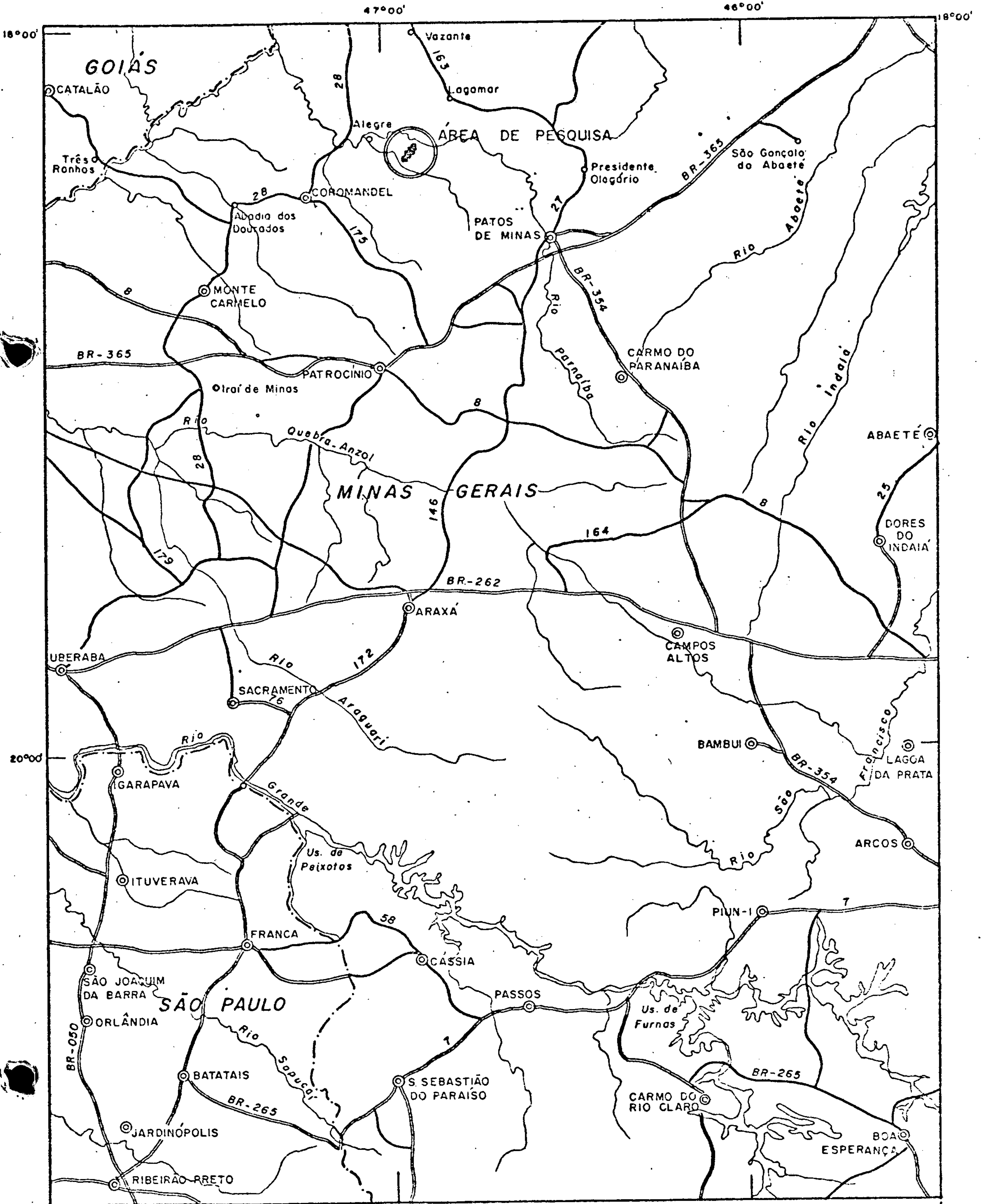
1:1.500.000

FONTE

MAPA FERROVIÁRIO - 1974 - D. I. - M. G.

PRONÓIA

II



Companhia de Pesquisa de Recursos Minerais - CPRM

Agência B. H.

PROJETO PATOS DE MINAS

MAPA RODOVIÁRIO

PAVIMENTADA
 IMPLANTADA
 BR-354 - FEDERAL
 -76 - ESTADUAL

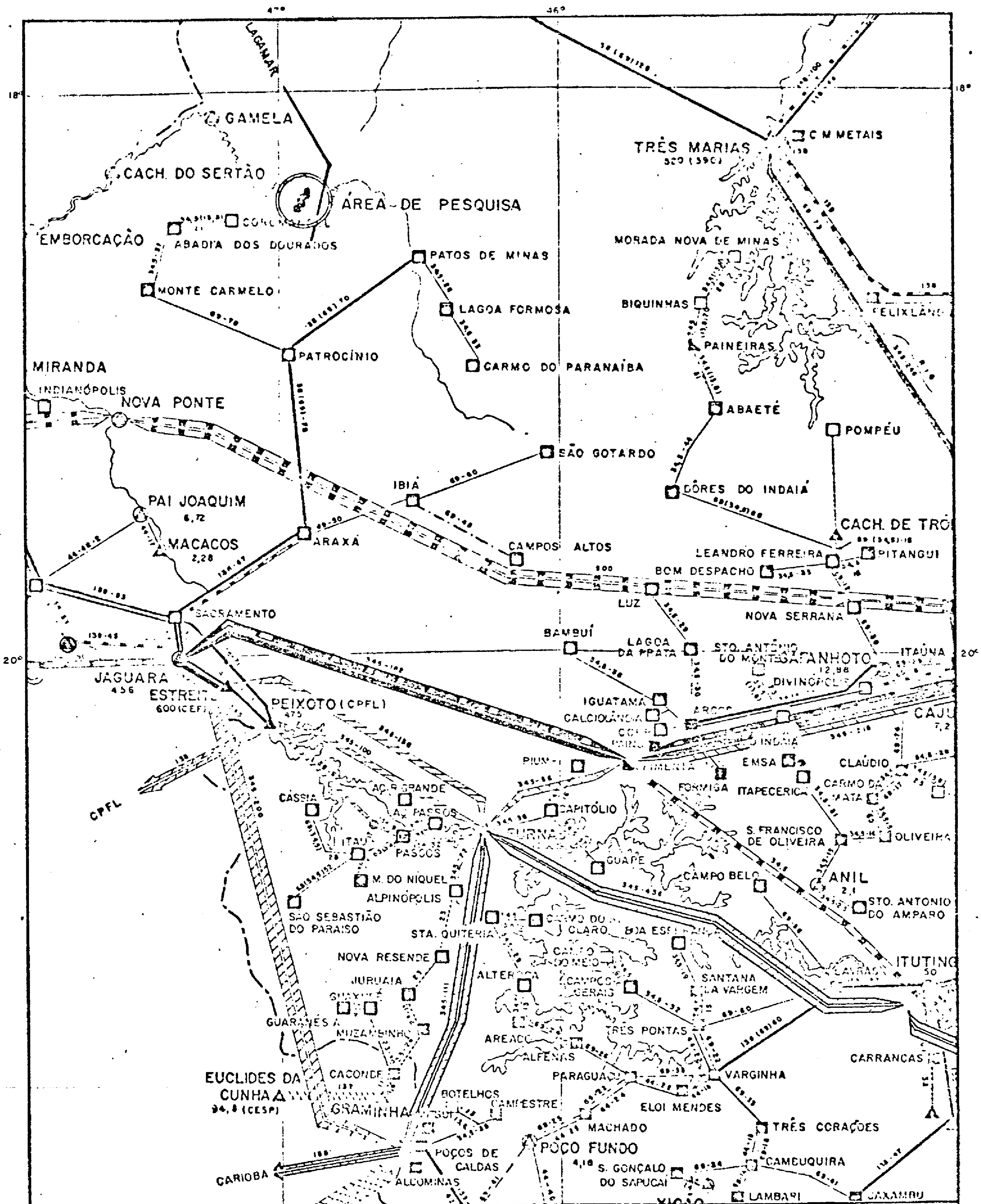
ESCALA	FONTE	PRANCHA
1:1 500.000	MAPA RODOVIÁRIO- 1974 - DER. - M. G.	III

De Ribeirão Preto há ramificações para todo o noroeste do Estado de São Paulo e para o sul, em direção a capital. Vê-se que com a construção de um ramal curto, poder-se-á ter uma grande facilidade de distribuição do fosfato para a principal área agrícola do país, sem levar em conta a distribuição por rodovia que atenderá pelo menos áreas circunvizinhas a Patos e Coromandel, região de cerrado onde já se inicia seu aproveitamento agrícola, constituindo -se numa das grandes perspectivas de solo, altamente produtiva, que apenas necessita da correção da acidez e de fertilização.

A estrada asfaltada que passa mais próximo da área é a que liga Patos a Patrocínio e tem conexão para todos os pontos mais importantes do Brasil. Já se encontra em vias de asfaltamento o trecho que liga Coromandel a Rodovia BR-148 (Patos-Patrocínio), o que deixará a área de pesquisa a pouco mais de 40 km de rodovia asfaltada (Prancha III).

Quanto a infra-estrutura de energia elétrica, existe uma rede de 34,5 KVA que passa aproximadamente a 7 km a leste da área, pertencente ao DAE-MG - Departamento de Água e Energia do Estado de Minas Gerais. Informa este órgão que a linha está sobrecarregada, não permitindo "sangria". No entanto, segundo informações do Sr. Prefeito de Patos de Minas, até o fim do ano em curso, a CEMIG - Centrais Elétricas de Minas Gerais deverá levar até Boassara, uma linha de 13 KVA e que distará 30 km em linha reta da área fosfática. Daí poder-se-á retirar energia necessária para os equipamentos de tratamento do minério (Prancha IV).

Quanto a água para indústria, poder-se-á no



Companhia de Pesquisa de Recursos Minerais — CPRM

Agência B. H.

PROJETO PATOS DE MINAS

MAPA DE SISTEMA DE TRANSMISSÃO DE ENERGIA ELÉTRICA

ESCALA APROXIMADA	FONTE	PRANCHA
1: 2.000.000	C E M I G	IV

momento usar as do Rib. Santo Antônio das Minas Vermelhas. No futuro, após a construção da barragem de Gamela pela CEMIG, poder-se-á usar as águas do reservatório, que atingirão o norte da área fosfática.

2.3 - Clima, Vegetação e Hidrografia

O clima regional é do grupo dos mesotérmicos, do tipo quente com inverno seco, com a temperatura média no mês mais quente do verão se mantendo acima de 22° C. É do tipo Cwa segundo Köppen, apresentando estações bem definidas, com muita chuva no verão e inverno bastante seco. O índice de pluviosidade anual situa-se em torno de 1.400 mm.

A vegetação da região, além das condições climáticas, sofre influência preponderante das condições pedológicas, que devem ser encaradas sob dois pontos de vista: geológico ou químico, pelas deficiências minerais do solo; e físico, pelas suas más condições de drenagem. Assim sendo, pode-se destacar na região, onde a vegetação é do tipo cerrado, três tipos de vegetação subordinadas ao cerrado, em função da litologia.

- a) Área de ocorrência de rochas fosfáticas, apesar de ser uma área quase toda ela cultivada, existem algumas árvores de grande porte, testemunhos de uma pretérita mata exuberante, onde predominam as anacardiáceas (aroeiras) fato este observado também na região de Cedro do Abaeté, onde este tipo de árvore associava-se a afloramentos de rochas fosfáticas e potássicas. Fugindo aos padrões de vegetação de cerrado, nas áreas de solos fosfáticos, junto às plantações de milho e feijão, encontra-se em abundância

- cia a gramínea *Panicum Melinis* (capim gordura);
- b) Solo proveniente de siltitos e ardósias do Grupo Bambuí, além de muito pouco espesso é mineralogicamente muito pobre, às vezes impermeável, dificultando a vida vegetal. Predominam as ciperáceas, no caso o *Cyperus Diffusus* (capim agreste) e arbustos de pequeno porte, predominando as xerofitas;
 - c) Solo resultante de siltitos calcíferos, bastante espesso, permeável, com boa circulação subterrânea de águas, e quimicamente mais rico que os solos resultantes de siltitos puros, dá árvores geralmente pequenas (3 a 5 metros) de troncos e galhos retorcidos, apresentando sua parte superior sob forma irregular; casca espessa e protegida, às vezes por uma camada de cortiça. Alguns espécimes apresentam folhas coriáceas duras e de grande porte. Chega-se mesmo em determinados lugares a verdadeiros cerradões.

A região pertence à Bacia Hidrográfica do Paraná, tendo como principal curso d'água o rio Paranaíba, que corre ao norte da área. É um rio de regime Tropical Austral (PARDE, 1933), caracterizando-se por um período de altos débitos, que corresponde às chuvas de verão; e um de fracos débitos no inverno, que é o período de mais fraca pluviosidade. A média mensal máxima costuma ocorrer nos meses de janeiro ou fevereiro. O ribeirão Santo Antônio das Minas Vermelhas limita a área de pesquisa ao sul, e os córregos de Rocinha e Extrema a cortam na parte meridional e se

tentrional, respectivamente. O córrego de Pirubinhas nasce na região fosfática, caminhando para noroeste, em direção ao rio Paranaíba.

2.4 - Geomorfologia

Os metassedimentos do Grupo Bambuí, que se apresentam cortados por uma superfície de pediplanação pertencente ao ciclo Gondwana (King, 1957), de idade provavelmente jurássica, em certas partes da região acham-se cobertos por arenitos cretáceos da Formação Areado. A superfície paleotopográfica constitui uma discordância entre os siltitos e ardósias do Grupo Bambuí e os arenitos cretáceos, apresentando-se subhorizontalizada.

As estruturas geológicas constituem fator de controle na evolução das formas de relevo. A drenagem é controlada, principalmente, pelos planos de foliação, estratificação e falhamento, além da permeabilidade das rochas. Assim é que nas faixas de ocorrência de rochas carbonáticas, a drenagem superficial é mais incipiente, formando lagoas e dolinas cársticas. Ao contrário, nos siltitos e ardósias, onde o solo é muito pouco espesso ou mesmo inexistente, e devido à baixa permeabilidade das rochas, tem-se uma intensa drenagem superficial, quase sempre orientada segundo as direções das camadas. Na região fosfática, as drenagens principais são orientadas segundo as direções das camadas ou foliação e as secundárias, às vezes perpendiculares às principais, são devidas a fraturamentos constatados pelas ocorrências de brechas em vários drenos, bem como de deslocamentos de camadas e sistemas de juntas.

Os planos de foliação dos metassedimentos do Grupo Bambuí apresentam direções variando de NS a N 50° E, predominando N 40° E, sentido segundo o qual se apresentam também os principais drenos e correspondentes altos topográficos. Este controle é mais evidente quando observado em escala regional.

Sobressai-se na região a serra dos Barbosas, constituída por quartzitos do Grupo Bambuí, que suportaram a erosão e apresentam cotas de até 1.018 m.

2.5 - Geologia Regional

Na região de Patos de Minas ocorrem metamorfitos pré-Cambrianos (Grupo Canastra e Formação Ibiá), eocambrianos (Grupo Bambuí), sedimentos cretáceos das Formações Areado e Mata da Corda, terciário laterítico e, nas planícies fluviais, sedimentos aluvionares recentes.

No Grupo Canastra (Barbosa, 1955), predominam os quartzitos e filitos, onde camadas espessas de quartzitos puros são raras. Estes são geralmente micáceos, contendo até 30% de sericita. Quanto aos filitos, são na maioria quartzosos, apresentando lâminas de filito intercaladas, com lâminas delgadas de quartzito de granulação muito fina até siltica. Há predominância dos filitos prateados puramente sericíticos, porém são comuns os grafitosos, apresentando-se, às vezes, piritosos.

O Grupo Canastra parece constituir-se apenas de metapelitos e quartzitos finos, não sendo encontrada nenhuma rocha grosseira. Apresentam-se ligeiramente metamorfisados, enquadrando-se no fácies xisto verde, embora, em

áreas restritas, a presença de granada induz a admitir o fácies almandina-anfibolito.

A Formação Ibiá é representada por calco-sericita a clorita-xistos, de granulação fina, exibindo uma coloração cinza-chumbo, ligeiramente esverdeada quando frescos. Apresenta como constituintes importantes, além da sericita e do quartzo, a albita, clorita e a calcita. O caráter calcítico é difícil de ser notado quando as rochas se apresentam intemperizadas, em virtude da lixiviação da calcita.

No Grupo Bambuí, constituído de rochas ligeiramente metamórficas, predominam calcários e siltitos da Formação Paraopeba e quartzitos e siltitos da Formação Paranoá.

Os calcários variam de silicosos e dolomíticos até predominantemente calcíticos. Os calcários cinza-azulados a cinza-escuros, tão comuns no Grupo, sempre contêm mais de 95% de calcita, sendo as impurezas constituídas por quartzo e poeira de grafita.

Os siltitos geralmente decompostos apresentam cores variegadas, com gradações entre amarela e roxa. Quando frescos, são muito compactos, duros, de cor cinza-esverdeada. São constituídos fundamentalmente por grãos de quartzo com dimensões sílticas, francamente angulosos, dispersos em matriz sericítico-clorítica. As palhetas de moscovita são frequentes, ocorrendo ainda plagioclásio e microclina subordinadamente.

Os quartzitos (arenitos quartzíticos) ocorrem intercalados nos siltitos, formando lentes ou camadas. São

em geral, de granulação média a fina, róseos e com matriz argilosa ou silicosa. São comuns no Alto Paranaíba e seus afluentes, ribeirões Santo Antônio das Minas Vermelhas e Jacaré.

A Formação Areado, um conjunto pouco espesso e representado por arenitos, folhelhos e conglomerados, recobre em acentuada discordância angular ao Grupo Bambuí.

A Formação Mata da Corda é constituída essencialmente por arenito, formando extensos chapadões. São argilosos e de cor amarela a vermelha (cor de tijolo), com níveis de pedriscos. Destacam-se nessa Formação os tufos, muito comuns na região de Patos de Minas e razoáveis pelas boas terras, do ponto de vista agrícola.

Os lateritos terciários ocorrem ao norte da cidade de Coromandel e formam também extensos chapadões. Trata-se de um material ferrífero, apresentando-se sob a forma de amêndoas e menos frequentemente como crosta contínua (canga). Comumente, o mineral ferrífero é constituído pela goetita, mas às vezes, a ele pode associar-se também a hematita.

O Quaternário possui pouca expressão superficial e constitui as aluviões diamantíferas dos rios Santo Inácio e Paranaíba e ribeirão Santo Antônio das Minas Vermelhas.

2.6 - Geologia Local

A área é constituída predominantemente por siltitos eo-Cambrianos, pertencentes ao Membro Lagoa do Jacaré do Grupo Bambuí.

Além destes termos litológicos, ocorre a rocha fosfática associada às ardósias escuras do Bambuí.

2.6.1 - Grupo Bambuí

Membro Lagoa do Jacaré

Há predominância total das litologias Bambuí na região; são siltitos com intercalações de calcário e quartzito, tendo como termo intermediário siltito calcífero, gerador de solos mais férteis e de coloração avermelhada.

Os siltitos, normalmente, em alto estado de decomposição, tornam-se de cores amareladas, encontrando-se, no entanto, cores variegadas, conforme a variação composicional da rocha, sendo comuns gradações arroxeadas e rosas. Os siltitos frescos têm a cor cinza-esverdeada e só são encontrados no fundo dos vales jovens.

Petrograficamente são constituídos fundamentalmente por grãos de quartzo de dimensões sílticas, francamente angulosos, dispersos em matriz sericítico-clorítica. As frequentes palhetas de moscovita dispõem-se linearmente segundo a direção da estratificação da rocha, ocorrendo ainda com pouca frequência plagioclásio e microclina, estando esta última parcial ou totalmente alterada em uma massa argilosa de tom amarelado. A matriz de sericita e clorita é abundante, chegando em algumas zonas a predominar sobre o quartzo, e resulta do leve metamorfismo de um cimento originalmente argiloso.

Os calcários ocorrem em raras lentes pouco espessas, encaixadas no siltito, segundo a estratificação e tem a cor cinza-escura a preta, fraturado e com vênulas de

calcita branca leitosa, contendo ainda intercalações argilosas.

Os quartzitos (arenitos quartzíticos) formam leitos milimétricos a decimétricos. São de granulometria fina, cor creme, mostrando às vezes alguma silicificação. Localmente, apresentam-se bastante moscovíticos.

As direções das litologias Bambuí são invariavelmente NE-SW com mergulhos predominantes para NW, o que corresponde também à vergência dos planos das dobras. Enquanto na porção norte as direções em média são em torno de N 40° E, para o sul há uma ligeira inflexão, com as direções passando para N 25° E.

Rocha fosfática

Constitui dois importantes corpos com direção-geral NE-SW, que se estendem por cerca de 10 km, fundindo-se em um único a SW.

Provavelmente a COLOFANA é o mineral que compõem esta rocha fosfática, que ocorre associada às ardósias do Grupo Bambuí. Os teores são muito variáveis, pois ficam condicionados a maior ou menor concentração do mineral fosfático na ardósia intemperizada.

É normalmente bem estratificada, com cores variáveis, esbranquiçadas e creme-amareladas a róseas, com leitos de material acinzentado, onde é visível com a lupa, um mineral acicular branco. Localmente acha-se dobrada a exemplo da ardósia, apresentando em muitos pontos, intensa silicificação, formando inclusive pequenas drusas de quartzo. Formam, às vezes, pacotes sem estratificação visível, com dureza e densidade mais elevadas, mostrando frequente-

mente aspecto brechóide. Onde a erosão atuou com maior intensidade, permitindo uma maior percolação das águas, a rocha é leve, devido à lixiviação do carbonato e parte do fosfato, dando estruturas típicas com "boxwork". Forma também uma canga alumino-fosfática, muito dura, concrecionária, recoberta por uma camada limonítica.

2.6.2 - Tectônica Local

Os trabalhos até agora realizados, como trincheiras e furos testemunhados de sondagem a diamante, já permitem uma idéia com respeito ao comportamento da rocha-fosfática no subsolo.

A cartografia geológica de detalhe mostrou uma predominância de mergulhos dos estratos para o quadrante NW, em decorrência da vergência dos planos das dobras.

Também fora da área de ocorrência das rochas fosfáticas, os metassedimentos do Grupo Bambuí estão intensamente dobrados, principalmente devido à proximidade da grande falha de empurrão de baixo ângulo, que colocou rochas do Grupo Canastra sobre as do Grupo Bambuí. Esta inserção estratigráfica pode ser observada ao sul e a leste da região fosfática.

No trecho da estrada Patos-Pirubinhas, após a entrada para Pilar, observa-se nos cortes que as dobras de pequena amplitude são consequências do empurrão, pois quando os esforços afetaram rochas incompetentes, ocorreram falhamentos concomitantes com o dobramento. A intensidade desses dobramentos varia de acordo com a natureza das rochas envolvidas.

De modo geral, a forte clivagem ou foliação de

sempre deformada e mascarou os planos de estratificação, o que pode ser observado no bordo oeste da ocorrência fosfática, onde a foliação das ardósias encontra-se segundo N 40° E, 50° NW e a estratificação, dada por intercalações diferentes na coloração e granulometria, exibe atitudes em torno de N 45° E, 20° SE.

2.7 - Gênese

O fosfato de Patos de Minas ocorre em estratos da Série Bambuí e integra uma sequência sedimentária de natureza pelítica, frequente em várias ocorrências de fosfato sedimentar no mundo.

No local os leitos fosfáticos, constituem, via de regra, a parte superior da sequência e afloram em quase toda a área estudada, sendo recoberto apenas por delgada camada de solo, que raramente atinge 3 metros. Notam-se afloramentos bem litificados em vales e ravinas. Os estratos fosfáticos apresentam, frequentemente, dobramentos assimétricos, que sugerem dobras de arrastamento. Entretanto, considerados no conjunto, o comportamento dos estratos pode ser considerado subhorizontal. A análise química de várias amostras acusou teores em carbono livre de até 3%, e o exame microscópico de algumas lâminas delgadas revelou formas que lembram estruturas estromatolíticas, sugerindo influência organogênica na deposição do fosfato. Até o presente, não foram observados restos orgânicos de seres mais evoluídos, mas a presença da matéria carbonosa é frequente na maioria das preparações. Esses fatos corroboram a hipótese de origem sedimentar singenética sob influência bacteriana, associada a de algas na concentração do fosfato.

2.8 - Metodologia e Trabalhos de Pesquisa

Os trabalhos seguiram uma metodologia pré-estabelecida, só que de um modo bastante acelerado, constando de:

- √ a.) Mapeamento em detalhe das áreas que apresentavam em superfície maior número de parâmetros determináveis a partir dos afloramentos naturais e/ou facilmente criados, por trincheiras e poços, visando obter elementos para localizar, com mais segurança, trabalhos de sondagem e de galeria, de modo a se entender o comportamento estrutural do depósito e obter elementos para estimar sua reserva;
- √ b.) Programa de sondagem rotativa
 - b.a) está sendo executada uma sondagem sistemática de acordo com malha previamente estabelecida, para fornecer elementos que serão usados na cubagem global da área e no planejamento de seu desenvolvimento e de sua lavra;
 - b.b) locação de furos, numa malha secundária em área favorável ditada pelo mapeamento de detalhe, para uma pronta quantificação de reserva aíjaacente;
- c) Amostragem, análise química, ensaios de beneficiamento e ensaios agrícolas, para definir qualidade e utilização mais adequada da rocha fosfática. Se para aplicação direta no solo ou produtos industrializados.

Até o presente, foram realizados os seguintes trabalhos nas áreas requeridas:

- a) Reconhecimento geológico ao longo de toda a área o que permitiu, juntamente com os trabalhos de fotointerpretação, delimitar, em superfície, a forma do corpo fosfático;
- b) Levantamento geológico detalhado de perfis transversais à linha base, tendo sido observados 1.200 pontos, num caminhamento de 60.000 metros, o que cobre uma área aproximada de 1.300 hectares;
- c) Sondagem rotativa a diamante, diâmetro BX, perfazendo um total de 4.289,65 metros e 61 furos, com uma profundidade média de 70,32 metros e com amostragem de metro em metro.
- d) Foram abertas 2.088 m³ de trincheiras como objetivo de delimitar os contatos da rocha fosfática com as ardósias do Grupo Bambuí e amostradas para análises e auxílio na cubagem da jazida. Para a abertura das trincheiras foi usada uma retroescavadeira;
- e) Foram abertos 51 metros de poços de pesquisa, com abertura de canais de amostragem;
- f) Foram realizadas análises químicas em 5.171 amostras, totalizando 9.055 elementos dosados, sendo executados pelos seguintes laboratórios:

LABORATÓRIOS	AMOSTRAS	ELEMENTOS
LAPEM - CPRM (Belo Horizonte)	4.145	6.828
LAMIN - CPRM (Rio)	20	1.750
CETEC - (Belo Horizonte)	56	280
GEOSOL - (Belo Horizonte)	663	663
Fertilizantes MITSUI (Poços de Caldas)	247	494
MBR - (Belo Horizonte)	40	40
TOTAL	5.171	9.055

- g) Foram feitos 40 km² de restituição planimétrica, escala 1:10.000, com curvas de nível de 10 em 10 metros, serviços estes contratados à firma EMBRAFOTO;
- h) Foram realizados 93 km de perfis topográficos por técnicos da Agência Belo Horizonte;
- i) Foram medidos 505 m de desvio de furos inclinados;
- j) Foi executado um ortofotomapa cobrindo uma área de 40 km² pela equipe do CECAR-CPRM;
- l) Foram realizados 250,50 m de perfilagem gama a fim de se determinar se o fosfato achava-se ou não associado a minerais de urânio;
- m) Foram realizados testes de viabilidade da concentração do material fosfático, viabilidade -



de lavra, pela firma Paulo Abib Andery & Asso
ciados.

2.9 - Cálculo das Reservas

PROJETO PATOS DE MINAS
RESULTADO DA CUBAGEM PARCIAL

PICHA Nº	PERFIS	ÁREA DOS PERFIS (m ²)	TEOR MÉDIO DOS PERFIS EM P ₂ O ₅ (%)	ÁREA DOS PERFIS INTERMED. (P. Is) (m ²)	SEMI-SOMA DAS ÁREAS DOS (P. Is) (m ²)	DISTÂNCIA ENTRE OS (P. Is) (m)	VOLUME DE MAT. ENTRE OS (P. Is) (m ³)	TONELAGEM DE MAT. ENTRE OS (P. Is)	TEOR EMP ₂ O ₅ DO MATERIAL DOS (P. Is) (%)	TEOR EMP ₂ O ₅ DO MATERIAL ENTRE OS (P. Is) (%)	TONELAGEM DE P ₂ O ₅ ENTRE OS (P. Is)	TEOR MÉDIO EM P ₂ O ₅ DO CORPO QUE REALIZADO (%)
MINÉRIO MEDIDO				8.250					13,56			
	LB/11	16.500	13,56		13.562	275	3.729.550	7.459.100		14,02	1.045.766	
				18.875					14,23			
	LB/12	21.250	14,76		21.312	250	5.328.000	10.656.000		14,36	1.530.202	
				23.750					14,54			
	LB/13	26.250	14,37		22.812	250	5.703.000	11.406.000		15,15	1.728.009	
				21.875					15,81			
	LB/14	17.500	17,97		20.231	275	7.586.625	15.773.250		16,23	2.462.618	
				18.687					16,72			
	LB/16	19.875	15,62		18.562	375	6.960.750	13.921.500		16,58	2.308.185	
				18.437					16,44			
	LB/17	17.000	17,41		19.156	250	4.789.000	9.578.000		16,23	1.554.509	
				19.875					16,03			
	LB/18	22.750	15,43		21.835	250	5.458.750	10.917.500		15,34	1.674.744	
			23.875					14,76				

PROJETO PATOS DE MINAS
RESULTADO DA CUBAGEM PARCIAL

PICHA Nº	PERFIS	ÁREA DOS PERFIS (m ²)	TEOR MÉDIO DOS PERFIS EM P ₂ O ₅ (%)	ÁREA DOS PERFIS INTERMED. (P. Is)(m ²)	SEMI-SOMA DAS ÁREAS DOS (P. Is)(m ²)	DISTÂNCIA ENTRE OS (P. Is) (m)	VOLUME DE MAT. ENTRE OS (P. Is) (m ³)	TONELAGEM DE MAT. ENTRE OS (P. Is)	TEOR EMP ₂ O ₅ DO MATERIAL DOS (P. Is)(%)	TEOR EMP ₂ O ₅ DO MATERIAL ENTRE OS (P. Is)(%)	TONELAGEM DE P ₂ O ₅ ENTRE OS (P. Is)	TEOR MÉDIO EM P ₂ O ₅ DO CORPO MINE RALIZADO (%)	
MINÉRIO MEDIDO				23.875					14,76			15,34	
	LB/19	25.000	14,15		24.062	250	6.015.500	12.031.000		14,71	1.772.166		
				24.250					14,71				
	LB/20	23.500	15,30		24.137	250	6.034.250	12.068.500		14,89	1.796.999		
				24.125					15,07				
	LB/21	24.750	14,85		19.000	275	5.225.000	10.450.000		14,99	1.566.455		
				12.875					14,85				
								56.830.425	113.660.850				17.439.650

PROJETO PATOS DE MINAS
RESULTADO DA CURAGEM PARCIAL

FICHA Nº 1	PERFIS	ÁREA DOS PERFIS (m ²)	TEOR MÉDIO DOS PERFIS EM P ₂ O ₅ (%)	ÁREA DOS PERFIS INTERMED. (P. I _a)(m ²)	SEMI-SOMA DAS ÁREAS DOS (P. I _a)(m ²)	DISTÂNCIA ENTRE OS (P. I _a) (m)	VOLUME DE MAT. ENTRE OS (P. I _a) (m ³)	TONELAGEM DE MAT. ENTRE OS (P. I _a)	TEOR EM P ₂ O ₅ DO MA- TERIAL DOS (P. I _a)(%)	TEOR EM P ₂ O ₅ DO MA- TERIAL EN- TRE OS (P. I _a)(%)	TONELAGEM DE P ₂ O ₅ - ENTRE OS (P. I _a)	TEOR MÉDIO EM P ₂ O ₅ LO CORPO MINE- RALIZADO (%)
MINÉRIO MEDIDO				5.750					14,39			13,98
	LF/23	11.500	14,39		8.137	275	2.237.675	4.475.350		14,13	632.366	
				10.625					14,00			
	LF/24	9.750	13,55		10.437	250	2.609.250	5.218.500		13,91	725.893	
				10.250					13,82			
	LF/25	10.750	14,07		7.812	275	2.148.300	4.296.600		13,91	597.657	
				5.375					14,07			
	T O T A I S							6.996.075	13.990.411			

PROJETO PATOS DE MINAS

RESULTADO DA CUPAGEM PARCIAL

FICHA Nº	PERFIS	ÁREA DOS PERFIS (m ²)	TEOR MÉDIO DOS PERFIS EM P ₂ O ₅ (%)	ÁREA DOS PERFIS INTERMED. (P.1a)(m ²)	SEMI-SOMA DAS ÁREAS DOS (P.1a)(m ²)	DISTÂNCIA ENTRE OS (P.1a) (m)	VOLUME DE MAT. ENTRE OS (P.1a) (m ³)	TONELAGEM DE MAT. ENTRE OS (P.1a)	TEOR EM P ₂ O ₅ DO MATERIAL DOS (P.1a)(%)	TEOR EM P ₂ O ₅ DO MATERIAL ENTRE OS (P.1a)(%)	TONELAGEM DE P ₂ O ₅ ENTRE OS (P.1a)	TEOR MÉDIO EM P ₂ O ₅ DO CORPO MINE RALIZADO (%)
MINÉRIO MEDIDO				5.500	- -				13,44			14,00
	LR/27	11.000	13,44		8.625	225	1.940.625	3.881.250		13,76	534.060	
				11.750					13,91			
	LR/28	12.500	14,32		10.437	250	2.609.250	5.218.500		14,10	735.808	
				9.125					14,35			
	LR/29	5.750	14,43		8.187	250	2.046.750	4.093.500		14,23	582.505	
				7.250					14,09			
	LR/30	8.750	13,87		6.042	250	1.510.500	3.021.000		13,97	422.033	
				4.835					13,78			
	LR/31	1.000	13,00		2.667	205	546.735	1.093.470		13,71	149.914	
				500					13,00			
	T O T A I S							8.653.860	17.307.720			

RESUMO DA CUBAGEM

(Tonelada)

C O R P O	TIPOS DE RESERVA			TEOR MÉ- DIO %
	MEDIDA	INDICADA	INFERIDA	
Central 1			27.520.000	10%
			35.100.000	5- 10
Central 2	113.660.850			15,34
Central 3	13.990.450			14,00
Central 4	17.307.720			13,00
Central 4			13.800.000	10%
Central 5			22.050.000	10%
Central 5			38.850.000	5 - 10
Corpo Lateral Oeste 3			8.640.000	10
Corpo Lateral Oeste 2			2.360.000	10
Corpo Lateral Oeste 1			9.280.000	10
Corpo Lateral Envolvente do Central 1 + 2		38.120.000		10
Corpo Lateral Leste			1.460.000	10
			2.920.000	5 - 10
TOTAIS	144.959.020	38.120.000	161.980.000	
TOTAL GERAL	345.059.020			

DISTRIBUIÇÃO DAS RESERVAS COM OS TEORES

DE P₂O₅

5 - 10 %	10 - 15 %			> 15 %
I N F E R I D A	M E D .	I N D .	I N F .	M E D I D A
76.820.000	31.298.170	38.120.000	85.110.000	113.660.850

A N E X O S

DADOS PARA CUBAGEM

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/11	PM-033	0,0	5,0	5,0	14,32	12,70			5,0	6,0	1,0	5,2
		6,0	20,0	14,0	11,90							
		21,0	34,0	13,0	13,41							
		37,0	41,0	4,0	12,70							
		-		-						-		
LB/11	PM-033	43,0	46,0	3,0	11,86				41,0	43,0	2,0	6,6
		47,0	63,95	16,95	12,52				46,0	47,0	1,0	6,6
		6		55,95		12,70			5		8,0	

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/11	PM-042	3,0	58,0	55,0	13,61	13,61	3,0	7,73				
		1		55,0		13,61	3,0	7,73				
LB/11	PM-045	0,0	32,00	32,0	11,79	14,17						
		32,0	51,0	19,0	19,11							
		51,0	60,80	9,8	12,37							
		3		60,8		14,17		-				

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/11	PM-050	8,0	12,0	4,0	10,7		8,0	5,7				
						10,52			12,0	22,0	10,0	7,24
		-		-		-	-	-	-		-	
		22,0	28,0	6,0	10,48							
LB/11	PM-050	30,0	32,0	2,0	10,60				28,0	30,0	2,0	4,15
		39,0	41,0	2,0	10,20				32,0	39,0	7,0	4,15
		4		14,0		10,52	8,0	5,7	3		19,0	

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/12	PM-035	0,0	24,0	24,0	11,30	12,40						
		24,0	45,0	21,0	13,90							
		45,0	54,0	9,0	11,70							
		3		54,0		12,40						
LB/12	PM-051	0,0	63,0	63,0	16,08	16,08						
		1				16,08						

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/12	PM-057	13,0	14,0	1,0	12,5	11,76	13,0	5,34	14,0	19,0	5,0	5,94
		19,0	20,0	1,0	10,6				20,0	22,0	2,0	7,75
		-		-		-	-		-		-	
LB/12	PM-057	22,0	24,0	2,0	11,25				24,0	39,0	15,0	6,70
		39,0	41,0	2,0	12,50				41,0	61,0	20,0	5,08
		4		6,0		11,76	13,0	5,34	4		42,0	

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/13	PM-001	3,0	21,0	18,0	11,66	15,61	3,0	12,59				
		21,0	42,0	21,0	16,68							
		-		-		-	-	-				
LB/13	PM-001	42,0	51,0	9,0	20,22							
		51,0	69,0	18,0	16,02							
		4		66,0		15,61	3,0	12,59				

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/13	PM-010	0,0	5,0	5,0	13,3				5,0	28,0	23,0	4,98
		28,0	45,0	17,0	11,39	13,6						
		-		-							-	
LB/13	PM-010	45,0	74,0	29,0	15,42							
		74,0	81,0	7,0	11,46							
		4		58,0		13,6			1		23,0	4,98

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/13	PM-014	0,0	43,0	43,0	15,25	14,76			43,0	63,0	20,0	5,15
		63,0	69,0	6,0	11,28							
		2		49,0		14,76			1		20,0	5,15
LB/13	PM-017	1,0	5,0	4,0	10,1	10,05	1,0	7,9	5,0	28,0	23,0	4,9
		28,0	38,9	10,9	10,0							
		2		14,9		10,05	1,0	7,9	1		23,0	4,9

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)				
		DE	ATÉ						DE	ATÉ						
LB/13	PM-020	0,0	50,0	50,0	13,97	13,61			50,0	52,0	2,0	7,75				
		52,0	67,0	15,0	13,38								67,0	76,0	9,0	8,74
		76,0	81,0	5,0	10,78											
		3		70,0		13,61			2		11,0					
LB/13	PM-027								0,0	40,0	40,0	3,87				
											40,0	3,87				

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/14	PM-019								0,0	50,1	50,1	2,91
											50,1	2,91
LB/14	PM-026								0,0	50,05	50,05	2,15
											50,05	2,15

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/14	PM-029	0,0	70,15	70,15	19,16	19,16						
		1		70,15		19,16						
LB/14	PM-038	0,0	37,10	37,10	15,72	15,72						
		1		37,10		15,72						

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/15	PM-011	4,0	9,0	5,0	15,8	15,8	4,0	5,9				
		1		4,0		15,8	4,0	5,9				
LB/15	PM-012	0,0	6,0	6,0	11,3	11,3						
		1		6,0		11,3						

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/16	PM-044	3,0	6,0	3,0	11,16	10,96	3,0	3,96	6,0	14,0	8,0	
		14,0	19,0	5,0	10,84							
		2		8,0		10,96	3,0	3,96	1		8,0	
LB/16	PM-055	0,0	60,0	60,0	15,62	15,62						
		1		60,0		15,62						

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)	
		DE	ATÉ						DE	ATÉ			
LB/17	PM-002								0,0	63,0	63,0	3,1	
											63,0	3,1	
LB/17	PM-007	0,0	2,0	2,0	15,50	17,35							
		2,0	15,0	13,0	20,50								
		15,0	59,0	44,0	16,50								
		3		59,0		17,35							

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/17	PM-015						14,0	7,4				
							14,0	7,4				
LB/17	PM-030	0,0	50,50	50,50	17,49	17,49						
		1		50,50		17,49						

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/18	PM-028	1,0	11,0	10,0	10,1	14,29	1,0	8,3	11,0	18,0	7,0	7,27
		18,0	62,0	44,0	15,25							
		2		54,0		14,29	1,0	8,3	1		7,0	7,27
LB/18	PM-041	0,0	54,0	54,0	17,10	17,10						
		1		54,0		17,10						

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/19	PM-008	4,0	21,0	17,0	10,7	14,3	4,0	7,0				
		21,0	62,0	41,0	15,8							
		2		58,0		14,3	4,0	7,0				
LB/19	PM-009	0,0	4,0	4,0	15,7	13,8						
		4,0	10,0	6,0	12,3							
		10,0	20,0	10,0	15,3							
		20,0	24,0	4,0	10,2							
		4		24,0		13,8						

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/19	PM-025	27,0	44,0	17,0	11,81	11,81	27,0	5,29				
		1		17,0		11,81	27,0	5,29				
LB/19	PM-013						35,0	3,62				
							35,0	3,62				

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/20	PM-021	19,0	23,0	4,0	10,23	13,90	19,0	6,26	23,0	28,0	5,0	7,96
		28,0	73,0	45,0	14,23							
		2		49,0		13,90	19,0	6,26	1		5,0	7,96
LB/20	PM-032	24,0	39,0	15,0	11,43	11,37	24,0	3,55	39,0	44,0	5,0	7,5
		44,0	47,0	3,0	11,10							
		2		18,0		11,37	24,0	3,55			5,0	7,5

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/21	PM-016	0,0	35,0	35,0	14,7	14,85			35,0	43,0	8,0	7,7
		43,0	63,0	20,0	15,43							
		64,0	73,0	9,0	14,15							
		3		64,0		14,85					8,0	7,7
LB/21	PM-031								0,0	42,75	42,75	2,46
											42,75	2,46

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO FATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/23	PM-037	12,0	49,0	37,0	14,93	14,39	12,0	6,8	49,0	52,0	3,0	4,5
		52,0	61,40	9,4	12,30							
		2		46,4		14,39	12,0	6,8	1		3,0	4,5
LB/23	PM-049	39,0	40,0	1,0	11,20	11,7	39,0	2,2	40,0	48,0	8,0	4,46
		49,0	54,0	5,0	10,18							
		2		6,0		11,7	39,0	2,2	1		8,0	4,46

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/25	PM-043								0,0	51,35	51,35	2,06
									1		51,35	2,06
LB/25	PM-046	0,0	34,0	34,0	14,95	14,07			34,0	43,0	9,00	4,88
		43,0	64,0	21,0	12,65							
		2		55,0		14,07			1		9,00	4,88

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/27	PM-003	8,0	22,0	14,0	11,18	13,44	8,0	5,58	22,0	38,0	16,0	3,63
		38,0	42,0	4,0	17,17							
		-		-		-	-	-			-	
LB/27	PM-003	42,0	46,0	4,0	10,09				46,0	50,0	4,0	7,58
		50,0	60,0	10,0	14,34							
		60,0	72,0	12,0	15,22							
		5		44,0		13,44	8,0	5,58	2		20,0	

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

PROJETO PATOS DE MINAS

DADOS PARA A CUBAGEM

PERFIL	FURO	INTERV. MINE- RALIZADO (m)		ESP. (m)	TEOR EM P ₂ O ₅ (%) (tmpi)	TEOR DO FURO EM P ₂ O ₅ (%) (tmpf)	CAPEAM. (m)	TEOR DO CAP. EM P ₂ O ₅ (%)	ESTÉRIL		ESP. (m)	TEOR EM P ₂ O ₅ (%)
		DE	ATÉ						DE	ATÉ		
LB/29	PM-004	11,0	14,0	3,0	12,23	14,43	11,0	3,9	30,0	31,0	1,0	3,9
		14,0	18,0	4,0	15,37							
		18,0	27,0	9,0	11,89							
		-		-		-		-			-	
LB/29	PM-004	27,0	30,0	3,0	15,23				33,0	52,0	19,0	4,5
		31,0	33,0	2,0	16,20							
		52,0	57,0	5,0	13,46							
		-		-		-		-			-	

ANÁLISES QUÍMICAS



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO MITSUI

TIPO DE ANÁLISE: COLORIMÉTRICA

FURO DE SONDA: 2148 - PM - 001 - MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 3,0	12,59	57,0 a 60,0	15,60
3,0 a 6,0	11,02	60,0 a 63,0	17,60
6,0 a 9,0	12,16	63,0 a 66,0	14,31
9,0 a 12,0	12,16	66,0 a 69,0	13,02
12,0 a 15,0	11,30	69,0 a 72,0	3,58
15,0 a 18,0	11,02	72,0 a 75,0	2,86
18,0 a 21,0	12,30	75,0 a 78,0	2,72
21,0 a 24,0	14,31	78,0 a 81,0	2,29
24,0 a 27,0	18,60	81,0 a 84,0	2,72
27,0 a 30,0	18,75	84,0 a 87,0	2,00
30,0 a 33,0	18,75	87,0 a 90,0	1,43
33,0 a 36,0	15,74	90,0 a 93,0	1,43
36,0 a 39,0	14,74	93,0 a 96,0	1,72
39,0 a 42,0	15,88	96,0 a 99,0	1,43
42,0 a 45,0	19,89	99,0 a 102,0	1,86
45,0 a 48,0	21,75	102,0 a 105,0	2,43
48,0 a 51,0	19,03	105,0 a 108,0	2,14
51,0 a 54,0	19,03	108,0 a 111,0	2,00
54,0 a 57,0	16,60	111,0 a 114,0	2,00

Cont. Furo 2148-PM-001-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
114,0 a 117,0	2,72	198,0 a 201,0	6,01
117,0 a 120,0	2,86	201,0 a 204,0	7,73
120,0 a 123,0	2,00	204,0 a 207,0	8,30
123,0 a 126,0	2,43	207,0 a 210,0	7,44
126,0 a 129,0	1,43	210,0 a 213,0	7,44
129,0 a 132,0	1,00	213,0 a 216,0	6,30
132,0 a 135,0	1,00	216,0 a 219,0	5,15
135,0 a 138,0	1,71	219,0 a 222,0	6,87
138,0 a 141,0	5,00	222,0 a 225,0	7,15
141,0 a 144,0	5,00	225,0 a 228,0	5,58
144,0 a 147,0	4,00	228,0 a 231,0	5,29
147,0 a 150,0	3,72	231,0 a 232,90	8,44
150,0 a 153,0	3,86		
153,0 a 156,0	4,43		
156,0 a 159,0	4,00		
159,0 a 162,0	4,43		
162,0 a 165,0	5,58		
165,0 a 168,0	5,00		
168,0 a 171,0	5,29		
171,0 a 174,0	4,86		
174,0 a 177,0	4,86		
177,0 a 180,0	4,43		
180,0 a 183,0	6,01		
183,0 a 186,0	6,72		
186,0 a 189,0	7,58		
189,0 a 192,0	6,58		
192,0 a 195,0	4,58		
195,0 a 198,0	5,58		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO MITSUI

TIPO DE ANÁLISE: COLORIMÉTRICA

FURO DE SONDA: 2148-PM-002-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 - 3,0	4,00	57,0 - 60,0	3,00
3,0 - 6,0	3,15	60,0 - 63,0	1,57
6,0 - 9,0	2,29		
9,0 - 12,0	1,57		
12,0 - 15,0	1,86		
15,0 - 18,0	1,57		
18,0 - 21,0	1,57		
21,0 - 24,0	3,15		
24,0 - 27,0	5,29		
27,0 - 30,0	4,43		
30,0 - 33,0	4,58		
33,0 - 36,0	4,15		
36,0 - 39,0	3,43		
39,0 - 42,0	3,00		
42,0 - 45,0	4,43		
45,0 - 48,0	3,58		
48,0 - 51,0	4,00		
51,0 - 54,0	2,72		
54,0 - 57,0	2,43		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO MITSUI

TIPO DE ANÁLISE: COLORIMÉTRICA

FURO DE SONDA: 2148-PM-003-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 2,0	5,58	38,0 a 40,0	16,45
2,0 a 4,0	10,45	40,0 a 42,0	17,90
4,0 a 6,0	3,43	42,0 a 44,0	10,16
6,0 a 8,0	2,86	44,0 a 46,0	10,02
8,0 a 10,0	9,01	46,0 a 48,0	9,44
10,0 a 12,0	12,45	48,0 a 50,0	5,72
12,0 a 14,0	12,74	50,0 a 52,0	15,31
14,0 a 16,0	12,88	52,0 a 54,0	14,31
16,0 a 18,0	10,59	54,0 a 56,0	14,17
18,0 a 20,0	12,02	56,0 a 58,0	13,16
20,0 a 22,0	8,58	58,0 a 60,0	14,74
22,0 a 24,0	4,00	60,0 a 62,0	13,31
24,0 a 26,0	2,72	62,0 a 64,0	16,17
26,0 a 28,0	3,00	64,0 a 66,0	17,74
28,0 a 30,0	2,86	66,0 a 68,0	16,03
30,0 a 32,0	4,58	68,0 a 70,0	14,31
32,0 a 34,0	3,58	70,0 a 72,0	13,74
34,0 a 36,0	4,15	72,0 a 74,0	8,58
36,0 a 38,0	4,15	74,0 a 76,0	4,86

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-004-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	4,8	19,0 a 20,0	13,4
1,0 a 2,0	4,4	20,0 a 21,0	12,4
2,0 a 3,0	7,3	21,0 a 22,0	13,4
3,0 a 4,0	3,6	22,0 a 23,0	10,5
4,0 a 5,0	3,3	23,0 a 24,0	12,1
5,0 a 6,0	2,8	24,0 a 25,0	13,0
6,0 a 7,0	3,4	25,0 a 26,0	10,8
7,0 a 8,0	4,0	26,0 a 27,0	9,1
8,0 a 9,0	2,9	27,0 a 28,0	15,5
9,0 a 10,0	3,0	28,0 a 29,0	15,8
10,0 a 11,0	4,0	29,0 a 30,0	14,4
11,0 a 12,0	10,0	30,0 a 31,0	3,9
12,0 a 13,0	13,2	31,0 a 32,0	18,1
13,0 a 14,0	13,5	32,0 a 33,0	14,3
14,0 a 15,0	16,3	33,0 a 34,0	6,8
15,0 a 16,0	14,8	34,0 a 35,0	1,9
16,0 a 17,0	15,2	35,0 a 36,0	1,4
17,0 a 18,0	15,2	36,0 a 37,0	1,3
18,0 a 19,0	12,3	37,0 a 38,0	1,3

Cont. Furo 2148-PM-004-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
38,0 a 39,0	1,5	66,0 a 67,0	23,8
39,0 a 40,0	2,1	67,0 a 68,0	25,2
40,0 a 41,0	2,2	68,0 a 69,0	21,2
41,0 a 42,0	2,8	69,0 a 70,0	11,6
42,0 a 43,0	5,4	70,0 a 71,0	1,5
43,0 a 44,0	4,2	71,0 a 72,0	1,2
44,0 a 45,0	4,0	72,0 a 73,0	1,2
45,0 a 46,0	5,5	73,0 a 74,0	1,6
46,0 a 47,0	8,3	74,0 a 75,0	1,1
47,0 a 48,0	5,2	75,0 a 76,0	1,5
48,0 a 49,0	6,4		
49,0 a 50,0	7,5		
50,0 a 51,0	8,8		
51,0 a 52,0	9,6		
52,0 a 53,0	16,1		
53,0 a 54,0	12,8		
54,0 a 55,0	15,7		
55,0 a 56,0	11,5		
56,0 a 57,0	11,2		
57,0 a 58,0	7,5		
58,0 a 59,0	7,8		
59,0 a 60,0	9,5		
60,0 a 61,0	8,9		
61,0 a 62,0	9,4		
62,0 a 63,0	10,3		
63,0 a 64,0	11,3		
64,0 a 65,0	13,5		
65,0 a 66,0	18,6		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-006-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
2,0 a 3,0	5,9	21,0 a 22,0	9,5
3,0 a 4,0	6,0	22,0 a 23,0	9,3
4,0 a 5,0	4,2	23,0 a 24,0	7,6
5,0 a 6,0	5,7	24,0 a 25,0	8,5
6,0 a 7,0	5,7	25,0 a 26,0	9,2
7,0 a 8,0	12,0	26,0 a 27,0	12,3
8,0 a 9,0	11,6	27,0 a 28,0	11,3
9,0 a 10,0	9,1	28,0 a 29,0	12,3
10,0 a 11,0	10,5	29,0 a 30,0	10,9
11,0 a 12,0	14,6	30,0 a 31,0	9,3
12,0 a 13,0	14,4	31,0 a 32,0	6,4
13,0 a 14,0	12,8	32,0 a 33,0	8,0
14,0 a 15,0	14,9	33,0 a 34,0	7,2
15,0 a 16,0	10,2	34,0 a 35,0	6,1
16,0 a 17,0	10,1	35,0 a 36,0	4,4
17,0 a 18,0	9,7	36,0 a 37,0	5,0
18,0 a 19,0	10,1	37,0 a 38,0	6,3
19,0 a 20,0	9,5	38,0 a 39,0	7,2
20,0 a 21,0	10,8	39,0 a 40,0	7,2

Cont. Furo 2148-PM-006-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
40,0 a 41,0	5,0	68,0 a 69,0	3,4
41,0 a 42,0	3,2	69,0 a 70,0	3,2
42,0 a 43,0	2,5	70,0 a 71,0	3,4
43,0 a 44,0	3,4	71,0 a 72,0	2,7
44,0 a 45,0	3,4	72,0 a 73,0	1,6
45,0 a 46,0	3,1	73,0 a 74,0	1,1
46,0 a 47,0	3,4	74,0 a 75,0	0,5
47,0 a 48,0	5,1	75,0 a 76,0	0,5
48,0 a 49,0	5,4	76,0 a 77,0	0,5
49,0 a 50,0	4,9	77,0 a 78,0	1,4
50,0 a 51,0	5,7	78,0 a 79,0	0,5
51,0 a 52,0	5,9	79,0 a 80,0	0,5
52,0 a 53,0	4,6	80,0 a 81,0	0,5
53,0 a 54,0	4,8	81,0 a 82,0	0,5
54,0 a 55,0	6,3	82,0 a 83,0	0,5
55,0 a 56,0	5,0	83,0 a 84,0	0,5
56,0 a 57,0	4,2	84,0 a 85,0	0,5
57,0 a 58,0	6,2	85,0 a 86,0	1,3
58,0 a 59,0	6,1	86,0 a 87,0	7,1
59,0 a 60,0	8,9	87,0 a 88,0	5,9
60,0 a 61,0	10,4	88,0 a 89,0	5,9
61,0 a 62,0	11,1	89,0 a 90,0	6,3
62,0 a 63,0	7,4	90,0 a 91,0	8,0
63,0 a 64,0	8,1	91,0 a 92,0	6,0
64,0 a 65,0	8,9	92,0 a 93,0	5,3
65,0 a 66,0	8,0	93,0 a 94,0	4,6
66,0 a 67,0	3,1	94,0 a 95,0	5,6
67,0 a 68,0	3,5	95,0 a 96,0	6,2

Cont. Furo 2148-PM-006-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
96,0 a 97,0	9,8		
97,0 a 98,0	2,3		
98,0 a 99,0	1,3		
99,0 a 100,0	1,2		
100,0 a 101,0	1,5		
101,0 a 102,0	1,3		
102,0 a 103,0	1,6		
103,0 a 104,0	1,2		
104,0 a 105,0	1,2		
105,0 a 106,0	0,9		
106,0 a 107,0	1,2		
107,0 a 108,0	1,0		
108,0 a 109,0	1,0		
109,0 a 109,60	1,0		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

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TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-007-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0 a 1	15,4	18 a 19	17,4
1 a 2	15,7	19 a 20	17,5
2 a 3	22,1	20 a 21	16,9
3 a 4	22,0	21 a 22	13,5
4 a 5	22,6	22 a 23	14,9
5 a 6	19,3	23 a 24	13,8
6 a 7	19,6	24 a 25	15,1
7 a 8	19,5	25 a 26	18,6
8 a 9	21,5	26 a 27	16,9
9 a 10	22,5	27 a 28	18,1
10 a 11	21,3	28 a 29	18,8
11 a 12	20,4	29 a 30	21,8
12 a 13	18,6	30 a 31	19,2
13 a 14	17,0	31 a 32	17,8
14 a 15	19,9	32 a 33	16,3
15 a 16	17,2	33 a 34	20,3
16 a 17	17,1	34 a 35	19,8
17 a 18	18,0	35 a 36	18,4

Cont. Furo 2148-PM-007-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
36 a 37	21,9	62 a 63	7,4
37 a 38	19,6	63 a 64	4,8
38 a 39	18,4	64 a 65	3,0
39 a 40	16,3	65 a 66	4,5
40 a 41	18,0	66 a 67	4,0
41 a 42	19,1	67 a 68	3,9
42 a 43	15,6	68 a 69	3,6
43 a 44	17,1	69 a 70	3,1
44 a 45	16,6	70 a 71	4,0
45 a 46	14,2	71 a 72	6,8
46 a 47	16,3	72 a 73	3,4
47 a 48	14,4	73 a 74	3,3
48 a 49	13,0	74 a 75	6,3
49 a 50	14,9	75 a 76	4,6
50 a 51	15,8	76 a 77	2,7
51 a 52	13,2	77 a 78	3,7
52 a 53	15,1	78 a 79	4,6
53 a 54	16,4	79 a 80	5,2
54 a 55	13,1	80 a 81	5,0
55 a 56 A	14,1	81 a 82	2,8
55 a 56 B	13,2	82 a 83	3,2
56 a 57	11,7	83 a 84	5,1
57 a 58	12,9	84 a 85	5,6
58 a 59	13,0	85 a 86	3,5
59 a 60	9,8	86 a 86,5	2,9
60 a 61	8,6		
61 a 62	5,2		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

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TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-008-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	11,9	19,0 a 20,0	6,6
1,0 a 2,0	4,0	20,0 a 21,0	10,2
2,0 a 3,0	3,2	21,0 a 22,0	16,6
3,0 a 4,0	9,1	22,0 a 23,0	16,7
4,0 a 5,0	14,5	23,0 a 24,0	14,7
5,0 a 6,0	17,0	24,0 a 25,0	13,4
6,0 a 7,0	10,8	25,0 a 26,0	12,2
7,0 a 8,0	10,1	26,0 a 27,0	16,7
8,0 a 9,0	9,7	27,0 a 28,0	17,9
9,0 a 10,0	7,4	28,0 a 29,0	16,6
10,0 a 11,0	9,3	29,0 a 30,0	16,8
11,0 a 12,0	12,5	30,0 a 31,0	13,0
12,0 a 13,0	13,1	31,0 a 32,0	16,1
13,0 a 14,0	9,1	32,0 a 33,0	15,7
14,0 a 15,0	8,0	33,0 a 34,0	12,9
15,0 a 16,0	12,1	34,0 a 35,0	14,8
16,0 a 17,0	11,3	35,0 a 36,0	20,8
17,0 a 18,0	11,8	36,0 a 37,0	17,0
18,0 a 19,0	7,9	37,0 a 38,0	15,9

Cont. Furo 2148-PM-008-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
38,0 a 39,0	16,0	66,0 a 67,0	4,2
39,0 a 40,0	19,5	67,0 a 68,0	4,1
40,0 a 41,0	16,7	68,0 a 69,0	3,4
41,0 a 42,0	17,4	69,0 a 70,0	2,5
42,0 a 43,0	18,6	70,0 a 71,0	2,5
43,0 a 44,0	15,7	71,0 a 72,0	3,0
44,0 a 45,0	15,4	72,0 a 73,0	2,5
45,0 a 46,0	17,9	73,0 a 74,0	3,6
46,0 a 47,0	14,7	74,0 a 75,0	2,7
47,0 a 48,0	19,0	75,0 a 76,0	1,9
48,0 a 49,0	19,2	76,0 a 77,0	1,6
49,0 a 50,0	17,2	77,0 a 78,0	2,3
50,0 a 51,0	13,9	78,0 a 79,0	2,8
51,0 a 52,0	11,7		
52,0 a 53,0	17,5		
53,0 a 54,0	17,2		
54,0 a 55,0	13,5		
55,0 a 56,0	13,3		
56,0 a 57,0	14,3		
57,0 a 58,0	15,5		
58,0 a 59,0	12,3		
59,0 a 60,0	12,5		
60,0 a 61,0	16,3		
61,0 a 62,0	15,1		
62,0 a 63,0	10,9		
63,0 a 64,0	6,0		
64,0 a 65,0	2,5		
65,0 a 66,0	2,2		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO · LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-009-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	17,2	19,0 a 20,0	13,0
1,0 a 2,0	16,2	20,0 a 21,0	12,7
2,0 a 3,0	16,7	21,0 a 22,0	9,3
3,0 a 4,0	12,8	22,0 a 23,0	7,8
4,0 a 5,0	11,6	23,0 a 24,0	10,9
5,0 a 6,0	11,7	24,0 a 25,0	7,1
6,0 a 7,0	12,3	25,0 a 26,0	4,5
7,0 a 8,0	13,2	26,0 a 27,0	6,7
8,0 a 9,0	12,9	27,0 a 28,0	7,2
9,0 a 10,0	12,0	28,0 a 29,0	6,3
10,0 a 11,0	14,3	29,0 a 30,0	7,9
11,0 a 12,0	17,0	30,0 a 31,0	4,0
12,0 a 13,0	17,6	31,0 a 32,0	6,0
13,0 a 14,0	18,9	32,0 a 33,0	7,3
14,0 a 15,0	14,3	33,0 a 34,0	5,1
15,0 a 16,0	13,6	34,0 a 35,0	6,0
16,0 a 17,0	13,7	35,0 a 36,0	5,2
17,0 a 18,0	16,5	36,0 a 37,0	5,8
18,0 a 19,0	14,1	37,0 a 38,0	6,2

Cont. Furo 2148-PM-009-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	4,1		
39,0 a 40,0	3,5		
40,0 a 41,0	6,9		
41,0 a 42,0	5,7		
42,0 a 43,0	7,6		
43,0 a 44,0	6,5		
44,0 a 45,0	4,7		
45,0 a 46,0	5,4		
46,0 a 47,0	4,7		
47,0 a 48,0	4,2		
48,0 a 49,0	2,5		
49,0 a 50,0	3,1		
50,0 a 51,0	3,3		
51,0 a 52,0	3,1		
52,0 a 53,0	4,9		
53,0 a 54,0	3,7		
54,0 a 55,0	4,6		
55,0 a 56,0	6,2		
56,0 a 57,0	8,1		
57,0 a 58,0	5,8		
58,0 a 58,75	5,2		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-010-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	17,3	18,0 a 19,0	3,2
1,0 a 2,0	11,6	19,0 a 20,0	3,3
2,0 a 3,0	13,8	20,0 a 21,0	4,5
3,0 a 4,0	11,2	21,0 a 22,0	3,5
4,0 a 5,0	12,7	22,0 a 23,0	2,3
5,0 a 6,0	8,8	23,0 a 24,0	3,3
6,0 a 7,0	6,0	24,0 a 25,0	4,9
7,0 a 8,0	6,0	25,0 a 26,0	5,3
8,0 a 9,0	6,6	26,0 a 27,0	5,4
9,0 a 10,0	10,4	27,0 a 28,0	7,8
10,0 a 11,0	5,8	28,0 a 29,0	14,3
11,0 a 12,0	6,1	29,0 a 30,0	11,5
12,0 a 13,0	3,7	30,0 a 31,0	14,0
13,0 a 14,0	4,6	31,0 a 32,0	11,5
14,0 a 15,0	3,5	32,0 a 33,0	14,0
15,0 a 16,0	3,1	33,0 a 34,0	13,3
16,0 a 17,0	3,8	34,0 a 35,0	14,2
17,0 a 18,0	2,8	35,0 a 36,0	10,7

Cont. Furo 2148-PM-010-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
36,0 a 37,0	9,6	64,0 a 65,0	17,2
37,0 a 38,0	6,5	65,0 a 66,0	16,9
38,0 a 39,0	7,6	66,0 a 67,0	18,5
39,0 a 40,0	13,0	67,0 a 68,0	12,6
40,0 a 41,0	8,9	68,0 a 69,0	12,4
41,0 a 42,0	9,8	69,0 a 70,0	12,7
42,0 a 43,0	10,2	70,0 a 71,0	17,9
43,0 a 44,0	12,0	71,0 a 72,0	19,1
44,0 a 45,0	12,5	72,0 a 73,0	15,4
45,0 a 46,0	13,7	73,0 a 74,0	14,2
46,0 a 47,0	18,1	74,0 a 75,0	12,5
47,0 a 48,0	17,5	75,0 a 76,0	12,9
48,0 a 49,0	15,2	76,0 a 77,0	10,8
49,0 a 50,0	13,0	77,0 a 78,0	12,1
50,0 a 51,0	17,0	78,0 a 79,0	10,1
51,0 a 52,0	14,6	79,0 a 80,0	9,0
52,0 a 53,0	14,1	80,0 a 81,0	12,8
53,0 a 54,0	12,6	81,0 a 82,0	9,0
54,0 a 55,0	15,7	82,0 a 83,0	8,8
55,0 a 56,0	17,7	83,0 a 84,0	4,8
56,0 a 57,0	15,9	84,0 a 85,0	4,2
57,0 a 58,0	17,3	85,0 a 86,0	2,9
58,0 a 59,0	13,5	86,0 a 87,0	3,5
59,0 a 60,0	12,5	87,0 a 87,95	3,3
60,0 a 61,0	13,6		
61,0 a 62,0	15,9		
62,0 a 63,0	16,6		
63,0 a 64,0	15,9		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-011-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	6,7	18,0 a 19,0	4,1
1,0 a 2,0	7,4	19,0 a 20,0	2,2
2,0 a 3,0	4,7	20,0 a 21,0	5,3
3,0 a 4,0	2,9	21,0 a 22,0	6,6
4,0 a 5,0	8,1	22,0 a 23,0	6,7
5,0 a 6,0	13,5	23,0 a 24,0	6,2
6,0 a 7,0	16,4	24,0 a 25,0	6,1
7,0 a 8,0	17,7	25,0 a 26,0	6,6
8,0 a 9,0	15,6	26,0 a 27,0	6,3
9,0 a 10,0	6,4	27,0 a 28,0	9,6
10,0 a 11,0	12,5	28,0 a 29,0	7,2
11,0 a 12,0	9,6	29,0 a 30,0	3,1
12,0 a 13,0	6,8	30,0 a 31,0	2,7
13,0 a 14,0	3,6	31,0 a 32,0	2,1
14,0 a 15,0	9,3	32,0 a 33,0	1,4
15,0 a 16,0	7,6	33,0 a 34,0	2,2
16,0 a 17,0	6,4	34,0 a 35,0	1,6
17,0 a 18,0	4,8	35,0 a 36,0	1,5

Cont. Furo 2148-PM-011-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	3,3		
37,0 a 38,0	2,8		
38,0 a 39,0	1,7		
39,0 a 40,0	2,6		
40,0 a 41,0	1,9		
41,0 a 42,0	3,4		
42,0 a 43,0	2,2		
43,0 a 44,0	2,1		
44,0 a 45,0	2,4		
45,0 a 46,0	3,3		
46,0 a 47,0	1,6		
47,0 a 48,0	1,3		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

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TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-012-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	9,8	19,0 a 20,0	5,1
1,0 a 2,0	9,5	20,0 a 21,0	3,2
2,0 a 3,0	9,2	21,0 a 22,0	3,6
3,0 a 4,0	9,0	22,0 a 23,0	2,7
4,0 a 5,0	10,5	23,0 a 24,0	3,8
5,0 a 6,0	20,0	24,0 a 25,0	4,1
6,0 a 7,0	6,1	25,0 a 26,0	3,7
7,0 a 8,0	9,8	26,0 a 27,0	3,0
8,0 a 9,0	7,0	27,0 a 28,0	3,2
9,0 a 10,0	2,9	28,0 a 29,0	1,6
10,0 a 11,0	2,4	29,0 a 30,0	9,6
11,0 a 12,0	3,0	30,0 a 31,0	6,1
12,0 a 13,0	5,0	31,0 a 32,0	1,6
13,0 a 14,0	8,4	32,0 a 33,0	1,8
14,0 a 15,0	10,0	33,0 a 34,0	3,2
15,0 a 16,0	11,1	34,0 a 35,0	1,7
16,0 a 17,0	8,5	35,0 a 36,0	2,5
17,0 a 18,0	7,8	36,0 a 37,0	4,2
18,0 a 19,0	6,5	37,0 a 38,0	4,0

Cont. Furo 2148-PM-012-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	3,5		
39,0 a 40,0	1,7		
40,0 a 41,0	1,0		
41,0 a 42,0	3,6		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

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PROJETO FATOS DE MINAS

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TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-013-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
0,0 a 1,0	3,9	19,0 a 20,0	5,0
1,0 a 2,0	2,1	20,0 a 21,0	3,3
2,0 a 3,0	3,0	21,0 a 22,0	3,1
3,0 a 4,0	2,5	22,0 a 23,0	3,2
4,0 a 5,0	5,4	23,0 a 24,0	5,0
5,0 a 6,0	3,5	24,0 a 25,0	2,4
6,0 a 7,0	6,8	25,0 a 26,0	2,8
7,0 a 8,0	5,5	26,0 a 27,0	2,6
8,0 a 9,0	5,5	27,0 a 28,0	3,6
9,0 a 10,0	3,8	28,0 a 29,0	2,4
10,0 a 11,0	3,0	29,0 a 30,0	3,4
11,0 a 12,0	4,7	30,0 a 31,0	3,5
12,0 a 13,0	1,6	31,0 a 32,0	5,1
13,0 a 14,0	2,7	32,0 a 33,0	6,3
14,0 a 15,0	1,6	33,0 a 34,0	5,5
15,0 a 16,0	5,3	34,0 a 35,0	2,5
16,0 a 17,0	1,8		
17,0 a 18,0	2,5		
18,0 a 19,0	2,0		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

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TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-014-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	17,1	19,0 a 20,0	17,7
1,0 a 2,0	10,6	20,0 a 21,0	17,3
2,0 a 3,0	10,6	21,0 a 22,0	15,6
3,0 a 4,0	14,9	22,0 a 23,0	17,0
4,0 a 5,0	14,4	23,0 a 24,0	18,9
5,0 a 6,0	14,3	24,0 a 25,0	19,5
6,0 a 7,0	12,5	25,0 a 26,0	12,3
7,0 a 8,0	14,5	26,0 a 27,0	16,0
8,0 a 9,0	14,4	27,0 a 28,0	14,8
9,0 a 10,0	13,9	28,0 a 29,0	13,8
10,0 a 11,0	16,3	29,0 a 30,0	14,1
11,0 a 12,0	16,0	30,0 a 31,0	15,5
12,0 a 13,0	18,3	31,0 a 32,0	16,8
13,0 a 14,0	15,6	32,0 a 33,0	14,5
14,0 a 15,0	14,1	33,0 a 34,0	13,4
15,0 a 16,0	19,4	34,0 a 35,0	12,1
16,0 a 17,0	20,4	35,0 a 36,0	13,0
17,0 a 18,0	19,1	36,0 a 37,0	16,0
18,0 a 19,0	19,4	37,0 a 38,0	13,8

Cont. Furo 2148-PM-014-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
38,0 a 39,0	10,9	66,0 a 67,0	11,7
39,0 a 40,0	13,5	67,0 a 68,0	13,3
40,0 a 41,0	14,3	68,0 a 69,0	10,0
41,0 a 42,0	15,6	69,0 a 70,0	7,1
42,0 a 43,0	13,5	70,0 a 71,0	6,3
43,0 a 44,0	6,7	71,0 a 72,0	7,2
44,0 a 45,0	6,0	72,0 a 73,35	5,9
45,0 a 46,0	4,8		
46,0 a 47,0	4,9		
47,0 a 48,0	4,0		
48,0 a 49,0	2,7		
49,0 a 50,0	3,7		
50,0 a 51,0	3,4		
51,0 a 52,0	4,6		
52,0 a 53,0	2,4		
53,0 a 54,0	2,3		
54,0 a 55,0	3,9		
55,0 a 56,0	5,8		
56,0 a 57,0	6,4		
57,0 a 58,0	6,1		
58,0 a 59,0	6,9		
59,0 a 60,0	7,1		
60,0 a 61,0	7,3		
61,0 a 62,0	7,1		
62,0 a 63,0	6,8		
63,0 a 64,0	12,1		
64,0 a 65,0	11,3		
65,0 a 66,0	9,3		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-015-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
0,0 a 1,0	3,1	18,0 a 19,0	3,3
1,0 a 2,0	4,5	19,0 a 20,0	1,1
2,0 a 3,0	6,0	20,0 a 21,0	5,3
3,0 a 4,0	7,5	21,0 a 22,0	5,4
4,0 a 5,0	8,3	22,0 a 23,0	2,7
5,0 a 6,0	7,5	23,0 a 24,0	1,7
6,0 a 7,0	7,1	24,0 a 25,0	1,3
7,0 a 8,0	7,3	25,0 a 26,0	4,9
8,0 a 9,0	7,9	26,0 a 27,0	4,6
9,0 a 10,0	7,8	27,0 a 28,0	3,0
10,0 a 11,0	8,8	28,0 a 29,0	5,0
11,0 a 12,0	8,5	29,0 a 30,0	3,0
12,0 a 13,0	12,4	30,0 a 31,0	1,1
13,0 a 14,0	7,1	31,0 a 32,0	1,6
14,0 a 15,0	5,6	32,0 a 33,0	2,0
15,0 a 16,0	2,8	33,0 a 34,0	5,6
16,0 a 17,0	2,9	34,0 a 35,0	5,2
17,0 a 18,0	2,6	35,0 a 36,0	2,5

Cont. Furo 2148-PM-015-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	3,6		
37,0 a 38,0	2,4		
38,0 a 39,0	1,6		
39,0 a 40,0	1,0		
40,0 a 41,0	2,3		
41,0 a 41,25	1,6		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO · LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-016-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	14,0	18,0 a 19,0	13,4
1,0 a 2,0	13,5	19,0 a 20,0	15,2
2,0 a 3,0	15,4	20,0 a 21,0	14,7
3,0 a 4,0	14,7	21,0 a 22,0	18,8
4,0 a 5,0	14,6	22,0 a 23,0	14,2
5,0 a 6,0	16,2	23,0 a 24,0	13,8
6,0 a 7,0	19,1	24,0 a 25,0	14,3
7,0 a 8,0	21,8	25,0 a 26,0	15,0
8,0 a 9,0	19,2	26,0 a 27,0	12,9
9,0 a 10,0	13,7	27,0 a 28,0	15,6
10,0 a 11,0	12,0	28,0 a 29,0	14,0
11,0 a 12,0	9,1	29,0 a 30,0	11,9
12,0 a 13,0	13,3	30,0 a 31,0	15,9
13,0 a 14,0	15,4	31,0 a 32,0	16,7
14,0 a 15,0	11,5	32,0 a 33,0	16,6
15,0 a 16,0	11,5	33,0 a 34,0	14,8
16,0 a 17,0	11,3	34,0 a 35,0	14,7
17,0 a 18,0	15,0	35,0 a 36,0	7,8

Cont. Furo 2148-PM-016-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
36,0 a 37,0	6,8	63,0 a 64,0	5 e
37,0 a 38,0	6,0	64,0 a 65,0	18,3
38,0 a 39,0	5,9	65,0 a 66,0	14,9
39,0 a 40,0	8,5	66,0 a 67,0	16,5
40,0 a 41,0	9,8	67,0 a 68,0	13,3
41,0 a 42,0	7,5	68,0 a 69,0	16,5
42,0 a 43,0	9,3	69,0 a 70,0	10,7
43,0 a 44,0	13,2	70,0 a 71,0	12,4
44,0 a 45,0	13,1	71,0 a 72,0	11,3
45,0 a 46,0	15,0	72,0 a 73,0	13,5
46,0 a 47,0	12,6		
47,0 a 48,0	13,7		
48,0 a 49,0	10,6		
49,0 a 50,0	11,0		
50,0 a 51,0	12,4		
51,0 a 52,0	19,2		
52,0 a 53,0	13,4		
53,0 a 54,0	18,4		
54,0 a 55,0	19,8		
55,0 a 56,0	18,8		
56,0 a 57,0	16,3		
57,0 a 58,0	14,3		
58,0 a 59,0	18,6		
59,0 a 60,0	17,9		
60,0 a 61,0	17,4		
61,0 a 62,0	17,2		
62,0 a 63,0	15,7		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-017-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	7,9	18,0 a 19,0	1,6
1,0 a 2,0	12,2	19,0 a 20,0	1,3
2,0 a 3,0	11,3	20,0 a 21,0	2,3
3,0 a 4,0	8,7	21,0 a 22,0	2,2
4,0 a 5,0	8,2	22,0 a 23,0	2,2
5,0 a 6,0	6,4	23,0 a 24,0	5,5
6,0 a 7,0	5,6	24,0 a 25,0	6,7
7,0 a 8,0	2,6	25,0 a 26,0	6,4
8,0 a 9,0	1,9	26,0 a 27,0	7,5
9,0 a 10,0	3,2	27,0 a 28,0	8,5
10,0 a 11,0	6,8	28,0 a 29,0	10,5
11,0 a 12,0	8,4	29,0 a 30,0	12,2
12,0 a 13,0	6,4	30,0 a 31,0	12,3
13,0 a 14,0	6,8	31,0 a 32,0	12,4
14,0 a 15,0	6,3	32,0 a 33,0	8,5
15,0 a 16,0	9,7	33,0 a 34,0	7,8
16,0 a 17,0	3,4	34,0 a 35,0	8,7
17,0 a 18,0	1,9	35,0 a 36,0	9,7

Cont. Furo 2148-PM-017-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	8,7		
37,0 a 38,0	7,8		
38,0 a 38,90	12,0		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO · LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-018-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	2,0	19,0 a 20,0	3,9
1,0 a 2,0	1,7	20,0 a 21,0	7,6
2,0 a 3,0	2,8	21,0 a 22,0	7,4
3,0 a 4,0	2,4	22,0 a 23,0	7,1
4,0 a 5,0	2,4	23,0 a 24,0	5,3
5,0 a 6,0	2,0	24,0 a 25,0	6,9
6,0 a 7,0	3,7	25,0 a 26,0	6,7
7,0 a 8,0	1,5	26,0 a 27,0	8,0
8,0 a 9,0	1,3	27,0 a 28,0	8,3
9,0 a 10,0	0,9	28,0 a 29,0	6,4
10,0 a 11,0	0,9	29,0 a 30,0	10,7
11,0 a 12,0	0,8	30,0 a 31,0	12,1
12,0 a 13,0	1,4	31,0 a 32,0	10,0
13,0 a 14,0	1,0	32,0 a 33,0	3,5
14,0 a 15,0	1,6	33,0 a 34,0	1,6
15,0 a 16,0	2,6	34,0 a 35,0	1,3
16,0 a 17,0	1,6	35,0 a 36,0	3,7
17,0 a 18,0	2,2	36,0 a 37,0	5,7
18,0 a 19,0	5,3	37,0 a 38,0	6,8

Cont. Furo 2148-PM-018-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	1,4		
39,0 a 40,0	1,4		
40,0 a 41,0	1,4		
41,0 a 42,0	1,5		
42,0 a 43,0	1,2		
43,0 a 44,0	1,4		
44,0 a 45,0	3,0		
45,0 a 46,0	2,6		
46,0 a 47,0	2,0		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO · LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-019-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	3,9	19,0 a 20,0	3,1
1,0 a 2,0	2,6	20,0 a 21,0	3,7
2,0 a 3,0	2,0	21,0 a 22,0	3,7
3,0 a 4,0	1,7	22,0 a 23,0	1,7
4,0 a 5,0	1,2	23,0 a 24,0	3,2
5,0 a 6,0	1,7	24,0 a 25,0	5,2
6,0 a 7,0	0,8	25,0 a 26,0	3,5
7,0 a 8,0	1,3	26,0 a 27,0	2,4
8,0 a 9,0	3,1	27,0 a 28,0	3,2
9,0 a 10,0	3,1	28,0 a 29,0	5,3
10,0 a 11,0	1,9	29,0 a 30,0	4,3
11,0 a 12,0	1,3	30,0 a 31,0	4,0
12,0 a 13,0	3,1	31,0 a 32,0	5,0
13,0 a 14,0	5,2	32,0 a 33,0	2,8
14,0 a 15,0	3,9	33,0 a 34,0	5,6
15,0 a 16,0	4,2	34,0 a 35,0	3,4
16,0 a 17,0	2,0	35,0 a 36,0	2,3
17,0 a 18,0	1,7	36,0 a 37,0	1,4
18,0 a 19,0	3,8	37,0 a 38,0	1,2

Cont. Furo 2148-PM-019-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	3,8		
39,0 a 40,0	2,4		
40,0 a 41,0	2,9		
41,0 a 42,0	2,3		
42,0 a 43,0	2,0		
43,0 a 44,0	1,3		
44,0 a 45,0	2,8		
45,0 a 46,0	2,9		
46,0 a 47,0	2,5		
47,0 a 48,0	2,3		
48,0 a 49,0	4,0		
49,0 a 50,10	2,9		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-020-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
1,0 a 2,0	16,7	19,0 a 20,0	11,0
2,0 a 3,0	12,0	20,0 a 21,0	12,8
3,0 a 4,0	13,5	21,0 a 22,0	11,8
4,0 a 5,0	13,6	22,0 a 23,0	10,3
5,0 a 6,0	16,5	23,0 a 24,0	10,1
6,0 a 7,0	18,0	24,0 a 25,0	14,5
7,0 a 8,0	12,3	25,0 a 26,0	17,5
8,0 a 9,0	12,3	26,0 a 27,0	15,9
9,0 a 10,0	10,1	27,0 a 28,0	15,0
10,0 a 11,0	11,8	28,0 a 29,0	16,7
11,0 a 12,0	12,2	29,0 a 30,0	18,6
12,0 a 13,0	11,0	30,0 a 31,0	16,5
13,0 a 14,0	12,8	31,0 a 32,0	17,3
14,0 a 15,0	14,9	32,0 a 33,0	14,6
15,0 a 16,0	16,9	33,0 a 34,0	12,9
16,0 a 17,0	17,7	34,0 a 35,0	14,9
17,0 a 18,0	17,8	35,0 a 36,0	11,9
18,0 a 19,0	11,4	36,0 a 37,0	13,3

Cont. Furo 2148-PM-020-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
37,0 a 38,0	15,7	64,0 a 65,0	15,1
38,0 a 39,0	17,1	65,0 a 66,0	12,7
39,0 a 40,0	19,2	66,0 a 67,0	11,2
40,0 a 41,0	15,9	67,0 a 68,0	7,1
41,0 a 42,0	13,5	68,0 a 69,0	7,8
42,0 a 43,0	12,0	69,0 a 70,0	9,6
43,0 a 44,0	12,3	70,0 a 71,0	9,5
44,0 a 45,0	14,7	71,0 a 72,0	8,7
45,0 a 46,0	13,7	72,0 a 73,0	10,9
46,0 a 47,0	10,0	73,0 a 74,0	9,1
47,0 a 48,0	13,6	74,0 a 75,0	7,7
48,0 a 49,0	10,5	75,0 a 76,0	8,3
49,0 a 50,0	10,0	76,0 a 77,0	10,0
50,0 a 51,0	8,7	77,0 a 78,0	11,2
51,0 a 52,0	6,8	78,0 a 79,0	11,1
52,0 a 53,0	16,4	79,0 a 80,0	10,5
53,0 a 54,0	9,0	80,0 a 81,0	11,1
54,0 a 55,0	17,1		
55,0 a 56,0	16,1		
56,0 a 57,0	12,6		
57,0 a 58,0	12,0		
58,0 a 60,0	13,6		
59,0 a 60,0	9,2		
60,0 a 61,0	10,6		
61,0 a 62,0	11,6		
62,0 a 63,0	15,2		
63,0 a 64,0	18,3		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO MITSUI

TIPO DE ANÁLISE: Colorimétrica

FURO DE SONDA: 2128-PM-021-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 0,1	6,58	18,0 a 19,0	7,58
0,1 a 0,2	2,29	19,0 a 20,0	12,16
0,2 a 0,3	3,29	20,0 a 21,0	10,45
0,3 a 0,4	2,57	21,0 a 22,0	9,01
0,4 a 0,5	2,57	22,0 a 23,0	9,30
0,5 a 0,6	6,01	23,0 a 24,0	8,30
0,6 a 0,7	7,30	24,0 a 25,0	7,73
0,7 a 0,8	5,01	25,0 a 26,0	6,87
0,8 a 0,9	6,15	26,0 a 27,0	8,16
0,9 a 10,0	5,01	27,0 a 28,0	8,73
10,0 a 11,0	6,72	28,0 a 29,0	12,02
11,0 a 12,0	7,15	29,0 a 30,0	11,45
12,0 a 13,0	6,75	30,0 a 31,0	11,45
13,0 a 14,0	6,01	31,0 a 32,0	7,73
14,0 a 15,0	8,59	32,0 a 33,0	11,16
15,0 a 16,0	9,30	33,0 a 34,0	12,45
16,0 a 17,0	7,73	34,0 a 35,0	12,59
17,0 a 18,0	9,30	35,0 a 36,0	13,74

Cont. Furo 2148-PM-021-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
36,0 a 37,0	13,74	64,0 a 65,0	16,74
37,0 a 38,0	11,16	65,0 a 66,0	15,88
38,0 a 39,0	8,87	66,0 a 67,0	14,45
39,0 a 40,0	8,58	67,0 a 68,0	16,46
40,0 a 41,0	13,31	68,0 a 69,0	15,74
41,0 a 42,0	12,59	69,0 a 70,0	14,02
42,0 a 43,0	12,74	70,0 a 71,0	14,88
43,0 a 44,0	15,45	71,0 a 72,0	13,16
44,0 a 45,0	10,16	72,0 a 73,0	11,73
45,0 a 46,0	13,31	73,0 a 74,0	9,30
46,0 a 47,0	14,45	74,0 a 75,0	7,01
47,0 a 48,0	10,01	75,0 a 76,0	9,01
48,0 a 49,0	18,03	76,0 a 77,0	6,01
49,0 a 50,0	13,45	77,0 a 78,50	8,01
50,0 a 51,0	14,88		
51,0 a 52,0	15,17		
52,0 a 53,0	16,60		
53,0 a 54,0	18,89		
54,0 a 55,0	15,45		
55,0 a 56,0	14,60		
56,0 a 57,0	17,60		
57,0 a 58,0	21,61		
58,0 a 59,0	13,45		
59,0 a 60,0	19,46		
60,0 a 61,0	16,17		
61,0 a 62,0	20,32		
62,0 a 63,0	18,46		
63,0 a 64,0	16,17		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: MITSUI

TIPO DE ANÁLISE: Colorimétrica

FURO DE SONDA: 2148-PM-022-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	14,31		
1,0 a 2,0	13,31		
2,0 a 3,0	14,88		
3,0 a 4,0	16,03		
4,0 a 5,0	9,87		
5,0 a 6,0	13,45		
6,0 a 7,0	23,33		
7,0 a 8,0	15,74		
8,0 a 9,0	15,03		
9,0 a 10,0	12,88		
10,0 a 11,0	14,88		
11,0 a 12,0	13,74		
12,0 a 13,0	14,02		
13,0 a 14,0	13,16		
14,0 a 15,0	15,17		
15,0 a 16,0	8,58		
16,0 a 17,0	10,87		
17,0 a 18,0	11,02		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO GEOSOL

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-025-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	1,9	18,0 a 19,0	6,5
1,0 a 2,0	3,2	19,0 a 20,0	8,0
2,0 a 3,0	4,8	20,0 a 21,0	7,4
3,0 a 4,0	5,4	21,0 a 22,0	6,5
4,0 a 5,0	5,2	22,0 a 23,0	7,8
5,0 a 6,0	5,3	23,0 a 24,0	8,0
6,0 a 7,0	5,4	24,0 a 25,0	8,2
7,0 a 8,0	5,7	25,0 a 26,0	8,1
8,0 a 9,0	6,4	26,0 a 27,0	9,4
9,0 a 10,0	6,2	27,0 a 28,0	12,3
10,0 a 11,0	5,0	28,0 a 29,0	10,2
11,0 a 12,0	6,2	29,0 a 30,0	10,7
12,0 a 13,0	6,7	30,0 a 31,0	10,8
13,0 a 14,0	5,9	31,0 a 32,0	15,5
14,0 a 15,0	5,2	32,0 a 33,0	11,9
15,0 a 16,0	6,2	33,0 a 34,0	11,6
16,0 a 17,0	5,8	34,0 a 35,0	12,8
17,0 a 18,0	5,7	35,0 a 36,0	9,2

Cont. Furo 2148-PM-025-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	11,7		
37,0 a 38,0	10,8		
38,0 a 39,0	13,0		
39,0 a 40,0	15,2		
40,0 a 41,0	13,8		
41,0 a 42,0	9,3		
42,0 a 43,0	8,8		
43,0 a 44,0	13,2		
44,0 a 45,0	8,6		
45,0 a 46,0	9,3		
46,0 a 47,0	8,8		
47,0 a 48,0	5,4		
48,0 a 49,0	3,9		
49,0 a 50,0	5,0		
50,0 a 51,0	4,1		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO GEOSOL

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-026-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	4,4	18,0 a 19,0	1,9
1,0 a 2,0	2,4	19,0 a 20,0	1,4
2,0 a 3,0	1,8	20,0 a 21,0	2,3
3,0 a 4,0	2,0	21,0 a 22,0	1,9
4,0 a 5,0	3,3	22,0 a 23,0	3,8
5,0 a 6,0	2,2	23,0 a 24,0	2,1
6,0 a 7,0	2,5	24,0 a 25,0	2,8
7,0 a 8,0	2,4	25,0 a 26,0	3,3
8,0 a 9,0	4,1	26,0 a 27,0	3,3
9,0 a 10,0	1,2	27,0 a 28,0	1,2
10,0 a 11,0	3,4	28,0 a 29,0	1,2
11,0 a 12,0	2,9	29,0 a 30,0	1,4
12,0 a 13,0	3,0	30,0 a 31,0	1,2
13,0 a 14,0	1,9	31,0 a 32,0	0,64
14,0 a 15,0	2,0	32,0 a 33,0	0,58
15,0 a 16,0	5,2	33,0 a 34,0	1,1
16,0 a 17,0	4,3	34,0 a 35,0	1,6
17,0 a 18,0	2,4	35,0 a 36,0	1,9

Cont. Furo 2148-PM-026-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	2,4		
37,0 a 38,0	3,0		
38,0 a 39,0	3,0		
39,0 a 40,0	1,8		
40,0 a 41,0	1,6		
41,0 a 42,0	1,7		
42,0 a 43,0	0,80		
43,0 a 44,0	1,1		
44,0 a 45,0	1,0		
45,0 a 46,0	1,2		
46,0 a 47,0	1,6		
47,0 a 48,0	1,8		
48,0 a 49,0	0,80		
49,0 a 50,5	0,86		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO · LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-027-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	5,6	18,0 a 19,0	6,4
1,0 a 2,0	4,5	19,0 a 20,0	4,7
2,0 a 3,0	4,4	20,0 a 21,0	3,5
3,0 a 4,0	4,0	21,0 a 22,0	4,8
4,0 a 5,0	3,6	22,0 a 23,0	4,4
5,0 a 6,0	4,7	23,0 a 24,0	3,3
6,0 a 7,0	2,0	24,0 a 25,0	2,1
7,0 a 8,0	2,7	25,0 a 26,0	1,6
8,0 a 9,0	4,2	26,0 a 27,0	1,7
9,0 a 10,0	5,1	27,0 a 28,0	6,4
10,0 a 11,0	4,4	28,0 a 29,0	3,1
11,0 a 12,0	4,5	29,0 a 30,0	3,0
12,0 a 13,0	5,1	30,0 a 31,0	4,6
13,0 a 14,0	3,3	31,0 a 32,0	4,8
14,0 a 15,0	1,5	32,0 a 33,0	5,2
15,0 a 16,0	4,6	33,0 a 34,0	2,7
16,0 a 17,0	1,3	34,0 a 35,0	3,3
17,0 a 18,0	8,1	35,0 a 36,0	5,8

Cont. Furo 2148-PM-027-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	2,6		
37,0 a 38,0	1,9		
38,0 a 39,0	3,3		
39,0 a 40,0	2,1		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO · LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-028-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	8,3	19,0 a 20,0	10,5
1,0 a 2,0	11,2	20,0 a 21,0	12,5
2,0 a 3,0	10,6	21,0 a 22,0	13,5
3,0 a 4,0	9,2	22,0 a 23,0	10,0
4,0 a 5,0	8,8	23,0 a 24,0	10,0
5,0 a 6,0	9,6	24,0 a 25,0	13,8
6,0 a 7,0	9,5	25,0 a 26,0	15,8
7,0 a 8,0	9,6	26,0 a 27,0	16,2
8,0 a 9,0	10,3	27,0 a 28,0	15,5
9,0 a 10,0	11,7	28,0 a 29,0	14,2
10,0 a 11,0	10,6	29,0 a 30,0	16,5
11,0 a 12,0	7,9	30,0 a 31,0	15,7
12,0 a 13,0	6,6	31,0 a 32,0	12,5
13,0 a 14,0	6,4	32,0 a 33,0	7,5
14,0 a 15,0	6,8	33,0 a 34,0	11,9
15,0 a 16,0	6,7	34,0 a 35,0	14,8
16,0 a 17,0	8,8	35,0 a 36,0	14,3
17,0 a 18,0	7,7	36,0 a 37,0	14,9
18,0 a 19,0	10,9	37,0 a 38,0	13,8

Cont. Furo 2148-PM-028-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
38,0 a 39,0	15,1	65,0 a 66,0	6,5
39,0 a 40,0	12,9	66,0 a 67,0	4,4
40,0 a 41,0	14,2	67,0 a 68,0	5,2
41,0 a 42,0	14,3	68,0 a 69,55	4,1
42,0 a 43,0	15,6		
43,0 a 44,0	19,0		
44,0 a 45,0	19,6		
45,0 a 46,0	16,9		
46,0 a 47,0	17,8		
47,0 a 48,0	20,0		
48,0 a 49,0	18,8		
49,0 a 50,0	19,9		
50,0 a 51,0	20,3		
51,0 a 52,0	19,4		
52,0 a 53,0	19,5		
53,0 a 54,0	11,9		
54,0 a 55,0	16,7		
55,0 a 56,0	14,0		
56,0 a 57,0	20,9		
57,0 a 58,0	19,4		
58,0 a 59,0	20,4		
59,0 a 60,0	15,7		
60,0 a 61,0	13,9		
61,0 a 62,0	10,1		
62,0 a 63,0	7,6		
63,0 a 64,0	6,5		
64,0 a 65,0	5,7		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-029-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	20,3	18,0 a 19,0	20,9
1,0 a 2,0	20,8	19,0 a 20,0	21,9
2,0 a 3,0	19,9	20,0 a 21,0	21,7
3,0 a 4,0	19,4	21,0 a 22,0	21,3
4,0 a 5,0	20,4	22,0 a 23,0	20,8
5,0 a 6,0	20,2	23,0 a 24,0	14,3
6,0 a 7,0	17,8	24,0 a 25,0	18,5
7,0 a 8,0	18,3	25,0 a 26,0	20,8
8,0 a 9,0	19,3	26,0 a 27,0	23,2
9,0 a 10,0	13,5	27,0 a 28,0	19,1
10,0 a 11,0	21,3	28,0 a 29,0	17,5
11,0 a 12,0	20,5	29,0 a 30,0	23,0
12,0 a 13,0	19,8	30,0 a 31,0	20,2
13,0 a 14,0	19,2	31,0 a 32,0	21,1
14,0 a 15,0	19,7	32,0 a 33,0	19,7
15,0 a 16,0	17,9	33,0 a 34,0	21,0
16,0 a 17,0	20,1	34,0 a 35,0	23,1
17,0 a 18,0	20,1	35,0 a 36,0	22,0

Cont. Furo 2148-PM-029-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
36,0 a 37,0	23,3	64,0 a 65,0	23,8
37,0 a 38,0	19,8	65,0 a 66,0	24,1
38,0 a 39,0	19,4	66,0 a 67,0	20,0
39,0 a 40,0	19,8	67,0 a 68,0	20,0
40,0 a 41,0	20,5	68,0 a 69,0	13,0
41,0 a 42,0	20,8	69,0 a 70,15	10,4
42,0 a 43,0	16,8		
43,0 a 44,0	17,9		
44,0 a 45,0	17,6		
45,0 a 46,0	18,7		
46,0 a 47,0	15,3		
47,0 a 48,0	15,2		
48,0 a 49,0	16,9		
49,0 a 50,0	16,7		
50,0 a 51,0	15,1		
51,0 a 52,0	10,0		
52,0 a 53,0	10,6		
53,0 a 54,0	16,0		
54,0 a 55,0	16,8		
55,0 a 56,0	18,5		
56,0 a 57,0	21,9		
57,0 a 58,0	21,4		
58,0 a 59,0	21,9		
59,0 a 60,0	20,6		
60,0 a 61,0	20,4		
61,0 a 62,0	21,0		
62,0 a 63,0	21,1		
63,0 a 64,0	20,7		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-030-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	21,3	18,0 a 19,0	17,0
1,0 a 2,0	17,2	19,0 a 20,0	17,6
2,0 a 3,0	18,2	20,0 a 21,0	19,2
3,0 a 4,0	16,5	21,0 a 22,0	18,1
4,0 a 5,0	16,4	22,0 a 23,0	20,1
5,0 a 6,0	21,5	23,0 a 24,0	19,9
6,0 a 7,0	19,6	24,0 a 25,0	17,7
7,0 a 8,0	15,2	25,0 a 26,0	19,0
8,0 a 9,0	15,3	26,0 a 27,0	20,8
9,0 a 10,0	10,9	27,0 a 28,0	21,4
10,0 a 11,0	17,1	28,0 a 29,0	17,6
11,0 a 12,0	16,2	29,0 a 30,0	17,4
12,0 a 13,0	15,1	30,0 a 31,0	17,0
13,0 a 14,0	14,7	31,0 a 32,0	17,7
14,0 a 15,0	16,2	32,0 a 33,0	19,6
15,0 a 16,0	16,7	33,0 a 34,0	21,9
16,0 a 17,0	15,7	34,0 a 35,0	21,4
17,0 a 18,0	16,8	35,0 a 36,0	18,4

Cont. Furo 2148-PM-030-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	16,9		
37,0 a 38,0	19,4		
38,0 a 39,0	18,7		
39,0 a 40,0	18,1		
40,0 a 41,0	18,6		
41,0 a 42,0	18,7		
42,0 a 43,0	16,2		
43,0 a 44,0	17,8		
44,0 a 45,0	18,3		
45,0 a 46,0	17,7		
46,0 a 47,0	13,2		
47,0 a 48,0	12,2		
48,0 a 49,0	14,8		
49,0 a 50,50	13,7		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO · GEOSOL

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-031-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	3,3	18,0 a 19,0	1,3
1,0 a 2,0	2,9	19,0 a 20,0	7,4
2,0 a 3,0	2,0	20,0 a 21,0	0,93
3,0 a 4,0	0,90	21,0 a 22,0	1,3
4,0 a 5,0	0,58	22,0 a 23,0	0,70
5,0 a 6,0	1,1	23,0 a 24,0	1,6
6,0 a 7,0	0,90	24,0 a 25,0	4,1
7,0 a 8,0	1,5	25,0 a 26,0	0,95
8,0 a 9,0	0,82	26,0 a 27,0	4,6
9,0 a 10,0	1,4	27,0 a 28,0	6,8
10,0 a 11,0	1,0	28,0 a 29,0	5,8
11,0 a 12,0	3,1	29,0 a 30,0	1,5
12,0 a 13,0	2,2	30,0 a 31,0	5,5
13,0 a 14,0	1,7	31,0 a 32,0	3,1
14,0 a 15,0	1,3	32,0 a 33,0	2,0
15,0 a 16,0	1,8	33,0 a 34,0	1,1
16,0 a 17,0	1,9	34,0 a 35,0	1,6
17,0 a 18,0	1,9	35,0 a 36,0	1,6

Cont. Furo 2148-PM-031-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	1,9		
37,0 a 38,0	0,65		
38,0 a 39,0	3,4		
39,0 a 40,0	4,9		
40,0 a 41,0	5,0		
41,0 a 42,0	5,1		
42,0 a 42,75	3,0		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-032-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	1,9	18,0 a 19,0	5,8
1,0 a 2,0	1,4	19,0 a 20,0	8,0
2,0 a 3,0	1,3	20,0 a 21,0	8,1
3,0 a 4,0	0,9	21,0 a 22,0	7,0
4,0 a 5,0	1,0	22,0 a 23,0	6,8
5,0 a 6,0	0,9	23,0 a 24,0	8,5
6,0 a 7,0	1,1	24,0 a 25,0	9,4
7,0 a 8,0	3,7	25,0 a 26,0	10,3
8,0 a 9,0	2,0	26,0 a 27,0	12,8
9,0 a 10,0	1,6	27,0 a 28,0	11,2
10,0 a 11,0	1,3	28,0 a 29,0	17,7
11,0 a 12,0	2,0	29,0 a 30,0	18,4
12,0 a 13,0	5,1	30,0 a 31,0	12,5
13,0 a 14,0	2,4	31,0 a 32,0	11,9
14,0 a 15,0	3,8	32,0 a 33,0	10,8
15,0 a 16,0	2,8	33,0 a 34,0	8,0
16,0 a 17,0	6,8	34,0 a 35,0	9,1
17,0 a 18,0	1,0	35,0 a 36,0	10,4
		36,0 a 37,0	9,8

Cont. Furo 2148-PM-032-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
37,0 a 38,0	8,0		
38,0 a 39,0	11,2		
39,0 a 40,0	7,7		
40,0 a 41,0	6,9		
41,0 a 42,0	8,4		
42,0 a 43,0	8,2		
43,0 a 44,0	6,3		
44,0 a 45,0	9,5		
45,0 a 46,0	11,8		
46,0 a 47,0	12,0		
47,0 a 48,0	6,8		
48,0 a 49,0	6,5		
49,0 a 50,0	10,1		
50,0 a 51,0	7,7		
51,0 a 52,35	6,9		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-033-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	13,7	19,0 a 20,0	13,7
1,0 a 2,0	15,8	20,0 a 21,0	4,3
2,0 a 3,0	15,0	21,0 a 22,0	10,8
3,0 a 4,0	16,0	22,0 a 23,0	10,7
4,0 a 5,0	11,1	23,0 a 24,0	13,8
5,0 a 6,0	5,2	24,0 a 25,0	17,4
6,0 a 7,0	10,6	25,0 a 26,0	12,0
7,0 a 8,0	10,5	26,0 a 27,0	11,7
8,0 a 9,0	13,5	27,0 a 28,0	9,5
9,0 a 10,0	12,6	28,0 a 29,0	14,3
10,0 a 11,0	12,8	29,0 a 30,0	15,7
11,0 a 12,0	11,3	30,0 a 31,0	16,6
12,0 a 13,0	11,8	31,0 a 32,0	9,1
13,0 a 14,0	11,1	32,0 a 33,0	14,7
14,0 a 15,0	13,0	33,0 a 34,0	18,1
15,0 a 16,0	12,6	34,0 a 35,0	3,2
16,0 a 17,0	9,7	35,0 a 36,0	6,5
17,0 a 18,0	12,7	36,0 a 37,0	3,8
18,0 a 19,0	10,7	37,0 a 38,0	8,8

Cont. Furo 2148-PM-033-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
38,0 a 39,0	12,5		
39,0 a 40,0	17,8		
40,0 a 41,0	11,7		
41,0 a 42,0	7,5		
42,0 a 43,0	5,7		
43,0 a 44,0	14,2		
44,0 a 45,0	10,4		
45,0 a 46,0	11,0		
46,0 a 47,0	6,6		
47,0 a 48,0	19,1		
48,0 a 49,0	18,2		
49,0 a 50,0	14,0		
50,0 a 51,0	17,9		
51,0 a 52,0	15,4		
52,0 a 53,0	11,0		
53,0 a 54,0	10,3		
54,0 a 55,0	11,2		
55,0 a 56,0	9,8		
56,0 a 57,0	10,3		
57,0 a 58,0	11,7		
58,0 a 59,0	8,3		
59,0 a 60,0	10,8		
60,0 a 61,0	9,2		
61,0 a 62,0	10,3		
62,0 a 63,0	10,7		
63,0 a 63,95	14,8		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-034-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	14,4	18,0 a 19,0	0,8
1,0 a 2,0	13,2	19,0 a 20,0	0,8
2,0 a 3,0	15,8	20,0 a 21,0	0,8
3,0 a 4,0	13,4	21,0 a 22,0	0,8
4,0 a 5,0	14,8	22,0 a 23,0	0,7
5,0 a 6,0	14,0	23,0 a 24,0	0,7
6,0 a 7,0	10,7	24,0 a 25,0	0,8
7,0 a 8,0	11,0	25,0 a 26,0	1,6
8,0 a 9,0	9,7	26,0 a 27,0	2,3
9,0 a 10,0	6,4	27,0 a 28,0	2,5
10,0 a 11,0	3,0	28,0 a 29,0	2,2
11,0 a 12,0	0,9	29,0 a 30,0	1,8
12,0 a 13,0	1,6	30,0 a 31,0	2,7
13,0 a 14,0	1,7	31,0 a 32,0	2,8
14,0 a 15,0	1,1	32,0 a 33,0	2,1
15,0 a 16,0	1,2	33,0 a 34,0	2,2
16,0 a 17,0	0,7	34,0 a 35,0	2,2
17,0 a 18,0	0,7	35,0 a 36,0	2,4

Cont. Furo 2148-PM-034-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	3,2		
37,0 a 38,0	3,0		
38,0 a 39,0	3,8		
39,0 a 40,0	3,6		
40,0 a 41,0	3,0		
41,0 a 42,0	3,3		
42,0 a 43,0	3,2		
43,0 a 44,0	3,1		
44,0 a 45,25	3,4		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-035-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	12,1	18,0 a 19,0	10,2
1,0 a 2,0	15,4	19,0 a 20,0	11,1
2,0 a 3,0	7,0	20,0 a 21,0	12,7
3,0 a 4,0	10,0	21,0 a 22,0	15,1
4,0 a 5,0	13,4	22,0 a 23,0	14,5
5,0 a 6,0	10,1	23,0 a 24,0	8,5
6,0 a 7,0	12,1	24,0 a 25,0	15,2
7,0 a 8,0	12,4	25,0 a 26,0	16,6
8,0 a 9,0	9,8	26,0 a 27,0	16,2
9,0 a 10,0	8,0	27,0 a 28,0	16,2
10,0 a 11,0	9,5	28,0 a 29,0	13,8
11,0 a 12,0	12,0	29,0 a 30,0	11,6
12,0 a 13,0	12,0	30,0 a 31,0	11,7
13,0 a 14,0	11,5	31,0 a 32,0	13,2
14,0 a 15,0	10,2	32,0 a 33,0	13,3
15,0 a 16,0	12,0	33,0 a 34,0	14,0
16,0 a 17,0	10,4	34,0 a 35,0	13,8
17,0 a 18,0	10,6	35,0 a 36,0	14,1

Cont. Furo 2148-PM-035-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
36,0 a 37,0	14,4		
37,0 a 38,0	13,1		
38,0 a 39,0	14,6		
39,0 a 40,0	13,1		
40,0 a 41,0	11,7		
41,0 a 42,0	10,9		
42,0 a 43,0	13,3		
43,0 a 44,0	15,8		
44,0 a 45,0	15,0		
45,0 a 46,0	12,9		
46,0 a 47,0	10,7		
47,0 a 48,0			
48,0 a 49,0	14,0		
49,0 a 50,0	9,6		
50,0 a 51,0	13,8		
51,0 a 52,0	10,7		
52,0 a 53,0	11,0		
53,0 a 54,0	10,9		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-036-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	3,8	18,0 a 19,0	2,8
1,0 a 2,0	1,7	19,0 a 20,0	3,8
2,0 a 3,0	1,4	20,0 a 21,0	4,0
3,0 a 4,0	7,5	21,0 a 22,0	3,7
4,0 a 5,0	3,9	22,0 a 23,0	2,4
5,0 a 6,0	2,5	23,0 a 24,0	1,7
6,0 a 7,0	4,7	24,0 a 25,0	1,0
7,0 a 8,0	3,4	25,0 a 26,0	1,5
8,0 a 9,0	5,0	26,0 a 27,0	2,0
9,0 a 10,0	6,2	27,0 a 28,0	2,1
10,0 a 11,0	5,8	28,0 a 29,0	1,3
11,0 a 12,0	5,5	29,0 a 30,0	8,4
12,0 a 13,0	2,1	30,0 a 31,0	5,8
13,0 a 14,0	3,4	31,0 a 32,0	6,0
14,0 a 15,0	4,4	32,0 a 33,0	6,5
15,0 a 16,0	4,3	33,0 a 34,0	7,4
16,0 a 17,0	3,4	34,0 a 35,0	6,2
17,0 a 18,0	3,0	35,0 a 36,30	2,0

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-037-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	5,6	18,0 a 19,0	10,1
1,0 a 2,0	4,0	19,0 a 20,0	11,3
2,0 a 3,0	7,7	20,0 a 21,0	10,2
3,0 a 4,0	6,0	21,0 a 22,0	12,9
4,0 a 5,0	4,6	22,0 a 23,0	14,1
5,0 a 6,0	7,5	23,0 a 24,0	16,0
6,0 a 7,0	7,3	24,0 a 25,0	13,6
7,0 a 8,0	8,7	25,0 a 26,0	10,7
8,0 a 9,0	7,8	26,0 a 27,0	15,0
9,0 a 10,0	7,4	27,0 a 28,0	13,8
10,0 a 11,0	7,8	28,0 a 29,0	15,1
11,0 a 12,0	7,2	29,0 a 30,0	15,7
12,0 a 13,0	18,0	30,0 a 31,0	18,2
13,0 a 14,0	18,3	31,0 a 32,0	11,4
14,0 a 15,0	21,3	32,0 a 33,0	16,9
15,0 a 16,0	20,3	33,0 a 34,0	21,4
16,0 a 17,0	13,4	34,0 a 35,0	15,7
17,0 a 18,0	16,5	35,0 a 36,0	17,7

Cont. Furo 2148-PM-037-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	15,4		
37,0 a 38,0	13,9		
38,0 a 39,0	11,6		
39,0 a 40,0	15,4		
40,0 a 41,0	12,4		
41,0 a 42,0	14,8		
42,0 a 43,0	13,5		
43,0 a 44,0	10,4		
44,0 a 45,0	19,4		
45,0 a 46,0	19,1		
46,0 a 47,0	16,4		
47,0 a 48,0	8,6		
48,0 a 49,0	14,1		
49,0 a 50,0	4,2		
50,0 a 51,0	5,2		
51,0 a 52,0	4,1		
52,0 a 53,0	9,4		
53,0 a 54,0	13,9		
54,0 a 55,0	17,3		
55,0 a 56,0	14,4		
56,0 a 57,0	12,5		
57,0 a 58,0	10,9		
58,0 a 59,0	9,8		
59,0 a 60,0	10,2		
60,0 a 61,40	12,3		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-038-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	14,9	19,0 a 20,0	15,8
1,0 a 2,0	15,7	20,0 a 21,0	20,0
2,0 a 3,0	17,1	21,0 a 22,0	18,7
3,0 a 4,0	16,3	22,0 a 23,0	19,8
4,0 a 5,0	15,4	23,0 a 24,0	16,2
5,0 a 6,0	14,7	24,0 a 25,0	17,4
6,0 a 7,0	15,7	25,0 a 26,0	15,7
7,0 a 8,0	16,7	26,0 a 27,0	18,1
8,0 a 9,0	16,9	27,0 a 28,0	17,9
9,0 a 10,0	14,8	28,0 a 29,0	18,6
10,0 a 11,0	12,3	29,0 a 30,0	16,2
11,0 a 12,0	11,0	30,0 a 31,0	13,4
12,0 a 13,0	13,4	31,0 a 32,0	16,2
13,0 a 14,0	14,5	32,0 a 33,0	13,2
14,0 a 15,0	13,5	33,0 a 34,0	14,6
15,0 a 16,0	14,0	34,0 a 35,0	15,3
16,0 a 17,0	15,7	35,0 a 36,0	15,4
17,0 a 18,0	16,7	36,0 a 37,10	14,3
18,0 a 19,0	16,0		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-039-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
0,0 a 1,0	5,9	19,0 a 20,0	6,7
1,0 a 2,0	4,4	20,0 a 21,0	7,5
2,0 a 3,0	3,8	21,0 a 22,0	7,6
3,0 a 4,0	2,8	22,0 a 23,0	5,5
4,0 a 5,0	2,1	23,0 a 24,0	7,1
5,0 a 6,0	2,3	24,0 a 25,0	7,3
6,0 a 7,0	2,6	25,0 a 26,0	8,8
7,0 a 8,0	2,3	26,0 a 27,0	8,8
8,0 a 9,0	2,8	27,0 a 28,0	13,5
9,0 a 10,0	2,3	28,0 a 29,0	9,4
10,0 a 11,0	1,6	29,0 a 30,0	12,9
11,0 a 12,0	1,4	30,0 a 31,0	6,2
12,0 a 13,0	2,0	31,0 a 32,0	5,8
13,0 a 14,0	2,1	32,0 a 33,0	7,4
14,0 a 15,0	2,9	33,0 a 34,0	5,7
15,0 a 16,0	5,2	34,0 a 35,0	7,9
16,0 a 17,0	6,7	35,0 a 36,0	6,0
17,0 a 18,0	6,9	36,0 a 37,0	9,1
18,0 a 19,0	7,2	37,0 a 38,0	11,1

Cont. Furo 2148-PM-039-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	10,4		
39,0 a 40,0	11,1		
40,0 a 41,0	12,4		
41,0 a 42,0	14,8		
42,0 a 43,0	7,7		
43,0 a 44,0	8,7		
44,0 a 45,0	7,7		
45,0 a 46,0	8,4		
46,0 a 47,0	8,5		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-040-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	17,3	19,0 a 20,0	16,3
1,0 a 2,0	18,2	20,0 a 21,0	14,0
2,0 a 3,0	18,3	21,0 a 22,0	15,5
3,0 a 4,0	16,9	22,0 a 23,0	11,9
4,0 a 5,0	14,3	23,0 a 24,0	12,2
5,0 a 6,0	15,4	24,0 a 25,0	14,4
6,0 a 7,0	15,3	25,0 a 26,0	11,6
7,0 a 8,0	19,7	26,0 a 27,0	10,5
8,0 a 9,0	12,5	27,0 a 28,0	3,5
9,0 a 10,0	11,7	28,0 a 29,0	5,2
10,0 a 11,0	12,8	29,0 a 30,0	5,5
11,0 a 12,0	13,5	30,0 a 31,0	3,3
12,0 a 13,0	15,7	31,0 a 32,0	7,4
13,0 a 14,0	13,0	32,0 a 33,0	9,4
14,0 a 15,0	14,8	33,0 a 34,0	11,5
15,0 a 16,0	9,7	34,0 a 35,0	10,1
16,0 a 17,0	13,3	35,0 a 36,0	6,9
17,0 a 18,0	11,7	36,0 a 37,0	4,5
18,0 a 19,0	11,0	37,0 a 38,0	4,6

Cont. Furo 2148-PM-040-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	1,9	66,0 a 67,0	2,6
39,0 a 40,0	2,4	67,0 a 68,0	2,7
40,0 a 41,0	4,0	68,0 a 69,0	3,2
41,0 a 42,0	4,9	69,0 a 70,0	2,4
42,0 a 43,0	4,8	70,0 a 71,0	3,2
43,0 a 44,0	2,8		
44,0 a 45,0	2,0		
45,0 a 46,0	3,2		
46,0 a 47,0	3,2		
47,0 a 48,0	2,7		
48,0 a 49,0	3,1		
49,0 a 50,0	3,2		
50,0 a 51,0	2,7		
51,0 a 52,0	2,5		
52,0 a 53,0	2,7		
53,0 a 54,0	2,9		
54,0 a 55,0	7,1		
55,0 a 56,0	7,8		
56,0 a 57,0	4,6		
57,0 a 58,0	2,4		
58,0 a 59,0	2,5		
59,0 a 60,0	2,0		
60,0 a 61,0	3,1		
61,0 a 62,0	3,2		
62,0 a 63,0	2,2		
63,0 a 64,0	3,0		
64,0 a 65,0	1,7		
65,0 a 66,0	2,3		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-041-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	17,5	19,0 a 20,0	16,6
1,0 a 2,0	24,0	20,0 a 21,0	18,4
2,0 a 3,0	24,5	21,0 a 22,0	17,4
3,0 a 4,0	21,3	22,0 a 23,0	19,2
4,0 a 5,0	22,5	23,0 a 24,0	19,8
5,0 a 6,0	24,6	24,0 a 25,0	18,8
6,0 a 7,0	23,2	25,0 a 26,0	16,7
7,0 a 8,0	20,4	26,0 a 27,0	15,8
8,0 a 9,0	22,4	27,0 a 28,0	15,6
9,0 a 10,0	22,1	28,0 a 29,0	18,0
10,0 a 11,0	21,0	29,0 a 30,0	14,3
11,0 a 12,0	21,8	30,0 a 31,0	14,9
12,0 a 13,0	18,8	31,0 a 32,0	18,1
13,0 a 14,0	16,5	32,0 a 33,0	17,8
14,0 a 15,0	20,0	33,0 a 34,0	15,6
15,0 a 16,0	18,1	34,0 a 35,0	14,0
16,0 a 17,0	17,7	35,0 a 36,0	11,3
17,0 a 18,0	19,1	36,0 a 37,0	14,2
18,0 a 19,0	19,4	37,0 a 38,0	16,4

Cont. Furo 2148-PM-041-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	16,7		
39,0 a 40,0	14,7		
40,0 a 41,0	16,5		
41,0 a 42,0	18,1		
42,0 a 43,0	15,4		
43,0 a 44,0	14,3		
44,0 a 45,0	15,9		
45,0 a 46,0	15,5		
46,0 a 47,0	12,1		
47,0 a 48,0	8,8		
48,0 a 49,0	12,0		
49,0 a 50,0	10,4		
50,0 a 51,0	12,6		
51,0 a 52,0	13,6		
52,0 a 53,0	9,0		
53,0 a 54,0	10,4		
54,0 a 55,0	5,4		
55,0 a 56,0	7,6		
56,0 a 57,0	6,2		
57,0 a 58,0	2,6		
58,0 a 59,0	2,9		
59,0 a 60,0	4,5		
60,0 a 61,0	5,4		
61,0 a 62,0	4,6		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO GEOSOL

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-042-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	8,1	18,0 a 19,0	16,8
1,0 a 2,0	8,1	19,0 a 20,0	14,3
2,0 a 3,0	7,0	20,0 a 21,0	16,0
3,0 a 4,0	13,2	21,0 a 22,0	18,0
4,0 a 5,0	18,0	22,0 a 23,0	15,9
5,0 a 6,0	19,2	23,0 a 24,0	17,4
6,0 a 7,0	13,4	24,0 a 25,0	13,2
7,0 a 8,0	16,8	25,0 a 26,0	14,0
8,0 a 9,0	16,4	26,0 a 27,0	15,2
9,0 a 10,0	14,6	27,0 a 28,0	13,8
10,0 a 11,0	17,2	28,0 a 29,0	15,1
11,0 a 12,0	16,8	29,0 a 30,0	11,8
12,0 a 13,0	17,2	30,0 a 31,0	12,1
13,0 a 14,0	15,2	31,0 a 32,0	9,5
14,0 a 15,0	16,2	32,0 a 33,0	11,2
15,0 a 16,0	15,2	33,0 a 34,0	11,1
16,0 a 17,0	14,6	34,0 a 35,0	12,2
17,0 a 18,0	17,2	35,0 a 36,0	9,9

Cont. Furo 2148-PM-042-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	9,7		
37,0 a 38,0	9,6		
38,0 a 39,0	9,3		
39,0 a 40,0	8,6		
40,0 a 41,0	10,5		
41,0 a 42,0	9,9		
42,0 a 43,0	11,8		
43,0 a 44,0	10,4		
44,0 a 45,0	12,0		
45,0 a 46,0	11,5		
46,0 a 47,0	12,8		
47,0 a 48,0	11,4		
48,0 a 49,0	12,0		
49,0 a 50,0	13,5		
50,0 a 51,0	15,6		
51,0 a 52,0	15,9		
52,0 a 53,0	14,0		
53,0 a 54,0	14,8		
54,0 a 55,0	16,2		
55,0 a 56,0	16,2		
56,0 a 57,0	14,4		
57,0 a 58,0	12,9		
58,0 a 59,0	7,4		
59,0 a 60,0	7,0		
60,0 a 61,0	6,3		
61,0 a 62,65	7,5		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

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PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

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TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-043-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	2,2	18,0 a 19,0	2,1
1,0 a 2,0	2,2	19,0 a 20,0	0,90
2,0 a 3,0	1,1	20,0 a 21,0	2,4
3,0 a 4,0	0,38	21,0 a 22,0	2,8
4,0 a 5,0	0,41	22,0 a 23,0	1,8
5,0 a 6,0	0,50	23,0 a 24,0	1,6
6,0 a 7,0	1,3	24,0 a 25,0	8,9
7,0 a 8,0	0,47	25,0 a 26,0	8,6
8,0 a 9,0	0,35	26,0 a 27,0	5,1
9,0 a 10,0	0,41	27,0 a 28,0	5,8
10,0 a 11,0	0,47	28,0 a 29,0	3,1
11,0 a 12,0	0,41	29,0 a 30,0	3,3
12,0 a 13,0	0,70	30,0 a 31,0	10,4
13,0 a 14,0	0,47	31,0 a 32,0	3,7
14,0 a 15,0	0,35	32,0 a 33,0	1,8
15,0 a 16,0	1,0	33,0 a 34,0	1,8
16,0 a 17,0	4,9	34,0 a 35,0	0,64
17,0 a 18,0	0,62	35,0 a 36,0	0,81

Cont. Furo 2148-PM-043-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	1,1		
37,0 a 38,0	0,50		
38,0 a 39,0	0,50		
39,0 a 40,0	1,0		
40,0 a 41,0	2,8		
41,0 a 42,0	2,4		
42,0 a 43,0	1,3		
43,0 a 44,0	1,2		
44,0 a 45,0	0,90		
45,0 a 46,0	2,1		
46,0 a 47,0	1,2		
47,0 a 48,0	1,2		
48,0 a 49,0	0,50		
49,0 a 50,0	0,60		
50,0 a 51,35	3,4		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO GEOSOL

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-044-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	3,2	18,0 a 19,0	9,7
1,0 a 2,0	3,3	19,0 a 20,0	5,6
2,0 a 3,0	5,4	20,0 a 21,0	3,8
3,0 a 4,0	10,5	21,0 a 22,0	5,3
4,0 a 5,0	12,2	22,0 a 23,0	4,3
5,0 a 6,0	10,8	23,0 a 24,0	2,1
6,0 a 7,0	4,5	24,0 a 25,0	4,0
7,0 a 8,0	2,9	25,0 a 26,0	8,0
8,0 a 9,0	6,4	26,0 a 27,0	3,5
9,0 a 10,0	6,0	27,0 a 28,0	5,9
10,0 a 11,0	2,9	28,0 a 29,0	4,5
11,0 a 12,0	3,0	29,0 a 30,0	8,8
12,0 a 13,0	3,8	30,0 a 31,0	4,0
13,0 a 14,0	7,8	31,0 a 32,0	2,4
14,0 a 15,0	10,5	32,0 a 33,0	1,1
15,0 a 16,0	12,3	33,0 a 34,0	1,0
16,0 a 17,0	11,3	34,0 a 35,0	3,7
17,0 a 18,0	10,4	35,0 a 36,0	4,0

Cont. Furo 2148-PM-044-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	4,9		
37,0 a 38,0	1,5		
38,0 a 39,0	2,6		
39,0 a 40,0	0,85		
40,0 a 41,55	1,6		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-045-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	8,3	19,0 a 20,0	10,9
1,0 a 2,0	15,8	20,0 a 21,0	12,0
2,0 a 3,0	15,8	21,0 a 22,0	15,0
3,0 a 4,0	8,1	22,0 a 23,0	14,0
4,0 a 5,0	7,4	23,0 a 24,0	13,9
5,0 a 6,0	13,0	24,0 a 25,0	11,3
6,0 a 7,0	11,7	25,0 a 26,0	15,1
7,0 a 8,0	9,5	26,0 a 27,0	15,2
8,0 a 9,0	10,8	27,0 a 28,0	12,9
9,0 a 10,0	4,0	28,0 a 29,0	13,0
10,0 a 11,0	9,5	29,0 a 30,0	12,0
11,0 a 12,0	8,5	30,0 a 31,0	13,2
12,0 a 13,0	12,9	31,0 a 32,0	13,9
13,0 a 14,0	12,2	32,0 a 33,0	16,0
14,0 a 15,0	10,3	33,0 a 34,0	13,5
15,0 a 16,0	12,3	34,0 a 35,0	17,2
16,0 a 17,0	13,8	35,0 a 36,0	16,4
17,0 a 18,0	10,6	36,0 a 37,0	20,4
18,0 a 19,0	10,5	37,0 a 38,0	20,0

Cont. Furo 2148-PM-045-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	18,2		
39,0 a 40,0	21,2		
40,0 a 41,0	22,1		
41,0 a 42,0	21,6		
42,0 a 43,0	20,0		
43,0 a 44,0	17,0		
44,0 a 45,0	18,1		
45,0 a 46,0	19,1		
46,0 a 47,0	20,6		
47,0 a 48,0	21,6		
48,0 a 49,0	21,6		
49,0 a 50,0	23,1		
50,0 a 51,0	15,5		
51,0 a 52,0	13,0		
52,0 a 53,0	14,5		
53,0 a 54,0	15,6		
54,0 a 55,0	14,4		
55,0 a 56,0	12,0		
56,0 a 57,0	10,0		
57,0 a 58,0	9,5		
58,0 a 59,0	9,8		
59,0 a 60,0	11,4		
60,0 a 60,80	13,8		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-046-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	16,1	19,0 a 20,0	11,8
1,0 a 2,0	14,9	20,0 a 21,0	14,3
2,0 a 3,0	22,1	21,0 a 22,0	13,7
3,0 a 4,0	16,8	22,0 a 23,0	16,9
4,0 a 5,0	14,4	23,0 a 24,0	17,1
5,0 a 6,0	14,9	24,0 a 25,0	16,6
6,0 a 7,0	12,3	25,0 a 26,0	14,0
7,0 a 8,0	15,8	26,0 a 27,0	13,5
8,0 a 9,0	17,5	27,0 a 28,0	13,0
9,0 a 10,0	17,9	28,0 a 29,0	15,3
10,0 a 11,0	14,7	29,0 a 30,0	15,6
11,0 a 12,0	15,5	30,0 a 31,0	15,1
12,0 a 13,0	13,9	31,0 a 32,0	15,2
13,0 a 14,0	14,5	32,0 a 33,0	14,1
14,0 a 15,0	14,6	33,0 a 34,0	12,9
15,0 a 16,0	12,2	34,0 a 35,0	7,4
16,0 a 17,0	14,1	35,0 a 36,0	3,6
17,0 a 18,0	15,0	36,0 a 37,0	3,5
18,0 a 19,0	12,0	37,0 a 38,0	3,3

Cont. Furo 2148-PM-046-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
38,0 a 39,0	3,7	66,0 a 67,0	3,7
39,0 a 40,0	2,3	67,0 a 68,0	3,0
40,0 a 41,0	4,7	68,0 a 69,35	4,4
41,0 a 42,0	7,3		
42,0 a 43,0	8,1		
43,0 a 44,0	9,7		
44,0 a 45,0	9,5		
45,0 a 46,0	10,0		
46,0 a 47,0	14,5		
47,0 a 48,0	10,6		
48,0 a 49,0	12,0		
49,0 a 50,0	13,2		
50,0 a 51,0	12,8		
51,0 a 52,0	10,3		
52,0 a 53,0	12,3		
53,0 a 54,0	16,2		
54,0 a 55,0	13,5		
55,0 a 56,0	17,1		
56,0 a 57,0	17,7		
57,0 a 58,0	15,5		
58,0 a 59,0	17,6		
59,0 a 60,0	7,5		
60,0 a 61,0	9,4		
61,0 a 62,0	9,1		
62,0 a 63,0	16,0		
63,0 a 64,0	11,2		
64,0 a 65,0	6,8		
65,0 a 66,0	5,9		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO: LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-047-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	4,5	18,0 a 19,0	10,1
1,0 a 2,0	4,8	19,0 a 20,0	9,7
2,0 a 3,0	5,2	20,0 a 21,0	10,0
3,0 a 4,0	5,9	21,0 a 22,0	10,0
4,0 a 5,0	6,2	22,0 a 23,0	9,6
5,0 a 6,0	5,8	23,0 a 24,0	11,2
6,0 a 7,0	8,8	24,0 a 25,0	10,9
7,0 a 8,0	5,2	25,0 a 26,0	10,3
8,0 a 9,0	5,6	26,0 a 27,0	7,3
9,0 a 10,0	5,9	27,0 a 28,0	8,6
10,0 a 11,0	5,1	28,0 a 29,0	10,3
11,0 a 12,0	5,2	29,0 a 30,0	13,2
12,0 a 13,0	6,0	30,0 a 31,0	10,6
13,0 a 14,0	5,5	31,0 a 32,0	11,7
14,0 a 15,0	2,7	32,0 a 33,0	13,4
15,0 a 16,0	8,7	33,0 a 34,0	16,8
16,0 a 17,0	6,7	34,0 a 35,0	14,4
17,0 a 18,0	11,1	35,0 a 36,0	12,8

Cont. Furo 2148-PM-047-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	13,5		
37,0 a 38,0	10,5		
38,0 a 39,0	9,7		
39,0 a 40,0	17,1		
40,0 a 41,0	11,1		
41,0 a 42,0	12,7		
42,0 a 43,0	15,2		
43,0 a 44,0	15,4		
44,0 a 45,0	18,3		
45,0 a 46,0	17,4		
46,0 a 47,0	11,7		
47,0 a 48,0	12,6		
48,0 a 49,0	12,0		
49,0 a 50,0	10,6		
50,0 a 51,50	9,2		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO GEOSOL

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-048-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR FM P ₂ O ₅ %
0,0 a 1,0	13,8	18,0 a 19,0	5,5
1,0 a 2,0	22,2	19,0 a 20,0	4,7
2,0 a 3,0	19,0	20,0 a 21,0	9,6
3,0 a 4,0	13,1	21,0 a 22,0	10,8
4,0 a 5,0	15,0	22,0 a 23,0	11,1
5,0 a 6,0	15,9	23,0 a 24,0	8,8
6,0 a 7,0	16,8	24,0 a 25,0	9,8
7,0 a 8,0	15,4	25,0 a 26,0	10,2
8,0 a 9,0	16,2	26,0 a 27,0	11,6
9,0 a 10,0	13,2	27,0 a 28,0	28,6
10,0 a 11,0	14,8	28,0 a 29,0	11,2
11,0 a 12,0	8,2	29,0 a 30,0	9,8
12,0 a 13,0	5,1	30,0 a 31,0	10,5
13,0 a 14,0	5,6	31,0 a 32,0	15,2
14,0 a 15,0	7,4	32,0 a 33,0	11,8
15,0 a 16,0	5,8	33,0 a 34,0	10,9
16,0 a 17,0	5,2	34,0 a 35,0	12,8
17,0 a 18,0	2,9	35,0 a 36,0	13,8

Cont. Furo 2148-PM-048-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
36,0 a 37,0	16,2	64,0 a 65,0	4,9
37,0 a 38,0	14,8		
38,0 a 39,0	15,1		
39,0 a 40,0	15,4		
40,0 a 41,0	13,8		
41,0 a 42,0	14,0		
42,0 a 43,0	11,5		
43,0 a 44,0	13,8		
44,0 a 45,0	11,2		
45,0 a 46,0	11,8		
46,0 a 47,0	11,1		
47,0 a 48,0	10,3		
48,0 a 49,0	9,8		
49,0 a 50,0	14,6		
50,0 a 51,0	15,2		
51,0 a 52,0	18,2		
52,0 a 53,0	13,0		
53,0 a 54,0	11,0		
54,0 a 55,0	14,8		
55,0 a 56,0	16,2		
56,0 a 57,0	10,4		
57,0 a 58,0	10,2		
58,0 a 59,0	8,8		
59,0 a 60,0	7,8		
60,0 a 61,0	8,2		
61,0 a 62,0	4,6		
62,0 a 63,0	5,6		
63,0 a 64,0	4,7		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

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TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-049-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	2,3	18,0 a 19,0	1,5
1,0 a 2,0	4,4	19,0 a 20,0	1,3
2,0 a 3,0	2,6	20,0 a 21,0	1,7
3,0 a 4,0	0,88	21,0 a 22,0	2,0
4,0 a 5,0	2,2	22,0 a 23,0	1,1
5,0 a 6,0	2,2	23,0 a 24,0	0,70
6,0 a 7,0	1,8	24,0 a 25,0	0,90
7,0 a 8,0	5,5	25,0 a 26,0	0,60
8,0 a 9,0	5,7	26,0 a 27,0	0,60
9,0 a 10,0	3,7	27,0 a 28,0	1,3
10,0 a 11,0	1,7	28,0 a 29,0	1,5
11,0 a 12,0	1,4	29,0 a 30,0	2,1
12,0 a 13,0	2,0	30,0 a 31,0	1,0
13,0 a 14,0	9,0	31,0 a 32,0	1,4
14,0 a 15,0	6,8	32,0 a 33,0	2,1
15,0 a 16,0	0,88	33,0 a 34,0	1,4
16,0 a 17,0	1,1	34,0 a 35,0	2,3
17,0 a 18,0	1,2	35,0 a 36,0	1,1

Cont. Furo 2148-PM-049-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	1,7		
37,0 a 38,0	4,5		
38,0 a 39,0	1,5		
39,0 a 40,0	11,2		
40,0 a 41,0	7,5		
41,0 a 42,0	-		
42,0 a 43,0	2,1		
43,0 a 44,0	4,8		
44,0 a 45,0	1,9		
45,0 a 46,0	1,9		
46,0 a 47,0	6,0		
47,0 a 48,0	7,0		
48,0 a 49,0	11,2		
49,0 a 50,0	13,8		
50,0 a 51,0	6,7		
51,0 a 52,0	9,0		
52,0 a 53,0	10,2		
53,0 a 54,0	1,6		
54,0 a 55,0	1,7		
55,0 a 56,0	2,5		
56,0 a 57,0	1,7		
57,0 a 58,0	0,72		
58,0 a 59,10	1,8		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO GEOSOL

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-050-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	4,4	18,0 a 19,0	5,5
1,0 a 2,0	4,8	19,0 a 20,0	5,7
2,0 a 3,0	3,6	20,0 a 21,0	7,3
3,0 a 4,0	5,0	21,0 a 22,0	6,0
4,0 a 5,0	6,7	22,0 a 23,0	7,4
5,0 a 6,0	8,0	23,0 a 24,0	9,8
6,0 a 7,0	8,8	24,0 a 25,0	10,2
7,0 a 8,0	4,2	25,0 a 26,0	9,8
8,0 a 9,0	7,6	26,0 a 27,0	16,2
9,0 a 10,0	8,0	27,0 a 28,0	9,5
10,0 a 11,0	13,7	28,0 a 29,0	3,0
11,0 a 12,0	13,5	29,0 a 30,0	6,1
12,0 a 13,0	6,9	30,0 a 31,0	11,2
13,0 a 14,0	7,0	31,0 a 32,0	10,0
14,0 a 15,0	9,0	32,0 a 33,0	2,6
15,0 a 16,0	8,2	33,0 a 34,0	4,4
16,0 a 17,0	8,5	34,0 a 35,0	3,8
17,0 a 18,0	8,3	35,0 a 36,0	2,6

Cont. Furo 2148-PM-050-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
36,0 a 37,0	6,5		
37,0 a 38,0	3,1		
38,0 a 39,0	6,1		
39,0 a 40,0	10,6		
40,0 a 41,0	9,8		
41,0 a 42,0	7,2		
42,0 a 43,0	4,0		
43,0 a 44,0	6,9		
44,0 a 45,0	5,0		
45,0 a 46,0	4,0		
46,0 a 47,0	3,4		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

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PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO · LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-051-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	17,7	19,0 a 20,0	18,1
1,0 a 2,0	20,0	20,0 a 21,0	17,2
2,0 a 3,0	19,6	21,0 a 22,0	15,9
3,0 a 4,0	17,6	22,0 a 23,0	13,4
4,0 a 5,0	19,4	23,0 a 24,0	17,0
5,0 a 6,0	18,0	24,0 a 25,0	16,7
6,0 a 7,0	18,3	25,0 a 26,0	16,0
7,0 a 8,0	18,4	26,0 a 27,0	19,4
8,0 a 9,0	18,9	27,0 a 28,0	15,9
9,0 a 10,0	19,1	28,0 a 29,0	18,6
10,0 a 11,0	18,6	29,0 a 30,0	18,8
11,0 a 12,0	17,6	30,0 a 31,0	21,4
12,0 a 13,0	19,3	31,0 a 32,0	12,3
13,0 a 14,0	18,1	32,0 a 33,0	10,8
14,0 a 15,0	14,0	33,0 a 34,0	10,7
15,0 a 16,0	13,7	34,0 a 35,0	16,6
16,0 a 17,0	13,2	35,0 a 36,0	15,8
17,0 a 18,0	17,9	36,0 a 37,0	17,1
18,0 a 19,0	17,3	37,0 a 38,0	16,0

Cont. Furo 2148-PM051-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	18,8		
39,0 a 40,0	18,9		
40,0 a 41,0	17,5		
41,0 a 42,0	16,6		
42,0 a 43,0	18,9		
43,0 a 44,0	13,4		
44,0 a 45,0	17,4		
45,0 a 46,0	18,6		
46,0 a 47,0	17,3		
47,0 a 48,0	15,1		
48,0 a 49,0	14,8		
49,0 a 50,0	18,6		
50,0 a 51,0	20,2		
51,0 a 52,0	14,0		
52,0 a 53,0	12,8		
53,0 a 54,0	13,4		
54,0 a 55,0	15,4		
55,0 a 56,0	19,3		
56,0 a 57,0	13,2		
57,0 a 58,0	9,8		
58,0 a 59,0	9,9		
59,0 a 60,0	11,8		
60,0 a 61,0	8,5		
61,0 a 62,0	8,3		
62,0 a 63,0	6,3		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO GEOSOL

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-052-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 - 1,0	11,5	19,0 - 20,0	14,8
1,0 - 2,0	18,2	20,0 - 21,0	15,2
2,0 - 3,0	18,2	21,0 - 22,0	16,2
3,0 - 4,0	17,2	22,0 - 23,0	14,9
4,0 - 5,0	17,1	23,0 - 24,0	15,2
5,0 - 6,0	17,1	24,0 - 25,0	12,0
6,0 - 7,0	19,2	25,0 - 26,0	15,0
7,0 - 8,0	27,0	26,0 - 27,0	17,7
8,0 - 9,0	12,4	27,0 - 28,0	24,0
9,0 - 10,0	9,6	28,0 - 29,0	16,8
10,0 - 11,0	10,2	29,0 - 30,0	16,8
11,0 - 12,0	10,7	30,0 - 31,0	12,6
12,0 - 13,0	11,0	31,0 - 32,0	14,1
13,0 - 14,0	15,2	32,0 - 33,0	13,8
14,0 - 15,0	12,4	33,0 - 34,0	15,4
15,0 - 16,0	20,2	34,0 - 35,0	11,2
16,0 - 17,0	16,2	35,0 - 36,0	14,3
17,0 - 18,0	15,2	36,0 - 37,0	11,2
18,0 - 19,0	19,0	37,0 - 38,0	12,8

Cont. Furo 2148-PM-052-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 - 39,0	12,8		
39,0 - 40,0	11,2		
40,0 - 41,0	14,5		
41,0 - 42,0	11,8		
42,0 - 43,0	12,2		
43,0 - 44,0	14,0		
44,0 - 45,0	14,0		
45,0 - 46,0	10,8		
46,0 - 47,0	11,5		
47,0 - 48,0	10,8		
48,0 - 49,0	11,3		
49,0 - 50,0	10,2		
50,0 - 51,0	12,0		
51,0 - 52,0	12,2		
52,0 - 53,0	11,3		
53,0 - 54,0	12,2		
54,0 - 55,0	13,4		
55,0 - 56,0	8,8		
56,0 - 57,0	9,5		
57,0 - 58,0	7,0		
59,0 - 60,0	10,1		
60,0 - 61,0	7,9		
61,0 - 62,0	6,2		
62,0 - 63,0	1,2		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-053-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	19,8	19,0 a 20,0	15,3
1,0 a 2,0	18,7	20,0 a 21,0	13,4
2,0 a 3,0	19,8	21,0 a 22,0	
3,0 a 4,0	19,8	22,0 a 23,0	16,9
4,0 a 5,0	21,0	23,0 a 24,0	18,3
5,0 a 6,0	17,5	24,0 a 25,0	18,0
6,0 a 7,0	17,7	25,0 a 26,0	15,9
7,0 a 8,0	21,7	26,0 a 27,0	16,0
8,0 a 9,0	18,7	27,0 a 28,0	13,1
9,0 a 10,0	17,6	28,0 a 29,0	12,8
10,0 a 11,0	22,0	29,0 a 30,0	5,3
11,0 a 12,0	20,6	30,0 a 31,0	9,5
12,0 a 13,0	21,3	31,0 a 32,0	4,8
13,0 a 14,0	17,7	32,0 a 33,0	3,0
14,0 a 15,0	18,1	33,0 a 34,0	3,2
15,0 a 16,0	16,4	34,0 a 35,0	4,3
16,0 a 17,0		35,0 a 36,0	4,9
17,0 a 18,0	14,9	36,0 a 37,0	3,1
18,0 a 19,0	14,4	37,0 a 38,0	4,1



Cont. Furo 2148-PM-053-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	2,0		
39,0 a 40,0	2,2		
40,0 a 41,0	1,8		
41,0 a 41,75	1,3		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO · GEOSOL

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-054-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 - 1,0	2,7	19,0 - 20,0	4,4
1,0 - 2,0	3,9	20,0 - 21,0	4,1
2,0 - 3,0	3,8	21,0 - 22,0	6,1
3,0 - 4,0	2,7	22,0 - 23,0	14,9
4,0 - 5,0	8,3	23,0 - 24,0	15,0
5,0 - 6,0	6,9	24,0 - 25,0	17,0
6,0 - 7,0	9,2	25,0 - 26,0	19,5
7,0 - 8,0	13,1	26,0 - 27,0	16,8
8,0 - 9,0	15,8	27,0 - 28,0	13,8
9,0 - 10,0	12,6	28,0 - 29,0	15,0
10,0 - 11,0	6,9	29,0 - 30,0	18,2
11,0 - 12,0	3,0	30,0 - 31,0	13,3
12,0 - 13,0	3,3	31,0 - 32,0	14,2
13,0 - 14,0	3,7	32,0 - 33,0	13,2
14,0 - 15,0	3,1	33,0 - 34,0	4,0
15,0 - 16,0	4,0	34,0 - 35,0	4,8
16,0 - 17,0	2,7	35,0 - 36,0	2,7
17,0 - 18,0	3,5	36,0 - 37,0	2,1
18,0 - 19,0	3,1	37,0 - 38,0	3,3

Cont. Puro 2148-PM-054-MG.

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
38,0 - 39,0	4,0	66,0 - 67,0	1,6
39,0 - 40,0	1,7	67,0 - 68,0	1,8
40,0 - 41,0	4,2	68,0 - 69,0	1,2
41,0 - 42,0	6,7	69,0 - 70,0	1,0
42,0 - 43,0	15,5	70,0 - 71,0	1,3
43,0 - 44,0	12,3	71,0 - 72,40	1,2
44,0 - 45,0	18,2		
45,0 - 46,0	17,3		
46,0 - 47,0	14,5		
47,0 - 48,0	13,8		
48,0 - 49,0	13,7		
49,0 - 50,0	13,1		
50,0 - 51,0	20,6		
51,0 - 52,0	12,4		
52,0 - 53,0	14,6		
53,0 - 54,0	14,2		
54,0 - 55,0	12,2		
55,0 - 56,0	15,8		
56,0 - 57,0	5,5		
57,0 - 58,0	6,3		
58,0 - 59,0	8,3		
59,0 - 60,0	2,9		
60,0 - 61,0	4,7		
61,0 - 62,0	7,2		
62,0 - 63,0	13,0		
63,0 - 64,0	17,6		
64,0 - 65,0	8,9		
65,0 - 66,0	1,4		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO · LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-055-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	18,4	18,0 a 19,0	17,1
1,0 a 2,0	19,8	19,0 a 20,0	14,8
2,0 a 3,0	16,6	20,0 a 21,0	16,5
3,0 a 4,0	19,5	21,0 a 22,0	19,1
4,0 a 5,0	13,4	22,0 a 23,0	18,1
5,0 a 6,0	20,2	23,0 a 24,0	19,9
6,0 a 7,0	18,8	24,0 a 25,0	19,1
7,0 a 8,0	14,8	25,0 a 26,0	21,1
8,0 a 9,0	20,1	26,0 a 27,0	20,8
9,0 a 10,0	13,5	27,0 a 28,0	17,5
10,0 a 11,0	9,8	28,0 a 29,0	21,0
11,0 a 12,0	15,3	29,0 a 30,0	16,8
12,0 a 13,0	20,2	30,0 a 31,0	17,9
13,0 a 14,0	16,3	31,0 a 32,0	
14,0 a 15,0	17,0	32,0 a 33,0	17,4
15,0 a 16,0	18,5	33,0 a 34,0	14,8
16,0 a 17,0	17,5	34,0 a 35,0	16,4
17,0 a 18,0	18,2	35,0 a 36,0	17,0

Cont. Furo 2148-PM-055-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
36,0 a 37,0	16,4		
37,0 a 38,0	16,2		
38,0 a 39,0	13,9		
39,0 a 40,0	13,2		
40,0 a 41,0	12,1		
41,0 a 42,0	9,3		
42,0 a 43,0	10,6		
43,0 a 44,0	13,6		
44,0 a 45,0	15,7		
45,0 a 46,0	13,0		
46,0 a 47,0	13,5		
47,0 a 48,0			
48,0 a 49,0	10,9		
49,0 a 50,0	15,8		
50,0 a 51,0	12,9		
51,0 a 52,0	15,1		
52,0 a 53,0	15,2		
53,0 a 54,0	18,4		
54,0 a 55,0	15,4		
55,0 a 56,0	8,2		
56,0 a 57,0	7,8		
57,0 a 58,0	10,0		
58,0 a 59,0	8,1		
59,0 a 60,0	8,5		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO GEOSOL

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-056-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 - 1,0	2,3	19,0 - 20,0	2,3
1,0 - 2,0	3,0	20,0 - 21,0	1,4
2,0 - 3,0	3,7	21,0 - 22,0	1,8
3,0 - 4,0	5,2	22,0 - 23,0	1,4
4,0 - 5,0	3,2	23,0 - 24,0	1,8
5,0 - 6,0	5,0	24,0 - 25,0	4,7
6,0 - 7,0	9,4	25,0 - 26,0	6,7
7,0 - 8,0	8,9	26,0 - 27,0	6,5
8,0 - 9,0	9,0	27,0 - 28,0	5,2
9,0 - 10,0	10,5	28,0 - 29,0	7,2
10,0 - 11,0	11,0	29,0 - 30,0	7,1
11,0 - 12,0	12,5	30,0 - 31,0	7,8
12,0 - 13,0	14,0	31,0 - 32,0	10,1
13,0 - 14,0	12,5	32,0 - 33,0	7,2
14,0 - 15,0	16,0	33,0 - 34,65	4,8
15,0 - 16,0	15,8		
16,0 - 17,0	15,8		
17,0 - 18,0	6,3		
18,0 - 19,0	3,2		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-057-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	3,6	19,0 a 20,0	10,6
1,0 a 2,0	3,1	20,0 a 21,0	7,8
2,0 a 3,0	3,6	21,0 a 22,0	7,7
3,0 a 4,0	3,4	22,0 a 23,0	11,1
4,0 a 5,0	3,8	23,0 a 24,0	11,4
5,0 a 6,0	8,7	24,0 a 25,0	6,9
6,0 a 7,0	8,7	25,0 a 26,0	5,05
7,0 a 8,0	7,6	26,0 a 27,0	6,4
8,0 a 9,0	5,3	27,0 a 28,0	3,9
9,0 a 10,0	5,2	28,0 a 29,0	4,3
10,0 a 11,0	5,1	29,0 a 30,0	5,0
11,0 a 12,0	5,4	30,0 a 31,0	6,7
12,0 a 13,0	5,9	31,0 a 32,0	6,6
13,0 a 14,0	12,5	32,0 a 33,0	9,3
14,0 a 15,0	6,6	33,0 a 34,0	8,0
15,0 a 16,0	7,0	34,0 a 35,0	7,2
16,0 a 17,0	3,9	35,0 a 36,0	4,4
17,0 a 18,0	3,35	36,0 a 37,0	8,0
18,0 a 19,0	7,7	37,0 a 38,0	9,9

Cont. Furo 2148-PM-057-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	8,9		
39,0 a 40,0	8,4		
40,0 a 41,0	16,6		
41,0 a 42,0	5,3		
42,0 a 43,0	5,1		
43,0 a 44,0	6,0		
44,0 a 45,0	3,6		
45,0 a 46,0	3,6		
46,0 a 47,0	4,5		
47,0 a 48,0	6,0		
48,0 a 49,0	6,5		
49,0 a 50,0	8,9		
50,0 a 51,0	6,2		
51,0 a 52,0	6,6		
52,0 a 53,0	7,0		
53,0 a 54,0	6,6		
54,0 a 55,0	7,3		
55,0 a 56,0	6,3		
56,0 a 57,0	2,2		
57,0 a 58,0	1,1		
58,0 a 59,0	3,4		
59,0 a 60,0	2,7		
60,0 a 61,0	2,8		



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-059-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	5,0	19,0 a 20,0	1,7
1,0 a 2,0	5,9	20,0 a 21,0	1,4
2,0 a 3,0	4,0	21,0 a 22,0	1,7
3,0 a 4,0	1,3	22,0 a 23,0	1,9
4,0 a 5,0	1,5	23,0 a 24,0	1,5
5,0 a 6,0	1,1	24,0 a 25,0	3,0
6,0 a 7,0	1,4	25,0 a 26,0	1,6
7,0 a 8,0		26,0 a 27,0	1,0
8,0 a 9,0	0,7	27,0 a 28,0	1,9
9,0 a 10,0	1,6	28,0 a 29,0	4,2
10,0 a 11,0	2,3	29,0 a 30,0	1,5
11,0 a 12,0	1,8	30,0 a 31,0	2,3
12,0 a 13,0	1,7	31,0 a 32,0	1,6
13,0 a 14,0	6,3	32,0 a 33,0	
14,0 a 15,0	1,4	33,0 a 34,0	2,3
15,0 a 16,0		34,0 a 35,0	5,7
16,0 a 17,0	1,6	35,0 a 36,0	2,6
17,0 a 18,0		36,0 a 37,0	5,4
18,0 a 19,0	2,5	37,0 a 38,0	1,3

Cont. Furo 2148-PM-059-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	1,3		
39,0 a 40,0	1,3		
40,0 a 41,0	1,1		
41,0 a 42,0	1,5		
42,0 a 43,0	2,5		
43,0 a 44,0	2,0		
44,0 a 45,0	2,2		
45,0 a 46,0	1,0		
46,0 a 47,0	1,5		
47,0 a 48,0	1,3		
48,0 a 49,0	3,4		
49,0 a 50,0	1,3		

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

BOLETIM DE ANÁLISE

LABORATÓRIO · LAPEM

TIPO DE ANÁLISE: ESPECTROGRÁFICA

FURO DE SONDA: 2148-PM-060-MG

PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %	PROFUNDIDADE (m)	TEOR EM P ₂ O ₅ %
0,0 a 1,0	2,4	19,0 a 20,0	4,0
1,0 a 2,0	1,4	20,0 a 21,0	2,1
2,0 a 3,0	0,8	21,0 a 22,0	1,4
3,0 a 4,0	1,4	22,0 a 23,0	1,5
4,0 a 5,0	1,7	23,0 a 24,0	1,4
5,0 a 6,0	3,2	24,0 a 25,0	1,6
6,0 a 7,0	1,2	25,0 a 26,0	1,4
7,0 a 8,0	5,3	26,0 a 27,0	1,1
8,0 a 9,0	1,2	27,0 a 28,0	2,0
9,0 a 10,0	2,4	28,0 a 29,0	2,0
10,0 a 11,0	5,6	29,0 a 30,0	5,5
11,0 a 12,0	3,4	30,0 a 31,0	1,0
12,0 a 13,0	0,8	31,0 a 32,0	3,0
13,0 a 14,0	1,0	32,0 a 33,0	0,5
14,0 a 15,0	0,7	33,0 a 34,0	2,3
15,0 a 16,0	3,7	34,0 a 35,0	2,9
16,0 a 17,0	4,8	35,0 a 36,0	1,8
17,0 a 18,0	2,9	36,0 a 37,0	0,9
18,0 a 19,0	2,0	37,0 a 38,0	1,3

Cont. Furo 2148-PM-060-MG

PROFUNDIDADE (m)	TEOR EM P_2O_5 %	PROFUNDIDADE (m)	TEOR EM P_2O_5 %
38,0 a 39,0	1,5		
39,0 a 40,0	1,9		
40,0 a 41,0	2,8		
41,0 a 42,0	2,1		
42,0 a 43,0	1,4		
43,0 a 44,0	1,5		
44,0 a 45,0	0,9		
45,0 a 46,0	2,3		
46,0 a 47,0	1,4		
47,0 a 48,0	2,4		
48,0 a 49,0	4,2		
49,0 a 50,50	3,1		

ANÁLISE DE SOLUBILIDADE CÍTRICA



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

SOLUBILIDADE CÍTRICA

LABORATÓRIO: MITSUI

TIPO DE ANÁLISE: Solubilidade Cítrica a 2%

FURO DE SONDA: 2148-PM-001-MG

PROFUNDIDADE (m)	TOTAL DE P ₂ O ₅ %	P ₂ O ₅ SOLÚVEL %	SOLUBILIDADE CÍTRICA %
0,0 a 3,0	12,59	0,71	5,64
3,0 a 6,0	11,02	6,01	54,53
6,0 a 9,0	12,16	6,29	51,72
9,0 a 12,0	12,16	7,44	61,18
12,0 a 15,0	11,30	7,29	64,51
15,0 a 18,0	11,02	6,20	57,08
18,0 a 21,0	12,30	6,87	55,85
21,0 a 24,0	14,31	6,72	46,96
24,0 a 27,0	18,60	9,16	49,24
27,0 a 30,0	18,75	9,30	49,60
30,0 a 33,0	18,75	9,60	51,20
33,0 a 36,0	15,74	9,73	61,81
36,0 a 39,0	14,74	9,44	64,04
39,0 a 42,0	15,88	9,30	58,56
42,0 a 45,0	19,89	11,30	56,81
45,0 a 48,0	21,75	10,45	48,04
48,0 a 51,0	19,03	10,16	53,38
51,0 a 54,0	19,03	9,16	48,13

Cont. Furo 2128-PM-001-MG

PROFUNDIDADE (m)	TOTAL DE P ₂ O ₅ %	P ₂ O ₅ SOLÚVEL %	SOLUBILIDADE CÍTRICA %
54,0 a 57,0	16,60	9,01	54,27
57,0 a 60,0	15,60	8,01	51,34
60,0 a 63,0	17,60	9,16	52,04
63,0 a 66,0	14,31	7,73	54,02
66,0 a 69,0	13,02	6,15	47,23
69,0 a 72,0	3,58	2,29	63,96
72,0 a 75,0	2,86	1,57	54,89
75,0 a 78,0	2,72	1,57	57,72
78,0 a 81,0	2,29	1,29	56,33
81,0 a 84,0	2,72	1,14	41,91
84,0 a 87,0	2,00	0,86	43,00
87,0 a 90,0	1,43	0,71	49,65
90,0 a 93,0	1,43	1,00	69,93
93,0 a 96,0	1,72	0,71	41,28
96,0 a 99,0	1,43	0,71	49,65
99,0 a 102,0	1,86	1,00	53,76
102,0 a 105,0	2,43	1,29	53,08
105,0 a 108,0	2,14	1,14	53,27
108,0 a 111,0	2,00	1,00	50,00
111,0 a 114,0	2,00	1,00	50,00
114,0 a 117,0	2,72	1,57	57,72
117,0 a 120,0	2,86	1,29	45,10
120,0 a 123,0	2,00	1,14	57,00
123,0 a 126,0	2,43	1,29	53,08
126,0 a 129,0	1,43	0,71	49,65
129,0 a 132,0	1,00	0,71	71,00
132,0 a 135,0	1,00	0,71	71,00

Cont. Furo 2148-PM-001-MG

PROFUNDIDADE (m)	TOTAL DE P ₂ O ₅ %	P ₂ O ₅ SOLÚVEL %	SOLUBILIDADE CÍTRICA %
135,0 a 138,0	1,71	0,71	41,52
138,0 a 141,0	5,00	1,86	37,12
141,0 a 144,0	5,00	2,43	48,60
144,0 a 147,0	4,00	1,43	35,75
147,0 a 150,0	3,72	1,14	30,64
150,0 a 153,0	3,86	1,00	25,90
153,0 a 156,0	4,43	1,29	29,12
156,0 a 159,0	4,00	1,00	25,00
159,0 a 162,0	4,43	1,14	25,73
162,0 a 165,0	5,58	1,43	25,62
165,0 a 168,0	5,00	1,29	25,80
168,0 a 171,0	5,29	1,29	24,38
171,0 a 174,0	4,86	1,29	26,54
174,0 a 177,0	4,86	1,43	29,42
177,0 a 180,0	4,43	1,72	38,82
180,0 a 183,0	6,01	1,57	26,12
183,0 a 186,0	6,72	1,86	27,68
186,0 a 189,0	7,58	2,57	33,90
189,0 a 192,0	6,58	1,72	26,14
192,0 a 195,0	4,58	1,14	24,89
195,0 a 198,0	5,58	1,57	28,13
198,0 a 201,0	6,01	1,57	26,12
201,0 a 204,0	7,73	2,00	25,87
204,0 a 207,0	8,30	2,29	27,59
207,0 a 210,0	7,44	1,72	23,11
210,0 a 213,0	7,44	2,00	26,88
213,0 a 216,0	6,30	1,43	22,70

Cont. Furo 2148-PM-001-MG

PROFUNDIDADE (m)	TOTAL DE P_2O_5 %	P_2O_5 SOLÚVEL %	SOLUBILIDADE CÍTRICA %
216,0 a 219,0	5,15	1,00	19,41
219,0 a 222,0	6,87	2,00	29,11
222,0 a 225,0	7,15	1,86	26,01
225,0 a 228,0	5,58	1,14	20,43
228,0 a 231,0	5,29	1,00	18,90
231,0 a 232,0	8,44	2,00	23,60



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

SOLUBILIDADE CÍTRICA

LABORATÓRIO: MITSUI

TIPO DE ANÁLISE: Solubilidade Cítrica a 2%

FURO DE SONDA: 2148-PM-002-MG

PROFUNDIDADE (m)	TOTAL DE P ₂ O ₅ %	P ₂ O ₅ SOLÚVEL %	SOLUBILIDADE CÍTRICA %
0,0 a 3,0	4,00	0,11	2,75
3,0 a 6,0	3,15	0,11	3,49
6,0 a 9,0	2,29	0,00	0,00
9,0 a 12,0	1,57	0,05	3,18
12,0 a 15,0	1,86	0,00	0,00
15,0 a 18,0	1,57	0,00	0,00
18,0 a 21,0	1,57	0,71	45,20
21,0 a 24,0	3,15	2,00	63,50
24,0 a 27,0	5,29	3,72	70,32
27,0 a 30,0	4,43	3,15	71,10
30,0 a 33,0	4,58	2,86	62,44
33,0 a 36,0	4,15	2,57	61,92
36,0 a 39,0	3,43	2,29	66,76
39,0 a 42,0	3,00	2,14	71,33
42,0 a 45,0	4,43	2,86	64,55
45,0 a 48,0	3,58	2,43	67,87
48,0 a 51,0	4,00	2,43	60,75
51,0 a 54,0	2,72	1,71	62,86
54,0 a 57,0	2,43	1,57	64,61

Cont. Furo 2148-PM-002-MG

PROFUNDIDADE (m)	TOTAL DE P_2O_5 %	P_2O_5 SOLÚVEL %	SOLUBILIDADE CÍTRICA %
57,0 a 60,0	3,00	1,71	57,00
60,0 a 63,0	1,57	1,00	63,69



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

SOLUBILIDADE CÍTRICA

LABORATÓRIO: MITSUI

TIPO DE ANÁLISE: Solubilidade Cítrica a 2%

FURO DE SONDA: 2148-PM-003-MG

PROFUNDIDADE (m)	TOTAL DE P ₂ O ₅ %	P ₂ O ₅ SOLÚVEL %	SOLUBILIDADE CÍTRICA %
0,0 a 2,0	5,58	0,00	0,00
2,0 a 4,0	10,45	0,11	1,05
4,0 a 6,0	3,43	0,22	6,41
6,0 a 8,0	2,86	0,34	11,88
8,0 a 10,0	9,01	5,87	65,14
10,0 a 12,0	12,45	8,01	64,33
12,0 a 14,0	12,74	8,16	64,05
14,0 a 16,0	12,88	8,16	63,35
16,0 a 18,0	10,59	7,01	66,19
18,0 a 20,0	12,02	7,82	65,06
20,0 a 22,0	8,58	5,58	65,03
22,0 a 24,0	4,00	2,43	60,75
24,0 a 26,0	2,72	1,43	52,57
26,0 a 28,0	3,00	2,14	71,33
28,0 a 30,0	2,86	1,71	59,79
30,0 a 32,0	4,58	3,43	74,89
32,0 a 34,0	3,58	2,14	59,77
34,0 a 36,0	4,15	2,43	58,55

Cont. Furo 2148-PM-003-MG

PROFUNDIDADE (m)	TOTAL DE P ₂ O ₅ %	P ₂ O ₅ SOLÚVEL %	SOLUBILIDADE CÍTRICA %
36,0 a 38,0	4,15	2,72	65,54
38,0 a 40,0	16,45	7,87	47,84
40,0 a 42,0	17,90	9,16	51,17
42,0 a 44,0	10,16	6,15	60,53
44,0 a 46,0	10,02	6,15	61,37
46,0 a 48,0	9,44	5,58	59,11
48,0 a 50,0	5,72	3,58	62,58
50,0 a 52,0	15,31	7,58	49,51
52,0 a 54,0	14,31	7,44	51,99
54,0 a 56,0	14,17	7,73	54,55
56,0 a 58,0	13,16	7,30	55,47
58,0 a 60,0	14,74	8,30	56,31
60,0 a 62,0	13,31	8,16	61,30
62,0 a 64,0	16,17	8,87	54,85
64,0 a 66,0	17,74	8,58	48,36
66,0 a 68,0	16,03	8,30	51,77
68,0 a 70,0	14,31	7,73	54,02
70,0 a 72,0	13,74	7,58	55,16
72,0 a 74,0	8,58	7,87	91,72
74,0 a 76,0	4,86	3,15	64,81



COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

SOLUBILIDADE CÍTRICA

LABORATÓRIO: MITSUI

TIPO DE ANÁLISE: Solubilidade Cítrica a 2%

FURO DE SONDA: 2148-PM-021-MG

PROFUNDIDADE (m)	TOTAL DE P ₂ O ₅ %	P ₂ O ₅ SOLÚVEL %	SOLUBILIDADE CÍTRICA %
0,0 a 1,0	6,58	0,86	13,07
1,0 a 2,0	2,29	0,23	10,04
2,0 a 3,0	3,29	0,23	6,99
3,0 a 4,0	2,57	0,11	2,33
4,0 a 5,0	2,57	0,05	1,94
5,0 a 6,0	6,01	4,00	66,55
6,0 a 7,0	7,30	5,15	70,54
7,0 a 8,0	5,01	3,72	74,25
8,0 a 9,0	6,15	4,72	76,74
9,0 a 10,0	5,01	3,86	77,04
10,0 a 11,0	6,72	5,01	74,55
11,0 a 12,0	7,15	5,72	80,00
12,0 a 13,0	6,75	5,15	76,29
13,0 a 14,0	6,01	4,72	78,53
14,0 a 15,0	8,59	6,15	71,59
15,0 a 16,0	9,30	6,58	70,75
16,0 a 17,0	7,73	5,72	73,99
17,0 a 18,0	9,30	6,30	67,74

Cont. Furo 2148- PM- 021-MG

PROFUNDIDADE (m)	TOTAL DE P ₂ O ₅ %	P ₂ O ₅ SOLÚVEL %	SOLUBILIDADE CÍTRICA %
18,0 a 19,0	7,58	5,29	69,72
19,0 a 20,0	12,16	7,87	64,72
20,0 a 21,0	10,45	7,87	75,31
21,0 a 22,0	9,01	6,01	66,70
22,0 a 23,0	9,30	6,01	64,62
23,0 a 24,0	8,30	5,58	67,22
24,0 a 25,0	7,73	5,01	64,81
25,0 a 26,0	6,87	4,72	68,70
26,0 a 27,0	8,16	4,15	50,85
27,0 a 28,0	8,73	4,86	55,64
28,0 a 29,0	12,02	5,01	41,62
29,0 a 30,0	11,45	5,72	49,95
30,0 a 31,0	11,45	5,87	51,26
31,0 a 32,0	7,73	5,15	66,62
32,0 a 33,0	11,16	6,15	55,10
33,0 a 34,0	12,45	5,87	47,14
34,0 a 35,0	12,59	6,72	53,37
35,0 a 36,0	13,74	7,15	52,03
36,0 a 37,0	13,74	7,30	53,12
37,0 a 38,0	11,16	6,30	56,45
38,0 a 39,0	8,87	5,29	59,63
39,0 a 40,0	8,58	5,58	65,03
40,0 a 41,0	13,31	7,58	56,94
41,0 a 42,0	12,59	7,58	60,20
42,0 a 43,0	12,74	7,30	57,29
43,0 a 44,0	15,45	8,30	53,72
44,0 a 45,0	10,16	6,58	64,76

Cont. Furo 2148-PM-021-MG

PROFUNDIDADE (m)	TOTAL DE P ₂ O ₅ %	P ₂ O ₅ SOLÚVEL %	SOLUBILIDADE CÍTRICA %
45,0 a 46,0	13,31	7,87	59,12
46,0 a 47,0	14,45	8,73	60,41
47,0 a 48,0	10,01	8,01	80,01
48,0 a 49,0	18,03	9,44	52,35
49,0 a 50,0	13,45	7,58	56,35
50,0 a 51,0	14,88	8,30	55,77
51,0 a 52,0	15,17	9,73	64,13
52,0 a 53,0	16,60	9,44	56,86
53,0 a 54,0	18,89	9,59	50,76
54,0 a 55,0	15,45	7,87	50,93
55,0 a 56,0	14,60	7,87	53,90
56,0 a 57,0	17,60	9,44	53,63
57,0 a 58,0	21,61	9,44	43,68
58,0 a 59,0	13,45	7,58	56,35
59,0 a 60,0	19,46	9,44	48,50
60,0 a 61,0	16,17	7,30	45,14
61,0 a 62,0	20,32	9,87	48,47
62,0 a 63,0	18,46	9,44	51,13
63,0 a 64,0	16,17	8,87	54,85
64,0 a 65,0	16,74	9,01	53,82
65,0 a 66,0	15,88	8,73	54,97
66,0 a 67,0	14,45	5,58	38,61
67,0 a 68,0	16,46	8,44	51,27
68,0 a 69,0	15,74	8,30	52,73
69,0 a 70,0	14,02	8,44	60,19
70,0 a 71,0	14,88	8,87	59,61
71,0 a 72,0	13,16	8,01	60,86

Cont. Furo 2148-PM-021-MG

PROFUNDIDADE (m)	TOTAL DE P ₂ O ₅ %	P ₂ O ₅ SOLÚVEL %	SOLUBILIDADE CÍTRICA %
72,0 a 73,0	11,73	5,58	47,57
73,0 a 74,0	9,30	2,14	23,01
74,0 a 75,0	7,01	1,43	20,39
75,0 a 76,0	9,01	2,29	25,41
76,0 a 77,0	6,01	1,14	18,96
77,0 a 78,50	8,01	2,00	24,96

COMPANHIA DE PESQUISA DE RECURSOS MINERAIS

AGÊNCIA BELO HORIZONTE

PROJETO PATOS DE MINAS

SOLUBILIDADE CÍTRICA

LABORATÓRIO: MITSUI

TIPO DE ANÁLISE: Solubilidade Cítrica a 2%

FURO DE SONDA: 2148-PM=022-MG

PROFUNDIDADE (m)	TOTAL DE P ₂ O ₅ %	P ₂ O ₅ SOLÚVEL %	SOLUBILIDADE CÍTRICA %
0,0 a 1,0	14,31	1,43	10,00
1,0 a 2,0	13,31	6,30	47,33
2,0 a 3,0	14,88	9,40	63,17
3,0 a 4,0	16,03	10,45	65,19
4,0 a 5,0	9,87	6,87	69,60
5,0 a 6,0	13,45	8,58	63,79
6,0 a 7,0	23,33	10,45	44,79
7,0 a 8,0	15,74	9,44	59,97
8,0 a 9,0	15,03	9,44	62,80
9,0 a 10,0	12,88	7,58	58,25
10,0 a 11,0	14,88	8,58	57,66
11,0 a 12,0	13,74	8,16	59,31
12,0 a 13,0	14,02	7,73	55,13
13,0 a 14,0	13,16	8,73	66,33
14,0 a 15,0	15,17	10,16	66,97
15,0 a 16,0	8,58	6,72	78,32
16,0 a 17,0	10,87	5,58	51,33
17,0 a 18,0	11,02	6,72	60,98

PERFIS GEOLÓGICOS

PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL . 1 / 2.500

ESCALA HORIZONTAL . 1 / 10.000

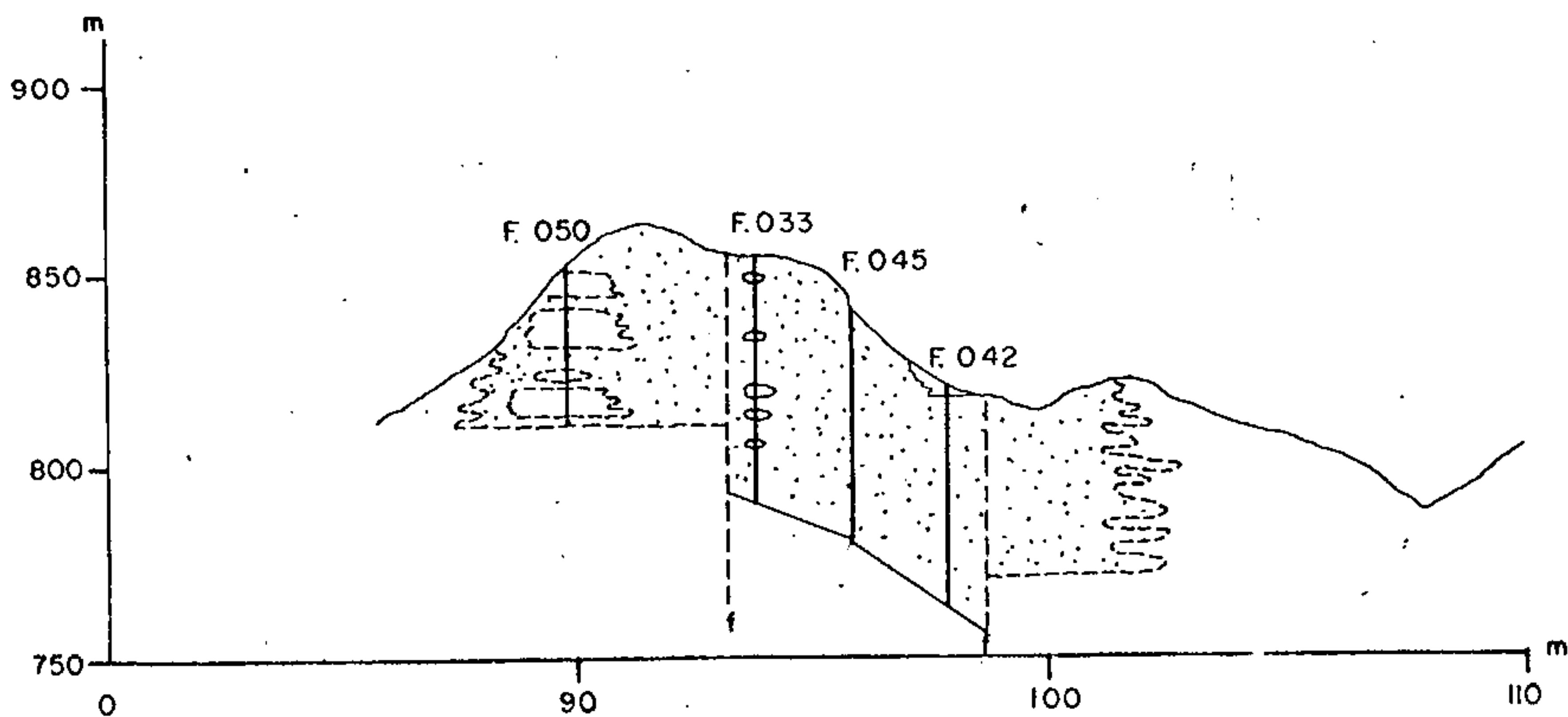
PERFIL - LB - II

ÁREA - MIN. - 16.500m²

TEOR MÉDIO - 13,56%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL. 1/2.500

ESCALA HORIZONTAL. 1/10.000

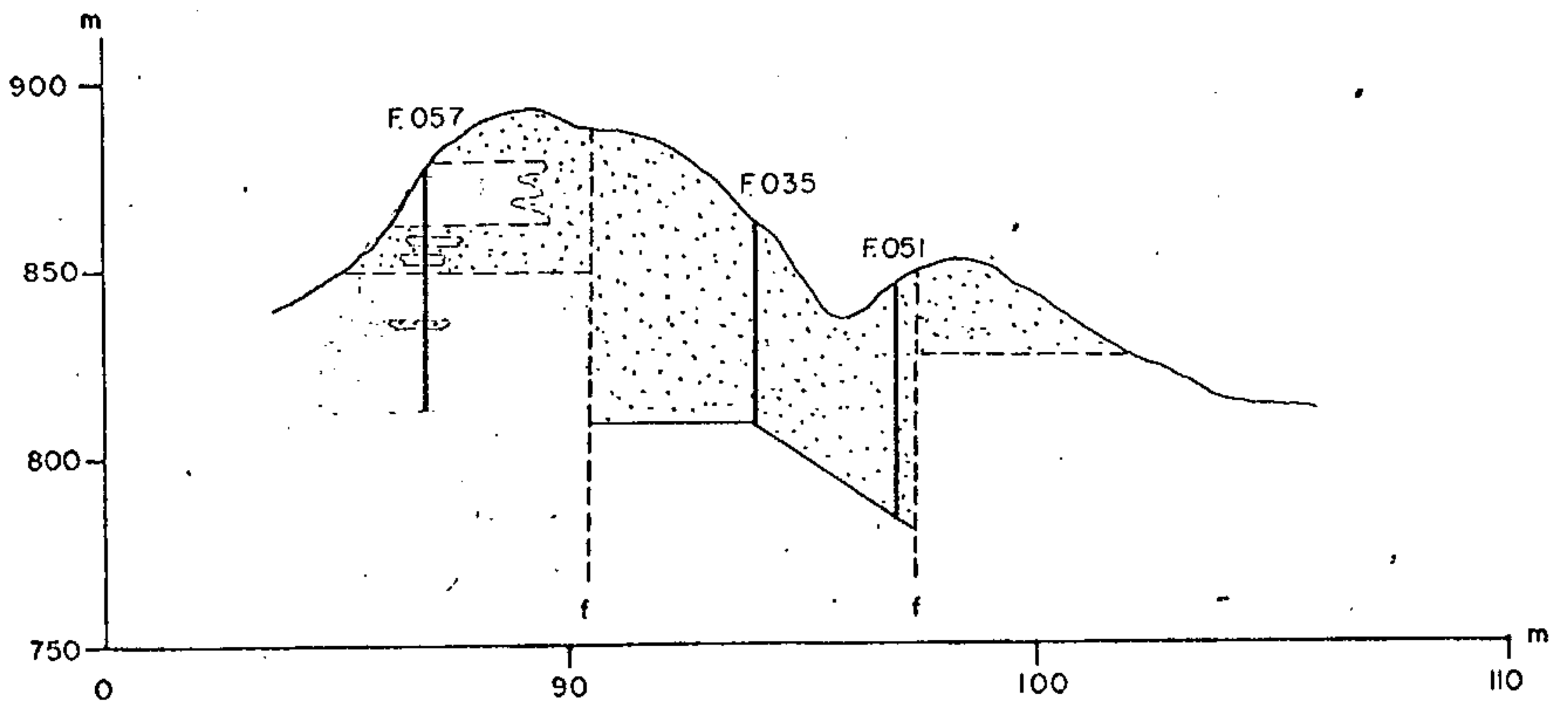
PERFIL - LB-12

ÁREA MIN. - 21.250m²

TEOR MÉDIO - 14,76%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL. 1/2.500

ESCALA HORIZONTAL. 1/10.000

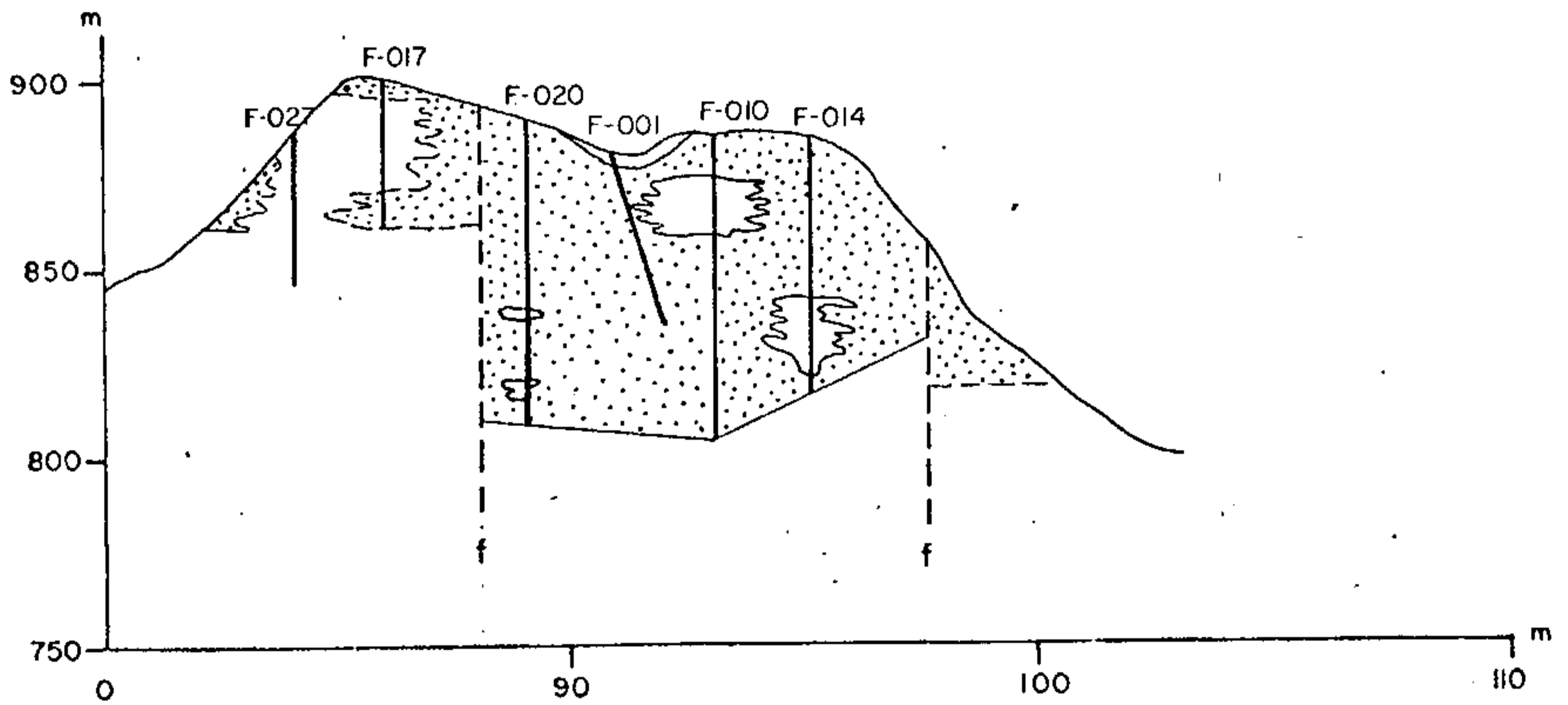
PERFIL - LB - 13

ÁREA MIN. - 26.250m²

TEOR MÉDIO - 14,37%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL . 1 / 2.500

ESCALA HORIZONTAL . 1 / 10.000

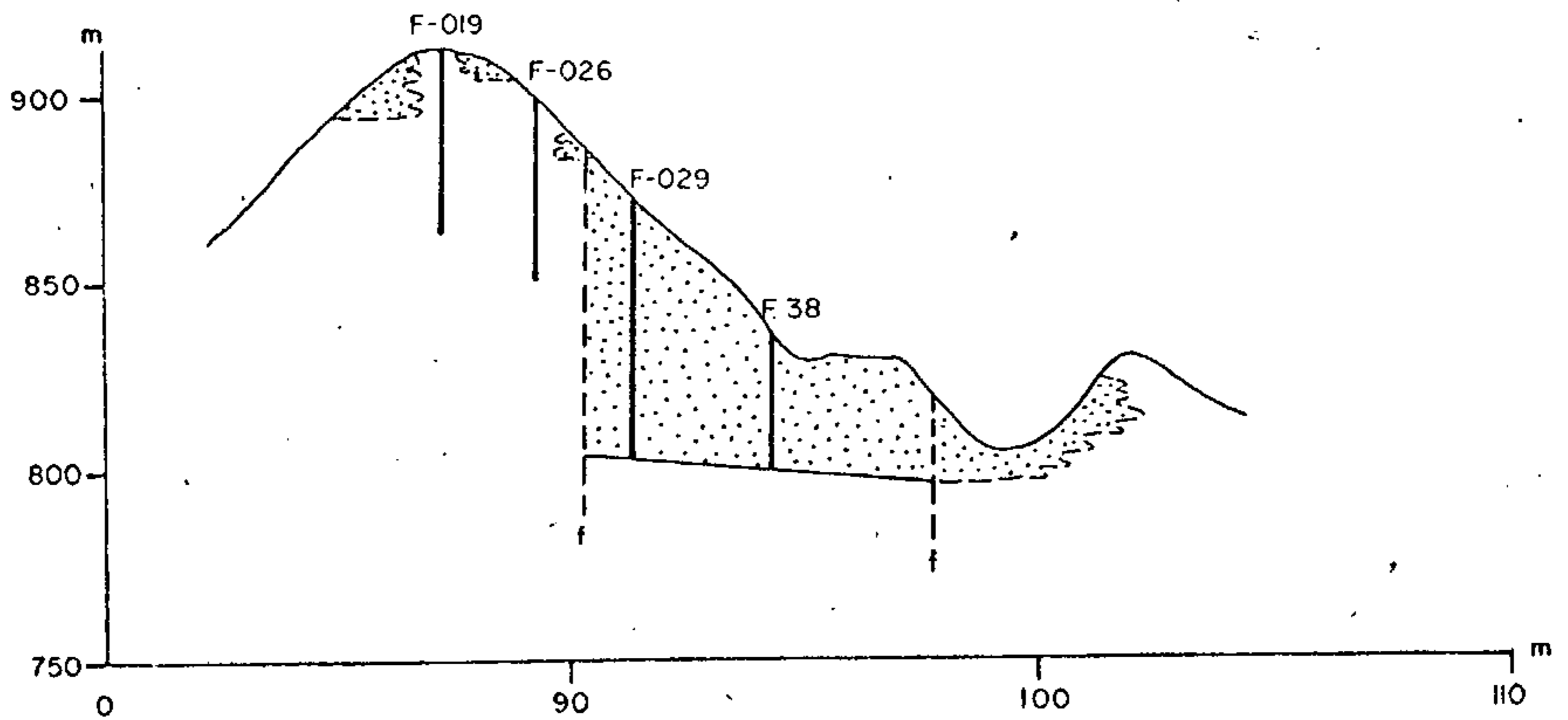
PERFIL - LB - 14

ÁREA MIN. - 17.500m²

TEOR MÉDIO - 17,97%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL. 1/2.500

ESCALA HORIZONTAL. 1/10.000

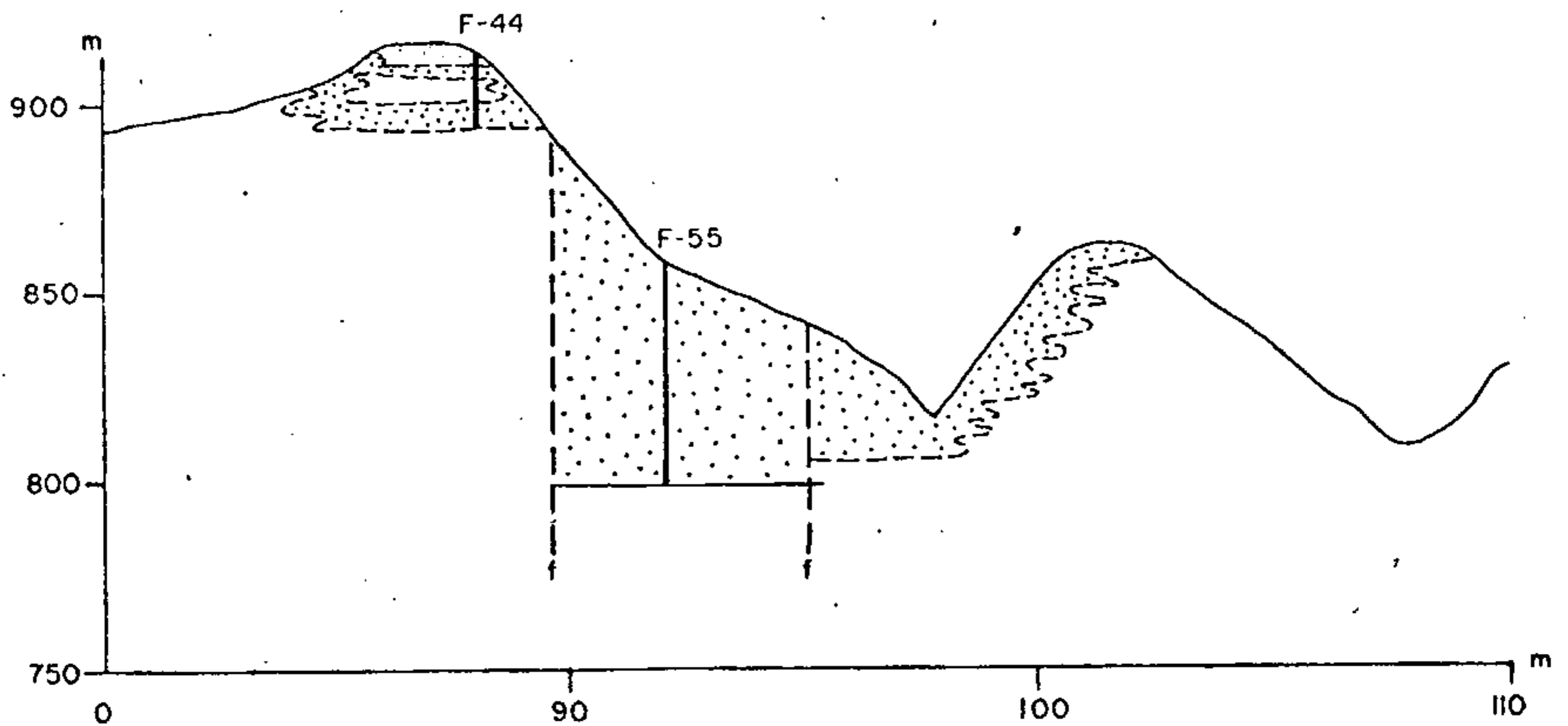
PERFIL - LB - 16

ÁREA MIN. - 19.875m²

TEOR MÉDIO - 15,62%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL . 1/2.500

ESCALA HORIZONTAL . 1/10.000

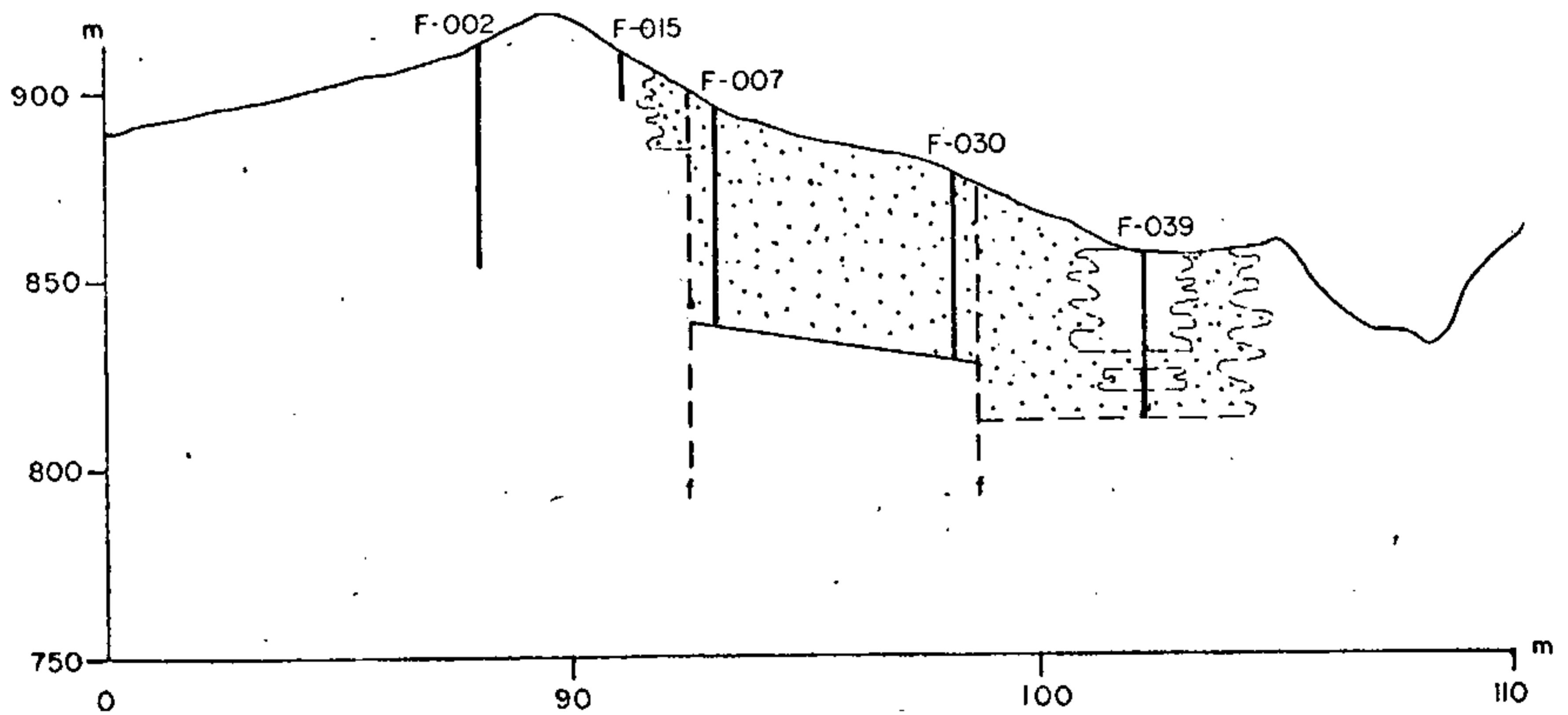
PERFIL - LB-17

ÁREA MIN. - 17.000m²

TEOR MÉDIO - 17,41%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL . 1 / 2.500

ESCALA HORIZONTAL . 1 / 10.000

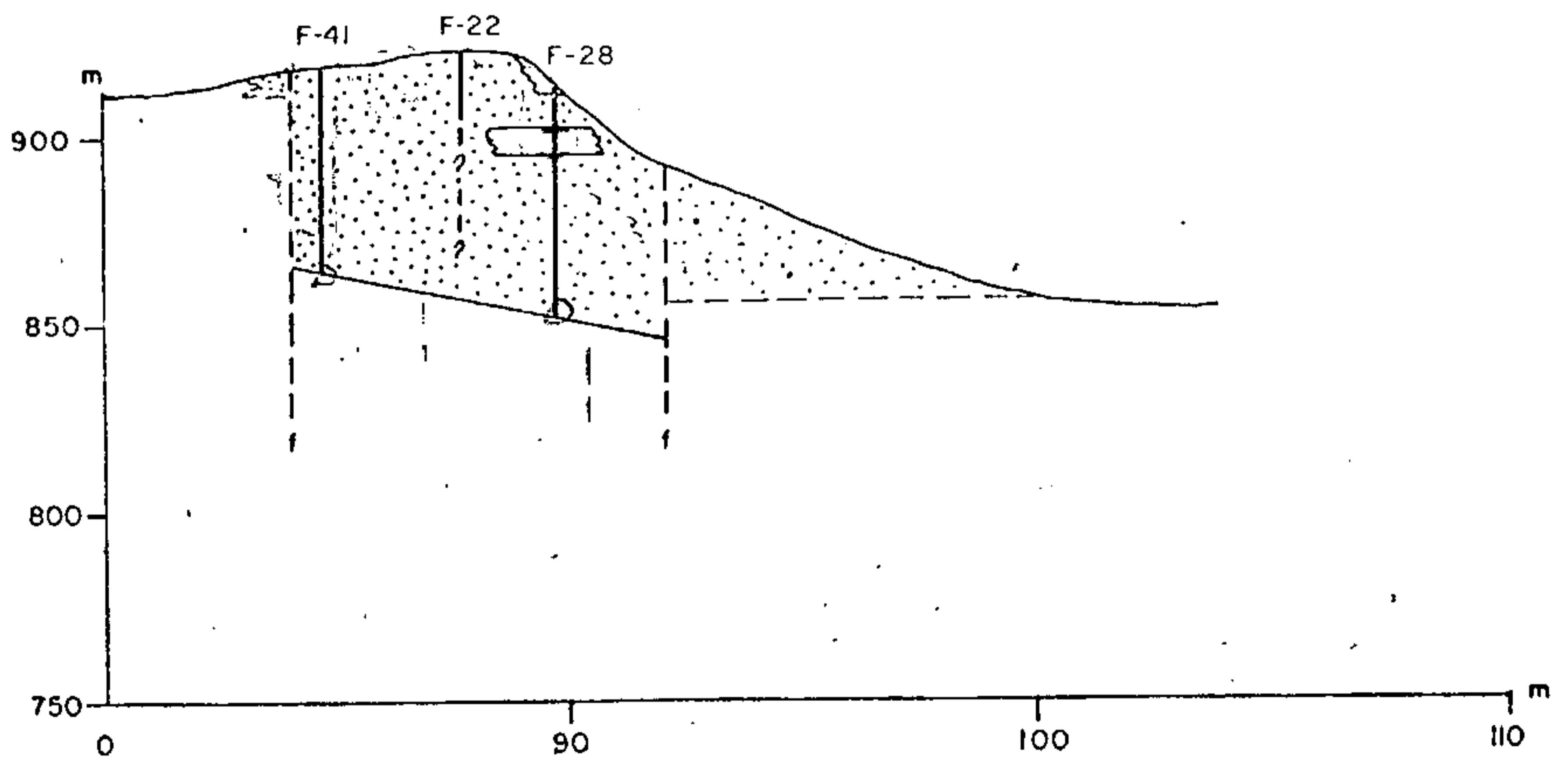
PERFIL - LB - 18

ÁREA MIN. - 22.750m²

TEOR MÉDIO - 15,43%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL. 1/2.500

ESCALA HORIZONTAL. 1/10.000

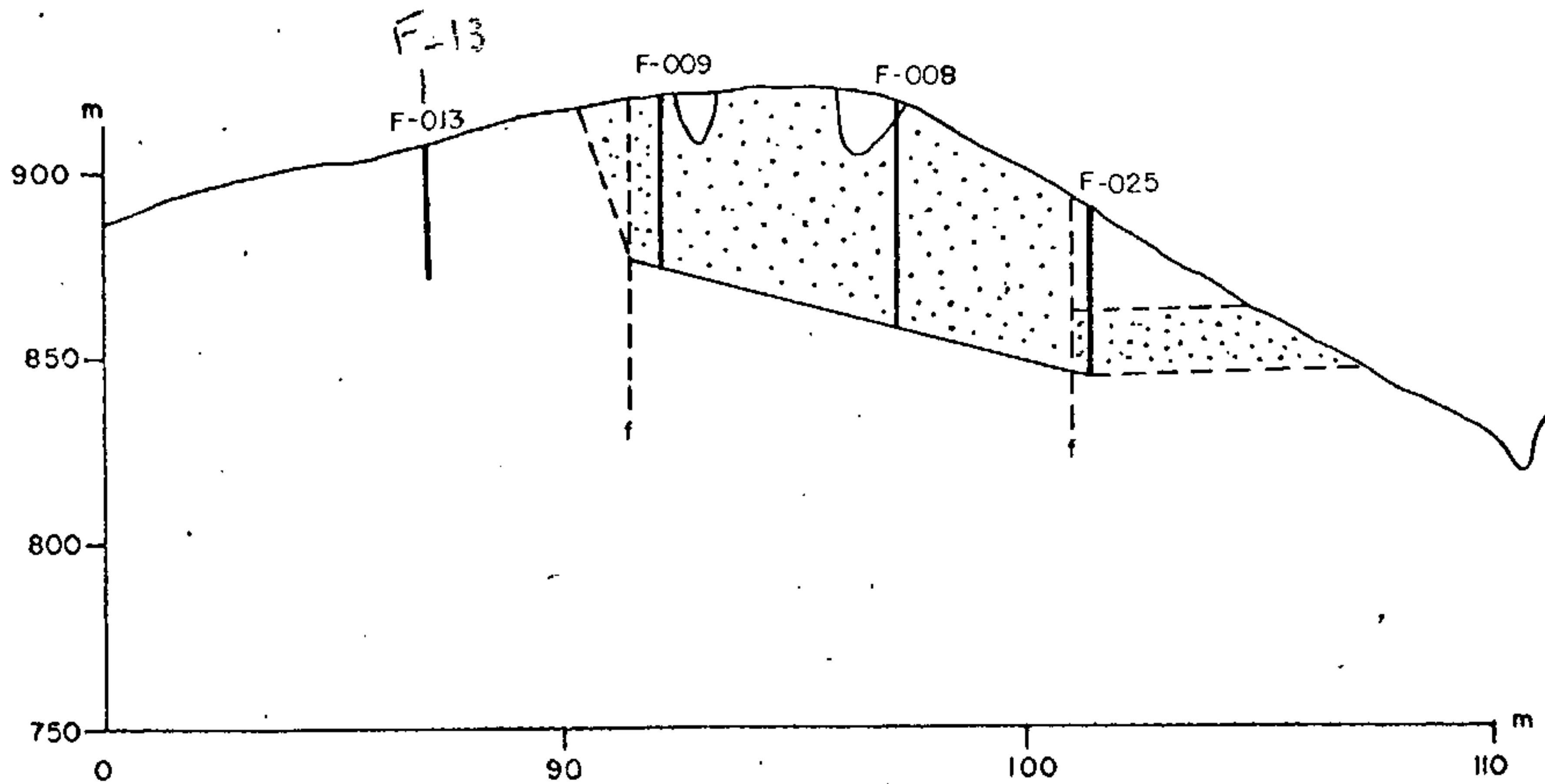
PERFIL - LB - 19

ÁREA MIN. - 25.000m²

TEOR MÉDIO - 14,15%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL . 1 / 2.500

ESCALA HORIZONTAL . 1 / 10.000

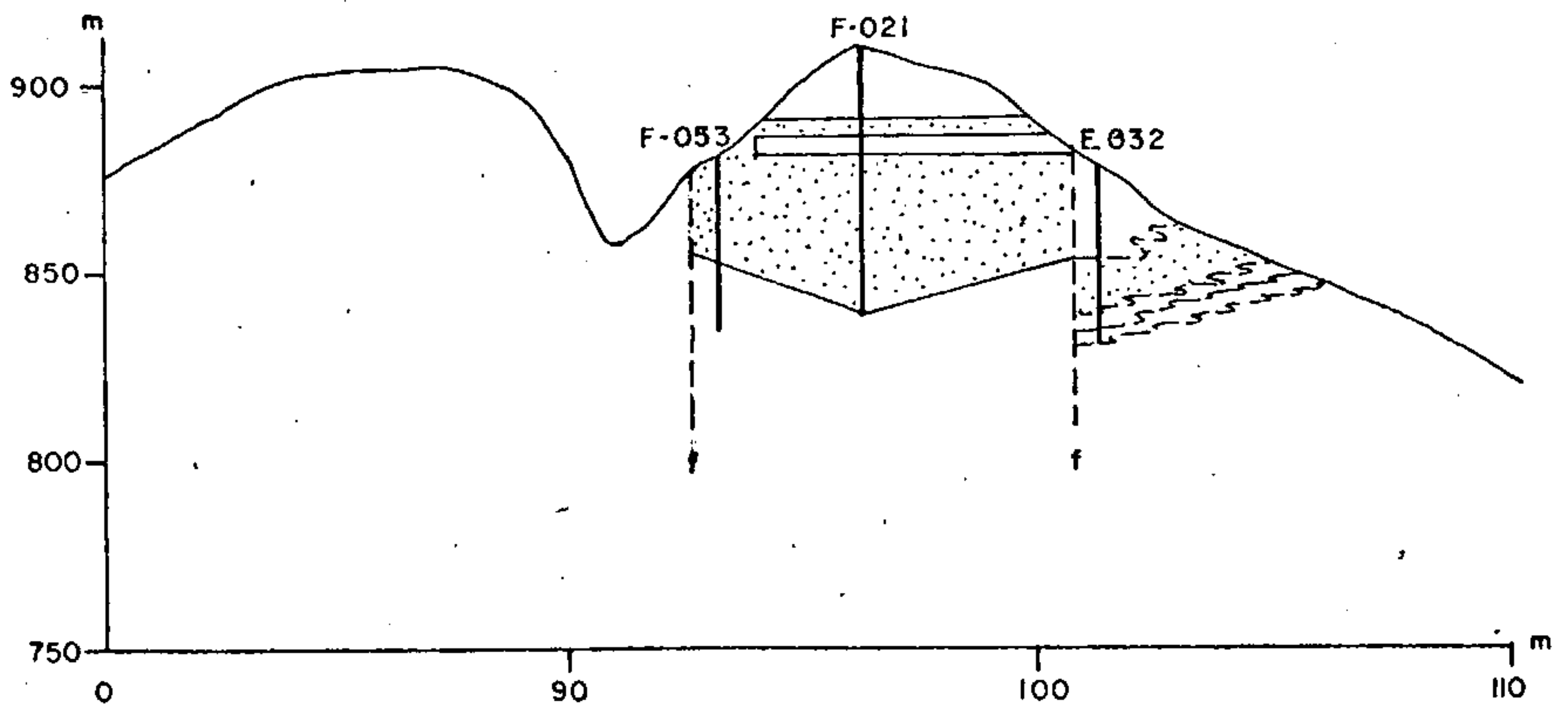
PERFIL - LB - 20

ÁREA MIN - 23 500 m²

TEOR MÉDIO - 15,30%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL. 1/2.500

ESCALA HORIZONTAL. 1/10.000

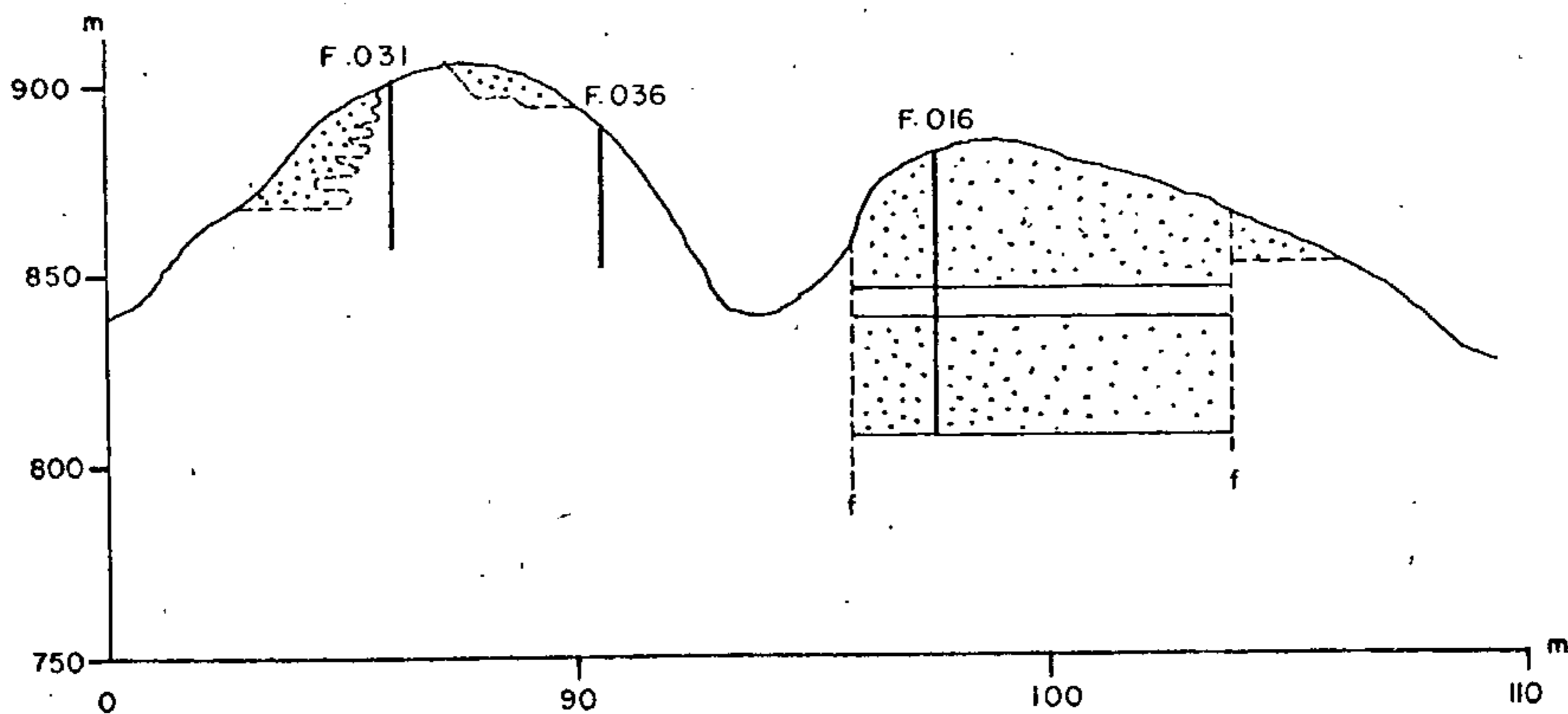
PERFIL - LB - 21

ÁREA MIN. - 24.750m²

TEOR MÉDIO - 14,85%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATÓS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL. 1/2.500

ESCALA HORIZONTAL. 1/10.000

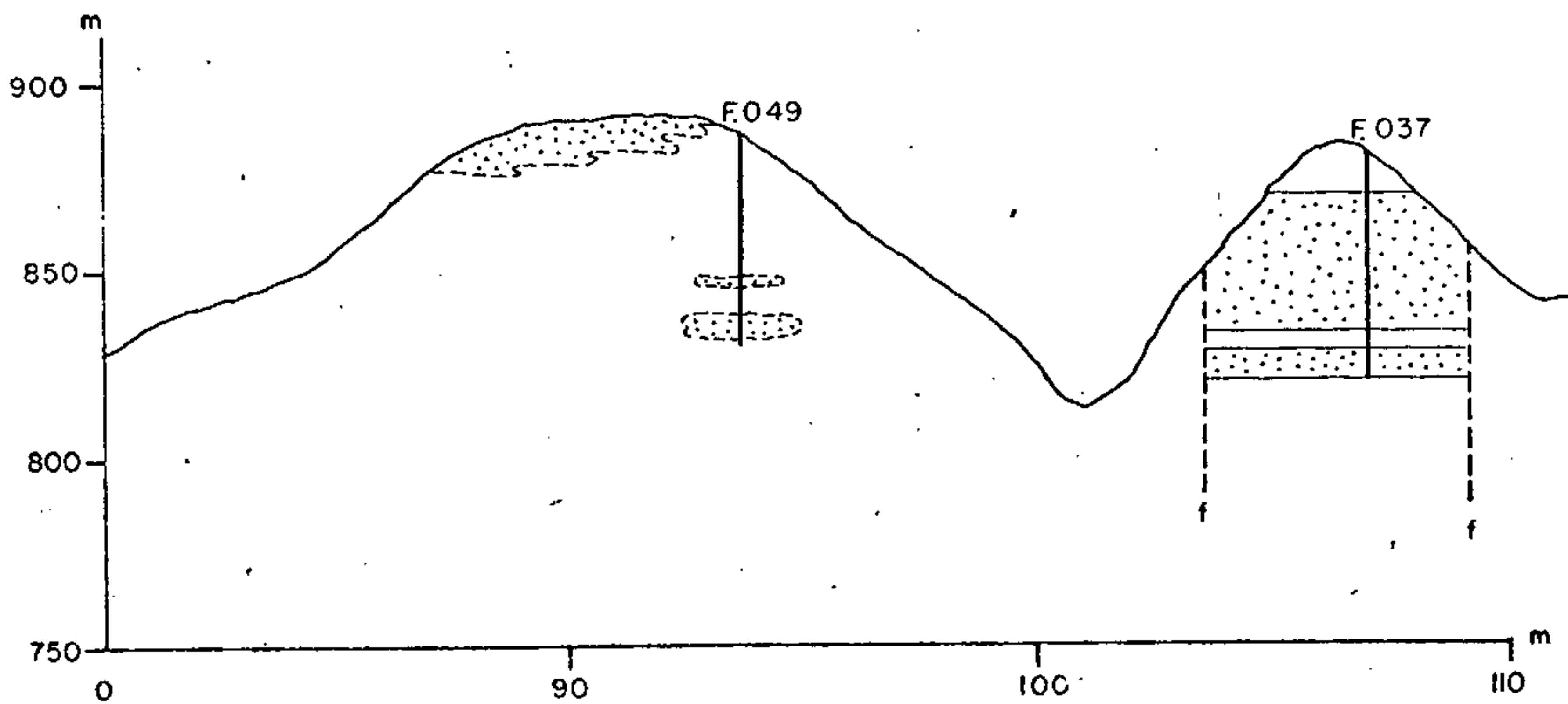
PERFIL - LB - 23

ÁREA MIN. - 11.500m²

TEOR MÉDIO - 14,39

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL. 1/2.500

ESCALA HORIZONTAL. 1/10.000

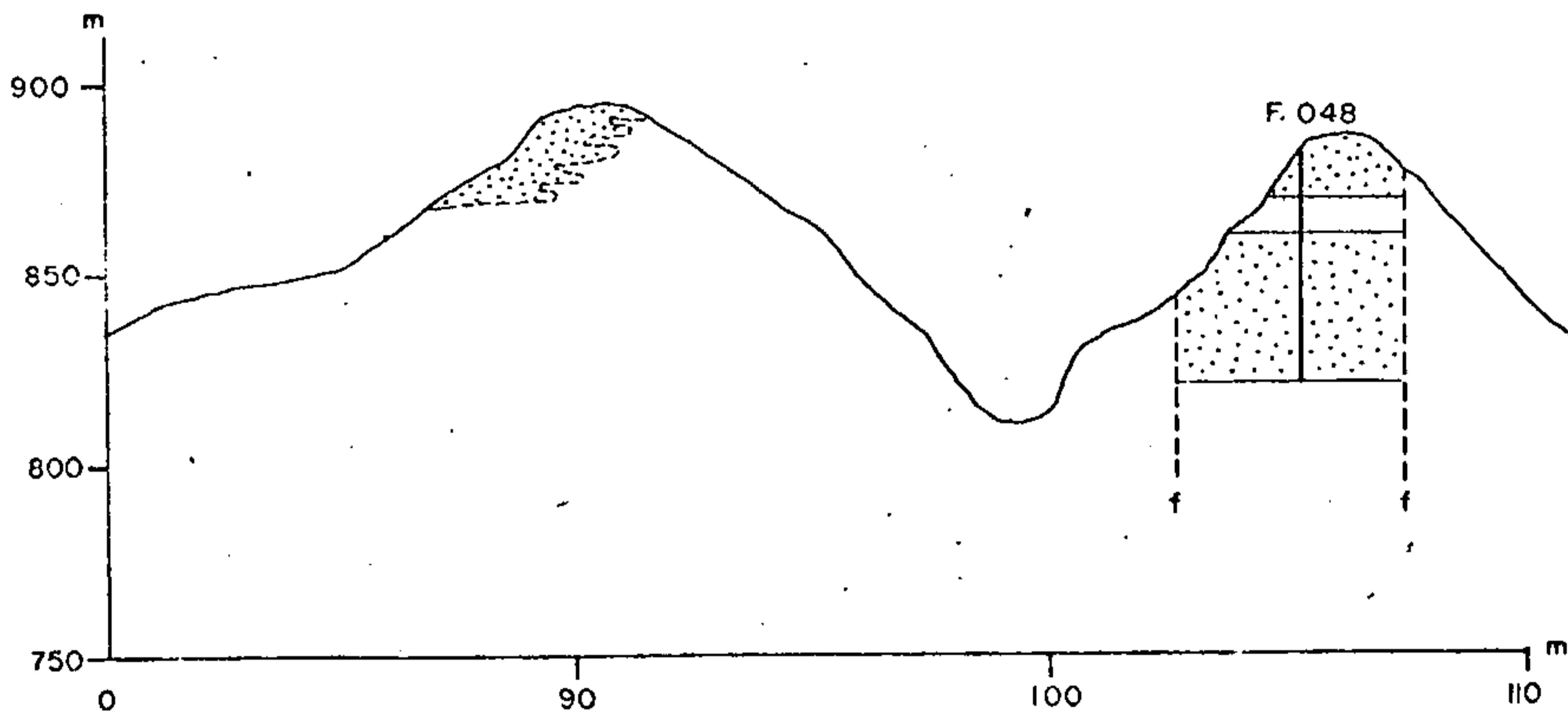
PERFIL - LB - 24

ÁREA MIN. - 9.750m²

TEOR MÉDIO - 13,55%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL . 1/ 2.500

ESCALA HORIZONTAL . 1/ 10.000

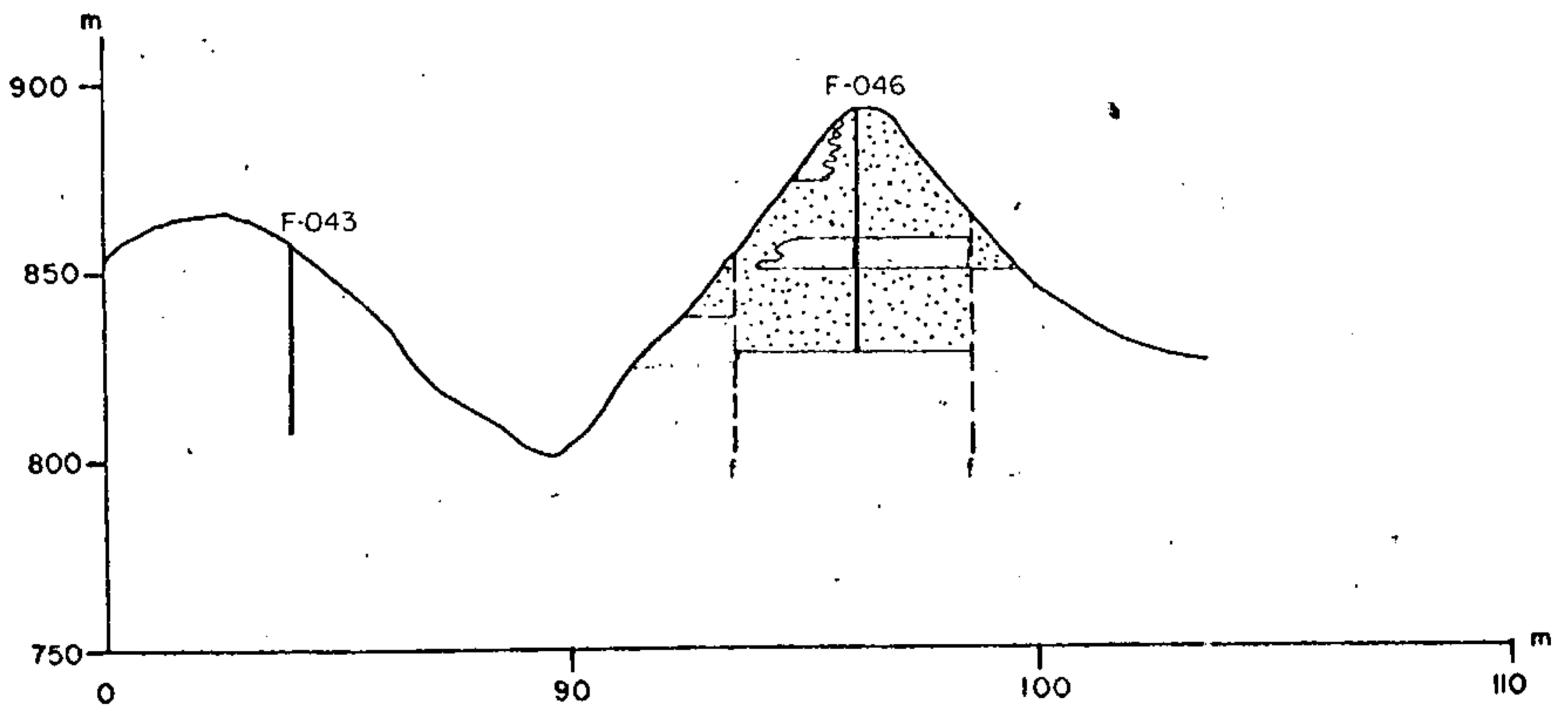
PERFIL - LB - 25

ÁREA MIN - 10.750m²

TEOR MÉDIO - 14,07%

ÁREA DE CAP -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL. 1/2.500

ESCALA HORIZONTAL. 1/10.000

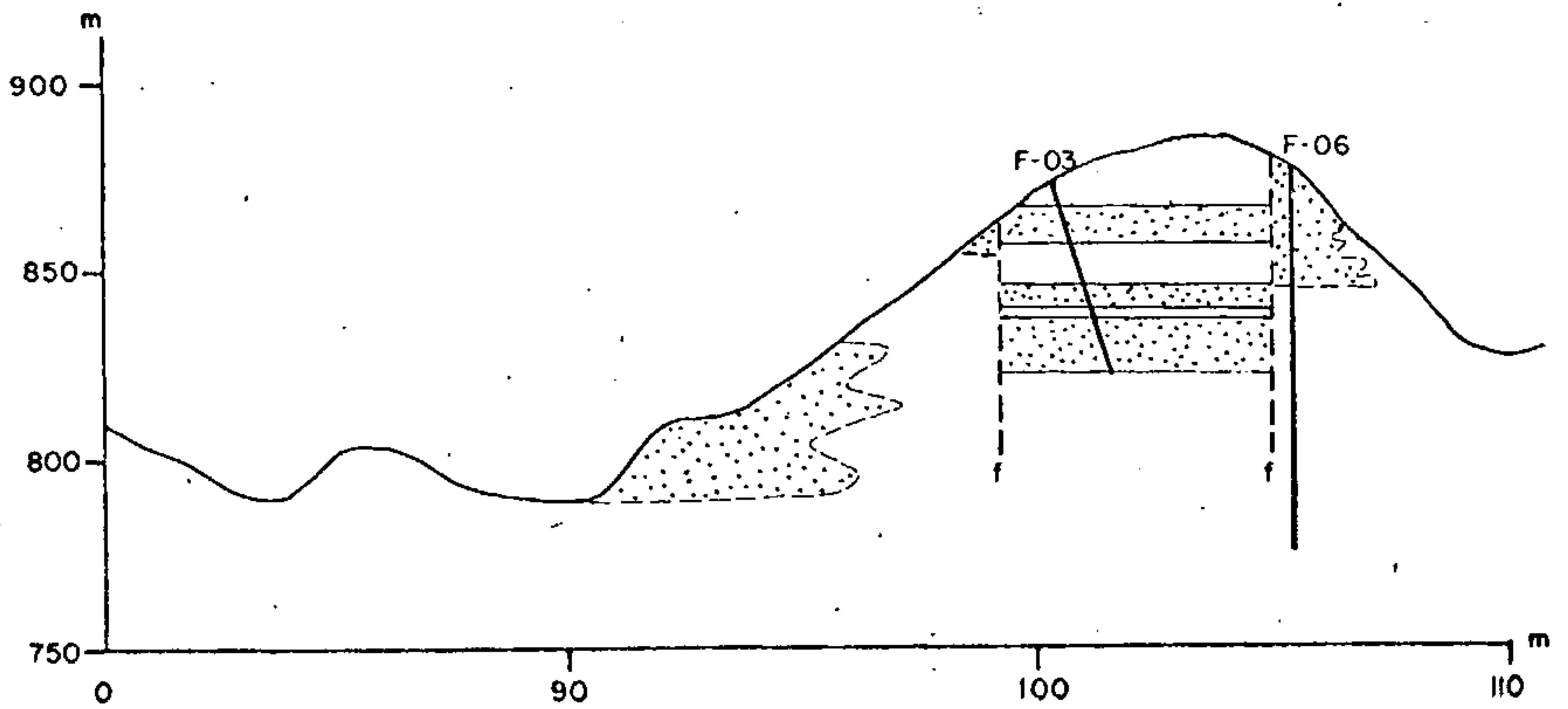
PERFIL - LB - 27

ÁREA MIN - 11.000 m²

TEOR MÉDIO - 13,44 %

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL. 1/2.500

ESCALA HORIZONTAL. 1/10.000

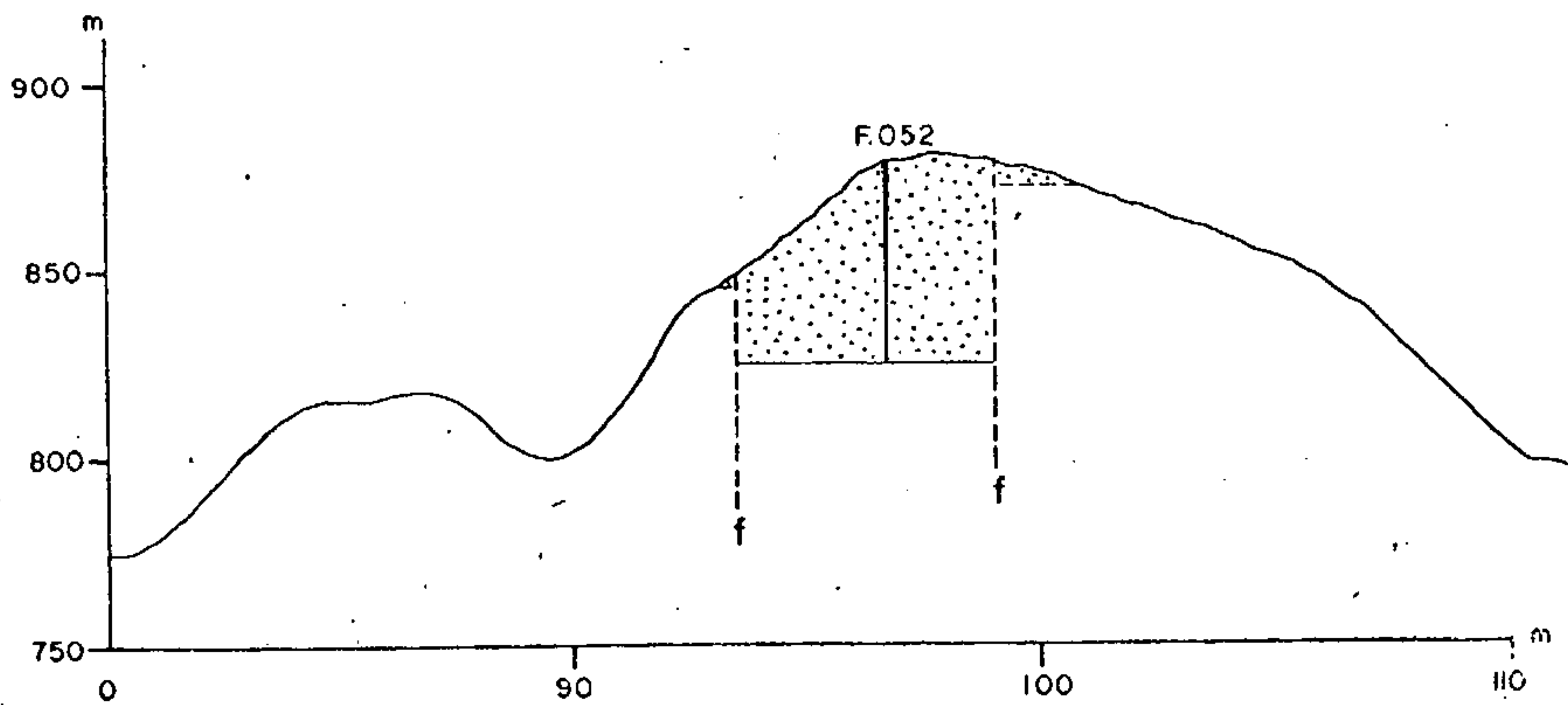
PERFIL - LB - 28

ÁREA MIN. - 12.500 m²

TEOR MÉDIO - 14,32%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL. 1/2.500

ESCALA HORIZONTAL. 1/10.000

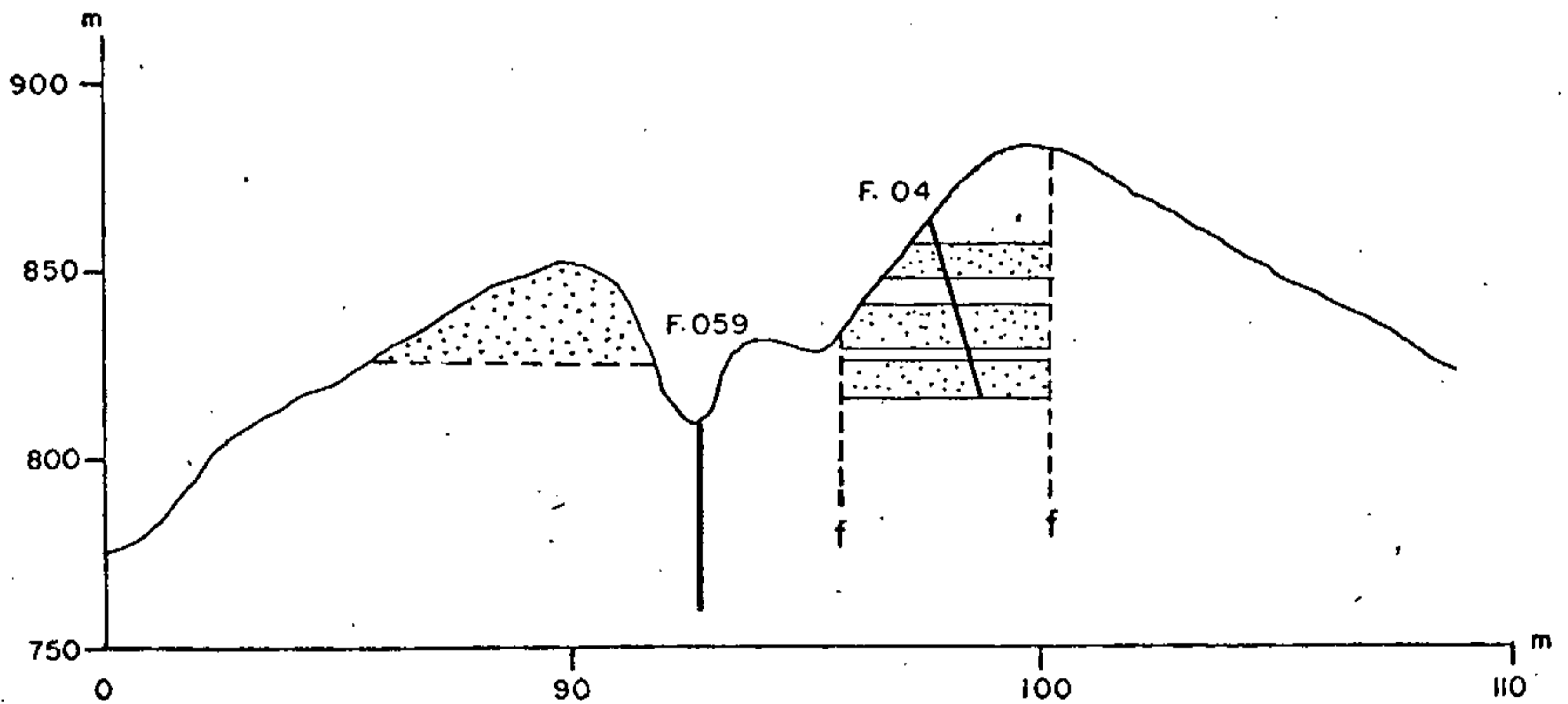
PERFIL - LB-29

ÁREA MIN. - 5.750 m²

TEOR MÉDIO - 14,43%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL . 1/2.500

ESCALA HORIZONTAL . 1/10.000

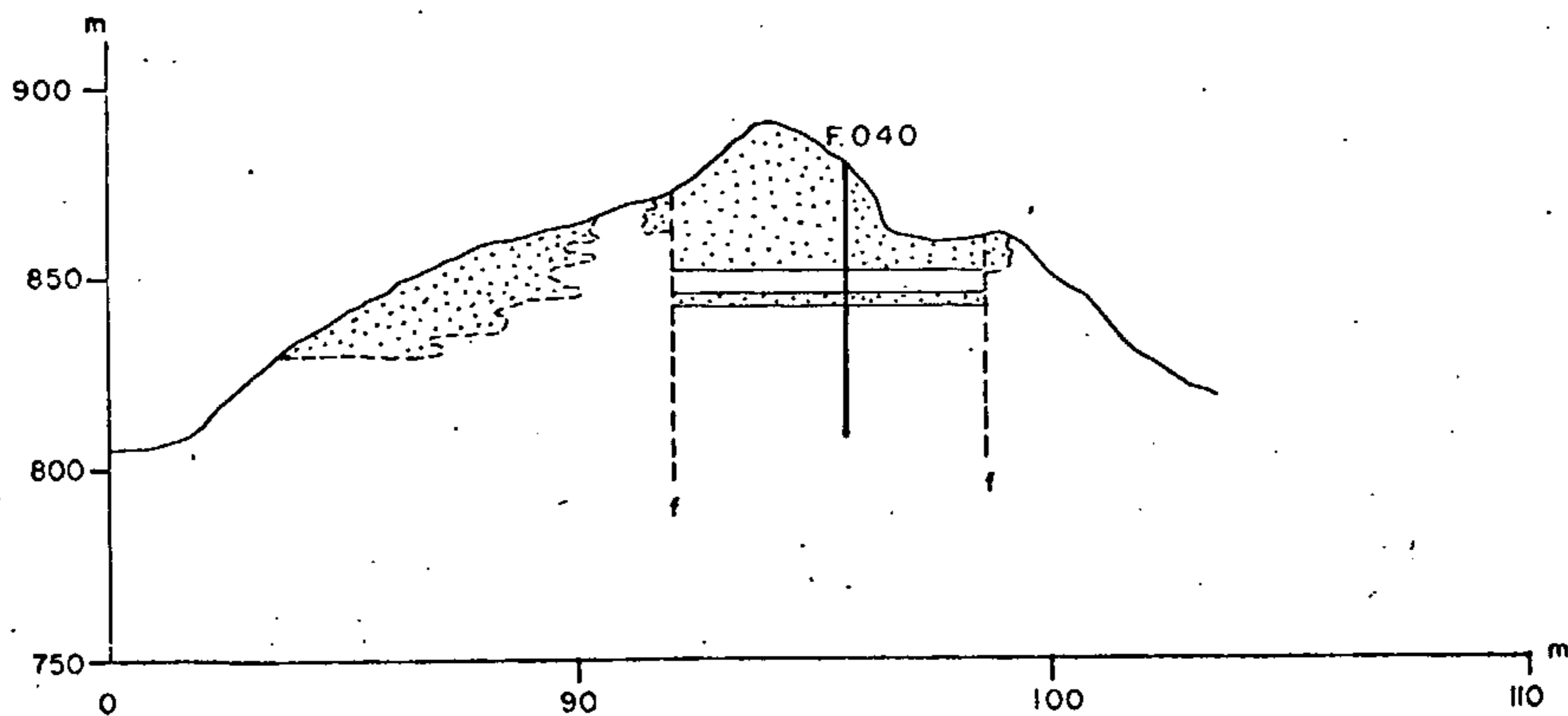
PERFIL - LB - 30

ÁREA MIN. - 8.750 m²

TEOR MÉDIO - 13,87%

ÁREA DE CAP. -

ÁREA ESTÉRIL -



PROJETO PATOS DE MINAS

PERFIS USADOS NA CUBAGEM

ESCALA VERTICAL . 1/2.500

ESCALA HORIZONTAL . 1/10.000

PERFIL - LB - 31

ÁREA MIN. - 1.000m²

TEOR MÉDIO - 13,00%

ÁREA DE CAP. -

ÁREA ESTÉRIL -

