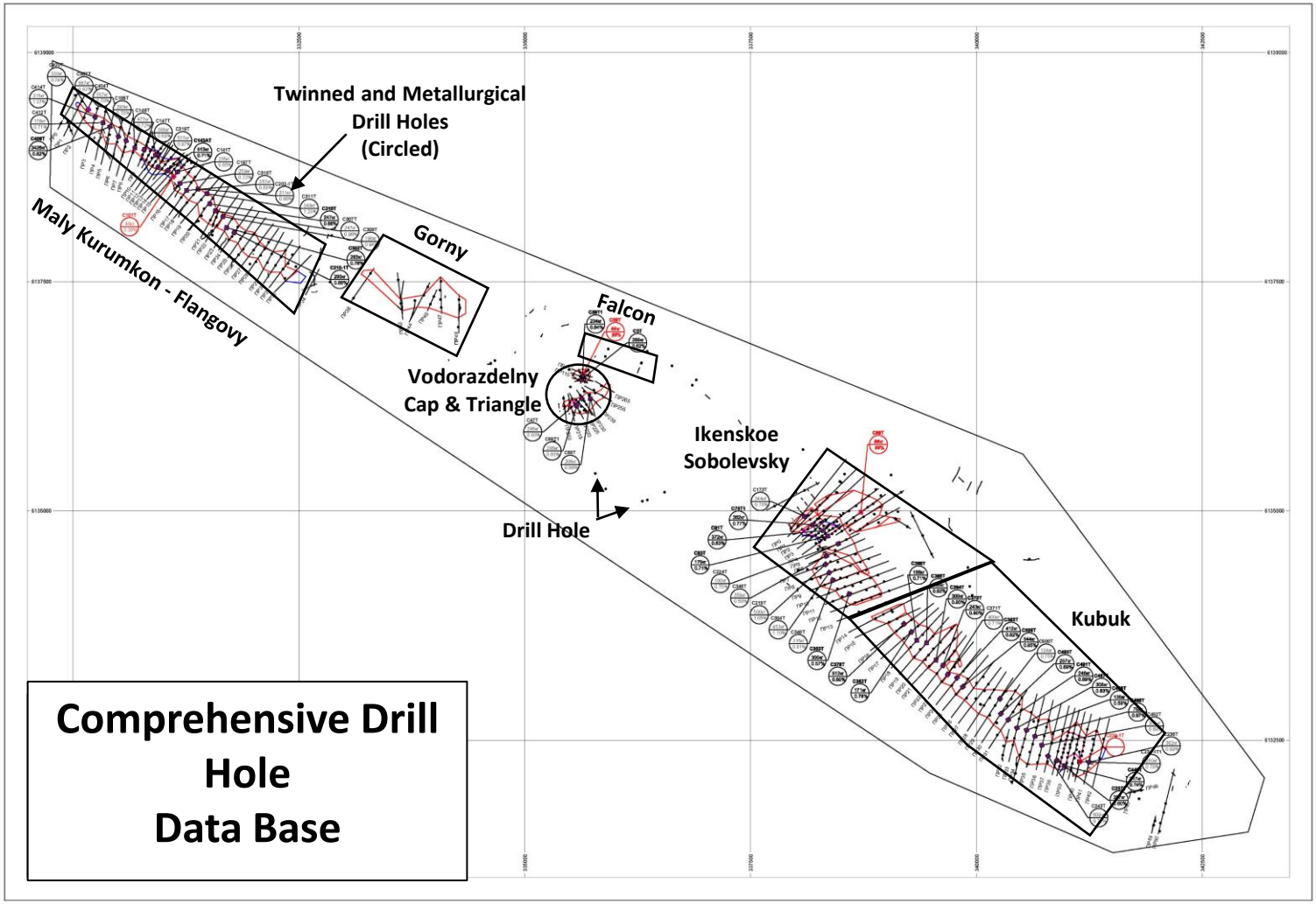
Amur Minerals

PERMANENT CONDITIONS TEO

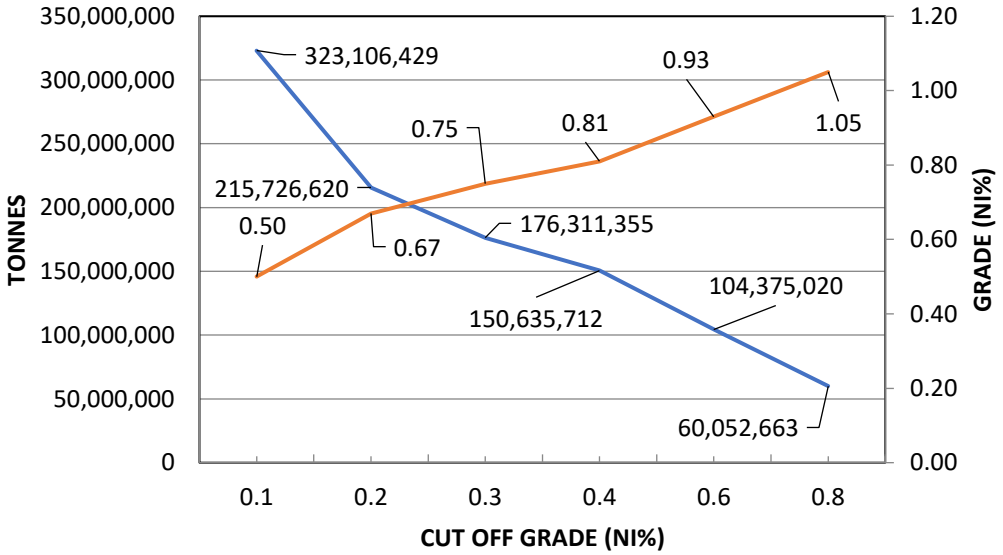
Kun-Manie Sulphide Nickel Copper Project

Summary Pack

Status as at 15 November 2020


Twinned and Metallurgical
Drill Holes
(Circled)
Maly Kurumkon - Flangovy
Gorny
Falcon
Vodorazdelny
Cap & Triangle
Ikenskoe
Sobolevsky
Drill Hole
Kubuk
Comprehensive Drill
Hole
Data Base

KUN-MANIE GRADE TONNAGE CURVE
Cumulative All Deposits – Total Balance



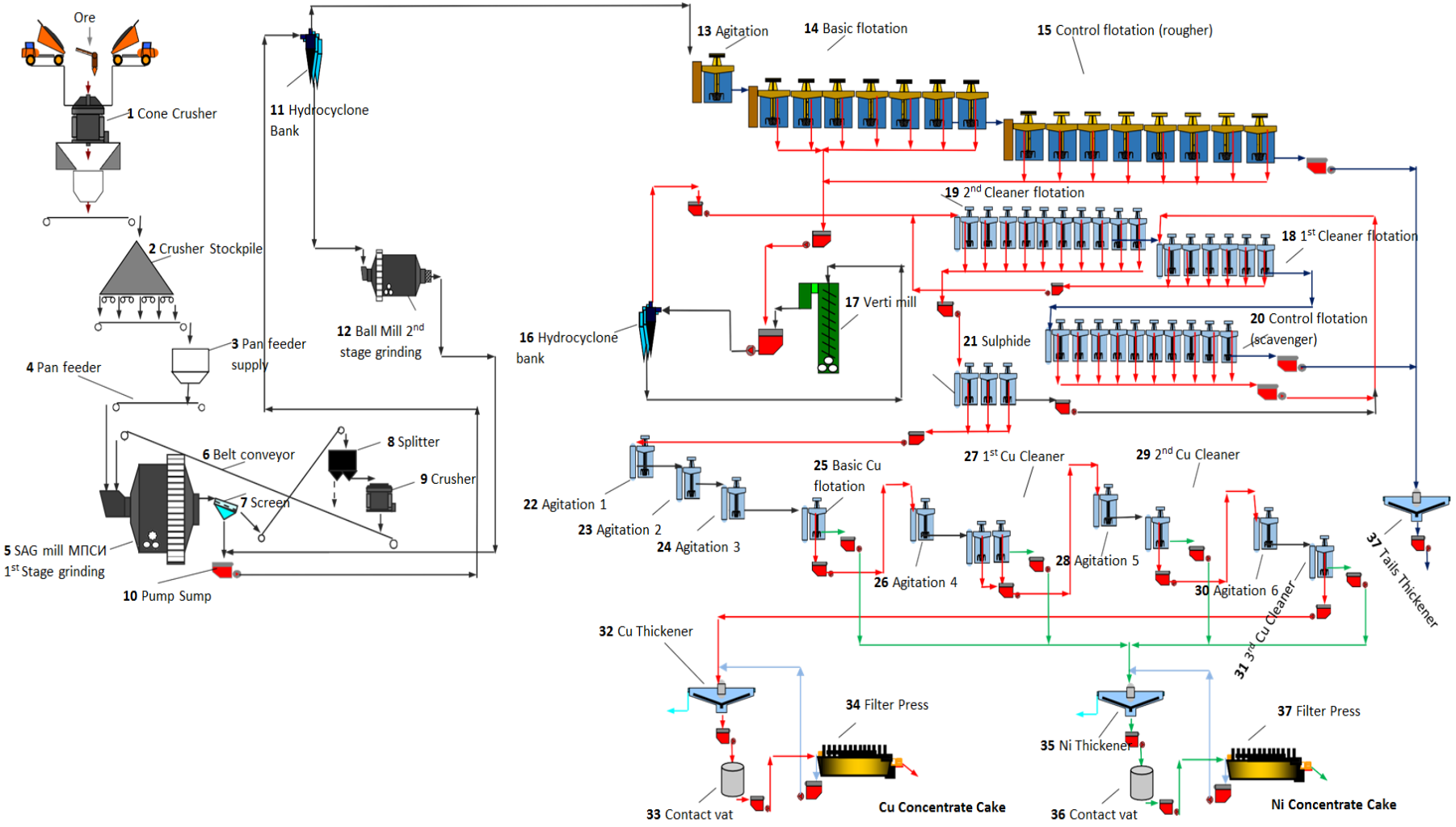
Global Balance Statement – Russian Classification System

Cutoff Grade Ni%	Total Reserve Balance, t	Content, %				Content, g/t				Reserves, t				Reserves, kg			
		Ni	Cu	Co	S	Au	Ag	Pt	Pd	Ni	Cu	Co	S	Au	Ag	Pt	Pd
0.1	323,106,429	0.50	0.15	0.011	1.13	0.05	0.76	0.12	0.13	1,614,441	476,217	35,862	3,654,728	14,756	244,815	38,566	41,880
0.2	215,726,620	0.67	0.19	0.014	1.47	0.05	0.95	0.15	0.15	1,445,430	405,707	30,068	3,177,608	11,303	205,076	31,287	32,483
0.3	176,311,355	0.75	0.21	0.015	1.63	0.06	1.01	0.15	0.16	1,324,006	365,029	26,721	2,872,912	10,036	178,695	26,629	28,577
0.4	150,635,712	0.81	0.22	0.016	1.73	0.06	1.07	0.18	0.19	1,215,081	328,529	24,431	2,609,801	9,559	161,413	26,372	28,646
0.6	104,375,020	0.93	0.24	0.018	1.98	0.06	1.23	0.16	0.18	970,760	249,273	19,274	2,063,726	6,146	128,340	17,003	18,230
0.8	60,052,663	1.05	0.26	0.02	2.22	0.06	1.30	0.16	0.18	629,243	155,020	12,121	1,336,080	3,641	77,360	10,020	11,007

Global Balance Statement By Deposit – Russian Classification System

Cutoff Grade Ni%	Deposit	Total Reserve Balance, t	Content, %				Content, g/t				Reserves, t				Reserves, kg			
			Ni	Cu	Co	S	Au	Ag	Pt	Pd	Ni	Cu	Co	S	Au	Ag	Pt	Pd
0.1	Kubuk	127,210,476	0.50	0.15	0.011	1.11	0.03	0.63	0.08	0.09	633,556	189,928	14,316	1,417,171	3,963	80,176	10,662	11,277
	Ikenskoe	76,398,138	0.53	0.15	0.011	1.17	0.05	0.60	0.14	0.16	403,045	117,839	8,383	895,030	3,548	45,289	10,796	12,313
	Triangle	5,691,427	0.67	0.19	0.014	1.37	0.05	1.05	0.14	0.16	38,212	11,010	801	77,820	300	5,958	793	919
	Cap	1,022,677	0.59	0.18	0.010	1.14	0.07	1.97	0.23	0.24	5,997	1,848	102	11,672	76	2,010	239	246
	Falcon	8,390,963	0.34	0.09	0.010	0.92	0.04	0.43	0.13	0.14	28,885	7,328	821	77,578	333	3,204	1,081	1,140
	Gorny	21,526,707	0.34	0.10	0.007	0.90	0.05	1.00	0.14	0.15	73,313	20,399	1,606	193,893	952	21,413	2,496	2,783
	MK_Flangovy	82,866,041	0.52	0.15	0.012	1.19	0.07	1.05	0.15	0.15	431,433	127,865	9,833	981,564	5,585	86,766	12,500	12,511
0.1		323,106,429	0.50	0.15	0.011	1.13	0.05	0.76	0.12	0.13	1,614,441	476,217	35,862	3,654,728	14,756	244,815	38,566	4,188
0.2	Kubuk	88,369,195	0.66	0.19	0.014	1.44	0.04	0.81	0.11	0.12	579,644	165,415	12,573	1,260,733	3,631	70,866	9,862	10,453
	Ikenskoe	50,281,249	0.71	0.20	0.013	1.53	0.06	0.76	0.18	0.20	354,250	98,703	6,809	768,737	2,901	38,281	8,856	10,180
	Triangle	4,605,296	0.80	0.23	0.017	1.59	0.06	1.09	0.16	0.19	36,906	10,381	760	73,302	257	5,034	728	853
	Cap	874,898	0.65	0.20	0.011	1.26	0.09	1.97	0.25	0.27	5,664	1,741	96	11,065	74	1,723	219	233
	Falcon	4,052,622	0.53	0.12	0.012	1.30	0.05		0.17	0.19	21,324	5,019	498	52,637	184		696	755
	Gorny	12,597,542	0.41	0.11	0.009	1.01	0.05	1.02	0.12	0.13	51,597	13,489	1,108	127,125	568	12,897	1,290	1,454
	MK_Flangovy	54,945,819	0.72	0.20	0.015	1.61	0.07	1.61	0.18	0.16	396,045	110,958	8,225	884,011	3,689	76,275	9,637	8,557
0.2		215,726,620	0.67	0.19	0.014	1.47	0.05	0.95	0.15	0.15	1,445,430	405,707	30,068	3,177,608	11,303	205,076	31,287	32,483
0.3	Kubuk	74,289,006	0.72	0.20	0.015	1.55	0.04	0.86	0.12	0.13	533,883	148,793	11,278	1,148,407	3,271	63,833	8,705	9,279
	Ikenskoe	42,372,272	0.79	0.22	0.015	1.69	0.06	0.82	0.19	0.22	333,905	90,913	6,190	717,644	2,580	34,534	8,037	9,277
	Triangle	4,135,176	0.85	0.24	0.017	1.69	0.06	1.24	0.17	0.19	35,169	9,830	705	69,768	247	4,583	682	793
	Cap	710,233	0.73	0.22	0.012	1.47	0.10	1.93	0.27	0.29	5,208	1,540	84	10,466	68	1,374	193	205
	Falcon	2,984,280	0.62	0.14	0.013	1.56	0.05		0.19	0.22	18,506	4,188	399	46,424	134		570	573
	Gorny	5,222,836	0.51	0.14	0.010	1.22	0.08	0.90	0.19	0.22	26,799	7,468	500	63,592	431	4,681	1,014	1,125
	MK_Flangovy	46,597,553	0.80	0.22	0.016	1.75	0.07	1.50	0.16	0.16	370,537	102,298	7,565	816,612	3,306	69,691	7,428	7,326
0.3		176,311,355	0.75	0.21	0.015	1.63	0.06	1.01	0.15	0.16	1,324,006	365,029	26,721	2,872,912	10,036	178,695	26,629	28,577
0.4	Kubuk	64,654,829	0.76	0.21	0.016	1.62	0.05	0.89	0.12	0.13	491,200	133,434	10,359	1,048,067	2,893	57,978	7,706	8,256
	Ikenskoe	35,740,989	0.85	0.23	0.016	1.82	0.06	0.90	0.19	0.23	305,138	82,377	5,719	650,229	2,266	31,241	6,940	8,175
	Triangle	3,847,619	0.89	0.24	0.017	1.69	0.06	1.43	0.17	0.20	34,122	9,357	652	64,985	237	4,305	655	752
	Cap	587,094	0.80	0.23	0.013	1.64	0.11	1.90	0.29	0.32	4,694	1,367	79	9,608	62	1,113	172	187
	Falcon	1,646,867	0.81	0.16	0.017	2.02	0.05		0.22	0.24	13,356	2,668	280	33,267	889		590	4,018
	Gorny	2,356,329	0.67	0.17	0.012	1.40	0.09	0.58	0.26	0.25	15,868	3,998	276	33,001	203	1,375	618	595
	MK_Flangovy	41,801,986	0.84	0.23	0.017	1.84	0.07	1.57	0.16	0.16	350,704	95,330	7,067	770,645	3,008	65,402	6,690	6,663
0.4		150,635,712	0.81	0.22	0.016	1.73	0.06	1.07	0.18	0.19	1,215,081	328,529	24,431	2,609,801	9,559	161,413	26,372	28,646
0.6	Kubuk	41,419,051	0.88	0.23	0.018	1.88	0.04	0.94	0.12	0.13	364,299	93,985	7,648	779,526	1,893	39,058	5,058	5,395
	Ikenskoe	24,506,580	1.00	0.25	0.018	2.08	0.07	0.97	0.21	0.25	244,943	61,149	4,488	510,679	1,637	23,382	5,033	6,030
	Triangle	3,243,342	0.97	0.27	0.019	1.94	0.07	1.08	0.18	0.21	31,474	8,587	615	62,920	215	3,243	595	664
	Cap	46,312	0.93	0.27	0.014	1.94	0.11	1.91	0.33	0.34	3,220	935	49	6,730	39	661	114	117
	Falcon	422,754	0.81	0.24	0.018	2.09	0.10	0.00	0.35	0.32	3,414	1,020	76	8,845	41		146	135
	Gorny	719,739	0.87	0.20	0.014	1.74	0.11	0.74	0.22	0.21	6,255	1,447	101	12,502	80	529	156	153
	MK_Flangovy	33,717,243	0.94	0.24	0.019	2.02	0.07	1.82	0.18	0.17	317,157	82,151	6,298	682,523	2,241	61,468	5,902	5,735
0.6		104,375,020	0.93	0.24	0.018	1.98	0.06	1.23	0.16	0.18	970,760	249,273	19,274	2,063,726	6,146	128,340	17,003	18,230
0.8	Kubuk	23,036,719	1.00	0.24	0.020	2.14	0.05	0.99	0.13	0.14	229,842	56,190	4,517	492,380	1,157	22,699	3,110	3,330
	Ikenskoe	16,265,049	1.13	0.27	0.020	2.34	0.07	1.03	0.21	0.27	183,384	43,298	3,325	381,888	1,066	16,418	3,336	4,188
	Triangle	2,579,545	1.08	0.27	0.020	2.12	0.07	1.24	0.19	0.19	27,782	7,065	516	54,745	172	3,037	480	488
	Cap	116,714	1.13	0.30	0.016	2.37	0.12	1.50	0.37	0.41	1,321	351	19	2,763	14	76	43	47
	Falcon																	
	Gorny																	
	MK_Flangovy	18,054,636	1.04	0.27	0.021	2.24	0.07	1.95	0.17	0.16	186,913	48,115	3,744	404,304	1,233	35,130	3,052	2,954
0.8		60,052,663	1.05	0.26	0.02	2.22	0.06	1.30	0.16	0.18	629,243	155,020	12,121	1,336,080	3,641	77,360	10,020	11,007

Gipronickel Institute Process Flowsheet
Individual Nickel and Copper Concentrates



Gipronickel Institute - Process Plant Equipment List

№	Equipment name	Quantity
1	KKD 1200/150 (Sandvik. Metso. FLSmidth. Krupp or similar)	1
2	SKDR	1
3	Crushed ore receiving hopper	
4	Apron feeder	
5	Semi-autogenous grinding mill MPSI 9500x3800 with N = 6 MW	2
6	Belt conveyor	
7	Screen GIS 51 (10x10 or 10x25 mm. S = 8.14 m2)	4 (2 + 2 in reserve)
8	Divider	2
9	Crusher for crushing KMD-1750T-2D	2
10	Pump sump	
11	Hydrocyclone GC-500 1 stage	16 (10 + 6 in reserve)
12	Ball mill MShTs 6400 × 10500 with N = 8 MW	2
13	Contact vat TankCell TC130XHD (Agitation)	2
14	Flotation machines TankCell TC100 (Basic flotation)	14
15	TankCell TC100 Flotation Machines (Test Flotation)	16
16	Hydrocyclone GC-150 2 stage	50 (40 + 10 in reserve)
17	Vertical mill VXP2500 (or Vertimill 1250.with N = 0.7-0.9 MW)	2
18	Flotation machines TankCell TC300 (I collective cleaning)	12
19	Flotation machines TankCell TC100 (II collective cleaning)	20
20	Flotation machines TankCell TC100 (Control collective cleaning)	20
21	Flotation machines TankCell TC50 (Sulfide flotation)	6
22	Contact vat TankCell TC30 (Campaign 1)	2
23	Contact vat TankCell TC30 (Agitation 2)	2
24	Contact vat TankCell TC20 (Agitation 3)	2
25	Flotation machines TankCell TC30 (Basic Cu flotation)	2
26	Contact vat TankCell TC10 (Campaign 4)	2
27	Flotation machines TankCell TC10 (I Cu re-cleaning)	4
28	Contact vat TankCell TC5 (Agitation 5)	2
29	Flotation machines TankCell TC10 (II Cu re-cleaning)	2
30	Contact vat TankCell TC1.6 (Agitation 6)	2
31	Flotation machines TankCell TC5 (III Cu re-cleaning)	2
32	Radial thickener D-9 m (Cu thickener)	2
33	Contact vat	2
34	Filter press Larox PF16 - 16 m2	4
35	Radial thickener D-15 m (Ni thickener)	2
36	Contact vat	2
37	Filter press Larox PP-M30 44 m2	6
38	Radial thickener D-25 m (tailings)	2

Gipronickel Institute Composition of Concentrate Products Based on Selected Flowsheet (6.0 mtpa feed)

Composition of 10 t Bulk Sample (% or g/t)							
Ni (%)	Cu (%)	Co (%)	Pt (g/t)	Pd (g/t)	Au (g/t)	Ag (g/t)	S (%)
0.801	0.210	0.0185	0.130	0.144	0.049	0.878	1.63
Fe (%)	CaO (%)	MgO (%)	Al2O3 (%)	SiO2 (%)	Na2O (%)	K2O (%)	P2O5 (%)
9.35	5.67	20.0	6.57	42.5	1.14	0.365	0.092
Cr2O3 (%)	Zn(%)	As	nnn	Re	Bi	Te	Pb
0.244	0.0063	<0.01	4.62	-	0.19	1.5	9.9
Se	Ir	Ru	Rh				
13.3	0.026	0.043	0.0123				

8.82% Of Mill Feed

Ni Recovery: 79.46%

Cu Recovery: 82.88%

Intermediate Sulphide Concentrate – Major Components							
Ni (%)	Cu (%)	Co (%)	Pt (g/t)	Pd (g/t)	Au (g/t)	Ag (g/t)	S (%)
7.28	2.02	0.135	0.673	0.981	0.363	5.47	13.10
Fe (%)	CaO (%)	MgO (%)	Al2O3 (%)	SiO2 (%)	Na2O (%)	K2O (%)	P2O5 (%)
19.7	2.04	15.8	3.2	28.4	0.32	0.18	0.04
Cr2O3 (%)	Zn(%)	As	Mn	Re	Bi	Te	Pb
0.151	0.0202	0.0166	0.066	0.079	0.00005	0.0006	0.0041
Se	Cd	Ru	Rh	Sn	Sb	Hg	Mo
0.0060	0.00018	0.276	0.079	0.00014	0.000014	0.000017	0.00067

6.14% Of Mill Feed

Nickel Concentrate										
%										
Ni	S	Co	Cu	Fe	Zn	Pb	Mn	Cd	As	
10.37	16.82	0.17	0.96	22.5	0.024	0.0053	0.158	0.00018	0.036	
Sn	Sb	P	Bi	Co	MgO	SiO2	Al2O3	CaO	Cr2O3	
0.00011	0.00027	<0.020	0.00012	0.171	15.5	25.7	2.42	1.18	0.070	
g/t										
Hg	Se	Te	Mo	Pt	Pd	Rh	Ru	Ir	Au	Ag
0.67	63	8.5	4.5	1.04	1.20	0.084	0.277	0.164	0.329	6.78

Revenue Generation From Offtake

Deduction for Penalties

0.5% Of Mill Feed

Copper Concentrate									
%									
Ni	Cu	S	Zn	Pb	Mn	As	P	MgO	
0.695	23.40	25.1	0.053	0.0037	0.019	<0.01	<0.01	7.60	
SiO2	Al2O3	CaO	Cr2O3	Fe	Co	NiS	C	Fe2+	
12.7	0.70	0.382	0.035	25.3	0.014	0.6	0.106	2.23	
g/t									
Cd	Bi	Sn	Sb	Se	Te	Hg	Mo	Pt	Pd
7.1	0.97	2.3	0.93	72	11.3	0.13	1.3	0.719	1.08
Ru	Ir	Au	Ag	Rh					
0.108	0.135	1.87	21.6	.058					

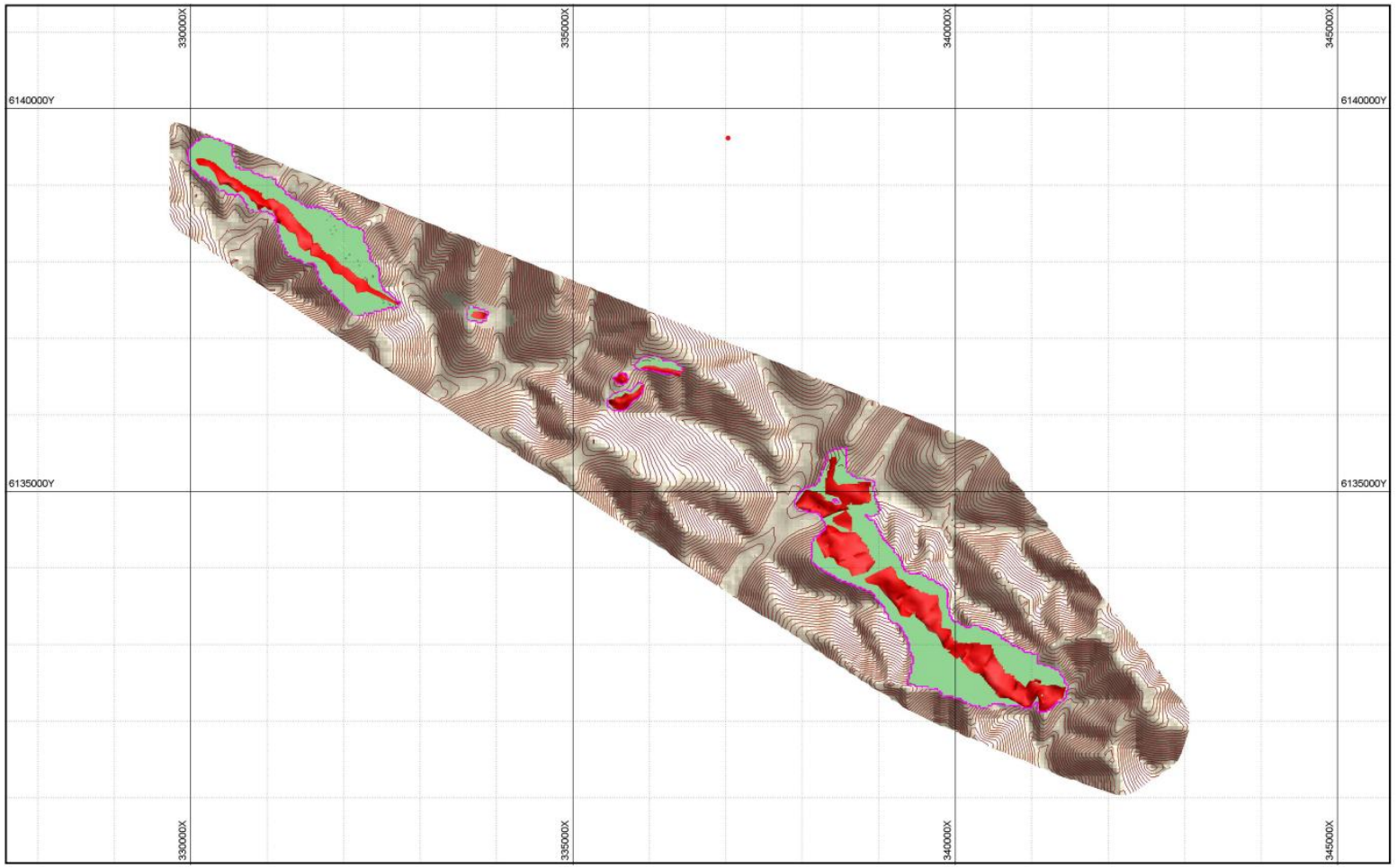
Gipronickel Concentrate Metal Balance

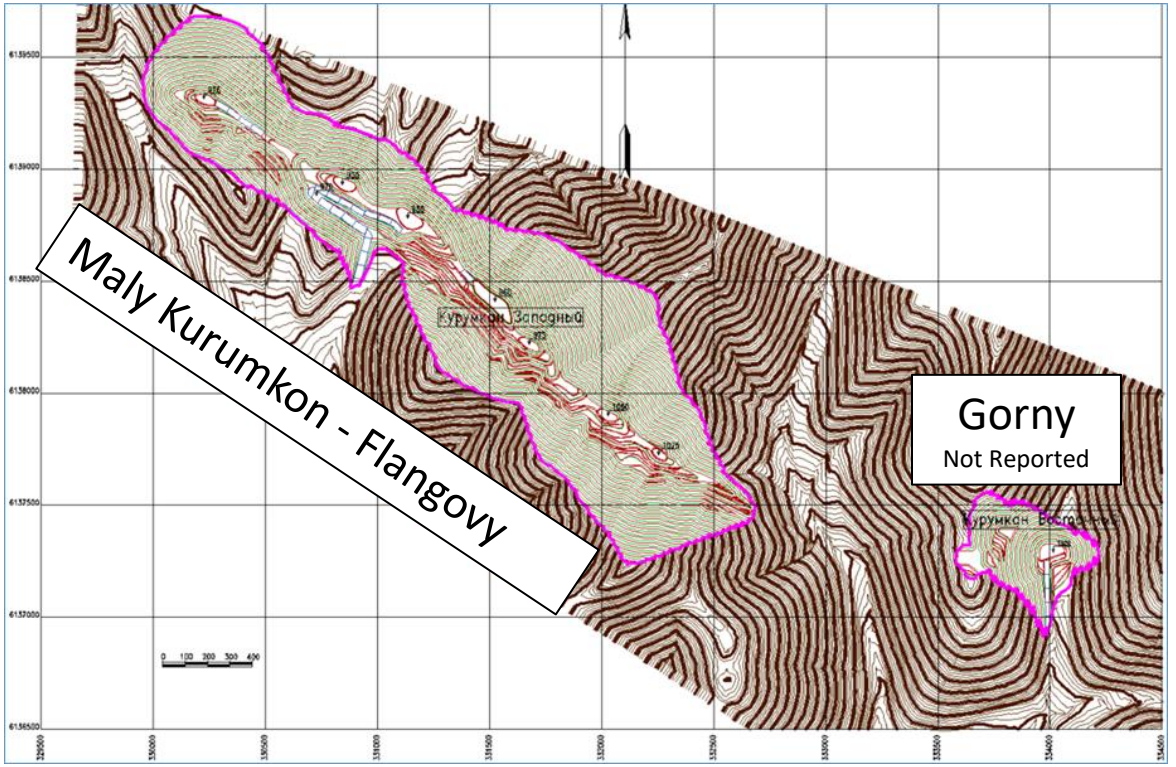
Concentrate	Mass Pull	Concentrate Tonnes	Ni (%)	Cu (%)	Ni Recovery (%)	Cu Recovery (%)
Nickel	6.14%	368,400	10.37	0.96	78.54	27.63
Copper	0.50%	30,000	0.695	23.40	0.43	54.93

Gipronickel Enhancement to the 2019 PFS
Annual Basis – 6.0 mtpa Design

Parameter	2019 PFS	TEO Results	
		Nickel Con	Copper Con
Annual Payable Inventory	Nickel (24,306 t)	Nickel (27,124 t) Platinum (142 oz) Palladium (711 oz)	Copper (6,704 t) Palladium (23 oz) Gold (755 oz)
Deductions Nickel Al2O3 MgO Silica	 - - $49.60 / t -	 - - $37.50 -	 $7.00 / t $2.00 / t $4.00 / t $4.05 / t
Concentrate Shipping	358,000 DMT	368,400 DMT	30,000 DMT

Oreall
0.4% Ni Open Pit Limits – Mining Licence Area

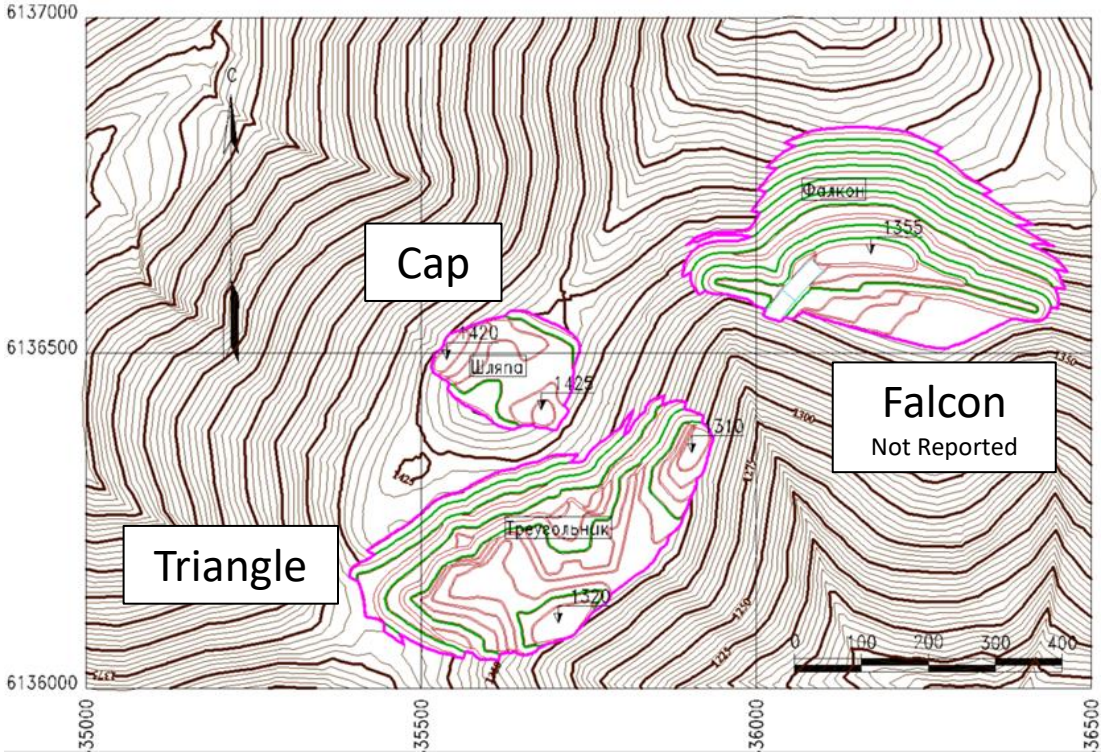




Oreall
Open Pit Limits
Maly Kurumkon and Gorny

Characteristic	MKF
Max Depth (m)	408
Pit Surface Area (m2)	1,927,000
Pit Bottom Area (m2)	11,100
Lowest Elevation (RL)	930
Length (m)	3,334
Width (m)	759
Overall Pit Slope (Degrees)	38 to 57

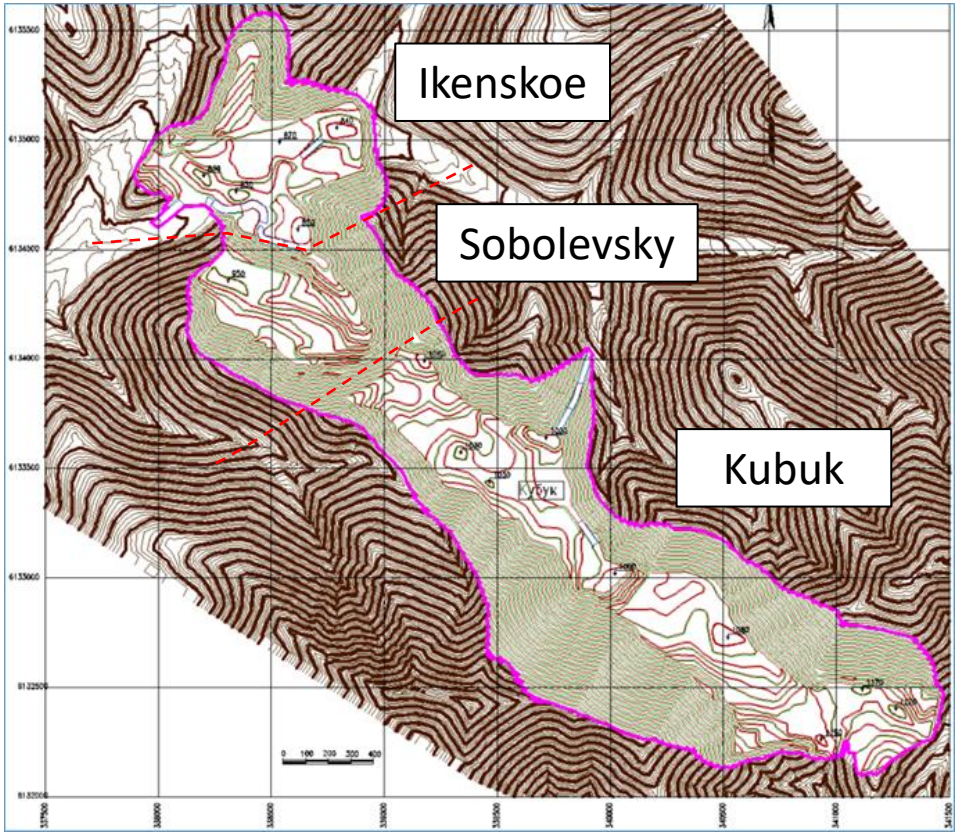
Cutoff Grade Ni%	Total Material, m³	Overburden m³	Ore, m³	Ore, t	Ni, %	Ni, t	Cu, %	Cu, t	AU, g/t	AU, kg	Pt, g/t	Pt, kg	Pd, g/t	Pd, kg	Strip Ratio
Maly Kurumkon - Flangovy															
0.1	254,622,290	230,797,419	23,824,871	71,712,862	0.52	375,265	0.15	111,035	0.04	2,974	0.14	10,207	0.14	10,244	3.2
0.2	259,173,584	243,029,077	16,144,507	48,594,966	0.74	358,281	0.21	100,032	0.07	3,452	0.17	8,245	0.15	7,312	5.0
0.3	250,574,345	237,033,150	13,541,195	40,758,997	0.80	325,410	0.22	90,051	0.07	2,885	0.15	6,236	0.15	6,178	5.8
0.4	251,198,947	238,497,489	12,701,458	38,231,389	0.82	312,274	0.22	84,939	0.07	2,743	0.16	6,005	0.16	6,000	6.2



Oreall
Open Pit Limits
Vodorazdelny Area

Characteristic	Cap	Triangle
Max Depth (m)	30	65
Pit Surface Area (m2)	28,000	114,400
Pit Bottom Area (m2)	1,200	1,600
Lowest Elevation (RL)	1,420	1,310
Length (m)	214	585
Width (m)	167	246
Overall Pit Slope (Degrees)	38 to 57	38 t0 57

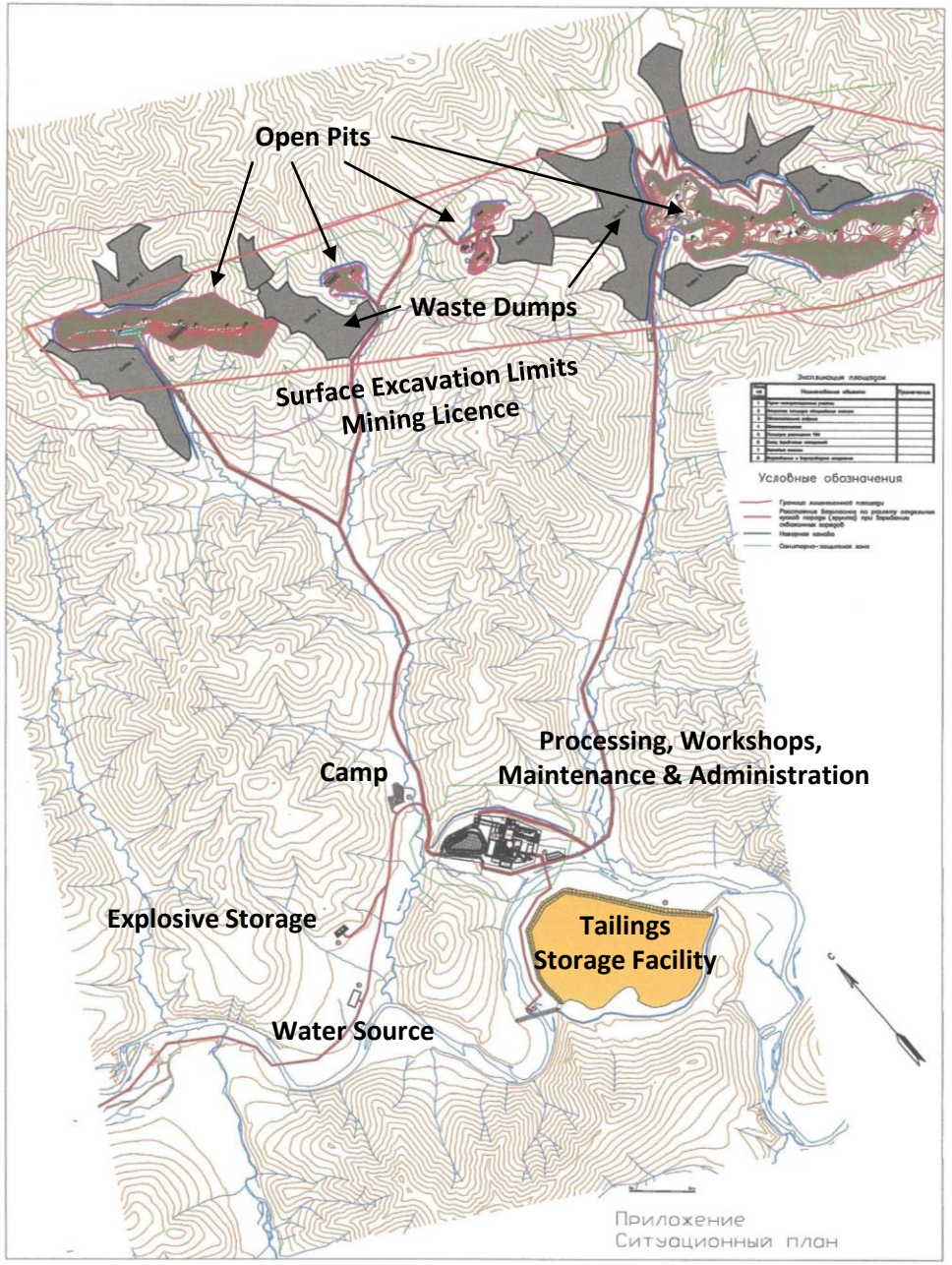
Cutoff Grade Ni%	Total Material, m³	Overburden, m³	Ore, m³	Ore, t	Ni, %	Ni, t	Cu, %	Cu, t	AU, g/t	AU, kg	Pt, g/t	Pt, kg	Pd, g/t	Pd, kg	Strip Ratio
Vodorazdelny - Cap															
0.1	404,718	122,381	282,338	852,660	0.60	5,138	0.17	1,484	0.07	63	0.23	200	0.24	205	0.1
0.2	404,882	144,112	260,770	787,527	0.60	5,112	0.19	1,490	0.09	67	0.25	197	0.27	209	0.2
0.3	363,235	145,147	218,088	658,625	0.70	4,775	0.21	1,366	0.01	7	0.03	18	0.03	19	0.2
0.4	314,998	136,156	178,842	540,102	0.80	4,259	0.23	1,214	0.11	57	0.29	158	0.32	172	0.3
Vodorazdelny - Triangle															
0.1	3,152,432	1,338,652	1,813,779	5,477,614	0.70	38,569	0.20	11,016	0.05	287	0.14	761	0.16	883	0.2
0.2	3,110,626	1,597,171	1,513,456	4,570,636	0.80	36,487	0.23	10,303	0.06	254	0.16	724	0.19	845	0.3
0.3	3,021,074	1,647,752	1,373,322	4,147,431	0.80	35,169	0.24	9,930	0.06	233	0.15	627	0.17	708	0.4
0.4	2,862,084	1,556,408	1,305,675	3,943,140	0.90	34,497	0.24	9,579	0.06	226	0.15	604	0.16	611	0.4



Oreall
Open Pit Limits
Ikenskoe, Sobolevsky and Kubuk Area

Characteristic	Kubuk
Max Depth (m)	405
Pit Surface Area (m2)	3,641,400
Pit Bottom Area (m2)	8,000
Lowest Elevation (RL)	820
Length (m)	4,460
Width (m)	870
Overall Pit Slope (Degrees)	38 to 57

Cutoff Grade (Ni%)	Total Material, m^3	Overburden m^3	Ore m^3	Ore t	Ni, %	Ni, t	Cu, %	Cu, t	AU, g/t	AU, kg	Pt, g/t	Pt, kg	Pd, g/t	Pd, kg	Strip Ratio
0.1	540,305,541	484,530,906	55,774,635	166,044,338	0.55	907,757	0.16	262,397	0.04	6,084	0.10	17,250	0.11	18,580	2.9
0.2	559,756,214	515,357,516	44,398,698	132,152,074	0.65	853,598	0.18	242,306	0.05	5,921	0.13	16,824	0.14	18,102	3.9
0.3	564,662,367	524,258,486	40,403,881	120,286,936	0.69	826,125	0.19	230,354	0.05	5,606	0.13	15,930	0.14	17,125	4.4
0.4	546,464,234	510,715,415	35,748,819	106,367,304	0.72	769,269	0.20	211,805	0.05	5,045	0.14	14,350	0.15	15,447	4.8



Mine Site Facility Layout