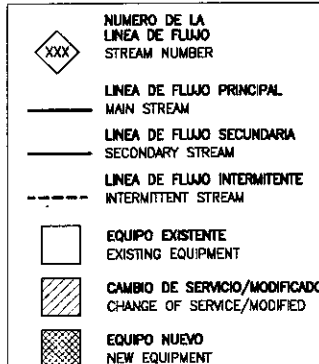


Stream # / Numero de la Linea de Flujo	714	810	814	817	820	821	822	823	824	825	826	827	831	840	841	842	843	844	845	860	861	862	863	866	867	870	871	872	873	
Annualized Average Conditions / Condiciones Promedias																														
Temperature / Temperatura (°C)	25	25	80	400	25	25	25	400	80	40	80	400	25	480	25	25	500	350	350	27	45	27	31	27	34	25	25	25	25	
Mass Flow Liquid / Flujo de Masa - Liquido (t/h)														7.11						21.1	21.1	91.3	91.3	112.4	112.4					
Mass Flow Solids / Flujo de Masa - Solidos (t/h)	20.0	11.6	0.003	0.34	7.18	0.004		0.21	0.003	0.003		0.55	1.28		0.04	0.02		0.14	7.02											
Mass Flow Total / Flujo de Masa Total (t/h)	20.0	11.6	0.003	0.34	7.18	0.004		0.21	0.003	0.003		0.55	1.28	7.11	0.04	0.02	7.17	0.14	7.02	21.1	21.1	91.3	91.3	112.4	112.4					
Volume Flow / Flujo de Volumen (m3/h)	2.82	1.63	13.365	0.07	1.01	0.002		0.04	28.000	0.001	41.365	0.11	0.18	1.08	0.01	0.00	1.08	0.02	0.99	21.1	21.1	91.3	91.3	112.4	112.4					
Specific Gravity / Gravedad Especifica	7.10	7.10		5.10	7.10	1.50		5.10		5.10		5.10	7.10	6.80	5.10	11.3	6.80	7.10	7.10	1.00	1.00	1.00	1.00	1.00	1.00					
Operating Conditions / Condiciones de Operacion																														
Operation Days per Year / Horas de Operaciones por Año	365	341	365	341	365	365	365	365	365	365	365	365	365	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	341	
Operating Hours per Day / Horas de Operacion por Dia	24	19	24	19	19	19	24	19	24	24	24	19	24	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	
Availability / Disponibilidad (%)	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	99%	93%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	95%	
Mass Flow Rate / Flujo de Masa (t/h)	20.2	15.8		0.46	9.16	0.005		0.27		0.003		0.70	1.37	10.1	0.05	0.03	10.2	0.20	9.74	30.0	30.0	130.0	130.0	160.0	160.0					
Volume Flow / Flujo de Volumen (m3/h)	2.85	2.23		13.500	0.09	1.29	0.003	122.500	0.05	28.000		50.000	0.14	0.19	1.53	0.01	0.00	1.55	0.03	1.37	30.0	30.0	130.0	130.0	160.0	160.0	51.0	432.0	216.0	699.0
Design Conditions / Condiciones del Diseño																														
Temperature / Temperatura (°C)	30	30	100	450	30	30	30	450	100	80	100	450	30	500	30	30	525	420	375	27	50	27	35	27	38	35	35	35	35	
Design Factor / Factor de Diseño	1.10	1.01	1.11	1.20	2.95	2.95	1.00	1.20	1.00	1.25	1.00	1.20	1.15	1.98	3.95	7.90	1.96	1.25	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Mass Flow Rate / Flujo de Masa (t/h)	22.3	16.0		0.55	27.0	0.014		0.32		0.004		0.84	1.47	20.0	0.20	0.20	20.0	0.26	10.0	30.0	30.0	130.0	130.0	160.0	160.0					
Volume Flow / Flujo de Volumen (m3/h)	3.14	2.25		15.000	0.11	3.80	0.009	122.500	0.06	28.000	0.001	50.000	0.16	0.21	3.03	0.04	0.02	3.03	0.04	1.41	30.0	30.0	130.0	130.0	160.0	160.0	51.0	432.0	216.0	699.0



160K PROJECT AREA 81 Zn MELTING & CASTING, JUMBO CASTING PROCESS FLOW DIAGRAM										81-01-2002		REV. 0
amerc Votorantim Metais Votorantim Metais - Cajamarquilla S.A.										APROBACION-CLIENTE 22/09/06		PLANO-CLIENTE
GERENTE PROYECTO GERENTE INGENIERIA JEFE DISCIPLINA CHEQUEO DISENO TH 27 JAN 06										PLANO-CLIENTE		PLANO N°
0 ISSUED FOR CONSTRUCTION - PREVIOUSLY ISSUED AS 81-01-1002										152505		ESCALA NTS
REV. DESCRIPCION										FECHA 06 SEP 06		REV. 0