

F62101 TO 401
FOUR DE SYNTHESE

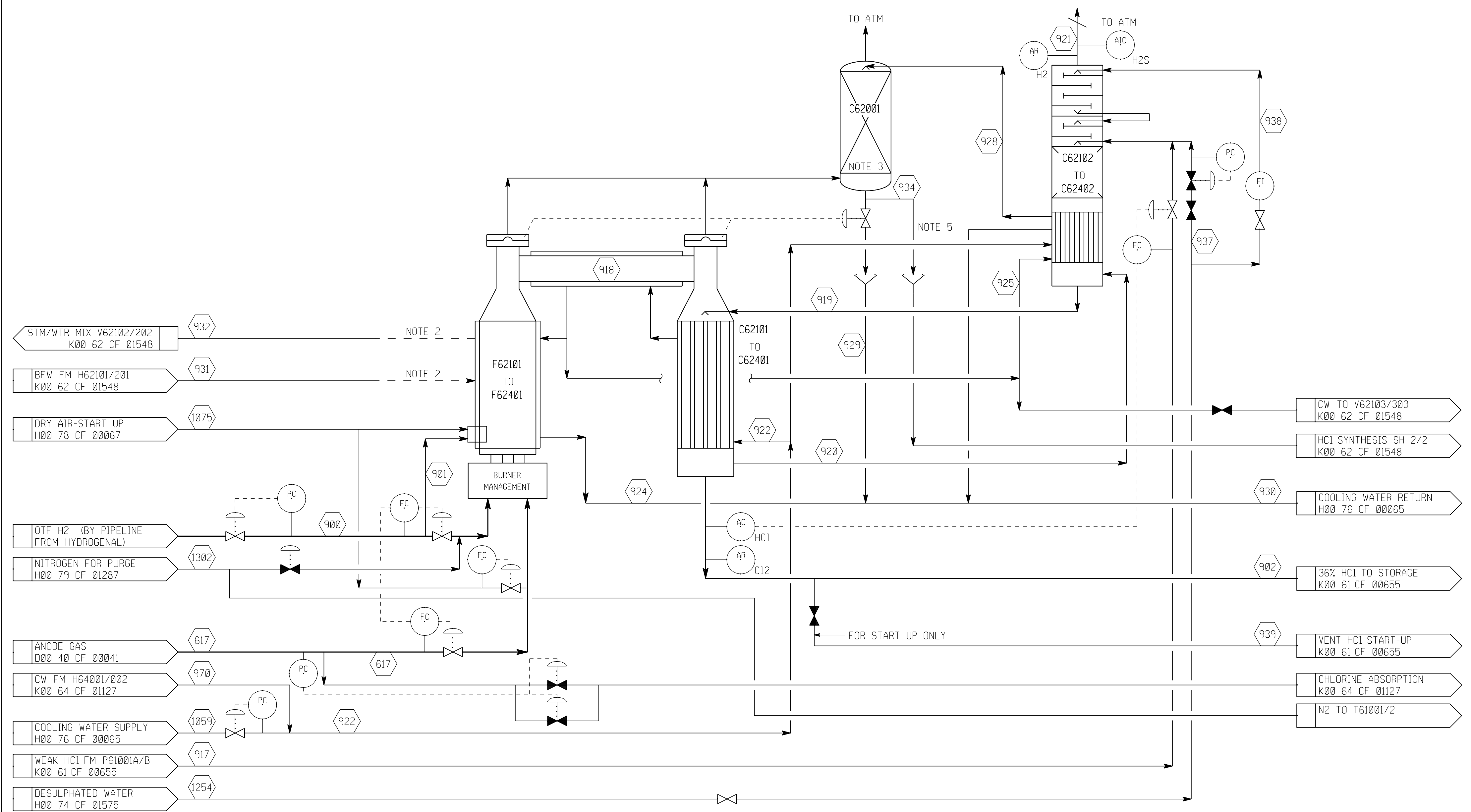
C62101 TO 401
REFROIDISSEUR/
ABSORBEURS

C62001
EPURATEUR DU
DISQUE DE RUPTURE

C62102 TO 402
EPURATEURS DE
GAZ RESIDUEL

HCl COMBUSTORS
COOLER ABSORBERS
RD VENT SCRUBBER
TAIL SCRUBBERS

- NOTES:
- L'USINE EST CONSISTE DE 4 TRAINS EN PARALLELES (INCLUANT UN TRAIN EN ARRET) POUR UNE PRODUCTION DE 45kt DE MAGNESIUM
 - DEUX DES UNITES D'HCl SONT EQUIPEES D'UN GENERATEUR DE VAPEUR BASSE PRESSION COMPRENANT LES EQUIPEMENTS SUPPLEMENTAIRES TEL QUE MONTRES SUR LE DESSIN L227-MO-K00-62-CF-01548.
 - UN EPURATEUR COMMUN POUR LES QUATRES DISQUES DE RUPTURE.
 - LE DEBIT D'EAU DESULPHATE DE CONCEPTION EST BASE SUR L'EAU D'ADSORPTION TOTALE REQUISE LORSQU'AUCUN ACIDE FAIBLE N'EST DISPONIBLE.
 - LE RETOUR D'EAU DE REFROIDISSEMENT EST DETOURNE AUTOMATIQUEMENT VERS LES TRAITEMENT D'EAU LOSQUE LES DISQUES SE ROMPENT.
 - FERMETURE A DISTANCE DU BATIMENT KE LORS DE L'OPERATION D'UNE DESTRUCTION.
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 - BILAN DE MASSE BASE SUR UNE OPERATION DE 8500h/an.
 - THE HCl PLANT CONSISTS OF FOUR PARALLEL TRAINS (INCL. ONE SPARE TRAIN) FOR 45000t/yr MAGNESIUM PRODUCTION.
TWO OF THE HCl TRAINS ARE EQUIPPED FOR LP STEAM GENERATION WITH ADDITIONAL EQUIPMENT AS SHOWN (SEE HCl SYNTHESIS SH 2 OF 2). THE COMBUSTION CHAMBERS FOR THESE TWO TRAINS CONSIST OF A STEEL TUBULAR SECTION, REMAINING EQUIPMENT ARE THE SAME FOR BOTH STEAM AND NON-STEAM UNITS.
 - A COMMON RD VENT SCRUBBER SYSTEM IS USED FOR ALL FOUR HCl UNITS.
 - DESIGN DESULPHATED WATER FLOW TO TAIL SCRUBBER IS BASED ON SUPPLYING ALL OF THE ABSORPTION WATER IN AN EMERGENCY WHEN NO DILUTE ACID IS AVAILABLE FROM THE DISSOLVING PLANT.
 - RETURN COOLING WATER FROM RD VENT SCRUBBER IS DIVERTED TO WASTE WATER TREATMENT PLANT WHEN RUPTURE DISC BLOWS (AUTOMATICALLY ACTUATED).
 - REMOTE SHUT-OFF FROM KE BUILDING WHEN BATCH DESTRUCTION IS IN PROGRESS.
 -
 - MASS BALANCE BASED ON ANNUAL OPERATION OF 8500h/year.



PRODUCTION TOTALE = 4ikt

No REV.	DATE	DESCRIPTION	DESISSE	VERIFIE	CIV/INF	IND	MECANIQUE	ELECTRIQUE	PROCEDE	T & C	RESP. DISC.	RESP. PROD.	HTL	HTA	JEF	TR	PLA
06 F	98-03-19	MISE A JOUR GENERALE (01 00-273)	RA														
05 F	89-10-16	AS BUILT	JAN	KVB													
04 B	88-04-07	INCORPORATED CLIENT'S COMMENTS															
03 E	88-03-21	APPROVED FOR CONSTRUCTION	KVB														
02 B	87-10-29	INCORPORATED CLIENT'S COMMENTS	RA														

CE DESSIN EST LA PROPRIETE DE NORSK HYDRO CANADA INC. ET DOIT ETRE RETOURNE AVEC LA SOUMISSION POUR LE MATERIEL ET L'EQUIPEMENT, OU AVEC LA LIVRAISON OU L'INSTALLATION SUBSEQUENTE. L'UTILISATION NON-AUTORISEE DE CE DESSIN, LA REVELATION DE L'INFORMATION TECHNIQUE DEMONTREE, OU LA REPRODUCTION TOTALE OU EN PARTIE UTILISEE PAR DES TIERS EST DEFENDUE A MOINS D'EN AVOIR OBTENU AU PREALABLE, L'AUTORISATION DE NORSK HYDRO CANADA INC. TOUTES REPRODUCTIONS AUTORISEES DOIVENT PORTER LE CACHET DE L'AUTORISATION

DESSIN PAR: JOSE L. ESCALEIRA DATE: 86-12-21	No PROJET: ----
VERIFIE PAR: JEAN-YVES LABERGE DATE: 88-03-22	ECHELLE: NULLE
RESP. DISC.: M. SUBRAHMANYAM DATE: 88-03-24	REPRESENTATION
RESP. PROJ.: ---- DATE: ----	



UNITE DE SYNTHESE DE HCl | HCl SYNTHESIS
SCHEMA DE PRINCIPE | PFD
FEUILLE 1 DE 2 | SHEET 1 OF 2

NHCl
No DESSIN: L227 MO K00 62 CF 01128 | REV. No: 06 F

STREAM NO.	8500h/y	617	900	901	902	917	918	919	920	921	922	924	925	928	929	930	931	932	934	937	938	939	970	1059	1075	1254	1302				
STREAM DESCRIPTION		ANODE GAS TO SYNTHESIS	H2 TO HYDRO-GENAL	H2 TO PILOT BURNER	HCl 36% TO STORAGE T61002	WEAK ACID TO C62102/40	HOT HCl TO C62104/40	WEAK ACID FROM C62102/40	HCl GAS TO C62102/40	VENT FROM C62102/40	COOLING WATER TO C62104/40	COOLING WATER FROM F62104/40	COOLING WATER TO C62102/40	COOLING WATER FROM C62102/40	COOLING WATER FROM C62001	COOLING WATER FROM KA	BFW TO F62101/40	BFW FROM F62101/40	DRAIN FROM C62001	DESULPH. WATER TO C62102/40	DESULPH. WATER TO C62102/40	WEAK HCl FROM C62101 (START-UP)	COOLING WATER FROM KA	COOLING WATER TO HCl UNITS	MP DRAY AIR TO HCl UNITS	DESULPH. WATER TO HCl UNITS	NITROGEN FOR PURGE				
MgCl2	kg/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Na2SO3	kg/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
NaOH	kg/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
NaOCl	kg/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
OTHER SALTS	kg/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
HCl	kg/h	35.63	-	-	25882.28	11346.49	14535.78	14980.44	3633.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
H2O	kg/h	-	-	-	46012.92	43964.41	89.75	46012.92	89.75	1376470.5	381563.55	183529.41	183529.41	183529.41	565092.96	187236.71	187236.71	183529.41	-	2048.51	338618	679200.95	697269.64	36.34	2048.51	-	-	-	-		
Air	kg/h	387.59	-	-	-	-	306.20	-	306.20	306.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3634.25	-	36.71	-	-		
MISCELLANEOUS	kg/h	18.04	-	-	-	-	-	-	19.35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Cl2	kg/h	14098.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
H2	kg/h	0.32	443.70	5.51	-	-	33.10	-	33.10	33.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TOT. Norm FLOW	kg/h	14540.48	443.70	5.51	71895.20	55310.90	14984.18	60993.36	4082.34	448.40	1376470.5	381563.55	183529.41	183529.41	183529.41	565092.96	187236.71	187236.71	183529.41	-	2048.51	41294.12	679200.95	697269.64	3670.59	2048.51	36.71	-	-		
TOT. VOL FLOW	m3/h	7423.89	5204.18	64.58	61.78	50.59	37985.03	55.39	3509.61	839.94	1380.45	384.55	184.32	184.51	184.51	569.03	216.39	18237.23	184.76	-	2.05	38.30	684.52	697.49	3255.88	2.05	32.06	-	-	-	
NORM GAS FLOW	Nm3/h	4792.24	4933.27	61.22	-	-	9668.37	-	2966.58	732.65	-	-	-	-	-	-	-	10320.98	-	-	-	-	-	-	2858.25	-	29.37	-	-	-	
DESIGN FLOW	kg/h	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TEMPERATURE	°C	150.00	15.00	15.00	50.00	35.35	800.00	60.00	50.00	40.00	25.00	40.00	29.85	33.20	33.20	37.79	204.00	204.00	37.00	-	25.00	42.00	40.00	10.32	38.00	25.00	25.00	-	-	-	
PRESSURE	BarA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DENSITY	kg/m3	1.96	0.09	0.09	1163.64	1093.27	0.39	1101.23	1.16	0.53	997.12	992.23	995.74	994.67	994.67	993.08	865.26	10.27	993.36	1.00	997.12	1078.16	992.23	999.69	1.13	997.12	1.15	-	-	-	
ENTHALPY	kJ/kg	15.08	-32.26	-32.26	14.06	7.36	162.12	23.07	5.86	8.34	0.00	14.88	4.81	8.13	8.13	12.69	182.10	177.59	11.90	-	0.00	13.21	14.88	-14.50	3.60	0.00	1.09	-	-	-	