


B

Appendix B – Pump Datasheets

DESCRIPTION		UNITS	DETAILS		REV
DATA TO SUPPLIER					1
No. of Units Required			2		3
Number operating Duty / standby			Duty	Standby	4
			1	1	5
Mechanical requirements					6
Maximum impeller tip speed		m/s	As per spec		7
Motor pump arrangement < or = to 355 kW, ZV style			ZV		8
Over 355KW side - side			No		9
Seal arrangement See Notes			Gland seals required		10
Variable speed INVERTER BY OTHERS		y/n	Yes		11
Discharge Nozzle Position			A		12
Materials					13
Pump casing material			Supplier confirm		14
Pump liner			By Supplier		15
Impeller material			Metal preferred. Supplier confirm		16
					17
Process Duty					18
Fluid description			Precipitate Slurry (gypsum+hydroxides)		19
Mode of Operation			Continuous		20
Temperature: normal/design		°C	45 / 60		21
Suction Head min / max		m	2 / 20		22
					23
					24
Flow characteristics					25
					26
Solids Description					27
Solids SG - Average / range			3.48		28
Percentage solids by weight - concentration Cw		%	20 (Design); 30 (Normal)		29
Solids P80		micron	18		30
Solids P100		micron	113		31
Occasional gypsum scale		mm	1		32
Particle shapes (ie smooth, sharp edges)					33
Slurry description					34
Slurry SG			1.31		35
Liquid TDS		g/L	57		36
Slurry Viscosity at design condition		cP	270 (Normal); 92 (Design)		37
Slurry pH			6 - 8		38
Vapour pressure @ normal temp and pressure		kPaa	20		39
Yield stress@operating temperature		Pa	11		40
Estimated Head Ratio Hr			0.96		41
Estimated Efficiency Ratio Er			0.94		42
					43
Principal corrosives and erosives					44
Reagents					45
Acid Concentration (H2SO4)		g/L			46
Other Chloride		mg/L	< 40		47
Rev No.	Date	Prepared By	Checked By	Authorised By	
O1	24-Apr-07	D Contarino	B Harding	T Giraud / T French	
A1	31-May-07	D Contarino <i>DRC</i>	B Harding <i>BH</i>	T Giraud / T French	
				<i>PPS</i> <i>TF</i>	

		GORO CONSTRUCTION TEAM EQUIPMENT DATA SHEET		GORO NICKEL PROJECT DOC No. GCT01-242-8410-DS-0006 REV A1 DSN DOC CLASS 2	
		Equipment Title MHP Return Pumps Equipment No.(s) 242-PPS-113, 114 Package No. 002000-1311Y			
DESCRIPTION		UNITS	DETAILS		REV
				48	
Pump system duty				49	
Normal flow case				50	
Slurry flowrate		m ³ /h	17	51	
Total Dynamic Head		m slurry	26	52	
NPSHa		m	26	53	
				54	
				55	
Minimum flow case				56	
Slurry flowrate		m ³ /h	N/A	57	
Total Dynamic Head		m slurry	N/A	58	
NPSHa		m	N/A	59	
				60	
				61	
Design flow case				62	
Slurry flowrate		m ³ /h	50	63	
Total Dynamic Head		m slurry	68	64	
NPSHa		m	6	65	
				66	
				67	
Type of slurry	Settling			68	
	Non settling (Bingham)		Yes	69	
				70	
Supplementary Information				71	
Anti roll back device requirement		y/n	No	72	
Hazard area classification		y/n	No	73	
Seal guard requirement			Yes	74	
Pump Location - specific environmental conditic			As per spec	75	
Testing: non witnessed hydrotest		y/n	No	76	
Certified performance curve		y/n	Yes	77	
Mechanical function test		y/n	No	78	
				79	
Power Supply		V/ph/Hz	690/3/50	80	
				81	
				82	
				83	
Notes				84	
1	The pump motor shall be selected for the design duty with zero contingency factor.			85	
2	The buyer intends to purchase the same pump as 240-PPS-003/004 PN2 Thickener U/F Pu with a motor suitable for the given duties. Vendor to advise suitability of this pump. Refer datasheet GCT01-240-8410-DS-0096			86	
				87	
				88	
				89	
				90	
				91	
				92	
				93	
				94	

EXISTING MHP RETURN PUMPS 242-PPS-113/114 (PUMP 1/3 IN SERIES)

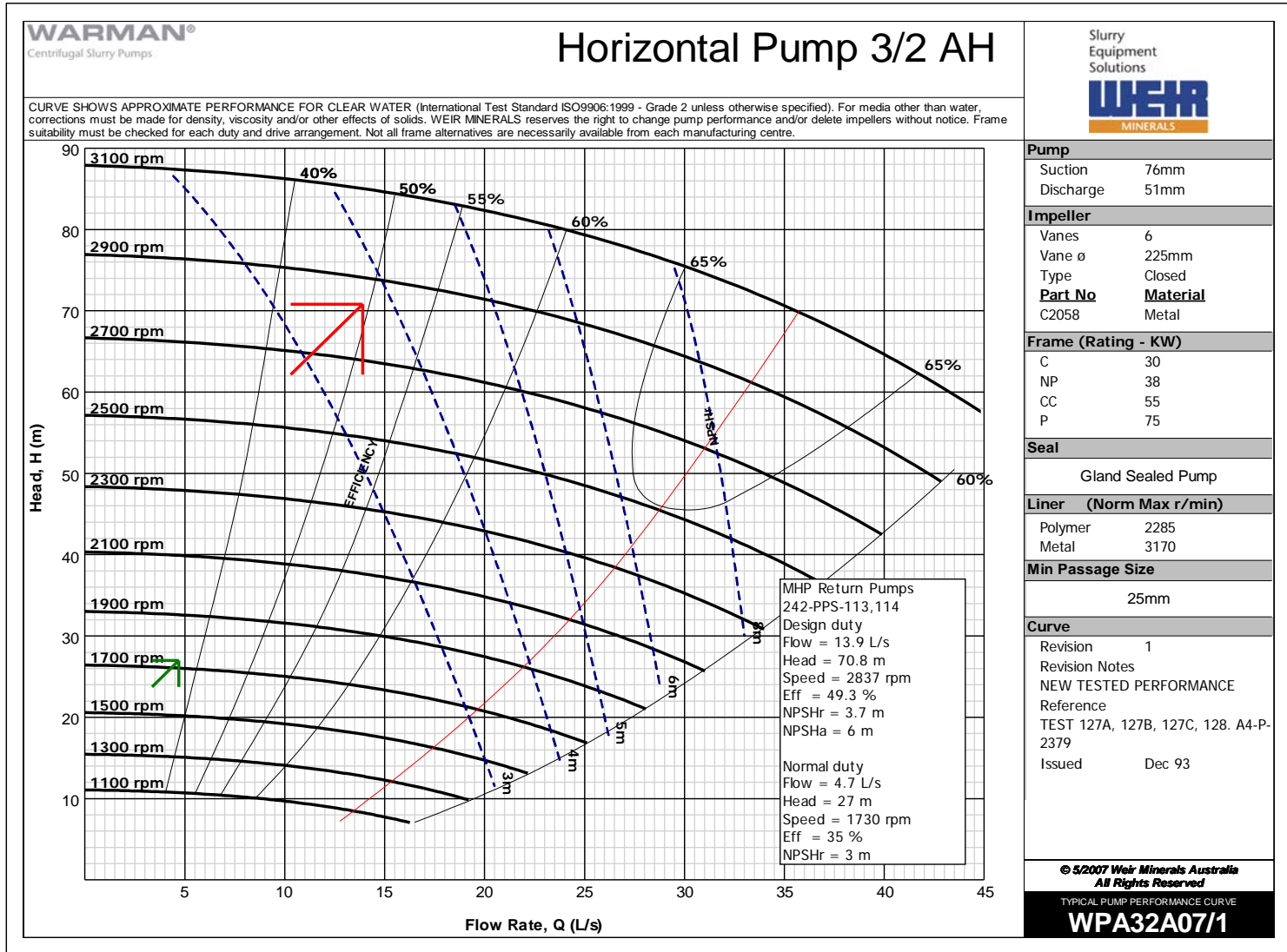
Curves

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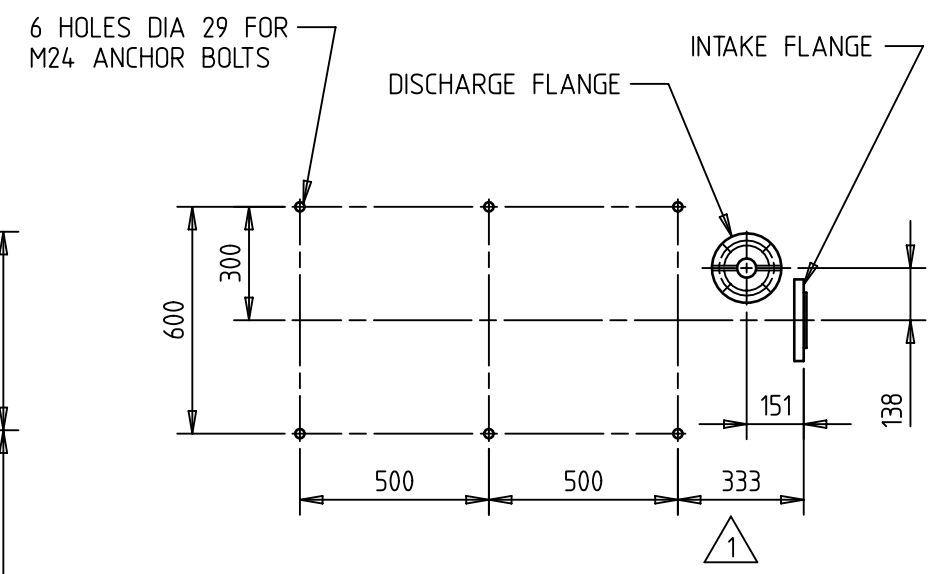
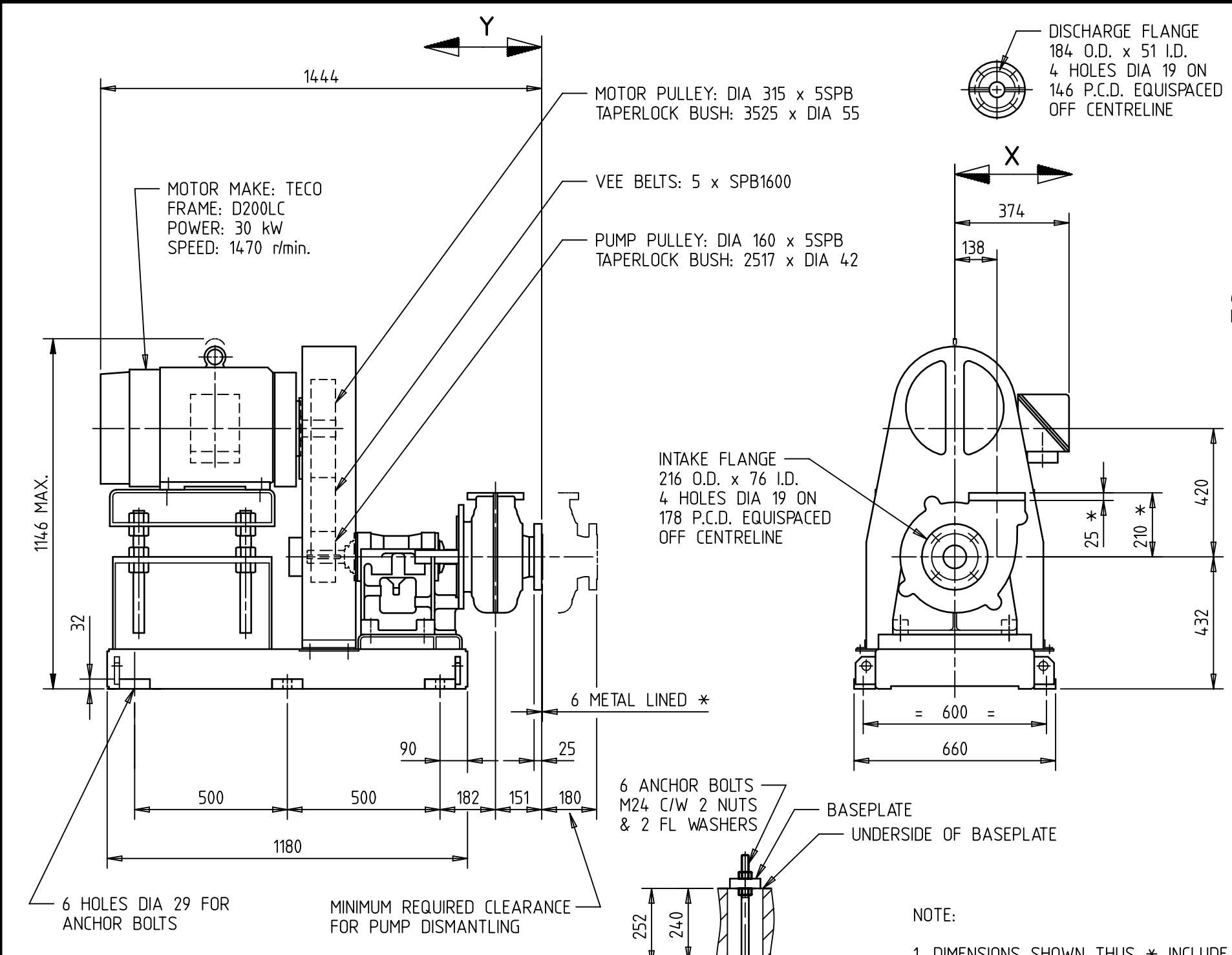
WARMAN REFERENCE NUMBER

F001 Horizontal Slurry Pumps Additional pumps



STATIC LOAD TABLE				
ITEM	MASS (kg).	POSITION OF CENTROID (mm).		
MOTOR	300	X= 0	Y= 1075	
PUMP	185	X= 0	Y= 285	
DRIVE COMPONENTS	294	X= 0	Y= 919	

DYNAMIC LOADS FOR FOUNDATIONS ARE NORMALLY CONSIDERED TO COMPRISE FORCES ACTING ON PUMP FLANGES PLUS UP TO 2,5 TIMES STATIC LOADS ACTING THROUGH RESPECTIVE CENTROIDS.



CLIENT	: INCO MANAGEMENT AUSTRALIA LTD
LOCATION	: NEW CALEDONIA
PROJECT	: GORO NICKEL PROJECT
DUTY	: MHP RETURN PUMPS
EQUIPMENT No/S.	: 242-PPS-113, 114
No. OF ASSEMBLIES	: TWO (2)
SERIAL No/S.	: SY76170, SY76171
WORKS ORDER No/S.	: AAS00006-39

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No.	DESCRIPTION	BY	DATE	CHK
4				
3				
2				
1	ANCHOR BOLT VIEW AND FOUNDATION / BOLT LAYOUT VIEW ADDED	T.TANG	OCT.15,2007	T.D
REVISIONS				

APP.	M.WILLIAMS	PRODUCT :	WARMAN® ENVIROTECH®*
CHECK	K.BEBB		Centrifugal Slurry Pumps
DRN.	T.TANG		
DATE	AUG.20.2007		
SCALE		DESIGN CENTRE OF ORIGIN :	AUSTRALIAN ENGINEERING SYDNEY

TITLE :	ARRANGEMENT FOR 3/2 C-AH WITH 30 kW MOTOR ZV2 DRIVE DISCHARGE FLANGE POSITION A
DRAWING No.	A3-110-8-410715
REV.	1



SYSTEM CALCS		ITEM NO.	01	02
V20070208		EQUIP NO.	285-PPP-070/071/072/073/074/075	285-PPP-067/068
CLIENT	Veolia Water Systems	QUANTITY.	6	2
PROJECT	Goro Nickel EPP	PUMP NAME.	Recirculation Pump	EPP Waste Pump
LOCATION	New Caledonia	COMMENTS.		
REF No.	F901	WARNINGS		
  				
PROCESS & SYSTEM DATA		UNITS		
CALCULATED DATA				
DUTY INFO. SUMMARY				
MIXTURE FLOW	l/s	9.4	33.3	
T.D.H SLURRY	m	21.6	30.0	
T.D.H WATER EQUIVALENT	m	21.6	30.0	
Solids Concentration	C/W %	20.0	0.3	
Solids SG	Ss	2.70	2.70	
Solids d50	mic	0	0	
Solids Sizing Max	mm	0.00	0.00	
Slurry Temperature	C	45	45	
Pump Efficiency	%	52	76	
Shaft Power	kW	4.41	14.77	
Seal Loss Factor	0.00	1	1	
Drive Loss Factor	0.00	0.97	0.97	
TOTAL ABS POWER	kW	4.55	15.23	
Minimum Rec Motor	kW	5.46	18.28	
VSD (Variable Speed Drive) Factor	0.00	1.00	1.00	
PUMP SELECTION	No. PUMPS IN SERIES	1	1	
Pump Model		3/2C-AH	4/3C-AH	
B.O.M Code	SAP	/RGGG	/CGGG	
Bearing Frame / kW Rating		C / 30	C / 30	
Liner Material	- Volute	R55	A05	
	- Sideliners	R55	A05	
Impeller - Part No.		C2147	D314SHE1	
Impeller Material		A05	A05	
Pump Curve	WPA	WPA32A01	WPA43A05	
Max Passage Sphere	mm	25	35	
Impeller Diameter	mm	214	265	
Pump Speed	rpm	1586	1733	
Impeller Tip Speed	m/s	17.8	24.1	
Motor Size - kW / Poles		7.5 / 4	22 / 4	
Motor Speed	rpm	1465	1475	
Motor Frame Size	Metric	PPA132M	PPA180L	
Motor Make		CMG	CMG	
Drive Type		ZVI-CS0303	DCI-DC0003	
Transmission Type / Ratio	x:1	BELT & PULLEY / 1.08:1	DIRECT DRIVE	
Discharge Pressure (per Stage)	kPa	242.46	335.40	
Shaft Sealing (Refer Drawing A138572 Rev 1)		MECHANICAL / VALVE	MECHANICAL / GLAND	
Shaft Sleeve Material		C21	C23	
Column Length	mm	NOT APPLICABLE	NOT APPLICABLE	
NPSHr	m	3	3	
Min Gland Flow Required	l/m	NOT APPLICABLE	NOT APPLICABLE	
Min Gland Pressure (at gland tapping)	kPa	NOT APPLICABLE	NOT APPLICABLE	
Approx. Unit Mass	kg	515	770	

RELOCATED EPP RECIRCULATION PUMPS

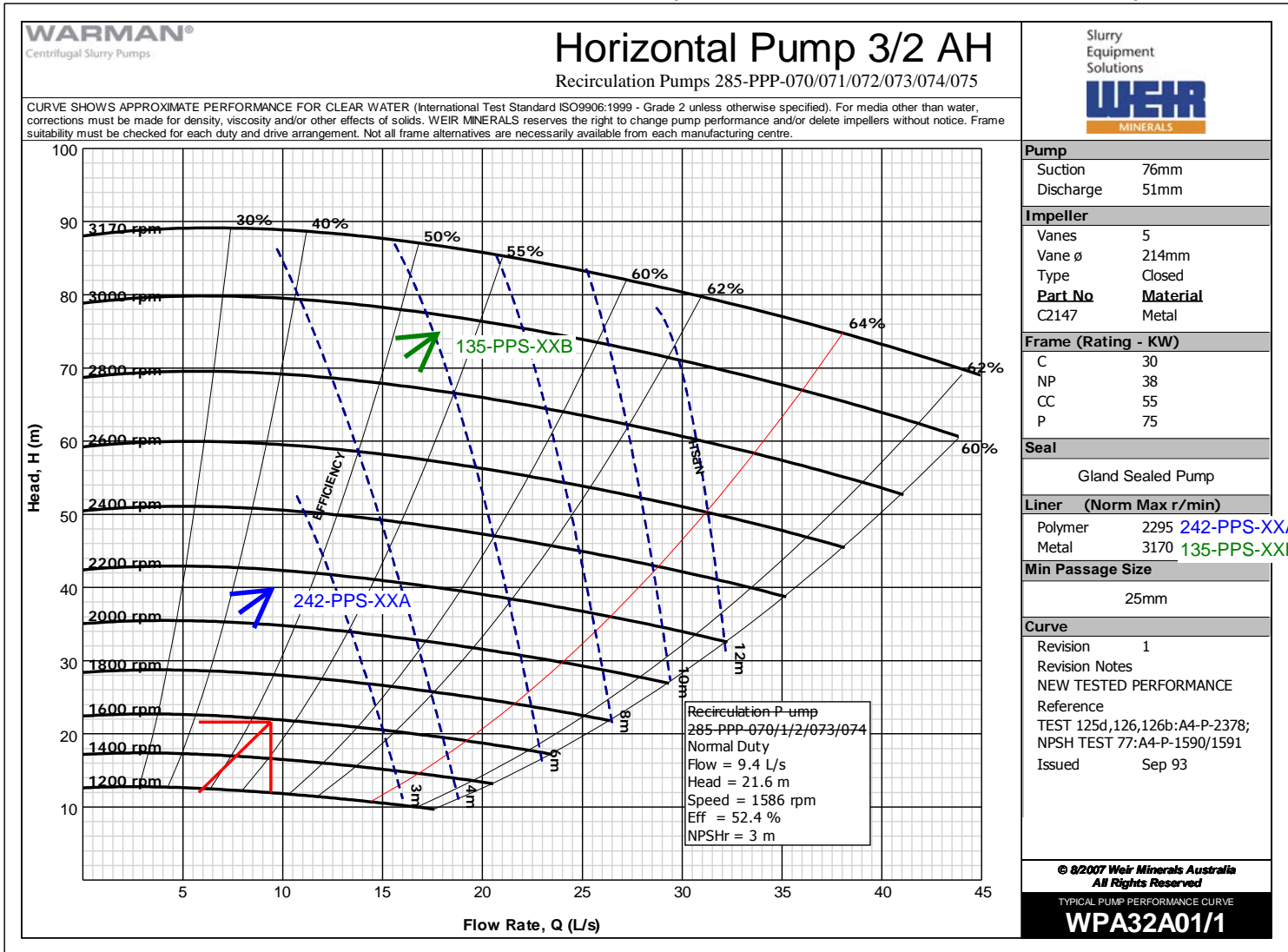
285-PPS-070 -> 242-PPS-XXA (PUMP 2/3 IN SERIES)

285-PPS-071 -> 135-PPS-XXB (PUMP 3/3 IN SERIES)

Curves

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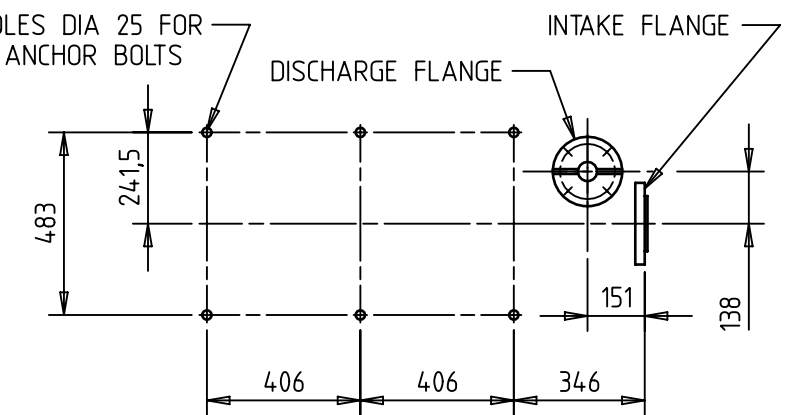
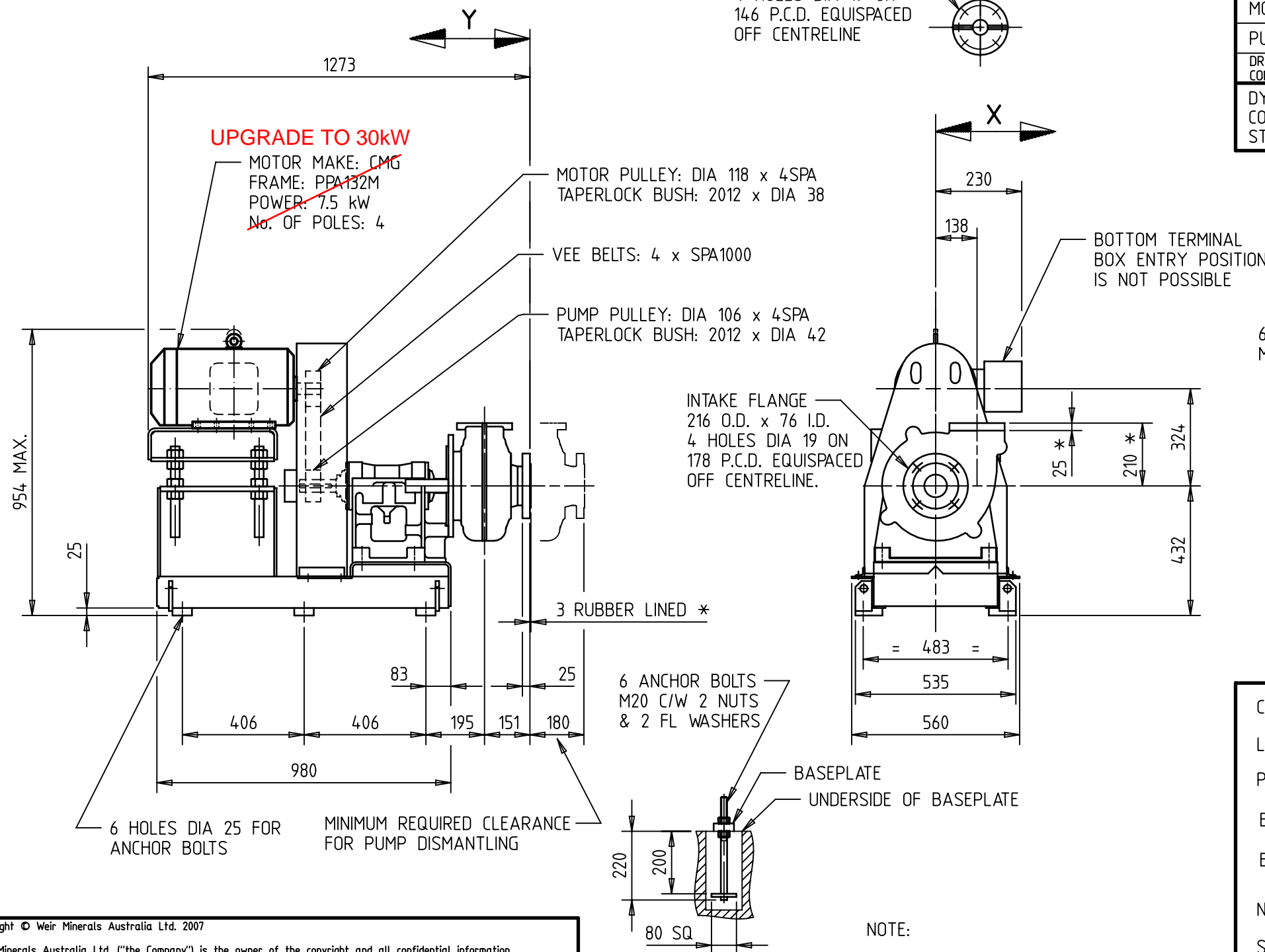
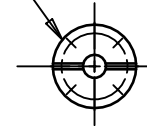
WARMAN REFERENCE NUMBER Water Systems rev4 both mechanically sealed - Waste Water DC arrangement.xls

STATIC LOAD TABLE

ITEM	MASS (kg).	POSITION OF CENTROID (mm).			
		X=	Y=	Z=	W=
MOTOR	98	0	987		
PUMP	161	0	304		
DRIVE COMPONENTS	182	0	860		

DYNAMIC LOADS FOR FOUNDATIONS ARE NORMALLY CONSIDERED TO COMPRISE FORCES ACTING ON PUMP FLANGES PLUS UP TO 2,5 TIMES STATIC LOADS ACTING THROUGH RESPECTIVE CENTROIDS.

DISCHARGE FLANGE
184 O.D. x 51 I.D.
4 HOLES DIA 19 ON
146 P.C.D. EQUISPACED
OFF CENTRELINE



CLIENT	: VEOLIA WATER
LOCATION	: NEW CALEDONIA
PROJECT	: GORO NICKEL PROJECT
EQUIPMENT NAME	: ACTIFLO SLUDGE RECIRCULATION PUMPS
EQUIPMENT No/S.	: 285-PPP-070, 285-PPP-071, 285-PPP-072, 285-PPP-073, 285-PPP-074, 285-PPP-075
No. OF ASSEMBLIES	: SIX (6)
SERIAL No/S.	: SY76413, SY76414, SY76415, SY76416, SY76417, SY76418
WORKS ORDER No/S.	: AAS00020-01

NOTE:
1. DIMENSIONS SHOWN THUS * INCLUDE COMPRESSION OF WARMAN RUBBER JOINT.

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No.	DESCRIPTION	BY	DATE	CHK
4				
3				
2				
1				
REVISIONS				

APP.	M.WILLIAMS	PRODUCT :	WARMAN® ENVIROTECH®*
CHECK	H.VYAS		Centrifugal Slurry Pumps
DRN.	C.SUBHASH		*New technology (post 1991) WARMAN® slurry pumps from Weir Minerals are sold as ENVIROTECH® pumps in Africa.
DATE	OCT.23.2007	DESIGN CENTRE OF ORIGIN :	AUSTRALIAN ENGINEERING SYDNEY
SCALE			

TITLE :	ARRANGEMENT OF 3/2 C-AH WITH 7.5 kW MOTOR ZV1 DRIVE DISCHARGE FLANGE POSITION A	
DRAWING No.	A3-110-8-411225	REV.
		0

