PROJECT

WATER UTILITY PUMPS

PARTICULAR SPECIFICATION

SW RECEIVING PIT PUMP

1200-PU-1610 AB

Rev	Date	STATUS	WRITTEN BY	CHECKED BY	APPROVED BY
	DD/MM/YYYY		(name & visa)	(name & visa)	(name & visa)
0	09/07/2013	Issued For Purchase (IFP)	C. FOURNIER	M. VERGARA	C. FOURNIER
B	31/01/2013	Issued For Design (IFD)	C. FOURNIER	M. VERGARA	C. FOURNIER
A	24/01/2013	Issued For Design (IFD)	C. FOURNIER	M. VERGARA	C. FOURNIER

DOCUMENT REVISIONS

SPECIFICATION/ Specification — Pag. 2/4 — Rev.

Project - Unit	Document type	Material code	Serial number	Revision
9806J -1200	SP	0910	`004	0

SW RECEIVING PIT PUMP

Site:
Unit: **1200, Sanitary Water Treatment**
Item No : **1200-PU-1610 A/B**
CENTRIFUGAL VERTICAL, SUBMERGED **(4)**

Total quantity: **2**
Quantity running: **1** **(A) Electrical**
Quantity spare: **1** **(B) Electrical**

Mechanical Data Sheet for: ☐ Inquiry ■ Purchase ☐ As built
Process reference : **9806J-1200-PDS-0910-004-Rev.B**

Vendor: **KSB**
Manufacturer:
Model: **Amarex NF 50-220/022ULG-140**
Serial number:

Service: **Sludge Pump**
Duty: ☐ continuous ■ batch ☐ other
Location: ■ outdoor ☐ exposed to elements ☐ under shelter ☐ indoor ☐ heated ☐ unheated

Installation: ☐ horizontal ■ vertical ☐ flooded ☐ self priming ■ submersible
Electrical area classification: **Non classified area**

HANDLED PRODUCTS

Fluid: **Sanitary Water** **(3)**
☐ corrosive ☐ abrasive ☐ explosive ☐ flamable ☐ toxic ☐ other:
Gas content: ☐ no ☐ yes
Solids content: ☐ no ☐ yes
Pumping temperature Tp (°C): mini: normal: **5 / 47** maxi:
Specific gravity at TP: mini: normal: **1,0** maxi:
Dynamic viscosity at Tp (Cp): normal: **0,72** maxi:
Vapour pressure at TP (bar a.): mini: normal: **0,106** maxi:
Atmospheric boiling temperature (°C):
Specific heat (kJ/ kg/ °C):

PUMP DESIGN (Vendor to complete)

Type: ☐ classic volute ☐ segmented ☐ barrel(HP) ☐ in-can ☐ in-line
☐ priming volute ☐ side chanel ☐ high speed ☐ w/separate priming
☐ monostage ☐ multistage ☐ hygienic construction

Basic design: ■ Std Manufacturer ☐ other:
Nominal pressure (bar g. @ °C): **By Vendor** **at** **(°C):**
Casing type: ☐ moulded ☐ fabricated ☐ lined ☐ other:
☐ single volute ☐ double volute ☐ jacketed
☐ with diffuser ☐ with wear ring ☐ with throat bushing

Casing nozzles	Orient.	Size	Rating	Facing	Remarks:
Suction					
Discharge	**Top**	**50**	**150**		
Drain	**N/A**				
Vent	**N/A**				

Casing split: ☐ radial ☐ axial ☐ none
Casing support ☐ foot ☐ centerline ☐ bearing frame ☐ other:
Shaft: ☐ solid (no sleeve) ☐ sleeved
Impeller: ☐ closed ☐ semi open ☐ open ☐ with wear ring
☐ single flux ☐ double flux ☐ vortex ☐ vane wheel
☐ radial ☐ mixed flow ☐ axial

Impeller mount: ☐ overhang ☐ between bearings ☐ with inducer
Impeller attachment: ☐ screwed ☐ keyed ☐ other:
Bearing type/ lubrif.: Drive End /
Non Drive End /
Baseplate: ☐ none ☐ under pump and drive system ☐ anchored ☐ stilt mounted
☐ moulded ☐ bended sheet ☐ fabricated

MATERIALS (Vendor to complete) (2)

Casing(s)/ Cover:	Casing wear ring:
Casing liner:	Casing gasket:
Impeller:	Impeller wear ring:
Shaft:	Shaft sleeve:
Stuffing box:	Gland:
Wetted bolting:	Bearing housing:
Baseplate:	

DRIVE SYSTEM DESCRIPTION (Vendor to complete)

Driver: **Electrical**
■ fixed speed ☐ Variable speed
supplied/ mounted by: **By Vendor / By Vendor**
manufacturer/ model: **Submerged**
nameplate power/ speed: **4,2 / 3000**
Connection driver/ pump: ☐ pulley/ belts ☐ direct (close coupled)
☐ direct(separately coupled) ☐ gears ☐ other:

Electrical utility data:
Volts: **400** Hertz: **50** Phase: **3**

REQUIRED OPERATING DATA (per pump)

Flow (m3/h): mini normal: **6** rated: **6** maxi:
Discharge pressure (bar g.): **2,1** **(1)**
Suction pressure (bar g.): **0** maxi:
Differential pressure (bar): **2,1**
Total head (m of LC): **21**
Available NPSH (m): **9**
Garanteed point : **6 m3/h@ 21 m** **(1)**
Speed control: **No**
Start-up conditions: **Open Valve**
Dry run requirements:
Parallel/ serie operation:
Basic material (wetted parts):

Remark:

PERFORMANCES (per pump) (Vendor to complete)

Rotation facing coupling: ☐ Clockwise ☐ Counter Clockwise
Performance curve reference:
Pump speed:
Allowable speed range:
Maximum Allowable Working Pressure (bar g.): **at** **(°C)**
Maximum Allowable Temperature (°C):

Performances with offered diameter	mini	normal	rated	
Stable flow (m3/h)				
Total Head (m)				
Required NPSH (m)				
Hydraulic impeller efficiency (%)				

Required power at driver shaft (kW):
Shut off head (m):
Flow at Best Efficiency point (m3/h):
Impeller diameter (mm): mini: maxi: installed:
Dry run capability:

SHAFT SEAL (Vendor to complete)

☐ None ☐ Packing ☐ Labyrinth ☐ Hydrodynamic

☐ Mechanical seal: ☐ single ☐ dual ☐ cartridge
☐ contact ☐ without contact
☐ spring(s) ☐ bellow
Mounting: ☐ face to face ☐ back to back ☐ tandem
☐ rotating flexible element ☐ stationary flexible element

Pressurisation: ■ N/A ☐ buffer fluid ☐ barrier fluid
fluid: pressure: circulation by:
Seal chamber: ☐ cylindric ☐ tapped (enlarged) ☐ jacketed
☐ integral with casing ☐ internal ☐ external ☐ with throttle bushing
Seal manufacturer/ Model: **By Vendor** API Plan NA

	Product side	Atmospheric side
Norme		
Max allow. pressure		
Balancing		
Spring/ Bellow		
O'Ring/ gaskets		
Cartridge sleeve:		
End plate:		

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9806J -1200	SP	0910	`004	0

Rev.

ACCESSORIES (Vendor to complete)	SUPPLY BY
Pulleys/ belts:	
Coupling(s):	
Safety guards:	
Gear box: Type: Nameplate power/ speed: Service factor:	
Manufacturer/ model:	
Seal pot: Material: Design/ fabric. code: ☐ baseplate mounted ☐ stand alone	
Available connections: ☐ filling ☐ drain ☐ flushing inlet ☐ flushing outlet ☐ pressurisation	
☐ inlet coil ☐ outlet coil ☐ gauge ☐ other	
Type of connections: ☐ threaded ☐ flanged ☐	
Baseplate, with ☐ drip recovery (D=25 mm mini) ■ **handling devices (5)** ■ earthing lugs ☐	**VENDOR**
☐ equipotential connections ☐ anchor bolts ☐ Cooler support	
Control/ Instrumentation: ■ **(6)**	**VENDOR**
Humidity sensor in motor housing	
Support Local operating panel with sun protection	
Variable Speed Drive :	

AUXILLIARY CIRCUITS DESCRIPTION (Vendor to complete)

Function	Fluid/ Flow	Material	P/ T design	Main features
	(name / m3/hr)		(kPa g. / °C)	

INSPECTION AND TESTS (Vendor to complete)				
Shop inspection	☐ no	■ yes		By Vendor
Material certificates	☐ no	☐ yes	**Type 3,1 for Stainlee Steel parts, Type 2.2 for other parts (according to EN 10204)**	By Vendor
Hydraulic test	☐ no	☐ yes	**with (1,5 x nominal pressure) during 30 minutes.**	By Vendor
NPSH test	☐ no	☐ yes	**Required only if difference between NPSHa and NSPHr < 1m at rated point**	By Vendor
Performance test	☐ no	■ yes	**5 points of measurement. Standard Vendor procedure**	By Vendor
Balancing test	☐ no	☐ yes	**Vendor to detail procedure, according to ISO 1940 G 6.3**	By Vendor
Vibrations measurement	☐ no	☐ yes	**at guaranteed point with limit indicated in 9806J-0000-JSS-0910-001**	By Vendor
Sound level measuremen	☐ no	☐ yes	**85 dB(a) @ 1m**	By Vendor
Dismantling after test	☐ no	☐ yes	**only if required after defects are measured**	By Vendor

MISCELLANEOUS (Vendor to complete)	
Painting: ■ Standard Vendor ☐ Other: Final color : RAL 5002	By Vendor
Tracing/ Insulation:	
Special tools: **If required**	By Vendor
Weights (kg): ☐ Bare pump: ☐ Driver: ☐ Baseplate: ☐ Total: 50	

NOTES:

(1) Discharge pressure at Low level / Pit bottom

(2) Material : Cast Iron

(3) Sanitary Water: water mixed with soap, feces, toilet paper.(Impeller free space 40 mm)

(4) Installed in pit 1200-TK-1600, 5100 mm depth.

(5) Rotating Crane for lifting and lifting chain + chain hoist (Load : 120 kg minimum)

(6) Configuration

Start pump 1 / Start pump 2

Alarm (general default)

General stop

Automatic permutation

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Site:	Item No : 1200-PU-1610 A/B	Quantity running: 1
Unit: 1200		Quantity spare: 1

VERTICAL PUMP (Vendor to complete)

Pump configuration:

- ☐ Cantilever
- ☐ With wetted bearing(s): number: location: material:
  - ☐ pumpage lub
  - ☐ externally lub fluid: flow: pressure:
- ☐ Suction can and discharge head
  - diameter (mm): total length: suction/ discharge flange:
  - material:

Pump discharge ☐ through driving column ☐ through elbow and separate column

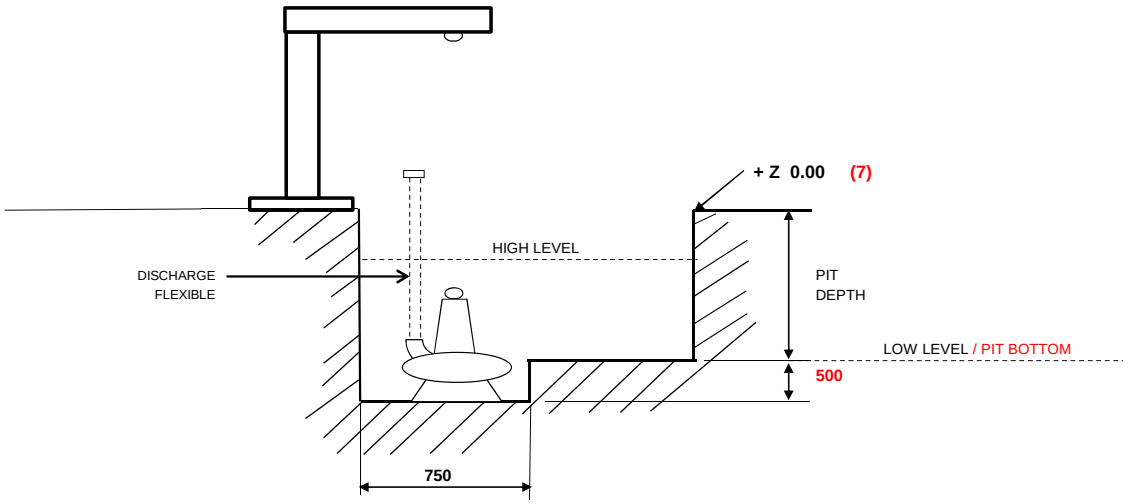
☐ under setting level ☐ above setting level

☐ vertical flange ☐ horizontal flange

Line shaft : ☐ Open ☐ Enclosed

Specific accessories :

- ☐ Strainer
- ☐ Bellmouth
- ☐



- ● PIT DEPTH **4600** (mm) **(4)**
- ○ PIT DIMENSION (mm)
- ○ SUBMERGENCE REQUIRED (mm)

Vendor scope (by pump)	Vendor scope (one for all plant submerged pump)	
Pump	1 commun Chain hoist	1200-PU-1610
3 transportable installation Feet		1200-PU-4110
Elbow + Flanged bend		1250-PU-1221
Local Control panel (commun for 2 pump)		1250-PU-1610
Support for local Control panel (commun for 2 pump)		1250-PU-4110
2 Float switches with 10 m cable		
Level swith support (commun for 2 pump)		
10 m flexible renforced hose with rigid spiral		
Flange DN 50 150#		
Rotating lifting crane (commun for 2 pump)		
Pump lifting chain (Stainless steel)		