

PROJECT
WATER UTILITY PUMPS

PARTICULAR SPECIFICATION
MINE PIT HEAD AREA SW PUMP
1200-PU-4110 AB

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
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DOCUMENT REVISIONS					

SPECIFICATION/ Specification						Pag. 2/4	Rev.
<div> <div>Project - Unit</div> <div>Document type</div> <div>Material code</div> <div>Serial number</div> <div>Revision</div> </div> <div> <div>9806J -1200</div> <div>SP</div> <div>0910</div> <div>001</div> <div>0</div> </div>							
<div> <div>MINE PIT HEAD AREA SW PUMP</div> <div>Total quantity: 2</div> </div>							
<div> <div>Site:</div> <div>Item No : 1200-PU-4110 A/B</div> <div>Quantity running: 1 (A) Electrical</div> </div>							
<div> <div>Unit: 1200, Sanitary Water Treatment</div> <div>CENTRIFUGAL VERTICAL, SUBMERGED (4)</div> <div>Quantity spare: 1 (B) Electrical</div> </div>							
<div> <div>Mechanical Data Sheet for: <input type="checkbox"/> Inquiry <input checked="" type="checkbox"/> Purchase <input type="checkbox"/> As built</div> <div>Process reference : 9806J-1200-PDS-0910-001-Rev.B</div> </div>							
<div> <div>Vendor: KSB</div> <div>Service: Sludge Pump</div> <div>Installation: <input type="checkbox"/> horizontal <input checked="" type="checkbox"/> vertical</div> </div>							
<div> <div>Manufacturer:</div> <div>Duty: <input type="checkbox"/> continuous <input checked="" type="checkbox"/> batch <input type="checkbox"/> other</div> <div><input type="checkbox"/> flooded <input type="checkbox"/> self priming <input checked="" type="checkbox"/> submersible</div> </div>							
<div> <div>Model: Amarex NF 50-170 /022ULG-13</div> <div>Location: <input checked="" type="checkbox"/> outdoor <input type="checkbox"/> exposed to elements <input type="checkbox"/> under shelter</div> <div>Electrical area classification: Non classified area</div> </div>							
<div> <div>Serial number:</div> <div><input type="checkbox"/> indoor <input type="checkbox"/> heated <input type="checkbox"/> unheated</div> </div>							
<div> <div>HANDLED PRODUCTS</div> <div>REQUIRED OPERATING DATA (per pump)</div> </div>							
<div> <div>Fluid: Sanitary Water (3)</div> <div>Flow (m3/h): mini normal: 10 rated: 10 maxi:</div> </div>							
<div> <div><input type="checkbox"/> corrosive <input type="checkbox"/> abrasive <input type="checkbox"/> explosive <input type="checkbox"/> flammable <input type="checkbox"/> toxic <input type="checkbox"/> other:</div> <div>Discharge pressure (bar g.): 1,4 (1)</div> </div>							
<div> <div>Gas content: <input type="checkbox"/> no <input type="checkbox"/> yes</div> <div>Suction pressure (bar g.): 0 maxi:</div> </div>							
<div> <div>Solids content: <input type="checkbox"/> no <input type="checkbox"/> yes</div> <div>Differential pressure (bar): 1,4</div> </div>							
<div> <div>Pumping temperature Tp (°C): mini: normal: 5 / 47 maxi:</div> <div>Total head (m of LC): 14</div> </div>							
<div> <div>Specific gravity at TP: mini: normal: 1,0 maxi:</div> <div>Available NPSH (m): 9</div> </div>							
<div> <div>Dynamic viscosity at Tp (Cp): normal: 0,72 maxi:</div> <div>Garanteed point : 10 m3/h@ 14m (1)</div> </div>							
<div> <div>Vapour pressure at TP (bar a.): mini: normal: 0,106 maxi:</div> <div>Speed control: No</div> </div>							
<div> <div>Atmospheric boiling temperature (°C):</div> <div>Start-up conditions: Open Valve</div> </div>							
<div> <div>Specific heat (kJ/ kg/ °C):</div> <div>Dry run requirements:</div> </div>							
<div> <div>Parallel/ serie operation:</div> <div>Basic material (wetted parts):</div> </div>							
<div> <div>PUMP DESIGN (Vendor to complete)</div> <div>Remark:</div> </div>							
<div> <div>Type: <input type="checkbox"/> classic volute <input type="checkbox"/> segmented <input type="checkbox"/> barrel(HP) <input type="checkbox"/> in-can <input type="checkbox"/> in-line</div> <div>Remark:</div> </div>							
<div> <div><input type="checkbox"/> priming volute <input type="checkbox"/> side chanel <input type="checkbox"/> high speed <input type="checkbox"/> w/separate priming</div> </div>							
<div> <div><input type="checkbox"/> monostage <input type="checkbox"/> multistage <input type="checkbox"/> hygienic construction</div> </div>							
<div> <div>PERFORMANCES (per pump) (Vendor to complete)</div> <div>Rotation facing coupling: <input type="checkbox"/> Clockwise <input type="checkbox"/> Counter Clockwise</div> </div>							
<div> <div>Basic design: <input checked="" type="checkbox"/> Std Manufacturer <input type="checkbox"/> other:</div> <div>Performance curve reference:</div> </div>							
<div> <div>Nominal pressure (bar g. @ °C): By Vendor at (°C):</div> <div>Pump speed:</div> </div>							
<div> <div>Casing type: <input type="checkbox"/> moulded <input type="checkbox"/> fabricated <input type="checkbox"/> lined <input type="checkbox"/> other:</div> <div>Allowable speed range:</div> </div>							
<div> <div><input type="checkbox"/> single volute <input type="checkbox"/> double volute <input type="checkbox"/> jacketed</div> <div>Maximum Allowable Working Pressure (bar g.): at (°C)</div> </div>							
<div> <div><input type="checkbox"/> with diffuser <input type="checkbox"/> with wear ring <input type="checkbox"/> with throat bushing</div> <div>Maximum Allowable Temperature (°C):</div> </div>							
<div> <div>Casing nozzles Orient. Size Rating Facing Remarks:</div> <div>Performances with offered diameter mini normal rated</div> </div>							
<div> <div>Suction</div> <div>Stable flow (m3/h)</div> </div>							
<div> <div>Discharge Top 50 150</div> <div>Total Head (m)</div> </div>							
<div> <div>Drain N/A</div> <div>Required NPSH (m)</div> </div>							
<div> <div>Vent N/A</div> <div>Hydraulic impeller efficiency (%)</div> </div>							
<div> <div>Casing split: <input type="checkbox"/> radial <input type="checkbox"/> axial <input type="checkbox"/> none</div> <div>Required power at driver shaft (kW):</div> </div>							
<div> <div>Casing support <input type="checkbox"/> foot <input type="checkbox"/> centerline <input type="checkbox"/> bearing frame <input type="checkbox"/> other:</div> <div>Shut off head (m):</div> </div>							
<div> <div>Shaft: <input type="checkbox"/> solid (no sleeve) <input type="checkbox"/> sleeved</div> <div>Flow at Best Efficiency point (m3/h):</div> </div>							
<div> <div>Impeller: <input type="checkbox"/> closed <input type="checkbox"/> semi open <input type="checkbox"/> open <input type="checkbox"/> with wear ring</div> <div>Impeller diameter (mm): mini: maxi: installed:</div> </div>							
<div> <div><input type="checkbox"/> single flux <input type="checkbox"/> double flux <input type="checkbox"/> vortex <input type="checkbox"/> vane wheel</div> <div>Dry run capability:</div> </div>							
<div> <div><input type="checkbox"/> radial <input type="checkbox"/> mixed flow <input type="checkbox"/> axial</div> </div>							
<div> <div>SHAFT SEAL (Vendor to complete)</div> <div><input type="checkbox"/> None <input type="checkbox"/> Packing <input type="checkbox"/> Labyrinth <input type="checkbox"/> Hydrodynamic</div> </div>							
<div> <div>Impeller mount: <input type="checkbox"/> overhang <input type="checkbox"/> between bearings <input type="checkbox"/> with inducer</div> </div>							
<div> <div>Impeller attachment: <input type="checkbox"/> screwed <input type="checkbox"/> keyed <input type="checkbox"/> other:</div> </div>							
<div> <div>Bearing type/ lubrif.: Drive End /</div> </div>							
<div> <div>Non Drive End /</div> </div>							
<div> <div>Baseplate: <input type="checkbox"/> none <input type="checkbox"/> under pump and drive system <input type="checkbox"/> anchored <input type="checkbox"/> stilt mounted</div> <div><input type="checkbox"/> Mechanical seal: <input type="checkbox"/> single <input type="checkbox"/> dual <input type="checkbox"/> cartridge</div> </div>							
<div> <div><input type="checkbox"/> moulded <input type="checkbox"/> bended sheet <input type="checkbox"/> fabricated</div> <div><input type="checkbox"/> contact <input type="checkbox"/> without contact</div> </div>							
<div> <div><input type="checkbox"/> spring(s) <input type="checkbox"/> bellow</div> </div>							
<div> <div>MATERIALS (Vendor to complete) (2)</div> <div>Mounting: <input type="checkbox"/> face to face <input type="checkbox"/> back to back <input type="checkbox"/> tandem</div> </div>							
<div> <div>Casing(s)/ Cover:</div> <div><input type="checkbox"/> rotating flexible element <input type="checkbox"/> stationary flexible element</div> </div>							
<div> <div>Casing liner:</div> </div>							
<div> <div>Impeller:</div> <div>Pressurisation: <input checked="" type="checkbox"/> N/A <input type="checkbox"/> buffer fluid <input type="checkbox"/> barrier fluid</div> </div>							
<div> <div>Shaft:</div> <div>fluid: pressure: circulation by:</div> </div>							
<div> <div>Stuffing box:</div> <div>Gland:</div> </div>							
<div> <div>Wetted bolting:</div> <div>Bearing housing:</div> </div>							
<div> <div>Baseplate:</div> <div>Seal chamber: <input type="checkbox"/> cylindric <input type="checkbox"/> tapped (enlarged) <input type="checkbox"/> jacketed</div> </div>							
<div> <div><input type="checkbox"/> integral with casing <input type="checkbox"/> internal <input type="checkbox"/> external <input type="checkbox"/> with throttle bushing</div> </div>							
<div> <div>Seal manufacturer/ Model: By Vendor API Plan NA</div> </div>							
<div> <div>DRIVE SYSTEM DESCRIPTION (Vendor to complete)</div> <div>Product side Atmospheric side</div> </div>							
<div> <div>Driver: Electrical</div> <div>Norme</div> </div>							
<div> <div><input checked="" type="checkbox"/> fixed speed <input type="checkbox"/> Variable speed</div> <div>Max allow. pressure</div> </div>							
<div> <div>supplied/ mounted by: By Vendor / By Vendor</div> <div>Balancing</div> </div>							
<div> <div>manufacturer/ model: Submerged</div> <div>Spring/ Bellow</div> </div>							
<div> <div>nameplate power/ speed: 2,3 / 3000</div> <div>O'Ring/ gaskets</div> </div>							
<div> <div>Connection driver/ pump: <input type="checkbox"/> pulley/ belts <input type="checkbox"/> direct (close coupled)</div> <div>Cartridge sleeve:</div> </div>							
<div> <div><input type="checkbox"/> direct(separately coupled) <input type="checkbox"/> gears <input type="checkbox"/> other:</div> <div>End plate:</div> </div>							
<div> <div>Electrical utility data:</div> </div>							
<div> <div>Volts: 400 Hertz: 50 Phase: 3</div> </div>							

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Project - Unit		Document type	Material code	Serial number	Revision		
1200		SP	0910	001	0		
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:	<input type="checkbox"/> baseplate mounted <input type="checkbox"/> stand alone			
Available connections:		<input type="checkbox"/> filling <input type="checkbox"/> drain	<input type="checkbox"/> flushing inlet <input type="checkbox"/> flushing outlet	<input type="checkbox"/> pressurisation			
		<input type="checkbox"/> inlet coil <input type="checkbox"/> outlet coil	<input type="checkbox"/> gauge	<input type="checkbox"/> other			
Type of connections:		<input type="checkbox"/> threaded <input type="checkbox"/> flanged	<input type="checkbox"/>				
Baseplate, with <input type="checkbox"/> drip recovery (D=25 mm mini)		<input checked="" type="checkbox"/> handling devices (5)	<input checked="" type="checkbox"/> earthing lugs	<input type="checkbox"/>		VENDOR	
<input type="checkbox"/> equipotential connections		<input type="checkbox"/> anchor bolts	<input type="checkbox"/> Cooler support				
Control/ Instrumentation: <input checked="" type="checkbox"/> (6)						VENDOR	
Humidity sensor in motor housing							
Support Local operating panel with sun protection							
Variable Speed Drive :							
AUXILIARY CIRCUITS DESCRIPTION (Vendor to complete)							
Function	Fluid/ Flow (name / m3/hr)	Material	P/ T design (kPa g. / °C)	Main features			
INSPECTION AND TESTS (Vendor to complete)							
Shop inspection	<input type="checkbox"/> no <input checked="" type="checkbox"/> yes					By Vendor	
Material certificates	<input type="checkbox"/> no <input type="checkbox"/> yes	Type 3,1 for Stainlee Steel parts, Type 2.2 for other parts (according to EN 10204)				By Vendor	
Hydraulic test	<input type="checkbox"/> no <input type="checkbox"/> yes	with (1,5 x nominal pressure) during 30 minutes.				By Vendor	
NPSH test	<input type="checkbox"/> no <input type="checkbox"/> yes	Required only if difference between NPSHa and NSPHr < 1m at rated point				By Vendor	
Performance test	<input type="checkbox"/> no <input checked="" type="checkbox"/> yes	5 points of measurement. Standard Vendor procedure				By Vendor	
Balancing test	<input type="checkbox"/> no <input type="checkbox"/> yes	Vendor to detail procedure, according to ISO 1940 G 6.3				By Vendor	
Vibrations measurement	<input type="checkbox"/> no <input type="checkbox"/> yes	at guaranteed point with limit indicated in 9806J-0000-JSS-0910-001				By Vendor	
Sound level measurement	<input type="checkbox"/> no <input type="checkbox"/> yes	85 dB(a) @ 1m				By Vendor	
Dismantling after test	<input type="checkbox"/> no <input type="checkbox"/> yes	only if required after defects are measured				By Vendor	
MISCELLANEOUS (Vendor to complete)							
Painting:	<input checked="" type="checkbox"/> Standard Vendor <input type="checkbox"/> Other: Final color : RAL 5002					By Vendor	
Tracing/ Insulation:							
Special tools: If required						By Vendor	
Weights (kg):	<input type="checkbox"/> Bare pump:	<input type="checkbox"/> Driver:	<input type="checkbox"/> Baseplate:	<input type="checkbox"/> 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-4110, 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							

