

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 1 PART: A GENERAL

ITEM NO.	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
1	SABS 1200 A	<u>FIXED CHARGE ITEMS</u>				
1.1	8.3.1	Contractual Requirements.	sum	1		
1.2	8.3.2	Establishment of facilities on site.				
1.2.1	8.3.2.1	<u>Facilities for Engineer</u>				
	PS.AB.3.2	a) Furnished office.	sum	1		
	PS.AB.3.1	b) Nameboards (2 No.).	sum	1		
1.2.2	8.3.2.2	<u>Facilities for Contractor</u>				
		a) Offices & storage sheds, workshops, laboratories, living accommodation, ablution and latrine facilities, tools and equipment, dealing with water, communications, access and plant.	sum	1		
	PS.11.3	b) Water supplies and electric power.	sum	1		
1.3	8.3.4	Removal of site establishment.	sum	1		
1.4	AH14.1	Contractors initial obligation in respect of Occupational Health and Safety Act and Construction regulations. The preparation of risk assessments, safe working procedures, the Health & Safety file, the Health & Safety plan, provision of Personal Protective Equipment and Clothing and any other health and safety matters that the contractor deems necessary.	sum	1		
1.5	PEM 6	Compliance with Environmental Management Plan.	sum	1		
1.6	C1.2.3.1	Contractors responsibility in terms of the Policy for the use of Community Liaison Officer, Local Labour and facilitation of suitable communication mechanisms between the community and the project team.	sum	1		
1.7	PS.1.3	Requirements for accommodation of traffic.	sum	1		
TOTAL CARRIED FORWARD						

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF $\pm 2700\text{m}$ OF 500mm $\varnothing$ STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 1 PART: A GENERAL

ITEM NO.	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
	SABS 1200 A	<u>FIXED CHARGE ITEMS</u>				
1.8	PS.2.4	Liaison with Telkom / Eskom / eThekwin Electricity etc. to remove their services i.e. pole, box, cable, etc.	sum	1		
1.9	PS.31	Compliance with way leave requirements.	sum	1		
1.10	PS.25	Provision of security on site to guard against any disruption of the works throughout the duration of the contract.	sum	1		
1.11	C1.2.3.3	Contractor's responsibility for executing the Contract Participation Goal Plan. Rate to include for all works required by the contractor to achieve the CPG including, but not limited to, engaging with CPG contractors, attending to queries, assisting in resolving conflict / rates disputes, administering all payments for the successful completion of the project.	sum	1		

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STEEL INLET MAIN, WARDS 4 AND 103.**

SECTION 1 PART: A GENERAL

ITEM NO.	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
	SABS 1200 A	<u>TIME RELATED ITEMS</u>				
1.12	8.4.1	Contractual Requirements.	sum	1		
1.13	8.4.2	Operation and maintenance of facilities on site.				
1.13.1	8.4.2.1	<u>Facilities for Engineer</u>				
	PS.AB.3.2	a) Furnished office.	sum	1		
	PS.AB.3.1	b) Nameboards (2 No.).	sum	1		
1.13.2	8.4.2.2	<u>Facilities for Contractor</u>				
		a) Offices & storage sheds, workshops, laboratories, living accommodation, ablution and latrine facilities, tools and equipment, dealing with water, communications, access and plant.	sum	1		
	PS.11.3	b) Water supplies and electric power.	sum	1		
1.14	8.4.3	Supervision for duration of contract.	sum	1		
1.15	8.4.4	Company and head office overhead costs.	sum	1		
1.16	PSA 5.9	Accommodation of traffic.	sum	1		
1.17	AH 14.2	Contractors time related obligation in respect of Occupational Health and Safety Act and Construction regulations.	sum	1		
1.18	AH 14.3	Submission of the Health and Safety file on Completion of the works.	sum	1		
1.19	PEM 6	Compliance with Environmental Management Plan.	sum	1		
1.20	C1.2.3.1	Contractors responsibility in terms of the Policy for the use of Community Liaison Officer, Local Labour and facilitation of suitable communication mechanisms between the community and the project team.	Prov Sum	1		430,000
1.21		Overhead, charges and profit on 1.20 above.	%	430,000		

BoQ 3

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF $\pm 2700\text{m}$ OF 500mm $\varnothing$ STEEL INLET MAIN, WARDS 4 AND 103.

ITEM NO.	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
	SABS 1200 A	<u>TIME RELATED ITEMS</u>				
1.22	C1.2.3.3	Contractor's responsibility for executing the Contract Participation Goal Plan.	sum	1		
1.23		Contractor's responsibility for executing the Expanded Public Works Programme / Plan.	sum	1		

TOTAL CARRIED FORWARD	

BoQ 4

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 1 PART: A GENERAL

ITEM NO.	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
1.24	SABS 1200 A	SUMS STATED PROVISIONALLY BY THE ENGINEER.				
	8.5a	a) Repairs to damaged Telkom, Electrical and other services which could not have reasonable foreseen or prevented by the Contractor.	Prov Sum	1		350,000
	8.5b(1)	b) Relocation of existing services where ordered by the Engineer.	Prov Sum	1		450,000
	8.5a	c) Protection of visible and underground services as directed by the Engineer.	Prov Sum	1		250,000
	8.5b(1)	d) Provisional sum for stakeholder management or facilitation / ISD consultant.	Prov sum	1		425,000
	8.5a	e) Provisional sum for 24hour armed response security to the works.	Prov sum	1		1,300,000
	8.5a	f) Reinstatement of road markings and traffic signs where ordered by the Engineer.	Prov Sum	1		150,000
	8.5a	g) Property owner's claims pertaining to disruption of access or egress to their properties.	Prov Sum	1		350,000
	8.5b(1)	h) Survey of completed pipeline as ordered by the Engineer.	Prov Sum	1		200,000
	PS.A 8.11	i) Acceptance control testing as directed by the Engineer.	Prov Sum	1		150,000
	8.5a	j) Purchase of material not available at the Employer's Store or as instructed by the Engineer.	Prov Sum	1		7,000,000
	8.5b(1)	k) Cathodic Protection (CP) Professional Services Provider (PSP) and installation supervision.	Prov Sum	1		500,000
	8.5b	m) Cathodic Protection installation.	Prov Sum	1		7,000,000

TOTAL CARRIED FORWARD						18,125,000

BoQ 5

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STEEL INLET MAIN, WARDS 4 AND 103.**

SECTION 1 PART: A GENERAL

ITEM NO.	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						18,125,000
	SABS 1200 A	SUMS STATED PROVISIONALLY BY THE ENGINEER.				
	8.5a	n) Crossing of existing watermain, telkom, electricity etc. as directed by the Engineer.	Prov Sum	1		150,000
	8.5a	o) Supply of topsoil as directed by the Engineer.	Prov Sum	1		150,000
	8.5b	p) Claims resulting from standing time / work stoppages due to social, environmental or any other unforeseen circumstances.	Prov Sum	1		3,000,000
	8.5a	q) Demolition of existing structures as directed by the Engineer and restatement thereof.	Prov Sum	1		400,000
	8.5a	r) Remove existing structures, drains, services etc. not determined during design stage.	Prov Sum	1		350,000
	8.5a	s) Provisional sum for completion of outstanding works not carried out on Phase 1 which may be unknown to the Employer.	Prov Sum	1		750,000
		Design of lateral support as required by the Engineer	Prov Sum	1		500,000
	8.5a	Cost of progress photographs submitted to the Engineer via emails.	Prov Sum	1		20,000
	8.5b(2)	Overhead, charges and profit on 1.24 above.	%	23,445,000		

TOTAL CARRIED FORWARD						

BoQ 6

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HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 2 PART: C SITE CLEARANCE

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
2	SABS 1200 C	<u>SITE CLEARANCE</u>				
2.1	8.2.1	General clearance and grubbing along pipeline route 10m wide.	m	2500		
2.2	8.2.2	Remove and grub large trees and tree stumps of girth.				
		a) Over 1m up to and including 2m.	No	15		
		b) Over 2m up to and including 3m.	No	10		
		c) Over 3m up to and including 4m.	No	5		
		d) Over 4m up to and including 5m.	No	5		
2.3		Remove sign posts and store for reuse.	No	10		
2.4		Remove grass and store for reuse, 3m wide.	m²	2500		
2.5	PS.24	Remove precast concrete kerbs, channels and haunching.to tip.	m³	200		
2.6		Remove stormwater pipes and store for reuse. Maximum Ø = 600mm.	m	50		
2.7		Remove water reticulation pipes up to 200mm Ø.	m	200		
		Remove brickwork stormwater manholes. Maximum height 1.5m. Rate to include reinforced concrete base and roof slab.	No	5		
2.80						
2.90		Erect new jersey barriers on pipeline route as directed by the Engineer.	m	5500		
		Remove new jersey barriers above.	m	5500		

TOTAL CARRIED FORWARD						

BoQ 7

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HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 3 PART: DB EARTHWORKS (PIPE TRENCHES)

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
3	SABS 1200 DB	<u>EARTHWORKS (PIPE TRENCHES)</u>				
3.1	8.3.2 a) PS.DB. 8.3.1	Excavate and backfill in soft materials, compact to 93% Mod AASHTO density and dispose of surplus material for 500mm Ø steel pipe where depth is :- a) 0.0m and not exceeding 1m b) 1.0m and not exceeding 2m c) 2.0m and not exceeding 3m d) 3.0m and not exceeding 4m	m m m m	100 2000 500 100		
3.2	8.3.2 a) PS.DB. 8.3.1	Excavate and backfill in soft materials, compact to 93% Mod AASHTO density and dispose of surplus material for 200mm Ø steel pipe where depth is :- a) 0.0m and not exceeding 1m b) 1.0m and not exceeding 2m c) 2.0m and not exceeding 3m d) 3.0m and not exceeding 4m	m m m m	10 40 10 5		
3.3	8.3.2 b)	Extra over item (3.1) for hard material excavation. (Provisional.)	m³	400		
3.4	8.3.2 b)	Extra over item (3.1) for excavation in rock. (Provisional).	m³	1500		
3.5	PS.DB 8.3.1	Extra over item (3.1) for excavation in rock where the use of explosives are prohibited. (Provisional)	m³	300		
3.6		Extra over item (3.1) for excavation in roads and paved areas.	m³	500		
3.7		Extra over item (3.1) for restricted excavation. (Provisional).	m²	8500		

TOTAL CARRIED FORWARD						

BoQ 8

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SECTION 3 PART : DB EARTHWORKS (PIPE TRENCHES)

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
3.8	SABS 1200 DB	<u>EARTHWORKS (PIPE TRENCHES)</u>				
		Excavation ancillaries				
	8.3.3 c)	a) Make up deficiency in backfill material by importation from commercial or off-site source. (Provisional)	m³	1500		
	8.3.3.3 PSDB 5.7.1	b) Extra over item (3.1) for compaction in road reserves to 98% Mod. AASHTO Density.	m³	250		
	PSDB 5.7.1	c) Extra over item (3.1) for compaction of bedding material to 100% Mod AASHTO Density.	m³	2200		
3.9	PS.DB. 8.3.1	d) Extra over item (3.1) for cement stabilized backfill. (Provisional)	m³	100		
	PS.D 8.3.7	Provide lateral support for telephone poles, electric light poles, sign posts etc for the duration of contract.	No	10		
3.10	PS.2.2	Excavate by hand in all material to expose unknown services as directed by the Engineer. (Provisional).	m³	300		
3.11	PS.DB. 8.3.2	Shore trench opposite structure or service regardless of depth.	m²	8500		

TOTAL CARRIED FORWARD						

BoQ 9

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HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4	SABS 1200 L	<u>MEDIUM-PRESSURE PIPELINES</u>				
4.1	PSL.4.4	Collect from Hammarsdale Pipeyard, 500mm Ø API 5L Grade X42, cement mortar lined 3LPE coated x 9.14m lengths 4.5mm/6mm thick plate steel pipes. Rate to include reinstatement of coating and lining. ± 4.5km from site to reservoir.	m	2700		
4.2	PSL.8.2.1	Extraover item for supply of 4.5mm thick plate steel pipes.	m	2368		
4.3	PSL.8.2.1	Extraover item for supply of 6.0mm thick plate steel pipes.	m	337		
4.5	PSL.8.2.1	Supply and install Class 25, 200mm Ø mPVC pipes.	m	66		
4.6	PSL.8.2.1	Bed, lay and join the following 500mm Ø steel pipes: bell-ended.				
		a) 4.5mm thick plate,	m	2368		
		b) 6mm thick plate.	m	337		
4.7	PSL.8.2.1	Bed, lay and join the following 500mm Ø steel pipes: plain-ended.				
		a) 4.5mm thick plate,	m	2368		
		b) 6mm thick plate.	m	337		
4.8		Inspection and acceptance of pipes, valves and precast units supplied by the Employer.	sum	1		
4.9		Remove existing 200mm Ø mPVC pipe. Refer to drawing no. 56724 sheet 6 for details.	m	66		
4.9		and precast units supplied by the Employer.				
4.9		Remove existing 200mm Ø mPVC pipe. Refer to drawing no. 56724 sheet 6 for details.	m	66		

TOTAL CARRIED FORWARD						

BoQ 10

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HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
4	SABS 1200 L	<u>MEDIUM-PRESSURE PIPELINES</u>				
4.10	PSL.8.2.4 PSL 3.4	Extra-over item 4.1, 4.2 & 4.3 for fabrication and installation of the following API5L Grade X42 steel pipe specials, (rate to include for 4.5mm & 6mm plate thickness) inclusive of flanges, gaskets, washers and bolts where not supplied. Note: Bolts and washers to be electro galvanized and yellow passivated. Rate to also include for drilling, welding, internal and external corrosion protection, and the supply and welding of jointing sleeves as required.				
		<u>500mm Ø Bends</u>				
	PSL 3.4.4	a) 0° to 5° (scarf)	No	50		
		b) 5° to 30° (1 mitre)	No	35		
		c) 30° to 60° (2 mitre)	No	20		
		d) 60° to 90° (3 mitre)	No	5		
4.11		Supply and install cradle and skids as detailed on drawing No. 56724 sheet 11.	No	60		
4.12		Supply the following materials and install steel pipe anchors as detailed on drawing No. 56724 sheet 12.				
	PSL 3.4.5	a) Steel sheet anchor to be welded to the pipe at various angles up to 90°.	No	40		
		b) 200mm deep overbreak.	m³	10		
		c) Cement stabilised backfill.	m³	10		
		d) 25MPa base.	m³	20		

TOTAL CARRIED FORWARD						

BoQ 11

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HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.13		<u>MEDIUM-PRESSURE PIPELINES</u> Butterfly Valve Chambers PN40 Supply all materials and construct valve chambers. Refer to standard drawing No. 56724 sheets 19. Rate to include 50mm thick blinding layer, 250mm thick base, screed, 220mm brickwork, roof slab, plastering, chamfers, drain pipe, slip joint, sump, etc.	No	4		
4.13.1		Extra over item 4.13 for the following brickwork on all chambers: a) 330mm brickwork ± 850mm b) 440mm brickwork ± 500mm	sum sum	1 1		
4.13.2	PSL-3	Supply and install the following steel specials. Rate to include for reinstatement of coating and lining and corrosion protection. a) 100mm Ø stub cut to suit, F.O.E. Item 1. b) 100mm Ø x 90° short radius bends F.O.E. Item 2. c) 100mm Ø spool pieces cut to suit F.O.E. Item 3. d) 100mm Ø wide x 4.5mm plate collar Item 4. e) 100mm Ø wafer valve. Item 5. f) 50mm Ø gas socket welded to pipe. g) 50mm Ø ball-o-stop. h) 15mm Ø male stop end.	No No No No sum No	8 8 8 8 8 8		

4.13.3	i) 15mm Ø gas socket.	No	8		
	j) 15mm Ø ball-o-stop.	No	8		
	Supply and install 50mm Ø double purpose air release valves.	No	8		
TOTAL CARRIED FORWARD					

BoQ 12

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HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
		<u>MEDIUM-PRESSURE PIPELINES</u>				
4.13.4	PS.4.4	Collect from Springfield Water Store and install 500mm Ø Butterfly valves.	No	4		
4.13.5	PSL-3	Supply and install the following steel specials for air vents detail:				
		a) 10mm Ø mild steel studs	No	8		
		b) 100mm Ø x 480mm long steel spool piece with a 100mm Ø x 90° long radius bend F.O.E.	No	4		
		c) 100mm Ø x 370mm long steel spool piece with a 100mm Ø x 90° long radius bend F.O.E.	No	4		
		d) 100mm Ø spool piece approximate length 1100m.	No	4		
		e) 100mm Ø spool piece approximate length 3000m.	No	4		
		f) 3 no. R8 bars welded across opening at equal centres.	No	24		
		g) 100mm Ø x 90° long radius bends.	No	8		
4.13.6		Supply and install 15MPa, 400 x 400 x 400mm concrete anchor blocks.	No	8		
4.13.7		Supply and install "calcamite" step irons to be driven into predrilled 25mm Ø x 75mm deep holes fixed with "Epidemix 372" or similar approved epoxy adhesive.	No	56		
4.13.8		Supply and install Smart Lock heavy duty 700mm Ø manhole access cover and frame	No	4		

		including key.				
4.13.9		Supply and install 3 Ply Malthoid over 3mm over tempered hardboard. Rate to include steel floating over mortar bed.	sum	1		
4.13.10		Supply all material and instal lifting holes as detailed.	No	32		
TOTAL CARRIED FORWARD						

BoQ 13

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HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
		<u>MEDIUM-PRESSURE PIPELINES</u>				
4.13.11		Supply all materials and construct pipe/wall sealing detail.	sum	1		
4.13.12		Supply all materials and construct slab joint to be sealed with bituminous sealant ABE" Bituminuos Putty" or similar approved sealant.	sum	1		
4.14		Air Valve Chamber (100mm Ø) Off Road pipe. PN40 Outstanding work Phase1 H45, H51 & H56				
4.14.1	PSL-3.4 PSL-8.2.2	Fabricate, supply and install the following air valve specials: Rate to include for drilling, welding, internal & external corrosion protection and lining & coating where applicable. Refer to drawing No. 56724 sheet 15 for details.				
		a) 100mm Ø x 200mm long spool piece F.O.E. Item B.	No	3		
		b) 15mm Ø thread-O-Let Gas Socket. Item C.	No	3		
		c) 100mm Ø Butterfly valve. Item E.	No	3		
		d) 100mm Ø x 400mm Ø taper F.O.E. Item F.	No	2		
		e) 15mm Ø male stop end Item H.	No	3		
		f) 400mm Ø x 300mm long stub F.O.E. with a blank flange. Item G.	No	3		
		g) 15mm Ø ball-o-stop Female to male.	No	3		

		Item D.				
		h) 100mm Ø air valve assembly. Item A.	No	3		
4.14.2		Supply and install 1250mm Ø precast concrete manhole rings 500mm deep.	No	9		
4.14.3		Supply and install 1550mm Ø precast reinforced concrete roof slab.	No	3		
TOTAL CARRIED FORWARD						

BoQ 14

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SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SABS BROUGHT FORWARD						
4	1200 L	<u>MEDIUM-PRESSURE PIPELINES</u>				
4.14.4		Supply and install 100mm thick, 25mm crushed stone.	m²	5		
4.14.5		Supply and install 100mm thick umgeni sand bedding.	m²	5		
4.14.6		Supply and install 100mm Ø steel pipe epoxied into a 120mm Ø hole (cored through slab) with suitable epoxy.	No	3		
4.14.7		Supply and install 100mm Ø x 90° long radius bend with 3 no. R8 bars welded across opening at equal centres.	No	3		
4.14.8		Supply and instal 400mm Ø x 100mm Ø steel tapers.	No	2		
4.14.9		Supply and install air valve marker posts. Refer to drawing No. 56274 sheet 12 Plan No. 32	No	3		
4.14.10		Supply and install Smart Lock heavy duty 700mm Ø manhole access cover and frame including key.	No	2		
4.14.11		Supply and install "calcamite" step irons to be driven into predrilled 25mm Ø x 75mm deep holes fixed with "Lokset S 40" or similar approved epoxy adhesive.	No	18		

TOTAL CARRIED FORWARD						

BoQ 15

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SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
SABS BROUGHT FORWARD						
4	1200 L	<u>MEDIUM-PRESSURE PIPELINES</u>				
4.15		Air Valve Chamber (100mm Ø) Off Road pipe. PN25 Phase 2.				
4.15.1	PSL-8.2.2 PSL-3.4	Fabricate, supply and install the following air valve specials: Rate to include for drilling, welding, internal & external corrosion protection and lining & coating where applicable. Refer to drawing No. 56724 sheet 9 for details.				
		a) 100mm Ø x 200mm long spool piece F.O.E. Item B.	No	2		
		b) 15mm Ø thread-O-Let Gas Socket. Item C.	No	2		
		c) 100mm Ø Butterfly valve. Item E.	No	2		
		d) 100mm Ø spool piece F.O.E. welded centrally to a blank flange. Item F. ±600mm long. Rate to include cutting of 100mm Ø hole.	No	2		
		e) 15mm Ø male stop end Item H.	No	2		
		f) 400mm Ø x 300mm long stub F.O.E. with a blank flange. Item G.	No	2		
		g) 15mm Ø ball-o-stop Female to male. Item D.	No	2		
		h) 100mm Ø air valve assembly. Item A.	No	2		
4.15.2		Supply and install 1250mm Ø precast	No	6		

4.15.3	concrete manhole rings 500mm deep.	No	2		
4.15.4	Supply and install 1550mm Ø precast reinforced concrete roof slab.	m²	5		
4.15.5	Supply and install 100mm thick, 25mm crushed stone.	m²	5		
	Supply and install 100mm thick umgeni sand bedding.				
TOTAL CARRIED FORWARD					

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SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
	SABS 1200 L	<u>MEDIUM-PRESSURE PIPELINES</u>				
4.15.6		Supply and install 100mm Ø steel pipe epoxied into a 120mm Ø hole (cored through slab) with suitable epoxy.	No	2		
4.15.7		Supply and install 100mm Ø x 90° long radius bend with 3 no. R8 bars welded across opening at equal centres.	No	2		
4.15.8		Supply and install air valve marker posts. Refer to drawing No. 56274 sheet 12 Plan No. 32	No	2		
4.15.9		Supply and install Smart Lock heavy duty 700mm Ø manhole access cover and frame including keys.	No	2		
4.15.10		Supply and install "calcamite" step irons to be driven into predrilled 25mm Ø x 75mm deep holes fixed with "Lokset S 40" or similar approved epoxy adhesive.	No	12		

TOTAL CARRIED FORWARD						

BoQ 17

CONTRACT NO. WS 7589

**HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø
STEEL INLET MAIN, WARDS 4 AN**

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.16	SABS 1200 L	<u>MEDIUM-PRESSURE PIPELINES</u> Scour Valve Chamber (Off Road) PN 25. Phase 2.				
4.16.1	PS.L-3.4 PSL-8.2.2	Supply and install the following Scour Steel Specials. Rate to include drilling, welding, internal & external corrosion protection and reinstatement of lining & coating where applicable. Refer to DWG No. 56724 sheet 16 for details.				
		a) Saddle plates 4.5/6mm thick with a 150mm Ø x 100mm long spool piece and a 150mm Ø x 90° long radius bend F.O.E.	No	3		
		b) 150mm Ø spool piece F.B.E. length to be determined on site.	No	3		
		c) 150mm Ø gate valves.	No	3		
		d) 150mm Ø steel scour pipe F.B.E. with a 45° bend, length to be determined on site.	No	3		
		e) Spindle extension 32mm Ø cut to suit mild steel rod with an end cap welded to each end.	No	3		
		f) 40mm deep x 6 mm thick stainless steel plate including welding (Grade 316).	No	24		
		g) 40mm Ø x 1,6 mm thick stainless steel tube. (Grade 316).	No	18		

4.16.2	h) 250 x 290 x 6mm thick stainless steel plate. (Grade 316W).	No	18		
	i) Mild Steel washer welded onto the spindle extension to be greater than 44mm.	No	16		
	j) 10mm stainless steel bolts (Grade 316) to be epoxied into concrete with "Epidermix 350" or similar approved epoxy.	No	24		
	k) 100mm Ø uPVC Class 6 pipe. Length to be determined on site.	m	24		
	Core 150mm Ø hole on roof slab for spindle extension.	No	3		
TOTAL CARRIED FORWARD					

BoQ 18

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AN

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.16.3	SABS 1200 L	<u>MEDIUM-PRESSURE PIPELINES</u>				
	PS.4.4	Collect from Springfield Water Store and install the following :				
		a) 32mm Ø spindle extension with end cap. Length to be determined on site.	No	3		
		b) 150mm Ø gate valve.	No	3		
		c) No.5 valve covers.	No	3		
4.16.4		Supply and install the following items:	No	3		
		a) No.5 valve covers to be painted red.				
		b) 1500mm I.D. x 500mm deep precast concrete manhole rings.	No	9		
		c) Precast circular reinforced concrete slab 150mm deep.	No	3		
		d) 100mm Ø steel pipe x 200mm long to be epoxied with 'prostruct 617' general purpose epoxy adhesive or similar approved onto a predrilled 120mm Ø hole.	No	3		
		e) 100mm Ø x 90° short radius bends with 100mm Ø x 100mm long steel spool piece and 3 x R8 bars welded across opening at equal centres.	No	3		
		f) 100mm Ø flanged jet dispersers as detailed.	No	3		

		g) Calcamite step irons to be driven into predrilled 25mm Ø x 75mm deep holes and fixed with 'Epidermix 350' or similar approved epoxy.	No	27		
		h) 50mm blinding layer (with 400mm thick layer of 24mm crushed stone if soil conditions are unstable).	m²	18		
		i) 150mm deep reinforced concrete slab.	No	3		
		j) 230 x 230mm brick plinths	No	3		
		k) 500 x 500 x 500mm grade 20/26MPa mass concrete thrust block.	No	5		
TOTAL CARRIED FORWARD						

BoQ 19

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AN

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.16.5	SABS 1200 L PS.L-3.4 PSL-8.2.2	<u>MEDIUM-PRESSURE PIPELINES</u>				
		Supply all materials and seal joints between manhole rings with "Expandite Butyl 300" with root inhibitor or similar approved.	sum	1		
4.16.6		Supply and instal 700mm Ø Smart Lock cover and frame including keys.	No	3		
4.16.7		<u>SCOUR TYPE S2.</u> (Provisional)				
		Supply and install the following Scour Steel Specials. Rate to include drilling, welding, internal & external corrosion protection and reinstatement of lining & coating where applicable. Refer to DWG No. 56724 sheet 10 for details.				
		a) Saddle plates 4.5/6mm thick with a 150mm Ø x 100mm long spool piece and a 150mm Ø x 90° long radius bend F.O.E.	No	3		
		b) 150mm Ø spool piece F.B.E. length to be determined on site.	No	3		
		c) 150mm Ø gate valves.	No	3		
		d) 150mm Ø steel scour pipe F.B.E. with a 45° bend, length to be determined on site.	No	3		
		e) Spindle extension 32mm Ø cut to suit mild steel rod with an end cap welded to each end.	No	3		

4.16.8	PS.4.4	Collect from Springfield Water Store and install the following :				
		a) 32mm Ø spindle extension with end cap. Length to be determined on site.	No	3		
		b) 150mm Ø gate valve.	No	3		
		c) No.5 valve covers.	No	3		
4.16.9		Supply and install the following items:	No	3		
		a) No.5 valve covers to be painted red.				
		b) 100mm Ø flanged jet dispersers as detailed.	No	3		
TOTAL CARRIED FORWARD						

BoQ 20

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AN

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.17	SABS 1200 L	<u>MEDIUM-PRESSURE PIPELINES</u>				
		Scour Valve Chamber (Off Road) PN 40. Outstanding work Phase1.				
4.17.1	PS.L-3.4 PSL-8.2.2	Supply and install the following Scour Steel Specials. Rate to include drilling, welding, internal & external corrosion protection and reinstatement of lining & coating where applicable. Refer to DWG No. 56724 sheet 16 for details.				
		a) Saddle plates 8mm thick with a 150mm Ø x 100mm long spool piece and a 150mm Ø x 90° long radius bend F.O.E.	No	2		
		b) 150mm Ø spool piece F.B.E. length to be determined on site.	No	2		
		c) 150mm Ø gate valves.	No	2		
		d) 150mm Ø steel scour pipe F.B.E. with a 45° bend, length to be determined on site.	No	2		
		e) Spindle extension 32mm Ø cut to suit mild steel rod with an end cap welded to each end.	No	2		
		f) 40mm deep x 6 mm thick stainless steel plate including welding (Grade 316).	No	16		

4.16.2	g) 40mm Ø x 1,6 mm thick stainless steel tube. (Grade 316).	No	12		
	h) 250 x 290 x 6mm thick stainless steel plate. (Grade 316W).	No	12		
	i) Mild Steel washer welded onto the spindle extension to be greater than 44mm.	No	8		
	j) 10mm stainless steel bolts (Grade 316) to be epoxied into concrete with "Epidermix 350" or similar approved epoxy.	No	16		
	k) 100mm Ø uPVC Class 6 pipe. Length to be determined on site.	m	18		
	Core 150mm Ø hole on roof slab for spindle extension.	No	2		
TOTAL CARRIED FORWARD					

BoQ 21

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AN

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.17.3	SABS 1200 L	<u>MEDIUM-PRESSURE PIPELINES</u>				
	PS.4.4	Collect from Springfield Water Store and install the following :				
		a) 32mm Ø spindle extension with end cap. Length to be determined on site.	No	2		
		b) 150mm Ø gate valve.	No	2		
		c) No.5 valve covers.	No	2		
4.17.4		Supply and install the following items:	No	2		
		a) No.5 valve covers to be painted red.				
		b) 1500mm I.D. x 500mm deep precast concrete manhole rings.	No	6		
		c) Precast circular reinforced concrete slab 150mm deep.	No	2		
		d) 100mm Ø steel pipe x 200mm long to be epoxied with 'prostruct 617' general purpose epoxy adhesive or similar approved onto a predrilled 120mm Ø hole.	No	2		
		e) 100mm Ø x 90° short radius bends with 100mm Ø x 100mm long steel spool piece and 3 x R8 bars welded across opening at equal centres.	No	2		

	f) 100mm Ø flanged jet dispersers as detailed.	No	2		
	g) Calcamite step irons to be driven into predrilled 25mm Ø x 75mm deep holes and fixed with 'Epidermix 350' or similar approved epoxy.	No	18		
	h) 50mm blinding layer (with 400mm thick layer of 24mm crushed stone if soil conditions are unstable).	m ²	12		
	i) 150mm deep reinforced concrete slab.	No	2		
	j) 230 x 230mm brick plinths	No	2		
	k) 500 x 500 x 500mm grade 20/26MPa mass concrete thrust block.	No	2		
TOTAL CARRIED FORWARD					

BoQ 22

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
	SABS 1200 L	<u>MEDIUM-PRESSURE PIPELINES</u>				
4.17.5		Supply all materials and seal joints between manhole rings with "Expandite Butyl 300" with root inhibitor or similar approved.	sum	1		
4.17.6		Supply and instal 700mm Ø Smart Lock cover and frame including keys.	No	2		
4.18	PSL 3.9.2.3 A 4 (a) (iv) & (v)	Additional wrapping to steel pipe under corrosive conditions as directed by Engineer. (Provisional)	m	100		
4.19		Supply all materials fabricate and install cradles and skids. Refer to drawing Number 56724 sheet 11 for details.	No	150		
4.20		Supply all materials and construct sleeve ends for 1117mm Ø pipe as detailed on drawing No. 56724 sheet 11.	No	10		
4.21		Supply and install 5 liters of paint, stencil and paint and install PC concrete markers for air valves, scour valves and route indicators. Refer to DWG No. 56724 sheet 12.	No	60		
4.22	PS.A 8.9	Cost of survey including as-built survey.	sum	1		

4.23	PS.4.4	Return excess material to Springfield store.	kg	2000		
4.24	PS.DB 5.5 (b)	Supply all material and construct 150mm thick x 1.1m, 19mm stone bedding wrapped in type A3 geotextile filter incl. 150mm overlap in filter. (Provisional).	m	200		
4.25		Flush 500mm Ø pipeline including all connections.	m	2700		
4.26	PS.L.7.3 PS.L. 8.2.18	Test new 500mm Ø steel pipeline including all assemblies and connections.	m	2700		
4.27	PS.L.7.3 PS.L. 8.2.18	Test existing 500mm Ø pipeline including all assemblies and connections.	m	1100		
TOTAL CARRIED FORWARD						

BoQ 23

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
		<u>MEDIUM-PRESSURE PIPELINES</u>				
4.28		Remove end cap and tie in to the existing 500mm Ø steel pipe laid under Phase 1. Refer to drawing No. 56724 sheet 2.	sum	1		
4.29	PSL 8.2.21	Remove end cap and tie in to the existing 500mm Ø steel pipe at PI-52. Refer to drawing No. 56724 sheet 7.	sum	1		
4.30	PSL 8.2.21	Tie in to the existing 500mm Ø steel pipe pipe at reservoir site. Refer to drawing No. 56724 sheet 7.	sum	1		
4.31		Provide the necessary electrical equipment to produce a through flow of air whilst working inside the pipeline.	sum	1		
4.32		Protection of existing buildings, structures, etc.	sum	1		
4.33		Supply of stormwater pipes up to 600mm Ø as directed by the Engineer.	m	250		
4.34	PS.23	Cost of progress photographs emailed to the Engineer.	No	200		
4.35		Crack survey (photographic evidence) for	No	100		

		existing properties in the vicinity of pipeline pre and post installation.				
TOTAL CARRIED FORWARD						

BoQ 24

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.36	PS.L-3.4 PSL-8.2.2	<u>MEDIUM-PRESSURE PIPELINES</u>				
		Standard Inlet detail				
4.36.1		Fabricate, supply and install the following material for standard inlet. Rate to include Schedule 40 API and Rilsan lining and coating where required.				
		a) 300mm Ø inlet tee.	sum	1		
		b) 300mm Ø slip-on flanges	No	6		
		c) 3mm thick gas socket.	No	2		
		d) 300mm Ø spool pieces, 121mm long.	No	3		
		e) 25mm Ø thread-O-let gas socket and plug.	sum	1		
		f) 300mm Ø blank flange with 25mm Ø pre-drilled hole at the centre of flange.	No	1		
		g) Retaining ring: 8mm thick x 200mm Ø.	No	1		
		h) Retaining ring: 8mm thick x 295mm Ø.	No	1		
		i) 3 No 8mm Ø lifting handles welded around	sum	1		

		retaining rings.				
		j) 385mm Ø x 3mm thick insertion rubber with 230mm Ø opening.	No	1		
		k) 10mm thick orifice plate x155mm Ø.	No	1		
		l) 25mm Øx 90° elbow.	No	2		
		m) 10mm Ø holes in diffuser.	No	6		
		n) Grade 16 flange 460mm OD x 220mm ID x 12mm thick to be welded all around 250mm x 200mm Ø taper.	No	1		
		o) 250mm x 200mm Ø concentric taper.	No	1		
		p) 250mm Ø x 250mm long straight pipe welded to taper.	No	1		
TOTAL CARRIED FORWARD						

BoQ 25

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
		<u>MEDIUM-PRESSURE PIPELINES</u>				
		q) Inlet pipe brackets as detailed.	sum	1		
		r) 300mm Ø x 1500mm long steel pipe with a 45° bend.	No	1		
		s) 25mm Ø holes in 300mm Ø pipe.	No	2		
		t) 120 x 120 x 8mm plate thickness web welded all round to 300mm Ø pipe	No	4		
		u) 25mm Ø air suction pipe. Length to be determined on site.	No	2		
		v) M16 SS bolts grouted in concrete with suitable epoxy.	No	4		
		w) 300mm Ø schedule 40 API pipe 1110mm long	No	1		
		x) 500mm Ø hole in reservoir roof slab.	No	1		
		y) 750mm x750mm x 18mm thick plate.	No	1		
		z) Weld all around top and underside of	sum	1		

		18mm thick plate.				
		aa) Support bracket to sit on a layer of epidermix 338 epoxy (100mm wide x20mm thick) in order to create a seal between the bracket and top of reservoir roof.	sum	1		
TOTAL CARRIED FORWARD						

BoQ 26

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.37		<u>MEDIUM-PRESSURE PIPELINES</u> Meter Chamber Supply all materials and construct 300mm Ø Meter Chamber, as detailed on drawing No. 56724 sheet 14. Rate to include for excavation, backfilling, grade 25/19 footing, brickwork, 2 No. 100mm Ø galvanised air vent pipes with flanges and 2 No. 90° bends, 75mm thick 19mm stone carpet, step irons and thrust blocks. Cover and frame measured elsewhere.	sum	1		
4.37.1	PS.L.3.4	Supply and install the following steel specials as per standard drawing No. 57276 sheet 20. Rate to include for reinstatement of coating and lining and corrosion protection. a) 500 x 500mm Ø tees F.A.E. Item 2. b) 500 x 300mm Ø reducer. F.B.E. c) 500mm Ø spool piece. F.B.E. Item 3.	No	2		
			No	6		
			No	1		

4.37.2	d) 300mm Ø R.S.V. Item 4.	No	3		
	e) 300mm Ø spool pieces. Cut to suit. Item 6.	No	4		
	f) 300mm Ø x 90° long radius bends. F.B.E. Item 7	No	4		
	g) 300mm Ø spool piece. Cut to suit. F.B.E. Item 9.	No	1		
	Collect from Springfield store and install the following:				
	a) 300mm Ø meter.	No	1		
	b) 300mm Ø dirt box.	No	1		
	c) 300mm Ø RSV.	No	1		
	d) Triangular meter marker.	No	1		
TOTAL CARRIED FORWARD					

BoQ 27

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.37.3	PS.L.3.4	<u>MEDIUM-PRESSURE PIPELINES</u> Supply and install 2 No. 1200mm x 1200mm fabricated galvanised cover and frame including stainless steel bolts, plates equal angles and waterproofing.	sum	1		
4.37.4		Supply all materials and construct 100mm thick reinforced concrete slab. Rate to include formwork and smooth wood float finishing.	sum	1		
4.38		<u>OFF TAKE CHAMBER</u> (Refer to drawing No. 57276 sheet 13 for details.)				
4.38.1		Supply and install the following steel specials. Rate to include reinstatement of coating and lining and corrosion protection. a) 500mm Ø pipe 2800mm long F.B.E. with collar plates and a 300mm Ø branch pipe F.O.E. with a blank flange cut centrally 100mm Ø hole and a 100mm Ø	No	1		

		pipe F.O.E. item 1.				
		b) 500mm Ø pipe 3700mm long F.O.E. with collar plate and 150mm Ø hole. Item 2.	No	1		
		c) 500mm Ø x 45° gusset bend F.O.E. including collar plate welded to 1600mm Ø pipe. Item 3.	No	1		
		d) 150mm Ø x 45° long radius bend F.O.E. with a 100mm pipe F.O.E. Item 4.	No	1		
		e) 150mm Ø x 90° long radius bend with spool pieces F.O.E each such that C/F equals 300mm. Item 5.	No	1		
		f) 150mm Ø x 2700mm spool piece. Item 6	No	1		
		g) 150mm Ø x 100mm spool piece. Item 7.	No	1		
		h) 150mm Ø tee F.A.R. Item 10.	No	1		
		i) 150mm Ø x 300mm spool piece. Item 12.	No	1		
TOTAL CARRIED FORWARD						

BoQ 28

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
		<u>MEDIUM-PRESSURE PIPELINES</u>				
		j) 150mm Ø x 1000mm spool piece F.B.E. Item 13.	No	1		
		k) 150mm Ø jet disperser F.O.E. Item 14.	No	1		
		l) 100mm Ø x 300mm spool piece. Item 16.	No	1		
		m) 150mm Ø spool piece F.O.E. Item 19.	No	1		
		n) 150mm Ø spool piece F.O.E. Item 20.	No	1		
		o) 200mm Ø x 550mm long spool piece with a 90° short radius bend air vent assembly. Item 21.	No	1		
		p) 1100 x 1100 x 12 collar plate Grade X52 with two 5mm holes.	No	1		
4.38.2		Collect from Springfield water store and install the following :				

		a) 500mm Ø wafer butterfly valve and gearbox. PN25. Item 8.	No	1		
		b) 150mm Ø wafer butterfly valve and gearbox. PN25. Item 9.	No	1		
		c) 150mm Ø wedge gate valve. PN25. Item 11.	No	1		
		d) 100mm Ø air valve. PN25. Item 15.	No	1		
		e) 100mm Ø wafer butterfly valve. PN25. Item 17.	No	1		
4.38.3		Break concrete walls ±300mm deep to expose existing reinforcement to enable continuous reinforcing.	sum	1		
4.38.4		Supply and install Smartlock cover and frame including keys.	sum	1		
TOTAL CARRIED FORWARD						

BoQ 29

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.38.5		<u>MEDIUM-PRESSURE PIPELINES</u> Supply and install the following items :				
		a) GRP steps, landing and supports.	sum	1		
		b) GRP access ladder, measured to suit.	sum	1		
		c) GRP safety cage.	sum	1		
		d) GRP hand rails, measured to suit.	sum	1		
		e) 150 x 150 x 5 steel plates with 4 M10 bolts grouted in floor.	sum	1		
		f) Securex cover and frame.	sum	1		

TOTAL CARRIED FORWARD						

BoQ 30

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.39		<u>PRESSURE REDUCING VALVE (PRV)</u>				
4.39.1		Supply and instal the following items:				
		a) 500 x 300mm Ø taper. Item 1.	No	1		
		b) 300mm Ø x 900mm long spool piece F.B. E. Item 2.	No	1		
		c) 300mm Ø x 90° long radius bend. F.B.E with 100mm spool pieces F.B.E. Item 3.	No	2		
		d) 300mm Ø spool piece, length to be determined on site. Item 4.	No	2		
		e) 300mm Ø x 400mm long spool piece F.B. E. Item 5.	No	2		
		f) 300mm Ø butterfly valve with matching flanges and bolts sets. Item 6.	No	2		

4.39.2		g) 300mm Ø x 90° long radius bend. F.B.E. Item 7.	No	2		
		h) 25mm Ø air valve. Item 8.	No	2		
		i) 300mm Ø PRV. Item 9.	sum	1		
		j) 300mm Ø spool piece F.B.E. 1065mm long. Item 10.	No	1		
		Supply all materials and construct the following items:				
		a) ± 2850 x 400 x 400 mm thrust block.	sum	1		
		b) 600 x 200mm concrete strip footing.				
		c) 270mm brickwork .	m²	30		
		d) 50mm concrete infill all round.	m³	2,0		
		e) 2no. 2125 x 1865 x 75mm deep roof slabs with 4no. each lifting holes plugged and sealed with bituminous joint sealant (ABE bitujoint putty) or similar approved.	sum	1		
		e) High tensile steel reinforcement.	kg	95,0		
TOTAL CARRIED FORWARD						

BoQ 31

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 4 PART: L MEDIUM-PRESSURE PIPELINES

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
4.39.3		f) 10mm drip mould.	m	15		
		g) Mesh Ref. 395.	m²	30		
		h) 1400m x 75mm precast concrete lintels.	No	2		
		i) Tapered hardwood plug 65mm Ø 85 x 150mm long.	No	8		
		Collect from Springfield Water Store and install the following items:				
		a) 1800 x 900mm trox door.	No	1		
		b) Air vents.	No	2		

TOTAL CARRIED FORWARD						

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CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 5 PART: G CONCRETE

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
BROUGHT FORWARD						
5	SABS 1200 G	<u>CONCRETE</u>				
5.1		<u>Formwork</u>				
		a) Smooth vertical formwork in walls.	m²	30		
		b) Smooth vertical formwork in roof slab.	m²	39,24		
		c) Extra over item c) for roof slab panels including lifting holes.	sum	1		
		d) Smooth horizontal formwork in roof slab.	m²	19,62		
		e) Wood float finish in roof slab.	m²	19,94		
5.2		<u>Reinforcement</u>				
		a) Mild steel	kg	5		

5.3		b) High tensile steel	kg	2030		
		<u>Concrete</u>				
		a) Grade 30/19 mPa in walls	m³	5		
		b) Grade 30/19 mPa in roof slab	m³	4,0		
5.4	SABS 1200 DA 8.3.1	Excavate and backfill in all materials, compact to 95% Mod AASHTO density and use for embankment or backfill or dispose as ordered for off take chamber:	m³	80		
TOTAL CARRIED FORWARD						

BoQ 33

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 6 PART: LB BEDDING (PIPES)

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
6	SABS 1200 LB	<u>BEDDING (500mm Ø PIPES)</u>				
6.1	8.2.1	Provision of selected granular material for bedding cradle compacted to 93% MOD AASHTO density from trench excavation.	m³	100		
6.2	8.2.1	Provision of selected fill material compacted to 93% MOD AASHTO density from trench excavation.	m³	750		
6.3	8.2.2	Provision of selected granular material for bedding cradle compacted to 100% MOD AASHTO density from commercial sources.	m³	200		
6.4	8.2.2	Provision of selected fill material compacted to 93% MOD AASHTO density from commercial sources.	m³	1700		
6.5	8.2.4	Encasing of pipes in grade 15/19 MPa	m³	150		

		concrete (Provisional)				
TOTAL CARRIED FORWARD						

BoQ 34

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 7 PART: LG PIPE JACKING

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SABS 1200 LG	<u>PIPE JACKING</u> <u>Under 400551 St</u>				
7.1	8.2.1	Jacking establishment				
		a) Fixed charges	sum	1		
		b) Time related charges	sum	1		
7.2	8.2.2	Supply 1117mm nominal Ø Class 100D concrete jacking pipes.	m	24.4		
7.3	8.2.3	Jacking of 1117mm Ø Class 100D concrete pipes.	m	24.4		
7.4	8.2.4	Excavate in soft material for jacking 1117mm Ø pipes.	m³	36		

7.5	8.2.4	Extra over item (7.4) for hard material excavation.	m ³	10		
7.6	8.2.8	Extra over item (7.4) for excavation in hard rock.	m ³	25		
7.7	8.2.9	Stabilization of unstable areas or grouting of voids where ordered.				
		a) Provision and establishment of equipment on site and removal on completion of operation.	sum	1		
		b) Operation of equipment	day	2		
		c) Materials used	m ³	20		
7.8	8.2.10	Standing time for pipe jacking gang and the jacking equipment. (Provisional)	hour	18		
7.9		Grout external periphery of pipe on completion of jacking. (Min. grout 5 Mpa).	m ³	15		
7.10		Allow for keeping excavations free from water.	sum	1		
TOTAL CARRIED FORWARD						

BoQ 35

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 7 PART: LG PIPE JACKING

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SABS 1200 LG	BROUGHT FORWARD				
		<u>PIPE JACKING</u> <u>Under PI33-PI34. (traffic circle).</u>				
7.11	8.2.1	Jacking establishment				
		a) Fixed charges	sum	1		
		b) Time related charges	sum	1		
7.12	8.2.2	Supply 1117mm nominal Ø Class 100D concrete jacking pipes.	m	34.16		
7.13	8.2.3	Jacking of 1117mm Ø Class 100D concrete pipes.	m	34.16		
7.14	8.2.4	Excavate in soft material for jacking	m ³	55		

		1117mm Ø pipes.				
7.15	8.2.4	Extra over item (7.14) for hard material excavation.	m³	15		
7.16	8.2.8	Extra over item (7.14) for excavation in rock.	m³	25		
7.17	8.2.9	Stabilization of unstable areas or grouting of voids where ordered.				
		a) Provision and establishment of equipment on site and removal on completion of operation.	sum	1		
		b) Operation of equipment	day	2		
		c) Materials used	m³	20		
7.18	8.2.10	Standing time for pipe jacking gang and the jacking equipment. (Provisional)	hour	18		
7.19		Grout external periphery of pipe on completion of jacking. (Min. grout 5 Mpa).	m³	25		
7.20		Allow for keeping excavations free from water.	sum	1		
TOTAL CARRIED FORWARD						

BoQ 36

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 7 PART: LG PIPE JACKING

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SABS 1200 LG	BROUGHT FORWARD				
		<u>PIPE JACKING</u> <u>Under PI31-PI32. (traffic circle).</u>				
7.21	8.2.1	Jacking establishment				
		a) Fixed charges	sum	1		
		b) Time related charges	sum	1		
7.22	8.2.2	Supply 1117mm nominal Ø Class 100D concrete jacking pipes.	m	21.96		
7.23	8.2.3	Jacking of 1117mm Ø Class 100D concrete pipes.	m	21.96		

7.24	8.2.4	Excavate in soft material for jacking 1117mm Ø pipes.	m³	35		
7.25	8.2.4	Extra over item (7.4) for hard material excavation.	m³	10		
7.26	8.2.8	Extra over item (7.4) for excavation in hard rock.	m³	15		
7.27	8.2.9	Stabilization of unstable areas or grouting of voids where ordered.				
		a) Provision and establishment of equipment on site and removal on completion of operation.	sum	1		
		b) Operation of equipment	day	2		
		c) Materials used	m³	20		
7.28	8.2.10	Standing time for pipe jacking gang and the jacking equipment. (Provisional)	hour	18		
7.29		Grout external periphery of pipe on completion of jacking. (Min. grout 5 Mpa).	m³	15		
7.30		Allow for keeping excavations free from water.	sum	1		
TOTAL CARRIED FORWARD						

BoQ 37

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 7 PART: LG PIPE JACKING

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SABS 1200 LG	BROUGHT FORWARD				
		<u>PIPE JACKING</u> <u>Under 62021 TRK</u>				
7.31	8.2.1	Jacking establishment				
		a) Fixed charges	sum	1		
		b) Time related charges	sum	1		
7.32	8.2.2	Supply 1117mm nominal Ø Class 100D concrete jacking pipes.	m	24.4		
7.33	8.2.3	Jacking of 1117mm Ø Class 100D concrete pipes.	m	24.4		

7.34	8.2.4	Excavate in soft material for jacking 1117mm Ø pipes.	m³	36		
7.35	8.2.4	Extra over item (7.14) for hard material excavation.	m³	10		
7.36	8.2.8	Extra over item (7.14) for excavation in rock.	m³	25		
7.37	8.2.9	Stabilization of unstable areas or grouting of voids where ordered.				
		a) Provision and establishment of equipment on site and removal on completion of operation.	sum	1		
		b) Operation of equipment	day	2		
		c) Materials used	m³	20		
7.38	8.2.10	Standing time for pipe jacking gang and the jacking equipment. (Provisional)	hour	18		
7.39		Grout external periphery of pipe on completion of jacking. (Min. grout 5 Mpa).	m³	15		
7.40		Allow for keeping excavations free from water.	sum	1		
TOTAL CARRIED FORWARD						

BoQ 38

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 7 PART: LG PIPE JACKING

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
	SABS 1200 LG	BROUGHT FORWARD				
		<u>PIPE JACKING</u> <u>Under Access Road to Platform 15</u>				
7.41	8.2.1	Jacking establishment				
		a) Fixed charges	sum	1		
		b) Time related charges	sum	1		
7.42	8.2.2	Supply 1117mm nominal Ø Class 100D concrete jacking pipes.	m	51.24		
7.43	8.2.3	Jacking of 1117mm Ø Class 100D concrete	m	51.24		

		pipes.				
7.44	8.2.4	Excavate in soft material for jacking 1117mm Ø pipes.	m³	80		
7.45	8.2.4	Extra over item (7.14) for hard material excavation.	m³	25		
7.46	8.2.8	Extra over item (7.14) for excavation in rock.	m³	35		
7.47	8.2.9	Stabilization of unstable areas or grouting of voids where ordered.				
		a) Provision and establishment of equipment on site and removal on completion of operation.	sum	1		
		b) Operation of equipment	day	3		
		c) Materials used	m³	30		
7.48	8.2.10	Standing time for pipe jacking gang and the jacking equipment. (Provisional)	hour	27		
7.49		Grout external periphery of pipe on completion of jacking. (Min. grout 5 Mpa).	m³	30		
7.50		Allow for keeping excavations free from water.	sum	1		
TOTAL CARRIED FORWARD						

BoQ 39

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 8 PART: DK GABIONS AND PITCHING

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
8	SABS 1200 DK	GABIONS AND PITCHING				
8.1	8.2.1	Surface preparation for bedding of gabions.	m²			
8.2	8.2.2	Supply 1x1x1m Class A galvanised wire gabions.	m³	28		
8.3	8.2.2	Supply 1x1x0.5m Class A galvanised wire gabions.	m³	3.5		
8.4	8.2.3	Extra over item 4 above for packing selected stone for exposed face.	m²	30		

8.5	8.2.4	Supply and install non-woven geo-textile filter made from high quality polypropylene fibers.	m ²	50		
TOTAL CARRIED FORWARD						

BoQ 40

CONTRACT NO. WS 7589

HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SECTION 9 REINSTATEMENT

ITEM No	PAYMENT REFERS	DESCRIPTION	UNIT	QUANTITY	RATE	AMOUNT
9		<u>REINSTATEMENT</u>				
9.1		Reinstatement of ground surface on pipeline route.	m ²	6500		
9.2	PS.29	Reinstatement of channels and haunching to suit existing.	m ³	100		
9.3	PS.27	Reinstatement of sign posts.	No	10		
9.4		Reinstatement of stormwater pipes Maximum Ø = 600mm.	m	50		

9.5		Reinstatement of stormwater catchpits.	No	5		
9.6		Spread and level 150mm thick topsoil as directed by Engineer.	m²	1000		
9.7	PSDB-8.3.6.2	Grassing to areas as directed by the engineer.	m²	1500		
9.8		Reinstatement of precast concrete kerbs and channels including haunching.	m	200		
9.9		Reinstatement of brickwork stormwater manholes. Maximum height 1.5m. Rate to include reinforced concrete base and roof slab.	No	3		
TOTAL CARRIED FORWARD						

BoQ 41

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HAMMARSDALE HIGH LEVEL RESERVOIR INLET (PHASE 2) - CONSTRUCTION OF ±2700m OF 500mm Ø STEEL INLET MAIN, WARDS 4 AND 103.

SUMMARY OF THE BILL OF QUANTITIES

SECTION 1 : GENERAL R.....

SECTION 2 : SITE CLEARANCE R.....

SECTION 3 : EARTHWORKS (PIPE TRENCHES) R.....

SECTION 4 : MEDIUM PRESSURE PIPELINES R.....

