Water Treatment Plant

Site Construction

Sample

Prepared: 5/25/2007

Final Version 1.0

This takeoff has been prepared by *Walsh Estimating Service* , a division of Maracorp International:

Although we have been careful to assure that all items are correct, we make no guarantee beyond the cost of our work. The contractor has the final responsibility for completeness and accuracy in the preparation of his bid.

By acceptance of this takeoff, the purchaser agrees to the following statement:

"I do hereby release and hold harmless Walsh Estimating Service, Maracorp International, Ed Walsh, and his employees from any and all errors and omissions beyond the invoiced value of services rendered."

Prepared For:

Water Plant Constructors

Takeoff By: **Walsh Estimating (570) 223-7880**

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	Water Treatment Plant				
	Site Construction				
	Sample				
	Prepared: 5/25/2007				
	NOTES:				
	1. Specifications have not been reviewed.				
	2. Pavement and Landscape areas from Agtek are not to be used for exact quantities				
	(e.g. curbed islands and sidewalks are included within pavement/landscape surface areas)				
	3. Agtek File: WTP Mass 1.0, WTP SDtr EX 1.1, WTP Fnl 1.1				

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GC.	**GENERAL CONDITIONS**				
	Bonding and Insurance	LS	1		
	Mobilization / Demobilization	LS	1		
	Surveys, Stake Out and Bench Marks	LS	1		
	Site Safety and Security	LS	1		
	Traffic Control Measures	LS	1		
	Site Cleanliness and Debris removal	LS	1		
	Other Conditions	LS	1		
	Î	Î			
Subtotal					

	ITEM	UNIT	QUANT	PRICE	AMOUNT
I.	**EROSION AND SEDIMENT CONTROL**				
	General Items				
	Construction Entrance Pad, 8" thick	CY	25		
	Class 3 Filter Fabric for construction entrance pad	SY	110		
	Inlet Filters, (type)	EA	11		
	Silt Fence, 30" high with tie backs and reinforcing mesh if required	LF	460		
	Super Silt Fence SF-30, 33" high with chain link fence, tension wire and mounted on 2-1/2" galvanized or aluminum posts set 30" deep	LF	580		
	Temporary Diversion Channel with downslope berm, 2'-6" deep x 2' bottom width with 2H:1V slopes	LF	350		
	Jute or Excelsior Lining for diversion channel	SY	817		
	Temporary Rock Filter in swale	EA	1		
	Temporary 15" HDPE	LF	70		
	Temporary Riser, Perforated as required 24" CMP, 3'+/- high and set in 36" square x 18" thick concrete footing	LS	1		
	Trash Rack and Anti Vortex Device, 36" diameter x 27" high with welded top closure	LS	1		
	Temporary 18" CMP stub to riser	LF	10		
	Pyramat for Sediment Basin Emergency Spillway, 8'-6" wide material (lose 5' per 30' run for key trench), incl 17% for overlap and key trench	SY	275		
	High Performance Turf reinforcement Mat (Pyramat or equal) for steep slopes, 8'-6" wide material (lose 5' per 30' run for key trench), incl 17% for overlap and key trench	SY	7,300		
	Temporary seeding as required	LS	1		
	Sediment Trap				
	Area, 12' x 70'	SF	840		
	Assume Earth Berm required on 2 sides, 36"+/- high	LF	82		
	R-3 Rock Berm, 5' crest width with 12" No.57 stone layer on face	LF	12		
	Approximate R-3 Rock	CY	16		
	Approximate No. 57 Rock	CY	3		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	Temporary Level Spreader				
	Length	LF	25		
	Excavation, 3'+/- wide x 3' deep	CY	8		
	Backfill	CY	4		
	Excess (See Mass Earthwork Overall Summary)	CY	4		
	Reinforced Concrete Footing, 1'-6" wide x 12" thick	CY	1		
	Reinforced Concrete Wall, 2'-0" high x 6" thick	CY	1		
	R-4 Rip Rap, 2'-0" wide x 12" thick	CY	2		
	Geotextile	SY	8		
	Trench Plugs				
	Burlap filled sacks, 24" x 12'+/- total height (8" below finish surface) over 24" finished water and 6" force main sewer, approximate trench width 9'+/-, 3 each	CY	25		
	Burlap filled sacks, 24" x 9'+/- total height (8" below finish surface) over 24" raw water and 24" waste water, approximate trench width 10'+/-, 3 each	CY	20		
	Stream Crossing				
	Temporary Cofferdam of earth filled sacks with Class 3 Geotextile lining for 15'+/- crossing and 12" freeboard, 2 uses ***NOTE:*** *Alternate: Jersey Barrier with impermeable fabric or Portable Dam*	LS	1		
	Permanent Swale Length				
	Swale No. 3, 4' wide	LF	150		
	Swale No. 5, 4' wide	LF	110		
	Swale No. 6, 6' wide	LF	80		
	Swale No. 7, 6' wide	LF	380		
	Swale No. 8, 6' wide	LF	80		
	Swale No. 9, 6' wide	LF	260		
	Swale No. 10, 19' wide	LF	350		
	Total =	***LF***	***1,410***		
	Swale Lining				
	Pyramat, 8'-6" wide (lose 5' per 30' run for key trench), incl 17% for overlap and key trench	SY	1,625		
	Î	Î			
Subtotal					

	ITEM	UNIT	QUANT	PRICE	AMOUNT
II.	**SITE CLEARING AND DEMOLITION**				
	Clear, Grub and Dispose Trees and Stumps to 10' outside fence line	AC	0.61		
	Saw Cut Pavement ***NOTE:*** *This is included with pavement section below.*	LF			
	Remove Curb ***NOTE:*** *Contours do not indicate existing curb.*	LF			
Subtotal					
III.	**EXCAVATION (All volumes are "Raw" -- no assumptions for swell or compaction)**				
	DISTURBANCE AREA	SF	224,913		
	Disturbance Area, Acres	Acre	5.16		
	Î	Î			
	Strip Topsoil Areas, 12" thick	CY	4,165		
	*********				
	SUBGRADE ASSUMPTIONS:				
	Basin and Swale	*0.50'*			
	Pavement Areas	*1.17'*			
	Mass grade landscape and slope areas, excluding plant footprint	*0.50'*			
	Structure Excavation with 4'-6' clearance and 1H:1V slopes	*var.*			
	Structure Backfill interior (820 cy is deep tank layback backfill, balance is layback under admin section of building and 3'+/- average fill under slab)	*var.*			
	Structure Backfill exterior under landscape				
	Final grade around plant, landscape areas	*0.50'*			
	Final grade around plant, pavement areas	*1.17'*			
	*********				
	EARTH CUT:				
	Basin and Swale	CY	2,414		
	Pavement Areas	CY	7,468		
	Mass grade landscape and slope areas, excluding plant footprint	CY	12,053		
	Structure Excavation with 4'-6' clearance and 1H:1V slopes	CY	31,921		
	Final grade around plant, landscape areas	CY	1,368		
	TOTAL EARTH CUT =	**CY**	**55,224**		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	ROCK CUT:				
	Basin and Swale	CY			
	Pavement Areas	CY	736		
	Mass grade landscape and slope areas, excluding plant footprint	CY	799		
	Structure Excavation with 4'-6' clearance and 1H:1V slopes	CY	5,815		
	TOTAL ROCK CUT =	**CY**	**7,350**		
	UNCLASSIFIED FILL:				
	Basin and Swale	CY	2,211		
	Pavement Areas	CY	144		
	Mass grade landscape and slope areas, excluding plant footprint	CY	201		
	Structure Backfill interior (820 cy is deep tank layback backfill, balance is layback under admin section of building and 3'+/- average fill under slab)	CY	6,012		
	Structure Backfill exterior under landscape	CY	12,328		
	Final grade around plant, pavement areas	CY	1,130		
	TOTAL FILL =	**CY**	**22,026**		
	*********				
	UNCLASSIFIED EXCESS (BORROW) =	**CY**	**40,548**		
	*********				
	OVERALL UNCLASSIFIED SUMMARY:				
	Unclassified Excess (Borrow)	*CY*	40,548		
	Footing Excavation Excess	*CY*	111		
	Pipe Trench Excess	*CY*	4,772		
	Rip Rap Excess	*CY*	98		
	TOTAL EXCESS (BORROW) =	***CY***	**45,529**		
	Î	Î			
	TOPSOIL SUMMARY:				
	Strip Volume	CY	4,165		
	Required Volume, 6" thick	CY	2,717		
	EXCESS (BORROW) TOPSOIL =	**CY**	**1,448**		
	Î	Î			
Subtotal					

	ITEM	UNIT	QUANT	PRICE	AMOUNT
III-1.	**ROCK BLASTING (AND REMOVAL) - If Required (Unit Price)**				
	Mass Rock Blasting	CY	7,350		
	Trench Rock Blasting (0'-6' deep)	LF			
	Trench Rock Blasting (6'-9' deep)	LF			
	Trench Rock Blasting (9'-12' deep)	LF			
	Trench Rock Blasting (12'-15' deep)	LF			
	Î	Î			
Subtotal					
IV.	**ROUGH GRADING AREAS**				
Important	***NOTE:*** *Pavement and Landscape areas from Agtek printout are not to be used for exact quantities*				
	(e.g. curbed islands and sidewalks are usually included within pavement/landscape surface areas)				
	Grading Areas				
	Basin and Swale	SY	5,868		
	Pavement Areas	SY	4,675		
	Mass grade landscape and slope areas, excluding plant footprint	SY	6,076		
	Structure Excavation with 4'-6' clearance and 1H:1V slopes	SY	5,349		
	Structure Backfill interior (820 cy is deep tank layback backfill, balance is layback under admin section of building and 3'+/- average fill under slab)	SY	1,959		
	Structure Backfill exterior under landscape	SY	2,846		
	Final grade around plant, landscape areas	SY	5,112		
	Final grade around plant, pavement areas	SY	1,478		
	adjust for overlapping area	SY	(33,362)		
	Disturbance Area	SY	24,990		
	Total =	***SY***	***24,991***		
	check	*SY*	*24,990*		
Subtotal					
V.	**TOPSOIL REDISTRIBUTION AREA**				
	Topsoil Redistribution	SY	16,316		
	Seed and Mulch	SY	16,316		
Subtotal					

	ITEM	UNIT	QUANT	PRICE	AMOUNT
VI.	**BUILDING EXCAVATION**				
	Area Reference				
	Carbon Feed Building Area (for reference only)	SF	600		
	Water Plant Area (for reference only)	SF	33,125		
	Stone Under Slab				
	Stone Under Slab, _" thick	SF	33,125		
	Carbon Building and Chemical/Admin Building Footing Excavation and Backfill				
	Excavation	CY	339		
	Backfill	CY	228		
	Excess (See Mass Earthwork Overall Summary)	CY	111		
	Î	Î			
Subtotal					
VII.	**SANITARY SEWER**				
	Pipe Excavation and Bedding				
	Excavation	CY	1,750		
	Bedding -- Assume 6" thick and 12" cover	CY	320		
	Select Backfill	CY	290		
	Common Backfill	CY	1,129		
	Excess (See Mass Earthwork Overall Summary)	CY	621		
	12" thick Clay Cap in Roosevelt Street	CY	11		
	Services				
	4" Cleanout Assembly with Neenah H20 Cast Iron Frame and Cover set on concrete slab, 6" thick	EA	3		
	4" PVC Lateral in pavement (0'-4' deep)	LF	210		
	Pipe				
	NOTE: *Install sewer force main prior to installation of remaining water pipelines.*				
	4" restrained joint DIP Force Main (6'-8' deep)	LF	50		
	6" restrained joint DIP Force Main (6'-8' deep)	LF	300		
	6" restrained joint DIP Force Main down stream banks (6'-8' deep)	LF	45		
	6" restrained joint DIP Force Main in existing paved driveway (6'-8' deep)	LF	12		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	6" restrained joint DIP Force Main in Spring Creek (6'-8' deep)	LF	15		
	6" restrained joint DIP Force Main (8'-10' deep)	LF	110		
	6" restrained joint DIP Force Main (10'-12' deep)	LF	478		
	6" restrained joint DIP Force Main in Roosevelt Street pavement (12'-14' deep)	LF	75		
	6" restrained joint DIP Force Main (14'-16' deep)	LF	100		
	6" restrained joint DIP Force Main in pavement (12'-14' deep)	LF	75		
	Total =	***LF***	***1,260***		
	pipe check		*1,260*		
	Fittings and Valves				
	4" PVC 22-1/2 degree Bend vertical	EA	2		
	4" x 4" x 4" PVC Wye	EA	3		
	4" DIP 22-1/2 degree Bend vertical	EA	1		
	4" DIP 45 degree Bend horizontal	EA	1		
	6" DIP 45 degree Bend horizontal	EA	7		
	6" DIP 45 degree Bend vertical	EA	4		
	6" x 6" x 6" DIP Wye	EA	1		
	6" DIP 11-1/4 degree Bend horizontal	EA	2		
	6" DIP 22-1/2 degree Bend horizontal	EA	2		
	6" DIP 22-1/2 degree Bend vertical	EA	1		
	6" x 6" x 6" Tapping Sleeve and Valve	EA	1		
	6" Wet Tap	EA	1		
	Total =	***EA***	***26***		
	structure check		*26*		
	Meter Manhole				
	4'-0" diameter x 6'-6" deep Precast Concrete with flat slab top, Neenah R-1916-D manhole frame with bolted and gasketed cover and 4" concrete fill sloped to sump	EA	1		
	4" Flanged Adapter with anchor studs	EA	2		
	4" Mag Meter	EA	1		
	Pump Station				
	6'-0" diameter x 10' deep Precast Concrete with flat slab top for H20 loading, 16"+/- riser, and Bilco J-4AL Double Door Access Hatch	LS	1		
	Duplex Pumps and Controls with 2" discharge and check valves	EA	2		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	Concrete Encasement				
	Concrete Encasement	LF	60		
	Hand Placed R-5 Volume, 36" thick in earth	CY	20		
	Î	Î			
Subtotal					
VIII.	**RAW WATER, FINISHED WATER, SERVICE WATER AND WASTEWATER**				
	Pipe Excavation and Bedding				
	Excavation	CY	7,410		
	Bedding -- Assume 6" thick and 12" cover	CY	1,950		
	2RC Select Backfill	CY	1,200		
	Common Backfill	CY	3,747		
	Excess (See Mass Earthwork Overall Summary)	CY	3,663		
	12" thick Clay Cap in Roosevelt Street	CY	33		
	Raw Water Sample Pipe				
	3/4" Copper B-RWS laid in trench with 24" raw water	LF	28		
	Plant Service Water				
	2" Service Water, assume copper (4'-6' deep)	LF	85		
	4" restrained joint DIP in pavement (4'-6' deep)	LF	65		
	Water Supply				
	2-1/2" restrained joint DIP (6'-8' deep)	LF	50		
	4" restrained joint DIP (6'-8' deep)	LF	35		
	4" restrained joint DIP in existing gravel driveway (6'-8' deep)	LF	170		
	4" restrained joint DIP in existing paved driveway (6'-8' deep)	LF	211		
	4" DIP Drain (6'-8' deep)	LF	45		
	Raw Water Pipe				
	16" restrained joint DIP in existing paved driveway (0'-6' deep)	LF	37		
	24" restrained joint DIP (0'-6' deep)	LF	75		
	24" restrained joint DIP (6'-8' deep)	LF	360		
	24" restrained joint DIP in existing paved driveway (6'-8' deep)	LF	145		
	24" restrained joint DIP in pavement (0'-6' deep)	LF	175		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (0'-6' deep)	LF	325		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (6'-8' deep)	LF	200		
	24" restrained joint DIP in Roosevelt Street pavement (6'-8' deep)	LF	100		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (8'-10' deep)	LF	210		
	Total =	***LF***	***1,627***		
	pipe check		*1,627*		
	Finished Water Pipe				
	6" restrained joint DIP (6'-8' deep)	LF	10		
	24" restrained joint DIP (6'-8' deep)	LF	105		
	24" restrained joint DIP in existing paved driveway (6'-8' deep)	LF	32		
	24" restrained joint DIP Force Main down stream banks (6'-8' deep)	LF	50		
	24" restrained joint DIP Force Main in Spring Creek (6'-8' deep)	LF	15		
	24" restrained joint DIP (8'-10' deep)	LF	58		
	24" restrained joint DIP (12'-14' deep)	LF	42		
	24" restrained joint DIP in pavement (0'-6' deep)	LF	70		
	24" restrained joint DIP in pavement (12'-14' deep)	LF	35		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (0'-6' deep)	LF	145		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (6'-8' deep)	LF	265		
	24" restrained joint DIP in common trench in Roosevelt Street (WMH No. 3 to WMH No.6) (6'-8' deep)	LF	60		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (8'-10' deep)	LF	260		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (10'-12' deep)	LF	65		
	Total =	***LF***	***1,212***		
	pipe check		*1,212*		
	Wastewater Pipe				
	24" restrained joint DIP (0'-6' deep)	LF	38		
	24" restrained joint DIP in existing paved driveway (0'-6' deep)	LF	12		
	24" restrained joint DIP (16'-18' deep)	LF	65		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	24" restrained joint DIP (20'-22' deep)	LF	65		
	24" restrained joint DIP (24'-26' deep)	LF	40		
	24" restrained joint DIP in pavement (18'-20' deep)	LF	140		
	24" restrained joint DIP in common trench in existing paved driveway (WMH No. 3 to WMH No.6) (8'-10' deep)	LF	40		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (8'-10' deep)	LF	340		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (10'-12' deep)	LF	89		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (12'-14' deep)	LF	103		
	24" restrained joint DIP in common trench in Roosevelt Street (WMH No. 3 to WMH No.6) (12'-14' deep)	LF	65		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (14'-16' deep)	LF	33		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (16'-18' deep)	LF	33		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (18'-20' deep)	LF	33		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (20' -22' deep)	LF	33		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (22' 24' deep)	LF	33		
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (24'-26' deep)	LF	33		
	Total =	***LF***	***1,195***		
	pipe check		*1,195*		
	Î	*check*	*4,723*		
	Pipe Summary				
	3/4" Copper Sample Line	*LF*	*28*		
	2" (Assume) Copper Plant Service	*LF*	*85*		
	2-1/2" restrained joint DIP (6'-8' deep)	*LF*	*50*		
	4" restrained joint DIP Plant Service	*LF*	*526*		
	6" restrained joint DIP	*LF*	*10*		
	16" restrained joint DIP	*LF*	*37*		
	24" restrained joint DIP	*LF*	*3,987*		
		LF	***4,723***		
	Î	*check*	*4,723*		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	Testing and Sterilization				
gal per ft	***NOTE:*** *Assume all pipe is required to be tested and sterilized.*				
	Flushing and Testing, 3/4"	LF	28		
0.006	Flushing and Testing, 2"	LF	85		
0.009	Flushing and Testing, 2-1/2"	LF	50		
0.025	Flushing and Testing, 4"	LF	526		
0.054	Flushing and Testing, 6"	LF	10		
0.390	Flushing and Testing, 16"	LF	37		
0.870	Flushing and Testing, 24"	LF	3,987		
	Gallons required to fill all pipe one time	GAL	3,490		
	Concrete Encasement				
	Concrete Encasement	LF	60		
	R-5 Volume, 36" thick in earth	CY	20		
	Fittings				
	3/4" Corporation Stop	EA	1		
	3/4" Curb Stop Valve and Box	EA	1		
	4" 45 degree Bend horizontal for drain	EA	1		
	4" Flap Valve for drain	EA	1		
	4" x 2" Reducer	EA	1		
	4" x 2-1/2" Reducer	EA	1		
	6" x 4" Reducer	EA	1		
	24" x 16" Reducer	EA	2		
	16" Solid Sleeve ***NOTE:*** *This will be installed on existing pipeline near Pump Station No. 2.*	EA	1		
	2" 45 degree Bend horizontal	EA	2		
	2" 90 degree Bend horizontal	EA	1		
	2-1/2" 90 degree Bend horizontal	EA	1		
	4" 22-1/2 degree Bend horizontal	EA	2		
	4" 45 degree Bend horizontal	EA	2		
	16" 11-1/4 degree Bend horizontal ***NOTE:*** *One of these will be installed on existing effluent pipeline near Pump Station No. 2, which is part of cut and cap operation.*	EA	2		
	16" 45 degree Bend vertical	EA	1		
	16" 90 degree Bend horizontal	EA	1		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	24" 11-1/4 degree Bend horizontal	EA	5		
	24" 22-1/2 degree Bend horizontal	EA	4		
	24" 22-1/2 degree Bend vertical	EA	2		
	24" 45 degree Bend horizontal	EA	12		
	24" 45 degree Bend vertical	EA	3		
	24" 90 degree Bend horizontal	EA	2		
	4" x 4" x 2-1/2" Tee	EA	1		
	16" x 16" x 16" Tee ***NOTE:*** *One of these will be installed on existing pipeline near Pump Station No. 2.*	EA	2		
	24" x 24" x 6" Tee	EA	2		
	24" x 24" x 24" Tee	EA	1		
	Total =	***EA***	***56***		
	structure check		*56*		
	Structures				
	Manholes, 4' diameter (10'-12' deep)	EA	4		
	Manholes, 4' diameter (12'-14' deep)	EA	1		
	Manholes, 4' diameter (16'-18' deep)	EA	1		
	Manholes, 4' diameter (22'-24' deep)	EA	1		
	Manholes, 4' diameter (24'-26' deep)	EA	1		
	Outfall No. 1 for 24" Wastewater pipe, 6'-6" x 8'-0" with Baffle Wall, 3'-6" deep key wall and 3/4" steel bar barrier ***NOTE:*** *See detail on plan C9 - assume quantified by Contractor (cast in place concrete)*	EA	1		
	Total =	***EA***	***9***		
	structure check		*9*		
	Valves				
	2" Gate Valve and Box (for post hydrant - not scheduled, shown only in plan view and detail)	EA	1		
	2-1/2" Gate Valve and Box (for post hydrant - not scheduled, shown only in plan view and detail)	EA	1		
	6" Gate Valve and Box (for fire hydrant - not scheduled, shown only in plan view and detail)	EA	1		
	4" Gate Valve and Box Valve	EA	1		
	16" Butterfly Valve and Box	EA	4		
	16" x 16" x 16" Tapping Sleeve and Valve	EA	1		
	16" Wet Tap	EA	1		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	Hydrants				
	Post Hydrants with 2" Nozzle	EA	1		
	Post Hydrants with 2-1/2" Nozzle	EA	1		
	Fire Hydrants	EA	1		
	Cut and Cap Existing 16" Pump Station No. 2 Effluent Line				
	Shut Down and Drain existing 16" raw water line as needed	LS	1		
	Cut existing 16" DIP main ***NOTE:*** *One location is at tee and one is 25'+/- from the tee toward Spring Creek*	EA	2		
	Install short spool into bell end of existing main, cap with 16" cap, clamp with 4 3/4" tie rods and concrete encase cap and stub	LS	1		
	Remove 16" DIP if required (assume 10'+/- deep)	LF	25		
	Cut Existing 16" Raw Water Main to install New Connections at Raw Water Pump Station No. 2				
	NOTE: *Fittings are included in the above tabulation.*				
	Shut Down and Drain existing 16" raw water line as needed	LS	1		
	Cut existing 16" DIP main	EA	2		
	Remove 16" DIP (assume 10'+/- deep)	LF	20		
	Water Supply Meter Manhole				
	4'-0" diameter x 7'-0" deep Precast Concrete with flat slab top, Neenah R-1916-D manhole frame with bolted and gasketed cover and 4" concrete fill sloped to sump	EA	1		
	4" Flanged Adapter with anchor studs	EA	2		
	4" Turbine Meter	EA	1		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	Raw Water Meter Chamber				
	8'-0" x 14'-0" I.D. x 8'-0" deep Precast Concrete vault with steps and flat slab top for H20 loading, 3'-0" x 3'-0" Bilco J-4AL Double Door Access Hatch and 3" minimum concrete fill sloped to sump, set on 12" stone base	EA	1		
	Precast Blockout, 26"+/- x 36"+/- in concrete chamber for 4" chemical feed containment lines	EA	1		
	Precast Blockout, 26"+/- x 46"+/- in concrete chamber for 4" chemical feed containment lines	EA	1		
	Concrete Fill and Modular Wall Seal for 4" pipe	EA	12		
	Concrete Fill and Modular Wall Seal for 6" pipe	EA	2		
	1-1/2" Insulation on upper portion of interior walls and ceiling	SF	288		
	6" PVC Vent Riser set 2'-0" above ground with SS Insect Screen	EA	1		
	High Level Probe for sump pump	EA	1		
	Raw Water Flow Transmitter	EA	1		
	Blended Raw Water Sample Pump	EA	1		
	Chemical Feed connections, drilled and tapped into 24" pipe	EA	6		
	Chemical Feed line supports	EA	6		
	2" Combination air vacuum/release valve, drilled and tapped into 24" pipe	EA	1		
	Chemical Containment Pipe End Assembly, consisting of 4" pipe flange, 4" blind flange tapped for 1/4" plug and 1" IPS Appleton Liquid Cord Connector	EA	12		
	Chemical Containment Pipe End Assembly, consisting of 6" pipe flange, 6" blind flange tapped for 1/4" plug and 1" IPS Appleton Liquid Cord Connector	EA	2		
	24" Raw Water Flow Meter	EA	1		
	24" Flanged Adapter with anchor studs	EA	1		
	Spool Piece, 24" diameter x 7'-0" long, PE x flange	EA	1		
	Spool Piece, 24" diameter x 3'-6" long, PE x flange	EA	2		
	Concrete Support block for 24" pipe	EA	1		
	Modular Wall Seal for 24" pipe	EA	2		
	Î	Î			
Subtotal					

	ITEM	UNIT	QUANT	PRICE	AMOUNT
IX.	**CHEMICAL LINES**				
	Pipe Excavation and Bedding				
	Excavation	CY	78		
Concrete	Concrete Encasement -- 6" thick and 6" cover	CY	16		
	Select Backfill	CY	61		
	Common Backfill	CY			
	Excess (See Mass Earthwork Overall Summary)	CY	78		
	Reference Information				
	Conduit Bank A (8-4" PVC lines)				
	Conduit Bank B (4-4" PVC lines and 2-6" PVC lines)				
	Chemical Conduits A and B				
	Trenching for conduit bank	LF	94		
	4" PVC Containment Pipe	LF	704		
	6" PVC Containment Pipe	LF	24		
	1" Clear Reinforced Carrier Tubing inside chemical manhole ***NOTE:*** *Does tubing go through containment pipes? - if so, add appropriate amount*	LF	40		
	Reinforced Concrete Encasement A, 26" x 46"	LF	82		
	Reinforced Concrete Encasement B, 26" x 36"	LF	12		
	Chemical Manhole				
	5'-0" x 5'-0" I.D. x 8'-0" deep Precast Concrete vault with steps and flat slab top for H20 loading, 2'-6" x 2'-6" Bilco J-2AL Double Door Access Hatch and 6" minimum concrete fill sloped to sump, set on 12" stone base	EA	1		
	Precast Blockout, 26"+/- x 46"+/- in concrete chamber for 4" chemical feed containment lines	EA	2		
	Modular Wall Seal for 4" pipe	EA	16		
	Chemical Containment Pipe End Assembly, consisting of 4" pipe flange, 4" blind flange tapped for 1/4" plug and 1" IPS Appleton Liquid Cord Connector	EA	16		
	Chemical Resistant Coating	SF	160		
	Î	Î			
Subtotal					

	ITEM	UNIT	QUANT	PRICE	AMOUNT
X.	**STORM SYSTEM**				
	NOTE: *Downspout connection count has not been included - unable to locate on plan.*				
	Pipe Excavation and Bedding				
	Excavation	CY	620		
	Bedding -- Assume 6" thick and 12" cover	CY	280		
	2RC Select Backfill in pavement areas	CY	80		
	Common Backfill	CY	210		
	Excess (See Mass Earthwork Overall Summary)	CY	410		
	Pipe				
	6" PVC (0'-4' deep)	LF	77		
	12" HDPE in pavement (0'-4' deep)	LF	93		
	12" HDPE (4'-6' deep)	LF	161		
	12" HDPE in pavement (6'-8' deep)	LF	80		
	12" HDPE (6'-8' deep)	LF	13		
	15" HDPE in pavement (0'-4' deep)	LF	60		
	15" HDPE (0'-4' deep)	LF	45		
	15" HDPE (4'-6' deep)	LF	146		
	18" RCP in pavement (0'-4' deep)	LF	48		
	18" HDPE in pavement (0'-4' deep)	LF	25		
	18" HDPE (0'-4' deep)	LF	162		
	18" HDPE (4'-6' deep)	LF	100		
	Total =	***LF***	***1,010***		
	pipe check		*1,010*		
	Structures				
	End Section for Temporary 15" HDPE at Second Street entrance	EA	1		
	End Section for 15" HDPE	EA	1		
	End Section for 18" HDPE	EA	2		
	6" Cleanout Assembly with Neenah H20 Cast Iron Frame and Cover set on concrete slab, 6" thick	EA	1		
	2'-6" x 4'-0" Inlet with Neenah R-3401 Frame and Grate (0'-4' deep), 3" minimum concrete fill	EA	5		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	2'-6" x 4'-0" Inlet with Neenah R-3401 Frame and Grate (4'-6' deep including 3'-0" sump required for oil debris hood), 3" minimum concrete fill	EA	2		
	2'-6" x 4'-0" Inlet with Neenah R-3401 Frame and Grate (4'-6' deep), 3" minimum concrete fill	EA	2		
	2'-6" x 4'-0" Inlet with Neenah R-3401 Frame and Grate (6'-8' deep), 3" minimum concrete fill	EA	2		
	6" PVC Downspout Connection Assembly with (2) 45 degree Bends and PVC Boot Cleanout "T" Branch	EA			
	Manholes, 4' diameter (3' deep)	EA	1		
	Manholes, 4' diameter (15' deep)	EA	1		
	Outlet Structure, 2'-6" x 5'-0" x 6'+/- deep with 3" minimum concrete fill, 2'-0" x 6'-0" x 1/4" steel orifice plate and watertight vault lid with handle	EA	1		
	Total =	***EA***	***19***		
	structure check		*19*		
	Oil Debris Hood				
	Plastic Composite Oil Debris Hood for 15" pipe	EA	1		
	Plastic Composite Oil Debris Hood for 18" pipe	EA	1		
	Trench Drain				
	Concrete Flow Chamber, 4'-0" wide I.D., sloped 4'-6" to 5'-6" deep with 8" walls	LF	48		
	Neenah Frame and Grate, R-4990-OX (Type A)	LF	48		
	Chemical Resistant Coating	SF	712		
	Spill Containment Chamber				
	4'-0" x 4'-0" I.D. x 7'-0" deep Precast Concrete vault with steps and flat slab top for H20 loading, 2'-6" x 2'-6" Bilco J-2AL Double Door Access Hatch and 3" minimum concrete fill sloped to sump, set on 12" stone base	EA	1		
	Precast or Core Bore concrete chamber for (2) 1/4" copper air lines	EA	1		
	Modular Wall Seal for 2-1/4" pipe	EA	1		
	Precast or Core Bore concrete chamber for 6" PVC line	EA	1		
	Modular Wall Seal for 6" pipe	EA	1		
	6" PVC Ball Valve (Pneumatic operated) with Control Panel	EA	1		
	Double 1/4" Copper Air Line	LF	190		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	Underdrain				
	6" Perforated PVC Underdrain	LF	265		
	Excavation, 2'-0" wide x 8'+/- deep	CY	157		
	Clean Stone	CY	155		
	Geotextile Wrap	SY	648		
	RIP RAP				
	R-3 Rip Rap for Storm Pond Emergency Spillway				
	Area	SY	140		
	Excavation for Rip Rap	CY	46		
	R-3 Volume, 12" thick	CY	46		
	Type II Geotextile	SY	146		
	R-4 Rip Rap				
	Rip Rap Area	SY	11		
	Excavation for Rip Rap	CY	6		
	R-4 Volume, 18" thick	CY	6		
	Filter Fabric	SY	11		
	R-5 Rip Rap				
	R-5 Area	SY	25		
	Excavation for Rip Rap	CY	17		
	R-5 Volume, 24" thick	CY	17		
	Filter Fabric	SY	25		
	R-6 Rip Rap				
	R-6 Area	SY	35		
	Excavation for Rip Rap	CY	29		
	R-6 Volume, 30" thick	CY	29		
	Filter Fabric	SY	35		
	Î	Î			
	Rip Rap Summary:				
	Area	*SY*	211		
	Excavation for Rip Rap	*CY*	98		
	Rip Rap Volume	*CY*	98		
	Filter Fabric	*SY*	217		
	Î	Î			
Subtotal					

	ITEM	UNIT	QUANT	PRICE	AMOUNT
XI.	**CONCRETE**				
	Sidewalk				
	Reinforced Concrete, 4" thick with 6 x 6 W2.9 x W2.9 WWM	SF	1,558		
	Stone Base, 4" thick	SF	1,558		
	Miscellaneous Pad Reference Information				
	4'-0" x 10'-0" at carbon feed facility	*SF*	*40*		
	8'-0" x 7'-7" at loading dock	*SF*	*61*		
	7'-7" x 15'-0" at loading dock	*SF*	*105*		
	4'-0" x 4'-0" at loading dock	*SF*	*16*		
	4'-0" x 4'-0" at north side of plant	*SF*	*16*		
	Total =	***SF***	***238***		
	Miscellaneous Pads				
	Reinforced Concrete, 4" thick with 6 x 6 W2.9 x W2.9 WWM	SF	238		
	Stone Base, 4" thick	SF	238		
	Transformer Pads - if required under this contract				
	Reinforced Concrete, 4" thick with 6 x 6 W2.9 x W2.9 WWM	SF	98		
	Stone Base, 4" thick	SF	98		
	Meter Cabinet Pad - if required under this contract				
	Reinforced Concrete, 4" thick with 6 x 6 W2.9 x W2.9 WWM	SF	36		
	Stone Base, 4" thick	SF	36		
	Generator Pad - if required under this contract				
	Reinforced Concrete, assume 4" thick with 6 x 6 W2.9 x W2.9 WWM	SF	240		
	Stone Base, 4" thick	SF	240		
	Chiller Pad - if required under this contract				
	Reinforced Concrete, assume 4" thick with 6 x 6 W2.9 x W2.9 WWM	SF	40		
	Stone Base, 4" thick	SF	40		
	Concrete Paving at Trench Drain				
	Reinforced Concrete, 8" thick with 6 x 6 W2.9 x W2.9 WWM	SF	1,216		
	Stone Base, 8" thick	SF	1,216		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	Dumpster Pad				
	Reinforced Concrete, 8" thick with 6 x 6 W2.9 x W2.9 WWM	SF	288		
	Stone Base, 8" thick	SF	288		
	Miscellaneous Concrete				
	Precast Wheel Stops	EA	7		
	Î	Î			
Subtotal					
XII.	**PAVEMENT**				
	Access Road				
	Fine Grade and Compact Subgrade	SY	3,679		
	2A Stone Base Course, 8" thick	SY	3,679		
	Bituminous Concrete Base Course, 4" thick	SY	3,679		
	ID-2 Bituminous Wearing Course, 2" thick	SY	3,679		
	Road A				
	Fine Grade and Compact Subgrade	SY	639		
	2A Stone Base Course, 6" thick	SY	639		
	Bituminous Concrete Base Course, 4" thick	SY	639		
	ID-2 Bituminous Wearing Course, 2" thick	SY	639		
	Type 1I Shoulder Upgrade				
	Saw Cut existing pavement and Seal Joint	LF	800		
	Fine Grade and Compact Subgrade	SY	711		
	2A Stone Base Course, 6" thick	SY	711		
	Bituminous Concrete Base Course, 4" thick	SY	711		
	ID-3 Bituminous Wearing Course, 1-1/2" thick	SY	711		
	4" Pavement Base Drain	LF	800		
	4" Pavement Base Drain Outlet	LF	105		
	Î	Î			
Subtotal					

	ITEM	UNIT	QUANT	PRICE	AMOUNT
XIII.	**PAVING REMOVAL AND REPLACEMENT FOR UTILITIES**				
	Temporary Pavement				
	Install and Remove Temporary Paving, 2" thick	SY	780		
	Roosevelt Street and Type 6 Shoulder				
	Saw Cut Pavement, full depth	LF	140		
	Saw Cut Pavement, trim back	LF	140		
	Pavement Removal, Assume 40' wide	SY	310		
	Fine Grade and Compact Subgrade	SY	310		
	Bituminous Concrete Base Course, 4" thick	SY	310		
	ID-2 Bituminous Wearing Course, 1-1/2" thick	SY	310		
	Driveway Pavement				
	Saw Cut Pavement, full depth	LF	52		
	Saw Cut Pavement, trim back	LF	52		
	Pavement Removal, 20' width at Second Street/Roosevelt intersection and assume full replacement from westerly limit pipe crossing to end at water plant pump station	SY	470		
	Fine Grade and Compact Subgrade	SY	470		
	Bituminous Concrete Base Course, 4" thick	SY	470		
	ID-2 Bituminous Wearing Course, 1-1/2" thick	SY	470		
	Gravel Driveway at Lehigh River Site				
	Fine Grade and Compact Subgrade	SY	600		
	2A Stone Base Course, 5" thick	SY	600		
	Î	Î			
Subtotal					
XIV.	**STRIPING AND SIGNS**				
	Striping				
	Striping Parking Spaces	EA	7		
	Striping Crosshatch Area (including lines and spaces)	SF	144		
	Striping Handicap Logo	EA	1		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	Signs				
	Stop Sign (R1-1), 24"	EA	2		
	No Parking Sign	EA	1		
	Handicap Parking Sign with Van Accessible and Penalty Signs	EA	1		
	Directional Sign, 2'-6" x 3'-6"	EA	1		
	2" Square Aluminum Post 7'-0" exposed with 2'-6" set in concrete footing	EA	5		
	Î	Î			
Subtotal					
XV.	**FENCE, GUIDERAIL AND MISCELLANEOUS**				
	Fence around New Plant				
	7' Chain Link Fence with 1'-0" high barbed wire top, 9 gauge fabric	LF	1,734		
	Man Gate, 3' wide with 1'-0" high barbed wire top, 9 gauge fabric	EA	1		
	Double Gate, 12' wide with 1'-0" high barbed wire top, 9 gauge fabric	EA	1		
	Cantilevered Sliding Gate, 40'-0" wide with 1'-0" high barbed wire top, 9 gauge fabric on 28'-0" (12'-0" length has no fabric)	EA	1		
	Gate Operator with 2 lop detectors	LS	1		
	Fence around Generator at Lehigh River				
	7' Chain Link Fence with 1'-0" high barbed wire top, 9 gauge fabric	LF	168		
	Double Gate, 12' wide with 1'-0" high barbed wire top, 9 gauge fabric	EA	1		
	Bollards				
	Pipe Bollard, 6" diameter concrete filled with 2 reflective bands around top, 4'-0" exposed and 3'-0" set in 4'-0" deep concrete footing at Carbon Feed Building	EA	2		
	Pipe Bollard, 6" diameter concrete filled with 2 reflective bands around top, 4'-0" exposed and 3'-0" set in 4'-0" deep concrete footing at water plant electric transformer	EA	6		
	Pipe Bollard, 6" diameter concrete filled with 2 reflective bands around top, 4'-0" exposed and 3'-0" set in 4'-0" deep concrete footing at generator station	EA	3		

	ITEM	UNIT	QUANT	PRICE	AMOUNT
	Miscellaneous				
	Bike Rack, 4 unit capacity, "Bike Up" Executive Rack TM	EA	1		
	Flagpole	EA	1		
	Î	Î			
Subtotal					
XVI.	**LANDSCAPE RESTORATION IN NON MASS EARTHWORK AREAS**				
	Combination trench, length	LF	825		
	Combination trench, assume 40'+/- wide	SY	3,660		
	Î	Î			
Subtotal					
	TOTAL				

Page 27 of 39 Water Plant Site Sample.xls Earth Summary 1.0 print date: 6/29/2007 2:04 PM

Water Plant
plan dated 12/2003

Takeoff by:	T. O'Neill
Summary by:	R. Decker
Checked by:	R. Decker
Date:	5/25/2007

Abbreviations:

BCY = bank cubic yards (or Raw Volumes) SF = square feet
LCY = loose cubic yards (swell factor) B.O.C. = bottom of concrete
CCY = compacted cubic yards (#,###) = negative number
SG = subgrade AS = as shown

	Earth_Swell	1.189
	Rock_Swell	1.500
(Compaction & Swell Assumptions)		
BCY%	88.00%	Existing
LCY%	74.00%	Swelled

Agtek File: WTP Mass 1.0, WTP SDtr EX 1.1, WTP Fnl 1.1 *(See Note 1)*

		DISTURBANCE AREA & STRIPPING					RAW CUT & FILL VOLUMES					VOLUMES ADJUSTED FOR SWELL & COMPACTION ASSUMPTIONS						*See Note 2*
												Earth	Rock	Proposed	*LOOSE CUBIC YARDS*			*Approx.*
	Subgrade	Cut, Surface	Fill, Surface	Total	Area	**6" Strip**	Cut Earth	Cut Rock	Total Cut	Fill	Balance	Swell	Swell	Compaction	*Cut*	*Fill*	*Balance*	*Grade Adjust to*
		SF	SF	SF	Acres	BCY	BCY	BCY	BCY	BCY	BCY	1.189	1.500	Percent	*LCY*	*LCY Required*	*LCY*	*Balance*
ALL AREAS																		
Basin and Swale	0.50'	21,933	30,882	52,815	1.21	978	2,414	0	2,414	2,211	203	2,870	0	95.00%	*2,870*	*2,838*	*32*	+ 0.02'
Pavement Areas	1.17'	35,750	6,321	42,071	0.97	779	7,468	736	8,204	144	8,060	8,879	1,104	95.00%	*9,983*	*185*	*9,798*	+ 6.29'
Mass grade landscape and slope areas, excluding plant footprint	0.50'	44,196	10,488	54,684	1.26	1,013	12,053	799	12,852	201	12,651	14,331	1,199	95.00%	*15,530*	*258*	*15,272*	+ 7.54'
Structure Excavation with 4'-6' clearance and 1H:1V slopes	var.	48,143	0	48,143	1.11	892	31,921	5,815	37,736	0	37,736	37,954	8,723	95.00%	*46,677*	*0*	*46,677*	+ 26.18'
Structure Backfill interior (820 cy is deep tank layback backfill, balance is layback under admin section of building and 3'+/- average fill under slab)	var.	0	17,627	17,627	0.40	326	0	0	0	6,012	(6,012)	0	0	95.00%	*0*	*7,718*	*(7,718)*	- 11.82'
Structure Backfill exterior under landscape	0.00'	0	25,610	25,610	0.59	474	0	0	0	12,328	(12,328)	0	0	95.00%	*0*	*15,826*	*(15,826)*	- 16.68'
Final grade around plant, landscape areas	0.50'	10,082	35,925	46,007	1.06	852	1,368	0	1,368	0	1,368	1,627	0	90.00%	*1,627*	*0*	*1,627*	+ 0.95'
Final grade around plant, pavement areas	1.17'	0	13,300	13,300	0.31	246	0	0	0	1,130	(1,130)	0	0	95.00%	*0*	*1,451*	*(1,451)*	- 2.95'
adjust for overlapping area		*0*	*0*	*(300,257)*	*(6.89)*	*(5,560)*	*0*	*0*	*0*	*0*	0	0	0	90.00%	*0*	*0*	*0*	+ 0.00'
Disturbance Area		*0*	*0*	*224,913*	*5.16*	*4,165*	*0*	*0*	*0*	*0*	0	0	0	90.00%	*0*	*0*	*0*	+ 0.00'
Î.		0	0	0	0.00	0	0	0	0	0	0	0	0	90.00%	*0*	*0*	0	
TOTALS		**160,104**	**140,153**	**224,913**	**5.18**	**4,165**	**55,224**	**7,350**	**62,574**	**22,026**	**40,548**	**65,661**	**11,026**		***76,687***	***28,276***	***48,411***	+ 5.81'
										Excess topsoil =	4,165				Excess topsoil *swelled 25%* =	5,206	
										Total Excess (Borrow) Material =	**44,713**				Total Excess (Borrow) Material =	**53,617**	+ 6.44'

NOTES:

1 TOPSOIL volumes are NOT included in the RAW and ADJUSTED cut & fill volumes. All earth volumes are calculated, after stripping and to proposed subgrade.

Redistribute Topsoil, 6" thick		0	SY
• Topsoil Required	6"	0	BCY
• Excess (Borrow) Topsoil		4,165	BCY

2 The last column shows the approximate finish grade adjustment required to achieve a balanced site.

3 Pavement areas above are not to be used for exact pavement areas -- e.g. islands are sometimes included within pavement earthwork areas.

Takeoff By: **Walsh Estimating (570) 223-7880**

		INPUTS			EXCAVATION			BEDDING				BACKFILL			
	Water Treatment Plant	Length	Avg Depth	Pipe Dia	Trench Limits per side	Trench Width	Excavate Volume	Under Pipe	% pipe cover	cover	Bed Vol	Pipe Vol	Select Backfill	Com'n B'fill	Excess
	Sample	LF	FT	IN	IN	FT	CY	IN	%	IN	CY	CY	CY	CY	CY
	Prepared: 5/25/2007														

This takeoff has been prepared by *Walsh Estimating Service* , a division of Maracorp International:

Although we have been careful to assure that all items are correct, we make no guarantee beyond the cost of our work. The contractor has the final responsibility for completeness and accuracy in the preparation of his bid.

By acceptance of this takeoff, the purchaser agrees to the following statement:

"I do hereby release and hold harmless Walsh Estimating Service, Maracorp International, Ed Walsh, and his employees from any and all errors and omissions beyond the invoiced value of services rendered."

I.	**SANITARY SEWER PIPE EXCAVATION**														
	Services														
	4" PVC Lateral in pavement (0'-4' deep)	210	4.0	4"	12.0"	2.33	72	6"	100%	12"	33	1	**38**	0	72
	Pipe														
	NOTE: Install sewer force main prior to installation of remaining water pipelines.														
	4" restrained joint DIP Force Main (6'-8' deep)	50	8.0	4"	12.0"	2.33	35	6"	100%	12"	8	0	**0**	27	8
	6" restrained joint DIP Force Main (6'-8' deep)	300	8.0	6"	12.0"	2.50	222	6"	100%	12"	53	2	**0**	167	55
	6" restrained joint DIP Force Main down stream banks (6'-8' deep)	45	8.0	6"	12.0"	2.50	33	6"	100%	12"	8	0	**0**	25	8
	6" restrained joint DIP Force Main in existing paved driveway (6'-8' deep)	12	8.0	6"	12.0"	2.50	9	6"	100%	12"	2	0	**7**	0	9

Water Plant Site Sample.xls Pipe Excav Worksheet 1.0

		INPUTS			EXCAVATION			BEDDING				BACKFILL			
	Water Treatment Plant	Length	Avg Depth	Pipe Dia	Trench Limits per side	Trench Width	Excavate Volume	Under Pipe	% pipe cover	cover	Bed Vol	Pipe Vol	Select Backfill	Com'n B'fill	Excess
	Sample	LF	FT	IN	IN	FT	CY	IN	%	IN	CY	CY	CY	CY	CY
	6" restrained joint DIP Force Main in Spring Creek (6'-8' deep)	15	8.0	6"	12.0"	2.50	11	6"	100%	12"	3	0	**8**	0	11
	6" restrained joint DIP Force Main (8'-10' deep)	110	10.0	6"	18.0"	3.50	143	6"	100%	12"	28	1	**0**	114	29
	6" restrained joint DIP Force Main (10'-12' deep)	478	12.0	6"	18.0"	3.50	744	6"	100%	12"	120	3	**0**	621	123
	6" restrained joint DIP Force Main in Roosevelt Street pavement (12'-14' deep)	75	14.0	6"	18.0"	3.50	136	6"	100%	12"	19	1	**116**	0	136
	6" restrained joint DIP Force Main (14'-16' deep)	100	16.0	6"	18.0"	3.50	207	6"	100%	12"	25	1	**0**	181	26
	6" restrained joint DIP Force Main in pavement (12'-14' deep)	75	14.0	6"	18.0"	3.50	136	6"	100%	12"	19	1	**116**	0	136
	Î	0	0.0	0"	12.0"	2.00	0	6"	100%	12"	0	0	**0**	0	0
	Excavation	**1748**	**CY**				**1748**				**318**	**10**	**285**	**1135**	**613**
	Bedding	**318**	**CY**												
	Select Backfill	**285**	**CY**												
	Common Backfill	**1135**	**CY**												
	Excess	**613**	**CY**												

		INPUTS			EXCAVATION			BEDDING				BACKFILL			
	Water Treatment Plant	Length	Avg Depth	Pipe Dia	Trench Limits per side	Trench Width	Excavate Volume	Under Pipe	% pipe cover	cover	Bed Vol	Pipe Vol	Select Backfill	Com'n B'fill	Excess
	Sample	LF	FT	IN	IN	FT	CY	IN	%	IN	CY	CY	CY	CY	CY
II.	**WATER PIPE EXCAVATION**														
	Plant Service Water														
	2" Service Water, assume copper (4'-6' deep)	85	6.0	2"	12.0"	2.17	41	6"	100%	12"	11	0	**0**	30	11
	4" restrained joint DIP in pavement (4'-6' deep)	65	6.0	4"	12.0"	2.33	34	6"	100%	12"	10	0	**24**	0	34
	Water Supply														
	2-1/2" restrained joint DIP (6'-8' deep)	50	8.0	2"	12.0"	2.17	32	6"	100%	12"	7	0	**0**	25	7
	4" restrained joint DIP (6'-8' deep)	35	8.0	4"	12.0"	2.33	24	6"	100%	12"	5	0	**0**	19	5
	4" restrained joint DIP in existing gravel driveway (6'-8' deep)	170	8.0	4"	12.0"	2.33	117	6"	100%	12"	26	1	**90**	0	117
	4" restrained joint DIP in existing paved driveway (6'-8' deep)	211	8.0	4"	12.0"	2.33	146	6"	100%	12"	33	1	**112**	0	146
	4" DIP Drain (6'-8' deep)	45	8.0	4"	12.0"	2.33	31	6"	100%	12"	7	0	**0**	24	7
	Raw Water Pipe														
	16" restrained joint DIP in existing paved driveway (0'-6' deep)	37	6.0	16"	12.0"	3.33	27	6"	100%	12"	11	2	**14**	0	27
	24" restrained joint DIP (0'-6' deep)	75	6.0	24"	12.0"	4.00	67	6"	100%	12"	30	9	**0**	28	39
	24" restrained joint DIP (6'-8' deep)	360	8.0	24"	12.0"	4.00	427	6"	100%	12"	145	42	**0**	240	187

Water Plant Site Sample.xls Pipe Excav Worksheet 1.0

		INPUTS			EXCAVATION			BEDDING				BACKFILL			
	Water Treatment Plant	Length	Avg Depth	Pipe Dia	Trench Limits per side	Trench Width	Excavate Volume	Under Pipe	% pipe cover	cover	Bed Vol	Pipe Vol	Select Backfill	Com'n B'fill	Excess
	Sample	LF	FT	IN	IN	FT	CY	IN	%	IN	CY	CY	CY	CY	CY
	24" restrained joint DIP in existing paved driveway (6'-8' deep)	145	8.0	24"	12.0"	4.00	172	6"	100%	12"	58	17	**97**	0	172
	24" restrained joint DIP in pavement (0'-6' deep)	175	6.0	24"	12.0"	4.00	156	6"	100%	12"	70	20	**66**	0	156
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (0'-6' deep)	325	6.0	24"	12.0"	4.00	289	6"	100%	12"	131	38	**0**	120	169
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (6'-8' deep)	200	8.0	24"	12.0"	4.00	237	6"	100%	12"	80	23	**0**	134	103
	24" restrained joint DIP in Roosevelt Street pavement (6'-8' deep)	100	8.0	24"	12.0"	4.00	119	6"	100%	12"	40	12	**67**	0	119
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (8'-10' deep)	210	10.0	24"	18.0"	5.00	389	6"	100%	12"	112	24	**0**	253	136
	Finished Water Pipe														
	6" restrained joint DIP (6'-8' deep)	10	8.0	6"	12.0"	2.50	7	6"	100%	12"	2	0	**0**	5	2
	24" restrained joint DIP (6'-8' deep)	105	8.0	24"	12.0"	4.00	124	6"	100%	12"	42	12	**0**	70	54
	24" restrained joint DIP in existing paved driveway (6'-8' deep)	32	8.0	24"	12.0"	4.00	38	6"	100%	12"	13	4	**21**	0	38
	24" restrained joint DIP Force Main down stream banks (6'-8' deep)	50	8.0	24"	12.0"	4.00	59	6"	100%	12"	20	6	**0**	33	26

		INPUTS			EXCAVATION			BEDDING				BACKFILL			
	Water Treatment Plant	Length	Avg Depth	Pipe Dia	Trench Limits per side	Trench Width	Excavate Volume	Under Pipe	% pipe cover	cover	Bed Vol	Pipe Vol	Select Backfill	Com'n B'fill	Excess
	Sample	LF	FT	IN	IN	FT	CY	IN	%	IN	CY	CY	CY	CY	CY
	24" restrained joint DIP Force Main in Spring Creek (6'-8' deep)	15	8.0	24"	12.0"	4.00	18	6"	100%	12"	6	2	**10**	0	18
	24" restrained joint DIP (8'-10' deep)	58	10.0	24"	18.0"	5.00	107	6"	100%	12"	31	7	**0**	69	38
	24" restrained joint DIP (12'-14' deep)	42	14.0	24"	18.0"	5.00	109	6"	100%	12"	22	5	**0**	82	27
	24" restrained joint DIP in pavement (0'-6' deep)	70	6.0	24"	12.0"	4.00	62	6"	100%	12"	28	8	**26**	0	62
	24" restrained joint DIP in pavement (12'-14' deep)	35	14.0	24"	18.0"	5.00	91	6"	100%	12"	19	4	**68**	0	91
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (0'-6' deep)	145	6.0	24"	12.0"	4.00	129	6"	100%	12"	58	17	**0**	54	75
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (6'-8' deep)	265	8.0	24"	12.0"	4.00	314	6"	100%	12"	107	31	**0**	176	138
	24" restrained joint DIP in common trench in Roosevelt Street (WMH No. 3 to WMH No.6) (6'-8' deep)	60	8.0	24"	12.0"	4.00	71	6"	100%	12"	24	7	**0**	40	31
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (8'-10' deep)	260	10.0	24"	18.0"	5.00	481	6"	100%	12"	138	30	**0**	313	168
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (10'-12' deep)	65	12.0	24"	18.0"	5.00	144	6"	100%	12"	35	8	**0**	101	43

Water Plant Site Sample.xls Pipe Excav Worksheet 1.0

		INPUTS			EXCAVATION			BEDDING				BACKFILL			
	Water Treatment Plant	Length	Avg Depth	Pipe Dia	Trench Limits per side	Trench Width	Excavate Volume	Under Pipe	% pipe cover	cover	Bed Vol	Pipe Vol	Select Backfill	Com'n B'fill	Excess
	Sample	LF	FT	IN	IN	FT	CY	IN	%	IN	CY	CY	CY	CY	CY
	Wastewater Pipe		0.0												
	24" restrained joint DIP (0'-6' deep)	38	6.0	24"	12.0"	4.00	34	6"	100%	12"	15	4	**0**	15	19
	24" restrained joint DIP in existing paved driveway (0'-6' deep)	12	6.0	24"	12.0"	4.00	11	6"	100%	12"	5	1	**5**	0	11
	24" restrained joint DIP (16'-18' deep)	65	18.0	24"	18.0"	5.00	217	6"	100%	12"	35	8	**0**	174	43
	24" restrained joint DIP (20'-22' deep)	65	22.0	24"	18.0"	5.00	265	6"	100%	12"	35	8	**0**	222	43
	24" restrained joint DIP (24'-26' deep)	40	26.0	24"	18.0"	5.00	193	6"	100%	12"	21	5	**0**	167	26
	24" restrained joint DIP in pavement (18'-20' deep)	140	20.0	24"	18.0"	5.00	519	6"	100%	12"	74	16	**429**	0	519
	24" restrained joint DIP in common trench in existing paved driveway (WMH No. 3 to WMH No.6) (8'-10' deep)	40	10.0	24"	18.0"	5.00	74	6"	100%	12"	21	5	**48**	0	74
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (8'-10' deep)	340	10.0	24"	18.0"	5.00	630	6"	100%	12"	181	40	**0**	409	221
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (10'-12' deep)	89	12.0	24"	18.0"	5.00	198	6"	100%	12"	47	10	**0**	141	57
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (12'-14' deep)	103	14.0	24"	18.0"	5.00	267	6"	100%	12"	55	12	**0**	200	67
	24" restrained joint DIP in common trench in Roosevelt Street (WMH No. 3 to WMH No.6) (12'-14' deep)	65	14.0	24"	18.0"	5.00	169	6"	100%	12"	35	8	**126**	0	169

Water Plant Site Sample.xls Pipe Excav Worksheet 1.0

		INPUTS			EXCAVATION			BEDDING				BACKFILL			
	Water Treatment Plant	Length	Avg Depth	Pipe Dia	Trench Limits per side	Trench Width	Excavate Volume	Under Pipe	% pipe cover	cover	Bed Vol	Pipe Vol	Select Backfill	Com'n B'fill	Excess
	Sample	LF	FT	IN	IN	FT	CY	IN	%	IN	CY	CY	CY	CY	CY
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (14'-16' deep)	33	16.0	24"	18.0"	5.00	98	6"	100%	12"	18	4	**0**	76	22
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (16'-18' deep)	33	18.0	24"	18.0"	5.00	110	6"	100%	12"	18	4	**0**	88	22
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (18'-20' deep)	33	20.0	24"	18.0"	5.00	122	6"	100%	12"	18	4	**0**	100	22
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (20' -22' deep)	33	22.0	24"	18.0"	5.00	134	6"	100%	12"	18	4	**0**	112	22
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (22' 24' deep)	33	24.0	24"	18.0"	5.00	147	6"	100%	12"	18	4	**0**	125	22
	24" restrained joint DIP in common trench (WMH No. 3 to WMH No.6) (24'-26' deep)	33	26.0	24"	18.0"	5.00	159	6"	100%	12"	18	4	**0**	137	22
	Î	0	0.0	0"	12.0"	2.00	0	6"	100%	12"	0	0	**0**	0	0
	Excavation	**7409**	**CY**				**7409**				**1953**	**471**	**1203**	**3782**	**3627**
	Bedding	**1953**	**CY**												
	Select Backfill	**1203**	**CY**												
	Common Backfill	**3782**	**CY**												
	Excess	**3627**	**CY**												

		INPUTS			EXCAVATION			BEDDING				BACKFILL			
	Water Treatment Plant	Length	Avg Depth	Pipe Dia	Trench Limits per side	Trench Width	Excavate Volume	Under Pipe	% pipe cover	cover	Bed Vol	Pipe Vol	Select Backfill	Com'n B'fill	Excess
	Sample	LF	FT	IN	IN	FT	CY	IN	%	IN	CY	CY	CY	CY	CY
III.	**STORM PIPE EXCAVATION**														
	6" PVC (0'-4' deep)	77	4.0	6"	12.0"	2.50	29	6"	100%	12"	14	1	**0**	14	15
	12" HDPE in pavement (0'-4' deep)	93	4.0	12"	12.0"	3.00	41	6"	100%	12"	23	3	**15**	0	41
	12" HDPE (4'-6' deep)	161	6.0	12"	12.0"	3.00	107	6"	100%	12"	40	5	**0**	62	45
	12" HDPE in pavement (6'-8' deep)	80	8.0	12"	12.0"	3.00	71	6"	100%	12"	20	2	**49**	0	71
	12" HDPE (6'-8' deep)	13	8.0	12"	12.0"	3.00	12	6"	100%	12"	3	0	**0**	9	3
	15" HDPE in pavement (0'-4' deep)	60	4.0	15"	12.0"	3.25	29	6"	100%	12"	17	3	**9**	0	29
	15" HDPE (0'-4' deep)	45	4.0	15"	12.0"	3.25	22	6"	100%	12"	13	2	**0**	7	15
	15" HDPE (4'-6' deep)	146	6.0	15"	12.0"	3.25	105	6"	100%	12"	42	7	**0**	56	49
	18" RCP in pavement (0'-4' deep)	48	4.0	18"	12.0"	3.50	25	6"	100%	12"	16	3	**6**	0	25
	18" HDPE in pavement (0'-4' deep)	25	4.0	18"	12.0"	3.50	13	6"	100%	12"	8	2	**3**	0	13
	18" HDPE (0'-4' deep)	162	4.0	18"	12.0"	3.50	84	6"	100%	12"	52	11	**0**	21	63
	18" HDPE (4'-6' deep)	100	6.0	18"	12.0"	3.50	78	6"	100%	12"	32	7	**0**	39	39
	Î	0	0.0	0"	12.0"	2.00	0	6"	100%	12"	0	0	**0**	0	0
	Excavation	**616**	**CY**				**616**				**280**	**46**	**82**	**208**	**408**
	Bedding	**280**	**CY**												
	Select Backfill	**82**	**CY**												
	Common Backfill	**208**	**CY**												
	Excess	**408**	**CY**												

		INPUTS			EXCAVATION			BEDDING				BACKFILL			
	Water Treatment Plant	Length	Avg Depth	Pipe Dia	Trench Limits per side	Trench Width	Excavate Volume	Under Pipe	% pipe cover	cover	Bed Vol	Pipe Vol	Select Backfill	Com'n B'fill	Excess
	Sample	LF	FT	IN	IN	FT	CY	IN	%	IN	CY	CY	CY	CY	CY
IV.	**CHEMICAL LINES**														
	Reinforced Concrete Encasement A, 26" x 46"	82	6.0	4"	6.0"	3.83	70	6"	100%	6"	14	1	**55**	0	70
	Reinforced Concrete Encasement B, 26" x 36"	12	6.0	4"	6.0"	3.00	8	6"	100%	6"	2	0	**6**	0	8
	Î	0	0.0	0"	12.0"	2.00	0	6"	100%	12"	0	0	**0**	0	0
	Excavation	**78**	**CY**				**78**				**16**	**1**	**61**	**0**	**78**
	Concrete	**16**	**CY**												
	Select Backfill	**61**	**CY**												
	Common Backfill	**0**	**CY**												
	Excess	**78**	**CY**												

Water Plant Site Sample.xls Pave Worksheet 1.0

		STATIONS								TOTAL
Ref	Description	From	To	Length	Width	Radius	Count	Add	Deduct	AREA (SF)
Access Road Pavement:										
p. 0	Access Road	0+00.00	0+80.00	80.00	24'	r = 50'	2	0	0	**2,995**
p. 0	Access Road	0+80.00	1+60.00	80.00	26'	r = 0'	0	0	0	**2,080**
p. 0	Access Road	1+60.00	2+13.00	53.00	24'	r = 0'	0	0	0	**1,272**
p. 0	Access Road	2+13.00	2+70.00	57.00	26'	r = 0'	0	0	0	**1,482**
p. 0	Access Road	2+70.00	7+11.00	441.00	24'	r = 20'	1	0	0	**10,670**
p. 0	Access Road Parking	6+07.00	6+77.00	70.00	18'	r = 10'	2	0	0	**1,303**
p. 0	Access Road Unloading Area	7+11.00	8+11.00	100.00	147'	r = 0'	0	0	1,392	**13,308**
p. 0		0+00.00	0+00.00	0.00	0'	r = 0'	0	0	0	**0**
				881.00						**33,110**
Road A Pavement:										
p. 0	Road A	0+12.00	1+93.00	181.00	20'	r = 30'	2	0	0	**4,007**
p. 0	Road A spur	0+10.00	0+78.00	68.00	20'	r = 30'	2	0	0	**1,747**
				249.00						**5,754**

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				DIMENSIONS					EXCAVATION					BACKFILL			
REF	DESCRIPTION	Subgrade Elev.	Top of Footing Elev.	Width	Length	Height	Qty	Volume (CY)	Depth	Width Add	Length Add	Footing length	Excav. (CY)	Wall thick.	Footing Deduct	Wall Deduct	Backfill (CY)
	Water Treatment Plant																
	Prepared: 5/25/2007																

This takeoff has been prepared by Walsh Estimating Service, a division of Maracorp International:

Although we have been careful to assure that all items are correct, we make no guarantee beyond the cost of our work. The contractor has the final responsibility for completeness and accuracy in the preparation of his bid.

By acceptance of this takeoff, the purchaser agrees to the following statement:

I do hereby release and hold harmless Walsh Estimating Service, Maracorp International, Ed Walsh, and his employees from any and all errors and omissions beyond the invoiced value of services rendered.

				DIMENSIONS					EXCAVATION					BACKFILL			
REF	DESCRIPTION	Subgrade Elev.	Top of Footing Elev.	Width	Length	Height	Qty	Volume (CY)	Depth	Width Add	Length Add	Footing length	Excav. (CY)	Wall thick.	Footing Deduct	Wall Deduct	Backfill (CY)
	Carbon Feed Building																
	Footing for 6" slab			2.00	12.00	1.00	2	1.78	2.50	2.50	0.00	24.00	10.00	12.0"	(1.78)	(1.33)	6.89
	Footing for 6" slab			2.00	20.00	1.00	1	1.48	2.50	2.50	0.00	20.00	8.33	12.0"	(1.48)	(1.11)	5.74
	Footing for 24" slab			3.00	12.00	1.50	1	2.00	1.50	1.50	0.00	12.00	3.00	12.0"	(2.00)	0.00	1.00
	Footing for 24" slab			2.00	20.00	1.50	2	4.44	1.50	1.50	0.00	40.00	7.78	12.0"	(4.44)	0.00	3.34
	Footing for 24" slab			2.00	20.00	1.50	1	2.22	1.50	1.50	0.00	20.00	3.89	12.0"	(2.22)	0.00	1.67
				0.00	0.00	0.00	1	0.00	0.00	0.00	0.00	0.00	0.00	12.0"	0.00	0.00	0.00
	Subtotal =							**12**				**116**	**33**		**(12)**	**(2)**	**19**
	Chemical/Admin Building																
	Perimeter	407.00	405.50	3.00	265.00	1.00	1	29.44	2.50	2.50	0.00	265.00	134.95	12.0"	(29.44)	(14.72)	90.79
	Interior	407.00	405.50	3.00	18.50	1.00	1	2.06	2.50	2.50	0.00	18.50	9.42	12.0"	(2.06)	(1.03)	6.33
	Interior	407.00	405.50	3.00	61.00	1.00	2	13.56	2.50	2.50	0.00	122.00	62.13	12.0"	(13.56)	(6.78)	41.79
	Interior	407.00	405.50	3.00	19.00	1.00	1	2.11	2.50	2.50	0.00	19.00	9.68	12.0"	(2.11)	(1.06)	6.51
	Interior	407.00	405.50	3.00	32.00	1.00	1	3.56	2.50	2.50	0.00	32.00	16.30	12.0"	(3.56)	(1.78)	10.96
	Interior	407.00	405.50	3.00	100.00	1.00	1	11.11	2.50	2.50	0.00	100.00	50.93	12.0"	(11.11)	(5.56)	34.26
	Column footings	407.00	405.50	3.00	3.00	1.00	8	2.67	2.50	2.50	2.50	24.00	22.41	12.0"	(2.67)	(1.33)	18.41
				0.00	0.00	0.00	1	0.00	0.00	0.00	0.00	0.00	0.00	12.0"	0.00	0.00	0.00
	Subtotal =							**65**				**581**	**306**		**(65)**	**(32)**	**209**
	GRAND TOTALS =							**77**				**697**	**339**		**(77)**	**(34)**	**228**