Power Budget

Team Number:	106
Project Name:	**Soil Moisture System**
Team Member Name:	**JT Harrison**
Version:	

A. List ALL major components (active devices, integrated circuits, etc.) except for power sources, voltage regulators, resistors, capacitors, or passive elements

All Major Components	Component Name	Part Number	SupplyVoltageRange	#	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
	Curiosity Nano board	PIC18F57Q43	1.8-5.5V	1	500	500	mA
	quad op-amp	MCP6004	1.8-5.5V	1	0.7	0.68	mA
	Copper Tubing Sensor	n/a	3.3-5.5V	1	10	10	mA

B. Assign each major component above to ONE power rail below. Try to minimize the number of different power rails in the design.

+5V Power Rail	Component Name	Part Number	SupplyVoltageRange	#	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
	Curiosity Nano board	PIC18F57Q43	1.8-5.5V	1	500	500	mA
	quad op-amp	MCP6004	1.8-5.5V	1	0.7	0.68	mA
	Copper Tubing Sensor	n/a	3.3-5.5V	1	10	10	mA
					1000	0	mA
						0	mA
					Subtotal	510.68	mA
					Safety Margin	25%	
					Total Current Required on +5V Rail	638.35	mA
c2. Regulator or Source Ch	+5V Regulator	LM7805	7-35V	1	1000	1000	mA
					Total Remaining Current Available on +5V Rail	361.65	mA

C. For each power rail above, select a specific voltage regulator using the same process as for major component selection. Confirm that the Total Remaining Current Available

D. Select a specific external power source (wall supply or battery) for your system, and confirm that it can supply all of the regulators for all of the power rails simultaneously.

External Power Source 1	Component Name	Part Number	SupplyVoltageRange	Outp	AbsoluteMaximumCurrent (mA)	TotalCurrent(mA)	Unit
Power Source 1 Selection	Plug-in Wall Supply	(full part number)	110VAC	+9V	1000	640	mA
Power Rails Connected to External Power Source 1							mA
	+5V Regulator	LM7805	7-35V	1	1000	1000	mA
							mA
					Total Remaining Current Available on External Power Source 1	-360	mA