AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

AGUAS DE URABA

CONTRATO DE CONSULTORÍA No. 0001-
Levantamiento de Información del Catastro de Clientes, Redes e Infraestructura, Modelación de la Red, Detección de Puntos Críticos y Actividades Adicionales de los Sistemas de Acueducto y Alcantarillado de los Municipios de Mutatá, Chigorodó, Carepa, Apartadó, Turbo y en los corregimientos donde Aguas de Urabá S.A. E.S.P., preste sus servicios.

INFORME DE LEVANTAMIENTO ALTIMÉTRICO DE LOS SISTEMAS DE ACUEDUCTO Y ALCANTARILLADO DE LOS MUNICIPIOS MUTATÁ, CHIGORODÓ, CAREPA, APARTADÓ, TURBO Y LOS CORREGIMIENTOS BELÉN DE BAJIRÁ Y EL REPOSO.

VOLUMEN 5: Anexos

URABA, Enero de 2010

Calle 48B No. 79-55. EDIFICIO CASA SIERRA. Local 101 PBX: (4) 4215441
E-MAIL: elber.hernandez@gmail.com
Medellín Colombia

En el siguiente informe se presentan:

- Anexo 5: Cálculos nivelación del Municipio de Turbo.
- Anexo 6: Cálculos nivelación de amarres de Puntos Np, de los municipios de Chigorodó, Carepa, Turbo, y el corregimiento de El Reposo.
- Anexo 7: Cálculos nivelación de revisiones realizadas en los municipios de Apartadó, Turbo.

ANEXO 5 – Cálculos nivelación del Municipio de Turbo.

Calle 48B No. 79-55. EDIFICIO CASA SIERRA. Local 101 PBX: (4) 4215441
E-MAIL: elber.hernandez@gmail.com
Medellín Colombia

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 22/10/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: C#06C

NIVELACION			
EN	V (+)	V (-)	COTA
C#06C	1.387		1.732
C#377C		1.356	1.763
C#377C	1.385		1.763
C#378C		1.529	1.619

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#06C	1.396			1.732	
C#377C			1.365	1.763	
010PS103		1.853		1.275	
010SC101		1.838		1.290	
010PS102		1.859		1.269	RASANTE
010PS102		2.061		1.067	BATEA
010PS101		1.847		1.281	RASANTE
010PS101		2.046		1.082	BATEA
14PS103		1.857		1.271	
14PS103		2.194		0.934	
010PS104		1.855		1.273	RASANTE
010PS104		2.142		0.986	BATEA
010SC100		1.678		1.450	
011SC027		2.058		1.070	
C#377C	1.375			1.763	
C#378C			1.521	1.617	010SC003
010PS105		1.884		1.254	TAPADA
010PS004		1.808		1.330	TAPADA
010PS0109		1.857		1.281	TAPADA
010PS108		1.936		1.202	RASANTE
010PS108		2.013		1.125	BATEA
010PS110		1.863		1.275	TAPADA
010SC107		1.726		1.412	
010PS113		1.754		1.384	RASANTE
010PS113		2.077		1.061	BATEA
010SC115		1.532		1.606	
010PS114		1.591		1.547	RASANTE
010PS114		2.021		1.117	BATEA
010PS116		1.529		1.609	RASANTE
010PS116		1.587		1.551	BATEA
010SC112		1.474		1.664	
C#378C	1.676			1.617	
010PS006		1.812		1.481	RASANTE

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#377C	0.031	0.031	0.000
C#378C	-0.144	-0.146	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
1.763	1.763	0.000
1.619	1.617	0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#378C	1.505		1.619
C#379C		1.676	1.448
C#379C	1.462		1.448
C#377C		1.135	1.775
C#379C	1.504		1.448
C#380C		1.513	1.439
C#380C	1.374		1.439
C#381C		1.403	1.410
C#381C	1.674		1.410

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
010PS006		2.125		1.168	BATEA
010PS007		1.775		1.518	RASANTE
010PS007		2.181		1.112	BATEA
010SC005		1.644		1.649	
C#378C	1.521			1.617	
C#379C			1.695	1.443	010SC001
C#379C	1.447			1.443	
C#377C			1.122	1.768	
C#379C	1.514			1.443	
C#380C			1.524	1.433	
010PS017		1.815		1.142	
010PS017		2.107		0.849	
010SC016		1.572		1.385	
010SC011		1.628		1.329	
010PS014		1.782		1.175	TAPADA
011SC026		1.770		1.187	
010SC018		1.642		1.315	
C#380C	1.441			1.433	
010SC019		1.582		1.292	
011SC022		1.585		1.289	
C#380C	1.456			1.433	
010PS013		1.690		1.199	RASANTE
010PS013		2.095		0.793	BATEA
010PS012		1.760		1.129	TAPADA
010SC015		1.115		1.774	
C#380C	1.340			1.433	
C#381C			1.368	1.405	010SC022
010PS023		1.594		1.179	
010PS023		2.273		0.499	
HTUR010002		0.863		1.910	ARRIBA
HTUR010002		1.345		1.428	ABAJO
010SC024		1.338		1.435	
C#381C	1.452			1.405	
08SC006		1.556		1.301	
C#381C	1.680			1.405	
010SC020		1.560		1.525	
010SC021		1.597		1.488	
011SC018		1.730		1.355	
C#381C	1.678			1.405	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#379C	-0.171	-0.174	0.003
C#377C	0.327	0.325	0.002
C#380C	-0.009	-0.010	0.001
C#381C	-0.029	-0.028	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
1.448	1.443	0.005
1.775	1.768	0.007
1.439	1.433	0.006
1.410	1.405	0.005

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#382C		1.310	1.774
TUR_01	1.074		1.304
C#01C		1.215	1.163

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#382C			1.315	1.768	08SC007
C#382C	1.547			1.768	
010SC029		1.401		1.914	
010SC028		1.498		1.817	
010SC027		1.608		1.707	
010SC010		1.285		2.030	
TUR_01	1.035			1.304	PRIMER ORDEN
C#01C			1.176	1.163	JESUS MORA

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#382C	0.364	0.363	0.001
C#01C	-0.141	-0.141	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
1.774	1.768	0.006
1.163	1.163	0.000

.

LUGAR: TURBO
FECHA LEVANTAMIENTO: 23/10/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: C#09C

NIVELACION			
EN	V (+)	V (-)	COTA
C#09C	1.404		1.322
C#383C		1.085	1.641
C#383C	1.695		1.641
C#384C		1.402	1.934
C#384C	1.938		1.934
C#385C		1.120	2.752
C#385C	1.495		2.752
C#386C		1.557	2.690
C#386C	1.607		2.690
C#387C		1.464	2.833

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#09C	1.412			1.322	
C#383C			1.094	1.640	
C#383C	1.699			1.640	
C#384C			1.408	1.931	
C#384C	1.936			1.931	
C#385C			1.121	2.746	
C#385C	1.512			2.746	
C#386C			1.575	2.683	022SC060
C#386C	1.582			2.683	
C#387C			1.437	2.828	022SC051
VTUR022066		1.624		2.641	
022PC062		1.661		2.604	
022PS063		1.682		2.583	RASANTE

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#383C	0.319	0.318	0.001
C#384C	0.293	0.291	0.002
C#385C	0.818	0.815	0.003
C#386C	-0.062	-0.063	0.001
C#387C	0.143	0.145	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
1.641	1.640	0.001
1.934	1.931	0.003
2.752	2.746	0.006
2.690	2.683	0.007
2.833	2.828	0.005

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
022PS063		2.236		2.029	BATEA
022PS064		1.671		2.594	RASANTE
022PS064		2.201		2.064	BATEA
HUR022003		0.906		3.359	ARRIBA
HUR022003		1.576		2.689	ABAJO
022PS067		1.792		2.473	RASANTE
022PS067		2.388		1.877	BATEA
022PC066		1.752		2.513	
022SC065		1.708		2.557	
022PS068		1.786		2.479	RASANTE
022PS068		2.345		1.920	BATEA
022PS072		1.716		2.549	RASANTE
022PS072		2.369		1.896	BATEA
022SC069		1.657		2.608	
022PC070		1.722		2.543	
022PS071		1.632		2.633	TAPADA
022PS073		1.662		2.603	RASANTE
022PS073		2.391		1.874	BATEA
022PC074		1.636		2.629	
022SC075		1.596		2.669	
022PS076		1.679		2.586	RASANTE
022PS076		2.346		1.919	BATEA
022PS058		1.616		2.649	RASANTE
022PS058		2.469		1.796	BATEA
022PC057		1.589		2.676	
022SC056		1.532		2.733	
022PS059		1.633		2.632	RASANTE
022PS059		2.243		2.022	BATEA
022PS055		1.554		2.711	RASANTE
022PS055		2.327		1.938	BATEA
022SC052		1.484		2.781	
022PC053		1.519		2.746	
022PS054		1.535		2.730	RASANTE
022PS054		2.525		1.740	BATEA
022PS050		1.482		2.783	RASANTE
022PS050		2.231		2.034	BATEA
022SC047		1.441		2.824	
022PC048		1.461		2.804	
C#387C	1.454			2.828	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
022SC085		1.565		2.717	
022SC086		1.604		2.678	
022SC087		1.554		2.728	
022SC088		1.556		2.726	
022SC089		1.525		2.757	
022SC090		1.534		2.748	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

LUGAR: TURBO
FECHA LEVANTAMIENTO: 24/10/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: C#386C

NIVELACION			
EN	V (+)	V (-)	COTA
C#386C	1.766		2.690
C#388C		1.493	2.963

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#386C	1.767			2.683	
C#388C			1.496	2.954	022SC005
022PS061		1.756		2.694	
022PS061		2.263		2.187	
C#388C	1.346			2.954	
022PS93		1.381		2.919	RASANTE
022PS93		1.985		2.315	BATEA
022PC094		1.385		2.915	RASANTE
022PC094		2.011		2.289	BATEA
022PC006		1.411		2.889	
022SC004		0.972		3.328	
022SC007		1.633		2.667	
022PS010		1.667		2.633	RASANTE
022PS010		2.183		2.117	BATEA
022PC008		1.646		2.654	
022PS009		1.678		2.622	RASANTE
022PS009		2.163		2.137	BATEA
022PS013		1.640		2.660	RASANTE
022PS013		2.272		2.028	BATEA
022PS014		1.644		2.656	RASANTE
022PS014		2.313		1.987	BATEA

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#388C	0.273	0.271	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
2.963	2.954	0.009

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
				022SC012		1.563		2.737								
				022PC011		1.601		2.699								
				022PS017		1.590		2.710	RASANTE							
				022PS017		2.423		1.877	BATEA							
				022PS018		1.592		2.708	RASANTE							
				022PS018		2.462		1.838	BATEA							
				022SC016		1.533		2.767								
				022PC015		1.547		2.753								
				022PS021		1.552		2.748	RASANTE							
				022PS021		2.373		1.927	BATEA							
				022PS022		1.564		2.736	RASANTE							
				022PS022		2.358		1.942	BATEA							
				022SC019		1.495		2.805								
				022PC020		1.501		2.799								
				022PS027		1.463		2.837	RASANTE							
				022PS027		2.302		1.998	BATEA							
				022PS025		1.468		2.832	RASANTE							
				022PS025		1.880		2.420	BATEA							
				022PS026		1.471		2.829	RASANTE							
				022PS026		2.265		2.035	BATEA							
				022SC024		1.438		2.862								
				022PC023		1.392		2.908								
				022SC084		1.460		2.840								
				022SC083		1.741		2.559								
				022SC081		1.441		2.859								
C#388C	1.732		2.963	**C#388C**	1.790			2.954								
C#389C		1.292	3.403	**C#389C**			1.348	3.396		**C#389C**	0.440	0.442	-0.002	3.403	3.396	0.007
				C#389C	1.033			3.396								
				022SC046		1.257		3.172								
				022SC044		1.494		2.935								
				022SC042		1.478		2.951								
				022SC037		1.593		2.836								
C#389C	1.001		3.403	**C#389C**	0.986			3.396								
C#390C		1.341	3.063	**C#390C**			1.326	3.056	022SC028	**C#390C**	-0.340	-0.340	0.000	3.063	3.056	0.007
				C#390C	1.729			3.056								
				022PC092		1.980		2.805								
				022SC030		1.134		3.651								
				022SC029		1.500		3.285								
				022SC080		1.429		3.356								

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
022SC033		1.193		3.592	
022SC031		1.096		3.689	
022SC034		1.237		3.548	
022SC035		1.561		3.224	
022SC036		1.598		3.187	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

LUGAR: TURBO
FECHA LEVANTAMIENTO: 26/10/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: C#387C

NIVELACION			
EN	V (+)	V (-)	COTA
C#387C	1.356		2.833
C#391C		1.354	2.835
C#391C	1.381		2.835
C#392C		1.547	2.669

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#387C	1.332			2.828	
C#391C			1.330	2.830	
022PC150		1.397		2.763	
C#391C	1.381			2.830	
C#392C			1.547	2.664	
022PC151		1.376		2.835	
C#392C	0.610			2.664	
022PO152		1.387		1.887	ARRIBA
022PO152		2.578		0.695	RASANTE
022PO152		3.147		0.126	BATEA
C#392C	1.437			2.664	
022SC077		1.228		2.873	
022SC078		1.267		2.834	
C#164I	1.676			0.566	
032SC001		2.175		0.067	
032SC003		1.748		0.494	
002SC005		1.812		0.430	
032SC004		1.727		0.515	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#391C	0.002	0.002	0.000
C#392C	-0.166	-0.166	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
2.835	2.830	0.005
2.669	2.664	0.005

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 30/11/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: nivelacion de terreno

NIVELACION			
EN	V (+)	V (-)	COTA
C#146I	0.969		1.084
C#458C		1.019	1.034
C#458C	1.279		1.034
C#459C		1.361	0.952
C#459C	1.250		0.952
C#460C		1.322	0.880
C#460C	1.149		0.880
C#461C		1.119	0.910
C#461C	1.400		0.910
C#146I		1.224	1.086
C#458C	1.587		1.034
C#462C		1.239	1.382
C#462C	1.615		1.382
C#463C		1.185	1.812

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#146I	0.919			1.084	
C#458C			0.972	1.031	
IEVTUR93		1.178		0.825	
C#458C	1.279			1.031	
C#459C			1.359	0.951	
IEVTUR107		1.217		1.093	
IEVTUR100		1.300		1.010	
IEVTUR98		0.853		1.457	
C#459C	1.443			0.951	
IEVTUR95		1.300		1.094	
IEVTUR94		1.425		0.969	
C#459C	1.268			0.951	
C#460C			1.338	0.881	
IEVTUR104		1.383		0.836	
C#460C	1.343			0.881	
IEVTUR90		1.407		0.817	
C#460C	0.961			0.881	
IEVTUR91		1.511		0.331	
C#460C	1.145			0.881	
C#461C			1.118	0.908	
IEVTUR92		1.467		0.559	
C#461C	1.385			0.908	
C#146I			1.210	1.083	0.002
C#458C	1.601			1.031	
C#462C			1.253	1.379	
C#462C	1.622			1.379	
C#463C			1.193	1.808	
IEVTUR99		1.268		1.733	
IEVTUR102		1.202		1.799	
C#463C	1.367			1.808	
IEVTUR101		1.701		1.474	
C#463C	1.075			1.808	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#458C	-0.050	-0.053	0.003
C#459C	-0.082	-0.080	-0.002
C#460C	-0.072	-0.070	-0.002
C#461C	0.030	0.027	0.003
C#146I	0.176	0.175	0.001
C#462C	0.348	0.348	0.000
C#463C	0.430	0.429	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
1.034	1.031	0.003
0.952	0.951	0.001
0.880	0.881	-0.001
0.910	0.908	0.002
1.086	1.083	0.003
1.382	1.379	0.003
1.812	1.808	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#463C	1.145		1.812
C#464C		1.458	1.499

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
IEVTUR97		1.449		1.434	
C#463C	1.147			1.808	
C#464C			1.459	1.496	
IEVTUR96		1.349		1.606	
C#464C	1.321			1.496	
IEVTUR106		1.369		1.448	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#464C	-0.313	-0.312	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
1.499	1.496	0.003

LUGAR: TURBO
FECHA LEVANTAMIENTO: 01/12/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: nivelacion de terreno

NIVELACION			
EN	V (+)	V (-)	COTA
C#42J	1.598		0.083
C#465C		1.426	0.255
C#465C	1.422		0.255
C#466C		1.366	0.311
C#466C	1.412		0.311
C#467C		1.411	0.312
C#467C	1.437		0.312
C#468C		1.261	0.488
C#468C	0.901		0.488
C#469C		1.032	0.357
C#469C	1.303		0.357
C#470C		1.583	0.077
C#470C	1.696		0.077
C#471C		1.432	0.341
C#471C	2.139		0.341
C#472C		1.513	0.967
C#472C	1.300		0.967
C#473C		1.424	0.843

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#42J	1.599			0.083	
C#465C			1.428	0.254	
C#465C	1.383			0.254	
C#466C			1.329	0.308	
C#466C	1.385			0.308	
C#467C			1.383	0.310	
C#467C	1.409			0.310	
C#468C			1.232	0.487	
IEVTUR55		1.427		0.292	
C#468C	0.906			0.487	
C#469C			1.038	0.355	
C#469C	1.300			0.355	
C#470C			1.581	0.074	
IEVTUR60		1.372		0.283	
C#470C	1.716			0.074	
C#471C			1.452	0.338	
C#471C	2.158			0.338	
C#472C			1.532	0.964	
C#472C	1.300			0.964	
C#473C			1.424	0.840	
VTUR21050		2.137		0.127	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#465C	0.172	0.171	0.001
C#466C	0.056	0.054	0.002
C#467C	0.001	0.002	-0.001
C#468C	0.176	0.177	-0.001
C#469C	-0.131	-0.132	0.001
C#470C	-0.280	-0.281	0.001
C#471C	0.264	0.264	0.000
C#472C	0.626	0.626	0.000
C#473C	-0.124	-0.124	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
0.255	0.254	0.001
0.311	0.308	0.003
0.312	0.310	0.002
0.488	0.487	0.001
0.357	0.355	0.002
0.077	0.074	0.003
0.341	0.338	0.003
0.967	0.964	0.003
0.843	0.840	0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#473C	1.629		0.843
C#474C		1.568	0.904
C#474C	1.588		0.904
C#475C		2.080	0.412
C#475C	1.300		0.412
C#476C		1.398	0.314

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
IEVTUR58		2.151		0.113	
VTUR021049		2.135		0.129	
C#473C	1.633			0.840	
C#474C			1.574	0.899	
C#474C	1.627			0.899	
C#475C			2.121	0.405	
IEVTUR59		2.337		0.189	
C#475C	1.306			0.405	
C#476C			1.404	0.307	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#474C	0.061	0.059	0.002
C#475C	-0.492	-0.494	0.002
C#476C	-0.098	-0.098	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
0.904	0.899	0.005
0.412	0.405	0.007
0.314	0.307	0.007

LUGAR: TURBO
FECHA LEVANTAMIENTO: 11/12/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: nivelacion de terreno

NIVELACION			
EN	V (+)	V (-)	COTA
C#473C	0.896		0.843
C#477C		1.563	0.176
C#477C	1.210		0.176
C#478C		1.510	-0.124
C#478C	1.522		-0.124
C#479C		1.414	-0.016
C#479C	1.288		-0.016
C#480C		1.068	0.204
C#478C	1.407		-0.124
C#481C		1.576	-0.293
C#481C	1.562		-0.293
C#482C		1.398	-0.129
C#482C	1.478		-0.129
C#483C		1.652	-0.303
C#482C	1.634		-0.129
C#484C		1.303	0.202
C#484C	1.263		0.202
C#485C		1.647	-0.182

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#473C	0.967			0.843	
C#477C			1.632	0.178	
C#477C	1.288			0.178	
C#478C			1.588	-0.122	
C#478C	1.513			-0.122	
C#479C			1.407	-0.016	
C#479C	1.300			-0.016	
C#480C			1.081	0.203	
C#478C	1.435			-0.122	
C#481C			1.603	-0.290	
C#481C	1.569			-0.290	
C#482C			1.405	-0.126	
C#482C	1.497			-0.126	
C#483C			1.669	-0.298	
C#482C	1.530			-0.126	
C#484C			1.202	0.202	
C#484C	1.268			0.202	
C#485C			1.653	-0.183	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#477C	-0.667	-0.665	-0.002
C#478C	-0.300	-0.300	0.000
C#479C	0.108	0.106	0.002
C#480C	0.220	0.219	0.001
C#481C	-0.169	-0.168	-0.001
C#482C	0.164	0.164	0.000
C#483C	-0.174	-0.172	-0.002
C#484C	0.331	0.328	0.003
C#485C	-0.384	-0.385	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
0.176	0.178	-0.002
-0.124	-0.122	-0.002
-0.016	-0.016	0.000
0.204	0.203	0.001
-0.293	-0.290	-0.003
-0.129	-0.126	-0.003
-0.303	-0.298	-0.005
0.202	0.202	0.000
-0.182	-0.183	0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#485C	1.922		-0.182
C#486C		1.658	0.082
C#486C	1.506		0.082
C#487C		1.537	0.051
C#487C	1.534		0.051
C#488C		1.811	-0.226
C#486C	1.245		0.082
C#489C		1.381	-0.054

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#485C	1.960			-0.183	
C#486C			1.697	0.080	
C#486C	1.521			0.080	
C#487C			1.554	0.047	
C#487C	1.537			0.047	
C#488C			1.815	-0.231	
C#486C	1.247			0.080	
IEVTUR57		1.595		-0.268	
C#486C	1.247			0.080	
IEVTUR56		1.453		-0.126	
C#486C	1.242			0.080	
C#489C			1.378	-0.056	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#486C	0.264	0.263	0.001
C#487C	-0.031	-0.033	0.002
C#488C	-0.277	-0.278	0.001
C#489C	-0.136	-0.136	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
0.082	0.080	0.002
0.051	0.047	0.004
-0.226	-0.231	0.005
-0.054	-0.056	0.002

LUGAR: TURBO
FECHA LEVANTAMIENTO: 29/12/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: COMPLEMENTO

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#389C	1.663			3.396	
022SC001		1.172		3.887	
022SC002		1.090		3.969	
022SC003		1.357		3.702	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 26/08/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: NIVELACION DE LA ESTACION DE BOMBEO JESUS MORA

NIVELACION			
EN	V (+)	V (-)	COTA
BMC	1.093		1.137
C#01C		1.067	1.163
C#01C	1.507		1.163
C#02C		1.338	1.332
C#02C	1.580		1.332
C#03C		1.253	1.659
C#03C	1.311		1.659
C#04C		1.734	1.236
C#04C	1.720		1.236
C#05C		1.553	1.403
C#05C	1.679		1.403
C#06C		1.352	1.730
C#06C	1.213		1.730
C#07C		1.489	1.454
C#07C	1.508		1.454
C#08C		1.505	1.457
C#08C	1.705		1.457
C#09C		1.836	1.326
C#09C	1.134		1.326
C#010C		1.701	0.759
C#010C	1.785		0.759
C#011C		1.194	1.350
C#011C	1.702		1.350
C#012C		1.585	1.467
C#012C	1.374		1.467
C#013C		1.406	1.435
C#013C	1.660		1.435
C#07C		1.632	1.463
C#09C	1.642		1.326
C#014C		1.530	1.438
C#014C	1.373		1.438
C#015C		1.527	1.284

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
BMC	1.126			1.137	ESTACION DE BOMBEO
C#01C			1.100	1.163	
C#01C	1.556			1.163	
C#02C			1.386	1.333	POSTE 2887
C#02C	1.536			1.333	
C#03C			1.209	1.660	CARR 16/ CALLE 109#04
C#03C	1.291			1.660	
C#04C			1.712	1.239	106/38 POSTE 2928/1
C#04C	1.698			1.239	
C#05C			1.530	1.407	CARR 16 104A36
C#05C	1.680			1.407	
C#06C			1.355	1.732	VALLEDUPAR DISC ESQUI
C#06C	1.191			1.732	
C#07C			1.467	1.456	CARR 16 102/50
C#07C	1.497			1.456	
C#08C			1.499	1.454	
C#08C	1.686			1.454	
C#09C			1.818	1.322	PUENTE
C#09C	1.148			1.322	
C#010C			1.718	0.751	PUENTE SAN MARTIN
C#010C	1.781			0.751	
C#011C			1.190	1.343	
C#011C	1.695			1.343	
C#012C			1.579	1.459	
C#012C	1.368			1.459	
C#013C			1.401	1.426	010SC030
C#013C	1.656			1.426	
C#07C			1.629	1.453	
C#09C	1.627			1.322	
C#014C			1.514	1.435	
C#014C	1.352			1.435	
C#015C			1.506	1.281	
C#015C	1.419			1.281	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#01C	0.026	0.026	0.000
C#02C	0.169	0.170	-0.001
C#03C	0.327	0.327	0.000
C#04C	-0.423	-0.421	-0.002
C#05C	0.167	0.168	-0.001
C#06C	0.327	0.325	0.002
C#07C	-0.276	-0.276	0.000
C#08C	0.003	-0.002	0.005
C#09C	-0.131	-0.132	0.001
C#010C	-0.567	-0.570	0.003
C#011C	0.591	0.591	0.000
C#012C	0.117	0.116	0.001
C#013C	-0.032	-0.033	0.001
C#014C	0.112	0.113	-0.001
C#015C	-0.154	-0.154	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
1.163	1.163	0.000
1.332	1.333	-0.001
1.659	1.660	-0.001
1.236	1.239	-0.003
1.403	1.407	-0.004
1.730	1.732	-0.002
1.454	1.456	-0.002
1.457	1.454	0.003
1.326	1.322	0.004
0.759	0.751	0.007
1.350	1.343	0.007
1.467	1.459	0.008
1.435	1.426	0.009
1.438	1.435	0.003
1.284	1.281	0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
				VOIH06		1.273		1.427	M.H 006							
				VOIH05		1.340		1.360	M.H 005							
				VOIH04		1.121		1.579	M.H 004							
C#015C	1.481		1.284	**C#015C**	1.487			1.281								
C#016C		1.271	1.494	**C#016C**			1.278	1.490		**C#016C**	0.210	0.209	0.001	1.494	1.490	0.004
C#016C	1.380		1.494	**C#016C**	1.377			1.490								
C#017C		1.531	1.343	**C#017C**			1.525	1.342		**C#017C**	-0.151	-0.148	-0.003	1.343	1.342	0.001
C#017C	1.640		1.343	**C#017C**	1.626			1.342								
C#018C		1.653	1.330	**C#018C**			1.640	1.328		**C#018C**	-0.013	-0.014	0.001	1.330	1.328	0.002

LUGAR: TURBO
FECHA LEVANTAMIENTO: 27/08/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: NIVELACION DE LA P.E.T.A.R

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
C#018C	1.350		1.328	**C#018C**	1.329			1.328								
C#019C		1.777	0.900	**C#019C**			1.757	0.900		**C#019C**	-0.427	-0.428	0.001	0.900	0.900	0.001
C#019C	1.450		0.900	**C#019C**	1.431			0.900								
C#020C		1.542	0.808	**C#020C**			1.523	0.808		**C#020C**	-0.092	-0.092	0.000	0.808	0.808	0.001
C#020C	1.470		0.808	**C#020C**	1.474			0.808								
C#021C		1.612	0.666	**C#021C**			1.618	0.664		**C#021C**	-0.142	-0.144	0.002	0.666	0.664	0.003
C#021C	1.313		0.666	**C#021C**	1.300			0.664								
C#022C		1.233	0.746	**C#022C**			1.222	0.742		**C#022C**	0.080	0.078	0.002	0.746	0.742	0.005
C#022C	1.224		0.746	**C#022C**	1.185			0.742								
C#023C		1.560	0.410	**C#023C**			1.523	0.404		**C#023C**	-0.336	-0.338	0.002	0.410	0.404	0.007
C#023C	1.510		0.410	**C#023C**	1.526			0.404								
C#024C		1.579	0.341	**C#024C**			1.592	0.338		**C#024C**	-0.069	-0.066	-0.003	0.341	0.338	0.004
C#024C	1.268		0.341	**C#024C**	1.267			0.338								
C#025C		1.255	0.354	**C#025C**			1.252	0.353		**C#025C**	0.013	0.015	-0.002	0.354	0.353	0.002
C#025C	1.288		0.354	**C#025C**	1.277			0.353								
C#026C		1.537	0.105	**C#026C**			1.524	0.106		**C#026C**	-0.249	-0.247	-0.002	0.105	0.106	0.000

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#026C	1.405		0.105
C#027C		1.564	-0.054
C#027C	2.801		-0.054
C#028C		1.412	1.336
C#028C	0.950		1.336
C#027C		2.339	-0.054

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#026C	1.404			0.106	
C#027C			1.565	-0.056	
C#027C	2.790			-0.056	
C#028C			1.398	1.337	
LAG1		1.567		1.168	LAGUNA AGUA NEGRA
LAG2		1.861		0.874	LAGUNA AGUA NEGRA
LAG3		2.863		-0.129	LAGUNA AGUA NEGRA
V08		2.185		0.550	
V09		2.186		0.549	
A07		2.558		0.177	
C#028C	1.393			1.337	
C#027C			2.782	-0.053	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#027C	-0.159	-0.161	0.002
C#028C	1.389	1.392	-0.003

DIFERENCIA COTA		
NIV	CONT	DIF
-0.054	-0.056	0.002
1.336	1.337	-0.001

LUGAR: TURBO
FECHA LEVANTAMIENTO: 28/08/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: NIVELACION DE LA P.E.T.A.R

NIVELACION			
EN	V (+)	V (-)	COTA
BMC	1.047		1.137
C#029C		1.001	1.183
C#029C	1.278		1.183
C#030C		1.661	0.800
C#030C	1.739		0.800
C#031C		1.300	1.239

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
BMC	1.045			1.137	
C#029C			0.997	1.185	
C#029C	1.239			1.185	
C#030C			1.625	0.799	
C#030C	1.727			0.799	
C#031C			1.290	1.236	
C#031C	1.234			1.236	
TANQUE # 1		1.287		1.183	EST DE BOMBEO
C#031C	0.964			1.236	
V01		1.168		1.032	
V02		1.213		0.987	
TANQUE # 2		1.036		1.164	SALIDA TANQUE # 2

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#029C	0.046	0.048	-0.002
C#030C	-0.383	-0.386	0.003
C#031C	0.439	0.437	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
1.183	1.185	-0.002
0.800	0.799	0.001
1.239	1.236	0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#031C	1.524		1.239
C#032C		1.595	1.168
C#032C	1.555		1.168
C#033C		1.557	1.166
C#033C	1.425		1.166
C#034C		1.257	1.334
C#034C	1.747		1.334
C#035C		1.111	1.970
C#035C	1.896		1.970
C#036C		1.096	2.770
C#036C	1.850		2.770
C#037C		1.409	3.211
C#037C	0.683		3.211
C#038C		1.645	2.249
C#038C	1.175		2.249
C#039C		1.679	1.745
C#039C	1.543		1.745
C#040C		1.666	1.622
C#040C	1.642		1.622
C#041C		0.257	3.007
C#041C	0.179		3.007
C#042C		1.830	1.356
C#042C	1.605		1.356
C#043C		1.276	1.685
C#043C	1.551		1.685
C#044C		1.638	1.598
C#044C	1.696		1.598
C#045C		1.448	1.846
C#045C	1.377		1.846
C#046C		1.093	2.130

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#031C	1.491			1.236	
C#032C			1.560	1.167	
C#032C	1.550			1.167	
C#033C			1.554	1.163	
C#033C	1.428			1.163	
C#034C			1.259	1.332	
C#034C	1.753			1.332	
C#035C			1.118	1.967	
C#035C	1.878			1.967	
C#036C			1.076	2.769	
C#036C	1.840			2.769	
C#037C			1.397	3.212	
C#037C	0.701			3.212	
C#038C			1.665	2.248	
C#038C	1.182			2.248	
C#039C			1.687	1.743	
C#039C	1.510			1.743	
C#040C			1.633	1.620	
C#040C	1.641			1.620	
C#041C			0.256	3.005	
C#041C	0.079			3.005	
C#042C			1.732	1.352	
C#042C	1.612			1.352	
C#043C			1.282	1.682	
C#043C	1.568			1.682	
C#044C			1.652	1.598	
C#044C	1.678			1.598	
C#045C			1.429	1.847	
C#045C	1.379			1.847	
C#046C			1.098	2.128	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#032C	-0.071	-0.069	-0.002
C#033C	-0.002	-0.004	0.002
C#034C	0.168	0.169	-0.001
C#035C	0.636	0.635	0.001
C#036C	0.800	0.802	-0.002
C#037C	0.441	0.443	-0.002
C#038C	-0.962	-0.964	0.002
C#039C	-0.504	-0.505	0.001
C#040C	-0.123	-0.123	0.000
C#041C	1.385	1.385	0.000
C#042C	-1.651	-1.653	0.002
C#043C	0.329	0.330	-0.001
C#044C	-0.087	-0.084	-0.003
C#045C	0.248	0.249	-0.001
C#046C	0.284	0.281	0.003

DIFERENCIA COTA		
NIV	CONT	DIF
1.168	1.167	0.001
1.166	1.163	0.003
1.334	1.332	0.002
1.970	1.967	0.003
2.770	2.769	0.001
3.211	3.212	-0.001
2.249	2.248	0.001
1.745	1.743	0.002
1.622	1.620	0.002
3.007	3.005	0.002
1.356	1.352	0.004
1.685	1.682	0.003
1.598	1.598	0.000
1.846	1.847	-0.001
2.130	2.128	0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 29/08/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: NIVELACION DE LA P.E.T.A.R

NIVELACION			
EN	V (+)	V (-)	COTA
C#046C	1.248		2.130
C#047C		1.014	2.364
C#047C	2.109		2.364
C#048C		0.208	4.265

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#046C	1.390			2.130	
C#047C			1.155	2.365	
C#047C	2.101			2.365	
C#048C			0.203	4.263	
C#048C	1.364			4.263	
DESC REP1		1.428		4.199	RASANTE
DESC REP1		1.634		3.993	ABAJO
DESC REP1		2.334		3.293	BATEA
DESC PPAL		1.554		4.073	RASANTE
DESC PPAL		1.701		3.926	ABAJO
DESC PPAL		2.456		3.171	BATEA
ULT POZO		1.560		4.067	RASANTE
ULT POZO		1.735		3.892	ABAJO
ULT POZO		2.529		3.098	BATEA
POZA LLEG 2		1.462		4.165	RASANTE
POZA LLEG 2		1.597		4.030	ABAJO
POZA LLEG 2		2.335		3.292	BATEA

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#047C	0.234	0.235	-0.001
C#048C	1.901	1.898	0.003

DIFERENCIA COTA		
NIV	CONT	DIF
2.364	2.365	-0.001
4.265	4.263	0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 24 DE OCTUBRE DE 2009
TOPOGRAFO: VERONICA ALEJANDRA MOLINA
COMISIÓN: F
AMARRE:

NIVELACION			
EN	V (+)	V (-)	COTA
C#102F	1.602		1.267
C#103F		1.340	1.529
C#103F	1.191		1.529
C#104F		1.626	1.094
C#104F	1.328		1.094
C#105F		1.492	0.930
C#105F	1.361		0.930
C#106F		1.342	0.949
C#106F	1.463		0.949
C#107F		1.611	0.801

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#102F	1.608			1.267	ESQUINA
C#103F			1.344	1.531	ESQUINA
013SC055		1.622		1.253	
C#103F	1.341			1.531	
013PS029		1.654		1.218	ARRIBA
013PS029		2.286		0.586	ABAJO
013SC032		1.626		1.246	
013SC033		1.721		1.151	VISIBLE
013PS036		1.787		1.085	ARRIBA
013PS036		2.11		0.762	ABAJO
013SC037		1.665		1.207	
C#103F	1.183			1.531	
C#104F			1.620	1.094	PAV, ESQUINA
013SC034		1.691		1.023	
013SC035		1.748		0.966	
C#104F	1.789			1.094	
013PC028		1.493		1.390	VISIBLE
013SC027		1.462		1.421	VISIBLE
C#104F	1.348			1.094	
C#105F			1.511	0.931	ESQUINA
013SC043		1.831		0.611	N.V
C#105F	1.348			0.931	
013SC046		1.614		0.665	
013SC045		1.055		1.224	
C#105F	1.354			0.931	
C#106F			1.337	0.948	ESQUINA
013SC047		1.478		0.807	VISIBLE
C#106F	1.431			0.948	
013SC048		1.581		0.798	
013SC049		1.629		0.750	
C#106F	1.465			0.948	
C#107F			1.613	0.800	013SC052
C#107F	1.402			0.800	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#103F	0.262	0.264	-0.002
C#104F	-0.435	-0.437	0.002
C#105F	-0.164	-0.163	-0.001
C#106F	0.019	0.017	0.002
C#107F	-0.148	-0.148	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
1.529	1.531	-0.002
1.094	1.094	0.000
0.930	0.931	-0.001
0.949	0.948	0.001
0.801	0.800	0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#107F	1.663		0.801
C#108F		1.526	0.938
C#108F	1.426		0.938
C#109F		1.112	1.252
C#109F	1.492		1.252
C#110F		1.662	1.082
C#110F	1.700		1.082
C#103F		1.259	1.523
C#111F	1.062		0.569
C#112F		0.901	0.730
C#112F	1.502		0.730
C#113F		1.919	0.313
C#113F	1.364		0.313
C#114F		1.539	0.139

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
013SC057		1.617		0.585	
011SC054		1.079		1.123	
C#107F	1.655			0.800	
C#108F			1.518	0.937	ESQUINA
013SC053		1.535		0.920	VISIBLE
C#108F	1.495			0.937	
C#109F			1.182	1.250	PAVIMENTO
013PS054		1.301		1.131	ARRIBA
013PS054		1.865		0.567	ABAJO
C#109F	1.502			1.250	
C#110F			1.672	1.080	ESQUINA
013PS039		1.745		1.007	ARRIBA
013PS039		1.902		0.850	ABAJO
013PSN		1.789		0.963	ARRIBA
013PSN		2.047		0.705	ABAJO
013SC038		1.701		1.051	
013SC040		1.322		1.430	
C#110F	1.691			1.080	
C#103F			1.251	1.520	
C#111F	1.105			0.569	ESQUINA
C#112F			0.945	0.729	ESQUINA
013SCN		1.469		0.205	
C#112F	1.467			0.729	
C#113F			1.882	0.315	ESQUINA
C#113F	1.353			0.315	
C#114F			1.527	0.141	ESQUINA

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#108F	0.137	0.137	0.000
C#109F	0.314	0.313	0.001
C#110F	-0.170	-0.170	0.000
C#112F	0.161	0.160	0.001
C#113F	-0.417	-0.415	-0.002
C#114F	-0.175	-0.174	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
0.938	0.937	0.001
1.252	1.250	0.002
1.082	1.080	0.002
0.730	0.729	0.001
0.313	0.315	-0.001
0.139	0.141	-0.002

LUGAR: TURBO
FECHA LEVANTAMIENTO: 26 DE OCTUBRE DE 2009
TOPOGRAFO: VERONICA ALEJANDRA MOLINA BUSTAMANTI
COMISIÓN: F
AMARRE:

NIVELACION			
EN	V (+)	V (-)	COTA
C#114F	1.195		0.139
C#115F		0.746	0.588

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#114F	1.200			0.141	
C#115F			0.749	0.592	ESQUINA

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#115F	0.449	0.451	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
0.588	0.592	-0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#115F	1.101		0.588
C#116F		1.407	0.282
C#116F	1.611		0.282
C#117F		1.387	0.506
C#116F	1.386		0.282
C#118F		1.349	0.319
C#118F	1.474		0.319
C#112F		1.054	0.738
C#115F	1.201		0.588
C#119F		0.959	0.830
C#119F	0.676		0.830
C#120F		1.741	-0.236
C#120F	1.451		-0.236
C#121F		1.181	0.034
C#121F	1.421		0.034
C#122F		1.254	0.202
C#122F	1.605		0.202
C#123F		0.852	0.955
C#123F	1.113		0.955
C#124F		1.589	0.479
C#124F	1.406		0.479
C#125F		1.139	0.746

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#115F	1.112			0.592	
C#116F			1.419	0.285	013SC044. VISIB
C#116F	1.591			0.285	
C#117F			1.367	0.509	
C#116F	1.387			0.285	
C#118F			1.351	0.321	ESQUINA
C#118F	1.525			0.321	
C#112F			1.103	0.742	
C#115F	1.202			0.592	
C#119F			0.958	0.835	ESQUINA
C#119F	0.641			0.835	
C#120F			1.706	-0.230	ENCIMA PIEDRA
C#120F	1.446			-0.230	
C#121F			1.178	0.038	ENCIMA PIEDRA
C#121F	1.404			0.038	
C#122F			1.236	0.206	ESQ, TIENDA
C#122F	1.641			0.206	
C#123F			0.886	0.961	ESQ, VENTA GAS
C#123F	1.122			0.961	
C#124F			1.599	0.484	ESQUINA
C#124F	1.408			0.484	
C#125F			1.142	0.751	ESQ, PUENTE

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#116F	-0.306	-0.307	0.001
C#117F			
C#118F	0.037	0.036	0.001
C#119F	0.242	0.244	-0.002
C#120F	-1.065	-1.065	0.000
C#121F	0.270	0.268	0.002
C#122F	0.167	0.168	-0.001
C#123F	0.753	0.755	-0.002
C#124F	-0.476	-0.477	0.001
C#125F	0.267	0.266	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
0.282	0.285	-0.003
0.319	0.321	-0.002
0.830	0.835	-0.006
-0.236	-0.230	-0.006
0.034	0.038	-0.004
0.202	0.206	-0.005
0.955	0.961	-0.007
0.479	0.484	-0.006
0.746	0.751	-0.005

LUGAR: TURBO
FECHA LEVANTAMIENTO: 27 DE OCTUBRE DE 2009
TOPOGRAFO: VERONICA ALEJANDRA MOLINA BUSTAMANTE
COMISIÓN: F
AMARRE:

NIVELACION			
EN	V (+)	V (-)	COTA
C#123F	0.857		0.955
C#126F		1.403	0.409
C#126F	1.141		0.409
C#119F		0.702	0.848
C#119F	1.014		0.830
C#127F		1.162	0.682

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#123F	0.865			0.961	
C#126F			1.412	0.414	
C#126F	1.135			0.414	
C#119F			0.695	0.854	
C#119F	1.024			0.835	
C#127F			1.174	0.686	ENCIMA PIEDRA

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#126F	-0.546	-0.547	0.001
C#127F	-0.148	-0.150	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
0.409	0.414	-0.006
0.682	0.686	-0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#127F	1.381		0.682
C#128F		1.422	0.641
C#123F	0.691		0.955
C#129F		1.438	0.208
C#129F	1.615		0.208
C#130F		1.439	0.384
C#130F	1.165		0.384
C#131F		1.453	0.095
C#132F	1.545		3.097
C#133F		1.372	3.270
C#133F	1.536		3.270
C#134F		2.114	2.692
C#134F	2.009		2.692
C#135F		2.526	2.175
C#135F	1.395		2.175
C#136F		1.259	2.311
C#136F	1.438		2.311
C#137F		1.339	2.410
C#137F	1.660		2.410
C#138F		1.307	2.763
C#138F	1.698		2.763
C#139F		1.557	2.904
C#139F	1.764		2.904
C#132F		1.559	3.109

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#127F	1.384			0.686	
C#128F			1.425	0.645	ENCIMA CAJA
C#123F	0.706			0.961	
C#129F			1.453	0.214	CERA CASA
C#129F	1.647			0.214	
C#130F			1.469	0.392	CERA CASA
C#130F	1.202			0.392	
C#131F			1.488	0.106	CERA CASA
013SC051		1.572		0.022	INUNDADA
013SC050		1.351		0.243	INUNDADA
C#132F	1.556			3.097	ESQUINA
C#133F			1.382	3.271	ESQUINA CERA
VTUR015005		1.661		2.992	
VTUR015006		1.682		2.971	
C#133F	1.562			3.271	
C#134F			2.138	2.695	ESQUINA
C#134F	2.045			2.695	
C#135F			2.563	2.177	CERA CASA
C#135F	1.377			2.177	
C#136F			1.241	2.313	ENCIMA PIEDRA
C#136F	1.415			2.313	
C#137F			1.314	2.414	017SC001
VTUR017013		1.419		2.309	N.V
C#137F	1.651			2.414	
C#138F			1.299	2.766	TAPA TELEFONO
017SC002		1.628		2.437	INUNDADA
VTUR017012		1.513		2.552	
VTUR017011		1.319		2.746	N.V
C#138F	1.702			2.766	
C#139F			1.560	2.908	ESQUINA
VTUR017008		1.560		2.908	
VTUR017007		1.450		3.018	
017SCN1		1.493		2.975	
C#139F	1.762			2.908	
C#132F			1.558	3.112	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#128F	-0.041	-0.041	0.000
C#129F	-0.747	-0.747	0.000
C#130F	0.176	0.178	-0.002
C#131F	-0.288	-0.286	-0.002
C#133F	0.173	0.174	-0.001
C#134F	-0.578	-0.576	-0.002
C#135F	-0.517	-0.518	0.001
C#136F	0.136	0.136	0.000
C#137F	0.099	0.101	-0.002
C#138F	0.353	0.352	0.001
C#139F	0.141	0.142	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
0.641	0.645	-0.004
0.208	0.214	-0.007
0.384	0.392	-0.009
0.095	0.106	-0.011
3.270	3.271	-0.001
2.692	2.695	-0.003
2.175	2.177	-0.002
2.311	2.313	-0.002
2.410	2.414	-0.004
2.763	2.766	-0.003
2.904	2.908	-0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 28 DE OCTUBRE DE 2009
TOPOGRAFO: VERONICA ALEJANDRA MOLINA BUSTAMANTE
COMISIÓN: F
AMARRE:

NIVELACION			
EN	V (+)	V (-)	COTA
C#133F	1.292		3.270
C#140F		1.187	3.375
C#140F	1.313		3.375
C#141F		1.605	3.083
C#141F	1.683		3.083
C#142F		1.734	3.032
C#142F	1.296		3.032
C#143F		1.278	3.050
C#143F	0.856		3.050
C#144F		1.328	2.578
C#144F	1.273		2.578
C#145F		1.493	2.358
C#145F	1.207		2.358
C#146F		1.774	1.791
C#146F	1.631		1.791
C#147F		1.027	2.395
C#147F	1.317		2.395
C#148F		1.424	2.288
C#148F	1.372		2.288
C#149F		1.380	2.280
C#149F	1.302		2.280
C#136F		1.281	2.301
C#136F	1.526		2.311
C#150F		1.110	2.727
C#150F	1.128		2.727
C#151F		1.624	2.231
C#151F	1.499		2.231
C#152F		1.539	2.191

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#133F	1.274			3.271	
C#140F			1.170	3.375	BORDE PUENTE
C#140F	1.361			3.375	
C#141F			1.651	3.085	ESQUINA
C#141F	1.676			3.085	
C#142F			1.725	3.036	ESQUINA
C#142F	1.284			3.036	
C#143F			1.265	3.055	
C#143F	0.698			3.055	
VTUR017080		1.250		2.503	
C#143F	0.837			3.055	
C#144F			1.307	2.585	ESQUINA
C#144F	1.260			2.585	
C#145F			1.478	2.367	ENTRADA CASA
C#145F	1.197			2.367	
C#146F			1.765	1.799	PUENTE
C#146F	1.656			1.799	
C#147F			1.054	2.401	
C#147F	1.271			2.401	
C#148F			1.379	2.293	
C#148F	1.348			2.293	
C#149F			1.356	2.285	
C#149F	1.323			2.285	
C#136F			1.304	2.304	
C#136F	1.534			2.313	
C#150F			1.118	2.729	CERA CASA
C#150F	1.108			2.729	
VTUR014014		1.404		2.433	
C#150F	1.153			2.729	
C#151F			1.648	2.234	PUENTE ESQ
C#151F	1.500			2.234	
C#152F			1.540	2.194	ENCIMA TUBO
VTUR014029		1.659		2.075	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#140F	0.105	0.104	0.001
C#141F	-0.292	-0.290	-0.002
C#142F	-0.051	-0.049	-0.002
C#143F	0.018	0.019	-0.001
C#144F	-0.472	-0.470	-0.002
C#145F	-0.220	-0.218	-0.002
C#146F	-0.567	-0.568	0.001
C#147F	0.604	0.602	0.002
C#148F	-0.107	-0.108	0.001
C#149F	-0.008	-0.008	0.000
C#150F	0.416	0.416	0.000
C#151F	-0.496	-0.495	-0.001
C#152F	-0.040	-0.040	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
3.375	3.375	0.000
3.083	3.085	-0.002
3.032	3.036	-0.004
3.050	3.055	-0.005
2.578	2.585	-0.007
2.358	2.367	-0.009
1.791	1.799	-0.008
2.395	2.401	-0.006
2.288	2.293	-0.005
2.280	2.285	-0.005
2.727	2.729	-0.002
2.231	2.234	-0.003
2.191	2.194	-0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#152F	1.481		2.191
C#153F		1.235	2.437
C#153F	1.382		2.437
C#154F		1.366	2.453
C#154F	1.133		2.453
C#155F		1.059	2.527
C#155F	0.903		2.527
C#156F		1.664	1.766
C#156F	1.629		1.766
C#157F		1.415	1.980
C#157F	1.648		1.980
C#158F		1.665	1.963
C#158F	1.815		1.963
C#159F		1.521	2.257
C#159F	1.468		2.257
C#148F		1.449	2.276

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
VTUR014028		1.483		2.251	
C#152F	1.490			2.194	
VTUR014016		1.511		2.173	
VTUR014015		1.381		2.303	
C#152F	1.469			2.194	
C#153F			1.222	2.441	CERA CASA
C#153F	1.537			2.441	
C#154F			1.523	2.455	
VTUR017027		1.886		2.092	
C#154F	1.155			2.455	
C#155F			1.083	2.527	
C#155F	0.914			2.527	
C#156F			1.675	1.766	
C#156F	1.612			1.766	
C#157F			1.399	1.979	
C#157F	1.621			1.979	
C#158F			1.639	1.961	
C#158F	1.791			1.961	
C#159F			1.499	2.253	
C#159F	1.480			2.253	
C#148F			1.462	2.271	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#153F	0.246	0.247	-0.001
C#154F	0.016	0.014	0.002
C#155F	0.074	0.072	0.002
C#156F	-0.761	-0.761	0.000
C#157F	0.214	0.213	0.001
C#158F	-0.017	-0.018	0.001
C#159F	0.294	0.292	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
2.437	2.441	-0.004
2.453	2.455	-0.002
2.527	2.527	0.000
1.766	1.766	0.000
1.980	1.979	0.001
1.963	1.961	0.002
2.257	2.253	0.004

LUGAR: TURBO
FECHA LEVANTAMIENTO: 30 DE OCTUBRE DE 2009
TOPOGRAFO: VERONICA ALEJANDRA MOLINA BUSTAMANTE
COMISIÓN: F
AMARRE:

NIVELACION			
EN	V (+)	V (-)	COTA
C#160F	1.724		5.105
C#161F		1.769	5.060

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#160F	1.711			5.105	CERA ESQUINA
C#161F			1.757	5.059	031SC022
031PS041		1.958		4.858	ARRIBA
031PS041		2.343		4.473	ABAJO
031PS042		1.636		5.180	ARRIBA
031PS042		2.343		4.473	ABAJO
031SC040		1.547		5.269	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#161F	-0.045	-0.046	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
5.060	5.059	0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#161F	1.490		5.060
C#162F		1.563	4.987
C#162F	1.675		4.987
C#163F		1.661	5.001
C#163F	1.641		5.001
C#164F		1.269	5.373
C#164F	1.586		5.373
C#165F		1.755	5.204
C#165F	1.485		5.204
C#160F		1.577	5.112
C#160F	1.755		5.105
C#166F		1.355	5.505

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
031SC021		1.597		5.219	
VTURN03101		1.802		5.014	
C#161F	1.482			5.059	
C#162F			1.555	4.986	CERA ESQUINA
031SCN1		1.766		4.775	
031SC023		1.720		4.821	
031SC037		1.672		4.869	
031SC035		1.939		4.602	
031PS036		1.962		4.579	ARRIBA
031PS036		2.373		4.168	ABAJO
031SC034		1.795		4.746	
031PS038		1.800		4.741	
031PS038		2.282		4.259	
031SC033		1.578		4.963	N,V
C#162F	1.676			4.986	
031SC039		1.627		5.035	N,V
031SC031		1.908		4.754	
031SC032		1.761		4.901	
C#162F	1.684			4.986	
C#163F			1.669	5.001	CERA ESQUINA
031SC024		1.768		4.902	
C#163F	1.725			5.001	
031SC025		1.446		5.280	
031SC026		1.432		5.294	
C#163F	1.649			5.001	
031SC027		1.588		5.062	
031SC030		1.635		5.015	
031SC029		1.621		5.029	
031SC051		1.658		4.992	
031SC050		1.610		5.040	
031SC028		1.475		5.175	
C#163F	1.656			5.001	
C#164F			1.284	5.373	CERA ESQUINA
C#164F	1.584			5.373	
C#165F			1.751	5.206	CERA ESQUINA
C#165F	1.481			5.206	
C#160F			1.573	5.114	
C#160F	1.733			5.105	
C#166F			1.331	5.507	CERA ESQUINA

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#162F	-0.073	-0.073	0.000

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#166F	1.335		5.505
C#167F		1.356	5.484
C#167F	1.594		5.484
C#168F		1.528	5.550
C#167F	1.616		5.484
C#169F		1.288	5.812

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#166F	1.349			5.507	
031CC020		1.456		5.400	
031CC043		1.524		5.332	
031CC019		1.509		5.347	
VTURN03102		1.446		5.410	
C#166F	1.342			5.507	
C#167F			1.362	5.487	CERA
C#167F	1.592			5.487	
C#168F			1.528	5.551	BORDE POSTE
C#167F	1.623			5.487	
C#169F			1.293	5.817	CERA
031SC013		1.410		5.700	
031CC014		1.428		5.682	
031SC015		1.262		5.848	
031CC016		1.673		5.437	
031PS017		1.692		5.418	
031PS017		2.543		4.567	
031PS018		1.666		5.444	
031PS018		2.329		4.781	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#167F	-0.021	-0.020	-0.001
C#168F	0.066	0.064	0.002
C#169F	0.328	0.330	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
5.484	5.487	-0.003
5.550	5.551	-0.001
5.812	5.817	-0.005

LUGAR: TURBO
FECHA LEVANTAMIENTO: 3 DE NOVIEMBRE DE 2009
TOPOGRAFO: VERONICA ALEJANDRA MOLINA BUSTAMANTE
COMISIÓN: F
AMARRE:

NIVELACION			
EN	V (+)	V (-)	COTA
C#169F	1.535		5.812
C#170F		1.484	5.863

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#169F	1.504			5.817	
C#170F			1.451	5.870	ESQUINA
031CC007		1.600		5.721	
031PS008		1.629		5.692	
031PS008		2.311		5.010	
031PS009		1.602		5.719	
031PS009		2.530		4.791	
C#170F	1.599			5.870	
031SC010		1.682		5.787	N,V

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#170F	0.051	0.053	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
5.863	5.870	-0.007

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#170F	1.599		5.863
C#171F		1.149	6.313
C#171F	1.175		6.313
C#172F		1.557	5.931
C#172F	1.594		5.931
C#169F		1.714	5.811
C#166F	1.545		5.505
C#173F		1.700	5.350
C#173F	1.344		5.350
C#174F		1.564	5.130
C#174F	1.389		5.130
C#175F		1.834	4.685

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
031PS006		1.632		5.837	
031PS006		1.845		5.624	
031CC001		1.593		5.876	SEDIMENTADA
031SC002		1.352		6.117	
C#170F	1.582			5.870	
C#171F			1.133	6.319	CERA ESQUINA
C#171F	1.544			6.319	
031CC005		1.95		5.913	
031SC003		2.000		5.863	
C#171F	1.588			6.319	
031PS004		1.221		6.686	
031PS004		1.467		6.440	
C#171F	1.196			6.319	
C#172F			1.579	5.936	CERA
031PSN2		1.617		5.898	
031PSN2		1.841		5.674	
031SC011		1.971		5.544	
C#172F	1.600			5.936	
C#169F			1.718	5.818	
031SC012		1.178		6.358	
C#166F	1.540			5.507	
C#173F			1.694	5.353	031CC044
C#173F	1.385			5.353	
C#174F			1.607	5.131	031CC045
VTUR03103		1.464		5.274	
C#174F	0.891			5.131	
023CC009		1.551		4.471	
031CC046		1.538		4.484	
C#174F	1.402			5.131	
C#175F			1.845	4.688	PIEDRA
C#175F	0.922			4.688	
VTUR301095		1.209		4.401	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#171F	0.450	0.449	0.001
C#172F	-0.382	-0.383	0.001
	-0.120	-0.118	-0.002
C#173F	-0.155	-0.154	-0.001
C#174F	-0.220	-0.222	0.002
C#175F	-0.445	-0.443	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
6.313	6.319	-0.006
5.931	5.936	-0.005
5.811	5.818	-0.007
5.350	5.353	-0.003
5.130	5.131	-0.001
4.685	4.688	-0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO - GONZALO MEJIA
FECHA LEVANTAMIENTO: 22/10/2009
TOPOGRAFO: ANGELA
COMISIÓN: G
AMARRE: C#153G

NIVELACION			
EN	V (+)	V (-)	COTA
C#153G	1.169		2.813
C#154G		1.685	2.297
C#154G	1.321		2.297
C#155G		1.100	2.518
C#155G	1.131		2.518
C#156G		1.284	2.365

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#153G	1.165			2.813	
C#154G			1.681	2.297	
015SC037		1.291		2.687	
015SC043		1.569		2.409	
015C01		1.001		2.977	
015CC035		1.748		2.230	
015PS036		1.836		2.142	RASANTE
015PS036		2.172		1.806	BATEA
VTUR015057		1.264		2.714	
VTUR015065		1.242		2.736	
015SC042		1.460		2.518	
015PS038		1.562		2.416	RASANTE
015PS038		1.969		2.009	BATEA
015SC003		1.755		2.223	
015SC033		1.607		2.371	
C#154G	1.324			2.297	
C#155G			1.100	2.521	
015SC030		1.343		2.278	
015SC032		1.319		2.302	
015SC031		1.311		2.310	
C#155G	1.248			2.521	
015SC052		1.421		2.348	
015SC028		1.374		2.395	
015SC007		1.688		2.081	
C#155G	1.242			2.521	
015CO025		2.725		1.038	ABAJO
015CO025		2.371		1.392	ARRIBA
015SC027		1.26		2.503	
C#155G	1.132			2.521	
C#156G			1.285	2.368	
015SC024		1.012		2.641	
015SC023		1.353		2.300	
015SC029		1.342		2.311	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#154G	-0.516	-0.516	0.000
C#155G	0.221	0.224	-0.003
C#156G	-0.153	-0.153	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
2.297	2.297	0.000
2.518	2.521	-0.003
2.365	2.368	-0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#156G	1.181		2.365
C#157G		1.101	2.445
C#157G	1.555		2.445
C#158G		1.575	2.425
C#158G	1.078		2.425
C#159G		1.016	2.487
C#159G	1.409		2.487
C#160G		1.021	2.875
C#160G	1.521		2.875
C#161G		1.461	2.935
C#161G	1.071		2.935
C#162G		0.822	3.184
C#162G	1.054		3.184

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
015SC026		1.218		2.435	
015PS020		1.313		2.340	ARRIBA
015PS020		1.439		2.214	ABAJO
015SC019		1.291		2.362	
C#156G	1.185			2.368	
C#157G			1.103	2.450	
015SCO155		1.288		2.265	
015SC008		1.282		2.271	
015SC005		1.429		2.124	
015SC006		1.435		2.118	
C#157G	1.562			2.450	
C#158G			1.579	2.433	034SC008
015SC021		1.491		2.521	
C#158G	1.078			2.433	
C#159G			1.019	2.492	
015SC022		1.273		2.238	
015SC016		1.038		2.473	
015SC015		1.027		2.484	
015SC046		1.327		2.184	
015SC017		1.173		2.338	
015SC018		1.293		2.218	
C#159G	1.263			2.492	
015SC051		1.412		2.343	
015SC014		1.451		2.304	
015SC013		1.049		2.706	
015SC050		1.521		2.234	
015SC009		1.601		2.154	
015SC045		1.581		2.174	
C#159G	1.400			2.492	
C#160G			1.013	2.879	
015SC012		1.170		2.722	
015SC011		1.239		2.653	
015SC010		1.400		2.492	
C#160G	1.534			2.879	
C#161G			1.473	2.940	
C#161G	1.068			2.940	
C#162G			0.817	3.191	
015SC001		0.649		3.359	
C#162G	1.055			3.191	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#157G	0.080	0.082	-0.002
C#158G	-0.020	-0.017	-0.003
C#159G	0.062	0.059	0.003
C#160G	0.388	0.387	0.001
C#161G	0.060	0.061	-0.001
C#162G	0.249	0.251	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
2.445	2.450	-0.005
2.425	2.433	-0.008
2.487	2.492	-0.005
2.875	2.879	-0.004
2.935	2.940	-0.005
3.184	3.191	-0.007

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#153G		1.417	2.821

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#153G			1.416	2.830	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#153G	-0.363	-0.361	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
2.821	2.830	-0.009

LUGAR: TURBO - BRISAS DEL MAR
FECHA LEVANTAMIENTO: 23/10/2009
TOPOGRAFO: ANGELA
COMISIÓN: G
AMARRE: C#94H

NIVELACION			
EN	V (+)	V (-)	COTA
C#94H	1.088		0.989
C#163G		1.460	0.617
C#163G	1.939		0.617
C#164G		2.042	0.514
C#164G	1.375		0.514
C#165G		1.545	0.344
C#165G	1.842		0.344
C#166G		1.462	0.724
C#166G	1.627		0.724
C#94H		1.341	1.011
C#165G	1.591		0.344
C#167G		1.489	0.446

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#94H	1.075			0.989	
C#163G			1.450	0.614	
002SC016		1.269		0.795	
C#163G	1.941			0.614	
C#164G			2.046	0.509	
C#164G	1.380			0.509	
C#165G			1.550	0.339	
002SC010		1.397		0.492	
002SC011		1.332		0.557	
C#165G	1.858			0.339	
C#166G			1.477	0.720	
C#166G	1.632			0.720	
C#94H			1.343	1.010	
C#165G	1.600			0.339	
C#167G			1.501	0.438	
C#167G	1.022			0.438	
002SC006		1.211		0.249	
002SC007		1.295		0.165	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#163G	-0.372	-0.375	0.003
C#164G	-0.103	-0.105	0.002
C#165G	-0.170	-0.170	0.000
C#166G	0.380	0.381	-0.001
C#94H	0.286	0.289	-0.003
C#167G	0.102	0.099	0.003

DIFERENCIA COTA		
NIV	CONT	DIF
0.617	0.614	0.003
0.514	0.509	0.005
0.344	0.339	0.005
0.724	0.720	0.004
1.011	1.010	0.001
0.446	0.438	0.008

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO - BRISAS DEL MAR - JESUS MORA
FECHA LEVANTAMIENTO: 24/10/2009
TOPOGRAFO: ANGELA
COMISIÓN: G
AMARRE: C#167G

NIVELACION			
EN	V (+)	V (-)	COTA
C#167G	1.065		0.446
C#168G		1.300	0.211
C#168G	1.568		0.211
C#169G		1.259	0.520
C#169G	1.335		0.520
C#165G		1.506	0.349
C#170G	1.425		0.879
C#171G		0.900	1.404
C#171G	1.390		1.404
C#172G		1.451	1.343
C#172G	1.629		1.343
C#173G		1.301	1.671

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#167G	1.050			0.438	
C#168G			1.285	0.203	
002SC004		1.200		0.288	
002SC002		1.263		0.225	
C#168G	1.303			0.203	
002SC001		1.353		0.153	
002SC017		1.862		-0.356	
C#168G	1.570			0.203	
C#169G			1.260	0.513	
002SC008		1.365		0.408	
002SC009		1.400		0.373	
C#169G	1.330			0.513	
C#165G			1.502	0.341	
C#170G	1.427			0.879	
C#171G			0.905	1.401	
014SC229		0.972		1.334	
014SC226		1.382		0.924	
014PS227		1.527		0.779	ARRIBA
014PS227		1.738		0.567	ABAJO
014PS228		1.642		0.664	ARRIBA
014S228		1.862		0.443	ABAJO
C#171G	1.400			1.401	
C#172G			1.461	1.340	
C#172G	1.627			1.340	
C#173G			1.300	1.667	014SC088
014SC083		1.465		1.502	
014PS029		1.540		1.427	TAPADO
014PS084		1.812		1.155	ARRIBA
014PS084		1.830		1.137	ABAJO
014PS089		2.121		0.845	ARRIBA
PS089		2.240		0.726	ABAJO
014PS087		1.820		1.147	SEDIMENTADO
014PS092		1.728		1.239	SEDIMENTADO

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#168G	-0.235	-0.235	0.000
C#169G	0.309	0.310	-0.001
C#165G	-0.171	-0.172	0.001
C#171G	0.525	0.522	0.003
C#172G	-0.061	-0.061	0.000
C#173G	0.328	0.327	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
0.211	0.203	0.008
0.520	0.513	0.007
0.349	0.341	0.008
1.404	1.401	0.003
1.343	1.340	0.003
1.671	1.667	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#173G	1.120		1.671
C#174G		1.550	1.241
C#174G	1.069		1.241
C#170G		1.431	0.879

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
014PS089		1.731		1.236	ARRIBA
014PS089		2.200		0.766	ABAJO
014SC217		1.700		1.267	
C#173G	1.100			1.667	
C#174G			1.532	1.235	
014SC201		1.289		1.478	
014SC200		1.509		1.258	
014SC217		1.631		1.136	
014SC203		1.770		0.997	
014SC202		1.630		1.137	
014SC205		1.700		1.067	
014SC204		1.590		1.177	
014SC207		1.750		1.017	
014SC149		1.500		1.267	
C#174G	1.063			1.235	
C#170G			1.425	0.872	
014CAMARA		1.439		0.858	
014PS221		1.642		0.656	SEDIMENTADO
014SC209		1.418		0.880	
014PS212		1.581		0.716	ARRIBA
014PS212		1.819		0.478	ABAJO
014PS220		1.670		0.628	ARRIBA
014PS220		2.011		0.286	ABAJO
014PS210		1.350		0.947	TAPADO
014PS213		1.260		1.038	TAPADO
014PS211		1.360		0.937	TAPADO
014PS214		1.620		0.677	ARRIBA
014PS214		1.778		0.519	ABAJO
014PS223		1.621		0.676	ARRIBA
014PS223		1.862		0.435	ABAJO

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#174G	-0.430	-0.432	0.002
C#170G	-0.362	-0.362	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
1.241	1.235	0.006
0.879	0.872	0.006

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO - JESUS MORA
FECHA LEVANTAMIENTO: 26/10/2009
TOPOGRAFO: ANGELA
COMISIÓN: G
AMARRE: C#172G

NIVELACION			
EN	V (+)	V (-)	COTA
C#172G	1.415		1.343
C#175G		0.988	1.770
C#175G	1.476		1.770
C#176G		1.229	2.017
C#176G	0.579		2.017
C#177G		0.927	1.669
C#177G	1.527		1.669
C#178G		1.122	2.074
C#178G	1.233		2.074
C#179G		1.824	1.483
C#179G	1.575		1.483
C#180G		1.342	1.716

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#172G	1.425			1.340	
C#175G			1.001	1.764	
C#175G	1.473			1.764	
C#176G			1.225	2.012	
C#176G	0.581			2.012	
C#177G			0.929	1.664	
014SC081		1.238		1.355	
C#177G	1.529			1.664	
C#178G			1.121	2.072	
C#178G	1.235			2.072	
C#179G			1.823	1.484	
014SC012		1.340		1.967	
C#179G	1.633			1.484	
014SC010		1.445		1.672	
014PS015		1.419		1.698	
014PS016		1.549		1.568	
014SC011		1.223		1.894	
014PS018		1.297		1.820	
014SC013		1.247		1.870	
014SC080		1.050		2.067	
014SC078		1.181		1.936	
014SC079		1.208		1.909	
014PS019		1.002		2.115	
014PS020		1.141		1.976	
014SC014		1.073		2.044	
C#179G	1.577			1.484	
C#180G			1.346	1.715	
014SC077		1.487		1.574	
014SC076		1.223		1.838	
014SC075		1.396		1.665	
014SC074		1.418		1.643	
014SC156		1.489		1.572	
014SC093		1.583		1.478	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#175G	0.427	0.424	0.003
C#176G	0.247	0.248	-0.001
C#177G	-0.348	-0.348	0.000
C#178G	0.405	0.408	-0.003
C#179G	-0.591	-0.588	-0.003
C#180G	0.233	0.231	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
1.770	1.764	0.006
2.017	2.012	0.005
1.669	1.664	0.005
2.074	2.072	0.002
1.483	1.484	-0.001
1.716	1.715	0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#180G	1.283		1.716
C#172G		1.633	1.366

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#180G	1.281			1.715	
C#172G			1.631	1.365	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#172G	-0.350	-0.350	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
1.366	1.365	0.001

LUGAR: TURBO - JESUS MORA
FECHA LEVANTAMIENTO: 27/10/2009
TOPOGRAFO: ANGELA
COMISIÓN: G
AMARRE: C#178G

NIVELACION			
EN	V (+)	V (-)	COTA
C#178G	1.708		2.074
C#181G		1.861	1.921
C#181G	1.311		1.921
C#182G		1.385	1.847

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#178G	1.719			2.072	
C#181G			1.869	1.922	014SC022
C#181G	1.309			1.922	
C#182G			1.383	1.848	
014SC037		1.359		1.872	
014PS023		1.428		1.803	
014PS021		1.300		1.931	
014SC024		1.407		1.824	
014SC027		1.271		1.960	
014SC029		1.369		1.862	
014SC028		1.209		2.022	
014PS024		1.488		1.743	
014SC025		1.345		1.886	
014SC066		1.602		1.629	
014SC006		1.325		1.906	
014PS026		1.417		1.814	
014PS026		1.721		1.510	
C#182G	1.521			1.848	
014SC032		1.763		1.606	
014SC320		1.715		1.654	
014SC033		1.732		1.637	
014SC034		1.688		1.681	
014SC064		1.662		1.707	
014SC053		1.623		1.746	
014SC005		1.569		1.800	
014SC063		1.631		1.738	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#181G	-0.153	-0.150	-0.003
C#182G	-0.074	-0.074	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
1.921	1.922	-0.001
1.847	1.848	-0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#182G	1.247		1.847
C#183G		1.219	1.875
C#183G	1.701		1.875
C#184G		1.76	1.816
C#184G	1.747		1.816
C#185G		1.381	2.182
C#185G	1.612		2.182
C#178G		1.727	2.067

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
014SC062		1.419		1.950	
014SC060		1.822		1.547	
014SC059		1.795		1.574	
014SC073		2.028		1.341	
014SC061		1.861		1.508	
014PS038		1.621		1.748	
014PS039		1.550		1.819	
C#182G	1.245			1.848	
C#183G			1.218	1.875	
014SC046		1.256		1.837	
014SC040		1.526		1.567	
014PS047		1.311		1.782	
014PS043		1.519		1.574	
014PS044		1.397		1.696	
014PS042		1.579		1.514	
014PS041		1.459		1.634	
014SC045		1.353		1.740	
014SC056		1.503		1.590	
014SC050		1.549		1.544	
C#183G	1.702			1.875	
C#184G			1.759	1.818	
014SC049		1.668		1.909	
014SC048		1.662		1.915	
014SC035		1.902		1.675	
C#184G	1.746			1.818	
C#185G			1.383	2.181	
014SC003		1.539		2.025	
014SC004		1.425		2.139	
014SC002		1.591		1.973	
014SC155		1.272		2.292	
014PSN02		1.914		1.650	
C#185G	1.605			2.181	
C#178G			1.721	2.065	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#183G	0.028	0.027	0.001
C#184G	-0.059	-0.057	-0.002
C#185G	0.366	0.363	0.003
C#178G	-0.115	-0.116	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
1.875	1.875	0.000
1.816	1.818	-0.002
2.182	2.181	0.001
2.067	2.065	0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO - JESUS MORA
FECHA LEVANTAMIENTO: 28/10/2009
TOPOGRAFO: ANGELA
COMISIÓN: G
AMARRE: C#174G

NIVELACION			
EN	V (+)	V (-)	COTA
C#174G	1.195		1.241
C#186G		1.569	0.867
C#186G	1.822		0.867
C#187G		1.161	1.528
C#187G	1.489		1.528
C#188G		1.632	1.385
C#188G	1.375		1.385
C#189G		1.751	1.009

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#174G	1.208			1.241	
C#186G			1.581	0.868	014SC150
014SC151		1.381		1.068	
014PS0152		1.501		0.948	
C#186G	1.828			0.868	
C#187G			1.167	1.529	014SC095
014SC148		1.358		1.338	
014SC097		1.385		1.311	
C#187G	1.502			1.529	
C#188G			1.648	1.383	014SC065
014SC071		1.544		1.487	
014SC070		1.444		1.587	
014SC072		1.328		1.703	
014SC067		1.477		1.554	
C#188G	1.498			1.383	
014SC069		1.309		1.572	
014SC068		1.193		1.688	
014SC098		1.461		1.420	
014SC099		0.981		1.900	
014SC047		1.681		1.200	
C#188G	1.381			1.383	
C#189G			1.758	1.006	
014SC114		1.347		1.417	014SC114
014SC141		1.821		0.943	
014SC110		1.319		1.445	
014SC111		1.332		1.432	
014PS112		1.338		1.426	
014PS112		1.610		1.154	
014SC107		1.321		1.443	
014PS115		1.400		1.364	
014PS115		1.719		1.045	
014SC109		1.549		1.215	
014PS108		1.421		1.343	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#186G	-0.374	-0.373	-0.001
C#187G	0.661	0.661	0.000
C#188G	-0.143	-0.146	0.003
C#189G	-0.376	-0.377	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
0.867	0.868	-0.001
1.528	1.529	-0.001
1.385	1.383	0.002
1.009	1.006	0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#189G	1.182		1.009
C#186G		1.318	0.873
			0.006
C#188G	1.708		1.385
C#190G		1.561	1.532
C#190G	1.342		1.532
C#191G		1.639	1.235

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#191G	1.315		1.235
C#192G		1.345	1.205
C#192G	1.589		1.205
C#193G		1.601	1.193
C#193G	1.889		1.193
C#186G		1.721	1.361
			-0.024

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
014SC121		1.210		1.368	
014SC138		1.616		0.962	
014SC123		1.506		1.072	
014SC120		1.473		1.105	
C#191G	1.326			1.237	
C#192G			1.359	1.204	
C#192G	1.377			1.204	
014SC137		1.723		0.858	
C#192G	1.585			1.208	
C#193G			1.600	1.193	
014SC129		1.643		1.150	
014PS128		1.605		1.188	
014PS128		1.895		0.898	
014PS130		1.695		1.098	
014PS130		1.926		0.867	
014SC132		1.901		0.892	
014PS131		1.681		1.112	
014PS131		2.08		0.713	
014SC133		1.699		1.094	
014PS125		1.995		0.798	
014PS125		2.517		0.276	
C#193G	1.893			1.193	
C#186G			1.725	1.361	
014SC135		1.685		1.401	
014PS134		1.800		1.286	
014PS136		1.828		1.258	
014PS136		2.050		1.036	
014SC153		1.681		1.405	
014PS155		1.709		1.377	
014PS155		1.921		1.165	
014PS154		1.585		1.501	
014PS154		1.926		1.160	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#192G	-0.030	-0.033	0.003
C#193G	-0.012	-0.015	0.003
C#186G	0.168	0.168	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
1.205	1.204	0.001
1.193	1.193	0.000
1.361	1.361	0.000

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR:	**TURBO - HOOVER QUINTERO - MANIZALES**
FECHA LEVANTAMIENTO:	**29/10/2009**
TOPOGRAFO:	**ANGELA PATRICIA CARDONA DUARTE**
COMISIÓN:	**G**
AMARRE:	**C#194G**

NIVELACION			
EN	**V (+)**	**V (-)**	**COTA**
C#194G	1.495		2.851
C#195G		1.831	2.515
C#195G	1.933		2.515
C#196G		1.422	3.026
C#196G	1.846		3.026
C#197G		0.760	4.112
C#197G	1.435		4.112
C#198G		2.201	3.346
C#198G	1.013		3.346
C#199G		1.141	3.218
C#199G	1.401		3.218
C#194G		1.786	2.833
C#195G	1.807		2.515
C#200G		1.021	3.301
C#200G	0.927		3.301
C#201G		0.842	3.386
C#201G	1.793		3.386
C#202G		0.979	4.200
C#202G	1.101		4.200
C#203G		1.975	3.326

CONTRANIVELACION					
EN	**V (+)**	**V (I)**	**V (-)**	**COTA**	**OBSERVACION**
C#194G	1.496			2.851	
C#195G			1.832	2.515	
C#195G	1.932			2.515	
C#196G			1.421	3.026	
023SC001		1.607		2.840	
C#196G	1.843			3.026	
C#197G			0.757	4.112	
023SC003		1.668		3.201	
023SC011		1.687		3.182	
023SC006		1.459		3.410	
023SC007		1.357		3.512	
C#197G	1.446			4.112	
C#198G			2.209	3.349	
023CC004		1.998		3.560	
023CC009		1.393		4.165	
C#198G	1.730			3.349	
023CC005		1.360		2.261	
C#198G	0.989			3.349	
C#199G			1.114	3.224	
C#199G	1.403			3.224	
C#194G			1.788	2.839	
C#195G	1.805			2.515	
C#200G			1.019	3.301	
C#200G	0.920			3.301	
C#201G			0.833	3.388	
C#201G	1.794			3.388	
C#202G			0.982	4.200	
C#202G	1.135			4.200	
C#203G			2.012	3.323	
C#203G	1.417			3.323	
023SC008		1.240		3.500	
023SC010		1.013		3.727	

DIFERENCIA VISTA			
EN	**NIV**	**CONT**	**DIF**
C#195G	-0.336	-0.336	0.000
C#196G	0.511	0.511	0.000
C#197G	1.086	1.086	0.000
C#198G	-0.766	-0.763	-0.003
C#199G	-0.128	-0.125	-0.003
C#194G	-0.385	-0.385	0.000
C#200G	0.786	0.786	0.000
C#201G	0.085	0.087	-0.002
C#202G	0.814	0.812	0.002
C#203G	-0.874	-0.877	0.003

DIFERENCIA COTA		
NIV	**CONT**	**DIF**
2.515	2.515	0.000
3.026	3.026	0.000
4.112	4.112	0.000
3.346	3.349	-0.003
3.218	3.224	-0.006
2.833	2.839	-0.006
3.301	3.301	0.000
3.386	3.388	-0.002
4.200	4.200	0.000
3.326	3.323	0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#203G	1.292		3.326
C#204G		1.666	2.952
C#204G	1.020		2.952
C#195G		1.441	2.531
			0.016
C#195G	1.582		2.515
C#205G		1.574	2.523
C#205G	1.449		2.523
C#206G		1.529	2.443
C#206G	1.249		2.443
C#207G		1.291	2.401
C#207G	1.899		2.401
C#208G		1.592	2.708
C#208G	1.605		2.708
C#195G		1.779	2.534
			0.019

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#203G	1.280			3.323	
C#204G			1.657	2.946	
C#204G	1.027			2.946	
C#195G			1.451	2.522	
C#195G	1.585			2.515	
C#205G			1.575	2.525	
C#205G	1.449			2.525	
C#206G			1.527	2.447	
C#206G	1.261			2.447	
C#207G			1.305	2.403	
C#207G	1.898			2.403	
C#208G			1.594	2.707	
024SC003		1.321		2.980	
024SC002		1.300		3.001	
024SC001		1.403		2.898	
024SC004		1.379		2.922	
024SC005		1.234		3.067	
024SC006		1.135		3.166	
C#208G	1.615			2.707	
C#195G			1.786	2.536	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#204G	-0.374	-0.377	0.003
C#195G	-0.421	-0.424	0.003
C#205G	0.008	0.010	-0.002
C#206G	-0.080	-0.078	-0.002
C#207G	-0.042	-0.044	0.002
C#208G	0.307	0.304	0.003
C#195G	-0.174	-0.171	-0.003

DIFERENCIA COTA		
NIV	CONT	DIF
2.952	2.946	0.006
2.531	2.522	0.009
2.523	2.525	-0.002
2.443	2.447	-0.004
2.401	2.403	-0.002
2.708	2.707	0.001
2.534	2.536	-0.002

LUGAR: TURBO - GAINTAN
FECHA LEVANTAMIENTO: 30/10/2009
TOPOGRAFO: ANGELA PATRICIA CARDONA DUARTE
COMISIÓN: G
AMARRE: C#209G

NIVELACION			
EN	V (+)	V (-)	COTA
C#209G	0.729		0.227
C#210G		1.669	-0.713
C#210G	1.625		-0.713
C#211G		1.429	-0.517

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#209G	0.734			0.228	
C#210G			1.672	-0.710	
012SC001		1.182		-0.220	
C#210G	1.609			-0.710	
C#211G			1.413	-0.514	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#210G	-0.940	-0.938	-0.002
C#211G	0.196	0.196	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
-0.713	-0.710	-0.003
-0.517	-0.514	-0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#211G	1.650		-0.517
C#209G		0.901	0.232
C#209G	1.031		0.227
C#212G		1.619	-0.361
C#212G	0.969		-0.361
C#213G		0.569	0.039
C#213G	1.229		0.039
C#209G		1.039	0.229
C#209G	0.350		0.227
C#214G		0.681	-0.104

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#211G	1.654			-0.514	
C#209G			0.902	0.238	
C#209G	1.022			0.228	
C#212G			1.609	-0.359	
012SC002		1.015		0.235	
C#212G	0.982			-0.359	
C#213G			0.581	0.042	
C#213G	1.221			0.042	
C#209G			1.033	0.230	
C#209G	0.353			0.228	
C#214G			0.685	-0.104	
012SC024		1.075		-0.494	
012SC006		0.727		-0.146	
C#214G	1.313			-0.104	
012PS004		1.411		-0.202	
012PS003		1.635		-0.426	
012PS003		2.186		-0.977	
012PS005		1.528		-0.319	
012PS005		1.971		-0.763	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#209G	0.749	0.752	-0.003
C#212G	-0.588	-0.587	-0.001
C#213G	0.400	0.401	-0.001
C#209G	0.190	0.188	0.002
C#214G	-0.331	-0.332	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
0.232	0.238	-0.006
-0.361	-0.359	-0.002
0.039	0.042	-0.003
0.229	0.230	-0.001
-0.104	-0.104	0.000

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 22/10/2009
TOPOGRAFO: KAHERINE CONTRERAS SOTO
COMISIÓN: H
AMARRE: C#93H

NIVELACION			
EN	V (+)	V (-)	COTA
C#93H	1.488		0.563
C#94H		1.061	0.990
C#94H	1.895		0.990
C#95H		1.755	1.131
C#95H	1.217		1.131
C#96H		1.145	1.203

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#93H	1.498			0.563	04SC008
C#94H			1.072	0.989	04SC012
04SC058		1.485		0.576	
04SC057		1.325		0.736	
02SC012		1.464		0.597	
04SC011		1.465		0.596	
C#94H	1.165			0.989	
02SC014		1.368		0.786	
C#94H	1.238			0.989	
004SC013		1.095		1.133	
004SC014		1.682		0.545	
004SC056		1.369		0.858	
C#94H	1.812			0.989	
C#95H			1.674	1.128	04SC032
004SC028		1.723		1.079	
004SC030		1.510		1.292	
004SC050		1.500		1.302	
004SC031		1.515		1.287	
004SC029		1.395		1.407	
VTUR004087		1.555		1.247	
004SC025		1.785		1.017	
004SC108		1.805		0.996	
004SC106		1.820		0.981	
004SC107		1.910		0.891	
004SC024		1.908		0.893	
C#95H	1.205			1.128	
004SC034		1.594		0.738	
004SC033		1.485		0.847	
004SC036		2.158		0.174	
C#95H	1.218			1.128	
C#96H			1.143	1.203	
05SC057		1.000		1.346	
004SC051		1.225		1.121	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#94H	0.427	0.426	0.001
C#95H	0.140	0.138	0.002
C#96H	0.072	0.075	-0.003

DIFERENCIA COTA		
NIV	CONT	DIF
0.427	0.426	0.001
0.140	0.138	0.002
0.072	0.075	-0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#95H	0.872		1.131
C#97H		1.825	0.177

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
004SC049		1.236		1.110	
004SC045		1.377		0.968	
004SC048		1.356		0.989	
004PS047		1.350		0.995	ARRIBA
004PS046		1.402		0.943	ARRIBA
004PS046		1.651		0.694	ABAJO
VTUR004086		1.187		1.159	
004SC044		1.471		0.874	
C#96H	1.410			1.203	
06SC008		1.419		1.194	
04SC053		1.620		0.992	
C#95H	0.875			1.128	
C#97H			1.825	0.177	
004SC052		1.207		0.795	
004SC005		1.085		0.917	
011SC010		1.365		0.637	
C#97H	1.350			0.177	
004CO054		1.720		-0.193	RASANTE

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#97H	-0.953	-0.950	-0.003

DIFERENCIA COTA		
NIV	CONT	DIF
-0.953	-0.950	-0.003

LUGAR: TURBO
FECHA LEVANTAMIENTO: 23/10/2009
TOPOGRAFO: KAHERINE CONTRERAS SOTO
COMISIÓN: H
AMARRE: C#95H

NIVELACION			
EN	V (+)	V (-)	COTA
C#95H	1.321		1.131
C#98H		2.070	0.382
C#98H	1.201		0.382
C#99H		1.461	0.121

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#95H	1.326			1.128	
C#98H			2.075	0.378	
C#98H	1.210			0.378	
C#99H			1.468	0.120	004SC035
11SC001		1.526		0.062	
004CO042		1.392		0.196	TERRENO
004CO042		2.300		-0.712	ESPEJO
004CO043		1.250		0.338	TERRENO
004CO043		2.281		-0.693	ESPEJO
VTUR004085		1.552		0.036	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#98H	-0.749	-0.749	0.000
C#99H	-0.260	-0.258	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
-0.749	-0.749	0.000
-0.260	-0.258	-0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#99H	1.695		0.121
C#100H		1.488	0.329
C#100H	1.875		0.329
C#93H		1.650	0.554
C#09C	1.427		1.322
C#101H		1.130	1.619
C#101H	2.420		1.619
C#102H		1.451	2.588
C#102H	1.382		2.588
C#103H		1.525	2.445

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
004SC040		1.471		0.117	
VTUR004084		1.470		0.118	
C#99H	1.421			0.120	
VTUR003077		1.456		0.085	
VTUR003079		1.400		0.141	
C#99H	1.690			0.120	
C#100H			1.483	0.327	
04SC022		1.570		0.240	
SC?		1.524		0.286	
04SC017		1.450		0.360	
04SC019		1.580		0.230	
C#100H	1.873			0.327	
C#93H			1.649	0.551	
04SC018		1.920		0.280	
04SC001		1.542		0.658	
C#09C	1.431			1.322	
C#101H			1.136	1.619	004SC004
008SC006		1.650		1.103	
008SC005		1.440		1.313	
008SC004		1.490		1.263	
C#101H	2.415			1.619	
C#102H			1.445	2.589	004SC001
008SC003		2.070		1.964	
008SC002		1.527		2.507	
C#102H	1.536			2.589	
06SC021		1.771		2.354	
VTUR022059		1.905		2.220	
VTUR022060		1.860		2.265	
008SC008		1.780		2.345	
VTUR022061		1.965		2.160	
VTUR022062		1.850		2.275	
C#102H	1.400			2.589	
C#103H			1.540	2.449	
C#103H	1.288			2.449	
VTUR009058		2.075		1.662	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#100H	0.207	0.207	0.000
C#93H	0.225	0.224	0.001
C#101H	0.297	0.295	0.002
C#102H	0.969	0.970	-0.001
C#103H	-0.143	-0.140	-0.003

DIFERENCIA COTA		
NIV	CONT	DIF
0.207	0.207	0.000
0.225	0.224	-0.010
0.297	0.297	0.000
0.969	0.970	-0.001
-0.143	-0.140	-0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 24/10/2009
TOPOGRAFO: KAHERINE CONTRERAS SOTO
COMISIÓN: H
AMARRE: C#103H

NIVELACION			
EN	V (+)	V (-)	COTA
C#103H	1.430		2.445
C#104H		1.893	1.982
C#104H	1.390		1.982
C#105H		1.770	2.756
C#105H	1.815		2.756
C#106H		1.087	3.484
C#106H	1.415		3.484
C#107H		2.251	2.648
C#107H	1.528		2.648
C#101H		1.425	2.751
C#103H	1.362		2.445
C#108H		1.260	2.547
C#108H	0.848		2.547
C#109H		1.432	1.963
C#109H	1.261		1.963
C#110H		1.388	1.836
C#110H	1.401		1.836
C#111H		1.199	2.038
C#111H	1.455		2.038
C#108H		0.925	2.568

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#103H	1.432			2.445	
C#104H			1.895	1.982	
C#104H	1.410			1.982	
C#105H			1.788	1.604	
C#105H	1.831			1.604	
C#106H			1.100	2.335	
C#106H	1.418			2.335	
C#107H			2.256	1.497	
C#107H	1.935			1.497	
008SC007		1.704		1.728	
C#107H	1.527			1.497	
C#101H			1.426	1.598	
C#103H	1.347			2.445	
C#108H			1.244	2.548	
C#108H	0.841			2.548	
C#109H			1.423	1.966	
C#109H	1.264			1.966	
C#110H			1.392	1.838	
C#110H	1.407			1.838	
C#111H			1.205	2.040	
C#111H	1.465			2.040	
C#108H			0.936	2.569	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#104H	-0.463	-0.463	0.000
C#105H	-0.380	-0.378	-0.002
C#106H	0.728	0.731	-0.003
C#107H	-0.836	-0.838	0.002
C#101H	0.103	0.101	0.002
C#108H	0.102	0.103	-0.001
C#109H	-0.584	-0.582	-0.002
C#110H	-0.127	-0.128	0.001
C#111H	0.202	0.202	0.000
C#108H	0.530	0.529	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
-0.463	-0.463	0.000
0.774	-0.378	1.152
0.728	0.731	-0.003
-0.836	-0.838	0.002
0.103	0.101	1.132
0.102	0.103	-0.001
-0.584	-0.582	-0.002
-0.127	-0.128	0.001
0.202	0.202	0.000
0.530	0.529	0.021

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO - MANUELA BELTRAN
FECHA LEVANTAMIENTO: 30/10/2009
TOPOGRAFO: KAHERINE CONTRERAS SOTO
COMISIÓN: H
AMARRE: C#112H

NIVELACION			
EN	V (+)	V (-)	COTA
C#112H	1.021		0.783
C#113H		1.249	0.554
C#113H	1.559		0.554
C#114H		1.652	0.461
C#114H	1.600		0.461
C#112H		1.278	0.784

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#112H	1.031			0.783	018SC001
C#113H			1.259	0.555	018SC002
C#113H	1.569			0.555	
C#114H			1.663	0.460	018SC003
C#114H	1.601			0.460	
C#112H			1.277	0.785	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#113H	-0.228	-0.228	0.000
C#114H	-0.093	-0.094	0.001
C#112H	0.322	0.324	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
-0.228	-0.228	0.000
-0.093	-0.094	0.001
0.322	0.324	0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 22/10/2009
TOPOGRAFO: OMAR CAMILO MUÑOZ
COMISIÓN: I
AMARRE: 05SC025

NIVELACION			
EN	V (+)	V (-)	COTA
C#136I	0.864		1.901
C#137I		1.261	1.504
C#137I	1.190		
C#138I		1.469	1.225
C#138I	1.480		
C#139I		1.288	1.417

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBS
C#136I	0.730			1.901	
C#137I			1.128	1.503	05SC025
05SC200		1.203		1.428	
05SC038		1.185		1.446	
05SC037		1.164		1.467	
C#136I	1.071			1.901	
05SC033		1.511		1.461	
C#137I	1.399			1.503	
C#138I			1.678	1.224	05SC020
05SC021		1.718		1.184	
05SC015		1.491		1.411	
05SC014		1.419		1.483	
05SC017		1.500		1.402	
05SC016		1.406		1.496	
C#138I	1.647			1.224	
05SC018		1.508		1.363	
05SC009		1.487		1.384	
05SC022		1.586		1.285	
C#137I	1.200			1.503	
05SC010		1.233		1.470	
05SC011		1.249		1.454	
C#137I	1.330			1.503	
05SC023		1.311		1.522	
C#138I	1.569			1.224	05SC020
C#139I			1.380	1.413	
05SC002		1.508		1.285	
05SC001		1.539		1.254	
05SC019		1.513		1.280	NO VISIBLE
02SC015		1.436		1.357	
05SC003		1.388		1.405	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#137I	-0.397	-0.398	0.001
C#138I	-0.279	-0.279	0.000
C#139I	0.192	0.189	0.003

DIFERENCIA COTA		
NIV	CONT	DIF
1.504	1.503	0.001
1.225	1.224	0.001
1.417	1.413	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#139I	1.420		
C#140I		1.358	1.479
C#140I	1.663		
C#141I		1.480	1.662
C#141I	1.571		
C#142I		1.543	1.690

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBS
C#139I	1.500			1.413	
05SC008		1.534		1.379	
05SC004		1.509		1.404	
05SC007		1.481		1.432	
C#139I	1.450			1.413	
05SC005		1.615		1.248	
05SC006		1.616		1.247	
C#139I	1.587			1.413	
C#140I			1.522	1.478	05SC012
05SC013		1.765		1.235	
05SC059		1.582		1.418	
C#140I	2.025			1.478	
05SC044		2.104		1.399	
05SC040		2.069		1.434	
05SC039		2.029		1.474	
05SC046		2.241		1.262	NO VISIBLE
05SC042		2.027		1.476	NO VISIBLE
05SC041		1.939		1.564	
C#140I	1.700			1.478	05SC012
C#141I			1.517	1.661	
05SC045		1.868		1.310	
05SC043		1.449		1.729	NO VISIBLE
05SC035		1.669		1.509	
C#141I	1.367			1.661	
05SC036		1.362		1.666	
05SC057		1.252		1.776	
04SC051		1.473		1.555	
04SC048		1.405		1.623	NO VISIBLE
C#141I	1.588			1.661	
C#142I			1.560	1.689	05SC050
05SC051		1.591		1.658	
05SC052		1.587		1.662	
05SC053		1.541		1.708	
C#142I	1.333			1.689	
05SC047		1.544		1.478	NO VISIBLE
05SC048		1.446		1.576	NO VISIBLE

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#140I	0.062	0.065	-0.003
C#141I	0.183	0.183	0.000
C#142I	0.028	0.028	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
1.479	1.478	0.001
1.662	1.661	0.001
1.690	1.689	0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#136I	1.485		1.901
C#143I		1.646	1.740
C#143I	1.482		
C#144I		1.624	1.598
C#144I	1.098		
C#145I		1.400	1.296
C#145I	1.561		
C#138I		1.630	1.227

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBS
05SC049		1.435		1.587	NO VISIBLE
06SC003		1.429		-1.429	
05SC058		1.468		-1.468	NO VISIBLE
C#136I	1.420			1.901	
C#143I			1.580	1.741	05SC035
05SC034		1.656		1.665	
C#143I	1.317			1.741	
05SC031		1.371		1.687	
05SC032		1.633		1.425	NO VISIBLE
C#143I	1.563			1.741	05SC035
C#144I			1.708	1.596	05SC030
VTUR005072		1.335		1.969	
VTUR005071		1.353		1.951	
05SC036		1.317		1.987	NO VISIBLE
C#144I	1.378			1.596	
05SC027		1.479		1.495	
05PS029		1.609		1.365	
05PS029		1.886		1.088	
05PS028		1.594		1.380	
05PS028		1.801		1.173	
05SC026		1.610		1.364	
C#144I	1.111			1.596	
05SC023		1.405		1.302	
VTUR005073		1.373		1.334	
05SC060		1.394		1.313	NO VISIBLE
C#144I	1.052			1.596	05SC030
C#145I			1.354	1.294	
002SC014		1.258		1.390	
002SC013		1.351		1.297	
C#145I	1.472			1.294	
C#138I			1.543	1.223	05SC020
002SC015		1.628		1.138	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#143I	-0.161	-0.160	-0.001
C#144I	-0.142	-0.145	0.003
C#145I	-0.302	-0.302	0.000
C#138I	-0.069	-0.071	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
1.740	1.741	-0.001
1.598	1.596	0.002
1.296	1.294	0.002
1.227	1.223	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 23/10/2009
TOPOGRAFO: OMAR CAMILO MUÑOZ
COMISIÓN: I
AMARRE: C#146I

NIVELACION			
EN	V (+)	V (-)	COTA
C#146I	1.120		1.084
C#147I		1.150	1.054
C#147I	1.309		
C#148I		1.408	0.955
C#148I	1.396		
C#149I		1.441	0.910
C#149I	1.551		
C#150I		1.486	0.975
C#150I	1.158		
C#151I		1.125	1.008
C#151I	1.132		
C#152I		1.233	0.907
C#152I	1.394		
C#153I		1.444	0.857
C#153I	1.431		
C#154I		1.295	0.993
C#154I	1.423		
C#155I		1.514	0.902
C#155I	1.351		
C#146I		1.183	1.070
C#155I	1.408		0.902
C#156I		1.474	0.836
C#156I	1.197		0.836
C#157I		1.386	0.647
C#157I	1.452		0.647
C#158I		1.312	0.787
C#158I	1.693		0.787
C#159I		1.723	0.757
C#159I	1.383		0.757

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBS
C#146I	1.218			1.084	
C#147I			1.247	1.055	
C#147I	1.338			1.055	
C#148I			1.436	0.957	
C#148I	1.339			0.957	
C#149I			1.383	0.913	
C#149I	1.476			0.913	
C#150I			1.412	0.977	
C#150I	1.237			0.977	
C#151I			1.205	1.009	
C#151I	1.085			1.009	
C#152I			1.184	0.910	
C#152I	1.363			0.910	
C#153I			1.412	0.861	
C#153I	1.370			0.861	
C#154I			1.234	0.997	
C#154I	1.447			0.997	
C#155I			1.539	0.905	
C#155I	1.413			0.905	
C#146I			1.244	1.074	
C#155I	1.424			0.905	
C#156I			1.493	0.836	
C#156I	1.151			0.836	
C#157I			1.341	0.646	
C#157I	1.463			0.646	
C#158I			1.321	0.788	
C#158I	1.642			0.788	
C#159I			1.671	0.759	
C#159I	1.283			0.759	

DIFERENCIA VISTA				DIFERENCIA COTA		
EN	NIV	CONT	DIF	NIV	CONT	DIF
C#147I	-0.030	-0.029	-0.001	1.054	1.055	-0.001
C#148I	-0.099	-0.098	-0.001	0.955	0.957	-0.002
C#149I	-0.045	-0.044	-0.001	0.910	0.913	-0.003
C#150I	0.065	0.064	0.001	0.975	0.977	-0.002
C#151I	0.033	0.032	0.001	1.008	1.009	-0.001
C#152I	-0.101	-0.099	-0.002	0.907	0.910	-0.003
C#153I	-0.050	-0.049	-0.001	0.857	0.861	-0.004
C#154I	0.136	0.136	0.000	0.993	0.997	-0.004
C#155I	-0.091	-0.092	0.001	0.902	0.905	-0.003
C#146I	0.168	0.169	-0.001	1.070	1.074	-0.004
C#156I	-0.066	-0.069	0.003	0.836	0.836	0.000
C#157I	-0.189	-0.190	0.001	0.647	0.646	0.001
C#158I	0.140	0.142	-0.002	0.787	0.788	-0.001
C#159I	-0.030	-0.029	-0.001	0.757	0.759	-0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#160I		1.417	0.723
C#160I	1.300		0.723
C#161I		1.522	0.501
C#161I	1.712		0.501
C#162I		1.479	0.734
C#162I	1.531		0.734
C#163I		1.335	0.930
C#163I	1.440		0.930
C#155I		1.485	0.885
C#161I	1.530		0.501
C#164I		1.470	0.561
C#164I	1.450		0.561
C#165I		1.277	0.734

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBS
C#160I			1.316	0.726	001SC001
C#160I	1.308			0.726	001SC001
C#161I			1.529	0.505	032SC002
C#161I	1.761			0.505	
C#162I			1.527	0.739	
C#162I	1.421			0.739	
C#163I			1.224	0.936	
C#163I	1.487			0.936	
C#155I			1.533	0.890	
C#161I	1.432			0.505	
C#164I			1.371	0.566	
C#164I	1.520			0.566	
C#165I			1.349	0.737	
C#165I	1.408			0.737	
001SC003		1.533		0.612	NO VISIBLE

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#160I	-0.034	-0.033	-0.001
C#161I	-0.222	-0.221	-0.001
C#162I	0.233	0.234	-0.001
C#163I	0.196	0.197	-0.001
C#155I	-0.045	-0.046	0.001
C#164I	0.060	0.061	-0.001
C#165I	0.173	0.171	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
0.723	0.726	-0.003
0.501	0.505	-0.004
0.734	0.739	-0.005
0.930	0.936	-0.006
0.885	0.890	-0.005
0.561	0.566	-0.005
0.734	0.737	-0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO (0BRERO - 003)
FECHA LEVANTAMIENTO: 26 DE OCTUBRE DE 2009
TOPOGRAFO: KELLY JOHANA MONTOYA VERONA
COMISIÓN: J
AMARRE: C#1J

NIVELACION			
EN	V (+)	V (-)	COTA
C#1J	1.449		0.469
C#2J		1.358	0.560
C#2J	1.432		0.560
C#3J		1.304	0.688
C#3J	1.48		0.688
C#4J		1.43	0.738
C#3J	1.375		0.688
C#5J		0.98	1.083
C#5J	1.125		1.083
C#6J		1.311	0.897
C#6J	1.27		0.897
C#7J		1.518	0.649
C#7J	0.728		0.649
C#8J		0.945	0.432
C#8J	1.84		0.432
C#9J		1.42	0.852

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#1J	1.439			0.469	MITAD CUADRA
C#2J			1.349	0.559	
011SC002		1.349		0.559	
VTUR004085		1.415		0.493	
004SCN1		1.335		0.573	
C#2J	1.500			0.559	
C#3J			1.370	0.689	MITAD CUADRA
004SC035		1.461		0.598	
VTUR004084		1.45		0.609	
004SCN2		1.432		0.627	
003SC005		1.650		0.409	
VTUR003078		1.565		0.494	
C#3J	1.432			0.689	
C#4J			1.382	0.739	ANDEN CASA
003SC204		1.39		0.731	
004SC022		1.402		0.719	
004SC103		1.411		0.710	
004SC101		1.313		0.808	
C#3J	1.369			0.689	
C#5J			0.975	1.083	MITAD CUADRA
C#5J	1.135			1.083	
C#6J			1.32	0.898	MITAD CUADRA
003SC004		1.538		0.680	
003SC202		1.431		0.787	
VTUR003001		1.481		0.737	
VTUR003079		1.590		0.628	
C#6J	1.271			0.898	
C#7J			1.52	0.649	MITAD CUADRA
003SC003		1.29		0.879	NV
C#7J	0.672			0.649	
C#8J			0.89	0.431	MITAD CUADRA
C#8J	1.78			0.431	
C#9J			1.359	0.852	MITAD CUADRA

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#2J	0.091	0.090	0.001
C#3J	0.128	0.130	-0.002
C#4J	0.050	0.050	0.000
C#5J	0.395	0.394	0.001
C#6J	-0.186	-0.185	-0.001
C#7J	-0.248	-0.249	0.001
C#8J	-0.217	-0.218	0.001
C#9J	0.420	0.421	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
0.560	0.559	0.001
0.688	0.689	-0.001
0.738	0.739	-0.001
1.083	1.083	0.000
0.897	0.898	-0.001
0.649	0.649	0.000
0.432	0.431	0.001
0.852	0.852	0.000

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
				003SC002		1.481		0.730	NV							
C#9J	1.27		0.852	**C#9J**	1.151			0.852								
C#10J		1.387	0.735	**C#10J**			1.27	0.733	003SC010	**C#10J**	-0.117	-0.119	0.002	0.735	0.733	0.002
C#10J	1.59		0.735	**C#10J**	1.54			0.733								
C#11J		1.679	0.646	**C#11J**			1.628	0.645	003SC009	**C#11J**	-0.089	-0.088	-0.001	0.646	0.645	0.001
C#11J	1.32		0.646	**C#11J**	1.365			0.645								
C#1J		1.481	0.485	**C#1J**			1.528	0.482		**C#1J**	-0.161	-0.163	0.002			**0.016**
				003SC008		1.481		0.529	NSPA							
				003SC006		1.328		0.682								
				VTUR003075		1.289		0.721								
				003SO007		1.345		0.665	RASANTE							
				003SO007		1.89		0.120	CLAVE							
				003SO007		2.32		-0.310	BATEA							
				VTUR003076		1.431		0.579	NV							
				VTUR003077		1.61		0.400	PERDIDA							

LUGAR: TURBO (OBRERO - 003)
FECHA LEVANTAMIENTO: 27 DE OCTUBRE DE 2009
TOPOGRAFO: KELLY JOHANA MONTOYA VERONA
COMISIÓN: J
AMARRE: C#4J

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
C#4J	1.570		0.738	**C#4J**	1.563			0.739								
C#12J		1.525	0.783	**C#12J**			1.519	0.783	MITAD CUADRA	**C#12J**	0.045	0.044	0.001	0.783	0.783	0.000
C#12J	1.630		0.783	**C#12J**	1.570			0.783								
C#13J		1.539	0.874	**C#13J**			1.479	0.874	ESQUINA	**C#13J**	0.091	0.091	0.000	0.874	0.874	0.000
				003SCN8		1.617		0.736								
				003SCN9		1.212		1.141								
C#13J	1.149		0.874	**C#13J**	1.119			0.874								
C#14J		1.470	0.553	**C#14J**			1.439	0.554	ESQUINA	**C#14J**	-0.321	-0.320	-0.001	0.553	0.554	-0.001
				VTURN003002		1.287		0.706								
C#13J	1.19		0.874	**C#13J**	1.185			0.874								
C#15J		1.26	0.804	**C#15J**			1.254	0.805	ESQUINA	**C#15J**	-0.070	-0.069	-0.001	0.804	0.805	-0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
C#15J	0.77		0.804	C#15J	0.768			0.805								
C#16J		0.935	0.639	C#16J			0.932	0.641	ESQUINA	C#16J	-0.165	-0.164	-0.001	0.639	0.641	-0.002
C#15J	1.24		0.804	C#15J	1.238			0.805								
C#17J		0.949	1.095	C#17J			0.948	1.095	004SC102	C#17J	0.291	0.290	0.001	1.095	1.095	0.000
C#17J	0.959		1.095	C#17J	0.96			1.095								
C#4J		1.331	0.723	C#4J			1.332	0.723		C#4J	-0.372	-0.372	0.000	-0.372	-0.372	0.000

LUGAR: TURBO (OBRERO - 003)
FECHA LEVANTAMIENTO: 28 DE OCTUBRE DE 2009
TOPOGRAFO: KELLY JOHANA MONTOYA VERONA
COMISIÓN: J
AMARRE: C#10J

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
C#10J	1.062		0.735	C#10J	1.065			0.733								
C#18J		0.680	1.117	C#18J			0.682	1.116	ESQUINA PUENTE	C#18J	0.382	0.383	-0.001	1.117	1.116	0.001
C#18J	0.631		1.117	C#18J	0.638			1.116								
C#19J		0.760	0.988	C#19J			0.767	0.987	ANDEN CASA	C#19J	-0.129	-0.129	0.000	0.988	0.987	0.001
C#19J	0.812		0.988	C#19J	0.814			0.987								
C#20J		1.502	0.298	C#20J			1.503	0.298	ANDEN CASA	C#20J	-0.690	-0.689	-0.001	0.298	0.298	0.000
C#19J	0.940		0.988	C#19J	0.951			0.987								
C#21J		1.573	0.355	C#21J			1.585	0.353	ANDEN CASA	C#21J	-0.633	-0.634	0.001	0.355	0.353	0.002
C#21J	1.3		0.355	C#21J	1.301			0.353								
C#22J		1.439	0.216	C#22J			1.44	0.214	ANDEN CASA	C#22J	-0.139	-0.139	0.000	0.216	0.214	0.002
C#21J	1.502		0.355	C#21J	1.505			0.353								
C#23J		1.514	0.343	C#23J			1.516	0.342	TUBERIA	C#23J	-0.012	-0.011	-0.001	0.343	0.342	0.001
C#23J	1.26		0.343	C#23J	1.382			0.342								
C#24J		1.33	0.273	C#24J			1.452	0.272	CAJA CASA	C#24J	-0.070	-0.070	0.000	0.273	0.272	0.001
C#24J	1.476		0.273	C#24J	1.461			0.272								
C#25J		1.062	0.687	C#25J			1.045	0.688	011SC200	C#25J	0.414	0.416	-0.002	0.687	0.688	-0.001
				003SC200		1.315		0.418	NV							
C#25J	1.013		0.687	C#25J	1			0.688								
C#26J		1.383	0.317	C#26J			1.37	0.318	MURO CASA	C#26J	-0.370	-0.370	0.000	0.317	0.318	-0.001
C#26J	1.437		0.317	C#26J	1.419			0.318								
C#27J		1.438	0.316	C#27J			1.42	0.317	ANDEN CASA	C#27J	-0.001	-0.001	0.000	0.316	0.317	-0.001
C#26J	1.43		0.317	C#26J	1.444			0.318								

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
C#28J		1.3	0.447	**C#28J**			1.315	0.447	ANDEN CASA	**C#28J**	0.130	0.129	0.001	0.447	0.447	0.000
C#26J	1.5		0.317	**C#26J**	1.49			0.318								
C#29J		1.2	0.617	**C#29J**			1.191	0.617	MURO CASA	**C#29J**	0.300	0.299	0.001	0.617	0.617	0.000
C#25J	1.46		0.687	**C#25J**	1.461			0.688								
C#30J		1.34	0.807	**C#30J**			1.339	0.810	ANDEN CASA	**C#30J**	0.120	0.122	-0.002	0.807	0.810	-0.003
				003SC001		1.401		0.748								
C#30J	1.401		0.807	**C#30J**	1.4			0.810								
C#9J		1.36	0.848	**C#9J**			1.358	0.852		**C#9J**	0.041	0.042	-0.001	0.848	0.852	-0.004

LUGAR: **TURBO (EL PROGRESO - 002)**
FECHA LEVANTAMIENTO: **30 DE OCTUBRE DE 2009**
TOPOGRAFO: **KELLY JOHANA MONTOYA VERONA**
COMISIÓN: **J**
AMARRE: **C#31J**

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
C#31J	1.455		0.968	**C#31J**	1.428			0.968	ORILLA CARRETERA							
C#32J		1.315	1.108	**C#32J**			1.287	1.109	013SC008	**C#32J**	0.140	0.141	-0.001	1.108	1.109	-0.001
				C#32J	1.484			1.109								
				002PSN001		1.482		1.111	ARRIBA							
				002PSN001		1.670		0.923	ABAJO							
				002PSN002		1.486		1.107	ARRIBA							
				002PSN002		2.300		0.293	ABAJO							
				002PSN003		1.458		1.135	ARRIBA							
				002PSN003		2.745		-0.153	ABAJO							
				013PC003		1.49		1.103								
				013SC008		1.411		1.182	013SC008							
C#32J	1.642		1.108	**C#32J**	1.621			1.109								
C#33J		1.37	1.380	**C#33J**			1.35	1.380	PUENTE	**C#33J**	0.272	0.271	0.001	1.380	1.380	0.000
				013SC016		1.45		1.280	013SC016							
				013PC017		1.483		1.247	013PC017							
C#33J	1.37		1.380	**C#33J**	1.38			1.380								
C#31J		1.795	0.955	**C#31J**			1.805	0.955		**C#31J**	-0.425	-0.425	0.000	0.955	0.955	**-0.013**
				013SC015		1.83		0.930	013SC015							
				013SC001		1.67		1.090								
C#32J	1.37		1.108	**C#32J**	1.362			1.109								

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#34J		1.57	0.908
C#35J		1.559	0.746
C#34J	1.397		0.908
C#35J	1.38		0.746
C#36J		1.437	0.689

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#34J			1.56	0.911	ORILLA CARRETERA
002PS031		1.59		0.881	ARRIBA
002PS031		2.638		-0.168	ABAJO
002PS032		1.65		0.821	ARRIBA
002PS032		2.711		-0.241	ABAJO
002PSN004		1.400		1.071	ARRIBA
002PSN004		2.52		-0.050	ABAJO
002PS033		1.584		0.887	ARRIBA
002PS033		2.342		0.129	ABAJO
002PSN005		1.425		1.046	ARRIBA
002PSN005		2.63		-0.160	ABAJO
002PS034		1.54		0.931	ARRIBA
002PS034		2.18		0.291	ABAJO
C#34J	1.375			0.911	
C#35J			1.54	0.746	ORILLA CARRETERA
002PS027		1.55		0.736	ARRIBA
002PS027		1.699		0.587	ABAJO
002PS028		1.606		0.680	ARRIBA
002PS028		2.881		-0.596	ABAJO
002PS029		1.6		0.686	ARRIBA
002PS029		2.099		0.187	ABAJO
002PS030		1.549		0.737	N.V
C#35J	1.357			0.746	
C#36J			1.416	0.687	020CC023
002CC023		1.61		0.493	
002PS024		1.419		0.684	ARRIBA
002PS024		2.289		-0.187	ABAJO
002PS026		1.425		0.678	ARRIBA
002PS026		2.792		-0.690	ABAJO
002PS021		1.419		0.684	ARRIBA
002PS021		2.53		-0.428	ABAJO

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#34J	-0.200	-0.198	-0.002
C#35J	-0.162	-0.165	0.003
C#36J	-0.057	-0.059	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
0.908	0.911	-0.003
0.746	0.746	0.000
0.689	0.687	0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO (EL PROGRESO - 002)
FECHA LEVANTAMIENTO: 03 DE NOVIEMBRE DE 2009
TOPOGRAFO: KELLY JOHANA MONTOYA VERONA
COMISIÓN: J
AMARRE: C#36J

NIVELACION			
EN	V (+)	V (-)	COTA
C#36J	1.369		0.689
C#37J		1.188	0.870
C#37J	1.53		0.870
C#38J		2.077	0.323
C#38J	2.181		0.323
C#39J		1.949	0.555
C#39J	1.468		0.555

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#36J	1.362			0.687	
C#37J			1.182	0.867	ORILLA CARRETERA
020PC021		1.433		0.616	
020PS022		1.268		0.781	ARRIBA
020PS022		2.298		-0.250	ABAJO
VTURN002003		1.265		0.784	
002PS020		1.285		0.764	ARRIBA
002PS020		2.043		0.006	ABAJO
C#37J	1.529			0.867	
C#38J			2.076	0.320	020PC016
002PS017		2.002		0.394	ARRIBA
002PS017		2.3		0.096	ABAJO
002PS019		1.681		0.715	ARRIBA
002PS019		1.871		0.525	ABAJO
002PS018		1.725		0.671	ARRIBA
002PS018		2.41		-0.015	ABAJO
C#38J	2.18			0.320	
C#39J			1.95	0.550	ORILLA CARRETERA
002PS015		2.099		0.401	ARRIBA
002PS015		2.727		-0.228	ABAJO
002PS014		1.866		0.634	ARRIBA
002PS014		3.005		-0.506	ABAJO
002PS013		1.933		0.567	ARRIBA
002PS013		2.988		-0.489	ABAJO
002PS010		2.069		0.431	ARRIBA
002PS010		3.012		-0.513	ABAJO
002PS011		2.109		0.391	ARRIBA
002PS011		3.104		-0.605	ABAJO
002PS012		2.04		0.460	ARRIBA
002PS012		2.445		0.055	ABAJO
002PS009		1.998		0.502	ARRIBA
002PS009		2.975		-0.476	ABAJO
C#39J	1.485			0.550	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#37J	0.181	0.180	0.001
C#38J	-0.547	-0.547	0.000
C#39J	0.232	0.230	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
0.870	0.867	0.003
0.323	0.320	0.003
0.555	0.550	0.005

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#40J		1.368	0.655
C#40J	1.25		0.655
C#41J		1.055	0.850
C#41J	1.319		0.850
C#42J		2.082	0.087

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#40J			1.385	0.650	ORILLA CARRETERA
002PS008		1.529		0.506	ARRIBA
002PS008		2.661		-0.627	ABAJO
002PS006		1.4		0.635	ARRIBA
002PS006		2.429		-0.394	ABAJO
002PS007		1.506		0.529	ARRIBA
002PS007		2.085		-0.050	ABAJO
002PS005		1.51		0.525	ARRIBA
002PS005		2.502		-0.467	ABAJO
C#40J	1.248			0.650	
C#41J			1.053	0.845	ORILLA CARRETERA
VTURN002004		1.501		0.397	
002PS004		1.229		0.669	ARRIBA
002PS004		2.385		-0.487	ABAJO
002PS003		1.267		0.631	ARRIBA
002PS003		2.125		-0.228	ABAJO
002PS002		1.341		0.557	ARRIBA
002PS002		1.757		0.141	ABAJO
002PS001		1.163		0.735	ARRIBA
002PS001		1.51		0.388	ABAJO
C#41J	1.303			0.845	
C#42J			2.065	0.083	ORILLA CARRETERA
002PSN006		1.711		0.437	
002PSN006		2.369		-0.222	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#40J	0.100	0.100	0.000
C#41J	0.195	0.195	0.000
C#42J	-0.763	-0.762	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
0.655	0.650	0.005
0.850	0.845	0.005
0.087	0.083	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO - LAS DELICIAS 006
FECHA LEVANTAMIENTO: 26/10/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS MOSQUERA
COMISIÓN: N
AMARRE: **C#1N**

NIVELACION			
EN	V (+)	V (-)	COTA
C#1N	1.485		2.978
C#2N		2.190	2.273
C#2N	1.207		2.273
C#3N		1.675	1.805
C#3N	1.250		1.805
C#4N		0.801	2.254
C#4N	1.422		2.254
C#5N		1.325	2.351
C#5N	1.895		2.351
C#1N		1.290	2.956

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#1N	1.490			2.683	TUR008SC001
C#2N			2.197	1.976	TUR006SCN
C#2N	1.215			1.976	
C#3N			1.682	1.509	TUR006SC007
C#3N	1.701			1.509	
TUR006SC006		1.400		1.810	
C#3N	1.575			1.509	
TUR006SC024		1.240		1.844	
TUR006SC005		1.485		1.599	
C#3N	1.245			1.509	TUR006SC007
C#4N			0.798	1.956	TUR006SC072
TUR006SC073		1.411		1.343	
TUR006SC004		1.085		1.669	
TUR006SC016		1.150		1.604	
C#4N	1.375			1.956	
TUR006SC075		1.149		2.182	
TUR006SC017		1.550		1.781	
C#4N	1.565			1.956	
TUR006SC014		1.575		1.946	
TUR006SC015		1.175		2.346	
TUR001SC018		1.460		2.061	
TUR006SC013		1.368		2.153	
TUR006SC012		1.418		2.103	
C#4N	1.640			1.956	
TUR006SC002		1.410		2.186	
TUR006SC020		1.440		2.156	
C#4N	1.424			1.956	TUR006SC072
C#5N			1.328	2.052	TUR006SC009
TUR006SC001		1.535		1.845	
TUR006SC010		1.337		2.043	
C#5N	1.898			2.052	TUR006SC009
C#1N			1.293	2.657	TUR008SC001
TUR006SC021		1.478		2.472	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#2N	-0.705	-0.707	0.002
C#3N	-0.468	-0.467	-0.001
C#4N	0.449	0.447	0.002
C#5N	0.097	0.096	0.001
C#1N	0.605	0.605	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
2.273	2.271	0.002
1.805	1.804	0.001
2.254	2.251	0.003
2.351	2.347	0.004
2.956	2.952	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#4N	0.870		2.254
C#6N		1.716	1.408
C#6N	1.782		1.408
C#7N		1.260	1.930

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR006SC022		1.568		2.382	
C#4N	0.865			1.956	TUR006SC072
C#6N			1.710	1.111	TUR006SC053
TUR006SO074		1.861		0.959	ARRIBA
TUR006SO074		2.510		0.310	ABAJO
TUR006SC019		1.467		1.354	
TUR006SC008		1.417		1.404	
C#6N	1.780			1.111	TUR006SC053
C#7N			1.256	1.635	
TUR005SC053		1.504		1.387	
TUR005SC052		1.505		1.386	
TUR006SC003		1.492		1.399	
C#7N	1.397			1.635	
TUR006SC071		1.576		1.456	
VTUR005072		1.349		1.683	
VTUR005071		1.370		1.662	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#6N	-0.846	-0.845	-0.001
C#7N	0.522	0.524	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
1.408	1.406	0.002
1.930	1.930	0.000

LUGAR: TURBO - MONTERREY / VERANILLO
FECHA LEVANTAMIENTO: 27/10/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS MOSQUERA
COMISIÓN: N
AMARRE: **C#108H**

NIVELACION			
EN	V (+)	V (-)	COTA
C#108H	1.202		2.547
C#111H		1.697	2.052

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#108H	1.210			2.547	
C#111H			1.703	2.054	
TUR009SC010		1.678		2.079	
TUR009SC009		1.500		2.257	INUNDADA
TUR009SC011		1.471		2.286	
TUR009SC012		1.600		2.157	
TUR009SC014		1.686		2.071	
TUR009SC013		1.629		2.128	
TUR009SC017		1.602		2.155	
TUR009SC015		1.900		1.857	
TUR009SC016		1.869		1.888	TAPADA

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#111H	-0.495	-0.493	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
2.052	2.054	-0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#111H	1.255		2.052
C#382C		1.578	1.729
C#382C	1.220		1.729
C#096C		1.661	1.288
C#096C	1.675		1.288
C#8N		1.190	1.773
C#8N	1.598		1.773
C#9N		1.350	2.021
C#9N	1.701		2.021
C#108H		1.190	2.532
C#108H	1.432		2.547
C#10N		0.945	3.034
C#10N	1.778		3.034
C#11N		1.432	3.380
C#11N	1.575		3.380
C#12N		1.865	3.090

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR010SC008		1.690		2.067	
C#111H	1.260			2.054	
C#382C			1.580	1.734	
C#382C	1.223			1.734	
C#096C			1.665	1.292	
C#096C	1.682			1.292	
C#8N			1.196	1.778	
C#8N	1.595			1.778	
C#9N			1.345	2.028	
C#9N	1.699			2.028	
C#108H			1.191	2.536	
VTUR014063		1.398		2.329	
C#108H	2.088			2.536	
VTUR009058		2.946		1.678	
C#108H	1.445			2.547	
C#10N			0.960	3.032	009SC003
TUR009SC007		1.406		2.586	
TUR009SC008		1.517		2.475	
TUR009SC006		1.469		2.523	
TUR009SC004		1.385		2.607	
TUR009SC005		1.395		2.597	
C#10N	1.030			3.032	
TUR009SO025		2.025		2.037	TERRENO
TUR009SO025		2.182		1.880	ARRIBA
TUR009SO025		2.533		1.529	ESPEJO
C#10N	1.586			3.032	
TUR016SO009		4.036		0.582	ESPEJO
TUR016SO009		3.345		1.273	ARRIBA
TUR016SO009		2.402		2.216	TERRENO
TUR016SC008		1.911		2.707	
C#10N	1.775			3.032	
C#11N			1.430	3.377	
TUR09SC002		1.748		3.059	
C#11N	1.569			3.377	
C#12N			1.860	3.086	016SC007
C#12N	1.591			3.086	
TUR016SC003		1.485		3.192	
TUR016SC002		1.533		3.144	
TUR016PC001		1.617		3.060	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#382C	-0.323	-0.320	-0.003
C#096C	-0.441	-0.442	0.001
C#8N	0.485	0.486	-0.001
C#9N	0.248	0.250	-0.002
C#108H	0.511	0.508	0.003
C#10N	0.487	0.485	0.002
C#11N	0.346	0.345	0.001
C#12N	-0.290	-0.291	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
1.729	1.734	-0.005
1.288	1.292	-0.004
1.773	1.778	-0.005
2.021	2.028	-0.007
2.532	2.536	-0.004
3.034	3.032	0.002
3.380	3.377	0.003
3.090	3.086	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#11N	1.272		3.380
C#13N		1.755	2.897
C#13N	1.352		2.897
C#108H		1.707	2.542

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR016PO004		3.165		1.512	ABAJO
TUR016PO004		3.005		1.672	ARRIBA
TUR016PO004		2.411		2.266	TERRENO
C#12N	1.761			3.086	
TUR016SC005		1.349		3.498	
TUR016SC006		1.702		3.145	
C#11N	1.280			3.377	
C#13N			1.760	2.897	
C#13N	1.361			2.897	
C#108H			1.715	2.543	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#13N	-0.483	-0.480	-0.003
C#108H	-0.355	-0.354	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
2.897	2.897	0.000
2.542	2.543	-0.001

LUGAR: TURBO - CENTRO
FECHA LEVANTAMIENTO: 28/10/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS MOSQUERA
COMISIÓN: N
AMARRE: C#14N

NIVELACION			
EN	V (+)	V (-)	COTA
C#14N	2.007		-0.497
C#15N		1.702	-0.192
C#15N	1.575		-0.192
C#16N		1.904	-0.521
C#15N	1.755		-0.192
C#17N		2.089	-0.526

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#14N	2.012			-0.497	
C#15N			1.710	-0.195	011SC076
TUR011SC080		1.602		-0.086	
TUR011SC077		1.782		-0.267	
C#15N	1.750			-0.195	
TUR011012SC019		1.610		-0.054	
C#15N	1.570			-0.195	
C#16N			1.900	-0.525	
TUR012PS021		1.502		-0.127	
C#16N	1.613			-0.525	
TUR011SC078		1.371		-0.283	
TUR011SC079		1.448		-0.359	
C#15N	1.760			-0.195	
C#17N			2.095	-0.530	011SC006
TUR011PS006		2.083		-0.518	ARRIBA
TUR011PS006		2.645		-1.080	ABAJO
TUR011PS007		2.207		-0.642	ARRIBA

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#15N	0.305	0.302	0.003
C#16N	-0.329	-0.330	0.001
C#17N	-0.334	-0.335	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
-0.192	-0.195	0.003
-0.521	-0.525	0.004
-0.526	-0.530	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#17N	2.030		-0.526
C#18N		0.970	0.535

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
				TUR011PS057		1.320		0.348	ARRIBA							
				TUR011PS057		1.404		0.264	ABAJO							
				TUR011PS056		1.346		0.322	ARRIBA							
				TUR011PS056		1.572		0.096	ABAJO							
				TUR011PS058		1.350		0.318	ARRIBA							
				TUR011PS058		1.650		0.018	ABAJO							
				TUR011PS059		1.290		0.378	ARRIBA							
				TUR011PS059		1.531		0.137	ABAJO							
				TUR011PS055		1.780		-0.113	ARRIBA							
				TUR011PS055		1.940		-0.273	ABAJO							
				TUR011SC054		1.579		0.089								
C#19N	1.310		0.364	**C#19N**	1.317			0.361								
C#14N		2.150	-0.477	**C#14N**			2.160	-0.483		**C#14N**	-0.840	-0.843	0.003	-0.477	-0.483	0.006
C#15N	1.273		-0.192	**C#15N**	1.277			-0.195								
C#20N		1.458	-0.377	**C#20N**			1.464	-0.382	011SC072	**C#20N**	-0.185	-0.187	0.002	-0.377	-0.382	0.005
				TUR003SC006		1.532		-0.450								
				C#20N	1.530			-0.382								
				TUR011SC074		1.706		-0.558								
				TUR011SC073		1.808		-0.660								
				TUR011SC004		1.509		-0.361								
C#20N	1.446		-0.377	**C#20N**	1.448			-0.382								
C#21N		1.657	-0.588	**C#21N**			1.661	-0.595	011SC001	**C#21N**	-0.211	-0.213	0.002	-0.588	-0.595	0.007
				TUR011SO003		2.000		-0.934	TERRENO							
				TUR011SO003		2.462		-1.396	ESPEJO							
				TUR011SC002		1.666		-0.600								
				TUR004SC040		1.620		-0.554								

LUGAR: TURBO - CENTRO
FECHA LEVANTAMIENTO: 29/10/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS MOSQUERA
COMISIÓN: N
AMARRE: **C#19N**

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
C#19N	1.728		0.364	**C#19N**	1.727			0.361	SC050							
C#22N		1.701	0.391	**C#22N**			1.702	0.386	SC026	**C#22N**	0.027	0.025	0.002	0.391	0.386	0.005

				TUR011SC024		1.672		0.416									
				TUR011SC025		1.768		0.320	ARRIBA								
				TUR011SC025		2.042		0.046	ABAJO								
				C#22N	1.594			0.386									
				TUR010SC016		1.441		0.539									
				TUR011SC048		1.927		0.053									
C#22N	1.692		0.391	**C#22N**	1.695			0.386	SC026								
C#23N		1.546	0.537	**C#23N**			1.547	0.534		**C#23N**	0.146	0.148	-0.002	0.537	0.534	0.003
				TUR011SC028		1.593		0.488									
				TUR011SC030		1.771		0.310									
				TUR011SC031		1.772		0.309									
				TUR011SC029		1.590		0.491									
				TUR011SC032		1.556		0.525									
				TUR011SC062		1.628		0.453	NV								
				TUR011PS063		1.692		0.389	ARRIBA								
				TUR011PS063		2.345		-0.265	ABAJO								
				TUR011PS064		1.526		0.555	ARRIBA								
				TUR011PS064		2.023		0.058	ABAJO								
				TUR011PS065		1.490		0.591	ARRIBA								
				TUR014SC122		1.425		0.656	NV								
				TUR010SC100		1.410		0.671	NV								
				C#23N	1.529			0.534									
				TUR011SC066		1.643		0.420									
				TUR011SC049		1.930		0.133									
				TUR011SC067		1.923		0.140									
C#23N	1.597		0.537	**C#23N**	1.601			0.534									
C#24N		2.125	0.008	**C#24N**			2.128	0.007	SC036	**C#24N**	-0.528	-0.527	-0.001	0.008	0.007	0.002
				TUR011SC033		1.637		0.498									
				TUR011SC034		1.647		0.488									
				TUR014SC123		1.565		0.570									
				TUR011SC035		1.620		0.515									
				TUR011SC041		2.202		-0.067									
C#24N	1.907		0.008	**C#24N**	1.912			0.007	SC036								
C#25N		1.558	0.358	**C#25N**			1.563	0.356	SC046	**C#25N**	0.349	0.349	0.000	0.358	0.356	0.002
				C#19N	1.710			0.361									
				TUR011PS037		1.780		0.291	ARRIBA								
				TUR011PS037		2.364		-0.293	ABAJO								
				TUR011PS042		1.932		0.139	ARRIBA								
				TUR011PS042		2.557		-0.486	ABAJO								
				TUR011PS038		1.928		0.143	ARRIBA								
				TUR011PS038		2.249		-0.179	ABAJO								

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#26N	1.251		0.122
C#27N		1.901	-0.529
C#27N	1.701		-0.529
C#28N		1.460	-0.288
C#28N	1.768		-0.288
C#15N		1.672	-0.192
C#15N	1.722		-0.192
C#29N		1.672	-0.142
C#29N	1.722		-0.142
C#30N		1.445	0.136

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR011PS039		1.561		0.510	ARRIBA
TUR011PS039		2.260		-0.189	ABAJO
TUR011PS040		1.562		0.509	ARRIBA
TUR011PS040		2.641		-0.571	ABAJO
TUR011PS043		1.827		0.244	ARRIBA
TUR011PS043		2.691		-0.620	ABAJO
TUR011PS044		1.900		0.171	ARRIBA
TUR011PS044		2.247		-0.176	ABAJO
TUR011SC045		1.572		0.499	
TUR011SC047		1.530		0.541	
C#26N	1.250			0.122	11SC080
C#27N			1.902	-0.531	
TUR012SC019		1.215		0.157	
C#27N	1.895			-0.531	
TUR012PS020		1.377		-0.012	ARRIBA
TUR012PS020		1.514		-0.150	ABAJO
TUR012PS021		1.285		0.080	ARRIBA
TUR012PS021		1.395		-0.030	ABAJO
C#27N	1.541			-0.531	
TUR012SC018		1.543		-0.533	
C#27N	1.705			-0.531	
C#28N			1.463	-0.289	SC009
TUR012PS008		1.695		-0.521	ARRIBA
TUR012PS008		1.923		-0.748	ABAJO
TUR012PS020		1.594		-0.420	ARRIBA
TUR012PS020		1.747		-0.573	ABAJO
C#28N	1.468			-0.289	
TUR012SC010		1.476		-0.297	
TUR012SC011		1.503		-0.323	
TUR012PS012		1.502		-0.323	ARRIBA
TUR012PS012		1.824		-0.645	ABAJO
C#28N	1.778			-0.289	
C#15N			1.681	-0.192	
C#15N	1.724			-0.192	
C#29N			1.675	-0.143	
C#29N	1.730			-0.143	
C#30N			1.455	0.133	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#27N	-0.650	-0.652	0.002
C#28N	0.241	0.242	-0.001
C#15N	0.096	0.097	-0.001
C#29N	0.050	0.049	0.001
C#30N	0.277	0.275	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
-0.529	-0.531	0.002
-0.288	-0.289	0.001
-0.192	-0.192	0.000
-0.142	-0.143	0.001
0.136	0.133	0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 30/11/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS MOSQUERA
COMISIÓN: N
AMARRE: **C#112H**

NIVELACION			
EN	**V (+)**	**V (-)**	**COTA**
C#112H	1.431		0.783
C#114N		0.950	1.264
C#114N	1.590		1.264
C#115N		1.810	1.044
C#115N	1.248		1.044
C#116N		1.613	0.679
C#116N	1.282		0.679
C#117N		1.105	0.856
C#117N	1.110		0.856
C#119F		1.000	0.966
C#119F	0.570		0.966
C#118N		1.277	0.259
C#118N	1.720		0.259
C#119N		1.250	0.729
C#119N	1.251		0.729
C#112H		1.212	0.768
			-0.015
C#37J	1.211		0.867
C#120N		1.264	0.814
C#120N	1.201		0.814
C#121N		1.560	0.455

CONTRANIVELACION					
EN	**V (+)**	**V (I)**	**V (-)**	**COTA**	**OBSERVACION**
C#112H	1.434			0.783	
C#114N			0.952	1.265	
C#114N	1.600			1.265	
C#115N			1.820	1.045	
IEVTUR028		1.613		1.252	
C#114N	1.568			1.265	
IEVTUR031		2.235		0.598	
C#115N	1.349			1.045	
IEVTUR029		1.920		0.474	
C#115N	1.320			1.045	
VTUR013043		1.900		0.465	
C#115N	1.268			1.045	
C#116N			1.635	0.678	
C#116N	1.292			0.678	
C#117N			1.115	0.855	
C#117N	1.118			0.855	
C#119F			1.010	0.963	
C#119F	0.575			0.963	
C#118N			1.283	0.255	
C#118N	1.722			0.255	
C#119N			1.253	0.724	
IEVTUR030		1.467		0.510	
C#119N	1.253			0.724	
C#112H			1.213	0.764	
				-0.019	
C#37J	1.208			0.867	
C#120N			1.260	0.815	
C#120N	1.203			0.815	
C#121N			1.561	0.457	

DIFERENCIA VISTA			
EN	**NIV**	**CONT**	**DIF**
C#114N	0.481	0.482	-0.001
C#115N	-0.220	-0.220	0.000
C#116N	-0.365	-0.367	0.002
C#117N	0.177	0.177	0.000
C#119F	0.110	0.108	0.002
C#118N	-0.707	-0.708	0.001
C#119N	0.470	0.469	0.001
C#112H	0.039	0.040	-0.001
C#120N	-0.053	-0.052	-0.001
C#121N	-0.359	-0.358	-0.001

DIFERENCIA COTA		
NIV	**CONT**	**DIF**
1.264	1.265	-0.001
1.044	1.045	-0.001
0.679	0.678	0.001
0.856	0.855	0.001
0.966	0.963	0.003
0.259	0.255	0.004
0.729	0.724	0.005
0.768	0.764	0.004
0.814	0.815	-0.001
0.455	0.457	-0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 01/12/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS MOSQUERA
COMISIÓN: N
AMARRE: **C#121N**

NIVELACION			
EN	V (+)	V (-)	COTA
C#121N	1.445		0.455
C#122N		1.795	0.105
C#122N	1.467		0.105
C#123N		1.453	0.119
C#123N	1.590		0.119
C#124N		1.800	-0.091

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#121N	1.580			0.457	
IEVTURX11		1.635		0.402	
IEVTURXX1		1.546		0.491	
C#121N	1.435			0.457	
C#122N			1.785	0.107	
IEVTURXX2		1.600		0.292	
IEVTURXX3		2.148		-0.257	
C#121N	1.605			0.457	
IEVTURXX5		1.708		0.354	
IEVTURXX6		1.962		0.100	
IEVTURXX8		1.728		0.334	
C#122N	1.547			0.107	
IEVTURXX9		1.472		0.182	
IEVTURXX10		1.463		0.191	
IEVTUR052		1.594		0.060	
IEVTURXX7		1.918		-0.265	
C#122N	1.470			0.107	
C#123N			1.455	0.122	
C#123N	1.568			0.122	
IEVTUR051		1.493		0.197	
IEVTURX13		1.438		0.252	
IEVTURX12		1.295		0.395	
IEVTURX14		1.762		-0.072	
IEVTURX15		1.942		-0.253	
C#123N	1.600			0.122	
C#124N			1.811	-0.089	
C#124N	1.805			-0.089	
IEVTURX17		1.550		0.166	
IEVTURX16		1.660		0.056	
IEVTURX18		1.890		-0.175	
C#124N	1.557			-0.089	
IEVTUR053		1.810		-0.343	
IEVTURX19		1.758		-0.291	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#122N	-0.350	-0.350	0.000
C#123N	0.014	0.015	-0.001
C#124N	-0.210	-0.211	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
0.105	0.107	-0.002
0.119	0.122	-0.003
-0.091	-0.089	-0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#124N	1.765		-0.091
C#125N		1.587	0.087
C#125N	2.079		0.087
C#41J		1.311	0.855
C#41J	1.191		0.855
C#126N		1.360	0.686
C#126N	1.929		0.686
C#37J		1.746	0.869
			0.002

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
IEVTURX20		1.432		0.036	
IEVTUR050		1.540		-0.072	
C#124N	1.752			-0.089	
IEVTURX21		1.460		0.203	
C#124N	1.763			-0.089	
C#125N			1.585	0.089	
C#125N	2.088			0.089	
C#41J			1.320	0.857	
C#41J	0.738			0.857	
IEVTUR054		1.510		0.085	
C#41J	1.195			0.857	
C#126N			1.365	0.687	
C#126N	1.923			0.687	
C#37J			1.742	0.868	
C#38J	1.907			0.320	
IEVTURX22		1.583		0.644	
C#121N	1.574			0.457	
IEVTURX23		1.605		0.426	
C#119N	1.358			0.724	
IEVTURX24		1.776		0.306	
IEVTURX25		1.794		0.288	
C#119N	1.306			0.724	
IEVTURX26		1.800		0.230	
C#119N	1.130			0.724	
IEVTURX27		1.487		0.367	
IEVTURX28		1.470		0.384	
C#118N	1.433			0.255	
IEVTURX29		1.970		-0.283	
IEVTURX30		1.628		0.059	
C#119F	0.917			0.963	
IEVTURX31		2.054		-0.175	
C#119F	1.005			0.963	
IEVTURX32		1.684		0.284	
C#117N	0.988			0.855	
IEVTURX33		1.788		0.054	
C#114H	1.775			0.460	
IEVTURX34		1.613		0.622	
IEVTURX35		1.640		0.595	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#125N	0.178	0.178	0.000
C#41J	0.768	0.768	0.000
C#126N	-0.169	-0.170	0.001
C#37J	0.183	0.181	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
0.087	0.089	-0.002
0.855	0.857	-0.002
0.686	0.687	-0.001
0.869	0.868	0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#114H	1.628			0.460	
IEVTURX36		1.570		0.518	
C#114N	0.968			1.265	
IEVTURX37		1.452		0.781	
IEVTURX38		1.320		0.912	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

ANEXO 6 – Cálculos nivelación de los amarres de los NPS.

Calle 48B No. 79-55. EDIFICIO CASA SIERRA. Local 101 PBX: (4) 4215441
E-MAIL: elber.hernandez@gmail.com
Medellín Colombia

CAREPA

Calle 48B No. 79-55. EDIFICIO CASA SIERRA. Local 101 PBX: (4) 4215441
E-MAIL: elber.hernandez@gmail.com
Medellín Colombia

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: CAREPA
FECHA LEVANTAMIENTO: 14 DE DICIEMBRE DE 2009
TOPOGRAFO: TOP. JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: C#02 P.O

NIVELACION			
EN	V (+)	V (-)	COTA
CAR_02	0.468		38.379
C#490C		0.883	37.964
C#490C	2.290		37.964
C#491C		0.903	39.351
C#491C	2.393		39.351
C#492C		0.180	41.564
C#492C	2.088		41.564
C#493C		0.397	43.255
C#493C	3.342		43.255
C#494C		0.917	45.680
C#494C	4.969		45.680
C#495C		0.102	50.547
C#495C	4.893		50.547
C#496C		0.107	55.333
C#496C	4.824		55.333
C#497C		0.166	59.991
C#497C	4.983		59.991
CAR_01		0.098	64.876
CAR_01	0.100		64.876
C#498C		4.982	59.994
C#498C	0.166		59.994
C#499C		4.824	55.336
C#499C	0.107		55.336
C#500C		4.893	50.550
C#500C	0.102		50.550
C#501C		4.969	45.683
C#501C	0.917		45.683
C#502C		3.342	43.258
C#502C	0.377		43.258
C#503C		2.078	41.557

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
CAR_02	0.455			38.379	SANTILLANA
C#490C			0.870	37.964	
C#490C	2.282			37.964	
C#491C			0.898	39.348	
C#491C	2.397			39.348	
C#492C			0.181	41.564	
C#492C	2.135			41.564	
C#493C			0.441	43.258	
C#493C	3.367			43.258	
C#494C			0.942	45.683	
C#494C	4.964			45.683	
C#495C			0.100	50.547	
C#495C	4.894			50.547	
C#496C			0.106	55.335	
C#496C	4.824			55.335	
C#497C			0.164	59.995	
C#497C	4.982			59.995	
CAR_01			0.100	64.877	
CAR_01	0.098			64.877	
C#498C			4.983	59.992	
C#498C	0.164			59.992	
C#499C			4.824	55.332	
C#499C	0.106			55.332	
C#500C			4.894	50.544	
C#500C	0.100			50.544	
C#501C			4.964	45.680	
C#501C	0.942			45.680	
C#502C			3.367	43.255	
C#502C	0.378			43.255	
C#503C			2.080	41.553	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#490C	-0.415	-0.415	0.000
C#491C	1.387	1.384	0.003
C#492C	2.213	2.216	-0.003
C#493C	1.691	1.694	-0.003
C#494C	2.425	2.425	0.000
C#495C	4.867	4.864	0.003
C#496C	4.786	4.788	-0.002
C#497C	4.658	4.660	-0.002
CAR_ 01	4.885	4.882	0.003
C#498C	-4.882	-4.885	0.003
C#499C	-4.658	-4.660	0.002
C#500C	-4.786	-4.788	0.002
C#501C	-4.867	-4.864	-0.003
C#502C	-2.425	-2.425	0.000
C#503C	-1.701	-1.702	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
37.964	37.964	0.000
39.351	39.348	0.003
41.564	41.564	0.000
43.255	43.258	-0.003
45.680	45.683	-0.003
50.547	50.547	0.000
55.333	55.335	-0.002
59.991	59.995	-0.004
64.876	64.877	-0.001
59.994	59.992	0.002
55.336	55.332	0.004
50.550	50.544	0.006
45.683	45.680	0.003
43.258	43.255	0.003
41.557	41.553	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#503C	0.442		41.557
C#504C		2.553	39.446
C#504C	0.964		39.446
C#505C		2.437	37.973
C#505C	0.842		37.973
CAR_02		0.428	38.387
			0.008

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#503C	0.427			41.553	
C#504C			2.540	39.440	
C#504C	0.963			39.440	
C#505C			2.435	37.968	
C#505C	0.853			37.968	
CAR_02			0.441	38.380	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#504C	-2.111	-2.113	0.002
C#505C	-1.473	-1.472	-0.001
CAR_02	0.414	0.412	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
39.446	39.440	0.006
37.973	37.968	0.005
38.387	38.380	0.007

CHIGORODÓ

Calle 48B No. 79-55. EDIFICIO CASA SIERRA. Local 101 PBX: (4) 4215441
E-MAIL: elber.hernandez@gmail.com
Medellín Colombia

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: Chigorodo
FECHA LEVANTAMIENTO: 18/12/2009
TOPOGRAFO: joSe luiS hernandez
COMISIÓN: ComiSion C
AMARRE: AMARRES NP

NIVELACION			
EN	V (+)	V (-)	COTA
CHI_09	0.689		31.861
C#518C		1.612	30.938
C#518C	0.983		30.938
C#519C		1.161	30.760
C#519C	1.218		30.760
C#520C		1.463	30.515
C#520C	1.430		30.515
C#521C		1.504	30.441
C#521C	1.033		30.441
C#522C		1.878	29.596
C#522C	1.167		29.596
CHI_03		1.993	28.770
CHI_03	1.988		28.770
C#523C		1.162	29.596
C#523C	1.841		29.596
C#524C		1.038	30.399
C#524C	1.184		30.399
C#525C		0.950	30.633
C#525C	0.902		30.633
C#526C		1.435	30.100
C#526C	1.995		30.100
C#527C		1.102	30.993
C#527C	1.595		30.993
C3528C		1.883	30.705
C3528C	1.602		30.705
C#529C		1.249	31.058
C#529C	1.500		31.058
C#530C		1.496	31.062
C#530C	1.322		31.062
C#531C		1.300	31.084
C#531C	1.487		31.084
CHI_09		0.701	31.870

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
CHI_09	0.687			31.861	2 ORDEN
C#518C			1.609	30.939	
C#518C	0.978			30.939	
C#519C			1.157	30.760	
C#519C	1.224			30.760	
C#520C			1.471	30.513	
C#520C	1.437			30.513	
C#521C			1.510	30.440	
C#521C	1.010			30.440	
C#522C			1.856	29.594	
C#522C	1.160			29.594	
CHI_03			1.985	28.769	
CHI_03	1.998			28.769	
C#523C			1.171	29.596	
C#523C	1.829			29.596	
C#524C			1.028	30.397	
C#524C	1.184			30.397	
C#525C			0.950	30.631	
C#525C	0.886			30.631	
C#526C			1.420	30.097	
C#526C	2.000			30.097	
C#527C			1.109	30.988	
C#527C	1.591			30.988	
C3528C			1.878	30.701	
C3528C	1.609			30.701	
C#529C			1.258	31.052	
C#529C	1.505			31.052	
C#530C			1.500	31.057	
C#530C	1.319			31.057	
C#531C			1.295	31.081	
C#531C	1.513			31.081	
CHI_09			0.728	31.866	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#518C	-0.923	-0.922	-0.001
C#519C	-0.178	-0.179	0.001
C#520C	-0.245	-0.247	0.002
C#521C	-0.074	-0.073	-0.001
C#522C	-0.845	-0.846	0.001
CHI_03	-0.826	-0.825	-0.001
C#523C	0.826	0.827	-0.001
C#524C	0.803	0.801	0.002
C#525C	0.234	0.234	0.000
C#526C	-0.533	-0.534	0.001
C#527C	0.893	0.891	0.002
C3528C	-0.288	-0.287	-0.001
C#529C	0.353	0.351	0.002
C#530C	0.004	0.005	-0.001
C#531C	0.022	0.024	-0.002
CHI_09	0.786	0.785	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
30.938	30.939	-0.001
30.760	30.760	0.000
30.515	30.513	0.002
30.441	30.440	0.001
29.596	29.594	0.002
28.770	28.769	0.001
29.596	29.596	0.000
30.399	30.397	0.002
30.633	30.631	0.002
30.100	30.097	0.003
30.993	30.988	0.005
30.705	30.701	0.004
31.058	31.052	0.006
31.062	31.057	0.005
31.084	31.081	0.003
31.870	31.866	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: Chigorodo
FECHA LEVANTAMIENTO: 19/12/2009
TOPOGRAFO: joSe luiS hernandez
COMISIÓN: ComiSion C
AMARRE: AMARRES NP

NIVELACION			
EN	V (+)	V (-)	COTA
CHI_09	1.102		31.861
C#532C		1.627	31.336
C#532C	1.566		31.336
C#533C		2.000	30.902
C#533C	2.622		30.902
CHI_05		2.658	30.866

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
CHI_09	1.123			31.861	
C#532C			1.648	31.336	
C#532C	1.580			31.336	
C#533C			2.012	30.904	
C#533C	2.624			30.904	
CHI_05			2.661	30.867	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#532C	-0.525	-0.525	0.000
C#533C	-0.434	-0.432	-0.002
CHI_05	-0.036	-0.037	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
31.336	31.336	0.000
30.902	30.904	-0.002
30.866	30.867	-0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: CHIGORODO
FECHA LEVANTAMIENTO: 18 DE DICIEMBRE DE 2009
TOPOGRAFO: ANGELA CARDONA
COMISIÓN: G
AMARRE: **AMARRES DE MOJONES**

NIVELACION			
EN	V (+)	V (-)	COTA
CHI_01	1.242		33.741
CHI_04		1.204	33.779
CHI_01	1.250		33.741
C#254G		1.660	33.331
C#254G	0.646		33.331
C#255G		1.011	32.966
C#255G	1.262		32.966
C#256G		1.621	32.607
C#256G	1.261		32.607
C#257G		1.411	32.457
C#257G	1.289		32.457
C#258G		1.580	32.166
C#258G	1.319		32.166
C#259G		1.418	32.067
C#259G	1.151		32.067
CHI_10		1.185	32.033
CHI_10	1.200		32.033
C#259G		1.165	32.068
C#259G	1.379		32.068
C#258G		1.285	32.162
C#258G	1.585		32.162
C#257G		1.296	32.451
C#257G	1.419		32.451
C#256G		1.267	32.603
C#256G	1.566		32.603
C#255G		1.214	32.955
C#255G	1.369		32.955
C#260G		1.169	33.155
C#260G	1.348		33.155
CHI_07		1.355	33.148

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
CHI_01	1.222			33.741	
CHI_04			1.185	33.778	
CHI_01	1.251			33.741	
C#254G			1.659	33.333	
C#254G	0.642			33.333	
C#255G			1.008	32.967	
C#255G	1.268			32.967	
C#256G			1.629	32.606	
C#256G	1.260			32.606	
C#257G			1.407	32.459	
C#257G	1.278			32.459	
C#258G			1.572	32.165	
C#258G	1.321			32.165	
C#259G			1.417	32.069	
C#259G	1.142			32.069	
CHI_10			1.174	32.037	
CHI_10	1.204			32.037	
C#259G			1.171	32.070	
C#259G	1.378			32.070	
C#258G			1.284	32.164	
C#258G	1.584			32.164	
C#257G			1.294	32.454	
C#257G	1.424			32.454	
C#256G			1.273	32.605	
C#256G	1.555			32.605	
C#255G			1.202	32.958	
C#255G	1.372			32.958	
C#260G			1.175	33.155	
C#260G	1.328			33.155	
CHI_07			1.335	33.148	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
CHI_04	0.038	0.037	0.001
C#254G	-0.410	-0.408	-0.002
C#255G	-0.365	-0.366	0.001
C#256G	-0.359	-0.361	0.002
C#257G	-0.150	-0.147	-0.003
C#258G	-0.291	-0.294	0.003
C#259G	-0.099	-0.096	-0.003
CHI_10	-0.034	-0.032	-0.002
C#259G	0.035	0.033	0.002
C#258G	0.094	0.094	0.000
C#257G	0.289	0.290	-0.001
C#256G	0.152	0.151	0.001
C#255G	0.352	0.353	-0.001
C#260G	0.200	0.197	0.003
CHI_07	-0.007	-0.007	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
33.779	33.778	0.001
33.331	33.333	-0.002
32.966	32.967	-0.001
32.607	32.606	0.001
32.457	32.459	-0.002
32.166	32.165	0.001
32.067	32.069	-0.002
32.033	32.037	-0.004
32.068	32.070	-0.002
32.162	32.164	-0.002
32.451	32.454	-0.003
32.603	32.605	-0.002
32.955	32.958	-0.003
33.155	33.155	0.000
33.148	33.148	0.000

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
CHI_07	1.334		33.148
C#260G		1.321	33.161
C#260G	1.213		33.161
C#255G		1.415	32.959
C#255G	1.158		32.959
C#254G		0.809	33.308
C#254G	1.632		33.308
CHI_01		1.188	33.752

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
CHI_07	1.336			33.148	
C#260G			1.324	33.160	
C#260G	1.215			33.160	
C#255G			1.415	32.960	
C#255G	1.154			32.960	
C#254G			0.805	33.309	
C#254G	1.631			33.309	
CHI_01			1.187	33.753	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#260G	0.013	0.012	0.001
C#255G	-0.202	-0.200	-0.002
C#254G	0.349	0.349	0.000
CHI_01	0.444	0.444	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
33.161	33.160	0.001
32.959	32.960	-0.001
33.308	33.309	-0.001
33.752	33.753	-0.001

LUGAR: CHIGORODO
FECHA LEVANTAMIENTO: 19 DE DICIEMBRE DE 2009
TOPOGRAFO: ANGELA CARDONA
COMISIÓN: G
AMARRE: **AMARRES DE MOJONES**

NIVELACION			
EN	V (+)	V (-)	COTA
CHI_10	1.133		32.037
C#261G		1.016	32.154
C#261G	1.322		32.154
C#262G		1.774	31.702
C#262G	1.625		31.702
C#263G		1.854	31.473
C#263G	1.414		31.473
CHI_09		1.025	31.862
CHI_09	1.031		31.862
C#263G		1.415	31.478
C#263G	1.849		31.478
C#262G		1.614	31.713
C#262G	1.779		31.713
C#261G		1.324	32.168
C#261G	1.042		32.168
CHI_10		1.157	32.053
			0.016

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
CHI_10	1.130			32.037	
C#261G			1.012	32.155	
C#261G	1.321			32.155	
C#262G			1.775	31.701	
C#262G	1.627			31.701	
C#263G			1.853	31.475	
C#263G	1.415			31.475	
CHI_09			1.029	31.861	
CHI_09	1.028			31.861	
C#263G			1.413	31.476	
C#263G	1.852			31.476	
C#262G			1.615	31.713	
C#262G	1.781			31.713	
C#261G			1.328	32.166	
C#261G	1.033			32.166	
CHI_10			1.150	32.049	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#261G	0.117	0.118	-0.001
C#262G	-0.452	-0.454	0.002
C#263G	-0.229	-0.226	-0.003
CHI_09	0.389	0.386	0.003
C#263G	-0.384	-0.385	0.001
C#262G	0.235	0.237	-0.002
C#261G	0.455	0.453	0.002
CHI_10	-0.115	-0.117	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
32.154	32.155	-0.001
31.702	31.701	0.001
31.473	31.475	-0.002
31.862	31.861	0.001
31.478	31.476	0.002
31.713	31.713	0.000
32.168	32.166	0.002
32.053	32.049	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: CHIGORODO
FECHA LEVANTAMIENTO: 18/12/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS MOSQUERA
COMISIÓN: N
AMARRE: **MOJON 02**

NIVELACION			
EN	V (+)	V (-)	COTA
CHI_02	1.800		29.795
C#158N		1.551	30.044
C#158N	1.685		30.044
C#159N		1.490	30.239
C#159N	1.840		30.239
C#160N		1.520	30.559
C#160N	1.942		30.559
C#161N		1.130	31.371
C#161N	1.847		31.371
C#162N		1.380	31.838
C#162N	1.809		31.838
C#163N		1.867	31.780
C#163N	1.192		31.780
C#164N		1.173	31.799
C#164N	1.189		31.799
C#165N		1.723	31.265
C#165N	1.850		31.265
CHI_06		1.610	31.505
CHI_06	1.687		31.505
C#166N		1.455	31.737
C#166N	1.680		31.737
C#167N		1.162	32.255
C#167N	1.439		32.255
C#168N		1.468	32.226
C#166N	1.658		32.226
C#169N		0.750	33.134
C#169N	1.494		33.134
C#170N		1.900	32.728
C#170N	1.367		32.728
C#162N		1.760	32.335

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
CHI_02	1.789			29.795	1er ORDEN
C#158N			1.542	30.042	
C#158N	1.683			30.042	
C#159N			1.487	30.238	
C#159N	1.827			30.238	
C#160N			1.508	30.557	
C#160N	1.943			30.557	
C#161N			1.131	31.369	
C#161N	1.850			31.369	
C#162N			1.384	31.835	
C#162N	1.823			31.835	
C#163N			1.880	31.778	
C#163N	1.190			31.778	
C#164N			1.170	31.798	
C#164N	1.188			31.798	
C#165N			1.721	31.265	
C#165N	1.860			31.265	
CHI_06			1.618	31.507	2do ORDEN
CHI_06	1.690			31.507	
C#166N			1.459	31.738	
C#166N	1.686			31.738	
C#167N			1.168	32.256	
C#167N	1.443			32.256	
C#168N			1.470	32.229	
C#166N	1.650			32.229	
C#169N			0.744	33.135	
C#169N	1.502			33.135	
C#170N			1.907	32.730	
C#170N	1.387			32.730	
C#162N			1.779	32.338	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#158N	0.249	0.247	0.002
C#159N	0.195	0.196	-0.001
C#160N	0.320	0.319	0.001
C#161N	0.812	0.812	0.000
C#162N	0.467	0.466	0.001
C#163N	-0.058	-0.057	-0.001
C#164N	0.019	0.020	-0.001
C#165N	-0.534	-0.533	-0.001
CHI_06	0.240	0.242	-0.002
C#166N	0.232	0.231	0.001
C#167N	0.518	0.518	0.000
C#168N	-0.029	-0.027	-0.002
C#169N	0.908	0.906	0.002
C#170N	-0.406	-0.405	-0.001
C#162N	-0.393	-0.392	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
30.044	30.042	0.002
30.239	30.238	0.001
30.559	30.557	0.002
31.371	31.369	0.002
31.838	31.835	0.003
31.780	31.778	0.002
31.799	31.798	0.001
31.265	31.265	0.000
31.505	31.507	-0.002
31.737	31.738	-0.001
32.255	32.256	-0.001
32.226	32.229	-0.003
33.134	33.135	-0.001
32.728	32.730	-0.002
32.335	32.338	-0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#162N	0.942		32.335
C#161N		1.908	31.369
C#161N	1.070		31.369
C#160N		1.881	30.558
C#160N	1.318		30.558
C#171N		1.820	30.056
C#171N	1.571		30.056
CHI_02		1.820	29.807

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#162N	0.948			32.338	
C#161N			1.913	31.373	
C#161N	1.087			31.373	
C#160N			1.898	30.562	
C#160N	1.328			30.562	
C#171N			1.832	30.058	
C#171N	1.573			30.058	
CHI_02			1.823	29.808	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#161N	-0.966	-0.965	-0.001
C#160N	-0.811	-0.811	0.000
C#171N	-0.502	-0.504	0.002
CHI_02	-0.249	-0.250	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
31.369	31.373	-0.004
30.558	30.562	-0.004
30.056	30.058	-0.002
29.807	29.808	-0.001

LUGAR: CHIGORODO
FECHA LEVANTAMIENTO: 19/12/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS MOSQUERA
COMISIÓN: N
AMARRE: **MOJON 02**

NIVELACION			
EN	V (+)	V (-)	COTA
CHI_02	1.626		29.795
CHI_08		1.260	30.161
CHI_08	1.245		30.161
CHI_02		1.610	29.796

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
CHI_02	1.610			29.795	1er ORDEN
CHI_08			1.244	30.161	
CHI_08	1.252			30.161	2do ORDEN
CHI_02			1.620	29.793	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
CHI_08	0.366	0.366	0.000
CHI_02	-0.365	-0.368	0.003

DIFERENCIA COTA		
NIV	CONT	DIF
30.161	30.161	0.000
29.796	29.793	0.003

EL REPOSO

Calle 48B No. 79-55. EDIFICIO CASA SIERRA. Local 101 PBX: (4) 4215441
E-MAIL: elber.hernandez@gmail.com
Medellín Colombia

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: EL REPOSO
FECHA LEVANTAMIENTO: 23/12/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: NIVELACION DEMOJONES DE 2 ORDEN

NIVELACION			
EN	V (+)	V (-)	COTA
REP_02	1.684		28.065
REP_03		1.076	28.673
REP_02	1.684		28.065
C#553C		1.396	28.353
C#553C	1.910		28.353
C#554C		0.881	29.382
C#554C	1.760		29.382
C#555C		1.706	29.436
C#555C	1.852		29.436
REP_04		1.334	29.954
REP_04	1.358		29.954
C#556C		1.876	29.436
C#556C	1.701		29.436
C#557C		1.754	29.383
C3557C	0.885		29.383
C#558C		1.912	28.356
C#558C	1.386		28.356
REP_02		1.673	28.069
REP_01	0.750		32.126
C#559C		1.656	31.220
C#559C	0.944		31.220
REP_06		1.584	30.580
REP_06	1.578		30.580
C#560C		0.937	31.221
C#560C	1.662		31.221
REP_01		0.754	32.129

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
REP_02	1.694			28.065	1 ORDEN
REP_03			1.084	28.675	
REP_02	1.652			28.065	
C#553C			1.365	28.352	
C#553C	1.910			28.352	
C#554C			0.883	29.379	
C#554C	1.768			29.379	
C#555C			1.715	29.432	
C#555C	1.878			29.432	
REP_04			1.357	29.953	
REP_04	1.383			29.953	
C#556C			1.902	29.434	
C#556C	1.709			29.434	
C#557C			1.762	29.381	
C3557C	0.890			29.381	
C#558C			1.920	28.351	
C#558C	1.375			28.351	
REP_02			1.662	28.064	
REP_01	0.754			32.126	
C#559C			1.662	31.218	
C#559C	0.938			31.218	
REP_06			1.578	30.578	
REP_06	1.584			30.578	
C#560C			0.944	31.218	
C#560C	1.656			31.218	
REP_01			0.750	32.124	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
REP_03	0.608	0.610	-0.002
C#553C	0.288	0.287	0.001
C#554C	1.029	1.027	0.002
C#555C	0.054	0.053	0.001
REP_04	0.518	0.521	-0.003
C#556C	-0.518	-0.519	0.001
C#557C	-0.053	-0.053	0.000
C#558C	-1.027	-1.030	0.003
REP_02	-0.287	-0.287	0.000
C#559C	-0.906	-0.908	0.002
REP_06	-0.640	-0.640	0.000
C#560C	0.641	0.640	0.001
REP_01	0.908	0.906	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
28.673	28.675	-0.002
28.353	28.352	0.001
29.382	29.379	0.003
29.436	29.432	0.004
29.954	29.953	0.001
29.436	29.434	0.002
29.383	29.381	0.002
28.356	28.351	0.005
28.069	28.064	0.005
31.220	31.218	0.002
30.580	30.578	0.002
31.221	31.218	0.003
32.129	32.124	0.005

TURBO

Calle 48B No. 79-55. EDIFICIO CASA SIERRA. Local 101 PBX: (4) 4215441
E-MAIL: elber.hernandez@gmail.com
Medellín Colombia

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 21/12/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: MOJONES DE 1 Y 2 ORDEN

NIVELACION			
EN	V (+)	V (-)	COTA
TUR_02	1.430		2.908
C#534C		1.468	2.870
C#534C	1.852		2.870
C#535C		1.430	3.292
C#535C	1.669		3.292
C#536C		0.821	4.140
C#536C	2.534		4.140
C#537C		1.503	5.171
C#537C	1.592		5.171
C#538C		1.333	5.430
C#538C	1.478		5.430
C#539C		2.177	4.731
C#539C	0.608		4.731
C#540C		2.136	3.203
C#540C	1.099		3.203
C#541C		1.727	2.575
C#541C	1.603		2.575
C#542C		1.353	2.825
C#542C	1.158		2.825
TUR_04		1.409	2.574
TUR_04	1.616		2.574
C#542C		1.368	2.822
C#542C	1.366		2.822
C#541C		1.615	2.573
C#541C	1.672		2.573
C#540C		1.047	3.198
C#540C	2.097		3.198
C#539C		0.568	4.727
C#539C	2.231		4.727
C#538C		1.531	5.427
C#538C	1.532		5.427
C#537C		1.791	5.168
C#537C	1.190		5.168

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR_02	1.467			2.908	
C#534C			1.506	2.869	
C#534C	1.810			2.869	
C#535C			1.387	3.292	
C#535C	1.657			3.292	
C#536C			0.810	4.139	
C#536C	2.540			4.139	
C#537C			1.510	5.169	
C#537C	1.580			5.169	
C#538C			1.318	5.431	
C#538C	1.477			5.431	
C#539C			2.174	4.734	
C#539C	0.618			4.734	
C#540C			2.148	3.204	
C#540C	1.073			3.204	
C#541C			1.703	2.574	
C#541C	1.608			2.574	
C#542C			1.358	2.824	
C#542C	1.152			2.824	
TUR_04			1.401	2.575	
TUR_04	1.608			2.575	2ORDEN
C#542C			1.362	2.821	
C#542C	1.368			2.821	
C#541C			1.618	2.571	
C#541C	1.685			2.571	
C#540C			1.057	3.199	
C#540C	2.098			3.199	
C#539C			0.570	4.727	
C#539C	2.239			4.727	
C#538C			1.540	5.426	
C#538C	1.536			5.426	
C#537C			1.798	5.164	
C#537C	1.175			5.164	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#534C	-0.038	-0.039	0.001
C#535C	0.422	0.423	-0.001
C#536C	0.848	0.847	0.001
C#537C	1.031	1.030	0.001
C#538C	0.259	0.262	-0.003
C#539C	-0.699	-0.697	-0.002
C#540C	-1.528	-1.530	0.002
C#541C	-0.628	-0.630	0.002
C#542C	0.250	0.250	0.000
TUR_04	-0.251	-0.249	-0.002
C#542C	0.248	0.246	0.002
C#541C	-0.249	-0.250	0.001
C#540C	0.625	0.628	-0.003
C#539C	1.529	1.528	0.001
C#538C	0.700	0.699	0.001
C#537C	-0.259	-0.262	0.003

DIFERENCIA COTA		
NIV	CONT	DIF
2.870	2.869	0.001
3.292	3.292	0.000
4.140	4.139	0.001
5.171	5.169	0.002
5.430	5.431	-0.001
4.731	4.734	-0.003
3.203	3.204	-0.001
2.575	2.574	0.001
2.825	2.824	0.001
2.574	2.575	-0.001
2.822	2.821	0.001
2.573	2.571	0.002
3.198	3.199	-0.001
4.727	4.727	0.000
5.427	5.426	0.001
5.168	5.164	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#536C		2.220	4.138
C#536C	0.721		4.138
C#184N		1.420	3.439
C#184N	1.405		3.439
C#157N		1.861	2.983
C#157N	1.395		2.983
TUR_02		1.475	2.903

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#536C			2.206	4.133	
C#536C	0.730			4.133	
C#184N			1.428	3.435	
C#184N	1.398			3.435	
C#157N			1.854	2.979	
C#157N	1.397			2.979	
TUR_02			1.477	2.899	1ORDEN

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#536C	-1.030	-1.031	0.001
C#184N	-0.699	-0.698	-0.001
C#157N	-0.456	-0.456	0.000
TUR_02	-0.080	-0.080	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
4.138	4.133	0.005
3.439	3.435	0.004
2.983	2.979	0.004
2.903	2.899	0.004

LUGAR: TURBO
FECHA LEVANTAMIENTO: 29/12/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: MOJONES DE 1 Y 2 ORDEN

NIVELACION			
EN	V (+)	V (-)	COTA
TUR_02	1.430		2.908
C#566C	1.852	1.468	2.870
C#567C	1.669	1.430	3.292
C#568C	2.534	0.821	4.140
C#569C	1.592	1.503	5.171
C#570C	1.080	1.333	5.430
C#571C	1.669	2.419	4.091
C#572C	1.931	1.033	4.727
C#573C	1.588	1.300	5.358
TUR_10	1.500	1.479	5.467
C#574C	1.352	1.607	5.360
C#575C	1.064	1.986	4.726
C#576C	2.401	1.701	4.089
C#577C	1.333	1.062	5.428
C#578C	1.510	1.592	5.169
C#579C	0.810	2.540	4.139
C#580C	1.387	1.657	3.292
C#581C	1.506	1.810	2.869
TUR_02		1.467	2.908

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR_02	1.467			2.908	
C#566C	1.810		1.506	2.869	
C#567C	1.657		1.387	3.292	
C#568C	2.540		0.810	4.139	
C#569C	1.580		1.510	5.169	
C#570C	1.062		1.318	5.431	
C#571C	1.701		2.401	4.092	
C#572C	1.986		1.064	4.729	
C#573C	1.607		1.352	5.363	
TUR_10	1.479		1.500	5.470	
C#574C	1.300		1.588	5.361	
C#575C	1.033		1.931	4.730	
C#576C	2.419		1.669	4.094	
C#577C	1.318		1.080	5.433	
C#578C	1.503		1.580	5.171	
C#579C	0.821		2.534	4.140	
C#580C	1.430		1.669	3.292	
C#581C	1.468		1.852	2.870	
TUR_02			1.430	2.908	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#566C	-0.038	-0.039	0.001
C#567C	0.422	0.423	-0.001
C#568C	0.848	0.847	0.001
C#569C	1.031	1.030	0.001
C#570C	0.259	0.262	-0.003
C#571C	-1.339	-1.339	0.000
C#572C	0.636	0.637	-0.001
C#573C	0.631	0.634	-0.003
TUR_10	0.109	0.107	0.002
C#574C	-0.107	-0.109	0.002
C#575C	-0.634	-0.631	-0.003
C#576C	-0.637	-0.636	-0.001
C#577C	1.339	1.339	0.000
C#578C	-0.259	-0.262	0.003
C#579C	-1.030	-1.031	0.001
C#580C	-0.847	-0.848	0.001
C#581C	-0.423	-0.422	-0.001
TUR_02	0.039	0.038	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
2.870	2.869	0.001
3.292	3.292	0.000
4.140	4.139	0.001
5.171	5.169	0.002
5.430	5.431	-0.001
4.091	4.092	-0.001
4.727	4.729	-0.002
5.358	5.363	-0.005
5.467	5.470	-0.003
5.360	5.361	-0.001
4.726	4.730	-0.004
4.089	4.094	-0.005
5.428	5.433	-0.005
5.169	5.171	-0.002
4.139	4.140	-0.001
3.292	3.292	0.000
2.869	2.870	-0.001
2.908	2.908	0.000

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO - JESUS MORA
FECHA LEVANTAMIENTO: 10/11/2009
TOPOGRAFO: ANGELA PATRICIA CARDONA
COMISIÓN: G
AMARRE: C#193G

NIVELACION			
EN	V (+)	V (-)	COTA
C#193G	1.172		1.197
TUR_06		1.175	1.194

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#193G	1.171			1.197	
TUR_06			1.176	1.194	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#193G			
TUR_06	-0.003	-0.005	0.002

DIFERENCIA COTA		
NIV	CONT	DIF
1.194	1.194	0.000

LUGAR: TURBO - amarres de cambios de inicio
FECHA LEVANTAMIENTO: 02/12/2009
TOPOGRAFO: ANGELA PATRICIA CARDONA
COMISIÓN: G
AMARRE: mojon 01

NIVELACION			
EN	V (+)	V (-)	COTA
TUR_01	1.418		1.304
C#240G		1.465	1.257
C#240G	1.259		1.257
C#170G		1.637	0.878
C#170G	1.473		0.878
C#241G		1.245	1.107
C#241G	1.059		1.107
C#112H		1.385	0.781
C#112H	1.384		0.781
C#241G		1.061	1.104
C#241G	1.169		1.104
C#170G		1.402	0.871
C#170G	1.621		0.871
C#240G		1.234	1.258
C#240G	1.471		1.258

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR_01	1.417			1.304	
C#240G			1.464	1.257	
C#240G	1.249			1.257	
C#170G			1.629	0.877	
C#170G	1.471			0.877	
C#241G			1.241	1.107	013SC002
C#241G	1.049			1.107	
C#112H			1.373	0.783	
C#112H	1.386			0.783	
C#241G			1.060	1.109	
C#241G	1.171			1.109	
C#170G			1.401	0.879	
C#170G	1.615			0.879	
C#240G			1.231	1.263	
C#240G	1.481			1.263	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#240G	-0.047	-0.047	0.000
C#170G	-0.378	-0.380	0.002
C#241G	0.228	0.230	-0.002
C#112H	-0.326	-0.324	-0.002
C#241G	0.323	0.326	-0.003
C#170G	-0.233	-0.230	-0.003
C#240G	0.387	0.384	0.003

DIFERENCIA COTA		
NIV	CONT	DIF
1.257	1.257	0.000
0.878	0.877	0.002
1.107	1.107	0.000
0.781	0.783	-0.002
1.104	1.109	-0.005
0.871	0.879	-0.008
1.258	1.263	-0.005

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
TUR_01		1.422	1.307
			0.003
TUR_01	1.229		1.304
C#242G		1.679	0.854
C#242G	1.589		0.854
C#243G		1.769	0.674
C#243G	1.819		0.674
C#244G		1.458	1.035
C#244G	1.124		1.035
C#14N		2.659	-0.501
C#244G	1.995		1.035
C#245G		1.758	1.272
C#245G	1.741		1.272
C#9C		2.462	0.551
C#9C	2.081		0.551
C#13C		1.445	1.187
C#13C	1.429		1.187
C#246G		1.286	1.330
C#246G	1.360		1.330
C#247G		1.209	1.481
C#247G	1.054		1.481
C#111H		1.411	1.124
C#247G	1.441		1.481
C#248G		1.178	1.744
C#248G	1.186		1.744
C#249G		1.245	1.685
C#249G	0.790		1.685
C#250G		1.390	1.085
C#250G	1.450		1.085
C#251G		1.121	1.414
C#251G	0.992		1.414
TUR_01		1.118	1.288
			-0.016

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR_01			1.435	1.309	
TUR_01	1.231			1.304	
C#242G			1.680	0.855	
C#242G	1.609			0.855	
C#243G			1.787	0.677	
C#243G	1.818			0.677	
C#244G			1.457	1.038	
C#244G	1.145			1.038	
C#14N			2.679	-0.497	
C#244G	1.994			1.038	
C#245G			1.760	1.272	
C#245G	1.849			1.272	
C#9C			2.568	0.553	
C#9C	2.079			0.553	
C#13C			1.445	1.187	
C#13C	1.439			1.187	
C#246G			1.299	1.327	
C#246G	1.345			1.327	
C#247G			1.195	1.477	
C#247G	1.055			1.477	
C#111H			1.414	1.118	
C#247G	1.437			1.477	
C#248G			1.172	1.742	
C#248G	1.183			1.742	
C#249G			1.241	1.684	
C#249G	0.780			1.684	
C#250G			1.380	1.084	
C#250G	1.455			1.084	
C#251G			1.129	1.410	
C#251G	0.990			1.410	
TUR_01			1.117	1.283	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
TUR_01	0.049	0.046	0.003
C#242G	-0.450	-0.449	-0.001
C#243G	-0.180	-0.178	-0.002
C#244G	0.361	0.361	0.000
C#14N	-1.535	-1.534	-0.001
C#245G	0.237	0.234	0.003
C#9C	-0.721	-0.719	-0.002
C#13C	0.636	0.634	0.002
C#246G	0.143	0.140	0.003
C#247G	0.151	0.150	0.001
C#111H	-0.357	-0.359	0.002
C#248G	0.263	0.265	-0.002
C#249G	-0.059	-0.058	-0.001
C#250G	-0.600	-0.600	0.000
C#251G	0.329	0.326	0.003
TUR_01	-0.126	-0.127	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
1.307	1.309	-0.002
0.854	0.855	-0.001
0.674	0.677	-0.003
1.035	1.038	-0.003
-0.501	-0.497	-0.004
1.272	1.272	0.000
0.551	0.553	-0.002
1.187	1.187	0.000
1.330	1.327	0.003
1.481	1.477	0.004
1.124	1.118	0.006
1.744	1.742	0.002
1.685	1.684	0.001
1.085	1.084	0.001
1.414	1.410	0.004
1.288	1.283	0.005

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO - amarres de cambios
FECHA LEVANTAMIENTO: 12/12/2009
TOPOGRAFO: ANGELA PATRICIA CARDONA
COMISIÓN: G
AMARRE: C#111H

NIVELACION			
EN	V (+)	V (-)	COTA
C#111H	1.412		2.040
C#108H		0.919	2.533
C#108H	1.071		2.533
C#252G		1.161	2.443
C#252G	1.301		2.443
C#1N		1.168	2.576
C#1N	1.125		2.576
C#253G		1.400	2.301
C#253G	0.719		2.301
C#105H		1.354	1.666
C#105H	1.543		1.666
C#111H		1.159	2.050
			0.010

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#111H	1.414			2.040	
C#108H			0.920	2.534	
C#108H	1.083			2.534	
C#252G			1.175	2.442	
C#252G	1.306			2.442	
C#1N			1.170	2.578	
C#1N	1.119			2.578	
C#253G			1.395	2.302	
C#253G	0.705			2.302	
C#105H			1.339	1.668	
C#105H	1.538			1.668	
C#111H			1.153	2.053	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#108H	0.493	0.494	-0.001
C#252G	-0.090	-0.092	0.002
C#1N	0.133	0.136	-0.003
C#253G	-0.275	-0.276	0.001
C#105H	-0.635	-0.634	-0.001
C#111H	0.384	0.385	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
2.533	2.534	-0.001
2.443	2.442	0.001
2.576	2.578	-0.002
2.301	2.302	-0.001
1.666	1.668	-0.002
2.050	2.053	-0.003

LUGAR: TURBO - amarres de mojones
FECHA LEVANTAMIENTO: 21/12/2009
TOPOGRAFO: ANGELA PATRICIA CARDONA
COMISIÓN: G
AMARRE: mojon de 1°er orden

NIVELACION			
EN	V (+)	V (-)	COTA
TUR_01	0.808		1.307
TUR_06		0.922	1.193
TUR_06	1.072		1.193
C#262G		1.446	0.819
C#262G	1.529		0.819
TUR_09		1.252	1.096
TUR_09	1.649		1.096

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR_01	0.763			1.307	
TUR_06			0.876	1.194	
TUR_06	1.078			1.194	
C#262G			1.453	0.819	
C#262G	1.530			0.819	
TUR_09			1.250	1.099	
TUR_09	1.650			1.099	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
TUR_06	-0.114	-0.113	-0.001
C#262G	-0.374	-0.375	0.001
TUR_09	0.277	0.280	-0.003

DIFERENCIA COTA		
NIV	CONT	DIF
1.193	1.194	-0.001
0.819	0.819	0.000
1.096	1.099	-0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#263G		1.504	1.241
C#263G	1.100		1.241
C#264G		1.405	0.936
C#264G	1.249		0.936
C#265G		1.269	0.916
C#265G	1.174		0.916
TUR_08		1.389	0.701
TUR_08	1.378		0.701
C#265G		1.164	0.915
C#265G	1.309		0.915
C#264G		1.279	0.945
C#264G	1.425		0.945
C#263G		1.125	1.245
C#263G	1.149		1.245
TUR_09		1.278	1.116
TUR_09	1.212		1.116
C#262G		1.495	0.833
C#262G	1.491		0.833
TUR_06		1.105	1.219
TUR_06	1.002		1.219
TUR_01		0.891	1.330
			0.023

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#263G			1.502	1.247	
C#263G	1.105			1.247	
C#264G			1.410	0.942	
C#264G	1.245			0.942	
C#265G			1.267	0.920	
C#265G	1.166			0.920	
TUR_08			1.382	0.704	
TUR_08	1.364			0.704	
C#265G			1.150	0.918	
C#265G	1.306			0.918	
C#264G			1.276	0.948	
C#264G	1.426			0.948	
C#263G			1.127	1.247	
C#263G	1.162			1.247	
TUR_09			1.292	1.117	
TUR_09	1.201			1.117	
C#262G			1.485	0.833	
C#262G	1.490			0.833	
TUR_06			1.106	1.217	
TUR_06	1.004			1.217	
TUR_01			0.892	1.329	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#263G	0.145	0.148	-0.003
C#264G	-0.305	-0.305	0.000
C#265G	-0.020	-0.022	0.002
TUR_08	-0.215	-0.216	0.001
C#265G	0.214	0.214	0.000
C#264G	0.030	0.030	0.000
C#263G	0.300	0.299	0.001
TUR_09	-0.129	-0.130	0.001
C#262G	-0.283	-0.284	0.001
TUR_06	0.386	0.384	0.002
TUR_01	0.111	0.112	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
1.241	1.247	-0.006
0.936	0.942	-0.006
0.916	0.920	-0.004
0.701	0.704	-0.003
0.915	0.918	-0.003
0.945	0.948	-0.003
1.245	1.247	-0.002
1.116	1.117	-0.001
0.833	0.833	0.000
1.219	1.217	0.002
1.330	1.329	0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO - amarres de Cambios de iniCio
FECHA LEVANTAMIENTO: 14/01/2010
TOPOGRAFO: ANGELA PATRICIA CARDONA DUARTE
COMISIÓN: G
AMARRE:

NIVELACION			
EN	V (+)	V (-)	COTA
TUR_04	1.569		2.575
C#132F		1.045	3.099
C#132F	1.019		3.099
C#133F		1.269	2.849
C#263G	1.238		1.247
C#31J		1.516	0.969
TUR_09	0.925		1.099
C#111F		1.457	0.566
C#111F	1.241		0.566
C#112F		0.865	0.942
TUR_06	1.501		1.194
C#102F		1.428	1.267

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR_04	1.572			2.575	NP EN MONTERREY
C#132F			1.050	3.097	NORTE EN LA PLACA
C#132F	1.016			3.097	
C#133F			1.264	2.849	
C#263G	1.241			1.247	
C#31J			1.520	0.968	
TUR_09	0.912			1.099	
C#111F			1.441	0.569	
C#111F	1.254			0.569	
C#112F			0.881	0.942	
TUR_06	1.499			1.194	
C#102F			1.426	1.267	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#132F	0.524	0.522	0.002
C#133F	-0.250	-0.248	-0.002
C#31J	-0.278	-0.279	0.001
C#111F	-0.532	-0.529	-0.003
C#112F	0.376	0.373	0.003
C#102F	0.073	0.073	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
3.099	3.097	0.002
2.849	2.849	0.000
0.969	0.968	0.001
0.566	0.569	-0.003
0.942	0.942	0.000
1.267	1.267	0.000

LUGAR: TURBO - amarres de Cambios de iniCio
FECHA LEVANTAMIENTO: 15/01/2010
TOPOGRAFO: ANGELA PATRICIA CARDONA DUARTE
COMISIÓN: G
AMARRE:

NIVELACION			
EN	V (+)	V (-)	COTA
TUR_10	1.456		5.470
C#160F		1.822	5.104
TUR_04	1.360		2.575
C#194G		0.703	3.232
TUR_12	0.885		1.086
C#309G		1.156	0.815
C#309G	1.111		0.815
C#1J		1.458	0.468
C#28N	1.394		-0.289

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR_10	1.466			5.470	
C#160F			1.831	5.105	
TUR_04	1.368			2.575	
C#194G			0.709	3.234	
TUR_12	0.884			1.086	
C#309G			1.154	0.816	
C#309G	1.113			0.816	
C#1J			1.460	0.469	
C#28N	1.370			-0.289	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#160F	-0.366	-0.365	-0.001
C#194G	0.657	0.659	-0.002
C#309G	-0.271	-0.270	-0.001
C#1J	-0.347	-0.347	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
5.104	5.105	-0.001
3.232	3.234	-0.002
0.815	0.816	-0.001
0.468	0.469	-0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#214G		1.209	-0.104
TUR_05	1.079		1.839
C#136I		1.019	1.899
C#459C	1.415		0.952
C#310G		1.165	1.202
C#310G	1.369		1.202
C#311G		1.275	1.296
C#311G	1.285		1.296
C#145I		1.287	1.294

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#214G			1.186	-0.104	
TUR_05	1.090			1.839	EST DE BOMB INCORA
C#136I			1.028	1.901	
C#459C	1.439			0.952	
C#310G			1.189	1.202	
C#310G	1.387			1.202	
C#311G			1.292	1.297	
C#311G	1.274			1.297	
C#145I			1.275	1.296	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#214G	0.185	0.184	0.001
C#136I	0.060	0.062	-0.002
C#310G	0.250	0.250	0.000
C#311G	0.094	0.095	-0.001
C#145I	-0.002	-0.001	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
-0.104	-0.104	0.001
1.899	1.901	-0.002
1.202	1.202	0.000
1.296	1.297	-0.001
1.294	1.296	-0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 11/12/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS
COMISIÓN: N
AMARRE: C#9C

NIVELACION			
EN	V (+)	V (-)	COTA
C#9C	1.607		1.322
C#138N		1.380	1.549
C#138N	1.224		1.549
C#139N		1.614	1.159
C#139N	1.580		1.159
C#140N		1.585	1.154
C#140N	1.680		1.154
C#141N		1.573	1.261
C#141N	1.328		1.261
C#94H		1.565	1.024
C#94H	1.211		1.024
C#142N		1.501	0.734
C#142N	1.383		0.734
C#93H		1.553	0.564
C#93H	1.546		0.564
C#142N		1.378	0.732
C#142N	1.520		0.732
C#94H		1.240	1.012
C#94H	1.655		1.012
C#141N		1.422	1.245
C#141N	1.770		1.245
C#140N		1.865	1.150
C#140N	1.552		1.150
C#139N		1.541	1.161
C#139N	1.594		1.161
C#138N		1.212	1.543
C#138N	1.471		1.543
C#9C		1.704	1.310

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#9C	1.615			1.322	
C#138N			1.389	1.548	
C#138N	1.228			1.548	
C#139N			1.617	1.159	
C#139N	1.578			1.159	
C#140N			1.584	1.153	
C#140N	1.679			1.153	
C#141N			1.572	1.260	
C#141N	1.330			1.260	
C#94H			1.567	1.023	
C#94H	1.210			1.023	
C#142N			1.499	0.733	
C#142N	1.382			0.733	
C#93H			1.552	0.563	
C#93H	1.551			0.563	
C#142N			1.382	0.732	
C#142N	1.523			0.732	
C#143N			1.245	1.011	
C#143N	1.661			1.011	
C#141N			1.429	1.243	
C#141N	1.773			1.243	
C#140N			1.868	1.148	
C#140N	1.556			1.148	
C#139N			1.544	1.160	
C#139N	1.596			1.160	
C#138N			1.213	1.543	
C#138N	1.477			1.543	
C#9C			1.709	1.311	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#9C			
C#138N	0.227	0.226	0.001
C#138N			
C#139N	-0.390	-0.389	-0.001
C#139N			
C#140N	-0.005	-0.006	0.001
C#140N			
C#141N	0.107	0.107	0.000
C#141N			
C#94H	-0.237	-0.237	0.000
C#94H			
C#142N	-0.290	-0.289	-0.001
C#142N			
C#93H	-0.170	-0.170	0.000
C#93H			
C#142N	0.168	0.169	-0.001
C#142N			
C#143N	0.280	0.278	0.002
C#143N			
C#141N	0.233	0.232	0.001
C#141N			
C#140N	-0.095	-0.095	0.000
C#140N			
C#139N	0.011	0.012	-0.001
C#139N			
C#138N	0.382	0.383	-0.001
C#138N			
C#9C	-0.233	-0.232	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
1.549	1.548	0.001
1.159	1.159	0.000
1.154	1.153	0.001
1.261	1.260	0.001
1.024	1.023	0.001
0.734	0.733	0.000
0.564	0.563	0.000
0.732	0.732	-0.001
1.012	1.011	0.001
1.245	1.243	0.002
1.150	1.148	0.002
1.161	1.160	0.001
1.543	1.543	0.000
1.310	1.311	-0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 12/12/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS
COMISIÓN: N
AMARRE: **C#111H**

NIVELACION			
EN	V (+)	V (-)	COTA
C#111H	2.125		2.040
C#108H		1.665	2.500
C#108H	1.982		2.500
C#144N		1.824	2.658
C#144N	1.750		2.658
C#153G		1.598	2.810
C#153G	1.110		2.810
C#145N		1.687	2.233
C#145N	1.770		2.233
C#146N		1.824	2.179
C#146N	1.500		2.179
C#194G		0.830	2.849
C#194G	0.847		2.849
C#146N		1.516	2.180
C#146N	1.820		2.180
C#145N		1.764	2.236
C#145N	1.632		2.236
C#153N		1.055	2.813
C#153N	1.568		2.813
C#144N		1.730	2.651
C#144N	1.517		2.651
C#108H		1.679	2.489
C#108H	1.112		2.489
C#111H		1.570	2.031

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#111H	2.115			2.040	
C#108H			1.654	2.501	
C#108H	1.990			2.501	
C#144N			1.830	2.661	
C#144N	1.749			2.661	
C#153G			1.597	2.813	
C#153G	1.112			2.813	
C#145N			1.688	2.237	
C#145N	1.767			2.237	
C#146N			1.822	2.182	
C#146N	1.525			2.182	
C#194G			0.856	2.851	
C#194G	0.842			2.851	
C#146N			1.510	2.183	
C#146N	1.821			2.183	
C#145N			1.765	2.239	
C#145N	1.642			2.239	
C#153N			1.064	2.817	
C#153N	1.560			2.817	
C#144N			1.724	2.653	
C#144N	1.520			2.653	
C#108H			1.682	2.491	
C#108H	1.114			2.491	
C#111H			1.573	2.032	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#111H			
C#108H	0.460	0.461	-0.001
C#108H			
C#144N	0.158	0.160	-0.002
C#144N			
C#153G	0.152	0.152	0.000
C#153G			
C#145N	-0.577	-0.576	-0.001
C#145N			
C#146N	-0.054	-0.055	0.001
C#146N			
C#194G	0.670	0.669	0.001
C#194G			
C#146N	-0.669	-0.668	-0.001
C#146N			
C#145N	0.056	0.056	0.000
C#145N			
C#153N	0.577	0.578	-0.001
C#153N			
C#144N	-0.162	-0.164	0.002
C#144N			
C#108H	-0.162	-0.162	0.000
C#108H			
C#111H	-0.458	-0.459	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
2.500	2.501	-0.001
2.658	2.661	-0.003
2.810	2.813	-0.003
2.233	2.237	-0.004
2.179	2.182	-0.003
2.849	2.851	-0.002
2.180	2.183	-0.003
2.236	2.239	-0.003
2.813	2.817	-0.004
2.651	2.653	-0.002
2.489	2.491	-0.002
2.031	2.032	-0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 14/12/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS
COMISIÓN: N
AMARRE: **C#111H**

NIVELACION			
EN	V (+)	V (-)	COTA
TUR_01	1.439		1.304
C#147N		1.434	1.309
C#147N	1.541		1.309
C#148N		1.350	1.500
C#148N	1.575		1.500
C#149N		1.589	1.486
C#149N	1.665		1.486
C#150N		1.625	1.526
C#150N	2.020		1.526
C#151N		1.462	2.084
C#151N	1.382		2.084
C#105H		1.689	1.777
C#105H	1.862		1.777
C#152N		0.887	2.752
C#152N	1.300		2.752
C#1N		1.296	2.756
C#1N	1.495		2.756
C#153N		1.137	3.114
C#153N	1.804		3.114
C#154N		1.348	3.570
C#154N	1.930		3.570
C#155N		2.300	3.200
C#155N	1.602		3.200
C#156N		1.784	3.018
C#156N	1.413		3.018
C#157N		1.548	2.883
C#157N	1.475		2.883
TUR_02		1.450	2.908
TUR_02	1.460		2.908
C#157N		1.480	2.888

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR_01	1.445			1.304	
C#147N			1.440	1.309	
C#147N	1.539			1.309	
C#148N			1.350	1.498	
C#148N	1.576			1.498	
C#149N			1.590	1.484	
C#149N	1.669			1.484	
C#150N			1.628	1.525	
C#150N	2.022			1.525	
C#151N			1.463	2.084	
C#151N	1.345			2.084	
C#105H			1.650	1.779	
C#105H	1.868			1.779	
C#152N			0.892	2.755	
C#152N	1.298			2.755	
C#1N			1.295	2.758	
C#1N	1.500			2.758	
C#153N			1.143	3.115	
C#153N	1.807			3.115	
C#154N			1.350	3.572	
C#154N	1.925			3.572	
C#155N			2.297	3.200	
C#155N	1.619			3.200	
C#156N			1.800	3.019	
C#156N	1.424			3.019	
C#157N			1.559	2.884	
C#157N	1.476			2.884	
TUR_02			1.452	2.908	
TUR_02	1.458			2.908	
C#157N			1.478	2.888	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#147N	0.005	0.005	0.000
C#148N	0.191	0.189	0.002
C#149N	-0.014	-0.014	0.000
C#150N	0.040	0.041	-0.001
C#151N	0.558	0.559	-0.001
C#105H	-0.307	-0.305	-0.002
C#152N	0.975	0.976	-0.001
C#1N	0.004	0.003	0.001
C#153N	0.358	0.357	0.001
C#154N	0.456	0.457	-0.001
C#155N	-0.370	-0.372	0.002
C#156N	-0.182	-0.181	-0.001
C#157N	-0.135	-0.135	0.000
TUR_02	0.025	0.024	0.001
C#157N	-0.020	-0.020	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
1.309	1.309	0.000
1.500	1.498	0.002
1.486	1.484	0.002
1.526	1.525	0.001
2.084	2.084	0.000
1.777	1.779	-0.002
2.752	2.755	-0.003
2.756	2.758	-0.002
3.114	3.115	-0.001
3.570	3.572	-0.002
3.200	3.200	0.000
3.018	3.019	-0.001
2.883	2.884	-0.001
2.908	2.908	0.000
2.888	2.888	0.000

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#157N	1.554		2.888
C#156N		1.419	3.023
C#156N	1.779		3.023
C#155N		1.600	3.202
C#155N	2.296		3.202
C#154N		1.926	3.572
C#154N	1.350		3.572
C#153N		1.820	3.102
C#153N	1.158		3.102
C#1N		1.527	2.733
C#1N	1.202		2.733
C#152N		1.201	2.734
C#152N	0.820		2.734
C#105H		1.800	1.754
C#105H	1.630		1.754
C#151N		1.325	2.059
C#151N	1.370		2.059
C#150N		1.918	1.511
C#150N	1.568		1.511
C#149N		1.603	1.476
C#149N	1.519		1.476
C#148N		1.497	1.498
C#148N	1.350		1.498
C#147N		1.545	1.303
C#147N	1.382		1.303
TUR_01		1.392	1.293
			-0.011

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#157N	1.565			2.888	
C#156N			1.431	3.022	
C#156N	1.790			3.022	
C#155N			1.609	3.203	
C#155N	2.299			3.203	
C#154N			1.930	3.572	
C#154N	1.352			3.572	
C#153N			1.824	3.100	
C#153N	1.162			3.100	
C#1N			1.532	2.730	
C#1N	1.195			2.730	
C#152N			1.195	2.730	
C#152N	0.822			2.730	
C#105H			1.804	1.748	
C#105H	1.640			1.748	
C#151N			1.335	2.053	
C#151N	1.375			2.053	
C#150N			1.924	1.504	
C#150N	1.570			1.504	
C#149N			1.607	1.467	
C#149N	1.520			1.467	
C#148N			1.499	1.488	
C#148N	1.343			1.488	
C#147N			1.535	1.296	
C#147N	1.390			1.296	
TUR_01			1.399	1.287	1er ORDEN

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#156N	0.135	0.134	0.001
C#155N	0.179	0.181	-0.002
C#154N	0.370	0.369	0.001
C#153N	-0.470	-0.472	0.002
C#1N	-0.369	-0.370	0.001
C#152N	0.001	0.000	0.001
C#105H	-0.980	-0.982	0.002
C#151N	0.305	0.305	0.000
C#150N	-0.548	-0.549	0.001
C#149N	-0.035	-0.037	0.002
C#148N	0.022	0.021	0.001
C#147N	-0.195	-0.192	-0.003
TUR_01	-0.010	-0.009	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
3.023	3.022	0.001
3.202	3.203	-0.001
3.572	3.572	0.000
3.102	3.100	0.002
2.733	2.730	0.003
2.734	2.730	0.004
1.754	1.748	0.006
2.059	2.053	0.006
1.511	1.504	0.007
1.476	1.467	0.009
1.498	1.488	0.010
1.303	1.296	0.007
1.293	1.287	0.006

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: TURBO
FECHA LEVANTAMIENTO: 12/21-22/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS
COMISIÓN: N
AMARRE: **MOJON02**

NIVELACION			
EN	V (+)	V (-)	COTA
TUR_02	1.373		2.908
TUR_03		1.313	2.968
TUR_03	1.223		2.968
C#157N		1.200	2.991
C#157N	1.652		2.991
C#156N		1.574	3.069
C#156N	1.791		3.069
C#155N		1.612	3.248
C#155N	2.230		3.248
C#154N		1.817	3.661
C#154N	1.159		3.661
C#153N		1.705	3.115
C#153N	1.318		3.115
C#1N		1.457	2.976
C#1N	1.222		2.976
C#172N		1.751	2.447
C#172N	1.101		2.447
C#173N		1.940	1.608
C#173N	1.810		1.608
C#138N		1.521	1.897
C#138N	1.098		1.897
TUR_05		1.157	1.838
TUR_05	1.160		1.838
C#174N		1.379	1.619
C#174N	1.226		1.619
C#175N		1.880	0.965
C#175N	1.263		0.965
C#176N		1.682	0.546
C#176N	1.719		0.546
C#177N		1.518	0.747

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
TUR_02	1.369			2.908	1er ORDEN
TUR_03			1.308	2.969	2do ORDEN
TUR_03	1.222			2.969	
C#157N			1.201	2.990	
C#157N	1.670			2.990	
C#156N			1.589	3.071	
C#156N	1.803			3.071	
C#155N			1.625	3.249	
C#155N	2.234			3.249	
C#154N			1.820	3.663	
C#154N	1.125			3.663	
C#153N			1.672	3.116	
C#153N	1.324			3.116	
C#1N			1.462	2.978	
C#1N	1.238			2.978	
C#172N			1.766	2.450	
C#172N	1.110			2.450	
C#173N			1.950	1.610	
C#173N	1.813			1.610	
C#138N			1.524	1.899	
C#138N	1.105			1.899	
TUR_05			1.165	1.839	
TUR_05	1.169			1.839	
C#174N			1.387	1.621	
C#174N	1.225			1.621	
C#175N			1.878	0.968	
C#175N	1.270			0.968	
C#176N			1.690	0.548	
C#176N	1.722			0.548	
C#177N			1.520	0.750	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
TUR_03	0.060	0.061	-0.001
TUR_03			
C#157N	0.023	0.021	0.002
C#157N			
C#156N	0.078	0.081	-0.003
C#156N			
C#155N	0.179	0.178	0.001
C#155N			
C#154N	0.413	0.414	-0.001
C#154N			
C#153N	-0.546	-0.547	0.001
C#153N			
C#1N	-0.139	-0.138	-0.001
C#1N			
C#172N	-0.529	-0.528	-0.001
C#172N			
C#173N	-0.839	-0.840	0.001
C#173N			
C#138N	0.289	0.289	0.000
C#138N			
TUR_05	-0.059	-0.060	0.001
TUR_05			
C#174N	-0.219	-0.218	-0.001
C#174N			
C#175N	-0.654	-0.653	-0.001
C#175N			
C#176N	-0.419	-0.420	0.001
C#176N			
C#177N	0.201	0.202	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
2.968	2.969	-0.001
2.991	2.990	0.001
3.069	3.071	-0.002
3.248	3.249	-0.001
3.661	3.663	-0.002
3.115	3.116	-0.001
2.976	2.978	-0.002
2.447	2.450	-0.003
1.608	1.610	-0.002
1.897	1.899	-0.002
1.838	1.839	-0.001
1.619	1.621	-0.002
0.965	0.968	-0.003
0.546	0.548	-0.002
0.747	0.750	-0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#177N	1.593		0.747
TUR_12		1.258	1.082
TUR_12	1.279		1.082
C#177N		1.615	0.746
C#177N	1.470		0.746
C#176N		1.666	0.550
C#176N	1.700		0.550
C#175N		1.280	0.970
C#175N	2.028		0.970
C#174N		1.379	1.619
C#174N	1.523		1.619
C#138N		1.250	1.892
C#138N	1.300		1.892
C#178N		1.250	1.942
C#178N	1.672		1.942
C#179N		1.320	2.294
C#179N	1.950		2.294
C#180N		1.385	2.859
C#180N	1.475		2.859
C#181N		1.125	3.209
C#181N	1.837		3.209
C#182N		1.491	3.555
C#182N	1.769		3.555
C#183N		1.155	4.169
C#183N	0.715		4.169
C#184N		1.420	3.464
C#184N	1.300		3.464
C#157N		1.765	2.999
C#157N	1.310		2.999
TUR_02		1.390	2.919

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#177N	1.605			0.750	
TUR_12			1.269	1.086	
TUR_12	1.284			1.086	
C#177N			1.620	0.750	
C#177N	1.478			0.750	
C#176N			1.673	0.555	
C#176N	1.702			0.555	
C#175N			1.283	0.974	
C#175N	2.030			0.974	
C#174N			1.380	1.624	
C#174N	1.526			1.624	
C#138N			1.255	1.895	
C#138N	1.301			1.895	
C#178N			1.253	1.943	
C#178N	1.690			1.943	
C#179N			1.340	2.293	
C#179N	1.915			2.293	
C#180N			1.350	2.858	
C#180N	1.480			2.858	
C#181N			1.132	3.206	
C#181N	1.840			3.206	
C#182N			1.495	3.551	
C#182N	1.780			3.551	
C#183N			1.165	4.166	
C#183N	0.733			4.166	
C#184N			1.440	3.459	
C#184N	1.240			3.459	
C#157N			1.704	2.995	
C#157N	1.300			2.995	
TUR_02			1.381	2.914	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#177N			
TUR_12	0.335	0.336	-0.001
TUR_12			
C#177N	-0.336	-0.336	0.000
C#177N			
C#176N	-0.196	-0.195	-0.001
C#176N			
C#175N	0.420	0.419	0.001
C#175N			
C#174N	0.649	0.650	-0.001
C#174N			
C#138N	0.273	0.271	0.002
C#138N			
C#178N	0.050	0.048	0.002
C#178N			
C#179N	0.352	0.350	0.002
C#179N			
C#180N	0.565	0.565	0.000
C#180N			
C#181N	0.350	0.348	0.002
C#181N			
C#182N	0.346	0.345	0.001
C#182N			
C#183N	0.614	0.615	-0.001
C#183N			
C#184N	-0.705	-0.707	0.002
C#184N			
C#157N	-0.465	-0.464	-0.001
C#157N			
TUR_02	-0.080	-0.081	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
1.082	1.086	-0.004
0.746	0.750	-0.004
0.550	0.555	-0.005
0.970	0.974	-0.004
1.619	1.624	-0.005
1.892	1.895	-0.003
1.942	1.943	-0.001
2.294	2.293	0.001
2.859	2.858	0.001
3.209	3.206	0.003
3.555	3.551	0.004
4.169	4.166	0.003
3.464	3.459	0.005
2.999	2.995	0.004
2.919	2.914	0.005

ANEXO 7: Cálculos nivelación revisiones

Calle 48B No. 79-55. EDIFICIO CASA SIERRA. Local 101 PBX: (4) 4215441
E-MAIL: elber.hernandez@gmail.com
Medellín Colombia

APARTADÓ

Calle 48B No. 79-55. EDIFICIO CASA SIERRA. Local 101 PBX: (4) 4215441
E-MAIL: elber.hernandez@gmail.com
Medellín Colombia

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 26/11/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: Planta pressea

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
				APA_02	1.378			27.748								
				A1		3.450		25.676								
				A1		1.379		27.747								
				A2		3.427		25.699								
				A2		1.418		27.708								
				A3		3.393		25.733								
				A3		1.382		27.744								
				A4		1.733		27.393								
				5A		1.858		27.268								
				6A		1.861		27.265								
				7A		1.869		27.257								
				8A		1.693		27.433								
				C#445C	1.663			27.467								
				APA_07		1.477		27.653	NP							
				C#444C	1.547			28.148								
				9A		1.633		28.062								
				10A		2.100		27.595								

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 27/11/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: chequeos

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
				C#203E	1.936			29.867								
				002SC055		1.775		30.028								
				002SC300		1.845		29.958								
				002SC221		1.585		30.218								

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#201E	1.928			29.417	
002SC051		2.176		29.169	
C#204E	1.190			29.177	
002SC040		1.410		28.957	
002PC219		1.788		28.579	
C#149E	1.412			27.609	
002CC218		1.715		27.306	
002PC094		1.745		27.276	
002PC217		1.517		27.504	
002PC216		1.536		27.485	
C#149E	1.805			27.609	
002SC104		1.495		27.919	
C#197E	1.782			27.766	
002CC221		1.322		28.226	
C#25H	1.659			27.698	
003SC172		1.782		27.575	
003SC555		1.427		27.930	
C#101G	0.522			26.563	
APA001CO218		2.541		24.544	ARRIBA
APA001CO218		2.973		24.112	RASANTE
APA001CO218		4.003		23.082	BATEA
APA001CO216		3.047		24.038	ARRIBA
APA001CO216		3.814		23.271	RASANTE
APA001CO216		4.835		22.250	BATEA
APA001SC215		0.407		26.678	
C#103G	1.166			27.701	
APA001SC219		1.428		27.439	
APA001SC171		1.493		27.374	
C#104G	1.423			27.458	
APA001CC195		1.465		27.416	
C#11G	0.901			33.427	
APA001CO189		4.741		29.587	BATEA
APA001CO189		4.542		29.786	RASANTE
APA001CO189		3.241		31.087	ARRIBA

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 28/11/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: chequeos

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#102G	1.558			27.708	
001CC190		1.730		27.536	
C#95G	1.713			27.638	
APA001045		1.714		27.637	
APA001SC043		1.751		27.600	
APA001SC027		1.769		27.582	
C#95G	1.913			27.638	
APA001SC240		1.585		27.966	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 12/03/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: revisiones

NIVELACION			
EN	V (+)	V (-)	COTA
C#277C	1.918		28.098
C#271C		1.462	28.554
C#271C	1.220		28.554
C#272C		1.708	28.066
C#272C	1.219		28.066
C#273C		1.241	28.044

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#277C	1.846			28.098	
C#271C			1.388	28.556	
APA021CC046		1.643		28.301	
APA021CC049		1.570		28.374	
APA021CC024		1.607		28.337	
C#271C	1.214			28.556	
C#272C			1.702	28.068	
C#272C	1.742			28.068	
APA021CC280		1.675		28.135	
APA021CC040		1.573		28.237	
APA021CC043		1.593		28.217	
C#272C	1.238			28.068	
C#273C			1.261	28.045	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#271C	0.456	0.458	-0.002
C#272C	-0.488	-0.488	0.000
C#273C	-0.022	-0.023	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
28.554	28.556	-0.002
28.066	28.068	-0.002
28.044	28.045	-0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#273C	1.458		28.044
C#274C		1.589	27.913
C#274C	1.471		27.913
C#275C		1.539	27.845
C#275C	1.665		27.845
C#276C		1.408	28.102
C#276C	1.509		28.102
C#277C		1.502	28.109

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#273C	1.424			28.045	
C#274C			1.555	27.914	
C#274C	1.479			27.914	
C#275C			1.548	27.845	APA021CC078
APA021CC081		1.245		28.148	
C#275C	1.676			27.845	
C#276C			1.421	28.100	
C#276C	1.550			28.100	
APA021CC117		1.740		27.910	
APA021CC083		1.801		27.849	
C#276C	1.507			28.100	
C#277C			1.503	28.104	0.011
C#280C	1.606			27.551	
APA021CC106		1.567		27.590	
C#286C	1.543			27.353	APA021CC133
APA021CC129		1.656		27.240	
C#286C	1.855			27.353	
APA021CC139		1.480		27.728	
C#284C	1.365			27.586	
APA021CC165		1.588		27.363	
APA021CC154		1.182		27.769	
APA021CC168		1.750		27.201	C#285C
APA021CC172		1.433		27.518	
C#284C	1.872			27.586	
APA021CC141		1.459		27.999	
APA021CC145		1.628		27.830	
C#285C	1.778			27.199	
APA021CC177		1.491		27.486	
C#291C	1.344			26.993	
APA021CC220		1.438		26.899	
APA021CC222		1.004		27.333	
C#287C	1.681			27.425	APA021CC201
APA021CC205		1.744		27.362	
C#287C	1.692			27.425	
APA021CC194		1.340		27.777	
APA021CC192		1.549		27.568	
C#288C	0.878			27.256	
APA021SC230		1.239		26.895	
APA021PC228		1.178		26.956	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#274C	-0.131	-0.131	0.000
C#275C	-0.068	-0.069	0.001
C#276C	0.257	0.255	0.002
C#277C	0.007	0.004	0.003

DIFERENCIA COTA		
NIV	CONT	DIF
27.913	27.914	-0.001
27.845	27.845	0.000
28.102	28.100	0.002
28.109	28.104	0.005

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
APA021PC233		1.072		27.062	
APA060SC015		1.160		26.974	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 12/04/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: revisiones

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#52E	1.432			36.050	APA032SC020
APA032SC019		1.147		36.335	
APA032SC021		1.332		36.150	
C#216G	1.548			35.469	APA032SC027
APA032SC053		1.587		35.430	
APA032SC050		1.856		35.161	C#65H
APA032SC066		1.663		35.354	
APA032SC065		1.679		35.338	
C#77E	1.546			35.046	
APA014CC126		1.423		35.169	
C#45E	1.983			35.000	
APA032SC062		1.553		35.430	
APA032SC061		1.340		35.643	
APA032SC060		0.999		35.984	
C#45E	1.773			35.000	
APA032SC074		1.714		35.059	
APA032SC075		1.505		35.268	
APA032SC076		1.248		35.525	
C#68H	1.591			35.047	
APA014SC168		1.571		35.067	
APA014SC167		1.322		35.316	
C#90E	1.505			34.470	
APA014SC166		1.453		34.522	
C#15G	1.174			33.621	APA014CC201
APA014CC197		1.635		33.160	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
				APA011SC033		0.594		30.098								
				APA011CC061		1.764		28.928								
				APA011SC070		1.437		29.255								
				APA011SC068		1.400		29.292								
				C#09F	1.993			28.696								
				APA011SC031		1.059		29.630								
				C#324C	1.628			29.995								
				APA027SC623		1.458		30.165								
				APA027SC624		1.462		30.161								
				APA027SC627		1.109		30.514								
				C#323C	1.416			30.478								
				APA027SC626		1.807		30.087								

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 12/07/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: revisiones

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
				C#70F	1.547			26.156								
				APA004CC166		1.728		25.975								
				APA004CC162		1.548		26.155								
				C#65F	1.564			26.473								
				APA004CC190		1.769		26.268								
				APA004CC059		1.536		26.501								
				C#103I	1.229			28.273								
				APA002CC214		1.664		27.838								
				C#103I	1.222			28.273								
				APA004CC300		1.294		28.201								
				C#199E	1.449			27.617								
				APA002CC194		1.359		27.707								
				APA002CC158		1.522		27.544								
				C#196E	1.551			27.902								
				APA002PC135		1.595		27.858								

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
				APA002PC140		1.401		28.052								
				C#189E	1.203			27.521								
				APA002CC162		1.536		27.188								
				APA002CC160		1.548		27.176								
				APA001CC001		1.563		27.161								
				APA001CC002		1.593		27.131								
				APA002CC189		1.248		27.476								
				C#112I	1.528			26.721								
				APA001CC014		1.510		26.739								
				C#113I	1.701			27.030								
				APA001SC032		1.511		27.220								
				APA001CC034		1.505		27.226								
				APA001CC039		1.335		27.396								

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 12/09/2009
TOPOGRAFO: JOSE LUIS HERNANDEZ
COMISIÓN: C
AMARRE: revisiones

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
				C#115I	1.781			27.638								
				APA001CC055		1.421		27.998								
				C#206E	1.482			29.280								
				APA028SC013		1.447		29.315								
				APA002SC053		1.573		29.189								
				C#35H	2.772			26.963								
				APA003SC054		1.430		28.305								
				APA003SC034		1.637		28.098								
				C#35H	1.058			26.963								
				APA003SC052		1.566		26.455								
				APA003SC084		1.889		26.132								
				C#35H	2.838			26.963								
				APA003CC011		1.247		28.554								
				APA003CC006		1.285		28.516								

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#202E	1.625			29.954	
APA002CC011		1.493		30.086	
APA002CC007		1.487		30.092	
C#54N	1.437			28.637	
APA003CC104		1.590		28.484	
APA003CC108		1.819		28.255	
C#22H	0.311			27.738	
APA003SC125		2.208		25.841	C#23H
APA003SC126		2.376		25.673	
C#25H	1.519			27.698	
APA003CC159		1.756		27.461	
C#13F	1.721			29.350	
APA029SC018		2.029		29.042	
APA029SC017		1.799		29.272	
C#325C	1.025			29.979	
APA027CC594		1.334		29.670	
C#08F	1.760			27.735	
APA011SC071		1.774		27.721	
C#47I	1.276			27.982	
APA018CC025		1.351		27.907	C#44I
APA018CC028		1.551		27.707	C#45I

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 03/12/2009
TOPOGRAFO: ANGELA CARDONA
COMISIÓN: G
AMARRE: C# 37I

NIVELACION			
EN	V (+)	V (-)	COTA
C#37I	1.439		24.481
C#41I		1.369	24.551
C#41I	1.542		24.551
C#39I		1.526	24.567
C#39I	0.921		24.567
C#37I		0.988	24.500
			0.019
C#174E	1.259		24.843
C#175E		1.329	24.773
C#174E	1.505		24.843
C#177E		1.279	25.069
C#177E	1.206		25.069
C#176E		1.318	24.957
C#176E	1.024		24.957
C#174E		1.136	24.845
			0.002
C#185E	1.339		24.465
C#17H		0.994	24.810
C#17H	1.012		24.810
C#18H		1.428	24.394
C#18H	0.695		24.394
C#185E		0.642	24.447
			0.018
C#36F	1.272		27.064
C#41F		1.326	27.010
C#41F	1.319		27.010
C#47F		1.552	26.777

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#37I	1.449			24.481	
C#41I			1.379	24.551	APA022CC066
02SC070		1.347		24.583	
02CC052		1.258		24.672	
02SC100		1.226		24.704	
C#41I	1.525			24.551	
C#39I			1.509	24.567	
C#39I	0.909			24.567	
C#37I			0.979	24.497	
C#174E	1.244			24.843	
C#175E			1.313	24.774	
029SC063		1.139		24.948	
C#174E	1.501			24.843	
C#177E			1.275	25.069	
023SC038		1.334		25.010	
C#177E	1.243			25.069	
C#176E			1.352	24.960	
C#176E	1.049			24.960	
C#174E			1.163	24.846	
C#185E	1.335			24.465	
C#17H			0.988	24.812	
C#17H	0.996			24.812	
C#18H			1.412	24.396	MH
C#18H	0.709			24.396	
C#185E			0.654	24.451	
031SC021		0.545		24.560	
C#36F	1.271			27.064	
C#41F			1.325	27.010	APA007CC031
008CC003		1.465		26.870	
C#41F	1.326			27.010	
C#47F			1.559	26.777	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#41I	0.070	0.070	0.000
C#39I	0.016	0.016	0.000
C#37I	-0.067	-0.070	0.003
C#175E	-0.070	-0.069	-0.001
C#177E	0.226	0.226	0.000
C#176E	-0.112	-0.109	-0.003
C#174E	-0.112	-0.114	0.002
C#17H	0.345	0.347	-0.002
C#18H	-0.416	-0.416	0.000
C#185E	0.053	0.055	-0.002
C#41F	-0.054	-0.054	0.000
C#47F	-0.233	-0.233	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
24.551	24.551	0.000
24.567	24.567	0.000
24.500	24.497	0.003
24.843	24.843	0.000
24.773	24.774	-0.001
25.069	25.069	0.000
24.957	24.960	-0.003
24.845	24.846	-0.001
24.810	24.812	-0.002
24.394	24.396	-0.002
24.447	24.451	-0.004
27.010	27.010	0.000
26.777	26.777	0.000

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#47F	1.562		26.777
C#41F		1.325	27.014
C#41F	1.332		27.014
C#36F		1.279	27.067
			0.003

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#47F	1.569			26.777	
C#41F			1.333	27.013	
C#41F	1.336			27.013	
C#36F			1.283	27.066	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#41F	0.237	0.236	0.001
C#36F	0.053	0.053	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
27.014	27.013	0.001
27.067	27.066	0.001

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 04/12/2009
TOPOGRAFO: ANGELA CARDONA
COMISIÓN: G
AMARRE: C# 2H

NIVELACION			
EN	V (+)	V (-)	COTA
C#2H	1.245		26.563
C#9H		1.504	26.304
C#9H	1.629		26.304
C#8H		1.468	26.465
C#8H	1.769		26.465
C#10H		1.404	26.830
C#10H	1.132		26.830
C#9H		1.665	26.297
			-0.007

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#2H	1.246			26.563	
C#9H			1.506	26.303	
C#9H	1.245			26.303	
009CC155		1.159		26.389	
C#9H	1.321			26.303	
009CC147		1.619		26.005	
C#9H	1.631			26.303	
C#8H			1.467	26.467	
C#8H	1.770			26.467	
C#10H			1.402	26.835	
009CC076		1.606		26.631	
009CC200		1.739		26.498	
009SC072		1.639		26.598	
009CC079		1.425		26.812	
C#10H	1.136			26.835	
C#9H			1.667	26.304	
C#8H	1.674			26.467	
009SC053		1.400		26.741	
009SC051		1.409		26.732	
009CC056		1.403		26.738	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#9H	-0.259	-0.260	0.001
C#8H	0.161	0.164	-0.003
C#10H	0.365	0.368	-0.003
C#9H	-0.533	-0.531	-0.002

DIFERENCIA COTA		
NIV	CONT	DIF
26.304	26.303	0.001
26.465	26.467	-0.002
26.830	26.835	-0.005
26.297	26.304	-0.007

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 04/12/2009
TOPOGRAFO: ANGELA CARDONA
COMISIÓN: G
AMARRE: C# 40H

NIVELACION			
EN	V (+)	V (-)	COTA
C#40H	2.070		24.847
C#41H		0.959	25.958
C#41H	0.821		25.958
C#42H		1.351	25.428
C#42H	1.121		25.428
C#43H		1.002	25.547
C#43H	1.319		25.547
C#245G		1.423	25.443
C#245G	1.360		25.443
C#40H		1.936	24.867
			0.020
C#40H	1.484		24.867
C#44H		1.538	24.813

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#40H	2.072			24.847	
C#41H			0.958	25.961	
006CC071		1.479		25.440	
006CC063		1.342		25.577	
C#41H	1.085			25.961	
006CC057		1.281		25.765	
006CC059		1.365		25.681	
C#41H	0.819			25.961	-0.002
C#42H			1.350	25.430	-0.001
C#42H	1.111			25.430	
C#43H			0.992	25.549	
C#43H	1.325			25.549	
C#245G			1.428	25.446	
CC115		1.294		25.580	
CC037		1.431		25.443	
C#245G	1.367			25.446	
C#40H			1.943	24.870	0.023
006CC114		1.649		25.164	
C#41H	1.705			25.961	
006CC069		1.619		26.047	
C#40H	1.221			24.847	
006CC026		1.689		24.379	
C#40H	1.485			24.847	
C#44H			1.539	24.793	
C#44H	1.129			24.793	
006SC011		1.970		23.952	
006SC014		1.548		24.374	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#41H	1.111	1.114	-0.003
C#42H	-0.530	-0.531	0.001
C#43H	0.119	0.119	0.000
C#245G	-0.104	-0.103	-0.001
C#40H	-0.576	-0.576	0.000
C#44H	-0.054	-0.054	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
25.958	25.961	-0.003
25.428	25.430	-0.002
25.547	25.549	-0.002
25.443	25.446	-0.003
24.867	24.870	-0.003
24.813	24.793	0.020

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR:	**APARTADO**
FECHA LEVANTAMIENTO:	**05/12/2009**
TOPOGRAFO:	**ANGELA CARDONA**
COMISIÓN:	**G**
AMARRE:	**C# 73I**

NIVELACION			
EN	**V (+)**	**V (-)**	**COTA**
C#73I	1.255		25.408
C#83F		1.479	25.184
C#83F	1.566		25.184
C#72I		1.827	24.923
C#72I	1.959		24.923
C#73I		1.474	25.408
			0.000
C#71F	1.912		25.920
C#74F		1.395	26.437
C#74F	2.031		26.437
C#75F		1.577	26.891
C#75F	1.424		26.891
C#70F		1.673	26.642
C#70F	1.083		26.642
C#71F		1.787	25.938
			0.018

CONTRANIVELACION					
EN	**V (+)**	**V (I)**	**V (-)**	**COTA**	**OBSERVACION**
C#73I	1.249			25.408	
C#83F			1.475	25.182	
005CC035		1.962		24.695	
005CC042		1.755		24.902	
005CC050		1.388		25.269	
005CC057		1.559		25.098	
C#83F	1.565			25.182	
C#72I			1.829	24.918	
C#72I	1.959			24.918	
C#73I			1.466	25.411	
C#72I	1.845			24.918	
004CC082		1.921		24.842	
C#71F	1.919			25.920	
C#74F			1.402	26.437	
004CC166		1.965		25.874	
C#74F	2.037			26.437	
C#75F			1.580	26.894	
004SC063		2.225		26.249	
C#75F	1.421			26.894	
C#70F			1.667	26.648	MH
C#75F	1.616			26.894	
004PC066		2.981		25.529	
C#70F	1.821			26.648	
004CC190		1.719		26.750	
C#70F	1.080			26.648	
C#71F			1.786	25.942	0.022
004CC162		1.369		26.359	

DIFERENCIA VISTA			
EN	**NIV**	**CONT**	**DIF**
C#83F	-0.224	-0.226	0.002
C#72I	-0.261	-0.264	0.003
C#73I	0.485	0.493	-0.008
C#74F	0.517	0.517	0.000
C#75F	0.454	0.457	-0.003
C#70F	-0.249	-0.246	-0.003
C#71F	-0.704	-0.706	0.002

DIFERENCIA COTA		
NIV	**CONT**	**DIF**
25.184	25.182	0.002
24.923	24.918	0.005
25.408	25.411	-0.003
26.437	26.437	0.000
26.891	26.894	-0.003
26.642	26.648	-0.006
25.938	25.942	-0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR:	**APARTADO**
FECHA LEVANTAMIENTO:	**10/12/2009**
TOPOGRAFO:	**ANGELA CARDONA**
COMISIÓN:	**G**
AMARRE:	**C# 65I**

NIVELACION			
EN	**V (+)**	**V (-)**	**COTA**
C#65I	1.789		26.024
C#62I		1.146	26.667
C#62I	1.433		26.667
C#61I		1.405	26.695
C#61I	1.371		26.695
C#62I		1.399	26.667
C#62I	1.279		26.667
C#65I		1.941	26.005
			-0.019
C#80F	1.547		25.407
C#79F		1.294	25.660
C#79F	1.286		25.660
C#80F		1.546	25.400
			-0.007
C#109G	1.515		27.733
C#246G		1.038	28.210
C#246G	1.345		28.210
C#106G		1.121	28.434
C#106G	0.901		28.434
C#246G		1.109	28.226

CONTRANIVELACION					
EN	**V (+)**	**V (I)**	**V (-)**	**COTA**	**OBSERVACION**
C#65I	1.768			26.024	
C#62I			1.126	26.666	
APA005CC136		1.774		26.018	
APA005CC147		1.039		26.753	
C#62I	1.429			26.666	
C#61I			1.401	26.694	
APA005CC183		1.524		26.571	
C#61I	1.265			26.694	
APA005SC093		1.736		26.223	
APA005SC094		1.946		26.013	
C#61I	1.379			26.694	
C#62I			1.404	26.669	
C#62I	1.280			26.669	
C#65I			1.939	26.010	
C#80F	1.545			25.407	
C#79F			1.289	25.663	
C#79F	1.285			25.663	
C#80F			1.548	25.400	
C#79F	1.179			25.663	
PC063		1.376		25.466	
C#109G	1.513			27.733	
C#246G			1.039	28.207	
APA001CC083		1.503		27.743	
APA001CC078		1.225		28.021	
APA001CC101		1.361		27.885	
C#246G	1.348			28.207	
C#106G			1.125	28.430	
APA001CC105		1.245		28.310	
C#106G	0.900			28.430	
C#246G			1.106	28.224	

DIFERENCIA VISTA			
EN	**NIV**	**CONT**	**DIF**
C#62I	0.643	0.642	0.001
C#61I	0.028	0.028	0.000
C#62I	-0.028	-0.025	-0.003
C#65I	-0.662	-0.659	-0.003
C#79F	0.253	0.256	-0.003
C#80F	-0.260	-0.263	0.003
C#246G	0.477	0.474	0.003
C#106G	0.224	0.223	0.001
C#246G			

DIFERENCIA COTA		
NIV	**CONT**	**DIF**
26.667	26.666	0.001
26.695	26.694	0.001
26.667	26.669	-0.002
26.005	26.010	-0.005
25.660	25.663	-0.003
25.400	25.400	0.000
28.210	28.207	0.003
28.434	28.430	0.004

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#246G	1.045		28.226
C#109G		1.522	27.749
			0.016
C#110G	1.317		28.272
C#104G		1.202	28.387
C#104G	1.145		28.387
C#111G		1.127	28.405
C#111G	1.089		28.405
C#110G		1.211	28.283
			0.011
C#97G	1.219		28.338
C#98G		1.349	28.208
C#79G	1.364		28.082
C#48N		1.308	28.138
C#48N	1.282		28.138
C#79G		1.338	28.082
			0.000

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#246G	1.032			28.224	
C#109G			1.508	27.748	
C#110G	1.315			28.272	
C#104G			1.201	28.386	
APA001CC175		1.459		28.128	
APA001CC172		1.519		28.068	
APA001CC166		1.320		28.267	
C#104G	1.143			28.386	
C#111G			1.128	28.401	
APA001SC191		1.348		28.181	
APA001SC186		1.208		28.321	
APA001CC187		1.106		28.423	
APA005SC175		0.956		28.573	
APA005SC176		0.399		29.130	
C#111G	1.087			28.401	
C#110G			1.209	28.279	
C#97G	1.229			28.338	
C#98G			1.361	28.206	
APA001CC152		1.337		28.230	
APA001CC155		1.702		27.865	
APA001CC217		3.425		26.142	
C#79G	1.366			28.082	
C#48N			1.309	28.139	
APA010CC014		1.408		28.040	
APA010CC011		1.384		28.064	
C#48N	1.280			28.139	
C#79G			1.335	28.084	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#109G	-0.477	-0.476	-0.001
C#104G	0.115	0.114	0.001
C#111G	0.018	0.015	0.003
C#110G	-0.122	-0.122	0.000
C#97G			
C#98G	-0.130	-0.132	0.002
C#48N	0.056	0.057	-0.001
C#79G	-0.056	-0.055	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
27.749	27.748	0.001
28.387	28.386	0.001
28.405	28.401	0.004
28.283	28.279	0.004
28.208	28.206	0.002
28.138	28.139	-0.001
28.082	28.084	-0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 24/12/2009
TOPOGRAFO: ANGELA CARDONA
COMISIÓN: G
AMARRE: C# 14H

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#14H	1.483			25.671	
APA009PC015		1.572		25.582	
APA009PC021		1		25.722	
APA009PC022		1.449		25.705	
C#72F	1.455			25.755	
APA004CC077		1.479		25.731	
C#246G	1.314			28.224	
APA001CC073		1.261		28.277	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 03/12/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS MOSQUERA
COMISIÓN: N
AMARRE: C#88G

NIVELACION			
EN	V (+)	V (-)	COTA
C#88G	1.585		27.399
C#78G		1.370	27.614
C#78G	1.465		27.613
C#127N		1.497	27.581
C#127N	1.692		27.581
C#161E		1.733	27.540
C#161E	1.292		27.540
C#128N		1.824	27.008
C#128N	1.838		27.008
C#88G		1.458	27.388
C#150E	1.200		28.052
C#149E		1.670	27.582
C#149E	1.475		27.582
C#144E		2.000	27.057
C#144E	1.760		27.057

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#88G	1.586			27.399	
C#78G			1.372	27.613	
C#78G	1.408			27.613	
APA010CC130		1.545		27.476	
APA010CC138		1.634		27.387	
APA010SC133		1.116		27.905	
APA010SC135		1.422		27.599	
C#78G	1.470			27.613	
C#127N			1.500	27.583	
APA010SC116		1.570		27.513	
APA010CC088		1.528		27.555	
APA010CC070		1.532		27.551	
APA010CC069		1.533		27.550	
C#127N	1.670			27.583	
C#161E			1.710	27.543	
C#161E	1.300			27.543	
C#128N			1.832	27.011	
C#128N	1.440			27.011	
APA027SC026		1.448		27.003	
APA027SC027		1.505		26.946	
APA027SC028		1.776		26.675	
C#128N	1.840			27.011	
C#88G			1.460	27.391	
C#150E	1.198			28.052	
C#149E			1.667	27.583	SC047
APA027SC048		1.500		27.750	
APA027SC049		1.290		27.960	
C#149E	1.480			27.583	
C#144E			2.004	27.059	SC043
APA027SC054		1.472		27.591	
APA027SC038		1.908		27.155	
C#144E	1.765			27.059	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#78G	0.215	0.214	0.001
C#127N	-0.032	-0.030	-0.002
C#161E	-0.041	-0.040	-0.001
C#128N	-0.532	-0.532	0.000
C#88G	0.380	0.380	0.000
C#149E	-0.470	-0.469	-0.001
C#144E	-0.525	-0.524	-0.001

DIFERENCIA COTA		
NIV	CONT	DIF
27.614	27.613	0.001
27.581	27.583	-0.002
27.540	27.543	-0.003
27.008	27.011	-0.003
27.388	27.391	-0.003
27.582	27.583	-0.001
27.057	27.059	-0.002

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#129N		1.516	27.301
C#129N	1.920		27.301
C#150E		1.189	28.032
C#80G	1.372		28.244
C#65N		1.318	28.298
C#65N	1.358		28.298
C#130N		1.793	27.863
C#130N	1.835		27.863
C#80G		1.433	28.265

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#129N			1.521	27.303	SC016
APA027SC042		1.657		27.167	
C#129N	1.922			27.303	
C#150E			1.190	28.035	
C#80G	1.360			28.244	
C#65N			1.307	28.297	SC016
C#65N	1.523			28.297	
APA010CC011		1.749		28.071	
C#65N	1.380			28.297	
C#130N			1.816	27.861	CC075
C#130N	1.918			27.861	
APA009CC083		2.278		27.501	
APA009CC078		2.390		27.389	
APA009CC079		3.010		26.769	
C#130N	1.830			27.861	
C#80G			1.429	28.262	
APA010CC051		1.319		28.372	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#129N	0.244	0.244	0.000
C#150E	0.731	0.732	-0.001
C#65N	0.054	0.053	0.001
C#130N	-0.435	-0.436	0.001
C#80G	0.402	0.401	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
27.301	27.303	-0.002
28.032	28.035	-0.003
28.298	28.297	0.001
27.863	27.861	0.002
28.265	28.262	0.003

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 05/12/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS MOSQUERA
COMISIÓN: **N**
AMARRE: **C#142E**

NIVELACION			
EN	V (+)	V (-)	COTA
C#142E	0.927		27.524
C#131N		0.902	27.549
C#142E	1.637		27.524
C#140E		1.603	27.558
C#140E	1.541		27.558

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#142E	0.900			27.524	
C#131N			0.875	27.549	SC077
APA027SC075		0.850		27.574	
APA027SC073		1.386		27.038	
C#142E	1.639			27.524	
C#140E			1.606	27.557	
APA027SC081		1.659		27.504	
APA027SC069		1.590		27.573	
C#140E	1.550			27.557	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#131N	0.025	0.025	0.000
C#140E	0.034	0.033	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
27.549	27.549	0.000
27.558	27.557	0.001

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#132N		1.334	27.765
C#132N	1.534		27.765
C#131N		1.758	27.541
			0.017
C#32G	1.724		26.763
C#133N		1.225	27.262
C#133N	1.303		27.262
C#35G		1.391	27.174
C#35G	1.683		27.174
C#44G		1.355	27.502
C#44G	1.360		27.502
C#45G		1.419	27.443
C#45G	1.433		27.443
C#35G		1.655	
C#35G	1.130		27.174
C#32G		1.550	26.754
C#36G	0.823		27.853
C#27G		2.170	26.506
C#36G	1.055		27.853
C#37G		1.410	27.498
C#37G	1.422		27.498
C#36G		1.064	27.856
C#51G	1.236		28.808
C#53G		1.029	29.015

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
C#132N			1.345	27.762	SC101
C#132N	1.558			27.762	
C#131N			1.783	27.537	
C#132N	0.663			27.762	
APA027SC102		0.959		27.466	
C#32G	1.710			26.763	SC113
C#133N			1.210	27.263	
APA027SC114		1.566		26.907	
C#133N	1.271			27.263	
C#35G			1.401	27.133	
C#35G	1.693			27.133	
C#44G			1.365	27.461	
APA027SC1033		1.475		27.351	
APA027SC1034		1.231		27.595	
C#44G	1.358			27.461	
C#45G			1.416	27.403	SC1029
APA027SC1031		1.358		27.461	
C#45G	1.496			27.403	
APA027SC1032		1.402		27.497	
C#45G	1.432			27.403	
C#35G			1.653	27.182	
C#35G	1.140			27.182	
C#32G			1.559	26.763	
				0.000	
C#36G	0.819			27.853	
C#27G			2.168	26.504	
APA027SC1039		1.362		27.310	
APA027SC119		1.943		26.729	
C#36G	1.054			27.853	
C#37G			1.409	27.498	
APA027SC1040		1.617		27.290	
APA027SC121		1.854		27.053	
APA027SC124		1.785		27.122	
C#37G	1.425			27.498	
C#36G			1.068	27.855	
C#51G	1.247			28.808	
C#53G			1.040	29.015	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#132N	0.207	0.205	0.002
C#131N	-0.224	-0.225	0.001
C#133N	0.499	0.500	-0.001
C#35G	-0.088	-0.130	0.042
C#44G	0.328	0.328	0.000
C#45G	-0.059	-0.058	-0.001
C#35G	-0.222	-0.221	-0.001
C#32G	-0.420	-0.419	-0.001
C#27G	-1.347	-1.349	0.002
C#37G	-0.355	-0.355	0.000
C#36G	0.358	0.357	0.001
C#53G	0.207	0.207	0.000

DIFERENCIA COTA		
NIV	CONT	DIF
27.765	27.762	0.003
27.541	27.537	0.004
27.262	27.263	-0.001
26.724	26.728	-0.004
27.052	27.056	-0.004
26.993	26.998	-0.005
26.771	26.777	-0.006
26.351	26.358	-0.007
26.506	26.504	0.002
27.498	27.498	0.000
27.856	27.855	0.001
29.015	29.015	0.000

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA
C#53G	1.418		29.015
C#52G		1.459	28.974
C#52G	1.306		28.974
C#51G		1.474	28.806
			0.002
C#59G	0.879		29.769
C#60G		1.899	28.749
C#60G	1.652		28.750
C#43N		1.945	28.457
C#43N	1.920		28.457
C#59G		0.618	29.759
			0.011
C#325C	1.432		29.979
C#20F		1.659	29.752
C#20F	1.613		29.752
C#23F		1.846	29.519
C#23F	1.946		29.519
C#325C		1.504	29.961

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
APA027SC1010		1.278		28.777	
APA027SC1006		0.958		29.097	
APA027SC1047		0.813		29.242	
C#53G	1.426			29.015	
C#52G			1.466	28.975	SC1009
C#53G	0.770			29.015	
APA027SC308		1.550		28.235	
APA027SC307		1.361		28.424	
C#52G	1.309			28.975	
C#51G			1.478	28.806	
C#59G	0.882			29.769	
C#60G			1.901	28.750	
APA027SC539		1.432		29.219	
APA027SC1001		1.599		29.052	
APA027SC538		1.878		28.773	
C#60G	1.616			28.750	
APA027SC547		1.633		28.733	
APA027SC546		1.697		28.669	
C#60G	1.657			28.750	
C#43N			1.950	28.457	
C#43N	1.917			28.457	
C#59G			0.615	29.759	
APA027SC569		1.377		28.997	
APA027SC570		1.379		28.995	
C#328C	1.328			29.383	
APA027SC556		1.340		29.371	
APA027SC604		1.296		29.415	
C#325C	1.436			29.979	
C#20F			1.664	29.751	APA029CC033
APA027CC594		1.739		29.676	
APA027SC597		2.150		29.265	
C#20F	1.616			29.751	
C#23F			1.850	29.517	APA029CC038
C#23F	1.948			29.517	
C#325C			1.507	29.958	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF
C#52G	-0.041	-0.040	-0.001
C#51G	-0.168	-0.169	0.001
C#60G	-1.020	-1.019	-0.001
C#43N	-0.293	-0.293	0.000
C#59G	1.302	1.302	0.000
C#20F	-0.227	-0.228	0.001
C#23F	-0.233	-0.234	0.001
C#325C	0.442	0.441	0.001

DIFERENCIA COTA		
NIV	CONT	DIF
28.974	28.975	-0.001
28.806	28.806	0.000
28.749	28.750	-0.001
28.457	28.457	0.000
29.759	29.759	0.000
29.752	29.751	0.001
29.519	29.517	0.002
29.961	29.958	0.003

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

LUGAR: APARTADO
FECHA LEVANTAMIENTO: 10/12/2009
TOPOGRAFO: JOVANNY ANDRES ROVIRAS MOSQUERA
COMISIÓN: **N**
AMARRE: **C#334C**

NIVELACION				CONTRANIVELACION						DIFERENCIA VISTA				DIFERENCIA COTA		
EN	V (+)	V (-)	COTA	EN	V (+)	V (I)	V (-)	COTA	OBSERVACION	EN	NIV	CONT	DIF	NIV	CONT	DIF
				C#334C	1.211			29.015	APA027CC702							
				APA027SC705		1.574		28.652								
C#342C	0.980		28.405	**C#342C**	1.056			28.405	APA027SC761							
C#134N		0.927	28.458	**C#134N**			1.005	28.456	APA027SC528	**C#134N**	0.053	0.051	0.002	28.458	28.456	0.002
				APA027SC525		1.236		28.225								
C#134N	1.620		28.458	**C#134N**	1.623			28.456								
C#342C		1.666	28.412	**C#342C**			1.670	28.409		**C#342C**	-0.046	-0.047	0.001	28.412	28.409	0.003
			0.007													
				C#73G	1.305			28.304								
				APA010CC051		1.565		28.044								
				C#74G	1.305			28.638								
				APA010CC201		1.473		28.470								
				APA010CC202		1.509		28.434								
C#50N	1.319		28.590	**C#50N**	1.328			28.590								
C#135N		1.122	28.787	**C#135N**			1.129	28.789		**C#135N**	0.197	0.199	-0.002	28.787	28.789	-0.002
				APA010CC032		1.570		28.348								
				APA010CC033		1.823		28.095								
C#135N	1.188		28.787	**C#135N**	1.178			28.789								
C#136N		1.189	28.786	**C#136N**			1.179	28.788		**C#136N**	-0.001	-0.001	0.000	28.786	28.788	-0.002
				APA029SC076		1.445		28.522								
				APA029SC075		1.526		28.441								
C#136N	1.395		28.786	**C#136N**	1.406			28.788								
C#50N		1.583	28.598	**C#50N**			1.594	28.600		**C#50N**	-0.188	-0.188	0.000	28.598	28.600	-0.002
			0.008													
				C#99G	1.783			28.066	APA001CC145							
				APA001CC228		1.626		28.223								
				APA001CC144		1.385		28.464								
				APA001CC139		1.425		28.424								
				APA003CC162		1.533		28.316								
C#309C	1.222		25.525	**C#309C**	1.181			25.525								
C#137N		1.818	24.929	**C#137N**			1.777	24.929		**C#137N**	-0.596	-0.596	0.000	24.929	24.929	0.000
				C#137N	1.720			24.929								

AGUA URBANA DE URABA
INGENIERÍA CIVIL & AMBIENTAL

NIVELACION			
EN	V (+)	V (-)	COTA

CONTRANIVELACION					
EN	V (+)	V (I)	V (-)	COTA	OBSERVACION
APA027SC589		1.362		25.287	
C#322C	1.431			30.088	
APA027SC626		1.415		30.104	

DIFERENCIA VISTA			
EN	NIV	CONT	DIF

DIFERENCIA COTA		
NIV	CONT	DIF

TURBO

Calle 48B No. 79-55. EDIFICIO CASA SIERRA. Local 101 PBX: (4) 4215441
E-MAIL: elber.hernandez@gmail.com
Medellín Colombia