



**FOTO-SERIE 3.** Descenso por la pared del farallón donde ubica la entrada horizontal a Cueva Naranjo; 2<sup>da</sup> Fase del estudio espeleológico.

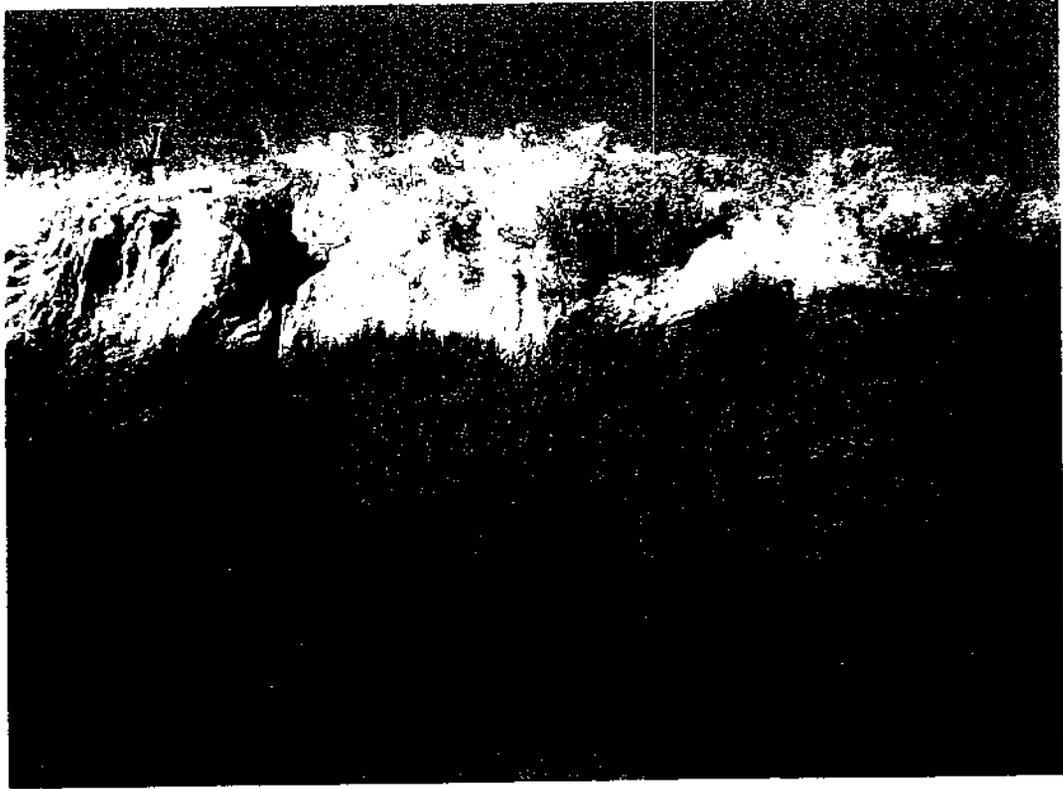
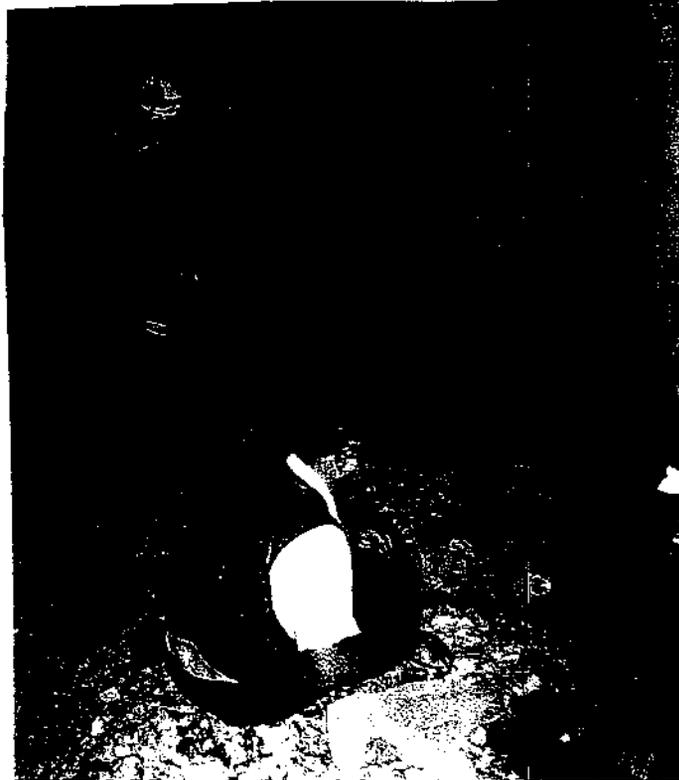


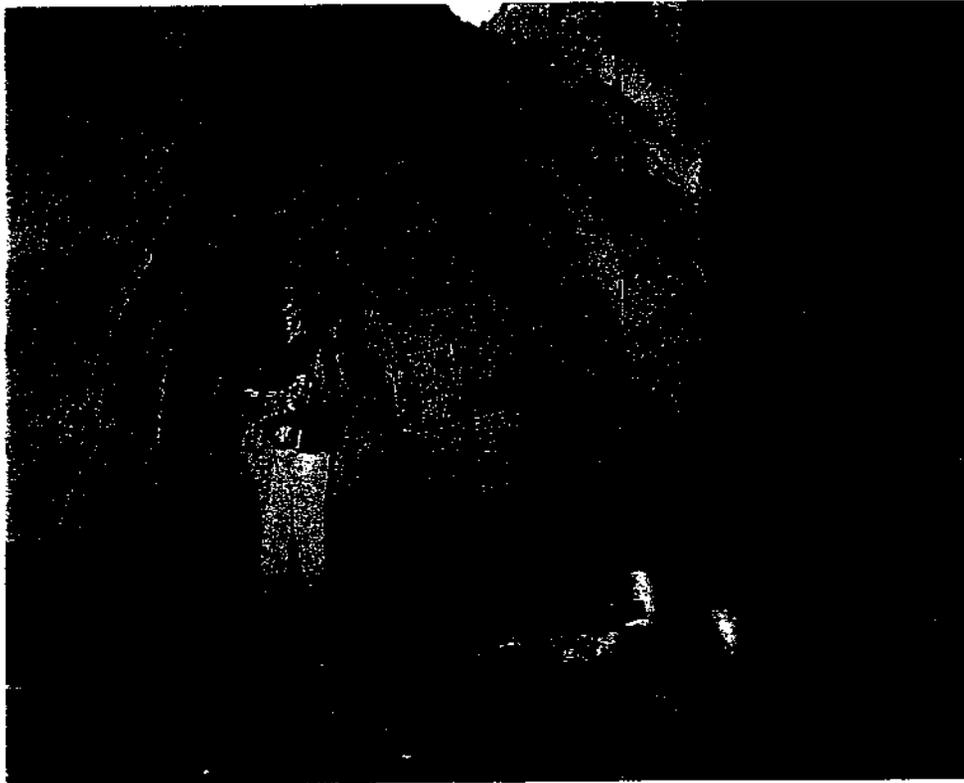
FOTO-SERIE 1-2. Foto superior: Vista de la pared del farallón donde ubica la entrada principal de Cueva Naranjo, bajo árbol que sobresale a la izq. Foto inferior: Entrada principal de Cueva Naranjo. Nótese elongamiento vertical.



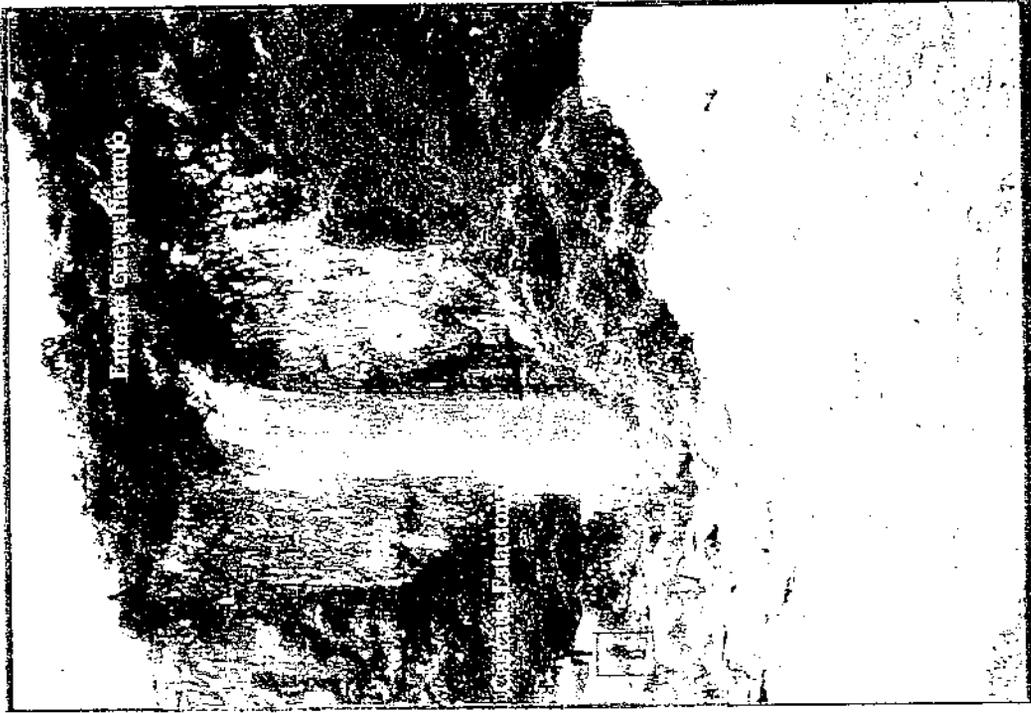
**FOTO-SERIE 5-6.** Foto Superior: Vista de la entrada secundaria en área de Estación 4. Foto Inferior: Entrada principal de Cueva Naranja. Nótese la columna central y la pedrería del suelo.



FOTO-SERIE 7-8. Foto Superior: Trabajos de agrimensura en área de E-5, gradiente arriba pasada la gatera, inicio de la Gran Vía. Foto Inferior: Detalle del material transportado por la escorrentia, área del E-6, la Gran Vía.



**FOTO-SERIE 9-10.** Foto Superior: Montículo de sedimento en E-6, la Gran Vía. Nótese coloración de la Caliza Cuevas. Foto Inferior: Depresión en área de confluencia del pasaje principal y el lateral, área de E-10. Nótese las marcas del nivel del agua.



**FOTO-SERIE 4.** Cascada estacional producto del drenaje subterráneo de Cueva Naranjo. La escorrentía drena a la Quebrada Guanábano, localizada adyacente a los predios de la Cantera Naranjo.



**FOTO-SERIE 11.** Trabajos de agrimensura en área de la Gran Vía, entre E-6 y E-8. Nótese el material de suelo y la amplitud de la galería.

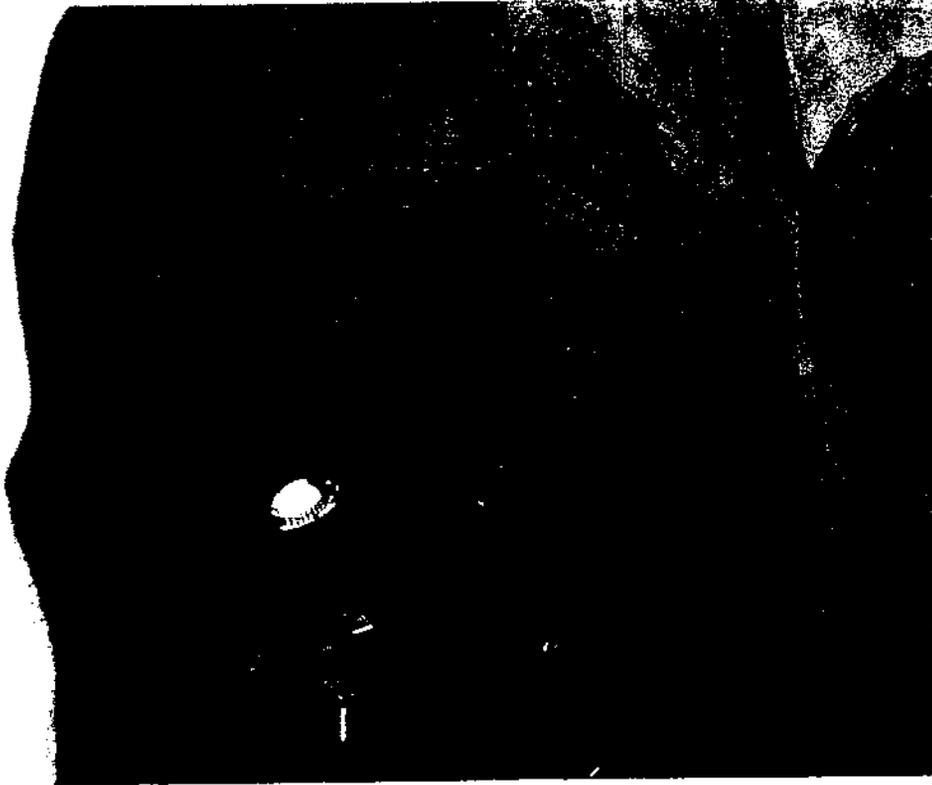
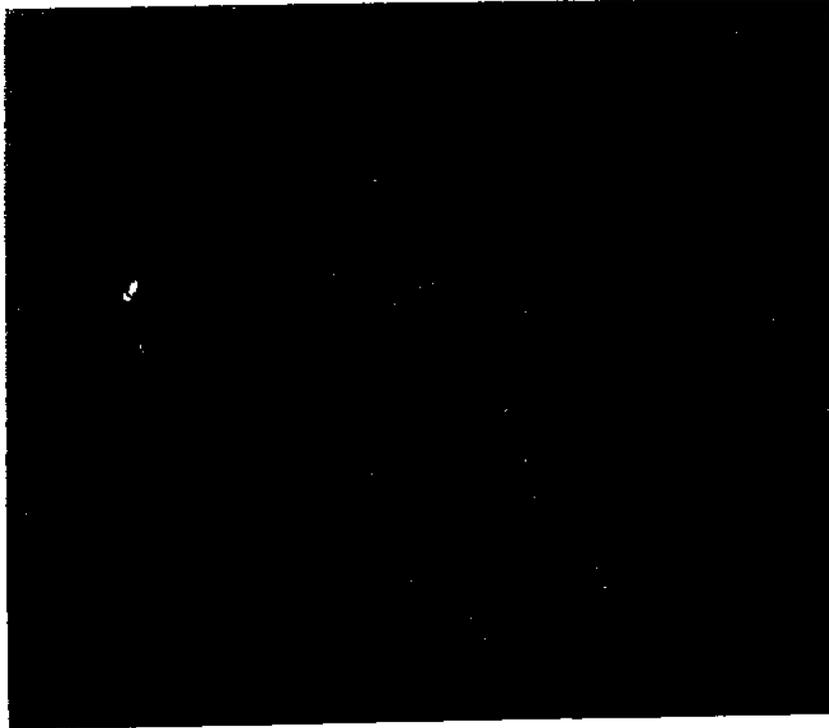


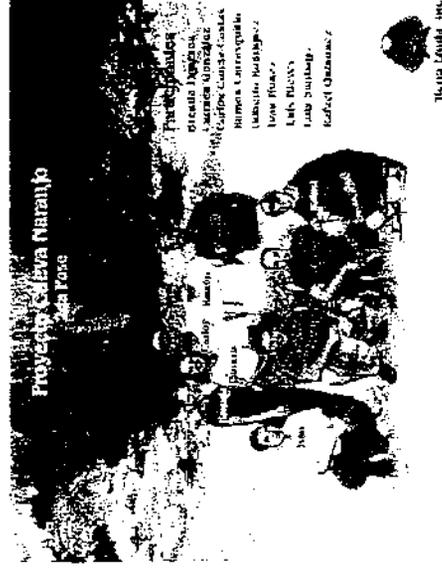
FOTO-SERIE 12. Trabajos de agrimensura entre E-37 y E-40, galería entre la depresión y el inicio del tramo de pendientes pronunciadas del pasaje principal.



**FOTO-SERIE 13-14.** Foto Superior: Detalle del tramo de pendientes abruptas del pasaje principal. Nótese la textura de la roca. Foto Inferior: Tramo entre E-39 y E-41. Nótese el cuerpo de agua y los bloques de colapso.



FOTO-SERIE 17. A: Escalada de la Cascada Menor. B-D: Trabajos de agrimensura entre la Cascada Menor y el Salón de la Charca, Pasaje Principal.



Tejeda Unidad, 1984.

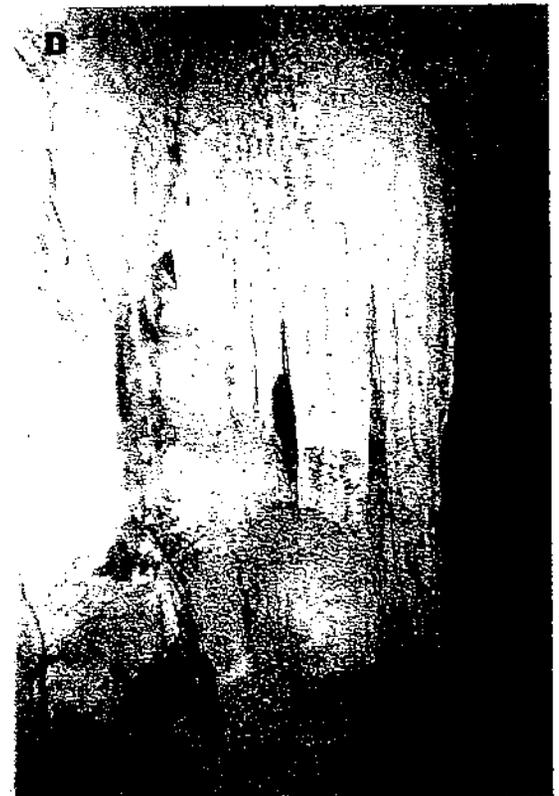
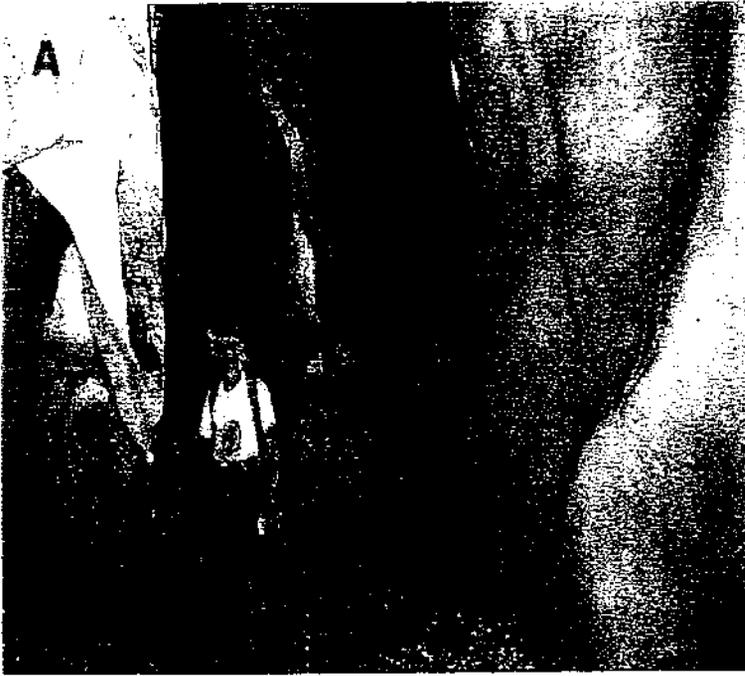
**FOTO-SERIE 18.** Entrada al conducto principal de drenaje del sumidero localizado abajo del punto de flexión del camino que discurre al norte de los predios de la Cantera Naranjo (ver Figura 2). Se entiende que este sumidero constituye el punto de recarga primario a través del cual penetra rápidamente a la Cueva Naranjo el mayor caudal de la escorrentía superficial.



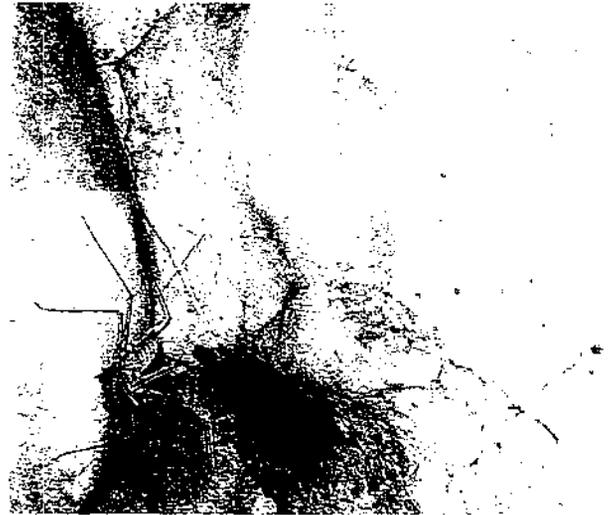
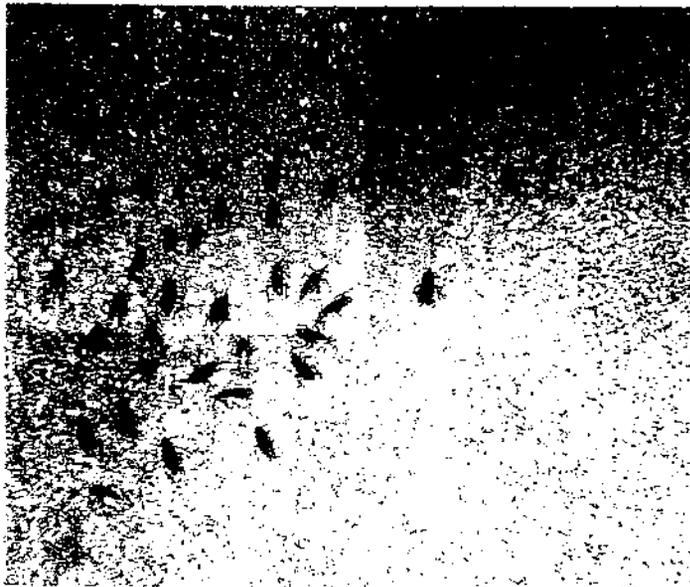
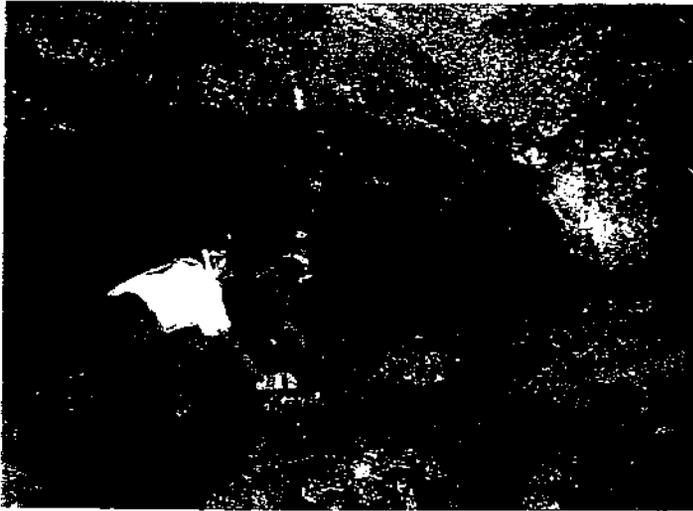
**FOTO-SERIE 19.** Descenso por la entrada vertical la Chimenea, localizada a pocos metros al Oeste del sumidero de drenaje primario. Se entiende que el drenaje del sumidero descarga en esta entrada como parte de su ruta hacia el pasaje principal de Cueva Naranjo.



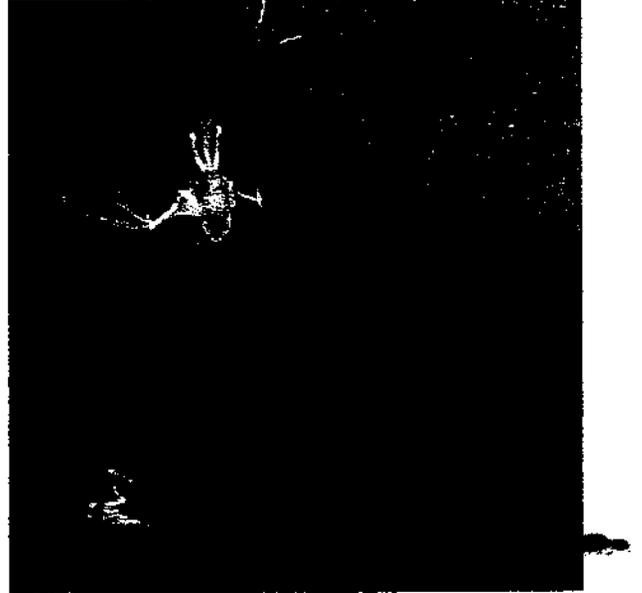
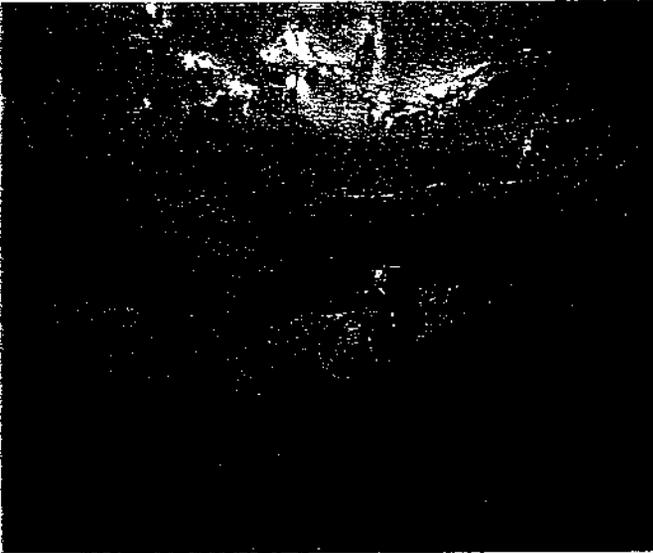
**FOTO-SERIE 20.** Trabajos de documentación y agrimensura del tramo entre la entrada vertical y la Cascada Mayor (nivel superior del Pasaje Principal). A: Área de Estación 82. B: Vista de la cámara terminal de la Galería de la Gatera. Es probable que las aguas que drenan por la misma afloren al Tributario Dorado. C. Localización de E-83. D. Área superior de Cascada Mayor, E-75.



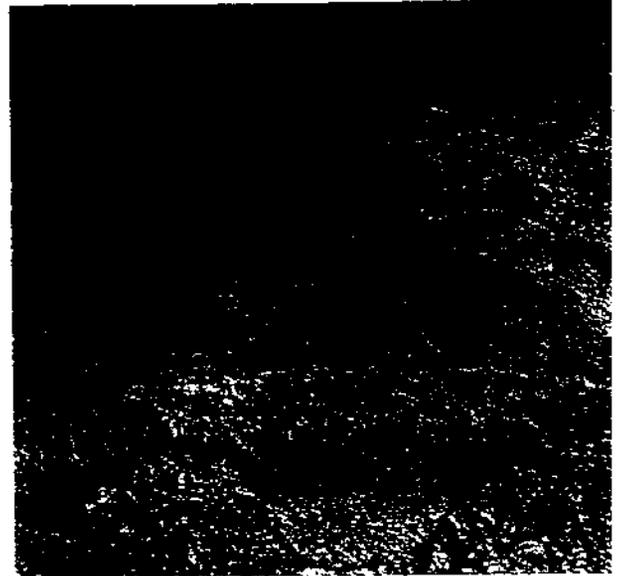
**FOTO-SERIE 21.** Visuales del tramo entre la Cascada Mayor y la entrada vertical (La Chimenea).  
A: Vista del área de la Estación 79. B: Colgaduras de calcita (Estación 85). C: Piscinas en pared (E-83). D: Columna de piedra colada en galería cerca de E-84.



**FOTO-SERIE 21.** A: Inicio de la gatera del Pasaje Lateral (Estación 16). B: Monitoreo ambiental del Salón de la Charca (Estación 74-75). C: Individuos de la cucaracha común (*Periplaneta americana*), muy abundantes entre la Estación 78 y 82 del nivel superior del Pasaje Principal. D: Individuo del guabá (*Phrynus longipes*) en área de E-76. El mismo fue observado alimentándose de los restos, aún frescos, de un murciélago bigotudo mayor.



**FOTO-SERIE 23.** A-B: Boa de Puerto Rico (*Epicrates inornatus*) en área de Estación 82. C-D: Colonia del murciélago barbicacho (*Mormoops blainvillii*) en el Salón del Guano, Pasaje Lateral (Estaciones 28 a 31).



**FOTO-SERIE 24.** Fauna cavernícola. De izq. a derecha comenzando en foto superior: Murciélago barbicacho (*M. blainvilli*) y murciélago bigotudo mayor (*P. quadridens*); Grillo de cuevas (*A. annulipes*); Guabá (*P. longipes*); Bruquena juvenil (*E. sinuatifrons*).

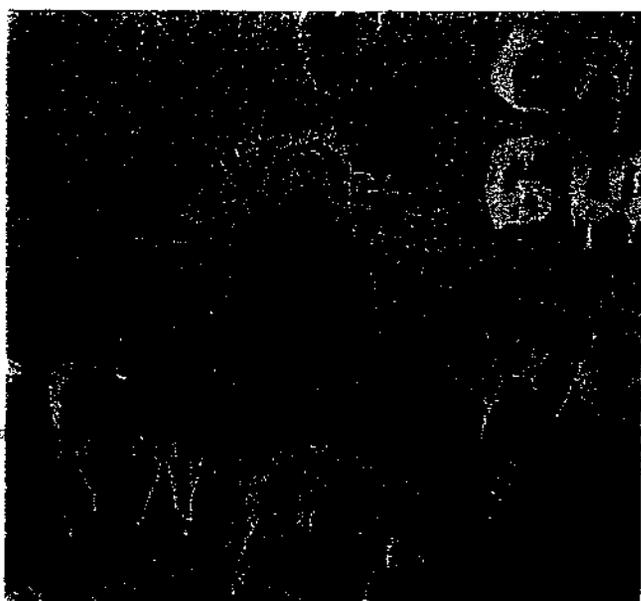
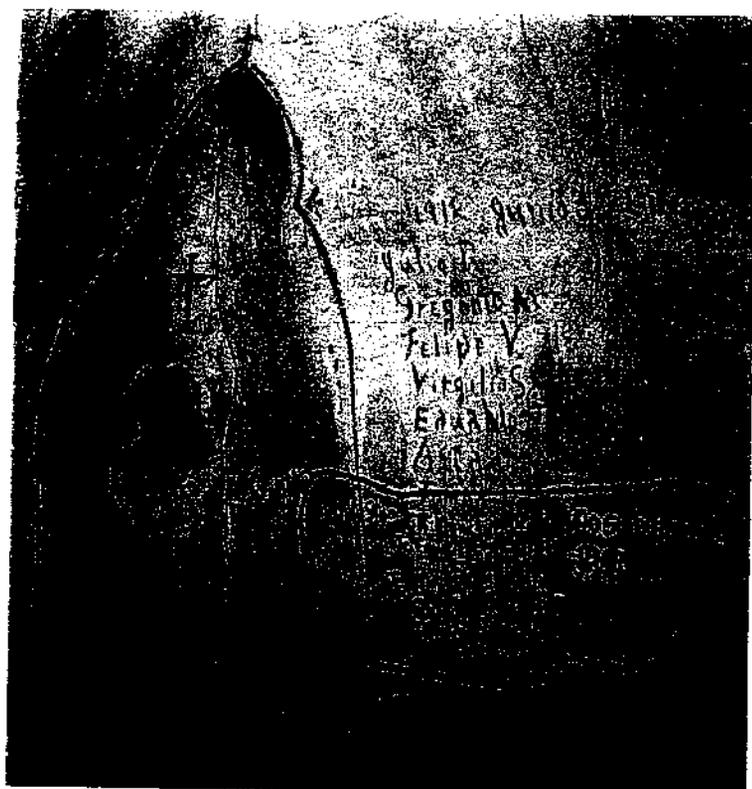


FOTO-SERIE 25. Muestras del arte religioso. Foto superior izq. "Cristo en la Capilla" 1918, en área de Galería la Gran Vía. La Resurrección de la Virgen, en pared de la entrada principal.

Estacion	Acimuto	Vertical	V Distancia	H Distancia	Piso	Techo	Izquierda	Derecha	H Distancia	V Diff	Techo
	Ins. @ Δ 1										
Δ 2	246°										
Δ 30	16°	+22°	13.83		1	+31°	2.31	0.00	12.82	5.18	7.12
⊕ 100	320°	-4°	4.80		0	+0°			4.79	0.33	0.00
⊕ 101	9.5°	+7°	6.12		0	+51°			5.08	0.82	3.98
⊕ 102	216°	+12°	5.93		0	+51°			6.80	1.23	4.81
⊕ 103	201°	+19°	8.83		0	+45°			8.35	2.87	6.24
	Ins. @ Δ 30										
Δ 1	198°										
Δ 31	314°	+4°	5.30		1.07	3.74	0.00	3.28	5.29	0.37	0.35
	Ins. @ Δ 31										
Δ 30	132°										
Δ 32	42°	+15°	4.58		1.87	3.09			4.42	1.19	0.25
	Ins. @ Δ 32										
Δ 31	221°										
Δ 33	4°	+10°	6.87						5.78	1.02	0.00
	Ins. @ Δ 33										
Δ 32	185°										
Δ 33	56°	+11°	9.82						9.44	1.84	0.00
	Ins. @ Δ 34										
Δ 33	237°										
Δ 35	109°	21.5°	7.88		1.63	4.59	2.06	0.00	7.33	2.89	0.83
⊕ 104	114°	+11°	6.73						6.61	1.28	
⊕ 105	106°	+13°	4.21						4.10	0.95	
	Ins. @ Δ 35										
Δ 34	289°										
Δ 36	364°	+10°	7.54						7.43	1.31	0.00
	Ins. @ Δ 36										
Δ 35	234°										
Δ 37	60°	+27°	9.1		1.03	10.23	0.00	2.96	8.11	4.13	1.02
⊕ 106	100°	+21°	6.13		0.00	8.25			6.72	2.20	0.88
⊕ 107	69°	+26°	6.13		0.00	8.23			4.61	2.25	0.73

Estacion	Acimuto	Vertical	V Distancia	H Distancia	Piso	Techo	Izquierda	Derecha	H Distancia	V DW	Techo
Ins. @ Δ 1											
Δ 2	246°										
Δ 30	16°	+22°	13.83		1	+31°	2.31	0.00	12.82	5.18	7.12
⊕ 100	320°	-4°	4.80		0	+0°			4.79	0.33	0.00
⊕ 101	9.5°	+7°	6.12		0	+51°			5.08	0.62	3.98
⊕ 102	216°	+12°	5.93		0	+51°			5.80	1.23	4.61
⊕ 103	201°	+19°	8.83		0	+45°			8.35	2.67	6.24
Ins. @ Δ 30											
Δ 1	198°										
Δ 31	314°	+4°	5.30		1.07	3.74	0.00	3.28	5.29	0.37	0.35
Ins. @ Δ 31											
Δ 30	132°										
Δ 32	42°	+15°	4.58		1.87	3.09			4.42	1.19	0.25
Ins. @ Δ 32											
Δ 31	221°										
Δ 33	4°	+10°	6.87						5.78	1.02	0.00
Ins. @ Δ 33											
Δ 32	185°										
Δ 33	56°	+11°	9.62						9.44	1.84	0.00
Ins. @ Δ 34											
Δ 33	237°										
Δ 35	109°	21.5°	7.88		1.63	4.69	2.00	0.00	7.33	2.89	0.83
⊕ 104	114°	+11°	6.73						6.61	1.28	
⊕ 105	108°	+13°	4.21						4.10	0.95	
Ins. @ Δ 35											
Δ 34	289°										
Δ 36	364°	+10°	7.54						7.43	1.31	0.00
Ins. @ Δ 36											
Δ 35	234°										
Δ 37	60°	+27°	9.1		1.03	10.23	0.00	2.98	6.11	4.13	1.62
⊕ 106	100°	+21°	6.13		0.00	8.25			6.72	2.20	0.86
⊕ 107	69°	+26°	5.13		0.00	8.23			4.61	2.25	0.73

Estacion	Azimuth	Vertical	V Distancia	H Distancia	Piso	Techo	Izquierda	Derecha	H Distancia	V Diff	Techo
Ins. @ Δ 44											
Δ 3	238°										
Δ 5	255°	+5°	4.77						4.75	0.42	0.00
Ins. @ Δ 45											
Δ 4	74°										
Δ 6	150°	+7°	9.28		1.72	2.14	1.49	0.10	9.21	1.13	0.35
⊕ 21	91.5°	-5°	4.83		1.43	3.59			4.81	0.40	0.29
⊕ 22	118°	+2°	6.61		1.45	3.91			6.60	0.30	0.59
⊕ 23	137°	-3°	6.8		1.56	3.6			6.79	0.36	0.43
⊕ 24	153°	-6°	6.75		1.46	3.59			6.72	0.60	0.36
Ins. @ Δ 46											
Δ 5	330°										
Δ 7	73°	+5°	4.12		1.77	1.67	0.00	1.17	4.10	0.36	0.12
Ins. @ Δ 47											
Δ 6	254°										
⊕ 25	148°	+3°	2.16						2.16	0.11	0.00
Ins. @ Δ 44											
Δ 5	255°										
Δ 3	342°	+3°	14.46		1.77	7.15			14.44	0.78	1.80
Ins. @ Δ 44											
Δ 4	161°										
Δ 9	107°	-3°	4.72		1.43	8.17			4.71	0.25	0.67
⊕ 16	141°	-5°	6.34		1.46	1.39			6.32	0.55	0.15
⊕ 17	139°	-7°	12.37		0.53	1.14			12.28	1.51	0.25
⊕ 13	125°	-5°	11.43		1.21	1.81			11.39	1.00	0.36
⊕ 19	110°	-4°	11.19		1.23	1.63			11.16	0.78	0.36
⊕ 10	96°	-2°	9.34		1.49	2.48			9.33	0.33	0.40
⊕ 11	40°	+10°	2.75		1.20	2.08			2.71	0.48	0.10
⊕ 12	332°	+6°	5.06		1.36	0.92			5.03	0.53	0.08
⊕ 13	280°	+0°	4.35		1.27	1.94			4.35	0.00	0.15
⊕ 14	193°	-6°	5.89		1.28	2.8			5.87	0.51	0.29
⊕ 13	171°	-3°	11.13		1.35	5.51			11.11	0.58	1.07

CUEVA NARANJO, JUANA DIAZ, PUERTO RICO

Datos de mensura obtenidos los días 11, 12 de marzo de 2000  
 Latitud 18° 04' 0.09" Longitud 66° 26' 11.10" Elevación entrada : +/- 181.0 mts.

Estacion	Punto	Azimuth	"Back" Azimuth	Distancia Vertical	Distancia Vertical	Angulo Vertical	Distancia Horizontal	piso	techo	Elevacion del Piso	Elevacion del Techo	E'levacion de la Estacion	Diferencia de Elevacion	(techo) - (piso)	Distancia / Estaciones	Distancia total de patillos
Instrumento ①																
2	1	249.0	69.0	3.85	3.8	-0.5	3.8	1.7	2.1	195.0	198.8	196.7	2.1	3.6	3.8	10.8
Instrumento ②																
3	1	126.0	306.0	8.88	8.8	-8.5	8.8	1.5	8.8	194.4	202.6	195.8	-0.8	8.2	8.8	19.8
2	2	82.0	282.0	2.22	2.2	0.0	2.2	1.5	1.5	195.2	198.2	196.7	0.0	3.0		
3	3	107.0	287.0	2.08	2.1	0.0	2.1	1.4	1.5	195.3	198.2	196.7	0.0	2.9		
4	4	180.0	340.0	2.53	2.5	0.0	2.5	0.0	0.0	196.7	196.7	196.7	0.0	0.0		
Instrumento ③																
2	2	306.0	126.0	8.88	8.8	6.0	8.8	1.7	2.1	195.0	198.8	196.7	0.9	3.8	6.9	26.5
4	4	253.0	73.0	7.20	6.9	-11.0	6.9	1.8	0.0	192.8	194.4	194.4	-1.3	1.8		
5	5	300.0	120.0	2.57	2.6	3.0	2.6	1.6	3.3	194.3	199.2	195.9	0.1	5.0		
6	6	282.0	82.0	3.46	3.5	2.0	3.5	1.6	3.6	194.3	199.5	195.9	0.1	5.3		
7	7	228.0	48.0	2.67	2.7	0.0	2.7	1.8	3.1	194.0	198.8	195.8	0.0	4.9		
8	8	320.0	140.0	3.49	3.5	4.0	3.5	1.5	0.8	194.5	198.8	196.0	0.2	2.3		
9a	9a	320.0	140.0	3.49	3.5	4.0	3.5	1.5	2.7	194.5	198.7	196.0	0.2	4.2		
Instrumento ④																
3	3	72.5	252.5	7.20	7.0	10.0	7.0	1.6	6.8	194.3	202.5	195.8	1.2	8.2	16.0	41.5
5	5	116.0	296.0	18.13	15.0	-6.0	15.0	1.2	8.8	191.7	201.8	193.0	-1.8	10.0		
9	9	81.0	261.0	3.40	3.4	-1.0	3.4	1.8	0.0	192.7	194.5	194.5	-0.1	1.8		
10	10	24.0	204.0	3.91	2.9	30.0	2.9	1.8	1.3	194.5	197.6	196.2	1.7	3.1		
11	11	0.0	180.0	3.09	3.1	2.0	3.1	1.4	1.2	193.2	195.8	194.6	0.1	2.6		
12	12	316.0	136.0	2.06	2.1	1.0	2.1	0.8	0.0	193.7	194.6	194.6	0.0	0.8		
13	13	167.0	347.0	2.42	2.4	-2.0	2.4	1.6	4.8	192.8	199.2	194.4	-0.1	6.4		
14	14	130.0	310.0	5.28	5.3	1.0	5.3	1.7	12.9	193.0	207.5	194.6	0.1	14.6		
15	15	101.0	281.0	5.26	5.3	0.0	5.3	1.8	0.7	192.7	195.2	194.5	0.0	2.6		
16	16	0.0	180.0	10.57	10.8	0.0	10.8	0.0	0.0	194.5	194.5	194.5	0.0	0.0		
Instrumento ⑤																
4	4	285.0	115.0	18.13	14.9	6.5	14.9	1.8	0.1	192.7	194.6	194.5	1.7	1.9	13.0	64.8
6	6	241.0	61.0	13.08	13.0	1.0	13.0	1.8	5.8	191.2	198.6	193.1	0.2	7.4		
16	16	282.0	102.0	4.79	4.8	4.0	4.8	1.7	4.1	191.4	197.3	193.2	0.3	5.9		
17	17	313.0	133.0	4.53	4.5	2.0	4.5	0.9	0.5	192.1	193.5	193.0	0.2	1.4		
18	18	255.0	75.0	7.31	7.3	2.0	7.3	1.4	3.4	191.7	196.5	193.1	0.3	4.8		
19	19	235.0	65.0	6.20	5.1	6.0	5.1	1.9	5.5	191.8	198.9	193.4	0.5	7.1		

Estacion	Punto	Azimuto	"Back" Azimuth	Distancia Vertical	Angulo Vertical	Distancia Horizontal	piso	techo	Elevacion del Piso	Elevacion del Techo	Elevacion de la Estacion	Diferencia de Elevacion	(techo) - (piso) =	Distancia / Estaciones	Distancia total de pasillos
<b>Instrumento 8</b>															
continuacion															
47		78.0	259.0	9.20	17.0	8.4	1.5	1.5	191.4	194.4	192.9	2.6	3.0		
48		58.0	238.0	13.85	18.0	12.8	0.6	2.8	193.8	197.2	194.4	4.1	3.3		
49		50.0	230.0	10.80	19.0	9.7	1.3	0.5	192.3	194.1	193.8	3.3	1.8		
50		40.0	220.0	4.00	1.0	4.0	0.9	2.0	189.5	192.4	190.4	-0.1	2.9		
<b>Instrumento 9</b>															
8		74.5	254.5	10.52	-1.0	10.8	0.6	0.5	190.0	191.1	190.6	-0.2	1.1		
10		323.0	143.0	14.46	-12.0	13.8	0.3	1.0	187.6	188.9	187.9	-2.9	1.3	13.8	113.9
51		121.0	301.0	2.40	15.0	2.2	1.1	1.5	190.4	192.9	191.4	0.6	2.6		
52		166.0	346.0	3.27	28.0	2.5	1.0	0.8	191.2	193.0	192.2	1.4	1.8		
53		149.0	329.0	13.35	13.0	12.7	2.6	0.0	191.2	193.6	193.8	2.9	2.6		
54		206.0	26.0	6.30	35.0	4.2	1.2	7.0	192.6	200.8	193.8	3.0	6.2		
55		279.0	99.0	8.80	40.0	5.0	1.8	7.0	193.3	202.1	195.1	4.2	6.8		
56		259.0	79.0	11.30	34.0	7.8	1.5	3.0	194.6	199.1	196.1	5.2	4.5		
57		346.0	166.0	3.40	-3.0	3.4	1.7	1.8	189.0	192.4	190.6	-0.2	3.5		
58		304.0	124.0	3.90	-7.0	3.8	1.7	1.8	188.6	192.2	190.4	-0.5	3.5		
<b>Instrumento 10</b>															
9		142.0	322.0	14.46	11.5	12.9	0.6	0.6	190.2	191.3	190.8	2.6	1.2		
11		6.0	186.0	24.10	6.0	23.8	0.4	1.4	190.1	191.9	190.5	2.5	1.8	23.8	
12		270.0	90.0	10.75	4.0	10.7	0.4	9.6	188.3	196.3	188.7	0.7	10.0	10.7	148.4
59		136.0	316.0	5.80	5.0	5.8	1.4	2.6	187.2	191.3	188.5	0.5	4.2		
60		155.0	335.0	6.00	5.0	6.0	1.2	0.0	187.3	188.5	188.5	0.5	1.2		
61		240.0	60.0	2.85	5.0	2.8	0.5	0.3	187.7	188.5	188.2	0.2	0.6		
62		292.0	112.0	3.57	3.0	3.6	1.3	0.0	186.9	188.2	188.2	0.2	1.3		
63		317.0	137.0	5.15	4.0	5.1	0.0	0.0	188.4	188.4	188.4	0.4	0.0		
64		350.0	170.0	2.15	8.0	2.1	0.9	1.1	187.4	189.4	188.3	0.3	1.9		
65		30.0	210.0	2.50	6.0	2.5	0.3	0.0	187.9	188.3	188.3	0.3	0.3		
66		20.0	200.0	6.20	4.0	6.2	0.2	1.8	188.3	190.2	188.4	0.4	2.0		
67		13.0	193.0	6.15	6.0	6.1	0.4	1.8	188.3	190.4	188.6	0.6	2.2		
<b>Instrumento 12</b>															
10		90.0	270.0	10.75	-3.5	12.7	0.3	1.0	187.7	189.0	188.0	-0.7	1.3		
13		303.0	123.0	38.14	-0.5	38.1	1.4	10.2	187.0	198.5	188.3	-0.3	11.6	38.1	186.5
68		84.0	264.0	5.88	-4.0	5.9	1.1	0.0	187.1	188.2	188.2	-0.4	1.1		
69		117.0	297.0	8.50	1.0	8.5	0.7	0.0	188.1	188.8	188.6	0.1	0.7		
70		137.0	317.0	4.80	6.0	4.7	1.4	4.9	187.9	194.2	189.3	0.7	6.3		
71		161.0	341.0	6.85	12.0	6.6	1.4	0.9	188.6	191.0	190.0	1.4	2.4		
72		196.0	16.0	10.44	14.0	15.5	1.8	5.4	190.8	197.9	192.5	3.9	7.1		

Estacion	Punto	Azimuth	"Back" Azimuth	Distancia Vertical	Angulo Vertical	Distancia Horizontal	piso	techo	Elevacion del Piso	Elevacion del Techo	Elevacion de la Estacion	Diferencia de Elevacion	(techo) - (piso)	Distancia / Estaciones	Distancia total de parrillos
<b>Instrumento 15</b>															
14	64.6	244.5	9.53	-3.5	9.5	0.5	7.7	185.7	193.9	188.8	-0.6	0.2	0.2	14.3	228.8
15	194.5	14.39	14.39	-5.0	14.3	0.4	1.2	185.1	186.7	188.2	-1.2	1.6	1.6		
16	36.0	218.0	6.61	1.0	6.6	0.9	6.0	186.0	192.9	189.9	0.1	6.9	6.9		
17	17.0	197.0	7.75	1.0	7.7	0.0	1.5	186.9	188.4	189.9	0.1	1.5	1.5		
18	10.0	180.0	4.08	-1.0	4.1	0.6	0.0	186.2	186.7	188.7	-0.1	0.6	0.6		
19	340.0	180.0	6.88	6.0	6.8	0.8	3.0	186.7	190.5	187.5	0.7	3.8	3.8		
20	280.5	100.5	4.85	8.0	4.8	0.7	0.0	186.7	187.5	187.5	0.7	0.7	0.7		
21	276.0	96.0	7.24	7.0	7.1	0.9	1.7	186.8	189.4	187.7	0.9	2.6	2.6		
22	225.0	45.0	8.42	-7.0	8.3	0.6	5.1	185.1	190.9	185.8	-1.0	5.7	5.7		
23	174.0	354.0	8.05	-5.0	8.0	1.1	0.0	185.0	186.1	186.1	-0.7	1.1	1.1		
24	191.0	11.0	8.70	-5.0	8.6	0.7	0.0	185.4	186.0	186.0	-0.6	0.7	0.7		
<b>Instrumento 16</b>															
15	14.0	194.0	14.39	4.5	14.3	0.5	0.9	186.1	187.6	186.7	1.1	1.4	1.4	20.0	246.8
17	290.5	110.5	20.05	-2.0	20.0	0.6	2.1	184.2	186.9	184.6	-0.7	2.7	2.7		
18	60.0	240.0	4.60	8.0	4.5	0.0	0.0	186.2	186.2	186.2	0.6	0.0	0.0		
19	314.0	134.0	2.80	-3.0	2.8	0.5	0.0	184.9	185.4	185.4	-0.1	0.5	0.5		
20	270.0	90.0	2.61	-2.0	2.6	0.5	0.0	184.9	185.4	185.4	-0.1	0.5	0.5		
21	245.0	65.0	6.00	5.0	6.0	0.7	0.0	185.4	186.1	186.1	0.5	0.7	0.7		
22	191.0	11.0	4.63	20.0	4.1	0.0	1.0	187.0	188.0	187.0	1.5	1.0	1.0		
23	191.0	11.0	7.00	20.0	6.2	1.1	6.0	186.7	193.8	187.8	2.2	7.1	7.1		
24	288.0	108.0	3.90	-8.0	3.9	0.5	0.0	184.6	185.1	185.1	-0.4	0.5	0.5		
<b>Instrumento 17</b>															
16	110.0	290.0	20.05	2.0	20.0	0.6	2.1	184.9	187.6	184.6	0.7	2.7	2.7	5.6	262.4
18	289.0	109.0	6.80	-25.0	5.0	1.2	0.6	181.0	182.7	182.2	-2.6	1.7	1.7		
19	102.0	282.0	13.13	1.0	13.1	0.5	0.0	184.6	185.1	185.1	0.2	0.5	0.5		
20	107.5	287.5	16.10	0.0	16.1	0.4	0.0	184.5	184.8	184.8	0.0	0.4	0.4		
21	108.0	288.0	15.33	0.0	15.3	0.6	0.0	184.2	184.6	184.6	0.0	0.6	0.6		
22	112.0	292.0	14.85	-0.5	14.8	0.6	1.5	184.1	186.2	184.7	-0.1	2.1	2.1		
23	117.5	297.5	14.71	2.0	14.7	1.5	1.0	183.9	186.4	185.4	0.5	2.5	2.5		
24	121.5	301.5	12.81	1.0	12.8	1.0	30.0	184.1	215.1	185.1	0.2	31.0	31.0		
25	121.0	301.0	12.81	0.0	12.8	0.0	8.0	184.8	192.8	184.8	0.0	8.0	8.0		
26	121.0	301.0	9.80	0.0	9.8	0.7	1.7	184.2	186.5	184.8	0.0	2.4	2.4		
27	121.0	301.0	7.90	0.0	7.9	0.9	0.0	183.9	184.8	184.8	0.0	0.9	0.9		
28	121.0	301.0	6.00	3.0	6.0	1.0	3.6	184.2	188.7	185.2	0.3	4.5	4.5		
29	135.0	315.0	4.05	10.0	3.9	0.7	2.8	184.5	188.1	185.5	0.7	3.3	3.3		
30	150.0	330.0	1.70	18.0	1.5	1.0	2.3	184.4	187.7	185.3	0.5	3.3	3.3		
31	74.0	254.0	6.00	17.0	5.5	0.9	0.0	185.6	186.5	186.5	1.7	0.9	0.9		

Estacion	Azimutho	Vertical	V Distancia	H Distancia	Piso	Techo	Izquierda	Derecha	H Distancia	V Diff	Techo
	Ina. $\odot$ $\Delta$ 37										
$\Delta$ 36	242°										
$\Delta$ 38	339°	-1°	7.69		1.03	5.29	0.00	2.47			
$\oplus$ 108	12° 30'	+3°	6.33		1.28	4.24					
$\oplus$ 109	338°	+2°	4.21		1.05	4.88					
	Ina. $\odot$ $\Delta$ 38										
$\Delta$ 37	159° 30'										
$\Delta$ 39	250° 30'	+9°	7.58		1.6	4.27	0.00	3.07			

Pasillo Humedo hasta la cascada

Estacion	Azimuto	Vertical	V Distancia	H Distancia	Piso	Techo	Isoperiencia	Derecha	H Distancia	V Diff	Techo
Δ 2	Ins. @ Δ 1 246°										
Δ 30	16°	+22°	13.83		1	+31°	2.31	0.00	12.82	5.16	7.12
⊕ 300	320°	-4°	4.80		0	+0°			4.79	0.33	0.00
⊕ 101	9.5°	+7°	5.12		0	+51°			5.08	0.62	3.98
⊕ 102	36°	+12°	5.93		0	+51°			5.90	1.23	4.61
⊕ 103	21°	+19°	8.83		0	+45°			8.35	2.87	6.24
Δ 1	Ins. @ Δ 30 188°										
Δ 31	314°	+4°	5.30		1.07	3.74	0.00	3.28	5.29	0.37	0.35
Δ 10	Ins. @ Δ 31 132°										
Δ 12	42°	+15°	4.55		1.87	3.09			4.42	1.19	0.25
Δ 1	Ins. @ Δ 32 221°										
Δ 3	4°	+10°	5.87						5.76	1.02	0.00
Δ 2	Ins. @ Δ 33 185°										
Δ 4	68°	+11°	9.82						9.44	1.84	0.00
Δ 3	Ins. @ Δ 34 237°										
Δ 5	109°	+21.5°	7.68		1.63	4.59	2.06	0.00	7.33	2.69	0.63
⊕ 104	114°	+11°	6.73						6.61	1.28	
⊕ 105	108°	+13°	4.21						4.10	0.95	
Δ 4	Ins. @ Δ 35 289°										
Δ 5	334°	+10°	7.54						7.43	1.31	0.00
Δ 5	Ins. @ Δ 36 234°										
Δ 37	60°	+27°	9.1		1.03	10.23	0.00	2.96	8.11	4.13	1.62
⊕ 106	100°	+21°	6.13		0.00	8.25			5.72	2.20	0.89
⊕ 107	59°	+26°	5.13		0.00	6.23			4.81	2.25	0.79

Pasillo Humedo hasta la cascada

Estacion	Azimuto	Vertical	V Distancia	H Distancia	Piso	Techo	Izquierda	Derecha	H Distancia	V Diff	Techo
Ins. $\odot$ $\Delta$ 44											
$\Delta$ 3	238°										
$\Delta$ 5	255°	+5°	4.77						4.75	0.42	0.00
Ins. $\odot$ $\Delta$ 45											
$\Delta$ 4	74°										
$\Delta$ 6	150°	+7°	9.28		1.72	2.14	1.48	0.10	9.21	1.13	0.35
$\oplus$ 121	91.5°	-5°	4.63		1.43	3.59			4.61	0.40	0.29
$\oplus$ 122	116°	+2°	8.61		1.45	3.91			8.60	0.30	0.59
$\oplus$ 123	137°	-3°	8.8		1.56	3.6			6.79	0.36	0.43
$\oplus$ 124	153°	-6°	5.75		1.46	3.59			5.72	0.60	0.36
Ins. $\odot$ $\Delta$ 46											
$\Delta$ 5	330°										
$\Delta$ 7	73°	+5°	4.12		1.77	1.67	0.00	1.17	4.10	0.36	0.12
Ins. $\odot$ $\Delta$ 47											
$\Delta$ 6	254°										
$\oplus$ 25	146°	+3°	2.16						2.16	0.11	0.00
Ins. $\odot$ $\Delta$ 44											
$\Delta$ 5	255°										
$\Delta$ 8	342°	+3°	14.46		1.77	7.15			14.44	0.76	1.80
Ins. $\odot$ $\Delta$ 48											
$\Delta$ 4	161°										
$\Delta$ 9	107°	-3°	4.72		1.43	8.17			4.71	0.25	0.67
$\oplus$ 26	141°	-5°	6.34		1.46	1.39			6.32	0.55	0.15
$\oplus$ 177	139°	-7°	12.37		0.53	1.14			12.28	1.51	0.25
$\oplus$ 28	125°	-5°	11.43		1.21	1.81			11.39	1.00	0.36
$\oplus$ 29	110°	-4°	11.19		1.23	1.83			11.16	0.78	0.36
$\oplus$ 30	96°	-2°	9.34		1.49	2.48			9.33	0.33	0.40
$\oplus$ 31	40°	+10°	2.75		1.20	2.08			2.71	0.48	0.10
$\oplus$ 32	332°	+6°	5.06		1.36	0.92			5.03	0.53	0.08
$\oplus$ 33	280°	+0°	4.35		1.27	1.94			4.35	0.00	0.15
$\oplus$ 34	183°	-5°	5.89		1.28	2.8			5.87	0.51	0.29
$\oplus$ 35	171°	-3°	11.13		1.35	5.51			11.11	0.58	1.07
Ins. $\odot$ $\Delta$ 49											
$\Delta$ 8	267°	+3°	4.72								
$\Delta$ 9	307°	+36°									

Pasillo Caliente g-1

Estacion	Azimuth	Vertical	V Distancia	H Distancia	Piso	Techo	Izquierda	Derecha	H Distancia	V Difer	Techo
Ins. @ Δ 60 = Δ 11											
Δ 61	354°	+4.5°	13.88		0.82	3.05	2.31'	0.00	13.84	1.09	0.74
Δ 10	186°	+6°	24.10		0.30	1.03'			23.97	2.52	0.43
Ins. @ Δ 61											
Δ 60	176°	-5°	13.88		0.49	1.28					
Δ 62	316.5°	+6°	14.30		0.49	1.28	1.60	4.80	14.22	1.49	0.31
Ins. @ Δ 62											
Δ 61	136.5°	-7°	14.30								
Δ 63	47.5°	+7.5°	16.12		1.61	5.67			14.19	1.74	0.00
⊕ 150	78°	+8°	5.50		1.26	4.61			17.96	2.37	1.78
⊕ 151	45°	+4°	10.62		1.81	5.67			6.45	0.77	0.44
Ins. @ Δ 63											
Δ 62	228.5°	-7°	5.26						10.59	0.74	1.06
Δ 64	288°	-4°	13.39						5.24	0.64	0.00
Ins. @ Δ 64											
Δ 63	108.5°	+6°							13.36	0.93	0.00
Δ 65	352.5°	+5°	14.27		0.45	2.82	1.36	3.22	0.00	0.00	0.00
Ins. @ Δ 65											
Δ 64	173°	-6°							14.22	1.24	0.70
Δ 66	291°	+15°	13.86		0.10	3.18	2.10	3.32	0.00	0.00	0.00
⊕ 152	113°	+3°	8.83		1.38	1.82			13.39	3.59	0.00
Ins. @ Δ 66											
Δ 65	110.5°	-15.5°							9.92	0.52	0.32
Δ 67	340°	+10°	12.54		1.51	5.8	0.00	4.73	0.00	0.00	0.00
Ins. @ Δ 67											
Δ 65	160°	-10.5°							12.35	2.18	1.22
Δ 66	9°	+12°	17.87		1.25	7.11	5.77	0.00	0.00	0.00	0.00
Ins. @ Δ 68											
									17.58	3.74	2.22

Pasillo Calleante 9-2

Estación	Azímuto Ins. @ Δ 70	Vertical	V Distancia	H Distancia	Piso mt	Techo pies	Izquierda	Derecha	H Distancia
Δ 68	188.5°	-33°	11.63						9.75
Δ 71	7°	+33°	7.82		1.43	58.50'	4.68	0.00	6.50
⊕ 155	330°	+26.5°	7.72		0.00				6.91
⊕ 156	352°	+27°	7.87		0.00				7.01
	Ins. @ Δ 71								
Δ 70	187°	-33°	7.82						
Δ 72	4°	+12.5°	17.16		0.8	30	2.00	3.83	16.75
	Ins. @ Δ 72								
Δ 71	187°	-13°							0.00
Δ 73	36°	+24.2°	13.16		0.92	25	5.00	5.10	12.00
	Ins. @ Δ 73								
Δ 72	217°	+17°	6.28		1.5	15'	0.85	4.88	5.28
Δ 74	17°		21.02						20.68
	Ins. @ Δ 74								
Δ 73	196°	+9°	14.53		0.8	20	8.05	2.75	0.00
Δ 75	28°								14.35
	Ins. @ Δ 75								
Δ 74	205°	+12°	13.20		0.66	15	1.81	3.35	0.00
Δ 76	338°								12.91
	Ins. @ Δ 76								
Δ 75	158.5°	+8.5°	27.69		0.29	15			0.00
Δ 77	13°								27.39
	Ins. @ Δ 77								
Δ 76	193°	+18°	19.00		0	15	0.21	3.37	0.00
Δ 78	74°								18.07

	Azimutho	Vertical	V Distancia	H Distancia	Piso	echo	Izquierda	Derecha	H Distancia	V Diff
Δ 2	Ins. ⊕ Δ 1 246°									
Δ 30	18°	+22°	13.83		1	+31°	2.31	0.00	12.82	5.18
⊕ 10°	320°	-4°	4.80		0	+0°			4.78	0.33
⊕ 10°	8.5°	+7°	5.12		0	+51°			5.06	0.62
⊕ 10°	216°	+12°	5.83		0	+51°			5.80	1.23
⊕ 10°	201°	+19°	8.83		0	+45°			8.35	2.87
Δ 1	Ins. ⊕ Δ 30 198°									
Δ 31	314°	+4°	5.30		1.07	3.74	0.00	3.28		
Δ 30	Ins. ⊕ Δ 31 132°									
Δ 32	42°	+15°	4.58		1.87	3.09	-	-		
Δ 31	Ins. ⊕ Δ 32 221°									
Δ 33	4°	+10°	5.87							
Δ 32	Ins. ⊕ Δ 33 185°									
Δ 32	56°	+11°	9.82							
Δ 33	Ins. ⊕ Δ 34 237°									
Δ 35	108°	+21° 30'	7.85		1.83	4.59	2.06	0.00		
⊕ 10°	114°	+11°	6.73		-					
⊕ 10°	106°	+13°	4.21		-					
Δ 34	Ins. ⊕ Δ 35 289°									
Δ 36	154°	+10°	7.54							
Δ 35	Ins. ⊕ Δ 36 234°									
Δ 37	80°	+27°	9.1		1.03	10.23	0.00	2.86		
⊕ 10°	100°	+21°	6.13		0.00	8.25				
⊕ 10°	59°	+26°	5.13		0.00	8.23				

offset +0.84 vertical





Estación	Azimuth	Vertical	V Distancia	H Distancia	Piso	Techo	Izquierda	Derecha	H Distancia
Δ 77	Ins. ⊕ Δ 78								0.00
⊕ A	234°		15.10						15.10
⊕ B	359°		20.58		2.58	10.44			20.58
	6°								



Estacion	Azimuth	Vertical	V Distancia	H Distancia	Piso	Techo	Izquierda	Derecha	H Distancia	V DWT	Tecno
	Ins. @ Δ 37										
Δ 36	242°										
Δ 38	339°	-1°	7.69		1.03	5.29	0.00	2.47	7.69	0.13	0.71
⊕ 108	12.5°	+3°	6.33		1.28	4.24			3.32	0.33	0.47
⊕ 109	338°	+2°	4.21		1.05	4.86			4.21	0.15	0.37
	Ins. @ Δ 38										
Δ 37	159.5°										
Δ 39	250.5°	+9°	7.50		1.6	4.27	0.00	3.07	7.49	1.19	0.56
	Ins. @ Δ 39										
Δ 38	70°										
Δ 40	21°	+12°	5.85		0	0			5.72	1.22	0.00
⊕ 110	83°	+0°	4.95		1.15	5.32			4.95	0.00	0.46
⊕ 111	113°	+10°	5.14		1.62	3.82			5.06	0.89	0.34
⊕ 112	49°	-6°	5.06		1.28	4.61			5.03	0.53	0.41
	Ins. @ Δ 40										
Δ 39	201°										
Δ 41	316°	+6°	5.25		1.47	0.36	0.00	3.61	5.23	0.46	0.09
⊕ 113	352°	+2°	3.50		1.25	2.72			3.60	0.12	0.17
⊕ 114	297°	+1°	3.19		1.33	2.92			3.19	0.06	0.16
	Ins. @ Δ 41										
Δ 40	136°										
Δ 42	301.5°	+2°	12.6		1.63	5.38	3.01	2.31	12.69	0.44	1.18
⊕ 115	193°	+0°	3.33						3.33	0.00	0.00
⊕ 116	239°	+0°	3.66						3.66	0.00	0.00
⊕ 117	297°	-0°	2.47						2.47	0.00	0.00
	Ins. @ Δ 42										
Δ 41	120°										
Δ 43	285.5°	+6°	8.68		1.58	4.63			8.63	0.93	0.72
	Ins. @ Δ 43										
Δ 42	105°										
Δ 44	57°	+3°	19.69		1.85	3.26	3.41	0.00	19.69	1.03	1.12
⊕ 118	84°	-2°	3.41						3.41	0.12	0.00
⊕ 119	58°	+2°	7.96		1.48	4.36	2.90	0.00	7.96	0.28	0.61
⊕ 120	55°	+4°	11.52		1.43	2.61	0.00	3.07	11.49	0.80	0.52

Estacion	Punto	Azimuto	"Back" Azimuth	Distancia Vertical	Angulo Vertical	Distancia Horizontal	piso	techo	Elevacion del Piso	Elevacion del Techo	Elevacion de la Estacion	Diferencia de Elevacion	(techo) - (piso)=	Distancia / Estaciones	Distancia total de pasillos
	156	282.0	102.0	2.20	-10.0	2.1	1.5	15.0	179.0	195.5	180.5	-0.4	16.5		313.8
	160	145.0	325.0	6.70	15.0	6.3	0.0	182.6	182.6	182.6	1.7	0.0			
MAX =		364.0			65.0				197.0	216.1	196.8		31.0	36.1	= MAX
MIN =		0.0			-35.0				179.0	179.9	179.9		0.0	3.8	= MIN
MEDIANA =		166.0			3.0				187.2	191.3	188.2		3.0	6.6	= MEDIANA

Estacion	Punto	Azimuth	"Back" Azimuth	Distancia Vertical	Angulo Vertical	Distancia Horizontal	piso	techo	Elevacion del Piso	Elevacion del Techo	Elevacion de la Estacion	Diferencia de Elevacion	(techo) - (piso) =	Distancia / Estaciones	Distancia total de pasillos
<b>Instrumento @ 17</b>															
129	60.0	230.0	6.40	17.0	5.9	0.0	0.4	186.6	187.0	186.6	1.8	0.4			
130	0.0	180.0	8.00	17.0	7.3	1.0	3.0	186.1	190.1	187.1	2.2	4.0			
131	270.0	90.0	1.56	0.0	1.6	2.6	0.0	182.0	184.8	184.8	0.0	2.8			
<b>Instrumento @ 18</b>															
17	108.0	288.0	6.80	28.0	5.6	0.9	3.5	183.9	188.4	184.8	2.6	4.5		21.4	273.9
19	298.0	118.0	21.60	-3.0	21.4	0.5	4.0	180.6	185.1	181.1	-1.1	4.6			
132	128.0	308.0	3.50	9.0	3.4	2.5	0.0	180.3	182.8	182.8	0.5	2.5			
133	80.0	260.0	4.35	5.0	4.3	1.0	0.0	181.6	182.6	182.6	0.4	1.0			
134	5.0	185.0	4.63	0.0	4.6	1.0	0.0	181.2	182.2	182.2	0.0	1.0			
135	285.0	105.0	4.13	0.0	4.1	1.4	0.0	180.8	182.2	182.2	0.0	1.4			
136	298.0	118.0	4.94	0.0	4.9	1.4	0.0	180.9	182.2	182.2	0.0	1.4			
137	0.0	180.0	6.50	0.0	6.5	0.5	0.0	181.7	182.2	182.2	0.0	0.5			
138	330.0	150.0	5.30	-2.0	5.3	1.3	1.0	180.7	183.0	182.0	-0.2	2.3			
139	295.0	115.0	5.00	-2.0	5.0	1.3	4.3	180.8	186.4	182.1	-0.2	5.6			
140	311.0	131.0	12.00	-2.0	12.0	1.0	0.0	180.9	181.8	181.8	-0.4	1.0			
<b>Instrumento @ 19</b>															
18	118.0	298.0	21.60	3.0	21.4	1.2	2.9	181.0	185.1	182.2	1.1	4.1		26.2	300.1
20	279.0	99.0	26.20	-0.6	26.2	0.9	18.0	180.0	198.9	180.9	-0.2	18.9			
141	123.0	303.0	8.30	4.0	8.3	0.7	3.7	181.0	185.4	181.7	0.6	4.4			
142	96.0	276.0	5.90	10.0	5.7	1.3	4.3	180.8	188.4	182.1	1.0	5.6			
143	156.0	336.0	2.85	10.0	2.8	1.3	1.1	180.3	182.7	181.6	0.5	2.4			
145	163.0	343.0	9.35	15.0	6.7	0.9	0.4	182.5	183.8	183.4	2.3	1.3			
146	247.0	67.0	3.83	3.0	3.8	0.6	0.0	180.8	181.3	181.3	0.2	0.6			
147	287.0	107.0	4.60	0.0	4.6	0.4	0.0	180.7	181.1	181.1	0.0	0.4			
<b>Instrumento @ 20</b>															
19	99.6	279.5	26.20	1.0	26.2	0.6	4.0	180.8	185.4	181.3	0.5	4.6		10.7	310.7
146	104.5	284.5	10.70	2.0	10.7	0.0	2.9	181.3	184.2	181.3	0.4	2.9			
149	96.5	276.5	11.20	1.0	11.2	0.7	0.0	180.3	181.1	181.1	0.2	0.7			
150	110.0	290.0	11.00	3.0	11.0	1.2	1.0	180.3	182.5	181.5	0.6	2.2			
151	113.0	293.0	5.76	2.0	5.8	0.9	3.1	180.2	184.1	181.1	0.2	4.0			
152	136.0	318.0	3.55	7.0	3.5	1.0	0.0	180.3	181.3	181.3	0.4	1.0			
153	145.0	325.0	3.70	15.0	3.5	0.7	1.6	181.1	183.6	181.8	0.9	2.5			
154	159.0	339.0	1.93	17.0	1.8	1.2	0.0	180.2	181.4	181.4	0.5	1.2			
155	220.0	40.0	1.60	8.0	1.8	0.9	0.0	180.2	181.1	181.1	0.2	0.9			
156	240.0	60.0	5.70	-10.0	5.5	0.0	0.0	179.9	179.9	179.9	-1.0	0.0			
157	261.0	81.0	5.30	-10.0	5.1	0.0	0.0	180.0	180.0	180.0	-0.9	0.0			
158	277.0	97.0	4.70	-10.0	4.6	0.0	0.0	180.1	180.1	180.1	-0.6	0.0			

Estacion	Punto Azimuto	"Back" Azimuth	Distancia Vertical	Angulo Vertical	Distancia Horizontal	piso	techo	Elevacion del Piso	Elevacion del Techo	Elevacion de la Estacion	Diferencia de Elevacion	(techo)-(piso)=	Distancia / Estaciones	Distancia total de pasillos
Instrumento @ 12 continuation														
73	218.0	38.0	15.30	10.0	14.8	1.2	1.8	190.1	193.0	191.3	2.6	2.9		
74	254.0	74.0	5.30	6.0	5.2	1.8	3.0	187.4	192.2	192.2	0.6	4.8		
75	288.0	108.0	11.75	5.0	11.7	1.4	11.4	188.2	201.0	197.7	1.0	12.8		
Instrumento @ 13														
12	122.0	302.0	38.14	4.0	38.0	0.4	9.6	188.3	190.2	191.3	2.7	10.0	18.6	203.0
14	218.0	38.0	16.60	1.0	16.5	0.5	7.7	185.8	193.9	188.3	0.3	8.2		
76	217.0	37.0	6.90	0.0	6.9	1.5	2.0	184.5	188.0	188.0	0.0	3.5		
77	235.0	75.0	11.80	3.0	11.8	1.4	4.0	185.2	190.6	186.6	0.6	5.4		
78	274.0	94.0	11.44	3.0	11.4	1.0	4.0	185.6	190.6	186.6	0.6	5.0		
79	303.0	123.0	7.24	4.0	7.2	1.4	2.1	185.1	188.6	186.5	0.5	3.5		
80	327.0	147.0	9.70	4.0	9.7	1.1	0.0	185.6	186.7	186.7	0.7	1.1		
81	345.0	165.0	10.30	2.0	10.3	0.7	0.5	185.7	186.9	186.4	0.4	1.2		
82	153.5	333.6	11.50	8.0	11.3	1.4	2.4	186.2	190.0	187.6	1.6	3.8		
83	135.0	315.0	16.86	4.0	16.8	1.2	5.7	186.1	193.0	187.3	1.3	6.9		
84	161.0	331.0	25.00	5.0	24.8	1.3	1.9	186.9	190.1	188.2	2.2	3.2		
92	347.0	167.0	2.36	2.0	2.4	1.0	6.8	185.1	182.7	186.1	0.1	7.6		
93	240.6	60.5	13.15	-1.0	13.1	1.5	0.0	184.2	185.8	185.8	-0.2	1.5		
94	235.0	55.0	9.78	-0.5	9.8	1.5	6.1	184.4	192.0	185.9	-0.1	7.6		
95	200.5	20.5	6.86	-0.5	6.9	1.4	10.7	184.6	196.7	185.9	-0.1	12.1		
Instrumento @ 13														
13	315.5	135.5	18.86	-4.0	18.8	1.4	10.2	184.6	196.2	186.0	-1.3	11.6		
85	236.0	56.0	7.40	10.0	7.2	1.3	2.0	187.3	190.6	188.6	1.3	3.3		
86	240.0	60.0	12.78	7.0	12.6	1.4	3.0	187.4	191.9	188.9	1.5	4.4	12.6	215.6
87	276.0	98.0	10.37	6.0	10.3	1.1	0.0	187.3	188.4	188.4	1.1	1.1		
88	280.0	110.0	8.03	3.0	8.0	1.3	3.6	186.4	191.3	187.7	0.4	4.8		
89	340.0	160.0	13.60	0.0	13.6	0.5	3.7	186.8	191.0	187.3	0.0	4.2		
90	354.0	174.0	18.20	0.0	18.2	1.5	3.1	185.8	190.4	187.3	0.0	4.6		
91	2.0	182.0	11.75	0.0	11.8	1.6	2.9	185.7	190.2	187.3	0.0	4.5		
Instrumento @ 14														
13	38.0	218.0	16.60	-0.5	16.5	0.7	10.2	185.5	196.3	186.1	-0.1	10.9		
15	244.0	64.0	9.63	3.0	9.5	0.8	3.1	186.2	189.9	186.8	0.5	3.6	9.5	212.6
96	95.5	275.5	5.55	5.0	5.5	1.0	2.4	185.6	189.2	186.6	0.5	3.4		
97	167.0	347.0	8.44	6.0	8.3	0.4	8.3	186.7	195.5	187.2	0.9	8.7		
98	199.5	18.5	9.54	-1.0	9.5	1.3	3.8	184.9	189.9	188.1	-0.2	5.0		
99	252.0	72.0	3.30	3.0	3.3	1.3	0.0	185.2	188.5	186.5	0.2	1.3		

Distancia total de peraltos

Distancia / Estaciones

Diferencia (techo) - (piso) =

Elevacion de la Estacion

Elevacion del Techo

Elevacion del Piso

techo

piso

Distancia Horizontal

Angulo Vertical

Distancia Vertical

"Back" Azimuth

Punto Azimuto

Estacion

Instrumento @ 5 continuacion

Instrumento	Punto Azimuto	"Back" Azimuth	Distancia Vertical	Angulo Vertical	Distancia Horizontal	piso	techo	Elevacion del Piso	Elevacion del Techo	Elevacion de la Estacion	Diferencia de Elevacion	(techo) - (piso) =	Distancia / Estaciones	Distancia total de peraltos
5	20	230.0	50.0	2.18	3.0	2.2	1.5	5.3	191.5	199.3	0.1	6.8		
	21	50.0	230.0	0.52	0.0	0.5	0.7	5.5	192.2	198.3	0.0	6.1		
	22	140.0	320.0	6.41	55.0	2.1	0.0	1.0	195.8	196.9	3.0	1.0		
6	23	74.0	254.0	5.85	2.0	5.6	1.3	1.8	191.9	185.1	0.2	3.1	21.1	75.7
	24	93.0	273.0	3.58	0.0	3.6	1.8	0.0	191.3	193.1	0.0	1.8		
	25	292.0	112.0	2.83	7.0	2.6	3.4	5.2	190.0	190.6	0.3	8.6		
	26	263.0	83.0	7.74	0.0	7.7	1.2	0.0	191.9	193.1	0.0	1.2		
	27	268.0	88.0	10.60	2.0	10.6	0.0	0.0	193.4	193.4	0.4	0.0		
	28	235.0	55.0	4.50	-1.0	4.5	1.6	5.6	191.4	198.5	-0.1	7.1		
	29	200.0	20.0	3.00	-5.0	3.0	1.4	3.6	191.4	198.4	-0.3	5.1		
	30	107.0	287.0	7.05	3.0	7.0	1.4	4.0	190.6	196.0	0.4	5.4	13.6	89.2
	31	62.0	242.0	3.70	6.0	3.7	1.5	1.5	190.1	193.5	0.4	3.4		
	32	30.0	210.0	1.65	6.0	1.6	1.8	3.0	190.0	194.8	0.2	4.8		
7	33	139.0	319.0	4.96	8.0	4.9	1.7	2.3	190.6	194.6	0.7	4.0		
	34	160.0	340.0	6.36	6.0	6.3	1.5	1.8	190.7	194.0	0.7	3.3		
	35	21.0	201.0	3.43	5.0	3.4	0.6	3.2	190.4	194.1	0.3	3.7	10.8	100.0
	36	339.0	159.0	6.12	7.0	6.0	1.8	0.0	189.6	191.4	0.7	1.8		
	37	303.0	123.0	7.20	12.0	6.9	1.6	0.0	190.5	192.1	1.5	1.5		
	38	274.0	94.0	8.33	8.0	8.2	1.5	0.9	190.2	192.7	1.1	2.4		
	39	240.0	60.0	5.60	8.0	5.5	1.5	0.0	190.0	191.4	0.8	1.5		
	40	226.0	46.0	3.00	10.0	2.9	1.5	3.5	189.7	194.7	0.5	5.0		
8	41	170.0	350.0	5.20	15.0	4.9	1.5	4.7	190.4	196.6	1.3	6.2		
	42	154.0	334.0	6.50	12.0	6.2	1.6	5.2	190.3	197.1	1.3	6.8		
	43	140.0	320.0	7.30	13.0	6.9	1.6	6.3	190.6	199.5	1.6	7.9		
	44	126.0	306.0	8.85	15.0	8.2	1.9	6.3	191.2	199.4	2.5	8.2		
	45	113.0	293.0	10.15	17.0	9.3	1.2	1.5	192.3	195.0	2.8	2.7		
	46	105.0	285.0	8.93	16.0	6.4	1.6	1.8	190.9	194.2	1.8	3.4		
	47	0.0	180.0	13.89	4.0	13.5	1.4	5.5	190.2	197.1	0.9	6.9		
	48	264.0	74.0	10.82	1.0	10.8	0.6	0.5	190.2	191.3	0.2	1.1		

Estacion	Azimutho	Vertical	V Distancia	H Distancia	Piso	Techo	Izquierda	Derecha	H Distancia	V DMF	Techo
Δ 2	Ins. Δ 1 246°										
Δ 30	16°	+22°	13.83		1	+31°	2.31	0.00	12.82	5.16	7.12
⊕ 100	320°	-4°	4.80		0	+0°			4.79	0.33	0.00
⊕ 101	9.5°	+7°	5.12		0	+51°			5.06	0.62	3.96
⊕ 102	36°	+12°	5.83		0	+51°			5.80	1.23	4.61
⊕ 103	21°	+19°	6.83		0	+45°			6.35	2.67	6.24
Ins. Δ 30											
Δ 1	198°										
Δ 31	314°	+4°	5.30		1.07	3.74	0.00	3.28	5.29	0.37	0.35
Ins. Δ 31											
Δ 30	132°										
Δ 32	42°	+16°	4.66		1.87	3.09			4.42	1.19	0.25
Ins. Δ 32											
Δ 31	221°										
Δ 33	4°	+10°	5.87						5.76	1.02	0.00
Ins. Δ 33											
Δ 32	165°										
Δ 34	56°	+11°	9.62						9.44	1.04	0.00
Ins. Δ 34											
Δ 33	237°										
Δ 35	109°	+21.5°	7.86		1.63	4.59	2.06	0.00	7.33	2.89	0.63
⊕ 104	114°	+11°	6.73						6.61	1.26	
⊕ 105	108°	+13°	4.21						4.10	0.96	
Ins. Δ 35											
Δ 34	289°										
Δ 36	334°	+10°	7.54						7.43	1.31	0.00
Ins. Δ 36											
Δ 35	234°										
Δ 37	60°	+27°	9.1		1.03	10.23	0.00	2.96	8.11	4.13	1.62
⊕ 106	100°	+21°	6.13		0.00	8.26			5.72	2.20	0.88
⊕ 107	59°	+26°	5.13		0.00	8.23			4.61	2.25	0.73

Estacion	Azimuth	Vertical	V Distancia	H Distancia	Piso	Techo	Izquierda	Derecha	H Distancia	V Diff	Techo
Ins. @ Δ 37											
Δ 36	242°										
Δ 38	339°	-1°	7.69		1.03	5.29	0.00	2.47	7.69	0.13	0.71
⊕ 108	12.5°	+3°	6.33		1.28	4.24			6.32	0.33	0.47
⊕ 109	338°	+2°	4.21		1.05	4.88			4.21	0.16	0.38
Ins. @ Δ 38											
Δ 37	159.6°										
Δ 39	250.6°	+9°	7.58		1.6	4.27	0.00	3.07	7.49	1.19	0.56
Ins. @ Δ 39											
Δ 38	70°										
Δ 40	21°	+12°	6.85		0	0			6.72	1.22	0.00
⊕ 110	83°	+0°	4.95		1.15	5.32			4.95	0.00	0.46
⊕ 111	113°	+10°	5.14		1.62	3.82			5.06	0.89	0.34
⊕ 112	49°	-6°	5.08		1.26	4.61			5.03	0.53	0.41
Ins. @ Δ 40											
Δ 39	201°										
Δ 41	316°	+5°	5.25		1.47	0.36	0.00	3.61	5.23	0.46	0.03
⊕ 113	352°	+2°	3.50		1.26	2.72			3.60	0.12	0.17
⊕ 114	287°	+1°	3.19		1.33	2.92			3.19	0.06	0.16
Ins. @ Δ 41											
Δ 40	136°										
Δ 42	301.5°	+2°	12.6		1.63	5.36	3.01	2.31	12.59	0.44	1.18
⊕ 115	193°	+0°	3.33						3.33	0.00	0.00
⊕ 116	239°	+0°	3.95						3.86	0.00	0.00
⊕ 117	287°	-0°	2.47						2.47	0.00	0.00
Ins. @ Δ 42											
Δ 41	120°										
Δ 43	285.5°	+6°	8.86		1.56	4.83			8.83	0.93	0.72
Ins. @ Δ 43											
Δ 42	105°										
Δ 44	57°	+3°	19.69		1.65	3.26	3.41	0.00	19.66	1.03	1.12
⊕ 118	84°	-2°	3.41				2.90	0.00	3.41	0.12	0.00
⊕ 119	58°	+2°	7.96		1.48	4.36	0.00	0.00	7.96	0.28	0.61
⊕ 120	55°	+4°	11.62		1.43	2.61	0.00	3.07	11.49	0.80	0.52





## **APÉNDICE 8 Declaración Jurada de Antiguo Residente Relocalizado**

## DECLARACION JURADA

**YO, WILSON RIVERA BURGOS, SEGURO SOCIAL NUMERO 581-46-5097,**

mayor de edad, soltero por viudez, vecino de Juana Díaz, Puerto Rico, bajo el más formal juramento declaro lo siguiente:

1. Que mi nombre y demás circunstancias personales son las antes expresadas.
2. Que declaro que aproximadamente estuve residiendo por cuarenta años en el Barrio Naranjo del Municipio de Juana Díaz PR, en los terreno donde está localizada la Cantera Naranjo.
3. Que hago constar que desde el 2002 resido en el Barrio Guayabal Sector Magas carretera 551, km.4 en el Municipio de Juana Díaz Puerto Rico.
4. Que presto la anterior declaración a efectos de que se tome conocimiento de lo anteriormente expresado.
5. Que lo antes declarado es la verdad y nada más que la verdad.

**Y PARA QUE ASI CONSTE,** juro y suscribo la presente declaración en Juana Díaz, Puerto Rico, hoy 9 de septiembre de 2008.

  
**DECLARANTE**

**AFFIDAVIT NUMERO: 25,146**

Jurado y suscrito ante mí por **WILSON RIVERA BURGOS**, de las circunstancias personales antes mencionadas a quien DOY FE conocer personalmente en Juana Díaz, Puerto Rico, hoy 09 de septiembre de 2008. Identificada mediante tarjeta electoral número 1097903.

  
**LCDO. MARIO S. COLLAZO COLÓN**



## **APÉNDICE 9 Descripción del Proceso de Manufactura de Agregados en los Predios**

## PLANTA DE CANTERA NARANJO

### MEMORIAL EXPLICATIVO

Para el procesamiento y extracción del material de la corteza terrestre, como primera alternativa se utilizan Buldózer y excavadoras para la extracción del mismo. Del material poseer una densidad que los equipos antes mencionados no pudiesen removerlo se utilizaran los explosivos como ultima alternativa.

Este material una vez extraído se deposita mediante “Loader” en los camiones “Off the Road” de gran capacidad que a su vez es transportado hasta el punto de alimentación de la procesadora.

En el caso de utilizar explosivos, se utilizara como equipo para realizar los barrenos los “Track Drill”. Una vez realizado el número de barrenos deseados con sus respectivas profundidades para el disparo, se proceden a llenar y a detonar. Esto se realiza siguiendo el protocolo como lo establece la ley.

El equipo utilizado en el procesamiento del material extraído de la corteza terrestre es:

#### **1. Planta Universal Portátil 5165**

- a. Aquí el material es depositado con el “Loader” en el cajón receptor y pasa al alimentador la muela vertical quedándose el material que exceda las 3” para ser triturado por la muela de impacto pasando al Conveyor # 2. El material de 3” o menor pasa através de las muelas verticales cayendo en el Conveyor # 1 que a su vez va al Conveyor # 2.
  - b. La Planta se compone de:
    - i. Cajón Receptor de 60 toneladas de capacidad.
    - ii. Feeder de 54” de ancho con motor de 30 hp @ 1750 RPM. Apertura aproximada 3” entre las barras.
    - iii. **Conveyor # 1** de 42” x 21’-0” se encuentra bajo el Feeder con motor de 25 hp @ 1750 RPM
    - iv. Muela de Impacto
    - v. **Conveyor # 2** de descarga de 48” x 39’-0” con motor de 10 hp @ 1750 RPM con “chute” frontal.
    - vi. Generador Caterpillar 3408 de 416 hp @ 1800 RPM. Que mueve la planta universal.
  - c. Todo el material procesado pasa al próximo equipo a traves del Conveyor # 2.
2. **Conveyor # 3** Marco 42” x 100’-0” Modelo 361 “Tubular Truss Transfer” con motor 40 hp @ 1750 RPM.
    - a. Este Conveyor transporta el material hacia el próximo equipo.
  3. **Cajón receptor 14’-0” x 14’-0”** (Surge Hopper) con alimentador (Feeder) electromagnético Syntron F680 4’-0” x 7’-0” de 7 ½ hp @ 1750 RPM.
    - a. Este alimenta el próximo equipo.
  4. **Conveyor # 4** Marco 42” x 110’-0” con motor de 50 hp @ 1750 RPM.
    - a. Transporta el material al vibrador inclinado.
  5. **Vibrador inclinado Deister 8’-0” x 20’-0”** modelo HM – 3820 – **06** de tres (3) paños, “Heavy Duty” con dos (2) motores de 30 hp @ 1750 RPM con **Conveyor # 4A** receptor de 30” x 28’-0” bajo este con motor de 15 hp.
    - a. Para tamizar y distribuir el material clasificado a los Conveyor # 6, # 7 y # 8.

6. Tres (3) **Conveyor, # 6, # 7 y # 8** Radiales de 30' x 60'-0" con motores de 20 hp @ 1750 RPM cada uno reciben del vibrador inclinado y distribuye los productos finales de 7/8" ó 3/4", 3/8" y 3/16".
7. **Molino Impactor "Impact Master II"** Universal Modelo 130 / 150 equipado con bombas hidráulicas y motor de 3 hp para lubricación. Montado sobre estructura de acero con unidad de generación eléctrica Caterpillar D 346 con 400 hp @ 1800 RPM. Montado sobre la misma estructura de acero. Este recibe el rechazo del vibrador inclinado.
8. **Conveyor # 4B** "Stud" (alcahuetes) de 30" x 22'-0" y motor de 15 hp @ 1800 RPM. Transporta el material procesado por el molino impactor que proviene del rechazo del vibrador inclinado al Conveyor # 4.
9. **Conveyor # 9** de retorno de 30" x 80'-0" con motor de 15 hp @ 1750 RPM, recibe del Conveyor # 4B.
  - a. Lo envía al cernidor 5' x 12'.
10. **Cernidor Inclinado Simplicity 5'-0" x 12'-0"** modelo M120A de dos (2) etapas equipado con un motor de 15 hp @ 1750 RPM. Montado sobre una estructura de metal que soporta un cajón de distribución de producto de 3/8" y 3/16".
11. Dos (2) **Conveyor # 10 y # 11** Radiales 30" x 60'-0" cada uno con un motor de 15 hp @ 1750 RPM para distribución de productos finales, de 3/8" y 3/16", suministrados por el cernidor 5' x 12'.
12. **Conveyor # 12** de 30" x 22'-0" con motor de 15 hp @ 1750 rpm transporta el rechazo del Cernidor Simplicity 5' x 12' que lo devuelve al **Conveyor # 4** Marco 42" x 110'-0" para reprocesar, completando el circuito cerrado.

Extracción diaria solicitada, 3,000 metros cúbicos.

Se mantendrán los siguientes equipos de repuestos:

1. Loader WA 600 con cadena.
2. Camión "Off Road"

Extracción diaria de 3,000 Metros Cúbicos.

## **APÉNDICE 10 Medidas para el Control de Erosión y Sedimentación**



# Stormwater Management Products

## 2006-2007

Over 50 BMP Products!



[www.StormWater-Products.com](http://www.StormWater-Products.com)

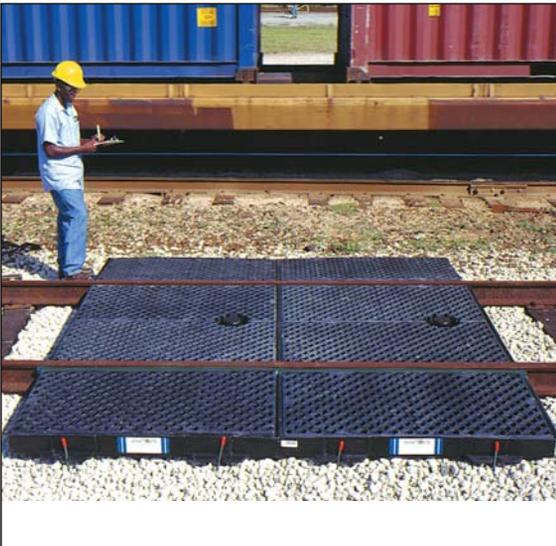
# DID YOU KNOW?

**A.** EPA Stormwater Management Regulations (National Pollutant Discharge Elimination System — NPDES) regulate the discharge of pollutants into storm drains.



**AND**

**B.** The NPDES requires permit holders to use Best Management Practices (BMPs) that include the use of Spill Containment and Spill Response products for hazardous liquids that are stored outdoors.



## What Other Stormwater Manufacturers Won't Tell You

Under NPDES Phase II, operators of all categories of Industrial Activities (except construction) may request a conditional **"No-Exposure"** exclusion by certifying that all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow and/or runoff.

For more regulatory information, please visit [www.stormwater-products.com/regs](http://www.stormwater-products.com/regs)

# Basic Requirements of a Stormwater Pollution Prevention Plan

(As outlined in NPDES, 40 CFR 122.26 (1999).)



A Stormwater Pollution Prevention Plan (SWPPP) is basically an erosion, sediment and waste chemical control plan. It is up to the permit holder to decide what types of Best Management Practices (BMPs) to use at a given site, but the company/municipality/contractor must comply with the permit requirement. SWPPPs will typically include:

- Site Description with a map.
- A description of the sediment, erosion and polluted water controls used on-site, including stabilization and structural practices (such as seeding, and catch basin inserts like the Ultra-DrainGuard or Ultra-GrateGuard).
- Descriptions of the BMPs to control stormwater runoff after completion of a construction activity or as a part of a long term maintenance plan.

## What are the Permit Requirements?

Permit holders are required to develop, implement and enforce a stormwater management program to:

1. Reduce the discharge of pollutants to the maximum extent practicable (MEP).
2. Protect water quality.
3. Satisfy the appropriate water quality requirements of the Clean Water Act.
4. Submit a Notice of Intent (NOI) which includes BMPs to be used, measurable goals, frequency of actions and responsible persons.

## What are Baseline BMPs?



- **Good Housekeeping:** reduce spill potential, routine inspections.
- **Preventive Maintenance:** maintain pipes, pumps, drum/tank storage and stormwater devices.
- **Visual Inspections:** signs of obvious stormwater contamination in outdoor storage and processing areas.
- **Spill Prevention and Response:** spill containment of drums and tanks, spill clean-up procedures, easily accessible spill response products.
- **Sediment and Erosion Control:** control methods for high erosion areas due to topography activities or other factors.
- **Runoff Management:** flow diversion, filtering using catch basin inserts, use of sumps, berms, mitigative techniques such as vacuuming, use of sorbents.

## What are Advanced BMPs?



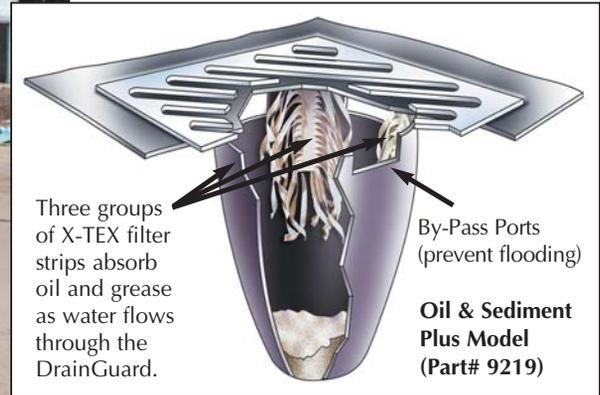
- Vegetated Filter Strips
- Detention Basins and Ponds
- Catch Basin Filters (disposable)
- Passive Skimmers
- Litter Removal Devices
- Silt Fences
- Drain Inlet Inserts
- Permanent Catch Basin Inserts

## Partial List of Industries Requiring a Stormwater Pollution Prevention Plan

- |                  |                     |
|------------------|---------------------|
| • Paper          | • Wood              |
| • Chemical       | • Cosmetics         |
| • Petroleum      | • Paint             |
| • Metals         | • Fertilizers       |
| • Transportation | • Building Products |
| • Food           | • Minerals          |
| • Textiles       | • Marine            |
| • Plastics       |                     |



# Keep Sediment And Other Pollutants From Entering The Water System With Ultra-DrainGuard Catch Basin Inserts



### Designed For Practical Use In:

**Industrial Facilities** — keep oil and other contaminants from entering storm drains.

**Construction Sites** — capture eroded soil and wind-blown debris.

**Parking Lots, "Drive-Up" Retail Facilities** — selected geotextiles collect oil, fuel and other contaminants that drip from cars.

**Oil & Sediment Model (Part# 9217/9218/9356)** — removes hydrocarbons, dirt, sand and other contaminants.

**Oil & Sediment Plus Model (Part# 9219/9220/9358)** — the addition of X-Tex filter strips increases oil and grease absorption.

**Trash & Debris Model (Part# 9227/9229)** —designed specifically to catch larger items and floatables such as leaves, cigarette butts and paper goods.

**Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**

U.S. Patent No. 5,372,714; 5,575,925; 6,632,501

	OIL & SEDIMENT MODEL	OIL & SEDIMENT PLUS MODEL	TRASH & DEBRIS MODEL
<b>Part#</b>	9217 (1-Pack) 9218 (10-Pack) 9356, 60" x 60" (1-Pack)	9219 (1-Pack) 9220 (10-Pack) 9358, 60" x 60" (1-Pack)	9227 (1-Pack) 9229 (10-Pack)
<b>Weight per unit</b>	9217/9218 — 1 lb. 9356 — 2 lbs.	9219/9220 — 2 lbs. 9358 — 3 lbs.	1 lb.
<b>Dimensions</b>	9217/9218 — 48" L x 36" W x 18" H 9356 — 60" L x 60" W x 18" H	9219/9220 — 48" L x 36" W x 18" H 9358 — 60" L x 60" W x 18" H	48" L x 36" W x 18" H
<b>Performance</b>	9217/9218 — Up to .87 gallons of oil and up to 40 lbs. of sediment 9356 — Up to 1.55 gallons of oil and up to 40 lbs. of sediment	9219/9220 — Up to 1.38 gallons of oil and up to 40 lbs. of sediment 9358 — Up to 2.06 gallons of oil and up to 40 lbs. of sediment	1 cu. ft. (before reaching bypass ports)
<b>Accessories</b>	PopUp Capacity Indicator (Part# 9236), Grate Lifter (Part# 9234), Grate Hook (Part# 9235), Retainers (Part# 9237 or 9238).		
Custom sizes are available.			

**Did you know? — In the United States, approximately 500,000 tons of pollutants pour into lakes and rivers each day.**

# Ultra DrainGuard® Ultimate Model

## The Ultimate in Catch Basin Inserts Removes Dirt, Sediment, Hydrocarbons and Reduces Harmful Bacteria.

**NEW!**

- Same hydrocarbon and sediment removal capabilities as the Ultra-DrainGuard, Oil & Sediment Plus Model (see opposite page) but with additional bacteria reducing properties.
- 1.5" x 20" strips of X-Tex AM (Antimicrobial) hang from the bottom of the DrainGuard and float on top of standing catch basin water, reducing destructive bacteria.
- The patented antimicrobial nano-structure kills single cell organisms such as bacteria, fungi, yeast and algae by molecular physical penetration, electrostatic attraction and electrocution.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**

ULTRA-DRAINGUARD, ULTIMATE MODEL	
Part#	9376 (1-Pack) 9377 (10-Pack)
Weight	3 lbs.
Dimensions	48" L x 36" W x 38" H
Performance	Oil — Up to 1.57 gallons Sediment — Up to 40 lbs.
Custom sizes available.	



**X-TEX AM STRIPS:**

- Add hydrocarbon removal capacity
- Reduce bacteria
- Reduce odors
- Reduce mosquitos

U.S. Patent Nos. 5,372,714; 5,575,925; 6,632,501  
Other Patents Pending

For more information on X-Tex AM, please see page 18 or visit our website: [www.Stormwater-Products.com](http://www.Stormwater-Products.com)

# Ultra DrainGuard® Curb-Insert Style

## Stop Oil, Sediment And Other Debris From Entering Curb Inlets And Catch Basins

- For use with combination catch basins with a street grate and curb opening.
- Heavy-duty tension rod secures DrainGuard inside curb inlet — stopping sediment and other contaminants from entering curb portion of storm drain.
- Fits grate sizes up to 40" x 40" and curb inlets up to 60" wide.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**



U.S. Patent Nos. 6,214,216; 5,372,714; 5,575,925; 6,632,501

### ULTRA-DRAINGUARD, CURB-INSERT STYLE

Part# 9230	Oil & Sediment Model, for curb inlets from 24"– 42"	Part# 9231	Oil & Sediment Model, for curb inlets from 42"– 60"
Part# 9239	Oil & Sediment Plus Model, for curb inlets from 24"– 42"	Part# 9240	Oil & Sediment Plus Model, for curb inlets from 42"– 60"
Custom sizes available.			

**Did you know? — UltraTech has more types of BMPs than any other company.**

# Ultra DrainGuard® Recycled Model



## Keep Oil and Sediment From Entering Catch Basins With Environmentally-Friendly Inserts

- Made completely out of X-Tex material — 100% recycled content.
- Superior water flow rate (151 gal/ft.<sup>2</sup>), together with built-in overflow ports prevents ponding and flooding.
- X-Tex material captures silt and sediment from runoff in addition to absorbing hydrocarbons.
- Quick and easy installation — simply lift catch basin grate, lower DrainGuard in place, and replace the grate.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**



U.S. Patent No. 5,575,925

### ULTRA-DRAINGUARD, RECYCLED MODEL

Part# 9378, 1-Pack

Part# 9379, 10-Pack

Weight per unit: 1 lb.

Dimensions: 48" L x 36" W x 18" H

Performance: Up to 1.26 gallons of oil and up to 40 lbs. of sediment

# Ultra DrainGuard® Reusable Model

## Capture Dirt and Sediment At Construction Sites and Other "High Erosion" Areas



- Rugged polypropylene construction can be easily rinsed and reused.
- Deep accumulation pocket (36") can hold up to 500 lbs. of soil, sand, sediment and dirt.
- Designed for easy removal with backhoe, forklift or other equipment.
- Custom sizes available.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**

### ULTRA-DRAINGUARD, REUSABLE MODEL

Part#	Dimensions
9341	24" x 24"
9340	24" x 36"
9342	24" x 48"
9332	24" x 24", Curb-Style
9330	24" x 36", Curb-Style
9331	24" x 48", Curb-Style

U.S. Patent No. 5,575,925



**Did you know? — In twenty minutes, one thunderstorm can send down over 125,000,000 gallons of water!**

# Ultra DrainGuard Retainers®

## Keep DrainGuards In Place Without The Use Of Grates



U.S. Patent Pending.



- Heavy-Duty coated steel retainers mount on inside ledge of catch basin — securing DrainGuard when grating is removed or installed.
- Two sizes of telescoping retainers adjust to fit any size storm drain.
- For use with all DrainGuards.

ULTRA-DRAINGUARD RETAINERS	
Part# 9237	Set of two. For catch basins from 22" – 36"
Part# 9238	Set of two. For catch basins from 36" – 62"

# Ultra Drain Markers®

- Helps inform and educate the public that most storm drains go directly into waterways untreated.
- Installs quickly and easily using permanent adhesive — cleaner and more environmentally friendly than paint and stencils.
- Designed for long life — heavy-duty plastic construction is scratch-resistant and will not rust or corrode.
- Part # 9208 includes 25 Markers and adhesive.
- **Helps comply with NPDES, 40 CFR 122.26 (1999).**

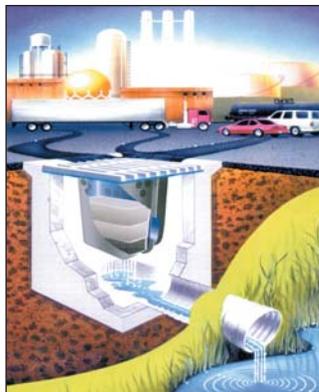


# Ultra HydroKleen®



## Permanent Catch Basin Removes Concentrated Contaminants From Stormwater at "Hot Spot" Drains

- Removes hydrocarbons, organically bound metals, sediments and other organics from stormwater and industrial runoff.
- Patented dual media filtration system provides consistent removal efficiencies.
- By-pass system prevents flooding or ponding during high flow storm events.
- Excellent post construction control for "hot spot" applications. (Drains that are more susceptible to large concentrations of contaminants.)
- Units available for round or square catch basin grates. Custom sizes available.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**



U.S. Patent No. 5,820,762.



Did you know? — Over a third of the oil found in the sea comes from the land.

# UltraGrateGuard®

## Capture Sediment, Silt And Other Debris Before They Enter Our Waterways

- For use with flat grate catch basins.
- Allows run-off to flow through while blocking sediment and/or capturing oil.
- Standard and custom sizes available.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**



U.S. Patent No. 5,725,782

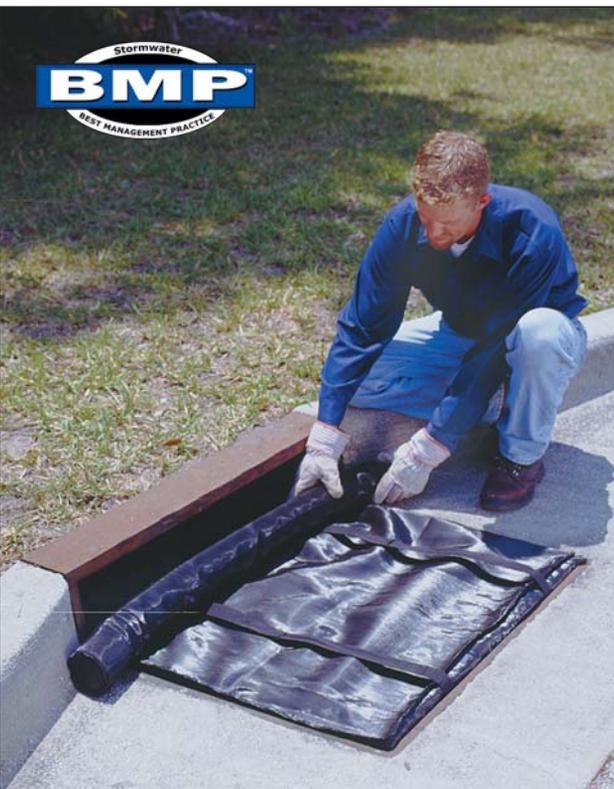
### ULTRA-GRATEGUARD

Part# 9272-SED	Sediment Only Model, 18" x 24" x 4"	Weight: 2.5 lbs.	
Part# 9278-SED	Sediment Only Model, 24" x 48" x 4"	Weight: 3.0 lbs.	
Part# 9272-O/S	Oil/Sediment Model, 18" x 24" x 4"	Weight: 3.0 lbs.	Absorbs up to 1.375 gallons of oil per unit
Part# 9278-O/S	Oil/Sediment Model, 24" x 48" x 4"	Weight: 3.5 lbs.	Absorbs up to 1.375 gallons of oil per unit

Other stock sizes and custom sizes available. Replacement Oil-Only Absorbent Pillows Available for Oil/Sediment Model Ultra-GrateGuards.

# UltraGrateGuard, Curb-Style®

## Protect Curb And Gutter Inlets From Sediment And Other Contaminants



- For use with curb openings with street grates.
- Patented design helps industrial and construction activities capture sediment, debris and oil runoff before they enter the stormwater system.
- Available in several standard lengths. Custom sizes also available.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**

U.S. Patent No. 5,632,888

### ULTRA-GRATEGUARD, CURB-STYLE

Part# 9284-SED	Sediment Only Model, 18" x 24" x 4"
Part# 9289-SED	Sediment Only Model, 24" x 48" x 4"
Part# 9284-O/S	Oil/Sediment Model, 18" x 24" x 4"
Part# 9289-O/S	Oil/Sediment Model, 24" x 48" x 4"

Other stock sizes and custom sizes available. Replacement Oil-Only Absorbent Socks Available for Oil/Sediment Model Ultra-GrateGuards.

**Did you know? — Oil spills account for only 5% of oil entering the oceans.**

# UltraGrateGuard Plus®

## Install Catch Basin Filters Without Removing Street Grates

**NEW!**

- One size fits all.
- Installs quickly and easily with included hardware — grate does not need to be moved or lifted.
- Built-in overflow port eliminates ponding and flooding during major rainfall events.
- Woven polypropylene construction provides superior strength and durability.
- Available for standard street drains and combination drains (street drains with curb inlets).
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**



U.S. Patent Pending

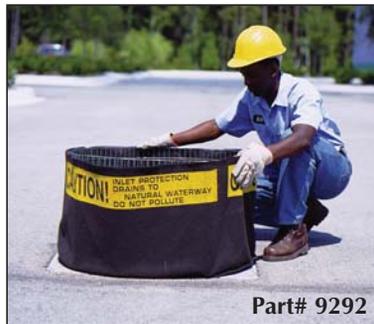


ULTRA-GRATEGUARD PLUS	
Part# 9130	Ultra-GrateGuard Plus, fits drains up to 60" x 60"
Part# 9142	Ultra-GrateGuard Plus, Curb-Style for combination drains, fits drains up to 60" x 60" and curb inlets 24"–42"
Part# 9143	Ultra-GrateGuard Plus, Curb-Style for combination drains, fits drains up to 60" x 60" and curb inlets 42"–60"

# UltraBasinGuard®

## Replace Messy Hay Bales And Keep Sediment And Oil From Entering Drains And Inlets

- Two standard sizes: Part# 9292 fits up to 24" x 24" grates. Part# 9293 fits up to 4' x 6' grates.
- Taller profile helps to identify drains and catch basins in construction sites and overgrown areas.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**



Part# 9292

Quick installation — simply remove grate, place unit over catch basin and replace grate.



Large, 4' x 6' size is installed by placing on top of grate and securing with gravel or other aggregate.

ULTRA-BASINGUARD	
Part# 9292-O/S	Oil/Sediment Model, 36" dia.
Part# 9293-O/S	Oil/Sediment Model, 4' x 6'
Other stock sizes and custom sizes available.	

**Did you know? — A single quart of used motor oil can contaminate a million gallons of water.**

# UltraPassive Skimmer®

## Remove Oil Permanently From Catch Basins And Storm Drains

- Unique polymer absorbent actually bonds the oil to the polymer matrix and prevents leaching.
- Will not create ponding or clog due to sediment.
- One 22" x 14" x 2" unit can hold up to 2 gallons of oil.
- Floats on water surface — continuously absorbs oil.
- Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.



ULTRA-PASSIVE SKIMMER			
Part# 9260	Ultra-PassiveSkimmer (2 per box)	Weight: 7 lbs.	Absorbs up to 2.0 gallons of oil per unit
Part# 9261	Ultra-PassiveSkimmer (5 per box)	Weight: 19 lbs.	Absorbs up to 2.0 gallons of oil per unit

# UltraCurbGuard®

## Keep Sediment, Oil And Debris Out Of Curb Inlets And Storm Drains

- For use with curb openings without street grates.
- Available in several standard lengths.
- Custom sizes also available.
- Patented design allows clean water to flow through while trapping sediment and/or oil depending on the model.
- Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.



U.S. Patent No. 5,632,888

ULTRA-CURBGUARD	
Part# 9265-SED	Sediment Only Model, 4" Dia. x 6' L
Part# 9269-SED	Sediment Only Model, 4" Dia. x 14' L
Part# 9265-O/S	Oil/Sediment Model, 4" Dia. x 6' L
Part# 9269-O/S	Oil/Sediment Model, 4" Dia. x 14' L
Other stock sizes and custom sizes available. Replacement Oil-Only Absorbent Socks Available for Oil/Sediment Model Ultra-CurbGuards.	

**Did you know? — Approximately 70% of all storm drains lead directly to waterways, without treatment.**

# UltraCurbGuard Plus®

## Protect Curb Inlets From Sediment-Laden Stormwater Runoff



Modular design allows units to be connected to make any length desired (3 units shown).

- Quick and easy installation.
- Modular design — build to any length.
- 3' long units can be quickly and easily connected to form longer lengths.
- Wedge-shaped, heavy-duty foam secures unit in curb inlet.
- Woven, polypropylene material provides high flow rate — will not cause ponding or flooding.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**

**NEW!**

U.S. Patent Pending

### ULTRA-CURBGUARD PLUS

Part# 9248 | Dimensions: 4" dia. x 36" L

# UltraCurbGuard® Insert-Style

## Keep Oil, Sediment, Floatables And Other Contaminants Out Of Curb Inlets



Patent No. 6,811,708

- For use in drains with curb inlets only.
- Two heavy-duty tension rods keep unit secured inside inlet for a clean, flush-mounted installation.
- Filtering material is quickly and easily replaced.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**



### ULTRA-CURBGUARD, INSERT-STYLE

Part# 9760	Ultra-CurbGuard, Insert-Style	Fits 22-35" Inlets
Part# 9761	Ultra-CurbGuard, Insert-Style	Fits 36-60" Inlets

**Did you know? — In 2001, a major retail chain was fined \$1 million by the EPA for stormwater violations.**

# Ultra GutterGuard Plus®

## Guard High-Flow Curb Inlets From Silt, Sediment And Other Contaminants



**NEW!**

- Designed for curb inlets with high-flow volumes.
- Unique, multi-dimensional outer filter combined with rigid inner frame maintains a low profile to prevent damage from vehicular traffic.
- 7lb. weighted attachment inserts into inlet to keep unit upright and secure (see inset photo).
- Tie-back straps on either end of unit can be used with sod pin or stake for additional anchoring.
- Can be easily cleaned and reused.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**

ULTRA-GUTTERGUARD PLUS	
Part# 9150	Dimensions: 10" H x 4' L
Part# 9151	Dimensions: 10" H x 6' L
Part# 9152	Dimensions: 10" H x 8' L
Part# 9153	Dimensions: 10" H x 10' L
Part# 9154	Dimensions: 10" H x 12' L
Part# 9155	Dimensions: 10" H x 14' L
Part# 9156	Dimensions: 10" H x 16' L

Available in many standard and custom sizes (allow 12" overlap on each side of inlet).

# Ultra GutterGuard®

## Keep Sediment And Other Debris Out of Curb Inlets



- Made of 100% recycled materials.
- Can be reused — simply remove, clean and store properly until needed again.
- Built-in overflow ports allow water to pass through during major rainfall events.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**



- Quick and easy installation — no stakes, weights or hardware required. Simply place in front of curb inlet assuring at least a 12" overlap on each side.

ULTRA-GUTTERGUARD	
Part#	Dimensions
9320	9" dia. x 8' L
9321	9" dia. x 10' L
9322	9" dia. x 12' L

**Did you know? — The new Spill Prevention Control and Countermeasure Act (SPCC) will require over 419,000 industrial facilities to develop SPCC plans that will include spill containment products.**

## Reduce Oil and Sediment Flowing Through Trench Drains and Pipes

- Filter design forces water to flow around and through a series of X-TEX filter strips — sand, silt and sediment are trapped between the strips while hydrocarbons are absorbed by the X-TEX material.
- Unit has a 10 ft. x 2ft. section of filter strips — nylon cord is sewn along the entire length of the fabric for added strength.
- Loops on each end allow TrenchFilters to be connected together for long runs of trench/pipe.



- Ten-foot cord (included) can be used to tie off TrenchFilter and secure it in place.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**

**NEW!**

Now available with X-TEX AM! Reduce oil and sediment from stormwater and eliminate harmful bacteria.

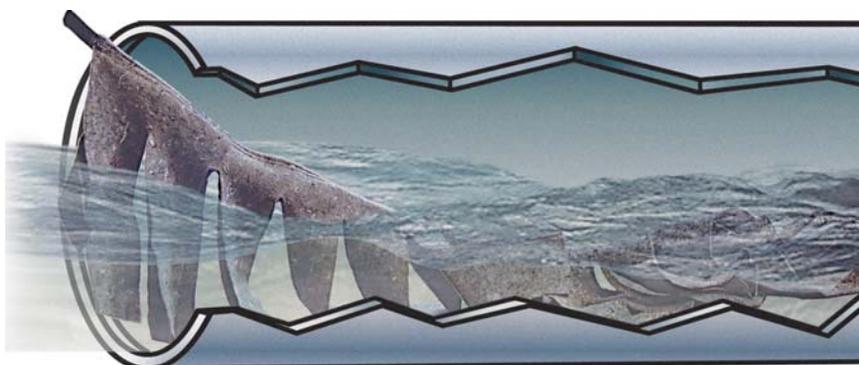
### ULTRA-TRENCHFILTER

Part# 9700      Part# 9702, X-TEX AM

Dimensions: 10' L x 2' W

Absorbs up to 0.5 gallons of oil per unit

Weight: 2 lbs.



The filter strips create mixing and turbulence as stormwater travels around and through the X-TEX fabric.



U.S. Patent No. 6,632,501

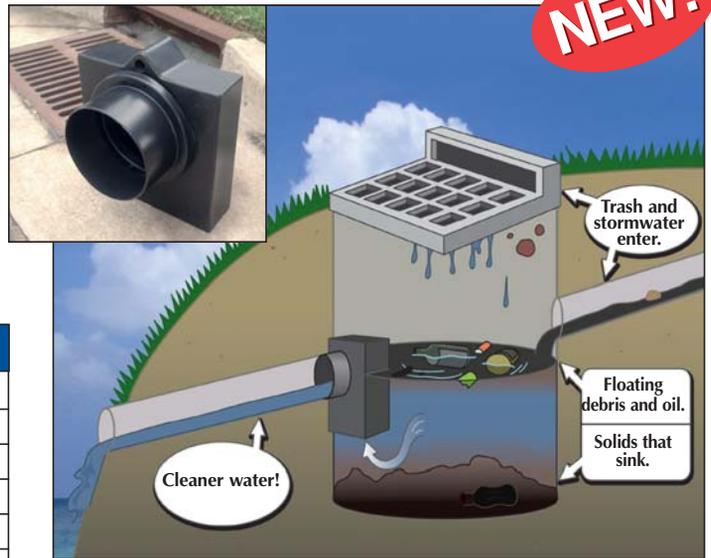
**Did you know? — 1 quart of oil makes a 2 acre oil slick. The Ultra-DrainGuard Plus Model holds 5+ quarts.**

# Ultra Oil & Debris Blocker®

## Stop Pollutants Before They Can Reach Stormwater Outflow

- Stormwater is forced to flow through bottom of unit — floating trash and hydrocarbons remain on the water's surface and *out* of the outflow.
- Installs quickly and easily in storm drain outflows.
- Low-profile allows vector trucks to clean catch basin *without* removing the unit.
- **Helps comply with NPDES, 40 CFR 122.26 (1999) and TMDL requirements.**

**NEW!**

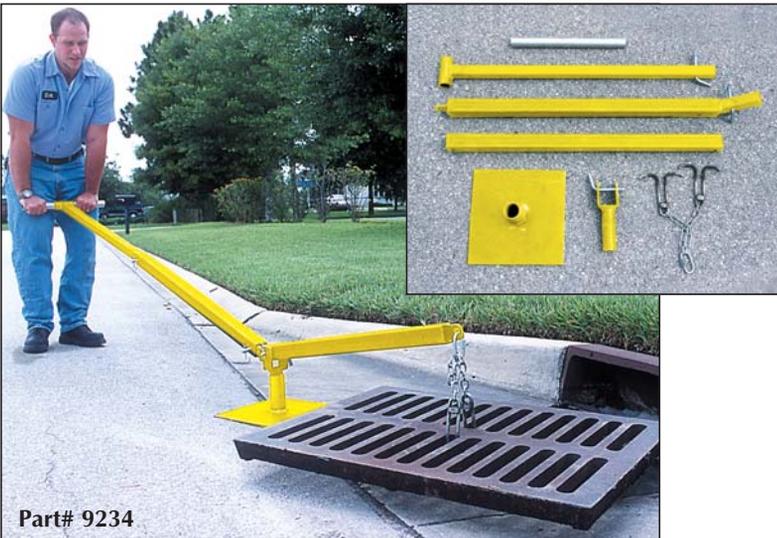


- **Dual component, all-polyethylene unit will not rust or corrode.**

ULTRA-OIL & DEBRIS BLOCKER			
Part# 9380	8" Center Opening	4 1/2" X 12" X 14"	4 lbs.
Part# 9381	10" Right Opening	5 1/2" X 14" X 16"	6 lbs.
Part# 9382	10" Center Opening	5 1/2" X 14" X 16"	6 lbs.
Part# 9383	10" Left Opening	5 1/2" X 14" X 16"	6 lbs.
Part# 9384	12" Center Opening	6 1/2" X 16 3/8" X 18"	7 lbs.
Part# 9385	8" Adapter	7 3/4" X 8" X 12"	1.5 lbs.
Part# 9386	10" Adapter	9 1/2" X 10" X 12"	2 lbs.
Part# 9387	12" Adapter	11" X 12" X 12"	3 lbs.

U.S. Patent Pending

# Ultra Grate Lifter®



Part# 9234

- Ergonomically designed — minimizes potential injuries associated with heavy lifting.
- Allows single-person grate lifting — reduces personnel and maintenance costs.
- Disassembles quickly for easy transport — optional two-piece carrying case available (Part# 9241).
- Part# 9234, 74 lbs.

# Ultra Grate Hook®



- Heavy duty steel hook fits all grates — protects hands from injury.
- Part# 9235, weight 3 lbs.

**Did you know? — 46% of the impaired rivers and lakes are polluted due to stormwater.**



# Minimize Erosion and Sediment Runoff



Ultra-StormWattle Fiber Rolls are made with wheat straw, and bound into a tight tubular roll. When StormWattles are placed on the face of slopes, they intercept stormwater runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff. By interrupting the length of a slope, the Ultra-StormWattle fiber roll can also reduce erosion.

- Use instead of silt fence to reduce erosion at construction sites — stops sediment and other debris from entering retentions ponds, lakes and other water bodies.
- Environmentally-friendly — units can be left in place to eventually “mulch in” with surrounding environment.
- Less intrusive and conspicuous than silt fence — perfect for use in ongoing residential and commercial construction projects.
- Installation is quick and easy — simply dig shallow trench and stake in place.
- Can be used as check dams to reduce water velocity.
- Requires no maintenance or upkeep.
- **Helps comply with NPDES, 40 CFR 122.26 (1999).**



Minimize erosion on slopes and inclines — perfect for construction sites, fire burn rehabilitation, timber harvest erosion control and revegetation projects.



StormWattles are made with biodegradable materials and can be left in place after use to “mulch in”.

ULTRA-STORMWATTLES	
Part #	Dimensions
9750	9" dia. x 10' L, 20 per pallet
9745	9" dia. x 14' L, 20 per pallet
9741	9" dia. x 25' L, 5 per pallet
9742	12" dia. x 10' L, 7 per pallet
9743	12" dia. x 25' L, 3 per pallet

### ULTRA-STORMWATTLES CAN BE USED:

- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- At the end of a downward slope where it transitions to a steeper slope.
- Along the perimeter of a project.
- As check dams in unlined ditches.
- Down-slope of exposed soil areas.
- Around temporary stockpiles.
- As a sediment filter surrounding catch basins.
- As a sediment filter in front of curb inlets.
- For soil stabilization after forest fires.
- To promote revegetation.

**Did you know? — Ultra-DrainGuard can capture up to 78% of incoming free oil and sediment.**

# UltraDewatering Bag®

## Contain Sediment And Oil Pumped Out During Dewatering Operations

- Retains both oil and sediment, offering a combination of benefits not available in alternative dewatering bags.
- Standard and custom sizes available.
- **Helps comply with NPDES, 40 CFR 122.26 (1999).**



ULTRA-DEWATERING BAG	
Part# 9724-O/S	Oil/Sediment Model, 6' x 6'
Part# 9725-O/S	Oil/Sediment Model, 10' x 15'
Part# 9727-O/S	Oil/Sediment Model, 15' x 15'

# UltraDewatering Bag, Reusable Model



## Reusable Dewatering Bag For Large Jobs And Big Savings

- Use for dewatering operations with large quantities of silt, sediment or dirt. Bags can be emptied and reused repeatedly.
- Large 3'-5' opening allows easy access and removal of trapped sediment.
- Galvanized steel Locking Rods (Part# 9735) are quickly and easily installed to secure bag opening during dewatering.
- **Helps comply with NPDES, 40 CFR 122.26 (1999).**



Use on truck beds to quickly and easily transport filled Dewatering Bag to site for emptying.

U.S. Patent Pending



ULTRA-DEWATERING BAG, REUSABLE MODEL	
Part# 9730	3' x 5' Bag with Locking Rods
Part# 9732	5' x 7' Bag with Locking Rods
Part# 9735	Locking Rods only
Part# 9736	Replacement Bag, 3' x 5'
Part# 9738	Replacement Bag, 5' x 7'

Did you know? — 110,000 more construction sites and MS4s fall under NPDES Phase II.



**NEW!**

## Economical And Versatile Sand Bags Have Many Uses

- Can be filled with sand, gravel or other aggregate.
- Sewn-in ties can be used to quickly close off bags.
- Use for flood control, counter balance, temporary barriers, etc.
- Woven monofilament construction — long lasting and durable.
- Large, cubic-yard bags also available (3,000-lb. capacity).



ULTRA-SAND BAGS	
Part#	Description
9720	14" x 25", Pallet of 15,000 qty.
9722	Cubic-yard bag, Pallet of 150 qty.



## Control The Flow Of Sediment And Oil Out Of Headwall And Other Types Of Pipes

- Use in pond applications where vertical pipes extend above the water surface, and preventing sediment in-flow during high-water events is required.
- Several standard and custom sizes available.
- **Helps comply with NPDES, 40 CFR 122.26 (1999).**



ULTRA-PIPESOCK	
Part#	Description
Part# 9705-O/S	Oil/Sediment Model, for 8" dia. Pipe, 60" L
Part# 9707-O/S	Oil/Sediment Model, for 16" dia. Pipe, 60" L
Other stock sizes and custom sizes available.	



**NEW!**



## Triangular Silt Dike™ Barrier Systems Help Contain Eroded Soils

- Designed as an effective and economical alternative to straw bales, silt fence and rock check dams.
- Patented design provides effective erosion and sediment control.
- Aprons on either side of Dike prevent erosion and failure of the structure. Optional, U-shaped wire staples help secure unit in place and conform to rough terrain.
- Lightweight and durable construction — installs in minutes.
- Multiple units can be installed side-by-side for larger areas.
- Other uses include: ditch check dams diversion dikes, drop inlet protection, continuous barrier, temporary ditch liner and stream and pond protection.



U.S. Patent No. 5,605,416

ULTRA-SILT DIKE	
Part#	9712
Dimensions:	84" L x 67" W x 10.5" H
Weight:	8 lbs.
Options:	U-Shaped Staples (Part# 9714)

- **Helps comply with NPDES, 40 CFR 122.26 (1999).**



## Prevent Erosion And Keep Sediment Out Of Storm Drains And Waterways

Ultra-SiltFence is conveniently shipped in pre-assembled 100-foot lengths. Includes 2" square, sharpened, hardwood stakes with 3 staples to hold the silt-controlling, polypropylene material firmly in place.

- Contractor-grade material in heights of 24" and 36".
- Easy and economical way to meet erosion and sediment control at construction sites.
- DOT-grade material available.
- **Helps comply with NPDES, 40 CFR 122.26 (1999).**



ULTRA-SILTFENCE		
Part#	Description	Weight
Part# 9715-WS	Ultra-SiltFence: 24" H x 100' L	Weight: 30 lbs.
Part# 9716-WS	Ultra-SiltFence: 36" H x 100' L	Weight: 40 lbs.

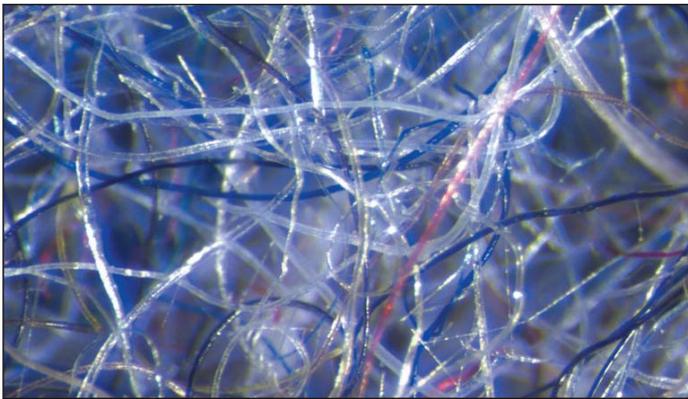
**Did you know? — Spill Containment, Prevention and Response is considered a "Baseline BMP".**

# What is X-TEX®?



Throughout this catalog, you've seen this logo. So what does it mean? It means that product is available using new X-TEX material, a lipophilic medium. This material is produced from a patented **recycled** blend of synthetic fibers. Utilizing state-of-the-art technology, these materials are blended and processed into a lightweight fiber mass with enormous surface area and interstitial spaces creating a high performance sorbent and filter media.

X-TEX at 40x magnification



X-TEX is a trademark of the XETEX Corporation, all rights reserved. U.S. Patents Pending.



- Designed for use as a durable long lasting geo-textile and filter media.
- Allows large volumes of water to pass through while sorbing liquid hydrocarbons, including petroleum, animal and vegetable oils.
- Cost effective — absorbs an average of 20 times its own weight of liquid hydrocarbons.
- Great for use in oil/water separators, stormwater and wastewater filtration systems and water "polishing" applications.
- X-TEX in fabricated forms can help meet NPDES and TMDL requirements. Call us or visit [www.Stormwater-Products.com](http://www.Stormwater-Products.com) for more information.

## Nano-Technology Merges with X-TEX Fabric for Stormwater Bacteria Control

Storm water control systems, catch basins and storm water pipes under low flow conditions can act as biological incubators that add to the microbial contamination of storm water runoff. Bacterial pollutants, unlike chemical ones, are dynamic — they grow exponentially and may quickly reach dangerous levels.

X-TEX AM provides a powerful, cost effective and durable delivery system for water filtration with antimicrobial action:

- Kills bacteria and other single-cell organisms and removes oil.
- Utilizes a physical rather than chemical kill mechanism.
- Retains full strength — won't leach, dilute or be consumed by bacteria.
- Prevents the development of adaptive organisms (super-bugs).
- Can be cut and formed for use in any BMP system design.

### X-TEX

Part# 9310	Rolled Fabric, 60" W x 250' L	Weight: 115 lbs.
Part# 9312	Bulk Fibers	Weight: 500 lbs.

Please call for X-TEX AM specifications.

**Did you know? — NPDES permits require the reduction of pollution to the maximum extent practicable (MEP).**

# Ultra DownSpoutGuard®

## Remove Pollutants From Stormwater Flow In Gutters and Downspouts



Call us for information on the new Ultra-DownSpoutGuard designed for removing heavy metals.

- Special “X-Tex” oil-absorbing filter material removes oil, grease and other hydrocarbons from gutter and downspout waterflow.
- Quick and easy to install on most downspouts.
- Filter material is easily removed and replaced.
- Polyethylene construction will not rust or corrode.
- **Helps comply with NPDES and TMDL requirements.**



ULTRA-DOWNSPOUTGUARD		
Part# 9315	Ultra-DownSpoutGuard	Weight: 16 lbs.
Part# 9316	Refill for Ultra-DownSpoutGuard	Weight: 3 lbs.
Total absorption capacity: 8 gallons of hydrocarbons		

U.S. Patent No. 6,632,501

# Ultra Absorbent Tarp®

## Catch And Trap Oil Drips Before They Can Reach The Ground

- Use under machinery and equipment to catch fluid leaks during maintenance or repairs.
- Rolls or folds into small package — store in vehicles for onsite repairs.
- Keeps floors free of oily mess — reduces slip hazards.
- Three-layer system provides maximum protection:

**Top layer:** UV resistant geotextile fabric — allows oils to pass through.

**Middle layer:** Absorbent core — oil-only polypropylene traps oils but allows stormwater to evaporate.

**Bottom layer:** Impermeable backing keeps drips from leaching through to the ground or shop floor.

- **Helps comply with NPDES, 40 CFR 122.26 (1999).**



ULTRA-ABSORBENT TARP			
Part#	Dimensions	Capacity	Weight
8305	5' x 5'	Up to 3 gallons	16 lbs.
8306	10' x 10'	Up to 12 gallons	3 lbs.

Did you know? — The new revisions to the Spill Prevention Control and Countermeasure Act (SPCC) deals specifically with oil at onshore and offshore facilities.

# Ultra DrainSeals®

## Stop Spills From Going Down The Drain

Part# 2142



Optional Ultra-DrainSeal WallMount Units allow quick response to any spill — just "grab and go"!



Part# 2134

- Unique, urethane construction allows the pad to deform and seal off most drains — temporarily "seals" to any smooth surface.
- A valuable addition to any emergency response plan, spill kit, SPCC or stormwater management program.
- **BOTH sides will quickly seal drains — no specified "top" or "bottom."**



Reinforcing mesh is "sandwiched" between layers of polyurethane — increases durability and resistance to tearing.

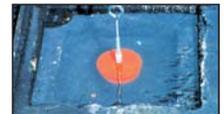
U.S. Patent No. 6,530,722

ULTRA-DRAINSEALS		ULTRA-DRAINSEAL WALLMOUNT
Flexible, non-absorbing material with reinforced, tear-resistant mesh  One unit per box, easily cuts to special shapes and sizes  Resists oil, water and most aggressive chemicals, cleans with soap and water  Prevents contaminants from entering drain  Helps comply with SPCC  Helps comply with NPDES	Square: Part# 2126: 18" x 18" x 3/8" • 5 lbs. Part# 2127: 24" x 24" x 3/8" • 9 lbs. Part# 2130: 30" x 30" x 3/8" • 10 lbs. Part# 2131: 42" x 42" x 3/8" • 20 lbs. Part# 2132: 48" x 48" x 3/8" • 34 lbs. Part# 2133: 54" x 54" x 3/8" • 41 lbs.	Part# 2140: Fits 18" x 18", 24" x 24", 12" dia. and 20" dia. DrainSeals  Part# 2142: Fits 36" x 36" and 30" dia. DrainSeals  Part# 2143: Fits 42" x 42", 48" x 48" and 42" dia. DrainSeals
	Circular: Part# 2134: 12" dia. x 3/8" • 2 1/2 lbs. Part# 2135: 20" dia. x 3/8" • 5 lbs. Part# 2136: 30" dia. x 3/8" • 10 lbs. Part# 2137: 42" dia. x 3/8" • 20 lbs.	Made of HDPE. Velcro strap allows quick and easy access  Non-slip handle for easy carrying  Mounting hardware included
	Rectangular: Part# 2124: 18" x 58" x 3/8" • 16 lbs. Part# 2125: 36" x 58" x 3/8" • 30 lbs.	

# Ultra DrainPlugs®



- Tapered design wedges securely into standard drains to stop any flow.
- Eyebolts are removable, allowing installation of grating with DrainPlug in place.
- Non-absorbing, easily cleaned for repeated use.



## ULTRA-DRAINPLUGS

Flexible polyurethane material Resists oil, water and most aggressive chemicals Prevents contaminants from entering drain Non-absorbing material Cleans with soap and water Safety orange color	2" dia. conical plug, Weight: 1.5 lbs.
	3" dia. conical plug, Weight: 2 lbs.
	4" dia. conical plug, Weight: 3 lbs.
	6" dia. conical plug, Weight: 8 lbs.
	8" dia. conical plug, Weight: 14 lbs.
	10" dia. conical plug, Weight: 22 lbs.
	12" dia. conical plug, Weight: 32 lbs.

## STANDARD SIZES:

2" Diameter	Part# 2113
3" Diameter	Part# 2114
4" Diameter	Part# 2115
6" Diameter	Part# 2117
8" Diameter	Part# 2118
10" Diameter	Part# 2119
12" Diameter	Part# 2121
3-Plug Kit*	Part# 2116

\* (Includes one each of 2", 3" and 4" Ultra-DrainPlugs and Plastic Carrying Case.)



## Temporary Berm Seals Off Spills From The Environment, Nearby Drains And Doorways



Part# 2100

ULTRA-SPILLBERM
Part# 2100: Orange • Part# 2050: Black
Dimensions: 10' x 4" x 2 1/4"
Weight: 31 lbs. per unit
Material: Non-absorbing polyurethane
Optional Connectors (Part# 2101) used to connect 10' sections
Optional Corners (Part# 2102) are used with Connectors to make 90° corners



Part# 2101  
Black Connector

Part# 2102  
90° Orange  
Corner

- Standard 10-foot sections can be cut to various lengths to meet custom needs.
- Unique, urethane material “weeps” into small cracks and crevices to seal off liquid flow.
- SpillBerm is non-absorbing and is easily cleaned for repeated use.
- Applications include:
  - Spill response
  - Temporary secondary containment
  - Sealing off of doorways during washdown operations
- Flexible Ultra-SpillBerm will bend and turn to form almost any shape while temporarily “bonding” to any smooth surface.
- **Helps comply with NPDES and SPCC.**

*Decide what shape or configuration is required and use optional Connectors and 90° Corners to complete the area.*



U.S. Patent No. 5,236,281



## Taller SpillBerm Helps Contain or Divert Larger Volume Spills

- Flexible polyurethane construction is non-absorbent and chemical resistant — easily cleans with soap and water for repeated uses.
- Built-in connectors allow multiple 5-foot units to be quickly and easily connected.
- **Helps comply with NPDES and SPCC.**

ULTRA-SPILLBERM PLUS
Part# 2054
Dimensions: 5' x 4" x 4 1/2"
Weight: 16 lbs. per unit
Material: Non-absorbing polyurethane



Part# 2054



U.S. Patent No. 5,236,281

**Did you know? — Stormwater runoff is the #1 source of water pollution in the United States.**

# Ultra SpillPallet Economy Models®

Part# 1006 (Cover) Optional PullOver Cover keeps rainwater out of the sump area and helps meet Stormwater Regulations.



- Available in 2-drum and 4-drum configurations.
- Applications for the all-polyethylene units include satellite waste collection and storage of virgin chemicals.
- Black color helps hide dirt and grime.
- Meet EPA Container Storage Regulation 40 CFR 264.175 and Uniform Fire Code Spill Containment Regulations.
- Helps meet new Stormwater Management Regulations — NPDES, 40 CFR 122.26 (1999).



Part# 1112

## ULTRA-SPILLPALLET ECONOMY MODELS

Ultra-SpillPallet P4-3000	Ultra-SpillPallet P2-1500
Part# 1112: no drain Part# 1113: with drain	Part# 2504: no drain Part# 2505: with drain
Dimensions: 53" x 53" x 11 3/4"	Dimensions: 53" x 29" x 16 1/2"
Weight: 85 lbs.	Weight: 63 lbs.
Uniformly Distributed Load: 3,000 lbs.	Uniformly Distributed Load: 1,500 lbs.
Containment Capacity: 66 gallons	Containment Capacity: 66 gallons
Optional PullOver Covers, Part# 1006	Optional PullOver Covers, Part# 1016

U.S. Patent No. 5,615,608

# Ultra HardTop P1 Plus®

## The Only 1-Drum, Lockable Outdoor Containment Unit Available



Part# 9640

- Convenient "roll-top" cover slides up and out of the way — allows quick access to drum pumps and funnels.
- 100% polyethylene construction will not rust or corrode.
- Safe Handling — can be moved by forklift under the "shoulder" area or wheeled with the optional dolly.
- Meets EPA Container Storage Regulation 40 CFR 264.175.
- Helps meet new Stormwater Management Regulations — NPDES, 40 CFR 122.26 (1999).

## ULTRA-HARDTOP P1 PLUS

Ultra-HardTop P1 Plus	Dolly
Part# 9640: no drain Part# 9641: with drain	Part# 0417
Dimensions: 36" x 36" x 66"	Dimensions: 26 1/2" x 26 1/2" x 5"
Weight: Top 36 lbs. Weight: Bottom 26 lbs.	Weight: 31 lbs.
Load Capacity: 800 lbs.	Load Capacity: 800 lbs.
Containment Capacity: 64 gallons	Construction: Steel

Tall head space (25 3/4") allows use with drum pumps and conical funnels.

Did you know? — 40% of U.S. rivers and streams are too polluted for fishing or swimming.

# UltraHardTop P2 Plus®

## Store 2 Hazardous Drums Safely Outdoors With Pumps And Funnel In Place!



Part# 9612

- Tall 23 3/4" head space easily accommodates rotary drum pumps and large conical funnels.
- Low profile (8 3/4") containment pallet positions drum-top funnels at a safe, convenient level to pour hazardous wastes.
- 100% Polyethylene construction will not rust or corrode.
- **Meets EPA Container Storage Regulation 40 CFR 264.175 and Uniform Fire Code Spill Containment Regulations.**
- **Helps meet new Stormwater Management Regulations — NPDES, 40 CFR 122.26 (1999).**

U.S. Patent No. 5,615,608

### ULTRA-HARDTOP P2 PLUS

Ultra-HardTop P2 Plus	Loading Ramp
Part# 9612: no drain Part# 9613: with drain	Part# 0676
Dimensions: 67 1/4" x 41 1/4" x 74"	Dimensions: 46" x 28" x 8 3/4"
Weight: 260 lbs.	Weight: 25 lbs.
Uniformly Distributed Load: 4,500 lbs.	Surface: Non-slip
Containment Capacity: 66 gallons	Construction: Polyethylene

"Swing out" lower doors provide full access to drums for loading and unloading — optional ramp features a non-slip surface.

Loading Ramp (Part# 0676) stores neatly inside the containment unit when not in use.



Ultra-HardTop P2 Plus is lockable with a standard padlock, and can be safely lifted by forklift with drums in place.



# UltraHardTop P4 Plus®

## Safely Store 4 Drums Outdoors

- Unique "dual closure" offers significant ergonomic and convenience benefits — drums are easily accessed from either side.
- Roll-top covers can be easily lifted from waist height to access drum tops — no need to reach near ground level.
- Low profile (8 3/4") containment pallet positions drum-tops at a safe, convenient level to pour wastes into funnels or to use drum pumps.
- Forkliftable, lockable, all-polyethylene construction will not rust or corrode.
- **Meets EPA Container Storage Regulation 40 CFR 264.175.**
- **Helps meet new Stormwater Management Regulations — NPDES, 40 CFR 122.26 (1999).**

U.S. Patent No. 5,615,608

### ULTRA-HARDTOP P4 PLUS

Part# 9636: no drain Part# 9637: with drain	Weight: 440 lbs.
Outside Dimensions: 64 1/2" x 62" x 79"	Containment Capacity: 75 gallons
Options: Loading Ramp (Part# 0676) — stores inside containment unit when not in use	Uniformly Distributed Load: 9,000 lbs.



Did you know? — The #1 pollutant in stormwater by volume is sediment.



## Comply With Regulations While Storing IBC Tanks Outdoors

- Upper roll-top door and lower swing-out doors combine to allow easy and convenient access to IBC.
- Safely stores an IBC tank with maximum dimensions of 52" x 52" x 61".
- Low profile (28" height), 360 gallon containment sump allows safe material handling and dispensing.
- Forkliftable, lockable, all-polyethylene design will not rust or corrode.

U.S. Patent No. 5,615,608



- Meets EPA Container Storage Regulation 40 CFR 264.175 and SPCC Regulations.
- Helps meet new Stormwater Management Regulations — NPDES, 40 CFR 122.26 (1999).



ULTRA-IBC HARDTOP	
Part# no drain: 1162 Part# with drain: 1161	Weight: 525 lbs.
Outside Dimensions: 64.5" x 62" x 96"	Containment Capacity: 360 gallons
Ultra-Twin IBC HardTop (Part# 1140) also available for storage of two IBC tanks.	Uniformly Distributed Load: 8,500 lbs.



OUTDOOR MODELS

## Low-Cost, Outdoor Spill Containment for Multiple IBC Tanks

- Available in 2-tank, 3-tank, 4-tank and 5-tank models.
- Unique "roll top" enclosures and swing-out doors allow convenient loading and unloading of IBC tanks.
- Each IBC tank sits on a low profile spill pallet with a containment capacity of 75 gallons — Expansion Tanks provide 65 gallons of additional capacity.
- "Flow-through" bulkhead fittings connect spill pallets and Expansion Tanks together, allowing spills to be channeled throughout the containment system — containment capacity is thereby "borrowed" from adjacent spill pallets and Expansion Tanks.
- Compartments are lockable for secure storage of hazardous materials.
- 100% polyethylene construction — eliminates the potential for rust and corrosion.
- Optional Extender Kits (Part# 9658) provide for the addition of another compartment. (1 tank per Extender Kit).
- Meets EPA Container Storage Regulation 40 CFR 264.175.
- Helps meet new Stormwater Management Regulations — NPDES, 40 CFR 122.26 (1999).



Expansion Tank

U.S. Patent No. 5,562,047; 5,615,608

ULTRA-MODULAR IBC SPILLPALLETS					
Part#	Description	Dimensions	Weight Capacity	Gallon Capacity	Weight
1165	2-Tank Model	126" x 93" x 79"	9,000 lbs. UDL per Pallet	280 gal.	881 lbs.
1166	3-Tank Model	188" x 93" x 79"	9,000 lbs. UDL per Pallet	355 gal.	1258 lbs.
1167	4-Tank Model	250" x 93" x 79"	9,000 lbs. UDL per Pallet	365 gal.	1603 lbs.
1168	5-Tank Model	312" x 62" x 79"	9,000 lbs. UDL per Pallet	375 gal.	1948 lbs.
1118	Assembly Kit	Includes hole saw, arbor and set of 2 tightening tools <b>REQUIRED</b>			
9658	Extender Kit	64" x 62" x 79"	9,000 lbs. UDL	75 gal.	375 lbs.

Options/Accessories: Part# 1117 — 2" Bulkhead Fittings (Set of 2), Part# 1124 — Expansion Tank only, 61" x 31" x 12 1/2", Capacity: 65 gallons, 30 lbs.

# Ultra HardTop Plus Models®

## Safely Store Multiple Drums Outdoors



Part# 9652

- Available in 8, 12, 16 and 20-drum models. Extender Kits are available to expand capacity beyond 20-drums.
- All polyethylene construction — offers excellent chemical resistance, will not rust or corrode.
- Separate, lockable compartments feature a unique “2-way” entry system — allows quick access to all four (4) drums.
- Roll-top covers can be easily lifted from waist height to access drum tops.
- Swing-out doors provide safety and convenience for loading or unloading drums.
- Low-profile (8-3/4” height) containment pallet positions drum-tops at a safe, convenient level to pour wastes into funnels or to use drum pumps.
- Units ship partially unassembled for freight savings.



Part# 9650



Part# 9656

- Rugged, 9,000 lb. uniformly distributed load (UDL) capacity per compartment allows safe storage of IBC tanks as well as drums.
- Multiple “4-drum compartments” offer flexible usage for a broad range of operations, including: storage of virgin chemicals, active hazardous waste collection and storage of spill response supplies. Internal walls and separate sumps allow materials to be segregated.
- Use optional Ramp (Part# 0676) for easier drum handling — stores inside HardTop when not in use.
- Meets EPA Container Storage Regulation 40 CFR 264.175 and helps comply with NPDES, 40 CFR 122.26 (1999). Considered a Stormwater Management “Best Management Practice” product (BMP). Also meets SPCC Regulations for secondary containment of hydrocarbons.

### ULTRA-HARDTOP PLUS MODELS

Part# 9650: HardTop P8, no drain, 815 lbs. Part# 9651: HardTop P8, with drain, 815 lbs. Dimensions: 126” x 62” x 79” Capacity: (8) 55-gallon drums	Part# 9652: HardTop P12, no drain, 1190 lbs. Part# 9653: HardTop P12, with drain, 1190 lbs. Dimensions: 188” x 62” x 79” Capacity: (12) 55-gallon drums
Part# 9654: HardTop P16, no drain, 1565 lbs. Part# 9655: HardTop P16, with drain, 1565 lbs. Dimensions: 250” x 62” x 79” Capacity: (16) 55-gallon drums	Part# 9656: HardTop P20, no drain, 1940 lbs. Part# 9657: HardTop P20, with drain, 1940 lbs. Dimensions: 312” x 62” x 79” Capacity: (20) 55-gallon drums
Part# 9658: 4-Drum HardTop Extender Kit, no drain, 375 lbs. Part# 9659: 4-Drum HardTop Extender Kit, with drain, 375 lbs.	
Weight Capacity: 9,000 lbs. UDL per compartment Containment Capacity: 75 gallons per compartment	
Options: Polyethylene Loading Ramp — Part# 0676	

U.S. Patent No. 5,615,608



**Did you know? — A TMDL, or Total Maximum Daily Load, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards.**

# Ultra Containment Sumps®

## Secondary Containment for Fuel Tanks

- Economical containment for 275 (Part# 2800 and 2801) and 550 (Part# 2823 and 2820) gallon fuel and oil tanks.
- 100% polyethylene construction will not rust or corrode — provides superior chemical and weather resistance.
- Optional 3/4" drain fitting available.
- Use with optional Ultra-Self Bailer (Part# 9935) for outdoor containment — Self Bailer allows clean stormwater to passively drain from sump while capturing hydrocarbons.
- Meets Stormwater, SPCC and EPA Containment Regulations.



Part # 2823



Part # 9935

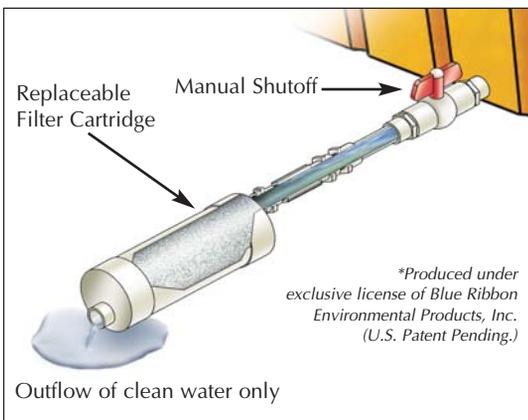
Note: To use Ultra-SelfBailer, the Ultra-Containment Sump WITH DRAIN, must be specified when ordering.

### ULTRA-CONTAINMENT SUMPS

Part# 2800: no drain Part# 2801: with drain	Weight: 90 lbs.	Capacity: 360 gallons
Outside Dimensions: 84 1/2" x 43 3/4" x 29" Inside Bottom: 73" x 31"		
Part# 2823: no drain Part# 2820: with drain	Weight: 108 lbs.	Capacity: 605 gallons
Outside Dimensions: 87" x 62 1/4" x 32 3/4". Inside Bottom: 75 3/4" x 47 3/4".		

# Ultra Self Bailer®

## Passively Filter Hydrocarbons From Stormwater In Outdoor Containment Products



- The best protection for non-monitored containment sites.
- Helps eliminate problems associated with the collection of rainwater in outdoor containment products.
- Simple installation — can be connected to any outdoor containment product.
- Hydrocarbon “sheens” and modest spills are captured — clean stormwater drains through the outflow port.
- Larger or concentrated spills activate “auto-shutoff” mechanism.
- Manual shutoff valve can be used to secure all draining operations, change out the filter cartridge.
- Filters are quickly and easily replaced.



Use with IBC SpillPallets, Containment Berms and other outdoor containment products.

### ULTRA-SELFBAILER

Part# 9935: standard	Part# 9937: large	Part# 9926: XL	Part# 9928: XXL
Dimensions: 28" L x 3 1/2" dia.	Dimensions: 36" L x 4 1/2" dia.	Dimensions: 20" L x 10" dia.	Dimensions: 23" L x 11" dia.
Weight: 2 lbs.	Weight: 7 lbs.	Weight: 11 lbs.	Weight: 16 lbs.
Flow Rate: 7.5 gallons per hour*	Flow Rate: 22 gallons per hour*	Flow Rate: 42 gallons per hour*	Flow Rate: 42 gallons per hour*
Material: PVC	Material: PVC	Material: PVC	Material: PVC
Replacement Filter Cartridges 2-Pack Part #9936	Replacement Filter Cartridge 1-Pack Part #9938	Replacement Filter Cartridge 1-Pack Part #9927	Replacement Filter Cartridge 1-Pack Part #9929

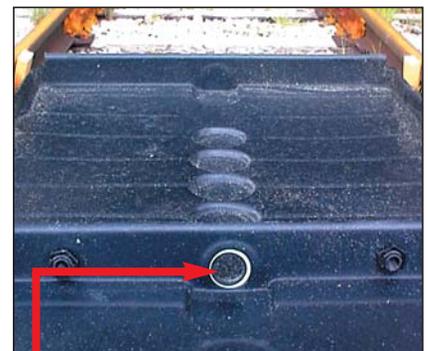
\*At 2"WC (Head Pressure)

Did you know? — The first inch of stormwater runoff carries 90% of the pollutants into our waterways.



### Easy to Install, Modular Design

Center and Side Pans are 53.5" long; containment areas can be easily assembled to any length desired.



Large, 3"-diameter flow-through channels allow spills to quickly travel from one Pan to the next. Channels are located at the low point in each Center and Side TrackPan.

**NOTE: Ultra TrackPans can also be ordered as complete systems: Popular 9-foot, 40-foot and 60-foot systems are available.**

Ultra-TrackPans have been designed to provide spill containment at industrial rail sidings, locomotive maintenance and fueling facilities. Available in virtually any length, Ultra-TrackPans may be used to collect small spills and leaks OR to capture and channel off significant spills caused by defective equipment or a major overflow.

- Prevent Costly Cleanup and Regulatory Fines.
- Slip-Resistant Design — Entire top surface is safe to walk on, even when wet or oily.
- All Polyethylene Construction — Rugged TrackPans withstand harsh chemicals and are designed to function in temperatures ranging from -40° F to +140° F.
- Sealed System — Polyethylene gaskets keep spills from falling between the rails and Pans.
- Trucks and other vehicles can drive over TrackPans with grates in place.\*
- Economical, easy to install.

\*To drive over TrackPans, firm footing must be beneath the Pans; also must "ramp up" to Side Pans with asphalt or concrete.



ULTRA-TRACKPANS	
<b>TrackPans with Grates, No Covers</b>  Part# 9566: <b>Center TrackPan with Grates</b> (Includes 2 bulkhead fittings, 4 gaskets, 2 grates) Dimensions: 53 1/2" x 53 1/2" x 6" • Weight: 106 lbs. Containment Capacity: 18 gallons	<b>TrackPan Covers Only</b>  Part# 9580: <b>Cover for Center TrackPan</b> Dimensions: 56" x 54" Weight: 24 lbs.
Part# 9576: <b>Side TrackPan with Grate</b> (Includes 1 bulkhead fitting, 2 gaskets, 1 grate) Dimensions: 53 1/2" x 27 1/2" x 6" • Weight: 60 lbs. Containment Capacity: 19 gallons	Part# 9581: <b>Cover for Side TrackPan</b> Dimensions: 56" x 27 3/4" Weight: 11 lbs.
<b>Options</b>	
Part# 9584: <b>Rebar Fasteners with Protective Caps</b> , 20-Pack Part# 9559: <b>3" dia. Bulkhead Fitting</b> (for below-grade piping)	



**NEW!**

## Remove Phosphorous From Stormwater

PhosFilter is an engineered filtration media that has the unique ability to filter and retain up to 1 1/2 times its weight in phosphorous. It has been shown to remove over 90% of phosphorous in its particulate and dissolved forms.



Testing done by the South Florida Water Management District at a local cattle ranch showed a phosphorous removal rate that exceeded 90%. (More testing information is available upon request.)

Helps comply with TMDL requirements.

### APPLICATIONS FOR THE ULTRA-PHOSFILTER INCLUDE:

- Urban Runoff • Animal Farms • Ponds & Ditches • Citrus Groves • Catch Basins • Sugar Farms
- Bioretention Systems • Golf Courses • Wetland Restoration

Please visit [www.Stormwater-Products.com/PhosFilter](http://www.Stormwater-Products.com/PhosFilter) or call for more information.

### UltraTech Offers Products For Removing These Pollutants From Stormwater Flow:

- HYDROCARBONS • SEDIMENT • DEBRIS • BACTERIA • NITROGEN • HEAVY METALS • PHOSPHOROUS

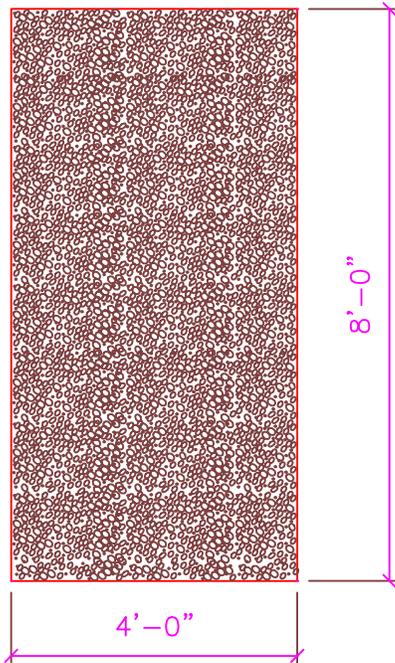
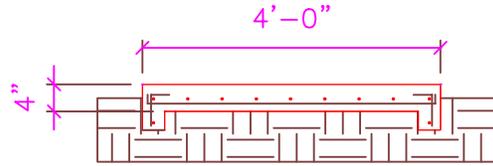
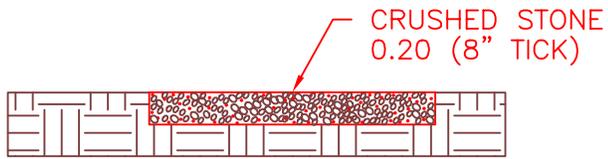


UltraTech International, Inc.  
 11542 Davis Creek Court  
 Jacksonville, FL 32256 USA  
 (904) 292-1611  
 Toll Free 1-877-NoSpill  
 (1-877-667-7455)  
 Fax (904) 292-1325  
 E-mail:

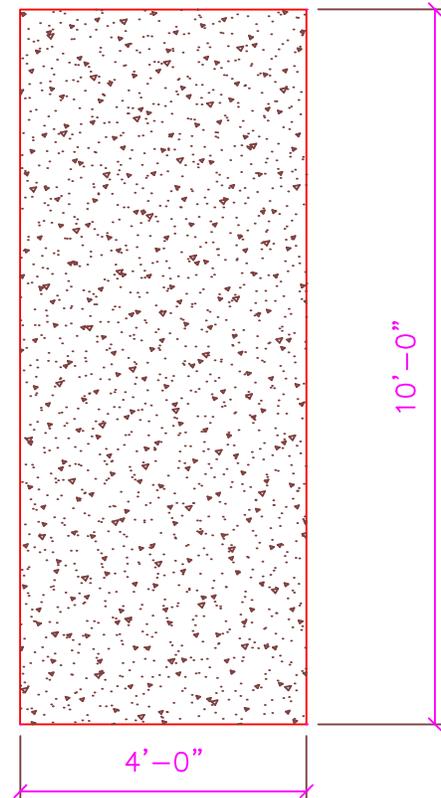
info@Stormwater-Products.com  
 www.Stormwater-Products.com  
 www.SpillContainment.com

## We Give You The Calm After The Storm®

UltraTech, the UltraTech logo, Ultra, the BMP logo, the SPCC logo, the X-Text logo, individual product marks and the Octagonal Trade Dress of the products are trademarks of UltraTech International, Inc.



VEHICLE WASH AREA



TRASH DEPOSIT SLAB


REV	REVISION	CHK'D.	APP.	APP.	APP. DATE
-----	----------	--------	------	------	-----------

DRAWN BY	
CHECKED BY	
APPROVED BY	
CLIENT REP	

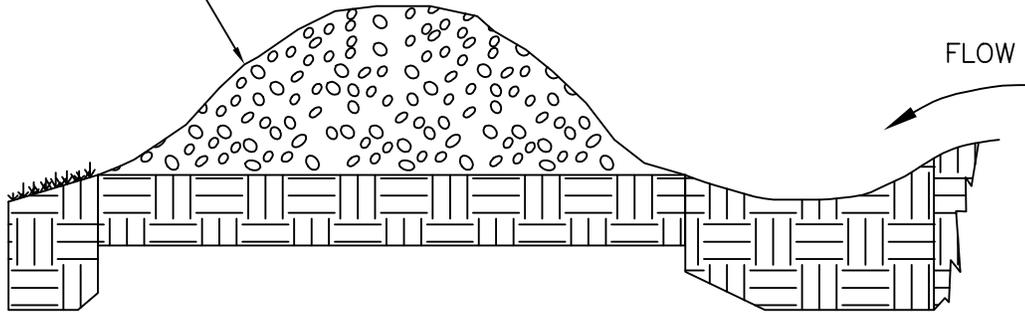


VEHICLE WASH AREA  
& TRASH DEPOSIT SLAB

DRAWING NO.		DATE	/ /
SHEET 1 OF 1		REV.	

FILENAME:

COARCE AGGREGATE



FLOW


REV	REVISION	CHK'D.	APP.	APP.	APP. DATE
-----	----------	--------	------	------	-----------

DRAWN BY	
CHECKED BY	
APPROVED BY	
CLIENT REP	

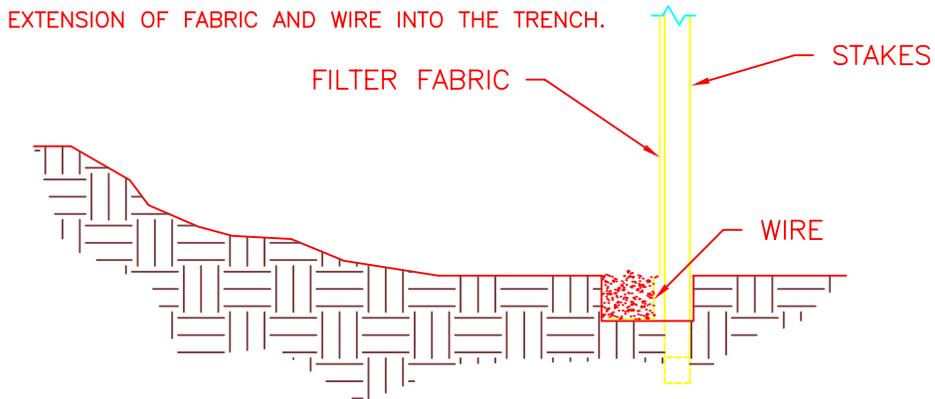
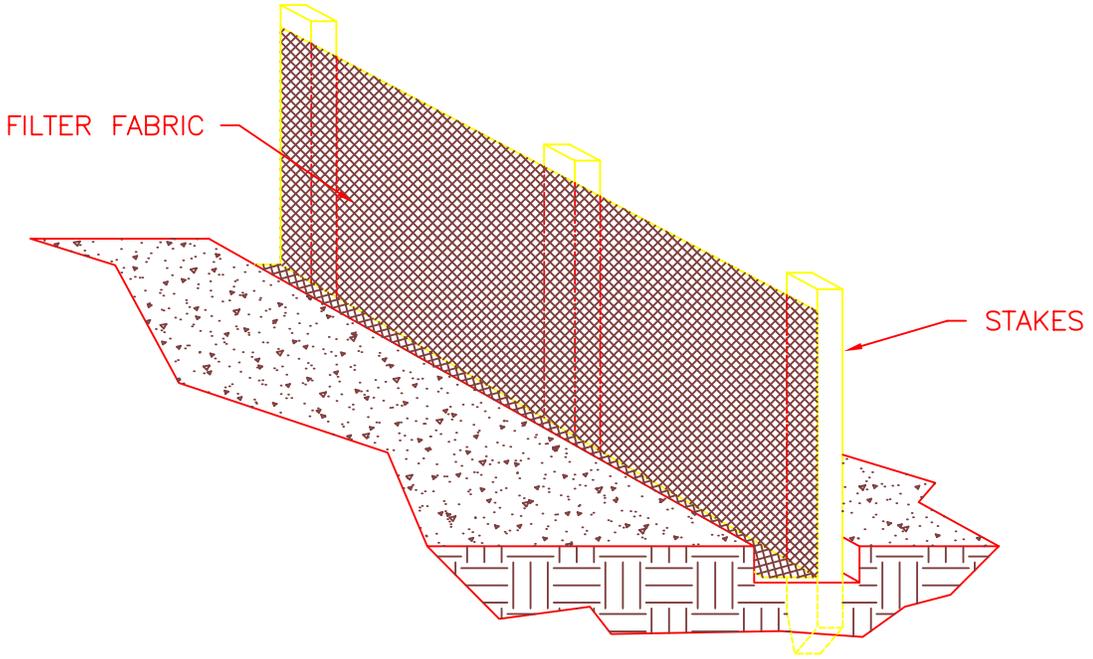


GRAVEL OR STONE FILLER BERM

DRAWING NO.		DATE	/ /
SHEET 1 OF 1		REV.	

FILENAME:

\\SPECICO\_SERVER\DATA2\_AML\DRAWINGS\AA-Details\DET-01.DWG



EMBEDDING & ANCHORING DETAIL


REV	REVISION	CHK'D.	APP.	APP.	APP. DATE

SEDIMENT FILTER DIKE



DRAWING NO.	DATE / /
SHEET 1 OF 1	REV.

FILENAME: