



Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	0.75
Return Period (years)	5	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.840	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Add Inflow (l/s)	Cover Level (m)	Diameter (mm)	Width (mm)	Easting (m)	Northing (m)	Depth (m)
16		5.00	0.9	37.500	450		384643.048	397692.471	1.500
10		5.00		41.050	450		384700.673	397711.393	0.884
6	0.013	5.00		38.240	1200		384648.489	397678.865	0.740
14	0.003	5.00		41.050	450		384687.339	397726.043	0.345
13			0.3	41.050	450		384687.961	397723.231	0.493
12			0.5	41.050	450		384692.168	397711.578	0.616
11				41.050	450		384682.137	397708.705	0.905
8	0.021	5.00		41.305	1200		384685.806	397697.568	3.105
5	0.013	5.00		38.460	1500		384667.934	397686.231	1.368
4	0.014	5.00	0.9	37.500	1200	675	384662.382	397703.274	0.706
2	0.003	5.00		37.500	1200		384656.878	397715.672	1.739
1			1.3	37.500	2400		384638.328	397708.556	2.040
1_OUT				41.300	450		384631.738	397720.061	5.973
7				39.659	1500		384687.726	397692.926	1.709
17	0.012	5.00		40.000	450		384712.689	397701.962	0.800
15		5.00	1.0	41.050	450		384695.465	397726.515	0.345
9			0.4	41.050	450		384697.812	397702.289	1.027
3		5.00	0.9	37.500	450		384659.410	397716.657	1.032

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
2	1	1_OUT	13.259	0.600	35.460	35.327	0.133	100.0	150	6.38	50.0
14	16	1	16.763	0.600	36.000	35.460	0.540	31.0	225	5.12	50.0
3	2	1	19.868	0.600	35.761	35.460	0.301	66.0	300	6.16	50.0
20	3	2	2.717	0.600	36.468	36.400	0.068	40.0	150	5.03	50.0
4	4	2	13.565	0.600	36.794	36.342	0.452	30.0	300	5.99	50.0
5	5	4	17.925	0.600	37.092	36.794	0.298	60.1	300	5.91	50.0
12	6	5	20.793	0.600	37.500	37.092	0.408	51.0	225	5.19	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
2	1.005	17.8	18.2	1.890	5.823	0.079	6.2
14	2.356	93.7	0.9	1.275	1.815	0.000	0.9
3	1.938	137.0	16.0	1.439	1.740	0.079	4.0
20	1.597	28.2	0.9	0.882	0.950	0.000	0.9
4	2.881	203.6	14.6	0.406	0.858	0.076	3.1
5	2.031	143.5	11.6	1.068	0.406	0.062	2.2
12	1.836	73.0	2.0	0.515	1.143	0.013	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
16	7	5	20.894	0.600	37.950	37.092	0.858	24.4	225	5.77	50.0
17	17	7	26.548	0.600	39.200	37.950	1.250	21.2	150	5.20	50.0
7	8	7	5.023	0.600	38.200	37.950	0.250	20.1	150	5.64	50.0
3.001	9	8	12.901	0.600	40.023	39.809	0.214	60.3	150	5.29	50.0
8	11	8	11.726	0.600	40.145	39.809	0.336	34.9	150	5.60	50.0
1.002	12	11	10.434	0.600	40.434	40.145	0.289	36.1	150	5.48	50.0
10	13	12	12.389	0.600	40.557	40.434	0.123	100.7	150	5.38	50.0
18	15	13	11.800	0.600	40.705	40.557	0.148	80.0	150	5.17	50.0
11	14	13	8.980	0.600	40.705	40.615	0.090	100.0	150	5.15	50.0
3.000	10	9	9.543	0.600	40.166	40.023	0.143	66.7	150	5.13	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
16	2.662	105.8	7.7	1.484	1.143	0.036	2.2
17	2.195	38.8	1.8	0.650	1.559	0.012	0.0
7	2.257	39.9	5.8	2.955	1.559	0.024	2.2
3.001	1.297	22.9	0.4	0.877	1.346	0.000	0.4
8	1.709	30.2	2.3	0.755	1.346	0.003	1.8
1.002	1.680	29.7	2.3	0.466	0.755	0.003	1.8
10	1.001	17.7	1.8	0.343	0.466	0.003	1.3
18	1.125	19.9	1.0	0.195	0.343	0.000	1.0
11	1.005	17.8	0.5	0.195	0.285	0.003	0.0
3.000	1.233	21.8	0.0	0.734	0.877	0.000	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
2	13.259	100.0	150	Circular	37.500	35.460	1.890	41.300	35.327	5.823
14	16.763	31.0	225	Circular	37.500	36.000	1.275	37.500	35.460	1.815
3	19.868	66.0	300	Circular	37.500	35.761	1.439	37.500	35.460	1.740
20	2.717	40.0	150	Circular	37.500	36.468	0.882	37.500	36.400	0.950
4	13.565	30.0	300	Circular	37.500	36.794	0.406	37.500	36.342	0.858
5	17.925	60.1	300	Circular	38.460	37.092	1.068	37.500	36.794	0.406
12	20.793	51.0	225	Circular	38.240	37.500	0.515	38.460	37.092	1.143
16	20.894	24.4	225	Circular	39.659	37.950	1.484	38.460	37.092	1.143
17	26.548	21.2	150	Circular	40.000	39.200	0.650	39.659	37.950	1.559
7	5.023	20.1	150	Circular	41.305	38.200	2.955	39.659	37.950	1.559

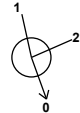
Link	US Node	Dia (mm)	Width (mm)	Node Type	MH Type	DS Node	Dia (mm)	Width (mm)	Node Type	MH Type
2	1	2400		Manhole	Adoptable	1_OUT	450		Manhole	Adoptable
14	16	450		Manhole	Adoptable	1	2400		Manhole	Adoptable
3	2	1200		Manhole	Adoptable	1	2400		Manhole	Adoptable
20	3	450		Manhole	Adoptable	2	1200		Manhole	Adoptable
4	4	1200	675	Manhole	Adoptable	2	1200		Manhole	Adoptable
5	5	1500		Manhole	Adoptable	4	1200	675	Manhole	Adoptable
12	6	1200		Manhole	Adoptable	5	1500		Manhole	Adoptable
16	7	1500		Manhole	Adoptable	5	1500		Manhole	Adoptable
17	17	450		Junction		7	1500		Manhole	Adoptable
7	8	1200		Manhole	Adoptable	7	1500		Manhole	Adoptable

Pipeline Schedule

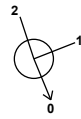
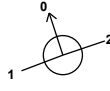
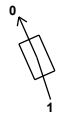
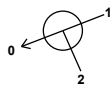
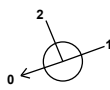
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
3.001	12.901	60.3	150	Circular	41.050	40.023	0.877	41.305	39.809	1.346
8	11.726	34.9	150	Circular	41.050	40.145	0.755	41.305	39.809	1.346
1.002	10.434	36.1	150	Circular	41.050	40.434	0.466	41.050	40.145	0.755
10	12.389	100.7	150	Circular	41.050	40.557	0.343	41.050	40.434	0.466
18	11.800	80.0	150	Circular	41.050	40.705	0.195	41.050	40.557	0.343
11	8.980	100.0	150	Circular	41.050	40.705	0.195	41.050	40.615	0.285
3.000	9.543	66.7	150	Circular	41.050	40.166	0.734	41.050	40.023	0.877

Link	US Node	Dia (mm)	Width (mm)	Node Type	MH Type	DS Node	Dia (mm)	Width (mm)	Node Type	MH Type
3.001	9	450		Manhole	Adoptable	8	1200		Manhole	Adoptable
8	11	450		Manhole	Adoptable	8	1200		Manhole	Adoptable
1.002	12	450		Manhole	Adoptable	11	450		Manhole	Adoptable
10	13	450		Manhole	Adoptable	12	450		Manhole	Adoptable
18	15	450		Manhole	Adoptable	13	450		Manhole	Adoptable
11	14	450		Manhole	Adoptable	13	450		Manhole	Adoptable
3.000	10	450		Manhole	Adoptable	9	450		Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
16	384643.048	397692.471	37.500	1.500	450					
							0	14	36.000	225
10	384700.673	397711.393	41.050	0.884	450					
							0	3.000	40.166	150
6	384648.489	397678.865	38.240	0.740	1200					
							0	12	37.500	225
14	384687.339	397726.043	41.050	0.345	450					
							0	11	40.705	150
13	384687.961	397723.231	41.050	0.493	450			1	11	40.615
							2	18	40.557	150
							0	10	40.557	150
12	384692.168	397711.578	41.050	0.616	450			1	10	40.434
							0	1.002	40.434	150
11	384682.137	397708.705	41.050	0.905	450			1	1.002	40.145
							0	8	40.145	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
8	384685.806	397697.568	41.305	3.105	1200			1 3.001 39.809 150 2 8 39.809 150 0 7 38.200 150		
5	384667.934	397686.231	38.460	1.368	1500			1 12 37.092 225 2 16 37.092 225 0 5 37.092 300		
4	384662.382	397703.274	37.500	0.706	1200	675		1 5 36.794 300 0 4 36.794 300		
2	384656.878	397715.672	37.500	1.739	1200			1 20 36.400 150 2 4 36.342 300 0 3 35.761 300		
1	384638.328	397708.556	37.500	2.040	2400			1 14 35.460 225 2 3 35.460 300 0 2 35.460 150		
1_OUT	384631.738	397720.061	41.300	5.973	450			1 2 35.327 150		
7	384687.726	397692.926	39.659	1.709	1500			1 17 37.950 150 2 7 37.950 150 0 16 37.950 225		
17	384712.689	397701.962	40.000	0.800	450			0 17 39.200 150		
15	384695.465	397726.515	41.050	0.345	450			0 18 40.705 150		
9	384697.812	397702.289	41.050	1.027	450			1 3.000 40.023 150 0 3.001 40.023 150		
3	384659.410	397716.657	37.500	1.032	450			0 20 36.468 150		

Simulation Settings

Rainfall Methodology	FEH-13	Skip Steady State	x	Check Discharge Volume	✓
Summer CV	0.750	Drain Down Time (mins)	240	100 year 360 minute (m³)	95
Winter CV	0.840	Additional Storage (m³/ha)	20.0		
Analysis Speed	Normal	Check Discharge Rate(s)	x		

Storm Durations											
15	30	60	120	180	240	360	480	600	720	960	1440
Return Period (years)	Climate Change (CC %)		Additional Area (A %)		Additional Flow (Q %)						
2	0		0		0						
30	0		0		0						
100	45		0		0						

Pre-development Discharge Volume

Site Makeup	Greenfield	Return Period (years)	100
Greenfield Method	FSR/FEH	Climate Change (%)	0
Positively Drained Area (ha)	0.297	Storm Duration (mins)	360
Soil Index	4	Betterment (%)	0
SPR	0.47	PR	0.509
CWI	124.703	Runoff Volume (m³)	95

Node 1 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	35.460	Product Number	CTL-SHE-0138-1080-1845-1080
Design Depth (m)	1.845	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	10.8	Min Node Diameter (mm)	1500

Node 8 Online Orifice Control

Flap Valve	x	Design Depth (m)	2.300	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Flow (l/s)	3.8		
Invert Level (m)	38.200	Diameter (m)	0.034		

Node 8 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	41.070
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	40.0	0.0	0.150	40.0	0.0	0.151	0.0	0.0

Node 11 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	1.002
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	40.145	Surround Shape	Trench
Safety Factor	2.0	Time to half empty (mins)	63	Diameter (mm)	500

Node 8 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	8
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	39.809	Surround Shape	Trench
Safety Factor	2.0	Time to half empty (mins)	94	Diameter (mm)	500

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	16	1	36.016	0.016	0.9	0.0025	0.0000	OK
15 minute summer	10	1	40.166	0.000	0.0	0.0000	0.0000	OK
15 minute winter	6	10	37.524	0.024	1.8	0.0358	0.0000	OK
15 minute winter	14	11	40.721	0.016	0.4	0.0053	0.0000	OK
15 minute winter	13	11	40.590	0.032	1.7	0.0052	0.0000	OK
15 minute winter	12	11	40.462	0.028	2.2	0.0045	0.0000	OK
15 minute winter	11	12	40.173	0.028	2.2	0.0062	0.0000	OK
60 minute winter	8	43	39.816	1.616	3.9	2.0462	0.0000	SURCHARGED
15 minute winter	5	11	37.139	0.047	7.3	0.0917	0.0000	OK
15 minute winter	4	11	36.841	0.047	10.0	0.0563	0.0000	OK
15 minute winter	2	11	35.819	0.058	11.3	0.0673	0.0000	OK
30 minute winter	1	23	35.732	0.272	12.1	1.2306	0.0000	SURCHARGED
15 minute summer	1_OUT	1	35.327	0.000	9.7	0.0000	0.0000	OK
30 minute summer	7	19	37.980	0.030	4.0	0.0527	0.0000	OK
15 minute winter	17	10	39.221	0.021	1.6	0.0062	0.0000	OK
15 minute summer	15	1	40.729	0.024	1.0	0.0037	0.0000	OK
15 minute summer	9	12	40.037	0.014	0.4	0.0022	0.0000	OK
15 minute summer	3	3	36.487	0.019	0.9	0.0031	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	16	14	1	0.9	0.659	0.010	0.3434	
15 minute summer	10	3.000	9	0.0	0.000	0.000	0.0039	
15 minute winter	6	12	5	1.8	0.449	0.024	0.0854	
15 minute winter	14	11	13	0.4	0.410	0.022	0.0087	
15 minute winter	13	10	12	1.7	0.666	0.096	0.0316	
15 minute winter	12	1.002	11	2.2	0.963	0.074	0.0238	
15 minute winter	11	8	8	2.2	0.983	0.073	0.0262	
60 minute winter	8	7	7	3.0	1.308	0.076	0.0119	
15 minute winter	5	5	4	7.3	1.047	0.051	0.1250	
15 minute winter	4	4	2	10.0	1.477	0.049	0.0919	
15 minute winter	2	3	1	11.3	0.498	0.082	0.7316	
30 minute winter	1	Hydro-Brake®	1_OUT	10.0				104.1
30 minute summer	7	16	5	4.0	1.008	0.038	0.0920	
15 minute winter	17	17	7	1.6	0.833	0.041	0.0512	
15 minute summer	15	18	13	1.0	0.616	0.051	0.0265	
15 minute summer	9	3.001	8	0.4	0.492	0.017	0.0105	
15 minute summer	3	20	2	0.9	0.702	0.032	0.0035	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	16	31	36.374	0.374	1.8	0.0595	0.0000	SURCHARGED
60 minute winter	10	47	40.313	0.147	0.9	0.0233	0.0000	OK
15 minute winter	6	10	37.538	0.038	4.5	0.0557	0.0000	OK
15 minute summer	14	11	40.730	0.025	1.0	0.0082	0.0000	OK
15 minute summer	13	11	40.595	0.038	2.3	0.0061	0.0000	OK
15 minute winter	12	11	40.466	0.032	2.8	0.0051	0.0000	OK
60 minute winter	11	47	40.315	0.170	2.4	0.0886	0.0000	SURCHARGED
60 minute winter	8	47	40.313	2.113	6.3	3.2028	0.0000	SURCHARGED
15 minute winter	5	11	37.162	0.070	16.0	0.1364	0.0000	OK
15 minute winter	4	11	36.863	0.069	21.5	0.0837	0.0000	OK
30 minute winter	2	30	36.376	0.615	19.9	0.7169	0.0000	SURCHARGED
30 minute winter	1	30	36.375	0.915	20.0	4.1389	0.0000	SURCHARGED
15 minute summer	1_OUT	1	35.327	0.000	10.8	0.0000	0.0000	OK
15 minute winter	7	11	37.990	0.040	7.2	0.0702	0.0000	OK
15 minute winter	17	10	39.233	0.033	4.2	0.0100	0.0000	OK
15 minute summer	15	1	40.729	0.024	1.0	0.0037	0.0000	OK
60 minute winter	9	47	40.313	0.290	2.1	0.0461	0.0000	SURCHARGED
15 minute summer	3	3	36.487	0.019	0.9	0.0031	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	16	14	1	1.9	0.659	0.020	0.6667	
60 minute winter	10	3.000	9	-0.9	-0.079	-0.041	0.1675	
15 minute winter	6	12	5	4.5	0.620	0.061	0.1530	
15 minute summer	14	11	13	1.0	0.538	0.056	0.0167	
15 minute summer	13	10	12	2.3	0.736	0.130	0.0388	
15 minute winter	12	1.002	11	2.8	1.044	0.094	0.0280	
60 minute winter	11	8	8	2.4	0.977	0.079	0.2064	
60 minute winter	8	7	7	3.5	1.380	0.087	0.0141	
15 minute winter	5	5	4	16.0	1.295	0.111	0.2212	
15 minute winter	4	4	2	21.6	1.827	0.106	0.1603	
30 minute winter	2	3	1	17.8	0.498	0.130	1.3991	
30 minute winter	1	Hydro-Brake®	1_OUT	10.8				114.6
15 minute winter	7	16	5	7.2	1.073	0.068	0.1583	
15 minute winter	17	17	7	4.2	1.271	0.107	0.0872	
15 minute summer	15	18	13	1.0	0.616	0.051	0.0307	
60 minute winter	9	3.001	8	-1.7	0.492	-0.074	0.2271	
15 minute summer	3	20	2	0.9	0.702	0.032	0.0035	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.89%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	16	58	37.468	1.468	5.0	0.2335	0.0000	FLOOD RISK
60 minute winter	10	50	40.845	0.679	1.5	0.1080	0.0000	FLOOD RISK
15 minute winter	6	10	37.553	0.053	9.1	0.0788	0.0000	OK
60 minute winter	14	51	40.850	0.145	1.1	0.0483	0.0000	OK
60 minute winter	13	51	40.850	0.293	2.4	0.0466	0.0000	FLOOD RISK
60 minute winter	12	52	40.849	0.415	3.0	0.0659	0.0000	FLOOD RISK
60 minute winter	11	52	40.847	0.702	2.9	0.9288	0.0000	FLOOD RISK
60 minute winter	8	52	40.845	2.645	8.8	4.8131	0.0000	SURCHARGED
60 minute winter	5	58	37.472	0.380	17.9	0.7436	0.0000	SURCHARGED
60 minute winter	4	58	37.471	0.677	24.0	0.8173	0.0000	FLOOD RISK
60 minute winter	2	58	37.470	1.709	25.1	1.9911	0.0000	FLOOD RISK
60 minute winter	1	58	37.468	2.008	22.1	9.0861	0.0000	FLOOD RISK
15 minute summer	1_OUT	1	35.327	0.000	10.8	0.0000	0.0000	OK
15 minute winter	7	10	38.000	0.050	11.7	0.0886	0.0000	OK
15 minute winter	17	10	39.247	0.047	8.4	0.0142	0.0000	OK
60 minute winter	15	51	40.850	0.145	1.1	0.0231	0.0000	OK
60 minute winter	9	50	40.845	0.822	2.5	0.1307	0.0000	FLOOD RISK
60 minute winter	3	58	37.470	1.002	2.8	0.1594	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	16	14	1	-4.1	0.659	-0.044	0.6667	
60 minute winter	10	3.000	9	-1.5	-0.136	-0.067	0.1680	
15 minute winter	6	12	5	9.0	0.781	0.123	0.2434	
60 minute winter	14	11	13	1.1	0.553	0.062	0.1573	
60 minute winter	13	10	12	2.4	0.758	0.138	0.2181	
60 minute winter	12	1.002	11	2.9	1.014	0.097	0.1837	
60 minute winter	11	8	8	2.8	0.977	0.093	0.2064	
60 minute winter	8	7	7	3.9	1.428	0.098	0.0167	
60 minute winter	5	5	4	17.9	1.384	0.125	1.2623	
60 minute winter	4	4	2	24.0	1.837	0.118	0.9552	
60 minute winter	2	3	1	20.8	0.498	0.152	1.3991	
60 minute winter	1	Hydro-Brake®	1_OUT	11.2				152.3
15 minute winter	7	16	5	11.6	1.126	0.109	0.2386	
15 minute winter	17	17	7	8.3	1.682	0.215	0.1315	
60 minute winter	15	18	13	1.2	0.616	0.062	0.2068	
60 minute winter	9	3.001	8	-2.1	0.492	-0.091	0.2271	
60 minute winter	3	20	2	-1.9	0.702	-0.067	0.0478	