Previous

New World Technology
Radiological Survey Report

Date:	12/21/97	**Time:**	0700	**Surveyor (print):**	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F3 to Man Hole 5F4				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
1425	23.1	2813	
I/S Pipe Background		1857	**CPM**
I/S M/H Background		3237	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.027

Net counts for L_D: 203 cpm L_D: 3.38 nCi 0.0034 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
0	Plane of M/H	3127	1	3237	-110	0.0E+00	Activity is below LD	
0.5	I/S Manhole	3016	1	3237	-221	0.0E+00	Activity is below LD	
1	"	3552	1	3237	315	5.2E-03	5	
.5	"	3605	1	3237	368	6.1E-03	6	
2	"	3292	1	3237	55	9.2E-04	Activity is below LD	
2.5	I/S Pipe	3050	1	1857	1193	2.0E-02	20	
3	"	2535	1	1857	678	1.1E-02	11	
3.5	"	2457	1	1857	600	1.0E-02	10	
4	"	2308	1	1857	451	7.5E-03	8	
4.5	"	2275	1	1857	418	7.0E-03	7	
5	"	2413	1	1857	556	9.3E-03	9	
5.5	"	2406	1	1857	549	9.1E-03	9	
6	"	2580	1	1857	723	1.2E-02	12	
6.5	"	2162	1	1857	305	5.1E-03	5	
7	"	2391	1	1857	534	8.9E-03	9	
7.5	"	2317	1	1857	460	7.7E-03	8	
8	"	2434	1	1857	577	9.6E-03	10	
8.5	"	2183	1	1857	326	5.4E-03	5	
9	"	2565	1	1857	708	1.2E-02	12	
9.5	"	2370	1	1857	513	8.5E-03	9	
10	"	2322	1	1857	465	7.7E-03	8	
10.5	"	2194	1	1857	337	5.6E-03	6	
11	"	2645	1	1857	788	1.3E-02	13	
11.5	"	2483	1	1857	626	1.0E-02	10	
12	"	2477	1	1857	620	1.0E-02	10	
.5	"	2666	1	1857	809	1.3E-02	13	
3	"	2924	1	1857	1067	1.8E-02	18	

New World Technology
Radiological Survey Report

Date:	12/21/97	**Time:**	O700	**Surveyor (print):**	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F3 to Man Hole 5F4				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
1425	23.1	2813	
I/S Pipe Background		1857	**CPM**
I/S M/H Background		3237	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.027

Net counts for L_D: 203 cpm L_D: 3.38 nCi 0.0034 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
13.5	"	2728	1	1857	871	1.4E-02	14	
14	"	2635	1	1857	778	1.3E-02	13	
14.5	"	2917	1	1857	1060	1.8E-02	18	
15	"	2608	1	1857	751	1.2E-02	12	
15.5	"	2752	1	1857	895	1.5E-02	15	
16	"	2537	1	1857	680	1.1E-02	11	
16.5	"	2631	1	1857	774	1.3E-02	13	
17	"	2640	1	1857	783	1.3E-02	13	
17.5	"	2855	1	1857	998	1.7E-02	17	
18	"	2606	1	1857	749	1.2E-02	12	
18.5	"	2801	1	1857	944	1.6E-02	16	
19	"	2729	1	1857	872	1.5E-02	15	
19.5	"	2813	1	1857	956	1.6E-02	16	
20	"	2764	1	1857	907	1.5E-02	15	
20.5	"	2502	1	1857	645	1.1E-02	11	
21	"	2660	1	1857	803	1.3E-02	13	
21.5	"	2781	1	1857	924	1.5E-02	15	
22	"	2707	1	1857	850	1.4E-02	14	
22.5	"	2456	1	1857	599	1.0E-02	10	
23	"	2637	1	1857	780	1.3E-02	13	
23.5	"	2615	1	1857	758	1.3E-02	13	
24	"	2719	1	1857	862	1.4E-02	14	
24.5	"	2576	1	1857	719	1.2E-02	12	
25	"	2510	1	1857	653	1.1E-02	11	
25.5	"	2765	1	1857	908	1.5E-02	15	
26	"	2649	1	1857	792	1.3E-02	13	
26.5	"	2462	1	1857	605	1.0E-02	10	

New World Technology
Radiological Survey Report

Date:	12/21/97	**Time:**	0700	**Surveyor (print):**	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F3 to Man Hole 5F4				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
1425	23.1	2813	
I/S Pipe Background		1857	**CPM**
I/S M/H Background		3237	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.027

Net counts for L_D: 203 cpm L_D: 3.38 nCi 0.0034 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
27	"	2857	1	1857	1000	1.7E-02	17	
27.5	"	2643	1	1857	786	1.3E-02	13	
28	"	2490	1	1857	633	1.1E-02	11	
[illegible].5	"	2471	1	1857	614	1.0E-02	10	
29	"	2605	1	1857	748	1.2E-02	12	
29.5	"	3040	1	1857	1183	2.0E-02	20	
30	"	2566	1	1857	709	1.2E-02	12	
30.5	"	2917	1	1857	1060	1.8E-02	18	
31	"	2674	1	1857	817	1.4E-02	14	
31.5	"	2699	1	1857	842	1.4E-02	14	
32	"	2600	1	1857	743	1.2E-02	12	
32.5	"	2932	1	1857	1075	1.8E-02	18	
33	"	2509	1	1857	652	1.1E-02	11	
33.5	"	2953	1	1857	1096	1.8E-02	18	
34	"	2616	1	1857	759	1.3E-02	13	
34.5	"	2607	1	1857	750	1.2E-02	12	
35	"	2565	1	1857	708	1.2E-02	12	
35.5	"	2688	1	1857	831	1.4E-02	14	
36	"	2647	1	1857	790	1.3E-02	13	
36.5	"	2701	1	1857	844	1.4E-02	14	
37	"	2496	1	1857	639	1.1E-02	11	
37.5	"	2302	1	1857	445	7.4E-03	7	
38	"	2614	1	1857	757	1.3E-02	13	
38.5	"	2623	1	1857	766	1.3E-02	13	
39	"	2636	1	1857	779	1.3E-02	13	
[illegible].5	"	2621	1	1857	764	1.3E-02	13	
[illegible]	"	2655	1	1857	798	1.3E-02	13	

New World Technology
Radiological Survey Report

Date:	12/21/97	**Time:**	0700	**Surveyor (print):**	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F3 to Man Hole 5F4				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
1425	23.1	2813	
I/S Pipe Background		1857	**CPM**
I/S M/H Background		3237	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.027

Net counts for L_D: 203 cpm L_D: 3.38 nCi 0.0034 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
40.5	"	2707	1	1857	850	1.4E-02	14	
41	"	2516	1	1857	659	1.1E-02	11	
41.5	"	2559	1	1857	702	1.2E-02	12	
42	"	2570	1	1857	713	1.2E-02	12	
42.5	"	2419	1	1857	562	9.4E-03	9	
43	"	2343	1	1857	486	8.1E-03	8	
43.5	"	2328	1	1857	471	7.8E-03	8	
44	"	2436	1	1857	579	9.6E-03	10	
44.5	"	2571	1	1857	714	1.2E-02	12	
45	"	2393	1	1857	536	8.9E-03	9	
45.5	"	2410	1	1857	553	9.2E-03	9	
46	"	2351	1	1857	494	8.2E-03	8	
46.5	"	2316	1	1857	459	7.6E-03	8	
47	"	2283	1	1857	426	7.1E-03	7	
47.5	"	2565	1	1857	708	1.2E-02	12	
48	"	2474	1	1857	617	1.0E-02	10	
48.5	"	2328	1	1857	471	7.8E-03	8	
49	"	2374	1	1857	517	8.6E-03	9	
49.5	"	2453	1	1857	596	9.9E-03	10	
50	"	2409	1	1857	552	9.2E-03	9	
50.5	"	2268	1	1857	411	6.8E-03	7	
51	"	2292	1	1857	435	7.2E-03	7	
51.5	"	2552	1	1857	695	1.2E-02	12	
52	"	2535	1	1857	678	1.1E-02	11	
52.5	"	2412	1	1857	555	9.2E-03	9	
53	"	2308	1	1857	451	7.5E-03	8	
53.5	"	2433	1	1857	576	9.6E-03	10	

New World Technology
Radiological Survey Report

Date:	12/21/97	**Time:**	O700	**Surveyor (print):**	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F3 to Man Hole 5F4				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
1425	23.1	2813	
I/S Pipe Background		1857	**CPM**
I/S M/H Background		3237	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.027

Net counts for L_D: 203 cpm L_D: 3.38 nCi 0.0034 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
54	"	2411	1	1857	554	9.2E-03	9	
54.5	"	2332	1	1857	475	7.9E-03	8	
55	"	2517	1	1857	660	1.1E-02	11	
.5	"	2730	1	1857	873	1.5E-02	15	
56	"	2465	1	1857	608	1.0E-02	10	
56.5	"	2316	1	1857	459	7.6E-03	8	
57	"	2338	1	1857	481	8.0E-03	8	
57.5	"	2604	1	1857	747	1.2E-02	12	
58	"	2585	1	1857	728	1.2E-02	12	
58.5	"	2462	1	1857	605	1.0E-02	10	
59	"	2391	1	1857	534	8.9E-03	9	
59.5	"	2416	1	1857	559	9.3E-03	9	
60	"	2478	1	1857	621	1.0E-02	10	
60.5	"	2583	1	1857	726	1.2E-02	12	
61	"	2171	1	1857	314	5.2E-03	5	
61.5	"	2362	1	1857	505	8.4E-03	8	
62	"	4268	1	1857	2411	4.0E-02	40	
62.5	"	4050	1	1857	2193	3.6E-02	36	
63	"	3720	1	1857	1863	3.1E-02	31	
63.5	"	3878	1	1857	2021	3.4E-02	34	
64	"	3859	1	1857	2002	3.3E-02	33	
64.5		3476	1	1857	1619	2.7E-02	27	
65	"	3595	1	1857	1738	2.9E-02	29	
65.5	"	3206	1	1857	1349	2.2E-02	22	
66	"	3073	1	1857	1216	2.0E-02	20	
.5	"	2279	1	1857	422	7.0E-03	7	
7	"	2499	1	1857	642	1.1E-02	11	

New World Technology
Radiological Survey Report

Date:	12/21/97	**Time:**	O700	**Surveyor (print):**	Dave Davis
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 5F3 to Man Hole 5F4				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
1425	23.1	2813	
I/S Pipe Background		1857	**CPM**
I/S M/H Background		3237	**CPM**

Sample Count Time: 1 minutes

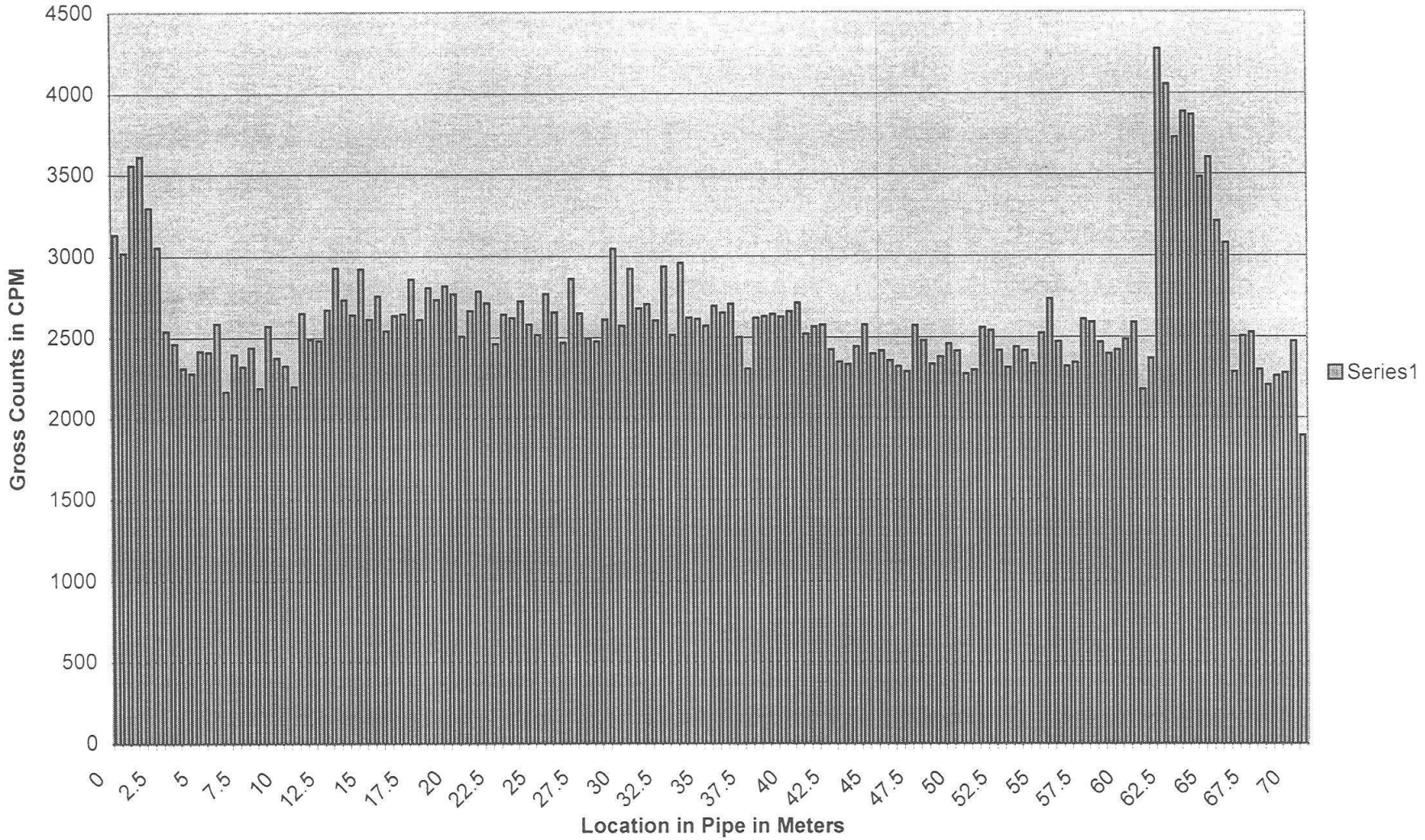
Efficiency: 0.027

Net counts for L_D: 203 cpm L_D: 3.38 nCi 0.0034 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
67.5	"	2521	1	1857	664	1.1E-02	11	
68	"	2292	1	1857	435	7.2E-03	7	
68.5	Bottom of M/H	2197	1	1857	340	5.7E-03	6	
69	Inside M/H	2254	1	1857	397	6.6E-03	7	
69.5	"	2271	1	1857	414	6.9E-03	7	
70	"	2465	1	1857	608	1.0E-02	10	
70.5	Plane of M/H	1886	1	1857	29	4.8E-04	Activity is below LD	

Figure 5F3-5F4 Survey Results from Mahnole 5F3 to Manhole 5F4



New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	0820	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F5 to Man Hole 6F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135346	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1003	23.1	2159	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D: 217 cpm L_D: 4.33 nCi 0.0043 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
0	Plane of M/H	1341	1	2803	-1462	0.0E+00	Activity is below LD	
0.5	I/S Manhole	1751	1	2803	-1052	0.0E+00	Activity is below LD	
1	"	1916	1	2803	-887	0.0E+00	Activity is below LD	
1.5	"	2038	1	2803	-765	0.0E+00	Activity is below LD	
2	I/S Pipe	2142	1	2120	22	4.4E-04	Activity is below LD	
2.5	"	2205	1	2120	85	1.7E-03	Activity is below LD	
3	"	2062	1	2120	-58	0.0E+00	Activity is below LD	
3.5	"	1968	1	2120	-152	0.0E+00	Activity is below LD	
4	"	2063	1	2120	-57	0.0E+00	Activity is below LD	
4.5	"	2054	1	2120	-66	0.0E+00	Activity is below LD	
5	"	2126	1	2120	6	1.2E-04	Activity is below LD	
5.5	"	2001	1	2120	-119	0.0E+00	Activity is below LD	
6	"	1913	1	2120	-207	0.0E+00	Activity is below LD	
6.5	"	1817	1	2120	-303	0.0E+00	Activity is below LD	
7	"	2050	1	2120	-70	0.0E+00	Activity is below LD	
7.5	"	2057	1	2120	-63	0.0E+00	Activity is below LD	
8	"	2025	1	2120	-95	0.0E+00	Activity is below LD	
8.5	"	2034	1	2120	-86	0.0E+00	Activity is below LD	
9	"	2081	1	2120	-39	0.0E+00	Activity is below LD	
9.5	"	1934	1	2120	-186	0.0E+00	Activity is below LD	
10	"	2047	1	2120	-73	0.0E+00	Activity is below LD	
10.5	"	2089	1	2120	-31	0.0E+00	Activity is below LD	
11	"	2154	1	2120	34	6.8E-04	Activity is below LD	
11.5	"	1987	1	2120	-133	0.0E+00	Activity is below LD	
12	"	1963	1	2120	-157	0.0E+00	Activity is below LD	
12.5	"	2071	1	2120	-49	0.0E+00	Activity is below LD	
13	"	2157	1	2120	37	7.4E-04	Activity is below LD	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	O820	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F5 to Man Hole 6F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135346	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1003	23.1	2159	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D: 217 cpm L_D: 4.33 nCi 0.0043 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
13.5	"	2058	1	2120	-62	0.0E+00	Activity is below LD	
14	"	2063	1	2120	-57	0.0E+00	Activity is below LD	
14.5	"	2069	1	2120	-51	0.0E+00	Activity is below LD	
15	"	1999	1	2120	-121	0.0E+00	Activity is below LD	
15.5	"	1952	1	2120	-168	0.0E+00	Activity is below LD	
16	"	2061	1	2120	-59	0.0E+00	Activity is below LD	
16.5	"	1852	1	2120	-268	0.0E+00	Activity is below LD	
17	"	2005	1	2120	-115	0.0E+00	Activity is below LD	
17.5	"	1853	1	2120	-267	0.0E+00	Activity is below LD	
18	"	1951	1	2120	-169	0.0E+00	Activity is below LD	
18.5	"	2089	1	2120	-31	0.0E+00	Activity is below LD	
19	"	2037	1	2120	-83	0.0E+00	Activity is below LD	
19.5	"	1921	1	2120	-199	0.0E+00	Activity is below LD	
20	"	1952	1	2120	-168	0.0E+00	Activity is below LD	
20.5	"	1966	1	2120	-154	0.0E+00	Activity is below LD	
21	"	1862	1	2120	-258	0.0E+00	Activity is below LD	
21.5	"	1896	1	2120	-224	0.0E+00	Activity is below LD	
22	"	2068	1	2120	-52	0.0E+00	Activity is below LD	
22.5	"	2016	1	2120	-104	0.0E+00	Activity is below LD	
23	"	1995	1	2120	-125	0.0E+00	Activity is below LD	
23.5	"	1911	1	2120	-209	0.0E+00	Activity is below LD	
24	"	2006	1	2120	-114	0.0E+00	Activity is below LD	
24.5	"	1954	1	2120	-166	0.0E+00	Activity is below LD	
25	"	2084	1	2120	-36	0.0E+00	Activity is below LD	
25.5	"	1924	1	2120	-196	0.0E+00	Activity is below LD	
26	"	2024	1	2120	-96	0.0E+00	Activity is below LD	
26.5	"	2111	1	2120	-9	0.0E+00	Activity is below LD	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	0820	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F5 to Man Hole 6F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135346	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1003	23.1	2159	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D: 217 cpm L_D: 4.33 nCi 0.0043 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
27	"	1951	1	2120	-169	0.0E+00	Activity is below LD	
27.5	"	1906	1	2120	-214	0.0E+00	Activity is below LD	
28	"	2000	1	2120	-120	0.0E+00	Activity is below LD	
[illegible].5	"	2072	1	2120	-48	0.0E+00	Activity is below LD	
29	"	1963	1	2120	-157	0.0E+00	Activity is below LD	
29.5	"	1988	1	2120	-132	0.0E+00	Activity is below LD	
30	"	1943	1	2120	-177	0.0E+00	Activity is below LD	
30.5	"	1917	1	2120	-203	0.0E+00	Activity is below LD	
31	"	1901	1	2120	-219	0.0E+00	Activity is below LD	
31.5	"	2040	1	2120	-80	0.0E+00	Activity is below LD	
32	"	2188	1	2120	68	1.4E-03	Activity is below LD	
32.5	"	2053	1	2120	-67	0.0E+00	Activity is below LD	
33	"	2081	1	2120	-39	0.0E+00	Activity is below LD	
33.5	"	2112	1	2120	-8	0.0E+00	Activity is below LD	
34	"	2039	1	2120	-81	0.0E+00	Activity is below LD	
34.5	"	1715	1	2120	-405	0.0E+00	Activity is below LD	
35	"	1719	1	2120	-401	0.0E+00	Activity is below LD	
35.5	"	1811	1	2120	-309	0.0E+00	Activity is below LD	
36	"	1719	1	2120	-401	0.0E+00	Activity is below LD	
36.5	"	1725	1	2120	-395	0.0E+00	Activity is below LD	
37	"	1647	1	2120	-473	0.0E+00	Activity is below LD	
37.5	"	1734	1	2120	-386	0.0E+00	Activity is below LD	
38	"	1701	1	2120	-419	0.0E+00	Activity is below LD	
38.5	"	1649	1	2120	-471	0.0E+00	Activity is below LD	
39	"	1703	1	2120	-417	0.0E+00	Activity is below LD	
39.5	"	1645	1	2120	-475	0.0E+00	Activity is below LD	
[illegible]0	"	1771	1	2120	-349	0.0E+00	Activity is below LD	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	O820	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F5 to Man Hole 6F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135346	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1003	23.1	2159	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D: 217 cpm L_D: 4.33 nCi 0.0043 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
40.5	"	1735	1	2120	-385	0.0E+00	Activity is below LD	
41	"	1675	1	2120	-445	0.0E+00	Activity is below LD	
41.5	"	1658	1	2120	-462	0.0E+00	Activity is below LD	
42	"	1636	1	2120	-484	0.0E+00	Activity is below LD	
42.5	"	1728	1	2120	-392	0.0E+00	Activity is below LD	
43	"	1797	1	2120	-323	0.0E+00	Activity is below LD	
43.5	"	1789	1	2120	-331	0.0E+00	Activity is below LD	
44	"	1690	1	2120	-430	0.0E+00	Activity is below LD	
44.5	"	1707	1	2120	-413	0.0E+00	Activity is below LD	
45	"	1653	1	2120	-467	0.0E+00	Activity is below LD	
45.5	"	1455	1	2120	-665	0.0E+00	Activity is below LD	
46	"	1445	1	2120	-675	0.0E+00	Activity is below LD	
46.5	"	1502	1	2120	-618	0.0E+00	Activity is below LD	
47	"	1517	1	2120	-603	0.0E+00	Activity is below LD	
47.5	"	1487	1	2120	-633	0.0E+00	Activity is below LD	
48	"	1567	1	2120	-553	0.0E+00	Activity is below LD	
48.5	"	1594	1	2120	-526	0.0E+00	Activity is below LD	
49	"	1645	1	2120	-475	0.0E+00	Activity is below LD	
49.5	"	1574	1	2120	-546	0.0E+00	Activity is below LD	
50	"	1617	1	2120	-503	0.0E+00	Activity is below LD	
50.5	"	1588	1	2120	-532	0.0E+00	Activity is below LD	
51	"	1751	1	2120	-369	0.0E+00	Activity is below LD	
51.5	"	1673	1	2120	-447	0.0E+00	Activity is below LD	
52	"	1582	1	2120	-538	0.0E+00	Activity is below LD	
52.5	"	1601	1	2120	-519	0.0E+00	Activity is below LD	
53	"	1702	1	2120	-418	0.0E+00	Activity is below LD	
53.5	"	1787	1	2120	-333	0.0E+00	Activity is below LD	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	0820	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F5 to Man Hole 6F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135346	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1003	23.1	2159	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D: 217 cpm **L_D:** 4.33 nCi 0.0043 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
54	"	1559	1	2120	-561	0.0E+00	Activity is below LD	
54.5	"	1515	1	2120	-605	0.0E+00	Activity is below LD	
55	"	1474	1	2120	-646	0.0E+00	Activity is below LD	
[illegible].5	"	1470	1	2120	-650	0.0E+00	Activity is below LD	
56	"	1501	1	2120	-619	0.0E+00	Activity is below LD	
56.5	"	1449	1	2120	-671	0.0E+00	Activity is below LD	
57	"	1475	1	2120	-645	0.0E+00	Activity is below LD	
57.5	"	1518	1	2120	-602	0.0E+00	Activity is below LD	
58	"	2210	1	2120	90	1.8E-03	Activity is below LD	
58.5	"	2970	1	2120	850	1.7E-02	17	
59	"	2782	1	2120	662	1.3E-02	13	
59.5	"	1908	1	2120	-212	0.0E+00	Activity is below LD	
60	"	1763	1	2120	-357	0.0E+00	Activity is below LD	
60.5	"	1623	1	2120	-497	0.0E+00	Activity is below LD	
61	"	1760	1	2120	-360	0.0E+00	Activity is below LD	
61.5	"	1681	1	2120	-439	0.0E+00	Activity is below LD	
62	"	1747	1	2120	-373	0.0E+00	Activity is below LD	
62.5	"	1789	1	2120	-331	0.0E+00	Activity is below LD	
63	"	1939	1	2120	-181	0.0E+00	Activity is below LD	
63.5	"	1915	1	2120	-205	0.0E+00	Activity is below LD	
64	"	1855	1	2120	-265	0.0E+00	Activity is below LD	
64.5	"	1816	1	2120	-304	0.0E+00	Activity is below LD	
65	"	1701	1	2120	-419	0.0E+00	Activity is below LD	
65.5	"	1670	1	2120	-450	0.0E+00	Activity is below LD	
66	"	1560	1	2120	-560	0.0E+00	Activity is below LD	
[illegible].5	"	1607	1	2120	-513	0.0E+00	Activity is below LD	
[illegible]	"	1556	1	2120	-564	0.0E+00	Activity is below LD	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	0820	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F5 to Man Hole 6F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135346	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1003	23.1	2159	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D: 217 cpm L_D: 4.33 nCi 0.0043 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
67.5	"	1446	1	2120	-674	0.0E+00	Activity is below LD	
68	"	1456	1	2120	-664	0.0E+00	Activity is below LD	
68.5	"	1470	1	2120	-650	0.0E+00	Activity is below LD	
69	"	1494	1	2120	-626	0.0E+00	Activity is below LD	
69.5	"	1497	1	2120	-623	0.0E+00	Activity is below LD	
70	"	1514	1	2120	-606	0.0E+00	Activity is below LD	
70.5	"	1525	1	2120	-595	0.0E+00	Activity is below LD	
71	"	1726	1	2120	-394	0.0E+00	Activity is below LD	
71.5	"	1688	1	2120	-432	0.0E+00	Activity is below LD	
72	"	1650	1	2120	-470	0.0E+00	Activity is below LD	
72.5	"	1430	1	2120	-690	0.0E+00	Activity is below LD	
73	"	1512	1	2120	-608	0.0E+00	Activity is below LD	
73.5	"	1515	1	2120	-605	0.0E+00	Activity is below LD	
74	"	1566	1	2120	-554	0.0E+00	Activity is below LD	
74.5	"	1447	1	2120	-673	0.0E+00	Activity is below LD	
75	"	1324	1	2120	-796	0.0E+00	Activity is below LD	
75.5	"	1550	1	2120	-570	0.0E+00	Activity is below LD	
76	"	1697	1	2120	-423	0.0E+00	Activity is below LD	
76.5	"	1676	1	2120	-444	0.0E+00	Activity is below LD	
77	"	1685	1	2120	-435	0.0E+00	Activity is below LD	
77.5	"	1824	1	2120	-296	0.0E+00	Activity is below LD	
78	"	1677	1	2120	-443	0.0E+00	Activity is below LD	
78.5	"	1623	1	2120	-497	0.0E+00	Activity is below LD	
79	"	1554	1	2120	-566	0.0E+00	Activity is below LD	
79.5	"	1533	1	2120	-587	0.0E+00	Activity is below LD	
80	"	1632	1	2120	-488	0.0E+00	Activity is below LD	
80.5	"	1744	1	2120	-376	0.0E+00	Activity is below LD	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	O820	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F5 to Man Hole 6F3				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
[illegible]	44-2 1x1 NaI	PR135346	10/17/98

Sample Count Time: 1 minutes

Efficiency: 0.023

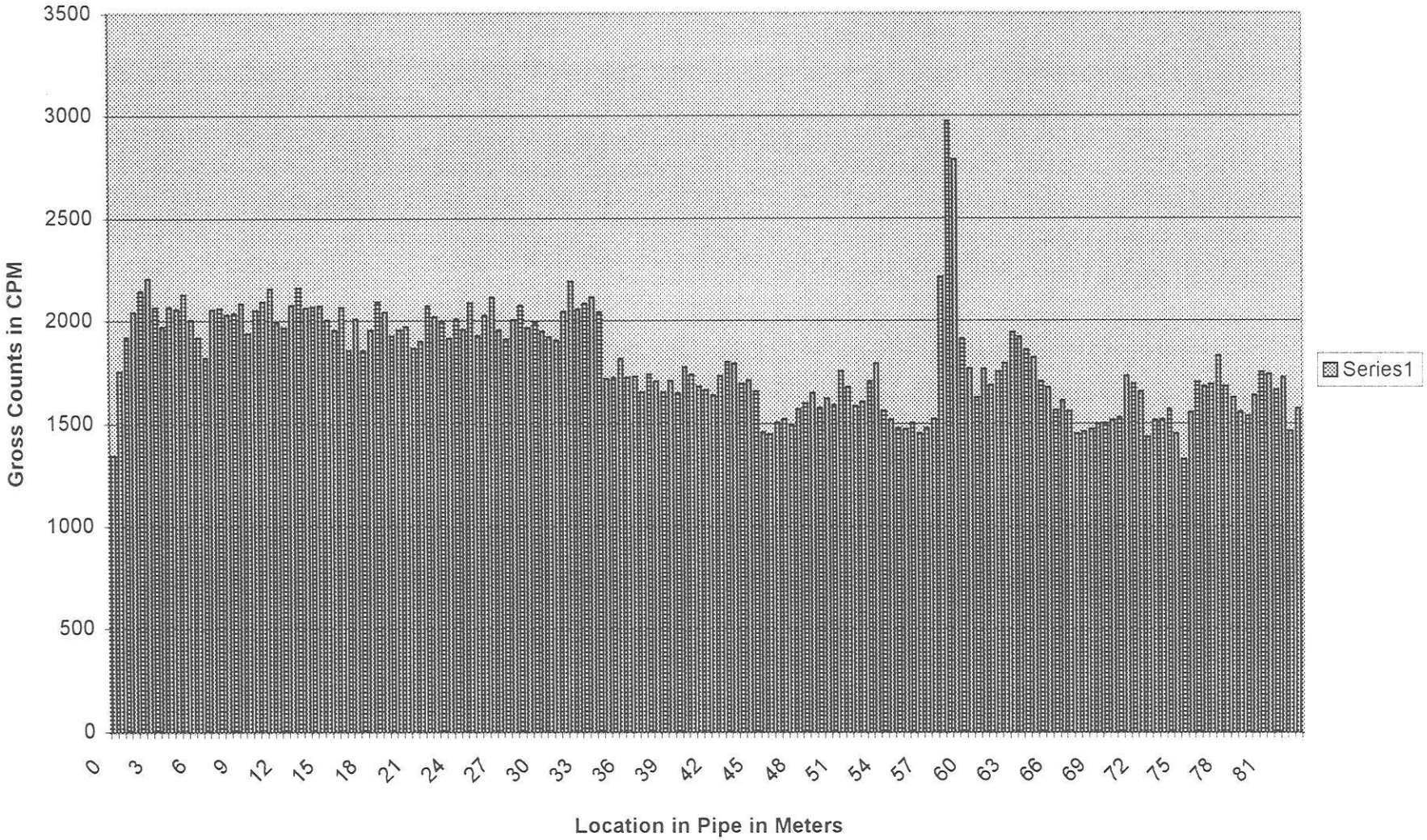
Bkrd CPM	Source (nCi)	Source CPM	
1003	23.1	2159	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Net counts for L_D: 217 cpm **L_D:** 4.33 nCi 0.0043 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
81	"	1734	1	2120	-386	0.0E+00	Activity is below LD	
81.5	Bottom of M/H	1659	1	2803	-1144	0.0E+00	Activity is below LD	
82	Inside M/H	1720	1	2803	-1083	0.0E+00	Activity is below LD	
82.5	"	1460	1	2803	-1343	0.0E+00	Activity is below LD	
83	Plane of M/H	1568	1	2803	-1235	0.0E+00	Activity is below LD	

Figure 6F5-6F3 Survey Results from Mahnole 6F5 to Manhole 6F3



New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	1350	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F3 to Man Hole 6F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135346	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1003	23.1	2159	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D: 217 cpm L_D: 4.33 nCi 0.0043 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
0	Plane of M/H	2371	1	2803	-432	0.0E+00	Activity is below LD	
0.5	I/S Manhole	2858	1	2803	55	1.1E-03	Activity is below LD	
1	"	2950	1	2803	147	2.9E-03	Activity is below LD	
1.5	"	2295	1	2803	-508	0.0E+00	Activity is below LD	
2	I/S Pipe	2204	1	2120	84	1.7E-03	Activity is below LD	
2.5	"	2120	1	2120	0	0.0E+00	Activity is below LD	
3	"	2117	1	2120	-3	0.0E+00	Activity is below LD	
3.5	"	2067	1	2120	-53	0.0E+00	Activity is below LD	
4	"	2165	1	2120	45	9.0E-04	Activity is below LD	
4.5	"	2121	1	2120	1	2.0E-05	Activity is below LD	
5	"	2064	1	2120	-56	0.0E+00	Activity is below LD	
5.5	"	2088	1	2120	-32	0.0E+00	Activity is below LD	
6	"	1937	1	2120	-183	0.0E+00	Activity is below LD	
6.5	"	2017	1	2120	-103	0.0E+00	Activity is below LD	
7	"	2027	1	2120	-93	0.0E+00	Activity is below LD	
7.5	"	2067	1	2120	-53	0.0E+00	Activity is below LD	
8	"	2024	1	2120	-96	0.0E+00	Activity is below LD	
8.5	"	2037	1	2120	-83	0.0E+00	Activity is below LD	
9	"	1935	1	2120	-185	0.0E+00	Activity is below LD	
9.5	"	1893	1	2120	-227	0.0E+00	Activity is below LD	
10	"	1948	1	2120	-172	0.0E+00	Activity is below LD	
10.5	"	1835	1	2120	-285	0.0E+00	Activity is below LD	
11	"	1823	1	2120	-297	0.0E+00	Activity is below LD	
11.5	"	1876	1	2120	-244	0.0E+00	Activity is below LD	
12	"	1813	1	2120	-307	0.0E+00	Activity is below LD	
12.5	"	1967	1	2120	-153	0.0E+00	Activity is below LD	
13	"	1912	1	2120	-208	0.0E+00	Activity is below LD	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	1350	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F3 to Man Hole 6F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135346	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1003	23.1	2159	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D: 217 cpm L_D: 4.33 nCi 0.0043 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
13.5	"	1959	1	2120	-161	0.0E+00	Activity is below LD	
14	"	1973	1	2120	-147	0.0E+00	Activity is below LD	
14.5	"	1882	1	2120	-238	0.0E+00	Activity is below LD	
15	"	1905	1	2120	-215	0.0E+00	Activity is below LD	
15.5	"	1879	1	2120	-241	0.0E+00	Activity is below LD	
16	"	2061	1	2120	-59	0.0E+00	Activity is below LD	
16.5	"	1849	1	2120	-271	0.0E+00	Activity is below LD	
17	"	2850	1	2120	730	1.5E-02	15	
17.5	"	1866	1	2120	-254	0.0E+00	Activity is below LD	
18	"	1743	1	2120	-377	0.0E+00	Activity is below LD	
18.5	"	1912	1	2120	-208	0.0E+00	Activity is below LD	
19	"	1866	1	2120	-254	0.0E+00	Activity is below LD	
19.5	"	1897	1	2120	-223	0.0E+00	Activity is below LD	
20	"	1725	1	2120	-395	0.0E+00	Activity is below LD	
20.5	"	1826	1	2120	-294	0.0E+00	Activity is below LD	
21	"	1799	1	2120	-321	0.0E+00	Activity is below LD	
21.5	"	1787	1	2120	-333	0.0E+00	Activity is below LD	
22	"	1797	1	2120	-323	0.0E+00	Activity is below LD	
22.5	"	1677	1	2120	-443	0.0E+00	Activity is below LD	
23	"	1827	1	2120	-293	0.0E+00	Activity is below LD	
23.5	"	1776	1	2120	-344	0.0E+00	Activity is below LD	
24	"	1871	1	2120	-249	0.0E+00	Activity is below LD	
24.5	"	1850	1	2120	-270	0.0E+00	Activity is below LD	
25	"	1771	1	2120	-349	0.0E+00	Activity is below LD	
25.5	"	1890	1	2120	-230	0.0E+00	Activity is below LD	
26	"	1832	1	2120	-288	0.0E+00	Activity is below LD	
26.5	"	2052	1	2120	-68	0.0E+00	Activity is below LD	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	1350	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F3 to Man Hole 6F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135346	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1003	23.1	2159	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.023

Net counts for L_D: 217 cpm **L_D:** 4.33 nCi 0.0043 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
27	"	1938	1	2120	-182	0.0E+00	Activity is below LD	
27.5	"	2154	1	2120	34	6.8E-04	Activity is below LD	
28	"	1990	1	2120	-130	0.0E+00	Activity is below LD	
[illegible].5	"	1995	1	2120	-125	0.0E+00	Activity is below LD	
29	"	2041	1	2120	-79	0.0E+00	Activity is below LD	
29.5	"	1915	1	2120	-205	0.0E+00	Activity is below LD	
30	"	2070	1	2120	-50	0.0E+00	Activity is below LD	
30.5	"	1834	1	2120	-286	0.0E+00	Activity is below LD	
31	"	1969	1	2120	-151	0.0E+00	Activity is below LD	
31.5	"	1848	1	2120	-272	0.0E+00	Activity is below LD	
32	"	2001	1	2120	-119	0.0E+00	Activity is below LD	
32.5	"	1840	1	2120	-280	0.0E+00	Activity is below LD	
33	"	1977	1	2120	-143	0.0E+00	Activity is below LD	
33.5	"	1948	1	2120	-172	0.0E+00	Activity is below LD	
34	"	1892	1	2120	-228	0.0E+00	Activity is below LD	
34.5	"	1956	1	2120	-164	0.0E+00	Activity is below LD	
35	"	1984	1	2120	-136	0.0E+00	Activity is below LD	
35.5	"	2076	1	2120	-44	0.0E+00	Activity is below LD	
36	"	2010	1	2120	-110	0.0E+00	Activity is below LD	
36.5	"	2137	1	2120	17	3.4E-04	Activity is below LD	
37	"	2185	1	2120	65	1.3E-03	Activity is below LD	
37.5	"	2096	1	2120	-24	0.0E+00	Activity is below LD	
38	"	2060	1	2120	-60	0.0E+00	Activity is below LD	
38.5	"	2017	1	2120	-103	0.0E+00	Activity is below LD	
39	"	2035	1	2120	-85	0.0E+00	Activity is below LD	
[illegible]9.5	"	2719	1	2120	599	1.2E-02	12	
[illegible]0	"	2601	1	2120	481	9.6E-03	10	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	1350	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F3 to Man Hole 6F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135346	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1003	23.1	2159	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

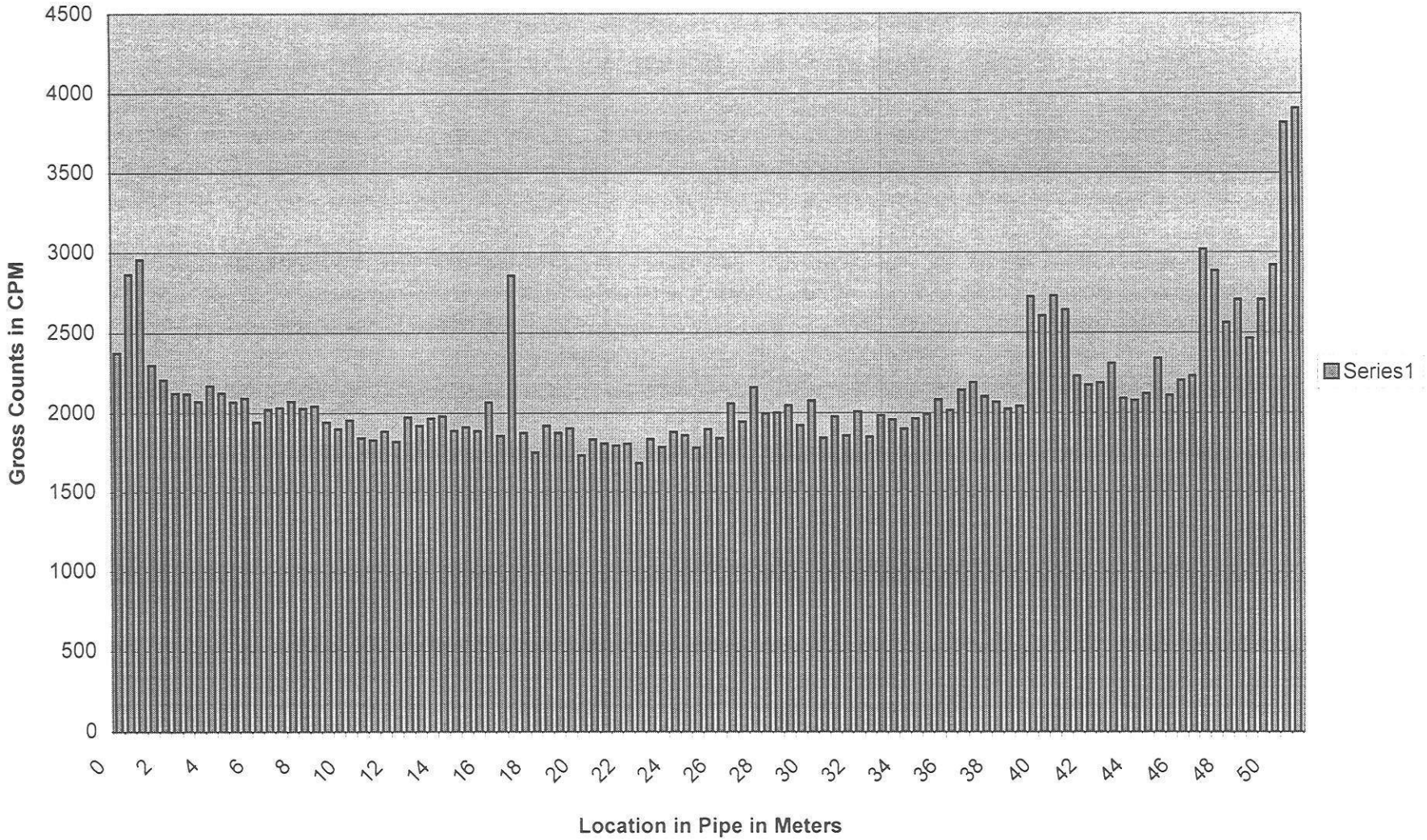
Efficiency: 0.023

Net counts for L_D: 217 cpm L_D: 4.33 nCi 0.0043 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
40.5	"	2723	1	2120	603	1.2E-02	12	
41	"	2636	1	2120	516	1.0E-02	10	
41.5	"	2225	1	2120	105	2.1E-03	Activity is below LD	
42	"	2169	1	2120	49	9.8E-04	Activity is below LD	
42.5	"	2184	1	2120	64	1.3E-03	Activity is below LD	
43	"	2303	1	2120	183	3.7E-03	Activity is below LD	
43.5	"	2085	1	2120	-35	0.0E+00	Activity is below LD	
44	"	2072	1	2120	-48	0.0E+00	Activity is below LD	
44.5	"	2114	1	2120	-6	0.0E+00	Activity is below LD	
45	"	2334	1	2120	214	4.3E-03	Activity is below LD	
45.5	"	2104	1	2120	-16	0.0E+00	Activity is below LD	
46	"	2199	1	2120	79	1.6E-03	Activity is below LD	
46.5	"	2227	1	2120	107	2.1E-03	Activity is below LD	
47	"	3013	1	2120	893	1.8E-02	18	
47.5	"	2880	1	2120	760	1.5E-02	15	
48	"	2556	1	2120	436	8.7E-03	9	
48.5	"	2701	1	2120	581	1.2E-02	12	
49	"	2460	1	2120	340	6.8E-03	7	
49.5	"	2701	1	2120	581	1.2E-02	12	
50	"	2914	1	2120	794	1.6E-02	16	
50.5	"	3811	1	2120	1691	3.4E-02	34	
51	"	3900	1	2120	1780	3.6E-02	36	

Figure 6F3-6F Survey Results from Mahnole 6F3 to Manhole 6F



New World Technology
Radiological Survey Report

Date:	12/18/97	**Time:**	O700	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F1to Man Hole 6F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
995	23.1	2218	
I/S Pipe Background		1903	**CPM**
I/S M/H Background		2528	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D: 206 cpm L_D: 3.88 nCi 0.0039 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
0	Plane of M/H	3212	1	2528	684	1.3E-02	13	
0.5	I/S Manhole	7828	1	2528	5300	1.0E-01	100	
1	"	14067	1	2528	11539	2.2E-01	218	
5	"	22589	1	2528	20061	3.8E-01	379	
2	"	41500	1	2528	38972	7.4E-01	736	
2.5	I/S Pipe	78926	1	1903	77023	1.5E+00	1455	
3	"	90684	1	1903	88781	1.7E+00	1677	
3.5	"	93623	1	1903	91720	1.7E+00	1732	
4	"	84036	1	1903	82133	1.6E+00	1551	
4.5	"	79013	1	1903	77110	1.5E+00	1456	
5	"	74964	1	1903	73061	1.4E+00	1380	
5.5	"	58512	1	1903	56609	1.1E+00	1069	
6	"	71233	1	1903	69330	1.3E+00	1310	
6.5	"	48713	1	1903	46810	8.8E-01	884	
7	"	42206	1	1903	40303	7.6E-01	761	
7.5	"	36833	1	1903	34930	6.6E-01	660	
8	"	33015	1	1903	31112	5.9E-01	588	
8.5	"	26255	1	1903	24352	4.6E-01	460	
9	"	31738	1	1903	29835	5.6E-01	564	
9.5	"	39194	1	1903	37291	7.0E-01	704	
10	"	40882	1	1903	38979	7.4E-01	736	
10.5	"	42020	1	1903	40117	7.6E-01	758	
11	"	49822	1	1903	47919	9.1E-01	905	
11.5	"	57079	1	1903	55176	1.0E+00	1042	
12	"	53295	1	1903	51392	9.7E-01	971	
12.5	"	50906	1	1903	49003	9.3E-01	926	
[illegible]	"	35402	1	1903	33499	6.3E-01	633	

New World Technology
Radiological Survey Report

Date:	12/18/97	**Time:**	O700	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F1to Man Hole 6F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
995	23.1	2218	
I/S Pipe Background		1903	**CPM**
I/S M/H Background		2528	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D: 206 cpm L_D: 3.88 nCi 0.0039 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
13.5	"	38475	1	1903	36572	6.9E-01	691	
14	"	39225	1	1903	37322	7.0E-01	705	
14.5	"	38892	1	1903	36989	7.0E-01	699	
15	"	38823	1	1903	36920	7.0E-01	697	
15.5	"	39056	1	1903	37153	7.0E-01	702	
16	"	37830	1	1903	35927	6.8E-01	679	
16.5	"	41240	1	1903	39337	7.4E-01	743	
17	"	39841	1	1903	37938	7.2E-01	717	
17.5	"	38294	1	1903	36391	6.9E-01	687	
18	"	37741	1	1903	35838	6.8E-01	677	
18.5	"	41695	1	1903	39792	7.5E-01	752	
19	"	47822	1	1903	45919	8.7E-01	867	
19.5	"	45590	1	1903	43687	8.3E-01	825	
20	"	47666	1	1903	45763	8.6E-01	864	
20.5	"	60308	1	1903	58405	1.1E+00	1103	
21	"	71116	1	1903	69213	1.3E+00	1307	
21.5	"	86579	1	1903	84676	1.6E+00	1599	
22	"	103499	1	1903	101596	1.9E+00	1919	
22.5	"	65555	1	1903	63652	1.2E+00	1202	
23	"	45946	1	1903	44043	8.3E-01	832	
23.5	"	52226	1	1903	50323	9.5E-01	950	
24	"	63645	1	1903	61742	1.2E+00	1166	
24.5	"	63707	1	1903	61804	1.2E+00	1167	
25	"	50971	1	1903	49068	9.3E-01	927	
25.5	"	41981	1	1903	40078	7.6E-01	757	
26	"	39875	1	1903	37972	7.2E-01	717	
26.5	"	47573	1	1903	45670	8.6E-01	863	

New World Technology
Radiological Survey Report

Date:	12/18/97	**Time:**	O700	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F1to Man Hole 6F				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
995	23.1	2218	
I/S Pipe Background		1903	**CPM**
I/S M/H Background		2528	**CPM**

Sample Count Time: 1 minutes

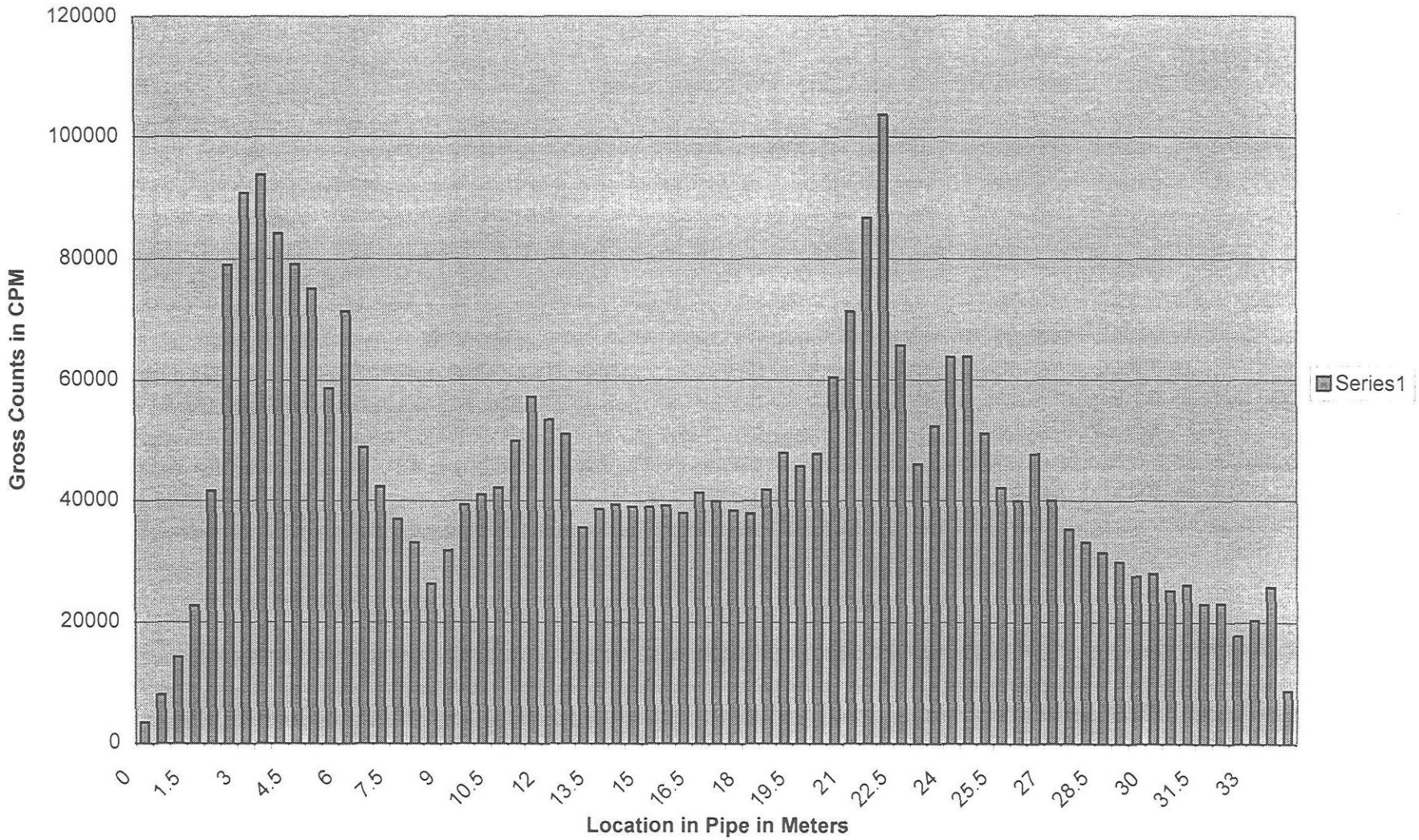
Efficiency: 0.024

Net counts for L_D: 206 cpm **L_D:** 3.88 nCi 0.0039 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
27	"	39909	1	1903	38006	7.2E-01	718	
27.5	"	35184	1	1903	33281	6.3E-01	629	
28	"	33091	1	1903	31188	5.9E-01	589	
28.5	"	31363	1	1903	29460	5.6E-01	556	
29	"	29872	1	1903	27969	5.3E-01	528	
29.5	"	27493	1	1903	25590	4.8E-01	483	
30	"	27916	1	1903	26013	4.9E-01	491	
30.5	"	25088	1	1903	23185	4.4E-01	438	
31	"	26020	1	1903	24117	4.6E-01	456	
31.5	"	22885	1	1903	20982	4.0E-01	396	
32	Bottom of M/H	22974	1	2528	20446	3.9E-01	386	
32.5	Inside M/H	17687	1	2528	15159	2.9E-01	286	
33	"	20218	1	2528	17690	3.3E-01	334	
33.5	"	25686	1	2528	23158	4.4E-01	437	
34	Plane of M/H	8531	1	2528	6003	1.1E-01	113	

Figure 6F1-6F Survey Results from Mahnole 6F1 to Manhole 6F



New World Technology
Radiological Survey Report

Date:	12/18/97	**Time:**	1110	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F1to Man Hole 6F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
995	23.1	2218	
I/S Pipe Background		1903	**CPM**
I/S M/H Background		2528	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D: 206 cpm **L_D:** 3.88 nCi 0.0039 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
0	Plane of M/H	8591	1	2528	6063	1.1E-01	115	
0.5	I/S Manhole	8596	1	2528	6068	1.1E-01	115	
1	"	24109	1	2528	21581	4.1E-01	408	
1.5	"	25100	1	2528	22572	4.3E-01	426	
2	"	75109	1	2528	72581	1.4E+00	1371	
2.5	I/S Pipe	46895	1	1903	44992	8.5E-01	850	
3	"	42816	1	1903	40913	7.7E-01	773	
3.5	"	49059	1	1903	47156	8.9E-01	891	
4	"	112142	1	1903	110239	2.1E+00	2082	
4.5	"	41104	1	1903	39201	7.4E-01	740	
5	"	36676	1	1903	34773	6.6E-01	657	
5.5	"	16371	1	1903	14468	2.7E-01	273	
6	"	10876	1	1903	8973	1.7E-01	169	
6.5	"	8463	1	1903	6560	1.2E-01	124	
7	"	6814	1	1903	4911	9.3E-02	93	
7.5	"	8576	1	1903	6673	1.3E-01	126	
8	"	11474	1	1903	9571	1.8E-01	181	
8.5	"	9812	1	1903	7909	1.5E-01	149	
9	"	8059	1	1903	6156	1.2E-01	116	
9.5	"	7392	1	1903	5489	1.0E-01	104	
10	"	6687	1	1903	4784	9.0E-02	90	
10.5	"	9281	1	1903	7378	1.4E-01	139	
11	"	9312	1	1903	7409	1.4E-01	140	
11.5	"	9421	1	1903	7518	1.4E-01	142	
12	"	12327	1	1903	10424	2.0E-01	197	
12.5	"	12317	1	1903	10414	2.0E-01	197	
[illegible]	"	16390	1	1903	14487	2.7E-01	274	

New World Technology
Radiological Survey Report

Date:	12/18/97	**Time:**	1110	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F1to Man Hole 6F2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142489	12/4/98
2	44-2 1x1 NaI	PR147389	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
995	23.1	2218	
I/S Pipe Background		1903	**CPM**
I/S M/H Background		2528	**CPM**

Sample Count Time: 1 minutes

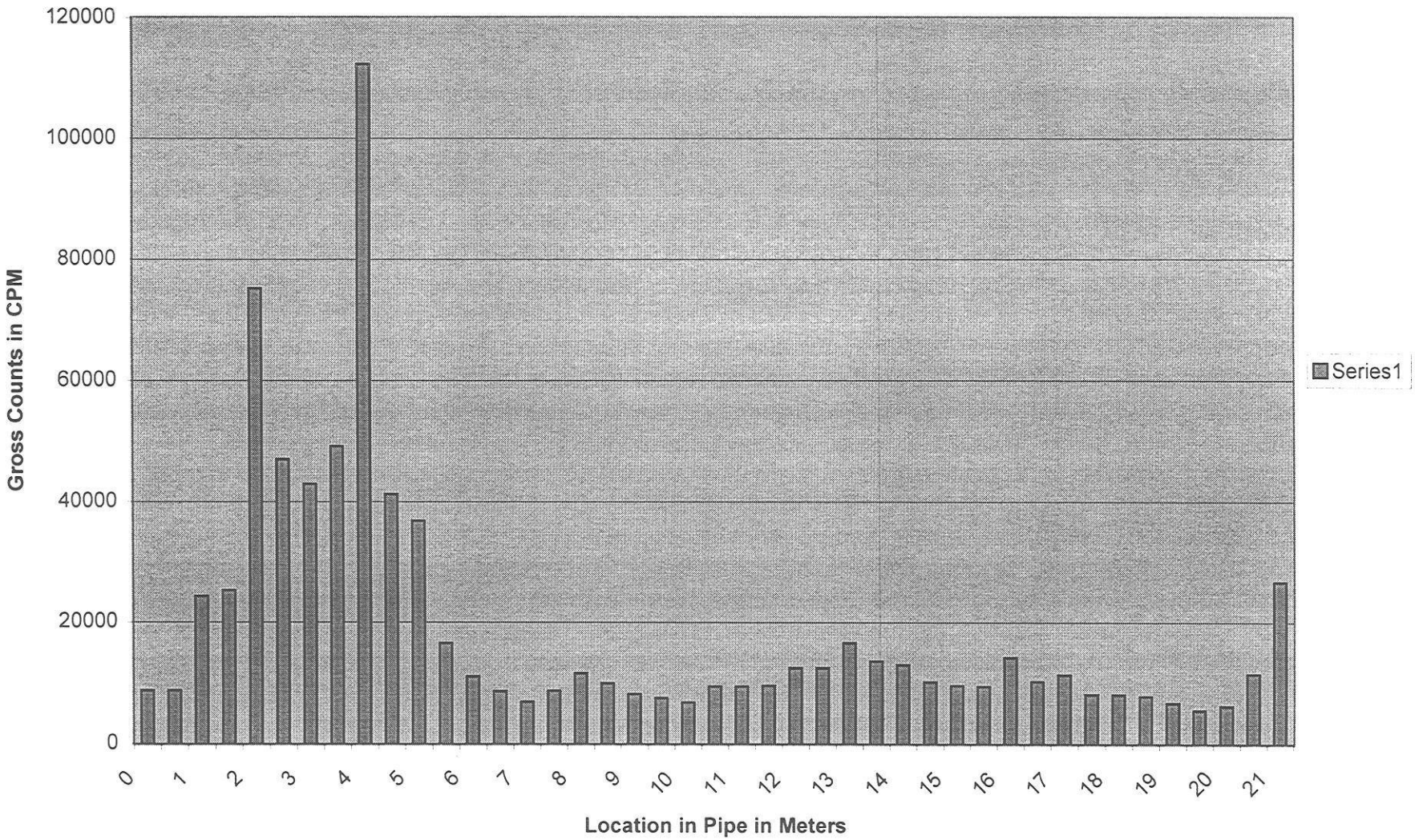
Efficiency: 0.024

Net counts for L_D: 206 cpm **L_D:** 3.88 nCi 0.0039 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
13.5	"	13393	1	1903	11490	2.2E-01	217	
14	"	12851	1	1903	10948	2.1E-01	207	
14.5	"	10037	1	1903	8134	1.5E-01	154	
15	"	9451	1	1903	7548	1.4E-01	143	
15.5	"	9282	1	1903	7379	1.4E-01	139	
16	"	13987	1	1903	12084	2.3E-01	228	
16.5	"	10120	1	1903	8217	1.6E-01	155	
17	"	11205	1	1903	9302	1.8E-01	176	
17.5	"	8030	1	1903	6127	1.2E-01	116	
18	"	7947	1	1903	6044	1.1E-01	114	
18.5	"	7690	1	1903	5787	1.1E-01	109	
19	Bottom of M/H	6600	1	2528	4072	7.7E-02	77	
19.5	Inside M/H	5377	1	2528	2849	5.4E-02	54	
20	"	6057	1	2528	3529	6.7E-02	67	
20.5	"	11313	1	2528	8785	1.7E-01	166	
21	Plane of M/H	26518	1	2528	23990	4.5E-01	453	

Figure 6F1-6F2 Survey Results from Mahnole 6F1 to Manhole 6F2



New World Technology
Radiological Survey Report

Date:	12/22/97	**Time:**	1430	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F1 Abandoned Line to Inside Building 5				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM
1486	23.1	2721

I/S Pipe Background	1857	**CPM**
I/S M/H Background	3237	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.024

Net counts for L_D: 203 cpm L_D: 3.80 nCi 0.0038 μCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μCi)	Activity (nCi)	Remarks
0	Plane of M/H	4254	1	3237	1017	1.9E-02	19	
0.5	I/S Manhole	271746	1	3237	268509	5.0E+00	5022	
1	"	281143	1	3237	277906	5.2E+00	5198	
.5	"	621935	1	3237	618698	1.2E+01	11572	
2	I/S Pipe	142556	1	3237	139319	2.6E+00	2606	
2.5	"	138447	1	1857	136590	2.6E+00	2555	
3	"	116976	1	1857	115119	2.2E+00	2153	
3.5	"	140933	1	1857	139076	2.6E+00	2601	
4	"	145767	1	1857	143910	2.7E+00	2692	
4.5	"	147911	1	1857	146054	2.7E+00	2732	
5	"	138293	1	1857	136436	2.6E+00	2552	
5.5	"	136943	1	1857	135086	2.5E+00	2527	
6	"	127525	1	1857	125668	2.4E+00	2351	
6.5	"	130676	1	1857	128819	2.4E+00	2409	
7	"	134577	1	1857	132720	2.5E+00	2482	
7.5	"	145733	1	1857	143876	2.7E+00	2691	
8	"	159436	1	1857	157579	2.9E+00	2947	
8.5	"	138999	1	1857	137142	2.6E+00	2565	
9	"	103486	1	1857	101629	1.9E+00	1901	
9.5	"	112676	1	1857	110819	2.1E+00	2073	
10	"	148639	1	1857	146782	2.7E+00	2745	
10.5	"	201969	1	1857	200112	3.7E+00	3743	
11	"	166173	1	1857	164316	3.1E+00	3073	
11.5	"	169774	1	1857	167917	3.1E+00	3141	
12	"	175661	1	1857	173804	3.3E+00	3251	
12.5	"	220587	1	1857	218730	4.1E+00	4091	
3	"	263725	1	1857	261868	4.9E+00	4898	

New World Technology
Radiological Survey Report

Date:	12/22/97	**Time:**	1430	**Surveyor (print):**	Dick Kountz
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F1 Abandoned Line to Inside Building 5				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-2 1x1 NaI	PR147392	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
1486	23.1	2721	
I/S Pipe Background		1857	**CPM**
I/S M/H Background		3237	**CPM**

Sample Count Time: 1 minutes

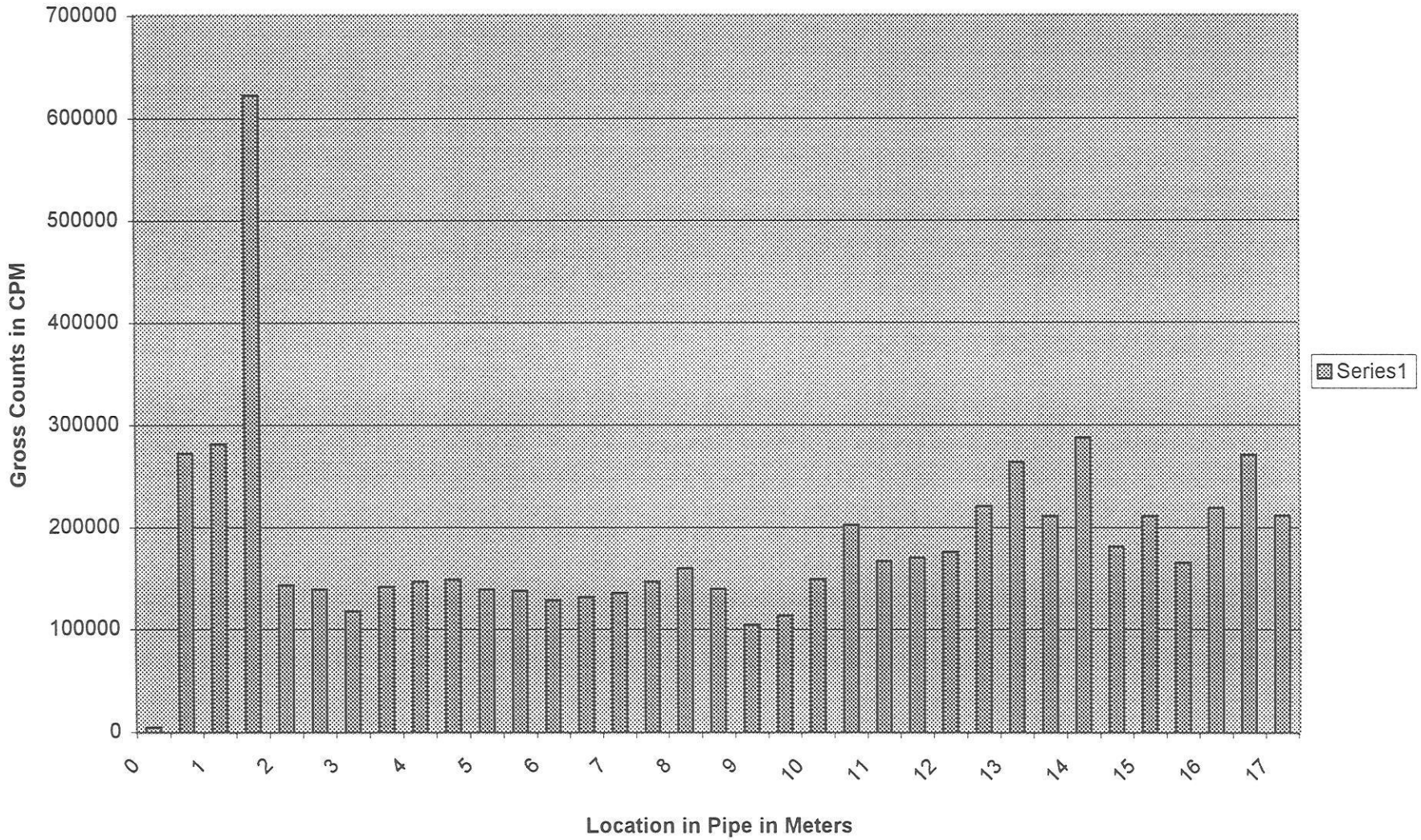
Efficiency: 0.024

Net counts for L_D: 203 cpm **L_D:** 3.80 nCi 0.0038 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
13.5	"	210776	1	1857	208919	3.9E+00	3908	
14	"	287336	1	1857	285479	5.3E+00	5340	
14.5	"	180444	1	1857	178587	3.3E+00	3340	
15	"	210690	1	1857	208833	3.9E+00	3906	
15.5	"	164680	1	1857	162823	3.0E+00	3046	
16	"	218695	1	1857	216838	4.1E+00	4056	
16.5	"	270628	1	1857	268771	5.0E+00	5027	
17	"	211369	1	1857	209512	3.9E+00	3919	

Figure 6F-AL Survey Results from Mahnole 6F1 Abandoned Line to Inside Building 5



New World Technology
Radiological Survey Report

Date:	12/16/97	**Time:**	1310	**Surveyor (print):**	Dave Davis, Dan Spicuzza
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F2 to Inside Building 5				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-62 1x1/2 NaI	PR147601	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
363	23.1	884	
I/S Pipe Background		719	**CPM**
I/S M/H Background		938	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.010

Net counts for L_D: 127 cpm L_D: 5.65 nCi 0.0056 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
0	Plane of M/H	75773	1	938	74835	3.3E+00	3318	
0.5	I/S Manhole	145182	1	938	144244	6.4E+00	6395	
1	"	242416	1	938	241478	1.1E+01	10707	
5	"	217482	1	938	216544	9.6E+00	9601	
2	"	274574	1	938	273636	1.2E+01	12132	
2.5	I/S Pipe	20475	1	719	19756	8.8E-01	876	
3	"	20683	1	719	19964	8.9E-01	885	
3.5	"	6586	1	719	5867	2.6E-01	260	
4	"	14532	1	719	13813	6.1E-01	612	
4.5	"	7444	1	719	6725	3.0E-01	298	
5	"	68814	1	719	68095	3.0E+00	3019	
5.5	"	52956	1	719	52237	2.3E+00	2316	
6	"	86591	1	719	85872	3.8E+00	3807	
6.5	"	23745	1	719	23026	1.0E+00	1021	
7	"	40640	1	719	39921	1.8E+00	1770	
7.5	"	43914	1	719	43195	1.9E+00	1915	
8	"	322576	1	719	321857	1.4E+01	14270	
8.5	"	186165	1	719	185446	8.2E+00	8222	
9	"	280693	1	719	279974	1.2E+01	12413	
9.5	"	417432	1	719	416713	1.8E+01	18476	
10	"	274550	1	719	273831	1.2E+01	12141	
10.5	"	223006	1	719	222287	9.9E+00	9856	
11	"	366541	1	719	365822	1.6E+01	16220	
11.5	"	370968	1	719	370249	1.6E+01	16416	
12	"	404643	1	719	403924	1.8E+01	17909	
12.5	"	295628	1	719	294909	1.3E+01	13076	
	"	170687	1	719	169968	7.5E+00	7536	

New World Technology
Radiological Survey Report

Date:	12/16/97	**Time:**	1310	**Surveyor (print):**	Dave Davis, Dan Spicuzza
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F2 to Inside Building 5				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-62 1x1/2 NaI	PR147601	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
363	23.1	884	
I/S Pipe Background		719	**CPM**
I/S M/H Background		938	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.010

Net counts for L_D: 127 cpm L_D: 5.65 nCi 0.0056 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
13.5	"	160116	1	719	159397	7.1E+00	7067	
14	"	197144	1	719	196425	8.7E+00	8709	
14.5	"	211307	1	719	210588	9.3E+00	9337	
15	"	121078	1	719	120359	5.3E+00	5336	
15.5	"	195595	1	719	194876	8.6E+00	8640	
16	"	108915	1	719	108196	4.8E+00	4797	
16.5	"	35507	1	719	34788	1.5E+00	1542	
17	"	55132	1	719	54413	2.4E+00	2413	
17.5	"	11622	1	719	10903	4.8E-01	483	
18	"	20493	1	719	19774	8.8E-01	877	
18.5	"	6938	1	719	6219	2.8E-01	276	
19	"	5544	1	719	4825	2.1E-01	214	
19.5	"	4654	1	719	3935	1.7E-01	174	
20	"	5701	1	719	4982	2.2E-01	221	
20.5	"	5008	1	719	4289	1.9E-01	190	
21	"	5498	1	719	4779	2.1E-01	212	
21.5	"	5446	1	719	4727	2.1E-01	210	
22	"	5473	1	719	4754	2.1E-01	211	
22.5	"	5653	1	719	4934	2.2E-01	219	
23	"	5499	1	719	4780	2.1E-01	212	
23.5	"	4770	1	719	4051	1.8E-01	180	
24	"	4942	1	719	4223	1.9E-01	187	
24.5	"	4391	1	719	3672	1.6E-01	163	
25	"	5629	1	719	4910	2.2E-01	218	
25.5	"	5964	1	719	5245	2.3E-01	233	
26	"	3743	1	719	3024	1.3E-01	134	
26.5	"	1699	1	719	980	4.3E-02	43	

New World Technology
Radiological Survey Report

Date:	12/16/97	**Time:**	1310	**Surveyor (print):**	Dave Davis, Dan Spicuzza
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F2 to Inside Building 5				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-62 1x1/2 NaI	PR147601	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
363	23.1	884	
I/S Pipe Background		719	**CPM**
I/S M/H Background		938	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.010

Net counts for L_D: 127 cpm L_D: 5.65 nCi 0.0056 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
27	"	1309	1	719	590	2.6E-02	26	
27.5	"	2211	1	719	1492	6.6E-02	66	
28	"	1655	1	719	936	4.2E-02	42	
.5	"	2337	1	719	1618	7.2E-02	72	
29	"	3764	1	719	3045	1.4E-01	135	
29.5	"	6272	1	719	5553	2.5E-01	246	
30	"	4549	1	719	3830	1.7E-01	170	
30.5	"	2273	1	719	1554	6.9E-02	69	
31	"	2178	1	719	1459	6.5E-02	65	
31.5	"	1896	1	719	1177	5.2E-02	52	
32	"	4015	1	719	3296	1.5E-01	146	
32.5	"	4559	1	719	3840	1.7E-01	170	
33	"	5878	1	719	5159	2.3E-01	229	
33.5	"	4524	1	719	3805	1.7E-01	169	
34	"	6439	1	719	5720	2.5E-01	254	
34.5	"	31785	1	719	31066	1.4E+00	1377	
35	"	39610	1	719	38891	1.7E+00	1724	
35.5	"	26923	1	719	26204	1.2E+00	1162	
36	"	23911	1	719	23192	1.0E+00	1028	
36.5	"	36839	1	719	36120	1.6E+00	1601	
37	"	14604	1	719	13885	6.2E-01	616	
37.5	"	14621	1	719	13902	6.2E-01	616	
38	"	14383	1	719	13664	6.1E-01	606	
38.5	"	11609	1	719	10890	4.8E-01	483	
39	"	35751	1	719	35032	1.6E+00	1553	
9.5	"	11355	1	719	10636	4.7E-01	472	
0	"	5417	1	719	4698	2.1E-01	208	

New World Technology
Radiological Survey Report

Date:	12/16/97	**Time:**	1310	**Surveyor (print):**	Dave Davis, Dan Spicuzza
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F2 to Inside Building 5				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-62 1x1/2 NaI	PR147601	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
363	23.1	884	
I/S Pipe Background		719	**CPM**
I/S M/H Background		938	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.010

Net counts for L_D: 127 cpm L_D: 5.65 nCi 0.0056 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
40.5	"	5210	1	719	4491	2.0E-01	199	
41	"	5330	1	719	4611	2.0E-01	204	
41.5	"	6199	1	719	5480	2.4E-01	243	
42	"	5529	1	719	4810	2.1E-01	213	
42.5	"	10396	1	719	9677	4.3E-01	429	
43	"	10829	1	719	10110	4.5E-01	448	
43.5	"	8427	1	719	7708	3.4E-01	342	
44	"	8649	1	719	7930	3.5E-01	352	
44.5	"	8147	1	719	7428	3.3E-01	329	
45	"	9040	1	719	8321	3.7E-01	369	
45.5	"	13577	1	719	12858	5.7E-01	570	
46	"	7128	1	719	6409	2.8E-01	284	
46.5	"	9337	1	719	8618	3.8E-01	382	
47	"	7202	1	719	6483	2.9E-01	287	
47.5	"	10556	1	719	9837	4.4E-01	436	
48	"	16006	1	719	15287	6.8E-01	678	
48.5	"	24194	1	719	23475	1.0E+00	1041	
49	"	20659	1	719	19940	8.8E-01	884	
49.5	"	33677	1	719	32958	1.5E+00	1461	
50	"	36777	1	719	36058	1.6E+00	1599	
50.5	"	32397	1	719	31678	1.4E+00	1405	
51	"	28294	1	719	27575	1.2E+00	1223	
51.5	"	20046	1	719	19327	8.6E-01	857	
52	"	28278	1	719	27559	1.2E+00	1222	
52.5	"	10061	1	719	9342	4.1E-01	414	
53	"	7403	1	719	6684	3.0E-01	296	
53.5	"	7383	1	719	6664	3.0E-01	295	

New World Technology
Radiological Survey Report

Date:	12/16/97	**Time:**	1310	**Surveyor (print):**	Dave Davis, Dan Spicuzza
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F2 to Inside Building 5				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-62 1x1/2 NaI	PR147601	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
363	23.1	884	
I/S Pipe Background		719	**CPM**
I/S M/H Background		938	**CPM**

Sample Count Time: 1 minutes

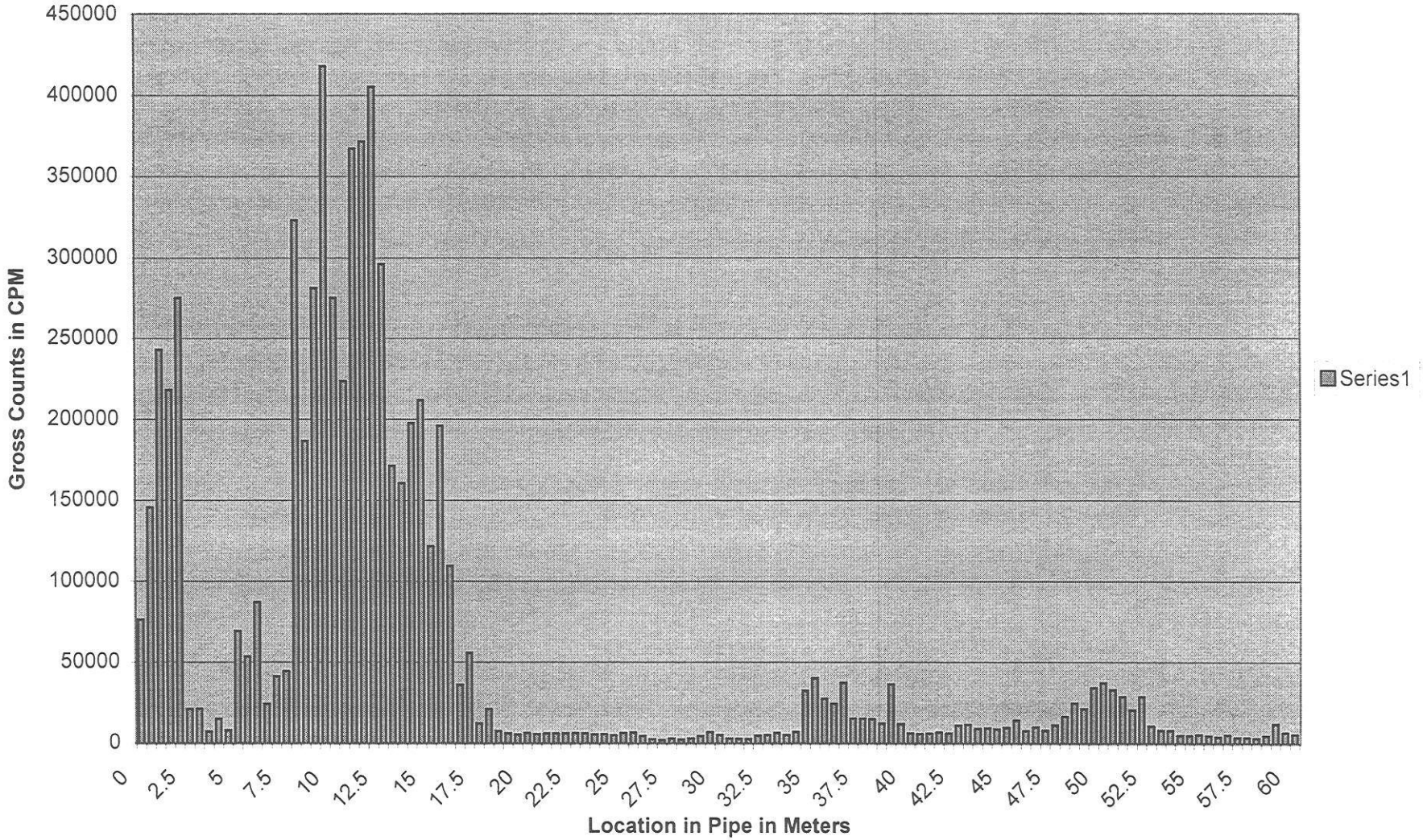
Efficiency: 0.010

Net counts for L_D: 127 cpm L_D: 5.65 nCi 0.0056 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
54	"	4255	1	719	3536	1.6E-01	157	
54.5	"	4114	1	719	3395	1.5E-01	151	
55	"	4730	1	719	4011	1.8E-01	178	
55.5	"	3938	1	719	3219	1.4E-01	143	
56	"	3296	1	719	2577	1.1E-01	114	
56.5	"	4319	1	719	3600	1.6E-01	160	
57	"	2926	1	719	2207	9.8E-02	98	
57.5	"	2914	1	719	2195	9.7E-02	97	
58	"	2453	1	719	1734	7.7E-02	77	
58.5	"	3810	1	719	3091	1.4E-01	137	
59	"	11311	1	719	10592	4.7E-01	470	
59.5	"	5902	1	719	5183	2.3E-01	230	
60	"	4900	1	719	4181	1.9E-01	185	

Figure 6F2-5-1 Survey Results from Mahnole 6F2 to Inside Building 5



New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	830	**Surveyor (print):**	Dave Davis, Dan Spicuzza
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F2 to Inside Building 5				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-62 1x1/2 NaI	PR147601	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
342	23.1	860	
I/S Pipe Background		719	**CPM**
I/S M/H Background		938	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.010

Net counts for L_D: 127 cpm L_D: 5.68 nCi 0.0057 μCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μCi)	Activity (nCi)	Remarks
60.5	I/S Pipe	7007	1	719	6288	2.8E-01	280	
61	"	8406	1	719	7687	3.4E-01	343	
61.5	"	7424	1	719	6705	3.0E-01	299	
2	"	5514	1	719	4795	2.1E-01	214	
62.5	"	6604	1	719	5885	2.6E-01	262	
63	"	6356	1	719	5637	2.5E-01	251	
63.5	"	14014	1	719	13295	5.9E-01	593	
64	"	9146	1	719	8427	3.8E-01	376	
64.5	"	12662	1	719	11943	5.3E-01	533	
65	"	9286	1	719	8567	3.8E-01	382	
65.5	"	12006	1	719	11287	5.0E-01	503	
66	"	15026	1	719	14307	6.4E-01	638	
66.5	"	16646	1	719	15927	7.1E-01	710	
67	"	17634	1	719	16915	7.5E-01	754	
67.5	"	11010	1	719	10291	4.6E-01	459	
68	"	16232	1	719	15513	6.9E-01	692	
68.5	"	11414	1	719	10695	4.8E-01	477	
69	"	15304	1	719	14585	6.5E-01	650	
69.5	"	15682	1	719	14963	6.7E-01	667	
70	"	13102	1	719	12383	5.5E-01	552	
70.5	"	11150	1	719	10431	4.7E-01	465	
71	"	11418	1	719	10699	4.8E-01	477	
71.5	"	9994	1	719	9275	4.1E-01	414	
72	"	8024	1	719	7305	3.3E-01	326	
72.5	"	6994	1	719	6275	2.8E-01	280	
73	"	11876	1	719	11157	5.0E-01	498	
.5	"	11128	1	719	10409	4.6E-01	464	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	830	**Surveyor (print):**	Dave Davis, Dan Spicuzza
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F2 to Inside Building 5				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-62 1x1/2 NaI	PR147601	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
342	23.1	860	
I/S Pipe Background		719	**CPM**
I/S M/H Background		938	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.010

Net counts for L_D: 127 cpm L_D: 5.68 nCi 0.0057 μCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μCi)	Activity (nCi)	Remarks
74	"	9440	1	719	8721	3.9E-01	389	
74.5	"	9610	1	719	8891	4.0E-01	396	
75	"	11358	1	719	10639	4.7E-01	474	
75.5	"	14636	1	719	13917	6.2E-01	621	
76	"	8602	1	719	7883	3.5E-01	352	
76.5	"	4240	1	719	3521	1.6E-01	157	
77	"	4054	1	719	3335	1.5E-01	149	
77.5	"	6066	1	719	5347	2.4E-01	238	
78	"	6722	1	719	6003	2.7E-01	268	
78.5	"	14568	1	719	13849	6.2E-01	618	
79	"	15060	1	719	14341	6.4E-01	640	
79.5	"	7882	1	719	7163	3.2E-01	319	
80	"	6474	1	719	5755	2.6E-01	257	
80.5	"	12230	1	719	11511	5.1E-01	513	
81	"	17158	1	719	16439	7.3E-01	733	
81.5	"	15274	1	719	14555	6.5E-01	649	
82	"	6538	1	719	5819	2.6E-01	259	
82.5	"	4470	1	719	3751	1.7E-01	167	
83	"	4396	1	719	3677	1.6E-01	164	
83.5	"	441	1	719	-278	0.0E+00	Activity is below LD	
84	"	9556	1	719	8837	3.9E-01	394	
84.5	"	11800	1	719	11081	4.9E-01	494	
85	"	13750	1	719	13031	5.8E-01	581	
85.5	"	6662	1	719	5943	2.7E-01	265	
86	"	4014	1	719	3295	1.5E-01	147	
86.5	"	4296	1	719	3577	1.6E-01	160	
87	"	12046	1	719	11327	5.1E-01	505	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	830	**Surveyor (print):**	Dave Davis, Dan Spicuzza
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F2 to Inside Building 5				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-62 1x1/2 NaI	PR147601	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
342	23.1	860	
I/S Pipe Background		719	**CPM**
I/S M/H Background		938	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.010

Net counts for L_D: 127 cpm **L_D:** 5.68 nCi 0.0057 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
87.5	"	8878	1	719	8159	3.6E-01	364	
88	"	8534	1	719	7815	3.5E-01	349	
88.5	"	11292	1	719	10573	4.7E-01	471	
9	"	10522	1	719	9803	4.4E-01	437	
9.5	"	5568	1	719	4849	2.2E-01	216	
90	"	4936	1	719	4217	1.9E-01	188	
90.5	"	8998	1	719	8279	3.7E-01	369	
91	"	9822	1	719	9103	4.1E-01	406	
91.5	"	3892	1	719	3173	1.4E-01	141	
92	"	3376	1	719	2657	1.2E-01	118	
92.5	"	3772	1	719	3053	1.4E-01	136	
93	"	5182	1	719	4463	2.0E-01	199	
93.5	"	3392	1	719	2673	1.2E-01	119	
94	"	2966	1	719	2247	1.0E-01	100	
94.5	"	2432	1	719	1713	7.6E-02	76	
95	"	2996	1	719	2277	1.0E-01	102	
95.5	"	2560	1	719	1841	8.2E-02	82	
96	"	2514	1	719	1795	8.0E-02	80	
96.5	"	4800	1	719	4081	1.8E-01	182	
97	"	2388	1	719	1669	7.4E-02	74	
97.5	"	2722	1	719	2003	8.9E-02	89	
98	"	1454	1	719	735	3.3E-02	33	
98.5	"	1634	1	719	915	4.1E-02	41	
99	"	1276	1	719	557	2.5E-02	25	
99.5	"	1284	1	719	565	2.5E-02	25	
100	"	1346	1	719	627	2.8E-02	28	
.5	"	972	1	719	253	1.1E-02	11	

New World Technology
Radiological Survey Report

Date:	12/17/97	**Time:**	830	**Surveyor (print):**	Dave Davis, Dan Spicuzza
Reviewed by:	Dan Spicuzza				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 6F2 to Inside Building 5				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	142501	12/4/98
2	44-62 1x1/2 NaI	PR147601	12/4/98

Bkrd CPM	Source (nCi)	Source CPM	
342	23.1	860	
I/S Pipe Background		719	**CPM**
I/S M/H Background		938	**CPM**

Sample Count Time: 1 minutes

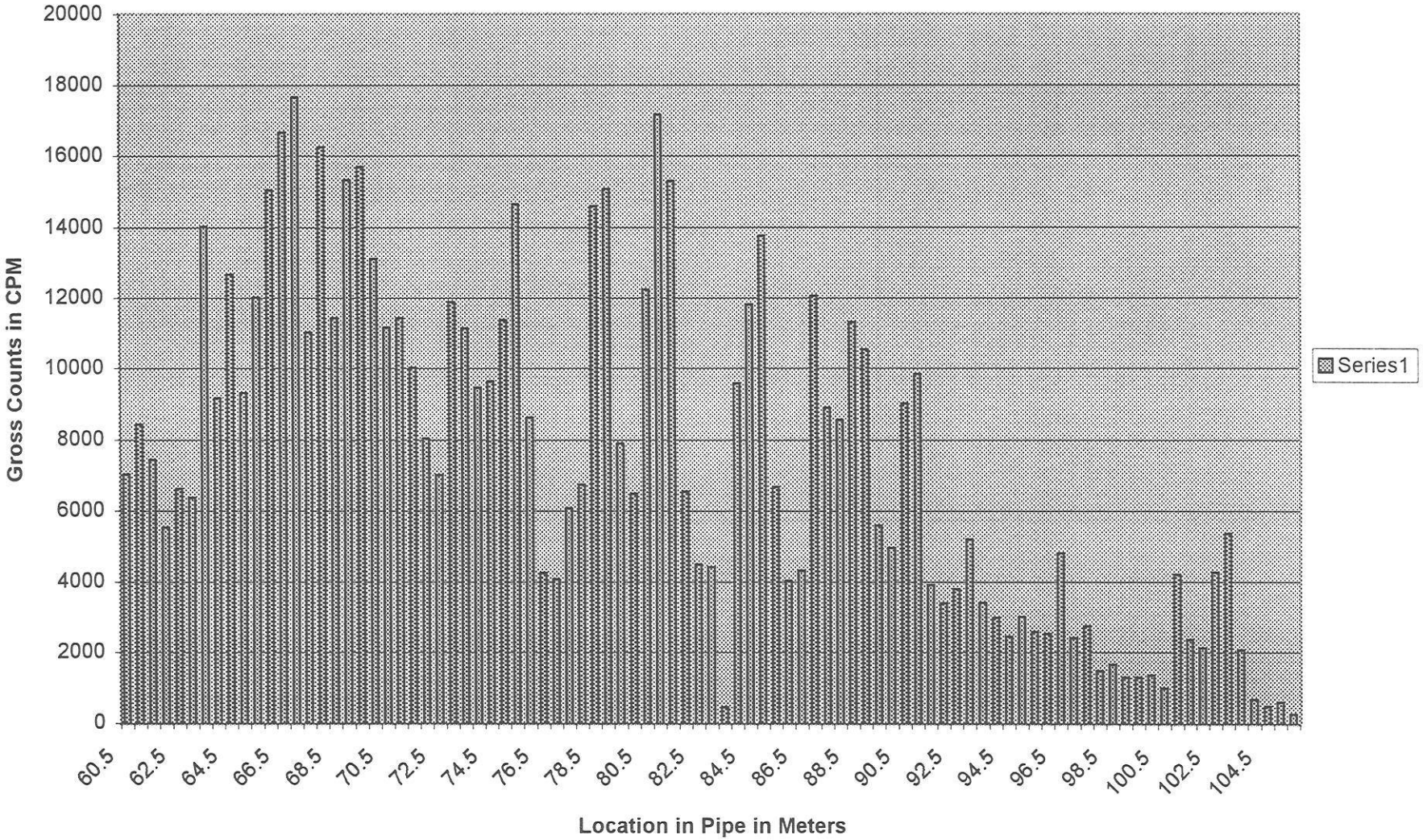
Efficiency: 0.010

Net counts for L_D: 127 cpm L_D: 5.68 nCi 0.0057 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
101	"	4192	1	719	3473	1.5E-01	155	
101.5	"	2338	1	719	1619	7.2E-02	72	
102	"	2110	1	719	1391	6.2E-02	62	
102.5	"	4244	1	719	3525	1.6E-01	157	
103	"	5352	1	719	4633	2.1E-01	207	
103.5	Inside Cleanout Line	2054	1	719	1335	6.0E-02	60	
104	"	662	1	719	-57	0.0E+00	Activity is below LD	
104.5	"	466	1	719	-253	0.0E+00	Activity is below LD	
105	"	594	1	719	-125	0.0E+00	Activity is below LD	
105.5	Plane of Cleanout	248	1	719	-471	0.0E+00	Activity is below LD	

Figure 6F2-5-2 Survey Results from Mahnole 6F2 to Inside Building 5



New World Technology
Radiological Survey Report

Date:	12/20/97	**Time:**	O815	**Surveyor (print):**	Dan Spicuzza
Reviewed by:	Bill Haney				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 400SS-1 to Man Hole 400SS-2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135436	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1023	23.1	2110	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.021

Net counts for L_D: 217 cpm L_D: 4.61 nCi 0.0046 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
0	Plane of M/H	1530	1	2803	-1273	0.0E+00	Activity is below LD	Manhole Full of Water
0.5	I/S Manhole	1194	1	2803	-1609	0.0E+00	Activity is below LD	
1	"	1236	1	2803	-1567	0.0E+00	Activity is below LD	
.5	"	1264	1	2803	-1539	0.0E+00	Activity is below LD	
2	I/S Pipe	1311	1	2120	-809	0.0E+00	Activity is below LD	
2.5	"	1592	1	2120	-528	0.0E+00	Activity is below LD	
3	"	1589	1	2120	-531	0.0E+00	Activity is below LD	
3.5	"	2034	1	2120	-86	0.0E+00	Activity is below LD	
4	"	2290	1	2120	170	3.6E-03	Activity is below LD	
4.5	"	2226	1	2120	106	2.3E-03	Activity is below LD	
5	"	2257	1	2120	137	2.9E-03	Activity is below LD	
5.5	"	1988	1	2120	-132	0.0E+00	Activity is below LD	
6	"	2073	1	2120	-47	0.0E+00	Activity is below LD	
6.5	"	2332	1	2120	212	4.5E-03	Activity is below LD	
7	"	2325	1	2120	205	4.4E-03	Activity is below LD	
7.5	"	2294	1	2120	174	3.7E-03	Activity is below LD	
8	"	2164	1	2120	44	9.4E-04	Activity is below LD	
8.5	"	2230	1	2120	110	2.3E-03	Activity is below LD	
9	"	2313	1	2120	193	4.1E-03	Activity is below LD	
9.5	"	2335	1	2120	215	4.6E-03	Activity is below LD	
10	"	2372	1	2120	252	5.4E-03	5	
10.5	"	2466	1	2120	346	7.4E-03	7	
11	"	2285	1	2120	165	3.5E-03	Activity is below LD	
11.5	"	2431	1	2120	311	6.6E-03	7	
12	"	2398	1	2120	278	5.9E-03	6	
12.5	"	2276	1	2120	156	3.3E-03	Activity is below LD	
[illegible]	"	2200	1	2120	80	1.7E-03	Activity is below LD	

New World Technology
Radiological Survey Report

Date:	12/20/97	**Time:**	O815	**Surveyor (print):**	Dan Spicuzza
Reviewed by:	Bill Haney				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 400SS-1 to Man Hole 400SS-2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135436	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1023	23.1	2110	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

Efficiency: 0.021

Net counts for L_D: 217 cpm L_D: 4.61 nCi 0.0046 µCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (µCi)	Activity (nCi)	Remarks
13.5	"	2186	1	2120	66	1.4E-03	Activity is below LD	
14	"	2174	1	2120	54	1.1E-03	Activity is below LD	
14.5	"	2184	1	2120	64	1.4E-03	Activity is below LD	
15	"	2015	1	2120	-105	0.0E+00	Activity is below LD	
15.5	"	1750	1	2120	-370	0.0E+00	Activity is below LD	
16	"	2031	1	2120	-89	0.0E+00	Activity is below LD	
16.5	"	2128	1	2120	8	1.7E-04	Activity is below LD	
17	"	2251	1	2120	131	2.8E-03	Activity is below LD	
17.5	"	2147	1	2120	27	5.7E-04	Activity is below LD	
18	"	2342	1	2120	222	4.7E-03	5	
18.5	"	2386	1	2120	266	5.7E-03	6	
19	"	2351	1	2120	231	4.9E-03	5	
19.5	"	2506	1	2120	386	8.2E-03	8	
20	"	2299	1	2120	179	3.8E-03	Activity is below LD	
20.5	"	2389	1	2120	269	5.7E-03	6	
21	"	2518	1	2120	398	8.5E-03	8	
21.5	"	2480	1	2120	360	7.7E-03	8	
22	"	2606	1	2120	486	1.0E-02	10	
22.5	"	2530	1	2120	410	8.7E-03	9	
23	"	2504	1	2120	384	8.2E-03	8	
23.5	"	2363	1	2120	243	5.2E-03	5	
24	"	2388	1	2120	268	5.7E-03	6	
24.5	"	2408	1	2120	288	6.1E-03	6	
25	"	2346	1	2120	226	4.8E-03	5	
25.5	"	2319	1	2120	199	4.2E-03	Activity is below LD	
26	"	2432	1	2120	312	6.6E-03	7	
26.5	"	2394	1	2120	274	5.8E-03	6	

New World Technology
Radiological Survey Report

Date:	12/20/97	**Time:**	O815	**Surveyor (print):**	Dan Spicuzza
Reviewed by:	Bill Haney				
Purpose of Survey:	Characterization of Drain Lines				
Location:	Man Hole 400SS-1 to Man Hole 400SS-2				

Instruments Used

#	Model	Serial No.	Cal. Due Date
1	Ludlum 2350-1	134743	10/17/98
2	44-2 1x1 NaI	PR135436	10/17/98

Bkrd CPM	Source (nCi)	Source CPM	
1023	23.1	2110	
I/S Pipe Background		2120	**CPM**
I/S M/H Background		2803	**CPM**

Sample Count Time: 1 minutes

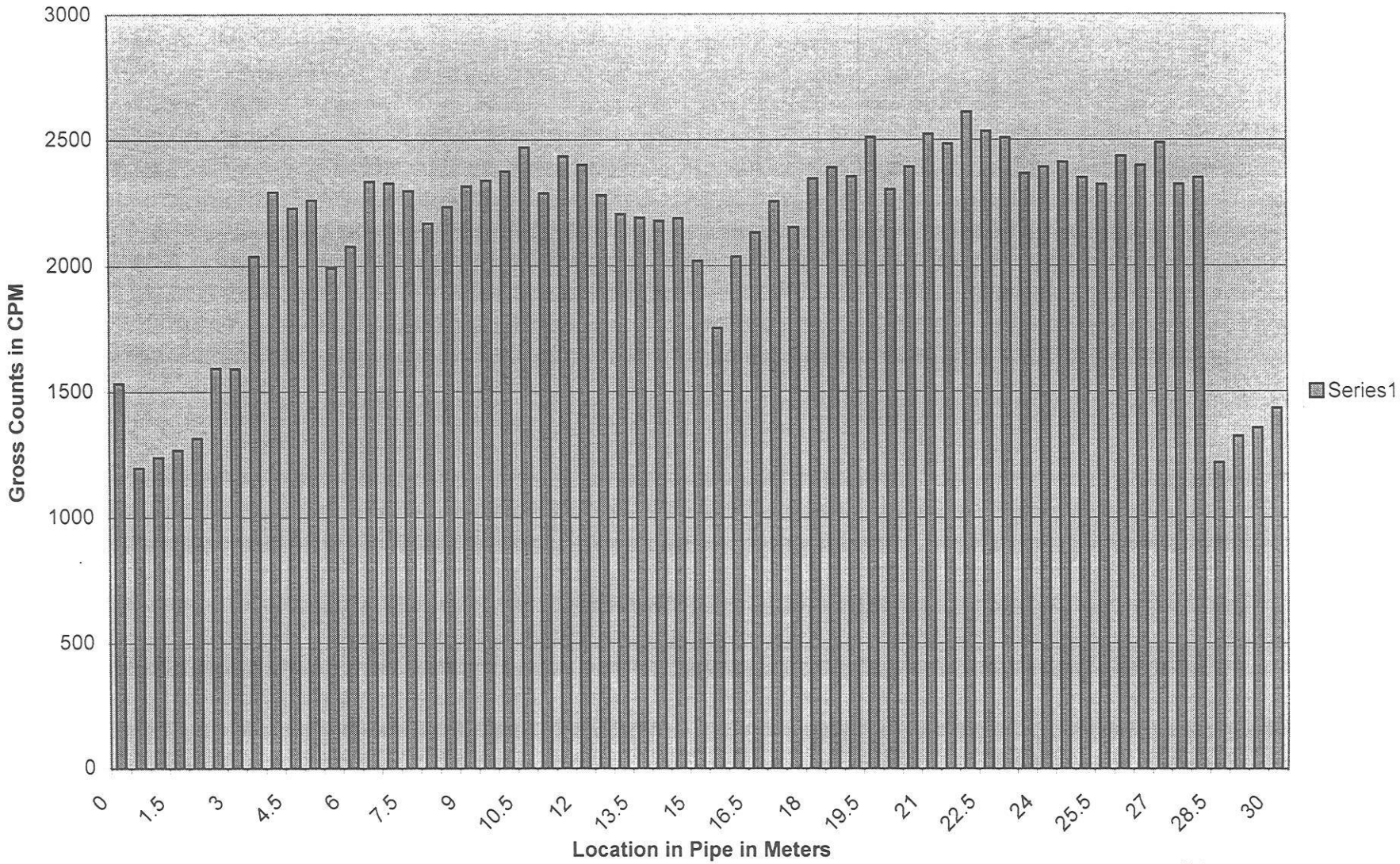
Efficiency: 0.021

Net counts for L_D: 217 cpm L_D: 4.61 nCi 0.0046 μCi

Survey Results

#	Item or Location	Gross Count	Count Time (Min)	Bkrd CPM	Net CPM	Activity (μCi)	Activity (nCi)	Remarks
27	"	2484	1	2120	364	7.7E-03	8	
27.5	"	2320	1	2120	200	4.3E-03	Activity is below LD	
28	"	2346	1	2120	226	4.8E-03	5	
28.5	Bottom of M/H	1214	1	2803	-1589	0.0E+00	Activity is below LD	
29	Inside M/H	1318	1	2803	-1485	0.0E+00	Activity is below LD	
29.5	"	1351	1	2803	-1452	0.0E+00	Activity is below LD	
30	Plane of M/H	1429	1	2803	-1374	0.0E+00	Activity is below LD	

Figure 400SS1-400SS2 Survey Results from Mahnole 400SS-1 to Manhole 400SS-2



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ALAMEDA POINT
SSIC NO. 5090.3

APPENDIX A
CHARACTERIZATION OF OUTFALLS

SUB-SECTION 5.24

FINAL REPORT
RADIOLOGICAL CHARACTERIZATION SURVEY OF STORM DRAINS

THE ABOVE IDENTIFIED SUB-SECTION IS NOT AVAILABLE.

EXTENSIVE RESEARCH WAS PERFORMED BY NAVFAC SOUTHWEST TO LOCATE THIS SUB-SECTION. THIS PAGE HAS BEEN INSERTED AS A PLACEHOLDER AND WILL BE REPLACED SHOULD THE MISSING ITEM BE LOCATED.

QUESTIONS MAY BE DIRECTED TO:

DIANE C. SILVA
RECORDS MANAGEMENT SPECIALIST
NAVAL FACILITIES ENGINEERING COMMAND SOUTHWEST
1220 PACIFIC HIGHWAY
SAN DIEGO, CA 92132

TELEPHONE: (619) 532-3676

Appendix B
Analytical Results
Of Outfalls

Gamma Spectrum Analysis

The following analysis from Thermo NUtech represents two soil samples collected at the NAS Alameda seaplane lagoon on 12/21/98.

The samples were obtained from the existing riprap at mean to low tide. Only surface sediment was collected and is not intended to represent the potential contamination below the bottom surface of the lagoon. For sample location see Appendix C, Figure 1

1. **Sample ID # 4F** is a sample of sediment below outfall G (incorrectly identified by the laboratory).

2. **Sample ID # OUTFALL F** is a sample of sediment below outfall F

Thermo NUtech

ANALYSIS RESULTS

SDG 8343
Work Order N801017
Received Date 01/08/98

Client NHT
Contract
Matrix SOLID

Client Sample ID	TNU Sample ID	Collected	Analyzed	Nuclide	Results ± 2σ pCi/g	MDA
4F	8343-001	01/08/98	01/09/98	K 40 (G)	7.06 ± 0.21	
				Co 60 (G)	<0.010	
				Cs 137 (G)	0.029 ± 0.011	
				Ra 226 (G)	0.421 ± 0.022	
				Th 228 (G)	0.458 ± 0.012	
				Th 232 (G)	0.514 ± 0.050	
OUTFALL F	8343-002	01/08/98	01/09/98	K 40 (G)	6.65 ± 0.10	
				Co 60 (G)	<0.005	
				Cs 137 (G)	0.028 ± 0.003	
				Ra 226 (G)	0.938 ± 0.014	
				Th 228 (G)	0.255 ± 0.006	
				Th 232 (G)	0.294 ± 0.019	

Certified by [signature]
Report Date 01/12/98
Page 1

Thermo NUtech

QC RESULTS

SDG 8343
Work Order N801017
Received Date 01/08/98

Client NWT
Contract
Matrix SOLID

TNU Sample ID	Nuclide	Results	Units	Amount Added	MDA	Evaluation
BLANK						
8343-003	K 40 (G)	U	pCi/Smpl	NA	58	<MDA
	Co 60 (G)	U	pCi/Smpl	NA	5.8	<MDA
	Cs 137 (G)	U	pCi/Smpl	NA	4.7	<MDA
	Ra 226 (G)	U	pCi/Smpl	NA	9.4	<MDA
	Th 228 (G)	U	pCi/Smpl	NA	6.2	<MDA
	Th 232 (G)	U	pCi/Smpl	NA	18	<MDA

Certified by [signature]
Report Date 01/12/98

Appendix C
Analytical Results
Of Manholes

TCLP and Gamma Spectrum Analysis

The following analysis from Mountain States Analytical and their subcontractor Thermo NUtech represents eight sludge and debris samples collected from 3 separate manholes west of building 5, by NWT technicians 12/24/97.

The samples were obtained from manholes 6F, 6F-1, and 6F-2 as indicated in figure 1 of this appendix. Sampling consisted of collecting sediment from the bottom of the manhole as well as chips of the brick lining and concrete piping. The samples analyzed by Gamma Specturm Analysis were primarily sediment with some debris included while the samples analyzed for TCLP were primarily debris with some sediment included.

The spread sheet below is intended to trace the sample ID numbers to manhole locations.

Sample ID #	Manhole Number	Sample ID #	Sample ID #	Type of
Chain Of Custody		MSAI	Thermo Nutech	Analytical
6F-2	6F-2		19158-73384	Gamma Spec.
6F-01	6F		19158-73385	Gamma Spec.
6F-02	6F		19158-73386	Gamma Spec.
6F-1	6F-1		19158-73387	Gamma Spec.
6F-1-E	6F-1	GF-1-E		TCLP
6F-2-E	6F-2	GF-2-E		TCLP
6F-1-E-1	6F-1	GF-1-E-1		TCLP
6F-1-E-2	6F-1	GF-1-E-2		TCLP

APPENDIX C
TCLP ANALYSIS

13478

Mountain States Analytical

Sample Chain of Custody

Client Name: New World Technology P.O. #

Phone #: (510) 443-7967 Fax #: (510) 443-0119

Project Name/#: Alameda NAS.

Sampler: Dan Spivack

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required: Gamma Spectroscopy Energy Range								Rush?	Remarks	Temp. of Samples Upon Receipt
6F-2	11-1-97	1315					X	1	X									RA-116	0.7 mr/hr
6F-01	11-1-97	1440					X	1	X										0.07 mr/hr
6F-02	11-1-97	1445					X	1	X										0.075 mr/hr
6F-1	11-1-97	1425					X	1	X										0.09 mr/hr
6F-1-E	11-1-97	1415					X	1		X									0.07 mr/hr
6F-2-E	11-1-97	1315					X	1		X									0.15 mr/hr
6F-1-E-1	11-1-97	1425					X	1		X									0.08 mr/hr
6F-1-E-2	11-1-97	1425					X	1		X									0.1 mr/hr

Sample relinquished by:	Date	Time	Sample received by:
Dan Spivack	11-1-97	1700	

Name of Shipper	Airbill No.	Date	Time

Received By (Lab)	Date	Time	Seal Intact?
Pam Olsen	11/2/97	1000	yes

Turnaround Time Requested (please circle): Normal Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date)

Rush results requested by (please circle): Phone Fax

Report Results to:

Type of Disposal: Authorized for Disposal by:

Date/Time of Disposal: Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

10 Years of Quality Service

White Copy - Original Retain by Lab Yellow Copy - Return to Customer Pink Copy - Retain by Sampler

Mountain States Analytical, Inc.

The Quality Solution

RECEIVED JAN 22 1998

January 15, 1998

Mr. Tom Dias
New World Technology
1236 ~~1336~~ Concannon Blvd.
Livermore, CA 94550

Reference:
Project: Alameda NAS
MSAI Group: 19157

Dear Mr. Dias:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

GF-1-E GF-2-E GF-1-E-1
GF-1-E-2

All holding times were met for the tests performed on these samples except:

Sample - (Sample Date) Test Description	Expiration Date	Date Analyzed	Days Past Holding Time
GF-1-E-1 - (12/21/97) SVOA Re-Extraction, TCLP	01/05/98	01/06/98	9
GF-1-E-2 - (12/21/97) SVOA Re-Extraction, TCLP	01/05/98	01/06/98	9

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

W. Scott Fraser

W. Scott Fraser
Project Manager

10 Years of Quality Service

Corporate Office
1645 West 2200 South, Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724(MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com

Southwest States Region
6223 Bayonne, Spring, Texas 77389
281-320-2842 • FAX 281-320-0989
e-mail: gbrewer@msailabs.com

MEMBER ACIL

Analytical Report

RECEIVED JAN 2 2 1998

Mountain States Analytical, Inc.
The Quality Solution

New World Technology
1336 Concannon Blvd.
Livermore, CA 94550

Attn: Mr. Tom Dias
Project: Alameda NAS

Sample ID: GF-1-E
Matrix: Solid Waste

MSAI Sample: 73380
MSAI Group: 19157
Date Reported: 01/15/98
Discard Date: 02/14/98
Date Submitted: 12/24/97
Date Sampled: 12/21/97
Collected by: DS
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
0246G	Barium by ICP, TCLP, 6010A Method: SW-846 6010A	1.28	mg/l	0.02
0249G	Cadmium by ICP, TCLP, 6010A Method: SW-846 6010A	0.311	mg/l	0.020
0251G	Chromium by ICP, TCLP, 6010A Method: SW-846 6010A	0.299	mg/l	0.050
3G	Copper by ICP, TCLP, 6010A Method: SW-846 6010A	0.150	mg/l	0.050
0255G	Lead by ICP, TCLP, 6010A Method: SW-846 6010A	5.23	mg/l	0.25
0259T	Mercury by CVAA, TCLP, 7470 Method: SW-846 7470	ND	mg/l	0.0005
0266G	Silver by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.020
0272G	Zinc by ICP, TCLP, 6010A Method: SW-846 6010A	18.8	mg/l	0.1
0392N	Mercury Prep CVAA, TCLP, 7470 Method: SW-846 7470	Batch. w964		
0392T	Flame/ICP Prep, TCLP, 3010A Method: SW-846 3010A	Batch. w962		
1045G	Arsenic by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.18
1064G	Selenium by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.30

Mountain States Analytical, Inc.
The Quality Solution

New World Technology

MSAI Sample: 73380
MSAI Group: 19157

Sample ID: GF-1-E

Test	Analysis	Results as Received	Units		Limit of Quantitation
0394E	pH on soil (T5/30), 9045C mod				
	Method: SW-846 9045C MOD				
	pH at 5 Minutes	7.79	SU		0.05
	pH at 30 Minutes	7.78	SU		0.05
0946	TCLP Extraction, ZHE, sw, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947H	TCLP Extraction, Herbicide, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947I	TCLP Extraction, ICP Metals, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947M	TCLP Extraction, Mercury, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947P	TCLP Extraction, Pesticides, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947S	TCLP Extraction, Semi-VOA, 1311	100	% Solids		0.001
	Method: SW-846 1311				
1121	Reactivity, (Cyanide & Sulfide)sw				
	Method: SW-846 CHAPTER 7.3				
	Cyanide (reactive)	ND	mg/kg		50
	Sulfide (reactive)	ND	mg/kg		410
2244	Halogen, Total Organic (Dohrmann)	ND	mg/kg		20
	Method: DOHRMANN				
6548	Cyanide, Total & Amenable, sw				
	Method: SW-846 9010A				
	Cyanide	3.7	mg/kg		0.5
	Amenable cyanide	ND	mg/kg		0.5
0949	Semi-VOA, TCLP				
	Method: SW-846 8270A				
	2,4-Dinitrotoluene	ND	mg/l	(1)	0.010
	Hexachlorobenzene	ND	mg/l		0.010

Mountain States Analytical, Inc.
The Quality Solution

New World Technology

MSAI Sample: 73380
MSAI Group: 19157

Sample ID: GF-1-E

Test	Analysis	Results as Received	Units	Limit of Quantitation
0949	Semi-VOA, TCLP			
	Method: SW-846 8270A			
	Hexachlorobutadiene	ND	mg/l	0.010
	Hexachloroethane	ND	mg/l	0.010
	Nitrobenzene	ND	mg/l	0.010
	Pyridine	ND	mg/l	0.010
	2-Methylphenol (o-Cresol)	ND	mg/l	0.025
	3 and 4- Methylphenol (m+p cresol)	ND	mg/l	0.025
	Pentachlorophenol	ND	mg/l	0.025
	2,4,5-Trichlorophenol	ND	mg/l	0.025
	2,4,6-Trichlorophenol	ND	mg/l	0.025
0950	Pesticides, TCLP, 8081			
	Method: SW-846 8081			
	Chlordane	ND	mg/l	0.03
	Endrin	ND	mg/l	0.02
	Heptachlor epoxide	ND	mg/l	0.0080
	gamma-BHC (Lindane)	ND	mg/l	0.40
	Methoxychlor	ND	mg/l	10.0
	Toxaphene	ND	mg/l	0.50
	Heptachlor	ND	mg/l	0.0080
0952	Herbicides, TCLP, 8151			
	Method: SW-846 8151			
	2,4-D	ND	ug/l	0.5
	2,4,5-TP (Silvex)	ND	ug/l	1.3
3000T	SVOA Extraction, TCLP	Complete		
	Method: SW-846 3510B			
3050T	Pesticide Extraction, TCLP	Complete		
	Method: SW-846 3510B			
3080T	Herbicide Extraction, TCLP	Complete		
	Method: SW-846 8151			
3082	SVOA Re-Extraction, TCLP	Complete		
	Method: SW-846 3510B			
0948	Volatiles, TCLP 8260A, sw			
	Method: SW-846 8260A			
	Benzene	ND	mg/l	0.0050

Mountain States Analytical, Inc.
The Quality Solution

New World Technology

MSAI Sample: 73380
MSAI Group: 19157

Sample ID: GF-1-E

Test	Analysis	Results as Received	Units	Limit of Quantitation
0948	Volatiles, TCLP 8260A, sw Method: SW-846 8260A			
	Carbon tetrachloride	ND	mg/l	0.0050
	Chlorobenzene	ND	mg/l	0.0050
	Chloroform	0.142	mg/l	0.0050
	1,2-Dichloroethane	ND	mg/l	0.0050
	1,1-Dichloroethene	ND	mg/l	0.0050
	2-Butanone (MEK)	ND	mg/l	0.025
	Tetrachloroethene	ND	mg/l	0.0050
	Trichloroethene	ND	mg/l	0.0050
	Vinyl chloride	ND	mg/l	0.0050

(1) Sample was re-extracted due to surrogate recovery failures in the initial extract analysis. The results of the re-extracted sample analysis were acceptable and reported.

ND - Not detected at the limit of quantitation

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
Project Manager

Analytical Report

Mountain States Analytical, Inc.
The Quality Solution

New World Technology
1336 Concannon Blvd.
Livermore, CA 94550

Attn: Mr. Tom Dias
Project: Alameda NAS

Sample ID: GF-2-E
Matrix: Solid Waste

MSAI Sample: 73381
MSAI Group: 19157
Date Reported: 01/15/98
Discard Date: 02/14/98
Date Submitted: 12/24/97
Date Sampled: 12/21/97
Collected by: DS
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
0246G	Barium by ICP, TCLP, 6010A Method: SW-846 6010A	1.42	mg/l	0.02
0249G	Cadmium by ICP, TCLP, 6010A Method: SW-846 6010A	1.12	mg/l	0.020
0251G	Chromium by ICP, TCLP, 6010A Method: SW-846 6010A	0.710	mg/l	0.050
3G	Copper by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.050
0255G	Lead by ICP, TCLP, 6010A Method: SW-846 6010A	6.23	mg/l	0.25
0259T	Mercury by CVAA, TCLP, 7470 Method: SW-846 7470	ND	mg/l	0.0005
0266G	Silver by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.020
0272G	Zinc by ICP, TCLP, 6010A Method: SW-846 6010A	27.7	mg/l	0.1
0392N	Mercury Prep CVAA, TCLP, 7470 Method: SW-846 7470	Batch. w964		
0392T	Flame/ICP Prep, TCLP, 3010A Method: SW-846 3010A	Batch. w962		
1045G	Arsenic by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.18
64G	Selenium by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.30

Mountain States Analytical, Inc.
The Quality Solution

New World Technology

MSAI Sample: 73381
MSAI Group: 19157

Sample ID: GF-2-E

Test	Analysis	Results as Received	Units		Limit of Quantitation
0394E	pH on soil (T5/30), 9045C mod				
	Method: SW-846 9045C MOD				
	pH at 5 Minutes	7.15	SU		0.05
	pH at 30 Minutes	7.08	SU		0.05
0946	TCLP Extraction, ZHE, sw, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947H	TCLP Extraction, Herbicide, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947I	TCLP Extraction, ICP Metals, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947M	TCLP Extraction, Mercury, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947P	TCLP Extraction, Pesticides, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947S	TCLP Extraction, Semi-VOA, 1311	100	% Solids		0.001
	Method: SW-846 1311				
1121	Reactivity, (Cyanide & Sulfide) sw				
	Method: SW-846 CHAPTER 7.3				
	Cyanide (reactive)	66	mg/kg		50
	Sulfide (reactive)	ND	mg/kg		410
2244	Halogen, Total Organic (Dohrmann)	42	mg/kg		20
	Method: DOHRMANN				
6548	Cyanide, Total & Amenable, sw				
	Method: SW-846 9010A				
	Cyanide	13.0	mg/kg		0.5
	Amenable cyanide	ND	mg/kg		0.5
0949	Semi-VOA, TCLP				
	Method: SW-846 8270A				
	2,4-Dinitrotoluene	ND	mg/l	(1)	0.010
	Hexachlorobenzene	ND	mg/l		0.010

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The Quality Solution

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MSAI Sample: 73381
MSAI Group: 19157

Sample ID: GF-2-E

Test	Analysis	Results as Received	Units	Limit of Quantitation
0949	Semi-VOA, TCLP			
	Method: SW-846 8270A			
	Hexachlorobutadiene	ND	mg/l	0.010
	Hexachloroethane	ND	mg/l	0.010
	Nitrobenzene	ND	mg/l	0.010
	Pyridine	ND	mg/l	0.010
	2-Methylphenol (o-Cresol)	ND	mg/l	0.025
	3 and 4- Methylphenol (m+p cresol)	ND	mg/l	0.025
	Pentachlorophenol	ND	mg/l	0.025
	2,4,5-Trichlorophenol	ND	mg/l	0.025
	2,4,6-Trichlorophenol	ND	mg/l	0.025
0950	Pesticides, TCLP, 8081			
	Method: SW-846 8081			
	Chlordane	ND	mg/l	0.03
	Endrin	ND	mg/l	0.02
	Heptachlor epoxide	ND	mg/l	0.0080
	gamma-BHC (Lindane)	ND	mg/l	0.40
	Methoxychlor	ND	mg/l	10.0
	Toxaphene	ND	mg/l	0.50
	Heptachlor	ND	mg/l	0.0080
0952	Herbicides, TCLP, 8151			
	Method: SW-846 8151			
	2,4-D	ND	ug/l	0.5
	2,4,5-TP (Silvex)	ND	ug/l	1.3
3000T	SVOA Extraction, TCLP	Complete		
	Method: SW-846 3510B			
3050T	Pesticide Extraction, TCLP	Complete		
	Method: SW-846 3510B			
3080T	Herbicide Extraction, TCLP	Complete		
	Method: SW-846 8151			
0948	Volatiles, TCLP 8260A, sw			
	Method: SW-846 8260A			
	Benzene	ND	mg/l	0.050
	Carbon tetrachloride	ND	mg/l	0.050

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MSAI Sample: 73381
MSAI Group: 19157

Sample ID: GF-2-E

Test	Analysis	Results as Received	Units	Limit of Quantitation
0948	Volatiles, TCLP 8260A, sw			
	Method: SW-846 8260A			
	Chlorobenzene	ND	mg/l	0.050
	Chloroform	ND	mg/l	0.050
	1,2-Dichloroethane	ND	mg/l	0.050
	1,1-Dichloroethene	ND	mg/l	0.050
	2-Butanone (MEK)	ND	mg/l	0.25
	Tetrachloroethene	ND	mg/l	0.050
	Trichloroethene	1.81	mg/l	0.050
	Vinyl chloride	ND	mg/l	0.050

(1) Surrogate recovery failures confirmed by MS/MSD samples of parent. Matrix interferences are suspected.

ND - Not detected at the limit of quantitation

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser

W. Scott Fraser
Project Manager

Analytical Report

Mountain States Analytical, Inc.
The Quality Solution

New World Technology
1336 Concannon Blvd.
Livermore, CA 94550

Attn: Mr. Tom Dias
Project: Alameda NAS

Sample ID: GF-1-E-1
Matrix: Solid Waste

MSAI Sample: 73382
MSAI Group: 19157
Date Reported: 01/15/98
Discard Date: 02/14/98
Date Submitted: 12/24/97
Date Sampled: 12/21/97
Collected by: DS
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
0246G	Barium by ICP, TCLP, 6010A Method: SW-846 6010A	0.64	mg/l	0.02
0249G	Cadmium by ICP, TCLP, 6010A Method: SW-846 6010A	0.218	mg/l	0.020
0251G	Chromium by ICP, TCLP, 6010A Method: SW-846 6010A	0.191	mg/l	0.050
3G	Copper by ICP, TCLP, 6010A Method: SW-846 6010A	0.191	mg/l	0.050
0255G	Lead by ICP, TCLP, 6010A Method: SW-846 6010A	2.74	mg/l	0.25
0259T	Mercury by CVAA, TCLP, 7470 Method: SW-846 7470	ND	mg/l	0.0005
0266G	Silver by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.020
0272G	Zinc by ICP, TCLP, 6010A Method: SW-846 6010A	9.6	mg/l	0.1
0392N	Mercury Prep CVAA, TCLP, 7470 Method: SW-846 7470	Batch. w964		
0392T	Flame/ICP Prep, TCLP, 3010A Method: SW-846 3010A	Batch. w962		
1045G	Arsenic by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.18
4G	Selenium by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.30

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The Quality Solution

New World Technology

MSAI Sample: 73382
MSAI Group: 19157

Sample ID: GF-1-E-1

Test	Analysis	Results as Received	Units		Limit of Quantitation
0394E	pH on soil (T5/30), 9045C mod				
	Method: SW-846 9045C MOD				
	pH at 5 Minutes	8.07	SU		0.05
	pH at 30 Minutes	7.70	SU		0.05
0946	TCLP Extraction, ZHE, sw, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947H	TCLP Extraction, Herbicide, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947I	TCLP Extraction, ICP Metals, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947M	TCLP Extraction, Mercury, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947P	TCLP Extraction, Pesticides, 1311	100	% Solids		0.001
	Method: SW-846 1311				
0947S	TCLP Extraction, Semi-VOA, 1311	100	% Solids		0.001
	Method: SW-846 1311				
1121	Reactivity, (Cyanide & Sulfide) sw				
	Method: SW-846 CHAPTER 7.3				
	Cyanide (reactive)	66	mg/kg		50
	Sulfide (reactive)	ND	mg/kg		410
2244	Halogen, Total Organic (Dohrmann)	24	mg/kg		20
	Method: DOHRMANN				
6548	Cyanide, Total & Amenable, sw				
	Method: SW-846 9010A				
	Cyanide	1.9	mg/kg		0.5
	Amenable cyanide	ND	mg/kg		0.5
0949	Semi-VOA, TCLP				
	Method: SW-846 8270A				
	2,4-Dinitrotoluene	ND	mg/l	(1)	0.010
	Hexachlorobenzene	ND	mg/l		0.010

Mountain States Analytical, Inc.
The Quality Solution

New World Technology

MSAI Sample: 73382
MSAI Group: 19157

Sample ID: GF-1-E-1

Test	Analysis	Results as Received	Units	Limit of Quantitation
0949	Semi-VOA, TCLP			
	Method: SW-846 8270A			
	Hexachlorobutadiene	ND	mg/l	0.010
	Hexachloroethane	ND	mg/l	0.010
	Nitrobenzene	ND	mg/l	0.010
	Pyridine	ND	mg/l	0.010
	2-Methylphenol (o-Cresol)	ND	mg/l	0.025
	3 and 4- Methylphenol (m+p cresol)	ND	mg/l	0.025
	Pentachlorophenol	ND	mg/l	0.025
	2,4,5-Trichlorophenol	ND	mg/l	0.025
	2,4,6-Trichlorophenol	ND	mg/l	0.025
0950	Pesticides, TCLP, 8081			
	Method: SW-846 8081			
	Chlordane	ND	mg/l	0.03
	Endrin	ND	mg/l	0.02
	Heptachlor epoxide	ND	mg/l	0.0080
	gamma-BHC (Lindane)	ND	mg/l	0.40
	Methoxychlor	ND	mg/l	10.0
	Toxaphene	ND	mg/l	0.50
	Heptachlor	ND	mg/l	0.0080
0952	Herbicides, TCLP, 8151			
	Method: SW-846 8151			
	2,4-D	ND	ug/l	0.5
	2,4,5-TP (Silvex)	ND	ug/l	1.3
3000T	SVOA Extraction, TCLP	Complete		
	Method: SW-846 3510B			
3050T	Pesticide Extraction, TCLP	Complete		
	Method: SW-846 3510B			
3080T	Herbicide Extraction, TCLP	Complete		
	Method: SW-846 8151			
3082	SVOA Re-Extraction, TCLP	Complete		
	Method: SW-846 3510B			
0948	Volatiles, TCLP 8260A, sw			
	Method: SW-846 8260A			
	Benzene	ND	mg/l	0.0050

Mountain States Analytical, Inc.
The Quality Solution

New World Technology

MSAI Sample: 73382
MSAI Group: 19157

Sample ID: GF-1-E-1

Test	Analysis	Results as Received	Units	Limit of Quantitation
0948	Volatiles, TCLP 8260A, sw Method: SW-846 8260A			
	Carbon tetrachloride	ND	mg/l	0.0050
	Chlorobenzene	ND	mg/l	0.0050
	Chloroform	ND	mg/l	0.0050
	1,2-Dichloroethane	ND	mg/l	0.0050
	1,1-Dichloroethene	ND	mg/l	0.0050
	2-Butanone (MEK)	ND	mg/l	0.025
	Tetrachloroethene	ND	mg/l	0.0050
	Trichloroethene	ND	mg/l	0.0050
	Vinyl chloride	ND	mg/l	0.0050

(1) Sample was re-extracted due to surrogate recovery failures in the initial extract analysis. The results of the re-extracted sample analysis confirmed the results from the first extraction. The results reported are from the first extraction.

ND - Not detected at the limit of quantitation

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser

W. Scott Fraser
Project Manager

Analytical Report

Mountain States Analytical, Inc.
The Quality Solution

New World Technology
1336 Concannon Blvd.
Livermore, CA 94550

Attn: Mr. Tom Dias
Project: Alameda NAS

Sample ID: GF-1-E-2
Matrix: Solid Waste

MSAI Sample: 73383
MSAI Group: 19157
Date Reported: 01/15/98
Discard Date: 02/14/98
Date Submitted: 12/24/97
Date Sampled: 12/21/97
Collected by: DS
Purchase Order:
Project No.:

Test	Analysis	Results as Received	Units	Limit of Quantitation
0246G	Barium by ICP, TCLP, 6010A Method: SW-846 6010A	0.97	mg/l	0.02
0249G	Cadmium by ICP, TCLP, 6010A Method: SW-846 6010A	0.234	mg/l	0.020
0251G	Chromium by ICP, TCLP, 6010A Method: SW-846 6010A	0.212	mg/l	0.050
3G	Copper by ICP, TCLP, 6010A Method: SW-846 6010A	1.16	mg/l	0.050
0255G	Lead by ICP, TCLP, 6010A Method: SW-846 6010A	2.49	mg/l	0.25
0259T	Mercury by CVAA, TCLP, 7470 Method: SW-846 7470	ND	mg/l	0.0005
0266G	Silver by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.020
0272G	Zinc by ICP, TCLP, 6010A Method: SW-846 6010A	20.2	mg/l	0.1
0392N	Mercury Prep CVAA, TCLP, 7470 Method: SW-846 7470	Batch. w964		
0392T	Flame/ICP Prep, TCLP, 3010A Method: SW-846 3010A	Batch. w962		
1045G	Arsenic by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.18
1064G	Selenium by ICP, TCLP, 6010A Method: SW-846 6010A	ND	mg/l	0.30

Mountain States Analytical, Inc.
The Quality Solution

New World Technology

MSAI Sample: 73383
MSAI Group: 19157

Sample ID: GF-1-E-2

Test	Analysis	Results as Received	Units	Limit of Quantitation
0394E	pH on soil (T5/30), 9045C mod			
	Method: SW-846 9045C MOD			
	pH at 5 Minutes	8.13	SU	0.05
	pH at 30 Minutes	7.81	SU	0.05
0946	TCLP Extraction, ZHE, sw, 1311	100	% Solids	0.001
	Method: SW-846 1311			
0947H	TCLP Extraction, Herbicide, 1311	100	% Solids	0.001
	Method: SW-846 1311			
0947I	TCLP Extraction, ICP Metals, 1311	100	% Solids	0.001
	Method: SW-846 1311			
0947M	TCLP Extraction, Mercury, 1311	100	% Solids	0.001
	Method: SW-846 1311			
0947P	TCLP Extraction, Pesticides, 1311	100	% Solids	0.001
	Method: SW-846 1311			
0947S	TCLP Extraction, Semi-VOA, 1311	100	% Solids	0.001
	Method: SW-846 1311			
1121	Reactivity, (Cyanide & Sulfide)sw			
	Method: SW-846 CHAPTER 7.3			
	Cyanide (reactive)	84	mg/kg	50
	Sulfide (reactive)	ND	mg/kg	410
2244	Halogen, Total Organic (Dohrmann)	ND	mg/kg	20
	Method: DOHRMANN			
6548	Cyanide, Total & Amenable, sw			
	Method: SW-846 9010A			
	Cyanide	8.1	mg/kg	0.5
	Amenable cyanide	2.8	mg/kg	0.5
0949	Semi-VOA, TCLP			
	Method: SW-846 8270A			
	2,4-Dinitrotoluene	ND	mg/l (1)	0.010
	Hexachlorobenzene	ND	mg/l	0.010

Mountain States Analytical, Inc.

The Quality Solution

New World Technology

MSAI Sample: 73383
MSAI Group: 19157

Sample ID: GF-1-E-2

Test	Analysis	Results as Received	Units	Limit of Quantitation
0949	Semi-VOA, TCLP			
	Method: SW-846 8270A			
	Hexachlorobutadiene	ND	mg/l	0.010
	Hexachloroethane	ND	mg/l	0.010
	Nitrobenzene	ND	mg/l	0.010
	Pyridine	ND	mg/l	0.010
	2-Methylphenol (o-Cresol)	ND	mg/l	0.025
	3 and 4- Methylphenol (m+p cresol)	ND	mg/l	0.025
	Pentachlorophenol	ND	mg/l	0.025
	2,4,5-Trichlorophenol	ND	mg/l	0.025
	2,4,6-Trichlorophenol	ND	mg/l	0.025
0950	Pesticides, TCLP, 8081			
	Method: SW-846 8081			
	Chlordane	ND	mg/l	0.03
	Endrin	ND	mg/l	0.02
	Heptachlor epoxide	ND	mg/l	0.0080
	gamma-BHC (Lindane)	ND	mg/l	0.40
	Methoxychlor	ND	mg/l	10.0
	Toxaphene	ND	mg/l	0.50
	Heptachlor	ND	mg/l	0.0080
0952	Herbicides, TCLP, 8151			
	Method: SW-846 8151			
	2,4-D	ND	ug/l	0.5
	2,4,5-TP (Silvex)	ND	ug/l	1.3
3000T	SVOA Extraction, TCLP	Complete		
	Method: SW-846 3510B			
3050T	Pesticide Extraction, TCLP	Complete		
	Method: SW-846 3510B			
3080T	Herbicide Extraction, TCLP	Complete		
	Method: SW-846 8151			
3082	SVOA Re-Extraction, TCLP	Complete		
	Method: SW-846 3510B			
0948	Volatiles, TCLP 8260A, sw			
	Method: SW-846 8260A			
	Benzene	ND	mg/l	0.0050

Mountain States Analytical, Inc.
The Quality Solution

New World Technology

MSAI Sample: 73383
MSAI Group: 19157

Sample ID: GF-1-E-2

Test	Analysis	Results as Received	Units	Limit of Quantitation
0948	Volatiles, TCLP 8260A, sw			
	Method: SW-846 8260A			
	Carbon tetrachloride	ND	mg/l	0.0050
	Chlorobenzene	ND	mg/l	0.0050
	Chloroform	ND	mg/l	0.0050
	1,2-Dichloroethane	ND	mg/l	0.0050
	1,1-Dichloroethene	ND	mg/l	0.0050
	2-Butanone (MEK)	ND	mg/l	0.025
	Tetrachloroethene	ND	mg/l	0.0050
	Trichloroethene	ND	mg/l	0.0050
	Vinyl chloride	ND	mg/l	0.0050

(1) Sample was re-extracted due to surrogate recovery failures in the initial extract analysis. The results of the re-extracted sample analysis confirmed the results from the first extraction. The results reported are from the first extraction.

ND - Not detected at the limit of quantitation

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

W. Scott Fraser
W. Scott Fraser
Project Manager

Corporate Office
1645 West 2200 South, Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724(MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com

Southwest States Region
6223 Bayonne, Spring, Texas 77389
281-320-2842 • FAX 281-320-0989
e-mail: gbrewer@msailabs.com

MEMBER ACIL

APPENDIX C
GAMMA SPECTRUM ANALYSIS

[redacted]

[redacted]

Mountain States Analytical

13495

Sample Chain of Custody

Client Name: [illegible] P.O. # 19158

Phone #: 801-973-0050 Fax #: 801-972-6278

Project Name/#:

Sampler:

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total of Containers	Analysis Required									Rush?	Remarks	Temp. of Samples Upon Receipt
19158-73384	12/2/97	1325					X		X	X									0.7 mr/hr	
-73385		1440					X		X	X									0.07 mr/hr	
-73386		1445					X		X	X									0.175 mr/hr	
-73387		1425					X		X	X									0.09 mr/hr	

Sample relinquished by:	Date	Time	Sample received by:
[illegible]	12/2/97	1545	To FedEx

Name of Shipper	Airbill No.	Date	Time

Received By (Lab)	Date	Time	Seal Intact?

Turnaround Time Requested (please circle): Normal Rush

(Rush TAT is subject to MSAI approval and surcharge)

Report Results By: (Date) 01-19-98

Rush results requested by (please circle): Phone Fax

Report Results to: [illegible]

Type of Disposal: Authorized for Disposal by:

Date/Time of Disposal: Disposed of by:

1645 West 2200 South, Salt Lake City, Utah 84119 (801) 973-0050 FAX (801) 972-6278

10 Years of Quality Service

White Copy - Original Retain by Lab Yellow Copy - Return to Customer Pink Copy - Retain by Sampler

Thermo NU tech
601 Scarboro Road
Oak Ridge, TN 37830
(423) 481-0683
FAX (423) 483-4621
FAX (423) 481-0121

TNU-OR-7101

January 13, 1998

Mr. W. Scott Fraser
Mountain States Analytical
1645 West 2200 South
Salt Lake City, UT 84119

CASE NARRATIVE
Work Order# 97-12170-OR
State of Utah Certificate #E-235

SAMPLE RECEIPT

This work order contains four solid samples received 12/26/97. These samples were analyzed for Radium-226 and Gamma Spectroscopy.

CLIENT ID	LAB ID
19158-73384	97-12170-04
19158-73385	97-12170-05
19158-73386	97-12170-06
19158-73387	97-12170-07

PROBLEMS OR UNUSUAL CIRCUMSTANCES

No problems or unusual circumstances were noted during the analytical process.

CERTIFICATION OF ACCURACY

I certify that this data report is in compliance with the terms and conditions of the Purchase Order, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the cognizant project manager or his/her designee to be accurate as verified by the following signature.

M.R. McDougall
Laboratory Manager

Date: 1/13/98

RECEIVED
JAN 19 1998

W. S aser
Mountain States Analytical
1645 West 2200 South
Salt Lake City, UT 84119

P.O. 158
SDG: 97/12170
MATRIX: Solid

Final Report alysis
Date of Report: 1/13/98

Lab ID		Sample ID	Client ID	Sample Date	Receipt Date	Prep Date	Analysis Date	Analyte	Method	Result	Error	MDA	Units
97-12170-01	K	KNOWN		12/26/97	12/26/97	01/05/98	01/08/98	Radium-226	EPA 903.0 Modified	10.67	0.49		PCI/G
97-12170-01	S	SPIKE		12/26/97	12/26/97	01/05/98	01/08/98	Radium-226	EPA 903.0 Modified	9.89	1.15	0.14	PCI/G
97-12170-02	B	BLANK		12/26/97	12/26/97	01/05/98	01/08/98	Radium-226	EPA 903.0 Modified	0.00	0.00	0.18	PCI/G
97-12170-03	D	19158-73386		12/21/97	12/26/97	01/05/98	01/08/98	Radium-226	EPA 903.0 Modified	73.47	6.57	0.31	PCI/G
97-12170-04		19158-73384		12/21/97	12/26/97	01/05/98	01/08/98	Radium-226	EPA 903.0 Modified	731.70	64.13	0.32	PCI/G
97-12170-05		19158-73385		12/21/97	12/26/97	01/05/98	01/08/98	Radium-226	EPA 903.0 Modified	92.68	7.96	0.18	PCI/G
97-12170-06		19158-73386		12/21/97	12/26/97	01/05/98	01/08/98	Radium-226	EPA 903.0 Modified	78.98	7.12	0.49	PCI/G
97-12170-07		19158-73387		12/21/97	12/26/97	01/05/98	01/08/98	Radium-226	EPA 903.0 Modified	387.40	34.97	0.75	PCI/G
97-12170-01	K	KNOWN		12/26/97	12/26/97	01/05/98	01/06/98	Cobalt-60	LANL ER-130 Modified	146.59	6.45		PCI/G
97-12170-01	K	KNOWN		12/26/97	12/26/97	01/05/98	01/06/98	Cesium-137	LANL ER-130 Modified	92.29	3.78		PCI/G
97-12170-01	S	SPIKE		12/26/97	12/26/97	01/05/98	01/06/98	Cobalt-60	LANL ER-130 Modified	139.50	12.31	0.78	PCI/G
97-12170-01	S	SPIKE		12/26/97	12/26/97	01/05/98	01/06/98	Cesium-137	LANL ER-130 Modified	93.95	15.19	0.76	PCI/G
97-12170-02	B	BLANK		12/26/97	12/26/97	01/05/98	01/06/98	Radium-226	LANL ER-130 Modified	0.05	0.08	0.14	PCI/G
97-12170-02	B	BLANK		12/26/97	12/26/97	01/05/98	01/06/98	Radium-228	LANL ER-130 Modified	-0.05	0.09	0.16	PCI/G
97-12170-03	D	19158-73384		12/21/97	12/26/97	01/05/98	01/06/98	Potassium-40	LANL ER-130 Modified	7.81	3.50	3.14	PCI/G
97-12170-03	D	19158-73384		12/21/97	12/26/97	01/05/98	01/06/98	Cesium-137	LANL ER-130 Modified	2.37	0.45	0.44	PCI/G
97-12170-03	D	19158-73384		12/21/97	12/26/97	01/05/98	01/06/98	Lead-214	LANL ER-130 Modified	142.80	26.15	0.89	PCI/G
97-12170-03	D	19158-73384		12/21/97	12/26/97	01/05/98	01/06/98	Radium-226	LANL ER-130 Modified	152.80	12.09	0.70	PCI/G
97-12170-03	D	19158-73384		12/21/97	12/26/97	01/05/98	01/06/98	Radium-228	LANL ER-130 Modified	0.16	0.77	1.30	PCI/G
97-12170-04		19158-73384		12/21/97	12/26/97	01/05/98	01/06/98	Potassium-40	LANL ER-130 Modified	6.83	2.97	3.18	PCI/G
97-12170-04		19158-73384		12/21/97	12/26/97	01/05/98	01/06/98	Cesium-137	LANL ER-130 Modified	0.89	0.28	0.32	PCI/G
97-12170-04		19158-73384		12/21/97	12/26/97	01/05/98	01/06/98	Lead-214	LANL ER-130 Modified	153.50	28.15	0.90	PCI/G
97-12170-04		19158-73384		12/21/97	12/26/97	01/05/98	01/06/98	Radium-226	LANL ER-130 Modified	156.10	12.35	0.70	PCI/G
97-12170-04		19158-73384		12/21/97	12/26/97	01/05/98	01/06/98	Radium-228	LANL ER-130 Modified	0.24	0.76	1.27	PCI/G
97-12170-05		19158-73385		12/21/97	12/26/97	01/05/98	01/06/98	Potassium-40	LANL ER-130 Modified	10.20	2.41	1.88	PCI/G
97-12170-05		19158-73385		12/21/97	12/26/97	01/05/98	01/06/98	Thallium-208	LANL ER-130 Modified	0.46	0.18	0.53	PCI/G

Approved by: _____ 1/13/98
M.R. McDougall, Laboratory Manager

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

Thermo NUtech
A Subsidiary of Thermo Remediation, a Thermo Electron Company
601 Scarboro Road, Oak Ridge, TN 37830 423/481-0683, FAX 423/483-4621

W. S[illegible]aser
Mountain States Analytical
1645 West 2200 South
Salt Lake City, UT 84119

P.O.[illegible] 158
SDG: 97 12170
MATRIX: Solid

Final Report[illegible]alysis
Date of Report: 1/13/98

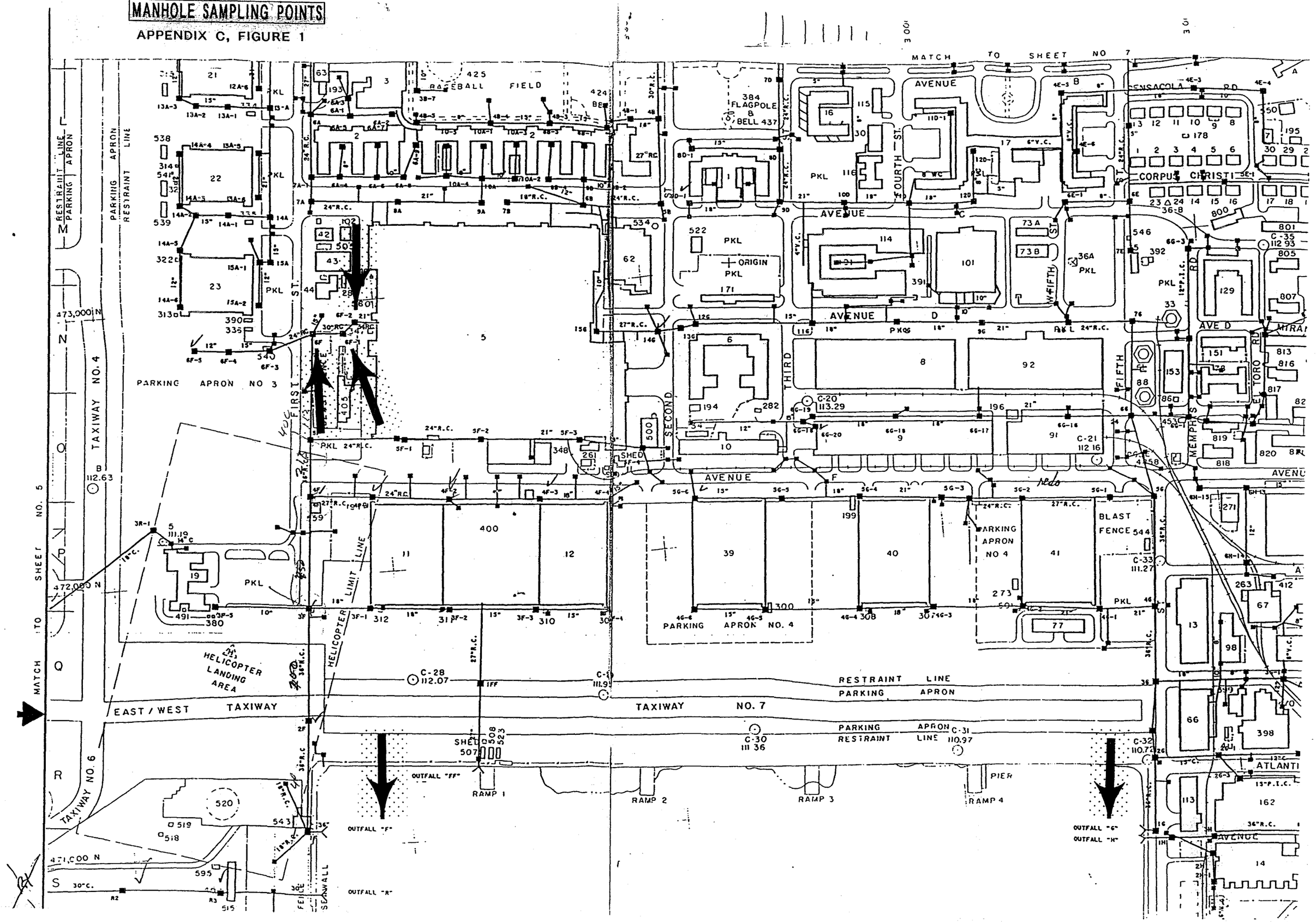
Lab ID	Sample ID	Client ID	Sample Date	Receipt Date	Prep Date	Analysis Date	Analyte	Method	Result	Error	MDA	Units
97-12170-05	19158-73385		12/21/97	12/26/97	01/05/98	01/06/98	Lead-212	LANL ER-130 Modified	0.29	0.28	0.37	PCI/G
97-12170-05	19158-73385		12/21/97	12/26/97	01/05/98	01/06/98	Lead-214	LANL ER-130 Modified	43.36	4.90	0.42	PCI/G
97-12170-05	19158-73385		12/21/97	12/26/97	01/05/98	01/06/98	Radium-226	LANL ER-130 Modified	41.72	2.58	0.35	PCI/G
97-12170-05	19158-73385		12/21/97	12/26/97	01/05/98	01/06/98	Radium-228	LANL ER-130 Modified	0.20	0.43	0.76	PCI/G
97-12170-06	19158-73386		12/21/97	12/26/97	01/05/98	01/06/98	Potassium-40	LANL ER-130 Modified	10.80	2.03	1.37	PCI/G
97-12170-06	19158-73386		12/21/97	12/26/97	01/05/98	01/06/98	Cesium-137	LANL ER-130 Modified	0.21	0.09	0.12	PCI/G
97-12170-06	19158-73386		12/21/97	12/26/97	01/05/98	01/06/98	Lead-212	LANL ER-130 Modified	0.45	0.19	0.26	PCI/G
97-12170-06	19158-73386		12/21/97	12/26/97	01/05/98	01/06/98	Lead-214	LANL ER-130 Modified	25.94	2.97	0.32	PCI/G
97-12170-06	19158-73386		12/21/97	12/26/97	01/05/98	01/06/98	Radium-226	LANL ER-130 Modified	26.23	1.65	0.26	PCI/G
97-12170-06	19158-73386		12/21/97	12/26/97	01/05/98	01/06/98	Radium-228	LANL ER-130 Modified	0.64	0.44	0.60	PCI/G
97-12170-07	19158-73387		12/21/97	12/26/97	01/05/98	01/06/98	Potassium-40	LANL ER-130 Modified	8.21	2.93	3.24	PCI/G
97-12170-07	19158-73387		12/21/97	12/26/97	01/05/98	01/06/98	Lead-214	LANL ER-130 Modified	95.65	10.67	0.71	PCI/G
97-12170-07	19158-73387		12/21/97	12/26/97	01/05/98	01/06/98	Radium-226	LANL ER-130 Modified	93.84	5.54	0.57	PCI/G
97-12170-07	19158-73387		12/21/97	12/26/97	01/05/98	01/06/98	Radium-228	LANL ER-130 Modified	-0.02	0.79	1.22	PCI/G

Approved by: _____ 1/13/98
M.R. McDougall, Laboratory Manager

K=Known,S=Spike,B=Blank,D=Duplicate,MS=Matrix Spike

MANHOLE SAMPLING POINTS

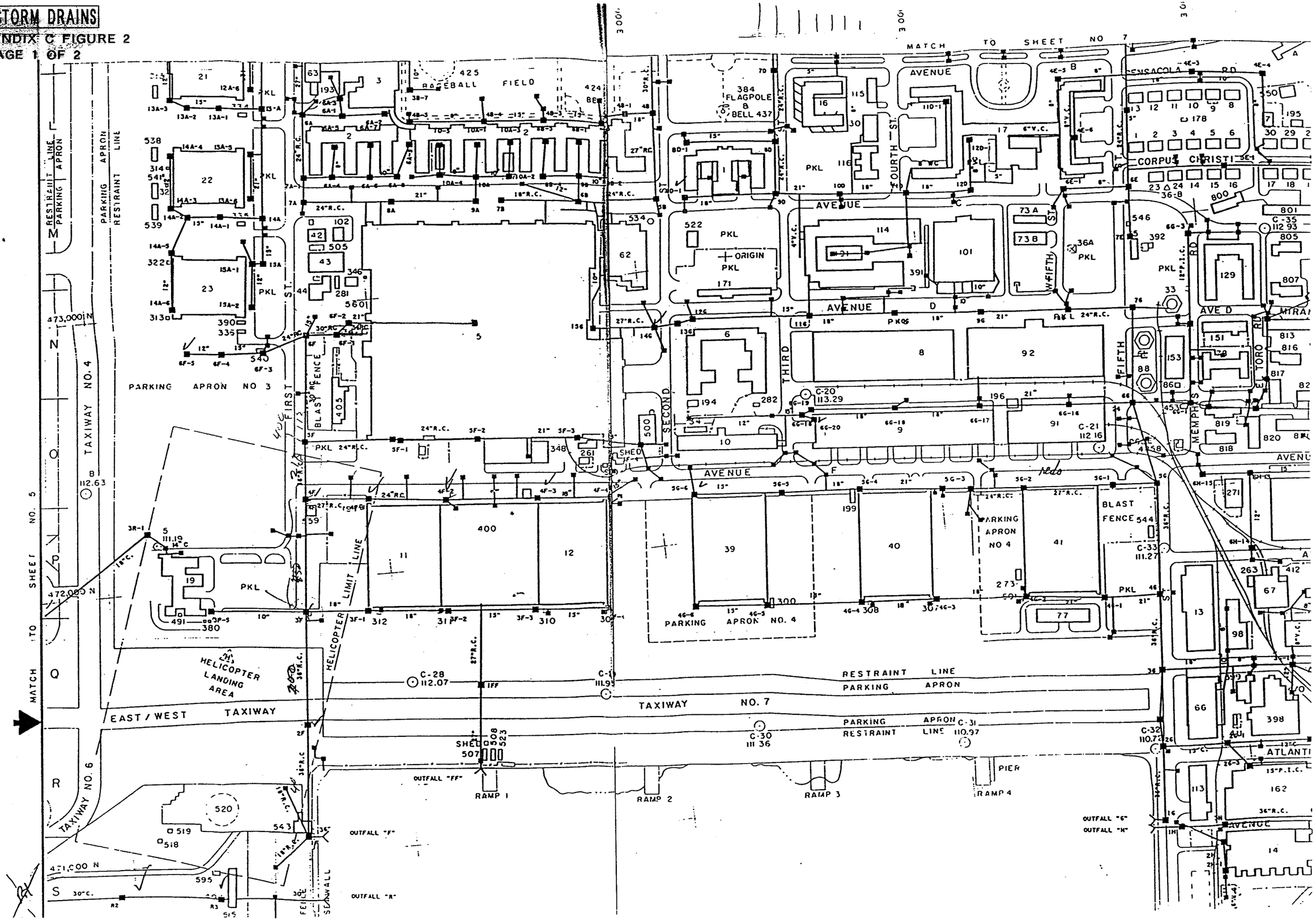
APPENDIX C, FIGURE 1



STORM DRAINS

APPENDIX C FIGURE 2

PAGE 1 OF 2



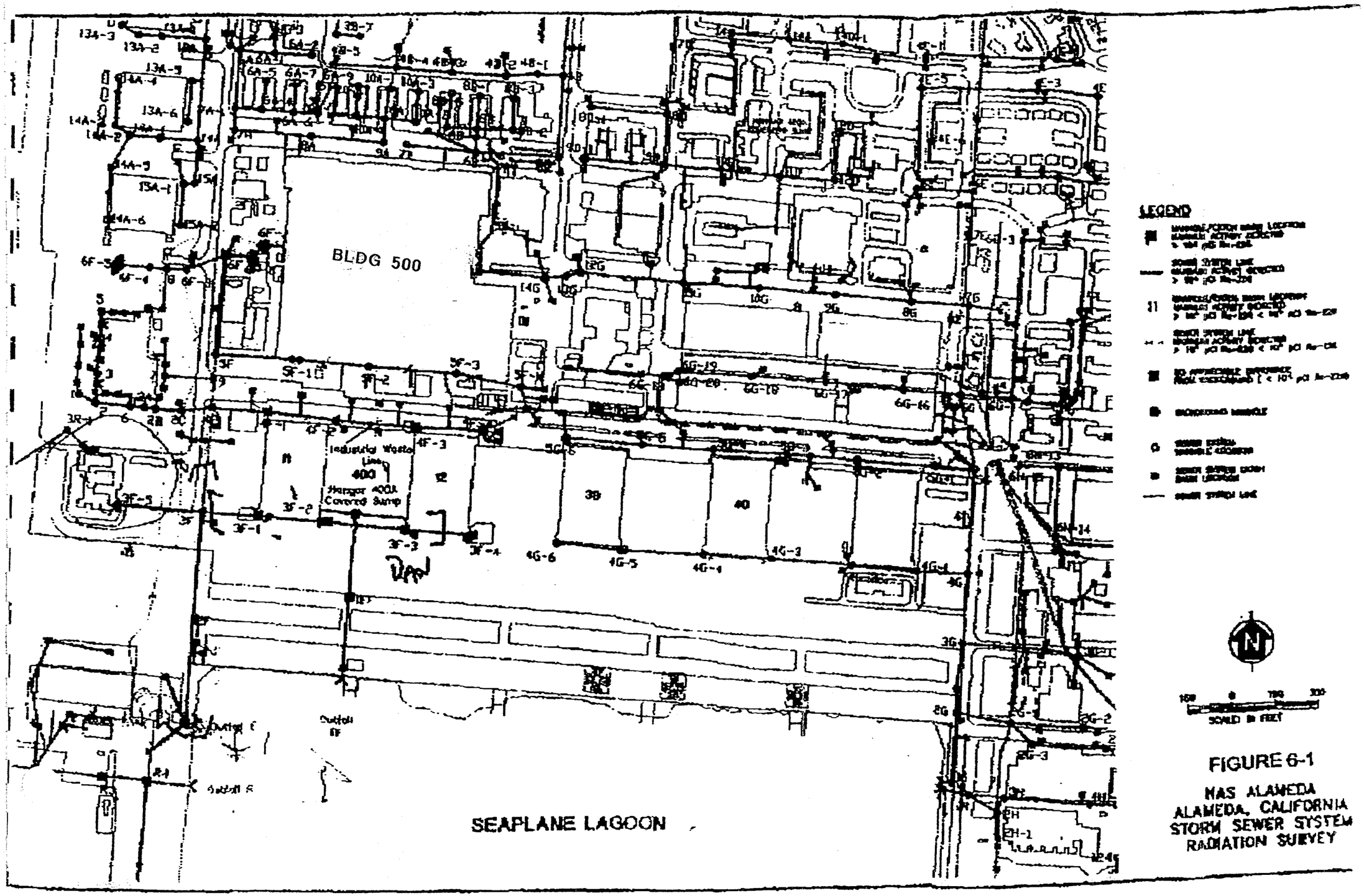
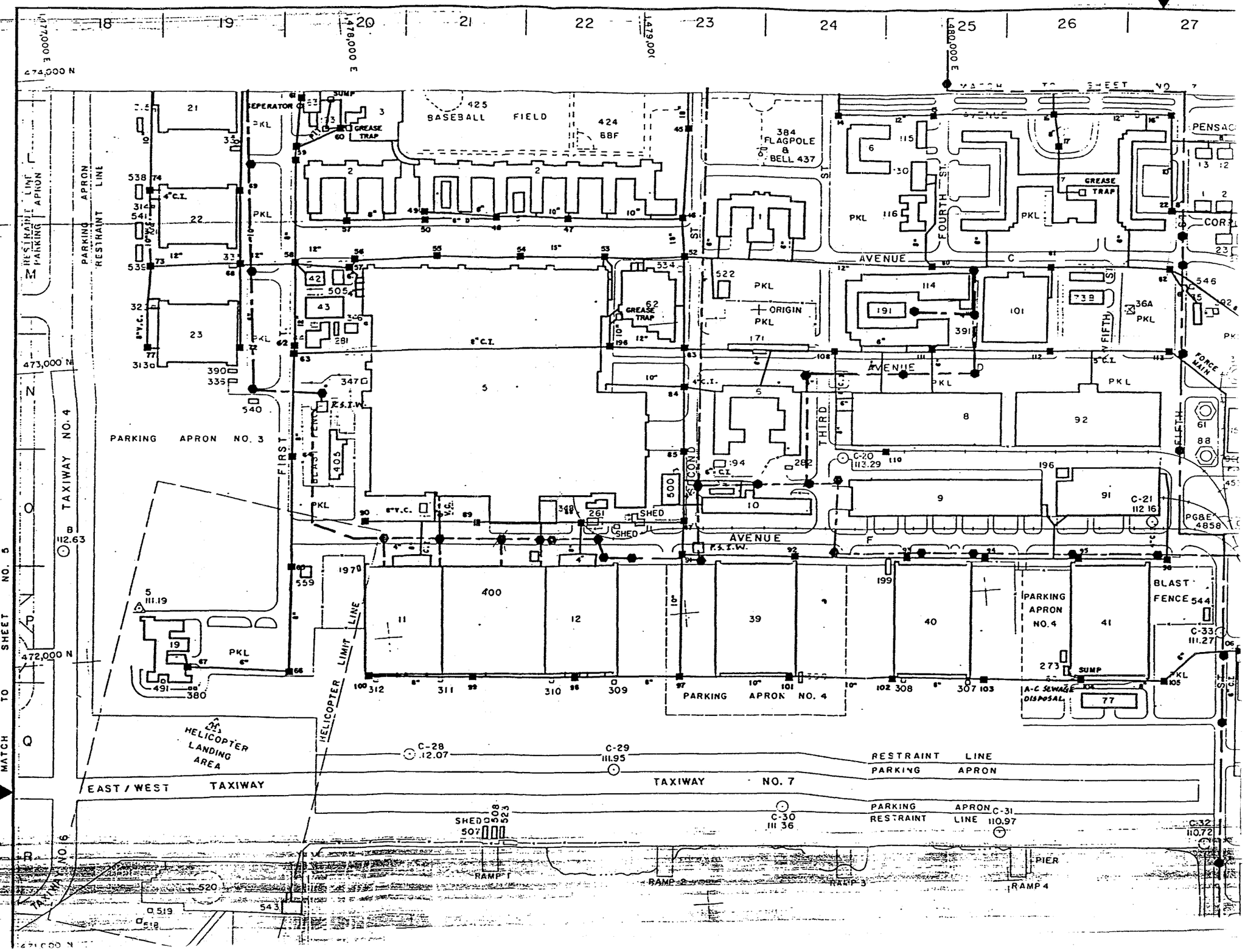


FIGURE 6-1

NAS ALAMEDA
ALAMEDA, CALIFORNIA
STORM SEWER SYSTEM
RADIATION SURVEY

SANITARY SEWER

APPENDIX C FIGURE 3