

Sample: SANDSTONE SAMPLE 1---994-1-130  
 Operator: LP  
 Submitter: NASA AMES RESEARCH  
 File: C:\WIN9420\DATA\APRIL97\2166.SMP

LP Analysis Time: 04/15/97 09:55:09      Sample Weight: 8.8595 g  
 HP Analysis Time: 04/15/97 10:54:25      Correction Type: Formula  
 Report Time: 04/15/97 10:54:27          Show Neg. Int: No

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## Summary Report

Penetrometer:            854 - (05) 15 Bulb, 1.836 Stem, Solid

Pen. Constant:	27.820 $\mu\text{L/pF}$	Adv. Contact Angle:	130.000 degrees
Pen. Weight:	58.9611 g	Rec. Contact Angle:	130.000 degrees
Stem Volume:	1.8360 mL	Hg Surface Tension:	485.000 dynes/cm
Max. Head Pressure:	4.4500 psia	Hg Density:	13.5335 g/mL
Pen. Volume:	16.9748 mL	Sample Weight:	8.8595 g
		Assembly Weight:	245.5345 g

## Low Pressure:

Evacuation Pressure:            50.000  $\mu\text{mHg}$   
 Evacuation Time:                    5 mins  
 Mercury Filling Pressure:        1.48 psia  
 Equilibration Time:                10 secs

## High Pressure:

Equilibration Time:                10 secs

Blank Correction by Formula

## Intrusion Data Summary

Total Intrusion Volume =	0.0638 mL/g
Total Pore Area =	5.612 $\text{m}^2/\text{g}$
Median Pore Diameter (Volume) =	18.9559 $\mu\text{m}$
Median Pore Diameter (Area) =	0.0050 $\mu\text{m}$
Average Pore Diameter (4V/A) =	0.0455 $\mu\text{m}$
Bulk Density =	2.3051 g/mL
Apparent (skeletal) Density =	2.7025 g/mL
Porosity =	14.7028 %
Stem Volume Used =	31 %

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Pressure (psia)	Pore Diameter ( $\mu\text{m}$ )	Incremental Pore Volume (mL/g)	Cumulative Pore Volume (mL/g)	Cumulative Pore Area ( $\text{m}^2/\text{g}$ )	Incremental Pore Area ( $\text{m}^2/\text{g}$ )
1.48	121.9128	0.0000	0.0000	0.000	0.000
2.14	84.5781	0.0004	0.0004	0.000	0.000
3.12	57.9286	0.0009	0.0014	0.000	0.000
4.12	43.8544	0.0011	0.0025	0.000	0.000
5.59	32.3597	0.0029	0.0054	0.000	0.000
7.09	25.5274	0.0087	0.0142	0.002	0.001
8.59	21.0429	0.0122	0.0263	0.004	0.002
10.58	17.1002	0.0103	0.0367	0.006	0.002
13.08	13.8234	0.0050	0.0416	0.007	0.001
14.77	12.2458	0.0017	0.0433	0.008	0.001
16.06	11.2651	0.0009	0.0442	0.008	0.000
20.04	9.0260	0.0016	0.0458	0.009	0.001
23.03	7.8544	0.0008	0.0465	0.009	0.000
25.03	7.2270	0.0004	0.0470	0.009	0.000
30.01	6.0270	0.0009	0.0479	0.010	0.001
40.00	4.5220	0.0005	0.0483	0.010	0.000
51.12	3.5377	0.0004	0.0487	0.011	0.000
60.77	2.9760	0.0003	0.0491	0.011	0.000
77.33	2.3388	0.0004	0.0494	0.011	0.001
90.01	2.0093	0.0002	0.0496	0.012	0.000
115.67	1.5637	0.0003	0.0500	0.013	0.001
140.05	1.2915	0.0003	0.0502	0.013	0.001
175.23	1.0322	0.0003	0.0505	0.014	0.001
220.49	0.8203	0.0002	0.0507	0.015	0.001
271.11	0.6671	0.0002	0.0510	0.017	0.001
330.41	0.5474	0.0002	0.0512	0.018	0.001
430.28	0.4203	0.0002	0.0514	0.020	0.002
532.28	0.3398	0.0002	0.0516	0.022	0.002
645.01	0.2804	0.0002	0.0518	0.024	0.002
698.48	0.2589	0.0001	0.0519	0.026	0.002
797.21	0.2269	0.0001	0.0520	0.028	0.002
989.72	0.1827	0.0003	0.0523	0.033	0.005
1218.17	0.1485	0.0002	0.0524	0.037	0.004
1305.45	0.1385	0.0001	0.0525	0.039	0.002
1399.15	0.1293	0.0001	0.0526	0.042	0.003
1503.76	0.1203	0.0001	0.0527	0.045	0.004
1600.99	0.1130	0.0001	0.0528	0.049	0.003
1695.89	0.1066	0.0001	0.0529	0.052	0.003
1909.83	0.0947	0.0001	0.0531	0.057	0.006
2054.10	0.0880	0.0001	0.0532	0.062	0.004
2201.95	0.0821	0.0001	0.0533	0.066	0.005
2346.16	0.0771	0.0001	0.0534	0.073	0.006

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## Tabular Report

Pressure (psia)	Pore Diameter ( $\mu\text{m}$ )	Incremental Pore Volume (mL/g)	Cumulative Pore Volume (mL/g)	Cumulative Pore Area ( $\text{m}^2/\text{g}$ )	Incremental Pore Area ( $\text{m}^2/\text{g}$ )
2495.78	0.0725	0.0001	0.0535	0.077	0.005
2644.26	0.0684	0.0001	0.0536	0.083	0.006
2696.21	0.0671	0.0001	0.0536	0.086	0.003
2846.43	0.0635	0.0001	0.0537	0.091	0.005
2991.11	0.0605	0.0001	0.0538	0.097	0.006
3235.11	0.0559	0.0001	0.0539	0.106	0.009
3484.83	0.0519	0.0001	0.0540	0.113	0.007
3741.72	0.0483	0.0001	0.0541	0.123	0.010
3998.01	0.0452	0.0002	0.0543	0.137	0.013
4258.38	0.0425	0.0001	0.0544	0.145	0.008
4505.49	0.0401	0.0001	0.0545	0.153	0.008
4737.98	0.0382	0.0001	0.0546	0.161	0.008
4985.03	0.0363	0.0001	0.0546	0.170	0.009
5279.24	0.0343	0.0001	0.0547	0.182	0.012
5477.85	0.0330	0.0001	0.0549	0.196	0.014
5730.79	0.0316	0.0001	0.0550	0.213	0.017
5971.03	0.0303	0.0001	0.0551	0.222	0.009
6223.27	0.0291	0.0001	0.0552	0.238	0.017
6489.26	0.0279	0.0001	0.0553	0.255	0.017
6729.15	0.0269	0.0001	0.0554	0.270	0.015
6984.20	0.0259	0.0001	0.0555	0.285	0.015
7483.74	0.0242	0.0002	0.0557	0.309	0.024
7983.97	0.0227	0.0002	0.0558	0.339	0.030
8517.37	0.0212	0.0001	0.0559	0.357	0.017
9022.55	0.0200	0.0001	0.0560	0.375	0.018
9276.55	0.0195	0.0001	0.0561	0.386	0.012
9594.40	0.0189	0.0001	0.0562	0.401	0.014
10053.71	0.0180	0.0001	0.0562	0.420	0.019
10492.22	0.0172	0.0001	0.0563	0.444	0.024
10984.34	0.0165	0.0001	0.0564	0.467	0.023
11471.17	0.0158	0.0001	0.0565	0.487	0.020
11968.59	0.0151	0.0001	0.0566	0.515	0.028
12569.01	0.0144	0.0001	0.0568	0.547	0.032
13064.31	0.0138	0.0001	0.0569	0.578	0.031
13610.76	0.0133	0.0001	0.0570	0.609	0.032
13954.72	0.0130	0.0001	0.0571	0.638	0.028
14285.27	0.0127	0.0001	0.0571	0.664	0.027
14549.86	0.0124	0.0001	0.0572	0.688	0.024
14956.61	0.0121	0.0001	0.0573	0.718	0.030
15394.05	0.0117	0.0001	0.0574	0.753	0.035
15770.46	0.0115	0.0001	0.0575	0.784	0.031
16146.17	0.0112	0.0001	0.0576	0.815	0.031



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16695.09	0.0108	0.0001	0.0577	0.848	0.033
16978.37	0.0107	0.0001	0.0578	0.877	0.029
17374.89	0.0104	0.0001	0.0578	0.905	0.028
17707.21	0.0102	0.0001	0.0579	0.930	0.025
18078.33	0.0100	0.0001	0.0580	0.963	0.033
18468.15	0.0098	0.0001	0.0580	0.988	0.025
18793.06	0.0096	0.0001	0.0581	1.021	0.033
19214.62	0.0094	0.0001	0.0582	1.053	0.032
19800.23	0.0091	0.0001	0.0583	1.099	0.045
20284.60	0.0089	0.0001	0.0584	1.130	0.031
20762.61	0.0087	0.0001	0.0585	1.174	0.044
21198.29	0.0085	0.0001	0.0586	1.215	0.041
21638.20	0.0084	0.0001	0.0586	1.249	0.034
22010.03	0.0082	0.0001	0.0587	1.279	0.030
22606.93	0.0080	0.0001	0.0588	1.334	0.055
23159.03	0.0078	0.0001	0.0589	1.383	0.049
23719.94	0.0076	0.0001	0.0590	1.434	0.051
24048.73	0.0075	0.0001	0.0591	1.474	0.040
24606.12	0.0074	0.0001	0.0592	1.524	0.050
24998.76	0.0072	0.0001	0.0592	1.562	0.038
25409.04	0.0071	0.0001	0.0593	1.613	0.051
25828.84	0.0070	0.0001	0.0594	1.659	0.046
26368.59	0.0069	0.0001	0.0595	1.715	0.056
26861.42	0.0067	0.0001	0.0596	1.764	0.048
27327.44	0.0066	0.0001	0.0597	1.822	0.058
27731.02	0.0065	0.0001	0.0598	1.871	0.049
28176.57	0.0064	0.0001	0.0599	1.923	0.052
28924.46	0.0063	0.0001	0.0600	1.998	0.075
29400.36	0.0062	0.0001	0.0601	2.064	0.066
29994.79	0.0060	0.0001	0.0602	2.113	0.048
30461.51	0.0059	0.0001	0.0602	2.170	0.057
30928.24	0.0058	0.0001	0.0603	2.221	0.051
31330.76	0.0058	0.0001	0.0604	2.265	0.044
31826.76	0.0057	0.0001	0.0605	2.319	0.054
32394.73	0.0056	0.0001	0.0605	2.382	0.063
32921.43	0.0055	0.0001	0.0606	2.448	0.066
33543.02	0.0054	0.0001	0.0607	2.512	0.064
33999.16	0.0053	0.0001	0.0608	2.576	0.064
34674.03	0.0052	0.0001	0.0609	2.645	0.070
35488.59	0.0051	0.0001	0.0610	2.725	0.080
36205.79	0.0050	0.0001	0.0611	2.809	0.084
37007.65	0.0049	0.0001	0.0612	2.896	0.087

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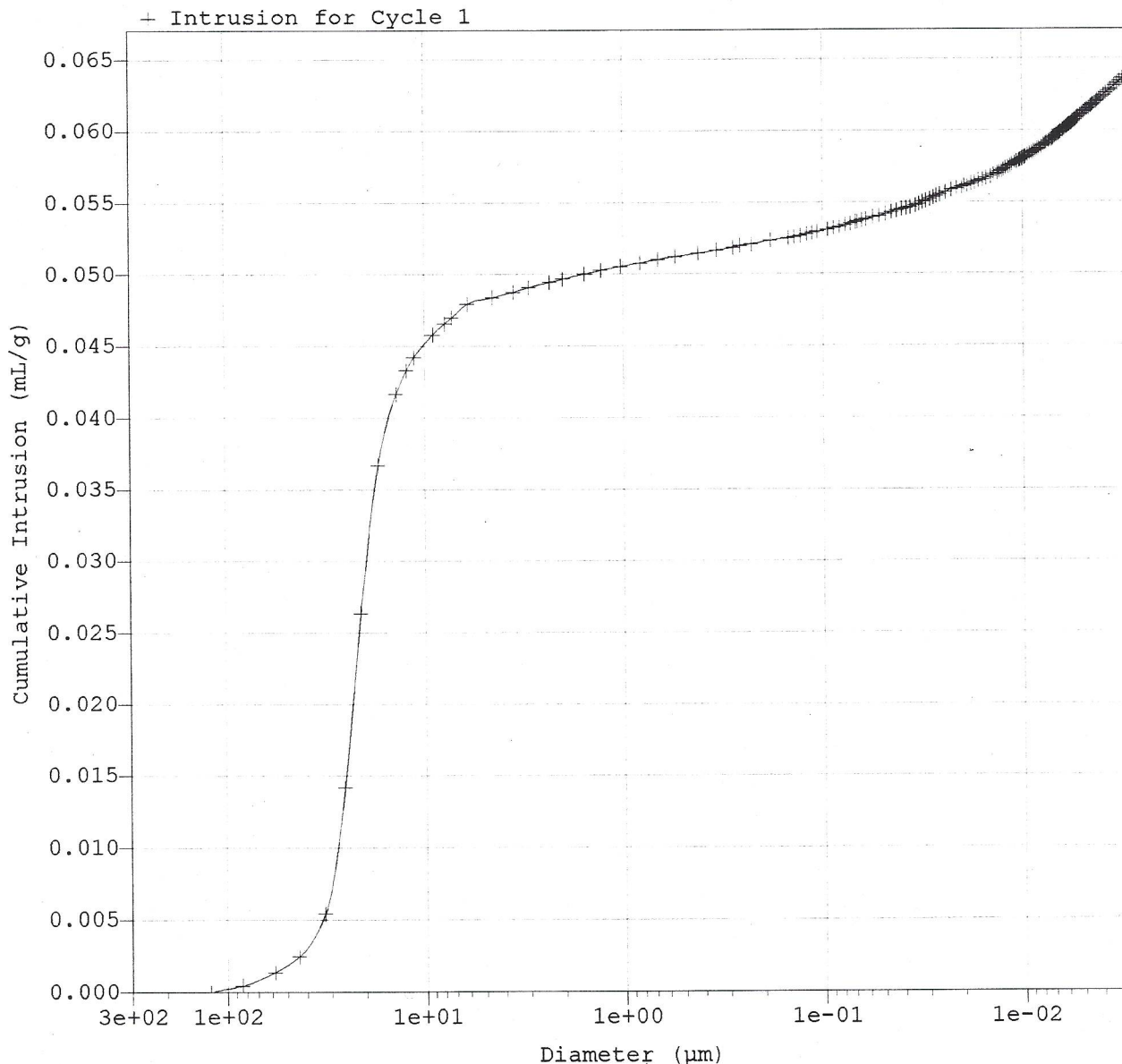
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37618.31	0.0048	0.0001	0.0613	2.972	0.076
38427.93	0.0047	0.0001	0.0614	3.058	0.086
39164.18	0.0046	0.0001	0.0615	3.132	0.074
40078.22	0.0045	0.0001	0.0616	3.224	0.092
40552.71	0.0045	0.0001	0.0617	3.302	0.078
41090.34	0.0044	0.0001	0.0618	3.385	0.083
42603.41	0.0042	0.0002	0.0619	3.527	0.142
43365.76	0.0042	0.0001	0.0620	3.622	0.094
44035.33	0.0041	0.0001	0.0621	3.710	0.089
45067.21	0.0040	0.0001	0.0622	3.824	0.114
46556.99	0.0039	0.0002	0.0624	3.979	0.154
47961.39	0.0038	0.0002	0.0625	4.137	0.158
49447.64	0.0037	0.0002	0.0627	4.307	0.170
50247.04	0.0036	0.0001	0.0628	4.415	0.108
53007.88	0.0034	0.0003	0.0631	4.714	0.299
54488.84	0.0033	0.0002	0.0632	4.896	0.182
55968.04	0.0032	0.0002	0.0634	5.097	0.201
57931.60	0.0031	0.0002	0.0636	5.341	0.244
59937.14	0.0030	0.0002	0.0638	5.612	0.272

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Cumulative Intrusion vs Diameter

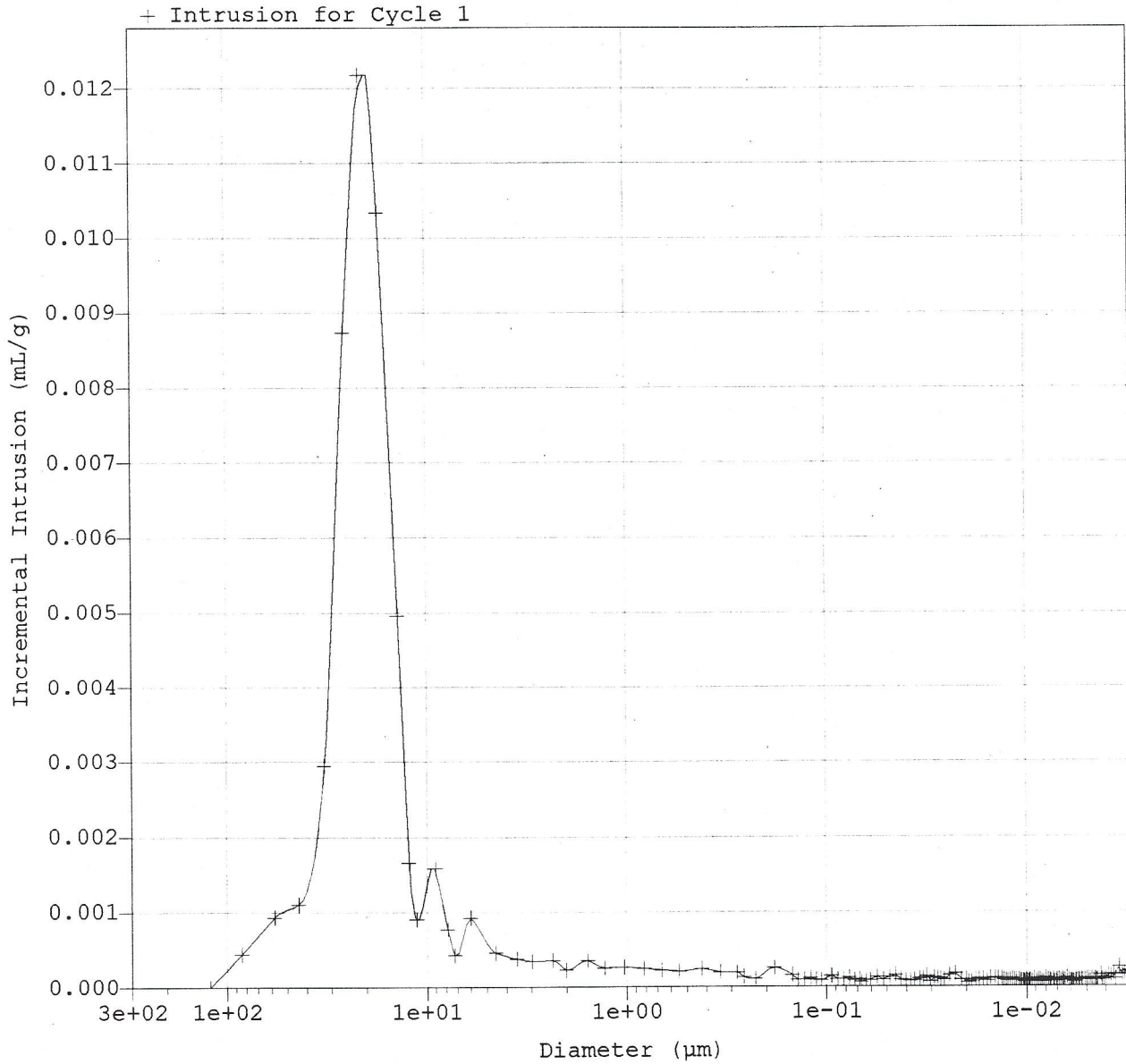


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Incremental Intrusion vs Diameter

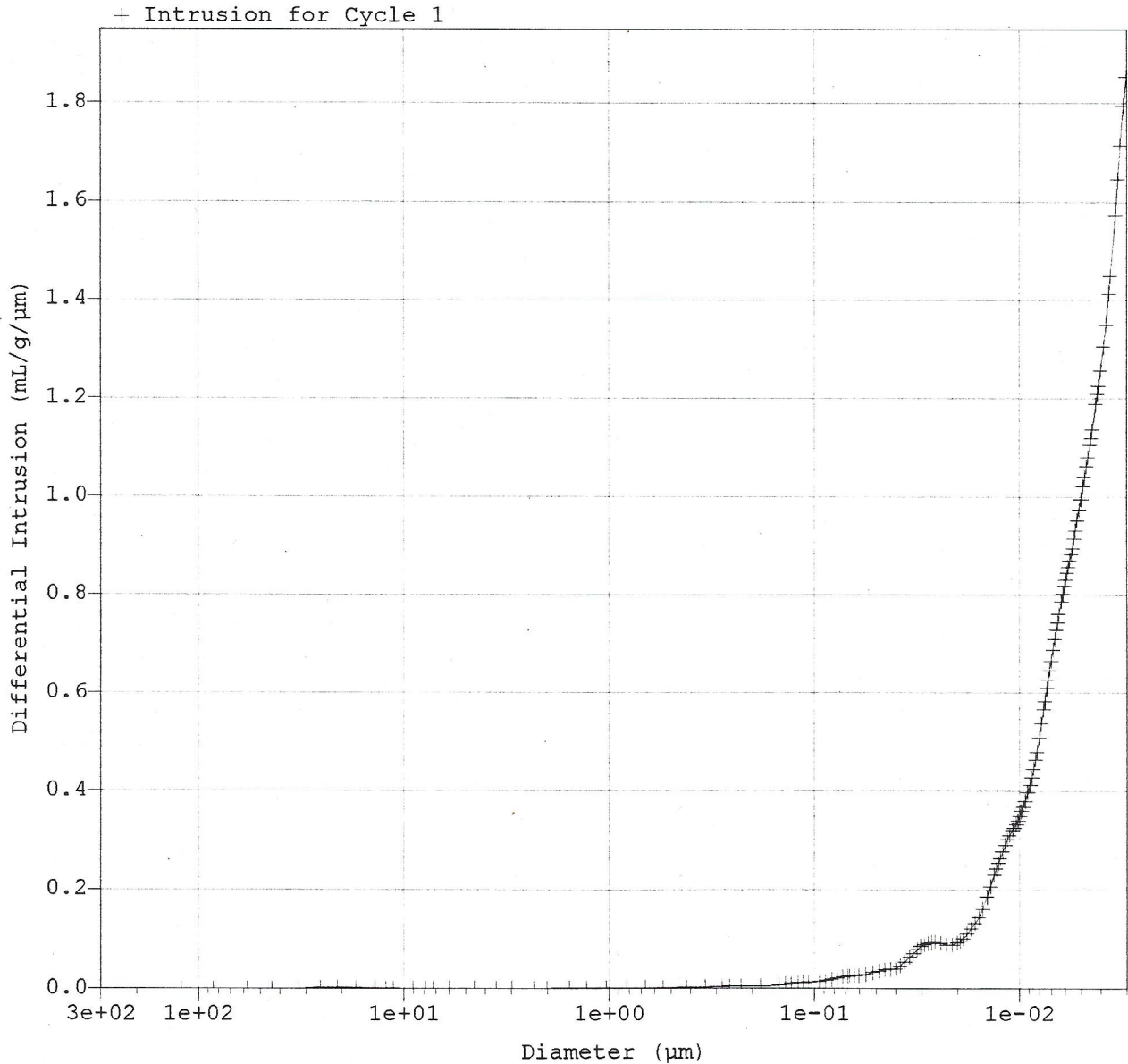


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Differential Intrusion vs Diameter



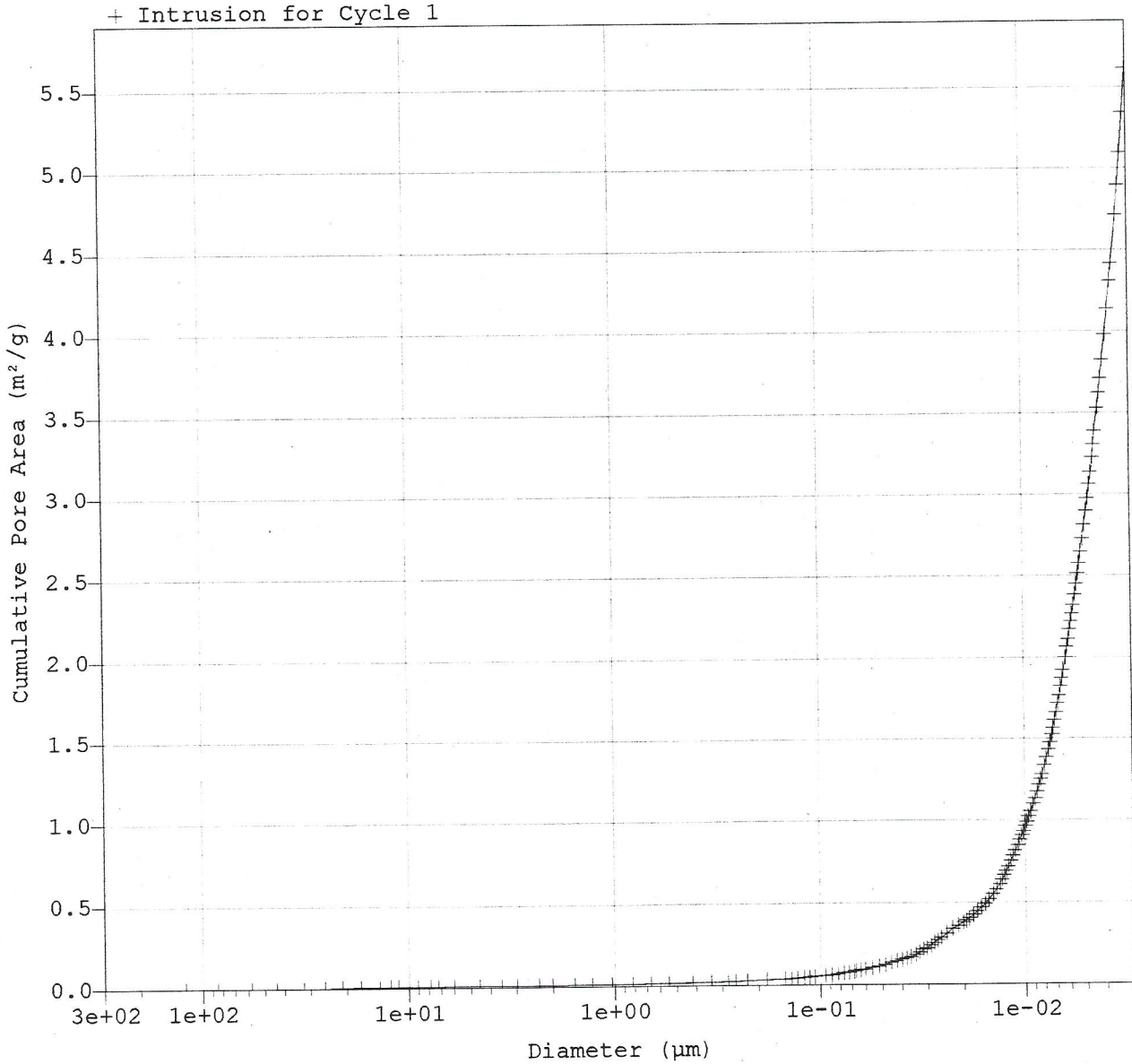


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Cumulative Pore Area vs Diameter



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Log Differential Intrusion vs Diameter

