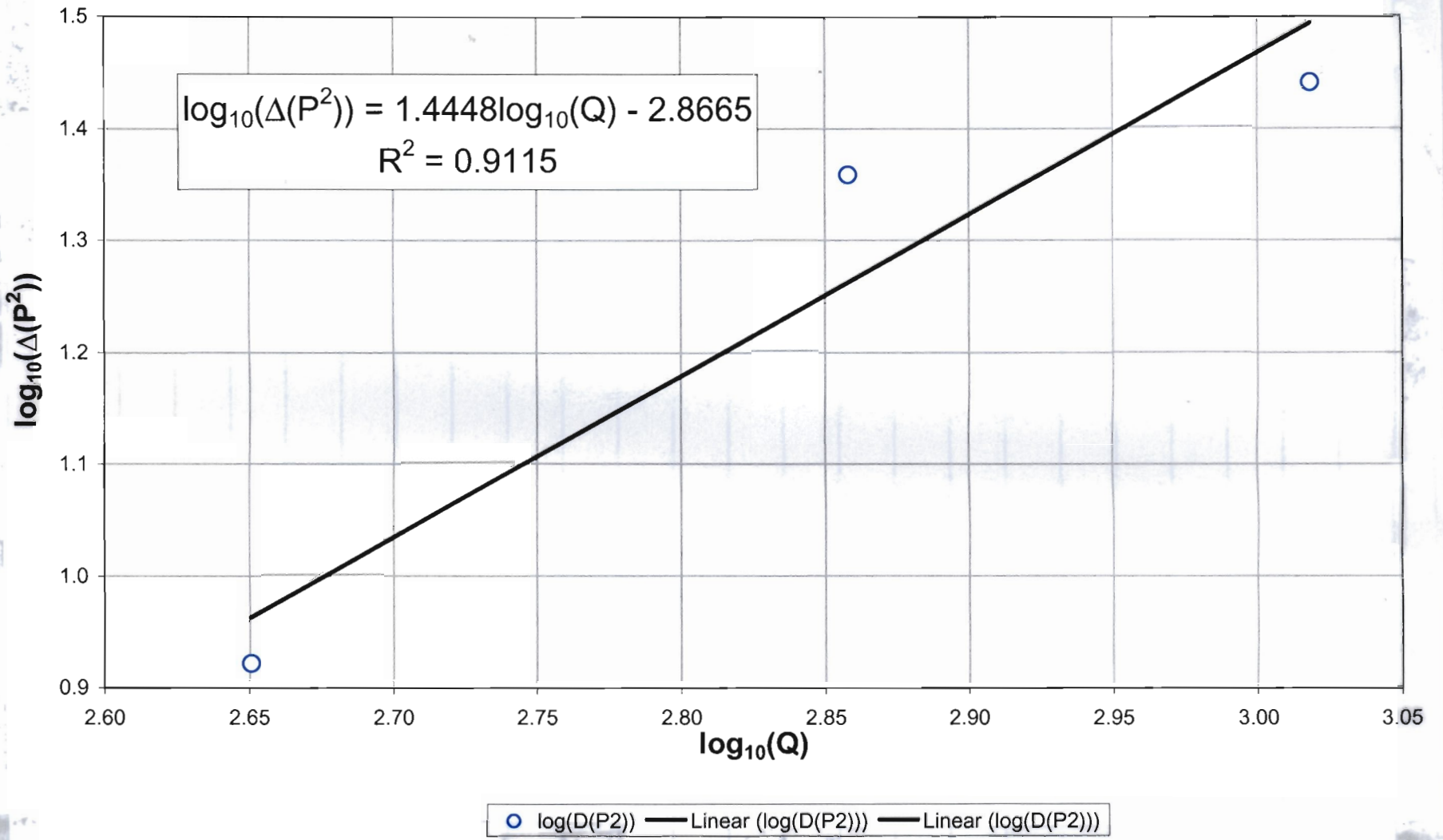


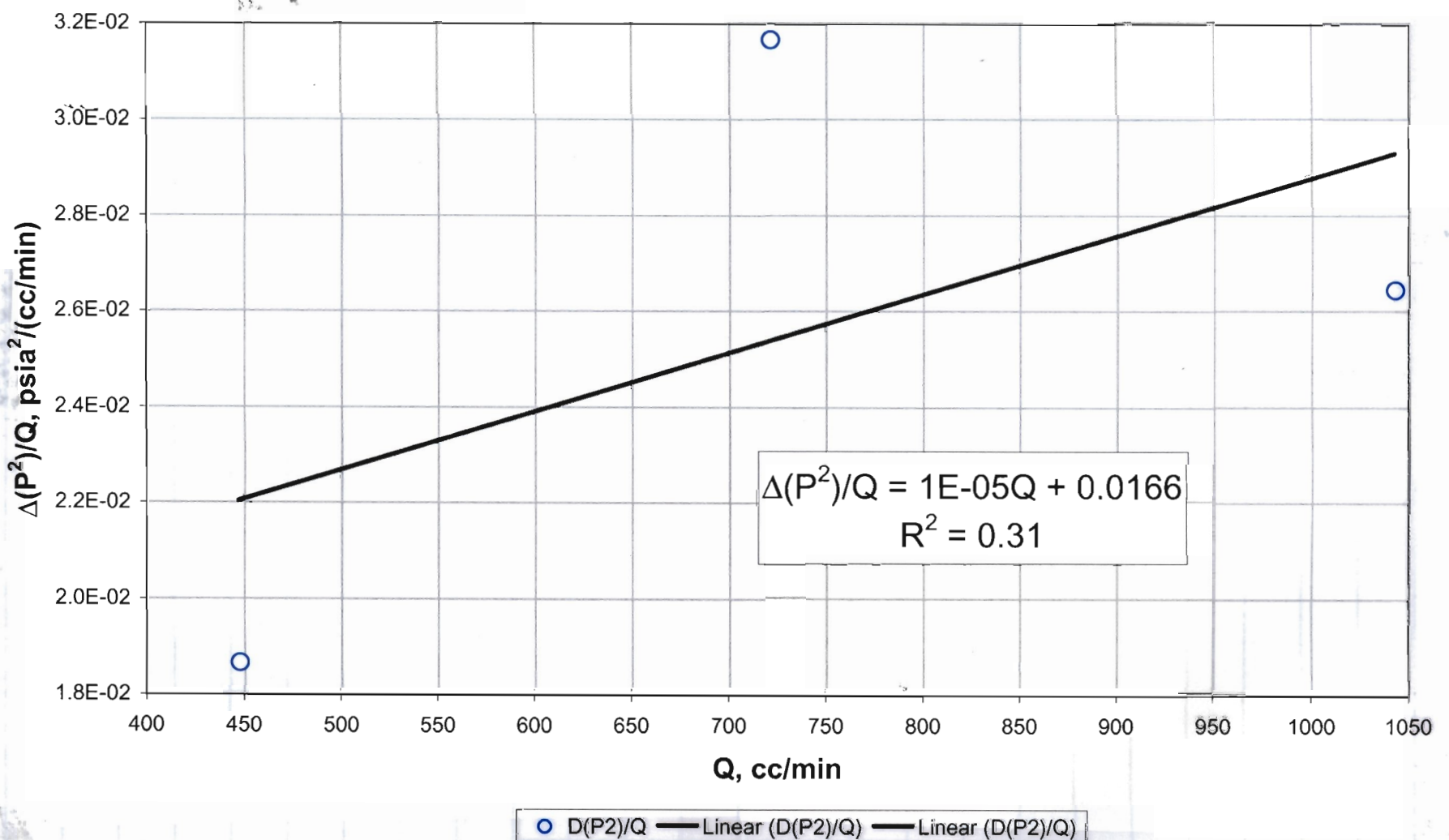
Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)  
V4 Transect: Drillhole 21

RMM, 01/30/03

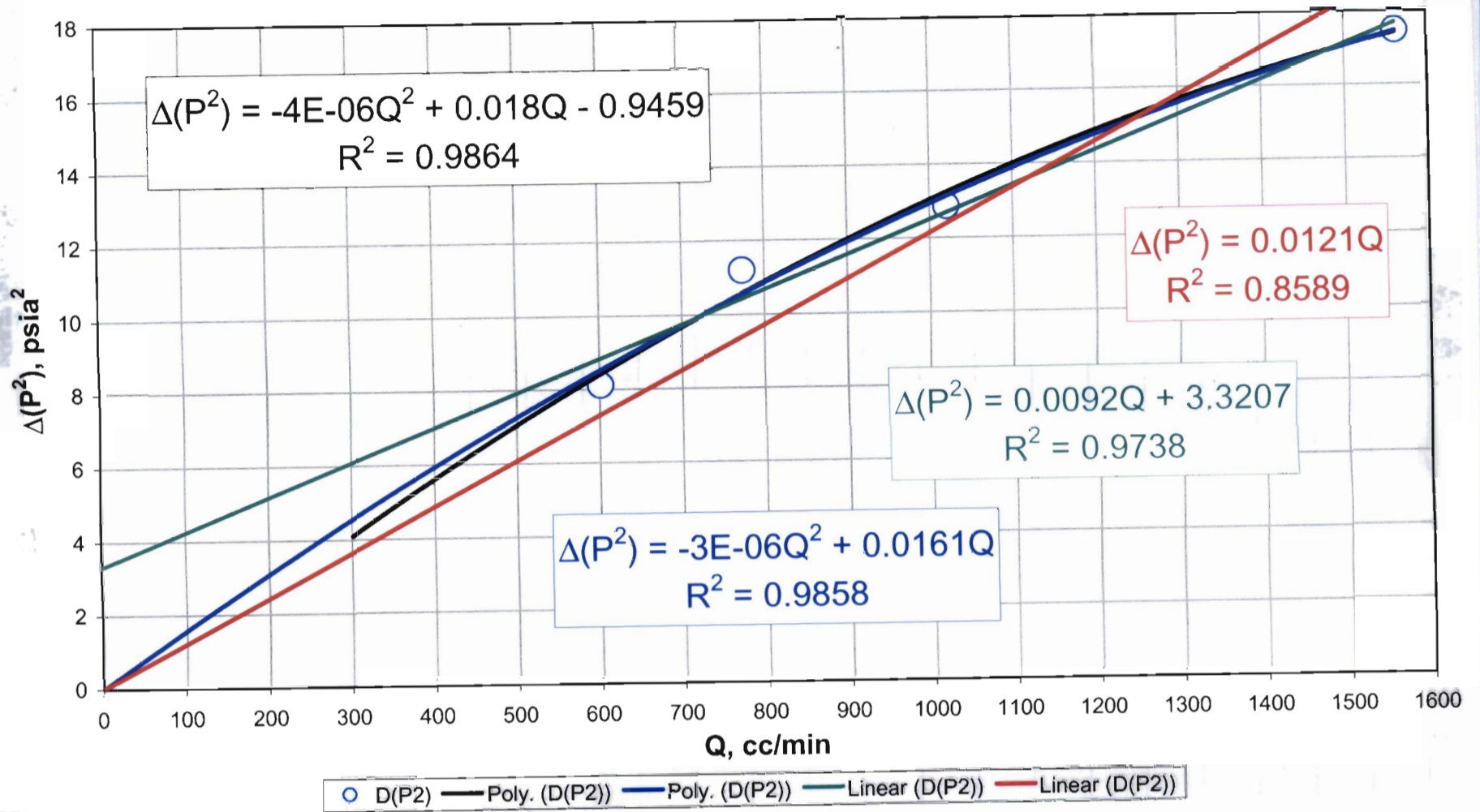


Final check for high velocity flow effects:  
High velocity flow effects are present when the slope is non-zero and positive.  
V4 Transect: Drillhole 21

RMM, 01/30/03

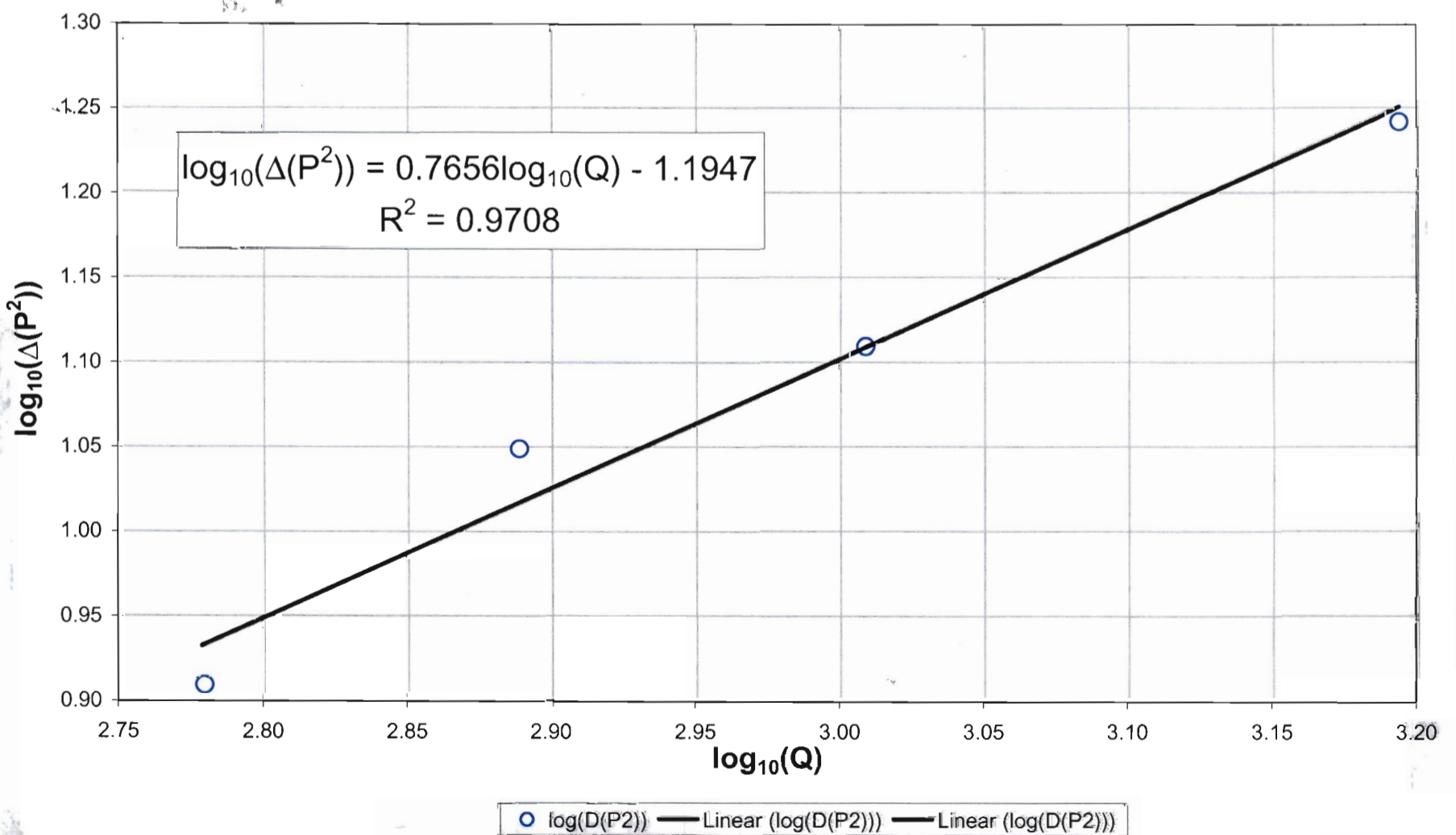


Relationship between steady-state differential pressures squared and flowrate:  
 If relationship is linear, with the ordinate intercept nearly zero,  
 there is no high velocity flow effect.  
 V4 Transect: Drillhole 22



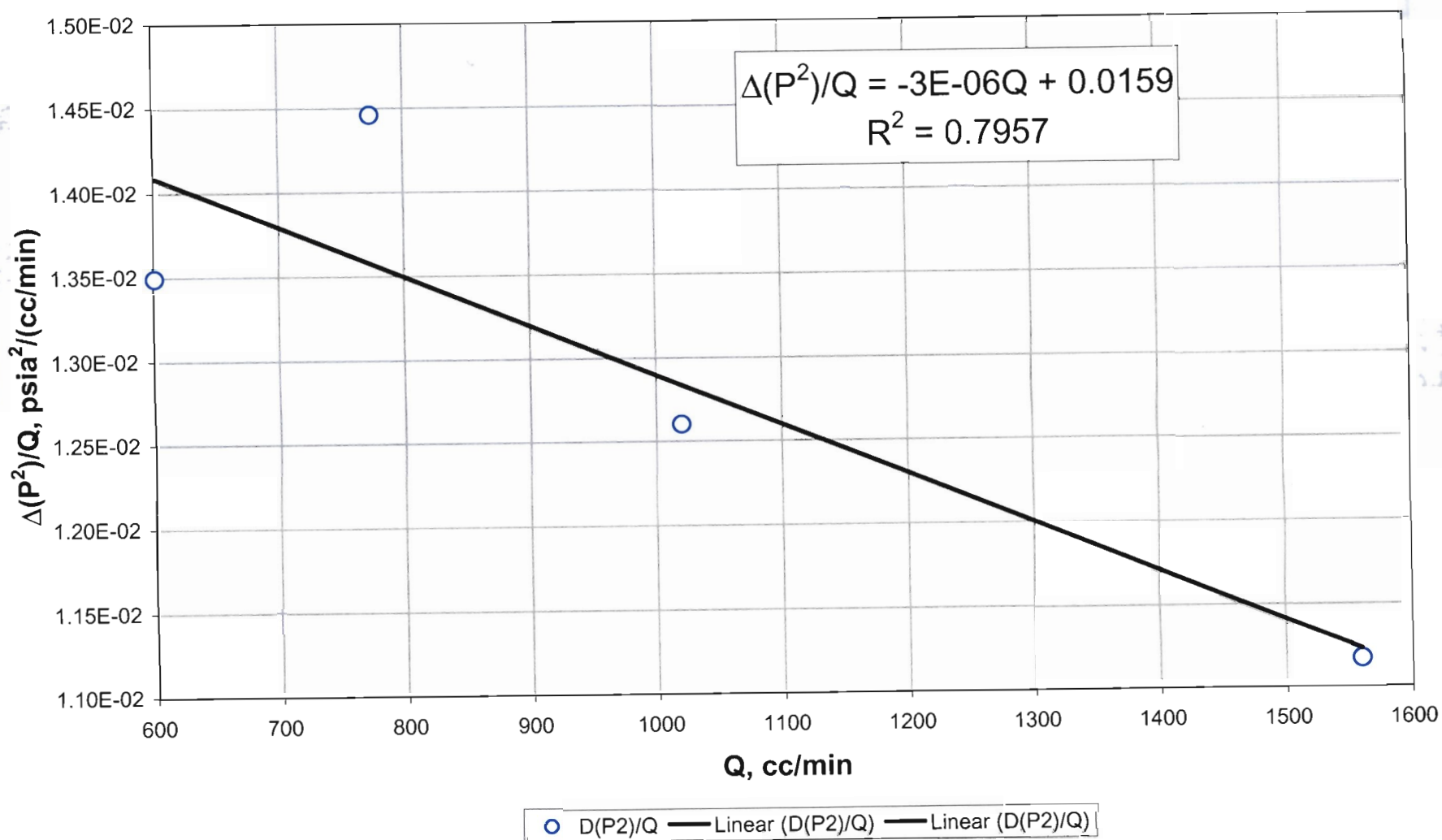
RMM, 01/30/03

Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of  
 high-velocity flow effects (when the slope is greater than unity)  
 V4 Transect: Drillhole 22



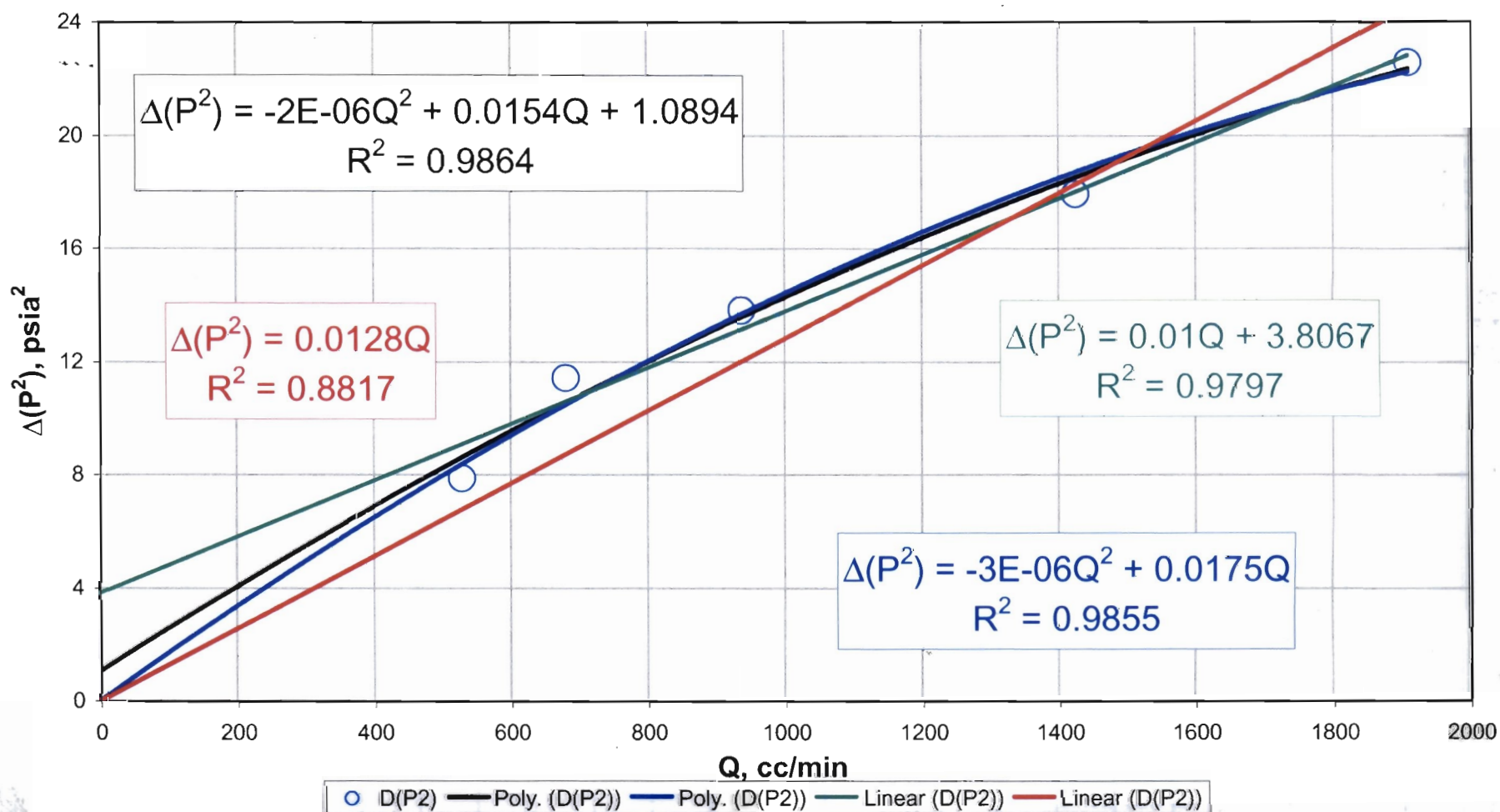
RMM, 01/30/03

Final check for high velocity flow effects:  
 High velocity flow effects are present when the slope is non-zero and positive.  
 V4 Transect: Drillhole 22



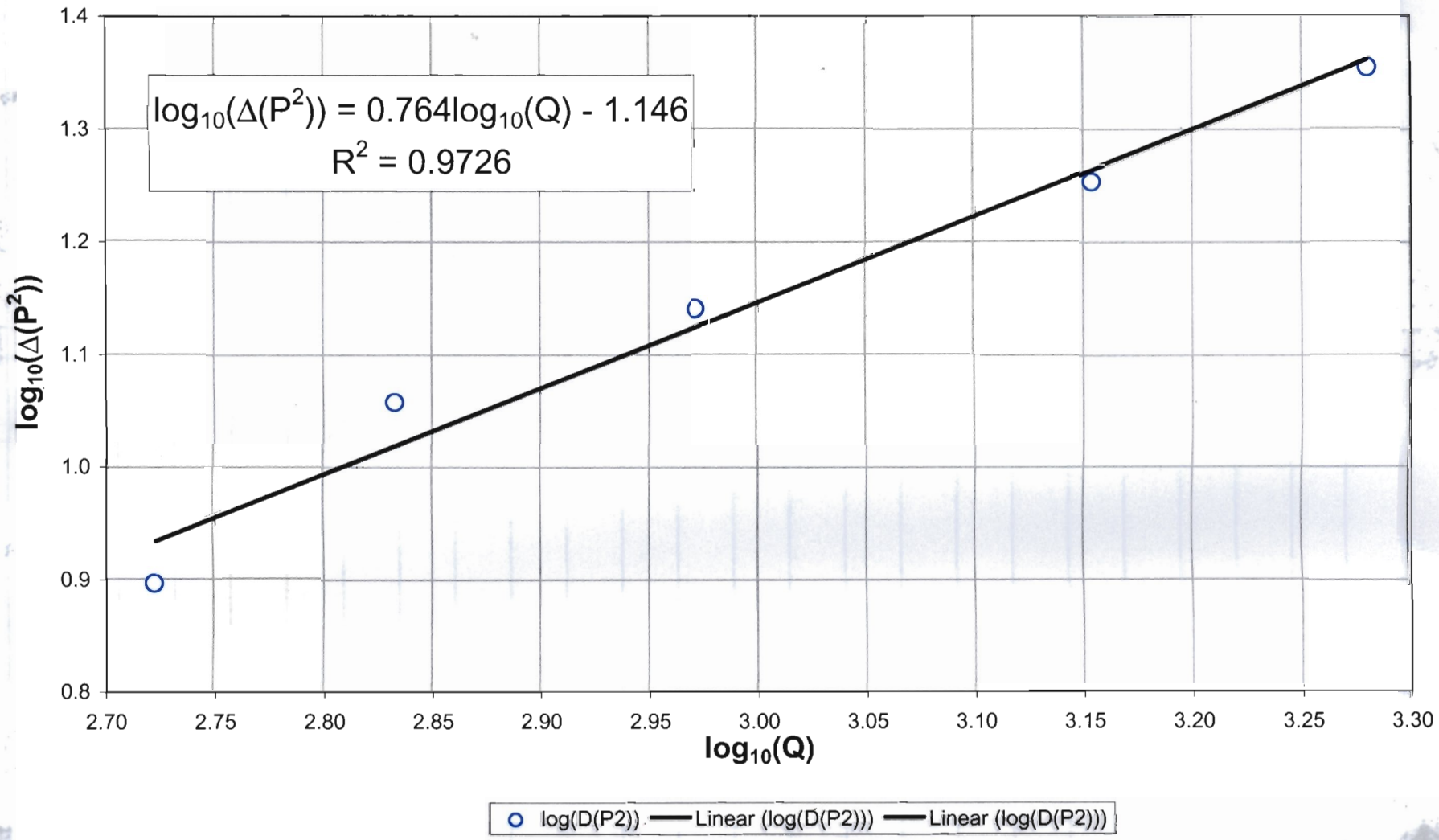
RMM, 01/30/03

Relationship between steady-state differential pressures squared and flowrate:  
 If relationship is linear, with the ordinate intercept nearly zero,  
 there is no high velocity flow effect.  
 V4 Transect: Drillhole 24



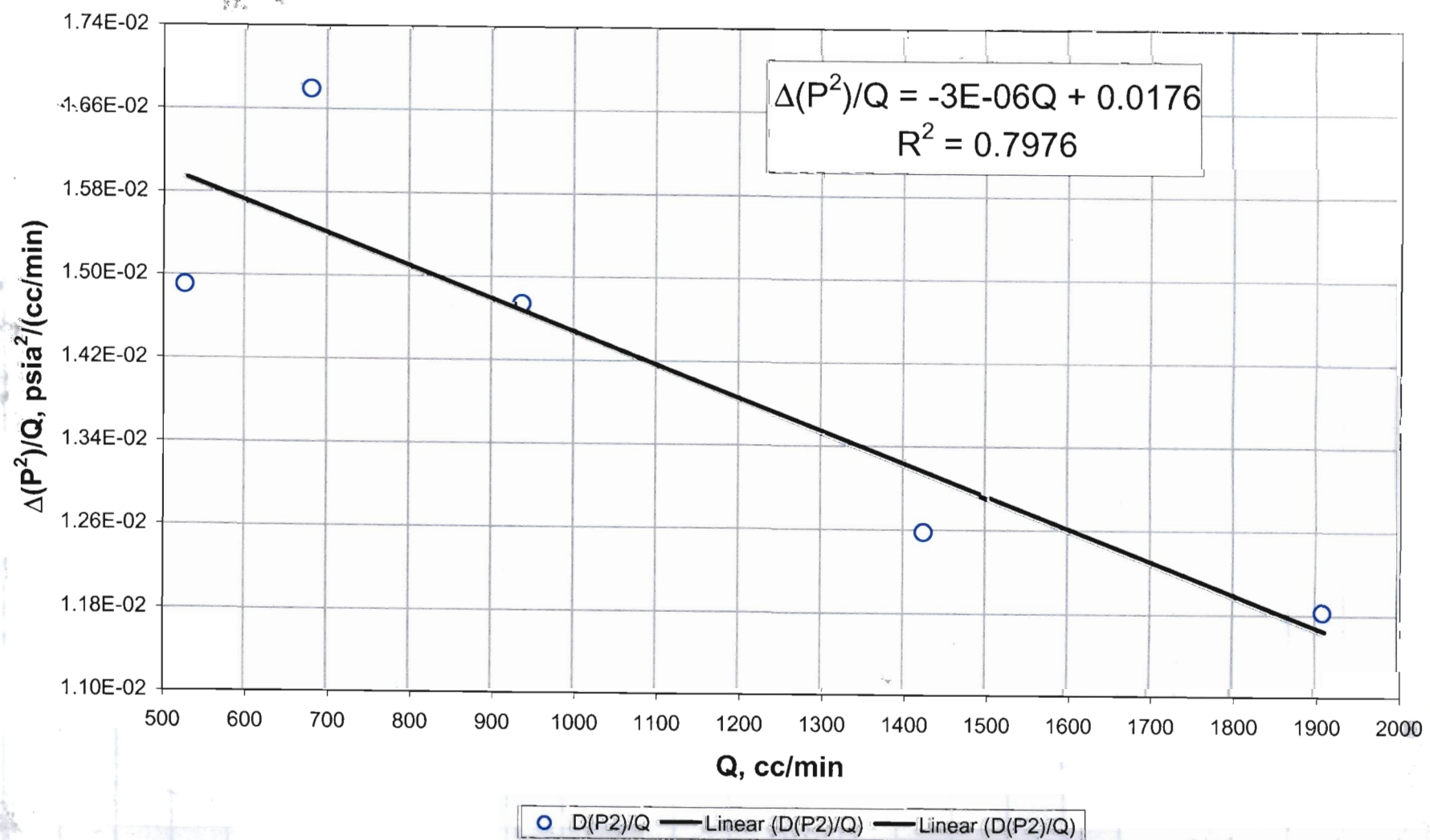
RMM, 01/30/03

Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)  
 V4 Transect: Drillhole 24



GMM, 01/30/03

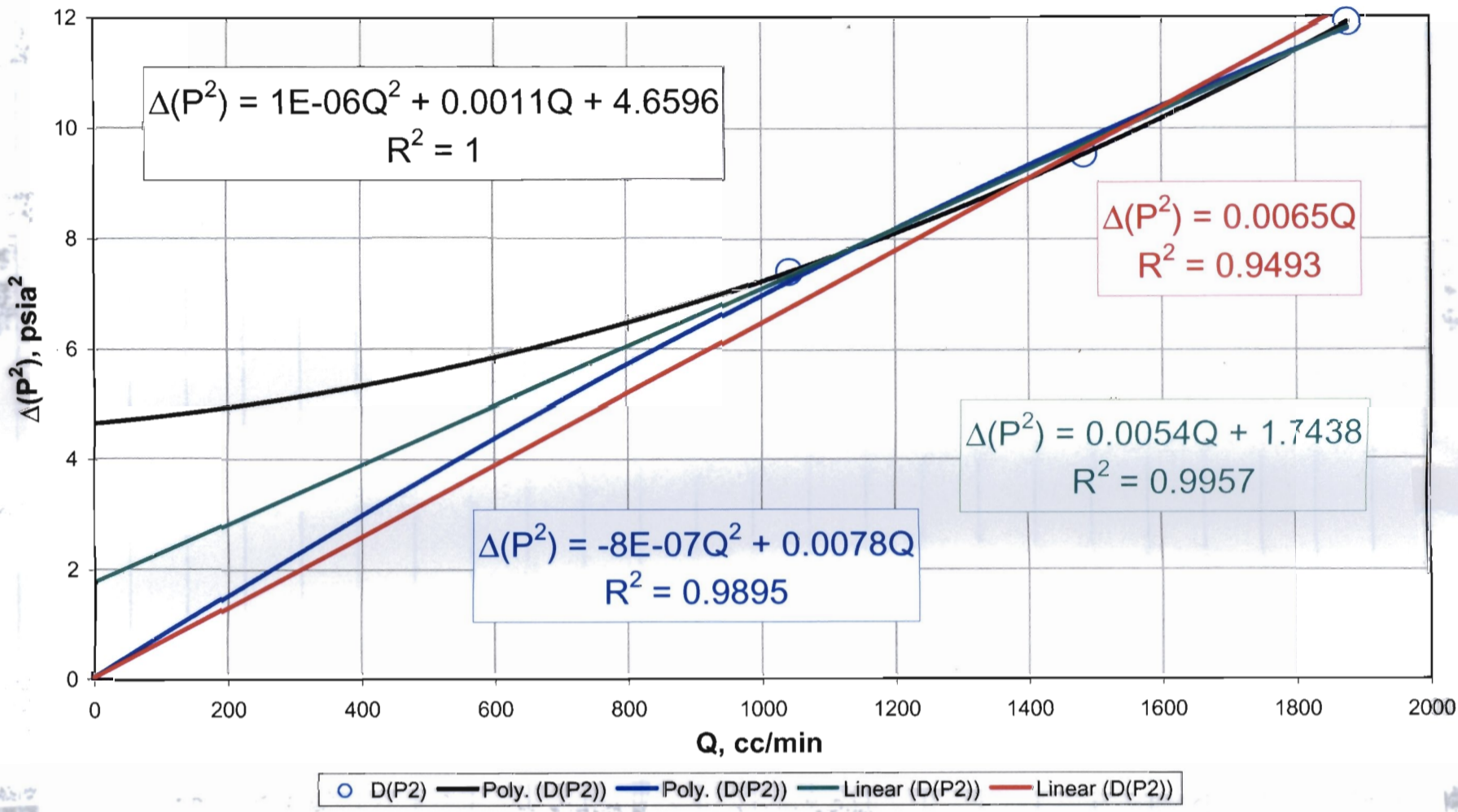
Final check for high velocity flow effects:  
 High velocity flow effects are present when the slope is non-zero and positive.  
 V4 Transect: Drillhole 24



GMM, 01/30/03

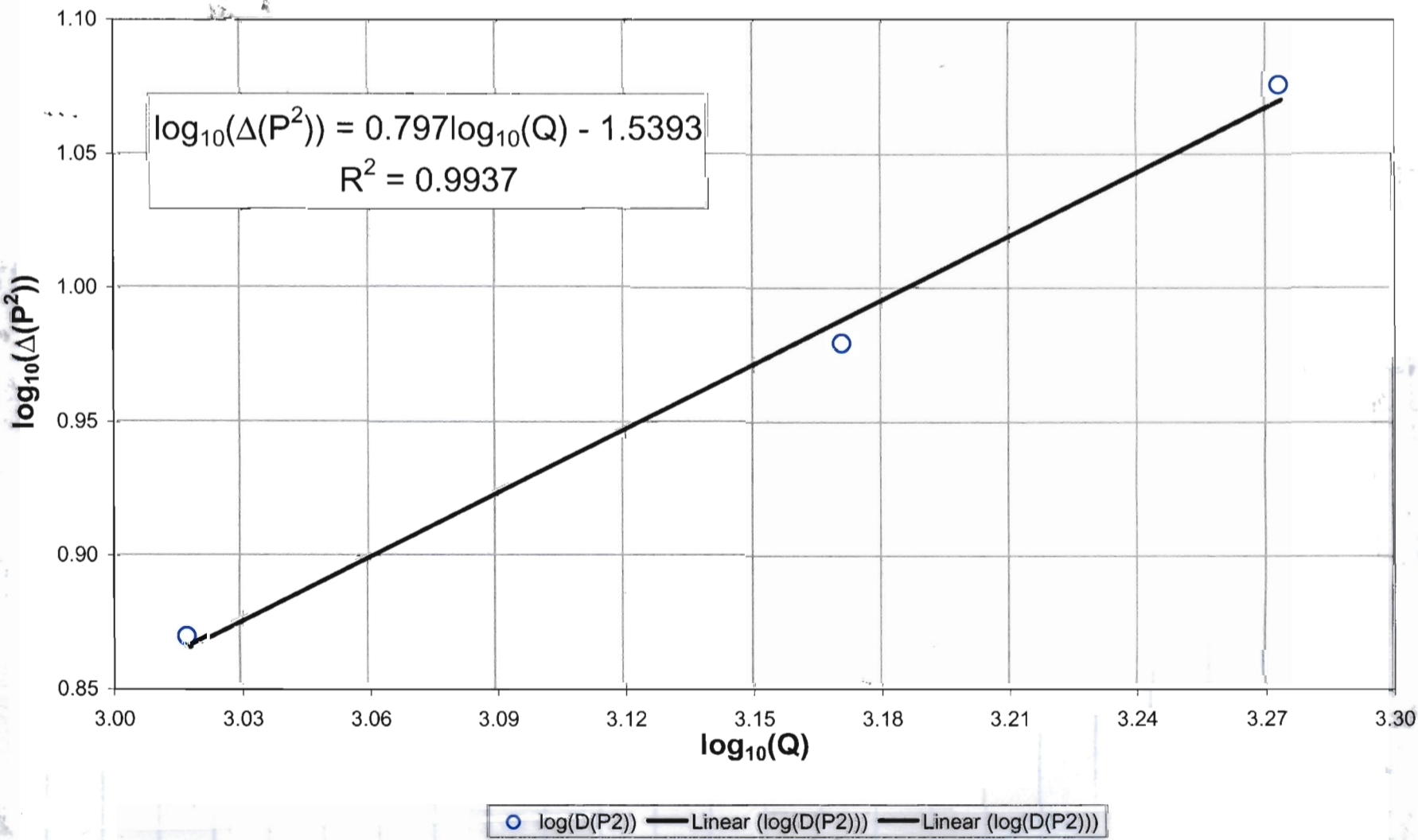
Relationship between steady-state differential pressures squared and flowrate:  
 If relationship is linear, with the ordinate intercept nearly zero,  
 there is no high velocity flow effect.  
 V4 Transect: Drillhole 25

RMM, 01/30/03

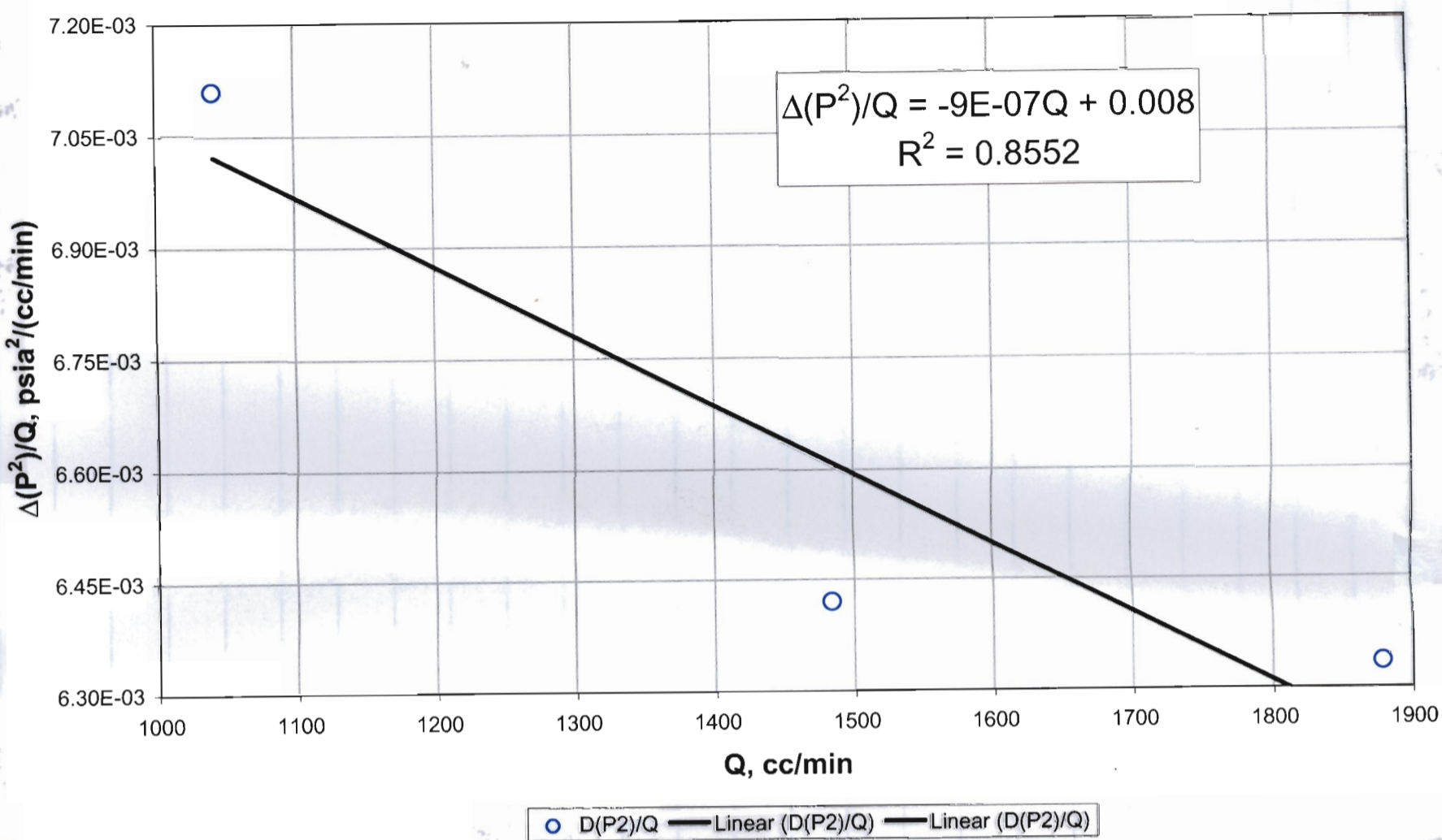


Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of  
 high-velocity flow effects (when the slope is greater than unity)  
 V4 Transect: Drillhole 25

RMM, 01/30/03

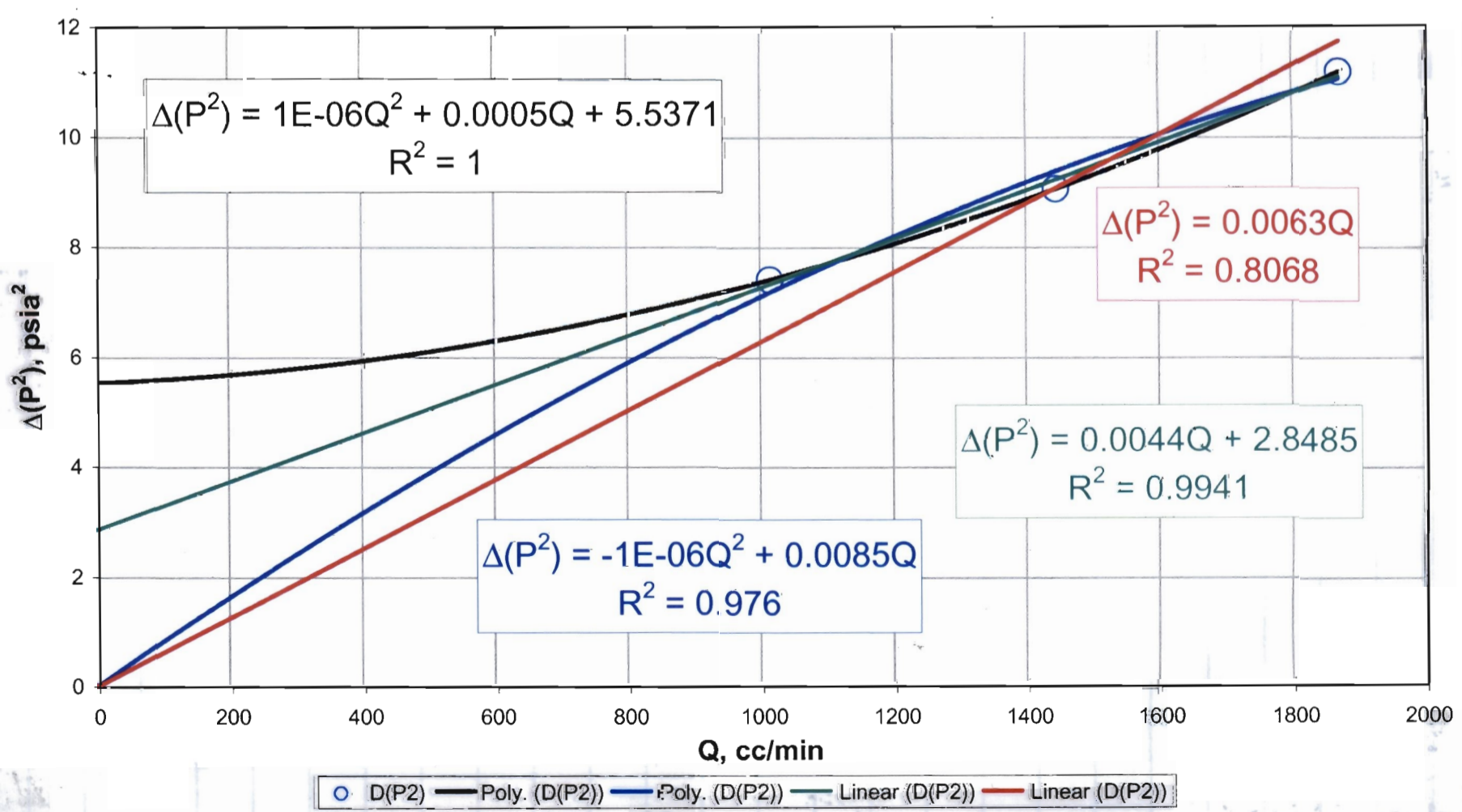


Final check for high velocity flow effects:  
 High velocity flow effects are present when the slope is non-zero and positive.  
 V4 Transect: Drillhole 25



RMN 01/30/03

Relationship between steady-state differential pressures squared and flowrate:  
 If relationship is linear, with the ordinate intercept nearly zero,  
 there is no high velocity flow effect.  
 V4 Transect: Drillhole 26

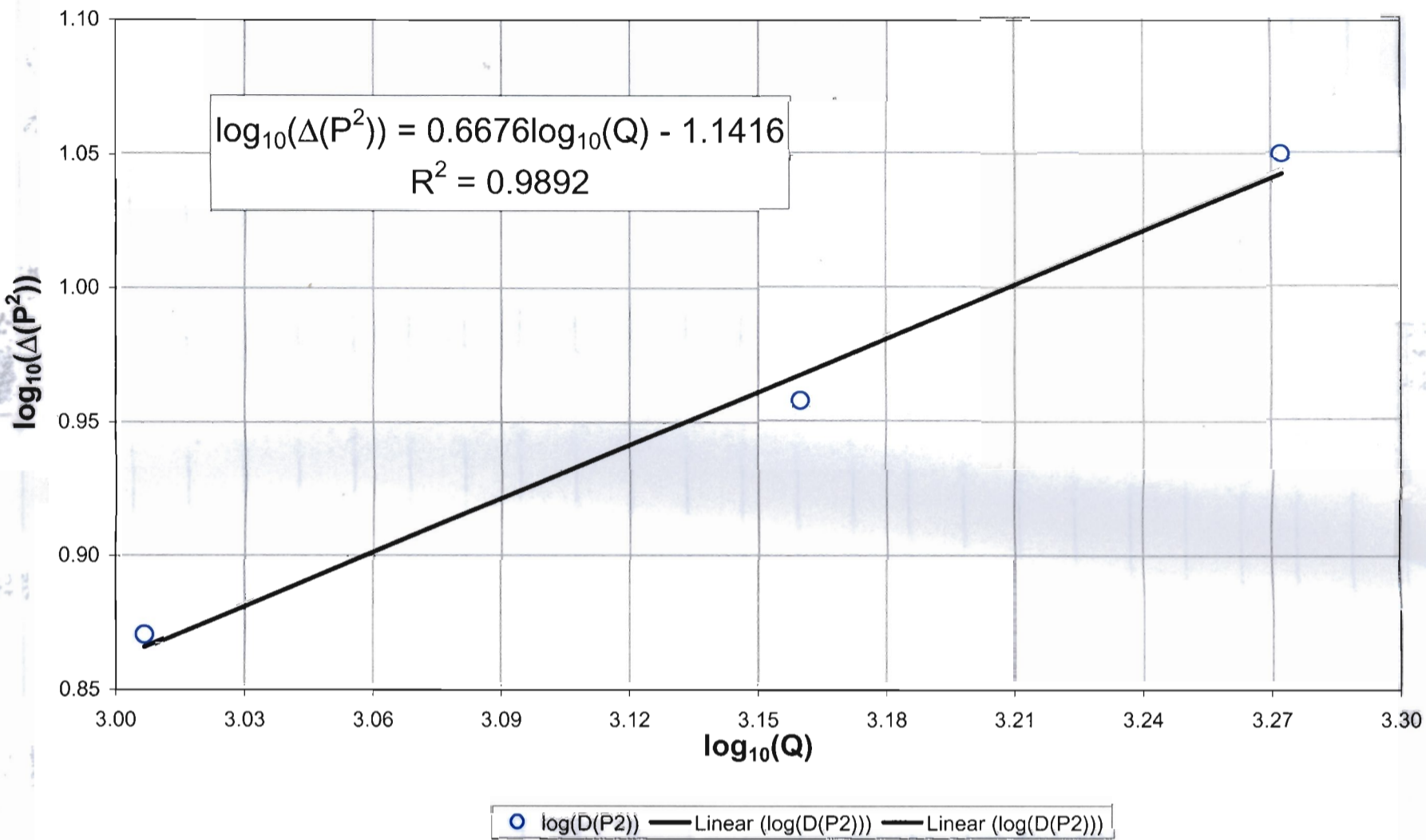


RMN 01/30/03

Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)

V4 Transect: Drillhole 26

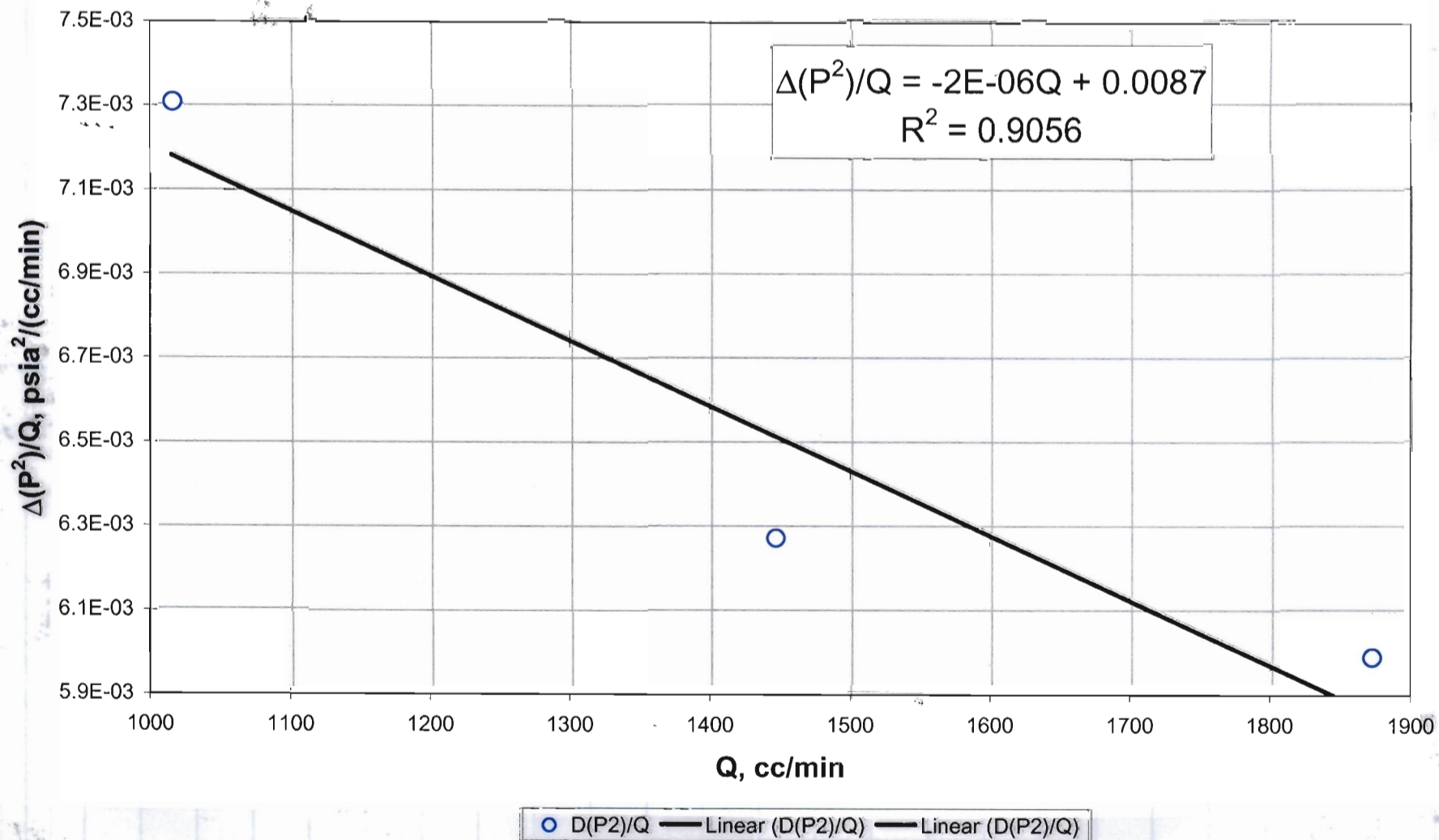
RMM, 01/20/03



Final check for high velocity flow effects: High velocity flow effects are present when the slope is non-zero and positive.

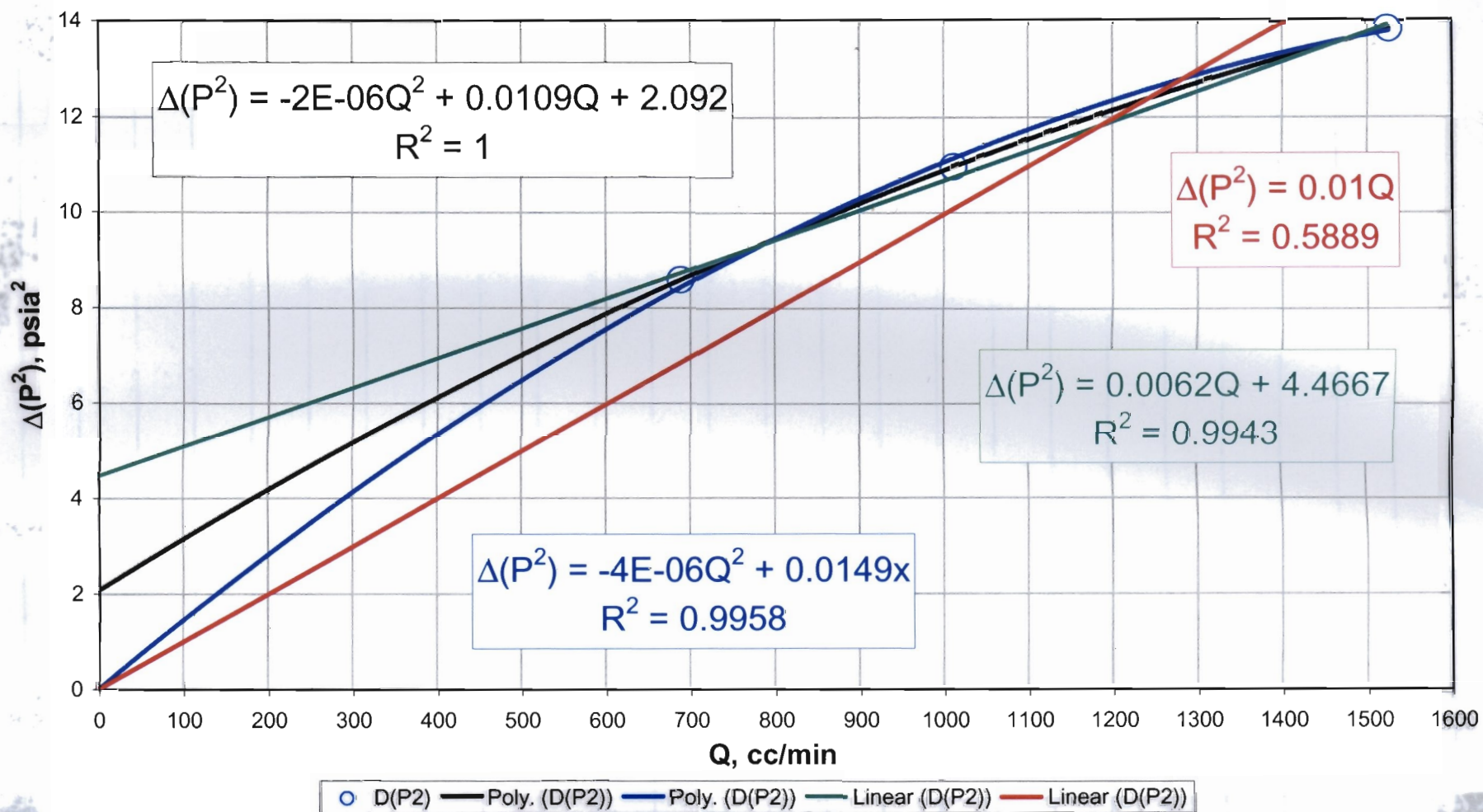
V4 Transect: Drillhole 26

RMM, 01/30/03



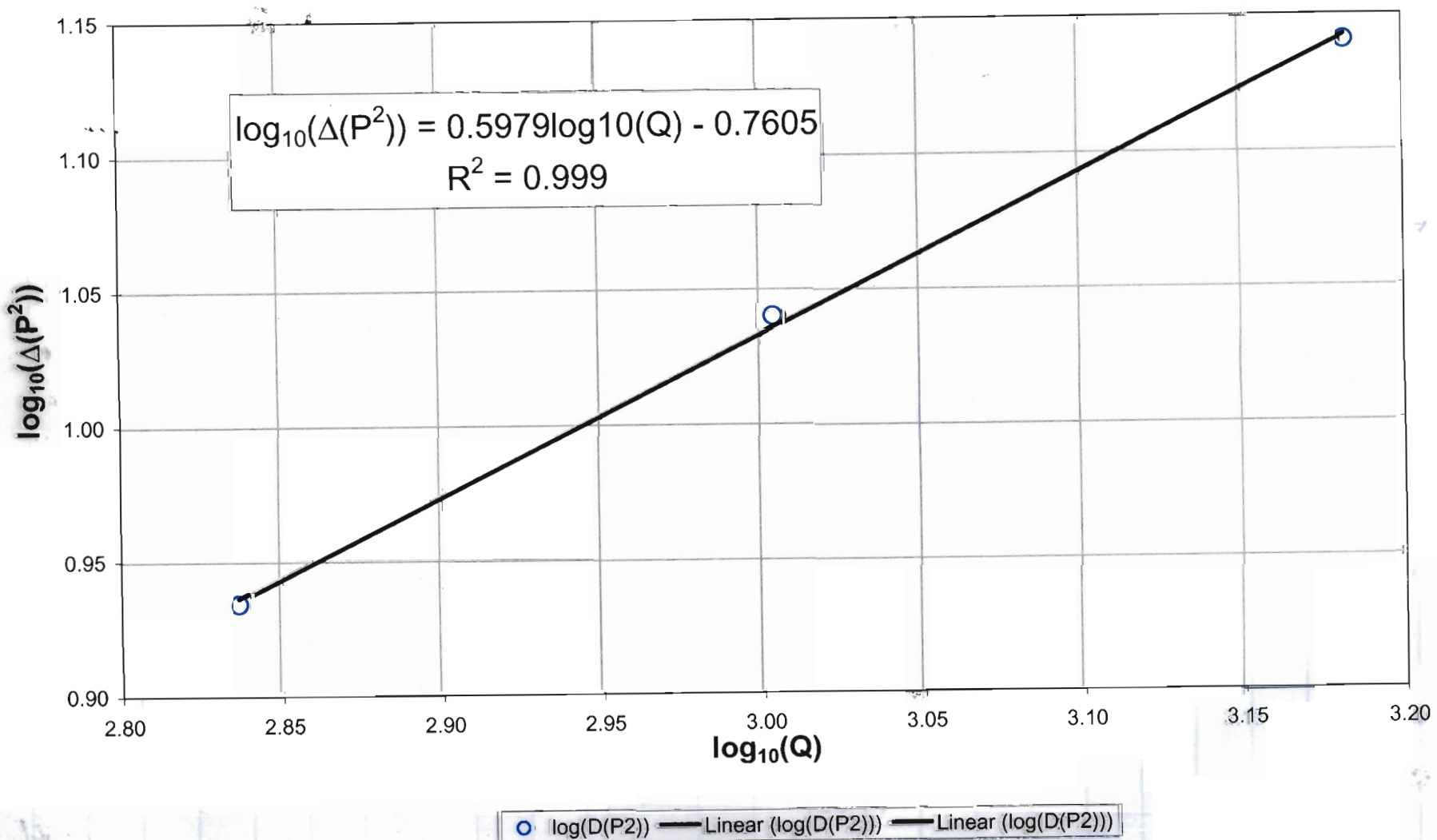
Relationship between steady-state differential pressures squared and flowrate:  
 If relationship is linear, with the ordinate intercept nearly zero,  
 there is no high velocity flow effect.  
 V4 Transect: Drillhole 27

RNM, 01/30/03



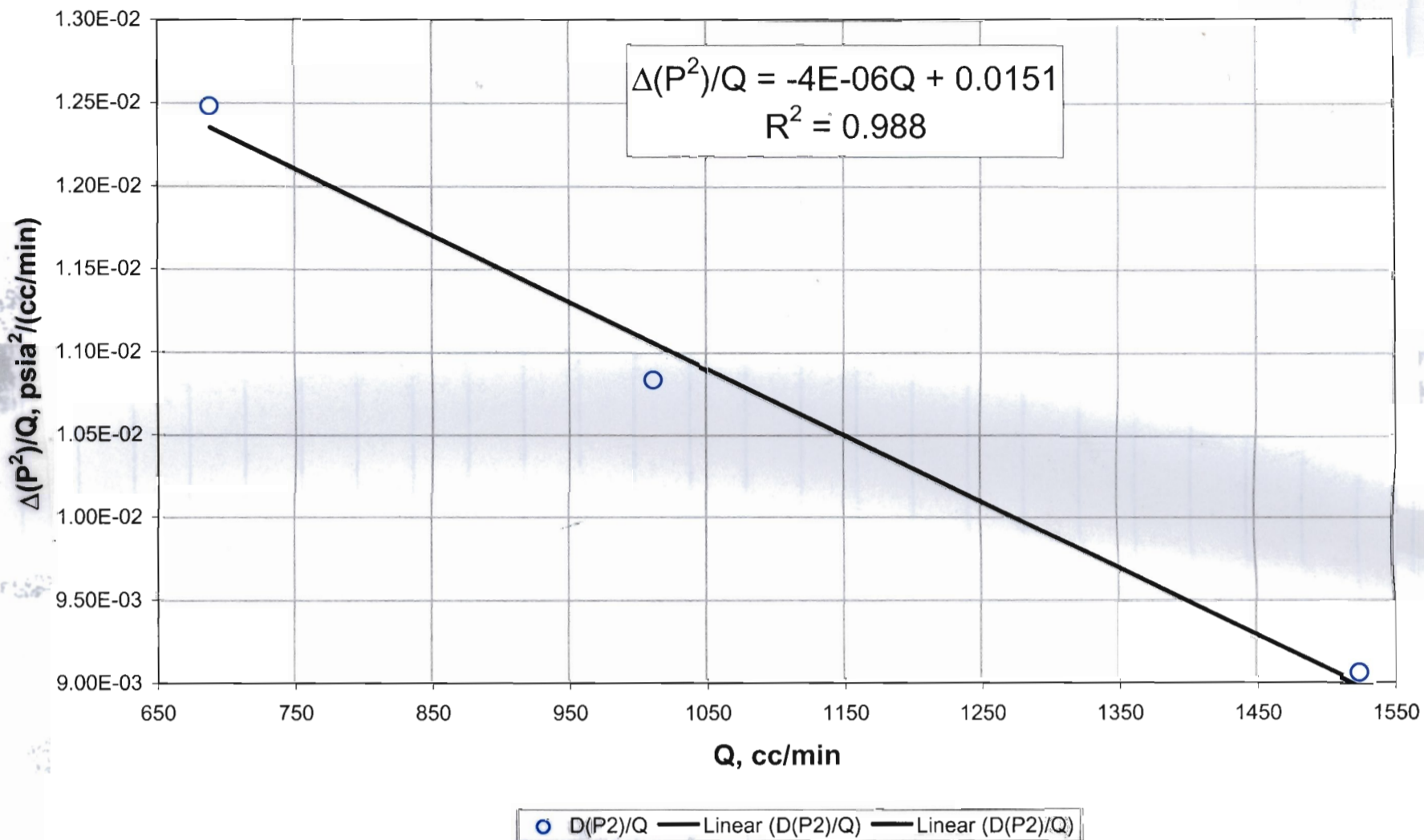
Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)  
 V4 Transect: Drillhole 27

RNM, 01/30/03



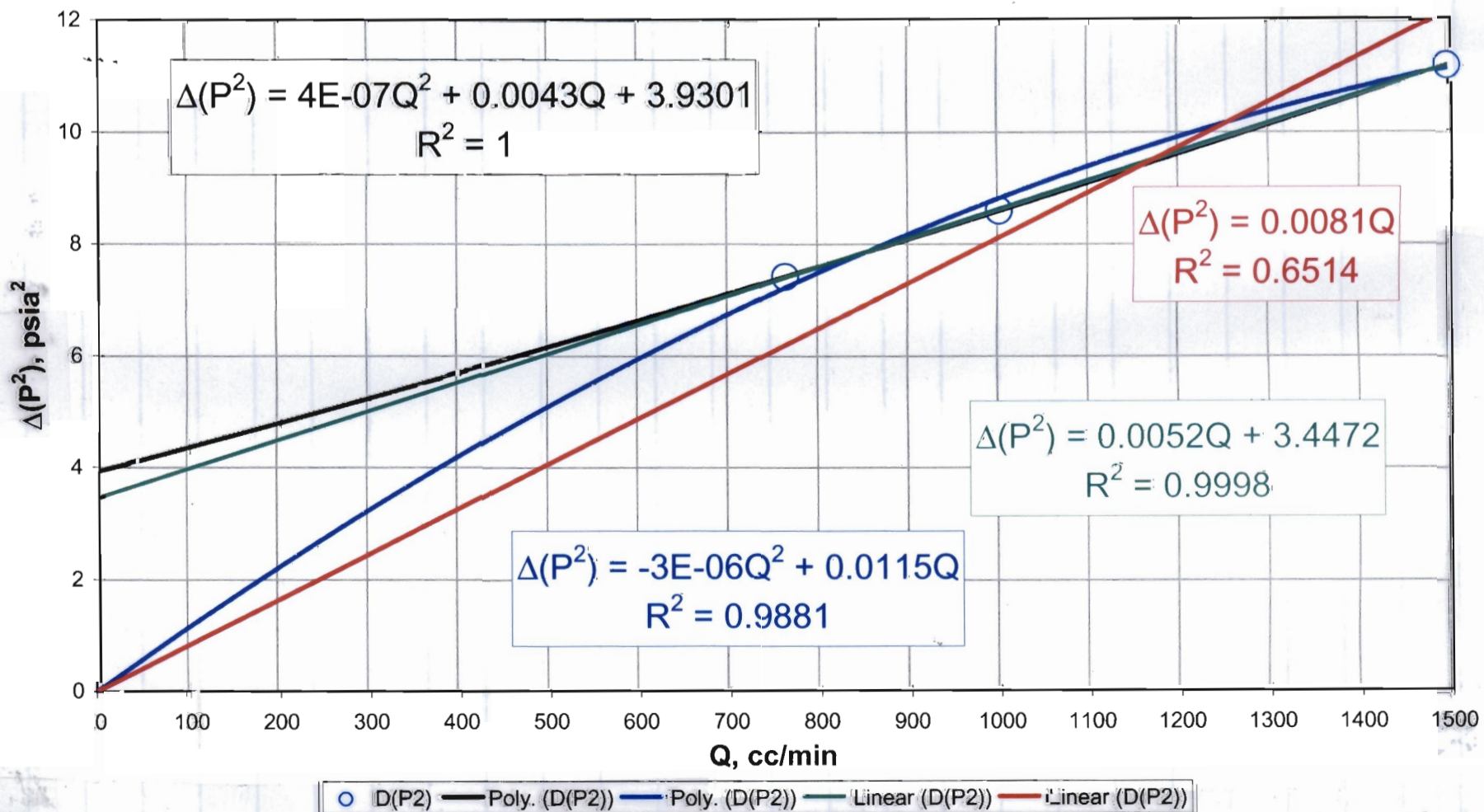


Final check for high velocity flow effects:  
 High velocity flow effects are present when the slope is non-zero and positive.  
 V4 Transect: Drillhole 27



RNM, 01/30/07

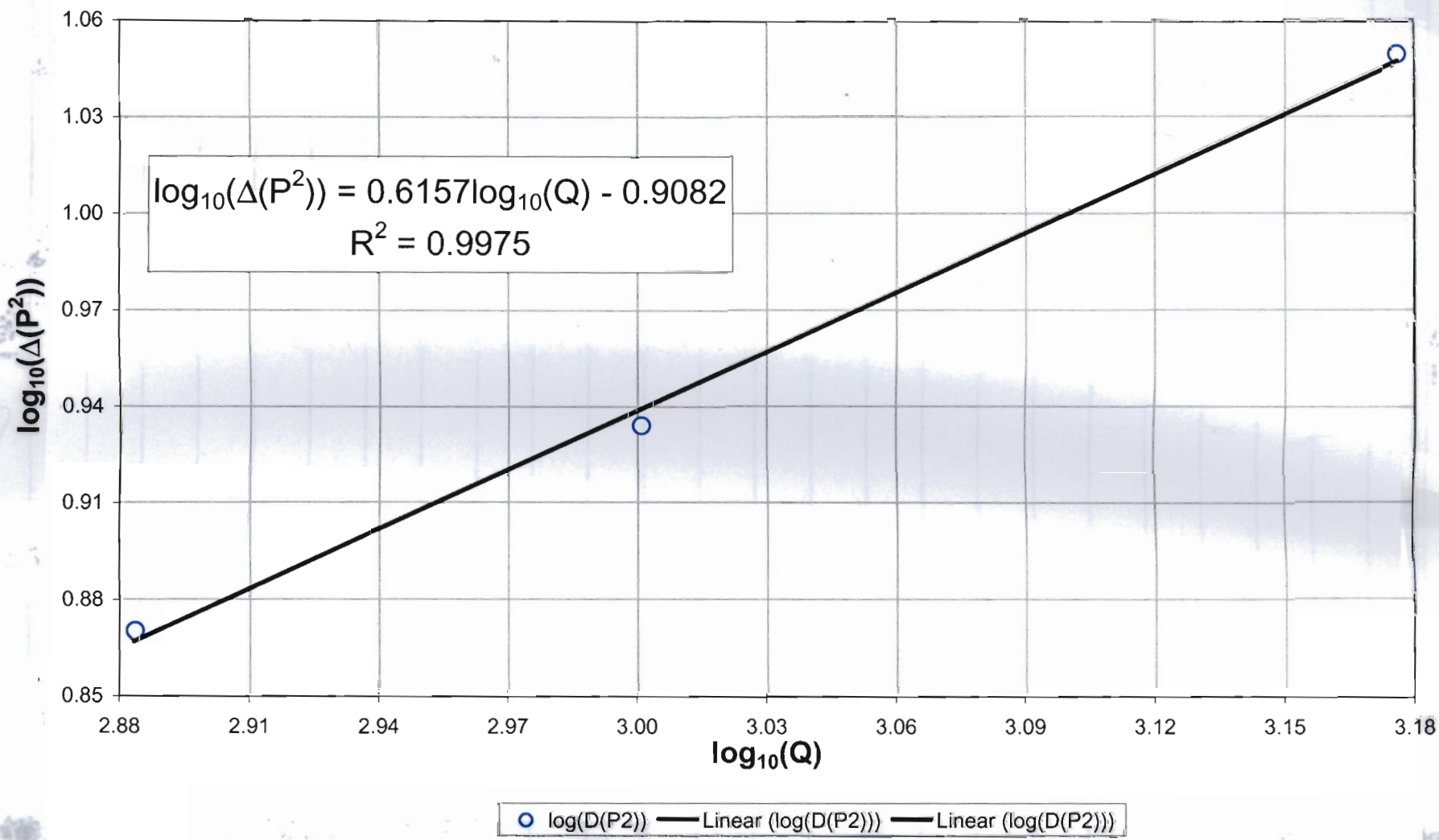
Relationship between steady-state differential pressures squared and flowrate:  
 If relationship is linear, with the ordinate intercept nearly zero,  
 there is no high velocity flow effect.  
 V4 Transect: Drillhole 28



RNM, 01/30/07

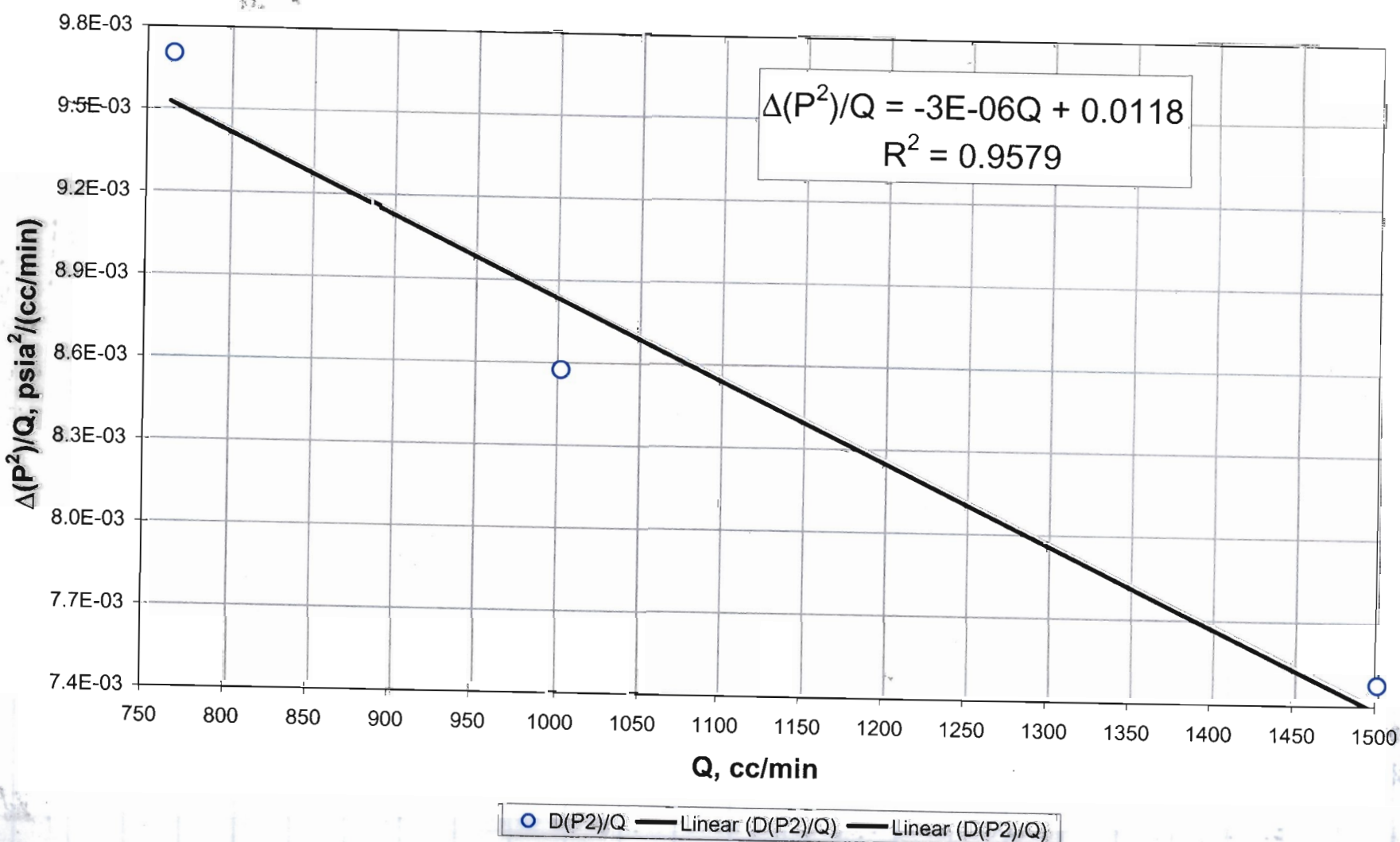
Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)  
V4 Transect: Drillhole 28

Run, 01/30/03

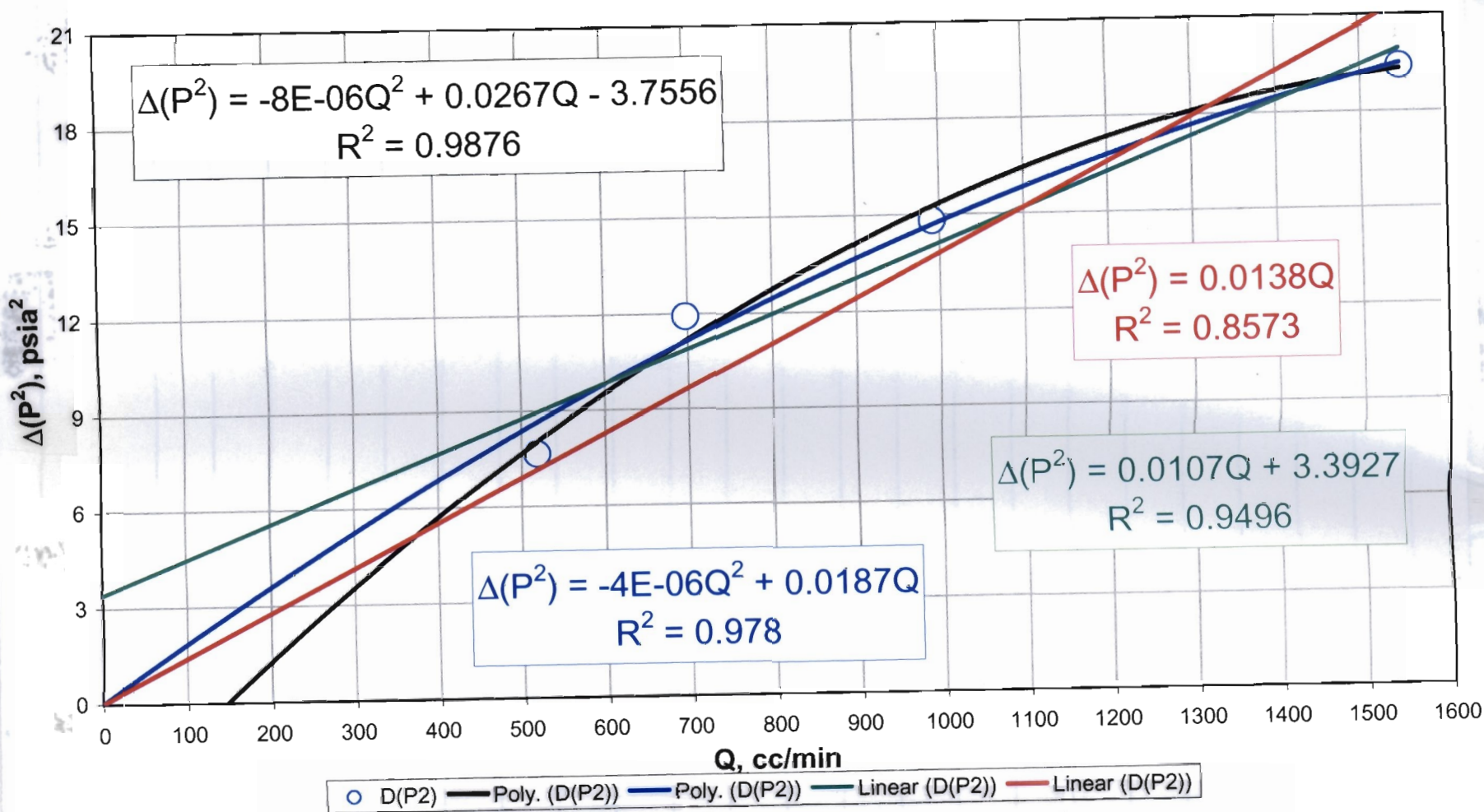


Final check for high velocity flow effects:  
High velocity flow effects are present when the slope is non-zero and positive.  
V4 Transect: Drillhole 28

Run, 01/30/03

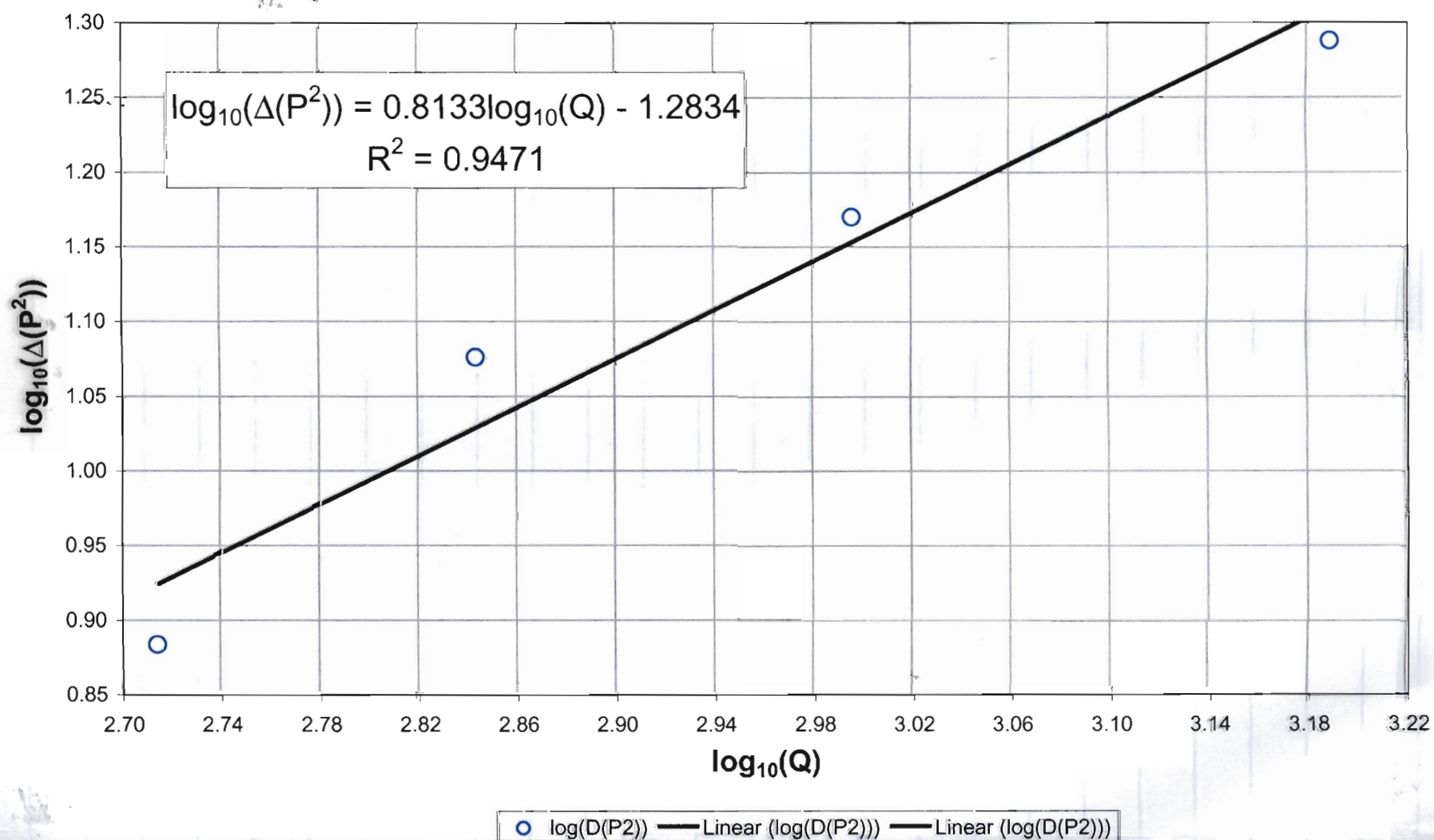


Relationship between steady-state differential pressures squared and flowrate:  
 If relationship is linear, with the ordinate intercept nearly zero,  
 there is no high velocity flow effect.  
 V4 Transect: Drillhole 29



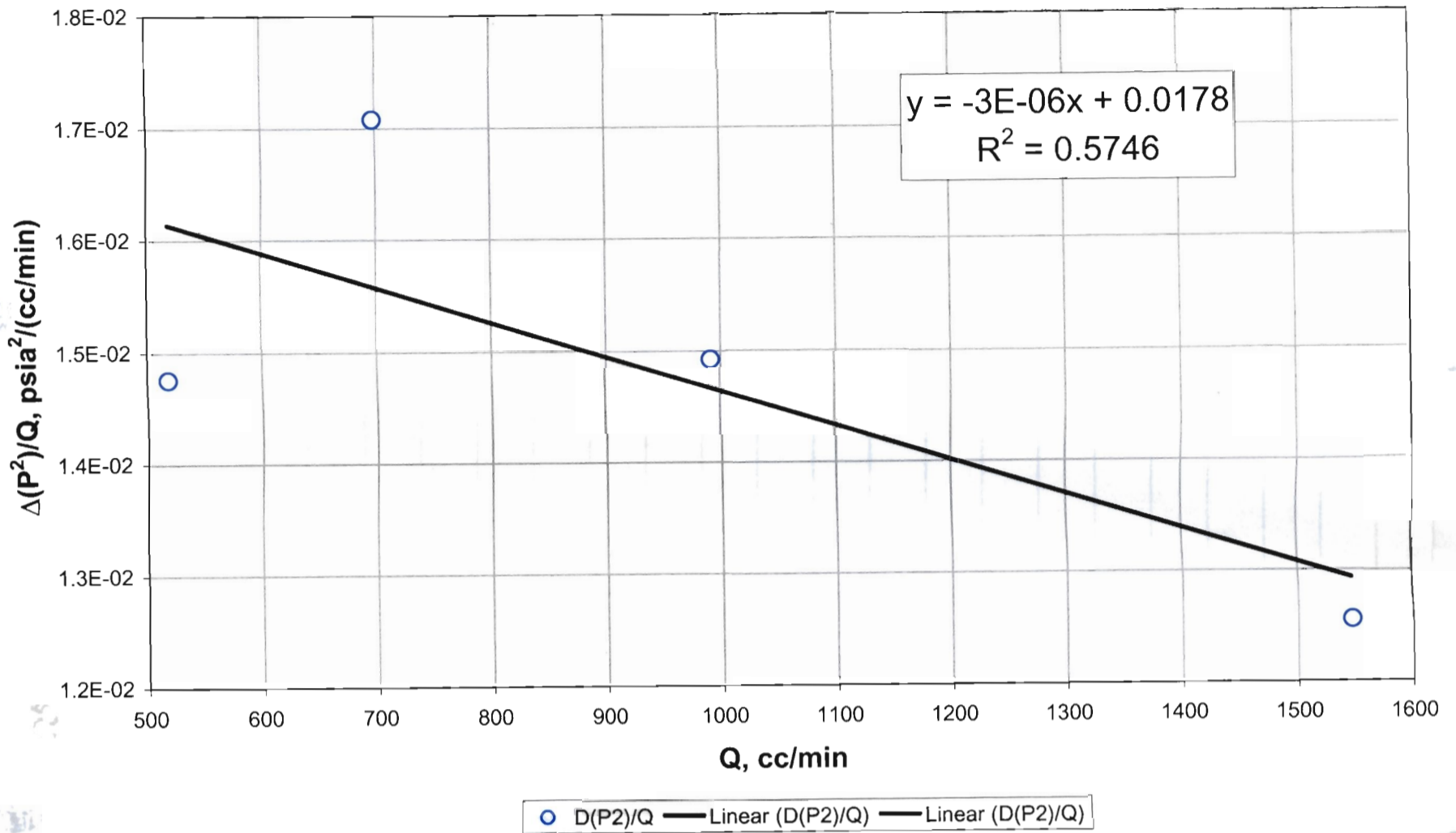
RMM, 01/30/03

Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of  
 high-velocity flow effects (when the slope is greater than unity)  
 V4 Transect: Drillhole 29

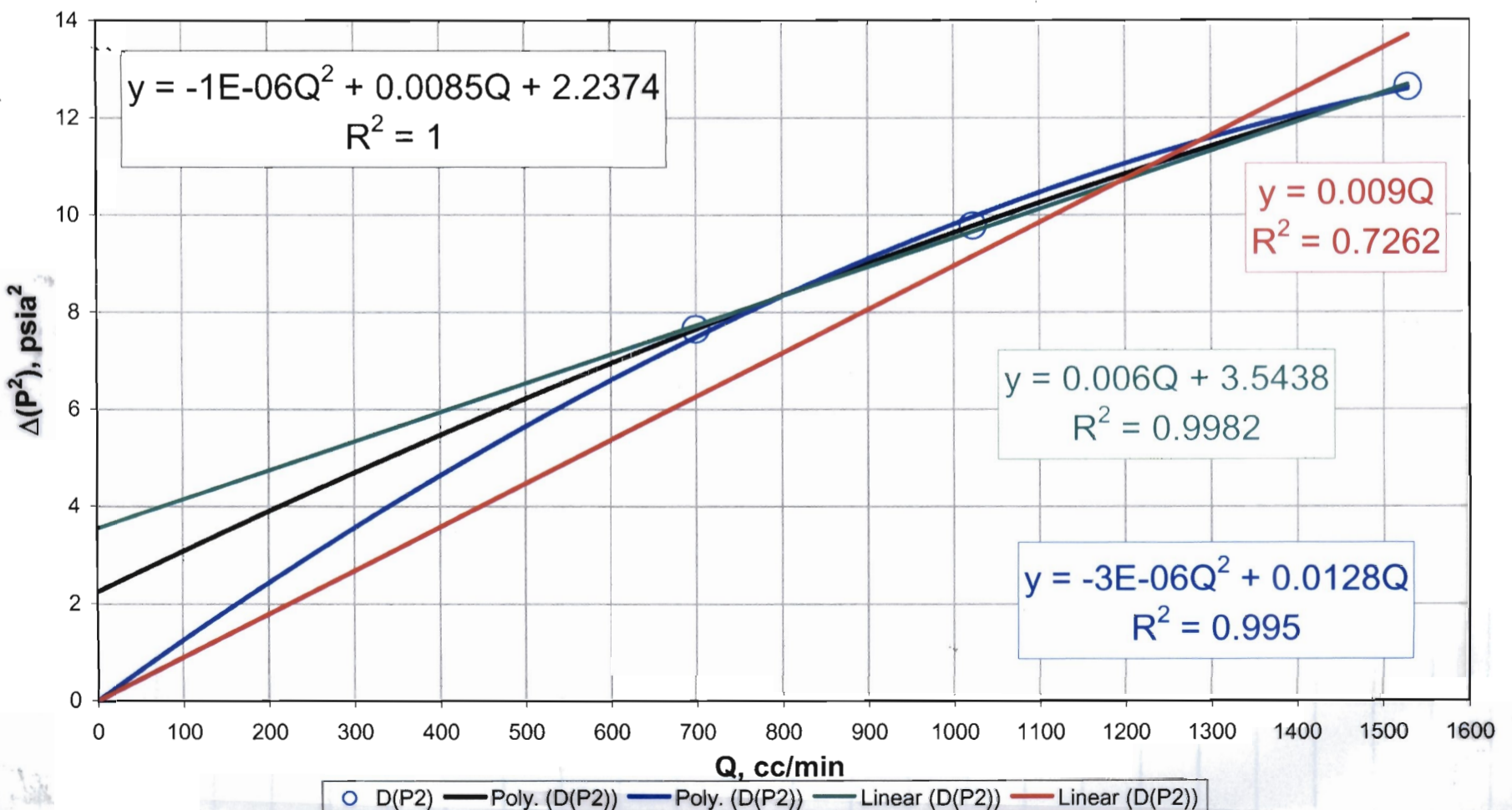


RMM, 01/30/03

Final check for high velocity flow effects:  
 High velocity flow effects are present when the slope is non-zero and positive.  
 V4 Transect: Drillhole 29

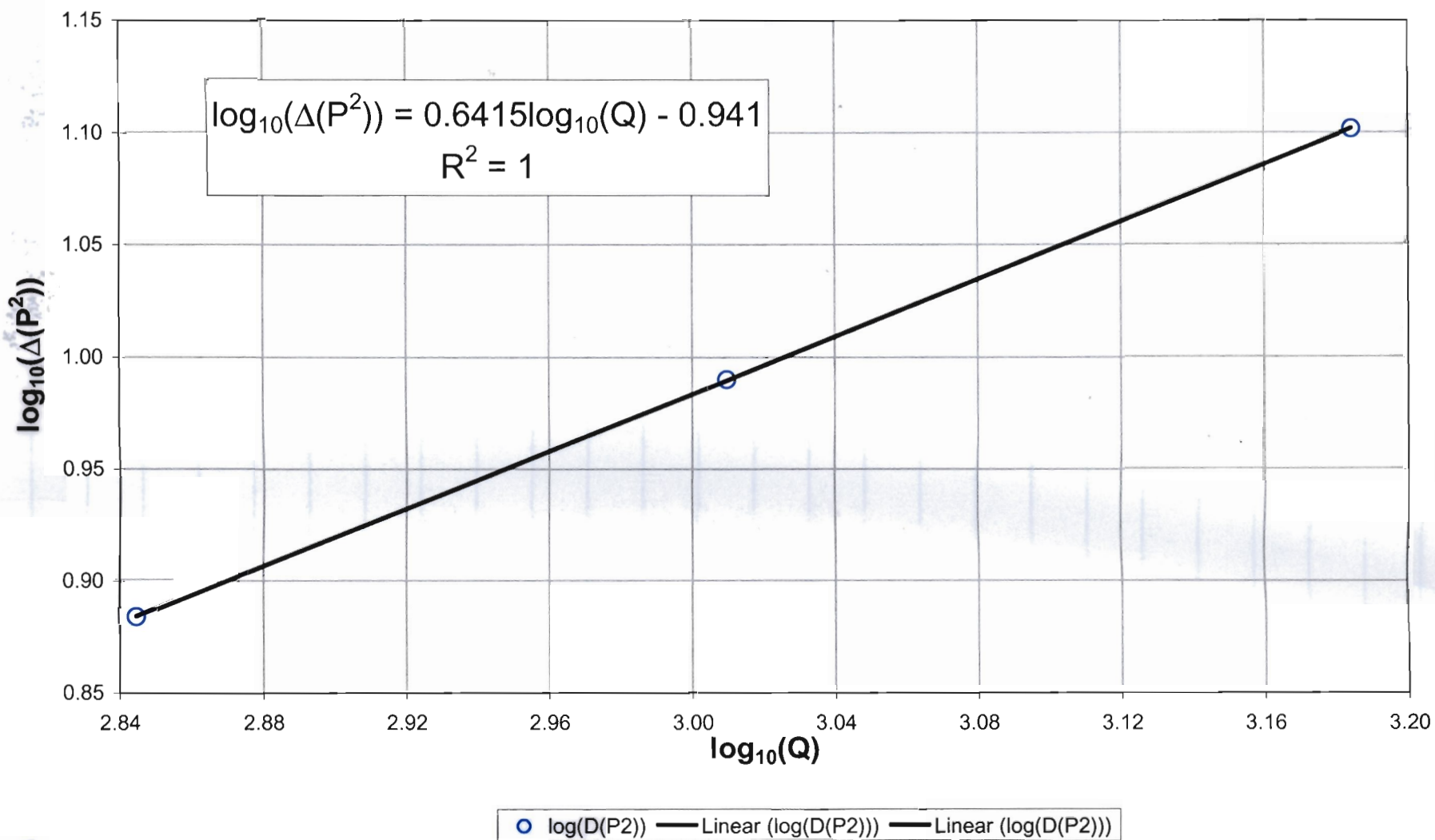


Relationship between steady-state differential pressures squared and flowrate:  
 If relationship is linear, with the ordinate intercept nearly zero,  
 there is no high velocity flow effect.  
 V4 Transect: Drillhole 30



Log-Log plot of differential pressures squared vs. flowrate--used to identify the presence of high-velocity flow effects (when the slope is greater than unity)

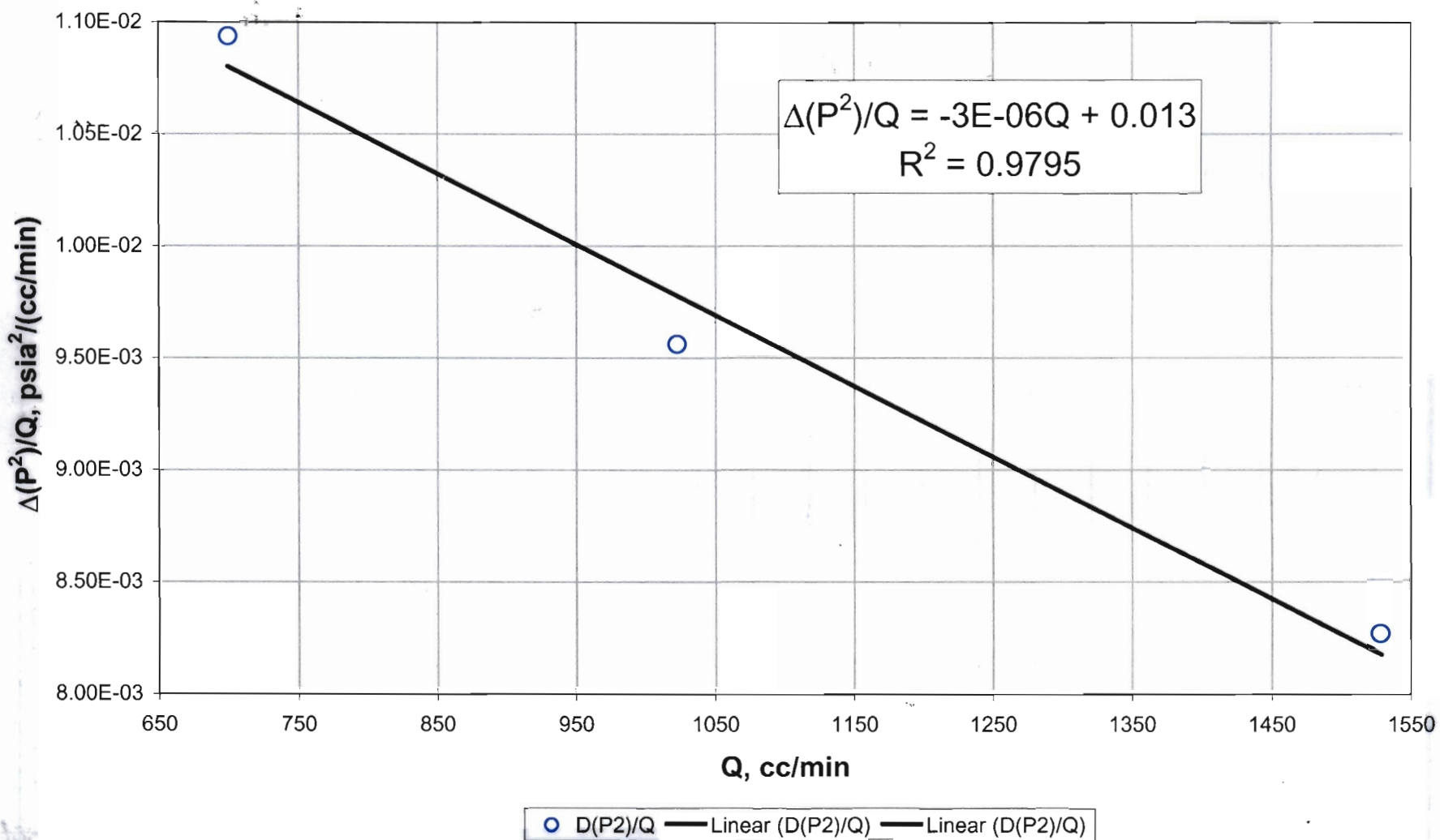
V4 Transect: Drillhole 30



RNM, 01/30/03

Final check for high velocity flow effects: High velocity flow effects are present when the slope is non-zero and positive.

V4 Transect: Drillhole 30



RNM, 01/30/03

The following is data analysis for transects D and H. This is an attempt to identify high velocity slow effects and then correct for HVF.

- If  $n < 1$ , then HVF (fully turbulent)
- If  $n = .990 - 1.1$ , then no HVF (fully Darcian)
- If  $n > 1.1$ , then no HVF (two phase flow)

Also,

$$Q = B \Delta (P^2)^n$$

$$\Delta (P^2)^n = \frac{Q}{B}$$

$$\Delta (P^2) = \left[ \frac{Q}{B} \right]^{1/n}$$

$$\Delta (P^2) = B^* Q^m = A Q^m$$

where  $B^* = 1/B^m$

$$m = 1/n$$

$m = 2 =$  fully turbulent

$m = 1 =$  Darcian

$m < 1 =$  two-phase

**D-transect**

D-10: A = .0868	D-9: A = .0648
= .0691	.0529
no HVF = .072	no HVF = .0604
= .074	$\bar{A} = .0594$
$\bar{A} = .076$	Darcian $n = 1.0436$
Darcian $n = 1.0059$	

RNM, 06/04/03

D-8: A = .0562	D-7: A = .0475
.0404	.0445
no HVF = .056	no HVF = .0452
.0576	.0478
.0626	$\bar{A} =$
$\bar{A} = .05456$	Darcian $n = .9966$
Darcian $n = 1.0256$	
D-6: A = .0531	D-5: A = .056
.0497	.0447
no HVF = .0522	.0512
.0533	HVF = .0383
$\bar{A} = .0521$	$\bar{A} = .04755$
Darcian $n = 1.0058$	$n = .8894$
	w/o LFD (low flow datums)
D-4: A = .0406	A = .0353
.0423	.0261
HVF = .0514	HVF = .0519
.0329	$\bar{A} = .0378$
$\bar{A} = .043175$	$n = 1.4574$
RNM oblation Klinkenberg $n_1 = .8685$	
w/o LFD	
A = .0243	

RNM, 06/04/03

D-3: A = .0596  
 .0489  
 HVF .0503  
 .0794  
 $\bar{A} = .0576$   
 Darcian n = 1.409

D-2: A = .0745  
 .0869  
 HVF .061  
 $\bar{A} = .0741$   
 n = .8631

D-1: A = .0477  
 .0425  
 HVF .0502  
 .0333  
 $\bar{A} = .0434$   
 n = .852

D0: A = .0736  
 .0584  
 HVF .0636  
 .0411  
 $\bar{A} = .0579$   
 n = .8385

D1: A = .0536  
 .0615  
 HVF .0369  
 .042  
 $\bar{A} = .0485$   
 n = .8871

D2: A = .0727  
 .0629  
 HVF .0452  
 $\bar{A} = .0603$   
 n = .8489

D3: A = .0281  
 .0523  
 HVF .062  
 .0371  
 $\bar{A} = .044875$   
 n = .8442

D4: A = .0356  
 .0678  
 .0488  
 HVF .0617  
 $\bar{A} = .0594$  Rnm, 06/05/03 .0535  
 n = .8076

Rnm/06/05/03

Rnm 06/06/03  
 D-5: A = .0112  
 .0314  
 HVF .0477  
 .0129  
 $\bar{A} = .0258$   
 n = .06424

D6: A = .0409  
 .0758  
 HVF .0623  
 .0477  
 $\bar{A} = .0567$   
 n = .8187

D7: A = .0255  
 .0623  
 HVF .085  
 .0351  
 $\bar{A} = .0520$   
 n = .7131

D8: A = .0347  
 .0382  
 HVF .0291  
 .0314  
 $\bar{A} = .0334$   
 n = .9189

D9: A = .0126  
 .0386  
 HVF .0584  
 .0135  
 A = .0308  
 n = .6237

D10: A = .0129  
 .0561  
 HVF .0408  
 .0177  
 $\bar{A} = .0319$   
 n = .6753

D11: A = .0251  
 .039  
 HVF .0444  
 .0337  
 $\bar{A} = .0356$   
 n = .8841

D12: A = .0176  
 .0475  
 HVF .0607  
 .0326  
 $\bar{A} = .0396$   
 n = .7892

Rnm, 06/06/03

D 13: A = .0389	D 14: A = .0417
.037	.0566
HVF .0394	HVF .061
.0354	.0523
$\bar{A} = .0352$	$\bar{A} = .0529$
n = .9437	n = .9729

D 15: A = .0220	D 16: A = .0238
.0363	.0375
HVF .0456	HVF .0461
.0256	.0282
$\bar{A} = .0324$	$\bar{A} = .0339$
n = .7838	n = .8043

D 17: A = .0486	D 18: A = .0542
.0628	.0412
HVF .0676	HVF .0812
.0603	$\bar{A} = .0587$
$\bar{A} = .0598$	n = .7651
n = .9449	

D 19: A = .0324	D 20: A = .0573
.0747	.0617
.0601	<sup>no</sup> HVF .0619
HVF .0417	.0664
$\bar{A} = .0522$	$\bar{A} =$
n = .7902	Darcian n = 1.0472

RNM , 06/23/03

D 21: A = .0401	D 22: A = .05
.0612	.0557
HVF .0728	HVF .0353
.0479	.0466
$\bar{A} = .0555$	$\bar{A} = .0469$
n = .8435	n = .8676

D 23: A = .0394	D 24: A = .0453
.0297	.0673
HVF .0423	HVF .0716
.0389	.0695
$\bar{A} = .0376$	$\bar{A} = .0634$
n = .9558	n = .9822

D 25: A = .0394	D 26: A = .0483
.0663	.0620
HVF .0594	no HVF .0631
.0532	HVF .0687
$\bar{A} = .0546$	$\bar{A} = .0605$
n = .9139	Darcian n = 1.0302

D 27: A = .0483	D 28: A = .0483
.0677	.0673
no HVF .0699	no HVF .0684
.0732	HVF .0763
$\bar{A} = .0648$	$\bar{A} = .0651$
Darcian n = 1.0031	Darcian n = 1.0367

RNM , 06/24/03



D 29 : A = .0361 .0673	D 30 : A = .0292 .0559
HVF .0607 .0567	HVF .0625 .0507
$\bar{A} = .0552$	$\bar{A} = .0496$
n = 9243	n = 927

<sup>RNM 06/24/03</sup> D 31 : A = .035 .0844	<sup>RNM 06/24/03</sup> D 32 : A = .0591 .1007
HVF .0714 .0549	HVF .1123 .0934
$\bar{A} = .0614$	$\bar{A} = .0914$
n = 4518	n = 9209

D 33 : A = .0208 .0537	D 34 : A = .0349 .0585
HVF .0634 .0406	HVF .0633 .0585
$\bar{A} = .0446$	$\bar{A} = .0538$
n = 4576	n = 967

D 35 : A = .0124 .0491	D 36 : A = .0167 .0491
HVF .0442 .0592	HVF .0474 .0634
.0184	.0257
$\bar{A} = .03586$	$\bar{A} = .04056$
n = 6743	n = 7273

RNM, 06/24/03

D 37 : A = .0226 .0754	D 38 : A = .0566 .0986
HVF .06 .0401	HVF .1154 .1043
$\bar{A} = .0495$	.0989
n = 7823	$\bar{A} = .0948$
	n = 9386

D 39 : A = .0717 .0711	D 40 : A = .0211 .0593
HVF .0565 .0207	HVF .0726 .0416
.0358	$\bar{A} = .0487$
$\bar{A} = .05116$	n = 8058
n = 7713	

D 41 : A = .0224 .0845	D 42 : A = .0352 .0877
HVF .071 .0538	HVF .1045 .0973
$\bar{A} = .0579$	.066
n = 8334	$\bar{A} = .0781$
	n = 8482

D 43 : A = .0309 .0798	D 44 : A = .0359 .1001
HVF .0947 .0721	HVF .0857 .0689
.0601	$\bar{A} = .0727$
$\bar{A} = .0675$	n = 8619
n = 8489	

RNM, 06/24/03

D 45: A = .0963  
 .1048  
 HVP .0911  
 .0374  
 .0766  
 $\bar{A} = .0812$   
 $n = .8887$

D 46: A = .0109  
 .0456  
 HVP .0624  
 .0226  
 $\bar{A} = .0354$   
 $n = .6993$

D 47: A = .0507  
 .1311  
 HVP .1651  
 .1294  
 .0831  
 $\bar{A} = .1119$   
 $n = .7764$

D 48: A = .0688  
 .1594  
~~HVP~~ .1261  
 .1921  
 .1141  
 $\bar{A} = .1321$   
 $n = .8279$

D 49: A = .0788  
 .1764  
 HVP .1602  
 .134  
 .1408  
 $\bar{A} = .138$   
 $n = .9387$

D 50: A = .0451  
 .1213  
 HVP .1477  
 .1168  
 .0847  
 $\bar{A} = .1031$   
 $n = .8173$

D 51: A = .0768  
 .1297  
 No .1247  
 HVP .1364  
 $\bar{A} = .117$   
 $n = 1.013$

D 52: A = .076  
 .1432  
 HVP .159  
 .1338  
 $\bar{A} = .128$   
 $n = .926$

D 53: A = .0822  
 .1565  
 HVP .1773  
 .1402  
 $\bar{A} = .1391$   
 $n = .895$

D 54: A = .0942  
 .0509  
 HVP .1603  
 .1567  
 $\bar{A} = .1405$   
 $n = .9841$

D 55: A = .0584  
 .1072  
 HVP .0885  
 .1169  
 .1064  
 $\bar{A} = .09548$   
 $n = .9654$

D 56: A = .055  
 .1063  
 HVP .1243  
 .1037  
 .0962  
 $\bar{A} = .0951$   
 $n = 8622$

D 57: A = .0468  
 .1005  
 HVP .1208  
 .0764  
 $\bar{A} = .0861$   
 $n = .83$

D 58: A = .0533  
 .1121  
 HVP .1324  
 .1274  
 .0892  
 $\bar{A} = .1029$   
 $n = .8511$

D 59: A = .0291  
 .0725  
 HVP .0847  
 .0592  
 $\bar{A} = .0614$   
 $n = .8598$

D 60: A = .0454  
 .0868  
 HVP .0939  
 .087  
 $\bar{A} = .0783$   
 $n = .9757$

D 62 : A = .0686  
 .1311  
 HUF .1414  
 .1322  
 $\bar{A} = .1183$   
 n = .9673

D 62 : A = .0654  
 .01398  
 HUF .01539  
 .01123  
 .1323  
 $\bar{A} = .1207$   
 n = .957

D 63 : A = .064  
 .1342  
 HUF .1554  
 .1124  
 $\bar{A} = .1162$   
 n = .8749

D 64 : A = .0596  
 .1279  
 HUF .141  
 .1215  
 .114  
 $\bar{A} = .1128$   
 n = .9522

D 65 : A = .0185  
 .0463  
 HUF .0555  
 .0433  
 .034  
 $\bar{A} = .03952$   
 n = .8372

D 66 : A = .0428  
 .0905  
 HUF .1039  
 .0696  
 .0762  
 $\bar{A} = .0766$   
 n = .8933

D 67 : A = .0619  
 .1345  
 HUF .1579  
 .109  
 $\bar{A} = .1158$   
 n = .8516

D 68 : A = .0445  
 .0892  
 HUF .1029  
 .0257  
 $\bar{A} = .0781$   
 n = .8776

D 69 : A = .0336  
 .0847  
 HUF .0996  
 .0968  
 .0673  
 $\bar{A} = .0764$   
 n = .8584

D 70 : A = .0623  
 .1289  
 HUF .1453  
 .1161  
 $\bar{A} = .1132$   
 n = .9091

D 71 : A = .0513  
 .1109  
 HUF .1329  
 .126  
 .0844  
 $\bar{A} = .1011$   
 n = .8338

D 72 : A = .0539  
 .1141  
 HUF .0988  
 .1332  
 .0918  
 $\bar{A} = .0984$   
 n = .8688

D 73 : A = .0551  
 .0707  
 no .0737  
 HUF .073  
 $\bar{A} = .068$   
 Darcian n = 1.0221

D 74 : A = .0657  
 .0907  
 no .096  
 HUF .091  
 $\bar{A} =$   
 Darcian n = 1.0002

D 75 : A = .0627  
 .0911  
 no .0627  
 HUF .0945  
 .0971  
 $\bar{A} =$

D 76 : A = .057  
 no .0647  
 HUF .0854  
 Darcian .0894  
 .0896  
 $\bar{A} =$

D 77 : A = .0408  
 No .0706  
 .0744  
 HVP .0731  
 .0745  
 Darcian n = 1.0067

D 78 : A = .0749  
 .1307  
 HVP .1204  
 .0957  
 .119  
 $\bar{A} = .1207$   
 n = .9628

D 79 : A = .0501  
 .0861  
 HVP .0934  
 .0676  
 .0859  
 $\bar{A} = .07662$   
 n = .9694

D 80 : A = .0586  
 .1034  
 HVP .1184  
 .0677  
 .0867  
 $\bar{A} = .087$   
 n = .8864

D 81 : A = .0441  
 .0733  
 HVP .0787  
 .0751  
 $\bar{A} = .0678$   
 n = .9726

D 82 : A = .0736  
 .0782  
 No .0445  
 HVP .0752  
 .0768  
 Darcian n = .9929

D 83 : A = .0953  
 No .1005  
 HVP .0587  
 .1008  
 Darcian n = .9968

D 84 : A = .0825  
 .1271  
 HVP .1376  
 .1221  
 .126  
 $\bar{A} = .1191$   
 n = .9573

D 85 : A = .0492  
 No .0781  
 HVP .0748  
 .0812  
 .0793  
 Darcian n = 1.0134

D 86 : A = .0694  
 .1106  
 HVP .1211  
 .0956  
 .1086  
 $\bar{A} = .1007$   
 n = .946

D 87 : A = .0718  
 .1223  
 HVP .1148  
 .1117  
 .119  
 $\bar{A} = .1079$   
 n = .9853

D 88 : A = .0669  
 .098  
 HVP .1037  
 .112  
 .1034  
 $\bar{A} = .0968$   
 n = .9642

D 89 : A = .0499  
 No .0854  
 HVP .0814  
 .0864  
 Darcian n = <sup>2 runs at 103</sup> ~~.9642~~ .9944

D 90 : A = .0942  
 .0567  
 HVP .0929  
 .0999  
 $\bar{A} = .0859$   
 n = .9647

D 91 : A = .0552  
 .0877  
 No .092  
 HVP .094  
 Darcian n = 1.0034

D 92 : A = .0602  
 .1012  
 HVP .108  
 .1044  
 $\bar{A} = .09345$   
 n = .9833

D 93 : A = .0599  
 .1015  
 HVP .1081  
 .1058  
 $\bar{A} = .0938$   
 $n = .9842$

D 94 : A = .0727  
 .1217  
 HVP .1356  
 .1339  
 .1126  
 $\bar{A} = .1153$   
 $n = .9194$

D 95 : A = .0474  
 .0.1225  
 HVP .1361  
 .1134  
 $\bar{A} = .1049$   
 $n = .9854$

D 96 : A = .0297  
 .0798  
 HVP .1026  
 .0513  
 $\bar{A} = .0659$   
 $n = 7575$

D 97 : A = .0528  
 .1274  
 HVP .1535  
 .1528  
 .0950  
 $\bar{A} = .1163$   
 $n = .8284$

D 98 : A = .0586  
 .0713  
 HVP .1172  
 .1352  
 .0952  
 $\bar{A} = .0955$   
 $n = .8862$

D 99 : A = .0405  
 .0425  
 HVP .0811  
 .0932  
 .0659  
 $\bar{A} = .0646$   
 $n = .8907$

D 100 : A = .0367  
 .0834  
 HVP .0709  
 .0947  
 .0722  
 $\bar{A} = .0716$   
 $n = .8093$

RNM, 07/01/03

D 101 : A = .0621  
 .1592  
 HVP .1356  
 .1059  
 .1062  
 $\bar{A} = .1138$   
 $n = .8623$

D 102 : A = .0386  
 A = .0997  
 HVP .1153  
 .0984  
 .0819  
 $\bar{A} = .0868$   
 $n = .8835$

D 103 : A = .0178  
 .0538  
 HVP .0535  
 .0593  
 .0489  
 $\bar{A} = .0454$   
 $n = .0467$

D 104 : A = .0413  
 .0959  
 HVP .0824  
 .1168  
 .067  
 $\bar{A} = .0807$   
 $n = .8163$

D 105 : A = .0313  
 .0625  
 HVP .0725  
 .0466  
 $\bar{A} = .0532$   
 $n = .8705$

D 106 : A = .0333  
 .0888  
 HVP .1044  
 .0821  
 .0682  
 $\bar{A} = .0754$   
 $n = .8612$

D 107 : A = .0649  
 .1348  
 HVP .1701  
 .1096  
 .0866  
 $\bar{A} = .1132$   
 $n = .7783$

D 108 : A = .0517  
 .1071  
 HVP .0629  
 .1275  
 .0781  
 $\bar{A} = .0855$   
 $n = .8425$

RNM, 07/01/03

D 109 : A = .0528  
 .0753  
 HVP .1093  
 .1282  
 .0641  
 $\bar{A} = .0899$   
 $n = .8624$

D 110 : A = .0328  
 .0468  
 HVP .0962  
 .0111  
 .0733  
 $\bar{A} = .0730$   
 $n = .8818$

D 111 : A = .0565  
 .075  
 HVP .1326  
 .1488  
 .1146  
 $\bar{A} = .1055$   
 $n = .9297$

D 112 : A = .0401  
 .0761  
 HVP .1309  
 .1077  
 .0717  
 $\bar{A} = .0853$   
 $n = .8168$

D 113 : A = .1074  
 .126  
 HVP .0442  
 .0666  
 .0798  
 $\bar{A} = .0848$   
 $n = .8613$

D 114 : A = .031  
 .0823  
 HVP .1033  
 .0411  
 .0476  
 $\bar{A} = .061$   
 $n = 7737$

D 115 : A = .0437  
 .1148  
 HVP .1393  
 .0866  
 .0774  
 $\bar{A} = .0924$   
 $n = .819$

D 116 : A = .0445  
 .115  
 HVP .1413  
 .0778  
 .0742  
 $\bar{A} = .0906$   
 $n = .8035$

RNM, 07/01/03

D 117 : A = .0664  
 .0485  
 HVP .0968  
 .1151  
 $\bar{A} = .0817$   
 $n = .8342$

D 118 : A = .0736  
 .0497  
 HVP .0426  
 .111  
 .1341  
 $\bar{A} = .0822$   
 $n = .8193$

D 119 : A = .0632  
 .0363  
 HVP .1002  
 .1233  
 .0657  
 $\bar{A} = .0777$   
 $n = .8005$

D 120 : A = .0308  
 .0104  
 HVP .062  
 .08  
 .0738  
 $\bar{A} = .0514$   
 $n = 7358$

D 121 : A = .0556  
 .0393  
 HVP .0839  
 .0998  
 $\bar{A} = .0697$   
 $n = .8293$

D 122 : A = .0726  
 .10914  
 HVP .045  
 .1213  
 .1529  
 $\bar{A} = .0966$   
 $n = 7754$

D 123 : A = .0913  
 .0564  
 .1448  
 .1789  
 .0983  
 $\bar{A} = .1139$   
 $n = .7958$

D 124 : A = .0776  
 .0405  
 HVP .12  
 .1474  
 .1176  
 $\bar{A} = .1006$   
 $n = .8015$

RNM, 07/01/03

D125 : A = .0384 .0264 HVP .0645 .0778 $\bar{A} = .0518$ n = .8013	H-10 : A = .0561 .0346 HVP .0566 .0654 .0595 $\bar{A} = .0522$ n = .9705
H-9 : A = .0738 .041 HVP .0726 .0782 $\bar{A} = .0664$ n = 9723	H-8 : A = .0802 .0518 HVP .0728 .0826 .0695 $\bar{A} = .0724$ n = .9877
H-7 : A = .0718 no .0664 HVP .0456 .0668 .0698 Decision n = .10275	H-6 : A = .0185 .0256 HVP .0281 .0241 $\bar{A} = .0241$ n = .9204
H-5 : A = .0435 .0231	(cont.) H-5 : A =

H-4 : A = .022 .0196 Klinkenberg .0185 .0201 $\bar{A} = .02005$ n1 = .9458 A = .0185 .0188 .0280 $\bar{A} = .0201$ n2 = 1.6128	H-3 : A = .0154 .0367 HVP .0437 .0411 .0282 $\bar{A} = .0334$ n = .8432
H-2 : A = .016 .0374 HVP .0439 .0298 $\bar{A} = .0318$ n = .8578	H-1 : A = .0175 .0379 HVP .0442 .0312 $\bar{A} = .0327$ n = .868
H0 : A = .0187 .0395 HVP .0452 .0391 $\bar{A} = .0344$ n = .8912	H1 : A = .0217 .042 HVP .049 .0377 .0341 $\bar{A} = .0369$ n = .8676

H 2 : A = .0138  
 .0324  
 HVP .0341  
 .0243  
 $\bar{A} = .0274$   
 $n = .8214$

H 3 : A = <sup>RNM 07/07/03</sup> .0377  
 .0319  
 no .0265  
 HVP .0353  
 .0433  
 .0372

Two Phase Flow  $n = 1.1049$

H 4 : A = .0311  
 no .0412  
 HVP .0414  
 .0471  
 $\bar{A} =$

H 5 : A = .039  
 no .0388  
 HVP .0296  
 .0445  
 .043

Darcian  $n = 1.0562$

Darcian  $n = 1.0519$

H 6 : A = .0312  
 no .0503  
 HVP .0456  
 .0536  
 .0521

H 7 : A = .0373  
 .056  
 HVP .0601  
 .0358  
 .0561

Darcian  $n = .9849$

A = .0491

$n = .9775$

H 8 : A = .0267  
<sup>RNM 07/07/03</sup> .0501  
 HVP .0468  
 .0505  
 .0468  
 $\bar{A} = .04418$   
 $n = .4698$

H 9 : A = .017  
 .0297  
 HVP .0354  
~~.029~~ <sup>RNM 07/07/03</sup>  
 .0232  
 $\bar{A} = .0274$  <sup>RNM 07/07/03</sup> .0263  
 $n = .8412$

RNM, 07/07/03

H 10 : A = .03  
 .0611  
 HVP .068  
 .0572  
 $\bar{A} = .0541$   
 $n = .9279$

H 11 : A = .0224  
 .0408  
 HVP .0443  
 .0337  
 .0403  
 $\bar{A} = .0363$   
 $\bar{A} = .9712$

H 12 : A = .0209  
 .0527  
 HVP .0585  
 .0498  
 $\bar{A} = .455$   
 $n = .9216$

H 13 : A = .0577  
 .0691  
 HVP .0756  
 .0667  
 $\bar{A} = .0633$   
 $n = .9496$

H 14 : A = .0243  
 .0491  
 HVP .0549  
 .0451  
 $\bar{A} = .0434$   
 $n = .9237$

H 15 : A = .03  
 .0626  
 HVP .0679  
 .0623  
 $\bar{A} = .0557$   
 $n = .9596$

H 16 : A = .0271  
 .0558  
 HVP .0616  
 .0529  
 $\bar{A} = .0494$   
 $n = .9389$

H 17 : A = .0453  
 .0911  
 HVP .0997  
 .0888  
 $\bar{A} = .0812$   
 $n = .9473$

RNM, 07/08/03



H 18 : A = .0387	H 19 : A = .026
.096	HVP .0649
HVP .1081	.0722
.0991	.0636
.0867	.0492
$\bar{A} = .0857$	$\bar{A} = .0562$
n = 9209	n = 8462
H 20 : A = .026	H 21 : A = .0221
.0634	.0525
HVP .0731	HVP .0459
.0704	.0627
.0527	.0392
$\bar{A} = .0571$	$\bar{A} = .0445$
n = 884	n = 8398
H 22 : A = .0229	H 23 : A = .0139
.0575	.0404
HVP .0666	HVP .0471
.0663	.0324
.047	$\bar{A} = .0335$
$\bar{A} = .0521$	n = 8648
n = 878	
H 24 : A = .0267	H 25 : A = .0305
.0679	.0493
HVP .08	HVP .0525
.0538	.0485
$\bar{A} = .0571$	.0512
n = 8487	$\bar{A} = .0464$
	n = 9886

RNM 07/08/03

H 26 : A = .0175	H 27 : A = .0327
.0308	.0601
HVP .0346	HVP .067
.0344	.0509
.0278	.0552
$\bar{A} = .0290$	$\bar{A} = .0532$
n = 9073	n = 9284
A = .0347	
Klinkenberg .0336	
.0278	
$\bar{A} = .0320$	
n = 9518	
H 28 : A = .0324	H 29 : A = .042
.0621	.0769
HVP .0685	HVP .0857
.0611	.0659
.0598	.0711
$\bar{A} = .0574$	$\bar{A} = .0683$
n = 9445	n = 9286
H 30 : A = .0287	H 31 : A = .0663
.0597	.1446
HVP .0666	HVP .162
.0554	.1317
$\bar{A} = .0526$	$\bar{A} = .1262$
n = 9911	n = 9115

RNM 07/08/03

H 32: A = .0558

.1045

HUF .1183

.088

 $\bar{A} = .0917$ 

n = 9104

H 33: A = .0316

.0389

HUF .0512

.0556

.0506

 $\bar{A} = .0456$ 

n = 9641

H 34: A = .0556

no .0925

HUF .0964

.0959

.0962

Darcian n = 9903

H 35: A = .0483

no .0808

HUF .0854

.0859

Darcian n = 9901

H 36: A = .0487

.0795

HUF .0801

.0793

 $\bar{A} = .0848$  $\bar{A} = .0757$ 

n = 9606

H 37: A = .0402

.0679

HUF .0733

.0652

.0688

 $\bar{A} = .06308$ 

n = 9711

H 38: A = .0537

.0949

HUF .1041

.0942

.0919

 $\bar{A} = .0478$ 

n = 9486

H 39: A = .0176

.0317

HUF .035

.0306

 $\bar{A} = .0287$ 

n = 9267

H 40: A = .0488

.0939

HUF .1034

.0927

.0887

 $\bar{A} = .0856$ 

n = 9396

H 41: A = .0328

.0677

HUF .0738

.0831

 $\bar{A} = .0644$ 

n = 957

H 42: A = .0426

.0899

HUF .1016

.0803

 $\bar{A} = .0786$ 

n = 9067

H 43: A = .0473

.1028

HUF .1128

.0996

 $\bar{A} = .0906$ 

n = 9376

H 44: A = .0612

.1347

HUF .1513

.1221

 $\bar{A} = .1173$ 

n = 9107

H 45: A = .0201

.0546

HUF .0652

.0626

.0411

 $\bar{A} = .0487$ 

n = 8402

H 46: A = .0215

.0544

HUF .0646

.0416

 $\bar{A} = .0455$ 

n = 8444

H 47: A = .0043

.0291

Klinkenberg .049

.0549

.0056

n = 5623

RNM, 07/08/03

RNM, 07/09/03

H 48 : A = .0101

.0444

HVF .0609

~~.0583~~ <sup>RNM 07/09/03</sup>

.0203

$\bar{A} =$  ~~.0388~~ <sup>RNM 07/09/03</sup> .0339

n = .6926

H 49 : A = .0078

.0389

HVF .0529

.0188

$\bar{A} =$  .0296

n = 7001

H 50 : A = .0187

.0664

HVF .0831

.0806

.0482

$\bar{A} =$  .0582

n = .784

H 51 : A = .0385

.0828

HVF .0958

.0695

$\bar{A} =$  .0717

n = .8777

H 52 : A = .0383

.0767

HVF .0848

.0814

.0727

$\bar{A} =$  .0709

n = .9402

H 53 : A = .0528

.1307

HVF .1528

.1064

$\bar{A} =$  .1107

n = .8549

H 54 : A = .0381

.068

HVF .0742

.051

.0656

$\bar{A} =$  .0594

n = .9649

H 55 : A = .0314

.0706

HVF .0822

.0582

$\bar{A} =$  .0606

n = .8668

RNM, 07/09/03

H 56 : A = .0451

.103

HVF .1242

.0768

$\bar{A} =$  .0873

n = .827

H 57 : A = .0321

.0678

HVF .0769

.0594

$\bar{A} =$  .05905

n = .9102

H 58 : A = .0142

.0337

HVF .0403

.0255

$\bar{A} =$  .0284

n = .8365

H 59 : A = .056

.0292

HVF .0653

.0786

.0476

$\bar{A} =$  .0553

n = .83

H 60 : A = .0259

.0736

HVF .0868

.0542

$\bar{A} =$  .0606

n = .8261

H 61 : A = .0487

.1357

HVF .1148

.1102

.0888

$\bar{A} =$  .0996

n = .8539

H 62 : A = .0472

n = .0511

HVF .0507

.0552

Descian n = 1.0634

H 63 : A = .0635

n = .0799

HVF .0814

.086

Descian n = 1.0462

RNM, 07/09/03

H 64 : A = .0537	H 65 : A = .042
No .0701	No .0632
HVP .0791	HVP .0603
.0502	.0471
Darcian n = 1.0234	Darcian N = 1.0097
H 66 : A = .0737	H 67 : A = .0528
No .1091	.0795
HVP .1143	HVP .0845
.1138	.0819
.1163	$\bar{A} = .0747$
$\bar{A} = .1054$	n = 9798
Darcian n = 1.0043	
H 68 : A = .0445	H 69 : A = .0265
No .0689	.045
HVP .0725	HVP .0485
.0736	.0421
Darcian N = 9981	.045
	$\bar{A} = .0414$
	n = 9754
H 70 : A = .0212	H 71 : A = .0337
.038	.0641
HVP .0407	HVP .0973
.0301	.0572
$\bar{A} = .0348$	.0582
n = 9836	$\bar{A} = .0529$
	n = 9163

RNM, 07/10/03

H 72 : A = .0373	H 73 : A = .0466
.0679	.0915
HVP .0738	HVP .01049
.0669	.079
$\bar{A} = .0615$	$\bar{A} = .0805$
n = 9529	n = 8841
H 74 : A = .0331	H 75 : A = .026
.0768	.0211
HVP .0878	HVP .0195
.0664	.022
$\bar{A} = .0660$	$\bar{A} = .0222$
n = 8876	n = 8662
	A = .0148
	Klinkenberg .0213
	.0323
	$\bar{A} = .0228$
	n = 1.5483
H 76 : A = .0133	H 77 : A = .0213
.0291	.0614
HVP .0384	HVP .0758
.0178	.042
$\bar{A} = .0247$	$\bar{A} = .0501$
n = 7325	n = 7987

RNM, 07/10/03

H 78 : A = .0288  
 .0755  
 HUF .0909  
 .055  
 A = .0626  
 n = 8299

H 80 : A = .0336  
 .082  
 HUF .0979  
 .0727  
 .0611  
 $\bar{A}$  = .0695  
 n = 8419

H 82 : A = .0309  
 .0798  
 HUF .0939  
 .0769  
 .062  
 $\bar{A}$  = .0687  
 n = 8105

H 84 : A = .05570  
 .1176  
 HUF .1351  
 .1001  
 $\bar{A}$  = .1021  
 n = 8828

H 79 : A = .0378  
 .0992  
 HUF .1194  
 .0735  
 $\bar{A}$  = .8248  
 n = 8265

H 81 : A = .0366  
 .0971  
 HUF .1163  
 .0727  
 $\bar{A}$  = .0807  
 n = 8362

H 83 : A = .0221  
 .0934  
 HUF .1166  
 .061  
 $\bar{A}$  = .0733  
 n = 782

H 85 : A = .0528  
 .1257  
 HUF .1436  
 .1334  
 .1086  
 $\bar{A}$  = .1128  
 n = 8981

RUM, 07/10/03

H 86 : A = .1035  
 .0908  
 HUF .1074  
 .0719  
 $\bar{A}$  = .0763  
 n = 8413

H 88 : A = .0424  
 .0979  
 HUF .1144  
 .08  
 $\bar{A}$  = .0837  
 n = 8614

H 90 : A = .0403  
 .1026  
 HUF .1072  
 .0764  
 $\bar{A}$  = .0791  
 n = 8804

H 92 : A = .0318  
 .075  
 HUF .0864  
 .0632  
 $\bar{A}$  = .0641  
 n = 8795

RUM, 07/14/03

H 87 : A = .0578  
 .1323  
 HUF .1466  
 .1245  
 $\bar{A}$  = .1153  
 n = 9333

H 89 : A = .0509  
 .1077  
 HUF .12  
 .1094  
 .0909  
 $\bar{A}$  = .0976  
 n = ~~9392~~ <sup>RUM, 07/14/03</sup> 9323

H 91 : A = .0497  
 .1078  
 HUF .1254  
 .0951  
 .0878  
 $\bar{A}$  = .0932  
 n = 8745

H 93 : A = .0243  
 .0469  
 HUF .0544  
 .0392  
 .0384  
 A = .0406  
 n = 876

H 78 : A = .0288  
 .0755  
 HUF .0909  
 .055  
 A = .0626  
 n = .8299

H 80 : A = .0336  
 .082  
 HUF .0979  
 .0787  
 .0611  
 A = .0695  
 n = .8419

H 82 : A = .0309  
 .0798  
 HUF .0939  
 .0769  
 .062  
 A = .0687  
 n = .8605

H 84 : A = .05570  
 .1176  
 HUF .1351  
 .1001  
 A = .1021  
 n = .8838

H 79 : A = .0378  
 .0992  
 HUF .1194  
 .0735  
 A = .8248  
 n = 8265

H 81 : A = .0366  
 .0971  
 HUF .1163  
 .0787  
 A = .0807  
 n = .0362

H 83 : A = .0821  
 .0934  
 HUF .1166  
 .081  
 A = .0733  
 n = .282

H 85 : A = .0528  
 .1257  
 HUF .1436  
 .1334  
 .1086  
 A = .1128  
 n = .8981

H 86 : A = .1035  
 .0908  
 HUF .1074  
 .0719  
 A = .0763  
 n = .8413

H 88 : A = .0424  
 .0979  
 HUF .1144  
 .08  
 A = .0837  
 n = .8614

H 90 : A = .0403  
 .1026  
 HUF .1072  
 .0764  
 A = .0791  
 n = .8804

H 92 : A = .0318  
 .075  
 HUF .0864  
 .0632  
 A = .0641  
 n = .8795

H 87 : A = .0578  
 .1323  
 HUF .1466  
 .1245  
 A = .1153  
 n = .9333

H 89 : A = .0509  
 .1077  
 HUF .12  
 .1094  
 .0989  
 A = .0976  
 n = <sup>RNM, 07/14/03</sup> .9323

H 91 : A = .0497  
 .1078  
 HUF .1254  
 .0951  
 .0878  
 A = .0932  
 n = .8745

H 93 : A = .0243  
 .0469  
 HUF .0544  
 .0392  
 .0384  
 A = .0406  
 n = .876

H 94: A = .0153  
 .0353  
 HVP .0413  
 .0283  
 $\bar{A}$  = .03005  
 n = .8594

H 95: A = .0275  
 .0621  
 HVP .0716  
 .071  
 .0522  
 $\bar{A}$  = .0569  
 n = .8631

H 96: A = .0373  
 .0707  
 HVP .0822  
 .0383  
 .0555  
 $\bar{A}$  = .0568  
 n = .8723

H 97: A = .0445  
 .0831  
 HVP .0949  
 .0676  
 $\bar{A}$  = .0725  
 n = .8922

H 98: A = .0341  
 .0614  
 .0687  
 .0532  
 $\bar{A}$  = .0544  
 n = .9271

H 99: A = .0685  
 .0453  
 HVP .0777  
 .087  
 $\bar{A}$  = .0691  
 n = .9246

H 100: A = .0255  
 HVP .0827  
 .0996  
 .061  
 $\bar{A}$  = .0672  
 n = .8086

H 101: A = .0426  
 .4012  
 HVP .1194  
 .0784  
 $\bar{A}$  = .0854  
 n = .8553

H 102: A = .0448  
 .0831  
 HVP .0984  
 .0613  
 $\bar{A}$  = .0719  
 n = .844

H 103: A = .0442  
 .0964  
 HVP .1091  
 .0836  
 $\bar{A}$  = .0833  
 n = .9182

H 104: A = .0265  
 .0536  
 HVP .0593  
 .0495  
 $\bar{A}$  = .0472  
 n = .4552

H 105: A = .0208  
 .0458  
 HVP .0542  
 .0341  
 $\bar{A}$  = .0387  
 n = .8521

H 106: A = .0489  
 .0927  
 HVP .106  
 .0503  
 .0767  
 $\bar{A}$  = .0749  
 n = .8974

H 107: A = .0493  
 .089  
 HVP .1009  
 .0739  
 $\bar{A}$  = .0783  
 n = .9071

H 108: A = .0635  
 .1118  
 HVP .1236  
 .1015  
 $\bar{A}$  = .1001  
 n = .9498

H 109: A = .0436  
 .0764  
 HVP .0872  
 .0613  
 $\bar{A}$  = .0671  
 n = .8926

H 110 : A = .0505  
 HUF .0945  
 .1074  
 .0784  
 $\bar{A} = .0827$   
 n = 9044

H 111 : A = .0501  
 .0934  
 HUF .1091  
 .0702  
 $\bar{A} = .0807$   
 n = 8607

H 112 : A = .0337  
 .049  
 HUF .0526  
 .0476  
 $\bar{A} = .0457$   
 n = 9796

H 113 : A = .0631  
 .0995  
 HUF .1074  
 .655  
 .0462  
 $\bar{A} = .0667$   
 n = 9744

H 114 : A = .0671  
 .0622  
 No .101  
 HUF .107  
 .102  
 $\bar{A} =$   
 Darcian n = 9979

H 115 : A = .0513  
 No .0882  
 HUF .0818  
 .0838  
 Darcian n = 1.0057

H 116 : A = .0601  
 .1252  
 HUF .1142  
 .1155  
 .1113  
 $\bar{A} = .1053$   
 n = 9533

H 117 : A = .0584  
 .1041  
 HUF .1148  
 .0868  
 .0993  
 $\bar{A} = .0927$   
 n = 9438

H 118 : A = .0468  
 .10777  
 HUF .0836  
 .0623  
 .0779  
 $\bar{A} = .0697$   
 n = 9791

H 119 : A = .0523  
 .0859  
 HUF .0961  
 .107  
 .0892  
 $\bar{A} = .0861$   
 n = 9305

H 120 : A = .0524  
 .085  
 HUF .0925  
 .0828  
 .084  
 $\bar{A} = .0793$   
 n = 9527

H 121 : A = .0482  
 .0915  
 HUF .1046  
 .0796  
 $\bar{A} = .0800$   
 n = 8868

A 122 : A = .0323  
 .056  
 HUF .0607  
 .069  
 .0531  
 $\bar{A} = .0542$   
 n = 9002

V 1.1 : A = .0349  
 .0798  
 HUF .0456  
 .1072  
 $\bar{A} = .0681$   
 n = 9633

V 1.2 : A = .0418  
 No .0554  
 HUF .0569  
 .0603  
 $\bar{A} =$   
 Darcian n = 1.0189

V 1.3 : A = .0468  
 No .0609  
 HUF .0628  
 .0657  
 $\bar{A} =$   
 Darcian n = 9974



VI.4 : A = .0254  
 No .0342  
 HVP .0347  
 .0381  
 .0363  
 Davian n = 1.0416

VI.5 : A = .0172  
 .0309  
 HVP .0374  
 .0369  
 .0235  
 $\bar{A} = .0292$   
 n = .8207

VI.6 : A = .0473  
 .0465  
 HVP .0733  
 .0809  
 .0683  
 $\bar{A} = .0633$   
 n = .9367

VI.7 : A = .0256  
 .0378  
 HVP .0488  
 .0547  
 .0443  
 $\bar{A} = .04224$   
 n = .9255

VI.8 : A = .0575  
 .0943  
 HVP .107  
 .0987  
 $\bar{A} = .0959$   
 n = .9622

VI.9 : A = .026  
 .0529  
 HVP .057  
 .0401  
 .0494  
 $\bar{A} = .0453$   
 n = .9567

VI.10 : A = .0405  
 .0679  
 HVP .0757  
 .0435  
 .0616  
 $\bar{A} = .05784$   
 n = .9166

VI.11 : A = .027  
 HVP .0926  
 .1137  
 .0707  
 $\bar{A} = .0904$   
 n = .9468

Rum, 08/11/03

VI.12 : A = .024  
 .0928  
 HVP .0598  
 .0465  
 $\bar{A} = .0453$   
 n = .9008

VI.13 : A = .0333  
 .0836  
 HVP .0716  
 .0574  
 .0615  
 $\bar{A} = .0615$   
 n = .8694

VI.14 : A = .011  
 No .0094  
 HVP .0057  
 .0161  
 .0165  
 Two-Rise n = 1.8505

VI.15 : A = .0144  
 .0491  
 HVP .057  
 .0404  
 $\bar{A} = .0402$   
 n = .8524

VI.16 : A = .08  
 .1474  
 HVP .1617  
 .1276  
 .1409  
 $\bar{A} = .1315$   
 n = .8543

VI.17 : A = .058  
 .128  
 HVP .1405  
 .1198  
 $\bar{A} = .1116$   
 n = .9471

VI.18 : A = .0285  
 .0604  
 HVP .0684  
 .053  
 $\bar{A} = .0526$   
 n = .8902

VI.19 : A = .0154  
 .0247  
 Klinkenberg .0336  
 .0024  
 n = .5688

Rum, 08/15/03

VI. 19 (cont.) A = .0259  
 .0114  
 .0411  
 A = .026  
 Two Phase n = 2.295

VI. 20 A = .0117  
 Klinkenberg .0283  
 HVP .0426  
 .0085  
 .0084  
 $\bar{A}$  = .0199  
 n = 5639  
 A = .0372  
 .0299  
 .0216  
 $\bar{A}$  .0295  
 n = 792

VI. 21: A = .0167  
 .0228  
 Klinkenberg .0298  
 .0108  
 $\bar{A}$  = .02008  
 n = 5673  
 A = .024  
 .0144  
 .0347  
 $\bar{A}$  = .0249  
 Two-Phase n = 1.6984

VI. 22: A = .01  
 No .0118  
 HVP .0071  
 .0136  
 .0137  
 Two-Phase n = 1.4426

VI. 23: A = .0058  
 No .004  
 HVP .0081  
 .0041  
 .0082  
 $\bar{A}$  = .0082  
 Two Phase n = 1.5103

VI. 24: A = Not Enough Data  
 VI. 25: A = Not Enough Data

VI. 26: A = .0096  
 No .0069  
 HVP .0148  
 .0138  
 .015  
 Two-Phase n = 1.4901

VI. 27: A = .0101  
 No .0055  
 HVP .018  
 .0084  
 Two Phase n = 2.0874

VI. 28: A = .0129  
 No HVP .0047  
 .0081  
 .0063  
 .0134  
 Two Phase n = 1.8874

VI. 29: A = Not Enough Data  
 VI. 30: A = .0126  
<sup>RAM 08/15/03</sup>  
~~Klinkenberg~~ .0068  
 HVP .0204  
 .0213

<sup>RAM 08/15/03</sup>  
 Two-Phase n = 2.0299  
 $\bar{A}$  = .0153

V1.31 : A = .0108 No .0069 HVP .0175 .0158 .0176 Two Phase N = 1.5274	V1.32 : A = .0116 No .0055 HVP .0057 .0185 .0189 Two Phase N = 2.1858
V2.1 : A = .0566 No .073 HVP .0746 .0798 Darcian N = 1.0397	V2.2 : A = .0617 No HVP .0015 .0462 .0705 Darcian N = 1.0517
V2.3 : A = .0318 No .0417 HVP .0375 .0476 Darcian N = 1.0525	V2.4 : A = .0659 No .0698 HVP .1026 .1093 .1051 Darcian N = .9956
V2.5 : A = .0626 No .0924 HVP .0967 .0948 .10983 Darcian N = 1.005	V2.6 : A = .0235 .043 HVP .0464 .0401 .043 A = .0322 N = .9759

V2.7 : A = .0099 .0283 HVP .0415 .0418 A = .0229 n = .6491	V2.8 : A = .0374 .0641 HVP .0719 .055 A = .0571 n = .9151
V2.9 : A = .021 .0396 HVP .0444 .0242 .0354 A = .0329 n = .9273	V2.10 : A = .0502 .0897 HVP .1023 .0636 .0766 A = .0765 n = .8947
V2.11 : A = .0434 .0857 HVP .10963 .0777 A = .0758 n = .91233	V2.12 : A = .0829 No .1236 HVP .1283 .1336 Darcian n = 1.0138
V2.13 : A = .0184 .027 Klinkenberg .0346 .0132 A = .0233 n = .6379	V2.13 A = .028 (cont.) .0253 .0311 A = .0281 n = 1.1127

V2. 14: A = .043	V2. 15: A = .0185
No .0749	No .0387
HVP .0671	HVP <sup>RNM 08/29/03</sup> <del>.0821</del> .0456
.0821	.0278
.0722	.0297
$\bar{A} = .0679$	$\bar{A} = .0320$
n = 9515	n = 8533
V2. 16: A = .0425	V2. 17: A = <sup>.0695</sup> <del>.0537</del>
.0716	.0762
HVP .0821	HVP .0821
.0733	.0758
.069	$\bar{A} = .0675$
$\bar{A} = .06776$	n = 9262
n = 9468	
V2. 18: A = .0324	V2. 19: A = .0612
No .0523	.0432
HVP <del>.0821</del>	HVP .0823
.0453	.0821
.0551	.0762
Decision $\bar{A} = 1.0052$	$\bar{A} = .089$
	n = 9355
V2. 20: A = .093	V2. 21: A = .0147
No .0821	No .0182
HVP .0219	HVP .0107
.0503	.0821
.0205	.0145
Decision n = 9956	Two-Phase n = 1.3528

RNM, 08/25/03

V2. 22: A = .0165	V2. 23: A = .0172
No = .0113	Klinkenberg .0246
HVP .0821	.0821
.0186	.0126
.0164	$\bar{A} = .0341$
Two Phase n = 1.5579	$\bar{A} = .6638$
	A = .0256
	.0177
	.0343
	$\bar{A} = .0256$
	Two Phase n = 1.5013
V2. 24: A = .0176	V. 25: A = .0127
	No .0079
	HVP .0821
	.009
	.0128
	$\bar{A} = .0249$
	Two Phase n = 2.065
V. 26: A = .0139	V. 27: A = .0097
No .0089	No .0124
HVP .009	HVP .0047
.0051	.0078
.0041	.0127
Two Phase n = 1.847	Two Phase n = 1.7643

RNM, 09/10/03

V2.28 : A = .0119 No .0162 HVF .0158 .0095 .0102 $\bar{A} = .0139$ Two-Phase n = 1.3134	V2.28 : A = .0333 .0108 HVF .0479 .0146 $\bar{A} = .0267$ n = .6645
V2.30 : A = .0208 HVF .0232 .0214 .0211 $\bar{A} = .0216$ n = .9245	V3. -4 : A = .0185 HVF .0501 .0576 .0427 $\bar{A} = .0422$ n = .8841
V3. -3 : A = .0328 HVF .0666 .0798 .063 .056 $\bar{A} = .0600$ n = .8723	V3. -2 : A = .0131 HVF .0431 .0342 .0223 $\bar{A} = .0282$ n = .
V3. -1 : A = .045 HVF .0904 .1046 .0842 .0754 $\bar{A} = .0799$ n = .8784	V3. 0 : A = .0266 HVF .0564 .0624 .0582 .0533 $\bar{A} = .0514$ n = .9424

RUM, 09/10/03

V3.1 : A = .091 .1061 HVF .1189 .1168 .0969 $\bar{A} = .0979$ n = .9207	V3.2 : A = .0768 .1559 HVF .1727 .1465 .1471 $\bar{A} = .1398$ n = .9416
V3.3 : A = .0626 .0994 HVF .1078 .0829 .0976 $\bar{A} = .0901$ n = .9619	V3.4 : A = .0314 .0542 HVF .0576 .0558 $\bar{A} = .0498$ n = .9826
V3.5 : A = .0534 No .0522 HVF .0551 .0543 $\bar{A} =$ Paccian n = .9917	V3.6 : A = .0366 No .0506 HVF .0523 .0441 .0549 $\bar{A} =$ Paccian n = 1.0222
V3.7 : A = .0536 .0814 HVF .0882 .0604 .0798 $\bar{A} = .0727$ n = .961	V3.8 : A = .0423 No .0658 HVF .0693 .0581 .0691 Paccian $\bar{A} = .0609$ A = .1005

RUM, 09/12/03

V3.9: A = .0315	V3.10: A = .0397
No .0483	No .052
HVF .051	HVF .0531
.0463	.034
.0505	.0565
$\bar{A} =$	$\bar{A} =$
Parcian n = .9996	Parcian n = 1.0449
V3.11: A = .043	V3.12: A = .0544
No .0613	No .0769
HVF .0633	HVF .0293
.0735	.0793
.0667	.083
$\bar{A} =$	$\bar{A} =$
Parcian n = 1.0162	Parcian n = 1.0236
V3.13: A = .0207	V3.14: A = .0132
No .0275	.0111
HVF .0355	HVF .0162
.0364	.0184
.0378	.0133
$\bar{A} =$	$\bar{A} =$ <sup>RM, 09/17/03</sup> <del>.0143</del> .01444
Parcian n = 1.0338	n = .8693
V3.15: A = .0329	V3.16: A = .2286
.1001	.6743
HVF .1156	HVF .829
.109	.4709
.0823	$\bar{A} =$ .5507
$\bar{A} =$ .08798	n = .8036
n = .9851	

RM, 09/17/03

V3.17: A = .0397	V3.18: A = .0192
.1004	.0377
HVF .1189	Klinkenberg .0285
.1182	.012
.0775	$\bar{A} =$ .0244
$\bar{A} =$ .0909	n <sub>1</sub> = .5883
n = .8496	A = .0308
	.0372
	.0463
	$\bar{A} =$ .0314
	Two Phase n <sub>2</sub> = 1.8317
V3.19: A = .0194	V3.20: A = .017
.018	No .0135
Klinkenberg .0236	HVF .0228
.0191	.0214
$\bar{A} =$ .0200	Two Phase n = 1.1269
n <sub>1</sub> = .8026	
A = .0196	
.0131	
.0288	$\bar{A} =$ .0205
Two Phase n <sub>2</sub> = 1.560	
V3.21: A = .0174	V3.22: A = .0089
No .0243	No .0053
HVF .013	HVF .0045
.0431	.0136
Two phase n = 1.204	.0141
	Two Phase n = 1.8043

RM, 09/24/03

V3.23: A= .0075	V3.24: A= .0086
No .0044	No .0052
HVP .0032	HVP .013
.0112	.0084
.0116	.0132
Two Phase n= 1.7792	Two Phase $\bar{A}$ = 1.722
V3.25: A= .0132	V3.26: A= .0128
No .0105	No .0176
HVP .0178	HVP .0098
.0167	.0166
Two Phase n= 1.1755	Two Phase n= 1.1656
V3.27: A= .0127	V3.28: A= .0086
No .01	No .0129
HVP .0177	HVP .0052
.0164	.0131
Two Phase n= 1.1907	Two Phase n= 1.7344
V3.29: A= .0142	V3.30: A= .0238
No HVP .0118	Klinkenberg .0272
.0178	.0297
.0168	.021
Two Phase n= 1.1022	$\bar{A}$ = .0254
	$n_1$ = .8211
	A= .0297
	.0262
	.0306
	$\bar{A}$ = .0293
	Davies $n_2$ = 1.0796

RNM, 09/24/03

V4.-7: A= .019	V4.-6: A= .0176
Klinkenberg .0217	Klinkenberg .0193
.0282	.0339
.0233	.0199
$\bar{A}$ = .0231	$\bar{A}$ = .0202
$n_1$ = .8098	$n_1$ = .8121
A= .0133	A= .0287
.022	.0196
.0333	.0124
.0127	.0299
.0342	$\bar{A}$ = .0227
$\bar{A}$ = .0231	Two Phase $n_2$ = 1.6836
Two Phase $n_2$ = 1.7517	
V4.-5: A= .0369	V4.-4: A= .0612
.0361	.0206
Klinkenberg .0351	HVP .0725
.0285	.047
$\bar{A}$ = .0342	$\bar{A}$ = .0503
$n_1$ = .8107	$n_1$ = .842
A= .0363	
.021	
.056	
$\bar{A}$ = .0378	
Two Phase $n_2$ = 1.8068	

RNM, 09/25/03

V4. -3 : A = .0475 HVP .0578 .0456 .0172 .0327 $\bar{A} = .842$ n = .0402	V4. 2 : A = .1551 .0644 HVP .1886 .1368 .1092 $\bar{A} = .1308$ n = .817
V4. -1 : A = .0316 HVP .1008 .0821 .0926 .0571 $\bar{A} = .0728$ n = .8075	V4. 0 : A = .0253 .0631 HVP .0747 .0728 .0488 $\bar{A} = .0569$ n = .8503
V4. 1 : A = .0098 HVP .0462 .0325 .0464 .0145 $\bar{A} = .299$ n = .8733	V4. 2 : A = .1443 HVP .0555 .1664 .154 .121 $\bar{A} = .1282$ n = .8875
V4. 3 : A = .0909 No .1331 HVP .1291 .1244 .1397 Darcian n = 1.0286	V4. 4 : A = .0969 .082 HVP .035 .0689 .0629 $\bar{A} = .0691$ n = .8535

RNM, 09/25/03

V4. 5 : A = .0534 HVP .0204 .0633 .075 .0417 $\bar{A} = .0508$ n = .8439	V4. 6 : A = .0917 .0355 HVP .1071 .0741 $\bar{A} = .0771$ n = .8661
V4. 7 : A = .0489 HVP .0208 .0565 .0408 $\bar{A} = .0418$ n = .8802	V4. 8 : A = .0825 .0413 HVP .0914 .0771 $\bar{A} = .0731$ n = .9265
V4. 9 : A = .0713 HVP .1366 .1497 .1312 $\bar{A} = .1222$ n = .9292	V4. 10 : A = .1736 .0643 HVP .2077 .1667 .1285 $\bar{A} = .1795$ n = .8384
V4. 11 : A = .0775 HVP .0447 .0874 .0698 .0689 $\bar{A} = .0697$ n = .9098	V4. 12 : A = .0655 .0296 HVP .0731 .0594 $\bar{A} = .0569$ n = .9259

RNM, 09/26/03



V4.13: A = .0601	V4.14: A = .0968
No .053	HVP .1032
HVP .0393	.0584
.0637	.0935
.0627	.0987
Darcian n = 9961	$\bar{A}$ = .0901
	n = 9863
V4.15: A = .0376	V4.16: A = .1118
No .0388	No .1472
HVP .0287	HVP .1535
.01	.1499
.0392	.0435
Darcian n = 1.0305	Darcian n = 1.0139
V4.17: A = .0664	V4.18: A = .0953
No .0731	.0313
HVP .0727	HVP .1089
.0792	.081
Darcian A = 1.0637	$\bar{A}$ = .0791
	n = 8959
V4.19: A = .0109	V4.20: A = .0202
No .0126	No .0126
HVP .0148	HVP .0155
.014	.0191
Darcian n = 9986	Two Phase n = 1,1378

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V4.21: A = .0244	V4.22: A = .0121
Klinkenberg .0271	No .0099
.0318	HVP .0161
.0166	.018
$\bar{A}$ =	.0159
n = 6309	Two Phase n = 1.2681
A = .0281	
.0147	
.0434	
$\bar{A}$ = .0287	
Two Phase n = 1.9558	
V4.24: A = .0128	V4.25: A = .0065
No .01	No .0054
HVP .0175	HVP .0078
.0154	.0011
.0176	.008
Two Phase, n = 1.273	Two Phase n = 1.2468
V4.26: A = .0063	V4.27: A = .01
No .0044	No .0062
HVP .0085	HVP .0149
.0005	.0109
.0087	.0151
Two Phase n = 1.4817	Two Phase n = 1.6709

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V4.28: A = .0081

No .0052

HVP .0115

.0043

.0118

Two Phase n = 1.6201

V4.30: A = .0085

No .009

HVP .006

.0128

.013

Two Phase n = 1.5589

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V4.29: A = .0138

No .0107

HVP .0187

.0267

.0178

Two Phase n = 1.1645

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this is the end of the notebook

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