

BLD1905

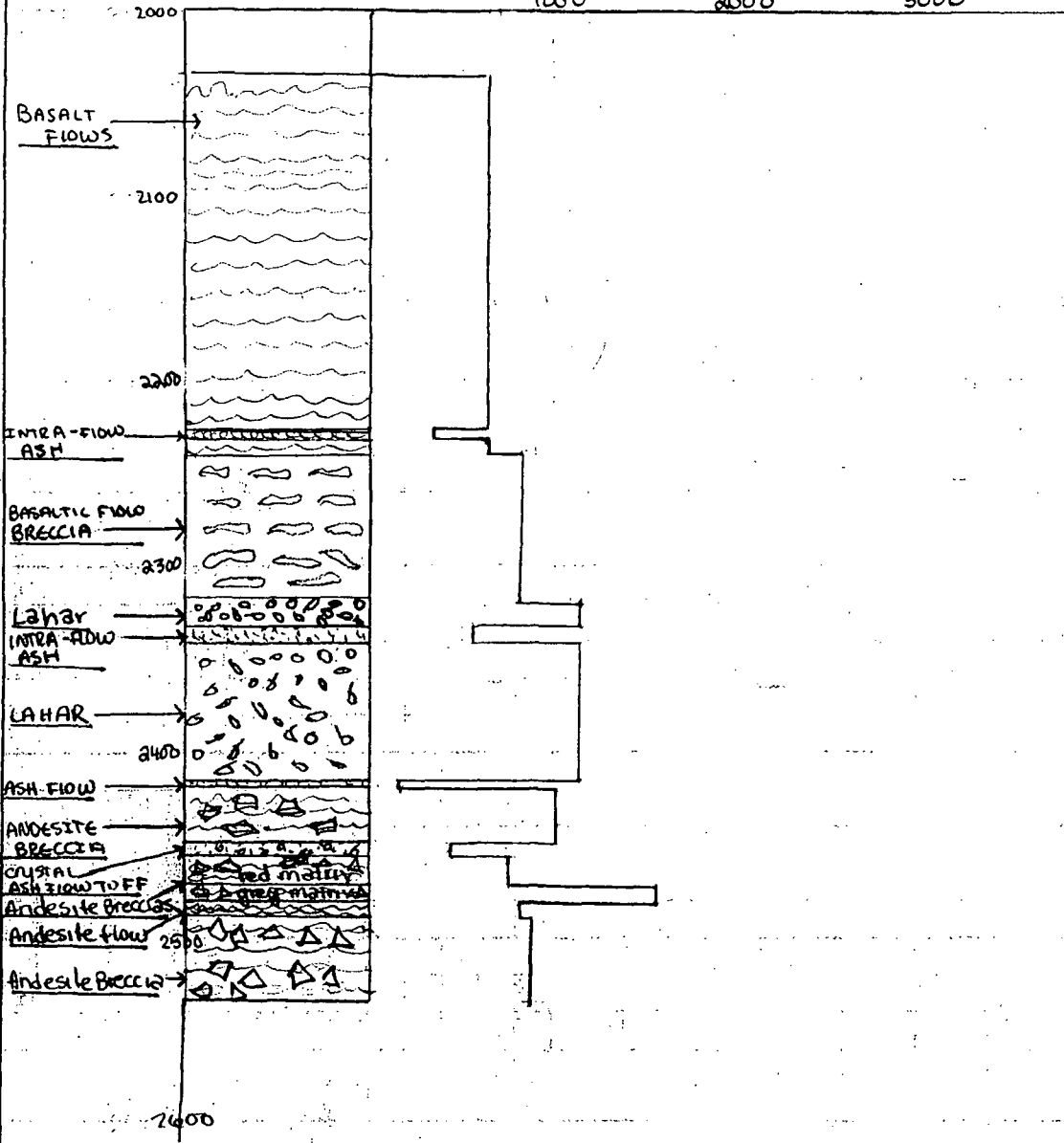
CTGH-1

average suscept. 10^{-6} cgs
2037' - 2535'

0-2037' data →
Pat Daubner

average
susceptibility 10^{-6} cgs

1000 2000 3000



22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS



AMRAD

CTG H-1

ave. susceptibility
2535' - 2966'

ave
susceptibility 10^{-6}

1000

2000

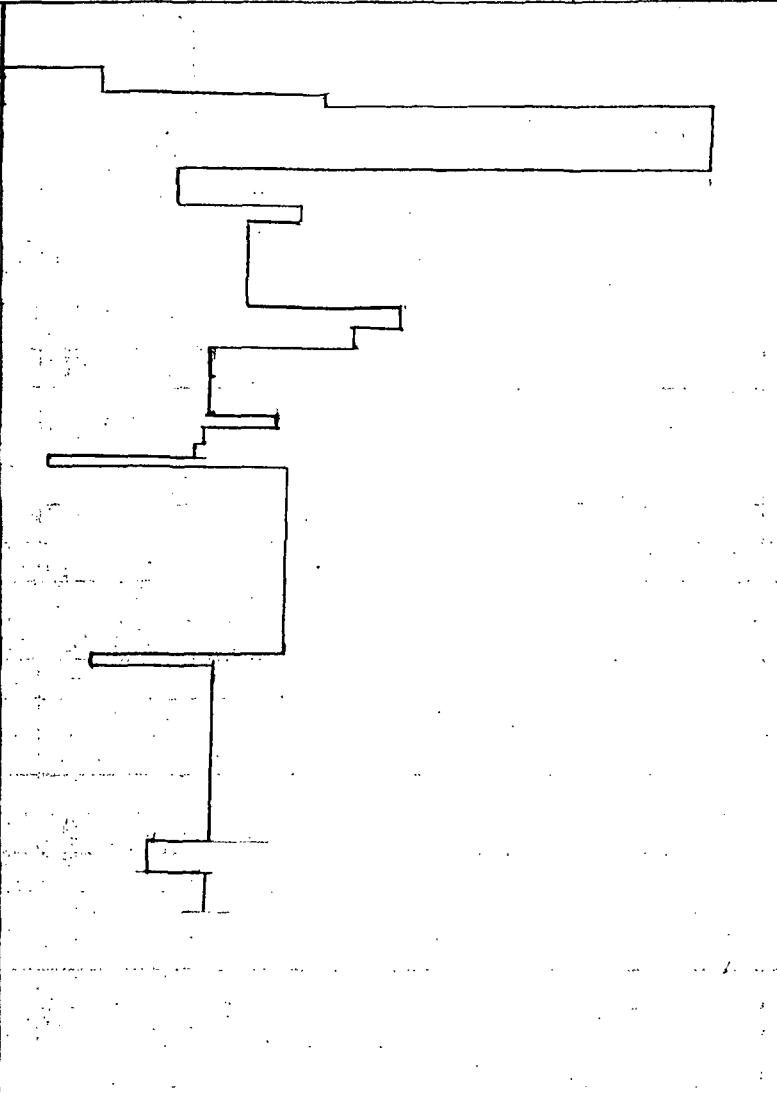
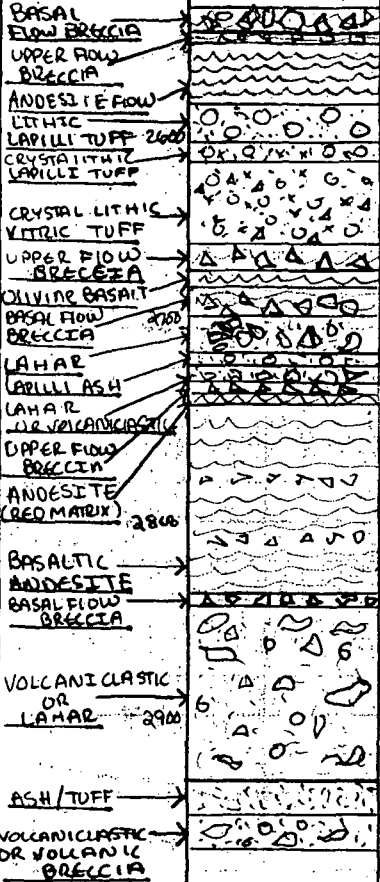
3000

2500

3000

3100

Andesite



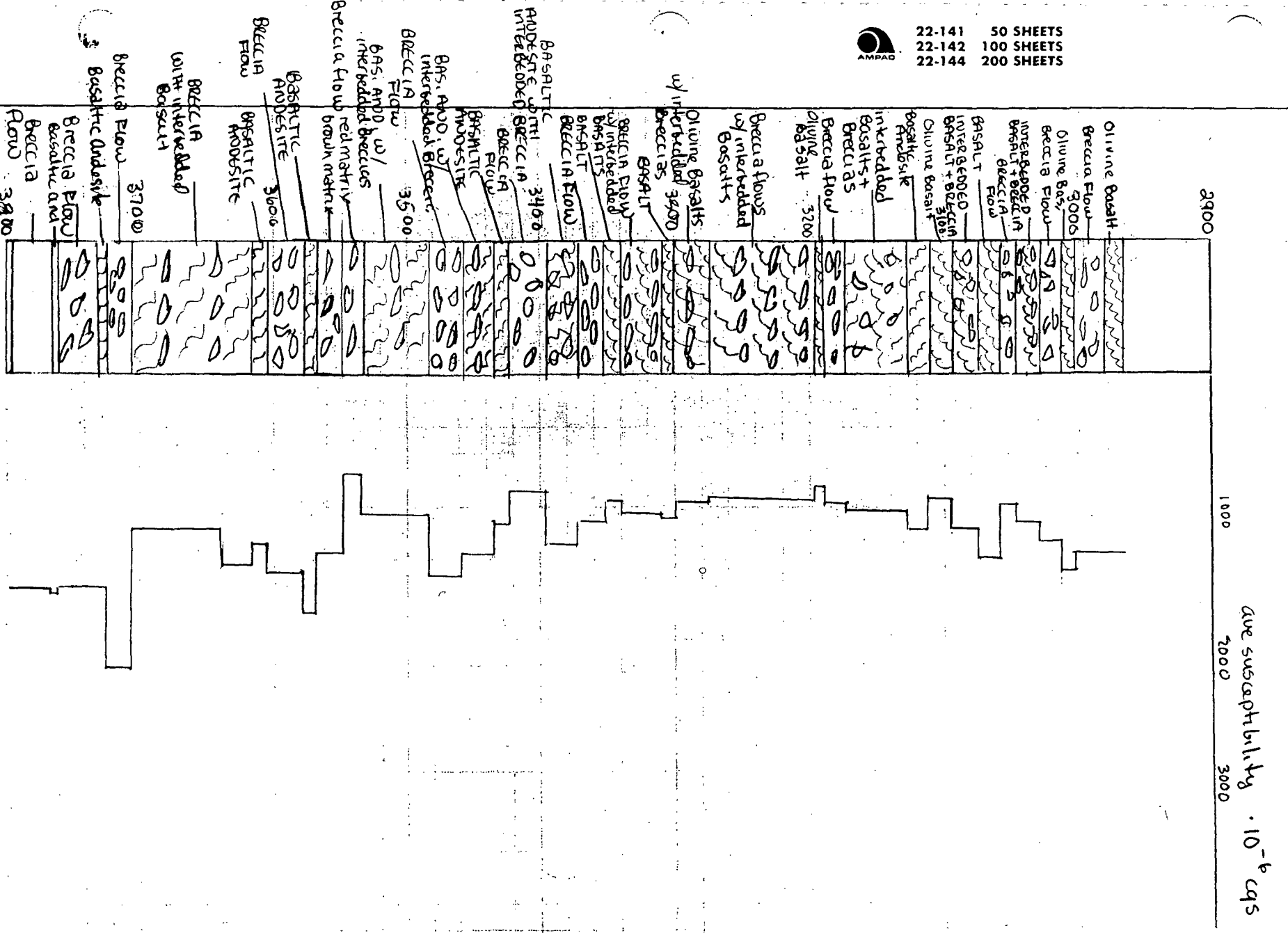
22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS





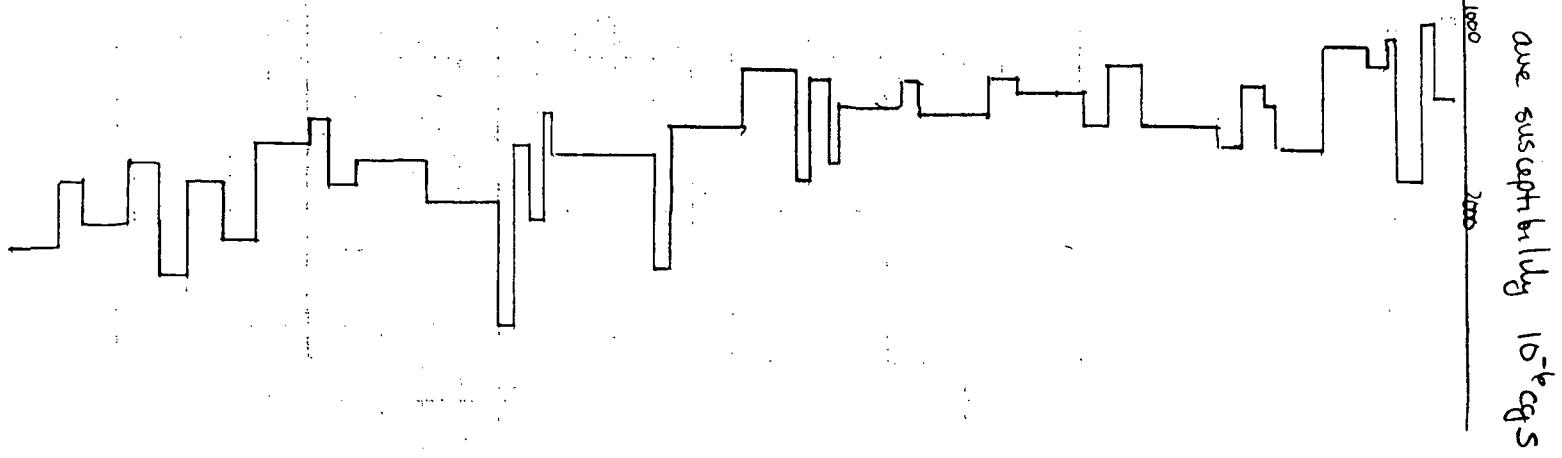
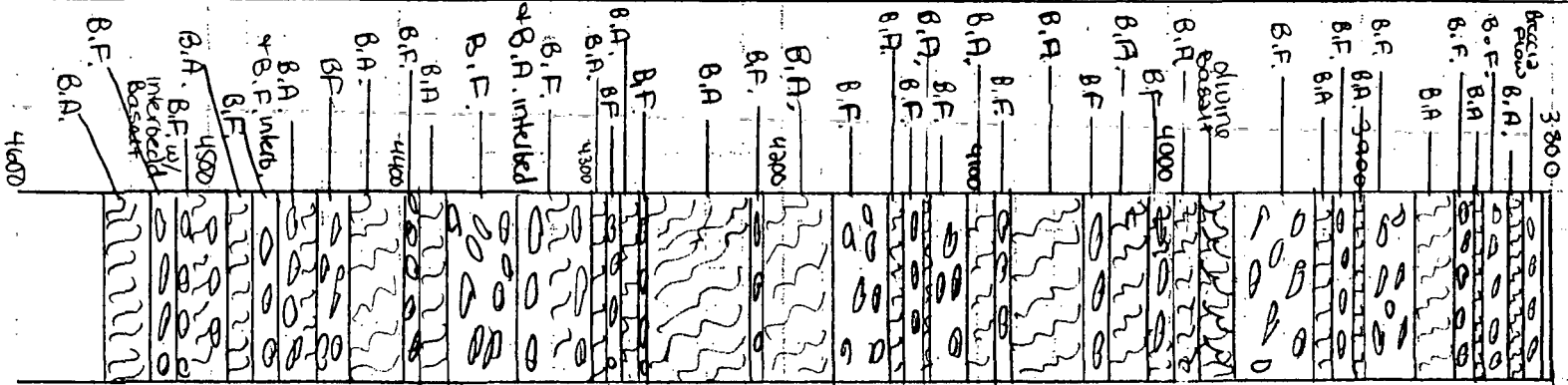
22-141 50 SHEETS
 22-142 100 SHEETS
 22-144 200 SHEETS

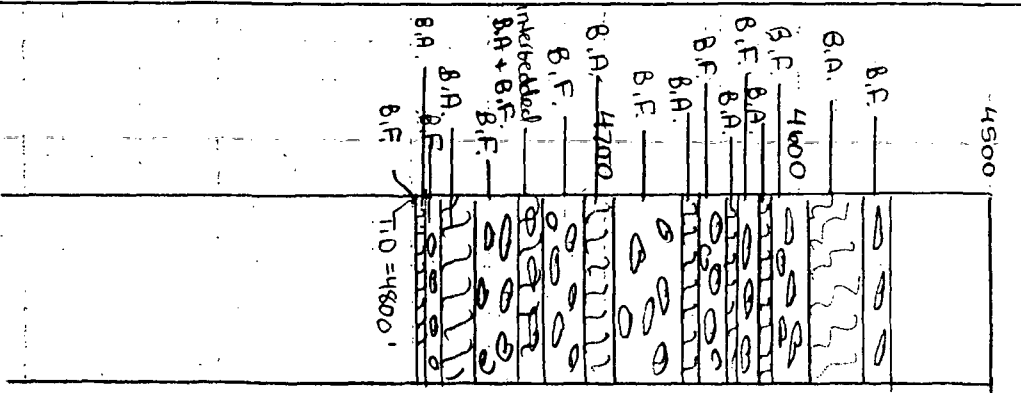
CTG H-1
 ave. susceptibility
 29.6e 4 - 4800' TD



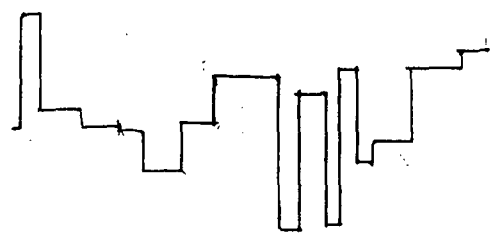


B.F. = Breccia Flow
 B.A. = Basaltic Andesite





ave susceptibility 10^{-4} cgs





22-141 50 SHEETS
 22-142 100 SHEETS
 22-144 200 SHEETS

Date

Lithology	Depth Interval	ave susceptibility 10 ⁻⁶ cgs
Basalt flows	2037' - 2240' →	652.7
intra-flow ash	2225' - 2229' →	351.4
Basaltic flow breccia	2240' - 2318'	838.6
Lahar	2318' - 2411.7	1155.9
intra flow ash	2331 - 2341 →	562.6
ASH FLOW	2417 - 2419	181.8
Andesite Breccia	2419 - 2448	1012
Crystal-ash flow tuff	2448 - 2454	251.8
Andesite Breccia with red ash matrix	2454 - 2469	781.5
Andesite Breccia with grey matrix	2469' - 2478'	1585.2
Andesite flow	2478' - 2486'	815.7
Andesite Breccia flow	2486' - 2535'	884.4



Data

Lithology	Depth interval	ave suscept. 10 ⁻⁶ eqs
basal flow breccia	2535 - 2546'	514.4
upper flow breccia	2546' - 2553'	1698
Andesite flow	2553' - 2586'	3685.9
Lithic Lapilli tuff	2586' - 2603'	901
crystal lithic lapilli tuff	2603 - 2616	1566.11
crystal lithic vitric tuff	2616 - 2657	1276
UPPER FLOW BRECCIA	2657' - 2668'	2683.4
andesite (?) Olivine basal	2668' - 2678'	1888.9
Basal Flow Breccia	2678' - 2694'	1661.6
Lahar	2694' - 2713'	1661
Lapilli ash	2713' - 2719'	1439.4
Lahar / volcaniclast.	2719' - 2726'	11061
upper flow breccia	2726' - 2733'	991.2
andesite (red matrix)	2733 - 2740	259.6
basaltic Andesite	2740' - 2837'	1471.8
Basal Flow breccia	2837' - 2842'	511.3
volcanic di.	2842' - 2935'	1086.3
ash / tuff volcaniclastic - volcanic breccia	2935' - 2952' - 2952' - 2966'	784.3 1075.9

Lithology	Depth Interval	ave suscept.
- Olivine basalt	2966' - 2979'	1370
- Breccia flow	2979' - 3001'	1399
- Olivine basalt	3001' - 3013'	1460.8
- Breccia flow	3013' - 3028'	1466.3
- interbedded Olivine basalts & breccia flows	3028' - 3044'	1110.2
- Breccia flow	3044' - 3058'	989.4
- Basalt	3058' - 3065'	1374.8
- interbedded Breccia & Olivine basalts	3067' - 3093'	1159.8
- Olivine basalt	3093' - 3109'	962.5
- Basaltic Andesite	3109' - 3127'	1166.4
- interbedded Basalts & Breccias	3127' - 3175'	1005.3
- Breccia flow	3175' - 3191'	945.5
- Olivine basalt	3191' - 3197'	848.8
- Breccia flow	3197' - 3274'	938.3
- interbedded Basalts & Olivine basalts	3274' - 3300'	968.6
- Basalt	3300' - 3308'	1084.5
- Breccia flow	3308' - 3340'	1014
- Basalt	3340' - 3352'	962.1
- Breccia flow	3352' - 3372'	1084.6
- Basaltic Andesite w/ interbedded Breccias	3372' - 3396'	1242
- Breccia flow	3396' - 3421'	873.8
- Basaltic Andesite	3421' - 3434'	1036.1
- Bas. Andes. w/ interb. Breccias	3434' - 3459'	1318.3
- Breccia flow	3459' - 3481'	1502.7
- Basaltic And. w/ interbedded breccias	3481' - 3531'	1079.5
- Breccia flows & w/ interbedded basalt	3531' - 3546'	765.9
- Basaltic And. brown	3546' - 3571'	1344.8
- Basaltic And.	3571' - 3575'	1803.5
- Breccia flow	3575' - 3601'	1460.4
- Basaltic And.	3601' - 3616'	1286
- Breccia flows w/ interbedded basalt	3616' - 3706'	1401.2
- Breccia flow	3706' - 3723'	1166
- Basaltic Andes	3723' - 3727'	2200.1
- Breccia flow	3727' - 3760'	1611.9

Basaltic Andesite + Breccia flows
 ave = 1572.5
 s dev = 5.8
 3322-4800 TD

Olivine Basalts & Olivine Breccia flows
 ave = 1066.6
 2966' - 3292'

ave susceptibility
 2966' - 4800 TD

Data



Basaltic Andes Breccia flow	3760 - 3764	1661.3
Basaltic Andes Breccia Flow	3764 - 3797	1611.9
Basaltic Andes Breccia Flow	3797 - 3804	1380.4
Basaltic Andes Flow breccia	3804 - 3815	1425.5
Basaltic Andes flow breccia	3815 - 3821	1141.6
Basaltic Andes flow breccia	3821 - 3835	1851.0
Basaltic Andes flow breccia	3835 - 3840	1159.7
Basaltic Andes flow breccia	3840 - 3852	1239.1
Basaltic Andes flow breccia	3852 - 3874	1188.5
Basaltic Andes flow breccia	3874 - 3897	1692.1
Basaltic Andes flow breccia	3897 - 3902	1450.1
Basaltic Andes flow breccia	3902 - 3915	1345.9
Basaltic Andes flow breccia	3915 - 3922	1623.7
Basaltic Andes flow breccia	3922 - 3925	1523.6
Basaltic Andes flow breccia	3925 - 3965	1250.2
Basaltic Andes flow breccia	3965 - 3982	1556.8
Basaltic Andes flow breccia	3982 - 3999	1380.7
Basaltic Andes flow breccia	3999 - 4010	1394.8
Basaltic Andes flow breccia	4010 - 4029	1296.8
Basaltic Andes flow breccia	4029 - 4044	1494.0
Basaltic Andes flow breccia	4044 - 4081	1328.9
Basaltic Andes flow breccia	4081 - 4089	1469.5
Basaltic Andes flow breccia	4089 - 4105	1465.2
Basaltic Andes flow breccia	4105 - 4122	1742.1
Basaltic Andes flow breccia	4122 - 4125	1289.2
Basaltic Andes flow breccia	4125 - 4139	1821
Basaltic Andes flow breccia	4139 - 4144	1256.1
Basaltic Andes flow breccia	4144 - 4175	1572.9
Basaltic Andes flow breccia	4175 - 4210	2313.4
Basaltic Andes flow breccia	4210 - 4217	1703.6
Basaltic Andes flow breccia	4217 - 4267	1491
Basaltic Andes flow breccia	4267 - 4271	2043.4
Basaltic Andes flow breccia	4271 - 4282	1626.1
Basaltic Andes flow breccia	4282 - 4287	2606.6
Basaltic Andes flow breccia	4287 - 4298	1929.6
Basaltic Andes flow breccia	4298 - 4338	
Basaltic Andes flow breccia	4338 - 4376	1771.6
Basaltic Andes flow breccia	4376 - 4390	1837.8
Basaltic Andes flow breccia	4390 - 4399	1505.9
Basaltic Andes flow breccia	4399 - 4426	1646.4
Basaltic Andes flow breccia	4426 - 4442	2146.7
Basaltic Andes flow breccia	4442 - 4463	1849.8
Basaltic Andes flow breccia	4463 - 4477	2335.8
Basaltic Andes flow breccia	4477 - 4490	1770.6
Basaltic Andes flow breccia	4490 - 4519	2014.0
Basaltic Andes flow breccia	4519 - 4529	1809.2
Basaltic Andes flow breccia	4529 - 4553	2184.4



Lithology	Depth Interval	Grav Suss.
Breccia flow basaltic And. + breccia flows interbedded	4553 - 4565 4565 - 4596	1718.8 1859.6
Breccia flow Basaltic And	4596 - 4616	2229.7
Breccia flow	4616 - 4620	2353.1
Basalt And	4620 - 4630	1865.7
breccia flow	4630 - 4636	2660.3
basaltic And.	4636 - 4649	1989.8
breccia flow	4649 - 4658	2672.6
Basaltic Andes.	4658 - 4694	1861.7
Breccia flow	4694 - 4707	2161.1
interbedded Breccia and basalt flow	4707 - 4736	2363.5
Breccia flow	4736 - 4742	2190.0
Basaltic And	4742 - 4767	2155.7
Breccia flow	4767 - 4784	2043.5
Basaltic And.	4784 - 4790	1559.9
Flow Breccia	4790 - 4796	2146.0
Flow Breccia	4796 - TD	?

CLACKAMAS CTGH-1 CORE LOG

Location: Marion Co., Oregon
T85, R8E, Sec. 28
Drilled July-Sept., 1986

Well Head Elevation: 3840 feet
Logged by: Sibbett, UURI, Nov., 86
Page: 1 of 18

GEOLOGIC DESCRIPTIONS

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology	Description
1	527-536	74°, 88°, 5°	527-550	Olivine Basalt	2% 2mm xls, 01, Plag. Xenomor, light gray, 1% ≤ 2mm vesicles, myrolitic cavities
2	544	mod. to few 45-90°		Basalt con.	3-5% diktytaxitic cavities, med. xl. text
3	552	irregular fract. few 25°, breccia	550-580	Basalt	viscular 1/2-2 cm, grayish-red, 10% ≤ 1 mm anh. pheno Plag. & ol., glommupheric, matrix fine grain.
4	562	no sign. alt. pk-brn clay	558-580		Diktytaxitic cavities. Flow breccia, vesicular.
5	579		580-610	Med-gray, flow breccia, vesicular	
6	588	few 75°		Basalt, ves.	first 8', ≤ 0.5 cm ves. Med-dark gray nonporph. Fine grain xenomorphic.
7	595.5	mod. 80-90°			Dense flow, vert. joints, few plag. pheno.
8	606.5	mod. 80-90°			Vesicular base starts at 603
9	620	few 80-90°	610-646	Basalt, vesicular	top to 618', 1-2 cm ves., Dark gray fine grain. 2% 1mm plag. xls.
10	629	minor fault 60°	625-628		Flow bands horizontal, 624.5 flow base breccia starts to 628. Slicken side, minor clay, fault & flow breccia above.
11	639	few 90-85°			1/2 cm 15% vesicles, pink clay wash-in on fract. near horiz. flow-band bubble plan. Flow breccia
12	648	few 65°			
13	658	few 65° & 90°	646-661	Basalt flow,	dark gray, fine, 1/2 cm ves., 25% vesicular top to 653! Xenomorphic, 2% 1 mm plag.
14	675	few 85°-90°	661-683	Basalt flow,	& breccia, vesicular 25%, fine grain dk gray-grayish-brn. 1-3 mm ves. clay matrix in brec.
15	693	mod. 80-90°, few 65°	683-711	Basalt flow,	v. fine grain, med-dk gray, dusky brn-grayish brn, flow-top breccia 686, ≤ 1 mm ves.
16	701	mod. 60-70° 90°			2% 1mm plag. pheno, anh, few 1-5 mm ves. fractures spaced 2-6 cm
17	710	few 55-60° and 90°			White clay on vert. fract. 0.5 ft. flow breccia base recovered.
18	733	few 70°	711-795	Basalt Flow,	ves., fine grain, Grayish red upper flow breccia, gray below 730'
19	743	mod. 80-90°			Brnsh-dk gray, ≤ 1 mm ves. abundant. minor clay on fractures spaced 3-6 cm.
20	750	few 60°			V. fine grain, med. gray, clay coat on fractures.
21	760	2 fractures, 30° & 65°			Same as above
22	770	45° & 70°			
23	785	few 65°	774-	Xenomorphic, non-porphyritic.	Flow contact, vesicular basalt above & below.

statistical param.	misc. notes
Olivine Basalt	uniform
average susc. = 863.37	
st. dev = 79.4	Log pgs 1
Basalt/Basalt flows	very uniform throughout
average susc. = 917.8	
s. dev = 330.6	log pages 1-6

Box # Bottom Depth Of Box

Fractures (90°=vert.)

Unit Interval (feet)

Lithology Description

Page 2

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description		
24	800	minor clay in ves.	795-815.2	Basalt Flow, vesicular top, dark gray, diktytaxitic 2% 1 mm anh plag. pheno. (yel-brn clay) on fractures	Basalt / Basalt-flows contin.	
25	809	few 80° & 60°		Fault breccia at 811', flow breccia 814-815.2'		
26	817.5	mod. strong 70-90°	815.2-846	Lithic Tuff, yel-gray to pale yel-brn ash	Lithic tuff	log pages: 6
27	826.5	crush-zone		Light gray to reddish-brn clast., non-welded weak compaction. Lithic-Lapilli tuff.	aver. susc = 804.1	
28	838	few 80°		Blocks to 15 cm. dia., water lain (?) ash 3 cm thick at 837. Andesitic? blocks in lapilli tuff	S dev = 109.2	
29	848.5	broke up	846-1114	Andesite? lava-flow, gradual contact 840-846	Andesite lava flow	unform throughout
30	863	strong 10°		fine grain, dk grnsh-gray. non-porphy, clay coating on flow fract. 2-3 cm sp. flow foliation dipping 10°	aver. susc = 884.6	not much variation in suscept.
31	883.5	mod.-strong 10° flow joints 80°		Andesite (cont.) dk-grn-gray-fine grain. bimodel xls. 20% 1 mm plag. & pyrox/01, mag.	S dev = 114.0	log pages: 6-11
32	883.5	65° 4 cm sp. strong 0-20°		black 1 mm min. on fract. MnOx?		
33	892	mod. 10° & 30°		as above, fractures 3-6 cm spac.		
34	903.5	mod. spec. 10-30°		pink-grayish orange clay on 80-90' fract.		
35	913	few 80°		as above		
36	918.5	mod. 10-30°		as above		
37	928	90° fract.		Andesite Flow continued from 846', fine grained as above, clay on 90° fractures, MnOx on 10-30° fract.		
38	937.5	10-30° strong few 60°		Andesite continued		
39	949	strong 0-20°, 90°		some clay cement breccia, slickesides-20° dip. increased clay on all fractures		
40	960	strong 0-20°, 90°		Minor hem. stain on fract. gray-orange clay in fractures. Andesite cont.		
41	964.5	mod. 0-70°		as above, bi-model andesite ≤ 1 mm plag. xls, in an aphanitic matrix, very uniform texture		
42	974	few 0-20°		clay infill on vert. fract., minor hem. coat on fract.		
43	984	few 90°		as above, 2-20 cm fracture spacing		
44	992.5	mod. 10-30°		clay on 80° fract.		
45	1000.5	few 80°				
45	1000.5	strong 10-30°		minor breccia zone at 1,000', clay filled fracture spacing 1-3 cm		
46	1010.5	few 70°				
46	1010.5	mod. 0-20°		as above		

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description
47	1021	mod. 0-10° few 80-90°		clay filling vertical fract.-clay had drying cracks
48	1030	mod. 0-10° mod. 70-80°		as above
49	1039	strong 65° 0-10° few 90°		1038-39 breccia, clay filled
50	1049	mod. 0-20° few 55°		as above, fracture spacing 5-20 cm
51	1057.5	mod. 10-20° 60°, few 80°		clay on high angle fractures
52	1057.5-1066.5	strong 70-80° few 10°, 60°		Andesite Flow continued from 846', dark-grn-gray, fine grained, 20% 1 mm xls plag. & pyrox fracture spacing 2-3 cm
53	1075	Strong 80°		as above, fracture spacing 1 cm
54	1082.5	Mod. 75-90° Few 30°		Andesite(?) poss. dacite continued.
55	1091.5	Mod. 40-60° few 90°		clay on fractures
56	1101	few 80-90°		clay on fractures
57	1110	Few 80-90° few 60°		Conformable lower contact with underlying pyroclastic. 1109-1114 basal flow breccia
58	1119	V. few 90° Minor slip 1115'	1114-1137.5	<u>Lahar(?)</u> volcaniclastic deposit, crude bedding. Carbon in top 1.5', mix. vol. clasts in tuff-sand-clay matrix
59	1130.5			Gray-brns to pale red near base -- base contact conformible, pebbles to 20 cm blocks, upper contact dips 15° lower contact 20°
60	1139		1137.5-1243.5	<u>Dacite (?)</u> Porphyritic 10% 1-3 mm anhedral feld: plag? pyx, bio, matrix is grnish-black, aphanitic, even text, minor ves. upper 6' porphyritic 10% 1-3 mm pheno. plag, prox bio. grn-black matrix, clay on fract. is pale-brn w/ red flakes, clay filled breccia 1143-1145 Clay coating on fract. ≤ 1 mm to 3 mm, tuffac. banded clay washed into fractures. minor slip surface on clay joint 1160'
61	1149	Few 75-90°		
62	1158	Few 50-60° & 80° & 30°		
63	1167	Few 90-80° & 60°		
64	1177	Few 90°		Dacite cont. joints clay coated
65	1186	Mod. 70° 90° few 55°		pink clay in joints, washed in.
66	1196	Mod. 50-60° few 80° & 40°		color grades to dark-olive gray. 40° flow-parting with clay & mica on fractures
67	1205	Few 50° & 30° flow parting		few andesitic? xenoliths. 2 cm.

Andesite (continued)

Laharave susc = 625.2
s dev = —

log page 11

Daciteave susc. = 1293.5
Sdev = 330.3Log pages 11-14
variation in
susceptibility
throughout

Box # Bottom Depth Of Box Fractures (90°=vert.) Unit Interval (feet) Lithology Description

68	1215	few 90-80° & 30°		dark brn coating-MnOx? on 30° fractures	Dacite continued	
69	1223.5	mod. 20° few 90°		dacite continued, 4-8 cm fracture spacing		
70	1232.5	few 20°, 70°		basal flow breccia starts at 1230', greenish-blk blocks with ash & minor clay filling breccia, vesicular, red oxidized matrix	<u>Basal flow Breccia</u> ave susc = 685.1 s. dev = —	Pg 14
71	1242			ves. in blocks increase, blocks red-oxidized also. minor pale-brn clay injected. Prob. flow emplacement fault at base.		
72	1251.5	fault 1243.5-1587 1244'		Volcano-clastic-2% porphy, pale-brn, Dacitic dome. lapilli to block size brn andesitic? clasts 2% xls.	<u>volcano clastic/Breccia flow</u>	The variations in this section seem to depend on amount of clasts present
73	1261	v. few 70°		pale red baked upper contact to 1251, pale brn clasts in a light brn to pink tuffac. clay matrix, clast supported	ave susc = 962.0 s dev = 500.6	Pgs 14-16
74	1270.5			pink to brn laminated swelling clay infills between clasts.		
75	1280	few 70°		probable rubble flow or dome spree apron.		
76	1288	few 40°		volcano clastic or flow breccia continued, core breaks around clasts		
77	1297.5	few 70°		Dacitic (?) flow or dome with upper breccia 1243-1292'	<u>Dacite/Andesite flow or dome</u>	This appears to be almost a separate unit except for presence of lithics
78	1306.5	few 70°		change to flow banded & sheared 70° to vertical.	ave susc = 738.6 s dev = 155.6	this unit of rock has consistent appearance & susceptibility & alteration minerals (1297'-1570')
79	1315.5	mod 90°		vertical flow banded, probably a dome- or thick flow		
80	1325.5	mod 70°		dark grnish-gray, some flow brecciation continued,		
81	1335	mod 50-60°		clay along fractures		
82	1344	mod 70°		as above		
83	1352.5	few 30° mod 90° & 70°				
84	1362	few 30° mod 90° to 50°		Dacitic Dome or Flow continued from 1243'		
85	1370	few 0-20° prod 0-30° few 80°				
86	1379	mod 10-30° & 55-70°		2% 1 mm plag. pheno's., fracture spacing 3-7 cm		
87	1387.5	mod. 80-90°, 10°		as above, fracture spacing 1-5 cm		
88	1395	mod 80-90°, 10°		fracture density increased		
89	1404	mod 60-70° & 80°, few 20°		as above		
90	1412	strong 30-40° 80°, few		Dacite or poss. Andesite continued.		obvious flow planes - many fractured zones Pg 16-21

Box # Bottom Depth Of Box Fractures (90°=vert.) Unit Interval (feet) Lithology Description

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description		
91	1420	strong 80°, 10-20		Andesitic-Dacite Dome, continued 2% 1 mm pheno, in a dk grnish-gray matrix	Dacite/Andesite contin.	
92	1428	strong 0-20° & 80°		pink clay wash-in along fractures, 1-5 cm spacing		
93	1438	mod 30°, 60°, 80°		Viscosity as indicated by thick flow breccias suggest dacite		
94	1447	80-90° & 10-20°		flow shear appears to be about 10° dip		
95	1456	mod 90° few 5°		gray-pink clay up to cm thick in vert. fract.		
96	1466	mod 80° & 10°		dacite continued		
97	1475.5	few 80° 10, 60°		flow shear planes about 10° dip		
98	1485	strong 10° 80-90°		dacite continued		
99	1494.5	mod 50°, 90°, 10°		2 cm thick clay wash-in on vertical fractures		
100	1503	mod 80°, 60°, 10°		white mineral, plag? along flow shear planes		
101	1512	mod 80° & 10°, few 60°		dacite continued from 1243'		
102	1521.5	few 10°		fracts. along flow shears		
103	1530	mod 10° & 75°		dacite continued		
104	1539	mod 80° 10° & 30°		dacite continued		
105	1548	few 20° & 50°		dacite continued		
106	1557	few fract. 60°, 20°, & 90°		dacite continued		
107	1565	80-90° & 55°		fracturing moderate to strong frequency		
108	1574	few 30° & 70°	1570-1587'	basal flow breccia	Basal flow Breccia $k=200-1500$ 605.7	This flow breccia had wide variat. in susc.-prob. to compos. of lithic
109	1583	few 50° & 90°		basal flow breccia		
110	1592	few 40° 75-90°	1587-1629	Lahar? Volcanoclastic, lapilli & few blocks in an ash & clay matrix, non-sorted, dark-med gray	Lahar/Volcanoclastic	Very large clasts of various lithol. relatively high
111	1601	few 55°		2' beds of ash, 40 cm blocks. Andesite to basaltic clasts, also few pumice clasts	ave susc = 1526.6 s dev = 287.3	k for entire unit (compared w/ basalts)
112	1610.5	no fract		some clasts are fairly rounded-smoothed surfaces, few clast irregular to angular, no alteration		
113	1621	none		4 cm thick laminated bed at 1620.5		
114	1630	few zone		broke up with 80-90° fractures 1626-1629		

log Page 21

Box # Bottom Depth Of Box Fractures (90°=vert.) Unit Interval (feet) Lithology Description

log pg 22

115	1639	few 50°	1629-1673.5	Basalt flow, viscular, to 1648, 2% 2 mm plag xl., upper flow breccia 1624-1644 in filled with ash & clay from lahar	Upper flow breccia w/interbedded basalt flow ave susc = 2550.4 s dev = 563.1	large clasts + ash matrix - high susc. (one interbed. basalt flow - low k)
116	1648	V. few 70°		brown and white clay layers half filling vesicles, basalt med-gray, fill surfaces 4° off normal to core brownish-gray, flow-shear planes dip 20°, with clay & ves. along planes clay in-filling along fractures. Basal flow breccia starts at 1666.5	Basalt flow ave susc = 607.8 s dev = 288.0	log pgs 22-24
117	1656.5	few 50° 90°, 20°				
118	1666	mod. 20° 90°-70°				
119	1675.5	minor faults 50-60°	1673.5-1694	Lahar or Volcanoclastic 10 cm clasts in banded clay and ash matrix, mostly clast supported	Basal flow breccia K=967 to 1594 steady increase	log pg 24 295
120	1684.5	mod 60-90° & 20°		clay slicken surfaces on fracture, probably minor movement. Most is gray brns & reds, mod-reddish-brn. matrix supported clay zone with gray lapilli	Volcanoclastic ave susc = 1167.9 s dev = 389.9	log pg 24
121	1693.5	none		Vol. Breccia-Volcanoclastics continued. dk gray dacitic blocks with pale red-gray ash-lapilli matrix		
122	1704	few 55-60°	1694-1784	Basalt or Andesite-olive-black, fine grain. Pink clay-ash in-filling, non-porphyrific, plag, pyroxene-ol.?	Basalt ave susc = 768.9 s dev = 405.7	log pg 25-26
123	1711	mod. 60° 32°, 90°		top flow breccia to 1702' breaking along flow shear planes		
124	1721	mod. 70-90°, 20°		pale green clay coating or hem. on fractures		
125	1728.5	strong 80°, 45°		few 2 mm vesicles		
126	1737.7	mod 90°-70°		MnOx & clay on fract.		
127	1745.5	mod-strong 55°, 90°		strong MnOx coat on high angle fract. minor hem. stain on 55° fract.		
128	1755	mod. 50-60°		MnOx & blue-grn clay coat on 2-15 cm spaced fract.		
129	1764.5	strong 50-60°		rock type & alt. continued, fracture spacing 1-5 cm		
130	1779.5	mod 45-60°		fracture spacing 2-9 cm		
131	1788.5	few 70-90°	1784-1798	Intra-flow breccias and cinders, red, non-vesicular		
132	1798	few 60° 10°		clay matrix in-filling flow breccias	breccia ave K = 1045	
133	1807.5	few 70-80°	1798-1820	Basalt Flow, med-dk gray, 25% 1-3 cm vesicles filled with blk-waxy clay, non-porphy	Basalt flow ave susc = 670.0 s dev = 146.8	log page 26
134	1817	mod 90-70°, 60° 10°		grn-blk clay & poss chlor on fract. minor flow breccia at base, but also slicken surface in clay alt. tuff		
135	1825	mod 70° 45 & 90°	1820-1826.5	Lapilli Tuff, clay alt. waxy, cracking clays, lapilli alt. also, mod. reddish brn. to orange. mod. sorting	Lapilli tuff ave = 673.2 s dev = 346.4	log pg 26
136	1834.5	few 70°	1826.5-1969	Basalt Flow, vesicular, black, non-porphy, upper flow breccia to 1836 in-filled with ol-brn ash	Upper flow breccia ave = 493.7	

Box # Bottom Depth Of Box Fractures (90°=vert.) Unit Interval (feet) Lithology Description

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137	1845	few 75°		vesicles & fractures filled with black-waxy clay	Basalt ave susc = 409.2 s dev = 192.0	P. 26-27
138	1854	few 90-70°		curving irregular fractures		
139	1863	none		Basalt Flow cont. color varies to dk. olive grn, basal flow breccia starts 1857'	Basalt flow breccia ave K = 1090.6 s dev = 590	P. 27
140	1872	none		flow breccia-gray to gray-red		
141	1882	few 90-80°, 60° & 20°		as above, dark gray	Basalt ave susc = 527.8 s dev = ~180	P. 27, 28, 29
142	1891	few 50°		flow shear planes at 50°		
143	1900	V. few 70°		flow shear 10-20°		
144	1909	few 70-80°		flow shear 20°, brnsh blk clay on fractures		
145	1919	mod 70°-80°		basalt flow continued		
146	1928	mod 75° 30°, 90°				
147	1937	mod 65° 30°, 90°		basalt flow continued		
148	1946.5	strong 50-70°		rock crushed, abundant black-waxy clay on fract.		
149	1956	strong		dark gray basalt continued, strong fractures		
150	1964.6	V. few 50°		Basalt continued		
151	1974	few 80° 70° & 30°	1969-1970.5	Lapilli tuff red, clay alt, compact, slicken surfaces	Lapilli tuff a 1389.0	
152	1984	few 55-70°	1970.5-2037	Basalt flow vesicular top w/flow breccia, dark gray, nonporphy, clay & chlor. alt. along fract.	basalt + interbedded breccias	
153	1992	mod 80-90°		few olivene pheno. 1-2 mm, partly alt., rock is grayish black	ave susc = 1267.3 s dev = 454	
154	2001	breccia fault		rock is strongly crushed & recemented by clay & chlorite, poss. zeo.		
155	2010	strong 60-70°		fractures of all angles, brecciated and cemented		
156	2019	brecciated		breccia		
157	2030			basal flow breccia, also crushed. red basal oxidized zone 2035-2037		
158	2039.5	few 65° & 80°	2037-2240	Basalt flows greenish-blk, vesicular, non-porphy strongly chloritized, ves. & fract. filled with white clay		
159	2049	mod 60° 45°, 80°		flow-breccia to 2039', poss. zeo. in vesicle, chloritized		
160	2057	few 45°		grnsh, blk chloritized, white lined vesicles		
161	2067	few 50-75°		Basalt Flows cont. white xl. min. in ves. and fract., prob. zeo. cubic xls. and few euh. qtz xls.		
162	2076	few 20°, 65°		zeolite in vesicles and fractures		
163	2085	few 80° 90°, 55°		fract. healed with chlor & zeo.		

Box # Bottom Depth Of Box Fractures (90°=vert.) Unit Interval (feet) Lithology Description

Page 8

164	2095	V. few 75°		vesicles continue thru entire flow
165	2105	V. few 65°		as above
166	2114	few 65°		as above
167	2124	few 90° 75°		as above-few zones alt. to red-brn
168	2133	few 65- 80°		vesicle filling level 4° off normal to core axis, abundant 0.5 to 2 cm vesicles, zeo. lined
169	2142	few 40°		fewer vesicles
170	2151.5	few 65°		grnish-blk grading to dk red-brn
171	2161	few 90° 10° & 70°		dark red brn., dark yellowish-orange zeo, on 90° fract.
172	2170	few 90- 85°		as above. about 1/2 grnish black
173	2179.5	few 60°		as above, grnish black
174	2189	few 65°		some breccia healed with chlorite. Intra-flow ash clay alt., compact at 2184'
175	2198	few 90°		fault zone?-crush breccia recemented by chlorite, clay slicken side & open space zeo. on vertical fract.
176	2208	none		totally chloritized, rock crushed and chl. cemented, vesicles with zeo. & clay amygdules in some clasts as above, grnish-black, zeolite and chlorite
177	2218	few 65- 50°, 40°		chl. zeo. alt., color grades to dk-red-brn
178	2228	few 60°		intra flow ash, brn-clay alt. compacted at 2240.
179	2231	few 30°, 60°		Basalt grades back to grn. black
180	2247	few 65° 85°	2240-2318	Basaltic flow Breccia & Ash , vesicular upper flow breccia, zeo. amygdules, clay in-filling
181	2257	fault 40-60°		grn-black blocks, brn to olive-brn clay-matrix, minor movement
182	2265	few 60- 70°		red brn to gray flow breccia, chlor.-clay alt. some tectonic crushing
183	2273	few 70- 80°		as above
184	2284	few 50- 60°		basaltic? flow breccia cont.
185	2292.5	90-70°		extensive clay alt., chloritized, zeo. in fract.
186	2301.5	strong- 50-90°		as above
187	2310.5	few 90° 50-60°		basaltic flow breccia and ash. cont.
188	2319	few 35°	2318-2419	Lahar(?) w/minor ash & vol. breccia zones. Grnish-blk. to red. ol. brn. chlor, clay alteration
189	2327.5	few 40°		mixed vol. litho. in clasts
190	2337.5	few 10° 45°		increased gray-red ash
191	2348	few 50° & 20°		dk gray brn to red Lahar/vol. breccia
192	2358	irregular		mixed vol. clasts types, andesitic, hornblendes,

Basalt continued

intra flow ash ave = 351.4

2225'-2229' P. 34

Basaltic flow breccia

ave susc = 838.6
s dev = 481.0

there were interbedded intervals of basalt (usually the SE had lower susc.) the susc. seemed to be directly prop to the size & amt of clasts. The higher the susc, the less matrix in sample

log pgs 34, 35

Lahar with interbedded ash + volcanic breccia

lahar
ave susc = 1155.9
s dev = 355.3

ash flow

2331-2341
ave susc = 562.6

the less matrix & lighter matrix had lower susc ash flows have much lower susc than rest
log p8

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description		
193	2366	few 20-30°		chlorite and clay alt. continued		lahar (cont)
194	2374.5	strong 90°, 20-30°		core broke up - Lahar cont.		
195	2383.5	mod 80°, 30°		poss. lithic rich pyroclastic flows, slip on fractures		
196	2393	mod 20-30, 70-90°		as above		
197	2402.5	few 90°, 45°, 70°		chloritized as above. poss. lava flow or dike 2400-2412		
198	2411	strong		as above, fractures of all angles		ASH FLOW ave = 181.8
199	2420	few 50°		grn-black to red, Vol. breccia-Lahar		2417-2419
200	2430	mod 20° 30-50°	2419-2448	<u>Andesitic Breccia</u> , dk-grn-gray to gray-red. Uncertain as to brecciation pre-dates emplacement or post dates chloritization. strong chl. clast-matrix ratio variable		<u>Andesite Breccia</u>
201	2440	strong 50-75°				ave susc = 1012.0
202	2449	strong 50° few 80°		minor movement on these fract. surfaces		s dev = 522.3 P. 37
203	2458	mod-strong 68-70°, 25-45°	2448-2454	<u>Crystal Ash Flow Tuff</u> , clay alt. 15% 1-2 mm plag. xls., compact, abund. bio., brn		<u>crystal ash flow tuff</u>
204	2467.5	few 70° & 75°	2454-2546	<u>Andesite Flow</u> , 15% 1-2 mm plag. xls. alt to chlor, clay, minor calcite. flow is brecciated		ave = 251.8 P. 38
205	2466.5	few 70°, 50°		brec. mostly flow emplacement, gray-red-brn to grn-black	2469	<u>Andesite Breccia flow with red ash matrix</u>
206	2486	V. few irreg.		flow grades to dk grnish-gray, w/hornb./bio 1-3 mm and motled appearance, magnetite still present	2478	ave = 781.5 s dev = 267.8
207	2495	few 80° 20°		strong chloritization, fractures zeolite filled	2486	<u>Andesite Breccia flow w/ gray matrix</u>
208	2504	few 70-80°		chor. veinlets along crush surfaces, zeolite		ave = 1585.2 s dev = 254.1 P. 3
209	2512.4	few 25°, 90°		rock is more crushed, extensive tectonic breccia and chl. matrix		ave = 815.7 P. 38
210	2512.5	few 80°		as above		<u>Andesite flow breccia</u>
211	2533	strong 75-80°		Andesite flow continued dark grn-gray, 15% porphy- strong, chloritized, clay? grn schist?		ave susc = 884.4
212	2543	V. few		basal flow breccia with red matrix ash 2535-2546	2535	s dev = 296.7 P. 38-40
213	2552.5	V. few 50°	2546-2586	<u>Andesite flow</u> , 15% 1-2 mm pyx xls. pyx. are little alt hem. coating, dark gray	2546	<u>Basal flow breccia</u>
214	2561.5	V. few 20-50°		Upper flow top breccia 2546-2553, poss. port. alt. pyx to hornb.	2553	ave susc = 514.4 P. 40
215	2570	mod. 80°		minor zeo. along 80° fract. Much less chlor. alt.		ave susc = 1698 P. 40
216	2579	strong 70-90° few 20°		pale grn. clay along fractures	2581	<u>Andesite</u>
						ave susc = 3685.9
						s dev = 816.5
					2586	<u>Basal flow breccia</u>
						ave = 539.7 P. 41
					2586	

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description		
217	2589	few 45° 75-80°	2586-2602.5	Lithic-lapilli tuff red to pale grnish-gray, 60% lapilli sand to 3 cm size mixed vol. litho	Lithic lapilli tuff	Pg 41
218	2598	few 45° & 65°		few V. pale grn. fiamme, compacted strong chloritization of matrix, mod. clay alt.	ave susc = 961	
219	2606	none		Lapilli reduced to 30%, more fiamme.	S dev = 373	
220	2615	1 fract 25%	2602.5-2657	Crystal Lithic Tuff, grayish-blk, 10% 2 mm plag. ≤ cm lapilli. 5% mix vol. litho; black-fiamme, vol. brecc. at top of unit 2602-2604.5 tuff appears little altered	2603 2605 Volcanic Breccia ave = 1276	
221	2624.5	V. few 40°			Crystal lithic tuff ave = 1506.4 S dev = 23.6	P. 41
222	2633.75	none		Vitric ash	2616 Crystal lithic vitric tuff ave = 1276.0 S dev = 249.8	P. 41-42
223	2643	none		compact, pumice flattened, but not strongly welded obsidian lapilli, matrix unaltered		
224	2652.5	none		minor clay & chlorite alt. near base 2656' tuff lightens to brnsh-gray below 2654	2657	
225	2662	none	2657-2694	Olivine Basalt, ves. near top 10% 1-2 mm olivine 3% plag, amygdules of zeo? 12' flow breccia on top	2668 Upper flow breccia - Andesite ave = 2083.4 S dev = 503	P. 42
226	2671	few irreg.		black to brnsh-gray, minor chlor. alt, zeo. filled fract.	2668 Andesite/Olivine Basalt () ave = 1888.9 S dev =	P. 42
227	2680	few 50°				
228	2690			> cm size open space left in breccia, zeo. cement & coat. basal flow breccia starts 2684', soft, white zeo.	2678 Basal flow breccia - Andesite ave = 1060.8 S dev = 417.9	P. 42-43
229	2699	none	2694-2713	Lahar, mixed vol. lapilli to blocks in a clay + sand matrix, dk red-brn to olive black mixed colors & non-to porphy. clasts	2694 Lahar ave = 1060.8	P. 43
230	2708.5	few irreg.				
231	2717.5	few 45° w/sliken	2713-2719	Lapilli ash 1-3 mm clasts, well sort. yel-brn to dk yel.-brn, 3 cm clast near base	2713 Lapilli ash ave = 1439.4 S dev = 65.1	P. 43
232	2727	none	2719-2726	Lahar or volcanoclastic, light gray blocks-lapilli in an olive-black matrix, clasts are rounded, non-sort	2719 Lahar/volcanoclastic ave = 1131.4	P. 43
233	2736.5	none	2726-2842	Andesite Flow, 5% 2 mm pyrox, 2% plag. blk-red-pale-brn-to gray black, hem clay alt. zeo. on fract. minor alt.	2726 Upper flow breccia ave = 991.2	P. 43
234	2745	few 80°		pale grn clay or celadonite on fract.	2733 Andesite red matrix ave = 259.4	P. 43-44
235	2754.5	few 80°		black MnOx(?) coat and waxy clay on fract.	2740 Basaltic Andesite/Andesite (with brecciate zones)	
236	2765.5	mod. 70-90°		chlor. alt. increases		
237	2775	mod. 70-90°, few 30°		clay & chlor. on fractures, andesite or poss. basalt cont.	ave susc = 1471.8 S dev =	P. 44-46
238	2784.5	mod 70-90°, few 30°		minor movement on high angle joints, chlor.+ zeo. cement fractures		
239	2794	mod 70-30°, few 90°		crush and chlor. alt.		

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description		
240	2804	mod. 70-80°		clay on joints as above		Basaltic Andosite / Andosite cont
241	2814	mod. 70-90°, 40°		Andesite Flow-cont. grnish-black, 5% 2 mm prox., 2% plag. strong chlor. alt.		
242	2823	mod. 80-90°, 50-60°		chlor. on fract.		
243	2832	mod. 60° few 45°		Andesite flow continued		
244	2842	few 60-75°		color changes to gray-red in basal flow breccia at 2837	2837	Basal flow breccia
245	2851.6	few-mod. 80-90°	2842-2935	<u>Volcano-clastic</u> or <u>Lahar</u> Mixed litho. of lapilli to blocks, non-sort., fine matrix of ash to clay, red-olive blk zeolite filling fractures	2842	<u>Volcaniclastic - Lahar or Volcanic Breccia</u>
246	2861	irreg. breaks				ave susc = 1086.3
247	2870	few 70°		brown clay alt. matrix, minor stricken surfaces		
248	2880	few 10°	2877-2879	Well sorted lapilli zone-dk brn to yel-brn clay alt. ash-cinders?, 75° slip surfaces		
249	2889	60°-45°	2885-2891	Lapilli-clay alt, compact, few slip surfaces		
250	2899	75°, 90° & 45°		as above, yel-brn & pale grn.		
251	2909	few 75°		Lapilli cinders, minor ash, few blocks		
252	2918	few 80°		grn, dk-gray & dk red lapilli few light gray, grnish gray to brn.		
253	2928	few 80°		olive black		
254	2937	few 45° 70° & 90°	2935-2952	Ash or tuff, trace plag. xls., dk. gray to gray-red	2935	ash and/or tuff
255	2945	few 75°		rare lapilli in ash, few slip surfaces	2952	ave susc = 784.3
256	2955	few 65-90°	2952-2966	<u>Volcanoclastic</u> lapilli pyroclastic, mix litho, dark grnish gray, slip surfaces on clay		volcanoclastic / volcanic Breccia
257	2964	strong 90-60°		few blocks & thin sand bed. clay alt. matrix. Basal contact is a fault	2966	ave = 1075.9 sdev = 319.1
258	2973.5	mod. 45° 80-90°	2966-4800 TD	<u>Olivine Basalt flows</u> . fine grain few mm xls. olivine, grnish blk to blk. mod. chlor-alt., 2% mm plag. xls. upper contact is a minor fault at 2966'		Olivine Basalt flows with interbedded olivine breccias
259	2983	mod. 65°		flow breccia, small irreg. vesicles, minor zeo.		
260	2992	minor-irreg.				
261	3001	few 65°		multi-colored flow breccia, mono-litho, zeo. and clay alt.		ave = 1066.6
262	3010	few 45°		vesicular, 1-3 mm, irreg.		
263	3018.6	irreg.		as above		
264	3028	none		dunite xenoliths?		
265	3037.5	few 80°		Basalt Flows continued, light blue clay alt.		
266	3047.5	few 60°		as above		
267	2057	few 90°		as above, flow breccia-cinders		
268	3066.5	strong 90°, 70°, 50°		more solid flow rock, white, blue & grn coating on fract.		

P. 46

much varied due to amt & type of das and mafics & matrix. P. 46 matrix char throughout & (ash/clay/m) with transitic indistinct cont minor gradin of lapilli/bloc

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P. 48

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description
269	3076	few 80°		flow breccia, vesicular
270	3085	few 50°		vesicular, vesicles open, coated w/blue clay
271	3084	none		continued dk gray-brnish gray, vesicular, irregular vesicles, 2% plag.
272	3103	none		as above, clay coating vesicles
273	3113	few 60-90°		med gray - as above
274	3123	strong 50-90°		open fractures, clay and chlorite, malachite
275	3131	mod 60		as above
276	3140.5	few 60-70°		open irreg. ves. flow breccia-cinders
277	3150	mod. 70-90°		chalcedony coating on open fract.-space
278	3159.5	mod. 90-70°		
279	3168.5	mod. 60-70°		as above, open irreg. ves.
280	3177.5	few 10° & 70°		as above
281	3187	few 70-80°, 100°		chlor. on fract.
282	3196	few 80°, 40°		some open breccia at 3196'
283	3205.5	few 45° 65°		as above
284	3214.5	few 50-40°		clay in filling breccia & fract. chlor-alt.
285	3223.5	few irreg.		vesicular, as above
286	3233	few 30°		as above
287	3242	irreg. breaks		vesicular
288	3252	few 80° 30°		Basalt Flows continued from 2966'
289	3261	few 90° & 60-70°		as above
290	3270	few 90-80° & 60°		as above
291	3279.5	few 70°		as above
292	3289	few 60°		
293	3299	few 90°		flow centers & breccia, mod. chlor. alt. in flow breccia
294	3308	few 25° & 90°		
295	3318	V. few 65°		as above, clay and zeolite along fract. cont.
296	3328	85° few		vesicular flow breccia, minor chalcedony

Olivine Basalt + flow breccias
contBasaltic andesite
with Breccia flows

ave = 1572

3292' - 4800'

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description
297	3337	few 80°, 60°		as above
298	3346	mod-strong 90°, 10°, 60°		as above, flow center
299	3355	mod. 80-90°, 55°, few 10°		
300	3364	few irreg.		as above, flow breccia
301	3373.5	55° few		Basalt-Andesite Flows continued, dark red-gray to grnish black, 3% 1-2 mm plag. xls. chlor. on fract. about 2/3 flow breccias & 1/3 solid flow center, Flow brec. consolidated. 2 mm irreg. vesicles
302	3383	mod. 90° 60-75°, 10°		chlor. on fractures
303	3392	mod. 80-90°, few 20-30°		
304	3401	mod. 70-90°, few 30°	3396-3421	flow breccia vesicular, dk olive grn
305	3411	none		fract. joints not present in flow breccia
306	3421	none		flow breccia cont.
307	3430	mod. fract. 55°, 90° 20°	3421-3434'	vesicular flow breccia, grn-gray shades flow center, open space 2nd minerals chlor-white zeo., poss. clay blue-grn Basalt Flows continued from 2966'
308	3440	mod. 80° 10-20°		flow breccia starts 3434, vesicular
309	3439.5	few 80° 20°, 45°		flow breccia to 3444 then flow center
310	3458.5	few 90-80°, 45° 10°		flow-breccia 3 feet thick
311	3468	one 90° 2-20°		all flow breccia
312	3477	irreg.		dk-gray-grn to grnish black. Vesicular flow breccia, consolidated
313	3487	mod. 70-75°, 30°		grn. chelcedony? on fractures, flow center
314	3497	few 75-90°		flow breccia, empty vesicles
315	3507	few 80°		as above
316	3517	irreg. 50°		as above
317	3526	mod. 75-80°, few 45°		flow center

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description
318	3535	mod. 80, 70°, few 10°		flow center to 3531 then flow breccia chlor. on fract.
319	3544.5	strong 60-70°		flow breccia zeo. along fract. & coat open space breccia
320	3553.5	mod. 70° irreg.		flow breccia, vesicular
321	3563	few 30°		vesicular flow breccia, as above
322	3572.5	2-55°		as above
323	3582	few 65-90°		clear to pale grn. zeolite on fractures
324	3592	V. few 57°		flow breccia-open vesicles
325	3601.5	V. few 70°		as above
326	3611.5	mod. 35°, 45°, 90°		Basalt Flows continued from 2966'. 5' thick flow center vesicular
327	3620	few 45° 75°		4' flow center - 6' flow breccias
328	3629	V. few 10-20° & 50°		calcite coating on one fracture <i>didn't effervesce!</i>
329	3638.5	V. few fract. 55° & 20°		matrix of flow breccia strong alt. to chlor or celadonite?
330	3648.5	V. few 80°		as above
331	3658	irreg. breaks		Basalt-Andesite? Flows continued, dk-gray, brn, gray-grn. 3% 1-2 mm plag. vesicular 2 mm, vesicles -1/2 filled w/zeo.
332	3669.5	irreg. break		flow breccia as above
333	3677	none		zeo. & clay as above
334	3687			as above
335	3696			as above
336	3706	none		at 3703, 3 cm vesicle-zeo. coat, amygdules of chalcedony, celadonite
337	3715	none		qtz & celadonite amygdules
338	3723.5	few 8° & 50°		as above
339	3733	mod. 75°, 40°		flow breccia
340	3242.5	V. few 60°		as above
341	3751.5	irreg.		as above
342	3760.5	few 90, 70°		as above
343	3770	few 70° 80°		ves. 2/3 filled. as amygdules

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description
				Page 15
344	3779	few 90-60 irreg.		flow breccia as above
345	3788	irreg.		as above
346	3797	few 90-80, 65°		as above
347	3805.5	mod. 80°, 60, 30°		Basalt Flows continued from 2966' qtz. filled 7" flow center amygdules
348	3815	none		flow breccia-as above
349	3824	few mod. 45°, 90°		as above
350	3833	few 75-80°		as above
351	3842	few 65°		as above flow breccia, qtz amygdules vesicular, few celadonite filled, some open chlor & qtz along fract.
352	3852	few 65°		
353	3861	strong 75-80°		
		few 30°, 60°		as above, flow breccia
354	3871	few 80-90°		most vesicles empty
355	3880	few 80-90°		flow breccia
356	3889	none		as above
357	3998	few 65° 80°, 90°		celadonite amygdules but most ves. empty,
358	3907	mod. 65-75°		flow breccia as above & qtz amygdules
359	3916	none		as above, breccia
360	3924.5	mod. 80-90°, few 75°		flow center. 8' thick
361	3434	none		Basalt-Andesite flows cont. 2 mm vesicular, 5-10% 3% 1-2 mm plag. xls, grnish-blk, to dk gray
362	3943.5	none		flow breccia cont.
363	3953	few irreg. 75°		as above
364	3962	few 20-25°		as above
365	3972.5	few 90° & 70°-80°		fract. qtz rock more crushed below 3970', qtz cemented
366	3982	strong 50-90°		chlorite & qtz cement
367	3991.5	few 20-30°		Basalt Flows continued from 2966', qtz amygdules
368	4000	mod. 90° 55-65°		as above
369	4009.5	few 70°		as above

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description
370	4019	mod. 80-90°		fract. in flow center, qtz in celadonite-chlor on fract.
371	4028	strong 70-90° 50°		qtz. vein/fract. fill increasing flow center
372	4037	few 70°		flow breccia, less qtz
373	4047	few 75°		as above, less qtz
374	4055.5	strong 70-80° 55°		flow center
375	4065	strong 70-80° few 55°		flow center as above
376	4074.5	mod. 80° & 20°		as above, center to breccia at 4069'
377	4084	strong 90°, few 65°		as above, flow center 4089-4103 8
378	4094	strong 80° & 70°		flow breccia to 4099'
379	4102	strong 90°, 70-80°		as above, flow center 4089-4103
380	4112	few 60° & 80°		as above, flow breccia
381	4121	none		as above
382	4030.5	few 50°		as above
383	4140	none		celadonite amygdules
384	4149.5	none		as above
385	4158.5			as above, flow breccia
386	4168			flow breccia
387	4177.5			as above
388	4186	mod. fract. 70-80° & 50°		as above, Basalt Flows
389	4195	few 40°		chlor. on fract., qtz. amygdules
390	4206	mod. 85-90°, few 45°		as above
391	4216	few 25 & 70°		Basalt flows & breccia-cont. from 2966' 2 mm vesicular-5 10%, 3% plag. 1-2 mm, grnish-black vesicles to 1 cm
392	4226	strong 90°, 50° 75°		
393	4235	mod. 90° 35-30°		as above
394	4245	trace py.		qtz. & celadonite amygdules, zeo.

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description
395	4255	no fract.		as above, breccia
396	4284.5	strong 75-80° 25°		flow center
397	4274	mod. 80-90°, few 20°		flow breccia
398	4283.5	few 65-70°, 30°		most ves. open/unfilled
399	4293	mod. 90° few 85°		as above
400	4301.5	few 85-90°, few < 10°		as above
401	4311	few 60° 45°		as above-flow center, upper part vesicular
402	4321	few 50, 90°		as above, center-breccia-ves. top
403	4330	few 90° 40°		as above
404	4339.5	strong 90°-80° 10°		Basalt Flows and intra Flow Breccias continued from 2699'
405	4349	few 90°		flow breccia
406	4359	few 80° 50°		as above
407	4368	none		as above
408	4377	few 70-90°, 25°		thin qtz coat on fract.
409	4387.5	mod. 90° 50°		flow center, as above
410	4397	few 55° & 25°		as above, flow center to 4391 breccia
411	4406.5	mod. 40° 80°		as above, flow center
412	4415	mod.		crushed rock with fractures at all angles
413	4423.5	strong 30° & 60°		as above
414	4433	mod. 30° & 60°		minor fault 30°, flow center over breccia
415	4442	irreg.		as above, ves. breccia
416	4451.5	few 55°		basalt cont.
417	4461	V. few 60°		qtz. amygdules
418	4471	few irreg.		as above

Box #	Bottom Depth Of Box	Fractures (90°=vert.)	Unit Interval (feet)	Lithology Description
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419	4480.5	few 90°		as above
420	4489.5	mod. 10° 30°, 80°		flow center

Box 421 to 453, Interval 4536-4800 T.D. Basalt Flows and breccia continued from 2966'

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

original log forms →
H. ROSS

Drill Hole: CTGH-1 Pg. 1 of

Date: 6-9-87

Company: Thermal Power

Logged by: ML + HR

Core Diameter: 2.40" = NC
(in.)

Total Correction: $(1/d^2)(1.75)(\frac{1}{\text{frac. present}})$

Instrument: BISON-3101A

$(\frac{1}{2.40})^2 (1.75) = .303819$

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General lithology	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 1 527.75	2730 2746	X		2730	.3038	829.4			Olivine Basalt	broken, 10% core missing along fracture
528.0	2373	X		2373	.3038	721.0			"	
528.5	2803	X		2803	.3038	951.6			"	
529	3053	X		3053	.3038	927.6			"	natural fracture
zero → 530	2953	X		2953	.3038	897.2			"	
530.7	2967	X		2967	.3038	901.4			"	
531.5	3012	X		3012	.3038	915.0			"	
532.5	2839	X		2839	.3038	862.5			"	
533.0	2984	X		2984	.3038	906.5			"	
zero → 533.5	2907	X		2907	.3038	883.1			"	
535.0	2667	X		2667	.3038	810.2			"	
Box 2 536.3	2931	X		2931	.3038	890.4			"	
536.8	2959	V		2959	.3038	899.0			"	
537.5	2686	X		2686	.3038	816.0			"	
zero → 538.0	2956	X		2956	.3038	898.1			"	
538.5	2737	X		2737	.3038	831.6			"	
539.0	2938	X		2938	.3038	892.6			"	
540.0	3095	X		3095	.3038	940.3			"	altered vug - green mine
541.0	3125	X		3125	.3038	949.4			"	
zero → 541.5	2839	X		2839	.3038	862.5			"	
542.0	2879	X		2879	.3038	874.6			"	
									"	542-544 badly broken no reading
Box 3 546.0	3120	X		3120	.3038	947.9			"	544-546 badly broken
546.3	2918	X		2918	.3038	886.5			"	
547.3	2694	X		2694	.3038	818.5			"	major fractures (fresh)
549.3	1318	X		1318	.4340	572.0	std dev 79.4	863.32	"	$\frac{1}{70}$ highly fractured cum mineral
551.3	1300	X		1300	.3038	395.0			Basalt	vesicular, w. clay or zeolites
551.6	1072	X		1072	.3038	325.7			"	badly broken
Box 4 552.5	920	X		920	.3038	279.5			"	vesicular but down
552.8	978	X		978	.3574	349.6			"	$\frac{1}{.85}$

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CTGH-1 Pg 2 of

Date: 6-9-87

Company: Thermal Power

Logged by: ML & HR

Core Diameter: NC. 2.40"

Total Correction: $(1/d^2)(1.75)(\frac{1}{70}) = .303819$

Instrument: BISON-3101A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General lithology	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Zero → 554.8	930	X		930	.3038	282.6			Basalt	
555.3	1040	X		1040	.3038	316.0			"	pk-bro clay
558.0	1325	X		1325	.3798	503.2			"	556-562 badly less vesicular broken ($\frac{1}{80}$)
Box 5. 563	2730	X		2730	.3038	829.4			"	minor alteration of mag. Sics - FeOx - Crumbly; Cum
565.5	2497	X		2497	.4051	1011.5			"	$\frac{1}{75}$ Partial sample cum
566.	2024	X		2024	.4051	819.91			"	$\frac{1}{75}$ Partial sample cum
567	1816	X		1816	.4051	735.6			"	$\frac{1}{75}$ Remainder of box badly broken
Zero → Box 6. 581.0	3472	X		3472	.3038	1055			"	visible limonite
582.0	2965	X		2965	.3038	900.8			"	
584.0	3093	X		3093	.3038	939.7			"	
585.0	2892	X		2892	.3038	878.6			"	
586.0	2760	X		2760	.3038	838.5			"	core getting denser
586.5	2821	X		2821	.3038	857.1			"	loss vesicles, fractures
587.2	2886	X		2886	.3038	876.8			"	
587.8	2892	X		2892	.3038	878.6			"	
Zero → Box 7. 588.3	2490	X		2490	.3198	796.3			"	$\frac{1}{95}$ Partial sample
589.0	1738	X		1738	.3798	660			"	$\frac{1}{80}$ Partial sample vesicul broken
589.3	2815	X		2815	.3376	956.3			"	$\frac{1}{90}$ Partial sample very dense
589.9	2895	Y		2895	.3198	925.8			"	$\frac{1}{95}$
590.4	2252	Y		2252	.3038	684.2			"	
590.9	2572	Y		2572	.3038	781.4			"	
592.0	2582	X		2582	.3038	784.5			"	remainder of box badly broken
Zero → Box 8. 597.0	2779	X		2779	.3038	844.3			"	
598.5	2750	Y		2750	.3038	835.5			"	very dense
598.8	2735	X		2735	.3038	830.9			"	

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CTG4-1 Pg 3 of

Date: 6-10-87

Company: Thermal Power

Logged by: ML

Core Diameter: NC 2.40"

Total Correction: $(1/d^2)(1.75)(\frac{1}{90}) = .303819$

Instrument: Bison 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithology	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 8 zero → 600.5	2510	x		2510	.4051	1016.8			Basalt	1/75 partial sample
601.7	2895	x		2895	.3038	879.6			"	Dense flow
602.5	2710	x		2710	.3038	823.3			"	remainder of box badly broken
Box 9 611.0	1387	x		1387	.3038	421.4			"	Broken up to 611 vesicular
618.0	2459	x		2459	.3375	830.1			"	1/90 partial vesicular, clay alter.
618.5	2992	x		2992	.3038	909.0			"	denser
zero → 619.5	3782	x		3782	.3038	1,149.0			"	dense
Box 10 620.3	2759	x		2759	.3038	838.2			"	
621.0	2768	x		2768	.3038	841.0			"	dense; slight clay in vesicles
623	2655	x		2655	.3038	806.6			"	very dense w/ a few large (> 2cm) vesicles
624.7	1175	x		1175	.3198	375.8			"	1/95 partial sample increasing vesicles
zero → 628.5	4122	x		4122	.3038	1,252.3			"	clay in vesicles
628.8	4040	x		4040	.3038	1,227.4			"	
Box 11 629.5	2621	x		2621	.3038	796.3			"	vesicular w/ clay in vesicles
632.0	3116	x		3116	.3038	946.7			"	"
634.5	3130	x		3130	.3038	956.9			"	fractured + broken from 635-638
zero → 638.5	3436	x		3436	.3038	1043.9			"	
Box 12 639.5	3410	x		3410	.3038	1036.0			"	dense no vesicles continuous
641.0	3441	x		3441	.3038	1045.4			"	↑
641.5	3267	x		3267	.3038	992.6			"	
643.0	3291	x		3291	.3038	1000.0			"	dense no vesicles
643.9	3501	x		3501	.3038	1063.7			"	
645.2	3812	x		3812	.3376	1,286.8			"	1/90 partial sample dense no vesicles; clay
zero → Box 13 650.5	3628	x		3628	.3198	1,160.2			"	1st 2 ft of box broken alt. very vesicular, alt. part, tan
651.5	4033	x		4033	.3038	1,225.3			"	clay in vesicles 1/95
653.0	3788	x		3788	.3038	1,150.9			"	small fractures
657.5	2826	x		2826	.3038	858.6			"	656-657 - removed by possible mix up. Therm. DOGAM of core? →
Box 14 658.7	2886	x		2886	.3038	876.8			"	
659.3	2617	x		2617	.3038	795.1			"	badly broken
zero → 664.0	1301	x		1301	.3038	395.3			"	vesicular - clay in vesicles

large section of interco

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CTGH-1 Pg 4 of

Date: 6-10-87

Company: THERMAL POWER

Logged by: ML

Core Diameter: 2.40" NC

Total Correction: $(1/d^2)(1.75)(\frac{1}{90}) = .303819 \times \frac{1}{90}$

Instrument: Bison 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithology	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 14 (cont) 664.3	1120	✓		1120	.3038	340.2			Basalt	vesicular remainder of box badly broken
Box 15 684.7	2401	✓		2401	.3198	767.9			"	675'-683' badly broken dense 1/95 partial sample
685.5	2098	✓		2098	.3038	637.4			"	
687.5	3353	X		3353	.3038	1018.7			"	much denser core intact clay in fract.
zero → 690.5	6052	X		6052	.3038	1838.7			"	689'-690' broken (vesic tuff w/ mi clay dense, non vesicular clay phenocrysts & no apparent alteration - dark gray Thermal + DOGAMI took samples - 692'-693' block appear to be in wrong place 1/95 part. sample
691.0?	6513	✓		6513	.3198	2082.9			"	
Box 16 696.5	3107	✓		3107	.3038	944.0			"	693'-696' badly broken
698.5	3408	✓		3408	.3038	1,126.6			"	dense no vesicles clay alt. on fract
700.5	3443	X		3443	.3038	1046.0			"	dense vert. fractures
zero → 700.9	2733	✓		2733	.3038	830.3			"	
Box 17 701.6	2750	✓		2750	.3038	835.5			"	dense no vesicles
702.0	2658	✓		2658	.3038	807.6			"	
702.5	2893	✓		2893	.3038	878.9			"	some vesicles - clay
703.8	2890	✓		2890	.3038	878.0			"	704-707 broken
708.5	4334	✓		4334	.3376	1,463.1			"	707'-708' THERMAL DOGAMI 1/90 part dense no vesicles
709.3	3492	✓		3492	.3038	1060.9			"	
zero → 710.3	4256	X		4256	.3038	1,293.0			"	dense non vesicul.
Box 18 712	536	X		536	.3038	162.8			"	vesicular - clay in vesic very red
714	1186	X		1186	.3376	400.4			"	1/90 partial sample
~ 716	931	X		931	.3376	314.3			"	vesicles > 2 cm 1/90 partial sample
718	1152	X		1152	.3798	437.5			"	717 - badly broken 1/90 partial, fractures
718.8	1292	✓		1292	.3038	392.5			"	719-733 badly broken partial broken
733.2	2300	✓		2300	.4051	931.7			"	1/75 sample
zero → 734	2290	X		2290	.3798	869.7			"	1/80
Box 19 735	1806	X		1806	.3038	548.7			"	badly broken 735-739
739.8	4738	X		4738	.3198	1515.3			"	1/95 partial sample
740.5	3765	X		3765	.3375	1271.0			"	1/90 partial sample

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CTGH - 1 Pg 5 of

Date: 6-10-87

Company: THERMAL POWER

Logged by: ML

Core Diameter: 2.40" NC

Total Correction: $(1/d^2)(1.75)(\quad) =$

Instrument: Bison 3101A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithology	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
^{Box 19} 741.5	3128	x		3128	.3038	950.3			Basalt	
^{Box 20} zero → 745.0	3263	x		3263	.3038	1239.2			"	743-745 badly broken 1/80 partial sample, dense
745.7	3097	x		3097	.3038	940.9			"	dense; non vesicular Red alter. on fract.
746.5	3078	x		3078	.3038	935.2			"	
748.5	2929	x		2929	.3038	889.9			"	Thermal Power / DOGAMI took 747-748' red clay altera
749.3	3260	x		3260	.3038	990.4			"	dense non vesicular
749.7	3207	x		3207	.3038	974.3			"	
^{Box 21} zero → 750.5	3402	x		3402	.3038	1033.6			"	dense - compact cores non vesicular
751.0	3885	x		3885	.3038	1180.3			"	"
753	4219	x		4219	.3038	1281.8			"	"
755	4144	x		4144	.3038	1259.0			"	"
757	4313	x		4313	.3038	1310.4			"	"
759	3749	x		3749	.3038	1139.0			"	"
^{Box 22} 761	3712	x		3712	.3038	1127.8			"	"
763	3954	x		3954	.3038	1201.3			"	"
765	3812	x		3812	.3038	1158.1			"	"
767	3547	x		3547	.3038	1077.6			"	"
769	3859	x		3859	.3038	1172.4			"	"
zero → ^{Box 23} 770.3	3196	x		3196	.3038	971.0			"	denser alterat
771.8	457	x		457	.4051	185.1			"	vesicular → filled with clay → partial sample 1/10
781.7	3364	x		3364	.3038	1022.0			"	badly broken to 781 dense, few vesicles; clay alter
782.3	3050	x		3050	.3038	926.6			"	dense vesicular clay in vesicles
783.5	3820	x		3820	.3038	1160.6			"	vesicular → no apparent alteration.
784.1	5075	x		5075	.3038	1541.9			"	denser w/ vesicles slight clay alteration
^{Box 24} 788.0	2518	x		2518	.4340	1092.9			"	remainder of box broken
798.0	4313	x		4313	.4051	1747.2			"	786'-787' THERMAL & 1/20 partial DOGAMI
									"	788-798 badly broken much clay alteration 1/10
									"	rest of box broken par
^{Box 25} zero → 801	2268	x		2268	.5064	1148.4			"	1/60 partial 800-801 broken
807	2835	x		2835	.3038	861.3			"	801-807 badly broken 804'-805'
									"	remainder of box broken

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

 Drill Hole: CTGH-1 Pg 7 of

 Date: 6-11-87

 Company: THERMAL POWER

 Logged by: ML

 Core Diameter: 2.40" NC

 Total Correction: $(1/d^2)(1.75)() =$

 Instrument: Bison 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithol	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 30 (cont) zero → 862	1862	X		1862	.4051	754.3			Andesite	Sample taken by Thermal & DOGAME at 849-850
									"	Badly broken - remainder of box
									"	1/75 partial sample dense no vesicles, cl
Box 31 863.8	2151	X		2151	.3798	816.9			"	1/80 partial sample
875.0	2082	X		2082	.4051	843.4			"	most of box is badly broken
Box 32 878.2	1606	X		1606	.5064	813.2			"	1/60 partial sample; clay alter
Box 33 884.8	2412	X		2412	.3376	814.2			"	1/90 partial sample
887.3	2150			2150	.3798	816.51			"	1/80 partial 885-887 broken
888.5	3220	X		3220	.3038	978.3			"	dense; no vesicles clay alteration
889.5	2474	X		2474	.3376	835.2			"	1/90 partial
891.2	2624	X		2624	.3376	885.80			"	1/90 partial
Box 34 zero → 893.3	3030	X		3030	.3038	926.6			"	dense no vesicles
899.0	3214	X		3214	.3038	976.5			"	broken to 899
900.0	3330	X		3330	.3038	1011.7			"	dense no alter. visible
902.0	2902	X		2902	.3038	881.7			"	
903	2829	X		2829	.3038	859.5			"	
Box 35 904.0	2847	X		2847	.3198	910.5			"	1/95 partial
907	2146	X		2146	.3798	815.0			"	badly broken 904-907
912.8	2568	X		2568	.3376	866.9			"	1/80 partial sample
Box 36 914	2424	X		2424	.3798	920.6			"	most of box broken → 1/90 partial sample
915.0	2989	X		2989	.3038	908.1			"	913-914 badly broken
917	2618	X		2618	.3198	837.3			"	1/80 partial
zero → 919	2710	X		2710	.3038	823.3			"	dense, no vesicles slight clay alt
Box 37 921.3	2514	X		2514	.3198	804.0			"	1/95 clay on fract. remainder of box broken
923.5	2585	X		2585	.3198	826.7			"	
924.5	2800	X		2800	.3038	850.9			"	922-923 broken - crumbly - much clay
925.5	2687	X		2687	.3574	853.2			"	dense; clay on fract 1/95
zero → 928.5	2824	X		2824	.3038	858.0			"	many fractures (due to drilling)
Box 38 931.8	2794	X		2794	.3798	1061.0			"	1/85 partial clay, puss. horn stain
									"	remainder of box very broken
									"	pink clay - alter.
									"	1/80 partial
									"	929-931 much broken core

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

 Drill Hole: CT6H-1 Pg 8 of

 Date: 6-11-37

 Company: THERMAL POWER

 Logged by: ML

 Core Diameter: 2.40" N.C.

 Total Correction: $(1/d^2)(1.75)(\%_0) = .303819 \times \%_0$

 Instrument: Bison 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General (lithology)	Comments
		x1	x10			(x 10 ⁻⁶ ogs)	S.I.			
<u>Box 38 (cont)</u> 932.5	3083	x		3083	.3038	936.7			Andesite	
933.8	3398	x		3398	.3038	1032.4			"	dense - less clay alteration
936.8	3164	y		3164	.3038	961.3			"	934-936 badly broken
937.0	2731	v		2731	.3574	976.2			"	1/85 partial
<u>Box 39</u> 947.8	2480	x		2480	.3038	753.5			"	most of box badly broken crumbly with much clay
<u>zero</u> <u>Box 40</u> 949.7	2662	y		2662	.3132	833.8			"	1st possible sample near end of box 1/97 part
956.0	2551	x		2551	.3376	861.2			"	1/90 partial most of box broke in small pieces
957	2470	x		2470	.3376	833.8			"	1/90
959	2820	y		2820	.3038	856.8			"	sampled taken by COSA 958-959 THEC
<u>Box 41</u> <u>zero</u> 961.3	2532	x		2532	.3038	769.3			"	dense, much alteration small fractures
963	2463	x		2463	.3038	748.3			"	much fragments from caving - crumbly + broken
963.8	2679	y		2679	.3038	813.9			"	This sample dense
964.3	2578	x		2578	.3038	783.2			"	↑
<u>Box 42</u> 965.3	2824	y		2824	.3038	857.9			"	↑
967.6	2534	x		2534	.3038	769.9			"	
969.7	2714	x		2714	.3038	824.6			"	dense no alteration very boring box
970.7	2692	x		2692	.3038	817.9			"	↓
973.0	2652	x		2652	.3038	805.7			"	↓
<u>zero</u> <u>Box 43</u> 975.0	2726	y		2726	.3038	828.2			"	↑
977.7	2558	x		2558	.3038	777.2			"	same boring andesite
979.9	2654	x		2654	.3376	895.9			"	1/90 partial
980.5	2918	y		2918	.3132	914.0			"	1/97
982.7	2640	y		2640	.3038	802.1			"	
<u>Box 44</u> 985.2	2620	y		2620	.3376	884.5			"	1/90
987.3	2828	x		2828	.3038	859.2			"	↓
<u>zero</u> 988.5	2759	x		2759	.3038	838.2			"	boring rock
989.5	2618	x		2618	.4051	1060.5			"	1/75 partial clay alter. remainder of box badly broken - much clay on fracture
<u>Box 45</u> 996.5	2390	x		2390	.3038	726.1			"	most of box broken up many fractures
997.5	2073			2073	.3798	787.3			"	1/40 much broken rock

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CTGH-1 Pg 10 of

Date: 6-12-37

Company: THERMAL POWER

Logged by: ML

Core Diameter: 2.40" NC

Total Correction: $(1/d^2)(1.75)(\gamma_{10}) = .303819$

Instrument: Bison 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Rock Type	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 49 zero → 1035	2870	x		2870	.3038	872.0			Basaltic andesite	1030'-1035' → badly broken
1037.3	2517	x		2517	.3038	764.7			"	most of box broken
Box 50 1039.5	3094	x		3094	.3198	989.5			"	1037-1039 breccia to 1/95 clay alterat.
1041.5	3313	x		3313	.3038	1006.5			"	
1043.5	3034	x		3034	.3038	921.8			"	
1046.0	3075	x		3075	.3038	934.2			"	red stain (hematite?) on fr. stones; dense
1048.0	3132	x		3132	.3038	951.6			"	
Box 51 zero → 1050.3	2520	y		2520	.3574	900.7			"	1/85 partial sample
1053.0	2734	x		2734	.3376	922.9			"	1/90 partial
1054.0	2994	x		2994	.3198	957.5			"	1/95
1056.7	2940	y		2940	.3038	893.2			"	large fracture w/ clay
1057.3	2960	x		2960	.3038	899.3			"	
Box 52 1058.5	2880	x		2880	.3574	1029.4			"	1/85 partial
1060.0	2988	x		2988	.3198	955.6			"	1/95
1063.0	2810	x		2810	.3038	853.7			"	
zero → 1065.0	2800	x		2800	.3376	945.2			"	1/90 partial fractured; much clay alter
									"	remainder of box badly broken
Box 53 1068.3	2788	x		2788	.3038	847.0			"	start of box broken up chlorite? on fractures, clay
1070.9	2353	y		2353	.4051	953.2			"	1/75 partial
									"	remainder of box all fractured - unable to get piece whole enough for measurement
Box 54 1076.5	2901	x		2901	.3376	979.3			"	1/90
1077.5	2678	x		2678	.3376	904.03			"	1/90
1078.5	2641	x		2641	.3132	827.2			"	1/97 much clay in fractures
1080.5	2996	x		2996	.3132	938.4			"	1/97
1081.0	2476	x		2476	.3574	885.0			increase clay	1/85 partial much clay
Box 55 zero → 1083.5	3130	x		3130	.3038	950.9			"	clay has drying cracks chlorite? alterat
1087.8	2619	x		2619	.3574	936.1			"	1/85 partial much clay
1088.5	2895	x		2895	.3375	977.3			"	1/90 partial

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CTG-H-1 Pg 11 of

Date: 6-12-87

Company: THERMAL POWER

Logged by: ML

Core Diameter: 2.40" NC

Total Correction: $(1/d^2)(1.75)(\frac{1}{670}) = .30389$

Instrument: BISON 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithology	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 55 (cont) 1090.0	2903	x		2903	.3198	928.4			Andesite	1/95 partial
Box 56 1092.0	2984	x		2984	.3038	906.6			"	CONTINUOUS sample
1093.8	2842	x		2842	.3198	908.9			"	1/95
1095	3022	x		3022	.3038	918.14			"	
1098	3011	x		3011	.3038	914.8			"	
1099.5	2980	x		2980	.3038	905.4			"	
zero Box 57 1103.5	2947	x		2947	.3132	923.0			"	1101-1103 broken up 1/97 partial
1105.7	2859	x		2859	.3038	868.6			"	
1108.0	2410	x		2410	.3038	732.2			"	
1108.9	2660	x		2660	.3376	897.9			"	much orange clay 1/80
1109.5	2248	x		2248	.3798	853.7			basal flow breccia	1/80
Box 58 1110.5	3598	x		3598	.3376	1214.6			"	much clay, crumbly 1/90
1111.0	2959	x		2959	.3038	899.0	5 dev 114.0	884.6	"	
1113.5	1848	x		1848	.3038	561.4			lahar	large lithics crumbly DICE clay matrix
1114.0	2486	x		2486	.3038	755.3			"	darker
1114.8	3135	x		3135	.3038	952.5			"	lighter matrix
1115.3	3436	x		3436	.3038	1043.9			"	
zero 1118.5	2750	x		2750	.3038	835.5			"	yellow/orange clay (?) alteration
Box 59 1120.5	2474	x		2474	.3038	751.6			"	very crumbly
1122.5	2427	x		2427	.3198	776.2			"	1/95
1128.0	1667	x		1667	.3574	595.8			"	1/85 1123-1130 very broken
1130.0	4315	x		4315	.3038	1310.9			Basaltic Andesite?	This sample is very dense + solid, no vesicles
1130.3	4155	x		4155	.3574	1485.1			"	1/85 partial little alteration
Box 60 zero 1131.5	3392	x		3392	.3038	1030.5			?	1130-1131 broken up chlorite? alteration
1134.8	1926	x		1926	.3574	688.4			lahar	crumbly - much red clay large lithics broken from m
1136.3	1480	x		1480	.3798	562.0		625.2	lahar	1/80 most of this box is broken up
1138.3	4274	x		4274	.3038	1298.5			transit. Dacite	transition of lahar to Dacite many small lithics, dense + clay, limonite (?) stain
1138.7	2448	x		2448	.3038	743.7			Dacite	plagioclase, dense

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

 Drill Hole: CTGH-1 Pg 13 of

 Date: 6-15-87

 Company: THERMAL POWER

 Logged by: ML

 Core Diameter: 2.40"

 Total Correction: $(1/d^2)(1.75)(\quad) = .303819 \times \frac{1}{9}$

 Instrument: Bison 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	Gener Lithol	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
zero ^{Box 62} 1149.8	5075	X		5075	.3038	1541.8			Ductile	slight clay alter.
1151.5	5945	X		5945	.3038	1806.2			"	plag phenocrysts
1152.5	5596	X		5596	.3038	1700.2			"	
1153.3	5593	X		5593	.3038	1699.3			"	
1155.0	6278	X		6278	.3038	1907.4			"	
1157.5	6475	X		6475	.3038	1967.2			"	more clay
zero ^{Box 63} 1158.5	5294	X		5294	.3038	1608.4			"	"pinkish" color
1161.5	4594	X		4594	.3038	1395.7			"	
1162.0	4594	X		4594	.3038	1395.7			"	
1164.0	2280	X		2280	.3198	729.2			"	$\frac{1}{95}$ banded clay in fracture
zero 1166.0	4080	X		4080	.3038	1239.6			"	
zero ^{Box 64} 1167.0	5204	X		5204	.3038	1581.1			"	
1170.0	5924	X		5924	.3198	1894.5			"	$\frac{1}{95}$
1172.5	4889	X		4889	.3038	1485.4			"	
1174.0	3836	X		3836	.3038	1165.4			"	
1174.8	4757	X		4757	.3038	1445.3			"	remainder of box broken
zero ^{Box 65} 1177.8	5090	X		5090	.3038	1546.4			"	much clay alteration - banding
1182.0	4952	X		4952	.3038	1504.5			"	1179-1182 broken much clay, core shows banding
1184.7	3270	X		3270	.3038	993.5			"	
1185.0	3404	X		3404	.3038	1034.2			"	
zero ^{Box 66} 1186.5	2710	P		2710	.3038	823.3			"	
1187.3	3749	X		3749	.3038	1139.6			"	
1190.5	3800	X		3800	.3198	1215.3			"	$\frac{1}{95}$ much clay
1193.8	3765	X		3765	.3038	1143.9			"	
zero 1195.0	4670	X		4670	.3038	1418.8			"	
zero ^{Box 67} 1197.2	4245	X		4245	.3038	1289.7			"	
1198.0	4630	X		4630	.3038	1406.7			"	
1198.5	4260	X		4260	.3038	1294.3			"	
1199.5	4232	X		4232	.3376	1428.6			"	$\frac{1}{90}$ orange clay on fract
1201.5	5100	X		5100	.3198	1631.0			"	$\frac{1}{95}$ much alteration various colors

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CTG4-1 Pg 14 of

Date: 6-15-87

Company: THERMAL POWER

Logged by: ML

Core Diameter: 2.40"

Total Correction: $(1/d^2)(1.75)() =$

Instrument: Bacon 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General lithol	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 67 Cont 1202.5	3587	x		3587	.3038	1089.8			Dacite	clay on fract.
Box 68 zero → 1205.5	3804	x		3804	.3038	1155.7			"	
1207.5	3858	x		3858	.3038	1172.1			"	much alteration of fractures
1210.5	3395	x		3395	.3038	1031.5			"	
1213.8	3490	x		3490	.3038	1060.3			"	
1214.8	3477	y		3477	.3038	1056.4			"	
box 69 1216.5	4050	x		4050	.3038	1236.5			"	1215-1216 to DOGAMI + THERMAL
1217.5	2965	x		2965	.3198	948.2			"	1/95
1219.3	3333	x		3333	.3038	1012.6			"	
1220.8	3590	x		3590	.3038	1090.7			"	coating on fractures
zero 1222.8	3273	x		3273	.3038	994.4			"	
box 70 1224.0	3469	x		3469	.3038	1053.9			"	rust-colored alteration
1226.0	2888	x		2888	.3038	877.4			"	decreasing alteration
1228.5	3324	x		3324	.3038	1009.9			"	small cu crystals
1229.0	1592	x		1592	.3038	483.7	5 dev 330.3	1293.5	basal flow breccia	banding yellow alteration possible sulfur? decrease in density increase in vesicles
1229.5	1777	x		1777	.3038	539.9			Flow: Breccia	Small clasts, much alteration, crumbly
1231.5	1049	x		1049	.3038	318.7			"	1230-1232 broken up
box 71 1233.0	1805	x		1805	.3038	548.4			"	crumbly much clay with drying cracks
									"	large (cpilli?) clasts. Andesite (?) or dacite not very vesicular
zero 1235.0	1357	x		1357	.3038	412.3			"	dark brown alteration as coating, crumbly
1236.5	1752	x		1752	.3038	532.3			"	increasing crumbly more brown coating
1238.5	2040	x		2040	.3198	652.4			"	clast. are vesicular matrix → dense mud
									"	much reddish alteration on fractures
									"	matrix has "mud" crack in it. 1/95
1241.5	5419	x		5419	.3038	1646.4		685.1	"	large clasts increasing vesicular
									"	orange mud matrix different than rest of
box 72 1242.8	638	x		638	.3038	193.8			Volcanic clastic breccia flow	decrease in clast size increase in intense orange color

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CTGH-1 Pg 15 of

Date: 6-15-87

Company: THERMAL POWER

Logged by: ML

Core Diameter: 2.40" NC

Total Correction: $(1/d^2)(1.75)(\quad) =$

Instrument: Bison 3101A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithology	Comments
		x1	x10			$(\times 10^{-6} \text{ cgs})$	S.I.			
Box 72 (cont) 1245.6	714	X		714	.3038	216.9			volcano-clastic breccia flow	deep orange color increase in clasts decrease in vesicles
1247.0	1258	X		1258	.3038	382.2			"	matrix is getting "muddier"
1250.7	2600	X		2600	.3038	789.9			"	increase in mud
Box 73 1252.5	3906	X		3906	.3038	1186.7			"	very muddy
1254.0	4705	X		4705	.3038	1429.5			"	increased lithics
1256.0	5633	X		5633	.3038	1711.4			"	few lithic clasts muddy
1259.0	5028	X		5028	.3038	1527.6			"	large clasts again
1260.0	7280	X		7280	.3038	2211.8			"	" less muddy
Box 74 1262.0	5652	X		5652	.3038	1717.2			"	now clast supported w/ muddy matrix
1263.8	3497	X		3497	.3038	1062.4			"	alteration clays in vugs (still clast supporte
1266.0	3480	X		3480	.3038	1057.3			"	very large clasts
1268.0	4792	X		4792	.3038	1455.9			"	
1269.5	3774	X		3774	.3038	1,146.6			"	

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CT64-1 Pg 16 of

Date: 6-16-87

Company: THERMA POWER

Logged by: ML

Core Diameter: 2.40"

Total Correction: $(1/d^2)(1.75)(\%) = .303819 \times$

Instrument: Bison 3101 A

sample present
in dec. form

True

Depth (ft.)	Instrument Reading	Scale		Apparent Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General lithol.	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 75 zero → 1271.3	3352	x		3352	.3038	1018.4			Volcano-Clastic	
1272.5	2750	x		2750	.3038	835.5			Flow breccia	less dense
1275.0	3495	x		3495	.3038	1061.8			"	more dense → increase clasts
1276.8	2330	x		2330	.3198	745.2			"	1/95 fewer lithics remainder of box broken up.
Box 76 1281.5	2538	x		2538	.3574	907.2			"	1/85 large clast
1282.5	2880	x		2880	.3198	921.1			"	1/95 clasts supported mud matrix
1284.5	2778	x		2778	.3038	844.0			"	small lithics - more mud
1287.0	2718	x		2718	.3038	825.8	500.6	962.0	"	dense red alteration mineral / remainder
Box 77 zero → 1292.0	2144	x		2144	.3038	651.4			Volcano clastic flow dome	1288-1292 broken up probably base of flow
1293.8	2230	x		2230	.3038	677.5			"	this is much more dense than the flow less cracks
1294.5	2320	x		2320	.3038	704.9			"	no fractures or alteration dense
1297.0	2342	x		2342	.3038	711.5	27.5	686.3	"	w/ very few phenocrysts looks like andesite
Box 78 1297.8	3285	x		3285	.3038	998.0			Tuff	1295-1297 - D66AMT + THERM
1300.0	1328	x		1328	.3198	424.7			Tuff	looks like a tuff - crumbly red, not dense
1302.0	666	x		666	.3798	252.9			"	much brown oxidized alteration present
1303.0	525	x		525	.3798	199.4	365.7	468.7	"	1/95 no lithics
1307	747	x		747	.3376	252.2			"	1/80 crumbly alteration, w/ fractures no lithics
Box 79 1309	989	x		989	.3038	300.5			"	1/80 remainder of box broken
Box 80 1315.8	1406	x		1406	.5064	711.9			Andesite/Diabase	1/50 much clay alteration, fractures
1319.8	1774	x		1774	.3376	598.9			"	vertical flow banding remainder of box badly broken
1325.0	2593	x		2593	.4051	1050.4			"	1/60 1318.6-1319.6 D66AMT
Box 81 1326.0	2218	x		2218	.3132	694.7			"	1/90 most of box in little pieces
1328.8	3091	x		3091	.3198	988.5			"	1/75 Denser, less crumbly
1330.5	3273	x		3273	.3798	1243.0			"	1/95 much clay on fractures
Box 82 1336.0	2836	x		2836	.3038	861.6			"	1/80 remainder of box in pieces
1338.6	3563	x		3563	.3798	1353.1			"	much clay on fractures
1341.8	1840	x		1840	.4051	745.4			"	1/80
1343.5	2506	x		2506	.3198	801.4			"	1/75 much clay alt
									"	1/95

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Salem Rashid
hydrology

Drill Hole: CTG H - 1 Pg 17 of

Date: 6-16-87

Company: THERMAL POWER

Logged by: ML

Core Diameter: 2.40"

Total Correction: $(1/d^2)(1.75)(\frac{1}{160}) = .303819 \times (\frac{1}{160})$

Instrument: Bison 3101A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithology	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 83: zero → 1345.5	2781	7		2781	.3038	844.9			Diagenetic	
1347.5	2085	x		2085	.5064	1055.8			"	broken up in box 1/160
1350.5	1791	x		1791	.4674	837.1			"	1/65 much clay
1352.0	2024	x		2024	.3574	723.45			"	1/85
Box 84 1354.0	2040	x		2040	.3198	652.4			"	blue dendritic mineral on fresh fracture 1/45
1355.0	2401	x		2401	.3132	752.0			"	1/97
1357.5	2288	x		2288	.3198	731.7			"	1/95
1359.5	2173	x		2173	.3376	733.6			"	1/90
1361.7	2216	x		2216	.3038	673.3			"	much alteration clay
Box 85: 1363.5	2392	x		2392	.3198	765.0			"	1/95
1365.0	1963	x		1963	.3038	596.4			"	
1368.0	2040	x		2040	.3038	619.8			"	
zero → 1369.0	2260	x		2260	.3376	762.9			"	1/90
Box 86: 1372.5	2230	x		2230	.3376	752.8			"	1/90 lots of fractures
1375.0	2521	x		2521	.3198	806.2			"	1/95
1377.0	2258	x		2258	.3132	767.2			"	1/97 remainder of box is broken
Box 87: 1379.8	2350	x		2350	.3798	892.5			"	1/80 large fractures with clay
1382.0	2010	x		2010	.3574	718.4			"	1/85
1386.0	2115	x		2115	.5064	1670.0			"	1/60 most of box badly broken
Box 88: zero → 1388.0	2270	x		2270	.3376	766.3			"	1/90 most of box broken
1390.5	2604	x		2604	.3038	791.1			"	1
1393.5	2150	x		2150	.3376	725.8			"	1/90
1394.5	2116	x		2116	.3038	642.9			"	remainder of box broken
Box 89: 1395.5	1770	x		1770	.4674	827.3			"	1/65 very broken up box
1398.0	2264	x		2264	.3198	724.0			"	1/85
1400.5	2520	x		2520	.3038	765.6			"	
1401.5	2390	x		2390	.3132	748.6			"	1/97 remainder of box in little pieces
Box 90: 1405.5	2240	x		2240	.3574	800.6			"	this entire box is in small pieces 1/85
1408.0	2380	x		2380	.4051	964.1			"	some clay alter. chlorite 1/75
1411.5	2257	x		2257	.3574	806.7			"	interbedded tuff? thick clay in fractures

K/c

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CT64-1 Pg 18 of

Date: 6-16-87

Company: THERMAL POWER

Logged by: ML

Core Diameter: 2.40"

Total Correction: $(1/d^2)(1.75)(\frac{1}{16}) = 1,303819 \times \frac{1}{16}$

Instrument: BISON 3101A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag.Susc.	General Lithol	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 91 zero									Andosif - Dactif	thus box is 80% brok up into small piec with extensive fract and clay
1418.5	2086	X		2086	.3198	667.1			"	completely broken 1412- 1419
1419.0	1788	X		1788	.3376	603.6			"	1/95
Box 92										1420 - 1422 0064M14 THERMAL 1/95
1422.5	2025	X		2025	.3038	615.2			"	1423 - 1425 broken red alteration (clay?)
1425.5	2166	X		2166	.3198	692.7			"	1/95 much clay
1426.5	2425	X		2425	.3038	736.8			"	chlorite in bands!
1427.5	2340	X		2340	.3571	836.4			"	chlorite 1/95
Box 93 1429.0	2470	X		2470	.3038	750.4			"	chlorite
1432.0	2400	X		2400	.3038	729.2				banding
1432.5	2255	X		2255	.3198	721.2				1/95 much clay
1435.0	2300	X		2300	.3038	698.8				
1437.5	1823	X		1823	.3198	459.7				1/95

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

 Drill Hole: CTGH-1 Pg 19 of

 Date: 6-17-87

 Company: THERMAL POWER

 Logged by: ML

 Core Diameter: 2.40" NC

 Total Correction: $(1/d^2)(1.75)(\frac{1}{64}) = .303819 \times \frac{1}{64}$

 Instrument: Bison 3101A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithology	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 94 zero 1439.0	1655	X		1655	.3038	502.8			Andosit-Dacite	dense, chlorite alter, flow banding
1440.5	1813	X		1813	.3038	550.8			"	not as much clay as rest of dome
1442.5	1925	X		1925	.3038	584.8			"	
1444.0	2089	X		2089	.3038	634.7			"	
1446.5	2339	X		2339	.3038	710.6			"	increase in clay + fract.
Box 95 1448.5	2234	X		2234	.3198	714.4			"	$\frac{1}{95}$ many fractures
1449.0	2173	X		2173	.3376	733.5			"	$\frac{1}{90}$
1451.0	1745	X		1745	.3376	589.1			"	$\frac{1}{90}$
1453.8	2171	X		2171	.3038	659.6			"	
1455.8	2458	X		2458	.3038	746.7			"	
zero Box 96 1456.5	2658	X		2658	.3038	807.5			"	chlorite + clay, dense alter.
1459.0	1784	X		1784	.3198	570.5			"	very crumbly much clay $\frac{1}{95}$
1461.5	1918	X		1918	.3038	582.7			"	
1464.0	2038	X		2038	.3198	651.8			"	$\frac{1}{95}$
1465.5	2325	X		2325	.3198	706.4			"	
Box 97 zero 1468.0	2120	X		2120	.3038	644.1			"	
1469.8	2219	X		2219	.3038	674.2			"	
1470.8	2110	X		2110	.3038	641.1			"	
1473.0	1890	X		1890	.3038	574.2			"	
1475.0	2207	X		2207	.3038	670.5			"	
Box 98 1476.0	2103	X		2103	.3038	638.9			"	
1477.0	2002	X		2002	.3574	715.6			"	$\frac{1}{85}$ broken to 1483
1483.3	2219	X		2219	.3038	674.2			"	remainder of box badly broken
Box 99 zero 1484.0	2123	X		2123	.3038	645.0			"	
1488.0	1900	X		1900	.3038	577.3			"	broken 1488-1491
1491.5	1874	X		1874	.3038	569.4			"	mud in vent fracture
1493.5	2210	X		2210	.3038	671.4			"	
Box 100 1497.5	2239	X		2239	.3038	680.3			"	broken 1494-1497 much clay
1500.0	2306	X		2306	.3038	700.6			"	
1501.0	2134	X		2134	.3038	648.3			"	chlorite + clay plus yellow mineral on fract.

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

 Drill Hole: CTGH -1 Pg 20 of

 Date: 6-17 87

 Company: THERMAL POWER

 Logged by: ml

 Core Diameter: 2.40" NC

 Total Correction: $(1/d^2)(1.75)(\frac{1}{90}) = .303819 \times \frac{1}{90}$

 Instrument: Bison 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithol.	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 100 (cont) 1501.7	2028	X		2028	.3198	648.6			Oxide-clay	1/95
1502.5	2295	X		2295	.3574	820.3			"	much clay 1/85
Box 101 zero → 1503.5	2195	X		2195	.3038	666.9			"	
1505.8	1600	X		1600	.4340	694.4			"	1/10 very crumbly
1508.0	2410	X		2410	.3132	754.8			"	1/97 remainder of box broken up
Box 102 1513.5	2010	X		2010	.3038	610.7			"	
1515.0	2137	X		2137	.3038	649.3			"	
1516.5	2217	X		2217	.3038	673.6			"	
1519.0	2330	X		2330	.3038	707.9			"	
1521.0	2414	X		2414	.3038	733.4			"	
Box 103 zero → 1521.7	2294	X		2294	.3376	774.4			"	1/90 1522 - 1525 broken up
1526.0	2060	X		2060	.3038	625.9			"	dendritic mineral on natural fract.
1526.5	2175	X		2175	.3038	660.8			"	
1527.3	2186	X		2186	.3038	664.1			"	remainder of box in small pieces
Box 104 1532.5	2050	X		2050	.3038	622.8			"	1530-1532 broken up 1/90
1534.0	2024	X		2024	.3132	633.9			"	1/97
1536.0	2200	X		2200	.3038	668.4			"	dark red clay in fract.
1537.5	2564	X		2564	.3038	779.0			"	
1538.5	3010	X		3010	.3132	942.8			"	1/97
zero → Box 105 1539.5	2920	X		2920	.3038	887.2			"	
1542.5	2714	X		2714	.3038	824.6			"	dark dendritic mineral dense, no clay
1544.0	3045	X		3045	.3038	925.1			"	increasing lighter color
1546.0	3005	X		3005	.3038	913.0			"	
1547	2690	X		2690	.5064	1058.3			"	1/60
Box 106 1548	2365	X		2365	.3574	845.3			"	1/85
15500	2775	X		2775	.3038	843.1			"	chlorite / no clay altered
1552.0	2481	X		2481	.3038	753.8			"	dendritic mineral
1555.0	2929	X		2929	.3038	889.9			"	
1556.5	3040	X		3040	.3038	923.6			"	

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

 Drill Hole: CT64-1 Pg. 21 of

 Date: 6-17 87

 Company: THERMAL POWER

 Logged by: ML

 Core Diameter: 2.40" NC

 Total Correction: $(1/d^2)(1.75)(\quad) = 1303819 \times 10^{-6}$

 Instrument: Bison 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithol	Comments
		x1	x10			($\times 10^{-6}$ cgs)	S.I.			
Box 107 zero → 1558.0	2410	✓		2410	.4051	976.3			Ducite	most of box broken clay fractures
1559.0	2404	✓		2404	.3798	913.0			"	1/50 1560 - 1564 broken
1564.0	2822	✓		2822	.3376	952.6			"	remainder of box 6 1/90
Box 108 1566.0	2534	✓		2534	.3038	769.9			"	
1568.0	4286	✓		4286	.3036	1302.2			"	transitional
1570.0	2178	X		2178	.3038	661.7	5 dex 155.6	738.6	Basal Flow	large clasts clay alteration
1571.0	956	X		956	.3038	290.4			Breccia	
1573.5	684	X		684	.3376	230.9			"	1/90
Box 109 zero → 1575.3	1416	X		1416	.4340	614.6			"	1/20 creamy most of box broke
1578.0	4913	X		4913	.3198	1571.2			"	1/95 broken 1576 - 1578
1580.0	4533	X		4533	.3132	1419.8			"	these last 2 samples 1/97 look like Ducite like previous foot
Box 110 1584.0	3827	✓		3827	.3038	1162.6			"	lithic clasts visible dense, no alteration
1586.0	2283	✓		2283	.3376	770.7			"	ash matrix, most of box very crumbly broke
1586.5	2454	✓		2454	.3376	828.4			Large Volcano clastic	large clast at 1/90 Andesite/Basalt
1589.0	3955	✓		3955	.3038	1201.6			"	much clay alter. 1/80
1591.0	4844	X		4844	.3038	1471.7			"	This sample had various colored clasts → some alter
Box 111 zero → 1593.0	6785	X		6785	.3038	2,061.4			"	brown mud matrix small lithics
1594.0	5580	✓		5580	.3038	1695.3			"	this sample looks very different from west large lithics, again
1596.5	5630	X		5630	.3038	1710.5			"	dense + dark
1598.0	4480	✓		4480	.3038	1361.1			"	
1600.0	4622	✓		4622	.3038	1404.2			"	
Box 112 1602.0	4188	✓		4188	.3038	1272.4			"	large clasts no clay alter.
1603.0	4986	X		4986	.3038	1514.8			"	
1605.8	5940	✓		5940	.3038	1804.7			"	
1607.0	4982	✓		4982	.3038	1513.6			"	very colorful clasts
1609.5	5151	✓		5151	.3038	1565.0			"	

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CT6H-1 Pg. 22 of

Date: 6-17-87

Company: Thermal Power

Logged by: ML

Core Diameter: 2.40" NC

Total Correction: $(1/d^2)(1.75)() = .303819 \times 1/70$

Instrument: Bison 3101A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General lithol.	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 13 1611.0	4617	0		4617	.3038	1402.7			Lahar	
1612.5	4511	X		4511	.3038	1370.5			"	many lithic clasts no clay
1614.8	6409	X		6409	.3038	1947.2			"	
1618.5	4115	X		4115	.3038	1250.2			"	
1620.0	4510	X		4510	.3038	1370.2			"	
Box 14 1621.5	4918	X		4918	.3038	1494.2			"	all of this core is comp. w/ little fracturing
1624.5	5953	X		5953	.3038	1808.6			"	or crumbling alteration not visible
1626.5	6512	X		6512	.3038	1978.5			"	very large clasts (Andosit)
		X							"	1627-1629 broken in small pieces
1629.5	5127	X		5127	.3038	1557.7	s dev 287.3	1526.6	"	very dark, crumbly
Box 15 1630.5	1180		X	11,800	.3038	3585.1			transit Lahar-Basalt	much darker matrix than before large clasts
1631.0	707		X	7070	.3038	2148.0			upper flow breccia	very shony black material in fractures
									"	brown matrix w/ very large clasts (20-30cm)
									"	clasts appear to be basalt w/ plagioclase phenocrysts
1633.0	6031	X		6031	.3038	1832.3			"	ash + clay matrix
1635.0	8000	X		8000	.3038	2430.5			"	
1636.0	3380	X		3380	.3038	1026.9			Basalt flow	much lighter color vesicles alterat-chlorite
										no apparent clasts of ash as in above lahar chlorite alteration on fractures
1637.5	7958	X		7958	.3038	2417.8			upper flow brecc.	basalt clasts large plugs with strange pink
1638.0	9705	X		9705	.3038	2948.6			"	clay, chlorite more strange pink clay
									"	chlorite + basalt clasts
Box 16 1640	7175	X		7175	.3038	2179.9			"	pink clay
1641.5	1004		X	10,040	.3038	3050.3			"	more breccia
1643.5	642		X	6420	.3038	1950.5			"	large clasts
1644.5	9745	X		9745	.3038	2960.7	s dev 563.1	2550.4	"	much lighter color but still appears to be breccia with large clasts
1646.5	4781	X		4781	.3038	1452.5			basalt flow	next 2 feet broken up gray, vesicular, chlorite + clay in vesicles

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

 Drill Hole: CTGH-1 Pg 24 of

 Date: 6-18-87

 Company: THERMAL POWER

 Logged by: ML

 Core Diameter: 2.40" NC

 Total Correction: $(1/d^2)(1.75)() = .30387 \times \frac{1}{9}$

 Instrument: Bison 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithol.	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 118 zero → 1656.8	1571	X		1571	.3198	502.4			Basalt flow	1/95 1657-1661 broken 1661-1663 THE EM 006 vesic
1663.0	2079	X		2079	.3038	631.6			"	much lighter, no vesic (andesite?)
1664.0	1912	Y		1912	.3376	645.4			"	1/90
1665.0	1528	X		1528	.3376	515.8			"	1/90
Box 119 1666.3	1292	X		1292	.3198	413.2	s dev 288	607.8	"	1/95
1667.3	3185			3185	.3038	967.7			Basalt flow breccia	
1669.5	4103	X		4103	.3038	1246.6			"	crumbly some large vesicular clasts of bas green mineral in vesicles much clay/mud ash m: very large vesicular c in mud matrix, den
1671.0	4521	Y		4521	.3038	1373.6			"	lighter, pink clay, no vesicles in clasts?
1673.0	5089	Y		5089	.3132	1594.0			"	Much less dense → low clasts - various color
1674.5	4442	X		4442	.3038	1349.6			Lahar volcano clastic	red clay matrix ve alterat. in vesicles no, cl
Box 120 1676.5	2628	X		2628	.3038	798.4			"	orange red matrix - matrix supported clast are various s. thick s; very crumbly - on frac clay has almost "glass appearance" 1/80
1680.0	1143	X		1143	.3798	434.1			"	brown mud/ash matrix large clasts
1682.0	4032	X		4032	.3038	1225.0			"	Andesite?
1683.0	4596	Y		4596	.3038	1396.4			"	
zero → Box 121 1685.5	5265	Y		5265	.3038	1599.6			Lahar volcano clastic	large clasts chlorite alter
1687.0	5706	Y		5706	.3038	1733.6			"	increasing lighter color matrix
1689.5	3832	X		3832	.3038	1164.2			"	
1690.5	3684	X		3684	.3038	1119.3			"	
1693.6	2826	Y		2826	.3038	858.6	s dev 389.9	1167.9	"	
Box 122 1694.0	2986	X		2986	.3038	907.2			upper flow brecc	blue color
1701	5178	X		5178	.3038	1573.2			"	broken up to 1701, therm 1696.5 - 1697.5 + 006A
1703.5	4760	Y		4760	.3038	1446.2			"	this sample has a strange smell!!!
zero → Box 123 1704.0	2268	X		2268	.3132	710.4			Basalt flow	1/97 dense, few phenocr
1706.6	6534	Y		6534	.3038	1985			"	
1707.5	4306	X		4306	.3198	1377			"	1/95
1709.0	1389	X		1389	.3798	527.5			"	1/80 This is only intact pie in remainder of box much alterat. - yellow? chlorite? black?
									"	crumbly pale green coating

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

 Drill Hole: CT64-1 Pg 25 of

 Date: 6-18-87

 Company: THERMAL POWER

 Logged by: ML

 Core Diameter: 2.40" NC

 Total Correction: $(1/d^2)(1.75)() = .303817 \times$

 Instrument: Bison 3101 FT

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General Lithol.	Comments
		x1	x10			($\times 10^{-6}$ cgs)	S.I.			
<u>Box 124</u> 1716.5	1774	✓		1774	.3038	538.0			basalt/andes.	broken up to 1716 pale green coating
1718.5	1875	✓		1875	.4051	759.5			"	1/75
1720.0	1995	✗		1995	.3198	638.0			"	1/95 most of box broken
<u>Box 125</u> 1721.5	2021	✗		2021	.3198	646.3			"	1/95
1727.5	1672	✓		1672	.3198	534.7			"	1721.5 - 1727 badly broken 1/95
1728.0	1316	✓		1316	.5064	1066.4			"	1/60 remainder of box broken
<u>Box 126</u> 1731.0	2234	✗		2234	.3798	848.4			"	1/80 much green coat
1737.0	1916	✗		1916	.3038	582.1			"	80% of this box broke up - only 2 readings possible
<u>zero</u> <u>Box 127</u> 1738.5	2102	✗		2102	.3038	638.6			"	
1739.8	1970	✓		1970	.3038	598.5			"	
1741.0	1910	✗		1910	.3038	580.3			"	1741.5 - 1744.5 broken up
1744.0	1776	✓		1776	.3798	674.5			"	1/80
<u>Box 128</u> 1746.5	1716	✓		1716	.3038	521.3			"	
1747.5	1852	✗		1852	.3038	562.7			"	
1748.5	1835	✓		1835	.3038	557.5			"	
1750.0	1910	✓		1910	.3038	580.3			"	pyroxite on fract
1752.5	1924	✓		1924	.3038	584.5			"	
<u>zero</u> <u>Box 129</u> 1758.5	1529	✓		1529	.4340	663.6			"	1/70 most of box broken
1760.5	1720	✗		1720	.4340	746.5			"	1/70
1762.5	2092	✗		2092	.3376	706.2			"	1/90
1754.0	2015	✗		2015	.3376	680.2			"	1/96 remainder of box broken
<u>Box 130</u> 1768.0	1451	✗		1451	.4340	629.8			"	There were only 2 1/70 samples where reading could be taken
1778.0	2000	✗		2000	.4051	810.2			"	Core recovery poor in this section
<u>Box 131</u>										Thermal + OGGAL I took sample
1780.0	5380	✓		5380	.4051	2179.4	5 dev. 405.7	768.9		1/75 darker color increase in clay
1782.0	1296	✓		1296	.3038	393.7			intra-floral clast	red non vesic clay matrix small clast
1784.0	964	✗		964	.3038	292.9			"	red matrix (mud) + nod vesicular clasts.
1786.5	1208	✓		1208	.3038	367.0			"	
1788.5	1328	✗		1328	.3038	403.5			"	

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CT 614-1 Pg. 26 of

Date: 6-18-87

Company: THERMAL POWER

Logged by: ML

Core Diameter: 2.40" NC

Total Correction: $(1/d^2)(1.75)(\quad) = 0.303817 \times \frac{1}{0.76}$

Instrument: Bison 3101 A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	Gen. Lithol.	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 132 zero → 1789.5	1391	X		1391	.3038	422.6			intra flow cinders	
1792.5	482	X		482	.3132	151.6			"	1/97
1793.5	420	X		420	.3198	134.3	s dev 121.2	309.2	"	1/95
1796.0	4100	X		4100	.3038	1245.6			intra flow breccia	darker matrix in more lithic S
1797.0	2780	X		2780	.3038	844.6			"	
Box 133 1799.5	3207	X		3207	.3038	974.3			basalt	dense
1801.5	2274	X		2274	.3038	690.9			"	some vesicles - little alteration
1804.5	2219	X		2219	.3038	674.2			"	
1806.0	2095	X		2095	.3132	656.2			"	1/97
1807.0	2133	X		2133	.3038	648.0			"	
Box 134 1808.3	2086	X		2086	.3038	633.8			"	
1809.5	1925	X		1925	.4340	835.5			"	1/70
1811.5	1833	X		1833	.3376	618.8			"	1/90
1814.0	1586	X		1586	.3038	481.9			"	
1816.5	1602	X		1602	.3038	486.7	s dev 146.8	670.0	"	samples taken by Thermal & OOB data 1815-1816?
zero → Box 135 1819.0	3688	X		3688	.3198	1179.4			minor flow breccia	1817-1819 breccia up
1819.8	2655	X		2655	.3038	806.6			"	
1820.5	2682	X		2682	.4051	1086.4			Lapilli Tuff	various lithic lapilli in sandy matrix/clay
1823.0	2174	X		2174	.3038	660.5			"	lithic small no grading - looks almost like sed rock except for flow patterns
1824.5	2325	X		2325	.3038	706.4			"	very crumbly w/ cracking clay w/ lapilli
Box 136 zero → 1825.5	789	X		789	.3038	239.7	s dev 346.4	673.2	"	upper flow breccia brown ash dense
1826.5	493	X		493	.3038	149.8			"	
1827.5	2302	X		2302	.3038	699.4			"	
1829.5	2080	X		2080	.3038	631.9			"	
1832.0	814	X		814	.3038	247.3			basalt	
1834.0	1330	X		1330	.3038	404.1			"	
Box 137 1836.0	892	X		892	.3198	285.3			"	1/95
1837.0	1892	X		1892	.3038	574.8			"	vesicular dense
1840.0	2776	X		2776	.3038	843.4			"	
1842.0	2150	X		2150	.3038	653.2			"	non vesicular

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

Drill Hole: CTGH-1 Pg 27 of

Date: 6-18-87

Company: THERMAL POWER

Logged by: ML

Core Diameter: 2.40" NC

Total Correction: $(1/d^2)(1.75)(\quad) = ,303889 \times \frac{1}{9}$

Instrument: Bison 3101A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	Gen. lithol	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 137 (cont) 1844.5	1080	✓		1080	.3038	328.1			Basalt	
Box 138 1847.5	916	✓		916	.3038	278.2			"	1845-1847 fractures 1845-1846? THERMAL 0066A
1850.0	930	✓		930	.3198	297.4			"	black wax clay 1/95
1851.0	695	✓		695	.3038	211.1			"	vesicles filled w/ clay
1853.0	1930	✓		1930	.3038	586.4			"	
1853.8	1165	✓		1165	.3038	353.9			"	increase in vesicles
Box 139 1855.0	1568	✓		1568	.3038	476.4			"	some chlorite?
1856.5	625	✓		625	.3038	189.9	5 dev 192.0	409.2	"	
1858.0	1258	✓		1258	.3038	382.2			basal flow breccia	large clasts in mud matrix
1860.0	2352	✓		2352	.3038	714.6			"	
1862.0	3942	✓		3942	.3038	1197.6			"	
Box 140 zero → 1864.5	5907	✓		5907	.3038	1794.7			"	chlorite alter large clasts
1866.5	5842	✓		5842	.3038	1774.9			"	
1868.0	5281	✓		5281	.3038	1604.5			"	
1869.0	8907	✓		2907	.3038	883.2			"	"Pinker" matrix less clay
1871.0	1228	✓		1228	.3038	373.1		1090 1090	"	light color only slight alteration
Box 41 1872.0	4353	✓		4353	.3038	1322.5			transd flow breccia to basalt	
1875.0	3980	✓		3980	.3038	1209.2			Basalt	pink clay lenses
1878.0	1707	✓		1707	.3038	518.6			"	black waxy clay on gra
1879.5	1787	✓		1787	.3038	542.9			"	
1881.5	1522	✓		1522	.3038	462.4			"	
zero → Box 142 1882.5	1403	✓		1403	.3038	426.3			"	
1885.5	1520	✓		1520	.3038	461.8			"	
1887.0	1277	✓		1277	.3038	388.0			"	
1889.0	1620	✓		1620	.3038	492.2			"	
1890.0	1985	✓		1985	.3038	603.1			"	flow planes → little alteration
Box 143 1892.0	1393	✓		1393	.3038	423.2			"	very uniform → not any alteration or fract.
1894.0	1295	✓		1295	.3038	393.5			"	
1897.0	1946	✓		1946	.3038	591.2			"	dense, no vesicles, phono or clay alter.
1898.0	1970	✓		1970	.3038	598.5			"	

MAGNETIC SUSCEPTIBILITY LOG-DRILL CORE

 Drill Hole: CTG H-1 Pg. 29 of _____

 Date: 6-24-87

 Company: THERMAL POWER

 Logged by: ML

 Core Diameter: 2.40" NC

 Total Correction: $(1/d^2)(1.75)() = .303819$

 Instrument: Bison 3107A

Depth (ft.)	Instrument Reading	Scale		Observed Value	Total Corr.	Magnetic Susc.		Average Mag. Susc.	General lithol	Comments
		x1	x10			(x 10 ⁻⁶ cgs)	S.I.			
Box 146 (cont.) zero) 1922	2088	X		2028	.3038	616.2			Basalt	few fractures, dense
1926	1766	✓		1766	.3038	536.5			"	
1926.8	1764	X		1764	.3038	535.9			"	
Box 147	1928.5	1365	X	1365	.3376	460.8			"	1/90
1929.5	1314	X		1314	.3038	399.2			"	
1932.5	1400	✓		1400	.3038	425.3			"	
1934.0	1308	✓		1308	.3038	397.4			"	
Box 148	1937.5	1228	✓	1228	.3038	373.1			"	back waxy clay on fracture
1940.5	1260	X		1260	.3376	425.3			"	box broken up 1/90
1942.0	1923	✓		1923	.3574	687.3			"	1/85
1946.5	1566	X		1566	.3038	475.8			"	some breccia on sample
Box 149	1948.0	2201	X	2201	.3038	668.7			"	very little alteration
1949.0	2068	✓		2068	.3038	628.3			"	
1953.0	1893	X		1893	.3132	592.9			"	1/97
1955.0	2011	X		2011	.3038	611.0			"	
Box 150 zero	1957.0	1958	X	1958	.3038	594.9			"	
1958.5	1910	✓		1910	.3038	580.3			"	
1960.5	2120	✓		2120	.3038	644.1			"	
1963.0	2117	✓		2117	.3038	643.2			"	
Box 151	1965.0	2045	✓	2045	.3038	621.3	527.8		"	
1967.5	3097	X		3097	.3038	940.9			transition Basalt	much less dense clay surface
1969.0	3886	✓		3886	.3574	1389.0			Capilliuff	1/85 waxy red clay
1971.0	5544	X		5544	.3038	1684.4			Capilliuff	
1973.0	4569	X		4569	.3038	1388.2			Top flow Breccia	dark dense vesicular
Box 152	1974.0	3916	X	3916	.3376	1322.0			"	transition to basalt again
1977.0	4738	X		4738	.3038	1439.5			Basalt	1/90 vesicular chert alter
1981.5	4802	X		4802	.3198	1535.7			flow breccia	
1983.0	3964	X		3964	.3038	1204.3			Basalt	1/95
									"	vesicular chert zone 1. to 10 centes (well formed v's)



Diamond Shamrock

Thermal Power Company

16 September 1987

Ms Susan Prestwich
Messrs Earl G. Jones and
Jeff Hoyles
U. S. Department of Energy
785 DOE Place
Idaho Falls, Idaho 83402

Mr. P. M. Wright
University of Utah
391 Chipeta Way, Suite C
Salt Lake City, Utah 84108

Re: Cooperative Agreement
DE-FC07-851D12614
Quarterly Reports

Gentlemen:

Enclosed are the Federal Assistance Management Summary Report and the Federal Assistance Program/Project Status Report for the reporting period 1 April 1987 through 30 June 1987.

Please be aware that Thermal Power Company will not abandon the 4800-foot CTGH-1 accomplished under the Cooperative Agreement, but will retain this hole for possible deepening in 1988. Additionally, the draft Final Report is in your review process at this time. Thermal has requested a 30-day extension to a Cooperative Agreement termination date of 30 October 1987, to complete Milestone 3 and qualify for final Progress Payment.

Should you have any questions, please feel free to contact us.

Yours very truly,

W. L. D'Olier
Vice President
Geothermal Exploration

WLD/ma
WLD155

enclosures

Thermal Power Company

A subsidiary of Diamond Shamrock International Petroleum Company
3333 Mendocino Avenue, Suite 120, Santa Rosa, California 95401
Phone 707 576-7022

1. Program/Project Identification No. DE-FC07-851D12614	2. Program/Project Title Cascade Geothermal Drilling	3. Reporting Period 4/1/87 through 6/30/87
4. Name and Address Thermal Power Company 3333 Mendocino Ave., Suite 120 Santa Rosa, California 95401	5. Program/Project Start Date 9/30/85	
	6. Completion Date 9/30/87	

7. Approach Changes

 None

8. Performance Variances, Accomplishments, or Problems

CTGH-1 Shut-in, locked. No site visits made.

 None

