

Figure B1. continued.

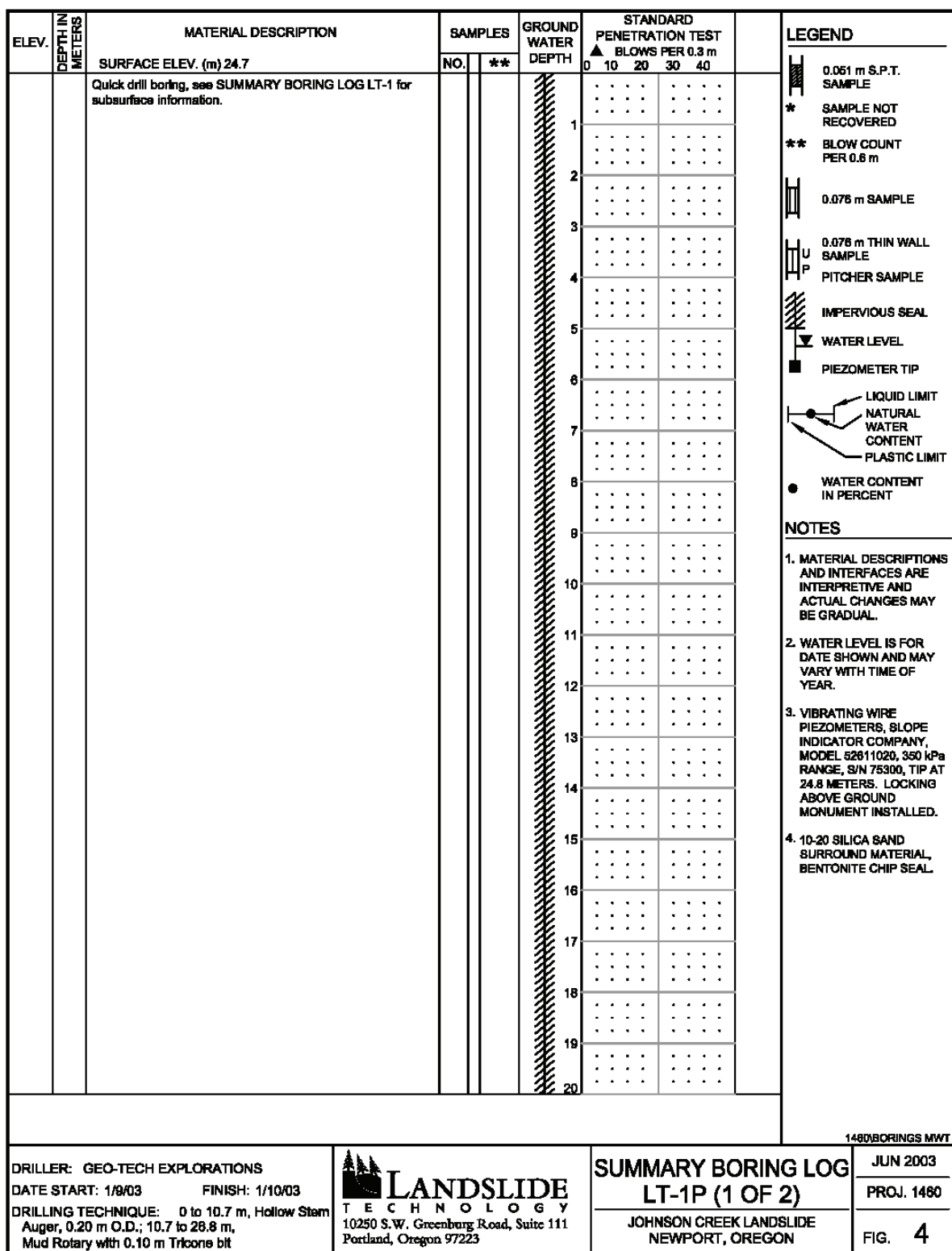
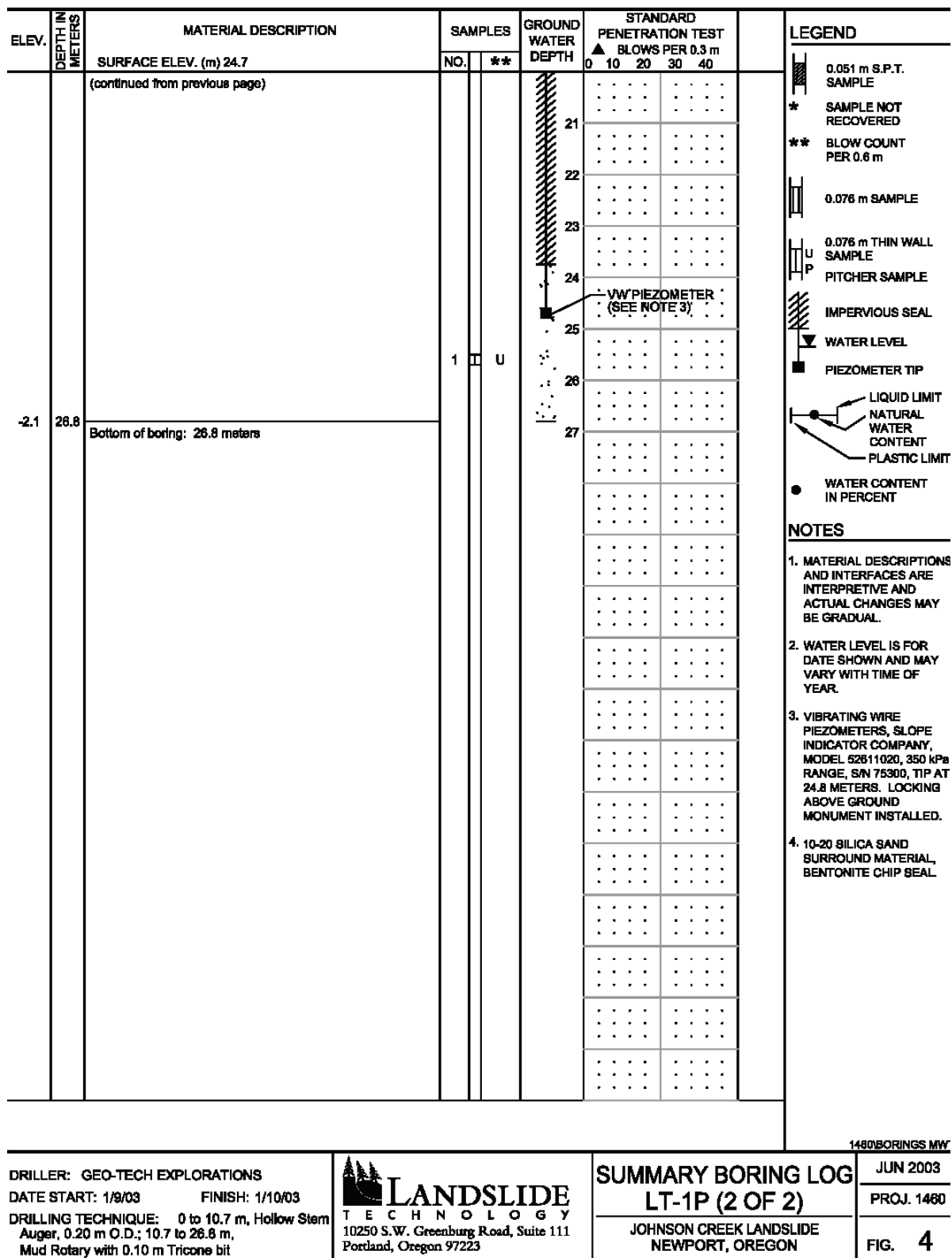


Figure B2. Summary boring log LT-1P.



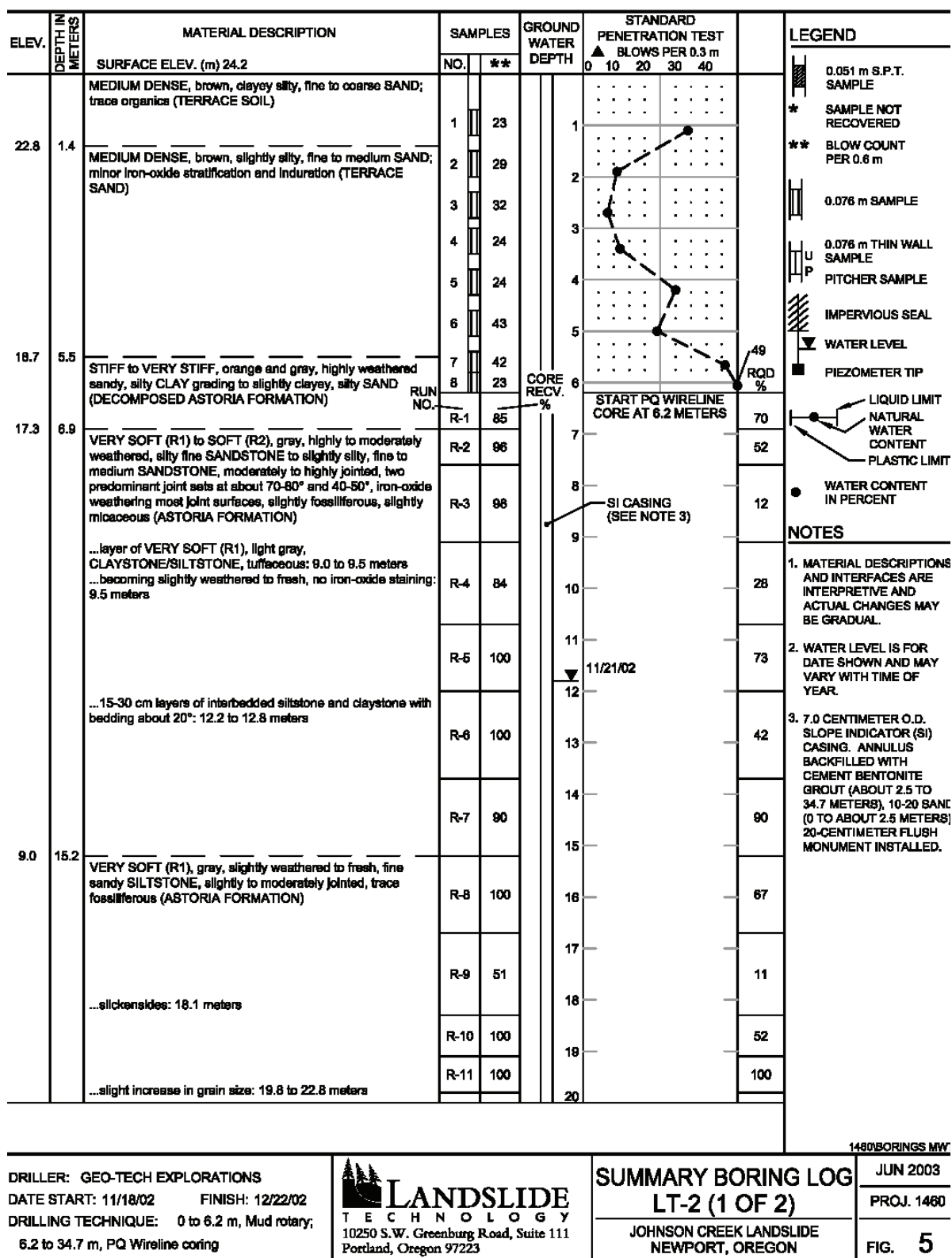


Figure B3. Summary boring log LT-2.

ELEV.	DEPTH IN METERS	MATERIAL DESCRIPTION	RUN NO.	CORE REC'D. %	GROUND WATER DEPTH	STANDARD PENETRATION TEST ▲ BLOWS PER 0.3 m	RQD %	LEGEND
		SURFACE ELEV. (m) 24.2				0 10 20 30 40		
		(continued from previous page)	R-12	96			96	0.051 m S.P.T. SAMPLE
		...bedding dipping 15-20°: 21.5 meters			21			* SAMPLE NOT RECOVERED
			R-13	100	22		100	** BLOW COUNT PER 0.6 m
					23			0.076 m SAMPLE
0.7	23.5	VERY SOFT (R1), gray, slightly weathered to fresh, clayey SILTSTONE, moderately to highly jointed, predominantly at 45 to 65°, trace fossiliferous, trace micaceous (ASTORIA FORMATION) ...occasional slickensides with 80-90° rake: 24.7 to 29.0 meters	R-14	70	24		54	0.076 m THIN WALL SAMPLE
			R-15	24	25		0	UP PITCHER SAMPLE
			R-16	100	26		100	IMPERVIOUS SEAL
			R-17	87	28		87	WATER LEVEL
			R-18	80	27		80	PIEZOMETER TIP
			R-19	100	29	SI CASING (SEE NOTE 3)	100	LIQUID LIMIT
								NATURAL WATER CONTENT
			R-20	100	30		100	PLASTIC LIMIT
					31		100	WATER CONTENT IN PERCENT
-7.5	31.7	SOFT (R2), gray, slightly weathered to fresh, silty fine SANDSTONE, slightly fractured to massive, fossiliferous, micaceous (ASTORIA FORMATION)	R-22	58	33		58	
		...SOFT (R2) to MEDIUM HARD (R3), light gray, CLAYSTONE, tuffaceous: 33.8 to 34.4 meters	R-23	100	34		100	
-10.5	34.7	Bottom of boring: 34.7 meters			35			

Figure B3. continued.

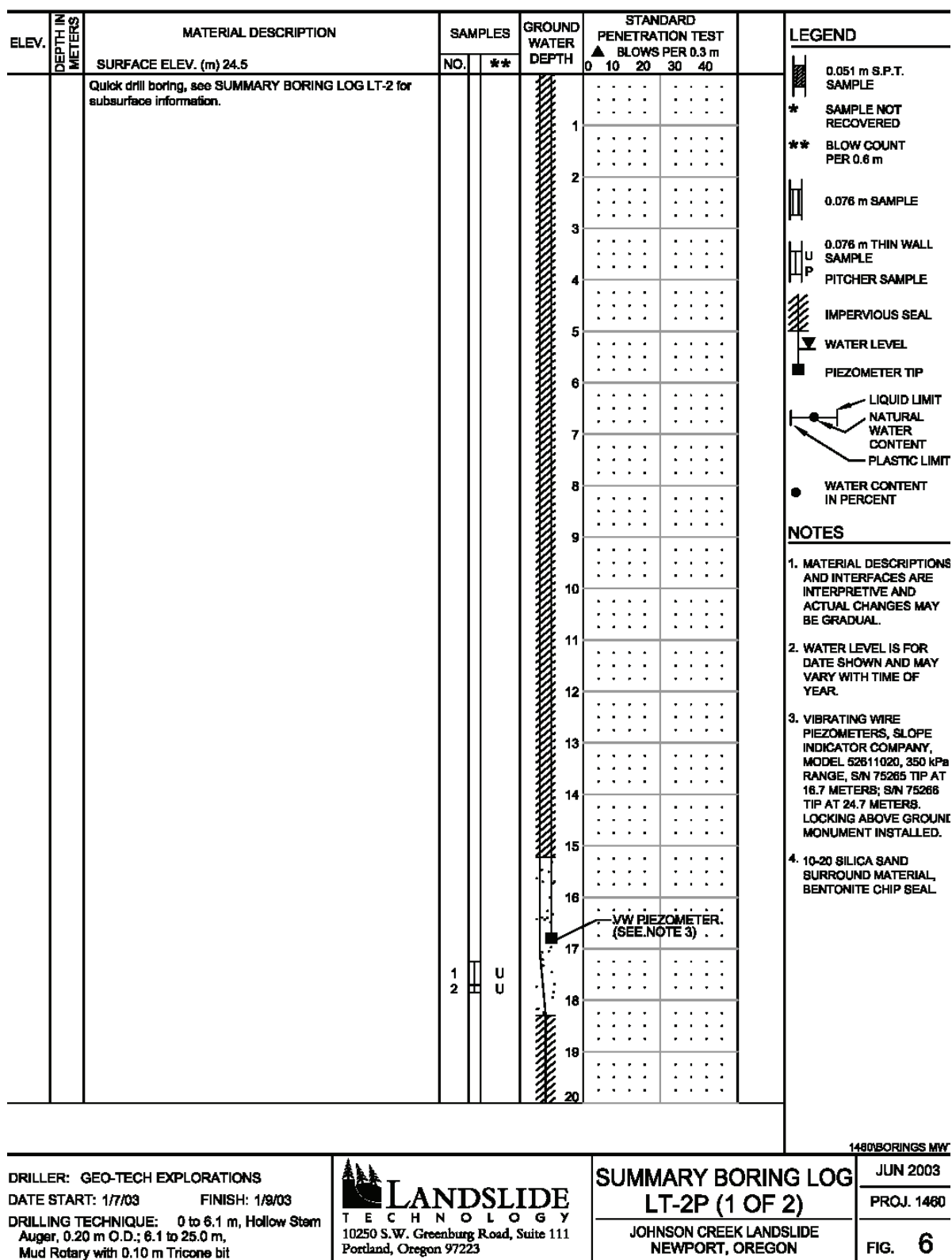
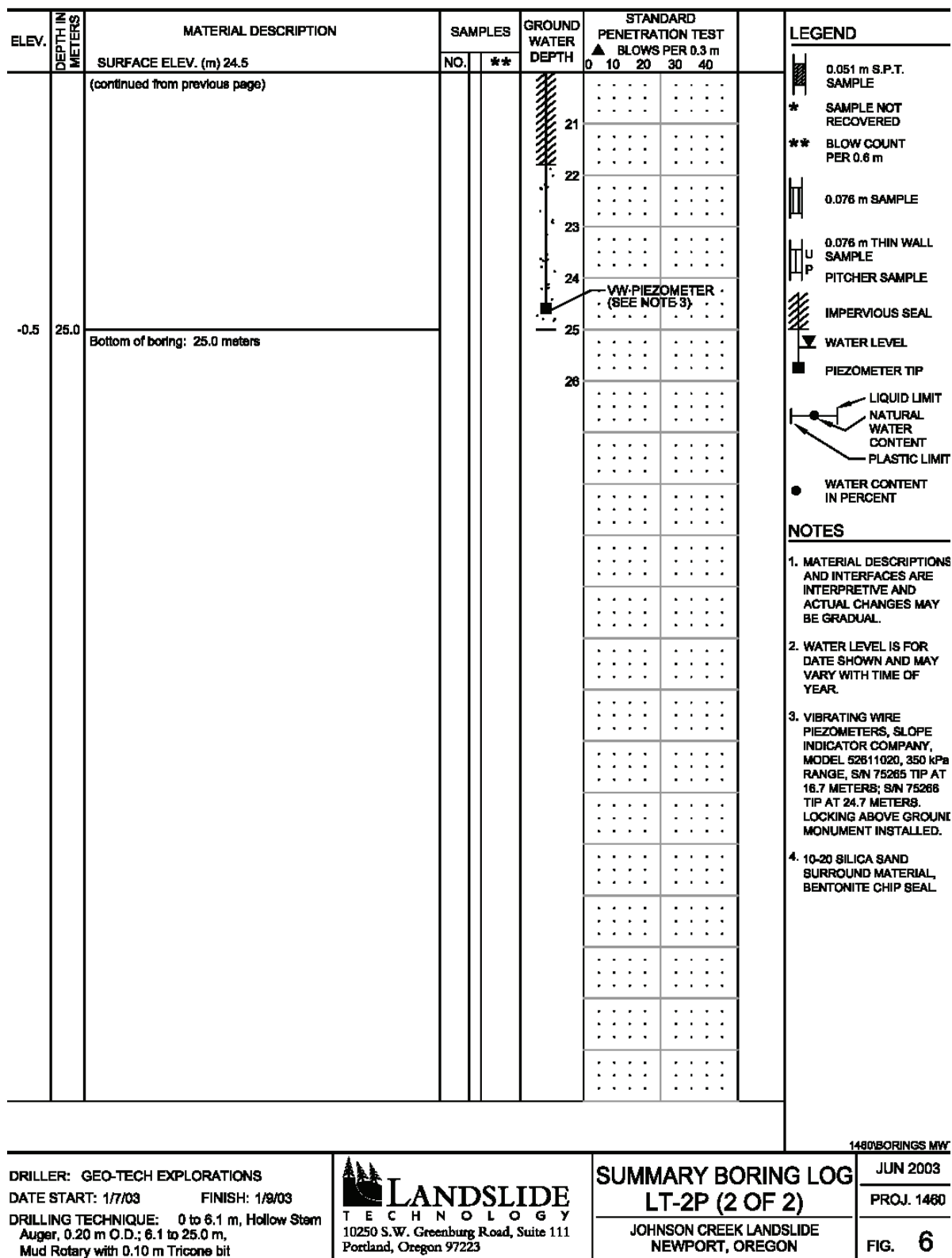


Figure B4. Summary boring log LT-2P.



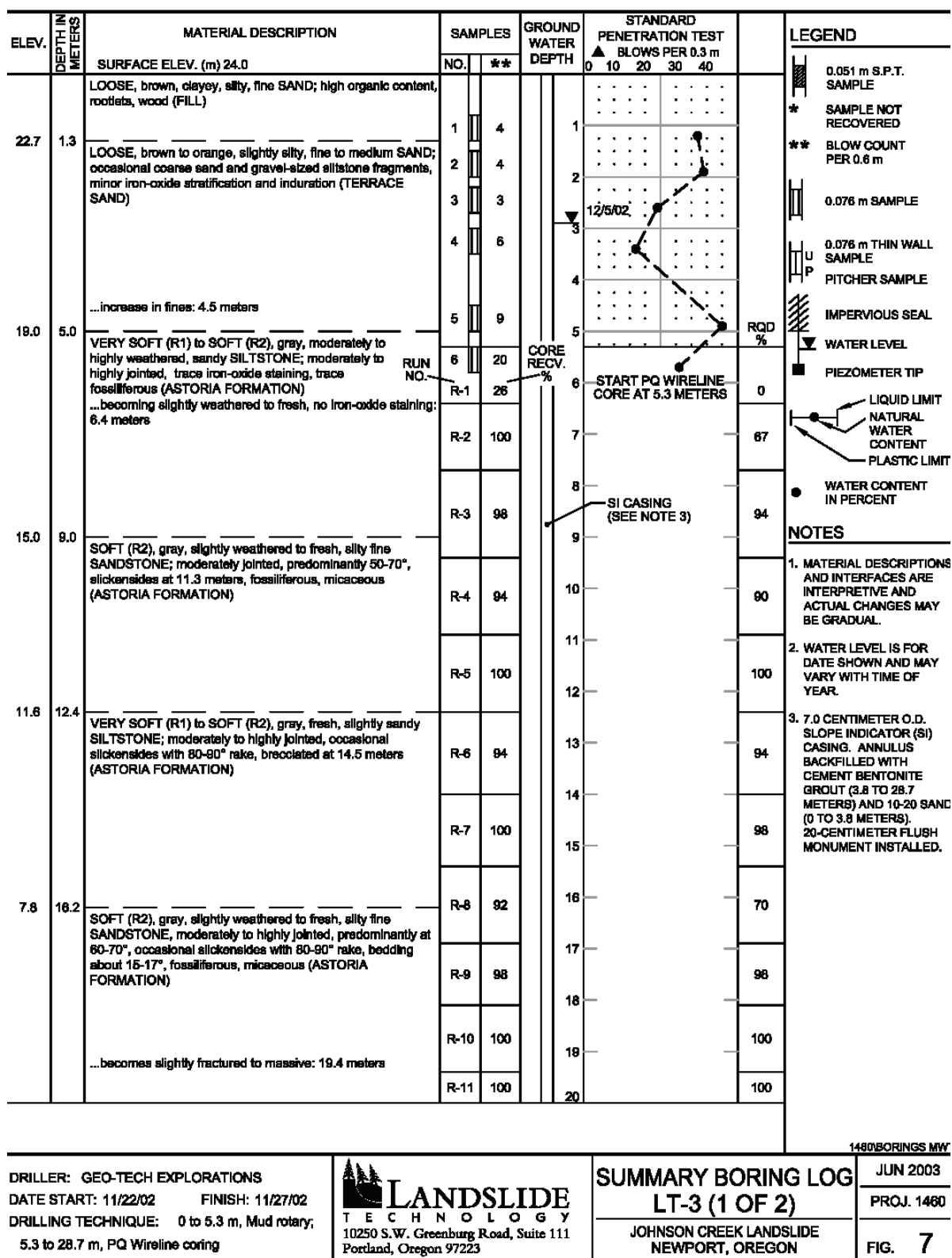
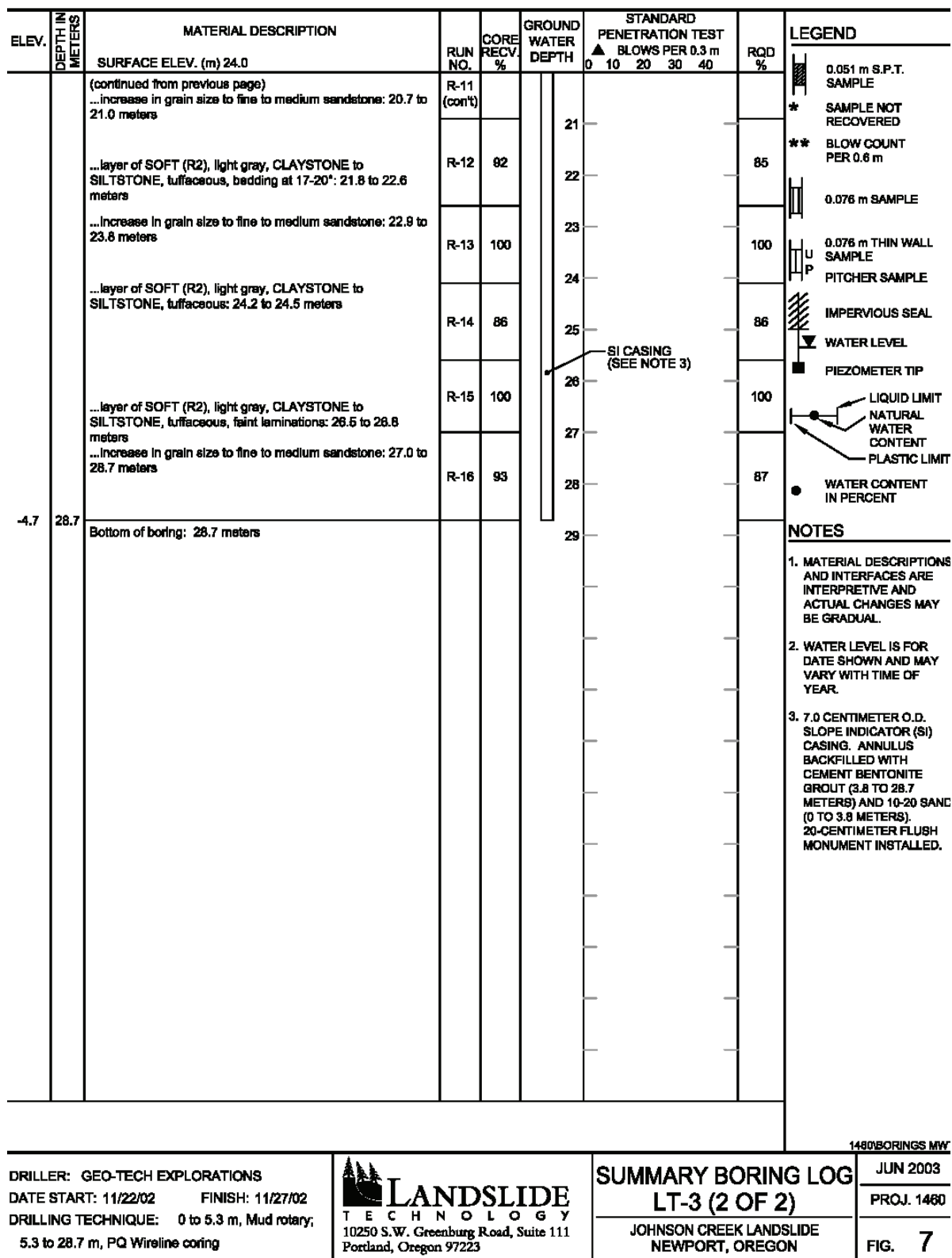


Figure B5. Summary boring log LT-3.



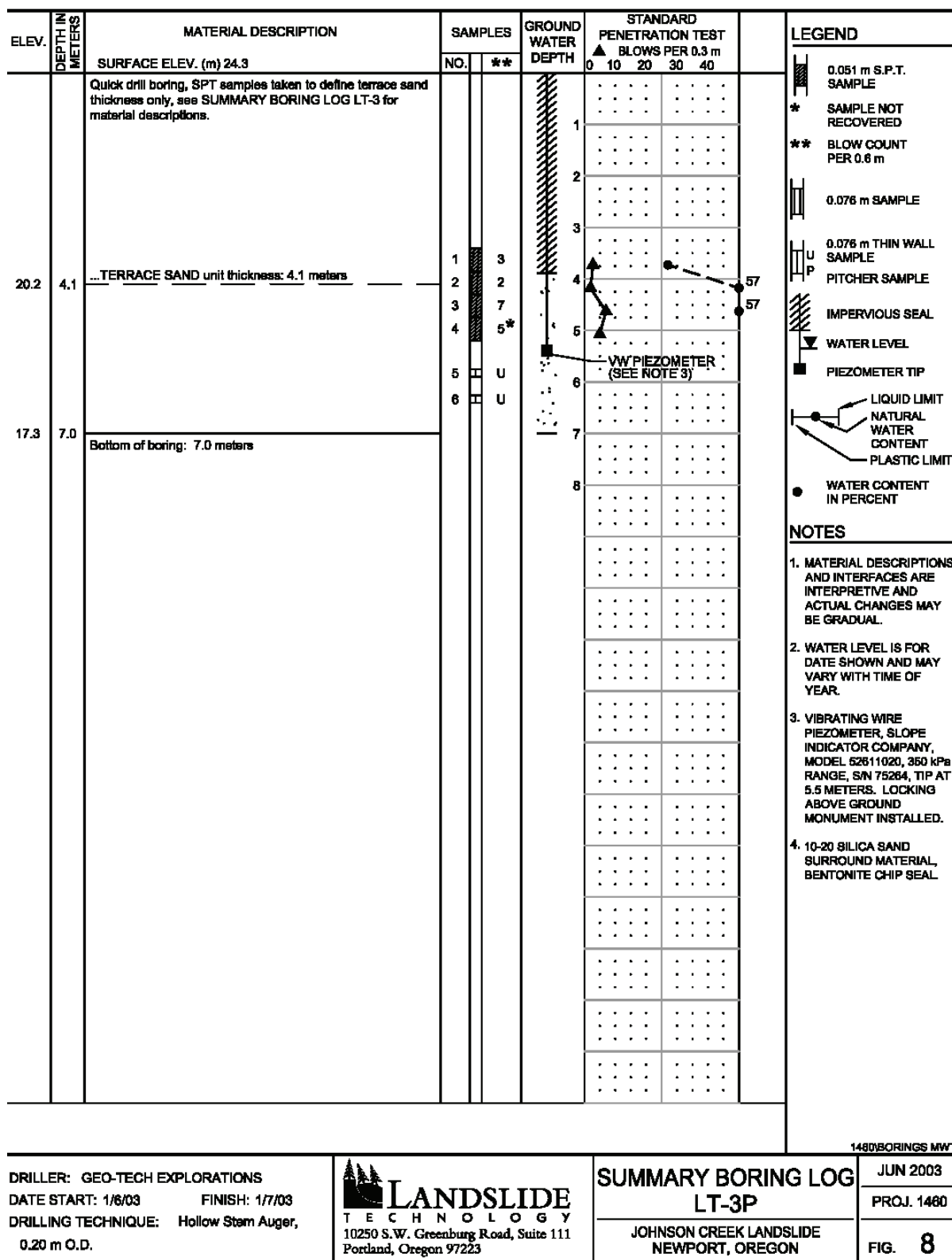


Figure B6. Summary boring log LT-3P.

2006 Borehole Logs (Figures B7–B8) (William Schulz, U.S. Geological Survey)

U.S. GEOLOGICAL SURVEY LANDSLIDE HAZARDS PROJECT
LOG OF SUBSURFACE EXPLORATION

Project Johnson Creek landslide Borehole Name B-4
 Location North of forest road, east of HWY 101, about 5 km N of Newport Date November 14-15, 2006
 Exploration Equipment Track-mounted CME 850, 2 5/8 in. dia. core Geologist Bill Schulz

Depth (ft / m)	Description	Recovery (%)	Comments
42	<u>Sedimentary Rock (0?-bottom)/Landslide Deposit</u>		Blind drill to 41 ft
43 13	Siltstone, sandy - very fine, dark gray (N3) to grayish black (N2), moist, fresh, moderately fractured, moderately hard and strong, massive to very subtly bedded, bedding inclined about 15°	100	
44			
45			
46 14			
47			
48		100	
49 15	49.8 ft - polished, clay-coated parting inclined 27°		
50			
51	51.8 ft - polished, clay-coated (1/16 in. thick) parting inclined 30°		
52			
53 16	54.6 ft - polished, clay-coated (1/16 in. thick) parting inclined 65°	100	
54			
55			
56 17			
57			
58	58.8 ft - clay-coated, striated parting inclined 64°, striae have 90° rake	100	
59 18			
60		100	Fluid pump broken at 60 ft, drill dry for 1 ft, core highly disrupted and hot (about 10 min. to drill 60-61 ft)
61			
62 19	64.8 ft - clay-coated, striated parting inclined 65°, striae have 90° rake	100	
63			
64			
65 20			
66			
67		NA	Blind drill to 67.5 ft
68	Bottom of borehole at 67.5 ft		
21	Water level at 26 ft on completion		
	1-1/4 in. diameter Sch. 80 PVC well casing (Johnson Screens) installed. Screen (.010 slot) from 16.0-66.0 ft, riser from 0-16.0 ft, 10/20 Colorado Silica Sand from 14.0-67.5 ft, Volclay coarse bentonite chips 1.0-14.0 ft, 8-1/4 in. dia., 12 in. tall flush-mount well cover set in concrete at 0-1.0 ft. RG-6 coaxial cable installed (attached to well casing) 0-67.5 ft.		

Sheet 1 of 1

Figure B7. Subsurface exploration log B-4.

U.S. GEOLOGICAL SURVEY LANDSLIDE HAZARDS PROJECT

LOG OF SUBSURFACE EXPLORATION

Project Johnson Creek landslide Borehole Name B-5
 Location South of forest road, east of HWY 101, about 5 km N of Newport Date November 14, 2006
 Exploration Equipment Track-mounted CME 850, 2-5/8 in. dia. core Geologist Bill Schulz

Depth (ft / m)	Description	Recovery (%)	Comments
1	<u>Fill (0-1 ft?)/Landslide Deposit</u>		
2 ? -	Sandy gravel, olive black (5Y2/1), moist, moderately dense, angular, 1-4 in. dia. basalt	12	Top foot rocky, easy drilling below
3 1 -			
4	<u>Marine Terrace Sand (1 ft? - 12 ft?)/Landslide Deposit</u>		
5	5.5-7.6 ft - Silty sand with little clay, yellowish gray (5Y7/2) with 30% dark yellowish orange (10YR6/6) mottling, dense, moist, fine grained, massive, trace organics (roots)		
6	7.6 ft - Sand with little to some gravel, yellowish gray (5Y7/2) with greenish black (5G2/1), moderately weathered, fossiliferous (pelecypods), subrounded siltstone pebbles, unit is loose to medium dense, wet	74	
7			
8			
9	<u>Sedimentary Rock/Landslide Deposit (12 ft? - bottom)</u>		
10 3 -	12 ft (approx.) Siltstone, greenish black (5G2/1), hard and strong, sand coated on top, highly oxidized top, unweathered (except top), unfractured		
11			
12 ? -	15.5 ft - Sandy siltstone, light brown (5YR5/6) with trace olive black (5Y2/1) mottling, soft, deeply weathered, weak, friable to low hardness, unfractured, wet, laminated	12	Hard drilling at 12 ft, siltstone plugged shoe
13 4 -	16.2 ft - Siltstone, dark yellowish orange (10YR6/6), moderately weathered, unfractured, moderately strong, low hardness, laminated at 10° inclination, stained black along bedding plane at 17.2 ft		
14			
15			
16	17.5 ft - Siltstone, dusky yellowish brown (10YR2/2) with grayish orange (10YR7/4) and light olive gray (5Y6/1) laminae, slightly weathered, crushed to highly fractured, plastic strength to weak, friable hardness	96	
17			
18			
19	18.1 ft - becomes light olive gray (5Y6/1) with dark yellowish orange (10YR6/6)		
20 6 -	18.6 ft - Sandstone, dark yellowish orange (10YR6/6), little weathered, moderately fractured, weak, low hardness, fine grained. Striated, polished, clay-coated parting at 19.2 ft, inclined 20°, 90° rake to striae		
21			
22			
23 7 -	19.3 ft - Sandstone, medium dark gray (N4), unweathered, moderately fractured, moderately strong and hard, massive to subtly bedded and laminated, very fine grained, little silt	100	Drilling fluid loss at 23 ft
24	20.5 - 25 ft - Subvertical fracture with 0.5-1.2-in.-thick moderate brown (5YR3/4) staining, free water in fracture (doesn't appear to be drilling fluid)		
25			
26 8 -	26.2 ft - subhorizontal fracture		
27	27.0 ft - subhorizontal fracture		
28		100	Soft drilling at 28 ft
29			
30 9 -	29.7 ft - subhorizontal fracture		
31	30.1 - 30.5 ft - crushed to pulverized, soft, plastic strength, wet		
32	30.5 ft - Sandy siltstone, medium dark gray (N4) to dark gray (N3), little weathered, one fracture inclined 70° at 31 ft with 1-in.-wide, moderate brown (5YR3/4) staining, moderately strong and hard, laminated at 10° inclination		
33 10 -	32.3 - 33.5 ft - intensely fractured, weak, friable and with thin clay-coated partings at 32.4, 33.0, and 33.4 ft	60	Very soft drilling at 30 ft
34			
35			
	Below 35.5 ft continued on sheet 2		

Sheet 1 of 2

Figure B8. Subsurface exploration log B-5.

Project <u>Johnson Creek landslide</u>		Date <u>November 14, 2006</u>	Borehole Name <u>B-5</u>
Depth (ft / m)	Description	Recovery (%)	Comments
36 11 37 38 39 12	35.8 ft - Siltstone, medium dark gray (N4) to dark gray (N3), little weathered to fresh, strong, moderately hard, unfractured.	88	35.5 ft much harder drilling
	Bottom of borehole 39.5 ft Water level at 21.6 ft on completion 1-1/4 in. diameter Sch. 80 PVC well casing (Johnson Screens) installed. Screen (.010 slot) from 5.0-35.0 ft, riser from 0-5.0 ft, 10/20 Colorado Silica Sand from 4.0-37 ft, Volclay coarse bentonite chips 37.0-39.5 ft and 1.0-4.0 ft, 8-1/4 in. dia., 12 in. tall flush-mount well cover set in concrete at 0-1.0 ft. RG-6 coaxial cable installed (attached to well casing) 0-39.5 ft.		

Sheet 2 of 2

Figure B8. continued.

Reference: Landslide Technology, 2004, Geotechnical investigation Johnson Creek landslide, Lincoln County, Oregon: Oregon Department of Geology and Mineral Industries Open-File Report O-04-05, 115 p.