

# University of Oregon Field Geophysics (UOFG) Experiment Report

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## Purpose

The purpose of the UOFG experiment is to collect shallow reflection and refraction data along the Vaughn landslide located in the central Oregon Coast Range (44.01°, -123.49°). This data will be used to constrain landslide thickness. This dataset was collected by the University of Oregon Field Geophysics class in Spring of 2012.

## Experiment description

Two arrays of 48 vertical component geophones (Ultra-Light Exploration Seismograph system by Geometrics from IRIS PASSCAL) were deployed (see Table 1 for locations). Geophone spacing was 5 m and active source shots were spaced every 30 m. The source was a truck-mounted Elastic Wave Generator and a striker plate. Eight shots were stacked at each source location to increase the signal-to-noise ratio (see attached field sheets). Further details on this experiment are provided in *Cerovski-Darriau* [2016].

## References

[1] Cerovski-Darriau, C. R. (2016). *Landslides and Landscape Evolution over Decades to Millennia: Using Tephrochronology, Air Photos, Lidar, and Geophysical Investigations to Reconstruct Past Landscapes* (Doctoral dissertation, UNIVERSITY OF OREGON).

**Table 1**

**\*modified from *Cerovski-Darriau* [2016]**

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<b>Geophone Locations</b>				
<b>Geophone</b>	<b>Distance (<math>X_{dist}</math>) (m)</b>	<b>X (Easting)</b>	<b>Y (Northing)</b>	<b>Z (m)</b>
1	0	460861	4873505	243.1
2	5	460865	4873506	242.7
3	10	460870	4873508	241.3
4	15	460874	4873510	240.7
5	20	460879	4873513	240.3
6	25	460884	4873514	239.1
7	30	460888	4873516	238.9
8	35	460892	4873518	238.1
9	40	460897	4873521	240.5
10	45	460902	4873522	237.0
11	50	460906	4873525	236.8
12	55	460910	4873525	241.5
13	60	460916	4873528	239.6
14	65	460919	4873531	238.0
15	70	460924	4873534	235.7
16	75	460927	4873536	235.5
17	80	460933	4873540	237.0
18	85	460936	4873542	234.3
19	90	460939	4873545	233.4
20	95	460946	4873545	233.2
21	100	460949	4873550	230.8
22	105	460954	4873553	233.6
23	110	460958	4873558	229.0
24	115	460961	4873560	227.5
25	120	460961	4873566	226.2
26	125	460966	4873569	228.0
27	130	460967	4873573	227.6
28	135	460971	4873575	228.3
29	140	460975	4873581	228.0
30	145	460978	4873583	223.4
31	150	460982	4873585	227.0
32	155	460986	4873586	227.3
33	160	460992	4873589	225.0
34	165	461001	4873590	223.8
35	170	461002	4873593	223.9
36	175	461005	4873593	220.2

**Table 1****\*modified from *Cerovski-Darriau* [2016]**

<b>Geophone Locations</b>				
<b>Geophone</b>	<b>Distance (<math>X_{dist}</math>) (m)</b>	<b>X (Easting)</b>	<b>Y (Northing)</b>	<b>Z (m)</b>
37	180	461037	4873596	219.2
38	185	461016	4873595	219.5
39	190	461020	4873596	218.5
40	195	461025	4873596	218.4
41	200	461030	4873597	217.8
42	205	461035	4873598	217.5
<b>°43</b>	<b>210</b>	<b>461041</b>	<b>4873598</b>	<b>217.5</b>
44	215	461045	4873598	217.7
45	220	461050	4873598	216.4
46	225	461055	4873599	216.0
47	230	461060	4873599	216.0
48	235	461065	4873600	215.4
49	240	461070	4873600	214.5
50	245	461075	4873600	213.8
51	250	461080	4873600	213.2
52	255	461085	4873599	215.6
53	260	461090	4873600	215.5
54	265	461095	4873600	215.4
55	270	461100	4873600	211.3
56	275	461104	4873603	210.9
57	280	461109	4873603	213.1
58	285	461114	4873605	210.5
59	290	461118	4873607	210.3
60	295	461122	4873609	208.8
61	300	461127	4873611	207.6
62	305	461132	4873614	207.8
63	310	461136	4873616	205.9
64	315	461140	4873618	206.4
65	320	461144	4873621	204.2
66	325	461148	4873623	203.3
67	330	461153	4873625	203.2
68	335	461157	4873629	200.6
69	340	461162	4873631	202.2
70	345	461167	4873632	201.9
71	350	461172	4873635	202.9
72	355	461174	4873638	199.8
73	360	461179	4873640	198.7
74	365	461183	4873643	198.2

**Table 1****\*modified from *Cerovski-Darriau* [2016]**

<b>Geophone Locations</b>				
<b>Geophone</b>	<b>Distance (<math>X_{dist}</math>) (m)</b>	<b>X (Easting)</b>	<b>Y (Northing)</b>	<b>Z (m)</b>
75	370	461187	4873646	197.7
76	375	461192	4873651	201.7
77	380	461192	4873653	195.1
78	385	461196	4873658	196.4
79	390	461198	4873661	194.8
80	395	461201	4873667	195.5
81	400	461203	4873672	195.2
82	405	461202	4873676	196.9
83	410	461204	4873682	195.0
84	415	461206	4873685	192.6
85	420	461209	4873691	196.3
86	425	461209	4873693	191.0
87	430	461215	4873700	195.5
88	435	461216	4873702	191.6
89	440	461221	4873704	188.7
90	445	461225	4873707	189.0
91	450	461232	4873709	194.9
92	455	461233	4873712	188.9
93	460	461237	4873716	187.2
94	465	461241	4873717	186.7
95	470	461246	4873719	186.8
96	475	461251	4873721	185.0

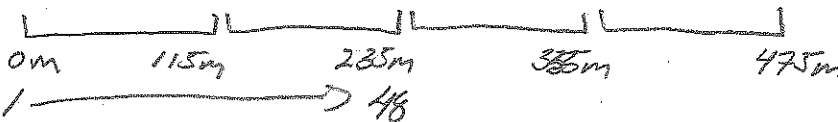


## Notes

- Some difficulties w/ orienting channels on Geode
- Channel 13 was not hooked up; fixed.
- Walking down line is a problem
- Talking ~~on~~ geophones is a problem

Traffic \_\_\_\_\_ Moisture \_\_\_\_\_ Surveyors \_\_\_\_\_

### PreAmp Gains:

[illegible]



- Set up for 2 spreads went well
- Shooting is moving along smoothly
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