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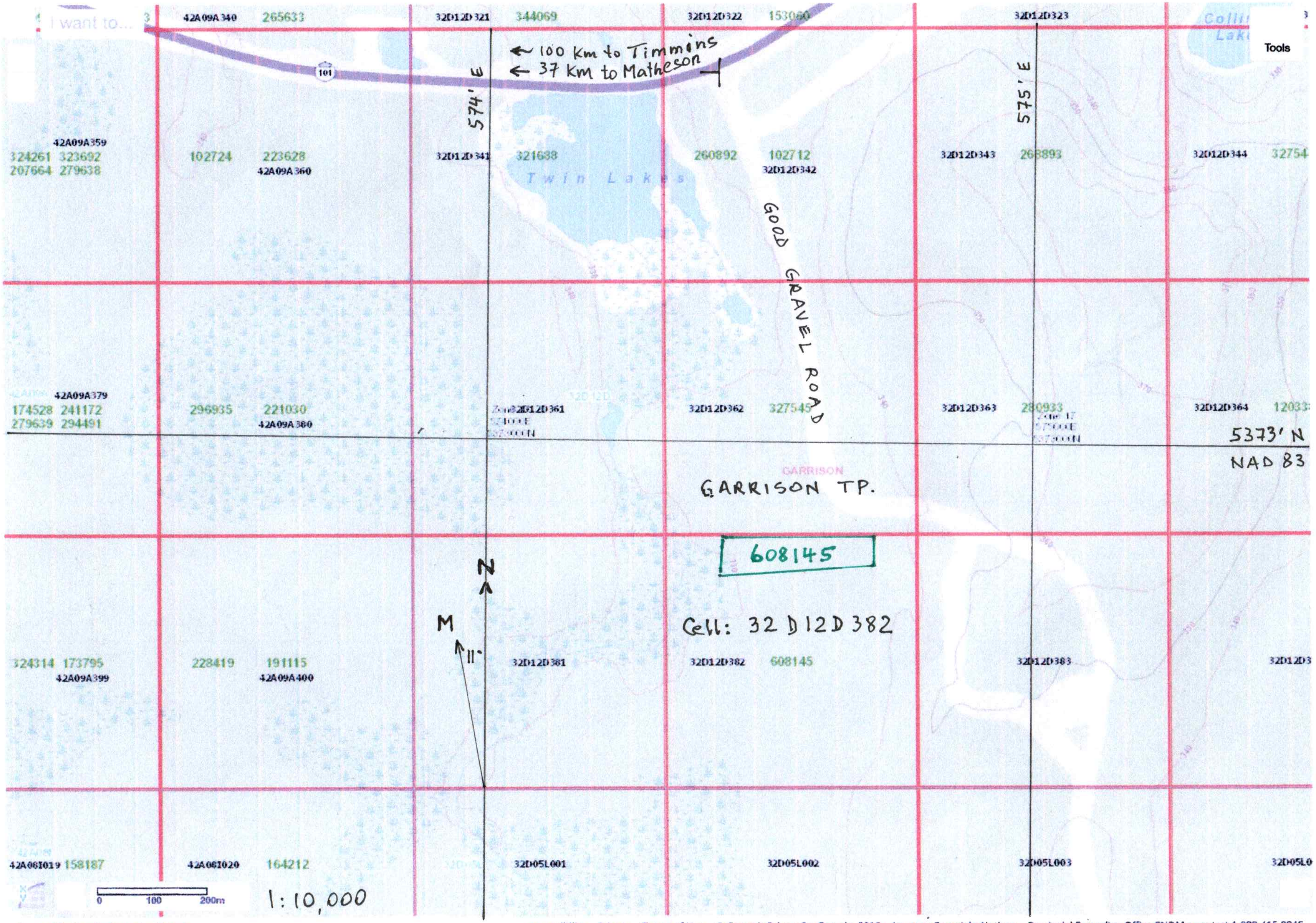
Gold in Decayed Vegetation in Garrison Township, Ontario

on Claim 608145, Cell 32D12D382

Report by Hermann Daxl, M.Sc.(Minex), Claim Holder

Timmins, 7 January 2021

Mining Lands Administration System
Ministry of Energy, Northern Development and Mines



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Introduction

All six samples of decayed vegetation were weakly anomalous in gold from 3 to 13 ppb, congruent with the occasional minor gold in drill holes on adjacent claims. I collected the samples on 17 August 2020 on my small boundary claim 608145 to test this prospecting method over deep overburden, here estimated to 50 m of mostly sand, and some gravel near the bedrock of metasedimentary rock.

My claim lies on crown land at the northern boundary of cell 32D12D382, 100 km east of Timmins, or 37 km east of Matheson via Highway 101, then 900 m south on a wide gravel road, as shown on the attached map. The forested terrain with mature conifers on sand simplified the sample collection, which is different from humus sampling. Here the 10 cm thick often mossy humus lies on 5 - 20 cm leached fine sand to silt, which is suddenly packed and brown enriched below, then grades to yellow and beige.

I have perfected and proven this method for gold, copper, zinc, molybdenum, in the Timmins region, and discovered two new gold zones despite similar thick overburden, with up to 61 ppb gold in such decayed vegetation (my assessment work reports 2891 and 3616). Results over known gold zones near surface were up to 100 ppb Au.

Present Work

Sample spots were chosen like in prospecting and located by GPS. If there are excessive elements in decayed vegetation, they can come only from occurrences in bedrock below. The efficiency lies in knowing from the start what elements of value there are.

Samples GR1 - 3 and GR5 - 7 are decayed vegetation (K) from 0 - 6 cm depth of the forest floor, after brushing aside loose debris and moss. This exposes the interwoven layer of rootlets including decayed leaves and needles, from which I ripped up a handful at 6 spots per sample in a radius of 20 m, avoiding any sand-silt. The higher moss content here was removed during sample preparation. Sample GR6 is from the 10m high steep hill top.

I dried the compact double-handful samples on paper towels for two days, then rubbed and rolled them with a glass bottle in a glass bowl to loosen the fines. After sieving <250 micron, I removed any remaining inorganic dilution or contamination by bracket sieving or dry swirling in a plastic gold pan and skimming off the wanted organics. After homogenizing by rolling on a bent sheet of paper, I noted any remaining sand, silt, or clay content. Basically the resulting sievings are condensed vegetation and therefore are suitable for vegetation analyses with the necessary very low detection limits. Please also refer to the attached lecture about such sampling for more details.

The analyses were done by ALS Canada Ltd., North Vancouver, by ME-VEG41, unashed vegetation, HNO3/HCI, ICPAES-ICPMS, for 53 elemets. Sample GR6 was also analyzed by Activation Laboratories Ltd., Ancaster, by neutron activation - code 2B - vegetation - double irradiation time at extra cost, in a medium vial I compacted myself. Neutron activation values are more precise for gold and usually somewhat higher than by ME-VEG41, as again demonstrated here by the 13.1 ppb versus 10.4 ppb gold in decayed vegetation sample GR6. Please refer to the annotated table of results, and also the map with the plotted gold values.

Results

The gold values of 3 to 13 ppb Au are considered reliable, and weakly anomalous. They should be about zero over barren bedrock. The thick overburden would have spread values. A contamination by sand is ruled out. The gold would come from bedrock, as also indicated by the sparse drilling in the area. Results of all other 52 elements are quite normal and do not indicate any such occurrences in the bedrock.

Values are also confirmed by sample GR9 of the standard reference material OREAS 47, being 32.8 ppb Au by ALS, versus 32.4 ppb Au. GR4 of the hardpan brown enriched B-horizon sand-silt, sieved <125 micron, served as a blank, as from other experience such sand has never carried gold, except near one gold-rich outcrop. However, the overlying decayed vegetation GR3 returned 4 ppb Au. This explains why the usual soil sampling cannot discover anything. Sample GR8 is the left-over sand part of GR1. With 60 % sand-silt content the 1.1 ppb Au versus 3.1 ppb Au of GR1 demonstrates the dilution, and further confirms that sand-silt does not carry gold.

GR4 of the enriched B-horizon sand-silt shows much higher CoCrFeTiVLiGa than GR8 which contains an estimated 60% leached sand-silt by volume. Apparently this enrichment is from the weathering mafic minerals of overlying sand-silt, not from below. Also this ironrich B-horizon does not seem to scavenge any elements migrating from bedrock, which however organics do.

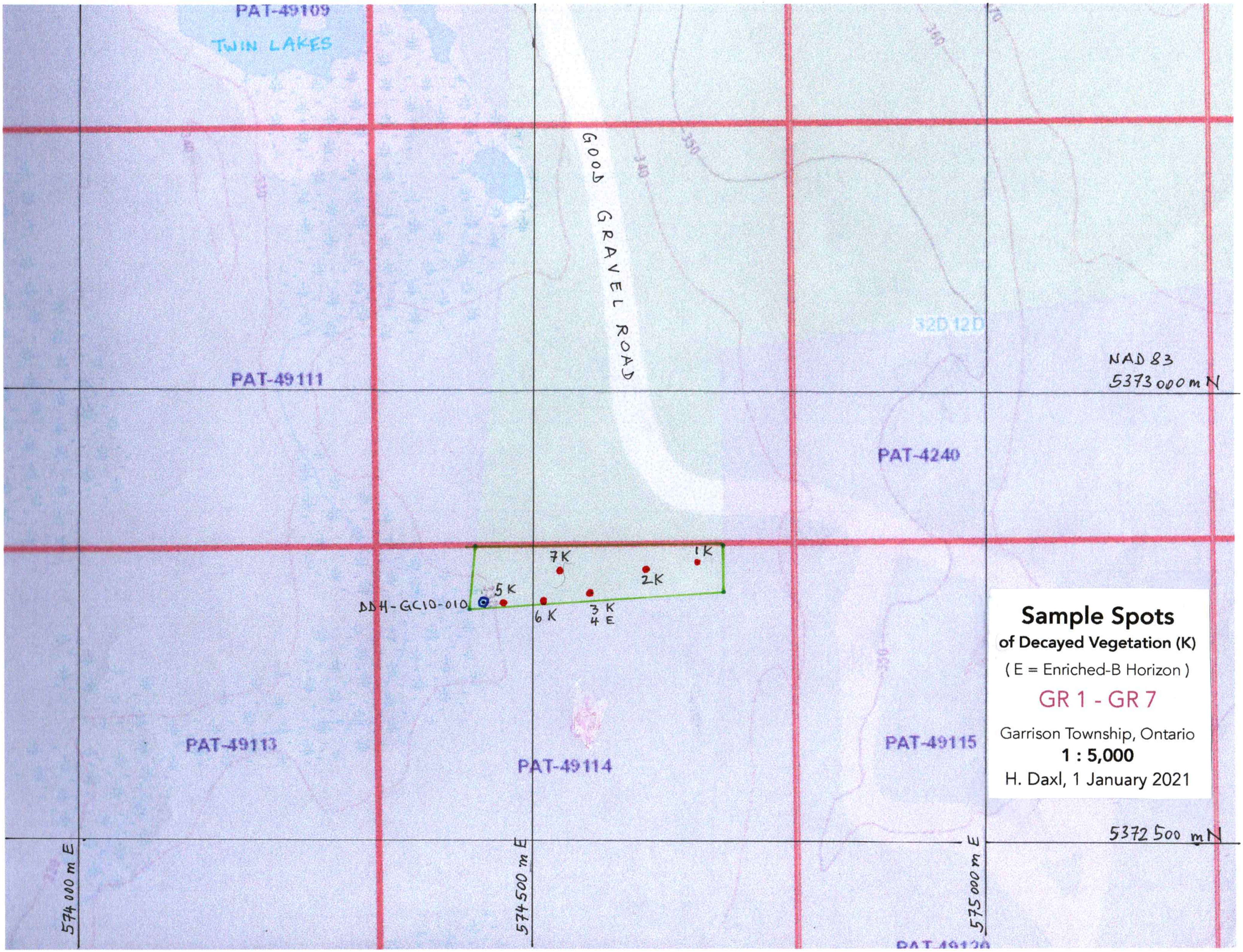
Conclusions and Recommendations

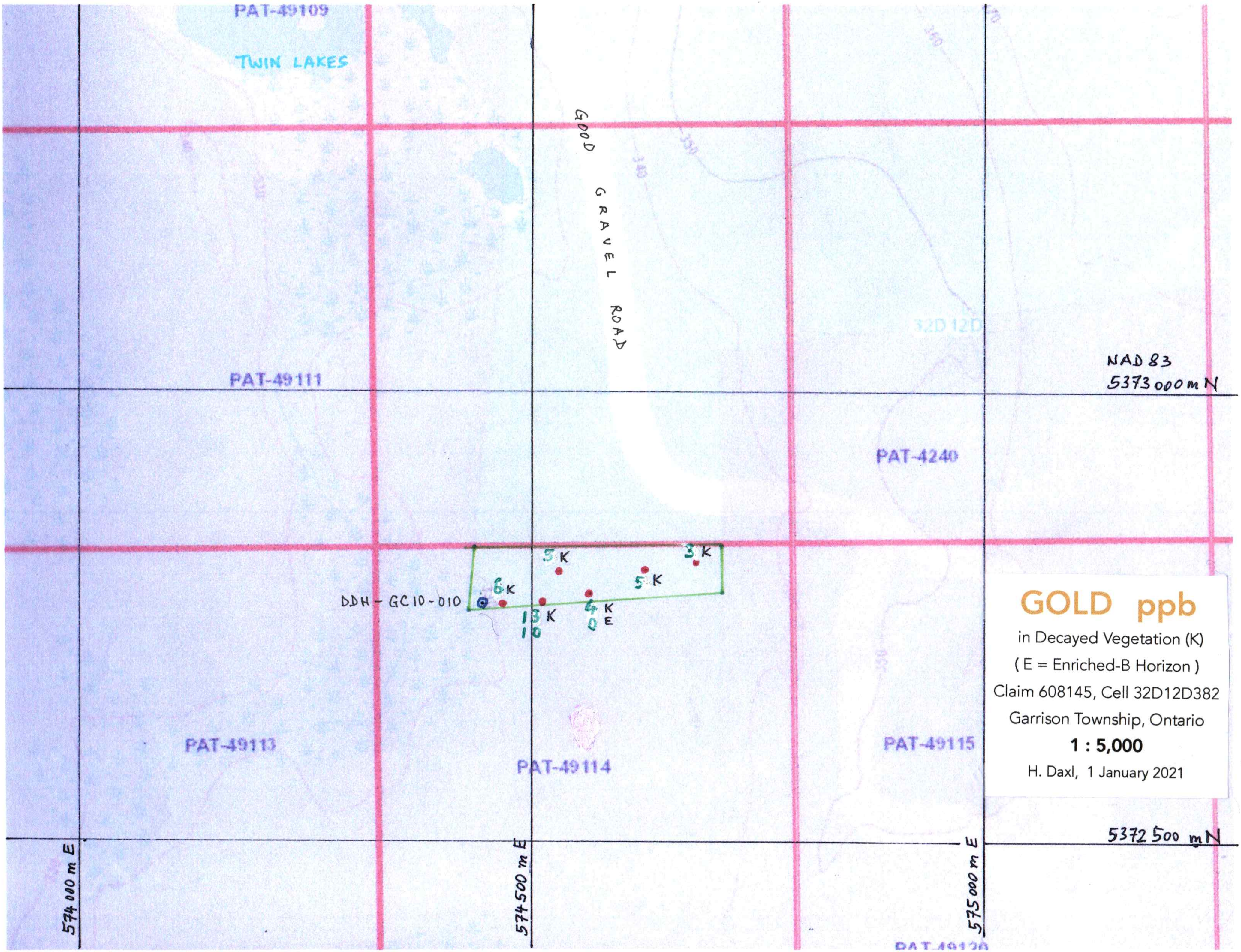
The present results show that decayed vegetation when cleaned from all inorganic material will show excessive mineralization in the rock below, as demonstrated for several elements in several areas around Timmins. The present 50 m sand-gravel is no obstacle, and the method has also worked over 20 m till and clay, and over 60 m sand and silt.

The next step of exploration can only be drilling.

Respectfully submitted,

Timmins, 7 January 2021 Hermann Daxl, M.Sc.(Minex)


PAT-49109
TWIN LAKES
GOOD GRAVEL ROAD
PAT-49111
NAD 83
5373 000 m N
PAT-4240
7K
1K
2K
5K
DDH-GC10-010
6K
3K
4E
PAT-49113
PAT-49114
PAT-49115
5372 500 m N
574 000 m E
574 500 m E
575 000 m E
Sample Spots
of Decayed Vegetation (K)
(E = Enriched-B Horizon)
GR 1 - GR 7
Garrison Township, Ontario
1 : 5,000
H. Daxl, 1 January 2021


PAT-49109
TWIN LAKES
GOOD GRAVEL ROAD
PAT-49111
32D 12D
NAD 83
5373 000 m N
PAT-4240
5 K
3 K
6 K
5 K
DDH - GC10-010
13 K
10
4 K
0 E
GOLD ppb
in Decayed Vegetation (K)
(E = Enriched-B Horizon)
Claim 608145, Cell 32D12D382
Garrison Township, Ontario
1 : 5,000
H. Daxl, 1 January 2021
PAT-49113
PAT-49114
PAT-49115
5372 500 m N
574 000 m E
574 500 m E
575 000 m E

ALS Canada Ltd.
2103 Dollarton Hwy
North Vancouver BC V7H 0A7
Phone: +1 604 984 0221 Fax: +1 604 984 0218
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To: HERMANN DAXL
39-630 RIVERPARK RD
TIMMINS ON P4P 1B4

Finalized Date: 7-SEP-2020
Account: DAXHER

CERTIFICATE VA20187058

P.O. No.: WAX-GR-2020 decayed vegetation sievings < 250 micron

This report is for ~~22 Pulp~~ 9 samples submitted to our lab in Vancouver, BC, Canada on 27-AUG-2020.

The following have access to data associated with this certificate:

HERMANN DAXL		

SAMPLE PREPARATION

ALS CODE	DESCRIPTION
WEI-21g	Received Wet Sample Wt in grams
LOG-22	Sample login - Rcd w/o BarCode

ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION
ME-VEG41	Vegetation - HNO3/HCl ICPAES-ICPMS (not ashed) - 1g

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

***** See Appendix Page for comments regarding this certificate *****

Signature:

Saa Traxler, General Manager, North Vancouver

Still Vol.% sand D silt T	Sample Description		VA20187058 ME-VEG41 Au ppb	VA20187058 ME-VEG41 Ag ppm	VA20187058 ME-VEG41 Al %	VA20187058 ME-VEG41 As ppm	VA20187058 ME-VEG41 B ppm	VA20187058 ME-VEG41 Ba ppm	VA20187058 ME-VEG41 Be ppm	VA20187058 ME-VEG41 Bi ppm
2 TD	GR1	K ◎	3.1	0.037	0.15	1.06	2	26.3	0.03	0.204
1 T	GR2	K	4.8	0.045	0.11	0.86	3	25.5	0.02	0.192
θ	GR3	K	4.3	0.077	0.17	1.83	2	30.7	0.03	0.294
100 DT	GR4	E <125 µm	<0.2	0.011	0.67	1.73	1	6.1	0.08	0.055
2 D	GR5	K ◎	5.5	0.034	0.13	2.11	2	48.8	0.03	0.450
1 T	GR6	K ◎	10.4 13.1*	0.056	0.13	1.28 1.83	2	39.8	0.03	0.359
1 D	GR7	K	5.1	0.047	0.12	0.98	3	25.2	0.02	0.302
60 DT	GR8	OF GR1	1.1	0.013	0.18	0.56	<1	9.9	0.03	0.079
	GR9	OREAS 47	32.8 ✓ 32.4	0.081 0.107	0.78	7.89 9.53	2	59.9	0.16	0.097

* By neutron activation 13.1 ppb Au (Actlabs A20-14312)

Still Vol.% sand D silt T	Sample Description		VA20187058 ME-VEG41 % Ca	VA20187058 ME-VEG41 Cd	VA20187058 ME-VEG41 Ce	VA20187058 ME-VEG41 Co	VA20187058 ME-VEG41 Cr	VA20187058 ME-VEG41 Cs	VA20187058 ME-VEG41 Cu	VA20187058 ME-VEG41 % Fe
2 TD	GR1	K ◎	0.20	0.768	1.740	0.640	1.86	0.188	10.85	0.134
1 T	GR2	K	0.22	0.844	1.385	0.425	1.56	0.216	12.70	0.102
θ	GR3	K	0.31	0.427	1.935	0.720	1.60	0.151	11.45	0.509
100 DT	GR4	E <125 µm	0.06	0.042	7.120	1.505	15.50	0.373	2.54	0.899
2 D	GR5	K ◎	0.18	0.654	2.280	0.476	2.11	0.279	16.10	0.192
1 T	GR6	K ◎	0.25	0.700	1.610	0.487 1.5	1.85 9.4	0.290	16.45	0.129 0.3
1 D	GR7	K	0.22	0.534	1.625	0.398	1.73	0.293	14.00	0.120
60 DT	GR8	OF GR1	0.08	0.208	4.090	0.394	2.74	0.142	4.01	0.209
	GR9	OREAS 47	0.56 ✓	0.411	36.000	43.700 49.9	25.00 30.4	0.962	141.50	1.380 1.65

Still Vol.% sand D silt T	Sample Description		VA20187058 ME-VEG41 Ga ppm	VA20187058 ME-VEG41 Ge ppm	VA20187058 ME-VEG41 Hf ppm	VA20187058 ME-VEG41 Hg ppm	VA20187058 ME-VEG41 In ppm	VA20187058 ME-VEG41 K %	VA20187058 ME-VEG41 La ppm	VA20187058 ME-VEG41 Li ppm
2 TD	GR1	K ◎	0.445	0.049	0.015	0.160	0.032	0.07	1.070	0.4
1 T	GR2	K	0.268	0.049	0.012	0.202	0.036	0.09	0.683	0.3
θ	GR3	K	0.390	0.083	0.014	0.224	0.049	0.07	0.990	0.2
100 DT	GR4	E <125 µm	1.995	0.007	0.035	0.018	0.010	0.02	2.360	4.1
2 D	GR5	K ◎	0.386	0.145	0.015	0.260	0.073	0.07	1.240	0.3
1 T	GR6	K ◎	0.328	0.074	0.015	0.298	0.068	0.10	0.828	0.4
1 D	GR7	K	0.328	0.079	0.014	0.248	0.053	0.11	0.829	0.4
60 DT	GR8	OF GR1	0.728	0.009	0.020	0.052	0.013	0.02	2.020	0.8
	GR9	OREAS 47	2.180	0.020	0.160	0.044	0.028 0.037	0.11	21.100	7.9 8.83

Still Vol % sand D silt T	Sample Description		VA20187058 ME-VEG41 Mg %	VA20187058 ME-VEG41 Mn ppm	VA20187058 ME-VEG41 Mo ppm	VA20187058 ME-VEG41 Na %	VA20187058 ME-VEG41 Nb ppm	VA20187058 ME-VEG41 Ni ppm	VA20187058 ME-VEG41 P %	VA20187058 ME-VEG41 Pb ppm
2 TD	GR1	K ⑥	0.043	101.0	0.22	0.005	0.157	5.07	0.077	11.20
1 T	GR2	K	0.038	185.0	0.21	0.009	0.113	4.98	0.084	9.78
θ	GR3	K	0.043	71.3	0.35	0.009	0.088	5.56	0.107	22.60
100 DT	GR4	E<125 µm	0.111	47.2	0.08	0.003	0.414	6.51	0.058	3.80
2 D	GR5	K ⑥	0.031	30.8	0.38	0.010	0.089	6.48	0.059	32.10
1 T	GR6	K ⑥	0.033	295.0	0.34	0.007 0.147	0.084	6.52	0.084	19.70
1 D	GR7	K	0.035	190.5	0.31	0.004	0.088	5.47	0.087	13.65
60 DT	GR8	OF GR1	0.030	32.3	0.09	0.004	0.309	2.36	0.030	4.01
	GR9	OREAS 47	0.454 ✓	246.0 270	8.58 12.7	0.084	0.154	69.40 80	0.053	268.00 284

Still Vol % sand D silt T	Sample Description		VA20187058 ME-VEG41 Pd ppb	VA20187058 ME-VEG41 Pt ppb	VA20187058 ME-VEG41 Rb ppm	VA20187058 ME-VEG41 Re ppm	VA20187058 ME-VEG41 S %	VA20187058 ME-VEG41 Sb ppm	VA20187058 ME-VEG41 Sc ppm	VA20187058 ME-VEG41 Se ppm
2 TD	GR1	K ⑥	1	1	4.72	0.001	0.13	0.16	0.19	1.865
1 T	GR2	K	<1	1	6.27	0.001	0.12	0.20	0.19	2.160
θ	GR3	K	2	1	2.38	0.002	0.17	0.24	0.27	2.370
100 DT	GR4	E<125 µm	<1	<1	2.15	<0.001	0.01	0.01	0.67	0.371
2 D	GR5	K ⑥	1	1	4.41	0.001	0.13	0.31	0.27	3.160
1 T	GR6	K ⑥	1	1	6.42	<0.001	0.11	0.29 0.5	0.22	3.590
1 D	GR7	K	1	<1	6.47	<0.001	0.11	0.25	0.20	3.160
60 DT	GR8	OF GR1	1	1	1.87	<0.001	0.04	0.05	0.21	0.730
	GR9	OREAS 47	29 43	17 26	6.45	<0.001	0.04 ✓	0.01	2.68	0.068

Still Vol % sand D silt T	Sample Description		VA20187058 ME-VEG41 Sn ppm	VA20187058 ME-VEG41 Sr ppm	VA20187058 ME-VEG41 Ta ppm	VA20187058 ME-VEG41 Te ppm	VA20187058 ME-VEG41 Th ppm	VA20187058 ME-VEG41 Ti %	VA20187058 ME-VEG41 Tl ppm	VA20187058 ME-VEG41 U ppm
2 TD	GR1	K ⑥	0.39	12.50	0.004	<0.02	0.105	0.006	0.075	0.047
1 T	GR2	K	0.34	9.52	0.005	<0.02	0.099	0.004	0.098	0.037
θ	GR3	K	0.58	16.85	0.003	0.02	0.054	0.003	0.063	0.062
100 DT	GR4	E<125 µm	0.08	3.22	0.002	<0.02	1.160	0.034	0.021	0.144
2 D	GR5	K ⑥	0.85	13.95	0.003	0.02	0.156	0.004	0.033	0.061
1 T	GR6	K ⑥	0.71	10.45	0.002	0.02	0.074	0.003	0.129	0.046
1 D	GR7	K	0.64	7.43	0.002	<0.02	0.072	0.004	0.114	0.042
60 DT	GR8	OF GR1	0.18	5.01	0.001	<0.02	0.742	0.012	0.025	0.083
	GR9	OREAS 47	0.74 2.54	26.00 31.4	<0.001	0.04	2.450 3.25	0.058	0.065	0.335

Still Vol.%	Sample Description		VA20187058 ME-VEG41 V	VA20187058 ME-VEG41 W	VA20187058 ME-VEG41 Y	VA20187058 ME-VEG41 Zn	VA20187058 ME-VEG41 Zr	UTM - NAD 83 57.... E	537.... N
2 TD	GR1	K @	2.56	0.06	0.358	32.2	0.53	4680	2809
1 T	GR2	K	1.75	0.06	0.258	45.4	0.44	4623	2802
θ	GR3	K	2.87	0.19	0.520	33.9	0.54	4565	2774
100 DT	GR4	E <125 μm	15.90	0.02	0.699	8.6	1.67	– Enriched B-horizon below GR3	
2 D	GR5	K @	2.11	0.08	0.422	26.4	0.59	4471	2766
1 T	GR6	K @	2.10	0.08	0.301	44.6 55	0.50	4514	2764
1 D	GR7	K	1.96	0.07	0.269	42.7	0.46	4532	2801
60 DT	GR8	of GR1	4.37	0.02	0.416	11.2	0.74	– Sand-silt residue of GR1	
	GR9	OREAS47	20.20 24.7	0.02	4.430	197.0 213	5.12	– Standard (values too low)	

K Decayed vegetation 0-6 cm depth, sieved < 250 micron.

@ Dry-swirled to remove excessive sand-silt (DT)

ME-VEG41 – unashed vegetation – HNO_3/HCl – ICPAES/MS – 1 gram aliquots.

ppm unless marked ppb or %

WORK LOG – GARRISON CLAIM 608145

17 Aug 2020	Collect samples GR1 – GR7
19 " "	Sample Preparation
29 Dec. "	Evaluate results, table values.
1 Jan 2021	Make maps
4 "	Write draft report
5 "	Annotate result tables
6 "	Write report
7 "	Finalize report

	Field work	Sample prep	Report
8 days	1	1	6

Grab some dirt - find a mine

Yes, you can find a mine on one claim unit in a few days work, if there is one !
You can also qualify and prioritize your drill targets.

This lecture is about the very specific method of **decayed vegetation (K) sampling** proven to find gold and base metals in the Timmins region. I would not completely rule out gold if there is none in a sample, but if there really is, it can only be from rock within 50 m. Therefore 30 chosen samples can adequately cover a claim unit in just two days. I have tested the method, which I learned during my M.Sc. studies at Queen's University, over six gold occurrences, also zinc, copper, molybdenum, and perfected it to work extremely well. However, to convince yourself, try it yourself over your known zones, gold or base metals, whereby you can also test your work. If it does not work for you, I would like to hear about it.

The scientific name of the decayed vegetation I sample is mor, which I had never heard before. I call it the decay horizon or K, because that is were most decay of organics happens. It is quite apparent in the forests around Timmins, where the humus usually rests on fine sand. On clay it may be very thin, so greater care is necessary, because all inorganic material needs to be removed during the lengthy sample preparation and sieving. Brush away the loose debris, then just grab and rip up the interwoven carpet of rootlets, mold, decayed leaves and needles, from 0 to 6 cm depth. One such handful from each of 5 - 10 selected dry spots within a 10 - 20 m radius make a good-size sample. Avoid sand, silt, clay, charcoal, sticks, bark, or greens. There usually are no insects nor worms. Rings, watches, bracelets, or necklaces must never be worn when handling any samples. View the 6-minute video: `https://youtu.be/zHgkvo0wSI0`

This therefore is not a so-called humus sample, because humus has two more parts below it, moder and mull. Also true humus is jelly-like, amorphous organics that cannot decay further, e.g. lake bottom sludge. But let's not get complicated. I have never had gold in the usually underlying enriched brown B-horizon below the white leached sand. As this is what other methods usually sample, I am not surprised of any ill repute.

Metal ions from deposits migrate to surface and get concentrated in that decayed vegetation, as water evaporates or is taken up by rootlets. Some elements also are taken up by rootlets and end up in leaves or needles, which again accumulate in that decay horizon. So far I have proven this for gold, zinc, cadmium, copper, molybdenum, bismuth, cesium, and silver. I had repeated samples of 85 ppb gold over 70 m across a 40 cm thick outcropping quartz-vein that ran 17 g/t gold. Another vein system had a halo of 25m of <100 ppb Au, but the thin underlying swamp muck had no gold; therefore look for decayed vegetation around big trees in swampy ground. Gold <61 ppb was found over two extensive areas with about 50 m clay and sand overburden which would have spread values.

Favourable sample spots are where water can evaporate, even some 2m wide humps, or higher ground around trees in swampy areas. Possibly small valley floors may be better than ridges, however, flowing groundwater can flush out migrating metal ions from swamp muck, and not allow later concentration. The sampling center is plotted with GPS, as selected sites are preferable to systematic sampling at line pickets. No statistical treatment is required; gold is where you find it. Notes can be limited to peculiarities, as discoveries need further work anyway.

Sample preparation requires special care and is best done inhouse. Even if a lab follows special instructions, you will have to live with short-cuts. So here is my method. I spread the samples without delay on paper towels on 10-inch square paper plates, which I change whenever they are getting too damp. The lower towels can be dried and re-used. This takes two days, which is less than in open paper envelopes even in a car in the sun, as air circulation is necessary. An oven would have to be less than 50 degrees Celsius, and likely is too small. The dried sample needs to be rubbed or rolled with a glass bottle in a glass bowl to loosen enough fine organics for sieving <250 micron with a 1/4 mm plastic coffee filter. This work is fine-dusty and needs to be done outside or with a good exhaust fan. A 3M N95 respirator mask will keep your nose and lungs clean. Any obvious sand or charcoal must not be crushed but removed before by swirling the bowl. Coarser material would be less decayed, and elements therefore much less concentrated. Therefore I advise against maceration and ashing.

After sieving, if still some sand is visible, further dry swirling in a plastic gold pan will bring the wanted organics to the top like scum which can be skimmed off clean. Bracket sieving to 125-250 micron may also help to remove silt or clay, but clay dries very hard and even finely crushed it may not release the wanted organics. The homogenized sievings need to be checked with a hand lens to estimate final sand and also silt content. Clay may show only as color and weight, but may not be so critical because its much higher surface area also may adsorb ions. Sandy-silty samples often contain more Ba, Ce, Co, Cr, Fe, La, Ni, Sc, Sm, but the main problem is that sand-silt-clay (D-T-C) with their higher density dilute values significantly. I therefore annotate such content, but do not adjust the values.

It is important to homogenize the sievings by rolling and overlapping using a bent sheet of paper, like labs used to do with pulps on a mat. Tightly packed samples stay homogenized. Keep left-overs in sachets, just do not shake them. Collecting a compact heaped double-handful of such decayed vegetation will yield the necessary 5 - 10 g of sievings.

The only reliable analysis for gold in such samples is by neutron activation, which however is not suitable for base metals, except Zn and As. As samples are basically organics, I send them to Actlabs, Attn: Neutron Activation Department, Ancaster, for INAA, code 2B, vegetation, but fill their medium vials (7cm3 like a pinkie finger) myself to press as much as possible into them. The lab also needs the weight of the empty vials, stopper and label, which varies. I also weigh the full vials so I can check for mix-up. They report the net weight (mass) from which one also can estimate roughly, whether a sample is diluted by silt or clay. The method is usually for 15-g briquettes, so that special double irradiation time has to be ordered for vials, for which they charge extra. Sandy samples or low inorganic standards are recognized and tolerated by the lab. Remind the lab that gold from rock pulp could cling to the outside of vials by static, and to damp-wipe and re-read vials of >10 ppb Au. No other sparse particle effects have occurred, as pristine sand-silt-clay carries no gold here, unless there is an outcrop nearby.

For base metals in such samples I send 3.5 g densely packed in a sachet to ALS, Attn: Vegetation Department, North Vancouver, for ME-VEG41 (not ashed) HNO3/HCl ICPAES-ICPMS, but any values for gold thereby are admittedly vague for various reasons. I weigh the full sachets to compare with their full weight received, to check for sample mix-up.

Prospecting must include swamps and swampy areas where the described decayed vegetation may only occur around trees, if any. I therefore bring a 1-m Dutch auger in the bush, also useful as a walking stick, a weapon against bears, and to at least occasionally probe the deeper overburden. Bedrock often is surprisingly near and should then be scanned with a Beep Mat. If decayed vegetation cannot be found, I take a 15 cm long auger core of the deepest dense **black swamp muck (M)**, staying clear of sediments below and noting the sample depth. I wrap this with paper towels and squeeze out the water, before letting it dry with the decay samples. Such muck apparently works well for copper, nickel, chromium, but not so well for gold, zinc, manganese. I use it as blanks for gold. However, I had gold values in one such dried-up swamp, diminishing downward in dry muck from the 57 ppb in overlying decayed vegetation. Too much water movement through swamp muck may flush out elements, but proper K-samples above the muck are valid. In deeper swamps I try for the deepest and densest muck.

Sampling the **lake bottom sludge (L)** may be the only way to explore lakes, from a canoe or best on the ice in late March - early April in just above freezing weather. A 16 cm (6 inch) diameter hand ice auger will do. A bomb will not penetrate the dense sludge which works well for sulfur and base metals, but I had no occasion to test it for gold yet. A soil auger with extensions may be necessary, but the water is often shallow, so a dry 5m wooden pole makes it easier with less than 4 m of water. I use a strong plastic bottle with the bottom cut off and a strong electric cable tied around near the bottom to pull on one side. I push it 1 m into the sludge, then remove the pole before pulling. The bottle will tilt and scoop up a good lump. I remove the stopper from the bottle to drain the water, then dump the lump on the snow to drain further and collect it on my return. Sludge can be 10 m thick, but I got similar values throughout.

Decay, muck, and sludge, have different concentration levels, and must be plotted as such. I suggest to add K, M, L to the values. Sample preparation and analyses are the same for all three. Notes of consistency (woody, fibrous, grainy, sticky, smeary), crushablility, colour, of M and L may be revealing.

So before you drill, do your shareholders a favour. Or before you lose a claim, grab some dirt. It takes a week to get a batch to the lab, then it takes at least 3-4 weeks to get the results for gold. A follow up again takes as much time, but a report for assessment credit can be filed as simply prospecting and sampling. The best time to sample is May and October-November, like any work in the bush. In summer you raise clouds of flies from humus, and visibility for choosing sample spots may be difficult. Allow for some drying after a rain, but I doubt that seasons affects the metals. The gardening claw is in your hand now, but you can still phone me for help or advice, for set-up, organizing, or training, including field work.

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