

095676

**Assessment Report**

**551 Fr.  
Fractional mineral claim  
Grant N° YC94522**

**Mayo Mining Division, Yukon Territory**

**Latitude 63° 57' North    Longitude 135° 12' West  
NTS Map Sheet 105M14**

by  
D Moraal  
Owner/Operator

December 2009



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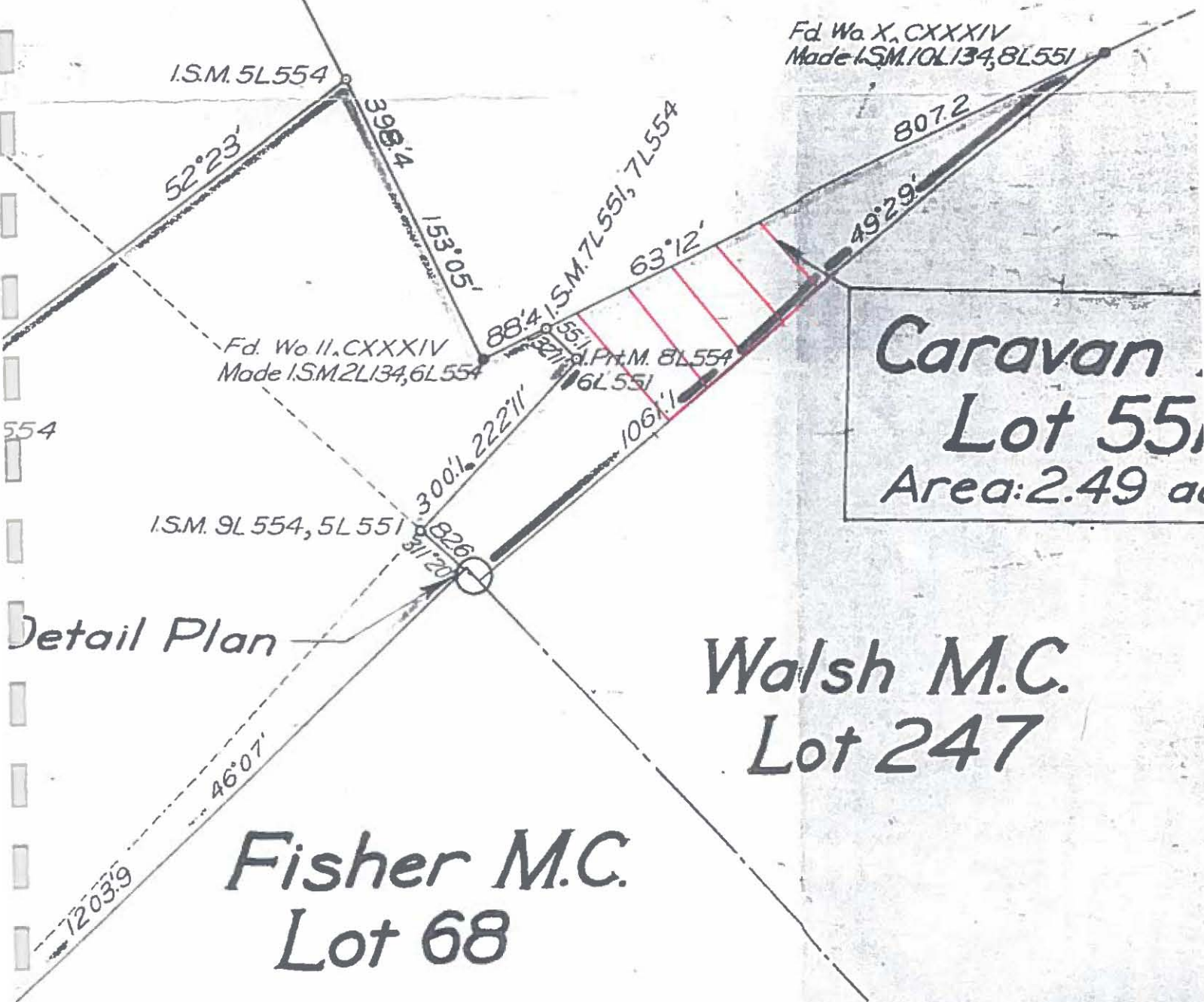


Location Map 551 Claim  
Mayo M.D. Yukon Territory Canada



CL. 256  
June 2009

Lot 134



Fd. Wo. X, CXXXIV  
Made I.S.M. 10L134, 8L551

I.S.M. 5L554

52°23'

398.4'

153°05'

Fd. Wo. II, CXXXIV  
Made I.S.M. 2L134, 6L554

88.4' I.S.M. 7L551, 7L554

63°12'

8L554  
6L551

807.2

49°29'

Caravan  
Lot 55  
Area: 2.49 a

I.S.M. 9L554, 5L551

300.1' 222°11'

106.1'

Detail Plan

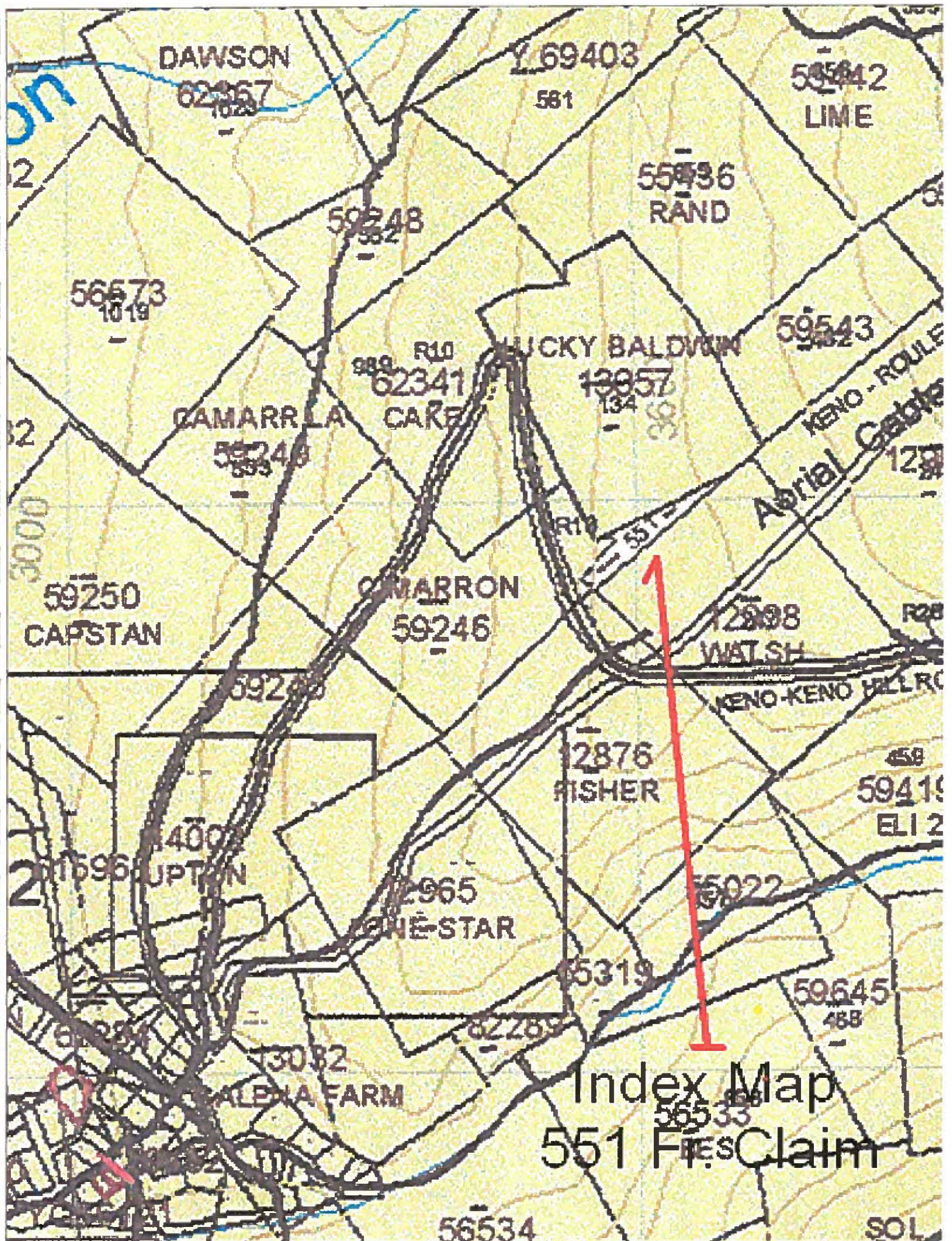
Walsh M.C.  
Lot 247

Fisher M.C.  
Lot 68

NOTE:  
Surveyed lines are shown thus \_\_\_\_\_  
Previous surveys are shown thus \_\_\_\_\_  
Other lines are shown thus - - - - -  
Monuments found are indicated thus \_\_\_\_\_  
Monuments erected are indicated thus \_\_\_\_\_  
Distances are in feet and tenths thereof  
Bearings are astronomic expressed in degrees and minutes

n & Cimarron  
554, 1L555







## Bibliography

Boyle, 1964, Lead Silver Deposits, Keno Hill-Galena Hill Area

Fraser, D.C., 1969, Contouring VLF-EM Data

Whittles, A.B. 1969. Prospecting with radio frequency EM in mountainous regions.  
Western Miner.

Saydam and Bonniwell, 1984, VLF Electromagnetic Method. A geophysical handbook for Geologists

Murphy D.C. and Roots C.F. Geoscience map 1996-5 Geological Map of Keno Hill Area Yukon NTS (105 M/14)

Bond, J.D. Geoscience map 1998-4 Surficial Geology of Keno Hill, Central Yukon (105 M/14)

Smee, Barry, 2008. Theory behind the use of pH measurements as an inexpensive guide to buried mineralization. Explore, ASEG Newsletter (2003)

## Introduction

The 551 Fr. Fractional mineral claim is a re-staking of the historic Caravan mineral claim, which was surveyed and given the official designation of Lot 551. This claim is a small and narrow plot which stood ignored despite the increased staking activity in the area. It was acquired for its relative proximity and orientation to the Onek vein system to the east of Keno City.

## Property location and access

The property consists of a narrow roughly spear head shaped fractional claim with a base of 80 mt and a length of 323 meters, oriented N.E. and covers an area of 2.49 acres (1.007 Ha.) and is situated on the west flank of Keno Hill overlooking Keno City. The ground is situated adjacent the old Keno Hill mine haul road at an elevation of between 3500 and 3600 feet (1067 and 1180 m).

Keno Hill is accessed by an all weather road from Whitehorse, Yukon, 404 Km to Mayo and thence by an all weather dirt road to historical Keno City at the base of Keno Hill. From there a summer only road leads to the top of Keno Hill. The claim is accessed from this road.

Table 1. GPS positions for the 551 Fr. claim posts

Post # 1	0485922 mE	7087850 mN	NAD 83
Post # 2	0486170 mE	7088060 mN	NAD 83

## Ownership

The 551 Fr. mineral claim is in good standing and is wholly owned by Dirk Moraal of Tagish, Yukon Territory. Anniversary date is 05 June.

## Geology

The claim is mapped as being underlain by Keno Hill Quartzite of Mississippian age. Property geology is observed to consist of shattered bedrock, almost exclusively slabs of light, locally mottled, vitreous quartzite. Prospecting the claim yielded no solid bedrock exposures. A contact with Earn Group light green quartz sericite chlorite phyllite of Devono-Mississippian age occurs adjacent north and well off the claims. No field specimens of this rock were found on the property.

The claim lies above the Late Pleistocene (Wisconsinian) McConnell glacial limit, (17 to 23 Ka) suggesting that the colluvium forming the conformable veneer of material over bedrock dates back to the mid Pleistocene Reid glacial period (about 200Ka) in age. No significant glacial features were identified on the claim.

## Work discussed in this report

### Baseline and cross lines.

The claim line was used as a baseline to establish a small grid consisting of five survey lines spaced 20 m apart. String and flag lines were laid out with a 5 m station interval. Due to the narrow character of the claim, these lines did not exceed 50 m in length for a combined total of 150 m of survey line.

### Soil sampling

55 soil samples were collected along the survey lines at an interval of 5 m. and placed in standard kraft paper soil sample bags. Samples were later field tested for pH. Sampling conditions were not ideal, as there was a general lack of good sampling material available.

### Geophysical data collected

Both VLF-EM and magnetometer readings were collected on the grid using the same stations as for the soil sampling. The lines were not ideally placed for VLF, but data smoothing using Frasers transform algorithm made the results interpretable.

## Results

### Soil sampling.

Soils collected on the claim were tested for pH, and these results were converted to Hydrogen mole by taking the inverse log of the negative pH value. H<sup>+</sup> mole results were plotted in grid form, contoured, and are presented in this report. The results are weak, but show the existence of a N.E. trending linear feature sub parallel to the baseline.

Table 2.- Soil pH

Station	Line	100N	120N	140N	160N	180N
0		4.25	4.52	4.67	4.72	4.81
5		4.34	4.78	4.86	4.84	4.94
10		4.6	4.79	4.7	4.83	4.66
5		4.43	4.88	4.7	4.87	4.76
20		4.36	4.89	4.9	4.61	4.78
25		4.53	4.59	4.74	4.61	4.58
30		4.51	4.77	4.59	5.04	4.59
35		4.81	4.86	4.81	4.84	4.45
40		4.75	4.82	4.69	4.88	4.44
50		4.77	4.53	4.63	4.67	
55		4.71				



Table 3.- H+ Mole

Station	Line	100N	120N	140N	160N	180N
0		5.62 -5	3.01 -5	2.13 -5	1.90 -5	1.55 -5
5		4.57 -5	1.65 -5	1.38 -5	1.44 -5	1.15 -5
10		2.51 -5	1.62 -5	1.99 -5	1.47 -5	2.15 -5
15		3.71 -5	1.31 -5	1.99 -5	1.34 -5	1.74 -5
20		4.36 -5	1.28 -5	1.25 -5	2.45 -5	1.66 -5
25		2.96 -5	2.57 -5	1.71 -5	2.45 -5	2.63 -5
30		3.09 -5	1.69 -5	2.57 -5	9.12 -6	2.57 -5
35		1.44 -5	1.38 -5	1.54 -5	1.44 -5	2.88 -5
40		1.77 -5	1.51 -5	2.04 -5	1.31 -5	
45		1.44 -5	1.94 -5	2.51 -5	1.44 -5	
50		1.69 -5	2.95 -5	2.31 -5		
55		1.94 -5				

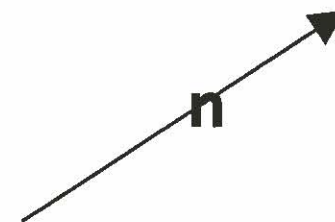
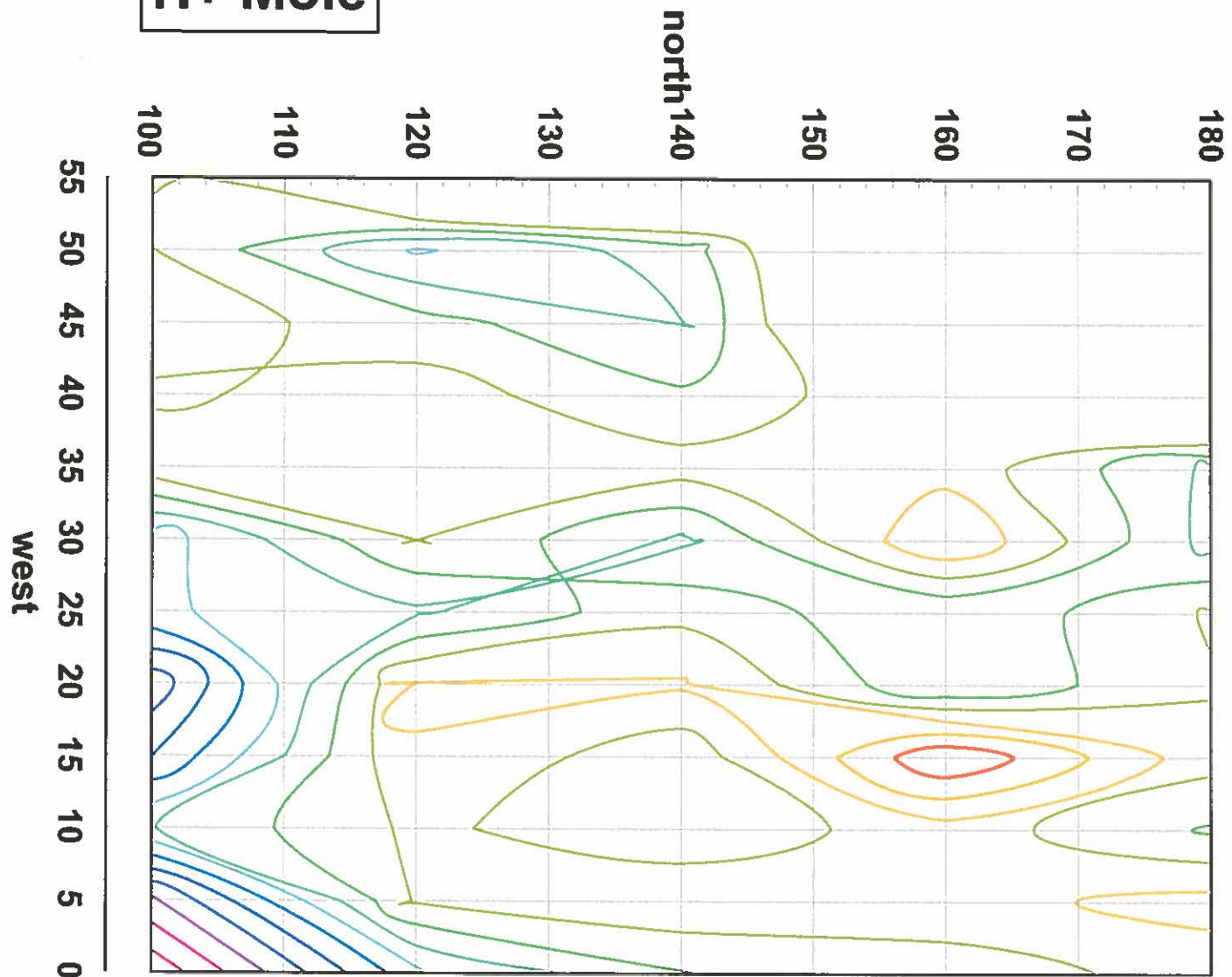
#### Magnetometer readings.

Magnetic data were collected using a Sharpe MF1 vertical field fluxgate magnetometer to collect readings at the same soil sample stations. The instrument has a sensitivity of 5 gammas, which was borderline for usefulness on this property where magnetic relief is very low. There was little detectable diurnal drift early in the short survey, but corrections were applied to the raw data.

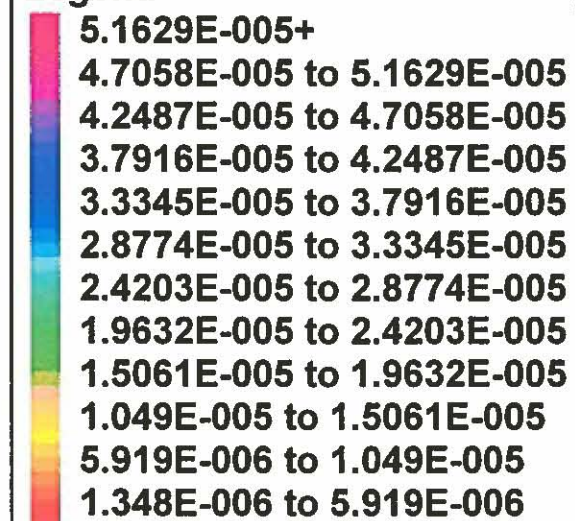
Table 4.- Raw magnetometer readings

Station	Line	100N	120N	140N	160N	180N
0		495	495	485	590	565
5		490	485	490	595	565
10		490	490	490	610	560
15		485	490	490	590	565
20		495	495	505	585	565
25		480	490	495	590	575
30		490	490	495	590	570
35		495	490	500	575	565

# H+ Mole



## Legend





40	490	495	495	565	565
45	485	495	490	575	
50	485	485	505		
55	485				

Lines 100, 120, 140 were corrected for diurnal shift of +5 gammas over 15 minutes. Lines 160 and 180 were corrected for a +70 gamma base shift and a diurnal shift of 35 gammas over 15 minutes.

Table 5.- Corrected magnetometer readings

Station	Line	100N	120N	140N	160N	180N
0		495	491.6	483.1	494	495.6
5		485	481.9	486.1	49	472.6
10		489	486.9	486.1	516.6	481.1
15		484	487.5	475.8	499	492.6
20		494.4	492.2	500.8	494	490.3
25		479.2	487.5	490.5	516.5	500.3
30		488.8	487.5	490.5	516.5	495.3
35		493.8	487.7	495.2	488.6	488
40		488.8	492.7	490.2	478.6	485.6
45		483.6	493	485	491	485.6
50		483.6	483	500		488.1
55		483.6				

#### VLF-EM.

A Sabre model 27 analogue VLF-EM receiver was used to collect readings on the grid.

Line orientation for this survey was not ideal, having the effect of broadening the curves over the resistivity interfaces. This broadening however, is common with VLF in this area. Readings are mostly positive, with weak inflections showing as lower positive readings instead of a clear "crossover". The standard Fraser Filter algorithm was applied to the readings but was only partly successful in defining the target at N=1. At N=2, a coherent Fraser anomaly shows some coincidence with magnetic and pH data. The lack of flank information due to the narrowness of the claim precluded filtering to a deeper level.

# Fraser Filter

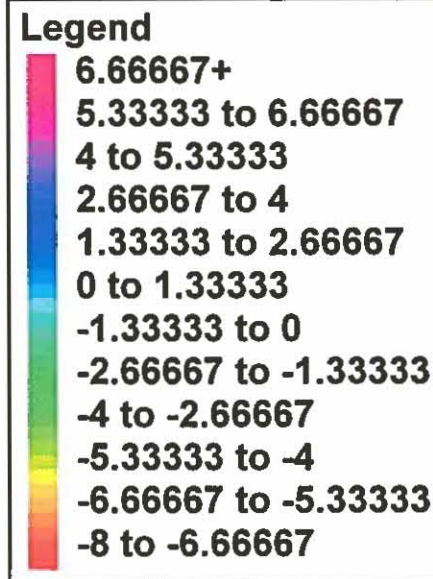
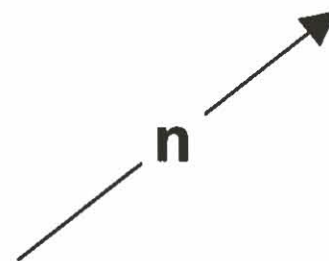
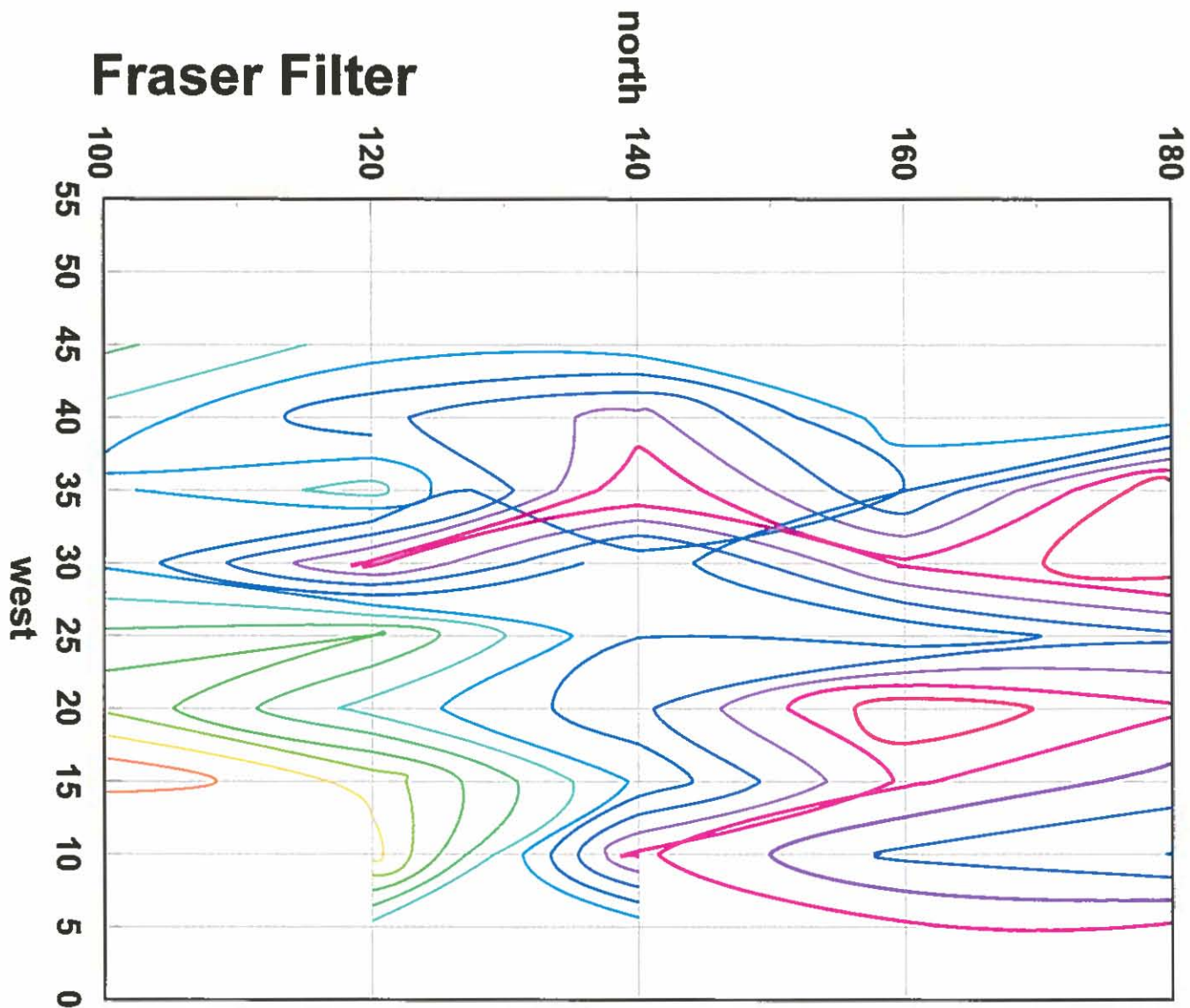




Table 6.- VLF-EM raw dip angle data in degrees

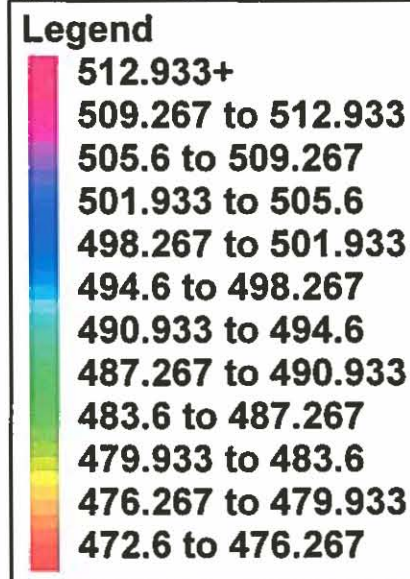
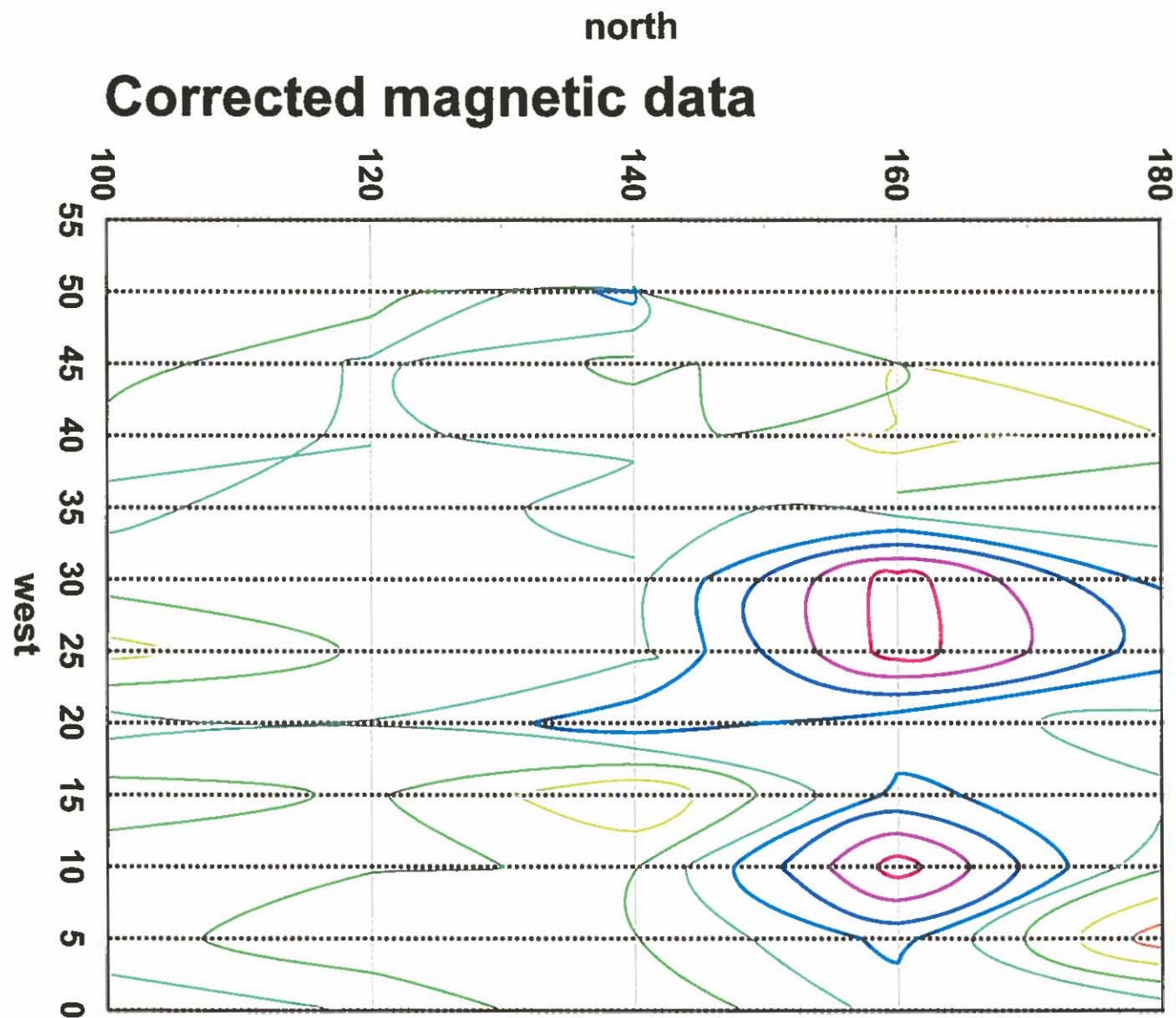
Station	Line	100N	120N	140N	160N	180N
0		+8	+12	+15	+16	+13
5		+12	+13	+15	+16	+10
10		+10	+9	+15	+13	+10
15		+11	+15	+12	+14	+12
12		+13	+12	+12	+11	+10
25		+15	+14	+11	+13	+9
30		+13	+12	+13	+12	+9
35		+12	+13	+13	+9	+7
40		+12	+15	+8	+11	+7
45		+13	+13	+9	+11	+6
50		+13	+9	+10+		
55		+14				

Due to the narrowness of the claim, some of the lines were extended to obtain flank data for the Fraser filter process.

Table 7.- Fraser's filter at n=2, (about 10 m depth)

Station	Line	100N	120N	140N	160N	/180N
0						
5					+6	+6
10			-6	+6	+3	+2
15	-8		-5	-1	+6	+4
20	-4		0	-3	+8	+6
25	-2		-3	-2	+1	+4
30	+1		+6	-1	+6	+8
35	+1		-1	-7	+2	+8
40	0		+3	-5		
45	-2					
50						
55						

# Corrected magnetic data





## **Conclusions and recommendations**

The work performed on the 551Fr. claim shows some coincidence between hydrogen mole activity, corrected magnetic data, and filtered VLF-EM data at a calculated depth of about 7 mt. on the last two lines of the grid. Beyond that point the grid lines would be less than 25 m. long. This linear feature strikes N.E. The linear feature appears to continue into the Walsh M.C. Lot 247 (owned by A.K.H.M) which is adjacent East of the 551 Fr. claim. Identification of any ore would benefit from geochemical analysis, which may be hampered by an overlying frozen clay and quartzite overburden. Research by Smee (2008) indicates that only the  $H^+$  mole can migrate through more than one meter of clay, and that other ions, regardless of the mode of transport, are severely impeded from migrating. The pH method has not given unambiguous results on this claim. pH does not work well under certain conditions such as high calcium content in the soil. Narrow veins such as occur on Keno Hill require sampling at intervals as small as 2 m. A faint pH anomaly centered on line 160N between 0 and 30 west coincides with small magnetic highs and VLF data suggest the anomaly is located at the contact with buried structure. This would be the location for further work, perhaps a 40m x 40m micro grid at a different orientation over the anomalous zone.

### **Statement of Qualifications**

I Dirk Moraal, of Tagish, Yukon hereby state:

I am a professional prospector and have been involved in mining exploration since 1969

I am the sole owner of the 551 Fr. fractional mineral claim

This report is based on data gathered by myself during the Fall of 2009

I am the author of this report which reflects the work performed and my understanding of the area and the technical methods used during the survey



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Dirk N. Moraal

### Table of expenses

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Personnel	
Prospector 2 field days @ 350	700.00
2 days report writing and data handling	700.00
Transportation	
Truck, 1262 km @ \$.40/Km	504.00
Meal allowance @ 35.00/day	70.00
Equipment rental	
pH lab 2 days/50	100.00
Vlf receiver 2 days/15	30.00
magnetometer 2 days/15	30.00
Field expendables	
batteries	9.00
soil sampling supplies	27.00
distilled water	4.90
	<hr/>
	\$ 2174.90