

## Site Assessment Report – 2013 – YPS- 546

### Site Data

Site	YPS- 546
Sample Date	July 17, 2013
Latitude	N 63.7542
Longitude	W 139.1228
Altitude	1446 ft
Feature Name	Quartz Creek
Stream Order	4

### Site Photograph



Downstream view

### Context Map

Refer to Indian River Watershed Aquatic Health Monitoring Sites 2013 map.

**Assignment of the Test Site to a Group**

The test site is assigned to a benthic insect community group (Group) based on the 2013 Yukon CABIN model (BEAST Prediction Results). The site is assigned to the Group for which it has the highest probability of belonging based on habitat attributes.

<b>Predictor Variables</b>	Altitude (ft), Longitude, LC-Bryoids (%), LC-Broadleaf open (%), LC-Mixed wood open (%), LC-Wetland herbaceous (%), Precipitation Feb (mm), Precipitation March (mm), Precipitation June (mm), Precipitation July (mm), Rainfall June (mm), April Max temp (C), Average Depth (cm), Average Velocity (m/s)				
<b>Predicted Group</b>	4				
<b>Group</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Probability that the site belongs to each Group</b>	7.2%	29.6%	11.3%	46.6%	5.3%

**Habitat Attributes of Site**

This table reports on how the habitat predictor variables measured at the test site compare to the mean habitat predictor variables for the reference sites in the same group.

<b>Variable</b>	<b>Site</b>	<b>Reference Mean</b>	<b>Reference SD</b>
Longitude	-139.123	-137.45	2.65
Altitude (ft)	1446	2296.81	838.01
Depth-Avg (cm)	13.6	29.80	14.62
Velocity-Avg (m/s)	0.5	0.52	0.32
Precip. FEB (mm)	33.5	29.34	11.79
Precip. MAR (mm)	32.2	27.46	11.91
Precip. JUN (mm)	54.7	53.49	18.49
Precip. JUL (mm)	68.5	65.85	22.37
Rainfall JUN (mm)	52.2	48.44	16.06
April Max Temp (C)	-3.7	-0.98	3.38
Broadleaf Open (%)	0.00	0.38	1.31
Bryoids (%)	0.55	0.54	1.04
Mixedwood Open (%)	0.13	0.77	2.87
Wetland Herb (%)	0.00	0.14	0.46

### Summary Results of the Benthic Invertebrate Data

The table presents the summary values of the benthic community of the test site compared to expected values and the average benthic community of the reference sites.

	Test Site	Reference Average	Reference Standard Deviation	Expected Families (RIVPACS)
Total Abundance	2	2059.44	1572.86	
Total No. of Taxa	2	12.95	4.37	12.4

### Detailed Results of the Benthic Data

This table shows how the benthic community of the test site compares to the average of the reference sites to which it is being compared. Both the presence of certain families and their abundance (the number of individuals found) are compared.

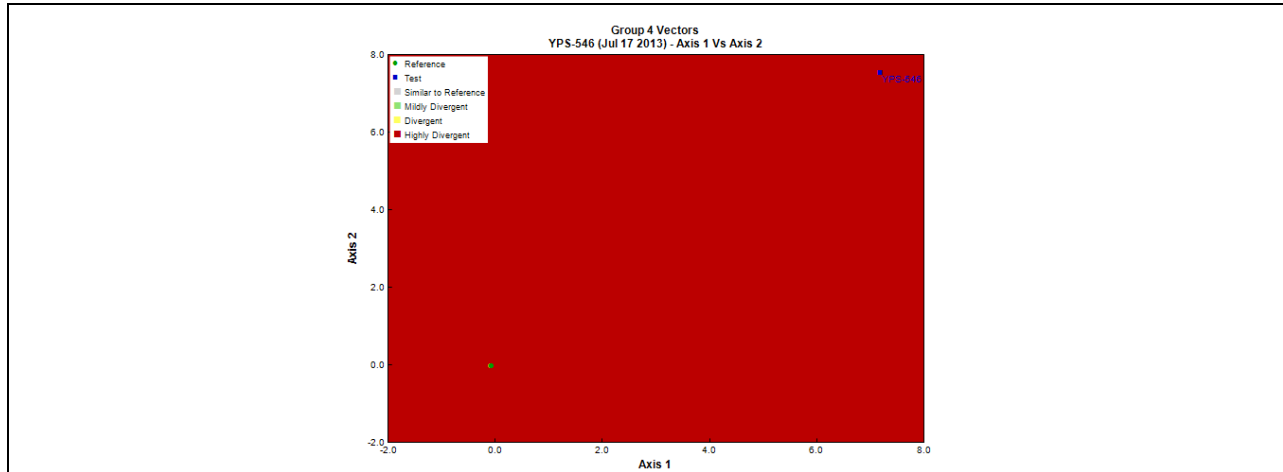
Family (bold = characteristic of group)	RIVPACS Prediction (probability)	Test Site (# of individuals)	Reference Average	Reference Standard Deviation
<b>Chironomidae</b>	0.99	1	911	827
<b>Baetidae</b>	0.85	0	233	309
<b>Nemouridae</b>	0.79	1	130	184
<b>Simuliidae</b>	0.80	0	207	367
<b>Heptageniidae</b>	0.71	0	120	216
Sperchontidae	0.57	0	35	60
Empididae	0.54	0	18	37

Using the predictive model with the RIVAPCS weighted probability of the sites predicted membership, we would expect 12.4 families at this site, but only 2 were observed. Of the seven families expected to occur ( $P > 0.5$ ), only two (Chironomidae and Nemouridae) were present. Only two of the five families characteristic of the group to which this site was predicted were present, and with extremely low abundance (represented by only one organism each). Total abundance was well below the normal range and richness was extremely low compare to what was expected.

### Visual Reports on Site Condition

This figure displays three site assessment graphs which show the site relative to the group of reference sites to which it is compared. The three axes (or vectors) represent three dimensional space, and the probability bands (from center) are 75 - 90% (Similar to Reference), 90 – 99% (Mildly Divergent from Reference), 99 – 99.9% (Divergent from Reference), and outside 99.9% (Highly Divergent from Reference).

A 0-75% probability band was provided in past annual monitoring reports. Programming is currently being developed in order to incorporate this function into the CABIN model, however at this time the 0-75% band cannot be included here.



### Assessment of Overall Site Condition

Vector 1 vs Vector 2	Highly Divergent from Reference Condition
Vector 1 vs Vector 3	Analysis Not Required
Vector 2 vs Vector 3	Analysis Not Required
Overall	Highly Divergent from Reference Condition

Using CABIN, YPS-546 is assessed as Highly Divergent from Reference Condition. The location of the site appeared to be highly impacted at the time of the site visit. Other than low abundance and diversity all other variables appear to be reasonable.

## Field Measurements

The following table shows general information collected at the site as well as water quality parameters when available. All measurements reflect conditions at the time the site visit was conducted.

Variable	
Site	YPS-546
Sample Year	2013
Status	Test
Bankfull Width (m)	6
Wetted Width (m)	4.5
Channel Depth Average (cm)	13.6
Channel Depth Max (cm)	15
Slope (m/m)	0.01
Max Water Velocity (m/s)	0.6
Average Water Velocity (m/s)	0.48
Substrate Embeddedness	3/4 embedded
Dominant Substrate-1st	<0.1 cm (silt)
Dominant Substrate-2nd	> 25.6 cm (boulder)
Surrounding Substrate Material	<0.1 cm (silt)
Pools	Absent
Rapids	Absent
Riffles	Present
Straight Run	Present
Canopy Coverage (%)	1-25
Periphyton Coverage	
Macrophyte Coverage (%)	None
Riparian Vegetation-Coniferous	Absent
Riparian Vegetation-Deciduous	Absent
Riparian Vegetation-Grasses/Ferns	Present
Riparian Vegetation-Shrubs	Present
General Conductivity ( $\mu\text{S}/\text{cm}$ )	414
Specific Conductance ( $\mu\text{S}/\text{cm}$ )	557
DO (mg/L)	9.8
pH (pH)	7.6
TDS (mg/L)	
TSS (mg/L)	
Air Temp (Degrees Celsius)	20
Water Temp (Degrees Celsius)	13.65
Turbidity (NTU)	