



(SR, HMC and Routine Water Field Card - June 2005)

N°S SHEET	YEAR	STATION NUMBER	RIVER NAME	DISTANCE	CONTINENT	STATE	LOCALITY	DATE	TIME	COLLECTORS
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;"> <p>GENERAL PHYSOGRAPHY</p> <input type="checkbox"/> Mountainous <input type="checkbox"/> Hilly <input type="checkbox"/> Plain <input type="checkbox"/> Plateau <input type="checkbox"/> Swamp <p>SURFACE EXPRESSION</p> <input type="checkbox"/> Hummocky <input type="checkbox"/> Inlined <input type="checkbox"/> Level <p>DRAINAGE PATTERN</p> <input type="checkbox"/> Dendritic <input type="checkbox"/> Herringbone <input type="checkbox"/> Rectilinear <input type="checkbox"/> Trellis <input type="checkbox"/> Poor <input type="checkbox"/> Discontinuous <input type="checkbox"/> Closed <p>SITE DRAINAGE</p> <input type="checkbox"/> Well <input type="checkbox"/> Moderate <input type="checkbox"/> Poor </div> <div style="width: 30%;"> <p>RIVER REFORM</p> <input type="checkbox"/> Gorge <input type="checkbox"/> SpringMelt <input type="checkbox"/> Glacier <input type="checkbox"/> Recent Rain <input type="checkbox"/> Unknown <p>STREAM CLASS</p> <input type="checkbox"/> Primary <input type="checkbox"/> Secondary <input type="checkbox"/> Tertiary <input type="checkbox"/> Quaternary <input type="checkbox"/> Undefined <p>STREAM TYPE</p> <input type="checkbox"/> Permanent <input type="checkbox"/> Intermittent <input type="checkbox"/> Re-emergent <input type="checkbox"/> Undefined <p>STREAM FLOW</p> <input type="checkbox"/> Stagnant <input type="checkbox"/> Slow <input type="checkbox"/> Moderate <input type="checkbox"/> Fast <input type="checkbox"/> Torrential </div> <div style="width: 30%;"> <p>WATER COLOUR</p> <p>_____ ↓</p> <p>WATER CLARITY</p> <input type="checkbox"/> Transparent <input type="checkbox"/> Partially Cloudy <input type="checkbox"/> Cloudy <p>VEGETATION</p> <input type="checkbox"/> Coniferous <input type="checkbox"/> Deciduous <input type="checkbox"/> Mixed <input type="checkbox"/> Grass <input type="checkbox"/> Bog <input type="checkbox"/> Other <p>BANK TYPE(S)</p> <input type="checkbox"/> Alluvium <input type="checkbox"/> Loess <input type="checkbox"/> Till <input type="checkbox"/> Outwash <input type="checkbox"/> Bare Rock <input type="checkbox"/> Talus/Scree <input type="checkbox"/> Organic <input type="checkbox"/> Other </div> <div style="width: 30%;"> <p>CONTAMINATION(S)</p> <input type="checkbox"/> None <input type="checkbox"/> Possible <input type="checkbox"/> Probable <input type="checkbox"/> Definite <p><input type="checkbox"/> Mining Industry <input type="checkbox"/> Agriculture <input type="checkbox"/> Domestic Forestry <input type="checkbox"/> Burn <input type="checkbox"/> Other</p> <p>BANK PRECIPITATE</p> <input type="checkbox"/> No Yes <input type="checkbox"/> _____ ↓ Colour(s) <p>BOTTOM PRECIPITATE</p> <input type="checkbox"/> No Yes <input type="checkbox"/> _____ ↓ Colour(s) </div> <div style="width: 30%;"> <p>STREAM SEDIMENT SAMPLE COLOUR(S)</p> <p>_____ ↓</p> <p>STREAM SEDIMENT COMPOSITION</p> Sand _____ % Silt & Clay _____ % Organics _____ % <p>SAMPLE TYPE(S)</p> <input type="checkbox"/> NGR Silt (S) <input type="checkbox"/> HMC Bulk (B) <input type="checkbox"/> Cast/Pebble (P) <input type="checkbox"/> Routine Water (R) <input type="checkbox"/> _____ <p>IN-SITU WATER</p> <p>_____ ↓</p> </div> <div style="width: 30%;"> <p>HMC RIF</p> <input type="checkbox"/> Longitudinal Bar <input type="checkbox"/> Transverse Bar <input type="checkbox"/> Point Bar <input type="checkbox"/> Diagonal Bar <input type="checkbox"/> Boulder Trap <input type="checkbox"/> Log Trap <input type="checkbox"/> Vegetation Trap <input type="checkbox"/> Bedrock Step <input type="checkbox"/> Pool <input type="checkbox"/> Gravel Weir <input type="checkbox"/> Stream Bed <input type="checkbox"/> Beaver Dam <p>SITE RATING</p> <input type="checkbox"/> Good <input type="checkbox"/> Good to Moderate <input type="checkbox"/> Moderate <input type="checkbox"/> Moderate to Poor <input type="checkbox"/> Poor <p>CLAST SHAPE</p> Rounded _____ % Sub-Angular _____ % Angular _____ % Polyhedral _____ % </div> <div style="width: 30%;"> <p>HMC RIF COMPOSITION</p> Cobbles _____ % Pebbles _____ % Sand _____ % Silt _____ % Clay _____ % Organics _____ % <p>CLAST LITHOLOGY(IES)</p> _____ % _____ % _____ % _____ % <p>BEDROCK EXPOSED</p> <input type="checkbox"/> No Yes <input type="checkbox"/> _____ ↓ Type(s) <p>BOULDERS PRESENT</p> <input type="checkbox"/> No Yes <input type="checkbox"/> _____ ↓ Type(s) </div> </div>										
<p>Latitude _____ Longitude _____</p> <p style="text-align: center;">N A D Decimal Degrees Decimal Degrees</p> <p>COMMENTS</p> <p>_____</p> <p>_____</p> <p>_____</p>										

	NTS SHEET	
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e.g.

0	3	1	G	0	5
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NTS Sheet: National Topographic System 1:250,000 index reference, consisting of three numbers and one letter e.g. 031G and occupy the first four boxes. The final two boxes are used for the 1:50,000 sheet identification e.g. 05, if applicable.

	YEAR	
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e.g.

2	0	0	3
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Year: The four-digit year, e.g. 2003.

	SAMPLE NUMBER	
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e.g.

1	0	0	1
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Sample Number: A four-digit sample number e.g. 1001. The first digit refers to the collection party crew number, while the other three digits are a sequential series from 001 to 999, for example:

- Crew 1 samples range from 1001 to 1999,
- Crew 2 samples range from 2001 to 2999,
- Crew 3 samples range from 3001 to 3999, ...

	REP STAT	
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e.g.

0	0
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Rep Stat (Replicate Status): A two digit number e.g. 00, defining the relationship of the current sample to others in the survey

- 00 routine sample
- 10 first sample of a field duplicate pair
- 20 second sample of a field duplicate pair
- 80 blind duplicate number (empty bag) for a blind duplicate cut of one of previous 18 field samples
- 90 control reference number (empty bag) for cut of a control reference sample

	WIDTH	
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e.g.

1	1
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Stream Width: width of the stream estimated in metres to the closest 1/10th of a metre e.g. 1.1metres wide.

	DEPTH	
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e.g.

0	1
---	---

Stream Depth: depth of the stream estimated in metres to the closest 1/10th of a metre e.g. 0.1 metres deep.

	DATE	
DAY	MO	

e.g.

3	0	0	5
DAY	MO		

Date: date of collection, DD MM format, e.g. May 30 = 30 05

	TIME	
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e.g.

1	4	2	6
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Time: time of day (24 hour clock), e.g. 2:26pm = 14:26

	COLLECTORS	
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e.g.

A	B	C	D	E	F
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Collectors: initials of the collection crew, first three boxes for the navigator, last three for the second sampler, e.g. ABC DEF

**GENERAL
PHYSIOGRAPHY**

- Mountainous
Youthful - reasonably rounded, rugged area of uplift having at least 300m gain from base to peak
- Mountainous
Mature - relatively steep sided part of the earth's crust with greater than 300m elevation gain from base to peak
- Hilly - natural elevation change, of less than 300m, while having a well defined outline
- Plain - any flat area at low elevation
- Peneplain - any almost flat area, gently undulating surface
- Swamp - low waterlogged area having shrubs and/or trees

**SURFACE
EXPRESSION**

- Hummocky - series of rounded knobs and kettles
- Inclined - constant sloping surface
- Level - flat or gently sloping

DRAINAGE PATTERN

- Dendritic - "tree-like" network of streams
- Herringbone - V-shaped pattern of streams
- Rectilinear/Trellis - series of parallel streams with near right-angle turns and perpendicular intersections
- Parallel - streams flowing parallel before joining at small angles
- Poor/Deranged - no clear geometry in the drainage and no true stream valley pattern
- Discontinuous - stream disappears for a short distance then re-appears down slope
- Closed

**SITE
DRAINAGE**

- Well - stream channel well developed and well drained
- Moderate
- Poor - stream channel poorly developed

STREAM SOURCE

- Ground - stream flow originates from natural springs or seeps
- SpringMelt - stream flow greater due to melting of winter's snow
- Glacier - stream originates from melting glacier
- Recent Rain - stream flow greater due to recent rain
- Unknown

STREAM CLASS

- Primary - smallest stream, originates from springs and seeps
- Secondary - stream below confluence of two primary streams
- Tertiary - stream below confluence of two secondary streams
- Quaternary - stream below confluence of two tertiary streams
- Undefined

STREAM TYPE

- Permanent - year-round flow
- Intermittent - seasonal flow during wet season or spring runoff
- Re-emergent - discontinuous stream course
- Undefined -

STREAM FLOW

- Stagnant - little or no flow
- Slow - speed of a slow walker
- Moderate - speed of someone briskly walking
- Fast - speed of a jogger
- Torrential - speed of a quick jogger

WATER COLOUR



dominant colour (if any)
of the stream water

WATER CLAIRITY

- Transparent - clear (any colour)
- Partially Cloudy - semi opaque (any colour)
- Cloudy - opaque or nearly opaque (any colour)

VEGETATION

- Coniferous - having needle-like leaves, e.g. spruce, pine, incl. tamarack.
- Deciduous - trees that shed their leaves annually, e.g. maple, poplar ...
- Mixed - roughly equal mixture of coniferous and deciduous trees
- Grass - grasslands surrounding site
- Bog - waterlogged spongy ground, sphagnum moss dominate
- Other _____

BANK TYPE

- Alluvium - clay, silt, sand or gravel recently deposited by stream action
- Colluvium - accumulation of soil
- Till - glacial till (unsorted)
- Outwash - stratified sand or gravel deposited by glaciofluvial melt water
- Bare Rock - bedrock
- Talus/Scree - loose rock fragments derived from an adjacent steep rocky slope
- Organic - peaty organic soil or sediment
- Other _____

CONTAMINATION

- None - no sign of any human activity
 - Possible - some human activity in area, no obvious sign of contamination
 - Probable - site, area disturbed by human activity
 - Definite - obvious contamination due to human activity
 - Mining
 - Industry
 - Agriculture
 - Domestic
 - Forestry
 - Burn
 - Other
- (Specify) →

BANK PRECIPITATE

No Yes

Colour(s)

Syntax
single colour
dominant-subordinate
multiple distinct colours
dominant ; subordinate

BOTTOM PRECIPITATE

No Yes

Colour(s)

Syntax
single colour
dominant-subordinate
multiple distinct colours
dominant ; subordinate

STREAM SEDIMENT SAMPLE COLOUR(S)

↓ _____ ↓

Syntax
single colour
dominant-subordinate
multiple distinct colours
dominant ; subordinate

STREAM SEDIMENT COMPOSITION

- Sand _____ % - particles between 0.0625 and 2 mm in size
 - will fall apart when squeezed into a ball
- Silt & Clay _____ % - particles smaller than 0.0625 mm
 - holds together when squeezed, silt is fine grained with gritty feel, clay is very fine grained and has slippery feel
- Organics _____ % - muck-like light weight sediment composed of organic materials

SAMPLE TYPE(S)

Check ALL applicable boxes

- NGR Silt
- HMC Bulk
- Clast/Pebble
- Routine Water
- Cation Water
- Other

IN-SITU WATER

PH	COND
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If applicable

N	A	D	
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Datum, either NAD27 or NAD83

Z	N
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Universal Transverse Mercator Zone

U	T	M	E	A	S	T	I	N	G
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Universal Transverse Mercator Easting

U	T	M	N	O	R	T	H	I	N	G
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Universal Transverse Mercator Northing

HMC SITE

- Longitudinal Bar - elongated bodies of sediment parallel to stream flow
- Transverse Bar - lobate bodies of sediment oriented roughly perpendicular to stream flow
- Point Bar - elongated bodies of sediment that form on the inside of stream bend, often attached to the inside bank
- Diagonal Bar - elongated bodies of sediment orientated obliquely to the stream flow
- Boulder Trap - sediment on the down-stream side of a boulder
- Log Trap - sediment on the down-stream side of a log
- Vegetation Trap - sediment on the down-stream side of vegetation
- Bedrock Step - sediment collects down-stream of break in bedrock slope
- Pool - sediment collects down-stream of waterfall or set of rapids
- Gravel Veneer - thin layer of gravel atop finer sediment
- Stream Bed - sediment taken from main stream channel
- Beaver Dam - coarse sediment exposed by flushing action adjacent or below dam

SITE RATING*

- Good** - Clast supported, tightly packed, poorly sorted gravel in well formed bedrock depression, pothole or crevice. Clast sizes: boulders, cobbles, pebbles, granules. Matrix contains sand and silt. Excavation to bedrock and/or presence of abundant well-rounded clasts enhances site rating. Lack of boulders diminishes rating.
- Good to Moderate** - Clast supported, tightly packed, poorly sorted gravel upstream or downstream of prominent rock bar or large boulder and preferably at a level well below the obstruction. Clast sizes: boulders, cobbles, pebbles, granules. Matrix contains sand and silt. Excavation to bedrock and/or presence of abundant well-rounded clasts enhances site rating.
- Moderate** - Clast supported, poorly sorted gravel amongst boulders. Packing moderate to tight. Clast sizes boulders (mainly small), cobbles, pebbles, granules. Matrix contains sand and silt. Excavation to bedrock and/or presence of many well-rounded clasts and/or association with some kind of obstruction enhances site rating. Lack of boulders diminishes rating.
- Moderate to Poor** - Matrix supported, generally loosely packed gravel strewn on river bed and not associated with any prominent obstruction. Sorting is moderate to poor. Boulders are rare or absent. Main clast sizes: cobbles, pebbles, granules. Matrix contains sand and silt.
- Poor** - Matrix supported, very loosely packed, fine gravel. Clasts are relatively rare and often form a thin surface veneer on sand or are confined to isolated lenses within a sand mass. Clast sizes: cobbles (rare), pebbles, granules. Matrix of sand and/or silt. No associated obstruction.

*Muggeridge, M.T., 1986. Pathfinder sampling techniques for locating primary sources of diamond: Recovery of indicator minerals, diamonds and geochemical signatures. *Journal of Geochemical Exploration* 53 183-204.

CLAST SHAPE

- Rounded _____ % - smooth and rounded clasts
- Sub-Angular _____ % - rough and semi-rounded clasts
- Angular _____ % - sharp edged angular clasts
- Platy/Flat _____ % - dislike clasts, one dimension much shorter than other two

HMC SITE COMPOSITION

- Cobbles _____ % - particles between 64 and 256 mm in size
- Pebbles _____ % - particles between 2 and 64 mm in size
- Sand _____ % - particles between 0.0625 and 2 mm in size
- will fall apart when squeezed into a ball
- Silt _____ % - particles between 0.02 and 0.0625 mm
- holds together when squeezed, silt is fine grained with gritty feel
- Clay _____ % - particles smaller than 0.02 mm
- holds together when squeezed, clay is very fine grained and has slippery feel
- Organics _____ % - muck-like light weight sediment composed of organic materials

CLAST LITHOLOGY(IES) - Rough estimate of clast lithologies

- _____ %
- _____ %
- _____ %
- _____ %

BEDROCK EXPOSED

No Yes

↓

Type(s)

BOULDERS PRESENT

No Yes

↓

Type(s)