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Package P5-20

Geochemical Characterization of Waste Rock and Ore
from the Madrid North Deposit, Hope Bay Project





Geochemical Characterization of Waste Rock and Ore, Madrid North Deposit, Hope Bay Project

Prepared for

TMAC Resources Inc.



Prepared by



SRK Consulting (Canada) Inc.
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Technical Summary

This report documents the methods and results of geochemical characterization completed to evaluate the metal leaching and acid rock drainage potential of waste rock and ore associated with development of the proposed underground mining operations at Madrid North.

The testing program included acid-base accounting, mineralogy, humidity cell tests and barrel tests. This report presents all of the geochemical data currently available for Madrid North deposit and supersedes SRK (2015). SRK (2015) presented data from the Naartok area of Madrid North and was prepared as part of TMAC's Type B water licence submission for the bulk exploration program at Madrid North.

The most volumetrically significant waste rock lithology is mafic metavolcanics (1). The ore is also hosted in the mafic metavolcanics (1). Mafic volcanics with sediments (1oj, 1aj or 1aj), intermediate volcanics (2p, 2pg), sedimentary units (5) and the deformation zone (13a) are volumetrically less significant waste lithologies that are projected to be intersected by the mine workings based on the geological logging. Additional volumetrically minor units include mafic volcanics with sediments (1oj, 1aj), intermediate volcanics (2p, 2pg), early gabbro (7a), late mafic intrusive rocks (10b), diabase (11c) and quartz veins (12q).

Carbonate minerals were generally ubiquitous and abundant. Ferroan dolomite was the dominant carbonate mineral though calcite was the dominant carbonate mineral in selected rock types. Magnesite, magnesite-siderite and siderite occurred less frequently and were present in significantly lower levels as compared with ferroan dolomite and calcite. Sulphide mineralogy was predominantly pyrite with trace amounts of gersdorffite, chalcopyrite, pyrrhotite, galena, cobaltite, sphalerite and tetrahedrite.

The waste rock sample set was typically characterized by low sulphur levels, with 90% of samples having total sulphur contents less than 0.43%. Sulphur levels for Madrid North waste rock were comparable to Doris (75th percentile of 0.28 and 0.26%, respectively), higher than Madrid South (0.11%) and lower than Boston (0.38%). With the exception of mafic intrusives (10b) and diabase (11c and 11c mixed), samples classified as waste had relatively high NP and TIC values, with median NP and TIC levels greater than 100 kg CaCO₃/t. For mafic metavolcanics classified as waste (1 waste) median levels of NP and TIC greater than 240 kg CaCO₃/t.

Samples of ore contained the highest median total sulphur levels, which included rock types mafic metavolcanics (1 ore and 1 ore/waste), mixed mafic metavolcanics (1 mixed) and mixed sedimentary units (5 mixed). These gold-bearing samples had median values of NP and TIC of 120 and 140 CaCO₃/t, respectively.

The potential overestimation of neutralization potential due to the presence of NP-neutral iron carbonates was assessed by calculating an effective TIC (TIC_(Ca+Mg)) based on the lowest calcium-plus-magnesium content in the Madrid North humidity cell test samples. Regardless of the buffering method used (NP, TIC or TIC_(Ca+Mg)) the majority of samples (96% to 98%) were classified as non-PAG. Approximately 4% of the overall sample set was classified as uncertain. Three samples were classified as PAG; these samples contained anomalously low levels of

buffering capacity and, in the case of the mafic metavolcanics and sedimentary units samples, anomalously high sulphur content.

In terms of metal leaching, kinetic tests (humidity cells and barrel tests) indicated that arsenic, antimony, cobalt, molybdenum and nickel leaching from waste rock are potential issues at neutral to alkaline pH values. Higher leaching rates for these elements are however expected from mafic metavolcanic waste and ore (1 waste and 1 ore), sedimentary units (5 and 5 mixed), early gabbro (7a) and the deformation zone (13a). The humidity cell data show that occurrence of arsenic, cobalt and nickel leaching is not related to a specific rock type, sulphur content or metal assays, but possibly to the occurrence of the trace occurrence of the sulphide mineral gersdorffite (NiAsS), which requires detailed petrographic examination to identify. There is no practical field technique for segregation of waste rock that contains gersdorffite.

During mine development approximately 25% of Madrid North waste rock will be placed on surface in a temporary stockpile while the remainder will never be removed from the underground. At closure, all Madrid North waste rock will have been placed as backfill in the Madrid North underground. Of the rock types with samples classified as PAG, volumetrically, sedimentary units and early gabbro rock types are projected to be relatively minor or approximately 3.7% based on the distribution of these samples in the ABA sample set, which is assumed to be reasonably representative of the rock intersected by the mine workings. For the mafic metavolcanics classified as waste, 0.5% or 1 sample of 220 was classified as PAG. In the event localized ARD is produced, it is anticipated that the high carbonate content in the overall waste rock stockpile would provide sufficient buffering capacity, and that the overall drainage from the stockpile would remain neutral to alkaline. Water quality from the waste rock stockpile will reflect concentrations from a mixture of rock types. Source terms for Madrid North are presented in SRK (2017).

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Change Log

The following table provides an overview of material changes to this report from the previous version issued as Appendix V3-4C as part of the DEIS for Phase 2 of the Hope Bay Project dated December 2016.

Changes by Section

Information Request, Technical Comment, or Other Change	Section	Comments
INAC-IR47	1.3	Waste rock management and conservative source term derivation method preclude the need to breakdown volumes of ore and waste rock by lithology.
INAC-TRC14	3.1.3	Best practice guidelines used for ARD classifications.

1 Introduction

1.1 Scope

The Hope Bay Project (the Project) is a gold mining and milling undertaking of TMAC Resources Inc. The Project is located 705 km northeast of Yellowknife and 153 km southwest of Cambridge Bay in Nunavut Territory, and is situated east of Bathurst Inlet. The Project comprises of three distinct areas of known mineralization plus extensive exploration potential and targets. The three areas that host mineral resources are Doris, Madrid, and Boston.

The Project consists of two phases; Phase 1 (Doris project), which is currently being carried out under an existing Water Licence, and Phase 2 (Madrid-Boston project) which is in the environmental assessment and regulatory stage. Phase 1 includes mining and infrastructure at Doris, while Phase 2 includes mining and infrastructure at Madrid and Boston located approximately 10 and 60 km due south from Doris, respectively (Figure 1.1).

In early 2013, TMAC acquired Hope Bay from Hope Bay Mining Ltd. (HBML), a wholly owned subsidiary of Newmont Mining. The previous owner, HBML, with assistance from SRK Consulting (Canada) Inc., completed a comprehensive geochemical characterization program of waste rock and ore associated with Madrid North, which includes the Naartok, Rand and Suluk ore zones. The characterization work was in support of ongoing feasibility, environmental assessment and permitting studies, including a Type B water licence submission to the Nunavut Water Board (NWB) in support of the bulk exploration program at Madrid North.

At the request of TMAC, SRK has prepared this report to present the methods and results for the Madrid North area testing program and to assess the metal leaching and acid rock drainage (ML/ARD) potential of waste rock and ore that would be produced as part of the proposed underground mining activities for the Project. The findings are based on acid-base accounting and mineralogy data obtained from sampling conducted primarily in 2006 and 2008, and also results from a kinetic test program initiated in 2008. The humidity cell test program operated until 2010. Monitoring of the barrel tests is ongoing and data up until 2015 are presented. This report contains the most current geochemical database for the overall Madrid North deposit and supersedes SRK (2015). SRK (2015) presented data from the Naartok area of Madrid North and was prepared as part of TMAC's Type B water licence submission for the bulk exploration program at Madrid North. Madrid North source terms for the Project are presented in SRK (2017).



Figure 1.1: Location of the Hope Bay project and its main deposits.

1.2 Geological Context

The geological information was extracted from the Hope Bay project summary (Miramar 2007) and Chapter 1 of the DEIS.

Hope Bay lies in the northeast corner of the Slave structural province of the Canadian Shield, which is comprised primarily of sedimentary, volcanic and intrusive rocks and is host to a number of significant gold, base metals and diamond deposits. The Hope Bay belt is a typical Archean greenstone belt, and extends over 80 km in length and is up to 20 km wide. The belt is comprised of mafic to felsic meta-volcanics (mainly meta-basalts), with localized sedimentary rocks, and is bounded by Archean granite intrusions and gneisses. The greenstone package has been deformed during multiple events and is transected by major north-south trending shear zones that appear to exert a significant control on the occurrence of mineralization, similar to other Archean greenstone gold camps. Overall the metamorphic grade is lower- to mid-greenschist facies except near the contact with the marginal granitoids where the rocks are hornfelsed to a lower amphibolite-facies metamorphic grade.

The Madrid North deposit is located 6 km south of the Doris deposit, and includes mineralization in the Naartok, Rand, and Suluk zones (Figure 1.2). The bulk of these previously separate mineralized zones have now been connected and are viewed as a single large mineralized system. These include a sequence of iron-titanium tholeiitic basalts, magnesium- tholeiitic basalts, komatiitic basalts, synvolcanic to late gabbroic and ultramafic rocks.

Gold mineralization is most commonly associated with high Fe-Ti tholeiites and is structurally controlled by a large-scale zone of deformation referred to as the Deformation Zone and localized within the hanging wall of the zone. The Deformation Zone is a localized corridor of high strain and hydrothermal alteration that is traceable for 11 km of open strike. The style of mineralization,

which is different to that of the Boston or Doris deposits, is characterised by replacement of favourable stratigraphic units, typically including Fe-rich tholeiitic basalts. Mineralisation is associated with an early alteration assemblage of sericite and carbonate (magnesite and ankerite) with a stockwork of quartz-carbonate veinlets. Gold is associated with secondary albite and paragonite with lesser ankerite and quartz-ankerite stockwork veinlets. While grades are more moderate in the Madrid system, thicknesses can be quite considerable, sometimes exceeding 60 m, often containing localized high grade veins. Higher gold content is associated with fine grained pyrite, intense albite flooding and hematite discolouration.

Rocks of the Naartok West, Naartok East, Rand and Suluk zones are classified based on textural and lithogeochemical similarities (Figure 1.3 to Figure 1.6). The general stratigraphy of the area is composed of three major volcanic packages: Wolverine Group (C-type, or normal tholeiitic, rocks), Patch Group (A-type, or Fe-Ti, rocks), and a C-type tholeiitic andesite (Pale Green Pillow). The Wolverine and Patch Group contacts have a NNE strike within the Naartok area, extending from the Deformation Zone. The Naartok stratigraphy consists of a package of intercalated C-type and A-type basalts with interflow sediment, dipping to the north at Naartok West, and moderately westerly dipping in Naartok East. At Rand, stratigraphy consists of a steep northerly dipping package of C-type and A-type variolitic basalts and volcanics. Stratigraphy continues south to Suluk as south- southeast trending, steeply dipping, and west younging volcanic and interflow sediment packages.

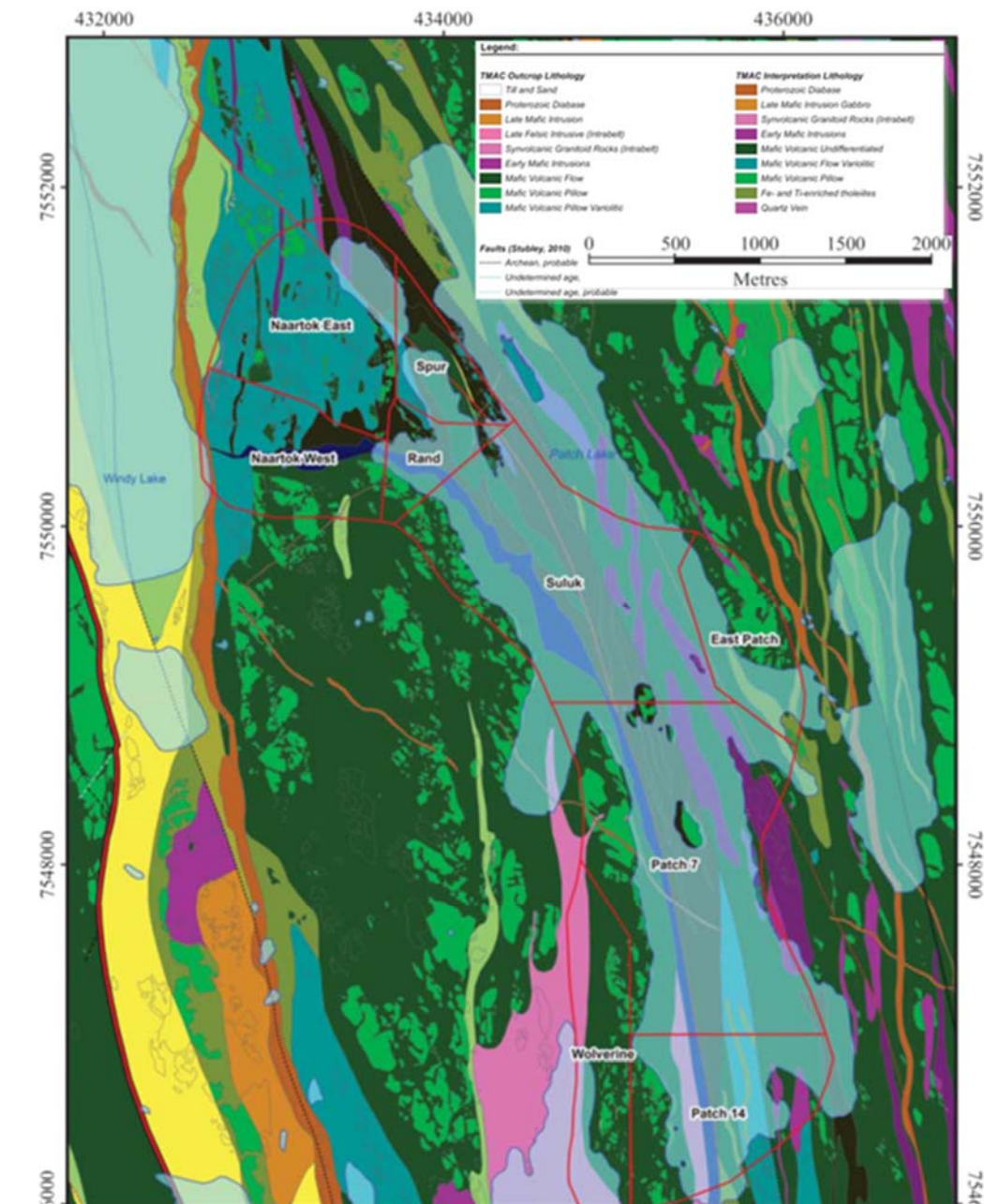


Figure 1.2: Bedrock geology of the Madrid deposit area showing the nine subdivisions associated with the mineralised corridor. Quaternary surficial sediments are shown in yellow (TMAC, 2016).

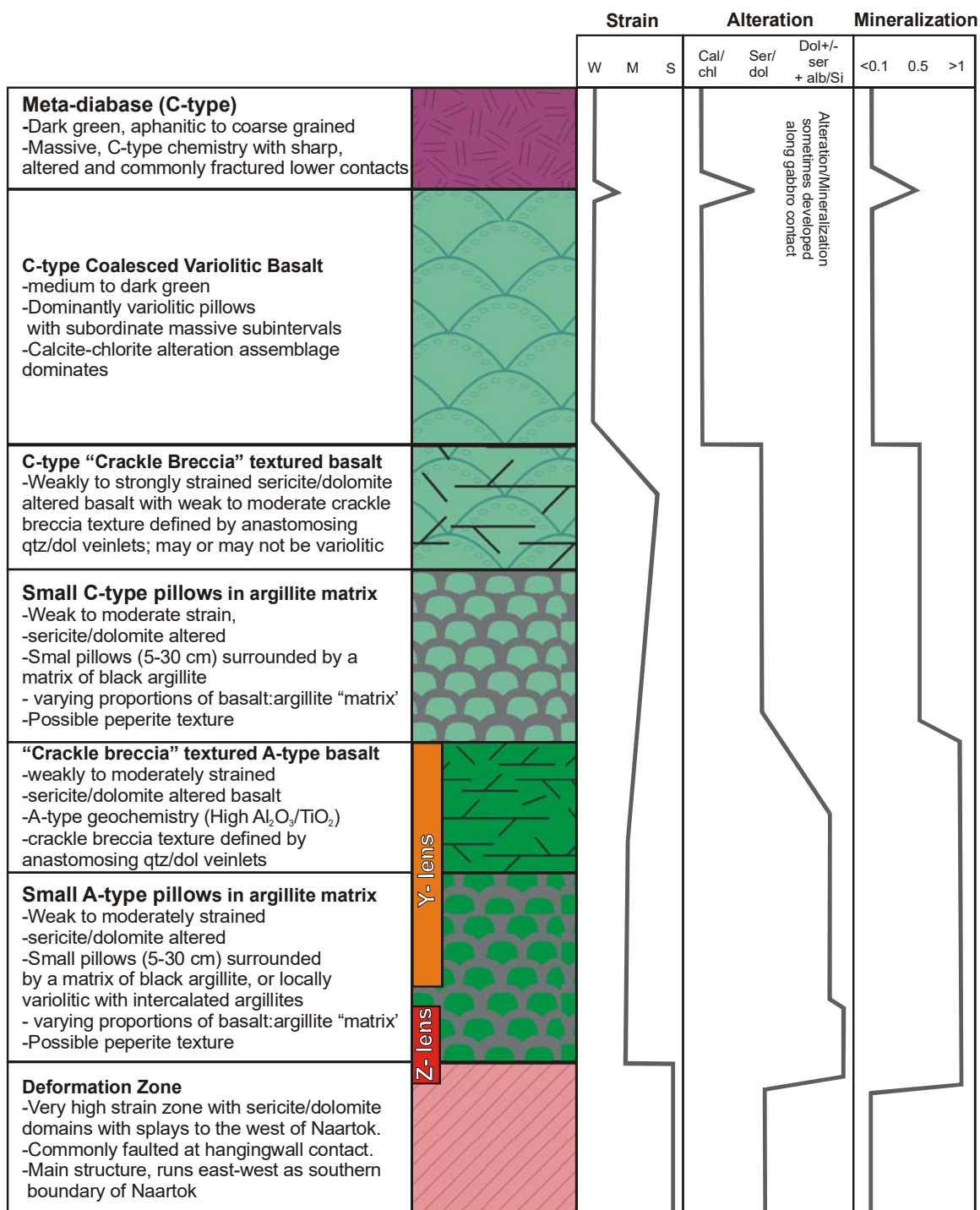


Figure 1.3: Generalized North-South stratigraphic column, Naartok West Area.

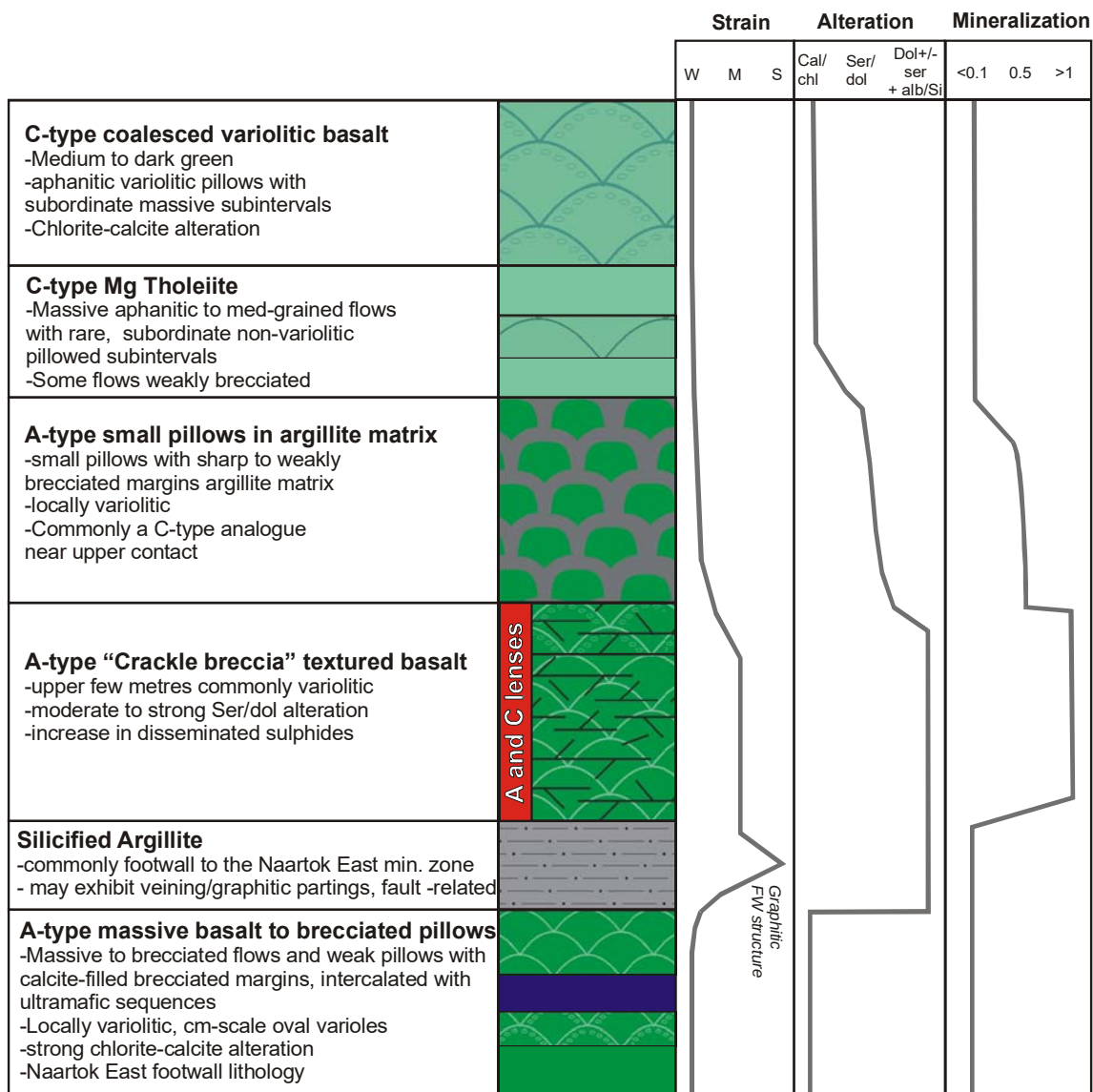


Figure 1.4: Generalized West-East stratigraphic column, Naartok East Area.

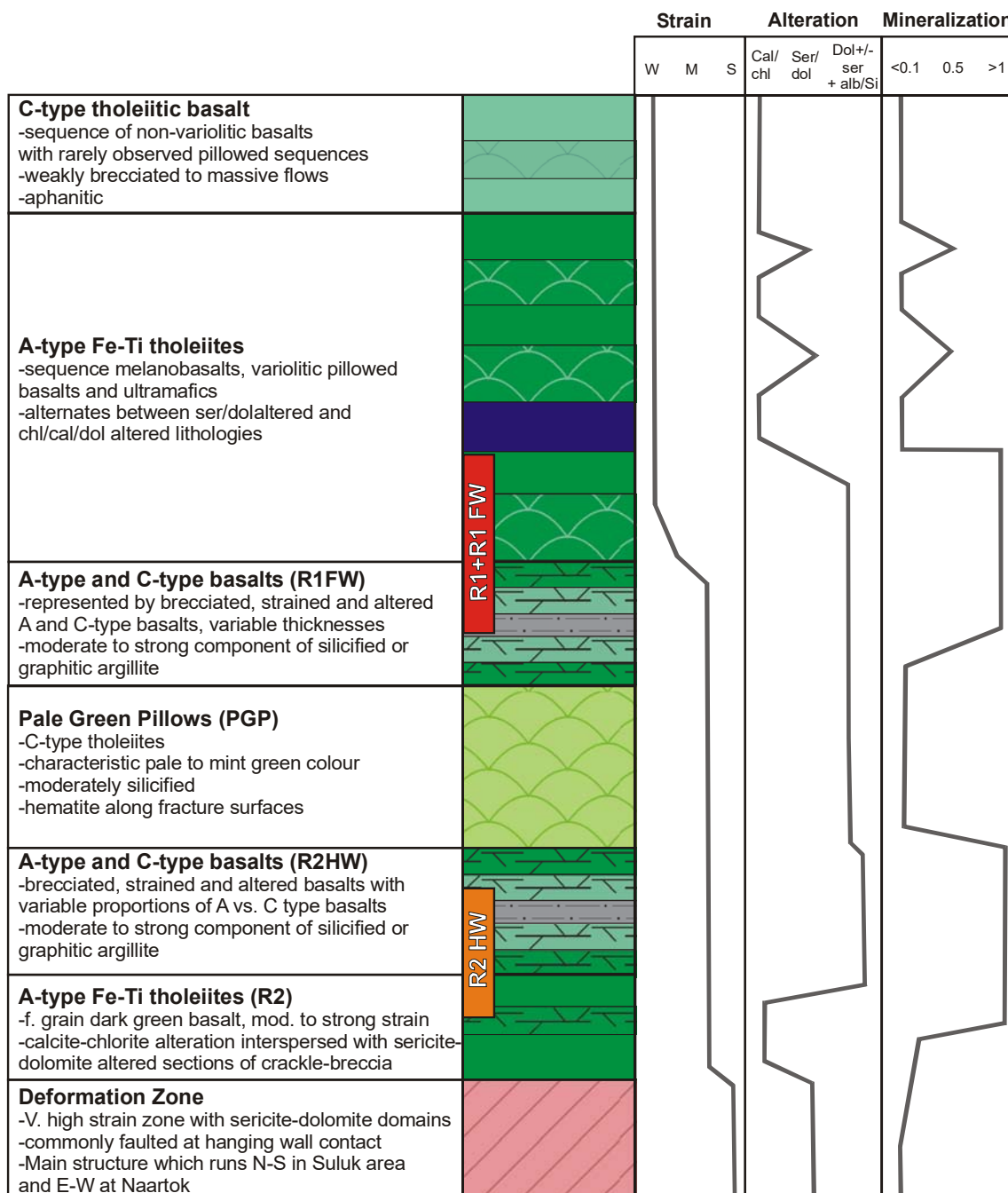


Figure 1.5: Generalized North-South stratigraphic column, Rand Area.

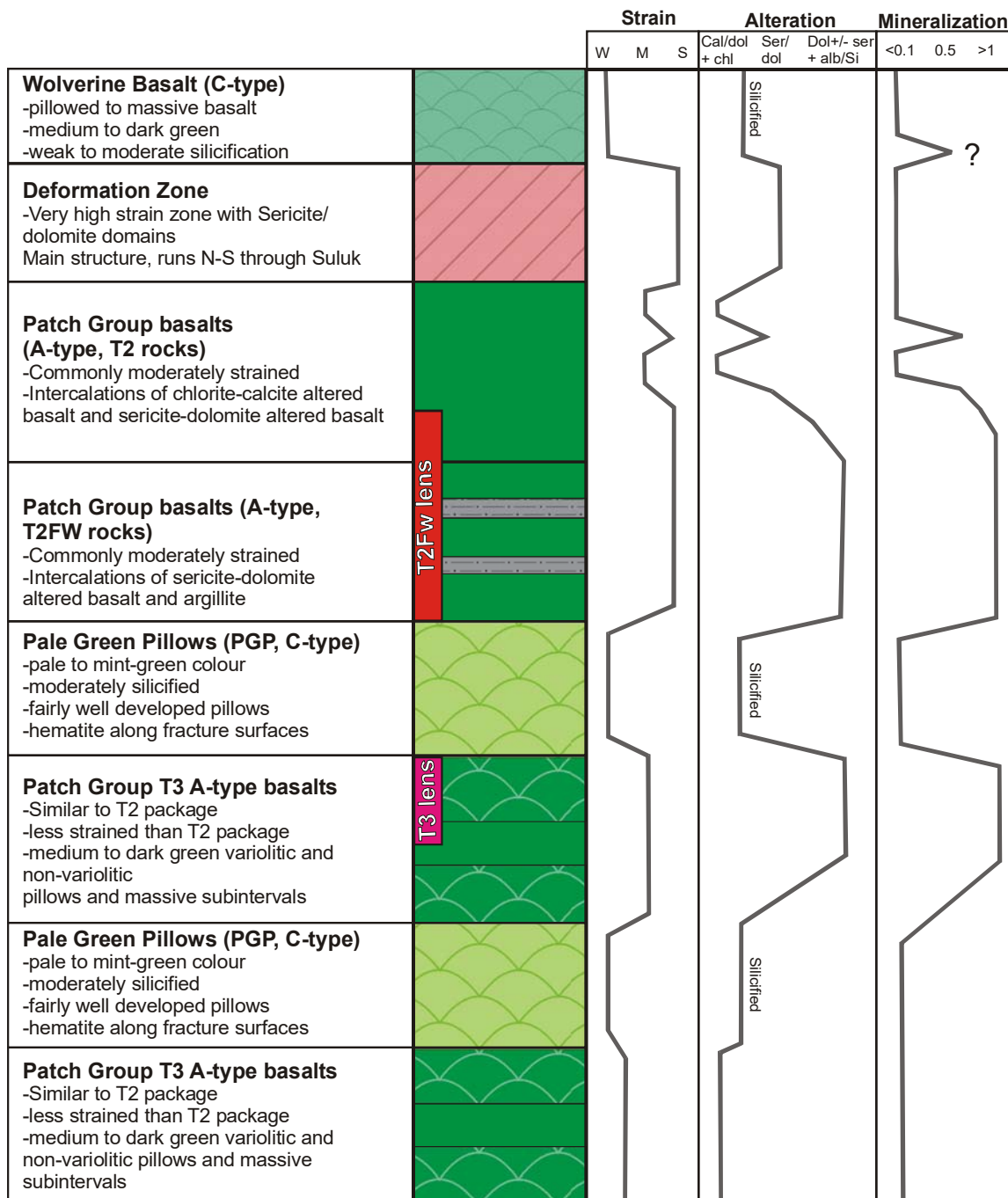


Figure 1.6: Generalized West-East stratigraphic column, Suluk Area.

1.3 Development Concept

Figure 1.7 presents the proposed Madrid North portal location, the surface projection of the ore body at three different depths and ABA sample set. The mining envelope for the Madrid South is not yet defined, but will be in the immediate vicinity of the ore zones. The majority of the development rock is expected to be comprised of mafic metavolcanics (1). The ore is also hosted in the mafic metavolcanics (1). Mafic volcanics with sediments (1oj, 1aj or 1aj), intermediate volcanics (2p, 2pg), sedimentary units (5) and the deformation zone (13a) are volumetrically less significant waste lithologies that are projected to be intersected by the mine workings based on the geological logging. Additional volumetrically minor units include mafic volcanics with sediments (1oj, 1aj), intermediate volcanics (2p, 2pg), early gabbro (7a), late mafic intrusive rocks (10b), diabase (11c) and quartz veins (12q).

Detailed mine plans are continuously under development and modification, and given the nature of the deposit will remain in flux throughout the mine life. This is consistent with the mine planning at the existing Doris Mine. However, because the mining method will result in a net backfill deficit situation, all mine waste rock being developed at the project site will ultimately be returned underground. As a result, in lieu of a detailed volumetric breakdown of volumes of ore and waste rock by lithological unit intersecting mine workings, TMAC has developed conservative source loads (SRK 2017) by selecting base case and upper bound values in all cases. All of these source loads are individually developed for each deposit taking into consideration the unique lithological units present in each.



2 Methods

2.1 Static Tests

2.1.1 Sample Sets

Overview

The geochemical database compiled for Madrid North was generated from a number of sources, including Knight Piesold (2001), Newmont (2006) and samples obtained by SRK in 2008 on behalf of Newmont. Details on tests and the testing methods used for each of these programs are discussed below and an overall summary of the available data is provided in the following sections.

Knight Piesold Samples

A total of 20 drill core samples from Naartok West were collected by Knight Piesold for the purposes of conducting a preliminary assessment of metal leaching and acid rock drainage for waste rock (Knight Piesold 2001). One sample of mafic metavolcanics was removed from the sample set because the economic classification could not be determined and this rock type can be either waste or ore. The analytical program was conducted at BC Research in Vancouver, BC (now Maxxam Analytics). All samples were analyzed for total sulphur (Leco), sulphate (HCl leach), total inorganic carbon (TIC), standard Sobek NP (Sobek et al. 1978) and trace elements by aqua regia digestion followed by ICP finish. TIC was determined by using a Leco furnace to directly measure CO₂ gas evolved from HCl treatment of the sample. All samples have been included in the geochemical database for Madrid North. Data from Knight Piesold (2001) are provided in Appendix A.

Newmont Samples

Newmont has their own internal standards, procedures and methods to assess the environmental geochemistry of mining wastes at their properties. Their analytical procedures and method of assessing the potential for acid rock drainage is known as Net Carbonate Value (NCV) (NMS 2003). Newmont also routinely carries out XRD analyses (using Rietveld refinement and pattern fitting) and metal analyses on all of the samples that are selected for NCV testing. These analyses are performed at NMS laboratory, located in Englewood, Colorado.

The key differences between the NCV method and conventional ABA procedures are that the neutralization potential (NP) is based on the carbonate content (versus a direct reaction with acid as per conventional NP procedures), and the neutralization potential and acid potential are reported in units of % carbon dioxide (versus CaCO₃ eq/tonne). There are also some key differences in the analytical procedures for carbon and sulphur speciation. Nonetheless, some of the NCV parameters are analogous to ABA and can be used as surrogates for ABA parameters in the interpretation of data.

NMS completed a 2006 program in support of a due diligence study prior to Newmont's acquisition of Hope Bay. This unpublished sample set that includes a total of 69 drill core samples from Madrid North. SRK understands that Newmont's sample selection was based on

geochemical characterization of specific holes in a cross sections (also known as type sections), all of which were selected by Newmont/HBML geologists. Sample composites for each hole were selected by NMS personnel with review by HBML geologists.

All samples were analyzed using NCV methods (NMS 2003), metals by 4-acid digestion with ICP finish and XRD using Rietveld refinement and whole pattern fitting at NMS laboratory in Englewood, Colorado. All samples were included in SRK's data set. The Newmont data are provided in Appendix B.

In 2008, Newmont also determined XRD mineralogy only for 44 sample intervals that were not geochemically characterized by SRK. As discussed in the next section, these intervals were omitted from the ABA characterized program based on long intervals of geological continuity that were assumed to also be geochemically consistent. There are no NCV data for these samples.

SRK Samples

In 2008, SRK completed two sampling and testing campaigns on waste rock and ore from Madrid North. These included a comprehensive sampling and testing program to address gaps in the spatial and geological coverage (referred to as the Infill sample set in Table 2.1), and some additional static tests completed as part of a field barrel testing program. The geochemical characterization program was a collaboration between SRK and Newmont. The scope of the SRK program was to fulfill regulatory and permit requirements whereas the purpose of Newmont's program was to fulfill internal requirements and conduct an economic assessment.

Samples obtained from the drill core during barrel setup were not included in the ABA geochemical database because exploration pulp samples from the barrel intervals were analyzed as part of the infill program. The details of the 2008 infill sample set are discussed below.

Table 2.1: Inventory of SRK ABA Samples

Sample Set	Sample Type	# of Samples	Samples Included in Current Data Set	Comment
Infill	assay pulps	332	332	
Barrel	drill core	59	0	Data excluded because ABA for barrel intervals also produced from assay pulps as part of SRK infill program.

2008 Infill Program

Samples for the 2008 infill program were characterized by SRK on behalf of HBML. The objective of SRK's waste rock geochemical characterization program was to:

- Expand the spatial coverage provided by existing samples.
- Provide sufficient spatial and geological coverage of the Naartok, Rand and Suluk deposit areas based on an earlier open pit mining concept (Figure 1.2).

A total of 332 static test samples were selected by SRK (Table 2.1). Data are presented in Appendix C.

Samples were selected by reviewing the spatial distribution of existing samples relative to the pit shells and identify specific drill holes that would improve spatial coverage. This was performed collaboratively by SRK and personnel from Newmont Metallurgical Services (NMS). Selection of holes was limited to those with accessible exploration pulps.

Once holes were selected, samples were chosen by SRK using geological logs and ore/waste classifications (when available). Ore/waste classifications were assigned by HBML geologists based on assays results for individual pulp samples and using a gold cut-off grade of 0.5 g/t. The objective was to select approximately 10 m long sample composites over the entire length of each hole. Gaps sometimes exist where an interval was not sampled during the exploration program. Selection was based primarily on continuity of lithology and waste/ore classifications and secondarily on the continuity of alteration and pyrite content. Intervals classified as ore were composited according to length.

Where there was downhole geological continuity over at least three ABA composite samples, SRK analyzed every second interval.

The pulps were shipped to Cantest Ltd. (now Maxxam) in Burnaby, BC, where weight-averaged composites were made according to SRK instructions.

All samples were analyzed at Cantest for paste pH, total sulphur (Leco), sulphate (HCl leach), total carbon (Leco), TIC, modified Sobek NP (MEND 1991), and metals (aqua regia digestion followed by ICP-MS finish). For 144 samples, TIC was determined by using a Leco furnace to directly measure CO₂ gas evolved from HCl treatment of the sample. TIC was determined by the difference between total carbon and organic carbon (HCl leach and analysis of the solids by Leco) for the remaining 188 samples. This latter method was initially chosen as it is comparable to the method used by NMS, which was also using this data for their internal geochemistry programs. A 250 g split from each of the 332 samples was shipped to NMS in Englewood, Colorado where the mineralogy for each sample was determined using XRD with Rietveld refinement and whole pattern fitting.

Summary of Available Testing Data

A summary of the testing data compiled for use in this report is provided in Table 2.2.

Table 2.2: Summary of Madrid North Static Geochemical Database

Test	Number of Samples
ABA or NCV	420
Elemental Analyses	420
XRD	442

2.1.2 Assignment of Geological Attributes and Economic Classifications

For each sample obtained from drill core, the lithology was assigned on a length-averaged basis using HBML's database of geology drill logs. Economic classifications were assigned by HBML using a nominal open pit assay grade cut-off of 0.5 g/t. The lithology and economic classification for each sample are presented in Appendix D. All calculations assumed that the entire sample interval was present. A description of the information and assumptions made when assigning and calculating attributes are described below.

Lithology codes were assigned using HBML's 2008 standard lithology codes (Appendix E). Many samples had one unique lithology whereas others were mixed and contained secondary and sometimes tertiary lithologies. For mixed samples, the proportion of each lithology was calculated for the sample interval. For data interpretation (e.g. graphing), samples are presented according to their dominant lithology.

2.1.3 Data Quality Assurance/ Quality Control

Historic Samples

Quality Assurance/Quality Control (QA/QC) procedures were not applied to samples from the Knight Piésold (2001) sample set. SRK accepted the Knight Piésold data as they were received, as there was no option for re-analysis.

Newmont Samples

All 2006 NCV results provided by Newmont passed their internal QA/QC screening. SRK accepted NCV data as they were received.

SRK Samples

The quality of data for SRK ABA samples was assessed by SRK using rigorous QA/QC procedures. A number of samples were requested for re-analysis with all re-analyzed data deemed acceptable. All re-analyzed data were included in this report.

2.1.4 Use of Surrogates for Data Interpretation

The various geochemical characterization programs for Hope Bay waste rock have used different analytical methods. Most of the historical data and the more recent SRK data were generated using acid-base accounting methods (ABA), but there have been variations in the testing campaigns (e.g. standard vs. modified Sobek NP). Newmont's characterization programs used the net carbonate value (NCV) method, which consists of analytical and data interpretation methods that were developed internally by Newmont Metallurgical Services (NMS) and consists of analytical and data interpretation methods that typically differ from ABA methods (Section 2.1.1).

A comparison of data was made to reconcile the different analytical methods, with the objective of determining which parameters were to be used in the assessment of acid rock drainage for waste rock. All NCV data were converted to ABA units, which allowed for ARD interpretations using ABA

terminology. Table 2.3 outlines the conclusions of the comparison and is a summary of the selected surrogates used in this report for the assessment of ARD.

Table 2.3: Summary of ABA and NCV Surrogate Assessment for Samples from the Hope Bay Belt

Parameter	ABA	NCV	Comment
Sulphur (Calculation of Acid Potential)	Sulphide sulphur (calculated) when available, otherwise total sulphur.	Total sulphur	
Neutralization Potential (NP)	Modified Sobek NP when available, otherwise standard Sobek NP.	NP as calculated from solid-phase calcium (Ca) by ICP or XRF	Sobek NP values preferred to ICP calcium. ANPA data not available.
Total Inorganic Carbon (TIC)	Calculated or measured TIC (by Leco) preferred to measured TIC (by coulometry). Where both calculated and measured TIC (by Leco) exist, use Leco. No samples have exclusively measured TIC by coulometry.	Use calculated TIC	Acid-insoluble carbon may be graphite or insoluble carbonate minerals. TIC data not available for all samples.

2.2 Humidity Cells

The overall objective of the humidity cell test program was to characterize the significant lithologies representing waste rock and ore. Humidity cell tests were selected in 2008 and 2009 by SRK, with the most comprehensive selection conducted in 2009.

A total of 22 humidity cell test samples (Table 2.4) were selected from the three ore zones in Madrid North (Naartok, Rand and Suluk). Sample intervals and corresponding sample IDs for acid-base accounting (ABA) and barrel tests for the Madrid North humidity cell tests are listed in Appendix F. The selection criteria for each program were different and are discussed below.

2.2.1 2008 Humidity Cell Test Program

The five humidity cells initiated from the Naartok, Rand and Suluk zones were sub-samples of the barrel tests set up in 2008 at Hope Bay (Section 2.2.2). Samples were selected using criteria for barrel test sample selection, as presented in Section 2.3.1. As static testing data were not available at the time, barrel test intervals were selected to represent specific lithologies where sufficient lengths of core were easily accessible.

The humidity cell samples were obtained during barrel set-up. Each barrel test core interval was laid out in sequential order and a 3 to 5 kg sub-sample removed. The sub-sample was a composite of small (~10 cm) pieces of core taken from the middle of every third row and submitted to Maxxam Analytics (formerly Cantest Ltd.) for kinetic and static test work. This data has not been included in the static database, as discussed in Section 2.1.1. The analytical program is described in detail later in this section.

For HC-3, HC-4, HC-5, and HC-8, static test data was also generated using samples of archived exploration pulps. The exploration samples consisted of half round core sampled continuously

along intervals that were approximately 1 m in length. The pulps were composited by Maxxam into approximately 10 m intervals under the direction of SRK. These samples are part of the SRK 2008 infill sample set described in Section 2.1.1.

The ABA data for the barrel interval was determined using weight-averaged calculations. This was not performed for HC-9 because this interval was not sampled during the exploration program and, as a result, pulps were not available.

2.2.2 2009 Humidity Cell Test Program

Seventeen humidity cell samples were selected in 2009 for Madrid North (Table 2.4). The selection was based on an ABA database for the Naartok, Rand and Suluk deposits (Section 2.1).

Selection was performed by SRK based on rock type, economic classification (ore or waste), and the statistical distribution of sulphur, neutralization potential (NP), and total inorganic carbon (TIC). The statistical distribution of specific trace elements (e.g., arsenic) was also a consideration but was secondary to the ABA characteristics. The dominant rock types considered for the Madrid deposit humidity cell test work are listed in Table 2.4.

For waste and ore samples of each rock type, the objective was to select samples containing either “typical” or “high” sulphur levels, and “typical” levels of NP, TIC and trace element content. “Typical” was defined as between P40 and P60 concentrations whereas “high” was between P90 and P95. For NP, TIC and trace element content, the data from each sample set was assessed according to rock type. The statistical assessment of sulphur varied depending on the size of the sample set for each rock type, as described in Table 2.5.

Humidity cell samples obtained from storage were obtained from either Maxxam in Burnaby, BC or Newmont Metallurgical Services (NMS) in Englewood, Colorado. Selections without jaw crushed splits in storage were obtained from drill core by HBML geologists under the direction of SRK. Samples obtained were either a half- or quarter-round splits of the drill core.

Static data was available for all samples. However, samples characterized by Newmont were analyzed using Newmont’s NCV methods. Samples selected for humidity cell tests with NCV data were also analyzed for ABA at Maxxam. The analytical program is described in detail later in this section.

Table 2.4: Inventory of Humidity Cell Tests and Test Work Program, Madrid North

HC #	SRK Program	Zone	Lithology Code	Rock Type	Preliminary Economic Classification	Selection Rationale	Static Testing ¹					Kinetic Testing	
							Static Data Type ²	XRD	MLA	SEM	Petrography	Date Initiated	Final No. of Cycles
HC-3	2008	Suluk	1	Mafic volcanic	Waste	Barrel ⁴	ABA	x				Feb 2009	155
HC-9	2008	Naartok	1	Mafic volcanic	Waste	Barrel ⁴	ABA	x	x	x		Feb 2009	104
HC-27	2009	Suluk	1	Mafic volcanic	Waste	Typical S	ABA	x	x	x		Jan 2010	57
HC-25	2009	Rand	1	Mafic volcanic	Waste	High S	ABA	x	x	x		Jan 2010	108
HC-8	2008	Rand	1	Mafic volcanic	Mixed	Barrel ⁴	ABA	x	x	x		Feb 2009	57
HC-28	2009	Naartok	1	Mafic volcanic	Ore	Typical S	ABA	x	x	x		Jan 2010	57
HC-26	2009	Suluk	1	Mafic volcanic	Ore	High S	ABA	x	x	x		Jan 2010	57
HC-24	2009	Naartok	1	Mafic volcanic	Ore	High S	ABA	x	x	x	x	Jan 2010	108
HC-17	2009	Suluk	1aj	Mafic volcanic w. sediments	Waste	Typical S	ABA	x	x	x	x	Jan 2010	57
HC-4	2008	Suluk	2pg	Pale Green Pillow	Mixed	Barrel ⁴	ABA	x	x	*		Feb 2009	104
HC-18	2009	Rand	2pg	Pale Green Pillow	Waste	Typical S	ABA	x	x	x		Jan 2010	108
HC-19	2009	Suluk	2pg mixed ³	Pale Green Pillow	Waste	High S	ABA	x	x	n/a		Jan 2010	57
HC-20	2009	Naartok	5	Sedimentary units	Waste	Typical S	ABA	x	x	x	x	Jan 2010	57
HC-21	2009	Rand	5	Sedimentary units	Waste	High S	ABA	x	x	x		Jan 2010	155
HC-40	2009	Naartok	7a	Early gabbro	Waste	Typical S	NCV & ABA	x	x	x		Jan 2010	108
HC-41	2009	Naartok	7a	Early gabbro	Waste	High S	NCV & ABA	x	x	x		Jan 2010	57
HC-22	2009	Naartok	11c	Diabase	Waste	Limited sample set	ABA	x	x	*		Jan 2010	57
HC-23	2009	Rand	11c	Diabase	Waste	Limited sample set	ABA	x	x	x		Jan 2010	108
HC-5	2008	Naartok	13a	Deformation zone	Waste	Barrel ⁴	ABA	x	x	x		Feb 2009	57
HC-29	2009	Suluk	13a	Deformation zone	Waste	Typical S	ABA	x	x	x		Jan 2010	57
HC-39	2009	Naartok	13a	Deformation zone	Waste	High S	NCV & ABA	x	x	x		Jan 2010	57
HC-30	2009	Suluk	13a	Deformation zone	Waste	High S	ABA	x	x	x		Jan 2010	104

Notes:

- ¹See Section 2.2.3 for details.
- ²Samples originally characterized by Newmont in 2006 used the net carbonate value (NCV) method. ABA analyses were subsequently determined for NCV samples selected for humidity cell tests.
- ³Mixed with flow basalt with interflow chert/argillite/sandstone.
- ⁴Corresponding barrel test IDs are listed in Table 2.8.
- *SEM analyses not conducted because mineral level below detection, as indicated by XRD.
- n/a indicates data not available.

Table 2.5: 2009 Humidity Cell Test Considerations, Madrid North Deposit

Rock Type	Consideration for Selecting “Typical” and “High” Sulphur Samples
Mafic volcanics (1)	For samples of waste, statistical distribution of sulphur were roughly equivalent for Naartok East, Naartok West, Suluk and Rand. Sample selection for both “typical” and “high” sulphur samples selected on basis of overall statistics for Madrid deposit. Samples from any zone assumed to representative of overall Madrid deposit. For samples of ore, the sample set was small with sulphur content varying (as listed in descending order): Naartok West, Suluk and Naartok East / Rand. Overall statistics for Madrid used for sample selection, with samples from any zone assumed to be representative of the overall Madrid deposit.
Sedimentary units (5)	Samples set is small (n=12) and from Naartok East, Rand and Suluk. Selections according to the available sample set.
Early gabbro intrusives (7a)	Sample set is small (n=8) and from Naartok East and Naartok West only. Selections according to the available sample set.
Diabase (11c)	Sample set is small (n=3) and from Naartok East and Suluk only. Selections according to the available sample set.
Deformation zone (13a)	Statistical distributions of sulphur were roughly equivalent for Naartok East, Naartok West, Suluk and Rand. Sample selection for both “typical” and “high” sulphur samples selected on basis of overall statistics for Madrid deposit. Samples from any zone assumed to representative of overall Madrid deposit.

2.2.3 Analytical Program

The design of the analytical program was a collaborative effort between SRK and NMS.

All samples were submitted to Maxxam for static and kinetic test work, as summarized in Table 2.4. ABA analyses included paste pH, total sulphur (Leco), sulphate sulphur (HCl leach), total inorganic carbon (TIC), modified Sobek NP (MEND 1991), and trace element content by aqua regia digestion with ICP finish. TIC was determined by using a Leco furnace to directly measure CO₂ gas evolved from HCl treatment of the sample.

Mineralogy was determined at NMS and included XRD mineralogy with Rietveld refinement and whole pattern fitting, as well as mineral liberation analysis (MLA). For samples containing iron carbonate minerals (ferroan dolomite (Ca(Fe,Mg)CO₃) and magnesium-rich siderite ((Fe,Mg)CO₃)), as detected by XRD, the iron content of the carbonates was determined by NMS using a scanning electron microscope (SEM). Three samples (HC-17, HC-20 and HC-24) were submitted to Kathryn Dunne for petrography, in order to characterize the mineralogy with particular emphasis on the occurrence and mineral form of the sulphides and carbonate minerals. The polished thin sections were prepared using the coarse crush material from the humidity cell tests.

The humidity cell tests were initiated at Maxxam using the ASTM (2001) method. Table 2.6 outlines the list of analytes and the analytical frequency used the kinetic test work. Humidity cell data were provided to SRK on a monthly basis and each report underwent QA/QC by SRK.

Table 2.6: Analytical Frequency of SRK Humidity Cell Tests

General Parameters	Frequency
pH, EC, SO ₄	weekly
Alkalinity, acidity	weekly
ORP ¹	0, 1, 2, 3 ..., 46, 48, 56, 64 etc.
Metals	
ICP-MS (trace elements)	0, 1, 2, 4, 8, 12, 16 ..., 40, 48, 56 etc.
ICP-OES suite ²	weekly
Hg by CV	0, 1, 2, 4, 8, 12, 16 ..., 40, 48, 56 etc.
Ions and Nutrients	
F, Cl, P, TDS	0, 1, 2, 4, 8, 12, 16 ..., 40, 48, 56 etc.
NO ₂ , NO ₃ , NH ₃	0, 1, 2, 4, 8, 12, 16 ..., 40, 48, 56 etc.

Notes:

¹Frequency for HCs that began Feb 2009. ORP was measured weekly for all other humidity cells.

²Al, Ca, Cu, Fe, Mg, K, Na, Zn

2.2.4 Evaluation for Completion of Humidity Cell Tests

The humidity cell tests operated between 57 and 155 cycles (Table 2.4). Results were periodically assessed by SRK to determine whether any of the operating tests could be considered complete. The assessment included evaluating the humidity cell data for stability with respect to sulphate levels, metals loadings, and pH.

In February 2011, 15 tests were determined to be complete on the basis of the samples being non-acidic and/or low stable sulphate and metal release rates. The rationale to continue seven of the samples varied, and related to increasing sulphate release rates and obtaining additional arsenic leaching data. All tests were completed by February 2012.

Upon completion of each humidity cell test, the remaining material (residue) was geochemically characterized for ABA and trace element content at Maxxam, using the same methods described in Section 2.2.3.

For samples HC-3, HC-4, HC-20, and HC-39, the leachates from the last two cycles were analyzed for low level sulphate (detection limit of 0.06 mg/L) at SGS in Lakefield, Ontario. In contrast, the detection limit for sulphate at Maxxam during the last cycles was 0.5 mg/L. The objective of the low level analysis was to determine if sulphate leaching was occurring at levels less than the limit of detection provided by Maxxam. A review of the data determined that the sulphate levels as determined by Lakefield were not below the Maxxam's analytical detection. Accordingly, the sulphate values as determined by Maxxam were maintained in the geochemical database for geochemical interpretations.

Table 2.7: Low-level Sulphate Data for Last Two Cycles of Selected Humidity Cell Tests

HC #	Cycle	SO ₄ (mg/L)		RPD%
		Lakefield	Maxxam	
HC-3	153	2.1	1.53	31.4
HC-3	155	1.2	1.56	-26.1
HC-4	153	2.0	2.21	-10.0
HC-4	155	2.0	2.39	-17.8
HC-20	106	7.9	7.99	-1.1
HC-20	108	6.4	6.64	-3.7
HC-39	106	3.5	3.36	4.1
HC-39	108	3.1	3.5	-12.1

Source: P:\01_SITES\Hope.Bay\1CH008.005_Geochemistry (Doris, Madrid, Boston)\4.Kinetic program\WR_HCs\Calculations\HB_WR_Loadings.mc.REV09.xlsx]

2.3 Field Barrel Tests

A barrel test is a large scale kinetic test. Each barrel is loaded with hundreds of kilograms of broken up drill core and allowed to weather under site climatic conditions. Leachate accumulates in a collection bucket and is routinely collected for geochemical analysis.

As previously mentioned in Section 2.2, kinetic tests (e.g., barrel tests) from the Naartok, Rand and Suluk areas are assumed to be interchangeable and representative for the purpose of water quality predictions. On this basis, there are eight barrel tests filled with waste rock and one blank barrel test that are relevant to Madrid North (Table 2.8). Barrel test sample intervals are presented in Appendix G. Each waste rock barrel test corresponds to a specific rock type.

The barrel tests were set up in 2008 and 2009 in the now-defunct northern core storage area at the Windy camp. Windy camp is adjacent to the Madrid deposit area and located approximately 10 km south of the Doris deposit. The location of the tests was determined according to proximity of the Madrid drill core, all of which was stored at the Windy camp. Additionally, this location was sufficiently remote in that it is unlikely to be disturbed or influenced by dust. In July 2012, all the barrel tests at Windy camp were moved from the northern core area into the Windy camp.

2.3.1 Sample Selection and Geochemical Characterization

2008 Field Barrel Test Program

In October 2008, SRK set-up barrel tests W2, W3, W4, W6 and W7 (Table 2.8). Static testing data were not available at the time of barrel sample selection. Intervals were selected on the basis of specific lithologies with sufficient lengths of core that were easily accessible.

Samples for static and additional kinetic geochemical characterization were obtained from the core boxes by obtaining chip samples along the barrel sample interval. In brief, the analytical test

work program included acid-base accounting (ABA), mineralogy and humidity cell tests. Details of the analytical program and data are discussed in Section 2.2.

2009 Field Barrel Test Program

In 2009, additional barrels (W8, W11 and W14) containing waste rock were set up and also a blank (empty) barrel test (W12) (Table 2.8). The materials selected for the barrel test work in 2009 represent volumetric significant rock types present in the Naartok, Suluk and Rand deposit areas. Samples were selected based on obtaining sufficient volumes of material from drillholes characterized as part of SRK's static geochemical program. The objective of the blank barrel test was to quantify background influences (i.e., such as from dust or barrel test materials) on the leachate water chemistry.

Samples for static geochemical characterization were obtained from the core boxes for static geochemical characterization by obtaining chip samples along the barrel sample interval. Samples were analyzed for ABA, trace element content and mineralogy by XRD using the same methods and laboratories as for the other SRK samples.

2.3.2 Barrel Test Leachate Analytical Program

Leachate accumulates in a collection bucket and is collected approximately once per month between the months of June and September or October. For the September 2010 sampling event, ice was present in the bucket when the samples were obtained, which resulted in concentration of the leachate.

Field measurements include leachate volume, pH, EC, temperature and oxidation-reduction potential (ORP). After sampling, any excess leachate is removed from the bucket and the bucket rinsed. From 2009 to 2010, buckets were rinsed with reverse osmosis water sourced from Doris camp. In subsequent years, deionized water from ALS Laboratory (ALS) was used.

Leachates were submitted for analyses at ALS Laboratories in Vancouver, BC for analysis of the following parameters:

- pH, electrical conductivity, alkalinity, sulphate;
- Bromide, chloride, fluoride;
- Ammonia, nitrate, nitrite; and
- Dissolved trace elements by ICP-MS (30 parameter)¹.

For each sampling event, the QA/QC program includes one sample duplicate and one sample blank. These samples are in addition to the sampling of the blank barrel test. From 2009 to 2012, the field blank was generated using the deionized water sourced from Doris camp. QA/QC of the data was performed by SRK.

Data from the September 2010 sampling event exhibited an anomalous spike from the general trend. This was observed for a number of critical parameters, for example, conductivity, sulphate

¹ Trace element detection limits are higher than for the humidity cell tests.

and to a lesser degree arsenic (Appendix Q). There was ice present in the buckets when samples were collected in September 2010; therefore, these anomalously high values are likely due to salt exclusion during freezing. The data from September 2010 were removed from the data set for the purposes of interpretations.

As previously mentioned, the barrel tests at Windy were re-located in the summer of 2012. The leachate samples for the Windy barrels collected in August 2012 were the first samples collected from the new location.

Table 2.8: Inventory of Barrel Tests for Madrid North

Barrel ID	Rock Code	Rock Type	Deposit	Program	Humidity Cell #	Sampling Events	Leachate Available ²
W6	1	A-type mafic volcanic (with argillite bands)	Rand	2008	HC-8	13	13
W4	1	C-type mafic volcanic	Suluk	2008	HC-3	11	11
W7	1	C-type mafic volcanic	Naartok	2008	HC-9	13	12
W11	1aj	Mafic volcanic with sediments	Suluk	2009	--	11	11
W3	2pg	Pale Green Pillows (PGP)	Suluk	2008	HC-4	10	8*
W14	5a + 1	Sediments (with mafic volcanic)	Naartok & Suluk ¹	2009	--	11	11
W8	7a	Early gabbro	Naartok	2009	--	9	6
W2	13a	Deformation zone	Naartok	2008	HC-5	12	10
W12	Blank			2009	--	9	7

Notes:

¹Insufficient volume of the targeted rock type (sediments or code 5a) from either deposit.

²Number of sampling events when leachate was available for laboratory analysis.

*On August 9th, 2012, leachate volume was enough to measure field parameters but not enough for laboratory analysis.

3 Results

3.1 Static Tests

3.1.1 Dataset

The distribution of the samples relative to the Madrid North portal location and the surface projection of the ore body at three different depths are shown in Figure 1.7. The sample set includes the lithologies (rock types) listed in Table 3.1.

The most volumetrically significant waste rock lithology is mafic metavolcanics (1). The ore is also hosted in the mafic metavolcanics (1). Mafic volcanics with sediments (1oj, 1aj or 1aj), intermediate volcanics (2p, 2pg), sedimentary units (5) and the deformation zone (13a) are volumetrically less significant waste lithologies that are projected to be intersected by the mine workings based on the geological logging. The other rock types listed in Table 3.1 are less prevalent in the deposit (and sample set). Sample sets for mafic volcanics with sediments (1aj), early gabbro (7a) late mafic intrusive rocks (10b), and diabase (11c) have fewer than ten samples. All data are presented though interpretations will focus on the rock types most relevant to the mine plan.

In terms of the sample set, there is at least one sample of ore in the following categories: mafic metavolcanics (1), mafic metavolcanics with sediments (1aj), mixed mafic metavolcanics (1 mixed), mixed sedimentary units (5 mixed) and early gabbro (7a). For the purposes of data interpretation, samples classified as ore within mixed lithologies (eg. ore from 1 mixed) were not differentiated from waste samples because they were composed of more than one rock type. Moreover, only the mafic metavolcanics were differentiated by waste category due to the low sample numbers of the remaining lithologies with ore or ore-influenced samples (1 mixed, 1aj, 1aj mixed, 5 mixed and 7a).

The ABA data for the sub-lithologies from rock type mafic metavolcanics (1) were compared to determine if the samples could be grouped together (e.g., samples of 1a, 1p and 1pd as "1"). There were no clear differences therefore samples were grouped together for the purposes of data analysis. Similarly, the intermediate metavolcanics (2) comprised of 2p and 2pg (pillow and pale green pillow, respectively) for the Madrid North deposit.

Table 3.1: Description of Samples

Description	Lithology	Lithology Code	Preliminary Economic Classification	No. of ABA Samples	No. of XRD Samples
Ultramafic to Mafic Metavolcanic Rocks	1	1a, 1ad, 1i, 1iz, 1p, 1pd, 1pr, 1pv, 1py, 1pz, 1u	Waste	206	231
			Ore	34	30
			Waste/Ore	11	10
	1 mixed	1a, 1p, 1pv, 1pz, 2pg, 5a, 5ai, 5c, 7a, 9, 10b, 11c, 12q, 13a	Various ²	39	39
Mafic Metavolcanic Rocks with Sediments	1aj	1aj, 1oj	Various ³	5	5
	1aj mixed	1aj, 1oj, 1p, 1pv, 12q	Various ⁴	4	4
Intermediate Metavolcanic Rocks	2	2p, 2pg	Waste	29	33
	2 mixed	2p, 2pg, 1a, 1aj, 1u	Waste	2	2
Sedimentary Units (Argillite)	5	5a, 5ai, 5aj, 5c	Waste	11	11
	5 mixed	5a, 5ai, 5aj, 5aw, 5c, 1a, 1p, 1pr, 1pv, 1pz, 2pg	Various ⁵	11	11
Early Gabbro ¹	7a	7a	Various ⁶	6	4
	7a mixed	7a, 1pv, 5a	Waste	2	2
Late Mafic-Ultramafic Intrusive Rocks ¹	10b	10b	Waste	2	2
	10b mixed	10b, 1p	Waste	1	1
Diabase	11c	11c	Waste	2	2
	11c mixed	11c, 1a	Waste	1	1
Carbonate Vein	12c mixed	12c, 1a	Waste	1	1
Quartz Vein	12q	12q	Waste	1	1
Deformation Zone	13a	13a, 13am	Various ⁷	49	49
	13a mixed	13a, 1a, 11c, 12q	Various ⁸	3	3
Total				420	442

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Notes:

¹Early and late used in a relative sense only.

²Lithology 1 mixed is comprised of samples classified as waste (n=20), ore (n=10) and ore/waste (n=9).

³Lithology 1aj is comprised of samples classified as waste (n= 3), ore (n= 1) and ore/waste (n=1).

⁴Lithology 1aj mixed is comprised of samples classified as waste (n=2), ore (n=1) and ore/waste (n=1).

⁵Lithology 5 mixed is comprised of samples classified as waste (n=8), ore (n= 2) and ore/waste (n= 1).

⁶Lithology 7a is comprised of samples classified as waste (n=5) and ore (n=1). All QXRD samples are waste.

⁷Lithology 13a is comprised of samples classified as waste (n=46) and ore/waste (n=3).

⁸Lithology 13a mixed is comprised of samples classified as waste (n=2) and ore/waste (n=1).

3.1.2 Mineralogy

A total of 442 samples were analyzed for mineralogy by XRD (Appendix H). For each rock type, Table 3.2 presents the median concentration of each of the minerals detected by XRD. Table 3.3 provides a summary of the major minerals, carbonates and sulphides. Figure 3.1 to Figure 3.3 illustrate the distribution of ferroan dolomite, calcite and pyrite. The stoichiometric formulae for carbonate minerals were determined by SEM for select humidity cell tests and are presented in Table 3.4

Quartz, ferroan dolomite, chlorite, plagioclase and muscovite-sericite were the dominant minerals in most rock types. Calcite, amphibole, epidote, and pyroxene were present at median concentrations of at least 5% in some rock types. From an ARD perspective, carbonate and sulphide minerals are of the greatest importance and the focus of this discussion.

Carbonate minerals identified by XRD in these samples include ferroan dolomite ($\text{Ca}(\text{Fe,Mg})(\text{CO}_3)_2$), calcite (CaCO_3), magnesite (MgCO_3), magnesite-siderite, and siderite (FeCO_3). Ferroan dolomite was the most abundant carbonate mineral with median concentrations ranging from less than detection (<1%) to 45%. Median concentrations of calcite ranged from less than detection (<1%) to 15%. Magnesite, magnesite-siderite and siderite occurred less frequently and were present in significantly lower levels as compared with ferroan dolomite and calcite.

Some key differences between the significant rock types include:

- In terms of samples classified as waste, the mixed carbonate vein unit (12c mixed) and deformation zone (13a) had the highest median concentrations of ferroan dolomite (45 and 37%, respectively). The median for intermediate metavolcanics (2), late mafic intrusives (10b and 10b mixed) and mixed diabase (11c mixed) were values below the detection limit. Of the detectable ferroan dolomite, the lowest median concentrations were found in mafic metavolcanics mixed with sediments (1aj, 5%), mixed intermediate metavolcanics (2 mixed, 7%), mixed early gabbro (7a mixed, 4%), and diabase (11c, 3%).
- Ferroan dolomite was not present in all samples as indicated by levels below detection for the lower quartile of mafic metavolcanics (1) and intermediate volcanics (2), and also the lower decile of mafic volcanics with sediments (1aj).
- Ore samples of mafic metavolcanics (1 ore and 1 ore/waste) and mixed mafic volcanics (1 mixed) had median ferroan dolomite levels ranging from 33 to 42%, which is comparable to levels for mixed carbonate vein (12c mixed) and deformation zone (13a).
- Median calcite levels were higher than ferroan dolomite for mafic volcanics with sediments (1aj), intermediate volcanics (2) and mafic intrusives (10b and 10b mixed). Selected samples of mafic metavolcanics (1), sedimentary units (5), and early gabbro (7a) also contain higher calcite levels than ferroan dolomite.
- Magnesite was present in selected samples from the overall dataset including four samples of mafic metavolcanics (1), seven samples of mixed mafic metavolcanics (1 mixed), and one sample each early gabbro (7a), mixed diabase (11c mixed) and deformation zone (13a).

- Siderite/magnesite was present in 8% of the samples, while siderite was present in less than 3%. These minerals were found predominantly in mafic metavolcanics waste (1 waste), mixed mafic metavolcanics (1 mixed), deformation zone (13a) and to a lesser extent in the sedimentary units (5).

Pyrite was the only sulphide mineral detected by XRD (Figure 3.3), with levels ranging from less than detection (<1%) to 16%. The highest pyrite concentrations were observed for the sedimentary units (5), mixed mafic metavolcanics (1 mixed), mafic metavolcanics ore (1 ore) and mixed sedimentary units (5 mixed) with concentrations of up to 16, 9, 7 and 6%, respectively. In mafic metavolcanics, ore samples tended to have higher concentrations, as shown by the distribution in Figure 3.3, with a 95th percentile of 1% for mafic metavolcanic waste (1 waste). In contrast, 95th percentiles for intermediate metavolcanics (2), mafic intrusives (10b and 10b mixed), diabase (11c and 11c mixed), and mixed carbonate vein (12c mixed) were all below detection limit.

SEM analysis of ferroan dolomite mineral grains in the Madrid North humidity cell test samples (Table 3.4) show that the sample with the lowest calcium-plus-magnesium content was HC-21, with the following stoichiometry: $\text{Ca}(\text{Mg}_{0.66}\text{Fe}_{0.34})\text{CO}_3$. Ferroan dolomite was found in all lithologies tested, while siderite was found in mafic metavolcanics waste (1 w), mixed mafic metavolcanics (1 mixed), early gabbro (7a) and the deformation zone (13a).

Table 3.2: Median Mineral Content in Mineral Percentage (%), Madrid North

Lithology	Description	Preliminary Economic Classification	Count (n)	Amphibole	Ferroan Dolomite	Calcite	Chlorite	Epidote	Muscovite/Sericite	Paragonite	Plagioclase	Pyrite	Pyroxene	Quartz	Rutile
1	Ultramafic to Mafic Metavolcanics	Waste	231	nd	13	6	33	nd	nd	nd	6	nd	nd	18	1
		Ore	30	nd	36	nd	12	nd	9	nd	13	2	nd	21	1
		Waste/Ore	10	nd	41	nd	10	nd	9	nd	8	1	nd	19	1
	Mixed	Various ²	39	nd	35	nd	20	nd	8	nd	7	1	nd	18	1
1aj	Mafic Metavolcanic Rocks with Sediments	Various ³	5	nd	5	15	31	nd	7	nd	10	nd	nd	18	1
	Mixed	Various ⁴	4	nd	34	8	19	nd	7	nd	12	1	nd	20	1
2	Intermediate Metavolcanics	Waste	33	nd	nd	9	25	6	nd	nd	21	nd	nd	16	nd
	Mixed	Waste	2	7	7	13	30	8	4	nd	13	1	nd	11	1
5	Sedimentary Units (Argillite)	Waste	11	nd	20	nd	4	nd	8	nd	18	1	nd	22	1
	Mixed	Various ⁵	11	nd	14	9	37	nd	8	nd	11	2	nd	18	1
7a	Early Gabbro ¹	Various ⁶	4	1	18	nd	38	nd	10	nd	14	nd	3	13	1
	Mixed	Waste	2	4	4	9	47	nd	4	nd	14	1	3	15	nd
10b	Late Mafic-Ultramafic Intrusives ¹	Waste	2	21	nd	4	16	9	nd	nd	37	nd	nd	11	nd
	Mixed	Waste	1	nd	nd	15	30	nd	nd	nd	31	nd	nd	13	nd
11c	Diabase	Waste	2	nd	3	nd	8	nd	nd	nd	54	nd	29	4	nd
	Mixed	Waste	1	nd	nd	nd	3	8	tr	nd	38	nd	36	6	2
12c mixed	Carbonate Vein Mixed	Waste	1	nd	45	nd	15	nd	9	nd	3	nd	nd	28	tr
12q	Quartz Vein	Waste	1	nd	29	nd	3	nd	6	nd	9	1	nd	38	nd
13a	Deformation Zone	Various ⁷	49	nd	37	nd	8	nd	11	10	1	nd	nd	27	1
	Mixed	Various ⁸	3	nd	30	nd	16	nd	19	nd	9	1	nd	22	2

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Notes:

- ¹Early and late used in a relative sense only.
- ²Lithology 1 mixed is comprised of samples classified as waste (n= 20), ore (n= 10) and ore/waste (n= 9).
- ³Lithology 1aj is comprised of samples classified as waste (n= 3), ore (n= 1) and ore/waste (n= 1).
- ⁴Lithology 1aj mixed is comprised of samples classified as waste (n= 2), ore (n= 1) and ore/waste (n= 1).
- ⁵Lithology 5 mixed is comprised of samples classified as waste (n= 8), ore (n= 2) and ore/waste (n= 1).
- ⁶Lithology 7a is comprised of samples classified as waste (n= 5) and ore (n= 1). All QXRD samples are waste.
- ⁷Lithology 13a is comprised of samples classified as waste (n= 46) and ore/waste (n= 3).
- ⁸Lithology 13a mixed is comprised of samples classified as waste (n= 2) and ore/waste (n= 1).

Table 3.3: Summary of Mineral Data according to Rock Type in Percentage (%), Madrid North

Lithology	Description	Preliminary Economic Classification	Dominant Minerals (>5%)						Carbonates																Sulphides								
									Ferroan Dolomite				Calcite				Magnesite				Siderite				Siderite/Magnesite				Pyrite				
			Ferroan Dolomite	Chlorite	Muscovite/ Sericite	Plagioclase	Quartz	Other	P25	P50	P75	P95	P25	P50	P75	P95	P25	P50	P75	P95	P25	P50	P75	P95	P25	P50	P75	P90	P25	P50	P75	P95	
1	Ultramafic to Mafic Metavolcanic Rocks	Waste	x	x		x	x	Calcite	bd	13	35	47	bd	6	15	22	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	9	bd	bd	bd	1		
		Ore	x	x	x	x	x		34	36	43	53	bd	bd	bd	6	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	3	1	2	3	4	
		Waste/Ore	x	x	x	x	x		35	41	45	50	bd	bd	bd	bd	bd	bd	bd	14	bd	bd	bd	bd	bd	bd	bd	4	23	bd	1	1	2
	Mixed	Various ²	x	x	x	x	x		30	35	42	52	bd	bd	3	14	bd	bd	bd	14	bd	bd	bd	bd	bd	bd	bd	7	bd	1	1	2	
1aj	Mafic Metavolcanic Rocks with Sediments	Various ³		x	x	x	x	Calcite	4	5	20	22	12	15	17	23	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	1	2	
	Mixed	Various ⁴	x	x	x	x	x	Calcite	21	34	41	44	4	8	11	11	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	1	1	5	8
2	Intermediate Metavolcanic Rocks	Waste		x		x	x	Calcite, Epidote	bd	bd	5	9	6	9	13	16	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd
	Mixed	Waste	x	x		x	x	Amphibole, Calcite, Epidote	3	7	10	12	11	13	14	16	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	1	1	1	
5	Sedimentary Units (Argillite)	Waste	x		x	x	x		12	20	34	45	bd	bd	10	17	bd	bd	bd	bd	bd	bd	bd	2	bd	bd	bd	3	bd	1	2	12	
	Mixed	Various ⁵	x	x	x	x	x	Calcite	6	14	23	34	1	9	17	22	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	2	2	4	
7a	Early Gabbro ¹	Various ⁶	x	x	x	x	x		13	18	26	38	bd	bd	bd	1	bd	bd	3	10	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	1	
	Mixed	Waste		x		x	x	Calcite	2	4	5	7	6	9	13	15	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	1	1	1	
10b	Late Mafic- Ultramafic Intrusive Rocks ¹	Waste		x		x	x	Amphibole, Epidote	bd	bd	bd	bd	4	4	4	4	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	
	Mixed	Waste		x		x	x	Calcite	bd	bd	bd	bd	15	15	15	15	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	
11c	Diabase	Waste		x		x		Pyroxene	2	3	3	4	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	
	Mixed	Waste				x	x	Epidote, Pyroxene	bd	bd	bd	bd	bd	bd	bd	bd	1	1	1	1	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	
12c mixed	Carbonate Vein Mixed	Waste	x	x	x		x		45	45	45	45	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	
12q	Quartz Vein	Waste	x		x	x	x	K-feldspar	29	29	29	29	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	1	1	1	1	
13a	Deformation Zone	Various ⁷	x	x	x		x		30	37	42	52	bd	bd	bd	2	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	3	bd	bd	bd	1	
	Mixed	Various ⁸	x	x	x	x	x		22	30	30	30	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	1	1	2	2		

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Notes:

- ¹Early and late used in a relative sense only.
- ²Lithology 1 mixed is comprised of samples classified as waste (n= 20), ore (n= 10) and ore/waste (n= 9).
- ³Lithology 1aj is comprised of samples classified as waste (n= 3), ore (n= 1) and ore/waste (n= 1).
- ⁴Lithology 1aj mixed is comprised of samples classified as waste (n= 2), ore (n= 1) and ore/waste (n= 1).
- ⁵Lithology 5 mixed is comprised of samples classified as waste (n= 8), ore (n= 2) and ore/waste (n= 1).
- ⁶Lithology 7a is comprised of samples classified as waste (n= 5) and ore (n= 1). All QXRD samples are waste.
- ⁷Lithology 13a is comprised of samples classified as waste (n= 46) and ore/waste (n= 3).
- ⁸Lithology 13a mixed is comprised of samples classified as waste (n= 2) and ore/waste (n= 1).

bd = below detection

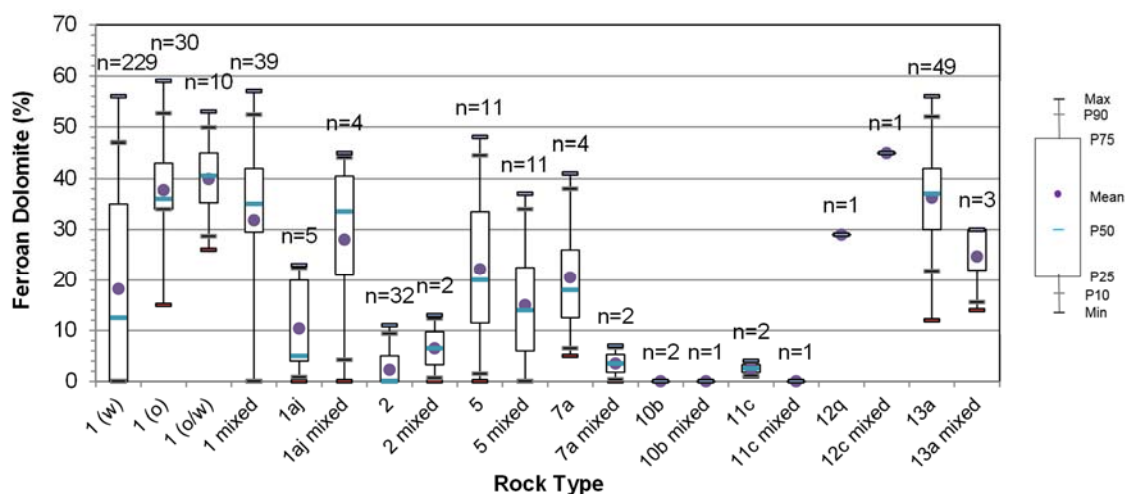


Figure 3.1: Percentile distribution of ferroan dolomite by rock type.

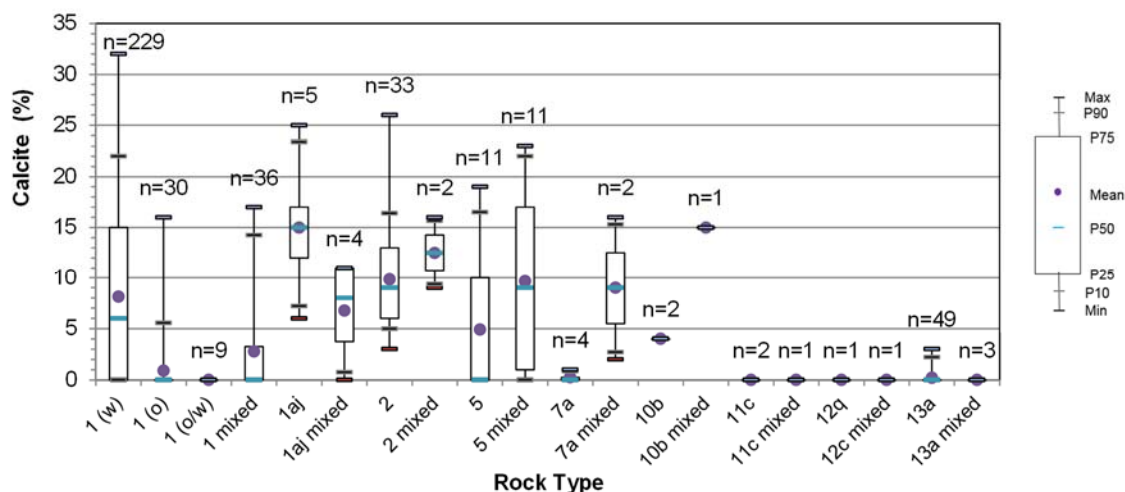


Figure 3.2: Percentile distribution of calcite by rock type

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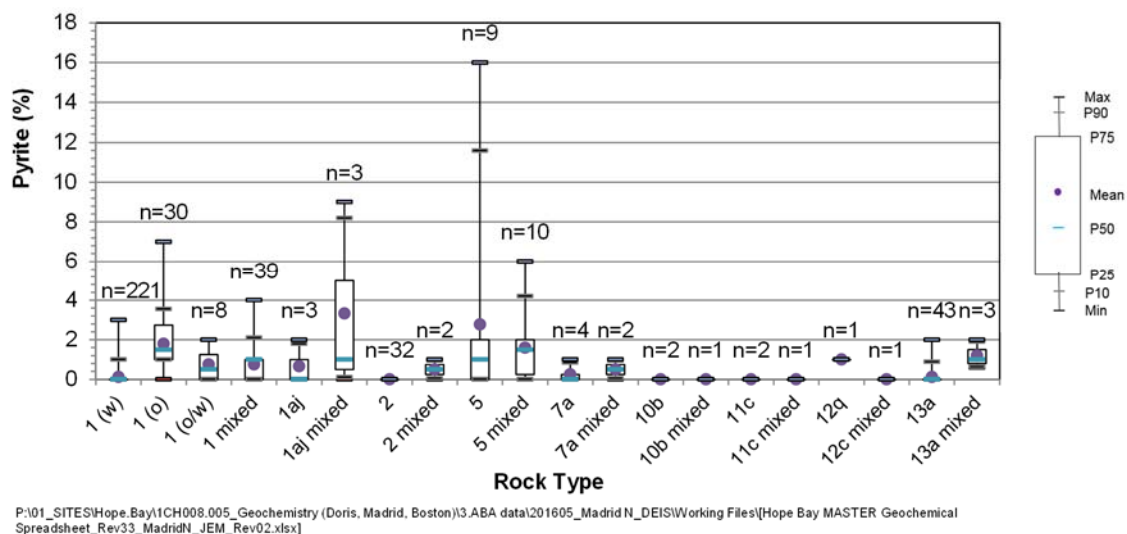


Figure 3.3: Percentile distribution of pyrite by rock type.

Table 3.4: Carbonate Mineral Stoichiometric Formulas for Humidity Cell Test Samples

Humidity Cell #	Rock Type ¹	Preliminary Economic Classification	Ferroan Dolomite $\text{Ca}(\text{Fe},\text{Mg})\text{CO}_3$	Siderite FeCO_3
HC-3	1	Waste	--	--
HC-9	1	Waste	$\text{Ca}(\text{Mg}_{0.72}\text{Fe}_{0.28})\text{CO}_3$	$(\text{Mg}_{0.14}\text{Fe}_{0.86})\text{CO}_3$
HC-27	1	Waste	$\text{Ca}(\text{Mg}_{0.67}\text{Fe}_{0.33})\text{CO}_3$	*
HC-25	1	Waste	$\text{Ca}(\text{Mg}_{0.72}\text{Fe}_{0.28})\text{CO}_3$	*
HC-8	1	Mixed	$\text{Ca}(\text{Mg}_{0.77}\text{Fe}_{0.23})\text{CO}_3$	$(\text{Mg}_{0.39}\text{Fe}_{0.61})\text{CO}_3$
HC-28	1	Ore	$\text{Ca}(\text{Mg}_{0.67}\text{Fe}_{0.33})\text{CO}_3$	*
HC-26	1	Ore	$\text{Ca}(\text{Mg}_{0.81}\text{Fe}_{0.19})\text{CO}_3$	*
HC-24	1	Ore	$\text{Ca}(\text{Mg}_{0.87}\text{Fe}_{0.13})\text{CO}_3$	*
HC-17	1aj	Waste	$\text{Ca}(\text{Mg}_{0.89}\text{Fe}_{0.11})\text{CO}_3$	*
HC-4	2pg	Mixed	*	*
HC-18	2pg	Waste	$\text{Ca}(\text{Mg}_{0.80}\text{Fe}_{0.20})\text{CO}_3$	*
HC-19	2pg mixed	Waste	--	--
HC-20	5	Waste	$\text{Ca}(\text{Mg}_{0.80}\text{Fe}_{0.20})\text{CO}_3$	*
HC-21	5	Waste	$\text{Ca}(\text{Mg}_{0.66}\text{Fe}_{0.34})\text{CO}_3$	*
HC-40	7a	Waste	$\text{Ca}(\text{Mg}_{0.92}\text{Fe}_{0.08})\text{CO}_3$	*
HC-41	7a	Waste	$\text{Ca}(\text{Mg}_{0.75}\text{Fe}_{0.25})\text{CO}_3$	$(\text{Fe}_{0.43}\text{Mg}_{0.57})\text{CO}_3$
HC-22	11c	Waste	*	*
HC-23	11c	Waste	$\text{Ca}(\text{Mg}_{0.82}\text{Fe}_{0.18})\text{CO}_3$	*
HC-5	13a	Waste	$\text{Ca}(\text{Mg}_{0.67}\text{Fe}_{0.33})\text{CO}_3$	$(\text{Mg}_{0.44}\text{Fe}_{0.56})\text{CO}_3$
HC-29	13a	Waste	$\text{Ca}(\text{Mg}_{0.71}\text{Fe}_{0.29})\text{CO}_3$	$(\text{Fe}_{0.57}\text{Mg}_{0.43})\text{CO}_3$
HC-39	13a	Waste	$\text{Ca}(\text{Mg}_{0.68}\text{Fe}_{0.32})\text{CO}_3$	*
HC-30	13a	Waste	$\text{Ca}(\text{Mg}_{0.68}\text{Fe}_{0.32})\text{CO}_3$	*

Notes:

¹Rock codes as follows: 1 = mafic volcanics; 2pg = pale green pillows; 5 = sedimentary rocks; 7a = early gabbro; 11c = diabase; 13a = deformation zone.

-- sample not analyzed for SEM

* denotes SEM analyses not conducted due to mineral level below detection, as indicated by either XRD and/or MLA.

3.1.3 Acid-Base Accounting

ABA data was generated for 420 samples (Appendix I). The data are presented according to rock type and preliminary economic classification, as appropriate.

Paste pH values were alkaline and ranged from 8.1 to 11.

Sulphur speciation data indicated that sulphate levels were below or near the level of analytical detection (0.01%) and sulphide was the dominant sulphur species. Accordingly, total sulphur is a good approximation of sulphide content and can be used for the calculation of acid potential (AP). Some key differences in total sulphur between dominant rock types are discussed as follows (Figure 3.4):

- Samples of ore contained the highest median total sulphur levels, as shown by distribution of sulphur for rock types containing ore: mafic metavolcanics (1 ore and 1 ore/waste), mixed mafic metavolcanics (1 mixed), mixed mafic volcanics with sediments (1aj mixed) and mixed sedimentary units (5 mixed)).
- The waste rock sample set was typically characterized by low sulphur levels where 90% of samples have total sulphur levels less than 0.43% (equivalent to an AP of 13 kg CaCO₃/t).
- Sedimentary units (5) and quartz veins (12q) had the highest total sulphur levels of the waste rock units. Median sulphur levels for the sedimentary units (5) was 0.43% and levels for one quartz vein sample (12q) were 0.65%.
- The median total sulphur for mafic metavolcanics waste (1 waste) was 0.16%.

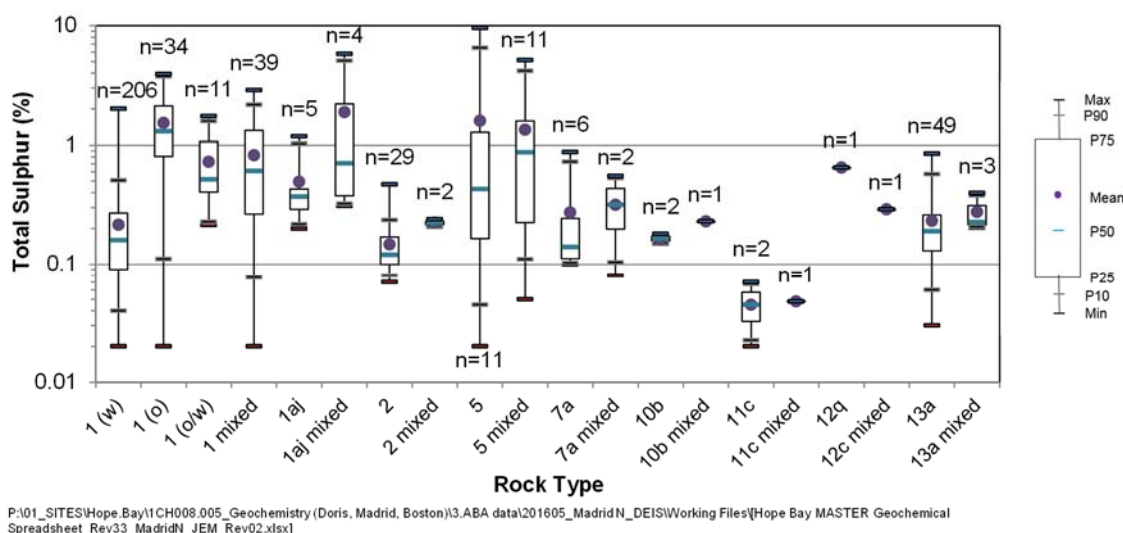


Figure 3.4: Percentile distribution of total sulphur by rock type.

Figure 3.5 and Figure 3.6 present the distribution of NP and TIC according to rock type, while Figure 3.7 presents the relationship between NP and TIC. Some key observations are discussed as follows:

- Samples classified as waste had high levels NP and TIC levels for all rock types with median NP and TIC levels greater than 105 and 100 kg CaCO₃/t, respectively. Exceptions include late mafic intrusives (10b), diabase (11c), and for TIC only, mixed diabase (11c mixed).
- For samples classified as containing ore, median levels of NP and TIC were 120 and 140 kg CaCO₃/t, respectively.
- For the majority of samples, levels of TIC were greater than NP. This suggests the presence of iron carbonate minerals in the samples.

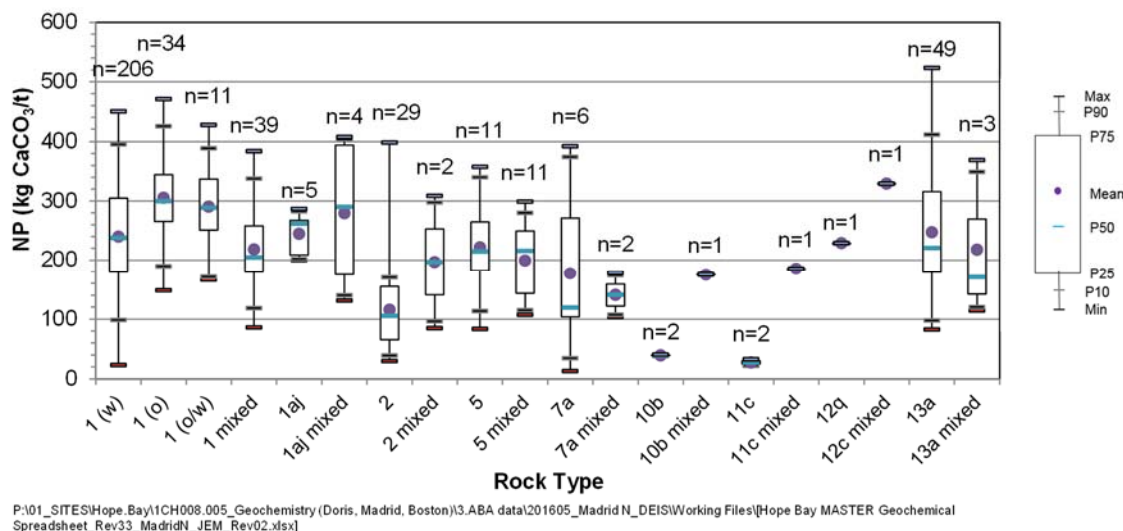


Figure 3.5: Percentile distribution of NP by rock type.

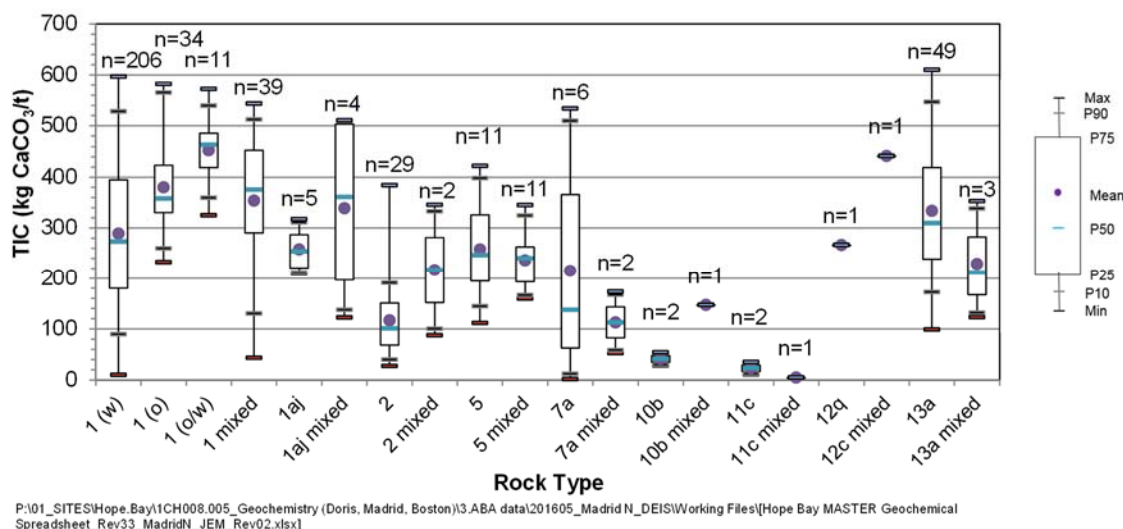


Figure 3.6: Percentile distribution of TIC by rock type.

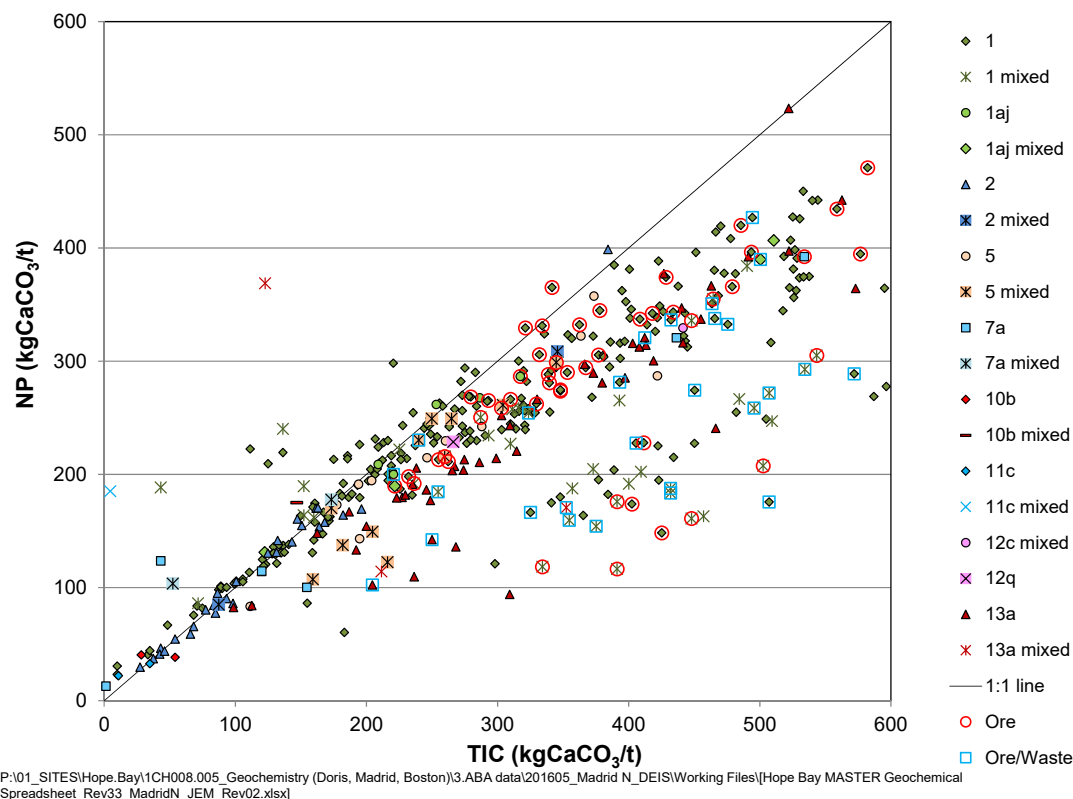


Figure 3.7: Comparison of NP and TIC levels.

To account for potential overestimation of neutralization potential from TIC, due to the presence of NP-neutral iron carbonates, the calcium+magnesium TIC ($TIC_{(Ca+Mg)}$), was calculated as follows:

$$TIC_{(Ca+Mg)} = TIC \cdot 0.83.$$

The factor of 0.83 represents the minimum stoichiometric proportion of calcium-plus-magnesium content in ferroan dolomite mineral grains in HC-21 (sedimentary unit, 5), which had the following stoichiometry: $Ca(Mg_{0.66}Fe_{0.34})CO_3$. As previously stated in Section 3.1.2, this sample had the lowest calcium-plus-magnesium content in ferroan dolomite from of any of the Madrid North samples. Therefore, the adjustment provides a conservative indication of the $TIC_{(Ca+Mg)}$ content of the samples. It is also conservative for samples that contain calcite and or magnesite, but less conservative for the very small number of samples that contained detectable levels of siderite.

Figure 3.8 presents the distribution of $TIC_{(Ca+Mg)}$ according to rock type while Figure 3.9 presents the relationship between NP and $TIC_{(Ca+Mg)}$. Some key observations include:

- For all rock types, the median $TIC_{(Ca+Mg)}$ was greater than 80 kg $CaCO_3$ eq/t, with the exception of late mafic intrusives (10b) and diabase (11c and 11c mixed) which had significantly lower TIC and $TIC_{(Ca+Mg)}$ concentrations. $TIC_{(Ca+Mg)}$ concentrations were high for

the most volumetrically significant lithological group, the mafic metavolcanics (1 waste), with a median of 230 kg CaCO₃ eq/t.

- As no iron-bearing carbonates were found for a pale green pillow sample (2pg) (HC-4) and diabase sample (11c) (HC-22), TIC_(Ca+Mg) may underestimate calcium-plus-magnesium carbonate content for these lithologies.
- Levels of TIC_(Ca+Mg) were closer to parity with modified NP compared to TIC (Figure 3.9), however the correction resulted in the underestimation and overestimation of effective TIC due to the variable calcium-plus-magnesium content of ferroan dolomite for each sample compared to HC-21, and is described as follows:
 - The majority of mafic metavolcanics (1), mafic metavolcanics with sediments (1aj), intermediate volcanics (2), sedimentary unit (5) and some early gabbro (7a) samples were above the 1:1 line indicating that the TIC_(Ca+Mg) method underestimates the amount of calcium-plus-magnesium content in the iron carbonates (Figure 3.9). For selected samples from these rock types, calcite content was at near parity with TIC (Figure 3.10), indicating that calcite is the dominant buffering mineral, and not ferroan dolomite. Applying the correction to samples where calcite is the dominant carbonate mineral is not warranted; however, it is a conservative approach.
 - Selected samples were below the 1:1 line, including selected samples of mafic metavolcanics (1), mixed mafic volcanics (1 mixed), mixed sedimentary units (5 mixed), deformation zone (13a), and mixed deformation zone (13a mixed). For these samples, NP values were more conservative. A review of these samples indicated that NP was based on surrogate values based on calcium levels, resulting in low NP values (Section 2.1.4). The other samples likely contain less effective NP (or less calcium-plus-magnesium) content than the correction factor derived from HC-21.
 - Depending on the sample, either modified NP or TIC_(Ca+Mg) provides the most conservative estimate of buffering capacity.

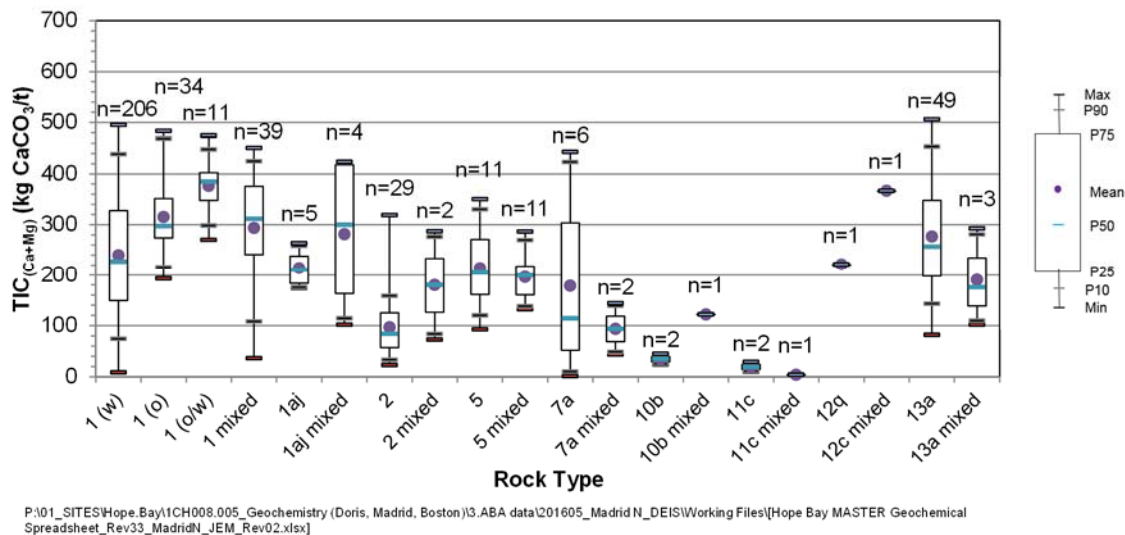


Figure 3.8: Percentile distribution of $TIC_{(Ca+Mg)}$ by rock type.

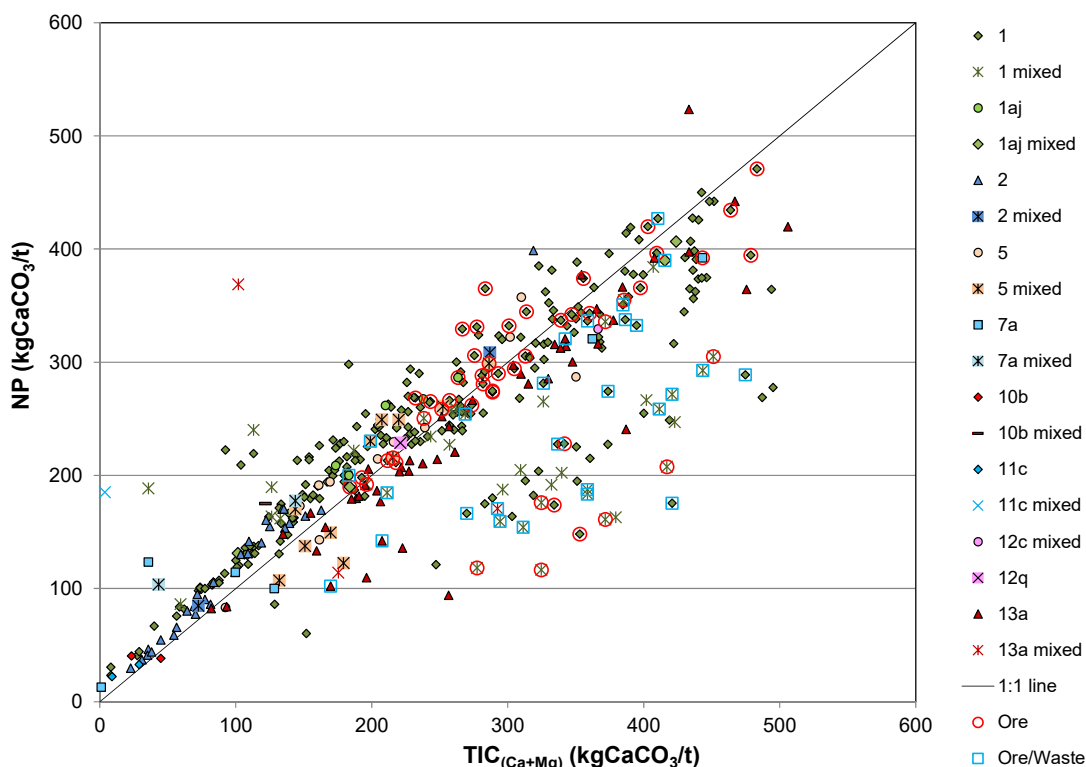


Figure 3.9: Comparison of NP and $TIC_{(Ca+Mg)}$ levels

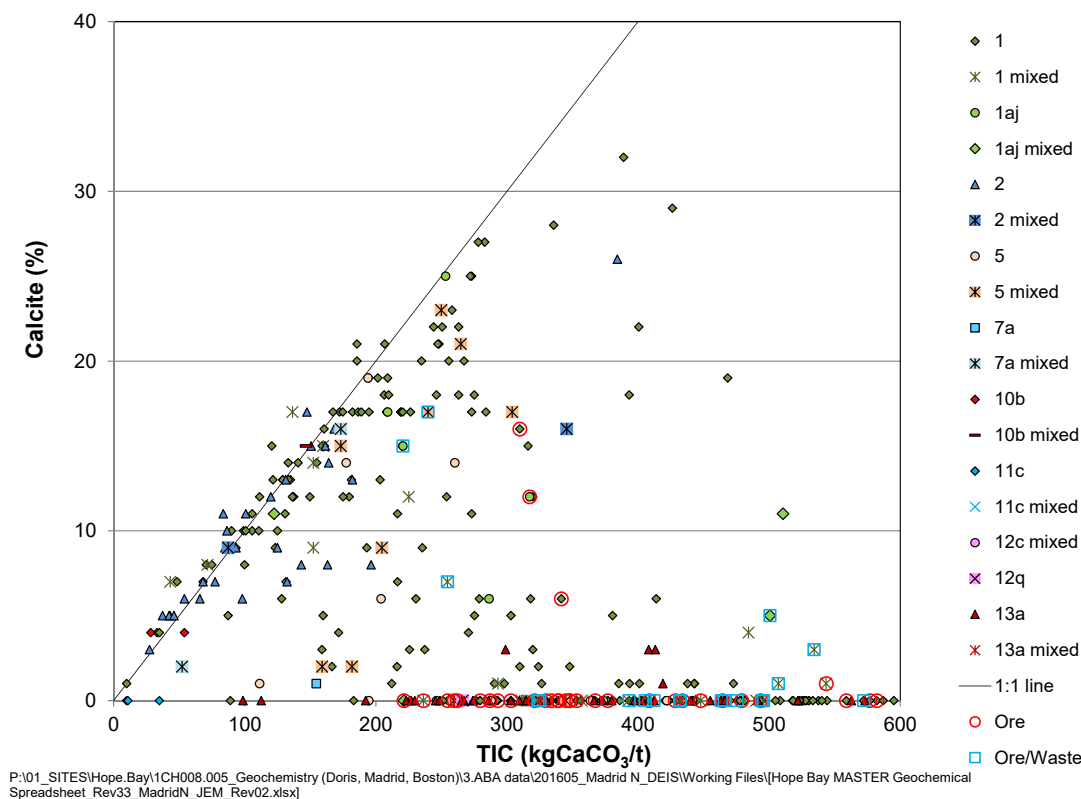


Figure 3.10: Comparison of calcite and TIC levels.

Figure 3.11 to Figure 3.13 and Table 3.5 show the ARD classifications on the basis of NP/AP, TIC/AP and $TIC_{(Ca+Mg)}/AP$. ARD classifications are not on the basis of total sulphur and fulfill the best practice guidelines outlined in MEND (2009). ARD classifications according to the dominant rock types are summarized as follows:

- All samples from the following lithologies were classified as non-PAG: mafic metavolcanics classified as a mixture of ore and waste (1 o/w), mafic metavolcanics with sediments (1aj), intermediate metavolcanics (2 and 2 mixed), late mafic intrusives (10b and 10b mixed), diabase (11c), mixed carbonate vein (12c mixed), quartz vein (12q), and deformation zone (13a and 13a mixed).
- The majority samples from the following lithologies were classified as non-PAG, with a proportion of samples classified as uncertain, and no sample classified as PAG:
 - Mafic metavolcanics classified as ore (1o), mixed mafic metavolcanics (1 mixed), mixed mafic volcanics with sediments (1aj mixed), mixed sedimentary units (5 mixed), mixed early gabbro (7a mixed) and mixed diabase (11c).
 - The one sample of mixed diabase (mixed 11c) was classified as non-PAG using NP/AP and TIC/AP, and uncertain using $TIC_{(Ca+Mg)}/AP$. Mineralogical analyses indicated that this sample did not contain iron carbonate minerals, therefore the $TIC_{(Ca+Mg)}$ correction and therefore the ARD classification using $TIC_{(Ca+Mg)}/AP$ was overly conservative.

- The following lithologies were primarily classified as non-PAG and each contained one sample that was classified as PAG. The PAG sample from each rock type are all outlier samples described as follows:
 - Mafic metavolcanics classified as waste (1 waste): the PAG classification was on the basis of NP/AP only, otherwise it was classified as uncertain using TIC/AP and $\text{TIC}_{(\text{Ca}+\text{Mg})}/\text{AP}$. This sample contained had anomalously high total sulphur (2%, the maximum level for this rock type) and low NP (60 kgCaCO_3/t or P5 levels).
 - Sedimentary units (5): the PAG classification was on the basis of NP/AP, TIC/AP and $\text{TIC}_{(\text{Ca}+\text{Mg})}/\text{AP}$. This sample contained anomalously high sulphur levels (9.6%, the maximum level for this rock type) and low buffering (minimum levels for this rock type).
 - Early gabbro (7a): the PAG classification was according to TIC/AP and $\text{TIC}_{(\text{Ca}+\text{Mg})}/\text{AP}$. The sample was classified as non-PAG on the basis of NP/AP. This sample contained low sulphur (0.1%) and low levels of TIC and $\text{TIC}_{(\text{Ca}+\text{Mg})}$ (1 kgCaCO_3/t for both).
 - In all cases, NP from the overall stockpile is expected to provide sufficient buffering to these materials.
- For unmixed lithologies that had samples classified as either uncertain and/or PAG, classification methods using NP/AP and/or $\text{TIC}_{(\text{Ca}+\text{Mg})}/\text{AP}$ were more conservative than TIC/AP and are described as follows:
 - There was no difference in classifications using NP/AP and $\text{TIC}_{(\text{Ca}+\text{Mg})}/\text{AP}$ for mafic metavolcanics classified as ore (1o) there.
 - NP/AP is more conservative for mafic metavolcanics classified as waste (1w).
 - $\text{TIC}_{(\text{Ca}+\text{Mg})}/\text{AP}$ was more conservative for sedimentary units (5) and early gabbro (7a). Samples from these rock types typically had appreciable levels of ferroan dolomite with lower or absent levels of non-iron carbonate minerals.

Table 3.5: ARD Classifications by Rock Type

Lithology ¹	Preliminary Economic Classification	Number of Samples	ARD Classification (% of Samples)								
			Non-PAG			Uncertain			PAG		
			(NP, TIC, or TIC _{(Ca+Mg),})/AP > 3			1 < (NP, TIC, or TIC _{(Ca+Mg),})/AP < 3			(NP, TIC, or TIC _{(Ca+Mg),})/AP < 1		
			NP/AP	TIC/AP	TIC _(Ca+Mg) /AP	NP/AP	TIC/AP	TIC _(Ca+Mg) /AP	NP/AP	TIC/AP	TIC _(Ca+Mg) /AP
Ultramafic to Mafic Metavolcanic Rocks (1)	Waste	206	99.5%	99.5%	98.5%	0%	0.5%	1.5%	0.5%	0%	0%
	Ore	34	85%	94%	85%	15%	6%	15%	0%	0%	0%
	Waste/Ore	11	100%	100%	100%	0%	0%	0%	0%	0%	0%
Mixed Ultramafic to Mafic Metavolcanic Rocks (1 mixed)	Various ²	39	92%	100%	97%	8%	0%	3%	0%	0%	0%
Mafic Metavolcanic Rocks with Sediments (1aj)	Various ³	5	100%	100%	100%	0%	0%	0%	0%	0%	0%
Mixed Mafic Metavolcanic Rocks with Sediments (1aj mixed)	Various ⁴	4	75%	75%	75%	25%	25%	25%	0%	0%	0%
Intermediate Metavolcanic Rocks (2)	Waste	29	100%	100%	100%	0%	0%	0%	0%	0%	0%
Mixed Intermediate Metavolcanic Rocks (2 mixed)	Waste	2	100%	100%	100%	0%	0%	0%	0%	0%	0%
Sedimentary Units (Argillite) (5)	Waste	11	82%	82%	73%	9%	9%	18%	9%	9%	9%
Mixed Sedimentary Units (Argillite) (5)	Various ⁵	11	73%	82%	82%	27%	18%	18%	0%	0%	0%
Early Gabbro (7a)	Various ⁶	6	100%	83%	83%	0%	0%	0%	0%	17%	17%
Mixed Early Gabbro (7a mixed)	Waste	2	100%	100%	50%	0%	0%	50%	0%	0%	0%
Late Mafic-Ultramafic Intrusive Rocks (10b)	Waste	2	100%	100%	100%	0%	0%	0%	0%	0%	0%
Mixed Late Mafic-Ultramafic Intrusive Rocks (10b mixed)	Waste	1	100%	100%	100%	0%	0%	0%	0%	0%	0%
Diabase (11c)	Waste	2	100%	100%	100%	0%	0%	0%	0%	0%	0%
Mixed Diabase (11c mixed)	Waste	1	100%	100%	0%	0%	0%	100%	0%	0%	0%
Mixed Carbonate Vein (12c mixed)	Waste	1	100%	100%	100%	0%	0%	0%	0%	0%	0%
Quartz Vein (12q)	Waste	1	100%	100%	100%	0%	0%	0%	0%	0%	0%
Deformation Zone (13a)	Various ⁷	49	100%	100%	100%	0%	0%	0%	0%	0%	0%
Mixed Deformation Zone (13a mixed)	Various ⁸	3	100%	100%	100%	0%	0%	0%	0%	0%	0%

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Notes:

- ¹Early and late used in a relative sense only.
- ²Lithology 1 mixed is comprised of samples classified as waste (n= 20), ore (n= 10) and ore/waste (n= 9).
- ³Lithology 1aj is comprised of samples classified as waste (n= 3), ore (n= 1) and ore/waste (n= 1).
- ⁴Lithology 1aj mixed is comprised of samples classified as waste (n= 2), ore (n= 1) and ore/waste (n= 1).
- ⁵Lithology 5 mixed is comprised of samples classified as waste (n= 8), ore (n= 2) and ore/waste (n= 1).
- ⁶Lithology 7a is comprised of samples classified as waste (n= 5) and ore (n= 1). All QXRD samples are waste.
- ⁷Lithology 13a is comprised of samples classified as waste (n= 46) and ore/waste (n= 3).
- ⁸Lithology 13a mixed is comprised of samples classified as waste (n= 2) and ore/waste (n= 1).

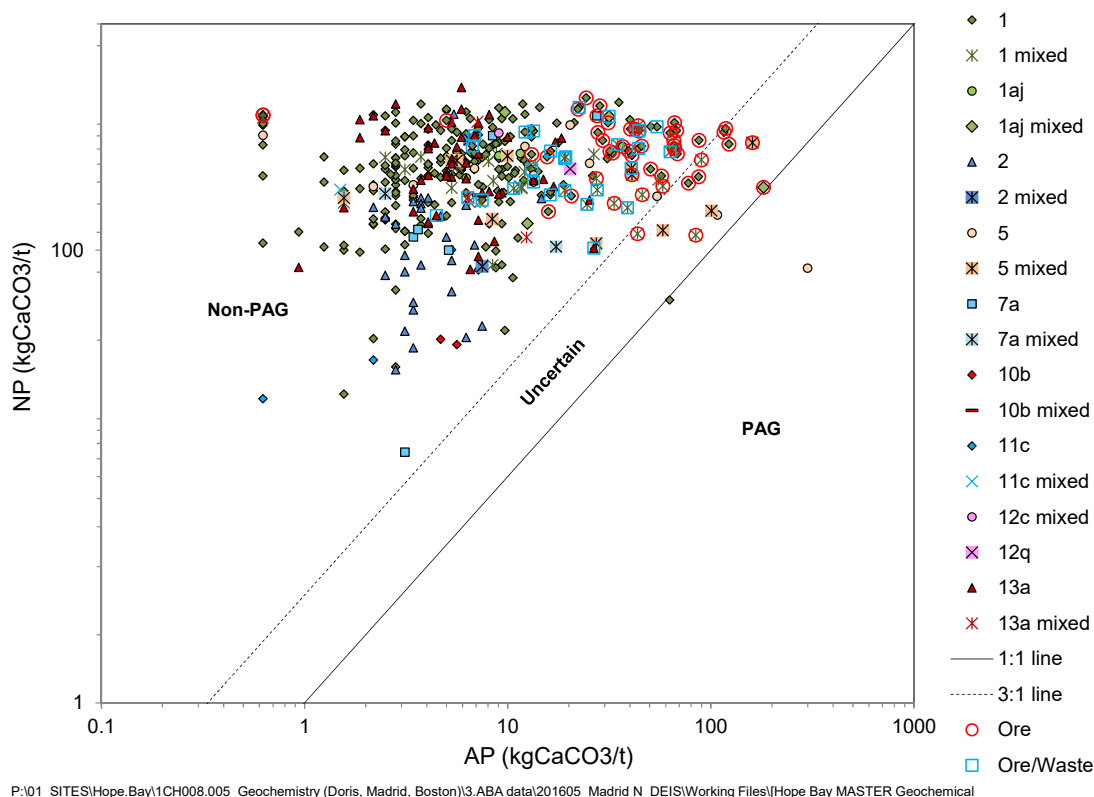


Figure 3.11: Comparison of NP and AP for Madrid North samples

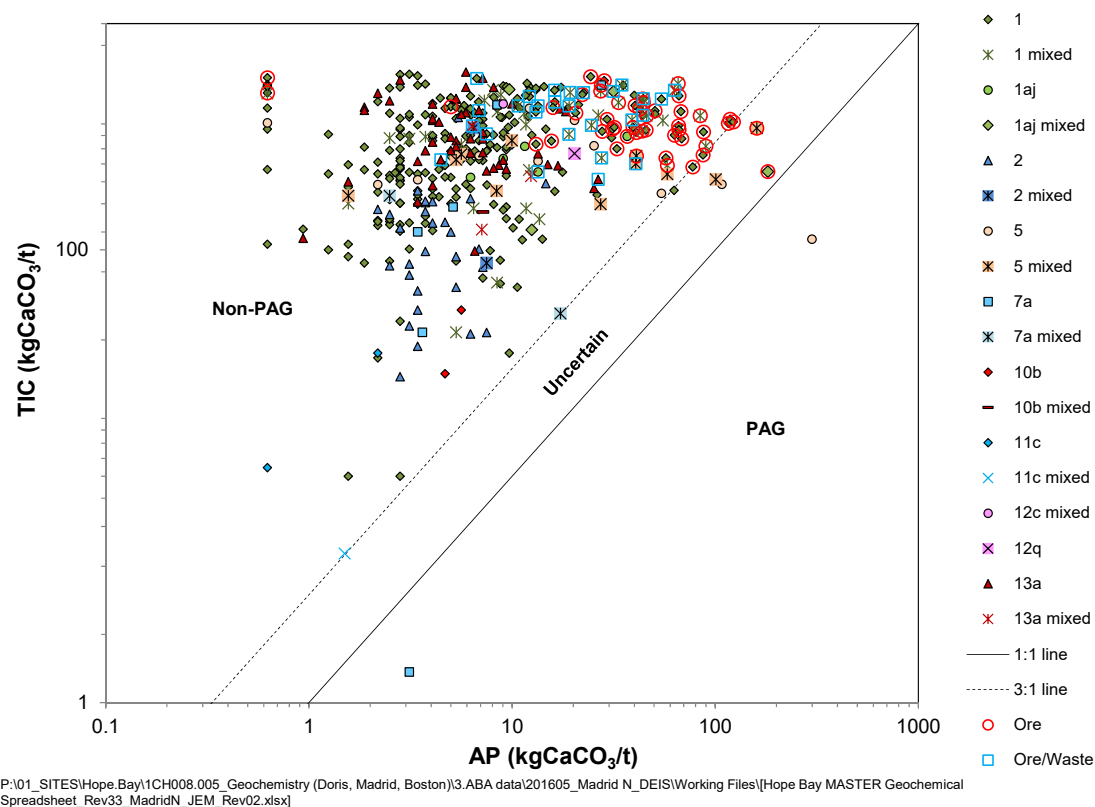


Figure 3.12: Comparison of TIC and AP for Madrid North samples

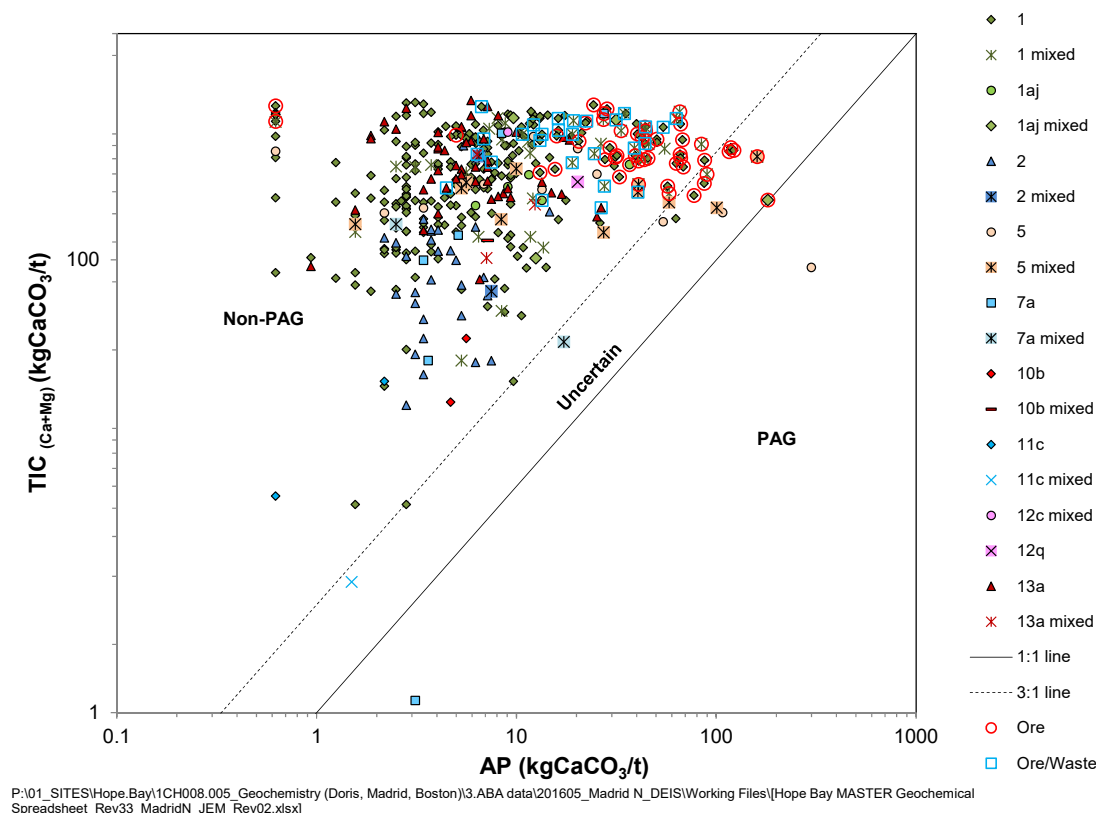


Figure 3.13: Comparison of TIC_(Ca+Mg) and AP for Madrid North samples

3.1.4 Solid-Phase Elemental Composition

Solid-phase trace elemental data were available for 420 samples (Appendix J). A statistical summary of each element by rock type is presented in Appendix K.

Parameters were screened by comparing 95th percentile concentrations against ten times the average crustal abundance for basalt (Price 1997). The limit of analytical detection for bismuth and gallium was higher than the respective crustal abundance; accordingly bismuth and gallium could not be assessed. Table 3.6 presents a summary of elevated parameters according to lithology. Parameters listed in Table 3.6 that are mobile at neutral pH values include arsenic and selenium.

A summary of the findings from Table 3.6 for the significant rock types is as follows:

- Arsenic was elevated for all rock types, except the late mafic intrusive (10b).
- Selenium detection limits (<0.5 ppm) were equal to ten times the crustal abundance for selenium. Accordingly only samples with P95 values greater than the level of analytical uncertainty (5 ppm) were assessed. Rock types with elevated levels of selenium included mafic metavolcanic categories except ore samples (1w, 1o/w, and 1 mixed), mixed

metavolcanics (2 mixed), all sedimentary units (5 and 5 mixed), all early gabbro (7a and 7a mixed), mixed diabase (11c mixed), and all deformation zone (13a and 13a mixed).

- Antimony was enriched in samples of all mafic metavolcanic categories (1w, 1o/w, 1o, and 1 mixed), mixed intermediate metavolcanics (2 mixed), sedimentary units (5 and 5 mixed), early gabbro (7a and 7a mixed), mixed diabase (11c mixed), and the deformation zone (13a and 13a mixed).
- Cadmium was enriched in some mafic metavolcanics (1o and 1 mixed), mixed intermediate metavolcanics (2 mixed), mixed sedimentary units (5), early gabbro (7a and 7a mixed), mixed diabase (11c mixed), and the deformation zone (13a and 13a mixed).
- Elevated gold content was present in all mafic metavolcanic categories, including those mixed with sediments (1w, 1o/w, 1o, 1 mixed, 1aj, 1aj mixed), sedimentary units (5 and 5 mixed), early gabbro (7a), mixed carbonate vein (12c mixed), quartz vein (12q) and deformation zone (13a).
- Other trace elements that were elevated include silver, sodium, mercury, thallium, sulphur, and tungsten.
- All other elements were below the screening criteria suggesting no appreciable enrichment in the samples.

Table 3.6: Summary of Elevated Solid Phase Elements, Madrid North

Lithology	Preliminary Economic Classification	No. of Samples	P95 > 10x Crustal Abundance for Basalt
Ultramafic to Mafic Metavolcanic Rocks (1)	Waste	200	As, Au, Sb, Tl, S, Se
	Ore	34	Ag, As, Au, Sb, Na, Hg, Tl, S
	Waste/Ore	12	Ag, As, Au, Cd, Sb, Na, Tl, S, Se
Mixed Ultramafic to Mafic Metavolcanic Rocks (1 mixed)	Various ²	48	Ag, As, Au, Cd, Sb, Na, W, Tl, S, Se
Mafic Metavolcanic Rocks with Sediments (1aj)	Various ³	5	As, Au, S
Mixed Mafic Metavolcanic Rocks with Sediments (1aj mixed)	Various ⁴	4	Ag, As, Au, S
Intermediate Metavolcanic Rocks (2)	Waste	29	As
Mixed Intermediate Metavolcanic Rocks (2 mixed)	Waste	2	Ag, As, Cd, Sb, Tl, Se
Sedimentary Units (Argillite) (5)	Waste	11	As, Au, Sb, S, Se
Mixed Sedimentary Units (Argillite) (5)	Various ⁴	11	Ag, As, Au, Cd, Sb, Na, Tl, S, Se
Early Gabbro ¹ (7a)	Various ⁵	6	Ag, As, Au, Cd, Sb, Al, Na, Hg, Tl, Se
Mixed Early Gabbro (7a mixed)	Waste	2	Ag, As, Cd, Sb, Na, Tl, Se
Late Mafic-Ultramafic Intrusive Rocks ¹ (10b)	Waste	2	
Mixed Late Mafic-Ultramafic Intrusive Rocks (10b mixed)	Waste	1	As, S
Diabase (11c)	Waste	2	As
Mixed Diabase (11c mixed)	Waste	1	As, Cd, Sb, Na, Tl, Se
Mixed Carbonate Vein (12c mixed)	Waste	1	As, Au
Quartz Vein (12q)	Waste	1	As, Au, S
Deformation Zone (13a)	Waste	49	Ag, As, Au, Cd, Sb, Na, Hg, Tl, S, Se
Mixed Deformation Zone (13a mixed)	Waste	3	As, Cd, Sb, Na, Tl, Se

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Notes:

¹Early and late used in a relative sense only

²Lithology 1 mixed is comprised of samples classified as waste (n= 20), ore (n= 10) and ore/waste (n= 9).

³Lithology 1aj is comprised of samples classified as waste (n= 3), ore (n= 1) and ore/waste (n= 1).

⁴Lithology 1aj mixed is comprised of samples classified as waste (n= 2), ore (n= 1) and ore/waste (n= 1).

⁵Lithology 5 mixed is comprised of samples classified as waste (n= 8), ore (n= 2) and ore/waste (n= 1).

3.2 Humidity Cell Tests

There are 22 humidity cell tests relevant to Madrid North.

3.2.1 Pre-Test Sample Characterization

The basic geochemical characteristics of the humidity cell samples included mineralogy, ABA, and trace element composition and are described in the following text. Table 2.4 summarizes available geochemical data for each humidity cell sample. The purpose of this section is to assess the humidity cell test samples in the context of the overall Madrid North static test sample set (Section 2.1).

Mineralogy

Selected mineralogy data are presented in Table 3.4, Table 3.7, Table 3.8, Table 3.9, and Appendix L. Mineralogy was determined using four methods: XRD for bulk mineralogy; MLA for trace level mineralogy; petrographic analysis to characterize the mineralogy with particular emphasis on the occurrence and mineral form of the sulphides and carbonate minerals; and SEM to determine the stoichiometric formulas of iron carbonate minerals. For the MLA and petrographic methods, the determination of carbonate and sulphide minerals was the focus of the reporting. Bulk XRD data is also presented in Appendix H. The mineralogy presented in Appendix H was determined on a pulp samples whereas the data presented in Appendix L-1 represents analysis for the drill core split obtained for the humidity cell program.

The bulk mineralogical results for the humidity cell tests were similar to the results of the overall Madrid North sample set (Table 3.2 and Table 3.3). Specific findings for the humidity cell samples are described as follows:

- Calcite was the dominant mineral for selected samples of mafic metavolcanics (HC-3 and HC-9) and selected samples of pale green pillow (HC-4 and HC-19). There were no iron carbonates detected in HC-4.
- In terms of sulphides, pyrite (FeS_2) was the dominant sulphide mineral. Chalcopyrite (CuFeS_2) and gersdorffite (NiAsS) were present at trace levels, and pyrrhotite ($\text{Fe}_{(1-x)}\text{S}$), galena (PbS), cobaltite (CoAsS), sphalerite (ZnS) and tetrahedrite (Cu_3SbS) were detected at levels near analytical detection for MLA. For HC-3, mineralogy was determined by XRD only due to limited sample quantities.
- Sulphide levels indicated by XRD, MLA and ABA are comparable except for the sedimentary unit samples (HC-20 and HC-21), for which optical mineralogy (HC-20 only) and MLA levels were higher. The variable sulphide levels according to method may be a result of a nugget effect in the samples.
- For HC-20 (sedimentary unit, 5), total sulphur values as determined by MLA (3.3%) and optical mineralogy (5%) were significantly higher than levels determined using XRD and ABA (trace and 0.48%, respectively) but comparable to levels in the humidity cell residue. For HC-20, the pre-test total sulphur value as determined by MLA has been adopted for the purposes of humidity cell data interpretation.

Acid-Base Accounting

ABA data for the humidity cell samples is presented in Table 3.10. ABA data were determined on the pulp samples that were characterized as part of the initial static program (Section 2.1.1) with the following exceptions:

- HC-3, HC-4, HC-5 and HC-8 are from intervals that were also tested as part of the barrel program (Section 3.3). For these samples, ABA was determined on pulp samples and also a split of the drill core that was sampled during barrel setup (and represents the humidity cell sample).
- HC-39, HC-40 and HC-41 were selected from samples that were initially characterized using NCV methods. For these samples, ABA was determined on the material loaded into the HCT.

For the aforementioned humidity cell samples that have two sets of data, total sulphur data was equivalent for both samples (HC-3, HC-4, HC-39 and HC-40) or lower for the humidity cell sample as compared to the pulps (HC-5, HC-8 and HC-41). NP levels were comparable for the samples that were used ABA for both samples, whereas NP levels were lower for the NCV samples (which represent calculated values based on calcium content). TIC levels were equivalent for all sample types and methods.

Table 3.11 presents the percentile rank of the ABA parameters for each humidity cell tests as compared to the Madrid North data set. Data were compared to the rock type and preliminary economic classification. Overall the humidity cell samples were consistent with the overall Madrid North sample set (Section 3.1.3), with the following exceptions:

- For sample HC-20, total sulphur levels were higher than the targeted total sulphur level. The sample collected from the drill core for the humidity cell test contained higher sulphide levels than the initial ABA sample. This could be due to the relatively short interval length of the drill core (<2 m) and the nuggety distribution of sulphides within sedimentary units (5).
- For sample HC-23 (diabase, 11c), TIC content was above the maximum in the Madrid North database for its respective lithology, while pulp sample HC-8 (mafic metavolcanic, 1, mixture of ore and waste) had TIC content below the minimum.
- For the rock types mafic metavolcanics with sediments (1aj), intermediate metavolcanics (2 mixed), early gabbro (7a) and diabase (11c) there are relatively few samples (n<10) in the database for a meaningful statistical comparison. Data was presented for completion.
- All samples were classified as non-PAG according to NP/AP, TIC/AP and $TIC_{(Ca+Mg)}/AP$, except for HC-26 (mafic metavolcanic, ore), HC-20 (sedimentary unit) and HC-21 (sedimentary unit), which were classified as uncertain.

Table 3.7: Carbonate Mineralogy by XRD and MLA for Humidity Cell Test Samples

Humidity Cell #	Rock Type ¹	Preliminary Economic Classification	Carbonates							
			Ferroan Dolomite Ca(Fe,Mg)CO ₃		Siderite FeCO ₃		Magnesite MgCO ₃	Siderite/Magnesite (Fe,Mg)CO ₃	Calcite CaCO ₃	
			XRD	MLA	XRD	MLA	XRD	XRD	XRD	MLA
HC-3	1	Waste	2	--	bd	--	bd	bd	13	--
	1	Waste	2	--	bd	--	bd	bd	13	--
HC-9	1	Waste	bd	4.9	bd	<0.01	bd	bd	14	8.1
HC-27	1	Waste	30	24	bd	<0.01	bd	bd	2	2.4
HC-25	1	Waste	31	24	bd	<0.01	bd	bd	bd	0.08
HC-8	1	Mixed	23	42	bd	0.06	bd	bd	7	3.8
	1	Mixed	26	--	bd	--	bd	bd	6	--
HC-28	1	Ore	35	32	bd	<0.01	bd	bd	bd	0.04
HC-26	1	Ore	35	36	bd	0.02	bd	bd	bd	<0.01
HC-24	1	Ore	45	41	bd	<0.01	bd	bd	bd	0.08
HC-17	1aj	Waste	23	25	bd	0.02	bd	bd	6	3.1
HC-4	2pg	Mixed	bd	bd	bd	--	bd	bd	9	--
	2pg	Mixed	bd	--	bd	--	bd	bd	8	--
HC-18	2pg	Waste	5	12	bd	0.01	bd	bd	6	3.1
HC-19	2pg mixed	Waste	bd	1.2	bd	<0.01	bd	bd	9	6.4
HC-20	5	Waste	26	44	bd	0.04	bd	bd	bd	<0.01
HC-21	5	Waste	20	14	bd	<0.01	bd	bd	bd	0.05
HC-40	7a	Waste	15	5.8	bd	0.06	bd	bd	bd	0.06
HC-41	7a	Waste	41	34	bd	3.0	12	bd	bd	<0.01
HC-22	11c	Waste	1	0.9	bd	<0.01	bd	bd	bd	0.9
HC-23	11c	Waste	4	0.6	bd	0.05	bd	bd	bd	0.5
HC-5	13a	Waste	28	25	1	0.9	bd	bd	bd	0.04
	13a	Waste	29	--	bd	--	bd	1	bd	--
HC-29	13a	Waste	39	33	bd	1.1	bd	2	bd	<0.01
HC-39	13a	Waste	36	13	1	<0.01	bd	bd	bd	0.02
HC-30	13a	Waste	37	52	bd	<0.01	bd	bd	1	0.32

Notes:

¹Rock codes as follows: 1 = mafic volcanics; 2pg = pale green pillow; 5 = sedimentary unit; 7a = early gabbro; 11c = diabase; 13a = deformation zone

-- denotes sample not available for characterization

bd: below detection

Table 3.8: Sulphide Mineralogy by XRD and MLA for Humidity Cell Test Samples

Humidity Cell #	Rock Type ¹	Preliminary Economic Classification	Pyrite FeS ₂		Chalcopyrite CuFeS ₂	Gersdorffite NiAsS	Pyrrhotite Fe _(1-x) S	Galena PbS	Cobaltite CoAsS	Sphalerite ZnS	Tetrahedrite Cu ₃ SbS	Total Sulphur %S		
			XRD	MLA	MLA	MLA	MLA	MLA	MLA	MLA	MLA	XRD	MLA	ABA
HC-3	1	Waste	bd	--	--	--	--	--	--	--	--	bd	--	0.17
	1	Waste	bd	--	--	--	--	--	--	--	--	bd	--	0.12
HC-9	1	Waste	bd	0.2	0.01	bd	<0.01	bd	<0.01	bd	bd	bd	0.1	0.07
HC-27	1	Waste	tr	0.1	0.03	0.01	bd	bd	<0.01	<0.01	bd	tr	0.09	0.15
HC-25	1	Waste	bd	1.0	0.03	0.01	<0.001	bd	0.01	<0.001	bd	bd	0.5	0.40
HC-8	1	Mixed	bd	1.3	0.08	0.01	<0.01	bd	<0.01	<0.01	bd	bd	0.7	0.26
	1	Mixed	bd	--	--	--	--	--	--	--	--	bd	--	0.35
HC-28	1	Ore	3	3.6	0.01	0.02	<0.001	bd	<0.001	<0.001	bd	1.6	1.9	1.31
HC-26	1	Ore	7	6.6	0.01	0.02	<0.001	<0.001	bd	bd	bd	3.7	3.5	3.93
HC-24	1	Ore	3	3.7	0.03	0.03	<0.001	bd	<0.001	<0.001	bd	1.6	2.0	2.17
HC-17	1aj	Waste	bd	2.1	0.029	bd	bd	bd	<0.01	bd	bd	bd	1.1	0.37
HC-4	2pg	Mixed	bd	--	--	--	--	--	--	--	--	bd	--	0.10
	2pg	Mixed	bd	--	--	--	--	--	--	--	--	bd	--	0.14
HC-18	2pg	Waste	bd	0.1	0.055	bd	bd	bd	<0.01	bd	bd	bd	0.09	0.12
HC-19	2pg mixed	Waste	bd	0.6	0.038	bd	0.18	bd	<0.001	0.022	<0.001	bd	0.40	0.24
HC-20	5	Waste	--	6.1	<0.01	0.09	<0.001	bd	<0.001	bd	bd	--	3.3*	0.48*
HC-21	5	Waste	5	9.3	0.02	bd	0.04	bd	<0.001	<0.01	bd	2.7	5.0	3.45
HC-40	7a	Waste	bd	0.3	0.02	bd	<0.001	bd	<0.001	bd	bd	bd	0.1	0.11
HC-41	7a	Waste	bd	0.4	0.02	0.03	bd	bd	<0.001	bd	<0.01	bd	0.2	0.27
HC-22	11c	Waste	bd	0.02	0.06	bd	0.03	bd	bd	bd	<0.001	bd	0.04	<0.02
HC-23	11c	Waste	bd	<0.01	0.06	bd	<0.01	bd	bd	bd	<0.001	bd	0.03	0.07
HC-5	13a	Waste	bd	1.7	<0.01	<0.01	0.01	bd	<0.01	<0.01	bd	bd	0.9	0.16
	13a	Waste	bd	--	--	--	--	--	--	--	--	bd	--	0.24
HC-29	13a	Waste	bd	0.1	0.01	0.01	bd	bd	<0.001	bd	bd	bd	0.07	0.19
HC-39	13a	Waste	1	1.1	0.02	<0.01	<0.001	bd	bd	<0.001	bd	bd	0.6	0.54
HC-30	13a	Waste	bd	0.7	0.8	bd	<0.001	bd	bd	bd	bd	bd	0.7	0.55

Notes:

¹Rock codes as follows: **1** = mafic volcanics; **2pg** = pale green pillow; 5 = sedimentary rocks; **7a** = early gabbro; **11c** = diabase; **13a** = deformation zone

-- For HC-20, denotes XRD data removed (see text for details). For MLA analysis, denotes sample not available for characterization

bd: below detection

*See text for details.

Table 3.9: Summary of Carbonate and Sulphide Minerals by Petrography for HC-17, HC-20 and HC-24

Humidity Cell #	Rock Type	Preliminary Economic Classification	Sulphide	Carbonate Occurrence
HC-17	1aj	Waste	- Pyrite (2%) - Chalcopyrite (trace)	Colourless, fine to very fine-grained (40%)
HC-24	1	Ore	- Pyrite (5%) - Chalcopyrite (trace)	Colourless, fine to very fine-grained (60%)
HC-20	5	Waste	- Pyrite (5%) - Chalcopyrite (rare) - Unknown (rare) - Sphalerite (rare)	Colourless to cloudy brownish, fine to very fine-grained (50%)

Trace Elements

Trace element data for the humidity cell samples are presented in Appendix M.

Trace element data are available for the overall Madrid North sample set, as discussed in Section 3.1.4. Twelve of the humidity cell samples and at least one sample of each rock type except mafic volcanics with sediments (1aj) and pale green pillow (2pg), contained arsenic levels greater than ten times the average crustal abundance for basalt (Price 1997). There was no apparent relationship between arsenic and sulphur content. Copper was the only other parameter that was elevated, and for one sample only (HC-30).

In terms of their respective rock type and economic classification, arsenic levels for 15 of the 22 samples ranged from P5 to P80 (Table 3.12). For the remaining samples, arsenic levels were either the minimum or maximum values in the dataset, or outside the range of values. For the rock types mafic metavolcanics with sediments (1aj), intermediate metavolcanics (2 mixed), early gabbro (7a) and diabase (11c) there are relatively few samples (n<10) in the database for a meaningful statistical comparison.

Table 3.10: ABA Data for Humidity Cell Test Samples

Humidity Cell #	Rock Type ¹	Preliminary Economic Classification	Sample Type ²	Paste pH	Total Sulphur %S	NP	TIC	TIC _(Ca+Mg)	NP/AP	TIC/AP	TIC _(Ca+Mg) /AP
						(kgCaCO ₃ /t)					
HC-3	1	Waste	HCT	8.5	0.17	146	165	137	27	31	21
			Pulp	8.7	0.12	145	148	123	38	39	27
HC-9	1	Waste	Pulp	8.9	0.07	131	146	121	60	67	46
HC-27	1	Waste	Pulp	9.7	0.15	244	310	257	52	66	46
HC-25	1	Waste	Pulp	9.6	0.40	239	321	267	19	26	18
HC-8	1	Mixed	HCT	9.1	0.26	250	335	278	31	41	28
			Pulp	8.4	0.35	270	303	251	25	28	19
HC-28	1	Ore	Pulp	9.3	1.3	262	330	274	6.4	8.1	5.5
HC-26	1	Ore	Pulp	8.5	3.9	294	367	305	2.4	3.0	2.1
HC-24	1	Ore	Pulp	8.5	2.2	337	409	339	5.0	6.0	4.2
HC-17	1aj	Waste	Pulp	8.6	0.37	267	287	238	23	25	17
HC-4	2pg	Mixed	HCT	9.0	0.10	82	85	70	26	27	19
			Pulp	9.1	0.14	82	84	70	19	20	14
HC-18	2pg	Waste	Pulp	10	0.12	86	98	82	23	26	18
HC-19	2pg mixed	Waste	Pulp	9.1	0.24	85	88	73	11	12	8.0
HC-20	5	Waste	Pulp	9.2	3.3	214	246	204	2.1	2.4	1.6
HC-21	5	Waste	Pulp	8.9	3.5	143	195	162	1.3	1.8	1.2
HC-40	7a	Waste	HCT	9.0	0.11	114	120	100	33	35	24
			NCV	9.1	0.15	62	130	108	13	28	23
HC-41	7a	Waste	HCT	9.1	0.27	321	437	362	38	52	36
			NCV	8.7	0.46	174	457	379	12	32	26
HC-22	11c	Waste	Pulp	9.3	0.02	22	11	9	35	17	12
HC-23	11c	Waste	Pulp	9.7	0.07	33	35	29	15	16	11
HC-5	13a	Waste	HCT	9.4	0.16	215	242	201	43	48	33
			Pulp	9.4	0.24	203	269	223	27	36	25
HC-29	13a	Waste	Pulp	9.6	0.19	316	403	335	53	68	47
HC-39	13a	Waste	HCT	9.0	0.54	191	235	195	11	14	9.6
			NCV	9.0	0.60	116	234	194	6	12	10
HC-30	13a	Waste	Pulp	8.9	0.55	300	419	348	17	24	17

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Notes:

¹Rock codes as follows: **1** = mafic volcanics; **2pg** = pale green pillow; **5** = sedimentary rocks; **7a** = early gabbro; **11c** = diabase; **13a** = deformation zone

²ABA determined on either a split of the humidity cell sample (HCT), pulp from the exploration program (Pulp) or from NCV methods

³Fizz test was moderate to strong for all samples. NP for NCV samples calculated from calcium levels (refer to Section 2.1.5).

*Value as determined by MLA. See Table 3.17 and accompanying text for discussion.

Table 3.11: Percentile Rank of Total Sulphur, NP and TIC for Humidity Cell Tests

Humidity Cell #	Lithology	Preliminary Economic Classification	No. of Samples	Sample Type	Selection Rationale	Total Sulphur		NP ²		TIC	
						%S	% Rank	kgCaCO ₃ /t	% Rank	kgCaCO ₃ /t	% Rank
HC-3	1	Waste	206	HCT	Barrel	0.17	52%	146	18%	165	21%
				Pulp	Barrel	0.12	41%	145	18%	148	17%
HC-9	1	Waste	206	Pulp	Barrel	0.07	10%	131	15%	146	17%
HC-27	1	Waste	206	Pulp	Typical S	0.15	47%	244	56%	310	58%
HC-25	1	Waste	206	Pulp	High S	0.4	92%	239	51%	321	62%
HC-8	1	Mixed	11	HCT	Barrel	0.26	11%	250	25%	335	1%
				Pulp	Barrel	0.35	17%	270	29%	303	<0%
HC-28	1	Ore	34	Pulp	Typical S	1.3	52%	262	21%	330	24%
HC-26	1	Ore	34	Pulp	High S	3.9	100%	294	48%	367	55%
HC-24	1	Ore	34	Pulp	High S	2.2	79%	337	67%	409	67%
HC-17	1aj	Waste	5	Pulp	Typical S	0.37	50%	267	75%	287	75%
HC-4	2pg	Mixed	29	HCT	Barrel	0.1	18%	82	34%	85	36%
				Pulp	Barrel	0.14	62%	82	34%	84	32%
HC-18	2pg	Waste	29	Pulp	Typical S	0.12	43%	86	39%	98	46%
HC-19	2 mixed	Waste	2	Pulp	High S	0.24	100%	85	0%	88	0%
HC-20	5	Waste	11	Pulp	Typical S	3.3	89%	214	50%	246	50%
HC-21	5	Waste	11	Pulp	High S	3.5	90%	143	10%	195	30%
HC-40	7a	Waste	6	HCT	Typical S	0.11	20%	114	40%	120	40%
				NCV		0.1	0%	62	11%	130	46%
HC-41	7a	Waste	6	HCT	High S	0.27	80%	321	80%	437	80%
				NCV		0.5	88%	174	65%	457	84%
HC-22	11c	Waste	2	Pulp	Limited sample set	0.02	0%	22	0%	11	0%
HC-23	11c	Waste	2	Pulp	Limited sample set	0.07	100%	33	100%	35	>100%
HC-5	13a	Waste	49	HCT	Barrel	0.16	35%	215	48%	242	26%
				Pulp	Barrel	0.24	72%	203	35%	269	38%
HC-29	13a	Waste	49	Pulp	Typical S	0.19	50%	316	75%	403	67%
HC-39	13a	Waste	49	HCT	High S	0.54	92%	191	33%	235	21%
				NCV		0.6	96%	116	9%	234	20%
HC-30	13a	Waste	49	Pulp	High S	0.55	94%	300	69%	419	75%

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Notes:

* Pale green pillow (2pg) and mixed pale green pillow (2pg mixed) were compared to intermediate metavolcanics waste (2) and mixed intermediate metavolcanics (2 mixed), respectively.

Table 3.12: Percentile Rank of Arsenic for Madrid North Humidity Cell Tests

Humidity Cell #	Lithology	Preliminary Economic Classification	No. of Samples	Sample Type	Arsenic	
					ppm	% Rank
HC-3	1	Waste	206	HCT Pulp	6.7	29%
					4.1	22%
HC-9	1	Waste	206	Pulp	2.6	19%
HC-27	1	Waste	206	Pulp	122	78%
HC-25	1	Waste	206	Pulp	108	75%
HC-8	1	Mixed	11	HCT	115	<0%
				Pulp	93	5%
HC-28	1	Ore	34	Pulp	433	39%
HC-26	1	Ore	34	Pulp	628	67%
HC-24	1	Ore	34	Pulp	630	70%
HC-17	1aj	Waste	5	Pulp	11	0%
HC-4*	2pg	Mixed	29	HCT	3.1	32%
				Pulp	3.2	32%
HC-18*	2pg	Waste	29	Pulp	10	64%
HC-19*	2 mixed	Waste	2	Pulp	8.2	<0%
HC-20	5	Waste	11	Pulp	1070*	>100%
HC-21	5	Waste	11	Pulp	86	40%
HC-40	7a	Waste	6	HCT	7.1	20%
				NCV	7.1	20%
HC-41	7a	Waste	6	HCT	273	80%
				NCV	273	80%
HC-22	11c	Waste	2	Pulp	3.1	<0%
HC-23	11c	Waste	2	Pulp	27	<0%
HC-5	13a	Waste	49	HCT	73	61%
				Pulp	93	77%
HC-29	13a	Waste	49	Pulp	77	67%
HC-39	13a	Waste	49	HCT	64	44%
				NCV	64	44%
HC-30	13a	Waste	49	Pulp	2	0%

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Notes:

*Samples of 2pg or 2pg mixed units were compared to samples of 2 or 2 mixed units.

*Value determined on HCT residue. See Table 3.7 and Section 3.2.1 for discussion.

3.2.2 Humidity Cell Data

There are 22 humidity cell tests relevant to the Madrid North. Table 2.6 presents the analytical program for the tests. Appendix N presents the humidity cell results, including summaries of key data, stable release rates of selected parameters and depletion calculations. Figures showing trends and the raw data for the humidity cell tests are provided in Appendix O.

Concentrations and Trends

For the humidity cell tests, maximum concentrations and pHs were typically highest during the initial stages, after which they decreased with time and levelled out. The pHs were neutral to alkaline for the duration of the test (Figure 3.14).

Sulphate concentrations were initially high and decreased rapidly to levels near the level of analytical detection (Figure 3.15) with the exception of HC-26 and HC-28 (both mafic volcanic, ore), HC-19 (pale green pillow) and HC-21 (sedimentary unit). HC-26, HC-21 and HC-19 are all “high” sulphide samples whereas HC-28 is a “typical” sulphide sample². For these three four samples, after an initial decrease, sulphate levels trended upward at 36 weeks (HC-28), 33 weeks (HC-19), 23 weeks (HC-21) and 19 weeks (HC-26) before levelling out to approximately 20 mg/L (HC-28), 11 mg/L (HC-19), 50 55 mg/L (HC-21) and 80 90 mg/L (HC-26).

Sulphate release rates reached stability for all samples. Sulphate release rates were below 5 mg/kg/week except for HC-26 and HC-28 (both mafic volcanic ore samples) and HC-21 (sedimentary unit). For HC-26 and HC-28, sulphate release rates were 25 and 10 mg/kg/week, respectively, and 41 mg/kg/week for HC-21.

As shown in Figure 3.16, there is a relationship between sulphate release rate and total sulphur content indicating that sulphide oxidation rates are related to sulphide content. Deviations from this trend include HC-20 (3.3% sulphur), HC-21 (3.5% sulphur) and HC-24 (2.2% sulphur). HC-20 and H-24 had lower sulphate release rates than the general trend, while HC-21 had higher sulphate release rates.

Alkalinity concentrations were low and stable and in the range of 12 to 41 mg/L for all tests. Alkalinity levels were highest for HC-21.

Arsenic, cobalt and nickel were the only elements that exhibited noteworthy trends in concentrations and leaching rates. The leaching of these parameters as observed in the humidity cell tests is discussed.

Arsenic leaching from humidity cells (Figure 3.17) and stable³ release rates were variable, with the latter varying over three orders of magnitude (Table 3.13). The arsenic leaching rates for HC-20 (sedimentary unit; 0.33 mg/kg/week) and HC-41 (early gabbro; 0.27 mg/kg/week) were the highest, followed by HC-27 (mafic metavolcanic, waste) and HC-24 (mafic metavolcanic, ore) (both 0.16 mg/kg/week). There were differing weak correlations between arsenic release and total sulphur (Figure 3.18) and arsenic release and arsenic content (Figure 3.19), but no clear trends. High levels of arsenic leaching appeared to be related to the occurrence of the trace mineral gersdorffite (NiAsS).

Gersdorffite was present at trace levels and above detection in the following samples (listed in descending order): HC-20 (sedimentary unit, 5), HC-24 (mafic metavolcanics, 1, ore), HC-41 (early gabbro, 7a), HC-26 and HC-28 (mafic metavolcanics, 1, ore), HC-8 (mafic metavolcanics, 1, mixed ore and waste), HC-25 and HC-27 (mafic metavolcanics, 1, waste), and HC-29

² Refer to Section 2.2.2 for definitions of “high” and “typical” sulphide

³ Assessed based on the assessment of the stability of sulphate release.

(deformation zone, 13a). Those humidity cell samples containing detectable levels of the trace mineral gersdorffite tended to have the highest stable arsenic release rates (Table 3.13).

Cobalt leaching from humidity cells (Figure 3.20) and stable rates varied less than arsenic rates (Table 3.13). Cobalt stable release rates were highest for HC-20 (sedimentary unit, 0.0015 mg/kg/week) followed by HC-25 and HC-27 (mafic metavolcanics, waste), HC-28 (mafic metavolcanics, ore), HC-41 (early gabbro) and HC-29 (deformation zone), with cobalt stable release rates ranging from 0.00041 to 0.00064 mg/kg/week. There were no clear correlations between cobalt leaching rates and sulphur (Figure 3.21) or cobalt contents (Figure 3.22). As with arsenic, samples with gersdorffite tended to have the highest stable cobalt release rates. Gersdorffite forms a solid solution series with cobaltite, and likely contains minor amounts of cobalt.

As with arsenic, nickel leaching (Figure 3.23) and stable release rates were variable (Table 3.13). Sample HC-20 (sedimentary unit) had the highest stable nickel release rate (0.018 mg/kg/week) followed by HC-24 and HC-26 (mafic metavolcanics, ore) with rates of 0.001 and 0.0021 mg/kg/week, respectively. There was no correlation between nickel release and total sulphur (Figure 3.24) or nickel content (Figure 3.25); generally high sulphur or high nickel content did not yield higher nickel release rates, with the exception of HC-20 and HC-26. Samples containing the mineral gersdorffite tended to have higher nickel release suggesting that nickel leaching may be related to the presence of gersdorffite, as was observed for arsenic and cobalt leaching.

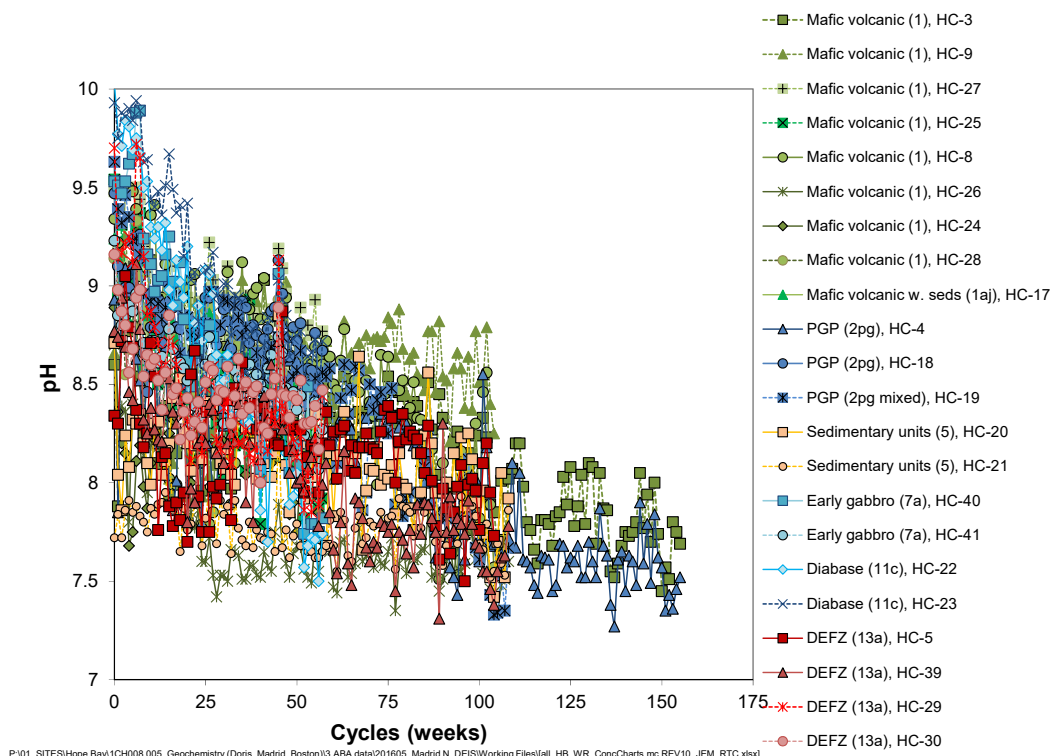


Figure 3.14: Humidity Cell Test pH Trends, Madrid North.

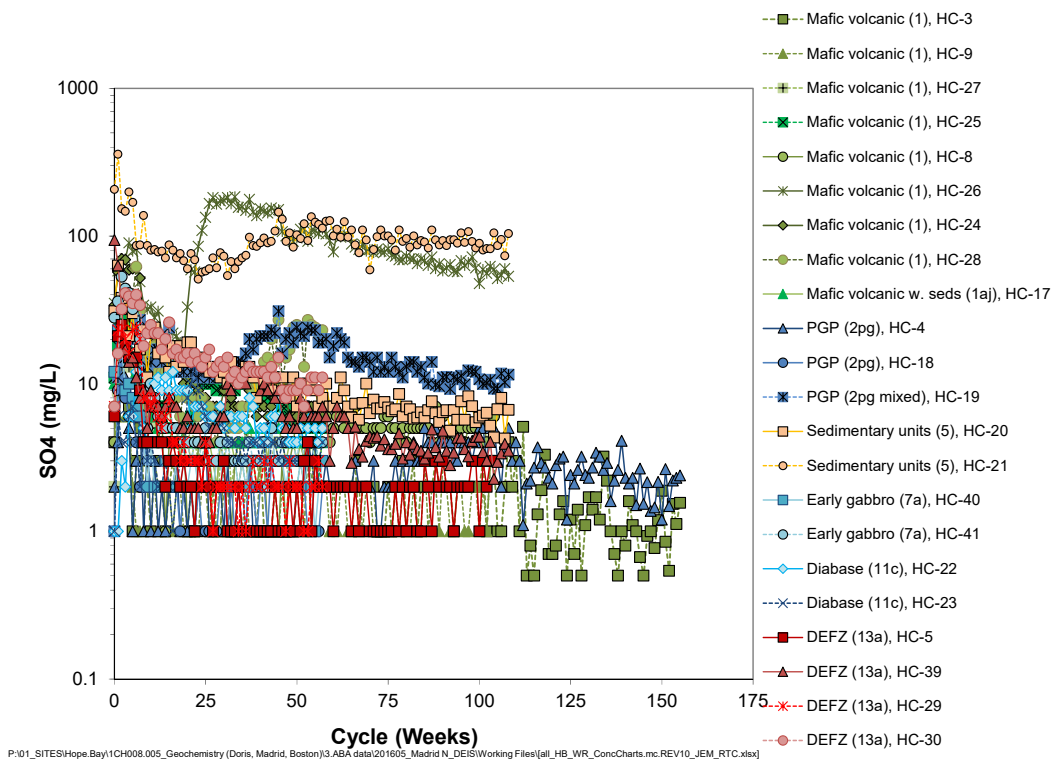


Figure 3.15: Humidity Cell Test Sulphate Concentration Trends, Madrid North.

Table 3.13: Selected Humidity Cell Test Release Rates and Static Data

HC #	Lithology ¹	Preliminary Economic Classification	Total Sulphur	Stable Rates				Solids				
				Sulphate	Arsenic	Nickel	Cobalt	Total S	Arsenic	Nickel	Cobalt	Gersdorfite (Fe,Co,Ni)AsS
			% Rank	mg/kg/week				%	ppm	ppm	ppm	%
HC-3	1	Waste	52%	0.75	0.0008	0.000055	0.000033	0.17	6.7	68	46	--
			41%	0.75	0.0008	0.000055	0.000033	0.12	4.1	75	46	--
HC-9	1	Waste	10%	0.66	0.00023	0.000065	0.000036	0.07	2.6	65	33	bd
HC-27	1	Waste	47%	1.3	0.16	0.00055	0.00062	0.15	120	140	45	0.014
HC-25	1	Waste	92%	2.1	0.065	0.00076	0.00047	0.40	110	150	47	0.014
HC-8	1	Mixed	11%	2.2	0.013	0.00012	0.000029	0.26	120	480	70	0.011
			17%	2.2	0.013	0.00012	0.000029	0.35	93	490	73	--
HC-28	1	Ore	52%	10	0.077	0.00089	0.00055	1.31	430	130	44	0.02
HC-26	1	Ore	100%	25	0.0067	0.0021	0.0003	3.93	630	390	70	0.015
HC-24	1	Ore	79%	3.1	0.16	0.001	0.00025	2.17	630	260	47	0.029
HC-17	1aj	Waste	50%	1.7	0.00032	0.00003	0.000022	0.37	11	190	57	bd
HC-4	2pg	Waste	18%	1.1	0.00021	0.00011	0.000028	0.10	3.1	140	42	--
			62%	1.1	0.00021	0.00011	0.000028	0.14	3.2	140	44	--
HC-18	2pg	Waste	43%	0.8	0.0073	0.000045	0.000029	0.12	10	150	46	bd
HC-19	2pg mixed	Waste	100%	4.8	0.00032	0.00022	0.000055	0.24	8.2	140	51	bd
HC-20	5	Waste	89%	2.9	0.33	0.018	0.0015	3.30	1100	650	15	0.094
HC-21	5	Waste	90%	41	0.00018	0.00019	0.0001	3.45	86	76	41	bd
HC-40	7a	Waste	20%	1.1	0.0022	0.00003	0.000017	0.11	7.1	110	45	bd
			54%	1.1	0.0022	0.00003	0.000017	0.10	7.1	110	45	bd
HC-41	7a	Waste	80%	1.6	0.27	0.00092	0.00041	0.27	270	180	52	0.035
			86%	1.6	0.27	0.00092	0.00041	0.50	270	180	52	0.035
HC-22	11c	Waste	0%	2.2	0.00062	0.00012	0.000017	0.02	3.1	25	20	bd
HC-23	11c	Waste	100%	1.5	0.0013	0.000019	0.0000093	0.07	27	52	22	bd
HC-5	13a	Waste	35%	0.87	0.037	0.00019	0.00029	0.16	73	45	30	<0.01
			72%	0.87	0.037	0.00019	0.00029	0.24	93	49	31	--
HC-29	13a	Waste	50%	1	0.065	0.00053	0.00064	0.19	77	120	36	0.01
HC-39	13a	Waste	92%	1.7	0.0029	0.00029	0.000056	0.54	64	24	14	<0.01
			96%	1.7	0.0029	0.00029	0.000056	0.60	64	24	14	<0.01
HC-30	13a	Waste	94%	4.1	0.00016	0.00003	0.000017	0.55	2	310	80	bd

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Notes:

¹Rock codes as follows: **1** = mafic volcanics; **2pg** = pale green pillow, **5** = sedimentary rocks; **7a** = early gabbro; **11c** = diabase; **13a** = deformation zone --denotes data not available.

bd denotes mineral below detection

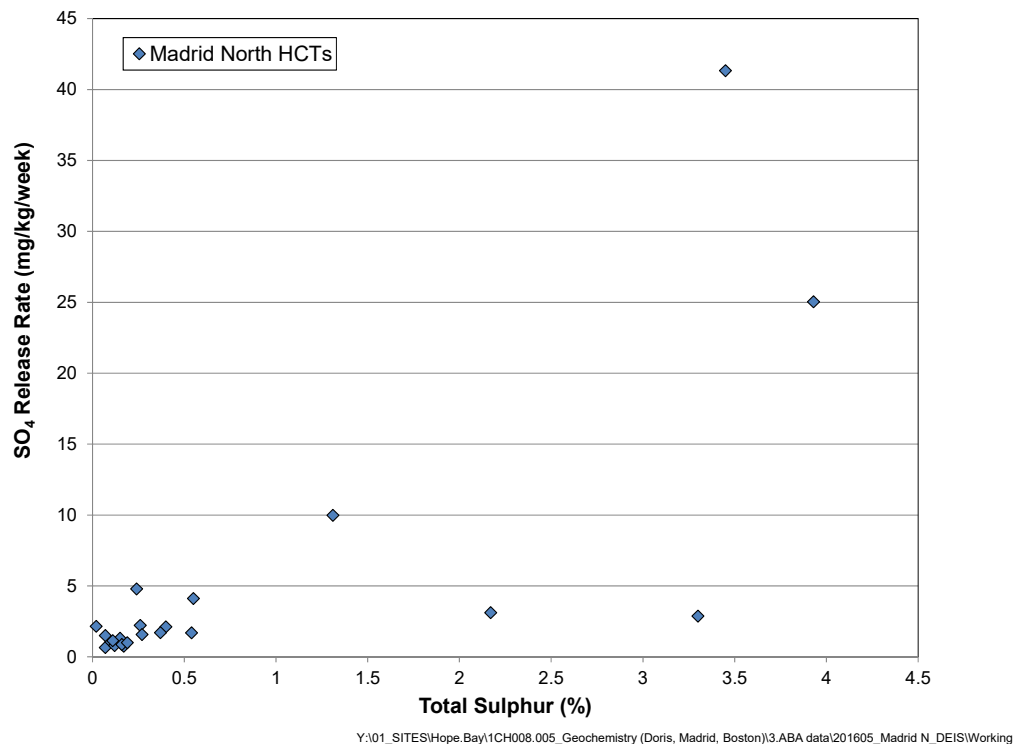


Figure 3.16: Relationship between Sulphate Release Rate and Total Sulphur, Madrid North Humidity Cell Tests.

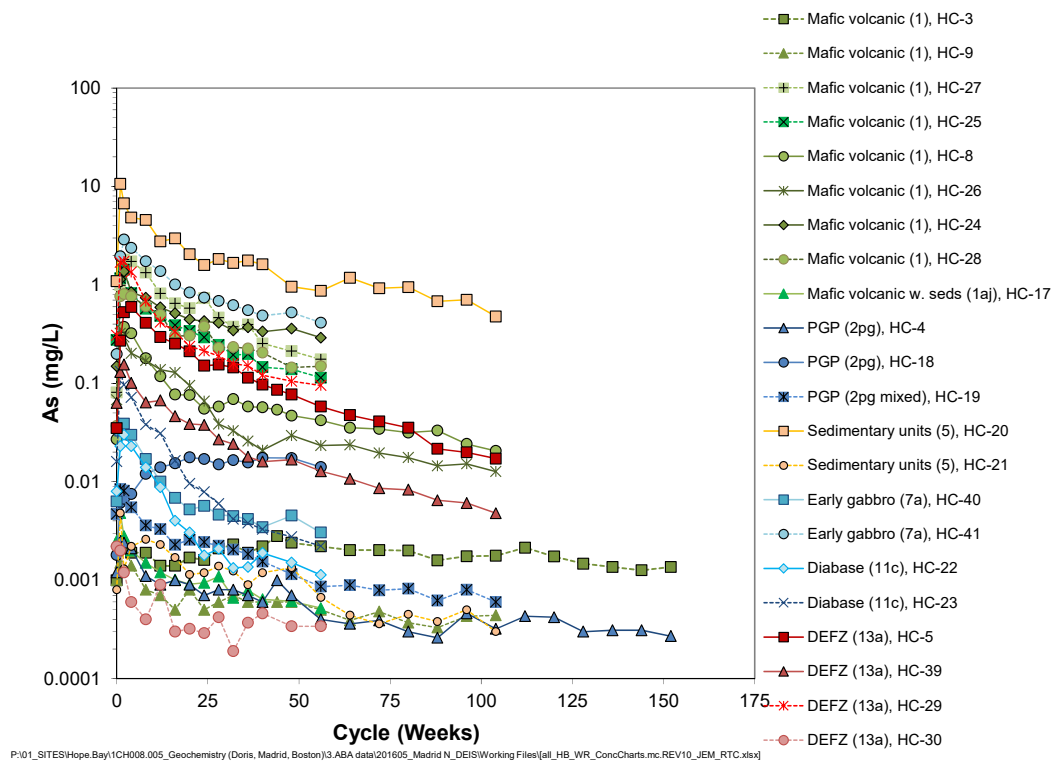


Figure 3.17: Humidity Cell Test Arsenic Concentration Trends, Madrid North.

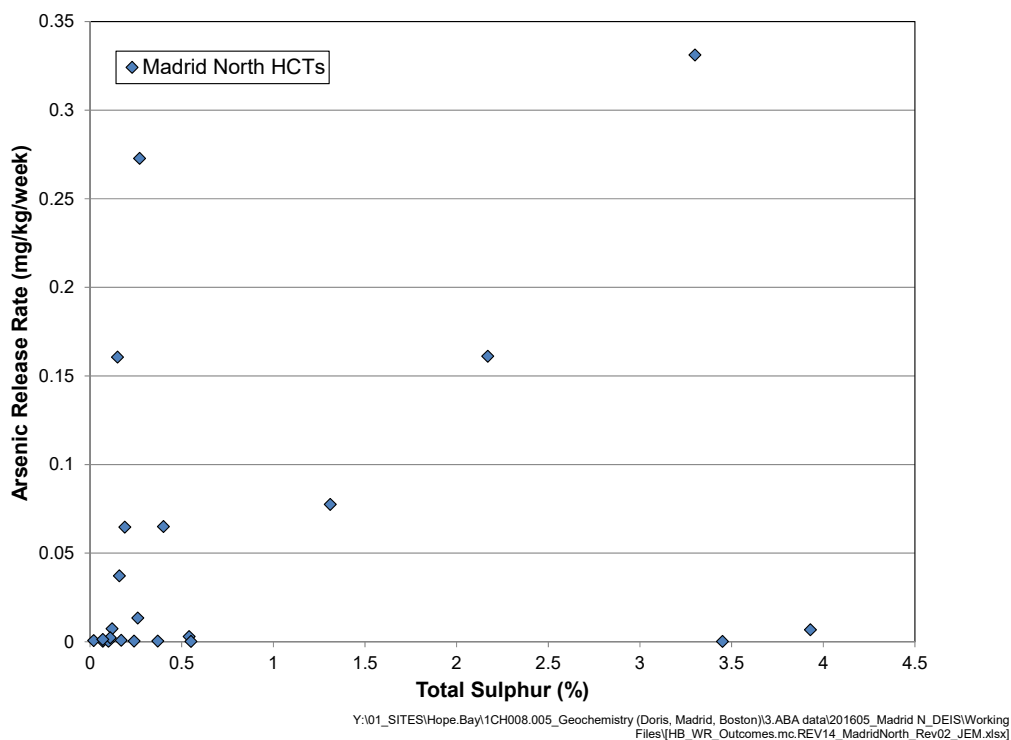


Figure 3.18: Comparison of Stable Arsenic Release Rates and Total Sulphur.

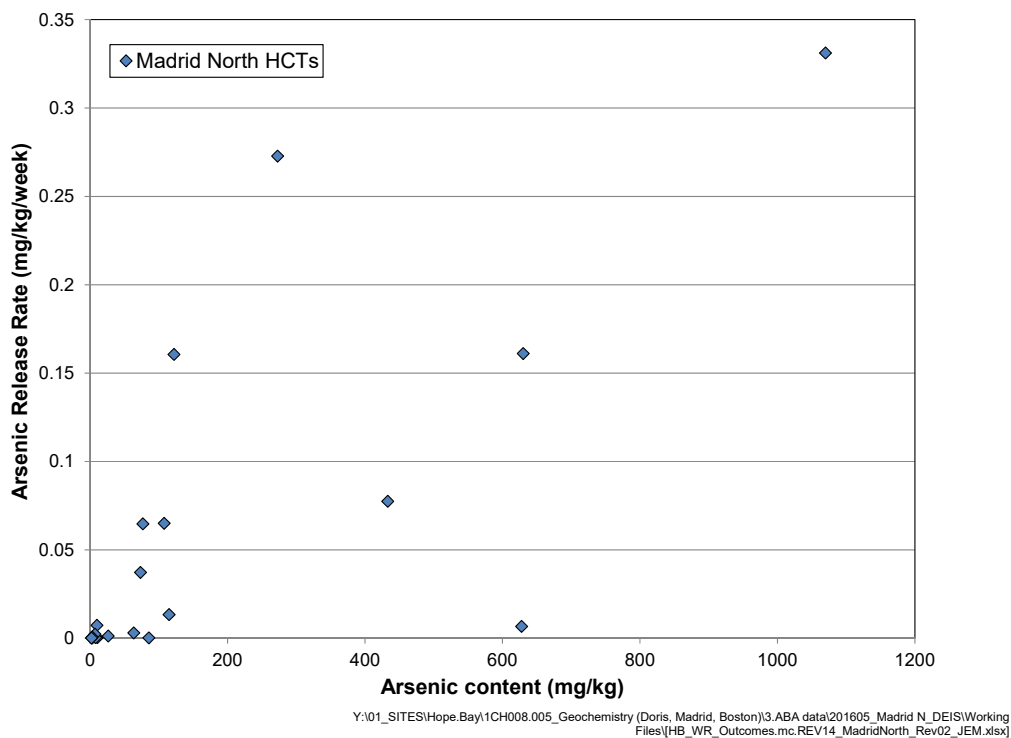


Figure 3.19: Comparison of Stable Arsenic Release Rates and Arsenic Content.

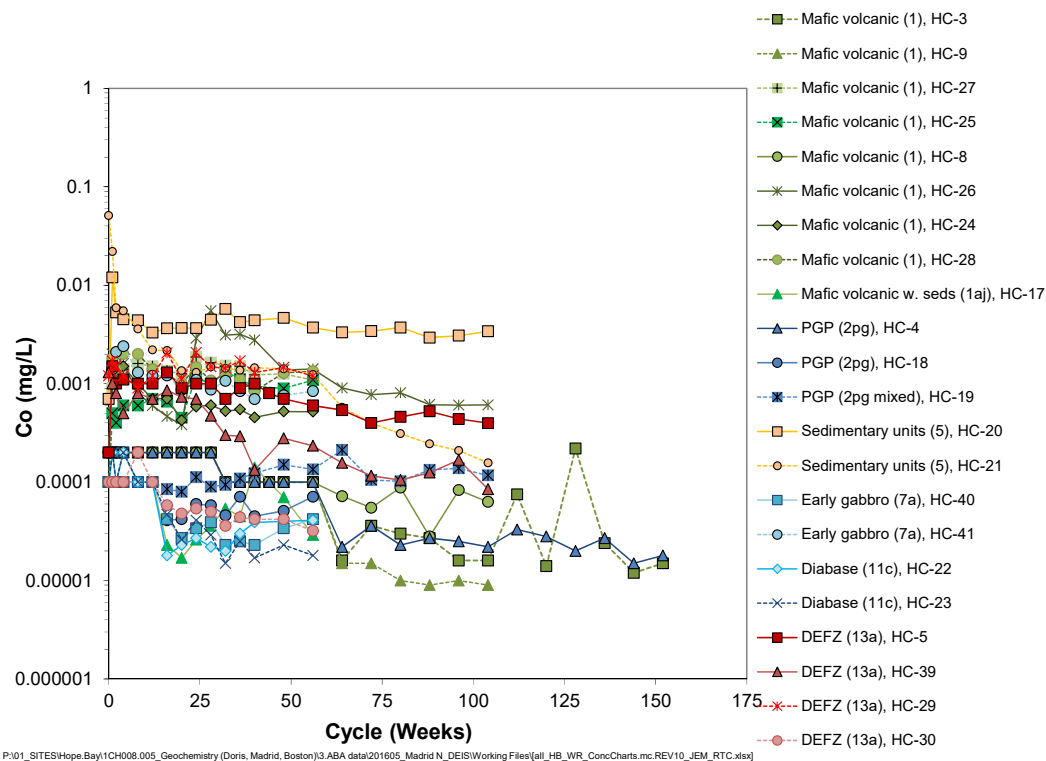


Figure 3.20: Humidity Cell Test Cobalt Concentration Trends for Madrid North HCTs.

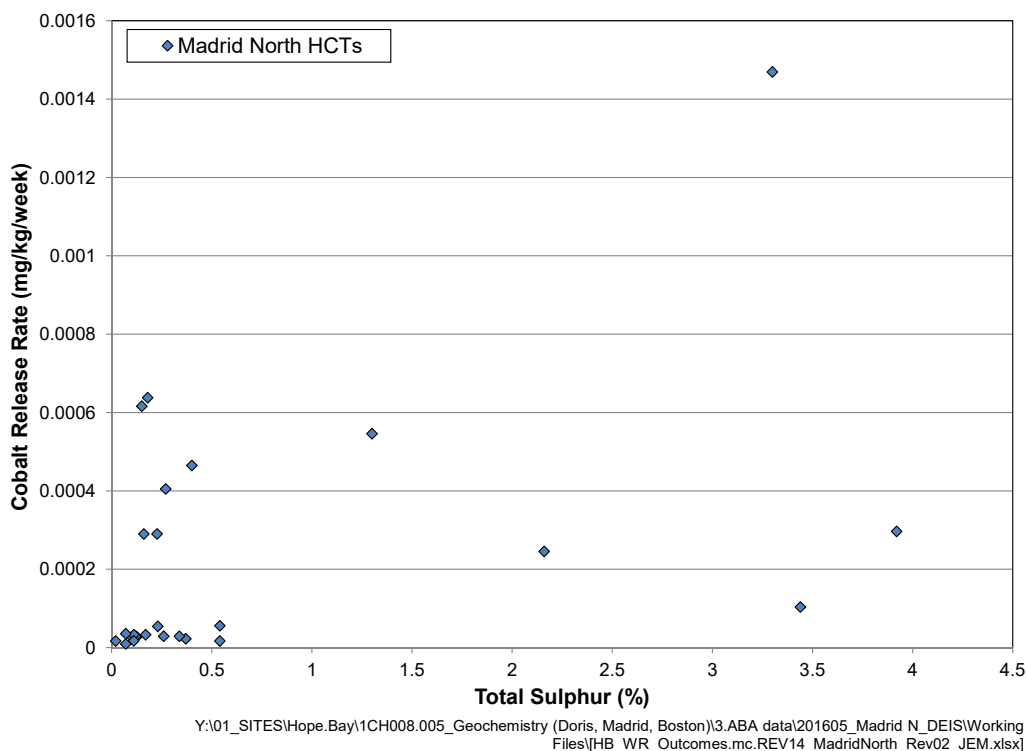


Figure 3.21: Comparison of Stable Cobalt Release Rates and Sulphur Content.

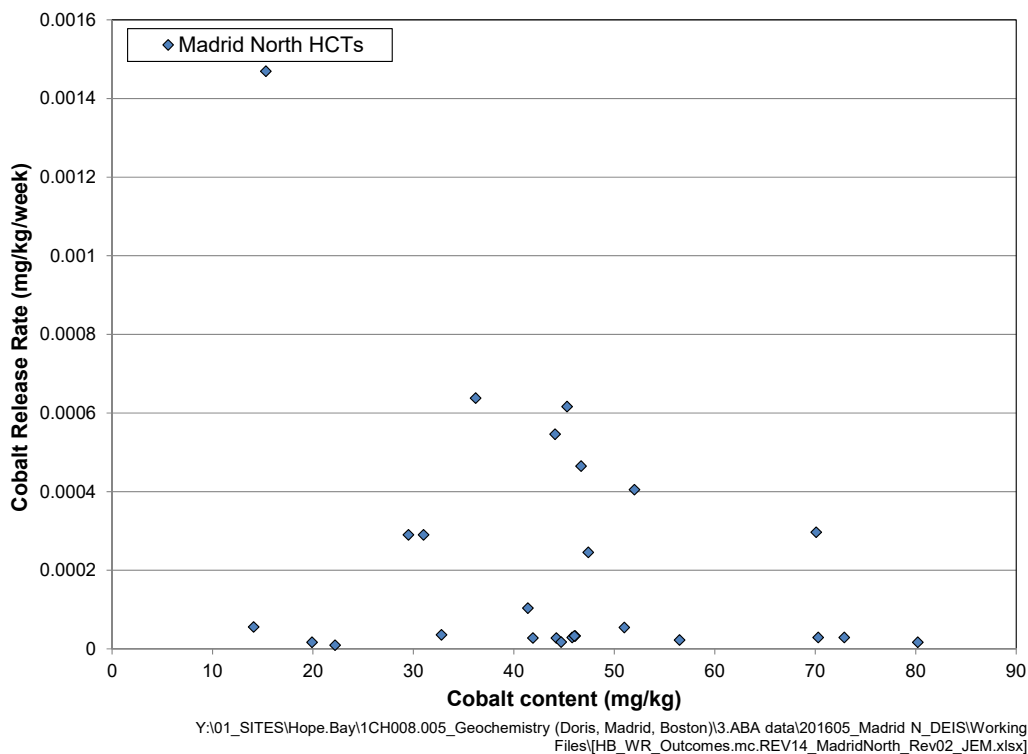


Figure 3.22: Comparison of Stable Cobalt Release Rates and Cobalt Content.

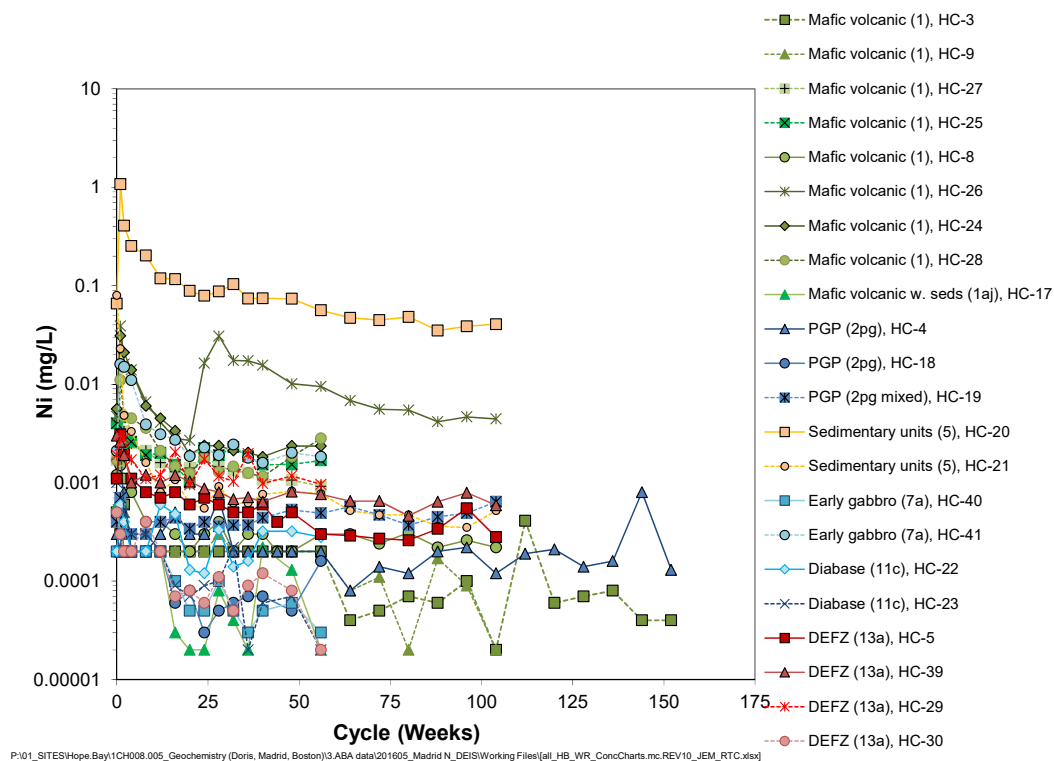


Figure 3.23: Humidity Cell Test Nickel Concentration Trends for Madrid North HCTs.

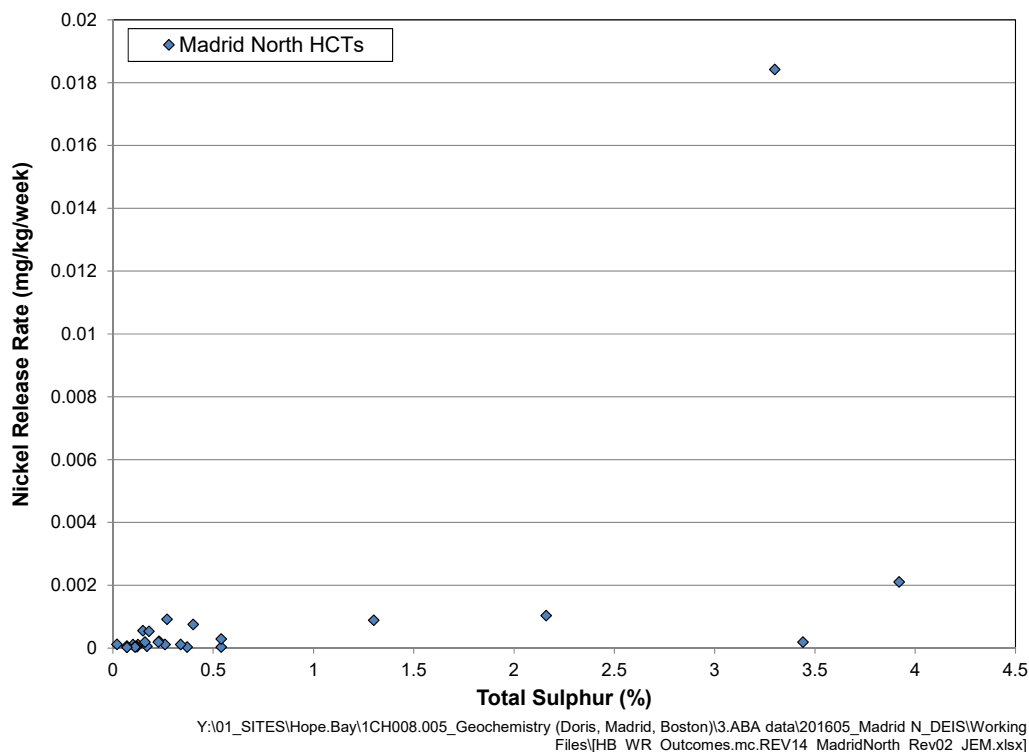


Figure 3.24: Comparison of Stable Nickel Release Rates and Total Sulphur.

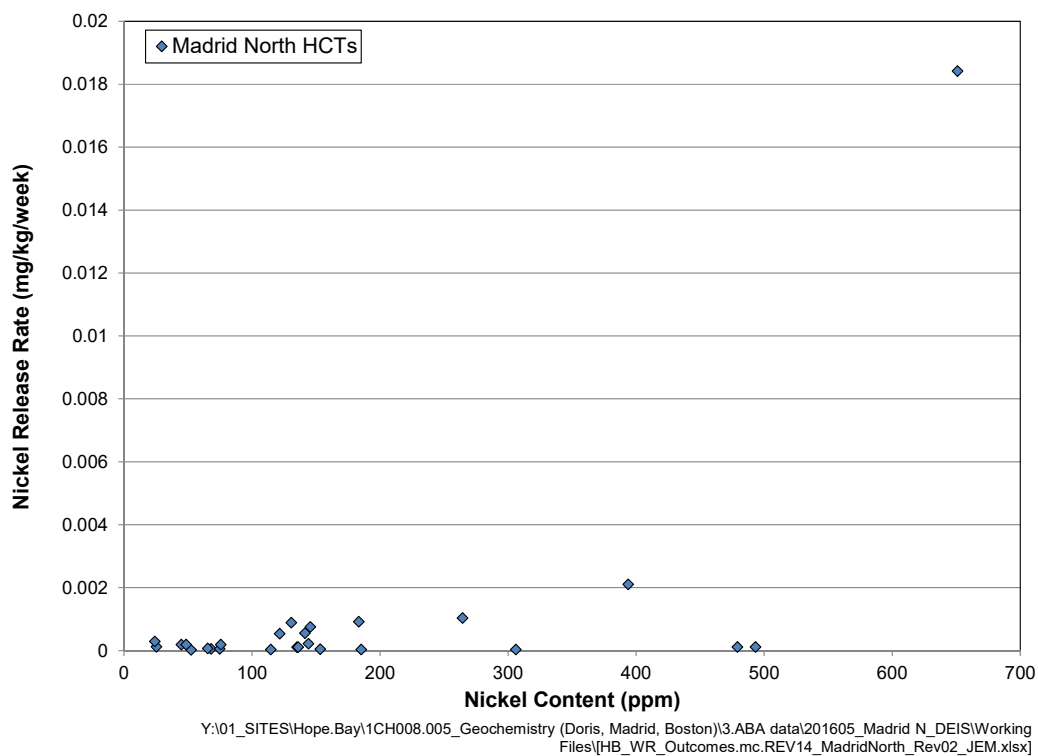


Figure 3.25: Comparison of Stable Nickel Release Rates and Nickel Content.

Depletion Calculations

Depletion calculations are presented in Appendix N-4.

Depletion calculations based on stable release rates suggest that all of the humidity cell tests are projected to remain neutral with the exception of HC-20 and HC-21 (sedimentary units, 5) both of which contain approximately 3% sulphide or P90 levels. HC-20 and HC-21 were classified as uncertain by ABA and could theoretically develop acidic conditions.

3.2.3 Post-Test Sample Characterization

After completion of the humidity cell tests, the remaining residues were geochemically analyzed for ABA and trace element content. Appendix M presents the ABA and trace element data for the humidity cell test residues. The static data for the material loaded into the tests prior to operation (Section 3.2.1) are also presented for comparison.

Acid-Base Accounting

For the majority of samples, post-test total sulphur, NP and TIC levels were lower or equivalent. In cases where post-test concentrations were higher (e.g. HC-27), these were within analytical error and pre- and post-test levels were considered equivalent. NP and TIC values for HC-20 were significantly lower for the pre-test sample. As discussed in Table 3.8 and Section 3.2.1, the humidity cell sample collected for humidity cell testing had different geochemical properties than the pulp sample.

The ARD classification of the post-test residues was generally consistent with the initial classifications, with the exception of HC-20 and HC-26. These samples were initially classified as uncertain but were classified as non-PAG in the residues.

Solid-Phase Elemental Composition

Trace element content for the post-test residues was relatively consistent with the pre-test material. For those humidity cell test samples initially identified as having arsenic levels greater than ten times the average crustal abundance for basalt (Price 1997), the humidity cell residues remained elevated in arsenic, with the exception of HC-23 (diabase, 11c). For HC-23, the reported decrease in arsenic is tenfold (from 27 to 2 ppm), and is likely related to sample heterogeneity. The calculated amount of arsenic leached over the course of operation of HC-23 is less than 1 ppm.

3.3 Barrel Tests

Eight barrel tests are relevant to the Madrid North deposit, plus a blank barrel test. As discussed in Section 2.3.1, the tests were set-up in 2008 and 2009. The drill core intervals are listed in Appendix G.

3.3.1 Pre-Test Sample Characterization

The purpose of this section is to assess the humidity cell test samples in the context of the overall Madrid North static test sample set (Section 2.1).

The basic geochemical characteristics of the barrel samples, including mineralogy, ABA and trace element composition are described in the following text. Mineralogy and ABA data are presented in Table 3.14 and Table 3.15, respectively. Appendix P presents the bulk mineralogy and trace element composition data.

For barrels W2, W3, W4, W6 and W14, there are ABA data for two different sample types. Samples denoted as “barrel” were chip samples obtained along the barrel interval during the test set-up (Section 2.3). The samples described as pulp are part of the initial ABA characterization program and represent continuous sampling of the barrel interval using exploration pulps (Section 2.1.1). For the remaining barrels (W7, W8, W11) the barrel intervals were characterized during test set-up but not using the exploration pulps.

Mineralogy

A summary of the carbonate and sulphide minerals by XRD for the barrel samples is presented in Table 3.14. The bulk mineralogical results for the humidity cell tests were comparable to the results of the overall Madrid North sample set (Table 3.2 and Table 3.3).

Table 3.14: Carbonate and Sulphide Mineralogy by XRD, Barrel Test Samples

Barrel ID	Rock Type ^{1,2}	Sample Type	Carbonates				Sulphides			
			Ferroan Dolomite	Calcite	Siderite	Siderite/	Pyrite	Sulphide S		
			Ca(Fe,Mg)(CO ₃) ₂	CaCO ₃	FeCO ₃	Magnesite	FeS ₂	XRD	ABA	MLA
			mineral %				mineral %	%S		
W6	1 (o/w)	barrel	23	7	bd	bd	bd	bd	0.26	0.7
		pulp	26	6	bd	bd	<1	0.5	0.35	--
W4	1 (w)	barrel	2	13	bd	bd	bd	bd	0.17	--
		pulp	2	13	bd	bd	bd	bd	0.12	--
W7	1 (w)	barrel	bd	14	bd	bd	bd	bd	0.07	0.11
W11	1aj	barrel	6	20	bd	bd	bd	bd	0.66	-
W3	2pg	barrel	bd	9	bd	bd	bd	bd	0.10	-
		pulp	bd	8	bd	bd	bd	bd	0.10	-
W14	5 mixed ³	barrel	32	5	4	bd	bd	bd	0.85	--
		pulp	36	2	bd	5	1	0.52	0.56	--
W8	7a mixed	barrel	3	11	bd	bd	bd	bd	0.08	--
W2	13a	barrel	28	bd	1	bd	bd	bd	0.16	0.93
		pulp	29	bd	bd	1	<1	0.5	0.24	--

Notes:

¹Rock codes as follows: **1** = mafic volcanics; **2pg** = pale green pillow; **5** = sedimentary rocks; **7a** = early gabbro; **11c** = diabase; **13a** = deformation zone.

²Economic classification in parentheses: w = waste and o/w = mixture of ore and waste.

³Barrel W14 rock type is 5 mixed with 1.

--denotes sample not available for characterization

bd denotes below detection.

Acid-Base Accounting

ABA data and the percentile rank for the barrel tests are presented in Table 3.15 and Table 3.16, respectively. The ABA data for the barrel samples was consistent with the overall Madrid North sample set. Relative percent difference in sulphur content between sample types (barrel and pulp samples) ranged between 29 and 41% for W2, W3, W4, W6 and W14. This could be artefact of the different sampling techniques and/or confirmation that the distribution of sulphides is not continuous throughout the waste rock. NP and TIC values were reproducible, suggesting a more uniform distribution of buffering minerals. In general, the sulphur content of the pulp samples is considered to be more representative of the average conditions of these samples. All samples are classified as non-PAG on the basis of NP/AP, TIC/AP and TIC_(Ca+Mg)/AP.

Table 3.15: ABA Data, Barrel Test Samples

Barrel ID	Lithology ¹	Sample Type	ABA								
			Paste pH	Total S %S	Sulphate %S	NP ²	TIC	TIC _(Ca+Mg)	NP/AP	TIC/AP	TIC _(Ca+Mg) /AP ³
W6	1 (o/w)	barrel pulp	9.1	0.26	<0.01	250	330	280	31	41	34
			8.4	0.35	0.01	270	300	250	25	28	23
W4	1 (w)	barrel pulp	8.5	0.17	<0.01	150	160	140	27	31	26
			8.7	0.12	0.01	150	150	120	38	39	32
W7	1 (w)	chip	8.9	0.07	<0.01	130	150	120	60	67	55
W11	1aj	Barrel	9.0	0.66	<0.01	230	240	200	11	12	10
W3	2pg	barrel pulp	9.0	0.10	<0.01	82	85	70	26	27	23
			9.1	0.14	<0.01	82	84	70	19	20	16
W14	5 mixed ⁴	barrel pulp	8.8	0.85	<0.01	300	380	310	11	14	12
			--	0.56	0.01	310	400	330	18	23	19
W8	7a mixed	barrel	9.1	0.08	<0.01	140	150	120	57	58	48
W2	13a	barrel pulp	9.4	0.16	<0.01	210	240	200	43	48	40
			9.4	0.24	0.01	200	270	220	27	36	30

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Notes:

1Rock codes as follows: 1 = mafic volcanics; 2pg = pale green pillow; 5 = sedimentary rocks; 7a = early gabbro; 11c = diabase; 13a = deformation zone

2Fizz test was Strong for all samples.

3All samples classified as non-PAG.

4Barrel W14 rock type is 5 mixed with 1.

Table 3.16: Percentile Rank of Total Sulphur, NP and TIC, Barrel Test Samples

Barrel ID	Lithology ¹	Sample Type	No. of Samples ²	Total Sulphur		NP		TIC	
				%S	% Rank	kgCaCO ₃ /t	% Rank	kgCaCO ₃ /t	% Rank
W6	1 (o/w)	barrel	11	0.26	11%	250	25%	330	1%
		pulp		0.35	17%	270	29%	300	<0%
W4	1 (w)	barrel	206	0.17	52%	150	18%	160	21%
		pulp		0.12	41%	150	18%	150	17%
W7	1 (w)	chip	206	0.07	10%	130	15%	150	17%
W11	1aj	barrel	5	0.66	83%	230	35%	240	43%
W3	2	barrel	29	0.1	18%	82	34%	85	36%
		pulp		0.14	62%	82	34%	84	32%
W14	5 mixed ³	barrel	11	0.85	50%	300	100%	380	>100%
		pulp		0.56	44%	310	>100%	400	>100%
W8	7a mixed	barrel	2	0.08	0%	140	53%	150	77%
W2	13a	barrel	49	0.16	35%	210	48%	240	26%
		pulp		0.24	72%	200	35%	270	38%

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Notes:

¹Rock codes as follows: 1 = mafic volcanics; 2pg = pale green pillow; 5 = sedimentary rocks; 7a = early gabbro; 11c = diabase; 13a = deformation zone.

²Sample W6 was compared to mafic volcanics ore and waste (1 o/w), samples W4 and W7 were compared to mafic volcanics waste (1 waste), and W14 was compared to 5 mixed. All other samples were compared to samples of their respective lithology without considering economic classifications.

³Barrel W14 rock type is 5 mixed with 1.

Trace Elements

Trace element data for the barrel test samples are presented in Appendix P. Trace element content of the barrel tests was comparable to the overall Madrid North sample set (Section 3.1.4).

Trace element content of the barrel tests was compared to ten times the average crustal abundance for basalt (Price 1997) to indicate relative enrichment. Parameters with elevated levels are described as follows:

- Arsenic was elevated in the following four barrel tests: W6 (mafic metalvolcanics, ore/waste, 1), W11 (mafic volcanics with sediments, 1aj), W14 (mixed sedimentary unit, 5 mixed with 1) and W2 (deformation zone, 13a). In terms of their respective rock type and economic classification, arsenic levels for all samples ranged from P5 to P93 (Table 3.17), except W8. For W8 (mixed early gabbro, 7a mixed), the percentile rank was less than 0%, indicating that arsenic levels were lower than those in the database for that particular lithology. For mafic metavolcanics, ore and waste (1 o/w), mafic metavolcanics with sediments (1aj), mixed sedimentary units (5 mixed with 1) and early gabbro (7a), sample sets were relatively small for statistical comparisons ($n \leq 12$).

- Gold was enriched relative to crustal abundances in W6 (mafic metalvolcanics, ore/waste), W11 (mafic volcanics with sediments, 1aj) and W14 (mixed sedimentary unit). Sulphur was enriched in W11 (mafic volcanics with sediments) and W14 (mixed sedimentary unit).
- All other parameters were below ten times the average crustal abundance indicating no appreciable enrichment.

Table 3.17: Percentile Rank of Arsenic Levels, Barrel Test Samples

Barrel ID	Lithology ¹	Sample Type	No. of Samples ²	As	
				ppm	% Rank
W6	1 (o/w)	barrel	11	120	13%
		pulp		93	5%
W4	1 (w)	barrel	206	6.7	29%
		pulp		4.1	22%
W7	1 (w)	chip	206	2.6	19%
W11	1aj	barrel	5	160	79%
W3	2pg	barrel	29	3.1	32%
		pulp		3.2	32%
W14	5a mixed ³	barrel	11	410	89%
		pulp		540	93%
W8	7a mixed	barrel	2	8.5	<0%
W2	13a	barrel	49	73	61%
		pulp		93	77%

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Notes:

¹Rock codes as follows: 1 = mafic volcanics; 2pg = pale green pillow; 5 = sedimentary rocks; 7a = early gabbro; 11c = diabase; 13a = deformation zone

²Sample W6 was compared to mafic volcanics ore and waste (1 o/w), samples W4 and W7 were compared to mafic volcanics waste (1 waste), and W14 was compared to 5 mixed. All other samples were compared to samples of their respective lithology without considering economic classifications.

³Barrel W14 rock type is 5 mixed with 1.

3.3.2 Barrel Test Data

This section discusses the barrel test monitoring data.

Between 2009 and 2012, the barrel tests were inspected for leachate on nine to thirteen occasions, however leachate was not available each time (Table 2.8).

The raw data and figures showing trends for the Madrid North barrel tests and the Windy barrel blank are provided in Appendix Q. Appendix Q includes data that passed QA/QC, as well as data removed from the interpretation. Charts do not include data that failed QA/QC.

The pHs for all of tests were neutral to alkaline, with field and lab values ranging from 7.5 to 8.9 (Figure 3.26).

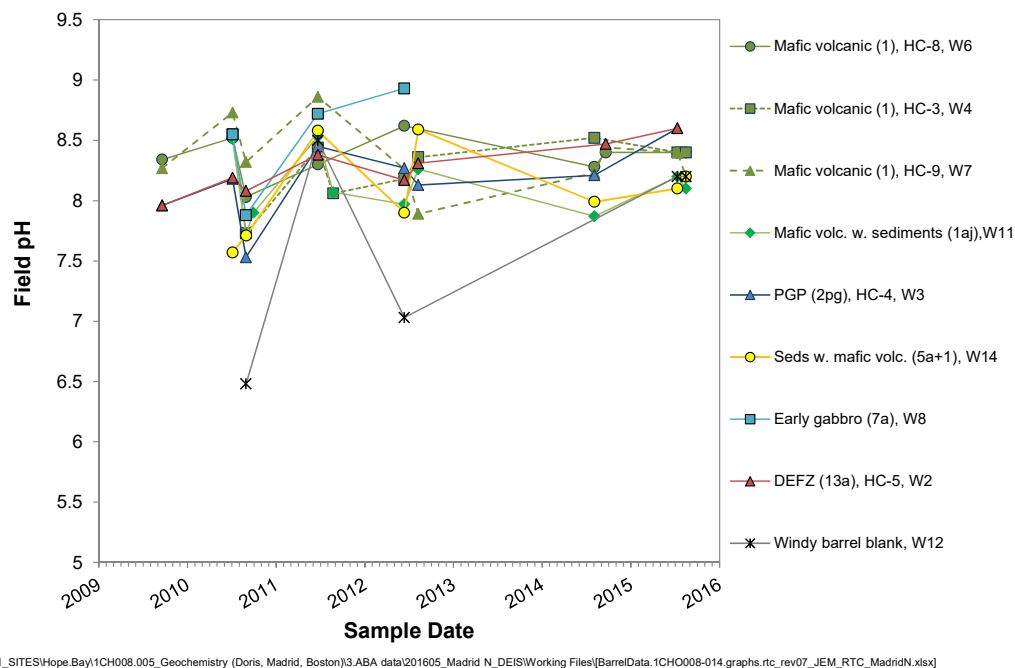


Figure 3.26: Leachate pH for Madrid North Barrel Tests.

The general trend for sulphate was initially high concentrations that progressively decreased for all barrels except W6 (mafic metavolcanic ore and waste, 1 o/w) and W2 (deformation zone, 13a), which remained relatively stable over the long term. Sulphate concentrations for W14 (mixed sedimentary unit, 5 mixed with 1) and W2 (deformation zone) were higher compared to the other barrel tests, with average concentrations of 160 and 131 mg/L, respectively. After 2011, sulphate concentrations were below 50 mg/L for all barrels except W2 (deformation zone) and W6 (mafic metavolcanic ore and waste).

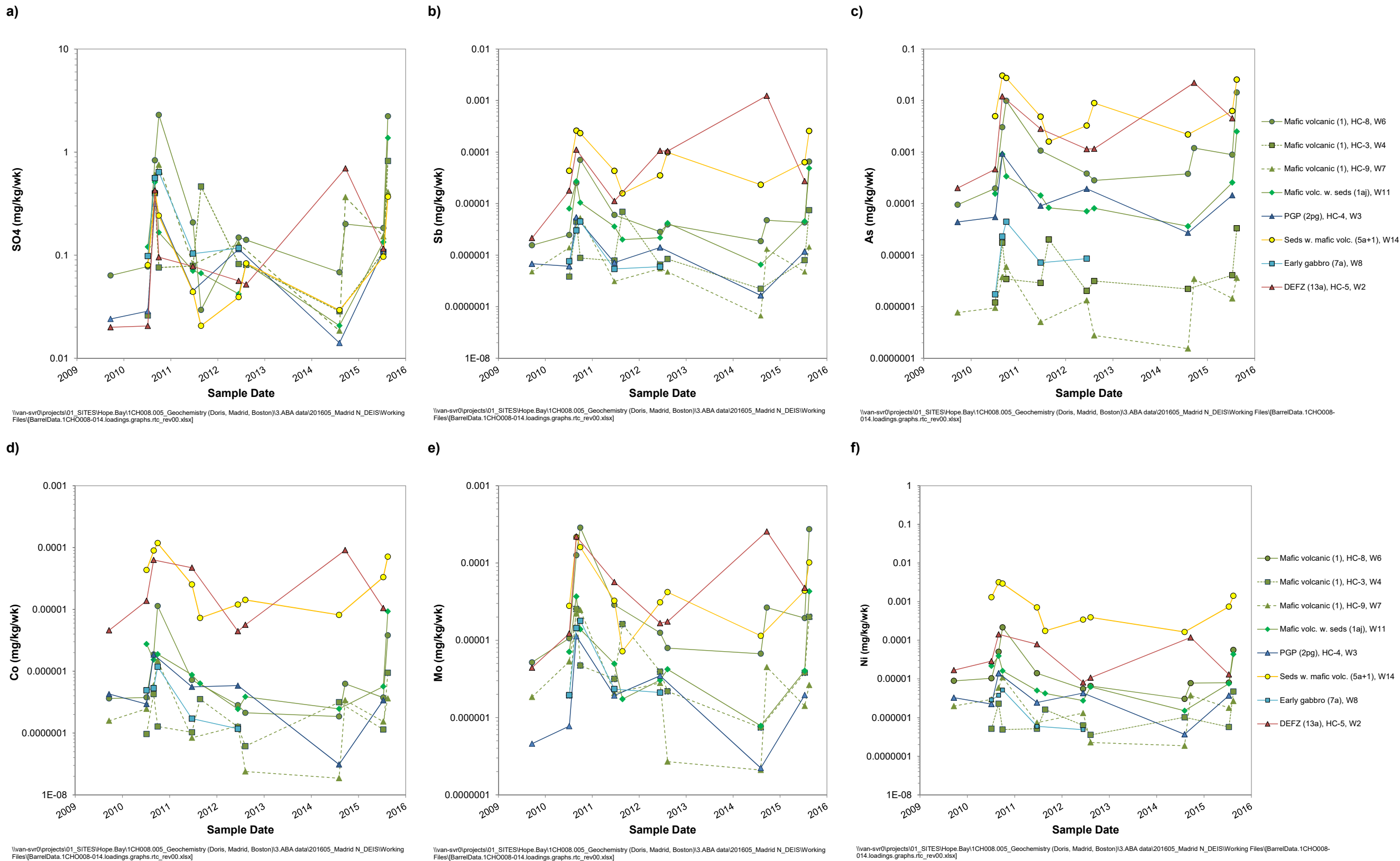


Figure 3.27: Sulphate, Arsenic, Cobalt, Molybdenum and Nickel Release Rates in Madrid South Barrel Test Leachates.

Antimony, arsenic, cobalt, molybdenum and nickel release rates were identified as having noteworthy trends (Figure 3.27). Average rates are presented in Table 3.18 and trends are discussed as follows:

- Antimony release rates for W14 (mixed sedimentary unit, 5 +1), and to a lesser degree W2 (deformation zone, 13a) and W4 (mafic metavolcanic waste, 1w) were higher as compared to the other samples. Average antimony release rates for W14 (mixed sedimentary unit, 5 + 1), were at least an order of magnitude higher than those of the other samples. The release rate was lowest for W7 (mafic metavolcanics waste, 1w).
- Arsenic release rates for W14 (mixed sedimentary unit, 5a +1), and to a lesser degree W2 (deformation zone, 13a) and W6 (mafic metavolcanics ore and waste, 1 o/w) were higher as compared to the other samples. Average arsenic release rates for these aforementioned barrels were within an order of magnitude or at least an order of magnitude higher than those of the other samples. The release rate was lowest for W7 (mafic metavolcanics waste, 1w).
- Cobalt release rates for W14 (mixed sedimentary unit, 5 +1) and W2 (deformation zone, 13a) were at least an order of magnitude higher than those of the other samples. The release rate was lowest for W4 (mafic metavolcanics waste, 1w)
- Molybdenum release rates for W2 (deformation zone, 13a) , W6 (mafic metavolcanics ore and waste, 1o/w) and W14 (mixed sedimentary unit, 5 + 1) were within an order of magnitude or at least an order of magnitude higher than those of the other samples. The release rate was lowest for W3 (pale green pillow, 2pg).
- Nickel release rates for W14 (mixed sedimentary unit, 5a +1) were at least two orders of magnitude higher as compared to the other samples.

The barrel data suggest there is a relationship between higher average arsenic release rates and higher arsenic content (Figure 3.28), however the data set is limited in terms of number of samples and continuity of data to assess the trend.

3.3.3 Comparison of Release Rates from Humidity Cell and Barrel Tests

Table 3.18 compares the average release rates from the humidity cell tests and barrel tests for sulphate and elements of concern identified in Sections 3.2.2 and 3.3.2. Selected humidity cell tests contain the same materials loaded into the barrels (Table 2.8). The comparison according to rock type is summarized as follows:

- Antimony, arsenic, cobalt and molybdenum rates for selected barrels were higher than specific humidity cell tests. Specific tests are identified in the subsequent discussion.
- Sulphate:
 - The following barrel tests had rates of the same order of magnitude as compared to two humidity cell tests of the same rock type: W6 (mafic metavolcanics classified as a mixture of ore/waste, 1 o/w) and W2 (deformation zone, 13a). Rates for W2 and W6 were one to two orders of magnitude lower than the remaining humidity cell tests.

- For all other barrels, rates were one to two orders of magnitude lower than humidity cell tests.
- Arsenic:
 - The following barrel tests had rates up to two orders of magnitude higher than selected humidity cell tests: W6 (mafic metavolcanics, 1 o/w), W11 (mafic volcanics with sediments, 1aj), W14 (sedimentary units, 5) and W2 (deformation zone, 13a). With the exception of W2 (deformation zone, 13a) these aforementioned barrels contained materials economically classified as a mixture of ore and waste. Humidity cell test with lower rates included HC-9 (mafic metavolcanics, waste, 1), HC-21 (sedimentary units, 5), and HC-30 (deformation zone, 13a), all of which were classified as waste. Arsenic contents in these humidity cells were at least five times lower than those of the barrel from the same rock types. Gersdorffite was not detected in these humidity cell samples, while only barrel W6 had MLA data and contained 0.01% gersdorffite. Compared to other humidity cell tests, rates for these aforementioned barrels were up to two orders of magnitude lower.
 - Rates for barrel W3 (pale green pillow, 2pg) were typically within an order of magnitude of the humidity cell tests.
 - For all other barrel tests, barrel rates were two to five orders of magnitude lower than humidity cell tests. This is the highest range of variation.
- Antimony:
 - The barrel test rate for W14 (mixed sedimentary units, 5 mixed, classified as a mixture of ore and waste) was almost twice as high as HC-21. Compared to HC-20, the barrel rate was approximately one order of magnitude lower.
 - Rates for the following barrel tests were within an order of magnitude of selected humidity cell tests: W6 (mafic metavolcanics, 1 o/w), W11 (mafic volcanics with sediments, 1aj), and W2 (deformation zone, 13a). Compared to other humidity cell tests, rates for these aforementioned barrels were up to two orders of magnitude lower.
 - For all other barrel tests, barrel rates were one to three orders of magnitude lower than humidity cell tests.
- Cobalt:
 - The barrel test rate for W2 (deformation zone, 13a) was almost twice as high as HC-30. For W2 rates were within an order of magnitude compared to the other humidity cell tests and up to two order of magnitude lower.
 - Rates barrel test W14 (mixed sedimentary units, 5 mixed, classified as a mixture of ore and waste) within an order of magnitude compared t HC-21 (sedimentary units, 5).
 - For all other barrel tests, barrel rates were one to three order of magnitude lower.
- Molybdenum:

- The barrel test rate for W6 (mafic metavolcanics, 1 o/w) was almost twice as high as HC-3, HC-9 and HC-27. For W6, rates were within an order of magnitude compared to the other humidity cell tests, including HC-8.
- For all other barrels, rates were within an order of magnitude or up to two orders of magnitude lower than the humidity cell tests.

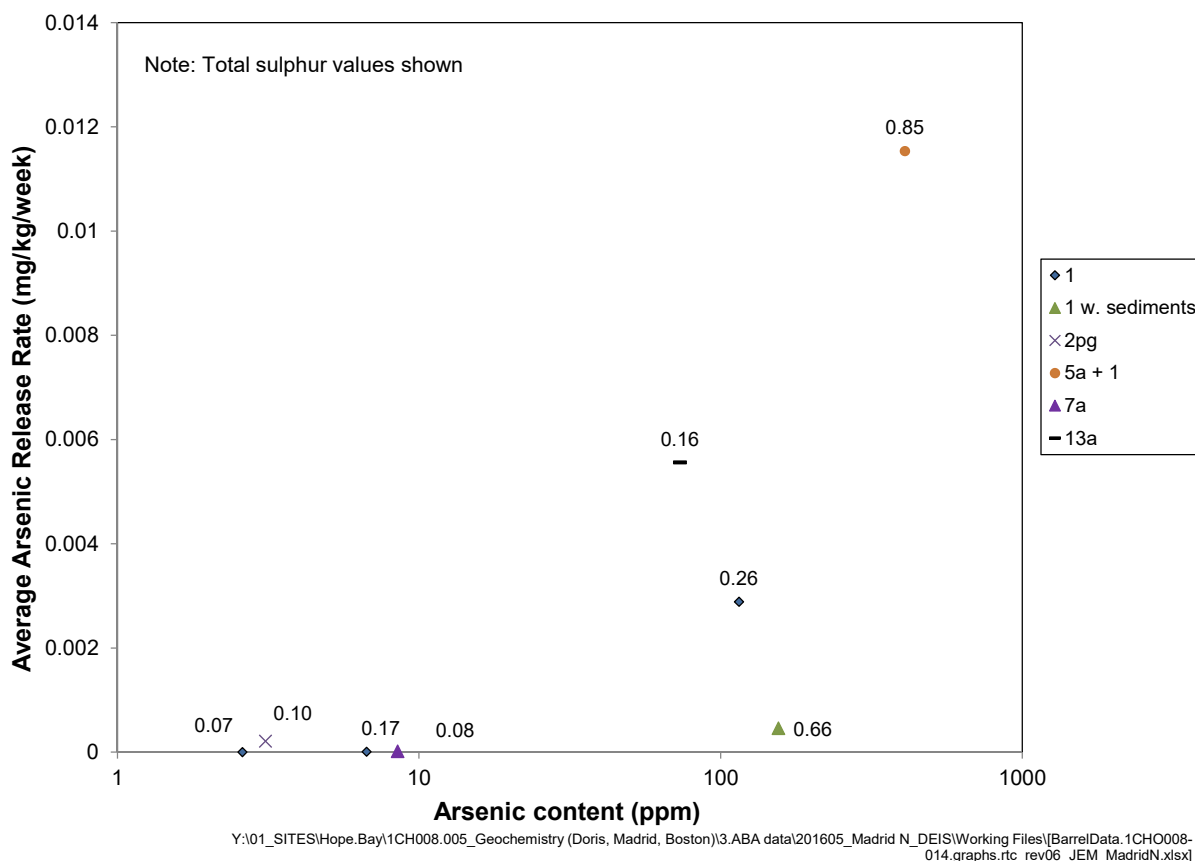


Figure 3.28: Average Arsenic Release Rates Compared to Arsenic Content for Barrel Tests.

Table 3.18: Comparison of Release Rates from Humidity Cell Tests and Barrel Tests

Rock Type ¹	Description	Humidity Cell/ Barrel ID ³	Preliminary Economic Classification	Release Rate ²					
				Sulphate	Antimony	Arsenic	Cobalt	Molybdenum	Nickel
				mg/kg/week					
1	Ultramafic to Mafic Metavolcanic Rocks	HC-3	Waste	0.75	0.000031	0.0008	0.000033	0.000052	0.000055
		HC-9	Waste	0.66	0.00004	0.00023	0.000036	0.000039	0.000065
		HC-27	Waste	1.3	0.0013	0.16	0.00062	0.000048	0.00055
		HC-25	Waste	2.1	0.00071	0.065	0.00047	0.000099	0.00076
		HC-8	Mixed	2.2	0.000097	0.013	0.000029	0.00039	0.00012
		HC-28	Ore	10	0.00039	0.077	0.00055	0.00018	0.00089
		HC-26	Ore	25	0.000061	0.0067	0.0003	0.0003	0.0021
		HC-24	Ore	3.1	0.0011	0.16	0.00025	0.00063	0.001
		W4	Waste	0.032	0.0000023	0.000009	2.7E-07	0.0000082	0.0000013
		W7	Waste	0.027	0.0000014	0.000002	3.3E-07	0.0000062	0.000003
1aj	Mafic Metavolcanic Rocks with Sediments	W6	Mixed	0.1	0.000017	0.0029	0.0000018	0.000073	0.000035
		HC-17	Waste	1.7	0.000046	0.00032	0.000022	0.0014	0.00003
2pg	Pale Green Pillow	W11	Mixed	0.24	0.000011	0.00046	0.0000018	0.000012	0.000015
		HC-4	Mixed	1.1	0.000027	0.00021	0.000028	0.000043	0.00011
2pg mixed	Mixed Pale Green Pillow	HC-18	Waste	0.8	0.000065	0.0073	0.000029	0.000049	0.000045
		W3	Mixed	0.018	0.0000015	0.00021	5.8E-07	0.0000029	0.0000043
5	Sedimentary Units (Argillite)	HC-19	Waste	4.8	0.000015	0.00032	0.000055	0.00007	0.00022
5 mixed	Mixed Sedimentary Units	HC-20	Waste	2.9	0.0018	0.33	0.0015	0.00012	0.018
		HC-21	Waste	41	0.000064	0.00018	0.0001	0.00069	0.00019
7a	Early Gabbro	W14	Mixed	0.26	0.00011	0.012	0.000042	0.000067	0.0011
7a mixed	Mixed Early Gabbro	HC-40	Waste	1.1	0.00009	0.0022	0.000017	0.00013	0.00003
		HC-41	Waste	1.6	0.00099	0.27	0.00041	0.000076	0.00092
11c	Diabase	W8	Waste	0.033	0.0000019	0.000017	0.0000005	0.0000077	0.0000026
13a	Deformation Zone	HC-22	Waste	2.2	0.000033	0.00062	0.000017	0.000073	0.00012
		HC-23	Waste	1.5	0.000017	0.0013	0.0000093	0.000045	0.000019
		HC-5	Waste	0.87	0.00027	0.037	0.00029	0.00058	0.00019
		HC-29	Waste	1	0.00077	0.065	0.00064	0.00016	0.00053
		HC-39	Waste	1.7	0.00016	0.0029	0.000056	0.00047	0.00029
13a	Deformation Zone	HC-30	Waste	4.1	0.000077	0.00016	0.000017	0.00022	0.00003
		W2	Waste	0.13	0.000015	0.0056	0.00003	0.000079	0.000052

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Notes:

¹No barrels were set up for lithology 2pg mixed (mixed pale green pillow), 5 (sedimentary units), 7a (early gabbro) or diabase (11c). No HCTs were set up for 5 mixed (mixed sedimentary units) or 7a mixed (mixed early gabbro).

²Rate is average for barrel tests and stable rate for humidity cell test (HCT).

³Humidity cell tests sample ID prefixed by HC- and barrel tests prefixed by W-

4 Conclusions

The risk of acid rock drainage is low from Madrid North waste rock. The ABA data indicate that the waste rock is primarily classified as non-PAG due to nearly ubiquitously high carbonate content. Less than 1% samples (or 3 of 420) were classified as PAG and approximately 4% of samples were classified as uncertain.

Carbonate minerals were generally ubiquitous and abundant. Ferroan dolomite was the dominant carbonate mineral though calcite was the dominant carbonate mineral in selected rock types. Magnesite, magnesite-siderite and siderite occurred less frequently and were present in significantly lower levels as compared with ferroan dolomite and calcite. Sulphide mineralogy was predominantly pyrite with trace amounts of gersdorffite, chalcopyrite, pyrrhotite, galena, cobaltite, sphalerite and tetrahedrite.

Samples of ore contained the highest median total sulphur levels, which included rock types mafic metavolcanics (1 ore and 1 ore/waste), mixed mafic metavolcanics (1 mixed) and mixed sedimentary units (5 mixed). These gold-bearing samples had median values of NP and TIC of 120 and 140 CaCO_3/t , respectively. In comparison, waste rock sample set was typically characterized by low sulphur levels, with 90% of samples having total sulphur contents less than 0.43% (or 13 $\text{kg CaCO}_3/\text{t}$). With the exception of mafic intrusives (10b) and diabase (11c and 11c mixed), samples classified as waste had relatively high NP and TIC values, with median NP and TIC levels greater than 105 and 100 $\text{kg CaCO}_3/\text{t}$, respectively. For mafic metavolcanics classified as waste (1 waste) median levels of NP and TIC were 240 and 270 $\text{kg CaCO}_3/\text{t}$, respectively.

The overestimation of neutralization potential due to the presence of NP-neutral iron carbonates was assessed by calculating an effective TIC ($\text{TIC}_{(\text{Ca}+\text{Mg})}$) based on the lowest calcium-plus-magnesium content in the Madrid North humidity cell test samples.

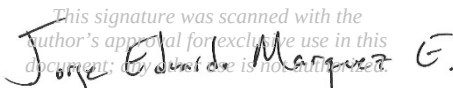
Regardless of buffering method used (NP, TIC or $\text{TIC}_{(\text{Ca}+\text{Mg})}$) the majority of samples (96% to 98%) were classified as non-PAG. Samples classified as uncertain were from rock types mafic metavolcanics classified as ore (1 ore), mixed mafic metavolcanics (1 mixed), mixed mafic volcanics with sediments (mixed 1aj), mixed sedimentary units (5 mixed) and mixed early gabbro (7a mixed). The 3 samples classified as PAG included one sample each of mafic metavolcanics classified as waste (1 waste), sedimentary units (5), and early gabbro (7a). All of these samples contained anomalously low levels of buffering and in the case of the mafic metavolcanics and sedimentary units anomalously high sulphur content

In terms of metal leaching, kinetic tests (humidity cells and barrel tests) indicate that arsenic, antimony, cobalt, molybdenum and nickel leaching from waste rock are potential issues at neutral to alkaline pH values. Higher leaching rates for these elements are however expected from mafic metavolcanic waste and ore (1 waste and 1 ore), sedimentary units (5 and 5 mixed), early gabbro (7a) and the deformation zone (13a). The humidity cell data show that occurrence of arsenic, cobalt and nickel leaching is not related to a specific rock type, sulphur content or metal assays, but possibly to the occurrence of the trace occurrence of the sulphide mineral gersdorffite (NiAsS), which requires detailed petrographic examination to identify. Gersdorffite forms a solids

solution with cobaltite (CoAsS), therefore gersdorffite likely contains some cobalt and arsenic. There is no practical field technique for segregation of waste rock that contains gersdorffite.

During mine development approximately 25% of Madrid North waste rock will be placed on surface in a temporary stockpile while the remainder will never be removed from the underground. At closure, all Madrid North waste rock will have been placed as backfill in the Madrid North underground. Of the rock types with samples classified as PAG, volumetrically, sedimentary units and early gabbro rock types are projected to be relatively minor or approximately 3.7% based on the distribution of these samples in the ABA sample set, which is assumed to be reasonably representative of the rock intersected by the mine workings. For the mafic metavolcanics classified as waste, 0.5% or 1 sample of 220 was classified as PAG. In the event localized ARD is produced, it is anticipated that the high carbonate content in the overall waste rock stockpile would provide sufficient buffering capacity, and that the overall drainage from the stockpile would remain neutral to alkaline. Water quality from the waste rock stockpile will reflect concentrations from a mixture of rock types. Source terms for the Project are presented in SRK (2017).

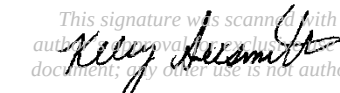
This report, "Geochemical Characterization of Waste Rock and Ore from Madrid North, Hope Bay", was prepared by SRK Consulting (Canada) Inc.

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and reviewed by

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.

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Appendix A
Knight-Piesold (2001)

Acid-Base Accounting and Trace Element Data, Madrid North

Appendix A: Knight-Piesold (2001) Acid-Base Accounting & Trace Element Data, Madrid North

SRK Serial Number	Sample ID	Lithology ¹	Preliminary Economic Classification	Paste pH	Total S	Sulphate	TIC (Direct)	Sobek NP	Fizz
					(Wt.%)	(Wt.%)	(Wt.%CO ₂)	kgCaCO ₃ /t	
643	2	1	W	8.7	1.1	<0.01	533	450	moderate
644	3	1	O	9.2	0.71	<0.01	486	420	moderate
645	6	13a	W	9.4	0.05	<0.01	200	154	moderate
646	7	13a	W	9.2	0.11	<0.01	163	148	moderate
647	8	1	O	9.1	1.4	<0.01	418	342	moderate
648	9	1	O	8.9	3.7	<0.01	363	332	moderate
649	10	7a	O	8.6	0.88	<0.01	534	392	moderate
650	11	1	W	9.1	0.12	<0.01	395	362	moderate
651	12	1	W	9	0.070	<0.01	451	396	moderate
652	13	1	O	9	2.5	<0.01	232	198	moderate
653	14	1	W	8.9	0.080	<0.01	213	228	moderate
654	15	1	O	8.9	2.8	<0.01	332	306	moderate
655	16	1	W	9	0.090	<0.01	228	243	moderate
656	17	1	W	9.1	0.23	<0.01	354	323	moderate
657	18	1	O	8.9	3.8	<0.01	378	345	moderate
658	19	13a	W	9.4	0.48	<0.01	238	206	moderate
659	20	7a	W	9.7	0.10	<0.01	1.4	13	none
660	21	13a	W	9.6	0.060	<0.01	427	377	moderate
661	22	13a	W	9.5	0.81	<0.01	187	167	moderate

¹Rock codes as follows: **1** = mafic volcanics; **1 w. sediments** = mafic volcanics with sediments; **2** = intermediate volcanics; **5** = sedimentary rocks; **7a** = early gabbro; **10b** = late intrusives; **11c** = diabase; **12q** = quartz vein; **13a** = deformation zone

Appendix A: Knight-Piesold (2001) Acid-Base Accounting & Trace Element Data, Madrid North

SRK Serial Number	Sample ID	Lithology ²	Preliminary Economic Classification	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	Ga
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	%	ppm	ppb	ppm	ppm	ppm
643	2	1	W	2.9	160	3	17	0.2	490	72	1700	5.3	790	<1	<0.002	<1	250	<0.2	2.2	<0.5	37	9.4	0.019	2	160	5.1	19	0.002	3	0.16	0.028	0.07	2	<1000	9.3	<1	1
644	3	1	O	3.7	69	3	19	0.1	620	71	1500	6.8	900	<1	<0.002	<1	150	<0.2	1.9	<0.5	38	5.1	0.008	1	150	5.8	11	0.001	9	0.12	0.02	0.02	1	<1000	12	<1	1
645	6	13a	W	6.3	23	3	15	0.1	33	17	710	2.8	62	1	<0.002	3	80	<0.2	<0.5	<0.5	3	4.1	0.092	12	80	1.4	35	<0.001	8	0.3	0.047	0.14	<1	<1000	2.1	<1	1
646	7	13a	W	5.1	37	2	13	<0.1	14	9	550	2.3	36	1	<0.002	3	61	<0.2	<0.5	<0.5	2	3.3	0.11	18	63	0.95	28	0.001	13	0.2	0.042	0.12	<1	<1000	1.5	<1	1
647	8	1	O	2.2	210	2	19	1	390	71	2000	6.5	580	<1	0.006	<1	99	<0.2	1.6	<0.5	28	6.8	0.068	3	76	3.5	13	0.001	4	0.4	0.019	0.07	<1	<1000	12	<1	1
648	9	1	O	4.1	49	10	10	0.4	430	51	1200	5.1	870	<1	0.002	<1	240	<0.2	1.9	<0.5	28	7	0.001	<1	100	3.9	4	0.001	1	0.21	0.018	0.02	1	<1000	10	<1	1
649	10	7a	O	2.5	110	3	15	0.5	710	81	1900	5.6	1000	<1	0.004	<1	230	<0.2	2.1	<0.5	39	10	0.029	3	230	6	15	<0.001	4	0.63	0.022	0.08	1	<1000	11	<1	2
650	11	1	W	1.2	76	<2	71	<0.1	110	46	1800	5.8	53	<1	<0.002	<1	30	0.3	0.5	<0.5	23	7.6	0.037	2	43	2.4	7	0.002	9	0.59	0.1	0.1	<1	<1000	8.5	<1	2
651	12	1	W	1.3	80	2	88	<0.1	82	46	1800	7.6	59	<1	<0.002	<1	81	<0.2	<0.5	<0.5	110	8.4	0.021	1	190	5	6	0.002	1	2.2	0.033	0.03	<1	<1000	14	<1	7
652	13	1	O	6.5	98	4	21	0.5	87	35	1000	4.8	300	<1	0.002	<1	55	<0.2	<0.5	<0.5	11	4.5	0.063	<1	100	2	24	<0.001	3	0.42	0.039	0.09	<1	<1000	7.9	<1	1
653	14	1	W	0.3	81	3	61	<0.1	80	41	1400	6	2	<1	<0.002	<1	49	<0.2	<0.5	<0.5	210	7.4	0.021	2	290	3.7	1	0.011	3	3.7	0.015	0.01	<1	<1000	19	<1	13
654	15	1	O	2.1	220	6	27	3.1	120	46	1200	5.9	590	<1	0.026	<1	130	<0.2	0.5	<0.5	13	6.3	0.019	<1	43	3.5	7	<0.001	8	0.38	0.04	0.09	1	<1000	14	<1	2
655	16	1	W	0.9	190	<2	60	<0.1	110	49	1500	5.9	5	<1	<0.002	<1	74	<0.2	<0.5	<0.5	210	8.4	0.023	2	310	3.9	5	0.16	1	3.2	0.015	<0.01	<1	<1000	19	<1	12
656	17	1	W	1.6	73	<2	42	<0.1	88	43	1400	4.9	130	<1	<0.002	<1	140	<0.2	<0.5	<0.5	44	7.4	0.011	1	170	4.9	20	0.001	5	1.3	0.007	0.11	2	<1000	8.3	<1	4
657	18	1	O	4.1	290	11	38	2.4	140	48	1700	7.6	750	<1	0.019	<1	160	<0.2	1.7	<0.5	34	6.1	0.039	1	62	3.3	16	0.001	2	0.13	0.036	0.07	1	<1000	12	<1	1
658	19	13a	W	3.9	69	3	15	0.1	57	26	890	3.4	100	<1	<0.002	2	100	<0.2	<0.5	<0.5	8	4.8	0.075	7	48	1.9	22	0.001	13	0.34	0.037	0.11	<1	<1000	4.2	<1	1
659	20	7a	W	1.9	110	4	52	<0.1	42	30	710	3.8	2	<1	<0.002	<1	11	<0.2	<0.5	<0.5	83	0.61	0.024	1	130	2.9	11	0.27	4	2.3	0.034	0.02	<1	<1000	2.1	<1	6
660	21	13a	W	1.8	100	<2	51	<0.1	90	36	1300	5.6	150	<1	<0.002	2	250	<0.2	<0.5	<0.5	37	7.7	0.017	1	63	3.5	13	0.001	7	0.75	0.036	0.07	<1	<1000	11	<1	2
661	22	13a	W	8.6	36	3	13	0.1	29	18	630	3	42	<1	<0.002	<1	89	<0.2	<0.5	<0.5	4	3.7	0.091	11	100	1.4	34	<0.001	14	0.4	0.068	0.15	<1	<1000	2.9	<1	1

²Rock codes as follows: 1 = mafic volcanics; 1 w. sediments = mafic volcanics with sediments; 2 = intermediate volcanics; 5 = sedimentary rocks; 7a = early gabbro; 10b = late intrusives; 11c = diabase; 12q = quartz vein; 13a = deformation zone

Appendix B
Newmont (2006)

Net Carbonate Value (NCV) and Trace Element Data, Madrid North

Appendix B: Newmont (2006) Net Carbonate Value (NCV) and Trace Element, Madrid North

SRK Serial Number	Lab ID	Lithology ¹	Preliminary Economic Classification	Paste pH	Total S %	SAP650/SAP550 Sulphur after Pyrolysis %	SCIS Elemental S %	Total C %	CAP650/CAP550 Carbon after Pyrolysis %	CAI Non-carbonate C %	ANP TIC %CO2	ANPA_CO2 Analytical NP %CO2
662	208801	1 mixed	W	8.6	0.38	0.26	0.36	4.3	2.1	0.02	16	12
663	208802	1	W	8.7	0.38	0.24	0.33	4.7	2.7	0.07	17	6.6
664	208803	1 mixed	mixed	8.8	0.61	0.34	0.61	5.4	2.2	0.24	19	13
665	208806	13a	W	9.2	0.23	0.22	0.19	3.2	1	0.03	12	3.7
666	208807	7a	W	9.1	0.15	0.22	0.12	1.6	0.16	<0.01	5.7	3.7
667	208808	7a mixed	W	9.3	0.55	0.2	0.49	0.76	0.09	0.12	2.3	2.6
668	208809	1 mixed	O	8.9	1.5	0.48	1.4	5	1.6	0.34	17	13
669	208810	1 mixed	mixed	8.9	0.79	0.29	0.77	4.4	1.2	0.13	16	12
670	208811	1	W	9.8	0.45	0.34	0.38	1.4	0.1	0.02	4.9	5.4
671	208812	1	W	9.9	0.24	0.3	0.22	2.3	0.7	0.01	8.5	8.9
672	208813	1	W	9.7	0.2	0.27	0.18	4.7	2.8	0.01	17	18
673	208814	1	W	9.5	0.14	0.24	0.05	5.6	3.3	0.01	21	20
674	208815	1 mixed	mixed	8.8	1.1	1	1.1	6.5	2.8	0.07	24	20
675	208816	1 mixed	O	8.9	2.1	0.94	2.1	6.6	2.7	0.06	24	21
676	208817	13a mixed	W	9.5	0.23	0.18	0.15	1.5	0.09	0.05	5.4	3.5
677	208839	1 mixed	mixed	8.9	1.2	0.6	1.3	4.7	1.3	0.16	17	5.7
678	208840	1	W	8.8	0.6	0.33	0.6	5.1	2.1	0.04	19	6
679	208841	1 mixed	mixed	8.9	0.34	0.32	0.3	5.3	2.1	0.15	19	6.3
680	208842	1	O	9.1	0.66	0.37	0.62	4.9	1.4	0.06	18	5.9
681	208843	1	O	8.9	0.51	0.27	0.48	5.4	2.4	0.34	19	7.1
682	208845	1	W	9.1	0.29	0.28	0.22	4.7	2.9	0.07	17	7.8
683	208846	1	W	9.1	0.19	0.19	0.17	5.3	3.6	0.07	19	14
684	208847	1	W	9	0.22	0.22	0.2	5.5	3.6	0.07	20	15
685	208848	7a	W	8.9	0.46	0.27	0.43	5.6	2.5	0.14	20	8
686	208849	1 mixed	W	8.8	0.27	0.18	0.23	4.9	3.4	0.02	18	7.7
687	208850	1	mixed	8.8	0.24	0.19	0.2	3.9	2.4	0.05	14	7.4
688	208851	1	W	8.8	0.31	0.22	0.29	4.2	2.8	0.06	15	7.4
689	208852	1 mixed	W	8.9	0.37	0.19	0.34	4.9	3.2	0.07	18	7.6
690	208853	1 mixed	W	8.9	0.23	0.21	0.18	5.8	2.2	0.33	20	8.1
691	208854	1	mixed	9	0.52	0.27	0.51	6.4	2.6	0.31	22	8.5
692	202741	11c mixed	W	9.6	0.048	0.13	0.03	0.15	0.03	0.08	0.2	1.2
693	202742	13a mixed	W	9.1	0.4	0.25	0.33	2.6	0.71	0.04	9.3	3.6
694	202743	5 mixed	W	9.1	1.9	0.58	1.6	3	0.98	0.43	9.5	4.7
695	202744	7a	W	9.4	0.12	0.15	0.09	0.56	0.06	0.03	1.9	2.3
696	202745	7a	W	9.1	0.16	0.21	0.12	1.9	0.8	0.08	6.8	3.5
697	202753	13a	W	9.2	0.23	0.25	0.13	3.8	1.4	0.09	14	3.5
698	202754	13a	mixed	9.3	0.14	0.2	0.11	3	1.2	0.03	11	3.5
699	202774	13a	W	9	0.6	0.27	0.55	2.8	1.5	0.02	10	3.5
700	202775	1 mixed	O	8.8	1.4	0.47	1.4	4.1	1.9	0.11	15	3.8
701	202776	13a	W	9	0.28	0.17	0.25	2.9	1.5	0.06	10	3.3
702	202777	1 mixed	O	8.7	2.7	0.74	2.9	4.8	2	0.12	17	5.7
703	202778	13a	mixed	8.8	0.85	0.29	0.82	2.5	0.92	0.01	9	3.2
704	202779	1 mixed	O	8.7	1.1	0.4	1.1	5.7	2	0.36	20	5.2
705	208819	13a mixed	mixed	9.3	0.2	0.14	0.08	4.3	1.8	0.04	16	11
706	208820	1 mixed	W	9	0.26	0.21	0.25	6.1	3.6	0.02	22	15
707	208821	1	W	8.8	0.39	0.3	0.36	6.1	3.5	0.01	22	16
708	208822	1 mixed	mixed	8.6	2	0.54	2	6.4	3.5	0.36	22	16
709	208824	1 mixed	mixed	8.9	0.62	0.36	0.58	6	3.2	0.1	22	16
710	208825	1 mixed	O	8.8	0.87	0.42	0.87	6.2	2.3	0.2	22	8.8
711	208826	1 mixed	mixed	9	0.88	0.35	0.85	3.1	1.3	0.04	11	6.6
712	208861	1	W	8.8	0.37	0.25	0.29	5.8	4.1	0.01	21	9
713	208862	2 mixed	W	9.8	0.21	0.21	0.19	4.2	3.2	0.03	15	15
714	208863	2	W	10	0.17	0.21	0.1	4.6	3.6	0.04	17	18
715	208864	1 mixed	W	9	0.28	0.28	0.19	5.8	4.3	0.04	21	9.2
716	208865	1 mixed	W	8.9	1.8	0.52	1.8	4.5	2.6	0.06	16	8.9
717	208867	1 mixed	W	9.4	0.38	0.25	0.3	1.9	0.97	0.02	6.7	6
718	208868	1	W	9.4	0.35	0.25	0.29	1.7	0.81	0.03	6	5.8
719	208869	1	W	9	0.84	0.37	0.67	2.2	1.3	0.04	7.7	6.7
720	208898	5 mixed	W	9.2	0.27	0.19	0.25	2.3	1.5	0.15	8	3.6
721	208899	1 mixed	W	9.5	0.17	0.19	0.12	0.65	0.08	0.13	1.9	2.5
722	208900	5 mixed	W	8.9	0.87	0.32	0.78	2.1	1	0.21	7	3.8
723	202703	1	W	9.5	0.57	0.32	0.5	2.8	1.8	0.1	9.7	10
724	202704	1 mixed	W	9.2	0.44	0.35	0.37	1.7	0.8	0.06	6	4
725	202705	1 mixed	W	9.1	0.39	0.3	0.33	2.7	1.7	0.04	9.9	4.1
726	202706	5 mixed	W	8.3	3.2	0.7	3.1	3	0.58	0.57	9	4.1
727	202707	1	W	9.4	0.24	0.26	0.19	3.3	2.2	0.03	12	13
728	202712	1	W	9.4	0.32	0.21	0.26	1.6	0.62	0.08	5.5	3.9
729	202739	1	O	8.9	1.6	0.54	1.5	5	3.1	0.07	18	4.6
1188	202740	1 mixed	W	9.3	0.21	0.24	0.17	1.9	0.76	0.09	6.7	3.9

¹Rock codes as follows: **1** = mafic volcanics; **1 w. sediments** = mafic volcanics with sediments; **2** = intermediate volcanics; **5** = sedimentary rocks; **7a** = early gabbro; **10b** = late intrusives; **11c** = diabase; **12q** = quartz vein; **13a** = deformation zone

Appendix B: Newmont (2006) Net Carbonate Value (NCV) and Trace Element, Madrid North

SRK Serial Number	Lab ID	Lithology ¹	Preliminary Economic Classification	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Sr	Cd	Sb	V	Ca	Cr	Mg	Ba	Ti	Al	Na	K	TI	Se	Be	Sn
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm
662	208801	1 mixed	W	<2	250	<10	110	0.4	580	99	2500	11	63	110	4	35	320	7.5	620	5	140	0.3	4.1	6600	0.55	<20	1	<2	<2
663	208802	1	W	<2	190	<10	110	0.2	760	100	2400	9.9	270	150	4	35	260	8.1	610	5.5	200	0.12	3.5	3500	0.48	<20	5	<2	<2
664	208803	1 mixed	mixed	<2	210	<10	110	0.2	740	110	2400	10	300	150	4	38	280	7.3	580	4.5	240	0.099	3.9	8500	0.97	<20	9	<2	<2
665	208806	13a	W	<2	42	<10	34	<2	40	28	880	4.5	70	230	2	24	120	5.4	63	2.2	600	0.11	6.5	7800	2.2	<20	11	<2	<2
666	208807	7a	W	0.2	100	0.8	69	<0.1	110	45	1400	8.3	7.1	13	<0.1	<0.1	190	2.5	170	5.2	6	0.069	4.3	0.039	0.05	<0.1	<0.5	<2	<2
667	208808	7a mixed	W	<2	85	<10	94	<2	180	63	1300	8.9	26	100	3	44	200	4.1	290	4.9	120	0.36	7.1	19000	0.79	<20	10	<2	<2
668	208809	1 mixed	O	<2	120	<10	48	<2	480	67	1400	7.4	280	140	3	25	150	7	510	4.5	76	0.038	3.1	11000	0.9	<20	4	<2	<2
669	208810	1 mixed	mixed	<2	170	<10	71	<2	360	69	1400	8.3	270	140	3	32	250	6.4	380	4.5	220	0.2	4.4	9800	1.3	27	8	<2	<2
670	208811	1	W	<2	270	<10	200	0.4	320	110	2300	12	9	160	4	35	380	8.9	370	3.8	300	1.3	4.9	16000	0.51	<20	4	<2	<2
671	208812	1	W	<2	240	<10	190	<2	1200	140	2600	13	15	93	5	42	300	7.6	490	4.4	220	0.88	3.9	9100	0.58	<20	9	<2	<2
672	208813	1	W	<2	170	<10	190	<2	580	100	2500	10	54	120	4	28	220	13	480	4.1	87	0.63	2.7	1500	0.32	<20	7	<2	<2
673	208814	1	W	<2	140	<10	150	0.2	400	82	2500	9.1	17	130	3	20	210	14	470	4.5	45	0.59	2.4	2700	0.47	<20	4	<2	<2
674	208815	1 mixed	mixed	<2	220	<10	220	0.6	460	83	2400	9	310	62	5	22	190	12	460	5.5	110	0.26	2.4	2600	0.85	<20	6	<2	<2
675	208816	1 mixed	O	<2	150	<10	55	0.4	420	75	2000	7.1	700	59	4	19	170	12	340	6.2	160	0.19	2.6	1900	2.1	<20	9	<2	<2
676	208817	13a mixed	W	<2	150	<10	67	0.6	60	44	1200	6.6	45	170	2	35	260	15	120	3.1	380	0.51	6.6	96000	1.5	<20	15	<2	<2
677	208839	1 mixed	mixed	<2	150	<10	55	0.8	300	58	1600	7.9	270	120	3	24	200	6.2	220	3.3	150	0.11	4.6	17000	1.4	<20	4	<2	<2
678	208840	1	W	<2	200	<10	87	<2	770	98	1900	9.1	170	100	2	22	240	7.8	800	3.8	350	0.087	3.6	4800	0.86	<20	<10	<2	<2
679	208841	1 mixed	mixed	<2	140	<10	74	<2	490	67	1600	7.8	180	140	3	34	180	7.5	630	4.2	120	0.059	3.9	6700	0.99	<20	5	<2	<2
680	208842	1	O	<2	93	<10	69	0.4	110	46	1400	7.2	110	110	2	23	180	6.9	140	2.8	77	0.064	5.8	15000	1.1	<20	5	<2	<2
681	208843	1	O	<2	120	<10	76	<2	470	69	1500	8.8	160	150	2	24	190	5.9	470	4.8	85	0.058	4.4	16000	0.62	<20	3	<2	<2
682	208845	1	W	<2	110	<10	53	<2	110	50	1900	6.9	110	100	2	31	180	7.3	180	2.8	130	0.081	6.6	13000	0.77	<20	6	<2	<2
683	208846	1	W	<2	100	<10	44	0.2	130	54	2100	7.5	130	97	3	36	13	8.6	150	2.5	100	0.079	6.4	14000	0.58	<20	1	<2	<2
684	208847	1	W	<2	110	<10	61	<2	130	54	1900	7.7	180	120	3	37	180	9.1	110	2.7	83	0.072	6.6	15000	0.56	<20	11	<2	<2
685	208848	7a	W	0.7	77	1.8	41	<0.1	180	52	1300	5.6	270	110	<0.1	0.2	49	7	220	4.3	16	<0.001	1.1	0.016	0.12	<0.1	<0.5	<2	<2
686	208849	1 mixed	W	<2	88	<10	74	<2	120	50	1500	7.2	120	88	3	25	200	8.1	220	4.1	140	0.096	5.4	8900	1	<20	16	<2	<2
687	208850	1	mixed	<2	110	<10	80	<2	94	50	1400	7.5	92	69	3	40	220	6.6	150	4	72	0.086	6	13000	0.93	<20	10	<2	<2
688	208851	1	W	<2	95	<10	85	<2	110	53	1600	7.8	85	95	3	34	210	7.2	150	3.6	82	0.072	6.3	12000	0.74	<20	5	<2	<2
689	208852	1 mixed	W	<2	130	<10	99	<2	400	72	1700	9.2	200	140	3	36	220	7.7	340	4.4	100	0.065	5.5	8900	0.85	<20	<10	<2	<2
690	208853	1 mixed	W	<2	140	<10	77	<2	780	90	1700	9.7	140	89	4	32	210	6.5	760	7	50	0.045	3	3700	0.3	<20	7	<2	<2
691	208854	1	mixed	<2	140	<10	57	0.4	740	89	1600	9.3	200	1500	4	36	210	7	790	6.3	110	0.03	2.9	4300	0.87	<20	12	<2	<2
692	202741	11c mixed	W	<2	330	<10	130	1	76	85	1700	12	33	170	4	51	500	7.4	97	3.8	67	1.3	7.3	16000	0.48	<20	6	<2	<2
693	202742	13a mixed	W	<2	47	<10	46	0.4	42	23	1000	3.6	64	170	2	23	100	4.6	80	2.7	530	0.11	6.5	5500	2	<20	20	<2	<2
694	202743	5 mixed	W	<2	130	<10	51	0.6	190	45	930	4.5	140	93	2	32	69	4.9	270	2.2	170	0.084	6.2	26000	2.2	<20	23	<2	<2
695	202744	7a	W	<2	110	<10	120	0.4	190	75	1500	11	32	120	4	47	270	4.9	250	6.3	82	0.47	82	18000	0.47	<20	6	<2	<2
696	202745	7a	W	<2	110	<10	120	<2	150	69	1700	11	38	37	4	47	290	4	160	6.1	110	0.3	83	11000	2	<20	11	<2	<2
697	202753	13a	W	<2	83	<10	43	0.4	48	43	1200	7.1	84	220	3	38	200	3.8	74	2.7	480	0.21	7.3	11000	2.4	<20	17	<2	<2
698	202754	13a	mixed	<2	31	<10	50	<2	44	24	790	4	70	250	2	29	100	5.7	69	2.2	690	0.13	7.3	8400	2.5	<20	14	<2	<2
699	202774	13a	W	1.7	70	1.7	11	0.2	24	14	750	2.4	64	65	<0.1	0.1	9	4.7	16	1.9	15	0.004	0.34	0.038	0.1	<0.1	<0.5	<2	<2
700	202775	1 mixed	O	<2	70	<10	35	<2	290	41	890	4.6	280	150	2	29	110	4.7	260	2.9	72	0.089	2.3	6100	0.71	<20	<10	<2	<2
701	202776	13a	W	<2	54	<10	26	<2	32	28	960	4.7	67	250	4	55	170	4.4	56	1.6	290	0.17	5.7	7800	1.4	24	13	<2	<2
702	202777	1 mixed	O	<2	64	<10	52	<2	470	60	1300	6.6	310	250	6	34	130	4.7	370	3.8	54	0.14	2.9	9400	0.63	<20	81	<2	<2
703	202778	13a	mixed	<2	54	<10	23	<2	48	26	850	4.4	120	200	4	50	110	4.1	67	1.6	410	0.19	6.9	7100	2.2	<20	51	<2	<2
704	202779	1 mixed	O	<2	130	<10	68	<2	670	78	1400	8.2	210	190	5	37	190	6.4	600	5.1	66	0.086	2.4	5100	0.87	<20	29	<2	<2
705	208819	13a mixed	mixed	<2	97	<10	82	0.6	120	43	1400	7.3	54	150	3	38	190	6.8	130	2.7	170	0.061	6.1	0.99	0.84	<20	10	<2	<2
706	208820	1 mixed	W	<2	160	<10	85	0.8	520	74	1700	7.5	120	180	3	25	210	9.9	380	4.8	120	0.061	3.2	0.31	0.65	<20	5	<2	<2
707	208821	1	W	<2	150	<10	92	0.8	580	79	2100	8.9	210	170	3	36	210	10	470	5.4	74	0.079	2.8	0.23	0.44	<20	3	<2	<2
708	208822	1 mixed	mixed	<2	2	<10	94	1.2	520	76	2600	11	160	130	4	36	210	11	640	6.5	49	0.09	3.4	0.24	0.46	<20	6	<2	<2
709	208824	1 mixed	mixed	<2	170	<10	71	0.8	460	70	2000	8.2	370	140	4	32	210	10	470	4	180	0.069	3.3	0.36	0.95	<20	1	<2	<2
710	208825	1 mixed	O	<2	72	<10	100	0.4	650	83	1900	8	430	150	3	35	170	8.3	620	6									

Appendix C

SRK (2008) Acid-Base Accounting and Trace Element Data, Madrid North

Appendix C: Geochemical Data - SRK Samples

SRK Serial Number	Lab ID	Preliminary Economic Classification	Lithology ¹	Paste pH	Total S	Sulphate	Total C	TOC (measured)	TIC (Indirect)	TIC (calculated)	Modified NP	Fizz
				s.u.	(Wt.%)	(Wt.%)	wt%_C	wt%_C	wt%_C	kgCaCO3/t	kgCaCO3/t	
1210	08PMD670-SRK-WR-1	W	1	8.5	0.08	<0.01	2.1	0.05	2	170	150	Strong
1211	08PMD670-SRK-WR-2	W	1	9.2	0.08	<0.01	1.1	0.05	1.1	89	100	Strong
1212	08PMD670-SRK-WR-3	W	1	9.4	0.09	<0.01	0.19	0.07	0.12	10	31	Moderate
1213	08PMD670-SRK-WR-4	W	1	9.5	0.07	<0.01	0.42	0.02	0.4	33	41	Strong
1214	08PMD670-SRK-WR-5	W	1	9.5	0.05	<0.01	0.16	0.04	0.12	10	23	Slight
1215	08PMD670-SRK-WR-6	W	1	8.4	0.05	<0.01	2.9	0.03	2.9	240	230	Strong
1216	08PMD670-SRK-WR-7	W	1	8.5	0.18	<0.01	3.1	0.08	3	250	240	Strong
1217	08PMD670-SRK-WR-8	W	12c mixed	9	0.29	<0.01	5.3	0.03	5.3	440	330	Strong
1218	08PMD670-SRK-WR-9	W	1	8.7	0.09	<0.01	2.5	0.01	2.4	200	200	Strong
1219	08PMD670-SRK-WR-10	W	1	8.8	0.09	<0.01	2	0.03	1.9	160	170	Strong
1220	08PMD670-SRK-WR-11	W	1	8.7	0.11	<0.01	2.2	0.03	2.2	180	190	Strong
1221	08PMD670-SRK-WR-12	W	1	8.7	0.23	<0.01	3	0.03	3	250	250	Strong
1222	08PMD670-SRK-WR-13	W	1	9.1	0.09	<0.01	3.1	0.02	3.1	250	230	Strong
1223	08PMD670-SRK-WR-14	W	1	8.7	0.09	<0.01	2.4	0.01	2.4	200	190	Strong
1224	08PMD670-SRK-WR-15	W	1	8.8	0.08	<0.01	1.6	0.02	1.6	130	140	Strong
1225	08PMD669-SRK-WR-16	W	2	8.7	0.07	<0.01	1.8	0.02	1.8	150	150	Strong
1226	08PMD669-SRK-WR-17	W	2	8.6	0.08	<0.01	1.8	0.03	1.7	140	140	Strong
1227	08PMD669-SRK-WR-18	W	2	8.8	0.12	<0.01	2	0.04	1.9	160	170	Strong
1228	08PMD669-SRK-WR-19	W	1	8.9	0.02	<0.01	1.3	0.02	1.3	110	110	Strong
1229	08PMD669-SRK-WR-20	W	1	8.9	0.04	<0.01	1.2	0.03	1.2	100	100	Strong
1230	08PMD669-SRK-WR-21	W	1	8.6	0.03	<0.01	1.5	0.03	1.5	120	120	Strong
1231	08PMD669-SRK-WR-22	W	1	9	0.06	<0.01	1.1	0.03	1.1	87	98	Strong
1232	08PMD669-SRK-WR-23	W	1	9.3	0.07	<0.01	1.6	0.04	1.5	130	130	Strong
1233	08PMD669-SRK-WR-24	W	1	8.6	0.08	<0.01	2.5	0.03	2.5	210	200	Strong
1234	08PMD669-SRK-WR-25	W	1	8.7	0.07	<0.01	3	0.03	2.9	240	240	Strong
1235	08PMD669-SRK-WR-26	W	1	8.6	0.09	<0.01	2.9	0.03	2.8	230	180	Strong
1236	08PMD669-SRK-WR-27	W	1	8.7	0.09	<0.01	2.5	0.04	2.5	210	200	Strong
1237	08PMD669-SRK-WR-28	W	1	8.9	0.08	<0.01	1.6	0.03	1.6	130	140	Strong
1238	08PMD669-SRK-WR-29	W	1	8.4	0.09	<0.01	2.4	0.02	2.3	190	180	Strong
1239	08PMD669-SRK-WR-30	W	1	8.8	0.09	<0.01	1.5	0.03	1.5	120	120	Strong
1240	08PMD669-SRK-WR-31	W	1	8.8	0.08	<0.01	2.1	0.03	2.1	170	180	Strong
1241	08PMD669-SRK-WR-32	W	1	9	0.22	<0.01	3.7	0.02	3.6	300	260	Strong
1242	08PMD669-SRK-WR-33	W	1	8.6	0.09	<0.01	2.8	0.02	2.8	230	210	Strong
1243	08PMD669-SRK-WR-34	W	1	8.7	0.08	<0.01	1.7	0.04	1.6	140	140	Strong
1244	08PMD669-SRK-WR-35	W	1	8.6	0.085	<0.01	2.7	0.04	2.6	220	220	Strong
1245	08PMD669-SRK-WR-36	W	1	8.9	0.09	<0.01	3.8	0.01	3.8	320	260	Strong
1246	08PMD650-SRK-WR-37	O	1 w. sediments mixed	8.3	5.8	0.03	3.6	0.89	2.7	220	190	Moderate
1247	08PMD650-SRK-WR-38	W	1 w. sediments	8.6	0.37	<0.01	3.6	0.13	3.4	290	270	Strong
1248	08PMD650-SRK-WR-39	W	2	9.3	0.22	<0.01	1.2	0.03	1.2	100	110	Strong
1249	08PMD650-SRK-WR-40	W	2	8.9	0.09	<0.01	1.5	0.04	1.5	120	130	Strong
1250	08PMD650-SRK-WR-41	W	5	9.1	0.07	<0.01	2.5	0.13	2.3	190	190	Strong
1251	08PMD650-SRK-WR-42	W	2	9.2	0.12	<0.01	1.9	0.1	1.8	150	160	Strong
1252	08PMD650-SRK-WR-43	W	5	8.7	0.11	<0.01	2.6	0.18	2.5	200	190	Strong
1253	08PMD650-SRK-WR-44	W	1	9.5	0.12	<0.01	2.7	0.05	2.6	220	210	Strong
1254	08PMD650-SRK-WR-45	W	1	9.1	0.19	<0.01	3.9	0.05	3.8	320	270	Strong
1255	08PMD650-SRK-WR-46	W	5	8.7	0.22	<0.01	3.1	0.02	3.1	260	230	Strong
1256	08PMD650-SRK-WR-47	W	5	8.6	1.7	<0.01	2.3	0.18	2.1	180	170	Strong
1257	08PMD650-SRK-WR-48	O	1	8.6	2.2	0.01	3.8	0.11	3.7	310	270	Strong
1258	08PMD650-SRK-WR-49	W	1	9.2	0.28	<0.01	1.2	0.1	1.1	90	99	Strong
1259	08PMD650-SRK-WR-50	O	1 w. sediments	8.9	1.2	<0.01	3.9	0.1	3.8	320	290	Strong
1260	08PMD650-SRK-WR-51	W	1 w. sediments	9.5	0.29	<0.01	3.1	0.06	3	250	260	Strong
1261	08PMD650-SRK-WR-52	W	1	8.9	0.22	<0.01	3.2	0.09	3.1	260	260	Strong
1262	08PMD650-SRK-WR-53	W	1 w. sediments	9.4	0.2	<0.01	2.6	0.09	2.5	210	210	Strong
1263	08PMD650-SRK-WR-54	W	5 mixed	8.6	0.17	<0.01	3.1	0.12	3	250	250	Strong
1264	08PMD650-SRK-WR-55	W	1	8.9	0.24	<0.01	3.4	0.09	3.3	270	260	Strong
1265	08PMD650-SRK-WR-56	W	5 mixed	9.5	0.18	<0.01	3.3	0.08	3.2	260	250	Strong
1266	08PMD650-SRK-WR-57	W	1	9	0.17	<0.01	1.2	0.1	1.1	89	100	Strong
1267	08PMD650-SRK-WR-58	W	1 mixed	9	0.27	<0.01	0.95	0.09	0.86	72	86	Strong
1268	08PMD650-SRK-WR-59	W	10b	9.3	0.15	<0.01	0.39	0.05	0.34	28	40	Strong
1269	08PMD650-SRK-WR-60	W	1	9.3	0.31	<0.01	0.46	0.04	0.42	35	44	Strong
1270	08PMD650-SRK-WR-61	W	1	9.1	0.28	<0.01	0.91	0.06	0.85	71	84	Strong
1271	08PMD650-SRK-WR-62	W	10b	9.2	0.18	<0.01	0.72	0.07	0.65	54	38	Strong
1272	08PMD650-SRK-WR-63	W	1 w. sediments mixed	8.8	0.4	<0.01	1.5	0.05	1.5	120	130	Strong
1273	08PMD650-SRK-WR-64	W	10b mixed	9	0.23	<0.01	2			150	180	Strong
1274	08PMD650-SRK-WR-65	W	1	9.4	0.17	<0.01	2.6			190	220	Strong
1275	08PMD650-SRK-WR-66	W	1	9.3	0.13	<0.01	2.9			210	230	Strong
1276	08PMD650-SRK-WR-67	W	1	9.5	0.19	<0.01	2.8			190	230	Strong
1277	08PMD650-SRK-WR-68	W	1	9.1	0.13	<0.01	2.6			190	210	Strong
1278	08PMD650-SRK-WR-69	W	1	9.3	0.27	<0.01	4			280	290	Strong
1279	08PMD650-SRK-WR-70	W	1	9.7	0.17	<0.01	4.9			430	340	Strong
1280	08PMD650-SRK-WR-71	W	1	9.2	0.29	<0.01	4.3			320	300	Strong
1281	08PSD143B-SRK-WR-72	W	1	8.8	0.12	<0.01	1.6	0.03	1.6	130	130	Strong
1282	08PSD143B-SRK-WR-73	W	1	8.6	0.09	<0.01	1.6	0.03	1.6	130	130	Strong
1283	08PSD143B-SRK-WR-74	W	1	8.8	0.11	<0.01	1.9	0.02	1.9	160	170	Strong
1284	08PSD143B-SRK-WR-75	W	1	8.8	0.12	<0.01	1.7	0.03	1.7	140	140	Strong
1285	08PSD143B-SRK-WR-76	W	1	8.5	0.16	<0.01	2	0.03	1.9	160	140	Strong
1286	08PSD143B-SRK-WR-77	W	1	9.2	0.13	<0.01	3.8	0.01	3.8	310	240	Strong
1287	08PSD143B-SRK-WR-78	W	1	9.5	0.09	<0.01	4.1	0.03	4.1	340	250	Strong
1288	08PSD143B-SRK-WR-79	W	1	9.1	0.1	<0.01	3.9	0.01	3.8	320	260	Strong
1289	08PSD143B-SRK-WR-80	W	1	8.6	0.07	<0.01	2.6	<0.01	2.6	220	190	Strong
1290	08PSD143B-SRK-WR-81	W	1	9.1	0.06	<0.01	2.7	0.01	2.7	230	190	Strong
1291	08PSD143B-SRK-WR-82	W	1	9.1	0.08	<0.01	3.3	0.03	3.3	280	240	Strong
1292	08PSD143B-SRK-WR-83	W	1	9.4	0.09	<0.01	3.4	0.02	3.4	280	240	Strong
1293	08PSD143B-SRK-WR-84	W	1 mixed	9.4	0.1	<0.01	3.7	0.01	3.7	310	230	Moderate
1294	08PSD143B-SRK-WR-85	W	13a	9.5	0.13	<0.01	4.5	0.02	4.5	370	290	Strong
1295	08PSD143B-SRK-WR-86	W	13a	9.3	0.14	<0.01	4.5	0.05	4.4	370	300	Strong
1296	08PSD143B-SRK-WR-87	O	1	9	0.91	<0.01	6.7	0.02	6.7	560	430	Strong
1297	08PSD143B-SRK-WR-88	O	1	8.8	0.78	<0.01	7	0.02	7	580	470	Strong
1298	08PSD143B-SRK-WR-89	mixed	13a	9.5	0.22	<0.01	5	0.02	5	410	320	Strong
1299	08PSD143B-SRK-WR-90	W	13a	9.6	0.13	<0.01	4.6	0.04	4.6	380	280	Strong
1300	08PSD143B-SRK-WR-91	W	13a	9.3	0.07	<0.01	5.9	0.03	5.9	490	390	Strong
1301	07PMD522-SRK-WR-92	W	1	8.4	0.3	<0.01	3.4	0.03	3.3	280	230	Strong
1302	07PMD522-SRK-WR-93	O	1	8.7	1.8	<0.01	3.2	0.12	3.1	250	210	Strong
1303	07PMD522-SRK-WR-94	O	1	8.5	3.9	0.01	4.5	0.04	4.4	370	290	Strong
1304	07PMD522-SRK-WR-95	W	1	8.2	0.29	<0.01	6.4	0.02	6.4	530	430	Strong
1305	07PMD522-SRK-WR-96	O	1	8.4	1.3	<0.01	5.3	0.08	5.2	430	340	Strong
1306	07PMD522-SRK-WR-97	W	1	9.4	0.13	<0.01	3.7	0.06	3.6	300	240	Strong
1307	07PMD522-SRK-WR-98	W	1	9.7	0.15	<0.01	4	0.05	3.9	330	250	Strong
1308	07PMD522-SRK-WR-99	W	1	8.9	1.3	<0.01	5.9	0.11	5.8	480	380	Strong
1309	07PMD522-SRK-WR-100	W	1 mixed	9.8	0.18	<0.01	3.6	0.12	3.5	290	230	Strong
1310	07PMD522-SRK-WR-101	W	1	9.7	0.2	<0.01	3.9	0.06	3.9	320	240	Strong
1311	07PMD522-SRK-WR-102	W	1	9.7	0.15	<0						

Appendix C: Geochemical Data - SRK Samples

SRK Serial Number	Lab ID	Preliminary Economic Classification	Lithology ¹	Paste pH	Total S	Sulphate	Total C	TOC (measured)	TIC (Indirect)	TIC (calculated)	Modified NP	Fizz
				s.u.	(Wt.%)	(Wt.%)	wt% C	wt% C	wt% C	kgCaCO3/t	kgCaCO3/t	
1326	08PMD657A-SRK-WR-117	W	13a	9.6	0.06	0.01	5	<0.01	5	410	310	Strong
1327	08PMD657A-SRK-WR-118	W	13a	9.6	0.18	0.01	4.8	0.02	4.8	400	290	Strong
1328	08PMD657A-SRK-WR-119	W	13a	9.6	0.17	0.01	5.6	0.05	5.6	460	370	Strong
1329	08PMD657A-SRK-WR-120	W	13a	9.4	0.32	<0.01	5.4	0.08	5.3	440	320	Strong
1330	08PMD657A-SRK-WR-121	W	1	9.1	0.06	0.01	3.5	0.04	3.4	280	230	Strong
1331	08PMD657A-SRK-WR-122	W	1	9.4	0.04	0.01	3.9	0.02	3.9	320	260	Strong
1332	08PMD657A-SRK-WR-123	W	13a	9.6	0.59	0.01	4.9	0.04	4.9	410	310	Strong
1333	08PMD657A-SRK-WR-124	W	13a	9.6	0.17	0.01	3.7	0.03	3.6	300	250	Strong
1334	08PMD657A-SRK-WR-125	W	13a	9.5	0.13	0.01	3.6	0.04	3.6	300	210	Strong
1335	08PMD657A-SRK-WR-126	W	13a	9.6	0.12	0.01	3.3	0.05	3.3	270	200	Strong
1336	08PMD657A-SRK-WR-127	W	13a	9.6	0.11	0.01	3	0.06	3	250	190	Strong
1337	08PMD657A-SRK-WR-128	W	1	8.8	0.1	0.01	1.6	0.04	1.6	130	120	Strong
1338	08PMD657A-SRK-WR-129	W	1	9.4	0.3	0.01	3.9	0.02	3.9	320	260	Strong
1339	08PMD657A-SRK-WR-130	W	1	8.9	0.1	0.01	2.7	0.07	2.6	220	200	Strong
1340	08PMD657A-SRK-WR-131	W	1	8.8	0.09	0.01	2.2	0.01	2.1	160	160	Strong
1341	08PMD657A-SRK-WR-132	W	1	8.9	0.07	0.01	1.6	0.02	1.6	130	130	Strong
1342	08PMD657A-SRK-WR-133	W	1	8.8	0.2	0.01	2.3	0.01	2.2	190	180	Strong
1343	08PMD657A-SRK-WR-134	W	1	8.9	0.11	0.01	2	0.02	2	170	170	Strong
1344	08PSD142-SRK-WR-135	W	1	9.1	0.34	0.01	0.82	<0.01	0.82	68	75	Strong
1345	08PSD142-SRK-WR-136	W	1	9	0.25	0.01	1.2	0.05	1.2	99	100	Strong
1346	08PSD142-SRK-WR-137	W	1	9.1	0.16	0.01	3.1	0.03	3.1	260	260	Strong
1347	08PSD142-SRK-WR-138	W	1 w. sediments mixed	8.8	0.31	<0.01	6.2	0.05	6.1	510	410	Strong
1348	08PSD142-SRK-WR-139	W	1	8.9	0.21	0.01	4.8	0.03	4.8	400	380	Strong
1349	08PSD142-SRK-WR-140	W	1	9.2	0.13	0.01	3.9	0.03	3.8	320	290	Strong
1350	08PSD142-SRK-WR-141	W	1	9.6	0.22	0.01	3.1	0.04	3	250	250	Strong
1351	08PSD142-SRK-WR-142	W	1	9.5	0.14	0.01	2.8	0.05	2.7	230	220	Strong
1352	08PSD142-SRK-WR-143	W	1	8.9	0.23	0.01	0.96	0.06	0.9	75	82	Strong
1353	08PSD142-SRK-WR-144	W	1	9	0.17	0.01	2.1	<0.01	2.1	170	160	Strong
1354	08PSD142-SRK-WR-145	W	1	9.5	0.2	0.01	4.1	0.03	4	340	320	Strong
1355	08PSD142-SRK-WR-146	mixed	1 w. sediments mixed	8.9	1	0.01	6.1	0.13	6	500	390	Strong
1356	08PSD142-SRK-WR-147	W	1	9.6	0.18	0.01	3.3	<0.01	3.3	280	270	Strong
1357	08PSD142-SRK-WR-148	W	1	9.2	0.21	0.01	3.3	0.01	3.3	270	270	Strong
1358	08PSD142-SRK-WR-149	O	1	8.8	2.1	0.01	5.8	0.03	5.8	480	370	Strong
1359	08PSD142-SRK-WR-150	W	1	9.1	0.17	0.01	3.2	<0.01	3.2	260	240	Strong
1360	08PSD142-SRK-WR-151	W	1	8.9	0.16	0.01	2.5	0.03	2.5	210	220	Strong
1361	08PSD142-SRK-WR-152	W	1	9	0.36	0.01	1.4	0.02	1.3	110	110	Strong
1362	08PSD142-SRK-WR-153	W	1	8.9	0.3	0.01	1.9	0.02	1.9	150	86	Strong
1363	08PSD142-SRK-WR-154	mixed	5 mixed	8.6	1.3	0.01	2.9	0.01	2.9	240	230	Strong
1364	08PSD142-SRK-WR-155	W	1	8.9	0.3	0.01	1.7	<0.01	1.7	140	130	Strong
1365	08PSD142-SRK-WR-156	W	5 mixed	8.7	0.32	0.01	3.7	0.01	3.7	300	260	Strong
1366	08PSD142-SRK-WR-157	W	2	9.2	0.17	0.01	0.82	<0.01	0.82	68	66	Strong
1367	08PSD142-SRK-WR-158	W	2 mixed	9.1	0.24	0.01	1.1	<0.01	1.1	87	85	Strong
1368	08PSD142-SRK-WR-159	mixed	1 w. sediments	9.2	0.43	0.01	2.7	0.06	2.7	220	200	Strong
1369	08PSD142-SRK-WR-160	W	2	9	0.08	0.01	1	<0.01	1	85	77	Strong
1370	08PSD142-SRK-WR-161	W	2	9.3	0.11	0.01	0.66	0.01	0.65	54	54	Strong
1371	08PSD142-SRK-WR-162	W	2	9.2	0.11	0.01	0.8	0.01	0.79	66	59	Strong
1372	08PSD142-SRK-WR-163	W	2	9.3	0.12	0.01	2	0.01	2	160	150	Strong
1678	07PMD610-SRK-WR-249	mixed	1	8.9	1.4	<0.01	4.8	0.03	4.7	390	280	Strong
1679	07PMD610-SRK-WR-250	O	1	8.9	2.1	<0.01	4.3	0.09	4.2	350	290	Strong
1680	07PMD610-SRK-WR-251	O	5 mixed	8.6	5.1	0.03	4.2	0.09	4.1	340	300	Strong
1681	07PMD610-SRK-WR-252	W	1	8.5	0.18	<0.01	3.2	0.01	3.2	260	240	Strong
1682	07PMD610-SRK-WR-253	W	1	9.1	0.19	<0.01	3.3	<0.01	3.3	270	230	Strong
1683	07PMD610-SRK-WR-254	W	1	9.5	0.14	<0.01	2.1	0.01	2.1	170	160	Strong
1684	07PMD610-SRK-WR-255	W	1	9.6	0.3	<0.01	3.4	0.01	3.4	280	260	Strong
1685	07PMD610-SRK-WR-256	W	1	9.8	0.09	<0.01	3	0.03	3	250	240	Strong
1686	07PMD610-SRK-WR-257	mixed	1	8.7	1.4	<0.01	5.6	0.01	5.6	470	340	Strong
1687	07PMD610-SRK-WR-258	W	1	8.6	0.17	0.01	4.6	0.03	4.6	380	310	Strong
1688	07PMD610-SRK-WR-259	O	1	9.5	1	<0.01	4.1	<0.01	4.1	340	370	Strong
1689	07PMD610-SRK-WR-260	W	1	10	0.18	<0.01	3.3	0.03	3.3	270	240	Strong
1690	07PMD610-SRK-WR-261	W	1	10	0.19	<0.01	3.2	0.02	3.2	270	260	Strong
1691	07PMD610-SRK-WR-262	W	1	8.8	0.11	0.01	4.3	0.02	4.3	360	320	Strong
1692	07PMD610-SRK-WR-263	W	1	8.5	0.3	<0.01	6.4	0.04	6.3	530	380	Strong
1693	07PMD610-SRK-WR-264	O	1	8.7	2.8	<0.01	3.2	0.05	3.2	260	210	Strong
1694	07PMD610-SRK-WR-265	mixed	1	9	0.42	0.01	4.9	0.05	4.9	410	230	Strong
1695	07PMD610-SRK-WR-266	W	1	9	0.35	<0.01	5.1	0.06	5.1	420	230	Strong
1696	07PMD610-SRK-WR-267	W	1	9.2	0.28	<0.01	5.4	0.09	5.3	440	310	Strong
1697	07PMD610-SRK-WR-268	mixed	1	9.1	0.39	<0.01	5.8	0.11	5.7	480	330	Strong
1698	07PMD610-SRK-WR-269	O	1	9	0.89	<0.01	4.1	0.06	4	330	330	Moderate
1699	07PMD610-SRK-WR-270	mixed	1	8.9	0.43	<0.01	5.4	0.16	5.2	430	340	Strong
1700	07PMD610-SRK-WR-271	W	1	8.6	0.1	<0.01	4.7	0.03	4.7	390	320	Strong
1701	07PMD610-SRK-WR-272	W	1	8.5	0.04	<0.01	2.6	0.02	2.6	220	200	Strong
1702	07PMD610-SRK-WR-273	W	7a mixed	8.5	0.08	<0.01	2.1	0.04	2.1	170	180	Strong
1703	07PMD610-SRK-WR-274	W	1	8.4	0.05	<0.01	2.3	0.01	2.3	190	180	Strong
1704	07PMD610-SRK-WR-275	W	1	8.5	0.15	<0.01	2.6	0.03	2.5	210	210	Strong
1705	07PMD610-SRK-WR-276	W	1 mixed	8.4	0.05	<0.01	1.9	<0.01	1.9	160	160	Strong
1706	07PMD610-SRK-WR-277	W	1	8.6	0.07	<0.01	1.6	<0.01	1.6	130	140	Strong
1707	07PMD610-SRK-WR-278	W	1	8.6	0.1	0.01	1.2	0.03	1.2	100	110	Strong
1708	07PMD610-SRK-WR-279	W	1	8.5	0.05	0.01	1.1	0.01	1.1	93	100	Strong
1709	07PMD610-SRK-WR-280	W	1	8.7	0.05	0.02	1.3	<0.01	1.3	110	110	Strong
1778	08PSD143B-SRK-WR-351	W	1	8.7	0.13	<0.01	1.5	0.06	1.5	120	120	Strong
1779	08PSD143B-SRK-WR-352	W	1	8.8	0.13	<0.01	2.1	0.05	2.1	170	160	Strong
1780	08PSD143B-SRK-WR-353	W	1	8.8	0.11	<0.01	2.2	0.05	2.1	170	170	Strong
1781	08PSD142-NMS-WR-354	W	2	9.2	0.24	<0.01	0.51	0.08	0.43	43	46	Strong
1782	08PSD142-NMS-WR-355	W	2	9.3	0.2	<0.01	0.51	<0.01	0.51	42	41	Strong
1876	08PSD142-SRK-WR-449	W	2	8.9	0.1	<0.01	1.1			86	95	Strong
1877	08PSD142-SRK-WR-450	W	2	8.9	0.13	<0.01	1.7			130	130	Strong
1887	08PMD668-SRK-WR-460	W	13a	9.3	0.3	<0.01	3.1			230	180	Strong
1888	08PMD668-SRK-WR-461	W	13a	9.5	0.29	<0.01	3.3			250	180	Strong
1889	08PMD668-SRK-WR-462	W	13a	9.6	0.13	<0.01	2.5			190	130	Strong
1890	08PMD668-SRK-WR-463	W	13a	9.6	0.16	<0.01	4.1			310	220	Strong
1891	08PMD668-SRK-WR-464	W	13a	9.5	0.17	<0.01	3.8			290	210	Strong
1892	08PMD668-SRK-WR-465	W	13a	9.5	0.16	<0.01	3.7			270	210	Strong
1893	08PMD668-SRK-WR-466	W	13a	9.3	0.2	<0.01	4			310	240	Strong
1894	08PMD668-SRK-WR-467	W	13a	9.5	0.2	<0.01	3.3			270	210	Strong
1895	08PMD668-SRK-WR-468	W	13a	9.3	0.43	<0.01	3.4			270	200	Strong
1896	07PMD602-SRK-WR-469	W	1	9.1	0.2	<0.01	3.3			250	240	Strong
1897	07PMD602-SRK-WR-470	W	1	9	0.15	0.01	3.3			240	250	Strong
1898	07PMD602-SRK-WR-471	W	1	9.6	0.16	<0.01	3.5			270	280	Strong
1899	07PMD602-SRK-WR-472	W	1	9	0.25	<0.01	3.8			290	260	Strong
1900	07PMD602-SRK-WR-473	W	1	8.2	0.22	<0.01	4.8			370	320	Strong
1901	07PMD602-SRK-WR-474	W	1	8.3	0.2	<0.01	6.1			480	410	Strong
1902	07PMD602-SRK-WR-475	mixed	1	8.3	0.72	<0.01	6.4			490	430	Strong
1903	07PMD60											

Appendix C: Geochemical Data - SRK Samples

SRK Serial Number	Lab ID	Preliminary Economic Classification	Lithology ¹	Paste pH	Total S	Sulphate	Total C	TOC (measured)	TIC (Indirect)	TIC (calculated)	Modified NP	Fizz
				s.u.	(Wt.%)	(Wt.%)	wt%_C	wt%_C	wt%_C	kgCaCO3/t	kgCaCO3/t	
1917	06PMD484-SRK-WR-490	W	1	8.6	0.07	<0.01	2.2			180	180	Strong
1918	06PMD484-SRK-WR-491	W	1	8.3	0.11	<0.01	3.1			220	230	Strong
1919	06PMD484-SRK-WR-492	W	1	8.8	0.09	<0.01	4.3			340	290	Strong
1920	06PMD484-SRK-WR-493	W	1	8.4	0.26	<0.01	4			320	280	Strong
1921	06PMD484-SRK-WR-494	O	1	8.5	2.2	0.01	5			410	340	Strong
1922	06PMD484-SRK-WR-495	O	1	8.7	1.5	0.01	4.3			340	290	Strong
1923	06PMD484-SRK-WR-496	W	1	8.7	0.42	0.01	6.4			510	320	Strong
1924	06PMD484-SRK-WR-497	W	1	8.5	0.3	<0.01	2.6			210	210	Strong
1925	06PMD470-SRK-WR-498	O	1	8.4	0.16	<0.01	5.4			430	370	Strong
1926	06PMD470-SRK-WR-499	W	1	9.1	0.2	<0.01	5.1			420	330	Strong
1927	06PMD470-SRK-WR-500	W	1	9.5	0.28	<0.01	4.8			390	290	Strong
1928	06PMD470-SRK-WR-501	W	1	9.5	0.33	<0.01	4.6			370	160	Strong
1929	06PMD470-SRK-WR-502	O	1	9.3	1.3	0.01	4.1			330	260	Strong
1930	06PMD470-SRK-WR-503	W	1 mixed	8.7	0.12	<0.01	3.9			320	260	Strong
1931	06PMD470-SRK-WR-504	W	1	9.1	0.1	<0.01	3.8			300	120	Strong
1932	06PMD470-SRK-WR-505	W	1	9.4	0.13	<0.01	5.5			440	340	Strong
1933	06PMD470-SRK-WR-506	O	1	8.9	1.1	0.01	4.1			280	270	Strong
1934	06PMD470-SRK-WR-507	W	1	9.4	0.09	<0.01	4.7			380	300	Strong
1935	06PMD470-SRK-WR-508	O	1	9	1	0.01	4.4			350	270	Strong
1936	06PMD470-SRK-WR-509	W	1	9.5	0.31	<0.01	5			390	300	Strong
1937	06PMD470-SRK-WR-510	W	1	8.9	1.6	0.01	5.2			400	350	Strong
1938	06PMD470-SRK-WR-511	W	1	9.7	0.34	<0.01	5.5			470	380	Strong
1939	06PMD470-SRK-WR-512	W	1	8.5	0.02	0.01	5.5			420	390	Strong
1940	06PMD470-SRK-WR-513	W	1	9	0.56	0.01	6.5			520	360	Strong
1941	06PMD470-SRK-WR-514	W	5	9	0.65	0.01	5.4			370	360	Strong
1942	06PMD470-SRK-WR-515	W	1	8.9	0.39	<0.01	6.8			530	400	Strong
1943	06PMD470-SRK-WR-516	W	1	8.7	0.38	0.01	6.8			540	440	Strong
1944	06PMD470-SRK-WR-517	W	5	8.6	0.02	0.01	4.6			360	320	Strong
1945	06PMD470-SRK-WR-518	W	1	9	0.02	0.01	7.2			530	390	Strong
1946	06PMD470-SRK-WR-519	W	5	9.3	0.39	<0.01	5.1			420	290	Strong
1947	06PMD470-SRK-WR-520	O	1	9	0.02	0.01	7.4			580	390	Strong
1948	06PMD470-SRK-WR-521	W	5	9.2	0.43	<0.01	3.1			250	210	Strong
1949	06PMD470-SRK-WR-522	W	1	8.6	0.46	0.01	6.4			530	430	Strong
1950	06PMD470-SRK-WR-523	W	1 mixed	8.7	0.02	0.01	6			490	380	Strong
1951	06PMD470-SRK-WR-524	O	1 mixed	8.7	1.4	0.01	5.6			450	340	Strong
1952	06PMD470-SRK-WR-525	W	1	8.7	0.42	0.01	6.5			520	340	Strong
1953	06PMD470-SRK-WR-526	W	1	8.7	0.02	0.01	6.6			540	370	Strong
1954	06PMD470-SRK-WR-527	O	1	8.8	0.02	0.01	6.2			490	400	Strong
1955	06PMD470-SRK-WR-528	W	1	9	0.02	0.01	6.8			530	360	Strong
1956	06PMD470-SRK-WR-529	W	5	9.3	0.81	<0.01	3.7			290	240	Strong
1957	06PMD470-SRK-WR-530	W	1	9.4	0.02	0.01	3.9			230	210	Strong
1958	06PMD470-SRK-WR-531	O	1 mixed	8.8	1.4	0.01	5.8			460	350	Strong
1959	06PMD470-SRK-WR-532	O	5 mixed	8.9	1.3	0.01	3.3			260	220	Strong
1960	06PMD470-SRK-WR-533	W	1	8.9	0.23	<0.01	4.6			380	200	Strong
1961	06PMD470-SRK-WR-534	O	1	9	1.3	<0.01	4.3			350	270	Strong
1962	06PMD470-SRK-WR-535	O	1 mixed	9.1	1.9	0.01	3			240	190	Strong
1963	06PMD470-SRK-WR-536	W	1	8.5	0.02	0.01	4			340	290	Strong
1964	06PMD470-SRK-WR-537	O	1 mixed	8.5	2.9	0.02	3.7			290	250	Strong
1965	06PMD470-SRK-WR-538	W	1	8.8	0.02	0.01	6.4			530	370	Strong
1966	06PMD470-SRK-WR-539	W	1 mixed	9.1	0.85	<0.01	4.9			390	270	Strong
1967	06PMD470-SRK-WR-540	O	1	9.2	0.94	<0.01	4.6			380	310	Strong
1968	06PMD470-SRK-WR-541	W	1	8.9	0.02	0.01	6.6			530	360	Strong
1969	06PMD470-SRK-WR-542	W	1	8.8	0.68	0.01	5.4			440	370	Strong
1970	06PMD470-SRK-WR-543	W	1	8.8	0.52	0.01	2.2			180	180	Strong
1971	06PMD470-SRK-WR-544	W	11c	9.3	0.02	0.01	0.11			11	22	Slight
1976	07PMD542 6.21-14.00	W	1	8.7	0.09	<0.01	6.3			520	410	Strong
1977	07PMD542 14.00-20.00	W	1	8.8	0.12	<0.01	6.4			540	440	Strong
1978	07PMD542 20.00-29.00	W	1	8.8	0.08	<0.01	6.1			520	390	Strong
1979	07PMD542 29.00-39.50	W	1	9.1	0.26	<0.01	5.9			470	380	Strong
1980	07PMD542 39.50-48.50	W	1	9.2	0.08	<0.01	4.9			400	340	Strong
1981	07PMD542 48.50-59.00	W	1	9	0.1	<0.01	4.7			400	320	Strong
1982	07PMD542 59.00-66.50	W	1	9	0.16	<0.01	6.1			470	420	Strong
1983	07PMD542 66.50-73.28	W	1	9	0.23	0.02	5			400	350	Strong
1984	07PMD542 73.28-77.00	W	11c	9.7	0.07	<0.01	0.39			35	33	Moderate
1985	07PMD542 77.00-87.00	W	1 mixed	9.6	0.08	<0.01	3.9			310	260	Strong
1986	07PMD542 87.00-95.90	W	1	9.2	0.11	<0.01	6.6			530	370	Strong
1987	07PMD542 95.90-104.15	W	5	8.1	9.6	0.03	4.9			110	83	Moderate
1988	07PMD542 104.15-105.29	W	5	8.9	3.5	0.01	3.2			190	140	Strong
1989	07PMD542 181.24-190.17	W	1	9.4	0.09	<0.01	7.4			600	360	Strong
1990	07PMD542 190.17-196.85	W	1	9.5	0.11	<0.01	7.3			590	270	Strong
1991	07PMD542 196.85-199.85	mixed	1	9.5	0.52	<0.01	5.6			450	270	Strong
1992	07PMD542 199.85-207.85	W	1	9.4	0.1	<0.01	7.6			600	280	Strong
1993	07PMD542 207.85-218.35	W	13a	9.7	0.26	<0.01	2.8			230	180	Strong
1994	07PMD542 218.35-230.00	W	13a	9.8	0.24	<0.01	2.8			220	180	Strong
1995	07PMD552 17.00-23.60	W	1	9.1	0.22	<0.01	4.5			370	270	Strong
1996	07PMD552 23.60-29.85	W	1	9.2	0.27	<0.01	5.3			440	320	Strong
1997	07PMD552 29.85-35.10	W	1	9.2	0.29	<0.01	4.3			330	250	Strong
1998	07PMD552 58.50-72.00	W	1	9.6	0.4	<0.01	3.9			320	240	Strong
1999	07PMD552 101.79-111.20	W	1	9.6	0.19	<0.01	3.4			280	230	Strong
2000	07PMD552 111.20-123.61	W	2	10	0.11	<0.01	2.3			180	160	Strong
2001	07PMD552 123.61-134.00	W	2	10	0.17	<0.01	1.2			93	90	Strong
2002	07PMD552 134.00-144.50	W	2	10	0.12	<0.01	1.3			98	86	Strong
2003	07PMD552 144.50-147.60	W	2	10	0.13	<0.01	2.3			160	170	Strong
2004	07PMD552 147.60-158.50	W	2	10	0.47	<0.01	2.4			200	170	Strong
2005	07PMD552 158.50-167.50	W	2	11	0.1	<0.01	0.95			77	80	Strong
2006	07PMD552 167.50-176.50	W	2	11	0.09	<0.01	0.31			27	30	Strong
2007	07PMD552 176.50-186.85	W	2	11	0.1	<0.01	0.52			46	44	Strong
2008	07PMD552 186.85-193.55	W	2	10	0.15	<0.01	2			130	140	Strong
2009	07PMD552 193.55-203.80	W	1	9.5	0.29	<0.01	3.7			250	230	Strong
2010	07PMD552 203.80-206.36	O	1	9.1	2	0.05	5.4			320	330	Strong
2011	07PMD552 206.36-216.25	W	1	9.3	0.27	<0.01	5.3			420	350	Strong
2012	07PMD552 216.25-228.00	W	13a	9.7	0.17	<0.01	5.7			470	240	Strong
2013	07PMD552 228.00-240.00	W	13a	9.7	0.19	<0.01	6.4			520	520	Strong
2014	07PMD552 240.00-251.75	W	13a	9.7	0.23	<0.01	4.2			330	270	Strong
2015	07PMD552 251.75-260.50	W	13a	10	0.03	<0.01	1.3			110	84	Strong
2016	07PMD552 260.50-270.60	W	13a	10	0.21	<0.01	1.3			99	82	Strong
2017	07PMD552 270.60-278.00	W	13a	9.9	0.13	<0.01	5.4			440	350	Strong
2018	07PMD552 278.00-287.00	W	13a	9.9	0.09	<0.01	7			560	440	Strong
2019	07PMD552 287.00-296.00	W	13a	9.8	0.08	<0.01	5.6			460	340	Strong
2106	07PMD542 196.85-207.85	mixed	1	9.4	0.21	<0.01	7.1			570	290	Strong

¹Rock codes as follows: **1** = mafic volcanics; **1 w. sediments** = mafic volcanics with sediments; **2** = intermediate volcanics; **5** = sedimentary rocks; **7a** = early gabbro; **10b** = late intrusives; **11c** = diabase; **12q** = quartz vein; **13a** = deformation zone

Appendix C: Geochemical Data - SRK Samples

SRK Serial Number	Lab ID	Preliminary Economic Classification	Lithology ¹	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	%	%	ppm	ppb	ppm	ppm	%	ppm	ppm
1210	08PMD670-SRK-WR-1	W	1	0.1	120	0.1	76	0.1	52	39	1300	7.2	2.8	0.1	0.5	0.1	16	0.1	0.1	0.1	210	3.3	0.024	1	35	4.7	4	0.009	20	3.3	0.035	0.02	0.1	20	24	0.1	0.07	11	0.8
1211	08PMD670-SRK-WR-2	W	1	0.1	130	0.1	58	0.1	59	34	1000	6.2	5.3	0.1	2.7	0.1	7	0.1	0.1	0.1	170	1.9	0.022	2	93	4.8	4	0.08	20	3.3	0.055	0.02	0.1	10	14	0.1	0.07	10	0.5
1212	08PMD670-SRK-WR-3	W	1	0.1	120	0.2	48	0.1	43	28	670	4.6	1.4	0.1	1.7	0.1	10	0.1	0.1	0.1	100	0.72	0.023	2	79	3.2	3	0.18	20	2.5	0.074	0.02	0.1	10	4.6	0.1	0.07	7	0.5
1213	08PMD670-SRK-WR-4	W	1	0.1	130	0.3	56	0.1	46	30	780	4.4	4	0.1	4.8	0.1	15	0.1	0.1	0.1	80	1.5	0.023	1	42	2.3	6	0.16	20	2.3	0.063	0.02	0.1	10	4	0.1	0.06	7	0.6
1214	08PMD670-SRK-WR-5	W	1	0.1	96	0.3	51	0.1	45	29	650	3.9	10	0.1	1.1	0.1	21	0.1	0.1	0.1	77	1.1	0.023	1	110	2.4	6	0.2	20	2.4	0.07	0.02	0.1	10	5	0.1	0.05	6	0.5
1215	08PMD670-SRK-WR-6	W	1	0.1	78	1.2	57	0.1	110	38	1600	6.4	9.7	0.1	0.5	0.1	16	0.1	0.1	0.1	170	5.2	0.016	2	540	7.1	5	0.013	20	4.2	0.023	0.04	0.1	10	24	0.1	0.05	9	0.5
1216	08PMD670-SRK-WR-7	W	1	0.2	66	0.4	63	0.1	210	54	1200	6.9	36	0.1	70	0.1	44	0.1	0.1	0.1	150	4.9	0.016	1	580	7.1	5	0.006	20	4	0.009	0.01	5	10	20	0.1	0.16	9	0.5
1217	08PMD670-SRK-WR-8	W	12c mixed	0.1	44	0.8	39	0.1	180	40	1500	5.3	200	0.1	190	0.1	190	0.1	0.1	0.1	64	9	0.004	1	270	5.2	35	0.004	20	1.6	0.013	0.11	0.4	10	11	0.1	0.28	5	0.6
1218	08PMD670-SRK-WR-9	W	1	0.1	83	0.3	66	0.1	150	49	1200	6.5	18	0.1	14	0.1	46	0.1	0.1	0.1	170	6.5	0.022	2	380	4.3	8	0.08	20	3.8	0.03	0.03	3.3	10	17	0.1	0.07	9	0.5
1219	08PMD670-SRK-WR-10	W	1	0.1	89	0.3	70	0.1	98	39	1300	6.6	1.1	0.1	4.9	0.1	16	0.1	0.1	0.1	180	5.8	0.022	2	260	4.3	8	0.15	20	4.1	0.035	0.02	0.1	10	17	0.1	0.07	11	0.5
1220	08PMD670-SRK-WR-11	W	1	0.1	91	0.3	68	0.1	70	37	1500	6.3	0.7	0.1	2.2	0.1	17	0.1	0.1	0.1	160	6.6	0.021	2	230	4.3	4	0.15	20	4.1	0.028	0.01	0.1	10	12	0.1	0.07	10	0.5
1221	08PMD670-SRK-WR-12	W	1	0.1	96	0.8	76	0.1	86	38	1600	5.8	4.2	0.1	2	0.1	39	0.1	0.1	0.1	140	9.4	0.027	2	180	3.3	13	0.005	20	3.9	0.016	0.07	0.1	10	14	0.1	0.2	9	0.6
1222	08PMD670-SRK-WR-13	W	1	0.2	91	0.4	62	0.1	73	35	1400	5.5	15	0.1	2	0.1	39	0.1	0.1	0.1	110	7.3	0.02	1	190	3.2	11	0.071	20	3	0.031	0.05	0.1	10	13	0.1	0.07	7	0.5
1223	08PMD670-SRK-WR-14	W	1	0.1	93	0.2	61	0.1	71	36	1200	5.8	0.5	0.1	0.5	0.1	41	0.1	0.1	0.1	160	7.7	0.022	1	230	3.2	17	0.12	20	3.7	0.018	0.02	0.1	10	16	0.1	0.07	9	0.5
1224	08PMD670-SRK-WR-15	W	1	0.1	100	0.4	72	0.1	78	38	1200	5.7	0.5	0.1	0.7	0.1	16	0.1	0.1	0.1	120	5.5	0.019	1	230	3.2	4	0.2	20	3.7	0.026	0.01	0.1	10	5.5	0.1	0.06	8	0.5
1225	08PMD669-SRK-WR-16	W	2	0.1	98	0.2	69	0.1	57	34	1400	6.2	0.5	0.1	2.3	0.1	15	0.1	0.1	0.1	160	6.1	0.025	1	210	3.7	2	0.19	20	3.9	0.021	0.01	0.1	10	8.6	0.1	0.05	9	0.8
1226	08PMD669-SRK-WR-17	W	2	0.1	86	0.3	72	0.1	57	35	1300	7	2	0.1	0.5	0.1	14	0.1	0.1	0.1	190	4.3	0.025	2	200	4.9	3	0.071	27	4.4	0.026	0.04	0.1	10	18	0.1	0.06	10	0.8
1227	08PMD669-SRK-WR-18	W	2	0.1	100	0.2	65	0.1	57	38	1300	6.6	0.5	0.1	0.5	0.1	20	0.1	0.1	0.1	180	6.2	0.024	2	190	3.5	5	0.11	20	3.8	0.024	0.03	0.1	10	18	0.1	0.1	11	0.7
1228	08PMD669-SRK-WR-19	W	1	0.1	100	0.2	74	0.1	50	35	1100	5.8	0.5	0.1	0.5	0.1	18	0.1	0.1	0.1	150	4.1	0.025	1	110	3.2	5	0.19	20	3.5	0.021	0.03	0.1	10	7.2	0.1	0.05	9	0.5
1229	08PMD669-SRK-WR-20	W	1	0.1	94	0.2	71	0.1	48	34	1100	6.2	0.5	0.1	420	0.1	15	0.1	0.1	0.1	160	3.4	0.024	1	130	4	14	0.13	20	3.9	0.027	0.06	0.1	10	11	0.1	0.05	10	0.5
1230	08PMD669-SRK-WR-21	W	1	0.2	96	0.2	61	0.1	56	32	1100	6.1	0.5	0.1	5	0.1	33	0.1	0.1	0.1	160	4	0.024	1	160	4	4	0.14	24	3.7	0.03	0.05	0.1	10	11	0.1	0.05	9	0.7
1231	08PMD669-SRK-WR-22	W	1	0.1	85	0.2	56	0.1	59	31	870	4.9	0.5	0.1	0.5	0.1	14	0.1	0.1	0.1	110	2.7	0.022	1	290	3.9	19	0.13	20	3.3	0.027	0.04	0.1	10	8.2	0.1	0.05	7	0.5
1232	08PMD669-SRK-WR-23	W	1	0.1	69	0.2	49	0.1	110	36	1000	4.8	0.7	0.1	0.5	0.1	14	0.1	0.1	0.1	120	3.5	0.019	2	610	5	8	0.083	20	3.3	0.032	0.01	0.1	10	9.6	0.1	0.05	8	0.5
1233	08PMD669-SRK-WR-24	W	1	0.1	64	0.2	50	0.1	140	42	1100	5.3	1.8	0.1	1.9	0.1	80	0.1	0.1	0.1	130	7.1	0.018	1	480	4.1	91	0.042	20	3.6	0.009	0.01	0.1	10	16	0.1	0.06	8	0.5
1234	08PMD669-SRK-WR-25	W	1	0.1	98	0.4	66	0.1	77	37	1700	7.4	0.5	0.1	2.4	0.1	100	0.1	0.1	0.1	190	9.3	0.022	2	240	3.9	31	0.0085	20	4.4	0.013	0.03	0.1	10	19	0.1	0.06	11	0.5
1235	08PMD669-SRK-WR-26	W	1	0.1	90	0.2	65	0.1	79	39	1700	7.4	0.5	0.1	1.7	0.1	46	0.1	0.1	0.1	180	9	0.018	2	250	4	20	0.042	20	4.6	0.01	0.05	0.1	10	16	0.1	0.07	10	0.5
1236	08PMD669-SRK-WR-27	W	1	0.1	84	0.2	62	0.1	80	37	1600	7	5.1	0.1	2.1	0.1	32	0.1	0.1	0.1	190	7.8	0.022	2	260	3.9	14	0.012	20	4.3	0.017	0.06	0.1	10	17	0.1	0.08	10	0.5
1237	08PMD669-SRK-WR-28	W	1	0.1	110	0.2	61	0.1	85	39	1400	6.3	0.6	0.1	0.8	0.1	22	0.1	0.1	0.1	170	5.5	0.022	1	270	3.4	2	0.26	20	3.8	0.031	0.02	0.1	10	8.3	0.1	0.07	9	0.5
1238	08PMD669-SRK-WR-29	W	1	0.2	100	0.2	73	0.1	87	41	1800	8.7	5.4	0.1	1.7	0.1	12	0.1	0.1	0.1	210	4.8	0.021	2	280	6.4	7	0.057	21	4.8	0.029	0.03	0.1	10	19	0.1	0.07	12	0.5
1239	08PMD669-SRK-WR-30	W	1	0.1	100	0.2	68	0.1	87	41	1400	6.6	0.6	0.1	0.5	0.1	18	0.1	0.1	0.1	160	5.3	0.02	1	250	3.7	3	0.27	20	4.3	0.027	0.01	0.1	10	5.7	0.1	0.07	9	0.5
1240	08PMD669-SRK-WR-31	W	1	0.1	100	0.1	61	0.1	86	39	1400	6.3	0.5	0.1	0.5	0.1	25	0.1	0.1	0.1	190	7.1	0.02	1	260	3.6	2	0.42	20	4.1	0.027	0.01	0.1	10	11	0.1	0.07	10	0.5
1241	08PMD669-SRK-WR-32	W	1	0.1	97	0.2	54	0.1	83	40	1600	6.5	0.7	0.1	33	0.1	50	0.1	0.1	0.1	100	7	0.02	1	150	3.9	25	0.002	20	3	0.011	0.02	0.1	10	11	0.1	0.18	6	0.5
1242	08PMD669-SRK-WR-33	W	1	0.2	210	0.5	71	0.1	80	38	1700	7.4	13	0.1	6.5	0.1	33	0.1	0.1	0.1	210	6.2	0.034	2	210	4.5	15	0.069	20	3.6	0.031	0.1	0.1	10	16	0.1	0.09	9	0.5
1243	08PMD669-SRK-WR-34	W	1	0.1	99	0.2	63	0.1	91	40	1300	6.7	0.1	0.1	3.5	0.1	25	0.1	0.1	0.1	170	5.4	0.022	1	280	3.9	1	0.19	20	4	0.024	0.01	0.1	10	11	0.1	0.06	9	0.5
1244	08PMD669-SRK-WR-35	W	1	0.1	100	0.2	70	0.1	96	42	1600	7.4	0.7	0.1	1.6	0.1	70	0.1	0.1	0.1	230	8.2	0.021	1	310	4.4	40	0.007	20	4.7	0.017	0.02	0.1	10	23	0.1	0.06	12	0.5
1245	08PMD669-SRK-WR-36	W	1	0.1	96	0.2	70	0.1	110	42	1300	6.8	43	0.1	11	0.1	37	0.1	0.1	0.1	110	6.6	0.024	1	230	4.1	13	0.001	20	3	0.041	0.13	0.1	10	13				

Appendix C: Geochemical Data - SRK Samples

SRK Serial Number	Lab ID	Preliminary Economic Classification	Lithology ¹	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	%	ppm	%	ppm	%	ppm	%	ppm	ppb	ppm	ppm	%	ppm
1323	08PMD657A-SRK-WR-114	W	13a	0.4	1600	0.6	120	0.1	310	80	2000	10	2	0.1	3.4	0.4	120	0.2	0.3	0.1	210	8.3	0.056	3	60	3.8	7	0.004	20	2.6	0.015	0.04	0.1	10	29	0.1	0.45	13	0.9
1324	08PMD657A-SRK-WR-115	W	13a	0.3	130	1	44	0.1	270	48	1700	6.4	100	0.1	5.5	0.2	100	0.1	0.3	0.1	47	9.9	0.034	1	110	3.7	14	0.002	20	0.77	0.071	0.07	0.1	10	13	0.1	0.26	3	0.5
1325	08PMD657A-SRK-WR-116	W	13a	0.3	86	1.2	53	0.1	120	36	1100	5.2	77	0.1	12	0.4	78	0.1	0.3	0.1	34	7.5	0.079	3	46	3	18	0.001	20	0.86	0.095	0.1	0.1	10	9.7	0.1	0.19	2	0.5
1326	08PMD657A-SRK-WR-117	W	13a	0.2	110	0.6	69	0.1	94	40	1300	6.5	45	0.1	30	0.1	54	0.1	0.2	0.1	56	7.5	0.023	1	65	3	12	0.001	20	1.3	0.11	0.06	0.1	10	14	0.1	0.09	3	0.5
1327	08PMD657A-SRK-WR-118	W	13a	0.2	110	0.8	62	0.1	100	40	1300	6.4	53	0.1	48	0.3	60	0.1	0.2	0.1	43	7.1	0.033	1	56	2.8	16	0.002	20	1.1	0.1	0.07	0.1	10	14	0.1	0.14	3	0.5
1328	08PMD657A-SRK-WR-119	W	13a	0.3	90	1.2	58	0.1	89	33	1200	5.6	38	0.1	1.8	0.4	76	0.1	0.3	0.1	40	8.6	0.065	2	45	3.4	15	0.002	20	1	0.08	0.07	0.1	10	10	0.1	0.17	3	0.5
1329	08PMD657A-SRK-WR-120	W	13a	0.3	110	1.4	67	0.1	110	38	1300	6.4	96	0.1	3.1	0.2	74	0.1	0.2	0.1	60	8.3	0.042	1	59	3.3	13	0.001	20	1.5	0.089	0.05	0.1	10	13	0.1	0.31	4	0.5
1330	08PMD657A-SRK-WR-121	W	1	0.1	120	0.3	66	0.1	120	44	1500	7	8.1	0.1	2.4	0.1	20	0.1	0.1	0.1	120	5.3	0.018	1	140	3.2	10	0.001	20	2.9	0.087	0.04	0.1	10	20	0.1	0.08	9	0.5
1331	08PMD657A-SRK-WR-122	W	1	0.1	110	0.4	65	0.1	110	46	1400	7	3.7	0.1	2.6	0.1	26	0.1	0.1	0.1	110	6.2	0.019	1	130	3.2	15	0.001	20	2.6	0.096	0.04	0.1	10	20	0.1	0.07	7	0.5
1332	08PMD657A-SRK-WR-123	W	13a	0.2	110	0.8	49	0.1	89	41	1400	6.8	72	0.1	100	0.1	34	0.1	0.1	0.1	65	7.7	0.021	1	74	2.6	10	0.001	20	1.4	0.11	0.05	0.1	10	19	0.1	0.57	4	0.6
1333	08PMD657A-SRK-WR-124	W	13a	0.5	79	1.1	24	0.1	65	28	1100	4.5	34	0.1	7.6	0.4	75	0.1	0.2	0.1	22	6.1	0.034	2	23	2	24	0.001	20	0.74	0.11	0.11	0.1	10	9.2	0.1	0.19	2	0.5
1334	08PMD657A-SRK-WR-125	W	13a	0.5	77	1.3	29	0.1	61	27	1000	4.2	24	0.1	4.7	0.6	91	0.1	0.2	0.1	19	5.6	0.031	2	22	1.7	30	0.001	20	0.75	0.1	0.13	0.1	10	7.5	0.1	0.13	2	0.5
1335	08PMD657A-SRK-WR-126	W	13a	0.8	60	1.5	25	0.1	46	20	850	3.6	19	0.2	14	0.8	100	0.1	0.1	0.1	12	5.2	0.036	3	12	1.6	25	0.001	20	0.65	0.093	0.13	0.1	10	5.2	0.1	0.11	2	0.5
1336	08PMD657A-SRK-WR-127	W	13a	0.8	57	1.7	31	0.1	40	18	820	3.3	25	0.3	1.7	1.2	100	0.1	0.1	0.1	13	4.7	0.039	4	14	1.5	40	0.001	20	0.68	0.086	0.13	0.1	10	3.9	0.1	0.12	2	0.5
1337	08PMD657A-SRK-WR-128	W	1	0.1	130	1.3	82	0.1	110	47	1300	6.9	16	0.1	3.3	0.1	55	0.1	0.1	0.1	150	4.2	0.022	1	140	3.3	4	0.19	20	3.7	0.035	0.02	0.1	10	17	0.1	0.07	9	0.5
1338	08PMD657A-SRK-WR-129	W	1	0.1	130	0.8	62	0.1	68	43	1600	7.7	54	0.1	35	0.1	46	0.1	0.1	0.1	120	6.2	0.026	1	73	2.8	16	0.001	20	2.3	0.09	0.05	0.1	10	21	0.1	0.29	7	0.5
1339	08PMD657A-SRK-WR-130	W	1	0.2	140	0.7	69	0.1	74	44	1700	8.2	7.2	0.1	39	0.1	62	0.1	0.1	0.1	190	7.3	0.028	1	120	2.7	13	0.004	20	4.3	0.025	0.03	0.1	10	23	0.1	0.1	12	0.5
1340	08PMD657A-SRK-WR-131	W	1	0.1	160	0.6	90	0.1	91	49	1500	7.7	14	0.1	2.1	0.1	34	0.1	0.1	0.1	190	6.2	0.026	1	130	2.7	7	0.13	20	4.4	0.022	0.02	0.1	10	19	0.1	0.1	12	0.6
1341	08PMD657A-SRK-WR-132	W	1	0.2	140	1.3	84	0.1	83	45	1500	7.5	5	0.1	1	0.1	25	0.1	0.1	0.1	170	5.3	0.025	1	130	2.9	3	0.24	20	4	0.037	0.03	0.1	10	15	0.1	0.08	11	0.5
1342	08PMD657A-SRK-WR-133	W	1	0.1	150	0.9	72	0.1	81	43	1600	7.7	14	0.1	200	0.1	27	0.1	0.1	0.1	170	6.7	0.024	2	120	3	8	0.14	20	4.1	0.031	0.06	0.1	10	18	0.1	0.08	11	0.6
1343	08PMD657A-SRK-WR-134	W	1	0.2	140	0.5	71	0.1	94	50	1500	7.4	7.9	0.1	3.4	0.1	20	0.1	0.1	0.1	200	6.4	0.025	2	140	2.7	4	0.17	20	4	0.034	0.05	0.1	10	21	0.1	0.11	12	0.9
1344	08PSD142-SRK-WR-135	W	1	0.5	270	4.6	99	0.1	340	62	970	5.2	2.1	0.2	3.1	1.1	38	0.5	0.1	0.1	150	9.3	0.065	9	450	1.7	37	0.52	20	2.3	0.041	0.06	0.1	10	4	0.1	0.35	12	0.5
1345	08PSD142-SRK-WR-136	W	1	0.6	290	2.6	77	0.1	730	89	1100	4.8	1.2	0.2	1	1.1	40	0.3	0.1	0.1	130	4.6	0.083	8	840	1.4	15	0.64	20	2.1	0.03	0.12	0.1	10	3.3	0.1	0.25	11	0.9
1346	08PSD142-SRK-WR-137	W	1	0.6	240	1.2	71	0.1	630	84	1900	6.7	6.6	0.2	39	0.8	120	0.1	0.1	0.1	190	10	0.071	9	880	2.3	16	0.48	20	2.8	0.036	0.11	0.1	10	7.1	0.1	0.16	13	0.8
1347	08PSD142-SRK-WR-138	W	1 w. sediments mixed	0.6	180	1.2	74	0.1	670	85	2600	8.5	300	0.1	110	0.4	150	0.1	0.4	0.1	140	12	0.058	4	570	3.4	28	0.026	20	1.8	0.008	0.09	0.3	10	15	0.1	0.29	8	0.5
1348	08PSD142-SRK-WR-139	W	1	0.6	570	0.9	64	0.1	820	83	2500	8.3	5.9	0.1	7.1	0.3	160	0.1	0.1	0.1	190	13	0.063	8	930	3.6	44	0.085	20	2.8	0.03	0.06	0.1	10	18	0.1	0.18	13	0.5
1349	08PSD142-SRK-WR-140	W	1	0.3	180	0.8	46	0.1	640	74	2100	8.1	5	0.1	2.4	0.2	100	0.1	0.1	0.1	160	8.6	0.039	5	650	5	75	0.077	20	2.5	0.039	0.06	0.1	10	17	0.1	0.15	10	0.5
1350	08PSD142-SRK-WR-141	W	1	0.5	230	1.2	85	0.1	510	72	2100	8.3	61	0.1	16	0.3	180	0.2	0.1	0.1	220	9.1	0.058	5	780	3.6	20	0.18	20	3.2	0.07	0.16	0.1	10	19	0.1	0.17	12	0.5
1351	08PSD142-SRK-WR-142	W	1	0.6	230	2.1	100	0.1	250	62	2800	9	31	0.1	19	0.6	180	0.3	0.1	0.1	250	8.1	0.06	8	440	2.7	47	0.28	20	3.3	0.061	0.13	0.1	10	18	0.1	0.17	14	0.5
1352	08PSD142-SRK-WR-143	W	1	0.6	270	3.1	75	0.1	590	79	1100	5.1	1.8	0.2	1.7	1	55	0.4	0.1	0.1	150	3.6	0.073	9	640	1.6	79	0.61	20	2.1	0.054	0.16	0.1	10	3.5	0.1	0.24	12	0.7
1353	08PSD142-SRK-WR-144	W	1	0.5	250	1.3	41	0.1	550	63	1100	4.5	2.9	0.2	0.5	0.8	89	0.1	0.1	0.1	110	6.6	0.066	8	610	1.7	47	0.53	20	2.1	0.031	0.13	0.1	10	2.3	0.1	0.17	11	0.5
1354	08PSD142-SRK-WR-145	W	1	0.5	180	1.1	51	0.1	520	71	1600	5.9	14	0.1	3.4	0.3	200	0.1	0.2	0.1	210	9.5	0.054	5	680	2.8	140	0.14	20	2.5	0.041	0.32	0.1	10	13	0.1	0.11	12	0.7
1355	08PSD142-SRK-WR-146	mixed	1 w. sediments mixed	0.5	190	2.5	62	0.2	680	85	2300	8	9	0.1	6.8	0.3	180	0.5	0.2	0.1	98	10	0.068	4	430	3.5	72	0.065	20	1.3	0.01	0.44	0.3	10	12	0.1	0.1	7	0.7
1356	08PSD142-SRK-WR-147	W	1	0.6	230	1.4	54	0.1	820	100	1800	7.9	35	0.1	140	0.4	220	0.1	0.1	0.1	260	10	0.063	9	740	3.3	49	0.23	20	3.2	0.073	0.44	0.1	10	19	0.1	0.19	16	0.5
1357	08PSD142-SRK-WR-148	W	1	0.6	240	1.3	47	0.1	790	97	1900	8.3	62	0.1	76	0.5	250	0.1	0.1	0.1	270	9.8	0.076	10	530	3.6	49	0.33	20	3.4	0.041	0.22	0.7	10	17	0.1	0.21	17	0.6
1358	08PSD142-SRK-WR-149	O	1	0.7	200	4.3	32	0.4	720	99	2500	7.9	1200	0.1																									

Appendix C: Geochemical Data - SRK Samples

SRK Serial Number	Lab ID	Preliminary Economic Classification	Lithology ¹	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	%	ppm	%	ppm	%	%	%	ppm	ppb	ppm	ppm	%	ppm	ppm
1911	07PMD552-SRK-WR-484	W	12q	0.9	12	7.2	11	0.1	50	20	1200	2.4	68	0.1	81	0.1	22	0.1	0.1	0.1	15	4.9	0.013	1	220	2.4	9	0.001	20	0.41	0.039	0.13	0.5	20	9.4	0.1	0.71	1	0.5
1912	07PMD552-SRK-WR-485	W	1	0.4	110	2.5	49	0.2	130	50	1200	4.9	150	0.1	320	0.1	44	0.1	0.3	0.1	51	5.7	0.021	1	130	2.8	13	0.001	20	1.5	0.079	0.13	0.8	20	15	0.1	1	3	0.7
1913	07PMD552-SRK-WR-486	O	1	0.1	120	0.8	33	0.1	130	42	1200	4.3	170	0.1	380	0.1	31	0.1	0.1	0.1	35	6.2	0.02	1	82	2.4	6	0.001	20	0.91	0.099	0.09	0.5	10	17	0.1	0.43	2	0.5
1914	07PMD552-SRK-WR-487	O	1	0.2	120	1	35	0.3	130	43	1200	4.3	190	0.1	1100	0.1	31	0.1	0.2	0.1	37	6	0.018	1	85	2.3	11	0.001	20	0.98	0.1	0.09	7.2	10	17	0.1	0.5	2	0.5
1915	07PMD552-SRK-WR-488	mixed	1 mixed	0.3	120	1.2	27	0.2	140	44	1200	4.3	210	0.1	730	0.1	35	0.1	0.2	0.1	23	6.2	0.024	1	65	2.1	7	0.001	20	0.53	0.07	0.06	79	10	16	0.1	0.68	1	0.6
1916	06PMD484-SRK-WR-489	W	1	0.1	110	0.4	46	0.1	61	27	660	3.7	1.1	0.1	2.6	0.1	17	0.1	0.1	0.1	64	2.7	0.018	1	140	1.6	3	0.21	20	2.3	0.046	0.03	0.1	10	3.3	0.1	0.07	4	0.5
1917	06PMD484-SRK-WR-490	W	1	0.1	100	0.3	64	0.1	83	39	1300	6.8	2.3	0.1	1.6	0.1	17	0.1	0.1	0.1	200	6	0.022	2	230	4.3	2	0.086	20	4.4	0.022	0.02	0.1	10	21	0.1	0.06	11	0.6
1918	06PMD484-SRK-WR-491	W	1	0.2	77	0.4	61	0.1	86	36	1300	6.4	34	0.1	44	0.1	14	0.1	0.1	0.1	130	5.2	0.02	2	190	5	9	0.004	20	3.8	0.019	0.05	0.1	10	14	0.1	0.13	8	0.5
1919	06PMD484-SRK-WR-492	W	1	0.2	96	0.3	69	0.1	83	38	1300	5.4	45	0.1	5.1	0.1	26	0.1	0.1	0.1	81	6.5	0.021	1	140	3.9	11	0.002	20	2.3	0.025	0.11	0.1	10	13	0.1	0.1	5	0.5
1920	06PMD484-SRK-WR-493	W	1	0.4	150	0.7	65	0.1	310	62	1400	7.6	65	0.1	5.1	0.2	64	0.1	0.3	0.1	210	6.2	0.048	3	400	5.6	2	0.005	20	3.9	0.008	0.01	0.1	10	21	0.1	0.26	12	0.5
1921	06PMD484-SRK-WR-494	O	1	0.4	180	3.5	37	0.3	260	47	1700	6.5	630	0.1	1800	0.2	79	0.1	0.8	0.1	96	7.8	0.025	3	190	4.1	11	0.002	20	1.5	0.027	0.1	0.1	10	14	0.1	2.2	5	0.6
1922	06PMD484-SRK-WR-495	O	1	0.6	97	2.1	29	0.2	190	43	1300	5.2	510	0.1	680	0.2	85	0.1	0.4	0.1	42	6.6	0.028	2	70	3.1	22	0.003	20	1.3	0.04	0.26	0.2	10	11	0.1	1.5	3	0.5
1923	06PMD484-SRK-WR-496	W	1	2	210	1.6	20	0.1	550	69	1500	5.2	810	0.1	79	0.4	120	0.1	0.8	0.1	38	9.9	0.088	5	100	4.4	46	0.002	20	1.1	0.017	0.22	0.2	10	11	0.1	0.44	3	0.5
1924	06PMD484-SRK-WR-497	W	1	0.7	190	1.1	88	0.1	180	54	1500	8	100	0.1	73	0.5	36	0.1	0.1	0.1	260	4.6	0.097	8	170	4.9	20	0.025	20	3.6	0.038	0.07	0.1	10	19	0.1	0.29	14	0.6
1925	06PMD470-SRK-WR-498	O	1	0.3	120	0.9	58	0.1	490	57	1700	6.1	150	0.1	120	0.1	93	0.1	0.1	0.1	150	8.2	0.028	3	630	5.8	9	0.003	20	2.8	0.015	0.07	0.1	10	17	0.1	0.17	8	0.5
1926	06PMD470-SRK-WR-499	W	1	0.2	86	1	49	0.3	110	37	2000	5.9	55	0.1	19	0.1	33	0.1	0.1	0.1	39	7.9	0.032	2	48	3.2	15	0.001	20	1.7	0.093	0.2	1.6	10	11	0.1	0.22	3	0.5
1927	06PMD470-SRK-WR-500	W	1	0.2	89	0.8	46	0.1	110	41	1600	6	95	0.1	240	0.1	42	0.1	0.1	0.1	37	7.3	0.035	1	45	2.3	14	0.002	20	1.4	0.12	0.2	0.1	10	11	0.1	0.31	3	0.5
1928	06PMD470-SRK-WR-501	W	1	0.1	84	1.1	52	0.1	110	40	1700	6	120	0.1	65	0.1	52	0.1	0.1	0.1	43	7	0.035	2	51	2.3	12	0.001	20	1.5	0.12	0.18	0.1	10	12	0.1	0.33	3	0.5
1929	06PMD470-SRK-WR-502	O	1	0.2	97	1.8	67	0.5	130	44	1600	6.8	430	0.1	2500	0.1	78	0.1	0.2	0.1	67	6.4	0.032	1	82	2.6	18	0.002	20	1.6	0.068	0.17	0.2	10	13	0.1	1.4	5	0.5
1930	06PMD470-SRK-WR-503	W	1 mixed	0.4	81	1.1	74	0.1	130	41	1800	7.3	23	0.1	3.6	0.3	44	0.1	0.1	0.1	110	6.2	0.046	4	130	3.3	29	0.002	20	2.9	0.051	0.12	0.1	10	14	0.1	0.12	7	0.5
1931	06PMD470-SRK-WR-504	W	1	0.2	96	0.3	85	0.1	160	46	1800	6.2	170	0.1	4.8	0.3	150	0.1	0.1	0.1	57	9.9	0.042	3	280	5.5	10	0.001	20	3.1	0.073	0.08	0.1	10	19	0.1	0.1	9	0.5
1932	06PMD470-SRK-WR-505	W	1	0.2	120	0.6	43	0.1	350	59	2000	6.9	140	0.1	17	0.1	63	0.1	0.1	0.1	66	8.5	0.039	2	190	3	10	0.001	20	1.5	0.091	0.13	0.1	10	15	0.1	0.16	4	0.5
1933	06PMD470-SRK-WR-506	O	1	0.4	64	1.3	32	0.6	230	41	1400	4.9	570	0.1	640	0.1	88	0.1	0.4	0.1	42	6.2	0.03	1	100	2.5	11	0.001	20	0.96	0.028	0.12	0.2	10	9.2	0.1	1.1	3	0.5
1934	06PMD470-SRK-WR-507	W	1	0.1	83	0.6	48	0.1	150	45	1400	7	77	0.1	150	0.1	62	0.1	0.1	0.1	60	7.3	0.035	2	110	2.7	13	0.001	20	2	0.11	0.15	0.1	10	15	0.1	0.1	4	0.5
1935	06PMD470-SRK-WR-508	O	1	0.1	94	1.3	53	0.2	140	44	1600	6.9	380	0.1	540	0.1	70	0.1	0.2	0.1	65	6.8	0.03	1	92	2.7	16	0.001	20	1.7	0.067	0.19	0.1	10	15	0.1	1.1	4	0.5
1936	06PMD470-SRK-WR-509	W	1	0.1	87	0.8	45	0.1	130	43	2000	6.6	75	0.1	58	0.1	45	0.1	0.1	0.1	44	7.5	0.032	2	64	2.3	12	0.002	20	1.4	0.092	0.18	0.1	10	12	0.1	0.27	3	0.5
1937	06PMD470-SRK-WR-510	W	1	0.4	180	2.8	41	0.2	280	55	2100	7	540	0.1	240	0.1	77	0.1	0.5	0.1	44	8.6	0.043	1	130	3.3	18	0.001	20	1.2	0.052	0.17	0.2	10	13	0.1	1.5	3	0.6
1938	06PMD470-SRK-WR-511	W	1	0.4	160	1.2	40	0.1	670	79	1900	8.2	360	0.1	42	0.2	89	0.1	0.6	0.1	160	8.8	0.041	2	620	5	8	0.003	20	2.5	0.014	0.04	0.1	10	18	0.1	0.3	9	0.5
1939	06PMD470-SRK-WR-512	W	1	0.4	150	0.8	45	0.1	640	81	2200	8.1	87	0.1	17	0.2	58	0.1	0.4	0.1	160	8.7	0.043	3	710	4.9	9	0.003	20	2.4	0.025	0.03	0.1	10	18	0.1	0.14	9	0.5
1940	06PMD470-SRK-WR-513	W	1	0.5	140	1.5	33	0.1	630	77	1700	6.7	770	0.1	250	0.2	190	0.1	2.3	0.1	49	8	0.038	2	260	5.3	19	0.001	20	0.75	0.02	0.14	1.2	10	13	0.1	0.46	3	0.7
1941	06PMD470-SRK-WR-514	W	5	0.6	190	2.5	12	0.2	300	42	1500	4	350	0.1	2.1	0.6	120	0.1	1.1	0.1	17	7.9	0.044	4	65	3.9	12	0.001	34	0.93	0.05	0.22	0.2	10	6.4	0.1	0.56	2	0.6
1942	06PMD470-SRK-WR-515	W	1	0.7	170	1.7	33	0.1	660	78	1900	6.9	590	0.1	36	0.3	210	0.1	1.7	0.1	54	8.9	0.042	4	250	5.9	23	0.001	20	0.89	0.016	0.16	0.2	10	15	0.1	0.34	3	0.8
1943	06PMD470-SRK-WR-516	W	1	0.5	170	1	26	0.1	650	78	1800	6.2	170	0.1	4.8	0.3	150	0.1	0.4	0.1	67	9.9	0.042	3	280	5.5	10	0.001	20	3.1	0.073	0.08	0.1	10	19	0.1	0.1	4	0.8
1944	06PMD470-SRK-WR-517	W	1	0.4	88	1.4	16	0.1	230	30	1100	4	250	0.1	19	0.9	120	0.1	1.1	0.1	18	6.9	0.032	1	38	3.2	8	0.001	20	0.88	0.047	0.1	1.9	10	5.1	0.1	0.3	2	0.5
1945	06PMD470-SRK-WR-518	W	1	0.6	170	1.7	40	0.1	520	66	1800	7	710	0.1	140	0.3	250	0.1	1.7	0.1	46	8.7	0.034	4	150	5.8	22	0.002	20	0.42	0.017	0.16	0.1	10	13	0.1	0.41	2	0.7
1946	06PMD470-SRK-WR-519	W	5	0.7	60	1.3	27	0.1	110	24	1200	5.2	180	0.2	96	1.1	170	0.1	0.3	0.1	20	6.4	0.023	4	25	4.1	10												

Appendix D

Geological Attributes and Economic Classifications of Static Database

Appendix D: Geological Attributes and Economic Classification of Static Database

SRK Serial Number	Lab ID	Sample Set	Drill Hole ID	Depth From (m)	Depth To (m)	Length (m)	Economic Classification	Lithology ¹	
								Primary	Summary (if additional lithologies) (proportion in parentheses)
643	2	Historic	PMD138	35.86	36	0.14	W	1	1a
650	11	Historic	PMD165	162.61	163.8	1.19	W	1	1p
651	12	Historic	PMD095	40.6	41.6	1	W	1	1a
653	14	Historic	PMD117	73.89	74.45	0.56	W	1	1a
655	16	Historic	PMD097	13.82	14.42	0.6	W	1	1p
656	17	Historic	PMD146	23.51	24.51	1	W	1	1a
663	208802	Newmont	04PMD272	39	64	25	W	1	1a
670	208811	Newmont	PMD150	4.71	30	25.29	W	1	1a
671	208812	Newmont	PMD150	30	55	25	W	1	1a
672	208813	Newmont	PMD150	55	80	25	W	1	1a
673	208814	Newmont	PMD150	80	105	25	W	1	1a
678	208840	Newmont	05PMD291	31	56	25	W	1	1a
682	208845	Newmont	05PMD352	4.7	30	25.3	W	1	1a
683	208846	Newmont	05PMD352	30	55	25	W	1	1a
684	208847	Newmont	05PMD352	55	71	16	W	1	1a
688	208851	Newmont	05PMD293	84	109	25	W	1	1pv (0.64), 1a (0.36)
707	208821	Newmont	PMD155	133	158	25	W	1	1a (0.86), 1p (0.14)
712	208861	Newmont	PMD156	21.77	47	25.23	W	1	1a
718	208868	Newmont	PMD156	197	222	25	W	1	1p (0.78), 1u (0.18), 1a (0.05)
719	208869	Newmont	PMD156	222	242.85	20.85	W	1	1a (0.68), 1p (0.26), 1u (0.06)
723	202703	Newmont	98PMD084	117	142	25	W	1	1a (0.93), 1pv (0.07)
727	202707	Newmont	98PMD084	212.5	221.59	9.09	W	1	1a
728	202712	Newmont	98PMD084	99	117	18	W	1	1pv
1210	08PMD670-SRK-WR-1	SRK	08PMD670	4.21	14.15	9.94	W	1	1a
1211	08PMD670-SRK-WR-2	SRK	08PMD670	20	30.5	10.5	W	1	1a
1212	08PMD670-SRK-WR-3	SRK	08PMD670	41	51.5	10.23	W	1	1a
1213	08PMD670-SRK-WR-4	SRK	08PMD670	62	72.31	9.99	W	1	1a
1214	08PMD670-SRK-WR-5	SRK	08PMD670	72.63	81.5	8.87	W	1	1a
1215	08PMD670-SRK-WR-6	SRK	08PMD670	90.5	101	10.5	W	1	1a
1216	08PMD670-SRK-WR-7	SRK	08PMD670	110	119.9	9.9	W	1	1a
1218	08PMD670-SRK-WR-9	SRK	08PMD670	120.55	134.14	13.31	W	1	1a
1219	08PMD670-SRK-WR-10	SRK	08PMD670	134.14	144.5	10.36	W	1	1pv
1220	08PMD670-SRK-WR-11	SRK	08PMD670	153.5	164.74	11.24	W	1	1pv
1221	08PMD670-SRK-WR-12	SRK	08PMD670	174.86	185	10.14	W	1	1pv
1222	08PMD670-SRK-WR-13	SRK	08PMD670	195.5	206	10.5	W	1	1pv
1223	08PMD670-SRK-WR-14	SRK	08PMD670	217.4	227	9.6	W	1	1pv
1224	08PMD670-SRK-WR-15	SRK	08PMD670	236	245	8.65	W	1	1pv
1228	08PMD669-SRK-WR-19	SRK	08PMD669	55.26	66.5	11.24	W	1	1a
1229	08PMD669-SRK-WR-20	SRK	08PMD669	66.5	77	10.5	W	1	1a
1230	08PMD669-SRK-WR-21	SRK	08PMD669	78.5	87.5	9	W	1	1a
1231	08PMD669-SRK-WR-22	SRK	08PMD669	87.5	98	10.24	W	1	1a
1232	08PMD669-SRK-WR-23	SRK	08PMD669	98	108.5	10.5	W	1	1a
1233	08PMD669-SRK-WR-24	SRK	08PMD669	108.5	119.73	10.99	W	1	1a
1234	08PMD669-SRK-WR-25	SRK	08PMD669	119.73	129.5	9.77	W	1	1pv
1235	08PMD669-SRK-WR-26	SRK	08PMD669	135.5	146.52	11.02	W	1	1pv
1236	08PMD669-SRK-WR-27	SRK	08PMD669	158	168.5	10.5	W	1	1pv
1237	08PMD669-SRK-WR-28	SRK	08PMD669	178.54	188	9.46	W	1	1pv
1238	08PMD669-SRK-WR-29	SRK	08PMD669	197	207	10	W	1	1pv
1239	08PMD669-SRK-WR-30	SRK	08PMD669	216.5	227	10.5	W	1	1pv
1240	08PMD669-SRK-WR-31	SRK	08PMD669	241.52	251	9.48	W	1	1pv
1241	08PMD669-SRK-WR-32	SRK	08PMD669	258.5	269	10.5	W	1	1pv
1242	08PMD669-SRK-WR-33	SRK	08PMD669	279.5	290	10.5	W	1	1pv
1243	08PMD669-SRK-WR-34	SRK	08PMD669	303.99	314	10.01	W	1	1pv
1244	08PMD669-SRK-WR-35	SRK	08PMD669	321.5	332	10.5	W	1	1pv
1245	08PMD669-SRK-WR-36	SRK	08PMD669	342.5	353	10.5	W	1	1pv
1253	08PMD650-SRK-WR-44	SRK	08PMD650	87.5	97.5	9.75	W	1	1a
1254	08PMD650-SRK-WR-45	SRK	08PMD650	97.5	101.02	3.52	W	1	1a
1258	08PMD650-SRK-WR-49	SRK	08PMD650	112	123.14	11.14	W	1	1iz
1261	08PMD650-SRK-WR-52	SRK	08PMD650	128.59	133.45	4.86	W	1	1ad
1264	08PMD650-SRK-WR-55	SRK	08PMD650	146.5	159	12.3	W	1	1a
1266	08PMD650-SRK-WR-57	SRK	08PMD650	160.75	171	10.25	W	1	1pz
1269	08PMD650-SRK-WR-60	SRK	08PMD650	198.35	205.5	7.15	W	1	1pz
1270	08PMD650-SRK-WR-61	SRK	08PMD650	205.5	213.29	7.79	W	1	1pz
1274	08PMD650-SRK-WR-65	SRK	08PMD650	227.22	236	8.78	W	1	1p
1275	08PMD650-SRK-WR-66	SRK	08PMD650	236	243.65	7.65	W	1	1p
1276	08PMD650-SRK-WR-67	SRK	08PMD650	243.65	256.69	12.68	W	1	1u
1277	08PMD650-SRK-WR-68	SRK	08PMD650	256.69	262.83	6.14	W	1	1p
1278	08PMD650-SRK-WR-69	SRK	08PMD650	262.83	265.96	3.13	W	1	1u
1279	08PMD650-SRK-WR-70	SRK	08PMD650	265.96	273.5	7.54	W	1	1u
1280	08PMD650-SRK-WR-71	SRK	08PMD650	273.5	280.5	6.69	W	1	1u
1281	08PSD143B-SRK-WR-72	SRK	08PSD143B	25.68	36.5	10.82	W	1	1p
1282	08PSD143B-SRK-WR-73	SRK	08PSD143B	45.5	56	10.23	W	1	1p
1283	08PSD143B-SRK-WR-74	SRK	08PSD143B	65	75.5	10.5	W	1	1p
1284	08PSD143B-SRK-WR-75	SRK	08PSD143B	84	92.5	8.12	W	1	1p
1285	08PSD143B-SRK-WR-76	SRK	08PSD143B	92.5	103	10.5	W	1	1p
1286	08PSD143B-SRK-WR-77	SRK	08PSD143B	113.3	122.3	8.69	W	1	1p
1287	08PSD143B-SRK-WR-78	SRK	08PSD143B	122.3	132.5	10.2	W	1	1p
1288	08PSD143B-SRK-WR-79	SRK	08PSD143B	143	152	9	W	1	1p
1289	08PSD143B-SRK-WR-80	SRK	08PSD143B	161	170	9	W	1	1p
1290	08PSD143B-SRK-WR-81	SRK	08PSD143B	177.47	187.5	10.03	W	1	1p
1291	08PSD143B-SRK-WR-82	SRK	08PSD143B	198	208.5	10.15	W	1	1p
1292	08PSD143B-SRK-WR-83	SRK	08PSD143B	219	228.7	9.7	W	1	1p
1301	07PMD522-SRK-WR-92	SRK	07PMD522	15.43	17	1.57	W	1	1a
1304	07PMD522-SRK-WR-95	SRK	07PMD522	38	52	14	W	1	1a
1306	07PMD522-SRK-WR-97	SRK	07PMD522	62	72.5	10.5	W	1	1a
1307	07PMD522-SRK-WR-98	SRK	07PMD522	80	90.5	10.5	W	1	1a
1308	07PMD522-SRK-WR-99	SRK	07PMD522	97.75	105	7.25	W	1	1a
1310	07PMD522-SRK-WR-101	SRK	07PMD522	115.5	126	10.5	W	1	1a
1311	07PMD522-SRK-WR-102	SRK	07PMD522	126	136.5	10.5	W	1	1a
1317	08PMD657A-SRK-WR-108	SRK	08PMD657A	24.04	34.5	10.46	W	1	1p
1318	08PMD657A-SRK-WR-109	SRK	08PMD657A	34.5	45	10.5	W	1	1p
1319	08PMD657A-SRK-WR-110	SRK	08PMD657A	45	52.5	7.5	W	1	1p
1320	08PMD657A-SRK-WR-111	SRK	08PMD657A	52.5	65.11	12.61	W	1	1a
1330	08PMD657A-SRK-WR-121	SRK	08PMD657A	155	164.5	9.5	W	1	1a
1331	08PMD657A-SRK-WR-122	SRK	08PMD657A	164.5	174.6	10.1	W	1	1a
1337	08PMD657A-SRK-WR-128	SRK	08PMD657A	230.49	243.5	13.01	W	1	1i
1338	08PMD657A-SRK-WR-129	SRK	08PMD657A	243.5	252.16	8.66	W	1	1a
1339	08PMD657A-SRK-WR-130	SRK	08PMD657A	252.16	262	9.84	W	1	1p
1340	08PMD657A-SRK-WR-131	SRK	08PMD657A	262	272.5	10.5	W	1	1p
1341	08PMD657A-SRK-WR-132	SRK	08PMD657A	272.5	283	10.5	W	1	1p
1342	08PMD657A-SRK-WR-133	SRK	08PMD657A	283	293	10	W	1	1p
1343	08PMD657A-SRK-WR-134	SRK	08PMD657A	293	301	8	W	1	1p
1344	08PSD142-SRK-WR-135	SRK	08PSD142	23	33.5	10.5	W	1	1pv
1345	08PSD142-SRK-WR-136	SRK	08PSD142	44	54.5	10.5	W	1	1pv
1346	08PSD142-SRK-WR-137	SRK	08PSD142	65	77	12	W	1	1pv
1348	08PSD142-SRK-WR-139	SRK	08PSD142	80.08	87.5	7.42	W	1	1u (0.99), 1aj (0.01)
1349	08PSD142-SRK-WR-140	SRK	08PSD142	87.5	95	7.5	W	1	1u
1350	08PSD142-SRK-WR-141	SRK	08PSD142	95	100.69	5.69	W	1	1p (0.89), 1u (0.06), 1py (0.05)
1351	08PSD142-SRK-WR-142	SRK	08PSD142	100.69	113	12.13	W	1	1py
1352	08PSD142-SRK-WR-143	SRK	08PSD142	113	117.5	4.5	W	1	1pd (0.89), 1py (0.11)
1353	08PSD142-SRK-WR-144	SRK	08PSD142	117.5	128	10.5	W	1	1p (0.96), 1pd (0.04)
1354	08PSD142-SRK-WR-145	SRK	08PSD142	138.5	148.27	9.47	W	1	1p
1356	08PSD142-SRK-WR-147	SRK	08PSD142	155	168.5	13.5	W	1	1p
1357	08PSD142-SRK-WR-148	SRK	08PSD142	168.5	180	11.3	W	1	1p
1359	08PSD142-SRK-WR-150	SRK	08PSD142	187.22	196	8.78	W	1	1p
1360	08PSD142-SRK-WR-151	SRK	08PSD142	196	205	8.67	W	1	1p
1361	08PSD142-SRK-WR-152	SRK	08PSD142	205	212.5	7.5	W	1	1pz (0.93), 1p (0.07)
1362	08PSD142-SRK-WR-153	SRK	08PSD142	212.5	219	6.5	W	1	1pz
1364	08PSD142-SRK-WR-155	SRK	08PSD142	227.5	230.5	2.75	W	1	1pr
1681	07PMD610-SRK-WR-252	SRK	07PMD610	23	32	9	W	1	1pv
1682	07PMD610-SRK-WR-253	SRK	07PMD610	41	51.5	10.5	W	1	1pv (0.95), 1u (0.05)
1683	07PMD610-SRK-WR-254	SRK	07PMD610	51.5	60.5	9	W	1	1u
1684	07PMD610-SRK-WR-255	SRK	07PMD610	60.5	70.5	10	W	1	1u
1685	07PMD610-SRK-WR-256	SRK	07PMD610	70.5	79.15	8.65	W	1	1u

Appendix D: Geological Attributes and Economic Classification of Static Database

SRK Serial Number	Lab ID	Sample Set	Drill Hole ID	Depth From (m)	Depth To (m)	Length (m)	Economic Classification	Lithology ¹	
								Primary	Summary (if additional lithologies) (proportion in parentheses)
1923	06PMD484-SRK-WR-496	SRK	06PMD484	247.0	249.0	2	W	1	1p
1924	06PMD484-SRK-WR-497	SRK	06PMD484	249.0	259.5	10.5	W	1	1pv (0.95), 1p (0.05)
1926	06PMD470-SRK-WR-499	SRK	06PMD470	46.8	56.5	9.67	W	1	1p
1927	06PMD470-SRK-WR-500	SRK	06PMD470	56.5	67.0	10.5	W	1	1p
1928	06PMD470-SRK-WR-501	SRK	06PMD470	76.0	85.0	9	W	1	1p
1931	06PMD470-SRK-WR-504	SRK	06PMD470	94.0	106.0	12	W	1	1p
1932	06PMD470-SRK-WR-505	SRK	06PMD470	106.0	118.5	12.5	W	1	1p
1934	06PMD470-SRK-WR-507	SRK	06PMD470	121.6	126.7	5.09	W	1	1p
1936	06PMD470-SRK-WR-509	SRK	06PMD470	129.7	137.0	7.33	W	1	1p
1937	06PMD470-SRK-WR-510	SRK	06PMD470	137.0	147.2	10.2	W	1	1p
1938	06PMD470-SRK-WR-511	SRK	06PMD470	147.2	157.0	9.8	W	1	1pv
1939	06PMD470-SRK-WR-512	SRK	06PMD470	157.0	167.5	10.5	W	1	1pv
1940	06PMD470-SRK-WR-513	SRK	06PMD470	173.5	182.1	8.59	W	1	1pv
1942	06PMD470-SRK-WR-515	SRK	06PMD470	183.5	191.0	7.51	W	1	1pv
1943	06PMD470-SRK-WR-516	SRK	06PMD470	191.0	198.4	7.35	W	1	1pv
1945	06PMD470-SRK-WR-518	SRK	06PMD470	203.5	206.8	3.36	W	1	1pv
1949	06PMD470-SRK-WR-522	SRK	06PMD470	218.7	224.9	6.21	W	1	1pv
1952	06PMD470-SRK-WR-525	SRK	06PMD470	238.5	246.0	7.51	W	1	1pv
1953	06PMD470-SRK-WR-526	SRK	06PMD470	246.0	253.0	7	W	1	1pv
1955	06PMD470-SRK-WR-528	SRK	06PMD470	260.4	266.1	5.64	W	1	1pv
1957	06PMD470-SRK-WR-530	SRK	06PMD470	269.2	270.7	1.5	W	1	1pv
1960	06PMD470-SRK-WR-533	SRK	06PMD470	286.5	291.8	5.26	W	1	1pv
1963	06PMD470-SRK-WR-536	SRK	06PMD470	303.0	314.6	11.55	W	1	1pv
1965	06PMD470-SRK-WR-538	SRK	06PMD470	326.6	329.6	2.99	W	1	1a
1968	06PMD470-SRK-WR-541	SRK	06PMD470	346.5	358.5	12	W	1	1p
1969	06PMD470-SRK-WR-542	SRK	06PMD470	358.5	369.0	10.5	W	1	1p
1970	06PMD470-SRK-WR-543	SRK	06PMD470	369.0	371.1	2.05	W	1	1p
1972	06PMD470-NMS-WR-55	#N/A	06PMD470	67.0	76.0	9	W	1	1p
1976	07PMD542 6.21-14.00	SRK	07PMD542	6.21	14	7.79	W	1	1a
1977	07PMD542 14.00-20.00	SRK	07PMD542	14	20	6	W	1	1a
1978	07PMD542 20.00-29.00	SRK	07PMD542	20	29	9	W	1	1a
1979	07PMD542 29.00-39.50	SRK	07PMD542	29	39.5	10.5	W	1	1a
1980	07PMD542 39.50-48.50	SRK	07PMD542	39.5	48.5	9	W	1	1a
1981	07PMD542 48.50-59.00	SRK	07PMD542	48.5	59	10.5	W	1	1a
1982	07PMD542 59.00-66.50	SRK	07PMD542	59	66.5	7.5	W	1	1a
1983	07PMD542 66.50-73.28	SRK	07PMD542	66.5	73.28	6.78	W	1	1a
1986	07PMD542 87.00-95.90	SRK	07PMD542	87	95.9	8.9	W	1	1a
1989	07PMD542 181.24-190.17	SRK	07PMD542	181.24	190.17	8.93	W	1	1a
1990	07PMD542 190.17-196.85	SRK	07PMD542	190.17	196.85	6.68	W	1	1a
1992	07PMD542 199.85-207.85	#N/A	07PMD542	199.85	207.85	8	W	1	1a
1995	07PMD552 17.00-23.60	SRK	07PMD552	17	23.6	6.6	W	1	1pv
1996	07PMD552 23.60-29.85	SRK	07PMD552	23.6	29.85	6.25	W	1	1pv
1997	07PMD552 29.85-35.10	SRK	07PMD552	29.85	35.1	5.25	W	1	1pv
1998	07PMD552 58.50-72.00	SRK	07PMD552	58.5	72	13.5	W	1	1p
1999	07PMD552 101.79-111.20	SRK	07PMD552	101.79	111.2	9.41	W	1	1p
2009	07PMD552 193.55-203.80	SRK	07PMD552	193.55	203.8	10.25	W	1	1a
2011	07PMD552 206.36-216.25	SRK	07PMD552	206.36	216.25	9.89	W	1	1a
2063	08PMD670-NMS-WR-1	#N/A	08PMD670	14.15	20.00	5.85	W	1	1a
2064	08PMD670-NMS-WR-2	#N/A	08PMD670	30.50	41.00	10.5	W	1	1a
2065	08PMD670-NMS-WR-3	#N/A	08PMD670	51.50	62.00	10.5	W	1	1a
2066	08PMD670-NMS-WR-4	#N/A	08PMD670	81.50	90.50	9	W	1	1a
2067	08PMD670-NMS-WR-5	#N/A	08PMD670	101.00	110.00	9	W	1	1a
2068	08PMD670-NMS-WR-6	#N/A	08PMD670	144.50	153.50	9	W	1	1pv
2069	08PMD670-NMS-WR-7	#N/A	08PMD670	164.74	174.86	10.12	W	1	1pv
2070	08PMD670-NMS-WR-8	#N/A	08PMD670	185.00	195.50	10.5	W	1	1pv
2071	08PMD670-NMS-WR-9	#N/A	08PMD670	206.00	217.40	11.4	W	1	1pv
2072	08PMD670-NMS-WR-10	#N/A	08PMD670	227.00	236.00	9	W	1	1pv
2075	08PMD670-NMS-WR-13	#N/A	08PMD669	129.50	135.50	6	W	1	1pv
2076	08PMD670-NMS-WR-14	#N/A	08PMD669	146.52	158.00	11.48	W	1	1pv
2077	08PMD670-NMS-WR-15	#N/A	08PMD669	168.50	178.54	10.04	W	1	1pv
2078	08PMD670-NMS-WR-16	#N/A	08PMD669	188.00	197.00	9	W	1	1pv
2079	08PMD670-NMS-WR-17	#N/A	08PMD669	207.00	216.50	9.5	W	1	1pv
2080	08PMD670-NMS-WR-18	#N/A	08PMD669	227.00	241.52	14.52	W	1	1pv
2081	08PMD670-NMS-WR-19	#N/A	08PMD669	251.00	258.50	7.5	W	1	1pv
2082	08PMD670-NMS-WR-20	#N/A	08PMD669	269.00	279.50	10.5	W	1	1pv
2083	08PMD670-NMS-WR-21	#N/A	08PMD669	290.00	303.99	13.99	W	1	1pv
2084	08PMD670-NMS-WR-22	#N/A	08PMD669	314.00	321.50	7.5	W	1	1pv
2085	08PMD670-NMS-WR-23	#N/A	08PMD669	332.00	342.50	10.5	W	1	1pv
2088	08PMD650-NMS-WR-37	#N/A	08PMD650	171.00	181.50	10.5	W	1	1pz
2089	07PMD610-NMS-WR-49	#N/A	07PMD610	32.00	41.00	9	W	1	1pv
2092	08PSD143B-NMS-WR-24	#N/A	08PSD143B	103.00	113.30	10.3	W	1	1p
2093	08PSD143B-NMS-WR-25	#N/A	08PSD143B	132.50	143.00	10.5	W	1	1p
2094	08PSD143B-NMS-WR-26	#N/A	08PSD143B	152.00	161.00	9	W	1	1p
2095	08PSD143B-NMS-WR-27	#N/A	08PSD143B	170.00	177.47	7.47	W	1	1p
2096	08PSD143B-NMS-WR-28	#N/A	08PSD143B	187.50	198.00	10.5	W	1	1p
2097	08PSD143B-NMS-WR-29	#N/A	08PSD143B	208.50	219.00	10.5	W	1	1p
2103	08PSD142-NMS-WR-40	#N/A	08PSD142	33.50	44.00	10.5	W	1	1pv
2104	08PSD142-NMS-WR-41	#N/A	08PSD142	54.50	65.00	10.5	W	1	1pv
2105	08PSD142-NMS-WR-42	#N/A	08PSD142	128.00	138.50	10.5	W	1	1p
644	3	Historic	PMD144	195.68	197.4	1.72	O	1	1a
647	8	Historic	PMD119	48.22	49	0.78	O	1	1a
648	9	Historic	PMD143	188.42	189.5	1.08	O	1	1a
652	13	Historic	PMD126	25.52	26.72	1.2	O	1	1a
654	15	Historic	PMD135	41.42	42.22	0.8	O	1	1a
657	18	Historic	PMD146	236.56	237.57	1.01	O	1	1a
680	208842	Newmont	05PMD291	81	106	25	O	1	1a
681	208843	Newmont	05PMD291	106	131	25	O	1	1a
729	202739	Newmont	PMD155	258	265	7	O	1	1a
1257	08PMD650-SRK-WR-48	SRK	08PMD650	109.05	112	2.95	O	1	1iz
1296	08PSD143B-SRK-WR-87	SRK	08PSD143B	271.7	281.5	9.8	O	1	1a
1297	08PSD143B-SRK-WR-88	SRK	08PSD143B	281.5	290	8.17	O	1	1a
1302	07PMD522-SRK-WR-93	SRK	07PMD522	17	27	10	O	1	1a
1303	07PMD522-SRK-WR-94	SRK	07PMD522	27	38	11	O	1	1a
1305	07PMD522-SRK-WR-96	SRK	07PMD522	52	62	9	O	1	1a
1358	08PSD142-SRK-WR-149	SRK	08PSD142	180	187.22	7.22	O	1	1a (0.99), 1p (0.01)
1679	07PMD610-SRK-WR-250	SRK	07PMD610	13.5	22	8.5	O	1	1a
1688	07PMD610-SRK-WR-259	SRK	07PMD610	89	92	3	O	1	1pv
1693	07PMD610-SRK-WR-264	SRK	07PMD610	121	125	4	O	1	1a
1698	07PMD610-SRK-WR-269	SRK	07PMD610	150.9	156.57	5.67	O	1	1pv
1909	07PMD552-SRK-WR-482	SRK	07PMD552	38.9	47.7	8.85	O	1	1a (0.55), 1pv (0.45)
1913	07PMD552-SRK-WR-486	SRK	07PMD552	72.0	82.0	10	O	1	1p
1914	07PMD552-SRK-WR-487	SRK	07PMD552	82.0	92.0	10	O	1	1p
1921	06PMD484-SRK-WR-494	SRK	06PMD484	224.5	236.5	12	O	1	1p
1922	06PMD484-SRK-WR-495	SRK	06PMD484	236.5	247.0	10.2	O	1	1p
1925	06PMD470-SRK-WR-498	SRK	06PMD470	35.5	46.8	11.33	O	1	1a
1929	06PMD470-SRK-WR-502	SRK	06PMD470	85.0	88.0	3	O	1	1p
1933	06PMD470-SRK-WR-506	SRK	06PMD470	118.5	121.6	3.08	O	1	1p
1935	06PMD470-SRK-WR-508	SRK	06PMD470	126.7	129.7	3	O	1	1p
1947	06PMD470-SRK-WR-520	SRK	06PMD470	207.3	217.0	9.7	O	1	1pv
1954	06PMD470-SRK-WR-527	SRK	06PMD470	253.0	260.4	7.44	O	1	1pv
1961	06PMD470-SRK-WR-534	SRK	06PMD470	291.8	296.0	3.94	O	1	1pv
1967	06PMD470-SRK-WR-540	SRK	06PMD470	331.2	331.5	0.31	O	1	1a
2010	07PMD552 203.80-206.36	SRK	07PMD552	203.8	206.36	2.56	O	1	1a
2090	07PMD522-NMS-WR-38	#N/A	07PMD522	72.50	80.00	7.5	O	1	1a
2091	07PMD522-NMS-WR-39	#N/A	07PMD522	90.50	97.75	7.25	O	1	1a
687	208850	Newmont	05PMD293	59	84	25	mixed	1	1pv
691	208854	Newmont	05PMD293	159	184	25	mixed	1	1a
1678	07PMD610-SRK-WR-249	SRK	07PMD610	4.2	13.5	9.3	mixed	1	1a
1686	07PMD610-SRK-WR-257	SRK	07PMD610	79.15	84	4.85	mixed	1	1pv (0.96), 1u (0.04)
1694	07PMD610-SRK-WR-265	SRK	07PMD610	125	129	4	mixed	1	1a
1697	07PMD610-SRK-WR-268	SRK	07PMD610	140.5	150.9	10.4	mixed	1	1pv
1699	07PMD610-SRK-WR-270	SRK	07PMD610	156.57	164	7.43	mixed	1	1pv

SRK Serial Number	Lab ID	Sample Set	Drill Hole ID	Depth From (m)	Depth To (m)	Length (m)	Economic Classification	Lithology ¹	
								Primary	Summary (if additional lithologies) (proportion in parentheses)
679	208841	Newmont	05PMD291	56	81	25	mixed	1 mixed	1a (0.8), 5a (0.2)
708	208822	Newmont	PMD155	158	183	25	mixed	1 mixed	0.83), 1u (0.07), 5ai (0.06), 5c (0.02), 10b (0.02)
709	208824	Newmont	PMD155	208	233	25	mixed	1 mixed	1a (0.84), 5ai (0.13), 5a (0.03)
711	208826	Newmont	PMD155	258	279.69	21.69	mixed	1 mixed	1p (0.59), 1a (0.4), 5ai (0)
1915	07PMD552-SRK-WR-488	SRK	07PMD552	92.0	103.0	11	mixed	1 mixed	1p (0.88), 12q (0.12)
1247	08PMD650-SRK-WR-38	SRK	08PMD650	33	36.4	3.15	W	1 w. sediments	1aj (0.1)
1260	08PMD650-SRK-WR-51	SRK	08PMD650	125.46	128.59	3.13	W	1 w. sediments	5aj
1262	08PMD650-SRK-WR-53	SRK	08PMD650	133.45	143.8	10.35	W	1 w. sediments	1aj
1259	08PMD650-SRK-WR-50	SRK	08PMD650	123.14	125.46	2	O	1 w. sediments	1aj
1368	08PSD142-SRK-WR-159	SRK	08PSD142	254.5	259.66	4.86	mixed	1 w. sediments	1aj
1272	08PMD650-SRK-WR-63	SRK	08PMD650	217	224.75	7.75	W	1 w. sediments mixed	1aj (0.88), 10b (0.12)
1347	08PSD142-SRK-WR-138	SRK	08PSD142	77	80.08	2.97	W	1 w. sediments mixed	1aj (0.96), 1pv (0.04)
1246	08PMD650-SRK-WR-37	SRK	08PMD650	23.85	33	9.15	O	1 w. sediments mixed	1aj (0.79), 12q (0.21)
1355	08PSD142-SRK-WR-146	SRK	08PSD142	148.27	155	6.73	mixed	1 w. sediments mixed	10j (0.97), 1p (0.03)
714	208863	Newmont	PMD156	72	97	25	W	2	2pg
1225	08PMD669-SRK-WR-16	SRK	08PMD669	0.7	11	10.3	W	2	2p
1226	08PMD669-SRK-WR-17	SRK	08PMD669	22	33.5	11.5	W	2	2p
1227	08PMD669-SRK-WR-18	SRK	08PMD669	44	55.26	10.96	W	2	2p
1248	08PMD650-SRK-WR-39	SRK	08PMD650	36.4	46.5	10.1	W	2	2pg
1249	08PMD650-SRK-WR-40	SRK	08PMD650	55.5	64.5	9	W	2	2pg
1251	08PMD650-SRK-WR-42	SRK	08PMD650	77.1	81.75	4.65	W	2	2pg
1313	07PMD552-SRK-WR-104	SRK	07PMD522	139.5	142.5	3	W	2	2pg
1314	07PMD522-SRK-WR-105	SRK	07PMD522	155	160	5	W	2	2pg
1315	07PMD522-SRK-WR-106	SRK	07PMD522	167	170.5	3.5	W	2	2pg
1316	07PMD522-SRK-WR-107	SRK	07PMD522	202.55	207	4.45	W	2	2pg
1366	08PSD142-SRK-WR-157	SRK	08PSD142	235	245.5	10.5	W	2	2pg
1369	08PSD142-SRK-WR-160	SRK	08PSD142	259.66	270	10.34	W	2	2pg
1370	08PSD142-SRK-WR-161	SRK	08PSD142	280	290.5	10.5	W	2	2pg
1371	08PSD142-SRK-WR-162	SRK	08PSD142	299.5	310	10.5	W	2	2pg
1372	08PSD142-SRK-WR-163	SRK	08PSD142	310	320	9.72	W	2	2pg
1781	08PSD142-NMS-WR-354	SRK	08PSD142	270	280	10	W	2	2pg
1782	08PSD142-NMS-WR-355	SRK	08PSD142	290.5	299.5	8.74	W	2	2pg
1876	08PSD142-SRK-WR-449	SRK	08PSD142	353.77	364.00	10.23	W	2	2pg
1877	08PSD142-SRK-WR-450	SRK	08PSD142	364.00	373.00	9	W	2	2pg
2000	07PMD552 111.20-123.61	SRK	07PMD552	111.2	123.61	12.41	W	2	2pg
2001	07PMD552 123.61-134.00	SRK	07PMD552	123.61	134	10.39	W	2	2pg
2002	07PMD552 134.00-144.50	SRK	07PMD552	134	144.5	10.5	W	2	2pg
2003	07PMD552 144.50-147.60	SRK	07PMD552	144.5	147.6	3.1	W	2	2pg
2004	07PMD552 147.60-158.50	SRK	07PMD552	147.6	158.5				

¹Rock codes as follows: **1** = mafic volcanics; **1 w. sediments** = mafic volcanics with sediments; **2** = intermediate volcanics; **5** = sedimentary rocks; **7a** = early gabbro; **10b** = late intrusives; **11c** = diabase;

Appendix E

Hope Bay Mining Ltd. 2008 Standard Lithology Codes for Core Logging

LEGEND
Outcrop Lithologies

Proterozoic Rocks

13

Proterozoic Sandstones

11

a Franklin diabase
b MacKenzie diabase
c diabase (unsubdivided)

Archean Rocks

10

Late* Mafic-Ultramafic Intrusive Rocks

- a gabbro
b fine- to medium-grained mafic dyke
c fine- to medium-grained ultramafic dyke
d diorite
f feldspar-phynic
h hornblende-phynic
p hypabyssal porphyritic rock
i xenolithic mafic-ultramafic intrusion

9

Late* Granitoid Rocks (mainly post-volcanic)

- a granite
b syenite
c granodiorite
d monzonite and quartz monzonite
e monzodiorite and quartz monzodiorite
g granitic gneiss and migmatite
f feldspar-phynic granitoid
q quartz-phynic granitoid
l xenolithic granitoid and intrusion breccia
- p porphyritic hypabyssal granitoid
t granitoid with less than 50% wallrock xenoliths (transitional to country rock)**
k fine-grained felsic dyke
n fine-grained intermediate dyke

8

Early* Granitoid Rocks (mainly synvolcanic)

- a tonalite
b trondhemite
c granodiorite
d diorite and quartz diorite
e monzodiorite and quartz monzodiorite
f feldspar-phynic granitoid
g tonalitic gneiss and migmatite
q quartz-phynic granitoid
l xenolithic granitoid and intrusion breccia
- p porphyritic hypabyssal granitoid
i fine-grained massive intermediate to felsic rock, may be equivalent to 3i, 4i****
t granitoid with less than 50% wallrock xenoliths (transitional to country rock)**

7

Early* Mafic and Ultramafic Intrusive Rocks (mainly synvolcanic)

- a gabbro
b leucogabbro
c melanogabbro
d diorite
h anorthosite
f feldspar-phynic gabbroic (includes glomeroporphyritic texture)
i fine-grained massive mafic/ultramafic rock, may be equivalent to 7i****
q quartz-bearing gabbroic rock
- m magnetite-ilmenite bearing mafic-ultramafic rock
o pyroxenite
r peridotite (includes serpentinite)
t gabbroic rock containing less than 50% granitoid dykes**
l xenolithic gabbroic to ultramafic intrusive rock
s (bdc)-chlorite schist
- u ultramafic intrusive rock (composition not specified)

6

Late* Sedimentary Rocks of the Conglomerate-Arenite facies (postvolcanic)

- a argillite
b siltstone
c arenite
d conglomerate
e biotite hornfels or schist (amphibolite facies)
f feldspathic arenite
l lithic arenite
q quartzose arenite
g iron formation
m magnetite bearing clastic rock
p granitoid clasts
- o polymictic (otherwise monomictic)***
k thick bedded (>30cm)
n thin bedded (<30cm)
r limestone/marble
s metasedimentary schist
t metasedimentary rock cut by less than 50% granitoid**

5

Early* Sedimentary Rocks of Wacke-Mudstone Facies (syn- to post volcanic)

- a argillite
b siltstone
c wacke
d conglomerate
e porphyroblastic biotite schist (amphibolite facies)
f feldspathic wacke
l lithic wacke
q quartzose wacke
s biotite schist
g iron formation
m magnetite-bearing wacke
- o polymictic (otherwise monomictic)***
k thick bedded (>30 cm)
n thin bedded (<30 cm)
r biotite migmatite less than 50% leucosome
v volcanic sandstone and conglomerate (may be equivalent to 4j)
t metasedimentary rock cut by less than 50% granitoid*
- s metasedimentary schist

4

Felsic Metavolcanic Rocks

- a flow
b tuff
c lapilli-(stone)
d breccia
e quartz-albite-biotite schist (amphibolite facies)
q quartz-phynic (includes glomeroporphyritic rocks)
i fine- to medium-grained massive felsic rock, may be equivalent to 8i****
- j felsic volcanic sandstone, pebbly sandstone and conglomerate
k thick bedded (>30 cm)
n thin bedded (<30cm)
o heterolithic fragmental rock (otherwise monolithic)**
s quartz-senecite schist
- t felsic metavolcanic rock containing less than 50% granitoid dykes**
w flow banded structure
y amygdaloidal/vesicular

3

Intermediate to Felsic Metavolcanic Rocks

- a flow
b tuff
c lapilli-(stone)
d breccia
e quartz-plagioclase-actinolite schist (amphibolite facies)
f feldspar-phynic (includes glomeroporphyritic rocks)
i fine- to medium-grained massive intermediate to felsic rock, may be equivalent to 8i****
- j intermediate to felsic volcanic sandstone, pebbly sandstone and conglomerate
k thick bedded (>30cm)
n thin bedded (<30cm)
o heterolithic fragmental rock (otherwise monolithic)**
q quartz-phynic
- s quartz-chlorite-senecite schist
t felsic to intermediate volcanic rock containing less than 50% granitoid dykes**
y amygdaloidal/vesicular structure

2

Intermediate Metavolcanic Rocks

- a flow
b tuff
c lapilli-(stone)
d breccia
e epidote-plagioclase amphibolite (amphibolite facies)
f feldspar-phynic (includes glomeroporphyritic rocks)
h hornblende-phynic
- i fine- to medium-grained massive intermediate rock, may be equivalent to 7i****
j interflow chert/argillite/sandstone
k thick pillow selvages (>2cm)
n thin pillow selvages (<2cm)
- o heterolithic fragmental rock (otherwise monolithic)
p pillowed flow
s chlorite schist
t intermediate volcanic rock containing less than 50% granitoid dykes**
v variolitic flow
y amygdaloidal/vesicular flow

1

Ultramafic to Mafic Metavolcanic Rocks

- a flow
b tuff
c lapilli-(stone)
d breccia
e amphibolite (amphibolite facies)
f feldspar-phynic (includes glomeroporphyritic rocks)
i fine- to medium-grained massive mafic rock, may be equivalent to 7i****
- j interflow chert/argillite/sandstone
k thick pillow selvages (>2cm)
n thin pillow selvages (<2cm)
o heterolithic fragmental rock (otherwise monolithic)***
p pillowed flow
r polystrured flow
s chlorite schist
- t mafic metavolcanic rock containing less than 50% granitoid dykes**
u ultramafic volcanic rock
v variolitic
w white- to light-weathering mafic metavolcanic (quartz-epidote alteration)
x spiriferex-textured flow
y amygdaloidal/vesicular flow

Generic Codes: Z - unmapped or questionable lithology, C - Calc alkaline, M - Magnesian Tholeiite, T - Tholeiite, F - Iron Tholeiite, B - Basaltic Komatiite, K - Komatiite

NOTES:
*early and late used in a relative sense only ** suffix "T" should only be used for transition from supracrustal to adjacent intrusions, rock type chosen on dominant (>50%) lithology.
*** suffix "o" separates heterolithic from monolithic volcanic fragmental rocks and polymictic from monomictic sedimentary rocks. No suffix required for rocks with single clast population.
**** may be fine- (coarse) -grained equivalents of rocktypes shown in brackets: eg. fine-grained gabbro versus coarse-grained basalt.

Hope Bay Mining Lithology Codes (2008 lithology coding standard)				
CODE	CODEDESC	Colour	RGB	VL Colour Code
1	Mafic to Ultramafic Volcanic		0,153,102	6723840
2	Intermediate Volcanic		204,255,204	13434828
3	Intermediate to Felsic Volcanic		192,192,64	4243648
4	Felsic Metavolcanic rocks		255,255,0	65535
5	Sedimentary Rocks		192,192,192	12632256
6	Post Volcanic Sedimentary Rocks		153,102,0	26265
7	Early Mafic / UM Intrusions		102,0,204	13369446
8	Synvolcanic Granitoid Rocks		255,153,153	10066431
9	Late Felsic Intrusive		255,153,204	13408767
10	Late Mafic Intrusion		0,0,128	8388608
11	Diabase		4,4,4	263172
12	Vein >30cm or Zone of >70% Single Vein Event		255,128,0	33023
13	Significant Structure		204,0,0	204
14	Missing Core		220,220,182	11984092
15	Casing		220,220,182	11984092

Appendix F
Humidity Cell Tests Drill Core Intervals

Appendix F: List of Humidity Cell Test Drill Core Intervals, Madrid North

Humidity Cell ID	Zone	Lithology ¹	Drill Hole	From	To	ABA Sample ID	Barrel Test ID
HC-3	Suluk	1	08PSD143B	25.68	103	08-MAD-WR-01	W4
HC-8	Rand	1	07PMD602	27.87	112.06	08-MAD-WR-06	W6
HC-9	Naartok E	1	07PMD610	286.16	312.04	08-MAD-WR-07	W7
			07PMD610	316.42	329.31		
HC-27	Suluk	1	07PMD522	126	136.5	07PMD522-SRK-WR-102	--
HC-25	Rand	1	07PMD552	58.5	72	07PMD552 58.50-72.00	--
HC-28	Naartok E	1	06PMD470	85	88	06PMD470-SRK-WR-502	--
HC-26	Suluk	1	07PMD522	27	38	07PMD522-SRK-WR-94	--
HC-24	Naartok E	1	06PMD484	224.5	226.5	06PMD484-SRK-WR-494	--
HC-17	Suluk	1 w. sediments	08PMD650	33	36.4	08PMD650-SRK-WR-38	--
HC-4	Suluk	2pg	08PSD142	260.32	320.38	08-MAD-WR-03	W3
			08PSD142	353.49	372.56		--
HC-18	Rand	2pg	07PMD552	134	144.5	07PMD552 134.00-144.50	--
HC-19	Suluk	2pg mixed	08PSD142	245.5	254.5	08PSD142-SRK-WR-158	--
HC-20	Naartok E	5	06PMD470	217.03	218.7	06PMD470-SRK-WR-521	--
HC-21	Rand	5	07PMD542	104.15	105.29	07PMD542 104.15-105.29	--
HC-40	Naartok E	7a	05PMD310	6	31	208807	--
HC-41	Naartok W	7a	05PMD293	8.89	34	208848	--
HC-22	Naartok E	11c	06PMD470	371.05	376.28	06PMD470-SRK-WR-544	--
HC-23	Rand	11c	07PMD542	73.28	77	07PMD542 73.28-77.00	--
HC-5	Naartok W	13a	08PMD668	167.74	248.15	08-MAD-WR-04	W2
HC-29	Suluk	13a	08PMD657A	101.5	111.5	08PMD657A-SRK-WR-116	--
HC-39	Naartok W	13a	04PMD272	105	110	202774	--
HC-30	Suluk	13a	08PMD657A	90.5	91	08PMD657A-SRK-WR-114	--

¹Rock codes as follows: **1** = mafic volcanics; **1 w. sediments** = mafic volcanics with sediments; **2pg** = pale green pillow; **5** = sedimentary rocks; **7a** = early gabbro; **10b** = late intrusives; **11c** = diabase; **12q** = quartz vein; **13a** = deformation zone

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Appendix G
Barrel Test Drill Core Intervals

Appendix G: Barrel Test Sample Intervals, Madrid North

Barrel ID	Lithology ¹	Zone	Drillhole	From (m)	To (m)	Length (m)	Mass (kg)	Set-up Year
W4	1	Suluk	08PSD143B	25.68	103	77.32	287.5	2008
W6	1	Rand	07PMD602	27.87	112.06	84.19	218.7	2008
W7	1	Naartok East	07PMD610	286.16	312.04	38.77	238.1	2008
			07PMD610	316.42	329.31			
W11	1 w. sediments	Suluk	08PMD650	108.69	144	35.31	195.1	2009
			08PSD142	148.5	173	24.5		
W14	5 mixed	Naartok East	06PMD470	224.91	284.63	59.72	164.9	2009
		Suluk	08PSD142	219.58	231.05	11.47	82.8	
W8	7a mixed	Naartok East/ West	07PMD610	200	227.3	27.3	242.2	2009
			PMD165	12.78	16.77	3.99		
				25.24	29.58	4.34		
				33.87	42.38	8.51		
				50.77	54.83	4.06		
W3	2pg	Suluk	08PSD142	260.32	320.38	79.13	301.3	2008
				353.49	372.56			
W2	13a	Naartok East	08PMD668	167.74	248.15	80.41	295.5	2008

¹Rock codes as follows: **1** = mafic volcanics; **1 w. sediments** = mafic volcanics with sediments; **2pg** = pale green pillow; **5** = sedimentary rocks; **7a** = early gabbro; **10b** = late intrusives; **11c** = diabase; **12q** = quartz vein; **13a** = deformation zone

Appendix H
XRD Data for Madrid North Static Test Sample Set

Appendix H: XRD Data Mineralogical Formulas

Mineral	Abbreviation	Formula
Ankerite/Dolomite	ANK	$\text{Ca(Fe,Mg)(CO}_3)_2$
Biotite	BIO	$\text{K(Mg,Fe)}_3(\text{AlSi}_3\text{O}_{10})(\text{OH})_2$
Calcite	CAL	CaCO_3
Chlorite	CHL	$(\text{Mg,Fe,Al})_6(\text{Al,Si})_4\text{O}_{10}(\text{OH})_8$
Chloritoid	CHLTD	$(\text{Fe,Mg,Mn})_2\text{Al}_4\text{Si}_2\text{O}_{10}(\text{OH})_4$
Epidote	EP	$\text{Ca}_2(\text{Al, Fe})_3(\text{SiO}_4)_3(\text{OH})$
Ilmenite	IL	FeTiO_3
K-feldspar	K-SPAR	KAlSi_3O_8
Magnesite	mgs	MgCO_3
Magnetite	MAG	Fe_3O_4
Muscovite	mus	$\text{KAl}_2(\text{AlSi}_3\text{O}_{10})(\text{OH})_2$
Muscovite/Sericite	MUSC	
Paragonite	PG	$\text{NaAl}_3\text{Si}_3\text{O}_{10}(\text{OH})_2$
Plagioclase	PLAG	$(\text{Ca,Na})(\text{Al,Si})\text{AlSi}_2\text{O}_8$
Pyrite	PY	FeS_2
Pyrophyllite	PYROP	$\text{AlSi}_2\text{O}_5(\text{OH})$
Pyroxene	PYX	$(\text{Ca,Na})(\text{Mg,Fe,Al,Ti})(\text{Si,Al})_2\text{O}_6$
Quartz	QTZ	SiO_2
Rutile	RUT	TiO_2
Sepiolite	SEP	$\text{Mg}_4\text{Si}_6\text{O}_{15}(\text{OH})_2 \cdot 6(\text{H}_2\text{O})$
Siderite	SID	FeCO_3
Siderite/Magnesite	SID/MAGN	$(\text{Fe}_{0.xx}, \text{Mg}_{0.xx})\text{CO}_3$
Stilpnomelane	STILP	$\text{K(Fe,Mg)}_8(\text{Si,Al})_{12}(\text{O,OH})_{27} \cdot n(\text{H}_2\text{O})$
Talc	TC	$\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$
Titanite	TIT	CaTiSiO_5
Tourmaline	TL	$\text{Na(Fe,Mg)}_3\text{Al}_6\text{Si}_6\text{O}_{18}(\text{BO}_3)_3(\text{OH})_4$

Appendix H: XRD Data for Madrid North Static Test Sample Set

SRK Serial Number	Lab ID	Economic Classification	Lithology ¹		AMP	ANK	CAL	CHL	EPI	IL	K-SPAR	MAGN	Magnetite	MUSC	PG	PLAG	PY	PX	QTZ	RUT	SEP	SID	SID/MAGN	STILP	TC	TIT
			Primary	Summary (if additional lithologies) (proportion in parentheses)	Amphibole %	Ankerite/Dolomite %	Calcite %	Chlorite %	Epidote %	Ilmenite %	K-feldspar %	Magnesite %		Muscovite/Sericite %	Paragonite %	Plagioclase %	Pyrite %	Pyroxene %	Quartz %	Rutile %	Sepiolite %	Siderite %	Siderite/Magnesite %	Stilpnomelane %	Talc %	Titanite %
643	2	W	1	1a																						
650	11	W	1	1p																						
651	12	W	1	1a																						
653	14	W	1	1a																						
655	16	W	1	1p																						
656	17	W	1	1a																						
663	208802	W	1	1a		42		29						4		3			21	1		2				
670	208811	W	1	1a	26		12	28								16	2	9	2	0.6				5		
671	208812	W	1	1a	10	9	9	29								6		6		1				25		
672	208813	W	1	1a	6	16	18	31				1		1				9						20		
673	208814	W	1	1a		20	19	28				1												20		
678	208840	W	1	1a		41		26				1				2		4	19	1		1				
682	208845	W	1	1a		36		10																		
683	208846	W	1	1a		45		1							26	1	2		16	1.1						
684	208847	W	1	1a		45		3							30		1		17	1						
688	208851	W	1	1pv (0.64), 1a (0.36)		32	2	29							34				17	0.5						
707	208821	W	1	1a (0.86), 1p (0.14)	4	47	1	24						14		1			17	0.6						
712	208861	W	1	1a		48		23						6			1		17	0.7						
718	208868	W	1	1p (0.78), 1u (0.18), 1a (0.05)	12		12	52						8					19	0.9						
719	208869	W	1	1a (0.68), 1p (0.26), 1u (0.06)	7	2	12	49						8			1		9	1						
723	202703	W	1	1a (0.93), 1pv (0.07)	12		17	40								12	1.3	7	10	1				10		
727	202707	W	1	1a	9	tr	18	48								6	1		7							
728	202712	W	1	1pv	17		10	48	1							1	1	8	8	0.5						
1210	08PMD670-SRK-WR-1	W	1	1a		13	2	42									1		15	1						
1211	08PMD670-SRK-WR-2	W	1	1a	8	8		41	3										10	2						
1212	08PMD670-SRK-WR-3	W	1	1a	23		tr	24	9									2	3	1						
1213	08PMD670-SRK-WR-4	W	1	1a	18		4	24	10							32	5	6	1							
1214	08PMD670-SRK-WR-5	W	1	1a	17		1	19	14							36		10	3	tr						
1215	08PMD670-SRK-WR-6	W	1	1a		19	3	47			3					6			22	tr						
1216	08PMD670-SRK-WR-7	W	1	1a		25		50											25	tr						
1218	08PMD670-SRK-WR-9	W	1	1a	7	6	13	43								13			18	tr						
1219	08PMD670-SRK-WR-10	W	1	1pv		2	15	41	3							18			20	tr						
1220	08PMD670-SRK-WR-11	W	1	1pv		2	17	41	6							12			21	tr						
1221	08PMD670-SRK-WR-12	W	1	1pv		3	21	38						10		7			21	tr						
1222	08PMD670-SRK-WR-13	W	1	1pv	6	11	12	29	3					7		9			22	tr						
1223	08PMD670-SRK-WR-14	W	1	1pv			19	45								15			21	tr						
1224	08PMD670-SRK-WR-15	W	1	1pv	9		14	34	9							15			18	tr						
1228	08PMD669-SRK-WR-19	W	1	1a	7		10	38	9							16			19	1						
1229	08PMD669-SRK-WR-20	W	1	1a	6	3	8	42	7							14			19	1						
1230	08PMD669-SRK-WR-21	W	1	1a	5	4	9	40	6							15			19	1						
1231	08PMD669-SRK-WR-22	W	1	1a	11	4	5	34	11							15			17	2						
1232	08PMD669-SRK-WR-23	W	1	1a	13	8	6	41	5							7			19	1						
1233	08PMD669-SRK-WR-24	W	1	1a	5	2	18	47								6			22							
1234	08PMD669-SRK-WR-25	W	1	1pv		1	22	47								10			18	1						
1235	08PMD669-SRK-WR-26	W	1	1pv	3	2	20	49								7			17	1						
1236	08PMD669-SRK-WR-27	W	1	1pv		4	17	41						7		11			19	1						
1237	08PMD669-SRK-WR-28	W	1	1pv	8		13	35	9							19			16	tr						
1238	08PMD669-SRK-WR-29	W	1	1pv	10		17	35	5							18			15							
1239	08PMD669-SRK-WR-30	W	1	1pv	6		15	42	4							18			14	tr						
1240	08PMD669-SRK-WR-31	W	1	1pv	5		17	38	3							19			17	tr						
1241	08PMD669-SRK-WR-32	W	1	1pv		22	5	28						16		4			25	tr						
1242	08PMD669-SRK-WR-33	W	1	1pv		16	6	33		1				12		11			21	tr						
1243	08PMD669-SRK-WR-34	W	1	1pv	5	3	12	38	8							15			19	tr						
1244	08PMD669-SRK-WR-35	W	1	1pv		4	17	46								13			20	tr						
1245	08PMD669-SRK-WR-36	W	1	1pv		31	23	23								12			21	tr						
1253	08PMD650-SRK-WR-44	W	1	1a		4	17	32							12				19	1						
1254	08PMD650-SRK-WR-45	W	1	1a		26	6	21								4			25	1						
1258	08PMD650-SRK-WR-49	W	1	1iz	26		10	27	5							17			8							
1261	08PMD650-SRK-WR-52	W	1	1ad		8										4			23		2					
1264	08PMD650-SRK-WR-55	W	1	1a		19	11	28								10			21	1						
1266	08PMD650-SRK-WR-57	W	1	1pz	28		9	26								6			8							
1269	08PMD650-SRK-WR-60	W	1	1pz	41		4	17	8							20			1		5					
1270	08PMD650-SRK-WR-61	W	1	1pz	33		8	25	4							19			4							
1274	08PMD650-SRK-WR-65	W	1	1p	26		20	29								5			9		7					
1275	08PMD650-SRK-WR-66	W	1	1p	21		21	23						11		6			9		5					
1276	08PMD650-SRK-WR-67	W	1	1u	16		19	29						7		4			8		7					
1277	08PMD650-SRK-WR-68	W	1	1p	33		21	25								9			4		4					
1278	08PMD650-SRK-WR-69	W	1	1u		1	27	42		2						1			16	tr	10					
1279	08PMD650-SRK-WR-70	W	1	1u	3	6	29	27		1						3	tr		11		7					
1280	08PMD650-SRK-WR-71	W	1	1u	6	16	15	36		tr						6			14		2					
1281	08PSD143B-SRK-WR-72	W	1	1p		2	11	52	2							15			18							
1282	08PSD143B-SRK-WR-73	W	1	1p			13	45	6							15			21							
1283	08PSD143B-SRK-WR-74	W	1	1p			15	38								10			21							
1284	08PSD143B-SRK-WR-75	W	1	1p			14	37								16			22							
1285	08PSD143B-SRK-WR-76	W	1	1p			5	37								14			9							
1286	08PSD143B-SRK-WR-77	W	1	1p			35	23								9			26	tr						
1287	08PSD143B-SRK-WR-78	W	1	1p			36	15								9			25	1						
1288	08PSD143B-SRK-WR-79	W	1	1p			28	31								7			20	1						
1289	08PSD143B-SRK-WR-80	W	1	1p			14	39											16	tr						
1290	08PSD143B-SRK-WR-81	W	1	1p			19	3								6			23	tr						
1291	08PSD143B-SRK-WR-82	W	1	1p																						

SRK Serial Number	Lab ID	Economic Classification	Lithology ¹		AMP % Amphibole	ANK % Ankerite/Dolomite	CAL % Calcite	CHL % Chlorite	EPI % Epidote	IL % Ilmenite	K-SPAR % K-feldspar	MAGN % Magnesite	Magnetite %	MUSC % Muscovite/Sericite	PG % Paragonite	PLAG % Plagioclase	PY % Pyrite	PX % Pyroxene	QTZ % Quartz	RUT % Rutile	SEP % Sepiolite	SID % Siderite	SID/MAGN % Siderite/Magnesite	STILP % Stilpnomelane	TC % Talc	TIT % Titanite
			Primary	Summary (if additional lithologies) (proportion in parentheses)																						
1331	08PMD657A-SRK-WR-122	W	1	1a		29	2	28						3	15				21	2						
1337	08PMD657A-SRK-WR-128	W	1	1i	5	6	7	35	8						9	13			16	tr						
1338	08PMD657A-SRK-WR-129	W	1	1a		30		24							14	10			21	1						
1339	08PMD657A-SRK-WR-130	W	1	1p		6	15	41						2	5	13			18	tr						
1340	08PMD657A-SRK-WR-131	W	1	1p			16	48	1							16			18							
1341	08PMD657A-SRK-WR-132	W	1	1p	7		13	41	5							17			16							
1342	08PMD657A-SRK-WR-133	W	1	1p			17	45	3							14			20	tr						
1343	08PMD657A-SRK-WR-134	W	1	1p			17	44	3							19			17							
1344	08PSD142-SRK-WR-135	W	1	1pv	32		7	31	2							17			6							5
1345	08PSD142-SRK-WR-136	W	1	1pv	36		10	25								12			7							5
1346	08PSD142-SRK-WR-137	W	1	1pv	18		23	37	5							7			9			3				3
1348	08PSD142-SRK-WR-139	W	1	1u (0.99), 1aj (0.01)		16	22	40											18	1						
1349	08PSD142-SRK-WR-140	W	1	1u		21	12	35					1						11	1					16	
1350	08PSD142-SRK-WR-141	W	1	1p (0.89), 1u (0.06), 1py (0.05)		1	22	49		tr						3			7	1					12	
1351	08PSD142-SRK-WR-142	W	1	1py	8	2	17	46		tr						8			12							2
1352	08PSD142-SRK-WR-143	W	1	1pd (0.89), 1py (0.11)	34		8	32	2							16			2							4
1353	08PSD142-SRK-WR-144	W	1	1p (0.96), 1pd (0.04)	37		16	25	2							7			3							4
1354	08PSD142-SRK-WR-145	W	1	1p		2	28	36		1				7					14				3	7		1
1356	08PSD142-SRK-WR-147	W	1	1p			27	40		1						4			18							1
1357	08PSD142-SRK-WR-148	W	1	1p	5		25	38		tr						3			14				3			
1359	08PSD142-SRK-WR-150	W	1	1p	22		22	33					1	8		6			10							2
1360	08PSD142-SRK-WR-151	W	1	1p	24		19	34								5			9							4
1361	08PSD142-SRK-WR-152	W	1	1pz (0.93), 1p (0																						

Appendix H: XRD Data for Madrid North Static Test Sample Set

SRK Serial Number	Lab ID	Economic Classification	Lithology ¹		AMP Amphibole %	ANK Ankerite/Dolomite %	CAL Calcite %	CHL Chlorite %	EPI Epidote %	IL Ilmenite %	K-SPAR K-feldspar %	MAGN Magnesite %	Magnetite %	MUSC Muscovite/Sericite %	PG Paragonite %	PLAG Plagioclase %	PY Pyrite %	PX Pyroxene %	QTZ Quartz %	RUT Rutile %	SEP Sepiolite %	SID Siderite %	SID/MAGN Siderite/Magnesite %	STILP Stilpnomelane %	TC Talc %	TIT Titanite %
			Primary	Summary (if additional lithologies) (proportion in parentheses)																						
1976	07PMD542 6.21-14.00	W	1	1a		49		24		1				5					21	tr						
1977	07PMD542 14.00-20.00	W	1	1a		50		28		tr									21	1						
1978	07PMD542 20.00-29.00	W	1	1a		47		29		tr									23	1						
1979	07PMD542 29.00-39.50	W	1	1a		42	1	27		1									18	tr				3	6	
1980	07PMD542 39.50-48.50	W	1	1a		36	1	34		1									14					2	11	
1981	07PMD542 48.50-59.00	W	1	1a		33		36		tr									15	1				2	11	
1982	07PMD542 59.00-66.50	W	1	1a		47		29											20	1					3	
1983	07PMD542 66.50-73.28	W	1	1a		39		27		1									12	1					20	
1986	07PMD542 87.00-95.90	W	1	1a		39		25						6		1			19	1			9			
1989	07PMD542 181.24-190.17	W	1	1a		35		12						10		1			22	1			19			
1990	07PMD542 190.17-196.85	W	1	1a		27		7						5	1	1			22	tr			37			
1992	07PMD542 199.85-207.85	W	1	1a																						
1995	07PMD552 17.00-23.60	W	1	1pv		35		34						8		2			19	1						
1996	07PMD552 23.60-29.85	W	1	1pv		42		22						10					24	1						
1997	07PMD552 29.85-35.10	W	1	1pv		31		30						13		5			19	1						
1998	07PMD552 58.50-72.00	W	1	1p		31		11						16		10			19	1						
1999	07PMD552 101.79-111.20	W	1	1p		29		16						15	11	3			24	1						
2009	07PMD552 193.55-203.80	W	1	1a		31		33						10		6			19	1						
2011	07PMD552 206.36-216.25	W	1	1a		43		23						10		1			23	tr						
2063	08PMD670-NMS-WR-1	W	1	1a		26		27						11		21			15	tr						
2064	08PMD670-NMS-WR-2	W	1	1a	19		20		12							40	7		2							
2065	08PMD670-NMS-WR-3	W	1	1a	21	1	27	7								35	1		4	2						
2066	08PMD670-NMS-WR-4	W	1	1a	10	3	31	7								36	6		7							
2067	08PMD670-NMS-WR-5	W	1	1a		16		63											21	tr						
2068	08PMD670-NMS-WR-6	W	1	1pv		6	11	46								15			21	tr						
2069	08PMD670-NMS-WR-7	W	1	1pv		5	13	41	5							12			22	1						
2070	08PMD670-NMS-WR-8	W	1	1pv		7	16	38						7		9			23	tr						
2071	08PMD670-NMS-WR-9	W	1	1pv	8		15	34	11							14			18	tr						
2072	08PMD670-NMS-WR-10	W	1	1pv	4		17	36	8							14			20	tr						
2075	08PMD670-NMS-WR-13	W	1	1pv			24	42						8		7			19	tr						
2076	08PMD670-NMS-WR-14	W	1	1pv		2	24	48								9			16							
2077	08PMD670-NMS-WR-15	W	1	1pv		11	11	46								11			19	1						
2078	08PMD670-NMS-WR-16	W	1	1pv		7	10	40								9			23	1						
2079	08PMD670-NMS-WR-17	W	1	1pv	9		13	40	5							16			16	1						
2080	08PMD670-NMS-WR-18	W	1	1pv		13	4	50	3							7			22	1						
2081	08PMD670-NMS-WR-19	W	1	1pv			19	45								13			21	1						
2082	08PMD670-NMS-WR-20	W	1	1pv		35		19						21					25	tr						
2083	08PMD670-NMS-WR-21	W	1	1pv	8	5	6	41	7							14			18	tr						
2084	08PMD670-NMS-WR-22	W	1	1pv		2	15	50								12			21	tr						
2085	08PMD670-NMS-WR-23	W	1	1pv		29	1	30						13		4			23	tr						
2088	08PMD650-NMS-WR-37	W	1	1pz		3	13	27						17		11			14						4	
2089	07PMD610-NMS-WR-49	W	1	1pv	11	6	13	54										3	14				3	4		
2092	08PSD143B-NMS-WR-24	W	1	1p	1	24		35						14	3				24							
2093	08PSD143B-NMS-WR-25	W	1	1p		38		16						11	10				23	1						
2094	08PSD143B-NMS-WR-26	W	1	1p		26	4	31						13	8				18	tr						
2095	08PSD143B-NMS-WR-27	W	1	1p		4	15	39						16		8			18	tr						
2096	08PSD143B-NMS-WR-28	W	1	1p		16	3	21						18		13			28	1						
2097	08PSD143B-NMS-WR-29	W	1	1p		24		33						12	4	5			20	tr						
2103	08PSD142-NMS-WR-40	W	1	1pv	26		9	41	2							10										

Appendix H: XRD Data for Madrid North Static Test Sample Set

SRK Serial Number	Lab ID	Economic Classification	Lithology ¹		AMP	ANK	CAL	CHL	EPI	IL	K-SPAR	MAGN		MUSC	PG	PLAG	PY	PX	QTZ	RUT	SEP	SID	SID/MAGN	STILP	TC	TIT
			Primary	Summary (If additional lithologies) (proportion in parentheses)	Amphibole %	Ankerite/Dolomite %	Calcite %	Chlorite %	Epidote %	Ilmenite %	K-feldspar %	Magnesite %	Magnetite %	Muscovite/Sericite %	Paragonite %	Plagioclase %	Pyrite %	Pyroxene %	Quartz %	Rutile %	Sepiolite %	Siderite %	Siderite/Magnesite %	Stilpnomelane %	Talc %	Titanite %
1902	07PMD602-SRK-WR-475	mixed	1	1p		53		16						7			tr		23							
1907	07PMD602-SRK-WR-480	mixed	1	1pv		46		13						13			2		19	1						
1991	07PMD542 196.85-199.85	mixed	1	1a												6										
2106	07PMD542 196.85-207.85	mixed	1	1a		26		6						4					21	1						
662	208801	W	1 mixed	1a (0.37), 7a (0.27), 1pv (0.26), 1p (0.1)	4	29	tr	42						6		4			14	0.5			37			
686	208849	W	1 mixed	1pv (0.69), 7a (0.31)	5	40	tr	20						12		5			18	0.6						
689	208852	W	1 mixed	1a (0.8), 7a (0.2)	5	37		27				3		9		4			14	0.7						
690	208853	W	1 mixed	1a (0.54), 7a (0.46)		31		26				20		5		2			16	0.6						
706	208820	W	1 mixed	1a (0.84), 13a (0.16)		52		16						10		1			21	1.2						
715	208864	W	1 mixed	1a (0.91), 2pg (0.09)		41	4	27						8					14	0.7						
716	208865	W	1 mixed	1a (0.96), 5ai (0.04)		37		27						9		10	1.1		15	1.3		1		5		
717	208867	W	1 mixed	1a (0.86), 1p (0.09), 3b (0.03), 10b (0.02)		1	14	39	4					14		17			12							
721	208899	W	1 mixed	1a (0.66), 1p (0.32), 5c (0.02)	6	7	7	27	19					3		26	1		11	1						
724	202704	W	1 mixed	1a (0.6), 1pv (0.37), 5c (0.03)	21	17	32	2	2					4		11	1	4	10	1						
725	202705	W	1 mixed	1a (0.89), 5c (0.11)	12	10	12	36	2					11		3			13	0.8		2		8		
1188	202740	W	1 mixed	1p (0.92), 1a (0.07), 5ai (0.01)		6	9	40	5					11		12			16	1						
1267	08PMD650-SRK-WR-58	W	1 mixed	1pz (0.99), 10b (0.01)	32		8	25	5					7	10	16			6							8
1293	08PSD143B-SRK-WR-84	W	1 mixed	1a (0.95), 13a (0.05)		32		28						10	12	11			22	1						
1309	07PMD522-SRK-WR-100	W	1 mixed	1a (0.98), 9 (0.02)		31	1	12						10		21			21	1						
1705	07PMD610-SRK-WR-276	W	1 mixed	1pv (0.92), 9 (0.08)		15	15	47						12		21			17							
1930	06PMD470-SRK-WR-503	W	1 mixed	1p (0.87), 9 (0.13)		33		26						12		15			14	tr						
1950	06PMD470-SRK-WR-523	W	1 mixed	1pv (0.88), 5a (0.12)		46		7						11		4			25	1			6			
1966	06PMD470-SRK-WR-539	W	1 mixed	1a (0.77), 9 (0.23)		31		7						14		19	1		20	1						
1985	07PMD542 77.00-87.00	W	1 mixed	1a (0.94), 11c (0.06)		30		32						3		3			11	1						
668	208809	O	1 mixed	1a (0.89), 5a (0.11)	1	41		8		2				7		10	2		23	1					21	
675	208816	O	1 mixed	1a (0.94), 11c (0.06)		57	1	8					1	9		5	1	4	13	1.5						
700	202775	O	1 mixed	1a (0.8), 13a (0.2)		39		2				12		5		4	1.6		35	0.7						
702	202777	O	1 mixed	1a (0.82), 13a (0.18)		48		5						5		8			32	1.1						
704	202779	O	1 mixed	1a (0.98), 13a (0.02)		35		4				25		4		4	0.8		27	0.7						
710	208825	O	1 mixed	1a (0.94), 1u (0.04), 5a (0.02)		43		13				13		6		1	1		24	0.8						
1951	06PMD470-SRK-WR-524	O	1 mixed	1pv (0.71), 5a (0.29)		44		7						11		1	2		29	1			5			
1958	06PMD470-SRK-WR-531	O	1 mixed	1pv (0.67), 5a (0.33)		47		4						10		11	2		25	1						
1962	06PMD470-SRK-WR-535	O	1 mixed	1pv (0.53), 5a (0.47)		23		5						5		43	3		20	1						
1964	06PMD470-SRK-WR-537	O	1 mixed	1a (0.53), 5a (0.28), 1pv (0.2)		31		8						6		14	4		31	1						
664	208803	mixed	1 mixed	1a (0.96), 5a (0.04)		37	tr	13						11		7	1		19	1.4						
669	208810	mixed	1 mixed	1pv (0.48), 1a (0.4), 5a (0.11)		30		24						13		9	1		18	1						
674	208815	mixed	1 mixed	1a (0.97), 5ai (0.03)		45	3	22						5		3	1		13	0.7			8			
677	208839	mixed	1 mixed	1a (0.91), 5a (0.09)		38		10				11		9		14	1		16	1.5						
679	208841	mixed	1 mixed	1a (0.8), 5a (0.2)		40		17						9		5			20	1						
708	208822	mixed	1 mixed	0.83), 1u (0.07), 5ai (0.06), 5c (0.02), 10b (0	3	43	1	37						5		1	1		8	0.7						
709	208824	mixed	1 mixed	1a (0.84), 5ai (0.13), 5a (0.03)		56	1	10						10		1	1		21	1.4						
711	208826	mixed	1 mixed	1p (0.59), 1a (0.4), 5ai (0)		22	7	32						13		10	1		14	1						
1915	07PMD552-SRK-WR-488	mixed	1 mixed	1p (0.88), 12q (0.12)		35		3						6	9	24	1		21	1						
1247	08PMD650-SRK-WR-38	W	1 w. sediments	1aj		23		6		1				6					22	1						
1260	08PMD650-SRK-WR-51	W	1 w. sediments	5aj		25		36						7					16	1	6					
1262	08PMD650-SRK-WR-53	W	1 w. sediments	1aj		4		29						6	7	19			18							
1259	08PMD650-SRK-WR-50	O	1 w. sediments	1aj		20		27						8		16	2		14	1						
1368	08PSD142-SRK-WR-159	mixed	1 w. sediments	1aj		5		31						14	7	10	tr		18	tr						
1272	08PMD650-SRK-WR-63	W	1 w. sediments	1aj (0.88), 10b (0.12)	11	11		22	2	tr				19		19			11							5
1347	08PSD142-SRK-WR-138	W	1 w. sediments	1aj (0.96), 1pv (0.04)		39		21		tr				4		2	tr		21	1						
1246	08PMD650-SRK-WR-37	O	1 w. sediments	1aj (0.79), 12q (0.21)		28		5						7		21	9		29	1						
1355	08PSD142-SRK-WR-146	mixed	1 w. sediments	1oj (0.97), 1p (0.03)		45		16						7		5	1		19	1						
714	208863	W	2	2pg		8		31						26		6			5	1				17		
1225	08PMD669-SRK-WR-16	W	2	2p	4	tr		39	4					15		18			19							
1226	08PMD669-SRK-WR-17	W	2	2p		5		47	3					8		10			21							
1227	08PMD669-SRK-WR-18	W	2	2p		1		42	2					11		21			19	tr						
1248	08PMD650-SRK-WR-39	W	2	2pg		11		23	7							34			13							
1249	08PMD650-SRK-WR-40	W	2	2pg		9		25	18					12		23			18	1						
1251	08PMD650-SRK-WR-42	W	2	2pg		17		25	5							22			18							
1313	07PMD522-SRK-WR-104	W	2	2pg	13		5	20	24							26			12	tr						
1314	07PMD522-SRK-WR-105	W	2	2pg		16		31						14		18			18							
1315	07PMD522-SRK-WR-106	W	2	2pg		11		33	6							42			7							
1316	07PMD522-SRK-WR-107	W	2	2pg		12		36	2					14		24			11							
1366	08PSD142-SRK-WR-157	W	2	2pg	18		7	20	14							32			7							2
1369	08PSD142-SRK-WR-160	W	2	2pg	9		9	27	17							18			16							4
1370	08PSD142-SRK-WR-161	W	2	2pg	12		6	17	23							27			12							2
1371	08PSD142-SRK-WR-162	W	2	2pg	7		6	20	20							29			14							3
1372	08PSD142-SRK-WR-163	W	2	2pg		14		25	5					18		15			18	tr						
1781	08PSD142-NMS-WR-354	W	2	2pg	15		5	20	23							24			11							2
1782	08PSD142-NMS-WR-355	W	2	2pg	12		5	17	25							27			12							2
1876	08PSD142-SRK-WR-449	W	2	2pg	11		10	25	14							22										

Appendix H: XRD Data for Madrid North Static Test Sample Set

SRK Serial Number	Lab ID	Economic Classification	Lithology ¹		AMP Amphibole %	ANK Ankerite/Dolomite %	CAL Calcite %	CHL Chlorite %	EPI Epidote %	IL Ilmenite %	K-SPAR K-feldspar %	MAGN Magnesite %	Magnetite %	MUSC Muscovite/Sericite %	PG Paragonite %	PLAG Plagioclase %	PY Pyrite %	PX Pyroxene %	QTZ Quartz %	RUT Rutile %	SEP Sepiolite %	SID Siderite %	SID/MAGN Siderite/Magnesite %	STILP Stilpnomelane %	TC Talc %	TIT Titanite %
			Primary	Summary (if additional lithologies) (proportion in parentheses)																						
1948	06PMD470-SRK-WR-521	W	5	5a		26		3			13			3		27			27							
1956	06PMD470-SRK-WR-529	W	5	5a		31		2						9		33	1		22	1						
1987	07PMD542 95.90-104.15	W	5	5ai		12	1	3						20		18	16		28	1						
1988	07PMD542 104.15-105.29	W	5	5c		20		3						24		27	5		20	1						
694	202743	W	5 mixed	5a (0.87), 1a (0.13)		31		6						12		26	2		21	0.9						
720	208898	W	5 mixed	5c (0.63), 1p (0.21), 1a (0.16)		15	2	31						8	21	7	1		14	1						
722	208900	W	5 mixed	5c (0.57), 1pv (0.25), 1a (0.18)		15	2	45						15		8	1		14	1						
726	202706	W	5 mixed	5ai (0.75), 1a (0.25)		14	9	29	3					12		11	2		18	0.5						
1263	08PMD650-SRK-WR-54	W	5 mixed	5a (0.96), 1a (0.04)			23	52								2			22	tr						
1265	08PMD650-SRK-WR-56	W	5 mixed	5a (0.71), 1a (0.29)		6	21	46		1							tr		17	tr	1			7		
1312	07PMD522-SRK-WR-103	W	5 mixed	5ai (0.71), 2pg (0.26), 1a (0.03)			15	37						14	5	11			18	tr						
1365	08PSD142-SRK-WR-156	W	5 mixed	5aw (0.88), 1pr (0.12)		11	17	38		1				5		3			19	tr	1				4	
1680	07PMD610-SRK-WR-251	O	5 mixed	5a (0.79), 1pv (0.19), 1a (0.02)		37		22			12					13	6		10							
1959	06PMD470-SRK-WR-532	O	5 mixed	5a (0.81), 1pv (0.19)		30		4						12		27	2		24	1						
1363	08PSD142-SRK-WR-154	mixed	5 mixed	5aj (0.87), 1pz (0.07), 1pr (0.06)		6	17	39								15	2		19	1						
659	20	W	7a	7a										9		13		4	11	1						
666	208807	W	7a	7a	2	15		46				12		12		6			21	1						
685	208848	W	7a	7a		41		8						4		25			7							
695	202744	W	7a	7a	9	5		39	4								9									
696	202745	W	7a	7a		21	1	37						10		15	2	2	15	1						
649	10	O	7a	7a																						
667	208808	W	7a mixed	7a (0.76), 5a (0.24)	8	7	2	35						8		23	1	6	10							
1702	07PMD610-SRK-WR-273	W	7a mixed	7a (0.91), 1pv (0.09)			16	59								5			19							
1268	08PMD650-SRK-WR-59	W	10b	10b	22		4	15	9							36			11							3
1271	08PMD650-SRK-WR-62	W	10b	10b	19		4	17	8							37			11							4
1273	08PMD650-SRK-WR-64	W	10b mixed	10b (0.81), 1p (0.19)			15	30		1						31			13		9					
1971	06PMD470-SRK-WR-544	W	11c	11c		1		8								45		40	5							
1984	07PMD542 73.28-77.00	W	11c	11c		4		8								63		18	2							
692	202741	W	11c mixed	11c (0.95), 1a (0.05)				3	8			1	5	tr		38		36	6	2						
1217	08PMD670-SRK-WR-8	W	12c mixed	12c (0.78), 1a (0.22)		45		15						9		3			28	tr						
1911	07PMD552-SRK-WR-484	W	12q	12q		29		3			14			6		9	1		38							
645	6	W	13a	13a																						
646	7	W	13a	13a																						
658	19	W	13a	13a																						
660	21	W	13a	13a																						
661	22	W	13a	13a																						
665	208806	W	13a	13a		34		6						23		7	2		27	1						
697	202753	W	13a	13a		34		10				5		21		6	0.5		21	2						
699	202774	W	13a	13a		36		3						12					31	2.6						
701	202776	W	13a	13a		36		8					1	15		3			32	4						
1294	08PSD143B-SRK-WR-85	W	13a	13a		39		8						9		10			32	1						
1295	08PSD143B-SRK-WR-86	W	13a	13a		38		15						12		10			22	1						
1299	08PSD143B-SRK-WR-90	W	13a	13a		40		7						11		11			27	1						
1300	08PSD143B-SRK-WR-91	W	13a	13a		52		9						6		10			21	1						
1321	08PMD657A-SRK-WR-112	W	13a	13am		56		3						11					24	1						
1322	08PMD657A-SRK-WR-113	W	13a	13am		52		5						7		4			24	1						
1323	08PMD657A-SRK-WR-114	W	13a	13am		37	1	29						6		2			23	1						
1324	08PMD657A-SRK-WR-115	W	13a	13am		51		5						7		10			24	2						
1325	08PMD657A-SRK-WR-116	W	13a	13am		39		5						9		15			27	2						
1326	08PMD657A-SRK-WR-117	W	13a	13am		38		11						3		19			23	2						
1327	08PMD657A-SRK-WR-118	W	13a	13am		37		8						7		17			26	2						
1328																										

Appendix I

Acid-Base Accounting Data for Madrid North Static Test Sample Set

Appendix I: Acid-Base Accounting Raw Lab Data for Madrid North Sample Set

SRK Serial Number	Lab ID	Economic Classification	Lithology ²		Paste pH	Total S	NP	TIC	TIC _(Ca+Mg)	NP/AP	TIC/AP	TIC _{(Ca+Mg)/AP}
			Primary	Summary (if additional lithologies) (proportion in parentheses)								
643	2	W	1	1a	8.7	1.1	450	533	443	13	15	13
650	11	W	1	1p	9.1	0.12	362	395	328	97	105	87
651	12	W	1	1a	9.0	0.07	396	451	375	181	206	171
653	14	W	1	1a	8.9	0.08	228	213	177	91	85	71
655	16	W	1	1p	9.0	0.09	243	228	189	86	81	67
656	17	W	1	1a	9.1	0.23	323	354	294	45	49	41
663	208802	W	1	1a	0.38	204	389	323	17	32	27	
670	208811	W	1	1a	0.45	222	111	92	16	7.9	6.5	
671	208812	W	1	1a	0.24	190	193	160	25	26	21	
672	208813	W	1	1a	0.2	316	393	327	50	63	52	
673	208814	W	1	1a	0.14	358	468	389	81	106	88	
678	208840	W	1	1a	0.6	195	423	351	10	22	19	
682	208845	W	1	1a	0.29	182	384	319	20	43	36	
683	208846	W	1	1a	0.19	215	434	360	37	75	62	
684	208847	W	1	1a	0.22	227	450	374	33	66	55	
688	208851	W	1	1pv (0.64), 1a (0.36)	0.31	180	348	289	19	36	30	
707	208821	W	1	1a (0.86), 1p (0.14)	0.39	249	505	419	21	42	35	
712	208861	W	1	1a	0.37	255	482	400	22	41	34	
718	208868	W	1	1p (0.78), 1u (0.18), 1a (0.05)	0.35	219	136	113	20	13	10	
719	208869	W	1	1a (0.68), 1p (0.26), 1u (0.06)	0.84	213	175	145	8.1	6.7	5.5	
723	202703	W	1	1a (0.93), 1pv (0.07)	0.57	298	221	183	17	12	10	
727	202707	W	1	1a	0.24	294	275	228	39	36	30	
728	202712	W	1	1pv	0.32	209	125	104	21	12	10	
1210	08PMD670-SRK-WR-1	W	1	1a	8.5	0.08	147	167	138	59	67	55
1211	08PMD670-SRK-WR-2	W	1	1a	9.2	0.08	101	89	74	40	36	30
1212	08PMD670-SRK-WR-3	W	1	1a	9.4	0.09	31	10	8	11	3.6	2.9
1213	08PMD670-SRK-WR-4	W	1	1a	9.5	0.07	41	33	28	19	15	13
1214	08PMD670-SRK-WR-5	W	1	1a	9.5	0.05	23	10	8	15	6.4	5.3
1215	08PMD670-SRK-WR-6	W	1	1a	8.4	0.05	225	237	197	144	152	126
1216	08PMD670-SRK-WR-7	W	1	1a	8.5	0.18	235	249	207	42	44	37
1218	08PMD670-SRK-WR-9	W	1	1a	8.7	0.09	204	203	169	73	72	60
1219	08PMD670-SRK-WR-10	W	1	1pv	8.8	0.09	174	161	133	62	57	47
1220	08PMD670-SRK-WR-11	W	1	1pv	8.7	0.11	192	182	151	56	53	44
1221	08PMD670-SRK-WR-12	W	1	1pv	8.7	0.23	249	248	206	35	35	29
1222	08PMD670-SRK-WR-13	W	1	1pv	9.1	0.09	233	254	211	83	90	75
1223	08PMD670-SRK-WR-14	W	1	1pv	8.7	0.09	194	202	167	69	72	59
1224	08PMD670-SRK-WR-15	W	1	1pv	8.8	0.08	138	133	111	55	53	44
1228	08PMD669-SRK-WR-19	W	1	1a	8.9	0.02	107	106	88	172	169	140
1229	08PMD669-SRK-WR-20	W	1	1a	8.9	0.04	103	100	83	83	80	66
1230	08PMD669-SRK-WR-21	W	1	1a	8.6	0.03	120	123	102	128	132	109
1231	08PMD669-SRK-WR-22	W	1	1a	9.0	0.06	98	87	73	52	47	39
1232	08PMD669-SRK-WR-23	W	1	1a	9.3	0.07	130	128	106	59	59	49
1233	08PMD669-SRK-WR-24	W	1	1a	8.6	0.08	200	207	171	80	83	69
1234	08PMD669-SRK-WR-25	W	1	1pv	8.7	0.07	241	244	203	110	112	93
1235	08PMD669-SRK-WR-26	W	1	1pv	8.6	0.09	182	235	195	65	84	69
1236	08PMD669-SRK-WR-27	W	1	1pv	8.7	0.09	205	208	173	73	74	61
1237	08PMD669-SRK-WR-28	W	1	1pv	8.9	0.08	136	129	107	54	52	43
1238	08PMD669-SRK-WR-29	W	1	1pv	8.4	0.09	179	195	162	64	69	58
1239	08PMD669-SRK-WR-30	W	1	1pv	8.8	0.09	125	121	100	44	43	36
1240	08PMD669-SRK-WR-31	W	1	1pv	8.8	0.08	176	172	143	70	69	57
1241	08PMD669-SRK-WR-32	W	1	1pv	9.0	0.22	259	303	252	38	44	37
1242	08PMD669-SRK-WR-33	W	1	1pv	8.6	0.09	214	231	192	76	82	68
1243	08PMD669-SRK-WR-34	W	1	1pv	8.7	0.08	137	137	113	55	55	45
1244	08PMD669-SRK-WR-35	W	1	1pv	8.6	0.085	216	219	182	81	82	68
1245	08PMD669-SRK-WR-36	W	1	1pv	8.9	0.09	256	317	263	91	113	93
1253	08PMD650-SRK-WR-44	W	1	1a	9.5	0.12	207	219	182	55	58	48
1254	08PMD650-SRK-WR-45	W	1	1a	9.1	0.19	267	318	264	45	54	44
1258	08PMD650-SRK-WR-49	W	1	1iz	9.2	0.28	99	90	75	11	10	8.5
1261	08PMD650-SRK-WR-52	W	1	1ad	8.9	0.22	263	256	212	38	37	31
1264	08PMD650-SRK-WR-55	W	1	1a	8.9	0.24	256	273	227	34	36	30
1266	08PMD650-SRK-WR-57	W	1	1pz	9.0	0.17	100	89	74	19	17	14
1269	08PMD650-SRK-WR-60	W	1	1pz	9.3	0.31	44	35	29	4.6	3.6	3.0
1270	08PMD650-SRK-WR-61	W	1	1pz	9.1	0.28	84	71	59	10	8.1	6.7
1274	08PMD650-SRK-WR-65	W	1	1p	9.4	0.17	216	186	154	41	35	29
1275	08PMD650-SRK-WR-66	W	1	1p	9.3	0.13	231	207	172	57	51	42
1276	08PMD650-SRK-WR-67	W	1	1u	9.5	0.19	226	195	162	38	33	27
1277	08PMD650-SRK-WR-68	W	1	1p	9.1	0.13	214	186	154	53	46	38
1278	08PMD650-SRK-WR-69	W	1	1u	9.3	0.27	290	283	235	34	34	28
1279	08PMD650-SRK-WR-70	W	1	1u	9.7	0.17	344	426	354	65	80	67
1280	08PMD650-SRK-WR-71	W	1	1u	9.2	0.29	300	316	262	33	35	29
1281	08PSD143B-SRK-WR-72	W	1	1p	8.8	0.12	129	131	109	34	35	29
1282	08PSD143B-SRK-WR-73	W	1	1p	8.6	0.09	130	129	107	46	46	38
1283	08PSD143B-SRK-WR-74	W	1	1p	8.8	0.11	171	159	132	50	46	38
1284	08PSD143B-SRK-WR-75	W	1	1p	8.8	0.12	138	141	117	37	38	31
1285	08PSD143B-SRK-WR-76	W	1	1p	8.5	0.16	142	160	133	28	32	27
1286	08PSD143B-SRK-WR-77	W	1	1p	9.2	0.13	240	314	261	59	77	64
1287	08PSD143B-SRK-WR-78	W	1	1p	9.5	0.09	255	340	282	91	121	100
1288	08PSD											

1912	07PMD552-SRK-WR-485	W	1	1p	9.0	0.99	253	313	260	8.2	10	8.4
1916	06PMD484-SRK-WR-489	W	1	1p	9.1	0.09	67	48	40	24	17	14
1917	06PMD484-SRK-WR-490	W	1	1pv	8.6	0.07	183	180	149	84	82	68
1918	06PMD484-SRK-WR-491	W	1	1p (0.94), 1pv (0.06)	8.3	0.11	230	216	180	67	63	52
1919	06PMD484-SRK-WR-492	W	1	1p	8.8	0.09	294	345	286	105	123	102
1920	06PMD484-SRK-WR-493	W	1	1p	8.4	0.26	282	322	267	35	40	33
1923	06PMD484-SRK-WR-496	W	1	1p	8.7	0.42	316	508	422	24	39	32
1924	06PMD484-SRK-WR-497	W	1	1pv (0.95), 1p (0.05)	8.5	0.3	212	212	176	23	23	19
1926	06PMD470-SRK-WR-499	W	1	1p	9.1	0.2	326	420	349	52	67	56
1927	06PMD470-SRK-WR-500	W	1	1p	9.5	0.28	295	385	320	34	44	37
1928	06PMD470-SRK-WR-501	W	1	1p	9.5	0.33	164	365	303	16	35	29
1931	06PMD470-SRK-WR-504	W	1	1p	9.1	0.1	121	298	247	39	95	79
1932	06PMD470-SRK-WR-505	W	1	1p	9.4	0.13	342	443	368	84	109	90
1934	06PMD470-SRK-WR-507	W	1	1p	9.4	0.09	304	381	316	108	136	112
1936	06PMD470-SRK-WR-509	W	1	1p	9.5	0.31	302	394	327	31	41	34
1937	06PMD470-SRK-WR-510	W	1	1p	8.9	1.6	352	398	330	7.0	7.9	6.5
1938	06PMD470-SRK-WR-511	W	1	1pv	9.7	0.34	380	465	386	36	44	36
1939	06PMD470-SRK-WR-512	W	1	1pv	8.5	0.02	388	423	351	621	677	562
1940	06PMD470-SRK-WR-513	W	1	1pv	9.0	0.56	365	523	434	21	30	25
1942	06PMD470-SRK-WR-515	W	1	1pv	8.9	0.39	398	527	437	33	43	36
1943	06PMD470-SRK-WR-516	W	1	1pv	8.7	0.38	442	544	452	37	46	38
1945	06PMD470-SRK-WR-518	W	1	1pv	9.0	0.02	391	528	439	625	846	702
1949	06PMD470-SRK-WR-522	W	1	1pv	8.6	0.46	427	525	436	30	37	30
1952	06PMD470-SRK-WR-525	W	1	1pv	8.7	0.42	344	518	430	26	39	33
1953	06PMD470-SRK-WR-526	W	1	1pv	8.7	0.02	375	538	446	600	860	714
1955	06PMD470-SRK-WR-528	W	1	1pv	9.0	0.02	356	526	437	570	842	698
1957	06PMD470-SRK-WR-530	W	1	1pv	9.4	0.02	213	226	188	341	362	301
1960	06PMD470-SRK-WR-533	W	1	1pv	8.9	0.23	195	377	313	27	52	44
1963	06PMD470-SRK-WR-536	W	1	1pv	8.5	0.02	292	341	283	467	546	453
1965	06PMD470-SRK-WR-538	W	1	1a	8.8	0.02	373	530	440	598	848	704
1968	06PMD470-SRK-WR-541	W	1	1p	8.9	0.02	362	528	438	580	844	701
1969	06PMD470-SRK-WR-542	W	1	1p	8.8	0.68	366	438	363	17	21	17
1970	06PMD470-SRK-WR-543	W	1	1p	8.8	0.52	181	181	151	11	11	9.3
1972	06PMD470-NMS-WR-55	W	1	1p								
1976	07PMD542 6.21-14.00	W	1	1a	8.7	0.09	407	523	434	145	186	154
1977	07PMD542 14.00-20.00	W	1	1a	8.8	0.12	442	540	448	118	144	120
1978	07PMD542 20.00-29.00	W	1	1a	8.8	0.08	392	518	430	157	207	172
1979	07PMD542 29.00-39.50	W	1	1a	9.1	0.26	377	473	392	46	58	48
1980	07PMD542 39.50-48.50	W	1	1a	9.2	0.08	338	401	333	135	160	133
1981	07PMD542 48.50-59.00	W	1	1a	9.0	0.1	317	397	330	102	127	105
1982	07PMD542 59.00-66.50	W	1	1a	9.0	0.16	419	470	390	84	94	78
1983	07PMD542 66.50-73.28	W	1	1a	9.0	0.23	346	402	334	48	56	46
1986	07PMD542 87.00-95.90	W	1	1a	9.2	0.11	374	533	443	109	155	129
1989	07PMD542 181.24-190.17	W	1	1a	9.4	0.09	364	595	494	130	212	176
1990	07PMD542 190.17-196.85	W	1	1a	9.5	0.11	269	587	487	78	171	142
1992	07PMD542 199.85-207.85	W	1	1a	9.4	0.1	278	597	495	89	191	158
1995	07PMD552 17.00-23.60	W	1	1pv	9.1	0.22	268	372	309	39	54	45
1996	07PMD552 23.60-29.85	W	1	1pv	9.2	0.27	322	442	367	38	52	43
1997	07PMD552 29.85-35.10	W	1	1pv	9.2	0.29	254	329	273	28	36	30
1998	07PMD552 58.50-72.00	W	1	1p	9.6	0.4	239	321	267	19	26	21
1999	07PMD552 101.79-111.20	W	1	1p	9.6	0.19	230	280	232	39	47	39
2009	07PMD552 193.55-203.80	W	1	1a	9.5	0.29	228	251	209	25	28	23
2011	07PMD552 206.36-216.25	W	1	1a	9.3	0.27	349	424	352	41	50	42
2063	08PMD670-NMS-WR-1	W	1	1a								
2064	08PMD670-NMS-WR-2	W	1	1a								
2065	08PMD670-NMS-WR-3	W	1	1a								
2066	08PMD670-NMS-WR-4	W	1	1a								
2067	08PMD670-NMS-WR-5	W	1	1a								
2068	08PMD670-NMS-WR-6	W	1	1pv								
2069	08PMD670-NMS-WR-7	W	1	1pv								
2070	08PMD670-NMS-WR-8	W	1	1pv								
2071	08PMD670-NMS-WR-9	W	1	1pv								
2072	08PMD670-NMS-WR-10	W	1	1pv								
2075	08PMD670-NMS-WR-13	W	1	1pv								
2076	08PMD670-NMS-WR-14	W	1	1pv								
2077	08PMD670-NMS-WR-15	W	1	1pv								
2078	08PMD670-NMS-WR-16	W	1	1pv								
2079	08PMD670-NMS-WR-17	W	1	1pv								
2080	08PMD670-NMS-WR-18	W	1	1pv								
2081	08PMD670-NMS-WR-19	W	1	1pv								
2082	08PMD670-NMS-WR-20	W	1	1pv								
2083	08PMD670-NMS-WR-21	W	1	1pv								
2084	08PMD670-NMS-WR-22	W	1	1pv								
2085	08PMD670-NMS-WR-23	W	1	1pv								
2088	08PMD650-NMS-WR-37	W	1	1pz								
2089	07PMD610-NMS-WR-49	W	1	1pv								
2092	08PSD143B-NMS-WR-24	W	1	1p								
2093	08PSD143B-NMS-WR-25	W	1	1p								
2094	08PSD143B-NMS-WR-26	W	1	1p								
2095	08PSD143B-NMS-WR-27	W	1	1p								
2096	08PSD143B-NMS-WR-28	W	1	1p								
2097	08PSD143B-NMS-WR-29	W	1	1p								
2103	08PSD142-NMS-WR-40	W	1	1pv								
2104	08PSD142-NMS-WR-41	W	1	1pv								
2105	08PSD142-NMS-WR-42	W	1	1p								
644	3	O	1	1a	9.2	0.71	420	486	403	19	22	18
647	8	O	1	1a	9.1	1.4	342	418	347	8.0	10	8.2
648	9	O	1	1a	8.9	3.7	332	363	301	2.9	3.1	2.6
652	13	O	1	1a	9.0	2.5	198	232	193	2.6	3.0	2.5
654	15	O	1	1a	8.9	2.8	306	332	275	3.5	3.8	3.1
657	18	O	1	1a	8.9	3.8	345	378	314	2.9	3.2	2.6
680	208842	O	1	1a		0.66	174	402	334	8.4	20	16
681	208843	O	1	1a		0.51	148	425	353	9.3	27	22
729	202739	O	1	1a		1.6	228	412	342	4.5	8.1	6.8
1257	08PMD650-SRK-WR-48	O	1	1iz	8.6	2.2	266	310	257	3.9	4.5	3.8
1296	08PSD143B-SRK-WR-87	O	1	1a	9.0	0.91	434	559	464	15	20	16
1297	08PSD143B-SRK-WR-88	O	1	1a	8.8	0.78	471	582	483	19	24	20
1302	07PMD522-SRK-WR-93	O	1	1a	8.7	1.8	213	255	212	3.7	4.5	3.7
1303	07PMD522-SRK-WR-94	O	1	1a	8.5	3.9	294	367	305	2.4	3.0	2.5
1305	07PMD522-SRK-WR-96	O	1	1a	8.4	1.3	343	434	360	8.5	11	8.9
1358	08PSD142-SRK-WR-149	O	1	1a (0.99), 1p (0.01)	8.8	2.1	366	479	398	5.5	7.2	6.0
1679	07PMD610-SRK-WR-250	O	1	1a	8.9	2.1	290	353	293	4.4	5.4	4.4
1688	07PMD610-SRK-WR-259	O	1	1pv	9.5	1	365	342	283	12	11	9.1
1693	07PMD610-SRK-WR-264	O	1	1a	8.7	2.8	211	262	218	2.4	3.0	2.5
1698	07PMD610-SRK-WR-269	O	1	1pv	9.0	0.89	331	334	277	12	12	10
1909	07PMD552-SRK-WR-482	O	1	1a (0.55), 1pv (0.45)	8.5	2.1	281	340	282	4.2	5.1	4.3
1913	07PMD552-SRK-WR-486	O	1	1p	9.5	0.42	265	293	243	20	22	19
1914	07PMD552-SRK-WR-487	O	1	1p	9.5	0.5	258	303	252	17	19	16
1921	06PMD484-SRK-WR-494	O	1	1p	8.5	2.2	337	409	339	5.0	6.0	5.0
1922	06PMD484-SRK-WR-495	O	1	1p	8.7	1.5	288	339	281	6.3	7.4	6.2
1925	06PMD470-SRK-WR-498	O	1	1a	8.4	0.16	374	429	356	75	86	71
1929	06PMD470-SRK-WR-502	O	1	1a	9.3	1.3	262	330	274	6.4	8.1	6.7
1933	06PMD470-SRK-WR-506	O	1	1p	8.9	1.1	268	280	232	8.2	8.5	7.1
1935	06PMD470-SRK-WR-508	O	1	1p	9.0	1	273	348	289	8.6	11	9.1
1947	06PMD470-SRK-WR-520	O	1	1pv	9.0	0.02	395	577	479	631	923	766
1954	06PMD470-SRK-WR-527	O	1	1pv	8.8	0.02	396	493	410	634	790	655

1962	06PMD470-SRK-WR-535	O	1 mixed	1pv (0.53), 5a (0.47)	9.1	1.9	192	236	196	3.3	4.1	3.4
1964	06PMD470-SRK-WR-537	O	1 mixed	1a (0.53), 5a (0.28), 1pv (0.2)	8.5	2.9	250	287	238	2.8	3.2	2.6
664	208803	mixed	1 mixed	1a (0.96), 5a (0.04)		0.61	183	432	359	10	23	19
669	208810	mixed	1 mixed	1pv (0.48), 1a (0.4), 5a (0.11)		0.79	159	355	294	6.5	14	12
674	208815	mixed	1 mixed	1a (0.97), 5ai (0.03)		1.1	293	534	444	8.4	15	13
677	208839	mixed	1 mixed	1a (0.91), 5a (0.09)		1.2	154	375	311	4.0	10	8.0
679	208841	mixed	1 mixed	1a (0.8), 5a (0.2)		0.34	187	432	359	17	40	33
708	208822	mixed	1 mixed	0.83), 1u (0.07), 5ai (0.06), 5c (0.02), 10b (0.01)		2	272	507	421	4.3	8.0	6.7
709	208824	mixed	1 mixed	1a (0.84), 5ai (0.13), 5a (0.03)		0.62	258	496	411	13	26	21
711	208826	mixed	1 mixed	1p (0.59), 1a (0.4), 5ai (0)		0.88	184	255	211	6.7	9.2	7.7
1915	07PMD552-SRK-WR-488	mixed	1 mixed	1p (0.88), 12q (0.12)	9.6	0.61	254	324	269	13	17	14
1247	08PMD650-SRK-WR-38	W	w. sediment	1aj	8.6	0.37	267	287	238	23	25	21
1260	08PMD650-SRK-WR-51	W	w. sediment	5aj	9.5	0.29	262	253	210	29	28	23
1262	08PMD650-SRK-WR-53	W	w. sediment	1aj	9.4	0.2	209	209	174	33	33	28
1259	08PMD650-SRK-WR-50	O	w. sediment	1aj	8.9	1.2	286	317	263	7.8	8.6	7.1
1368	08PSD142-SRK-WR-159	mixed	w. sediment	1aj	9.2	0.43	200	221	183	15	16	14
1272	08PMD650-SRK-WR-63	W	sediments n	1aj (0.88), 10b (0.12)	8.8	0.4	131	122	102	10	10	8.1
1347	08PSD142-SRK-WR-138	W	sediments n	1aj (0.96), 1pv (0.04)	8.8	0.31	407	511	424	42	53	44
1246	08PMD650-SRK-WR-37	O	sediments n	1aj (0.79), 12q (0.21)	8.3	5.8	190	222	184	1.0	1.2	1.0
1355	08PSD142-SRK-WR-146	mixed	sediments n	10j (0.97), 1p (0.03)	8.9	1	390	501	416	12	16	13
714	208863	W	2	2pg		0.17	399	384	319	73	71	59
1225	08PMD669-SRK-WR-16	W	2	2p	8.7	0.07	155	151	125	71	69	57
1226	08PMD669-SRK-WR-17	W	2	2p	8.6	0.08	140	143	119	56	57	48
1227	08PMD669-SRK-WR-18	W	2	2p	8.8	0.12	170	162	134	45	43	36
1248	08PMD650-SRK-WR-39	W	2	2pg	9.3	0.22	105	101	84	15	15	12
1249	08PMD650-SRK-WR-40	W	2	2pg	8.9	0.09	130	125	104	46	44	37
1251	08PMD650-SRK-WR-42	W	2	2pg	9.2	0.12	160	147	122	43	39	33
1313	07PMD522-SRK-WR-104	W	2	2pg	8.9	0.11	37	37	31	11	11	9.1
1314	07PMD522-SRK-WR-105	W	2	2pg	8.5	0.2	158	168	140	25	27	22
1315	07PMD522-SRK-WR-106	W	2	2pg	8.5	0.23	84	84	69	12	12	10
1316	07PMD522-SRK-WR-107	W	2	2pg	8.6	0.16	114	120	100	23	24	20
1366	08PSD142-SRK-WR-157	W	2	2pg	9.2	0.17	66	68	57	12	13	11
1369	08PSD142-SRK-WR-160	W	2	2pg	9.0	0.08	77	85	71	31	34	28
1370	08PSD142-SRK-WR-161	W	2	2pg	9.3	0.11	54	54	45	16	16	13
1371	08PSD142-SRK-WR-162	W	2	2pg	9.2	0.11	59	66	55	17	19	16
1372	08PSD142-SRK-WR-163	W	2	2pg	9.3	0.12	153	164	136	41	44	36
1781	08PSD142-NMS-WR-354	W	2	2pg	9.2	0.24	46	43	36	6.2	5.8	4.8
1782	08PSD142-NMS-WR-355	W	2	2pg	9.3	0.2	41	42	35	6.6	6.8	5.6
1876	08PSD142-SRK-WR-449	W	2	2pg	8.9	0.1	95	86	72	30	28	23
1877	08PSD142-SRK-WR-450	W	2	2pg	8.9	0.13	131	131	109	32	32	27
2000	07PMD552 111.20-123.61	W	2	2pg	10.0	0.11	164	182	151	48	53	44
2001	07PMD552 123.61-134.00	W	2	2pg	10.2	0.17	90	93	77	17	18	15
2002	07PMD552 134.00-144.50	W	2	2pg	10.1	0.12	86	98	82	23	26	22
2003	07PMD552 144.50-147.60	W	2	2pg	10.2	0.13	170	163	135	42	40	33
2004	07PMD552 147.60-158.50	W	2	2pg	10.0	0.47	169	196	163	12	13	11
2005	07PMD552 158.50-167.50	W	2	2pg	10.5	0.1	80	77	64	26	25	21
2006	07PMD552 167.50-176.50	W	2	2pg	10.7	0.09	30	27	23	11	10	8.1
2007	07PMD552 176.50-186.85	W	2	2pg	10.8	0.1	44	46	38	14	15	12
2008	07PMD552 186.85-193.55	W	2	2pg	10.0	0.15	141	132	110	30	28	23
2073	08PMD670-NMS-WR-11	W	2	2p								
2074	08PMD670-NMS-WR-12	W	2	2p								
2086	08PMD650-NMS-WR-35	W	2	2pg								
2087	08PMD650-NMS-WR-36	W	2	2pg								
713	208862	W	2 mixed	2pg (0.5), 1u (0.25), 1a (0.22), 10b (0.04)		0.21	308	346	287	47	53	44
1367	08PSD142-SRK-WR-158	W	2 mixed	2pg (0.92), 1aj (0.08)	9.1	0.24	85	87	73	11	12	10
1250	08PMD650-SRK-WR-41	W	5	5aj	9.1	0.07	191	194	161	87	89	74
1252	08PMD650-SRK-WR-43	W	5	5a	8.7	0.11	194	204	169	57	59	49
1255	08PMD650-SRK-WR-46	W	5	5aj	8.7	0.22	229	260	216	33	38	31
1256	08PMD650-SRK-WR-47	W	5	5aj	8.6	1.7	173	177	147	3.2	3.3	2.7
1941	06PMD470-SRK-WR-514	W	5	5a	9.0	0.65	357	374	310	18	18	15
1944	06PMD470-SRK-WR-517	W	5	5a	8.6	0.02	322	364	302	515	582	483
1946	06PMD470-SRK-WR-519	W	5	5a	9.3	0.39	287	422	350	24	35	29
1948	06PMD470-SRK-WR-521	W	5	5a	9.2	0.43	214	246	204	16	18	15
1956	06PMD470-SRK-WR-529	W	5	5a	9.3	0.81	242	288	239	10	11	9.4
1987	07PMD542 95.90-104.15	W	5	5ai	8.1	9.6	83	111	93	0.3	0.4	0.3
1988	07PMD542 104.15-105.29	W	5	5c	8.9	3.5	143	195	162	1.3	1.8	1.5
694	202743	W	5 mixed	5a (0.87), 1a (0.13)		1.9	122	216	179	2.1	3.7	3.1
720	208898	W	5 mixed	5c (0.63), 1p (0.21), 1a (0.16)		0.27	137	182	151	16	22	18
722	208900	W	5 mixed	5c (0.57), 1pv (0.25), 1a (0.18)		0.87	107	159	132	3.9	5.8	4.8
726	202706	W	5 mixed	5ai (0.75), 1a (0.25)		3.2	149	205	170	1.5	2.0	1.7
1263	08PMD650-SRK-WR-54	W	5 mixed	5a (0.96), 1a (0.04)	8.6	0.17	249	250	207	47	47	39
1265	08PMD650-SRK-WR-56	W	5 mixed	5a (0.71), 1a (0.29)	9.5	0.18	249	265	220	44	47	39
1312	07PMD522-SRK-WR-103	W	5 mixed	5ai (0.71), 2pg (0.26), 1a (0.03)	9.0	0.05	170	173	144	109	111	92
1365	08PSD142-SRK-WR-156	W	5 mixed	5aw (0.88), 1pr (0.12)	8.7	0.32	261	304	252	26	30	25
1680	07PMD610-SRK-WR-251	O	5 mixed	5a (0.79), 1pv (0.19), 1a (0.02)	8.6	5.1	299	345	286	1.9	2.2	1.8
1959	06PMD470-SRK-WR-532	O	5 mixed	5a (0.81), 1pv (0.19)	8.9	1.3	216	260	216	5.3	6.3	5.3
1363	08PSD142-SRK-WR-154	mixed	5 mixed	5aj (0.87), 1pz (0.07), 1pr (0.06)	8.6	1.3	230	240	199	5.7	5.9	4.9
659	20	W	7a	7a	9.7	0.1	13	1	1	4.1	0.4	0.4
666	208807	W	7a	7a	9.0	0.11	114	120	100	33	35	29
685	208848	W	7a	7a	9.1	0.27	321	437	362	38	52	43
695	202744	W	7a	7a		0.12	123	43	36	34	12	10
696	202745	W	7a	7a		0.16	100	155	128	20	30	25
649	10	O	7a	7a	8.6	0.88	392	534	443	14	19	16
667	208808	W	7a mixed	7a (0.76), 5a (0.24)		0.55	103	52	43	6.0	3.0	2.5
1702	07PMD610-SRK-WR-273	W	7a mixed	7a (0.91), 1pv (0.09)	8.5	0.08	178	173	144	71	69	58
1268	08PMD650-SRK-WR-59	W	10b	10b	9.3	0.15	40	28	24	8.6	6.0	5.0
1271	08PMD650-SRK-WR-62	W	10b	10b	9.2	0.18	38	54	45	6.8	10	8.0
1273	08PMD650-SRK-WR-64	W	10b mixed	10b (0.81), 1p (0.19)	9.0	0.23	175	147	122	24	20	17
1971	06PMD470-SRK-WR-544	W	11c	11c	9.3	0.02	22	11	9	35	17	14
1984	07PMD542 73.28-77.00	W	11c	11c	9.7	0.07	33	35	29	15	16	13
692	202741	W	11c mixed	11c (0.95), 1a (0.05)		0.048	185	5	4	123	3.0	2.5
1217	08PMD670-SRK-WR-8	W	12c mixed	12c (0.78), 1a (0.22)	9.0	0.29	329	441	366	36	49	40
1911	07PMD552-SRK-WR-484	W	12q	12q	8.7	0.65	229	266	221	11	13	11
645	6	W	13a	13a	9.4	0.05	154	200	166	99	128	106
646	7	W	13a	13a	9.2	0.11	148	163	135	43	47	39
658	19	W	13a	13a	9.4	0.48	206	238	198	14	16	13
660	21	W	13a	13a	9.6	0.06	377	427	354	201	228	189
661	22	W	13a	13a	9.5	0.81	167	187	155	6.6	7.4	6.1
665	208806	W	13a	13a		0.23	136	268	223	19	37	31
697	202753	W	13a	13a		0.23	94	309	257	13	43	36
699	202774	W	13a	13a	9.0	0.54	191	235	195	11	14	12
701	202776	W	13a	13a		0.28	109	236	196	13	27	23
1294	08PSD143B-SRK-WR-85	W	13a	13a	9.5	0.13	289	373	310	71	92	76
1295	08PSD143B-SRK-WR-86	W	13a	13a	9.3	0.14	297	367	304	68	84	70
1299	08PSD143B-SRK-WR-90	W	13a	13a	9.6	0.13	281	380	315	69	94	78
1300	08PSD143B-SRK-WR-91	W	13a	13a	9.3	0.07	392	491	408	179	225	186

Appendix J

Trace Element Data for Madrid North Static Test Sample Set

Appendix J: Solid Phase Elemental Data, ICP-MS, for Madrid North Sample Set

SRK Serial Number	Lab ID	Economic Classification	Lithology ¹		Molybdenum	Copper	Lead	Zinc	Silver	Nickel	Cobalt	Manganese	Iron	Arsenic	Uranium	Gold	Thorium	Strontium	Cadmium	Antimony	Bismuth	Vanadium	Calcium	Phosphorus	Lanthanum	Chromium	Magnesium	Barium	Titanium	Boron	Aluminum	Sodium	Potassium	Tungsten	Mercury	Scandium	Thallium	Sulphur	Gallium	Selenium	Beryllium	Tin	
			Primary	Summary (If additional lithologies) (proportion in parentheses)	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Be	Sn	
					ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppb	ppm	ppm	%	ppm	ppm	ppm	ppm	
643	2	W	1	1a	2.9	160	3	17	0.2	490	72	1700	5.3	790	<1	<0.002	<1	250	<0.2	2.2	<0.5	37	9.4	0.019	2	160	5.1	19	0.002	3	0.16	0.028	0.07	2	<1000	9.3	<1		1				
650	11	W	1	1p	1.2	76	<2	71	<0.1	110	46	1800	5.8	53	<1	<0.002	<1	30	0.3	0.5	<0.5	23	7.6	0.037	2	43	2.4	7	0.002	9	0.59	0.1	0.1	<1	<1000	8.5	<1		2				
651	12	W	1	1a	1.3	80	2	88	<0.1	82	46	1800	7.6	59	<1	<0.002	<1	81	<0.2	<0.5	<0.5	110	8.4	0.021	1	190	5	6	0.002	1	2.2	0.033	0.03	<1	<1000	14	<1		7				
653	14	W	1	1a	0.3	81	3	61	<0.1	80	41	1400	6	2	<1	<0.002	<1	49	<0.2	<0.5	<0.5	210	7.4	0.021	2	290	3.7	1	0.011	3	3.7	0.015	0.01	<1	<1000	19	<1		13				
655	16	W	1	1p	0.9	190	<2	60	<0.1	110	49	1500	5.9	5	<1	<0.002	<1	74	<0.2	<0.5	<0.5	210	8.4	0.023	2	310	3.9	5	0.16	1	3.2	0.015	<0.01	<1	<1000	19	<1		12				
656	17	W	1	1a	1.6	73	<2	42	<0.1	88	43	1400	4.9	130	<1	<0.002	<1	140	<0.2	<0.5	<0.5	44	7.4	0.011	1	170	4.9	20	0.001	5	1.3	0.007	0.11	2	<1000	8.3	<1		4				
663	208802	W	1	1a	<2	190	<10	110	0.2	760	100	2400	9.9	270		<0.002		150	4	35		260	8.1			610	5.5	200	0.12		3.5	3500	0.48		<20								
670	208811	W	1	1a	<2	270	<10	200	0.4	320	110	2300	12	9			160	4	35		380	8.9			370	3.8	300	1.3		4.9	16000	0.51		<20									
671	208812	W	1	1a	<2	240	<10	190	<2	1200	140	2600	13	15			93	5	42		300	7.6			490	4.4	220	0.88		3.9	9100	0.58		<20									
672	208813	W	1	1a	<2	170	<10	190	<2	580	100	2500	10	54			120	4	28		220	13			480	4.1	87	0.63		2.7	1500	0.32		<20									
673	208814	W	1	1a	<2	140	<10	150	0.2	400	82	2500	9.1	17			130	3	20		100	210			470	4.5	46	0.59		2.4	2700	0.47		<20									
678	208840	W	1	1a	<2	200	<16	87	<2	770	98	1900	9.1	170			100	2	22		240	7.8			800	3.9	350	0.087		3.6	4890	0.86		<20									
682	208845	W	1	1a	<2	110	<10	53	<2	110	50	1900	6.9	110			100	2	31		180	7.3			180	2.8	100	0.081		6.6	13000	0.77		<20									
683	208846	W	1	1a	<2	100	<10	44	0.2	130	54	2100	7.5	130			97	3	36		13	8.6			150	2.5	100	0.079		6.4	14000	0.58		<20									
684	208847	W	1	1a	<2	110	<10	61	<2	130	54	1900	7.7	180			120	3	37		180	9.1			110	2.7	83	0.072		6.6	15000	0.56		<20									
688	208851	W	1	1pv (0.64), 1a (0.36)	<2	95	<10	85	<2	110	53	1600	7.8	85			95	3	34		210	7.2			150	3.6	82	0.072		6.3	12000	0.74		<20									
707	208821	W	1	1a (0.86), 1p (0.14)	<2	150	<10	92	0.8	580	79	2100	8.9	210			170	3	36		210	10			470	5.4	74	0.079		2.8	0.23	0.44		<20									
712	208861	W	1	1a	<2	210	<10	88	<2	550	81	2300	9.6	230			170	4	35		230	10			500	4.9	98	0.11		3.4	0.22	0.88		<20									
718	208868	W	1	1a	<2	230	<10	330	<2	220	92	2100	10	72			170	5	59		410	8.8			270	3.8	420	1.4		5.7	1.3	0.49		45									
719	208869	W	1	1a (0.68), 1p (0.26), 1u (0.06)	<2	230	<10	180	<2	150	81	2100	10	69			210	5	61		410	8.5			240	3.4	290	1.3		5.7	1.6	0.4		63									
723	202703	W	1	1a (0.93), 1pv (0.07)	<2	240	<10	150	0.8	570	110	2300	10	22			190	3	26		330	12			550	4	230	1.2		4.4	0.59	0.35		<20									
727	202707	W	1	1a	<2	190	<10	81	0.4	690	110	2100	9.9	11			100	2	25		280	12			800	4.2	15	0.9		3.4	0.24	0.048		<20									
728	202712	W	1	1pv	<2	220	<10	100	0.4	280	97	2100	10	11			100	3	40		370	8.4			97	4.7	4	1.3		0.97	0.52		<20										
1210	08PMD670-SRK-WR-1	W	1	1a	0.1	120	0.1	75	<0.1	52	39	1300	7.2	2.8		<0.1	<0.1	16	<0.1	<0.1	<0.1	100	3.3	0.024	1	35	4.7	4	0.009	<20	3.3	0.035	0.02	<0.1	20	24	<0.1	0.07	11				
1211	08PMD670-SRK-WR-2	W	1	1a	0.1	130	0.1	58	<0.1	59	34	1000	6.2	5.3		<0.1	<0.1	7	<0.1	<0.1	<0.1	170	1.9	0.022	2	93	4.8	3	0.08	<20	3.3	0.055	0.02	<0.1	<10	14	<0.1	0.07	10				
1212	08PMD670-SRK-WR-3	W	1	1a	0.1	120	0.2	48	<0.1	43	28	670	4.6	1.4		<0.1	<0.1	10	<0.1	<0.1	<0.1	100	0.72	0.023	2	79	3.2	3	0.18	<20	2.5	0.074	0.02	<0.1	<10	4.6	<0.1	0.07	7				
1213	08PMD670-SRK-WR-4	W	1	1a	0.1	130	0.3	56	<0.1	46	30	780	4.4	4		<0.1	<0.1	15	<0.1	<0.1	<0.1	80	1.5	0.023	1	42	2.3	6	0.16	<20	2.3	0.063	0.02	<0.1	<10	4	<0.1	0.06	7				
1214	08PMD670-SRK-WR-5	W	1	1a	0.1	96	0.3	51	<0.1	45	29	650	3.9	10		<0.1	<0.1	21	<0.1	<0.1	<0.1	77	1.1	0.023	1	110	2.4	6	0.2	<20	2.4	0.07	0.02	<0.1	<10	5	<0.1	<0.05	6				
1215	08PMD670-SRK-WR-6	W	1	1a	<0.1	78	1.2	57	<0.1	110	38	1600	6.4	9.7		<0.5	<0.1	16	<0.1	<0.1	<0.1	170	5.2	0.016	2	540	7.1	5	0.013	<20	4.2	0.023	0.04	<0.1	10	24	<0.1	<0.05	9				
1216	08PMD670-SRK-WR-7	W	1	1a	0.2	66	0.4	63	<0.1	210	54	1200	6.9	36		<0.1	70	<0.1	44	<0.1	<0.1	<0.1	150	4.9	0.016	1	580	7.1	5	0.006	<20	4	0.009	0.01	5	<10	20	<0.1	0.16	9			
1218	08PMD670-SRK-WR-9	W	1	1a	0.1	83	0.3	60	<0.1	150	49	1200	6.5	18		<0.1	14	<0.1	46	<0.1	<0.1	<0.1	170	6.5	0.022	2	380	4.3	8	0.08	<20	3.8	0.03	0.03	3.3	<10	17	<0.1	0.07	9			
1219	08PMD670-SRK-WR-10	W	1	1pv	0.1	89	0.3	70	<0.1	88	39	1300	6.6	1.1		<0.1	4.9	<0.1	16	<0.1	<0.1	<0.1	180	5.8	0.022	2	260	4.3	8	0.15	<20	4.1	0.035	0.02	<0.1	<10	17	<0.1	0.07	11			
1220	08PMD670-SRK-WR-11	W	1	1pv	0.1	91	0.3	68	<0.1	70	37	1500	6.3	0.7		<0.1	2.2	<0.1	17	<0.1	<0.1	<0.1	160	6.6	0.021	2	230	4.3	4	0.15	<20	4.1	0.028	0.01	<0.1	<10	12	<0.1	0.07	10			
1221	08PMD670-SRK-WR-12	W	1	1pv	0.1	96	0.8	76	<0.1	86	38	1600	5.8	4.2		<0.1	39	<0.1	<0.1	<0.1	140	9.4	0.027	2	180	3.3	13	0.005	<20	3.9	0.016	0.07	<0.1	<10	14	<0.1	0.20	9					
1222	08PMD670-SRK-WR-13	W	1	1a	0.2	91	0.4	62	<0.1	73	35	1400	5.5	15		<0.1	2	<0.1	39	<0.1	<0.1	<0.1	110	7.3	0.02	1	190	3.2	11	0.071	<20	3.8	0.05	<0.1	<10	13	<0.1	0.07	7				
1223	08PMD670-SRK-WR-14	W	1	1pv	0.1	92	0.2	61	<0.1	71	36	1200	5.8	<0.5		<0.5	<0.1	47	<0.1	<0.1	<0.1	160	7.7	0.022	1	230	3.2	17	0.12	<20	3.7	0.018	0.02	&									

Appendix J: Solid Phase Elemental Data, ICP-MS, for Madrid North Sample Set

SRK Serial Number	Lab ID	Economic Classification	Lithology ¹		Molybdenum	Copper	Lead	Zinc	Silver	Nickel	Cobalt	Manganese	Iron	Arsenic	Uranium	Gold	Thorium	Strontium	Cadmium	Antimony	Bismuth	Vanadium	Calcium	Phosphorus	Lanthanum	Chromium	Magnesium	Barium	Titanium	Boron	Aluminum	Sodium	Potassium	Tungsten	Mercury	Scandium	Thallium	Sulphur	Gallium	Selenium	Beryllium	Tin	
			Primary	Summary (if additional lithologies) (proportion in parentheses)	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Be	Sn	
					ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
1356	08PSD142-SRK-WR-147	W	1	1p	0.6	230	1.4	54	<0.1	820	100	1800	7.9	35	<0.1	140	0.4	220	<0.1	0.1	<0.1	260	10	0.063	9	740	3.3	49	0.23	<20	3.2	0.073	0.44	<0.1	<10	19	<0.1	0.19	16	<0.5			
1357	08PSD142-SRK-WR-148	W	1	1p	0.6	240	1.3	47	<0.1	790	97	1900	8.3	62	0.1	76	0.5	250	0.1	<0.1	<0.1	270	9.8	0.076	10	530	3.6	49	0.33	<20	3.4	0.041	0.22	0.7	<10	17	<0.1	0.21	17	0.6			
1359	08PSD142-SRK-WR-150	W	1	1p	0.7	230	1	42	<0.1	550	78	1500	6.1	41	0.2	12	0.6	170	<0.1	0.2	<0.1	190	9	0.072	8	560	2.4	26	0.43	<20	2.6	0.041	0.14	0.4	<10	10	<0.1	0.16	13	0.6			
1360	08PSD142-SRK-WR-151	W	1	1p	0.8	250	1.3	53	<0.1	600	78	1500	6	16	0.2	1.6	0.7	110	<0.1	0.1	<0.1	150	7.8	0.07	10	730	2.2	44	0.5	<20	2.7	0.034	0.07	0.5	<10	3.1	<0.1	0.14	14	<0.5			
1361	08PSD142-SRK-WR-152	W	1	1pz (0.93), 1p (0.07)	0.8	190	4.5	93	<0.1	170	46	1400	5.3	24	0.1	0.5	0.8	49	0.3	0.1	<0.1	130	4.4	0.093	11	140	1.7	25	0.41	<20	2.5	0.065	0.22	<0.1	<10	3.8	<0.1	0.34	10	0.7			
1362	08PSD142-SRK-WR-153	W	1	1pz	0.9	210	2.1	100	0.1	140	54	1600	7	3.4	0.2	75	0.9	85	0.2	0.2	<0.1	240	6.1	0.11	17	170	2.6	50	0.59	<20	3.3	0.052	0.18	0.4	<10	11	<0.1	0.27	15	0.6			
1364	08PSD142-SRK-WR-155	W	1	1pr	1	210	1.6	98	<0.1	130	63	1600	9.5	6.4	0.2	1.9	0.7	99	<0.1	0.3	<0.1	310	5.3	0.11	17	220	3.4	40	0.55	<20	4.1	0.042	0.11	0.2	<10	18	<0.1	0.30	21	0.9			
1681	07PMD610-SRK-WR-252	W	1	1pv	0.4	180	1.1	50	<0.1	720	83	1900	8.8	18	<0.1	15	0.2	140	<0.1	<0.1	<0.1	260	7.6	0.047	5	670	4.7	7	0.085	<20	4.1	0.026	0.05	<0.1	<10	21	<0.1	0.24	12	<0.5			
1682	07PMD610-SRK-WR-253	W	1	1pv (0.95), 1u (0.05)	0.3	180	0.7	43	<0.1	680	83	2000	10	6.7	<0.1	4.2	0.2	41	<0.1	<0.1	<0.1	250	5.3	0.047	6	520	6.6	44	0.024	<20	3.9	0.1	0.22	<0.1	<10	23	<0.1	0.17	13	0.8			
1683	07PMD610-SRK-WR-254	W	1	1u	0.3	150	0.8	33	<0.1	400	62	1300	7.7	19	<0.1	1.3	0.2	68	<0.1	<0.1	<0.1	220	3.9	0.04	4	660	6	11	0.057	<20	3.3	0.06	0.1	<0.1	<10	20	<0.1	0.14	11	0.7			
1684	07PMD610-SRK-WR-255	W	1	1u	0.4	160	1.1	34	<0.1	780	85	1900	8.4	170	<0.1	160	0.2	210	<0.1	<0.1	<0.1	240	8.6	0.04	4	540	4.7	17	0.082	<20	3.4	0.11	0.25	0.1	<0.1	<10	22	<0.1	0.33	12	0.7		
1685	07PMD610-SRK-WR-256	W	1	1u	0.4	170	0.9	31	<0.1	710	81	1700	7.9	35	<0.1	3.2	0.2	220	<0.1	<0.1	<0.1	240	8.4	0.044	5	520	4.5	16	0.097	<20	3.3	0.12	0.27	<0.1	<10	22	<0.1	0.12	12	<0.5			
1687	07PMD610-SRK-WR-258	W	1	1pv	0.3	170	0.8	36	<0.1	720	84	2000	8.2	200	<0.1	20	0.2	200	0.1	<0.1	<0.1	230	7.6	0.045	3	570	5.3	29	0.038	<20	2.9	0.023	0.04	0.2	<10	20	<0.1	0.18	11	0.8			
1689	07PMD610-SRK-WR-260	W	1	1pv	0.5	170	1	32	<0.1	620	74	1800	7.9	58	<0.1	34	0.1	210	0.1	<0.1	<0.1	260	8	0.044	2	620	4.5	44	0.048	<20	2.9	0.13	0.34	0.2	<10	21	<0.1	0.2	11	<0.5			
1690	07PMD610-SRK-WR-261	W	1	1pv	0.4	170	0.9	35	<0.1	680	81	1700	8.2	11	<0.1	1.4	0.1	190	0.1	<0.1	<0.1	260	8.9	0.045	3	670	4.7	44	0.057	<20	2.9	0.18	0.47	<0.1	<10	22	<0.1	0.18	12	<0.5			
1691	07PMD610-SRK-WR-262	W	1	1pv	0.4	170	1	38	<0.1	820	89	1800	8.9	77	<0.1	12	0.2	110	<0.1	<0.1	<0.1	250	6.8	0.045	3	720	6	710	0.025	<20	3.1	0.056	0.12	<0.1	<10	20	<0.1	0.13	12	<0.5			
1692	07PMD610-SRK-WR-263	W	1	1a	0.4	140	1.2	32	<0.1	780	84	2000	7	530	<0.1	120	0.1	180	<0.1	0.9	<0.1	150	9.2	0.037	2	720	5	11	0.007	<20	1.7	0.014	0.04	0.2	<10	16	<0.1	0.33	7	<0.5			
1695	07PMD610-SRK-WR-266	W	1	1a	0.3	130	1	53	0.1	27	41	1500	8.6	100	<0.1	200	<0.1	59	<0.1	0.2	<0.1	50	5.5	0.036	<1	45	2.7	13	0.002	<20	0.82	0.055	0.13	0.1	<10	13	<0.1	0.41	2	<0.5			
1696	07PMD610-SRK-WR-267	W	1	1pv	0.1	89	1.1	39	0.1	56	34	1400	5.9	120	<0.1	290	<0.1	79	<0.1	0.2	<0.1	39	7.4	0.022	<1	65	3.2	11	0.004	<20	0.84	0.05	0.11	0.2	<10	13	<0.1	0.31	2	<0.5			
1700	07PMD610-SRK-WR-271	W	1	1pv	0.2	86	0.4	54	<0.1	75	37	1600	5.9	19	<0.1	1.9	<0.1	30	<0.1	<0.1	<0.1	100	7.2	0.018	1	220	4.3	10	0.004	<20	2.5	0.026	0.07	<0.1	<10	14	<0.1	0.08	6	<0.5			
1701	07PMD610-SRK-WR-272	W	1	1p	0.1	90	0.5	59	<0.1	68	36	1400	5.7	3.4	<0.1	3.2	<0.1	37	<0.1	<0.1	<0.1	190	6.7	0.021	1	300	4	3	0.057	<20	4	0.022	0.03	<0.1	<10	18	<0.1	0.06	10	<0.5			
1703	07PMD610-SRK-WR-274	W	1	1pv	0.2	110	0.6	68	<0.1	71	39	1500	6.6	8.4	<0.1	11	<0.1	39	<0.1	<0.1	<0.1	190	6.9	0.022	1	250	3.5	8	0.14	<20	4.2	0.015	0.03	<0.1	<10	18	<0.1	0.09	10	0.6			
1704	07PMD610-SRK-WR-275	W	1	1pv	0.2	100	0.5	66	<0.1	65	38	1400	6.3	24	<0.1	14	<0.1	48	<0.1	<0.1	<0.1	190	7.5	0.022	1	230	3.3	11	0.098	<20	4	0.016	0.04	<0.1	<10	17	<0.1	0.11	10	<0.5			
1706	07PMD610-SRK-WR-277	W	1	1pv	0.1	92	0.6	68	<0.1	54	32	1300	5.3	2.4	<0.1	<0.5	0.3	30	<0.1	<0.1	<0.1	160	5.2	0.039	3	200	3.2	4	0.18	<20	3.4	0.029	0.01	<0.1	<10	7.7	<0.1	0.09	10	<0.5			
1707	07PMD610-SRK-WR-278	W	1	1pv	0.1	110	0.5	66	<0.1	67	38	1300	5.4	4.9	<0.1	<0.5	<0.1	23	<0.1	<0.1	<0.1	130	4.1	0.022	<1	230	3.2	3	0.22	<20	3.9	0.032	<0.01	0.1	<10	5.9	<0.1	0.11	8	<0.5			
1708	07PMD610-SRK-WR-279	W	1	1pv	0.1	110	0.4	76	<0.1	77	36	1100	5.3	1	<0.1	0.8	<0.1	11	0.1	<0.1	<0.1	110	4	0.021	<1	240	3	2	0.2	<20	3.8	0.025	0.02	<0.1	<10	5	<0.1	0.06	7	<0.5			
1709	07PMD610-SRK-WR-280	W	1	1pv	0.1	100	0.3	56	<0.1	72	34	1100	4.5	1.5	<0.1	1.2	<0.1	17	<0.1	<0.1	<0.1	84	4.6	0.021	<1	230	2.3	6	0.23	<20	3.3	0.025	0.03	<0.1	<10	4	<0.1	<0.05	5	<0.5			
1778	08PSD143B-SRK-WR-351	W	1	1p	0.3	150	5.9	100	<0.1	85	46	1600	8.6	5	<0.1	1.3	0.1	21	0.1	<0.1	<0.1	220	5.3	0.028	2	140	3.4	6	0.24	<20	5.2	0.036	0.03	<0.1	<10	16	<0.1	0.12	12	0.6			
1779	08PSD143B-SRK-WR-352	W	1	1p	<0.1	140	0.5	79	<0.1	87	45	1800	8.2	2.5	<0.1	1.6	<0.1	31	<0.1	<0.1	<0.1	220	7	0.029	2	150	3.3	11	0.15	<20	5.1	0.033	0.05	<0.1	<10	17	<0.1	0.1	13	0.8			
1780	08PSD143B-SRK-WR-353	W	1	1p	0.4	140	0.4	94	<0.1	86	46	1600	8.5	7.9	<0.1	1.1	<0.1	48	<0.1	<0.1	<0.1	230	7.5	0.032	2	130	3.2	7	0.008	<20	5.3	0.036	0.05	<0.1	<10	21	<0.1	0.1	13	0.9			
1896	07PMD602-SRK-WR-469	W	1	1p	0.7	240	1.6	69	<0.1	870	100	2300	9.7	9.7	0.1	2.3	0.5	160	<0.1	<0.1	<0.1	270	8.9	0.063	11	980	4	33	0.43	<20	3.6	0.088	0.22	<0.1	<10	16	<0.1	0.19	15	0.6			
1897	07PMD602-SRK-WR-470	W	1	1p	0.5</																																						

Appendix J: Solid Phase Elemental Data, ICP-MS, for Madrid North Sample Set

SRK Serial Number	Lab ID	Economic Classification	Lithology ¹		Molybdenum	Copper	Lead	Zinc	Silver	Nickel	Cobalt	Manganese	Iron	Arsenic	Uranium	Gold	Thorium	Strontium	Cadmium	Antimony	Bismuth	Vanadium	Calcium	Phosphorus	Lanthanum	Chromium	Magnesium	Barium	Titanium	Boron	Aluminum	Sodium	Potassium	Tungsten	Mercury	Scandium	Thallium	Sulphur	Gallium	Selenium	Beryllium	Tin	
			Primary	Summary (if additional lithologies) (proportion in parentheses)																																							
2082	08PMD670-NMS-WR-20	W	1	1pv																																							
2083	08PMD670-NMS-WR-21	W	1	1pv																																							
2084	08PMD670-NMS-WR-22	W	1	1pv																																							
2085	08PMD670-NMS-WR-23	W	1	1pv																																							
2086	08PMD650-NMS-WR-37	W	1	1pz																																							
2089	07PMD610-NMS-WR-49	W	1	1pv																																							
2092	08PSD143B-NMS-WR-24	W	1	1p																																							
2093	08PSD143B-NMS-WR-25	W	1	1p																																							
2094	08PSD143B-NMS-WR-26	W	1	1p																																							
2095	08PSD143B-NMS-WR-27	W	1	1p																																							
2096	08PSD143B-NMS-WR-28	W	1	1p																																							
2097	08PSD143B-NMS-WR-29	W	1	1p																																							
2103	08PSD142-NMS-WR-40	W	1	1pv																																							
2104	08PSD142-NMS-WR-41	W	1	1pv																																							
2105	08PSD142-NMS-WR-42	W	1	1p																																							
644	3	O	1	1a	3.7	69	3	19	0.1	620	71	1500	6.8	900	<1	<0.002	<1	150	<0.2	1.9	<0.5	38	5.1	0.008	1	150	5.8	11	0.001	9	0.12	0.02	0.02	1	<1000	12	<1		1				
647	8	O	1	1a	2.2	210	2	19	1	390	71	2000	6.5	580	<1	0.006	<1	99	<0.2	1.6	<0.5	28	6.8	0.068	3	76	3.5	13	0.001	4	0.4	0.019	0.07	<1	<1000	12	<1		1				
648	9	O	1	1a	4.1	49	10	10	0.4	430	51	1200	5.1	870	<1	0.002	<1	240	<0.2	1.9	<0.5	28	7	0.001	<1	100	3.9	4	0.001	1	0.21	0.018	0.02	1	<1000	10	<1		1				
652	13	O	1	1a	6.5	98	4	21	0.5	87	35	1000	4.8	300	<1	0.002	<1	55	<0.2	<0.5	<0.5	11	4.5	0.063	<1	100	2	24	<0.001	3	0.42	0.039	0.09	<1	<1000	7.9	<1		1				
654	15	O	1	1a	2.1	220	6	27	3.1	120	46	1200	5.9	590	<1	0.026	<1	130	<0.2	0.5	<0.5	13	6.3	0.019	<1	43	3.5	7	<0.001	8	0.38	0.04	0.09	1	<1000	14	<1		2				
657	18	O	1	1a	4.1	290	11	39	2.4	140	48	1700	7.6	750	<1	0.019	<1	160	<0.2	1.7	<0.5	34	6.1	0.039	<1	62	3.3	16	0.001	2	0.13	0.036	0.07	1	<1000	12	<1		1				
680	208842	O	1	1a	<2	93	<10	69	0.4	110	46	1400	7.2	110	<2			110	2	23		180	6.9			140	2.8	77	0.064	5.8	15000	1.1							5	<2	<2		
681	208843	O	1	1a	<2	120	<10	76	<2	470	69	1500	8.8	160	<1			150	2	24		190	5.9			470	4.8	85	0.058	4.4	16000	0.62							3	<2	<2		
729	202739	O	1	1a	<2	120	<10	61	0.6	190	51	1500	7.8	210	<1			170	4	31		210	9.1			250	3.7	180	0.055	4.5									12	<2	<2		
1257	08PMD650-SRK-WR-48	O	1	1iz	0.7	240	4.4	70	0.3	150	54	1600	8.8	210	<0.1	130	0.6	170	<0.1	0.3	0.2	150	9.8	0.064	9	100	2.4	19	0.01	<20	2.3	0.018	0.06	0.3	<10	13	<0.1	2.20	8	1.3			
1296	08PSD143B-SRK-WR-87	O	1	1a	0.5	160	2.4	29	0.5	160	70	1800	7	700	<0.1	2000	0.3	190	0.1	1.1	<0.1	55	10	0.043	2	160	4.8	28	<0.001	<20	0.75	0.037	0.12	0.1	<10	12	<0.1	0.89	2	<0.5			
1297	08PSD143B-SRK-WR-88	O	1	1a	0.5	150	2.3	28	0.2	620	67	1700	6	810	<0.1	650	0.2	220	0.1	1.1	<0.1	55	12	0.036	2	170	5	28	<0.001	<20	0.67	0.023	0.11	0.2	<10	12	<0.1	0.79	2	<0.5			
1302	07PMD522-SRK-WR-93	O	1	1a	0.7	210	2.8	37	0.3	91	38	1100	5.4	140	<0.1	720	0.6	88	<0.1	0.3	<0.1	54	4.8	0.1	5	63	2.6	20	0.002	<20	1.3	0.028	0.1	0.8	<10	10	<0.1	1.80	4	1.5			
1303	07PMD522-SRK-WR-94	O	1	1a	0.7	73	5.5	21	0.6	390	70	1500	6.5	630	<0.1	3500	0.2	150	<0.1	0.6	<0.1	54	6.9	0.047	2	240	3.7	3	0.004	<20	0.81	0.028	0.03	1.4	<10	14	<0.1	3.80	3	1.5			
13																																											

Appendix J: Solid Phase Elemental Data, ICP-MS, for Madrid North Sample Set

SRK Serial Number	Lab ID	Economic Classification	Lithology ¹		Molybdenum	Copper	Lead	Zinc	Silver	Nickel	Cobalt	Manganese	Iron	Arsenic	Uranium	Gold	Thorium	Strontium	Cadmium	Antimony	Bismuth	Vanadium	Calcium	Phosphorus	Lanthanum	Chromium	Magnesium	Barium	Titanium	Boron	Aluminum	Sodium	Potassium	Tungsten	Mercury	Scandium	Thallium	Sulphur	Gallium	Selenium	Beryllium	Tin		
			Primary	Summary (If additional lithologies) (proportion in parentheses)	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Be	Sn		
					ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
1226	08PMD669-SRK-WR-17	W	2	2p	0.1	86	0.3	72	<0.1	57	35	1300	7	2	<0.1	<0.5	<0.1	14	<0.1	<0.1	<0.1	190	4.3	0.025	2	200	4.9	3	0.071	27	4.4	0.026	0.04	<0.1	<10	18	<0.1	0.06	10	0.8				
1227	08PMD669-SRK-WR-18	W	2	2p	0.1	100	0.2	65	<0.1	57	38	1300	6.6	<0.5	<0.1	<0.5	<0.1	20	<0.1	<0.1	<0.1	180	6.2	0.024	2	190	3.5	5	0.11	<20	3.8	0.024	0.03	<0.1	<10	18	<0.1	0.10	11	0.7				
1248	08PMD650-SRK-WR-39	W	2	2pg	0.1	130	2.2	100	<0.1	170	54	930	4.7	5.1	<0.1	7.3	0.1	20	<0.1	<0.1	<0.1	160	4.3	0.017	1	260	2.3	8	0.17	<20	3.5	0.054	0.11	<0.1	10	13	<0.1	0.26	7	<0.5				
1249	08PMD650-SRK-WR-40	W	2	2pg	0.1	120	2.9	85	<0.1	170	56	1200	4.3	16	<0.1	3	0.1	24	0.2	0.1	<0.1	110	4.6	0.019	1	250	2.8	4	0.26	<20	3.4	0.046	0.07	0.1	<10	7.6	<0.1	0.12	6	<0.5				
1251	08PMD650-SRK-WR-42	W	2	2pg	0.1	130	0.7	69	<0.1	170	52	970	4.4	12	<0.1	3	0.1	28	<0.1	<0.1	<0.1	150	6.6	0.02	1	250	2.2	17	0.15	<20	3.7	0.051	0.09	<0.1	<10	11	<0.1	0.16	7	<0.5				
1313	07PMD522-SRK-WR-104	W	2	2pg	0.3	130	13	79	<0.1	130	40	640	2.9	14	<0.1	0.9	<0.1	19	0.3	0.1	<0.1	68	1.8	0.018	<1	220	1.6	1	0.31	54	2	0.041	<0.01	<0.1	<10	5	<0.1	0.12	3	<0.5				
1314	07PMD522-SRK-WR-105	W	2	2pg	0.2	95	0.7	56	0.8	130	46	1000	4	18	<0.1	1.9	<0.1	18	<0.1	0.1	<0.1	120	6.1	0.018	1	250	2	10	0.096	<20	2.9	0.025	0.05	1.4	<10	9.6	<0.1	0.19	6	1.0				
1315	07PMD522-SRK-WR-106	W	2	2pg	0.2	140	2.8	64	<0.1	150	50	1100	4.7	30	<0.1	2.6	<0.1	16	<0.1	0.1	<0.1	180	3.2	0.018	1	290	2.8	1	0.2	<20	3	0.049	0.05	<0.1	<10	15	<0.1	0.23	8	0.6				
1316	07PMD522-SRK-WR-107	W	2	2pg	0.2	140	2.3	66	<0.1	170	53	1200	5.1	7.7	<0.1	2.4	0.1	14	<0.1	<0.1	<0.1	190	4.6	0.021	1	320	2.7	8	0.29	<20	3.6	0.032	0.05	0.1	<10	14	<0.1	0.18	9	0.9				
1366	08PSD142-SRK-WR-157	W	2	2pg	0.3	150	3.6	100	<0.1	200	45	780	3.7	4.4	<0.1	2.8	0.2	28	0.3	0.2	<0.1	100	2.9	0.029	3	300	1.8	3	0.35	37	2.3	0.063	<0.01	<0.1	<10	6.8	<0.1	0.16	7	0.6				
1369	08PSD142-SRK-WR-160	W	2	2pg	<0.1	120	5.8	88	<0.1	120	42	910	4.1	3.1	<0.1	13	<0.1	21	0.2	<0.1	<0.1	95	3.1	0.019	<1	220	2.4	5	0.3	<20	3	0.039	0.04	<0.1	<10	7.2	<0.1	0.07	6	<0.5				
1370	08PSD142-SRK-WR-161	W	2	2pg	0.1	130	7.8	120	<0.1	120	38	750	3.2	4.6	<0.1	3.6	<0.1	24	0.5	0.1	<0.1	74	2.4	0.02	<1	170	1.4	4	0.29	26	2	0.055	0.01	<0.1	<10	5.3	<0.1	0.10	4	<0.5				
1371	08PSD142-SRK-WR-162	W	2	2pg	0.1	130	1.3	85	<0.1	140	43	950	4.1	2.2	<0.1	2.2	<0.1	29	0.2	<0.1	<0.1	120	2.8	0.018	<1	220	1.9	4	0.36	<20	2.8	0.065	0.06	<0.1	<10	10	<0.1	0.08	6	0.7				
1372	08PSD142-SRK-WR-163	W	2	2pg	0.1	130	0.3	76	<0.1	150	53	1000	4.5	5.9	<0.1	2.3	<0.1	39	<0.1	<0.1	<0.1	120	6	0.022	2	240	2	31	0.11	<20	3.3	0.084	0.12	<0.1	<10	15	<0.1	0.12	9	0.5				
1781	08PSD142-NMS-WR-354	W	2	2pg	<0.1	160	8.2	120	<0.1	150	44	930	4	2.3	<0.1	2.4	<0.1	26	0.5	<0.1	<0.1	84	2.5	0.019	<1	200	1.7	3	0.39	40	2.8	0.071	<0.01	<0.1	<10	4.1	<0.1	0.13	4	0.8				
1782	08PSD142-NMS-WR-355	W	2	2pg	0.1	140	3.6	120	<0.1	130	41	880	3.8	4	<0.1	1.9	<0.1	28	0.4	<0.1	<0.1	94	2.5	0.017	<1	200	1.4	3	0.41	<20	2.4	0.073	0.02	<0.1	<10	6.6	<0.1	0.12	4	0.9				
1876	08PSD142-SRK-WR-449	W	2	2pg	<0.1	140	0.7	69	<0.1	140	48	1200	4.6	1.4	<0.1	<0.5	<0.1	17	<0.1	<0.1	<0.1	110	3.9	0.017	<1	230	2.2	5	0.3	<20	3.1	0.03	0.03	0.2	<10	8.1	<0.1	0.11	5	0.6				
1877	08PSD142-SRK-WR-450	W	2	2pg	<0.1	120	0.3	60	<0.1	130	44	970	4.9	1.6	<0.1	0.5	<0.1	14	<0.1	<0.1	<0.1	160	5.1	0.02	1	260	2.8	9	0.14	<20	3.8	0.029	0.05	0.1	<10	13	<0.1	0.11	8	<0.5				
2000	07PMD552 111.20-123.61	W	2	2pg	0.5	120	0.7	71	<0.1	160	48	1200	5.2	17	<0.1	7.9	0.4	17	<0.1	<0.1	<0.1	130	6.3	0.019	2	240	2.5	19	0.011	<20	3.7	0.049	0.07	<0.1	<10	15	<0.1	0.13	9	0.9				
2001	07PMD552 123.61-134.00	W	2	2pg	1.1	120	1.8	81	0.2	160	50	1000	4.3	5	<0.1	4.3	0.4	14	0.2	0.1	<0.1	120	3.6	0.018	2	230	2.3	10	0.22	<20	3	0.033	0.06	<0.1	<10	11	<0.1	0.18	6	0.5				
2002	07PMD552 134.00-144.50	W	2	2pg	0.7	120	0.8	66	<0.1	150	46	1100	4.7	10	0.1	4.4	0.9	14	<0.1	<0.1	<0.1	140	3.4	0.019	2	240	2.8	10	0.17	<20	3.3	0.033	0.07	<0.1	<10	13	<0.1	0.12	8	0.7				
2003	07PMD552 144.50-147.60	W	2	2pg	0.6	110	0.9	64	<0.1	150	46	1200	5	110	0.1	8.8	0.7	21	<0.1	<0.1	0.3	130	5.3	0.021	3	210	2.8	12	0.006	<20	3.4	0.043	0.06	<0.1	<10	16	<0.1	0.12	9	<0.5				
2004	07PMD552 147.60-158.50	W	2	2pg	0.9	110	1	56	<0.1	130	42	1300	4.8	140	<0.1	120	0.4	32	<0.1	<0.1	<0.1	95	5.4	0.12	2	170	3	17	0.003	<20	3.1	0.036	0.08	0.1	<10	9.6	<0.1	0.44	7	<0.5				
2005	07PMD552 158.50-167.50	W	2	2pg	0.7	110	0.9	56	<0.1	140	45	1100	4.3	5.3	0.1	9	0.6	12	<0.1	<0.1	<0.1	120	2.9	0.018	2	230	2.3	7	0.21	<20	2.8	0.027	0.06	<0.1	<10	8.4	<0.1	0.11	5	<0.5				
2006	07PMD552 167.50-176.50	W	2	2pg	1	110	1.7	49	<0.1	130	37	720	3.4	1.5	<0.1	4.9	0.6	12	<0.1	<0.1	<0.1	79	1.3	0.016	2	200	1.7	6	0.22	<20	2.1	0.034	0.03	<0.1	<10	5.6	<0.1	0.09	4	<0.5				
2007	07PMD552 176.50-186.85	W	2	2pg	1	120	1.3	59	<0.1	120	38	660	3.1	1.5	0.1	5	0.7	13	0.2	<0.1	1.2	83	1.7	0.017	2	200	1.6	6	0.2	<20	1.8	0.036	0.03	<0.1	<10	5.9	<0.1	0.11	4	<0.5				
2008	07PMD552 186.85-193.55	W	2	2pg	0.5	110	0.7	63	<0.1	140	46	920	4.4	39	<0.1	1.5	0.5	22	<0.1	<0.1	<0.1	130	4.2	0.019	2	230	2.4	14	0.019	<20	2.7	0.027	0.05	<0.1	<10	12	<0.1	0.11	7	<0.5				
2073	08PMD670-NMS-WR-11	W	2	2p																																								
2074	08PMD670-NMS-WR-12	W	2	2p																																								
2086	08PMD650-NMS-WR-35	W	2	2pg																																								
2087	08PMD650-NMS-WR-36	W	2	2pg																																								
713	208862	W	2 mixed	0.5), 1u (0.25), 1a (0.22), 10b (0.22)	<2	220	<10	89	<2	620	100	2300	9.8	39	<0.1	2.9	<0.1	180	3	30	<0.1	250	12	0.017	<1	550	4.5	47	0.69	<20	3.6	0.87	0.26	<0.1	<10	7.3	<20	0.22	5	<10	<2	<2		
1367	08PSD142-SRK-WR-158	W	2 mixed	2pg (0.92), 1aj (0.08)	0.2	160	1.3	78	<0.1	140	51	1300	4.5	8.2	<0.1	2.9	<0.1	22	<0.1	0.1	<0.1	100	3.5	0.017	<1	210	1.8	4	0.28	<20	2.9	0.												

Appendix J: Solid Phase Elemental Data, ICP-MS, for Madrid North Sample Set

SRK Serial Number	Lab ID	Economic Classification	Lithology ¹		Molybdenum ppm	Copper Cu ppm	Lead Pb ppm	Zinc Zn ppm	Silver Ag ppm	Nickel Ni ppm	Cobalt Co ppm	Manganese Mn ppm	Iron Fe %	Arsenic As ppm	Uranium U ppm	Gold Au ppb	Thorium Th ppm	Strontium Sr ppm	Cadmium Cd ppm	Antimony Sb ppm	Bismuth Bi ppm	Vanadium V ppm	Calcium Ca %	Phosphorus P %	Lanthanum La ppm	Chromium Cr ppm	Magnesium Mg %	Barium Ba ppm	Titanium Ti %	Boron B ppm	Aluminum Al %	Sodium Na %	Potassium K %	Tungsten W ppm	Mercury Hg ppb	Scandium Sc ppm	Thallium Tl ppm	Sulphur S %	Gallium Ga ppm	Selenium Se ppm	Beryllium Be ppm	Tin Sn ppm	
			Primary	Summary (if additional lithologies) (proportion in parentheses)																																							
2015	07PMD552 251.75-260.50	W	13a	13a	1.2	37	2	11	<0.1	12	3	210	0.79	13	0.2	1.7	0.3	18	<0.1	0.2	0.1	2	2	0.012	<1	35	0.92	13	<0.001	<20	0.28	0.066	0.08	<0.1	<10	0.8	<0.1	<0.05	<1	<0.5			
2016	07PMD552 260.50-270.60	W	13a	13a	0.9	41	2.4	11	<0.1	8.6	2.1	190	0.71	15	0.3	0.5	0.3	17	<0.1	0.2	<0.1	<2	2	0.008	1	28	0.9	12	<0.001	<20	0.28	0.072	0.08	<0.1	<10	0.6	<0.1	<0.05	<1	<0.5			
2017	07PMD552 270.60-278.00	W	13a	13a	0.8	56	2.3	40	<0.1	74	33	1000	4.1	51	<0.1	1.7	0.3	44	<0.1	0.4	0.1	13	7.9	0.023	1	30	2.9	11	<0.001	<20	0.3	0.056	0.06	<0.1	<10	4.6	<0.1	0.12	<1	<0.5			
2018	07PMD552 278.00-287.00	W	13a	13a	0.7	41	1.3	49	<0.1	66	29	1300	5.1	36	<0.1	<0.5	0.3	50	<0.1	0.3	<0.1	16	10	0.016	<1	26	3.9	10	<0.001	<20	0.22	0.045	0.05	<0.1	<10	5	<0.1	0.15	<1	<0.5			
2019	07PMD552 287.00-296.00	W	13a	13a	0.7	52	1.5	62	<0.1	78	30	1100	5	25	<0.1	1	0.4	37	0.1	0.2	<0.1	22	8.3	0.021	1	32	3.1	12	<0.001	<20	0.7	0.051	0.06	<0.1	<10	5.8	<0.1	0.08	2	<0.5			
2098	08PSD143B-NMS-WR-30	W	13a	13a																																							
2100	08PSD143B-NMS-WR-32	W	13a	13a																																							
2101	08PSD143B-NMS-WR-33	W	13a	13a																																							
2102	08PSD143B-NMS-WR-34	W	13a	13a																																							
698	202754	mixed	13a	13a	<2	31	<10	50	<2	44	24	790	4	70				250	2	29		100	5.7		69	2.2	690	0.13		7.3	8400	2.5					<20	14	<2	<2			
703	202778	mixed	13a	13a	<2	54	<10	23	<2	48	26	850	4.4	120				200	4	50		110	4.1		67	1.6	410	0.19		6.9	7100	2.2					<20						
1298	08PSD143B-SRK-WR-89	mixed	13a	13a	<0.1	110	0.8	48	<0.1	100	40	1400	6.4	150	<0.1	240	<0.1	64	<0.1	<0.1	<0.1	45	8.6	0.018	<1	41	3	13	<0.001	<20	1.2	0.09	0.09	<0.1	<10	14	<0.1	0.22	3	<0.5			
2099	08PSD143B-NMS-WR-31	mixed	13a	13a																																							
676	208617	W	13a mixed	13a (0.64), 11c (0.36)	<2	150	<10	67	0.6	60	44	1200	6.6	45				170	2	35		260	15		120	3.1	380	0.51		6.6	96000	1.5					<20	15	<2	<2			
693	202742	W	13a mixed	13a (0.99), 11c (0.01)	<2	47	<10	46	0.4	42	23	1000	3.6	64				170	2	23		100	4.6		80	2.7	530	0.11		6.5	5500	2					<20	20	<2	<2			
705	208619	mixed	13a mixed	13a (0.5), 1a (0.47), 12q (0.02)	<2	97	<10	82	0.6	120	43	1400	7.3	54				150	3	38		190	6.8		130	2.7	170	0.061		6.1	0.99	0.84				<20	10	<2	<2				

volcanics; 5 = sedimentary rocks; 7a = early gabbro; 10b = late intrusives; 11c = diabase; 12q = quartz vein; 13a = deformation zone

Appendix K

Statistical Analysis of Trace Element Data by Lithology, Madrid North

Appendix K: Statistical Analysis of Trace Element Data by Lithology, Madrid North

Lithology ^a	Economic Classification	Statistics	Molybdenum	Copper	Lead	Zinc	Silver	Nickel	Cobalt	Manganese	Iron	Arsenic	Uranium	Gold	Thorium	Strontium	Cadmium	Antimony	Bismuth	Vanadium	Calcium	Phosphorus	Lanthanum	Chromium	Magnesium	Barium	Titanium	Boron	Aluminum	Sodium	Potassium	Tungsten	Mercury	Scandium	Thallium	Sulphur	Gallium	Selenium	Beryllium	Tin	
			Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Be	Sn	
			ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppb	ppm	ppm	%	ppm	ppm	ppm	ppm	
1	Waste	Min	0.1	23	0.1	17	0.1	27	18	650	3.7	0.5	0.1	0.002	0.1	13	0.1	0.1	0.1	13	0.72	0.01	1	27	1.4	1	0.001	1	0.16	0.007	0.01	0.1	10	2.3	0.1	0.05	1	0.5	2	2	2
		P5	0.1	77	0.2	32	0.1	56	34	1000	4.5	0.6	0.1	0.5	0.1	16	0.1	0.1	0.1	41	3.5	0.018	1	70	2.2	3	0.001	20	0.83	0.01	0.01	0.1	10	4	0.1	0.06	2	0.5	2	2	2
		P25	0.1	100	0.5	49	0.1	87	42	1400	6	5.2	0.1	1.6	0.1	34	0.1	0.1	0.1	110	5.5	0.022	1	140	3	8	0.0023	20	2.3	0.019	0.03	0.1	10	11	0.1	0.09	7	0.5	2	2	2
		P50	0.5	140	1.1	63	0.1	150	53	1600	7.2	28	0.1	3.5	0.2	69	0.1	0.1	0.1	170	7.3	0.035	2	250	3.8	15	0.041	20	3.1	0.034	0.06	0.1	10	15	0.1	0.16	10	0.5	2	2	2
		P75	0.7	200	1.7	76	0.1	630	79	1900	8.3	110	0.1	31	0.4	140	0.1	0.3	0.1	210	8.6	0.058	6	560	4.8	29	0.19	20	3.9	0.073	0.15	0.1	10	18	0.1	0.27	12	0.7	2	2	2
		P95	2	250	10	110	0.8	820	110	2300	10	760	0.2	210	1	210	3	33	0.2	290	10	0.095	11	880	6.6	180	0.59	20	5.3	1.5	0.51	1.1	10	22	20	0.44	14	5	2	2	2
		Max	2	570	25	330	2	1200	140	2800	13	1100	1	2400	1.4	410	5	61	2.8	410	14	0.11	17	1200	8.5	710	1.4	64	6.6	16000	0.88	11	1000	25	63	2	21	49	2	2	2
		Count	210	210	210	210	210	210	210	210	210	210	190	190	190	210	210	210	190	210	210	190	190	210	210	210	210	210	210	210	210	190	190	190	210	180	190	200	17	17	17
	Ore	Min	0.1	49	0.8	10	0.1	38	28	850	4.2	110	0.1	0.002	0.1	31	0.1	0.1	0.1	11	4.5	0.001	1	43	2	3	0.001	1	0.12	0.014	0.02	0.1	10	7.9	0.1	0.17	1	0.5	2	2	2
		P5	0.17	65	0.97	19	0.1	75	33	990	4.3	150	0.1	0.002	0.1	47	0.1	0.17	0.1	21	4.9	0.007	1	61	2.2	3.7	0.001	2.5	0.16	0.016	0.02	0.1	10	8.9	0.1	0.44	1	0.5	2	2	2
		P25	0.4	95	1.8	24	0.2	130	43	1300	5.5	230	0.1	130	0.1	88	0.1	0.33	0.1	36	6.2	0.022	1	87	2.6	10	0.001	20	0.46	0.019	0.07	0.2	10	12	0.1	0.89	2	0.5	2	2	2
		P50	0.7	120	2.7	33	0.3	250	52	1500	6.2	490	0.1	640	0.3	130	0.1	0.7	0.1	54	6.8	0.036	2	140	3.5	17	0.001	20	0.99	0.028	0.1	0.4	10	12	0.1	1.3	3	0.65	2	2	2
		P75	2	180	5.7	53	0.58	470	69	1700	7.1	700	0.1	1300	0.55	170	0.18	1.6	0.2	94	8.1	0.056	3	230	4.1	24	0.003	20	1.6	0.041	0.13	1	10	14	0.78	2.1	5	1.2	2	2	2
		P95	4.1	250	10	69	2.1	660	86	2200	8.2	880	1	4200	1	250	2	23	0.5	200	9.9	0.077	4.5	480	5.8	80	0.056	20	4.4	5300	0.79	4.5	1000	17	20	2.7	8	4.3	2	2	2
		Max	6.5	290	11	76	3.1	770	99	2500	8.8	1200	1	5500	1	280	4	31	0.5	220	12	0.1	9	630	5.8	180	0.064	20	5.8	16000	1.2	28	1000	19	20	3.8	8	12	2	2	2
		Count	34	34	34	34	34	34	34	34	34	34	31	31	31	34	34	34	34	31	34	34	31	34	34	34	34	34	34	34	34	31	31	31	34	25	31	28	2	3	3
Ore/Waste	Min	0.1	34	1.1	25	0.1	32	37	1000	5.4	92	0.1	58	0.1	62	0.1	0.2	0.1	25	4.9	0.005	1	50	2.6	9	0.001	20	0.16	0.011	0.03	0.1	10	11	0.1	0.34	1	0.5	2	2	2	
	P5	0.15	37	1.2	26	0.1	55	38	1100	5.5	93	0.1	68	0.1	66	0.1	0.2	0.1	31	5	0.0067	1	54	2.8	10	0.001	20	0.25	0.012	0.034	0.1	10	11	0.1	0.36	1	0.5	2	2	2	
	P25	0.35	91	1.3	33	0.1	96	42	1400	6.3	170	0.1	240	0.1	110	0.1	0.2	0.1	44	6.1	0.017	1	98	3.4	13	0.0012	20	0.55	0.024	0.09	0.2	10	12	0.1	0.44	1.7	0.5	2	2	2	
	P50	0.6	110	1.9	36	0.1	160	53	1400	7.5	310	0.1	320	0.2	140	0.1	0.3	0.1	52	7	0.028	1	110	4	15	0.002	20	1.2	0.033	0.12	0.4	10	13	0.1	0.48	3	0.5	2	2	2	
	P75	1.6	160	3.1	45	0.4	630	66	1700	7.9	660	0.1	860	0.3	210	0.1	1.1	0.1	150	8	0.056	2	290	5	43	0.014	20	1.6	0.047	0.15	0.5	10	14	0.1	1.5	4	0.85	2	2	2	
	P95	2	220	10	69	1.2	730	86	2000	8.7	1000	0.1	1500	0.4	890	3.5	38	0.1	220	9	0.075	4.6	610	6.2	91	0.056	20	4.5	8700	0.9	0.6	10	17	20	0.9	1.7	6	11	2	2	2
	Max	2	240	10	80	2	740	89	2200	9.3	1100	0.1	1800	0.4	1500	4	40	0.1	220	9.6	0.076	5	790	6.3	110	0.086	20	8.2	13000	0.93	0.6	10	18	20	1.8	6	12	2	2	2	
	Count	11	11	11	11	11	11	11	11	11	11	9	9	9	11	11	11	11	9	11	11	9	11	11	11	11	9	11	11	11	9	9	9	11	9	9	11	2	2	2	
1 mixed	Various ¹	Min	0.1	2	0.4	17	0.1	66	32	880	4.3	1.9	0.1	1	0.1	32	0.1	0.1	0.1	23	4.1	0.02	1	60	1.7	4	0.001	20	0.41	0.019	0.01	0.1	10	5.9	0.1	0.07	1	0.5	2	2	2
		P5	0.2	69	0.69	25	0.1	120	41	990	4.8	17	0.1	1.4	0.1	35	0.1	0.1	0.1	34	4.7	0.021	1	76	2.1	8.8	0.001	20	0.63	0.019	0.039	0.1	10	7	0.1	0.07	1	0.5	2	2	2
		P25	1.1	120	3.5	50	0.2	180	56	1300	6.3	51	0.1	3	0.2	90	0.1	0.1	0.1	120	6.2	0.024	2	190	3																

Appendix K: Statistical Analysis of Trace Element Data by Lithology, Madrid North

Lithology ^a	Economic Classification	Statistics	Molybdenum	Copper	Lead	Zinc	Silver	Nickel	Cobalt	Manganese	Iron	Arsenic	Uranium	Gold	Thorium	Strontium	Cadmium	Antimony	Bismuth	Vanadium	Calcium	Phosphorus	Lanthanum	Chromium	Magnesium	Barium	Titanium	Boron	Aluminum	Sodium	Potassium	Tungsten	Mercury	Scandium	Thallium	Sulphur	Gallium	Selenium	Beryllium	Tin		
			Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Be	Sn		
			ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb	ppm	ppm	%	ppm	ppm	ppm	ppm		
10b	Waste	Min	56	14	54	19	0.1	19	27	700	3.6	1.5	0.3	1.5	2.3	92	0.15	0.1	0.1	69	2.2	0.14	19	26	1.4	35	0.2	20	2	0.12	0.091	0.11	10	2.9	0.1	0.16	7.1	0.5	--	--		
		P5	0.41	58	13	61	0.1	19	27	700	3.6	1.5	0.3	1.5	2.3	92	0.15	0.1	0.1	69	2.2	0.14	19	26	1.4	35	0.2	20	2	0.12	0.091	0.11	10	2.9	0.1	0.16	7.1	0.5	--	--		
		P25	0.43	64	15	91	0.1	20	27	720	3.7	1.9	0.3	3.3	2.3	96	0.33	0.1	0.1	71	2.2	0.15	20	27	1.5	38	0.21	20	2.1	0.13	0.093	0.13	10	3	0.21	0.17	7.5	0.5	--	--		
		P50	0.45	73	18	130	0.1	20	27	750	3.8	2.4	0.3	5.6	2.4	100	0.55	0.1	0.1	73	2.3	0.15	21	29	1.5	42	0.21	20	2.2	0.13	0.095	0.15	10	3.2	0.1	0.18	8	0.5	--	--		
		P75	0.48	81	20	160	0.1	21	27	770	3.8	2.8	0.3	7.8	2.4	110	0.78	0.1	0.1	75	2.3	0.16	21	30	1.6	46	0.22	20	2.2	0.14	0.098	0.18	10	3.3	0.1	0.19	8.5	0.5	--	--		
		P95	0.5	87	22	190	0.1	21	27	790	3.9	3.2	0.3	9.6	2.4	110	0.96	0.1	0.1	77	2.3	0.16	22	31	1.6	49	0.22	20	2.3	0.14	0.1	0.2	10	3.4	0.1	0.2	8.9	0.5	--	--		
		Max	0.5	89	22	200	0.1	21	27	790	3.9	3.3	0.3	10	2.4	110	1	0.1	0.1	77	2.3	0.16	22	31	1.6	50	0.22	20	2.3	0.14	0.1	0.2	10	3.4	0.1	0.2	9	0.5	--	--		
10b mixed	Waste	Count	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
		Min	1.1	120	2.2	93	0.1	160	44	1100	6.7	82	0.2	9.5	1.2	160	0.1	0.1	0.1	230	6	0.13	12	190	3.1	30	0.057	20	3.2	0.057	0.04	0.2	10	15	0.1	0.33	14	0.5	--	--		
		P5	1.1	120	2.2	93	0.1	160	44	1100	6.7	82	0.2	9.5	1.2	160	0.1	0.1	0.1	230	6	0.13	12	190	3.1	30	0.057	20	3.2	0.057	0.04	0.2	10	15	0.1	0.33	14	0.5	--	--		
		P25	1.1	120	2.2	93	0.1	160	44	1100	6.7	82	0.2	9.5	1.2	160	0.1	0.1	0.1	230	6	0.13	12	190	3.1	30	0.057	20	3.2	0.057	0.04	0.2	10	15	0.1	0.33	14	0.5	--	--		
		P50	1.1	120	2.2	93	0.1	160	44	1100	6.7	82	0.2	9.5	1.2	160	0.1	0.1	0.1	230	6	0.13	12	190	3.1	30	0.057	20	3.2	0.057	0.04	0.2	10	15	0.1	0.33	14	0.5	--	--		
		P75	1.1	120	2.2	93	0.1	160	44	1100	6.7	82	0.2	9.5	1.2	160	0.1	0.1	0.1	230	6	0.13	12	190	3.1	30	0.057	20	3.2	0.057	0.04	0.2	10	15	0.1	0.33	14	0.5	--	--		
		P95	1.1	120	2.2	93	0.1	160	44	1100	6.7	82	0.2	9.5	1.2	160	0.1	0.1	0.1	230	6	0.13	12	190	3.1	30	0.057	20	3.2	0.057	0.04	0.2	10	15	0.1	0.33	14	0.5	--	--		
11c	Waste	Max	1.1	120	2.2	93	0.1	160	44	1100	6.7	82	0.2	9.5	1.2	160	0.1	0.1	0.1	230	6	0.13	12	190	3.1	30	0.057	20	3.2	0.057	0.04	0.2	10	15	0.1	0.33	14	0.5	--	--		
		Count	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
		Min	0.3	260	1.1	56	0.1	25	20	510	4.7	3.1	0.1	7.7	0.4	41	0.1	0.1	0.1	230	1.5	0.054	4	3	0.81	12	0.48	20	1.9	0.3	0.15	0.1	10	3.1	0.1	0.05	8	0.5	--	--		
		P5	0.35	260	1.1	57	0.1	26	20	510	4.7	4.3	0.1	8.2	0.41	41	0.1	0.11	0.1	230	1.5	0.054	4.1	5.6	0.82	12	0.48	21	1.9	0.3	0.15	0.1	10	3.2	0.1	0.051	8.1	0.52	--	--		
		P25	0.53	270	1.2	59	0.1	32	21	520	4.8	9.1	0.1	10	0.43	42	0.1	0.15	0.1	230	1.5	0.055	4.3	16	0.86	13	0.49	25	1.9	0.3	0.16	0.1	10	3.5	0.1	0.055	8.3	0.58	--	--		
		P50	0.75	280	1.4	62	0.1	39	21	530	4.9	15	0.1	12	0.45	43	0.1	0.2	0.1	240	1.6	0.055	4.5	29	0.91	15	0.51	30	2	0.31	0.17	0.1	10	3.9	0.1	0.06	8.5	0.65	--	--		
		P75	0.98	280	1.5	64	0.1	45	22	540	5	21	0.1	15	0.48	43	0.1	0.25	0.1	240	1.6	0.056	4.8	42	0.95	16	0.52	34	2	0.31	0.18	0.1	10	4.2	0.1	0.065	8.8	0.73	--	--		
11c mixed	Waste	P95	1.2	290	1.6	66	0.1	51	22	550	5.1	26	0.1	17	0.5	44	0.1	0.29	0.1	240	1.6	0.056	5	52	0.99	17	0.53	38	2	0.31	0.19	0.1	10	4.5	0.1	0.069	9	0.79	--	--		
		Max	1.2	290	1.6	67	0.1	52	22	550	5.1	27	0.1	17	0.5	44	0.1	0.3	0.1	240	1.6	0.056	5	55	1	17	0.53	39	2	0.31	0.19	0.1	10	4.6	0.1	0.07	9	0.8	--	--		
		Count	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
		Min	2	330	10	130	1	76	85	1700	12	33	--	--	--	170	4	51	--	500	7.4	--	--	97	3.8	67	1.3	--	7.3	16000	0.48	--	--	--	20	--	--	6	2	2	2	
		P5	2	330	10	130	1	76	85	1700	12	33	--	--	--	170	4	51	--	500	7.4	--	--	97	3.8	67	1.3	--	7.3	16000	0.48	--	--	--	20	--	--	6	2	2	2	
		P25	2	330	10	130	1	76	85	1700	12	33	--	--	--	170	4	51	--	500	7.4	--	--	97	3.8	67	1.3	--	7.3	16000	0.48	--	--	--	20	--	--	6	2	2	2	
		P50	2	330	10	130	1	76	85	1700	12	33	--	--	--	170	4	51	--	500	7.4	--	--	97	3.8	67	1.3	--	7.3	16000	0.48	--	--	--	20	--	--	6	2	2	2	
12c mixed	Waste	P75	2	330	10	130	1	76	85	1700	12	33	--	--	--	170	4	51	--	500	7.4	--	--	97	3.8	67	1.3	--	7.3	16000	0.48	--	--	--	20	--	--	6	2	2	2	
		P95	2	330	10	130	1	76	85	1700	12	33	--	--	--	170	4	51	--	500	7.4	--	--	97	3.8	67	1.3	--	7.3	16000	0.48	--	--	--	20	--	--	6	2	2	2	
		Max	2	330	10	130	1	76	85	1700	12	33	--	--	--	170	4	51	--	500	7.4	--	--	97	3.8	67	1.3	--	7.3	16000	0.48	--	--	--	20	--	--	6	2	2	2	
		Count	1	1	1	1	1	1	1	1	1	1	--	--	--	1	1	1	--	1	1	--	--	1	1	1	1	1	1	1	--	--	--	1	--	--	1	1	1	1	1	
		Min	0.1	44	0.8	3																																				

Appendix L
Mineralogy for Humidity Cell Test Samples

Appendix L1 – XRD Mineralogy for Humidity Cell Test Samples

Appendix L-1: XRD Mineralogy for Humidity Cell Samples

Humidity Cell #	Lithology ¹	Preliminary Economic Classification	Sample type	Sample ID	Amphibole Ca ₂ (Mg,Fe,Al) ₅ (Al,Si) ₈ O ₂₂ (OH) ₂	Ferroan Dolomite Ca(Fe,Mg)(CO ₃) ₂	Calcite CaCO ₃	Chlorite (Mg,Fe,Al) ₆ (Al,Si) ₄ O ₁₀ (OH) ₈	Epidote Ca ₂ (Al,Fe) ₂ (SiO ₄) ₂ (OH)	K-feldspar KAlSi ₃ O ₈	Magnesite MgCO ₃	Magnetite Fe ₃ O ₄	Muscovite/ Sericite	Paragonite NaAl ₃ Si ₃ O ₁₀ (OH) ₂	Plagioclase (Ca,Na)(Al,Si) ₃ AlSi ₂ O ₈	Pyrite FeS ₂	Pyroxene (Ca,Na)(Mg,Fe,Al,Ti)(Si,Al) ₂ O ₆	Quartz SiO ₂	Rutile TiO ₂	Sepiolite Mg ₄ Si ₈ O ₂₀ (OH) ₂ ·n(H ₂ O)	Siderite FeCO ₃	Siderite/ Magnesite	Stilpnomelane K(Fe,Mg) ₃ (Si,Al) ₂ (O,OH) ₂ ·n(H ₂ O)	Talc Mg ₃ Si ₄ O ₁₀ (OH) ₂	Titanite CaTiSiO ₅
HC-3	1	Waste	Chip sample	08-MAD-WR-01	bd	2	13	48	bd	bd	bd	bd	12	bd	8	bd	bd	17	bd	bd	bd	bd	bd	bd	tr
	1	Waste	Pulp	Wt. Av. Composite	bd	2	13	43	1	bd	bd	bd	7	bd	12	bd	bd	21	bd	bd	bd	bd	bd	bd	1
HC-9	1	Waste	Chip sample	08-MAD-WR-07	13	bd	14	39	8	bd	bd	bd	bd	bd	12	bd	bd	13	1	bd	bd	bd	bd	bd	bd
HC-25	1	Waste	Pulp	07PMD552 58.50-72.00	bd	31	bd	11	bd	bd	bd	bd	16	11	10	bd	bd	19	1	bd	bd	bd	bd	bd	bd
HC-27	1	Waste	Pulp	07PMD522-SRK-WR-102	bd	30	2	17	bd	bd	bd	bd	bd	24	bd	tr	bd	26	bd	bd	bd	bd	bd	bd	bd
HC-24	1	Ore	Pulp	06PMD484-SRK-WR-494	bd	45	bd	12	bd	bd	bd	bd	9	bd	15	3	bd	15	1	bd	bd	bd	bd	bd	bd
HC-26	1	Ore	Pulp	07PMD522-SRK-WR-94	bd	35	bd	9	bd	bd	bd	bd	bd	bd	23	7	bd	24	2	bd	bd	bd	bd	bd	bd
HC-28	1	Ore	Pulp	06PMD470-SRK-WR-502	bd	23	bd	13	bd	bd	bd	bd	11	bd	25	3	bd	13	tr	bd	bd	bd	bd	bd	bd
HC-8	1	Ore/Waste	Chip sample	08-MAD-WR-06	bd	7	41	41	bd	bd	bd	bd	bd	bd	4	bd	bd	14	bd	1	bd	bd	3	5	1
	1	Ore/Waste	Pulp	Wt. Av. Composite	3	26	6	38	bd	bd	bd	bd	1	bd	2	0	bd	16	0	2	bd	bd	1	2	1
HC-17	1 w. sediments	Waste	Pulp	08PMD650-SRK-WR-38	bd	23	6	41	bd	bd	bd	bd	6	bd	bd	bd	bd	22	1	bd	bd	bd	bd	bd	bd
HC-18	2pg	Waste	Pulp	07PMD552 134.00-144.50	bd	5	6	27	6	bd	bd	bd	18	bd	21	bd	bd	15	bd	bd	bd	bd	bd	bd	2
HC-4	2pg	Ore/Waste	Chip sample	08-MAD-WR-03	9	bd	9	30	16	bd	bd	bd	bd	bd	20	bd	bd	13	bd	bd	bd	bd	bd	bd	3
	2pg	Ore/Waste	Pulp	Wt. Av. Composite	9	bd	8	22	16	bd	bd	bd	4	1	23	bd	bd	14	bd	bd	bd	bd	bd	bd	2
HC-19	2pg mixed	Waste	Pulp	08PSD142-SRK-WR-158	9	bd	9	21	16	bd	bd	bd	8	bd	20	bd	bd	14	bd	bd	bd	bd	bd	bd	2
HC-20	5	Waste	Pulp	06PMD470-SRK-WR-521	bd	26	bd	3	bd	13	bd	bd	3	bd	27	tr	bd	27	bd	bd	bd	bd	bd	bd	bd
HC-21	5	Waste	Pulp	07PMD542 104.15-105.29	bd	20	bd	3	bd	bd	bd	bd	24	bd	27	5	bd	20	1	bd	bd	bd	bd	bd	bd
HC-40	7a	Waste	Pulp	208807	2	15	bd	46	bd	bd	bd	bd	9	bd	13	bd	4	11	<1	bd	bd	bd	bd	bd	bd
HC-41	7a	Waste	Pulp	208848	bd	41	bd	8	bd	bd	12	bd	12	bd	6	bd	bd	21	<1	bd	bd	bd	bd	bd	bd
HC-22	11c	Waste	Pulp	06PMD470-SRK-WR-544	bd	1	bd	8	bd	bd	bd	bd	bd	bd	45	bd	40	5	bd	bd	bd	bd	bd	bd	bd
HC-23	11c	Waste	Pulp	07PMD542 73.28-77.00	bd	4	bd	8	bd	bd	bd	5	bd	bd	63	bd	18	2	bd	bd	bd	bd	bd	bd	bd
HC-5	13a	Waste	Chip sample	08-MAD-WR-04	bd	28	bd	16	bd	bd	bd	bd	7	10	bd	bd	bd	37	1	bd	bd	1	bd	bd	bd
	13a	Waste	Pulp	Wt. Av. Composite	bd	29	bd	11	bd	bd	bd	bd	11	7	2	0	bd	37	1	bd	bd	1	bd	bd	bd
HC-29	13a	Waste	Pulp	08PMD657A-SRK-WR-116	bd	39	bd	5	bd	bd	bd	bd	9	15	bd	bd	bd	27	2	bd	bd	2	bd	bd	bd
HC-30	13a	Waste	Pulp	08PMD657A-SRK-WR-114	bd	37	1	29	bd	bd	bd	bd	6	bd	2	bd	bd	23	1	bd	bd	bd	bd	bd	bd
HC-39	13a	Waste	Pulp	202774	bd	36	bd	3	bd	bd	bd	bd	12	13	bd	1	bd	31	3	bd	bd	bd	bd	bd	bd

bd: below detection
¹Rock codes as follows: **1** = mafic volcanics; **1 w. sediments** = mafic volcanics with sediments; **2** = intermediate volcanics; **5** = sedimentary rocks; **7a** = early gabbro; **10b** = late intrusives; **11c** = diabase; **12q** = quartz vein; **13a** = deformation zone

Appendix L2 – MLA Mineralogy for Humidity Cell Test Samples

NEWMONT MINING CORPORATION

**Semiquantitative Mineralogy by XRD and Sulfide
Characterization by MLA for Forty-three Ore and
Waste Composites from Various Sites in Hope Bay
undergoing Humidity Cell Testing**



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May 9, 2011



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Memorandum

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FROM: D. Lopez/Inverness

DATE: February 10, 2011

COPY: D. Brosnahan/Inverness
D. Doerr/Inverness
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D. Snyder/Inverness
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SUBJECT: Semiquantitative Mineralogy by XRD and Sulfide Characterization by MLA for Forty-three Ore and Waste Composites from Various Sites in Hope Bay undergoing Humidity Cell Testing

File 11486
MI 207561, 209144, 210052,
210117, 210172, 210173

SUMMARY

XRD (X-ray diffraction) and MLA (Mineral Liberation Analyzer) were used to characterize forty-four environmental composites from various sites in Hope Bay undergoing humidity cell testing. Samples were analyzed by XRD for bulk semiquantitative mineralogy and analyzed by MLA for characterization of any sulfides detected. MLA was able to detect trace amounts of sulfide, commonly unaccounted for by XRD due to detection limits, and supply mineral associations and free surface amounts from detected sulfides. MLA used the Extended Back-Scattered Electron (XBSE) method; an extended liberation analysis where back-scattered electron (BSE) images are collected and segmented based on a range of gray levels. A copper standard was used in establishing a gray scale due to the similar gray levels of the complex mixed gangue found in the samples. This elevated the contrast between gray levels optimizing the segmentation of gangue, which is necessary for a more accurate account of mineral association. Pyrite's (the predominate sulfide detected in most samples) particle size was given by percent passing values P_{50} (50% passing) and P_{80} (80% passing) in microns, ranging from 25-905 μ m; <1%-40% is the range of encapsulated pyrite. Pyrite's crystal morphology was classed as anhedral, subhedral, and euhedral; in addition pyrite particles were described as either coarse and/or fine-grained, whether there was dissemination in gangue, and whether particles had sieve texture.

INTRODUCTION

Forty-three ore and waste composites from different sites in Hope Bay undergoing humidity cell testing were submitted by C. Bucknam for identification of mineral content by XRD and sulfide characterization by MLA. Mineral weight percents, sulfide mineral associations, sulfide encapsulation, size and morphology of pyrite (the predominate sulfide detected in most of the

samples), calculated and measured assays, and back scattered electron images from MLA, are given for each composite.

DISCUSSION

Experimental

Analytic pulps of the samples were initially analyzed by XRD for semiquantitative mineralogy. Table I shows major and minor phases identified by XRD, with quantities determined by Rietveld refinement, whole pattern fitting, and based on chemical analyses. Table III shows measured chemical analyses used to aid XRD identifications, and to check XRD quantity estimates.

The samples were then analyzed by MLA (Mineral Liberation Analyzer), which uses a SEM (scanning electron microscope) with EDS (energy dispersive X-ray spectrometers) and automated quantitative mineralogy software, to detect trace minerals with a focus in characterizing sulfides. Five grams from each sample were mounted and slurried in epoxy, polished, and carbon-coated for MLA analysis. Most samples were analyzed at a ¼" mesh size (four samples were analytic pulps, -500 mesh) using the Extended Back-Scattered Electron (XBSE) measurement. MLA/XBSE is an extended liberation analysis where back-scattered electron (BSE) images are collected and segmented based on gray levels. An EDS spectrum is then collected for each segmented gray level image or "phase" and matched to a standards (mineral) list by pattern fitting.

Gold is commonly used as a standard to establish a gray level scale because of its brightness. Due to the similar gray levels of the complex mixed gangue found in the samples, copper was used to establish the gray scale. This elevated the contrast between gray levels which optimized the segmentation of gangue.

Data Analysis

Each sample is detailed with a brief description which includes the following:

- Major and minor minerals detected by XRD and MLA.
- Mineral weight percentages for any sulfide detected by MLA.
- Mineral associations of sulfides (≥ 0.01 wt%) detected by MLA.
- Encapsulation of sulfide quantities (≥ 0.01 wt%) determined by MLA.
- Particle size of pyrite, given by percent passing values P_{50} (50% passing) and P_{80} (80% passing), in microns.
- Pyrite's crystal morphology.

Mineral Content

XRD and MLA mineral weight percentages are given in a table for each sample (Table II contains MLA mineral weight % for all samples, Table V contains mineral key). The minerals are listed based on highest to lowest weight % by MLA, which were in accordance with XRD quantities for most samples. Sulfides detected by MLA are in bold. Calculated assays from MLA weight % for each sample are included in Table IV.

XRD and MLA shows the predominate gangue in these samples are silicates (quartz, albite, chlorite, muscovite/sericite, K-feldspar, and paragonite) and carbonates (ankerite, siderite, and calcite). XRD quantities of major and minor phases should be regarded when comparing with MLA's quantities for gangue; similar gray levels were still not fully segmented by MLA even though a Cu standard was used to optimize segmentation. XRD only detected pyrite when it was ~1% or higher, whereas trace amounts were detected by MLA.

There were eleven sulfide phases detected in this suite of samples: pyrite (FeS_2), chalcopyrite (CuFeS_2), gersdorffite ($(\text{Fe}, \text{Co}, \text{Ni})\text{AsS}$), pyrrhotite ($\text{Fe}_{(1-x)}\text{S}$), arsenopyrite (FeAsS), galena (PbS), cobaltite (CoAsS), millerite (NiS), sphalerite (ZnS), tetradymite ($\text{Bi}_2\text{Te}_2\text{S}$), and tetrahedrite (Cu_3SbS_3). Pyrite was the predominate sulfide followed by chalcopyrite.

Sulfide Mineral Associations

A table showing mineral associations was created for each sample, for any sulfides detected by MLA. The values represent the percentage of the periphery length in which a sulfide is associated (touching) with another phase. There is a "free surface" column which represents the percent of the sulfide that is exposed (touching epoxy). The last column in the table is "OTHER", this percentage represents the sum of phases which had <1% association with each sulfide detected in the sample.

Sulfide Encapsulation

A table showing sulfide encapsulation was created for each sample, for any sulfides detected by MLA. The values represent the percentage of sulfide that occurred in grains that were present in the following three categories:

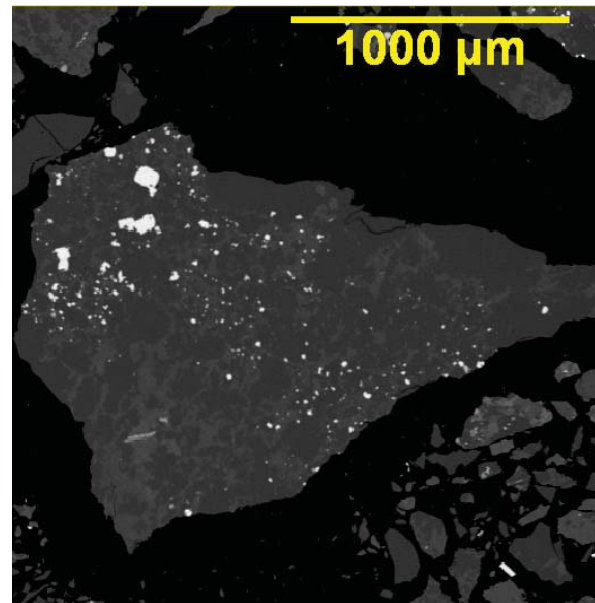
- 1) encapsulated (0% exposed)
- 2) liberated (100% exposed)
- 3) intermediate exposure ($0\% < x < 100\%$)

This can be useful for determining potential oxidation of sulfides. For example, it may be assumed that sulfide that was completely encapsulated will not oxidize, which could help explain disagreements between humidity cell test results and anticipated results based on sulfur chemical analyses. Encapsulation was based on two-dimensional images, which could be exaggerated due to possible exposure in the third dimension.

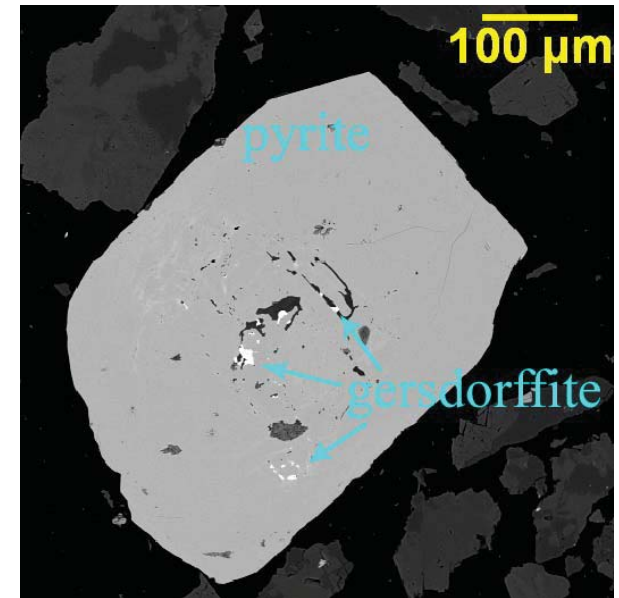
06PMD470, 217.03-218.7m (HC-20) - Predominately composed of ankerite, quartz, and albite. Lesser amounts of pyrite, muscovite/sericite, chlorite, and rutile were also detected. MLA measured a relatively high amount of pyrite (6.05%) along with trace amounts of gersdorffite (0.09%), chalcopyrite (<0.01%), and <0.001% cobaltite and pyrrhotite. Pyrite was mainly associated with ankerite (23%) and quartz (17%); 48% of pyrite had a free surface. Three percent of pyrite was encapsulated, 25% was liberated, and 72% had intermediate exposure. Pyrite had a P₅₀ and P₈₀ of 132µm and 247µm respectively. Pyrite's crystal morphology, displayed in images below, is mostly subhedral to euhedral, coarse to fine-grained with slight sieve texture. Gersdorffite was mainly associated with ankerite (37%), quartz (20%), and pyrite (16%); 12% of gersdorffite had a free surface. Forty-seven percent of gersdorffite was encapsulated, 6% was liberated, and 47% had intermediate exposure. An image of subhedral pyrite with gersdorffite inclusions is displayed in right image below.

Mineral Weight %

Mineral	MLA	XRD
	Wt%	Wt%
Ankerite	43.57	45
Quartz	38.49	38
Albite	8.26	11
Pyrite	6.05	4
Chlorite	1.97	<1
Muscovite	0.40	2
Rutile	0.36	<1
Amphibole	0.23	
Ilmenite	0.19	
Gersdorffite	0.09	
Kspar	0.09	
Chromite	0.08	
Apatite	0.06	
Biotite	0.04	
Siderite	0.04	
Paragonite	0.03	
Epidote	0.01	
Calcite	<0.01	
Chalcopyrite	<0.01	
Monazite	<0.01	
Sphene	<0.01	
Tourmaline	<0.01	
Anhydrite	<0.001	
Cobaltite	<0.001	
Gold	<0.001	
Iron	<0.001	
Pyrophyllite	<0.001	
Pyrrhotite	<0.001	



BSE image of bright coarse and fine-grained pyrite in an ankerite (light gray) and quartz (dark gray) particle.



BSE image of very bright gersdorffite inclusions in light gray subhedral pyrite with sieve texture.

Sulfide Mineral Associations

MINERAL	Albite	Amphibole	Ankerite	Chlorite	Gersdorffite	Muscovite	Pyrite	Quartz	Free Surface	OTHER
Chalcopyrite	4.04	2.97	24.41	9.31	1.18	3.60	32.31	8.99	12.44	0.76
Cobaltite	0.00	0.00	27.91	0.00	0.00	0.00	0.00	20.65	51.44	0.00
Gersdorffite	6.76	0.31	37.05	3.26	0.00	2.53	16.29	19.87	11.79	2.16
Pyrite	7.63	0.03	22.60	1.08	1.12	0.98	0.00	17.10	48.12	1.35
Pyrrhotite	1.09	0.00	3.75	0.00	0.00	0.00	16.57	18.80	59.79	0.00

Sulfide Exposure

Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	32.37	65.67	1.96
Cobaltite	25.93	0.00	74.07
Gersdorffite	46.91	46.83	6.26
Pyrite	3.18	71.93	24.90
Pyrrhotite	3.09	62.65	34.26

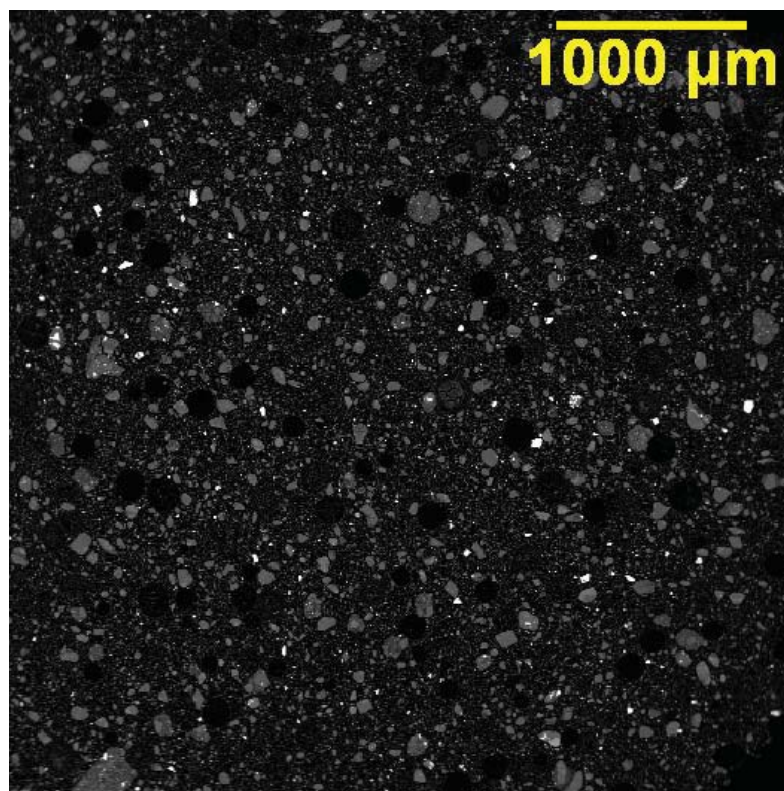
Pyrite Particle Size by Percent Passing

P-value	µm
P50	132.34
P80	247.34

07PMD542, 104.15-105.29m (HC-21) - Predominately composed of albite, muscovite/sericite, quartz, and ankerite. Lesser amounts of pyrite, chlorite, and rutile were also detected. MLA measured a relatively high amount of pyrite (9.35%), almost double of what XRD detected; based on total sulfur amount (3.54%) from chemical analyses pyrite weight percent should be ~7%. Sulfide mineral associations and sulfide exposure parameters were not included for this sample because most particles have been liberated due to pulverization. The image below shows pulverized sample with liberated grains of gangue and sulfides.

Mineral Weight %

Mineral	MLA	XRD
	Wt%	Wt%
Muscovite	26.35	24
Quartz	22.93	20
Albite	22.26	27
Ankerite	14.20	20
Pyrite	9.35	5
Chlorite	1.89	3
Kspar	0.75	
Paragonite	0.65	
Apatite	0.52	
Ilmenite	0.34	
Rutile	0.23	1
Epidote	0.16	
Tourmaline	0.08	
Amphibole	0.07	
Calcite	0.05	
Pyrrhotite	0.04	
Pyrophyllite	0.03	
Biotite	0.02	
Chalcopyrite	0.02	
Iron	0.02	
Monazite	0.02	
Barite	<0.01	
Chromite	<0.01	
FeClay	<0.01	
Siderite	<0.01	
Sphalerite	<0.01	
Sphene	<0.01	
Cobaltite	<0.001	
Xenotime	<0.001	



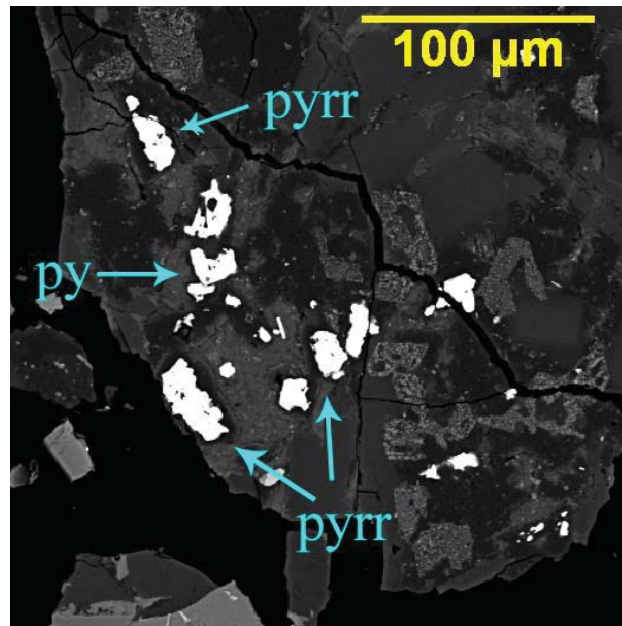
Low magnification BSE image of pulverized sample. Bright gray particles are sulfides and darker gray particles are gangue. Black spheres are holes in the epoxy formed by air bubbles during sample mounting.

06PMD470, 371.05-376.28m (HC-22) - Predominately composed of diopside and plagioclase (albite, andesine). Lesser amounts of chlorite, quartz, titanomagnetite, and ankerite were also detected. MLA measured trace amounts of chalcopyrite (0.06%), pyrrhotite (0.03%), pyrite (0.02%), and <0.001% tetrahedrite. Pyrite was mainly associated with albite (22%) and chlorite (18%); 17% of pyrite had a free surface. Thirty-four percent of pyrite was encapsulated, 21% was liberated, and 45% had intermediate exposure. Pyrite had a P₅₀ and P₈₀ of 10µm and 16µm respectively. Pyrite's crystal morphology, displayed in left image below, is mostly anhedral and fine-grained. Chalcopyrite was mainly associated with diopside (30%) and albite (20%); 11% of chalcopyrite had a free surface. Sixty-seven percent of chalcopyrite was encapsulated, 5% was liberated, and 28% had intermediate exposure. Pyrrhotite (also displayed in left image below) was mainly associated with chlorite (30%) and albite (14%); 23% of pyrrhotite had a free surface. Three of pyrrhotite was encapsulated, 6% was liberated, and 91% had intermediate exposure. MLA detected titanium-rich magnetite (titanomagnetite), shown in the right image below.

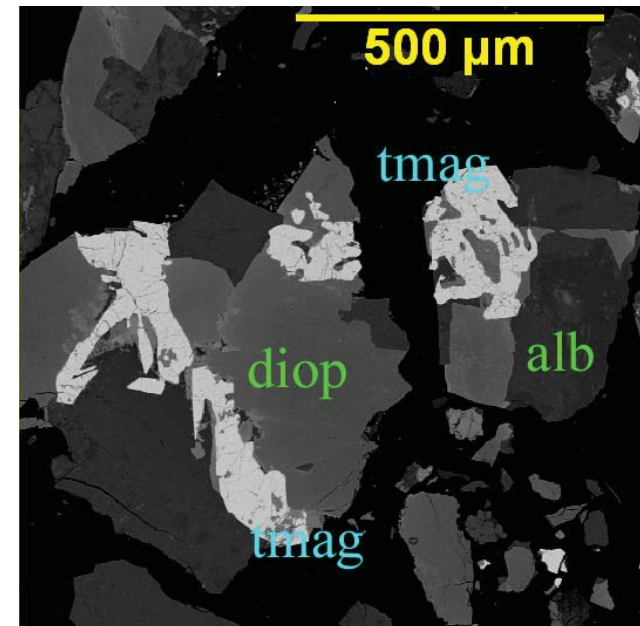
Mineral Weight %

Mineral	MLA	XRD
	Wt%	Wt%
Diopside	40.18	40
Albite	25.92	45
Andesine	12.64	
Titanomagnetite	5.34	2*
Chlorite	4.69	8
Epidote	3.51	
Quartz	3.03	3
Calcite	0.89	
Ankerite	0.86	1
Kspar	0.86	
Amphibole	0.64	
Biotite	0.55	
Sphene	0.32	
Ilmenite	0.29	
Apatite	0.08	
Chalcopyrite	0.06	
Paragonite	0.04	
Pyrrhotite	0.03	
Tourmaline	0.03	
Pyrite	0.02	
Hematite	<0.01	
Iron	<0.01	
Olivine	<0.01	
Rutile	<0.01	
Siderite	<0.01	
Gold	<0.001	
Monazite	<0.001	
Tetrahedrite	<0.001	
Zircon	<0.001	

*Titanomagnetite was quantified as magnetite by XRD



BSE image of bright anhedral pyrite (py) and pyrrhotite (pyrr) in mixed gangue of epidote, quartz, chlorite, and albite.



BSE image of bright titanomagnetite (tmag) in light gray diopside (diop) and dark gray albite (alb) mixed particles.

Sulfide Mineral Associations

MINERAL	Albite	Andesine	Ankerite	Biotite	Calcite	Chalcopyrite	Chlorite	Diopside	Epidote	Kspar	Pyrite	Pyrrhotite	Quartz	Titanomagnetite	Free Surface	OTHER
Chalcopyrite	19.89	11.78	1.24	2.24	1.14	0.00	8.15	30.09	1.33	1.19	0.51	0.10	5.99	3.57	10.97	1.81
Pyrite	21.72	5.77	1.27	0.43	0.87	1.05	17.63	19.42	2.47	0.26	0.00	2.85	6.38	1.68	17.06	1.14
Pyrrhotite	14.25	5.49	0.11	0.42	1.64	0.28	29.64	4.88	1.03	0.24	3.78	0.00	14.18	1.25	22.75	0.04
Tetrahedrite	22.80	0.00	0.00	0.00	0.00	32.16	0.00	37.21	0.00	0.00	0.00	0.00	0.00	0.00	7.83	0.00

Sulfide Exposure

Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	67.28	28.17	4.55
Pyrite	33.99	45.21	20.80
Pyrrhotite	3.33	90.60	6.07
Tetrahedrite	94.12	2.75	3.14

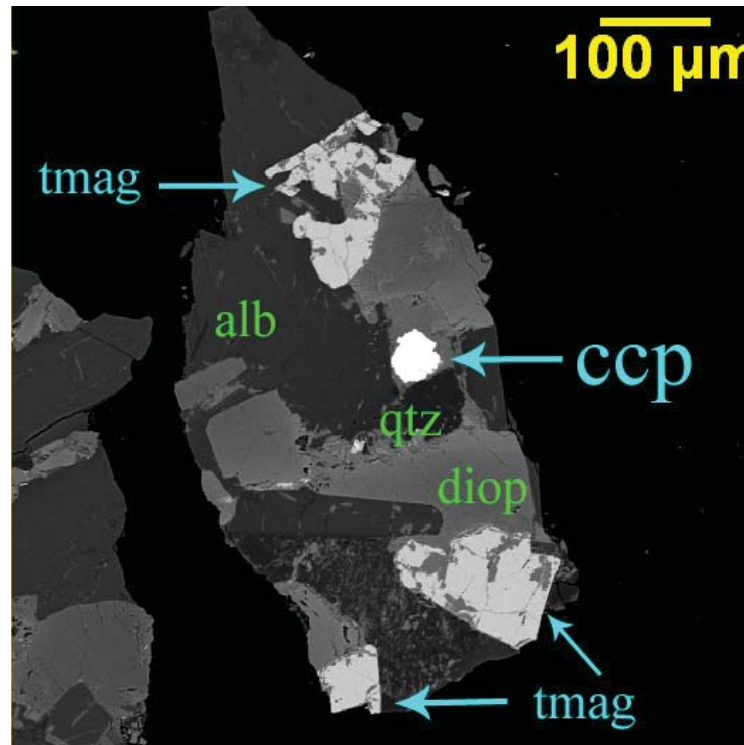
Pyrite Particle Size by Percent Passing

P-value	µm
P50	9.88
P80	16.03

07PMD542, 73.28-77m (HC-23) - Predominately composed of plagioclase (albite, andesine) and diopside. Lesser amounts of chlorite, quartz, titanomagnetite, and ankerite were also detected. MLA detected major amounts of diopside (38.08%) compared to XRD (18%) due to difficulties segmenting similar gray level phases, which is most likely the reason for lower MLA quantities of plagioclase compared to XRD. MLA measured trace amounts of chalcopyrite (0.06%), <0.01% pyrite and pyrrhotite, and <0.001% tetrahedrite. Chalcopyrite was mainly associated with diopside (30%) and albite (19%); 9% of chalcopyrite had a free surface. Sixty-seven percent of chalcopyrite was encapsulated, 3% was liberated, and 30% had intermediate exposure. Pyrite was mainly associated with diopside (18%) and chlorite (15%); 31% of pyrite had a free surface. Forty percent of pyrite was encapsulated, 37% was liberated, and 22% had intermediate exposure. Pyrite had a P₅₀ and P₈₀ of 9µm and 16µm respectively. MLA detected titanium-rich magnetite (titanomagnetite), shown in the image below.

Mineral Weight %		
Mineral	MLA Wt%	XRD Wt%
Diopside	38.08	18
Albite	24.30	63
Andesine	13.11	
Chlorite	9.78	8
Titanomagnetite	5.73	5*
Quartz	3.29	2
Epidote	3.14	
Ankerite	0.64	4
Biotite	0.62	
Calcite	0.47	
Ilmenite	0.28	
Sphene	0.22	
Apatite	0.09	
Chalcopyrite	0.06	
Hematite	0.06	
Siderite	0.05	
Tourmaline	0.03	
Chromite	0.02	
Kspar	0.02	
Olivine	<0.01	
Pyrite	<0.01	
Pyrrhotite	<0.01	
Enstatite	<0.001	
FeClay	<0.001	
Monazite	<0.001	
Paragonite	<0.001	
Rutile	<0.001	
Tetrahedrite	<0.001	
Zircon	<0.001	

*Titanomagnetite was quantified as magnetite by XRD



BSE image of bright chalcopyrite grain (ccp) and light grey titanomagnetite (tmg) in a diopside (diop) and albite (alb) mixed particle.

Sulfide Mineral Associations

MINERAL	Albite	Andesine	Ankerite	Biotite	Calcite	Chalcopyrite	Chlorite	Diopside	Pyrite	Pyrrhotite	Quartz	Titanomagnetite	Free Surface	OTHER
Chalcopyrite	18.92	9.45	0.96	2.31	0.39	0.00	11.26	29.76	0.15	0.24	11.49	5.00	8.84	1.23
Pyrite	9.28	5.97	1.23	3.38	2.23	1.14	15.12	17.92	0.00	4.00	5.30	1.29	31.19	1.96
Pyrrhotite	11.65	1.10	24.38	0.00	18.73	2.31	14.07	7.62	5.17	0.00	4.87	0.00	10.10	0.00
Tetrahedrite	14.54	31.29	0.00	6.92	0.00	7.13	0.00	23.61	0.00	0.00	16.52	0.00	0.00	0.00

Sulfide Exposure

Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	66.68	30.25	3.07
Pyrite	40.40	22.22	37.39
Pyrrhotite	73.60	22.13	4.27
Tetrahedrite	100.00	0.00	0.00

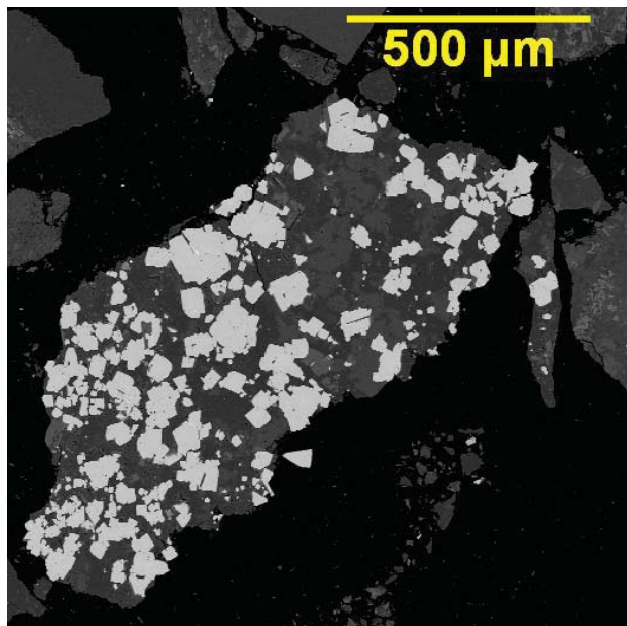
Pyrite Particle Size by Percent Passing

P-value	µm
P50	8.67
P80	16.21

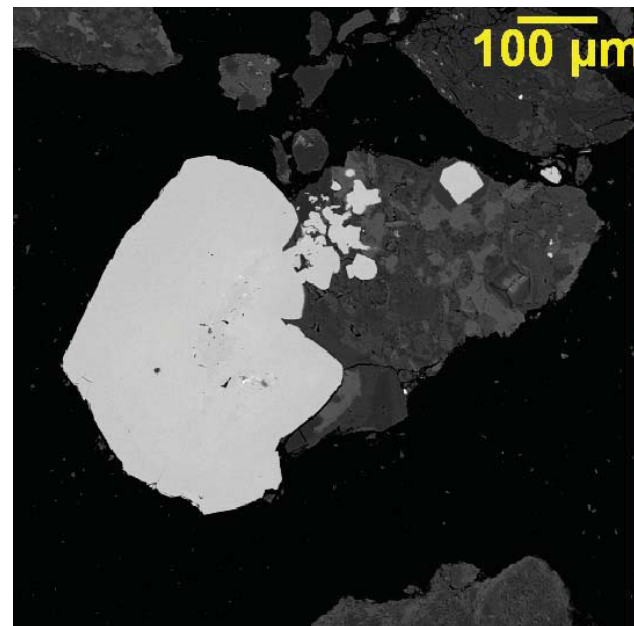
06PMD484, 224.5-226.5m (HC-24) - Predominately composed of ankerite, albite, quartz, and chlorite. MLA detected 17% muscovite/sericite which is in close agreement with the K values (1.4-2.0%) from chemical analyses. Lesser amounts of pyrite, and rutile were also detected. MLA measured minor amounts of pyrite (3.69%) along with trace amounts of chalcopyrite (0.03%), gersdorffite (0.03%), and <0.001% cobaltite, pyrrhotite and sphalerite. Pyrite was mainly associated with ankerite (18%), muscovite/sericite (17%), chlorite (11%), and quartz (10%); 28% of pyrite had a free surface. Three percent of pyrite was encapsulated, 14% was liberated, and 83% had intermediate exposure. Pyrite had a P₅₀ and P₈₀ of 125µm and 301µm respectively. Pyrite's crystal morphology, displayed in images below, is mostly subhedral to euhedral, coarse to fine-grained with sieve texture. Chalcopyrite was mainly associated with ankerite (26%) and chlorite (17%); 18% of chalcopyrite had a free surface. Forty-five percent of chalcopyrite was encapsulated, 6% was liberated, and 49% had intermediate exposure. Gersdorffite was mainly associated with muscovite/sericite (23%), chlorite (22%) and ankerite (17%); 10% of gersdorffite had a free surface. Seventy percent of gersdorffite was encapsulated, 3% was liberated, and 28% had intermediate exposure.

Mineral Weight %

Mineral	MLA Wt%	XRD Wt%
Ankerite	41.14	45
Muscovite	16.68	9
Quartz	12.06	15
Albite	11.52	15
Chlorite	10.62	12
Pyrite	3.69	3
Kspar	2.53	
Amphibole	0.39	
Rutile	0.38	1
Ilmenite	0.26	
Epidote	0.22	
Biotite	0.16	
Paragonite	0.10	
Calcite	0.08	
Apatite	0.05	
Chalcopyrite	0.03	
Chromite	0.03	
Gersdorffite	0.03	
Tourmaline	0.02	
Monazite	<0.01	
Siderite	<0.01	
Sphene	<0.01	
Xenotime	<0.01	
Cobaltite	<0.001	
FeClay	<0.001	
Gold	<0.001	
Pyrophyllite	<0.001	
Pyrrhotite	<0.001	
Sphalerite	<0.001	



BSE image of bright coarse and fine-grained euhedral pyrite in an ankerite (light gray) and muscovite/sericite (dark gray) particle.



BSE image of bright subhedral/euhedral pyrite in a chlorite (light gray) and muscovite/sericite (dark gray) particle.

Sulfide Mineral Associations

MINERAL	Albite	Ankerite	Chalcopyrite	Chlorite	Gersdorffite	Kspar	Muscovite	Pyrite	Quartz	Free Surface	OTHER
Chalcopyrite	2.60	26.46	0.00	16.64	5.65	0.42	7.31	10.36	10.64	18.08	1.83
Cobaltite	0.00	20.29	2.10	35.78	0.00	0.00	0.00	0.00	41.82	0.00	0.00
Gersdorffite	5.72	16.75	5.98	22.17	0.00	1.63	23.48	5.97	7.03	10.19	1.08
Pyrite	10.73	18.01	0.21	10.99	0.12	3.26	16.91	0.00	9.94	28.20	1.63
Pyrrhotite	9.06	0.00	0.00	7.58	0.00	0.00	4.88	35.04	2.29	41.15	0.00
Sphalerite	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	0.00	0.00	0.00

Sulfide Exposure

Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	45.42	48.69	5.89
Cobaltite	100.00	0.00	0.00
Gersdorffite	69.38	27.70	2.92
Pyrite	2.98	83.13	13.89
Pyrrhotite	23.99	70.95	5.07
Sphalerite	100.00	0.00	0.00

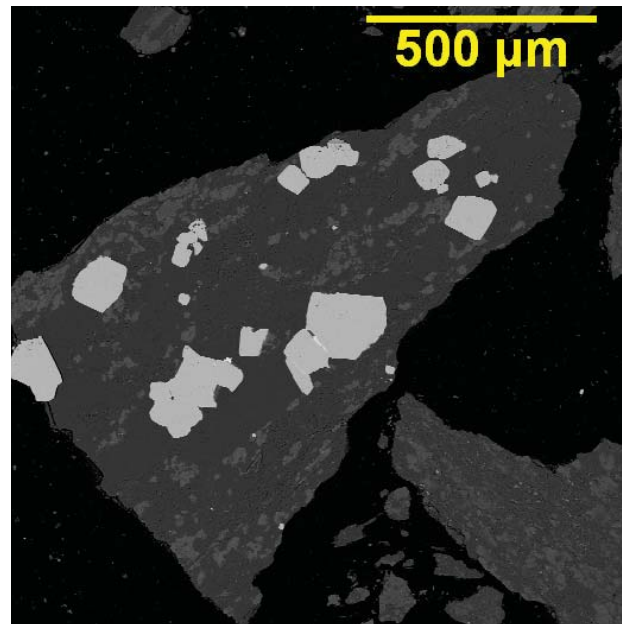
Pyrite Particle Size by Percent Passing

P-value	µm
P50	125.15
P80	300.75

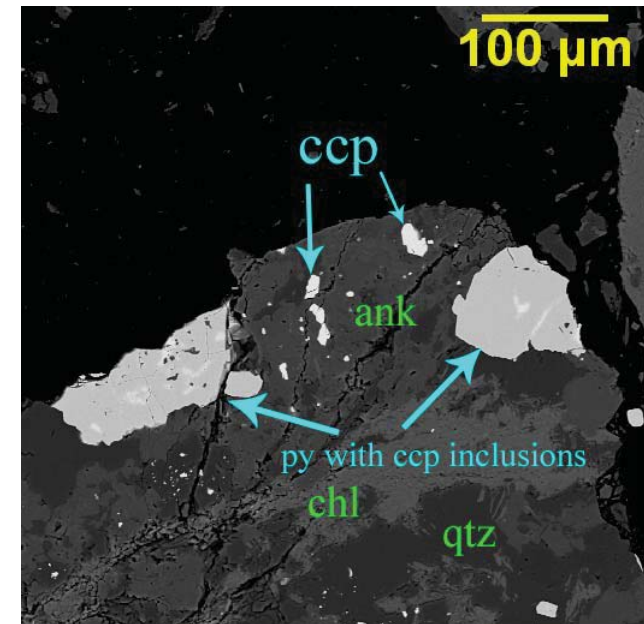
07PMD552, 58.5-72m (HC-25) - Predominately composed of ankerite, quartz, and muscovite/sericite. Lesser amounts of paragonite, chlorite, albite, and rutile were also detected. MLA measured trace amounts of pyrite (0.97%), chalcopyrite (0.03%), 0.01% cobaltite and gersdorffite, <0.01% millerite, and <0.001% pyrrhotite and sphalerite. Pyrite was mainly associated with muscovite/sericite (25%) and quartz (16%); 19% of pyrite had a free surface. Seven percent of pyrite was encapsulated, 9% was liberated, and 84% had intermediate exposure. Pyrite had a P_{50} and P_{80} of 91 μ m and 169 μ m respectively. Pyrite's crystal morphology, displayed in images below, is mostly anhedral to subhedral, coarse grained with sieve texture. Chalcopyrite was mainly associated with pyrite (24%) and quartz (21%); 12% of chalcopyrite had a free surface. Fifty-two percent of chalcopyrite was encapsulated, 4% was liberated, and 44% had intermediate exposure. Gersdorffite and cobaltite were mainly associated with muscovite/sericite (21-27%); 12% of gersdorffite and 5% of cobaltite had a free surface. Thirty-seven percent of gersdorffite was encapsulated, 3% was liberated, and 60% had intermediate exposure. Eighty-three percent of cobaltite was encapsulated, 1% was liberated, and 15% had intermediate exposure.

Mineral Weight %

Mineral	MLA	XRD
	Wt%	Wt%
Ankerite	24.18	31
Muscovite	21.26	16
Albite	19.31	10
Quartz	13.72	19
Paragonite	11.52	11
Chlorite	6.31	11
Kspar	1.47	
Pyrite	0.97	
Epidote	0.53	
Tourmaline	0.28	
Amphibole	0.13	
Calcite	0.08	
Rutile	0.07	1
Ilmenite	0.05	
Apatite	0.04	
Chalcopyrite	0.03	
Biotite	0.02	
Cobaltite	0.01	
Gersdorffite	0.01	
Millerite	<0.01	
Monazite	<0.01	
Pyrophyllite	<0.01	
Siderite	<0.01	
Chromite	<0.001	
Enstatite	<0.001	
FeClay	<0.001	
Iron	<0.001	
Magnetite	<0.001	
Pyrrhotite	<0.001	
Sphalerite	<0.001	
Sphene	<0.001	
Xenotime	<0.001	



BSE image of bright subhedral/euhedral pyrite grains in an ankerite (light gray) and albite (dark gray) particle.



BSE image of very bright chalcopyrite grains encapsulated in bright gray pyrite found in mixed gangue (ankerite-ank, chlorite-chl, and quartz-qtz).

Sulfide Mineral Associations

MINERAL	Albite	Ankerite	Chalcopyrite	Chlorite	Cobaltite	Gersdorffite	Kspar	Millerite	Muscovite	Paragonite	Pyrite	Quartz	Siderite	Free Surface	OTHER
Chalcopyrite	6.13	15.33	0.00	6.48	0.26	0.15	0.66	0.85	8.34	3.58	24.25	20.81	0.49	12.10	0.57
Cobaltite	10.44	16.67	0.98	4.45	0.00	7.29	1.19	1.12	20.70	12.43	12.16	7.20	0.00	4.77	0.60
Gersdorffite	11.35	7.87	0.36	5.31	4.80	0.00	5.04	1.96	26.77	9.56	8.58	5.67	0.00	12.32	0.41
Millerite	10.12	17.35	6.11	1.80	2.15	5.73	0.00	0.00	19.75	0.84	18.79	14.73	0.00	2.62	0.00
Pyrite	11.33	11.00	1.94	1.84	0.26	0.28	1.29	0.21	24.90	10.92	0.00	15.87	0.02	19.26	0.88
Pyrrhotite	0.00	13.97	0.00	3.09	0.00	0.00	0.00	0.00	0.00	3.33	54.15	9.96	1.55	13.94	0.00
Sphalerite	24.62	43.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.44	0.00	0.00	0.00

Sulfide Exposure

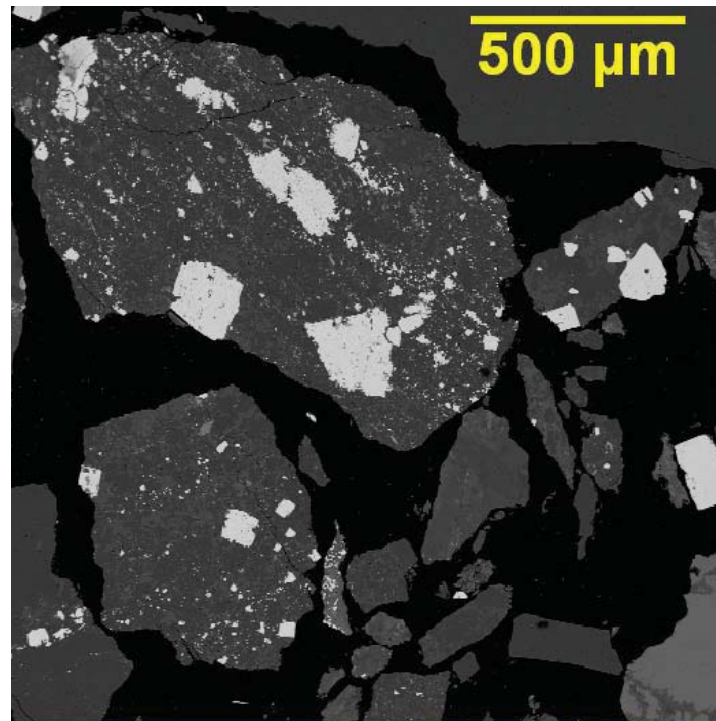
Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	52.36	43.89	3.75
Cobaltite	83.32	15.40	1.28
Gersdorffite	36.64	60.03	3.33
Millerite	84.67	14.83	0.50
Pyrite	7.32	83.77	8.90
Pyrrhotite	6.59	73.08	20.33
Sphalerite	100.00	0.00	0.00

Pyrite Particle Size by Percent Passing

P-value	µm
P50	90.70
P80	169.39

07PMD522, 27-38m (HC-26) - Predominately composed of ankerite, quartz, and albite. Lesser amounts of chlorite, pyrite, and rutile were also detected. MLA measured relatively high amounts of pyrite (6.61%), which is in agreement with XRD and chemical analyses. Also detected were trace amounts of gersdorffite (0.02%), chalcopyrite (0.01%), and <0.001% galena and pyrrhotite. Pyrite was mainly associated with albite (30%) and ankerite (28%); 20% of pyrite had a free surface. One percent of pyrite was encapsulated, 8% was liberated, and 91% had intermediate exposure. Pyrite had a P₅₀ and P₈₀ of 102µm and 192µm respectively. Pyrite's crystal morphology, displayed in image below, is anhedral to euhedral, coarse to fine-grained with sieve texture. Disseminated pyrite is common in gangue. Gersdorffite was mainly associated with ankerite (39%) and chlorite (31%); 9% of gersdorffite had a free surface. Thirty-four percent of gersdorffite was encapsulated, 3% was liberated, and 63% had intermediate exposure. Chalcopyrite was mainly associated with albite (34%) and ankerite (21%); 15% of chalcopyrite had a free surface. Twenty-four percent of chalcopyrite was encapsulated, 7% was liberated, and 68% had intermediate exposure.

Mineral Weight %		
	MLA	XRD
Mineral	Wt%	Wt%
Ankerite	35.86	35
Quartz	25.91	24
Albite	22.19	23
Chlorite	7.79	9
Pyrite	6.61	7
Muscovite	0.56	
Ilmenite	0.33	
Rutile	0.28	2
Apatite	0.20	
Kspar	0.11	
Chromite	0.05	
Amphibole	0.02	
Gersdorffite	0.02	
Siderite	0.02	
Chalcopyrite	0.01	
Tourmaline	0.01	
Biotite	<0.01	
Calcite	<0.01	
Epidote	<0.01	
Monazite	<0.01	
Paragonite	<0.01	
Sphene	<0.01	
FeClay	<0.001	
Galena	<0.001	
Gold	<0.001	
Magnetite	<0.001	
Pyrophyllite	<0.001	
Pyrrhotite	<0.001	
Xenotime	<0.001	



BSE image of bright coarse-grained euhedral pyrite and fine-grained anhedral pyrite disseminated in mixed gangue (albite and ankerite).

Sulfide Mineral Associations

MINERAL	Albite	Ankerite	Chlorite	Gersdorffite	Muscovite	Pyrite	Quartz	Rutile	Free Surface	OTHER
Chalcopyrite	34.31	21.55	5.26	1.25	1.66	15.35	4.65	0.36	14.78	0.85
Galena	0.00	0.00	0.00	0.00	0.00	77.92	15.99	0.00	6.09	0.00
Gersdorffite	1.83	38.85	31.35	0.00	0.00	7.59	7.81	1.49	8.97	2.11
Pyrite	30.01	27.56	8.91	0.06	1.83	0.00	9.48	0.53	19.85	1.77
Pyrrhotite	29.72	11.20	0.00	0.00	0.00	35.18	1.64	0.00	22.26	0.00

Sulfide Exposure

Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	23.93	68.43	7.64
Galena	89.19	10.81	0.00
Gersdorffite	33.71	63.00	3.29
Pyrite	1.00	91.08	7.92
Pyrrhotite	81.13	11.32	7.55

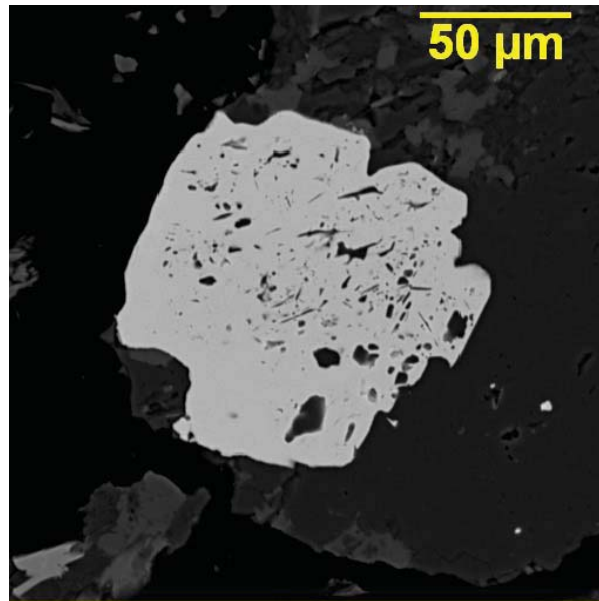
Pyrite Particle Size by Percent Passing

P-value	µm
P50	102.30
P80	192.10

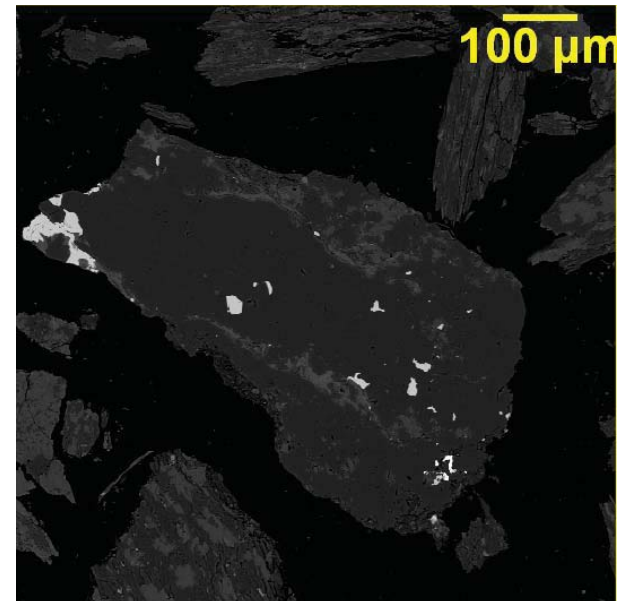
07PMD522, 126-136.5m (HC-27) - Predominately composed of ankerite, paragonite, quartz, and chlorite. Albite detected by MLA was most likely exaggerated in the expense of other gangue minerals due to difficulty in segmenting phases with similar gray levels. Lesser amounts of calcite were also detected. MLA measured trace amounts of pyrite (0.14%), chalcopryite (0.03%), gersdorffite (0.01%), and <0.01% cobaltite and sphalerite. Pyrite was mainly associated with quartz (17%), ankerite (14%), and paragonite (13%); 37% of pyrite had a free surface. Ten percent of pyrite was encapsulated, 36% was liberated, and 54% had intermediate exposure. Pyrite had a P_{50} and P_{80} of 82 μ m and 147 μ m respectively. Pyrite's crystal morphology, displayed in left image below, is mostly subhedral, coarse grained with sieve texture. Chalcopryite (displayed in right image below) was mainly associated with quartz (28%) and ankerite (11%); 35% of chalcopryite had a free surface. Twenty-eight percent of chalcopryite was encapsulated, 15% was liberated, and 56% had intermediate exposure. Gersdorffite was mainly associated with paragonite (28%) and quartz (21%); 14% of gersdorffite had a free surface. Thirty-one percent of gersdorffite was encapsulated, <1% was liberated, and 68% had intermediate exposure.

Mineral Weight %

Mineral	MLA	XRD
	Wt%	Wt%
Ankerite	24.25	30
Paragonite	23.27	24
Quartz	20.93	26
Albite	13.48	
Chlorite	7.17	17
Muscovite	4.27	
Tourmaline	2.83	
Calcite	2.42	2
Epidote	0.57	
Amphibole	0.44	
Pyrite	0.14	<1
Apatite	0.06	
Rutile	0.06	
Chalcopryite	0.03	
Ilmenite	0.03	
Gersdorffite	0.01	
Pyrophyllite	0.01	
Chromite	<0.01	
Cobaltite	<0.01	
FeClay	<0.01	
Iron	<0.01	
Monazite	<0.01	
Siderite	<0.01	
Sphalerite	<0.01	
Biotite	<0.001	
Enstatite	<0.001	
Kspar	<0.001	
Sphene	<0.001	
Xenotime	<0.001	



BSE image of bright subhedral pyrite with sieve texture in dark gray quartz.



BSE image of bright chalcopryite grains in a chlorite (light gray) and quartz (dark gray) particle.

Sulfide Mineral Associations

MINERAL	Albite	Ankerite	Calcite	Chlorite	Muscovite	Paragonite	Pyrite	Quartz	Tourmaline	Free Surface	OTHER
Chalcopyrite	4.82	10.92	2.23	6.23	2.22	8.02	0.94	27.74	1.40	34.86	0.62
Cobaltite	15.84	4.53	0.00	4.53	6.31	17.33	0.00	27.46	0.40	23.59	0.00
Gersdorffite	7.31	13.83	0.00	8.65	2.85	27.79	0.00	21.37	4.53	13.58	0.09
Pyrite	5.95	13.69	1.23	6.40	2.44	12.95	0.00	16.84	2.32	37.13	1.05
Sphalerite	0.00	3.65	7.01	11.59	0.82	0.00	1.56	25.35	0.00	50.02	0.00

Sulfide Exposure

Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	28.33	56.22	15.45
Cobaltite	62.02	5.85	32.13
Gersdorffite	31.40	68.14	0.47
Pyrite	10.23	53.52	36.24
Sphalerite	38.35	37.27	24.38

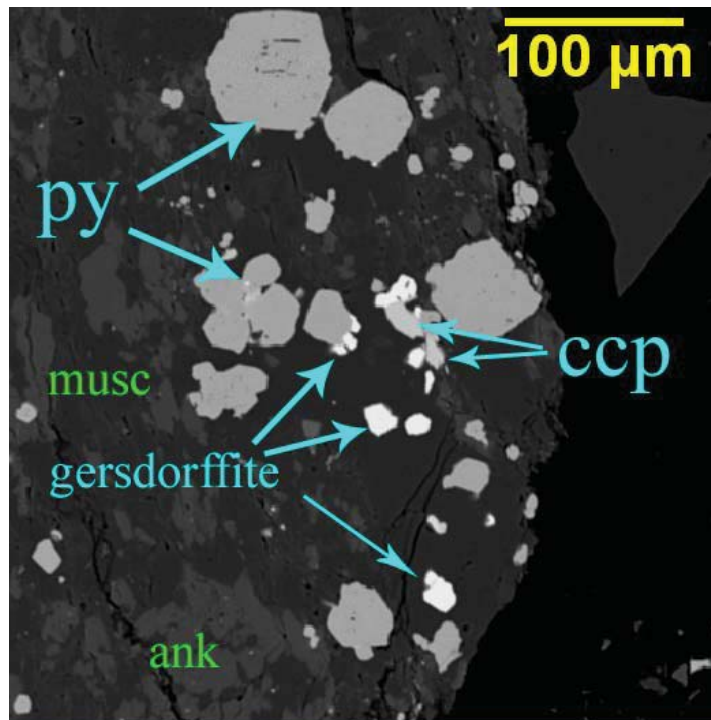
Pyrite Particle Size by Percent Passing

P-value	µm
P50	82.19
P80	147.08

06PMD470, 85-88m (HC-28) - Predominately composed of ankerite, albite, quartz, chlorite, and muscovite/sericite. Lesser amounts pyrite and rutile were also detected. MLA measured minor amounts of pyrite (3.63%) along with trace amounts of gersdorffite (0.02%), chalcopyrite (0.01%), and <0.001% cobaltite, pyrrhotite and sphalerite. Pyrite was mainly associated with albite (21%), muscovite/sericite (18%), and ankerite (15%); 26% of pyrite had a free surface. Three percent of pyrite was encapsulated, 12% was liberated, and 84% had intermediate exposure. Pyrite had a P_{50} and P_{80} of 98 μ m and 257 μ m respectively. Pyrite's crystal morphology, displayed in image below, is subhedral to euhedral, coarse to fine-grained with some sieve texture. Gersdorffite was mainly associated with muscovite/sericite (41%); 9% of gersdorffite had a free surface. Seventy-nine percent of gersdorffite was encapsulated, 6% was liberated, and 15% had intermediate exposure. Chalcopyrite was mainly associated with albite (23%) and pyrite (20%); 14% of chalcopyrite had a free surface. Seventy percent of chalcopyrite was encapsulated, 8% was liberated, and 22% had intermediate exposure.

Mineral Weight %

Mineral	MLA Wt%	XRD Wt%
Ankerite	31.45	35
Albite	22.61	25
Muscovite	17.79	11
Quartz	10.56	13
Chlorite	10.52	13
Pyrite	3.63	3
Paragonite	2.27	
Tourmaline	0.44	
Epidote	0.15	
Ilmenite	0.12	
Amphibole	0.10	
Rutile	0.10	<1
Apatite	0.08	
Kspar	0.07	
Calcite	0.04	
Gersdorffite	0.02	
Chalcopyrite	0.01	
Biotite	<0.01	
Monazite	<0.01	
Siderite	<0.01	
Xenotime	<0.01	
Chromite	<0.001	
Cobaltite	<0.001	
Electrum	<0.001	
FeClay	<0.001	
Gold	<0.001	
Iron	<0.001	
Pyrophyllite	<0.001	
Pyrrhotite	<0.001	
Sphalerite	<0.001	
Sphene	<0.001	



BSE image of white gersdorffite, bright gray chalcopyrite (ccp), and light gray subhedral/euhedral pyrite grains encapsulated in muscovite/sericite (musc, dark gray) and ankerite (ank, medium gray).

Sulfide Mineral Associations

MINERAL	Albite	Ankerite	Chalcopyrite	Chlorite	Gersdorffite	Muscovite	Paragonite	Pyrite	Quartz	Free Surface	OTHER
Chalcopyrite	23.39	12.85	0.00	7.56	4.22	12.64	0.00	19.86	3.90	14.45	1.14
Cobaltite	12.94	0.00	0.00	48.91	0.00	5.27	0.00	0.00	19.53	13.35	0.00
Gersdorffite	13.76	11.36	3.16	5.87	0.00	40.50	0.88	7.59	5.94	9.33	1.60
Pyrite	21.44	14.77	0.30	8.56	0.15	18.03	1.67	0.00	7.08	26.37	1.64
Pyrrhotite	0.00	16.92	0.00	3.61	0.00	6.80	3.61	44.80	10.44	13.82	0.00
Sphalerite	0.00	73.85	0.00	0.00	0.00	0.00	0.00	10.30	12.37	3.48	0.00

Sulfide Exposure

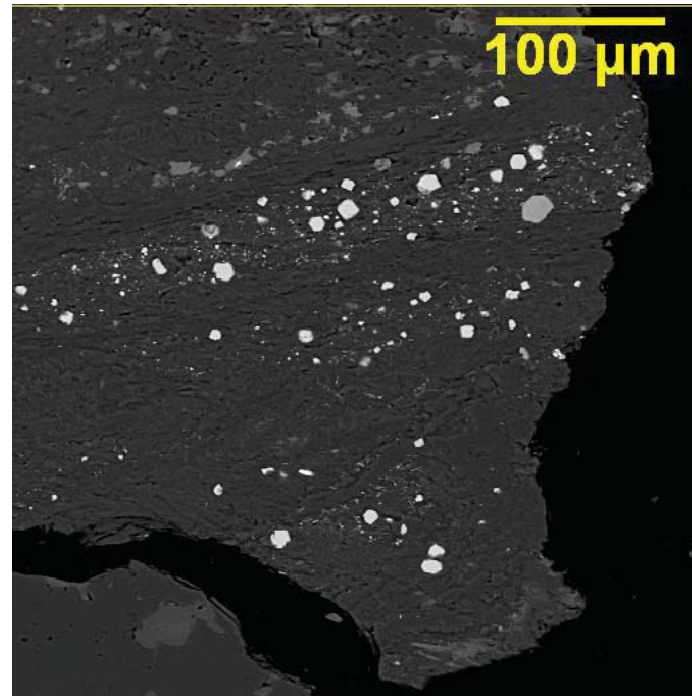
Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	70.28	21.72	8.00
Cobaltite	19.51	80.49	0.00
Gersdorffite	78.96	14.67	6.36
Pyrite	3.41	84.15	12.44
Pyrrhotite	24.56	75.44	0.00
Sphalerite	98.15	0.00	1.85

Pyrite Particle Size by Percent Passing

P-value	µm
P50	98.20
P80	257.35

08PMD657A, 101.5-111.5m (HC-29) - Predominately composed of ankerite, quartz, albite, and muscovite/sericite. Lesser amounts of chlorite, siderite, and rutile were also detected. Paragonite detected by MLA was most likely exaggerated in the expense of albite due to difficulty in segmenting both phases with such similar gray levels. MLA measured trace amounts of pyrite (0.13%), 0.01% chalcopyrite and gersdorffite, and <0.001% cobaltite. Pyrite was mainly associated with muscovite/sericite (34%), and paragonite (28%); 12% of pyrite had a free surface. Twenty-nine percent of pyrite was encapsulated, 15% was liberated, and 56% had intermediate exposure. Pyrite had a P₅₀ and P₈₀ of 19µm and 39µm respectively. Pyrite's crystal morphology, displayed in image below, is anhedral to euhedral, some coarse, but was mostly finely-grained disseminated pyrite. Chalcopyrite was mainly associated with ankerite (35%); 24% of chalcopyrite had a free surface. Forty-four percent of chalcopyrite was encapsulated, 15% was liberated, and 41% had intermediate exposure. Gersdorffite was mainly associated with paragonite (41%) and muscovite/sericite (32%); 10% of gersdorffite had a free surface. 62% of gersdorffite was encapsulated, 5% was liberated, and 33% had intermediate exposure.

Mineral Weight %		
Mineral	MLA	XRD
	Wt%	Wt%
Ankerite	32.62	39
Quartz	27.57	27
Muscovite	16.56	9
Paragonite	15.22	
Chlorite	4.76	5
Albite	1.19	15
Siderite	1.06	2
Tourmaline	0.33	
Apatite	0.22	
Pyrite	0.13	
Rutile	0.12	2
Ilmenite	0.10	
Amphibole	0.06	
Monazite	0.03	
Chalcopyrite	0.01	
Epidote	0.01	
Gersdorffite	0.01	
Calcite	<0.01	
FeClay	<0.01	
Kspar	<0.01	
Magnetite	<0.01	
Biotite	<0.001	
Chromite	<0.001	
Cobaltite	<0.001	
Enstatite	<0.001	
Iron	<0.001	
Pyrophyllite	<0.001	
Sphene	<0.001	
Xenotime	<0.001	
Zircon	<0.001	



BSE image of bright subhedral/euhedral coarse and fine-grained disseminated pyrite in dark gray muscovite/sericite.

Sulfide Mineral Associations

MINERAL	Ankerite	Chlorite	Gersdorffite	Ilmenite	Muscovite	Paragonite	Pyrite	Quartz	Siderite	Free Surface	OTHER
Chalcopyrite	34.60	6.94	0.00	0.00	8.86	5.14	0.81	10.67	7.98	23.72	1.29
Cobaltite	0.00	3.21	4.46	0.00	20.05	28.84	10.55	19.31	0.00	13.58	0.00
Gersdorffite	6.20	3.71	0.00	0.26	31.58	41.40	2.35	2.77	0.81	10.25	0.67
Pyrite	5.67	3.94	0.13	1.15	33.87	27.83	0.00	11.98	0.71	12.41	2.31

Sulfide Exposure

Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	44.30	40.75	14.95
Cobaltite	30.77	69.23	0.00
Gersdorffite	61.88	32.91	5.21
Pyrite	28.87	55.82	15.32

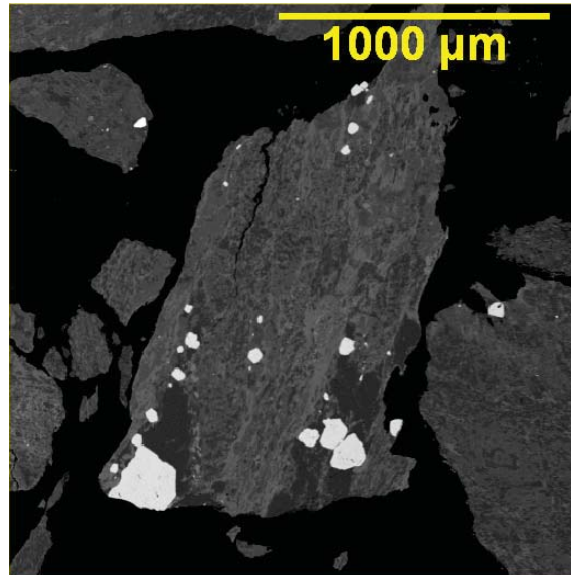
Pyrite Particle Size by Percent Passing

P-value	μm
P50	18.96
P80	39.10

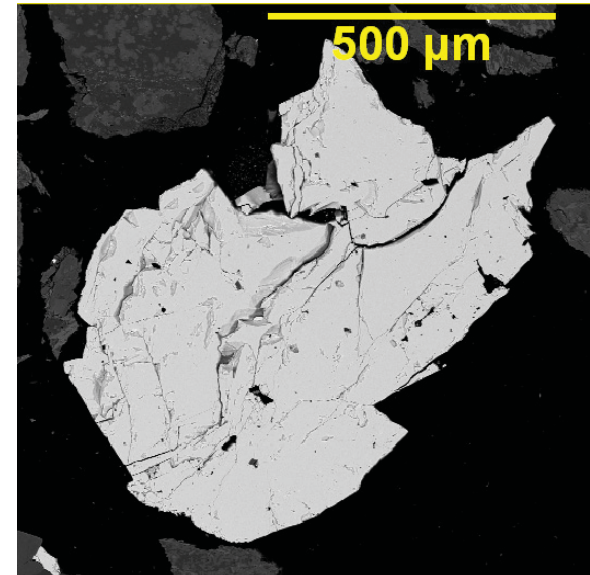
08PMD657A, 90.5-91m (HC-30) - Predominately composed of ankerite, quartz, and chlorite. Lesser amounts of muscovite/sericite, albite, calcite, and rutile were also detected. MLA measured trace amounts of chalcopyrite (0.79%), pyrite (0.72%), and <0.001% pyrrhotite. Calculated Cu (2.88%) is slightly higher than measured Cu (~2%), but is still in agreement with relatively elevated amount of chalcopyrite detected in the sample. Pyrite was mainly associated with ankerite (32%) and quartz (20%); 20% of pyrite had a free surface. 4% of pyrite was encapsulated, 3% was liberated, and 92% had intermediate exposure. Pyrite had a P₅₀ and P₈₀ of 182µm and 238µm respectively. Pyrite's crystal morphology, displayed in left image below, is subhedral to euhedral, coarse grained with sieve texture. Chalcopyrite (large liberated particle displayed in right image below) was mainly associated with ankerite (32%); 47% of chalcopyrite had a free surface. Two percent of chalcopyrite was encapsulated, 73% was liberated, and 25% had intermediate exposure.

Mineral Weight %

Mineral	MLA	XRD
	Wt%	Wt%
Ankerite	52.45	37
Quartz	19.02	23
Chlorite	14.72	29
Albite	7.63	2
Muscovite	1.44	6
Rutile	1.01	1
Amphibole	0.97	
Chalcopyrite	0.79	
Pyrite	0.72	
Paragonite	0.50	
Calcite	0.32	1
Apatite	0.13	
Kspar	0.10	
Biotite	0.08	
Ilmenite	0.06	
Tourmaline	0.05	
Epidote	<0.01	
Iron	<0.01	
Monazite	<0.01	
Siderite	<0.01	
Sphene	<0.01	
FeClay	<0.001	
Pyrrhotite	<0.001	
Xenotime	<0.001	



BSE image of bright subhedral/euhedral pyrite in mixed gangue (ankerite, chlorite, and quartz).



BSE image of a large liberated chalcopyrite grain measuring 1000 x 600 microns in size

Sulfide Mineral Associations

MINERAL	Albite	Ankerite	Chlorite	Muscovite	Paragonite	Pyrite	Quartz	Free Surface	OTHER
Chalcopyrite	0.39	31.94	9.41	0.89	0.03	0.76	9.34	46.89	0.35
Pyrite	4.67	31.58	17.70	2.66	1.33	0.00	19.98	19.74	2.34
Pyrrhotite	0.00	20.31	0.00	0.00	0.00	52.89	24.65	2.15	0.00

Sulfide Exposure

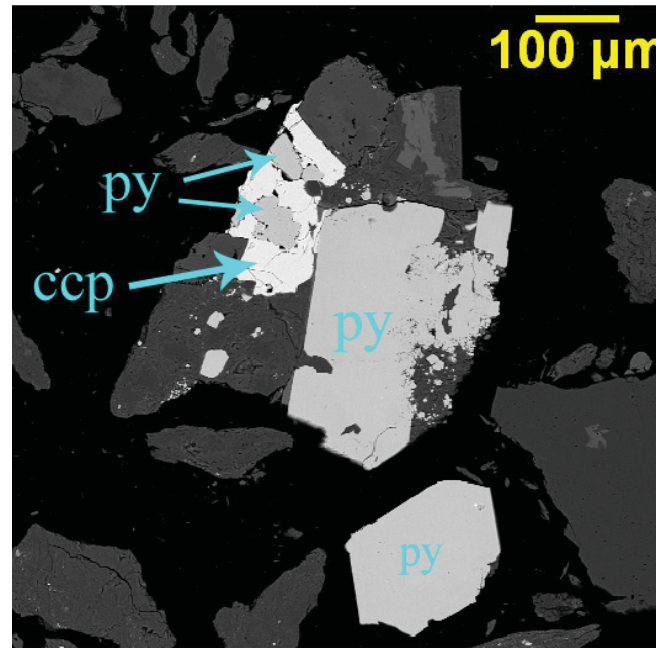
Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	1.62	25.31	73.07
Pyrite	4.23	92.44	3.33
Pyrrhotite	0.00	100.00	0.00

Pyrite Particle Size by Percent Passing

P-value	μm
P50	181.56
P80	238.44

04PMD272, 105-110m (HC-39) - Predominately composed of quartz, muscovite/sericite, ankerite, and paragonite. Lesser amounts of chlorite and rutile were also detected. MLA detected exaggerated amounts of muscovite/sericite (40.81%) compared to XRD (20%) due to difficulties segmenting similar gray level phases, which is most likely the reason for lower MLA quantities of quartz, ankerite, and paragonite compared to XRD values; K values (~1.8%) from chemical analyses suggests XRD quantities for muscovite/sericite are more accurate. MLA measured minor amounts of pyrite (1.09%) and trace amounts of chalcopyrite (0.02%), <0.01% gersdorffite, and <0.001% pyrrhotite and sphalerite. Pyrite was mainly associated with muscovite (59%), but this value is most likely skewed due to exaggerated muscovite/sericite quantities detected by MLA; 17% of pyrite had a free surface. Seven percent of pyrite was encapsulated, 15% was liberated, and 77% had intermediate exposure. Pyrite had a P₅₀ and P₈₀ of 72µm and 202µm respectively. Pyrite's crystal morphology, displayed in image below, is subhedral to euhedral, with mostly coarse grained particles with slight sieve texture. Chalcopyrite (also displayed in image below) was mainly associated with pyrite (33%) and ankerite (19%); 17% of chalcopyrite had a free surface. Thirteen percent of chalcopyrite was encapsulated, <1% was liberated, and 87% had intermediate exposure.

Mineral Weight %		
	MLA	XRD
Mineral	Wt%	Wt%
Muscovite	40.81	20
Quartz	30.45	41
Ankerite	13.18	19
Paragonite	11.85	16
Chlorite	1.27	2
Pyrite	1.09	1
Apatite	0.56	
Albite	0.27	
Tourmaline	0.22	
Monazite	0.07	
Rutile	0.06	1
Amphibole	0.05	
Ilmenite	0.04	
Kspar	0.03	
Calcite	0.02	
Chalcopyrite	0.02	
Epidote	<0.01	
FeClay	<0.01	
Gersdorffite	<0.01	
Siderite	<0.01	
Zircon	<0.01	
Anhydrite	<0.001	
Biotite	<0.001	
Chromite	<0.001	
Gold	<0.001	
Iron	<0.001	
Magnetite	<0.001	
Pyrophyllite	<0.001	
Pyrrhotite	<0.001	
Sphalerite	<0.001	
Sphene	<0.001	
Xenotime	<0.001	



BSE image of bright chalcopyrite (ccp) and light gray subhedral/euhedral pyrite (py).

Sulfide Mineral Associations

MINERAL	Ankerite	Chlorite	Muscovite	Paragonite	Pyrite	Quartz	Tourmaline	Free Surface	OTHER
Chalcopyrite	18.85	5.43	12.38	9.66	33.05	3.22	0.00	17.16	0.27
Gersdorffite	6.12	3.01	61.39	2.74	8.83	16.13	0.00	0.96	0.82
Pyrite	2.75	3.18	58.73	7.67	0.00	8.43	0.38	17.42	1.45
Pyrrhotite	0.00	0.61	56.43	0.00	37.31	0.00	3.97	1.67	0.00
Sphalerite	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00

Sulfide Exposure

Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	12.79	86.75	0.46
Gersdorffite	95.25	4.75	0.00
Pyrite	7.06	77.48	15.45
Pyrrhotite	93.04	6.96	0.00
Sphalerite	100.00	0.00	0.00

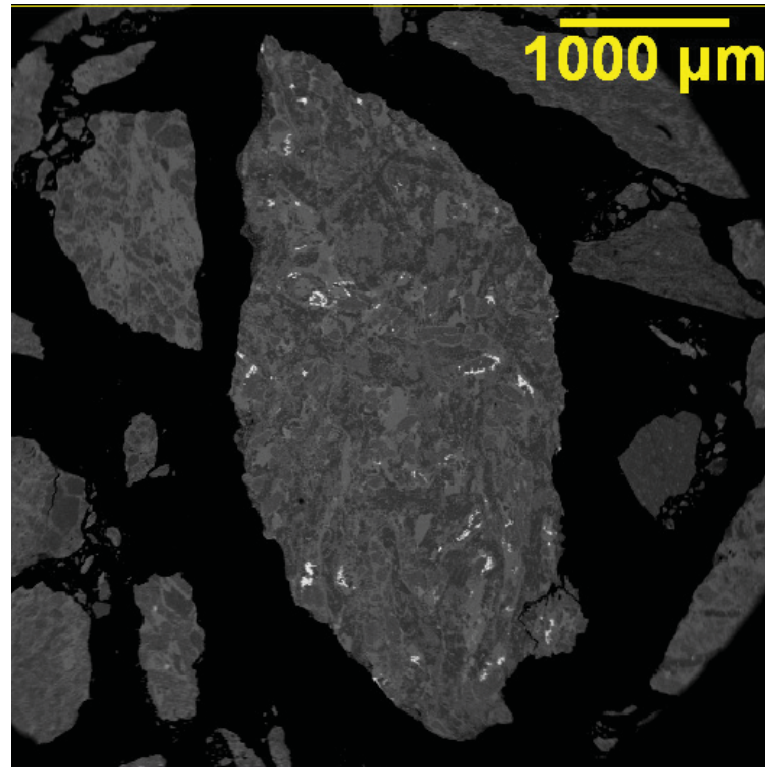
Pyrite Particle Size by Percent Passing

P-value	µm
P50	72.21
P80	202.24

05PMD310, 6-31m (HC-40) - Predominately composed of chlorite (~50%). Lesser amounts albite, muscovite/sericite, quartz, amphibole, and ankerite were also detected. MLA measured trace amounts of pyrite (0.26%), chalcopyrite (0.02%), and <0.001% cobaltite and pyrrhotite. Pyrite was mainly associated with amphibole (40%) and chlorite (29%); 9% of pyrite had a free surface. Fourteen percent of pyrite was encapsulated, 3% was liberated, and 83% had intermediate exposure. Pyrite had a P_{50} and P_{80} of 40 μ m and 77 μ m respectively. Pyrite's crystal morphology, displayed in image below, is anhedral and mostly found in one particle composed of amphibole, albite, and chlorite. Chalcopyrite was mainly associated with chlorite (34%) and quartz (16%); 7% of chalcopyrite had a free surface. Forty-four percent of chalcopyrite was encapsulated, <1% was liberated, and 56% had intermediate exposure.

Mineral Weight %

Mineral	MLA	XRD
	Wt%	Wt%
Chlorite	50.56	51
Albite	10.69	10
Muscovite	10.14	11
Quartz	7.79	10
Amphibole	6.04	9
Ankerite	5.80	8
Kspar	4.16	
Biotite	2.57	
Epidote	0.47	
Rutile	0.38	
Sphene	0.31	
Tourmaline	0.31	
Pyrite	0.26	
Ilmenite	0.17	
Paragonite	0.16	
Calcite	0.06	
Siderite	0.06	
Apatite	0.03	
Chalcopyrite	0.02	
Chromite	<0.01	
Iron	<0.01	
Magnetite	<0.01	
Monazite	<0.01	
Cobaltite	<0.001	
FeClay	<0.001	
Pyrrhotite	<0.001	
Xenotime	<0.001	



BSE image of bright anhedral pyrite in mixed gangue composed of chlorite, amphibole, and albite.

Sulfide Mineral Associations

MINERAL	Albite	Amphibole	Ankerite	Chlorite	Epidote	Kspar	Muscovite	Pyrite	Quartz	Sphene	Free Surface	OTHER
Chalcopyrite	11.14	15.97	0.00	34.14	0.00	2.20	4.90	3.28	16.46	3.31	7.05	1.55
Cobaltite	0.00	0.00	0.00	68.43	0.00	0.00	31.57	0.00	0.00	0.00	0.00	0.00
Pyrite	6.19	39.45	1.44	29.07	1.31	1.27	5.27	0.00	4.87	0.09	9.43	1.60
Pyrrhotite	32.01	0.00	0.00	67.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Sulfide Exposure

Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	43.69	56.01	0.30
Cobaltite	100.00	0.00	0.00
Pyrite	14.07	83.27	2.67
Pyrrhotite	100.00	0.00	0.00

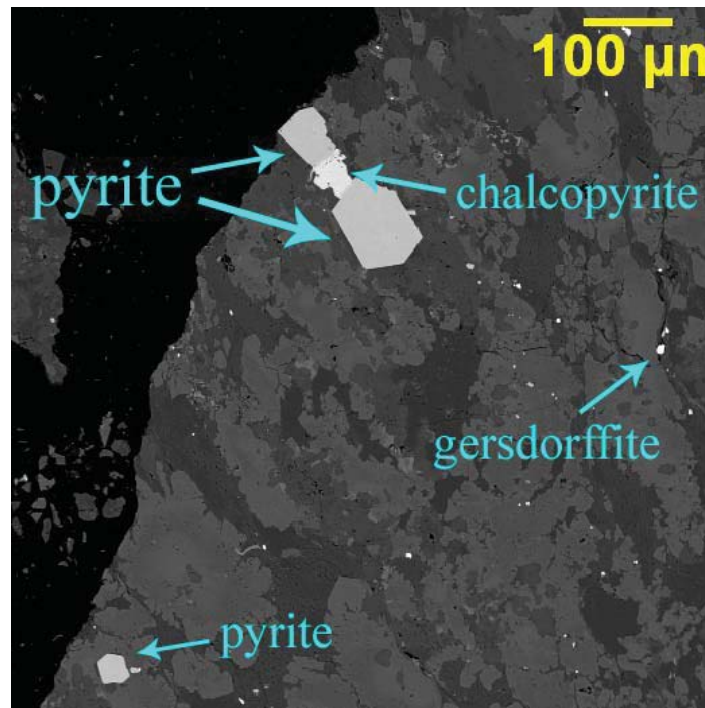
Pyrite Particle Size by Percent Passing

P-value	µm
P50	39.65
P80	76.54

05PMD293, 8.89-34m (HC-41) - Predominately composed of ankerite, quartz, and muscovite/sericite. Lesser amounts chlorite, albite, siderite, and rutile were also detected. MLA measured trace amounts of pyrite (0.40%), gersdorffite (0.03%), chalcopyrite (0.02%), <0.01% tetrahedrite, and <0.001% cobaltite. Pyrite was mainly associated with quartz (18%), ankerite (17%), and muscovite/sericite (16%); 33% of pyrite had a free surface. Twenty-two percent of pyrite was encapsulated, 18% was liberated, and 60% had intermediate exposure. Pyrite had a P₅₀ and P₈₀ of 56µm and 97µm respectively. Pyrite's crystal morphology, displayed in image below, is subhedral to euhedral, with coarse to fine-grained particles. Gersdorffite was mainly associated with muscovite/sericite (30%) and had 15% free surface. Sixty-five percent of gersdorffite was encapsulated, 8% was liberated, and 27% had intermediate exposure. Chalcopyrite was mainly associated with quartz (24%) and ankerite (21%); 17% of chalcopyrite had a free surface. Seventy percent of chalcopyrite was encapsulated, 10% was liberated, and 20% had intermediate exposure.

Mineral Weight %

Mineral	MLA	XRD
	Wt%	Wt%
Ankerite	33.49	35
Quartz	24.18	25
Muscovite	21.20	21
Chlorite	7.81	8
Albite	7.63	7
Siderite	2.97	3
Kspar	1.20	
Pyrite	0.40	
Biotite	0.31	
Ilmenite	0.21	
Amphibole	0.15	
Tourmaline	0.15	
Rutile	0.10	<1
Apatite	0.06	
Paragonite	0.05	
Gersdorffite	0.03	
Chalcopyrite	0.02	
Chromite	0.01	
Calcite	<0.01	
Epidote	<0.01	
FeClay	<0.01	
Iron	<0.01	
Magnetite	<0.01	
Monazite	<0.01	
Sphene	<0.01	
Tetrahedrite	<0.01	
Anhydrite	<0.001	
Barite	<0.001	
Cobaltite	<0.001	
Gold	<0.001	
Pyrophyllite	<0.001	
Scheelite	<0.001	
Xenotime	<0.001	



BSE image of white gersdorffite inclusions along with bright chalcopyrite associated with light gray euhedral pyrite. Mixed gangue is composed of chlorite (medium gray), ankerite (med-dark gray), and albite (dark gray).

Sulfide Mineral Associations

MINERAL	Albite	Ankerite	Chalcopyrite	Chlorite	Kspar	Muscovite	Pyrite	Quartz	Siderite	Free Surface	OTHER
Chalcopyrite	5.39	20.88	0.00	7.55	0.40	12.84	6.79	24.12	2.63	17.40	1.99
Cobaltite	19.79	31.28	7.63	1.23	0.00	9.47	0.00	13.60	0.00	17.01	0.00
Gersdorffite	4.20	12.45	0.00	12.80	1.17	29.60	1.26	16.10	6.05	15.07	1.30
Pyrite	5.45	17.25	0.51	6.88	1.00	15.54	0.00	17.61	1.05	33.23	1.49
Tetrahedrite	0.00	23.39	0.00	0.00	0.00	2.13	0.00	7.45	0.00	67.04	0.00

Sulfide Exposure

Free Surface of Particle (%)	0% (not exposed)	0% < x < 100%	100% (liberated)
Chalcopyrite	70.25	19.81	9.94
Cobaltite	68.97	25.12	5.91
Gersdorffite	64.71	26.67	8.63
Pyrite	22.33	60.01	17.67
Tetrahedrite	0.00	28.88	71.12

Pyrite Particle Size by Percent Passing

P-value	µm
P50	56.46
P80	97.04

TABLE V
Mineral Key

MINERAL	FORMULA
Albite, Andesine (PLAG)	$\text{NaAlSi}_3\text{O}_8/(\text{Ca}, \text{Na})(\text{Al}, \text{Si})_4\text{O}_8$
Alstonite	$\text{BaCa}(\text{CO}_3)_2$
Amphibole (AMP)	$\text{Ca}_2(\text{Mg}, \text{Fe}, \text{Al})_5(\text{Al}, \text{Si})_8\text{O}_{22}(\text{OH})_2$
Anhydrite	CaSO_4
Ankerite (ANK)	$\text{Ca}(\text{Fe}, \text{Mg})(\text{CO}_3)_2$
Apatite	$\text{Ca}_5(\text{PO}_4)_3(\text{OH})$
Arsenopyrite	FeAsS
Barite	BaSO_4
Biotite	$\text{K}(\text{Mg}, \text{Fe})_3(\text{Si}_3\text{Al})\text{O}_{10}(\text{OH})_2$
Calcite (CAL)	CaCO_3
Chalcopyrite (CCP)	CuFeS_2
Chlorite (CHL)	$(\text{Mg}, \text{Fe}, \text{Al})_6(\text{Al}, \text{Si})_4\text{O}_{10}(\text{OH})_8$
Chromite	$(\text{FeZn})\text{Cr}_2\text{O}_4$
Cobaltite	CoAsS
Diopside (PYROX)	$(\text{Ca}, \text{Na})(\text{Mg}, \text{Fe}, \text{Al}, \text{Ti})(\text{Si}, \text{Al})_2\text{O}_6$
Electrum	Au_2Ag
Enstatite	MgSiO_3
Epidote (EPI)	$\text{Ca}_2(\text{Fe}^{3+}, \text{Al})\text{Al}_2(\text{Si}_2\text{O}_7)(\text{SiO}_4)(\text{O}, \text{OH})_2$
FeClay	$\text{Na}_{0.3}\text{Fe}_2(\text{Si}, \text{Al})_4\text{O}_{10}(\text{OH})_2 \cdot \text{N}(\text{H}_2\text{O})$
Galena	PbS
Gersdorffite	$(\text{Fe}, \text{Co}, \text{Ni})\text{AsS}$
Gold	Au
Hematite	$\text{Fe}^{3+}_2\text{O}_3$
Hessite	Ag_2Te
Ilmenite	FeTiO_3
Iron	Fe
K-feldspar (KSPAR)	KAlSi_3O_8
Magnetite (MAG)	Fe_3O_4
Millerite	NiS
Monazite	$(\text{La}, \text{Ce})\text{PO}_4$
Muscovite/Sericite (MUSC/SER)	$\text{KAl}_2(\text{AlSi}_3\text{O}_{10})(\text{OH})_2$
Olivine	$(\text{Mg}, \text{Fe})_2\text{SiO}_4$
Paragonite (PG)	$\text{NaAl}_2(\text{Si}_3\text{Al})\text{O}_{10}(\text{OH})_2$
Petzite	Ag_3AuTe_2
Platinum	Pt
Pyrite (PY)	FeS_2
Pyrophyllite (PYRO)	$\text{AlSi}_2\text{O}_5(\text{OH})$
Pyrrhotite	$\text{Fe}_{(1-x)}\text{S}$
Quartz (QTZ)	SiO_2
Rutile (RUT)	TiO_2
Scheelite	CaWO_4
Sepiolite (SEP)	$\text{Mg}_4\text{Si}_6\text{O}_{15}(\text{OH})_2 \cdot 6(\text{H}_2\text{O})$
Siderite (SID)	FeCO_3
Sphalerite	ZnS
Sphene (TIT)	CaTiSiO_5
Stibnite	Sb_2S_3
Tetradymite	$\text{Bi}_2\text{Te}_2\text{S}$
Tetrahedrite	Cu_3SbS_3
Titanomagnetite	$\text{Fe}_{3-x}\text{Ti}_x\text{O}_4$
Tourmaline (TL)	$(\text{Ca}, \text{Na})(\text{Mg}, \text{Fe}^{2+})_3\text{Al}_5\text{Mg}(\text{BO}_3)_3\text{Si}_6\text{O}_{18}(\text{OH}, \text{F})_4$
Xenotime	YPO_4
Zircon	ZrSiO_4

Mineral abbreviations are from XRD Table I.

Appendix L3 – Optical Mineralogy for Selected Humidity Cell Test Samples

Petrography Report

CHARACTERIZATION OF CRUSHED ROCK HOPE BAY PROJECT, NUNAVUT CANADA

Feb 7, 2011

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Background

Ten crushed rock samples from the Hope Bay Project are characterized in this report. Optical reporting was requested by Lisa Barazzuol of SRK Consulting (Canada) Inc. A geological writeup on the Hope Bay project and QXRD data for the samples was provided by Lisa Barazzuol. The samples were received by Kathryn Dunne from Maxxam laboratory at the end of November and submitted for polished thin section production at Vancouver Petrographics Ltd. on Dec. 3, 2010 by Kathryn Dunne. The prepared polished thin sections were received in January and then examined optically by Kathryn Dunne. The purpose of the optical study was to characterize the mineralogy with particular emphasis on sulphide minerals and any carbonate minerals present.

The optical observations are summarized below and petrographic descriptions of polished thin sections with representative photomicrographs follow the summary. All percentages in the descriptions are approximate based on visual estimation.

Definition of terms

Please note that the term “Fe-ox” is used in this report for unknown iron-oxides, -hydroxides, -oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals. The term “rutile” is used in this report for very fine-grained Ti-oxides which may also include leucxene and anatase. The term “sericite” is used in this report as a fine to very fine-grained colourless mica, either muscovite, illite, or paragonite.

Summary

<u>Sample #</u>	<u>Description Page #</u>	<u>Sample #</u>	<u>Description Page #</u>
HC-17	5	HC-50	33
HC-20	9	HC-51	38
HC-24	16	HC-52	43
HC-32	22	HC-53	48
HC-35	28	HC-55	53

The samples comprise fine to coarse rock chips (< 24 mm) and liberated mineral grains. Rock chips represent altered and variably deformed mafic volcanic/intrusive rock, sedimentary rock and quartz veins (based on Rock Type code provided). The alteration and deformation have resulted in strongly foliated and banded rock fragments with virtually no features of the protoliths remaining. Deformation in altered igneous rocks is represented by sericite, chlorite and/or rutile aggregates defining a strong foliation fabric. In some samples, bands of sericite-rutile or chlorite-rutile alternate with massive bands of carbonate-quartz aggregate. Rock chips generally comprises some of the following mineral assemblages: 1) rutile-chlorite-quartz-carbonate, 2) quartz-carbonate, 3) sericite-chlorite-carbonate, 4) albite-quartz-carbonate (Madrid deposit), 5) sericite-rutile±tourmaline ±pyrite and 6) quartz-sericite-carbonate-rutile. Vein fragments comprise quartz±carbonate and carbonate aggregate.

Carbonate occurs in major amounts in the sections (10-50%) with the exception of one quartz vein sample (HC-53) which has trace amounts of carbonate (see tabular summary, over). Carbonate occurs as colourless to locally cloudy brownish, fine to very fine-grained and locally medium-grained aggregates. Carbonate occurs as: 1) anhedral to less commonly rhombic, patchy aggregates within foliated fragments, 2) anhedral aggregates within massive quartz-carbonate and carbonate aggregate, 3) anhedral aggregates within quartz±carbonate vein fragments and carbonate stringers and 4) anhedral liberated grains. Some of the carbonate in sample HC-17 is calcite based on reaction to HCl. In sample HC-24, some of the carbonate is partly replaced by minor (~1%) amounts of Fe-ox which occurs as very fine-grained, red-brown aggregates of unknown composition. In samples HC-50 and HC-52, very fine-grained Fe-ox aggregate occurs rarely partly replacing carbonate. In sample HC-51, very fine-grained Fe-ox aggregate occurs in late fractures.

Summary cont.

Sulphide occurs in trace to major amounts (up to 5%) as pyrite and in trace amounts or rarely as chalcopyrite in most sections (see tabular summary, below). Rare sphalerite is observed as inclusions in pyrite in sample HC-20. Rare amounts of unknown phases are observed in samples HC-20 and HC-55. Pyrite grains are fine to very fine-grained, rarely medium-grained (HC-32), and occur disseminated, as clusters and as patchy sub-anhedral or eu-anhedral grains and aggregate in altered rock fragments and as liberated anhedral grains and aggregate. In sample HC-53, pyrite occurs disseminated in trace amounts in quartz vein fragments. Pyrite grains have irregular to straight grain boundaries which are unaltered. Chalcopyrite grains are fine to very fine-grained and can occur disseminated in rock fragments, as anhedral aggregates associated with pyrite, as inclusions in pyrite or as liberated grains. Chalcopyrite grains are unaltered. Rare, unknown, high reflectance very fine grains occur as aggregates associated with pyrite and as inclusions in pyrite in sample HC-20. Another unknown, highly reflective phase occurs as rare, patchy fine to very fine-grains in sample HC-55.

Tabular summary:

Sample #	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-17	pyrite chalcopyrite	2 tr	colourless, fine to very fine-grained	40		x	chlorite quartz rutile sericite feldspar	40 8 8 1 tr
HC-20	pyrite chalcopyrite unknown sphalerite	5 r r r	colourless to cloudy brownish, fine to very fine-grained	50		x	quartz plagioclase chlorite rutile sericite K-feldspar gold	30 ? 1 1 tr tr r
HC-24	pyrite chalcopyrite	5 tr	colourless, fine to very fine-grained	60	very fine-grained, red-brown	1	plagioclase chlorite quartz rutile sericite	15 10 7 1 tr
HC-32	pyrite chalcopyrite	3 tr	colourless and cloudy brownish, fine to very fine-grained	50		x	quartz chlorite sericite tourmaline rutile	20 15 7 3 1
HC-35	pyrite chalcopyrite	1 r.	cloudy and colourless brownish, very fine to medium-grained	25		x	sericite quartz plagioclase chlorite rutile zircon	25 20 20 7 2 r.
HC-50	pyrite chalcopyrite	5 r.	colourless to cloudy brownish, very fine to medium-grained	30	red-brown unknown	r.	quartz sericite rutile chlorite	40 20 4 r.

Table continued over

Tabular summary (cont.):

Sample #	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-51	pyrite chalcopyrite	tr r.	colourless to cloudy brownish, very fine to medium-grained	50	red-brown unknown	r.	sericite quartz chlorite rutile	20 13 10 6
HC-52	pyrite	2	colourless to cloudy very fine to fine- grained	10	red-brown unknown	r.	quartz sericite rutile ?clay/chlorite	80 6 1 tr
HC-53	pyrite	tr	colourless to cloudy brownish, very fine to fine-grained	tr		x	quartz sericite rutile ?clay/chlorite tourmaline	99 tr tr tr r.
HC-55	pyrite chalcopyrite unknown	1 tr r.	colourless to cloudy brownish, fine to very fine-grained	50		x	quartz chlorite sericite plagioclase rutile tourmaline	25 10 10 2 1 r.

tr = trace (< 1%); r. = rare; x = none observed; fine-grained = > 0.05 mm and < 1 mm; very fine-grained = < 0.05 mm;
 Fe-ox = iron and/or Fe-Ti-oxides, includes amorphous, very fine-grained poorly crystalline and/or crystalline ferric
 hydroxides, oxides, oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals

Project: Hope Bay**Deposit:** Madrid**Zone:** Suluk**Rock Type:** Mafic volcanic with sediments: Flow basalt with interflow chert/argillite/sandstone**Sample ID:** HC-17**Offcut #:** AP-1**Crushed Rock and Offcut Mount Description:**

Fine to coarse angular chips (less than 9 mm size). Chips comprise mostly dark grey, lesser greenish-grey and pale grey very fine-grained rock with texture varying from massive to foliated. Traces of fine-grained pyrite occurs disseminated. Reaction of chips to cold dilute HCl. No reaction of chips to magnet. No reaction of rock chips to etching with HF and staining with sodium cobaltinitrite (no yellow stain).

Polished Thin Section Description:

Fine to coarse chips representing altered and variably deformed rock: 1) fine to very fine-grained, intensely foliated rutile-chlorite± carbonate aggregate locally with bands of fine to very fine-grained quartz-carbonate ±chlorite aggregate, 2) fine to very fine-grained massive quartz-carbonate aggregate and 3) minor patchy very fine-grained sericite±chlorite-carbonate aggregate. A number of irregular stringers of fine to medium-grained carbonate and less commonly fine-grained quartz-carbonate occur in many of the chips. Chlorite comprises approximately 40% of the section as very fine-grained aggregates. Major rutile, approximately 8%, occurs as very fine-grained aggregates within the foliation and replacing fine-grained disseminated tabular forms. Quartz, approximately 8%, occurs as fine to very fine-grained (< 0.2 mm) patchy, anhedral aggregates commonly with undulose extinction. Locally quartz occurs as very fine-grained pressure fringes to pyrite grains in foliated rock fragments. Sericite occurs in minor amounts, ~ 1%, as very fine-grained flaky aggregates. Traces of feldspar occur within rock fragments with quartz-carbonate aggregate and sericite±chlorite-carbonate aggregate.

Carbonate occurs in major amounts (~40%) as colourless carbonate in the following forms: 1) fine to very fine-grained (< 0.1 mm), anhedral aggregates within foliated rutile-chlorite-carbonate fragments, 2) fine to very fine-grained (< 0.6 mm), anhedral aggregates within quartz-carbonate aggregate, 3) very fine-grained aggregate associated with sericite-bearing fragments, 4) fine-grained (< 0.8 mm) anhedral aggregates within carbonate stringers and 5) as fine-grained liberated grains (< 0.7 mm). Note some of the carbonate within quartz-carbonate aggregate and rutile-chlorite-carbonate fragments is strained with local development of undulatory extinction and subgrains. Some of the carbonate is calcite based on reaction of crushed rock to cold, dilute HCl.

Sulphide occurs in minor amounts (~2%) as pyrite and in trace amounts as chalcopyrite. Pyrite grains are fine to very fine grained (< 0.3 mm) and occur as disseminated to patchy sub-anhedral grains and aggregate in altered rock fragments and as liberated anhedral grains and aggregate. Some pyrite grains are highly fractured. Pyrite grains have irregular to straight grain boundaries which are unaltered. Traces of fine to very fine-grained (< 0.2 mm) chalcopyrite occur disseminated in rock fragments, as anhedral aggregates associated with pyrite and as inclusions in pyrite.

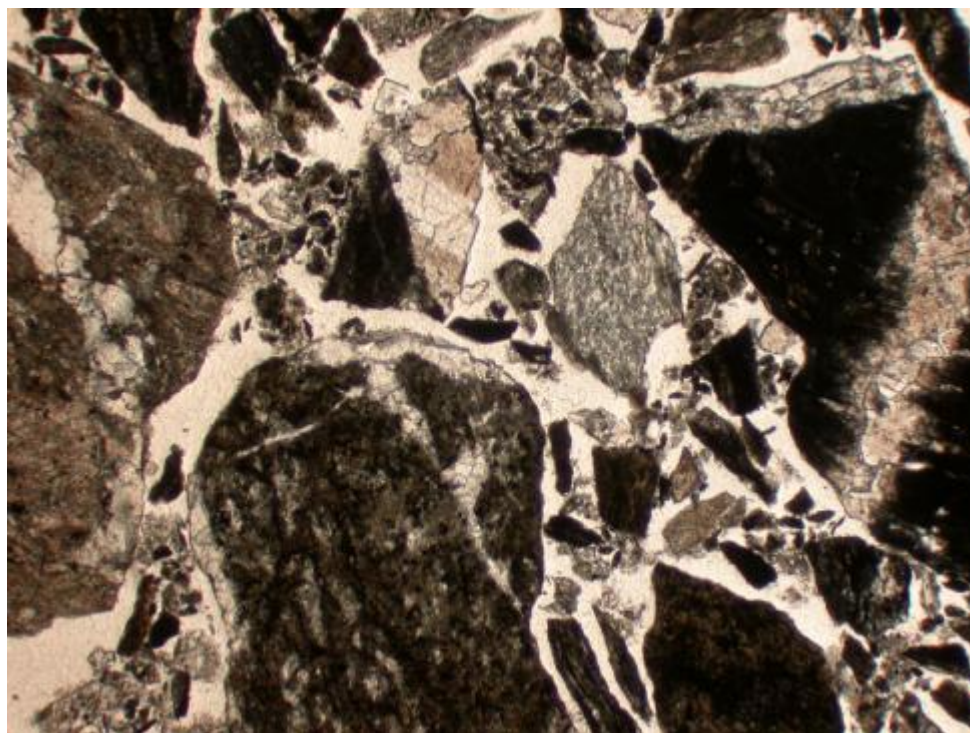
Tabular summary (visual estimate):

Sample # -	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-17	pyrite	2	colourless, fine to very fine-grained	40		x	chlorite	40
	chalcopyrite	tr					quartz	8
							rutile	8
							sericite	1
							feldspar	tr

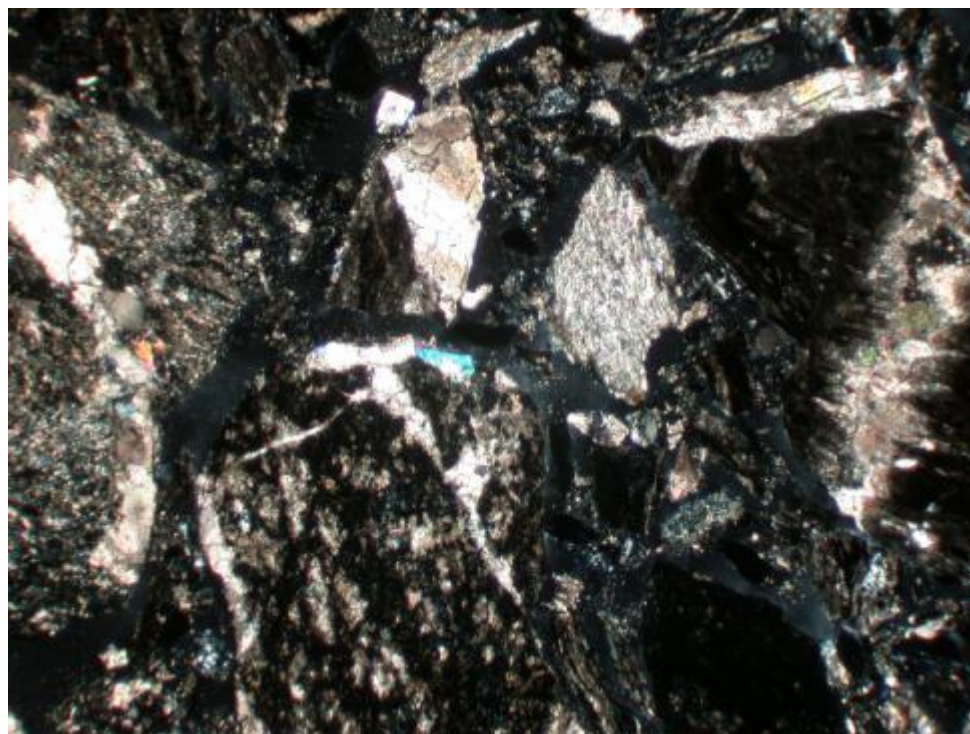
Abbreviations: tr = trace (< 1%); r. = rare; x = none observed

-fine-grained = > 0.05 mm and < 1 mm; very fine-grained = < 0.05 mm; medium-grained = 1-5 mm

-Fe-ox = iron and/or Fe-Ti-oxides, includes amorphous, very fine-grained poorly crystalline and/or crystalline ferric hydroxides, oxides, oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals

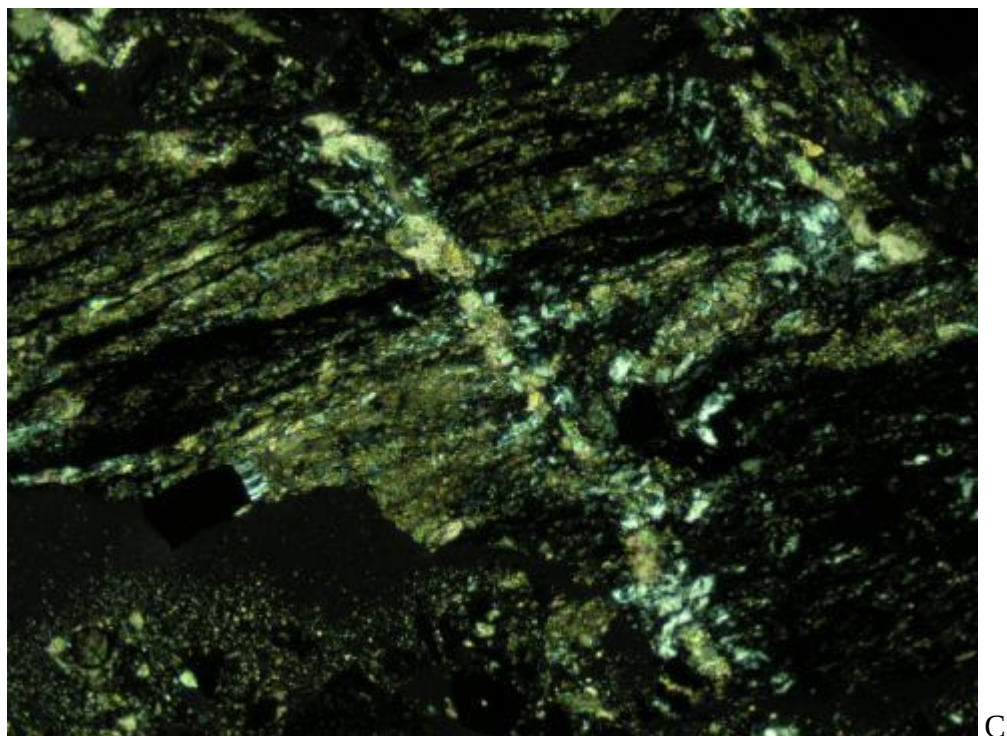


A

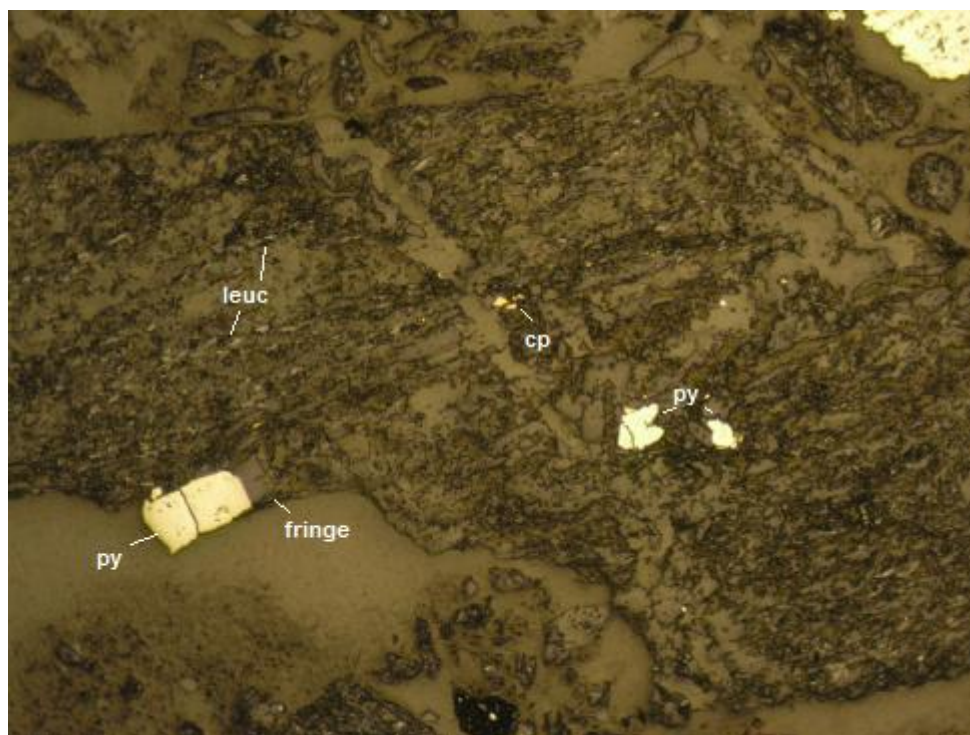


B

HC-17: A&B) View of altered and deformed rock rock chips represented by intensely foliated rutile-chlorite± carbonate aggregate locally with bands of fine to very fine-grained quartz-carbonate ±chlorite aggregate and minor sericite±chlorite-carbonate aggregate cut by irregular stringers of fine carbonate. A) PPL, B) XPL, FOV ≈ 4.5 mm.

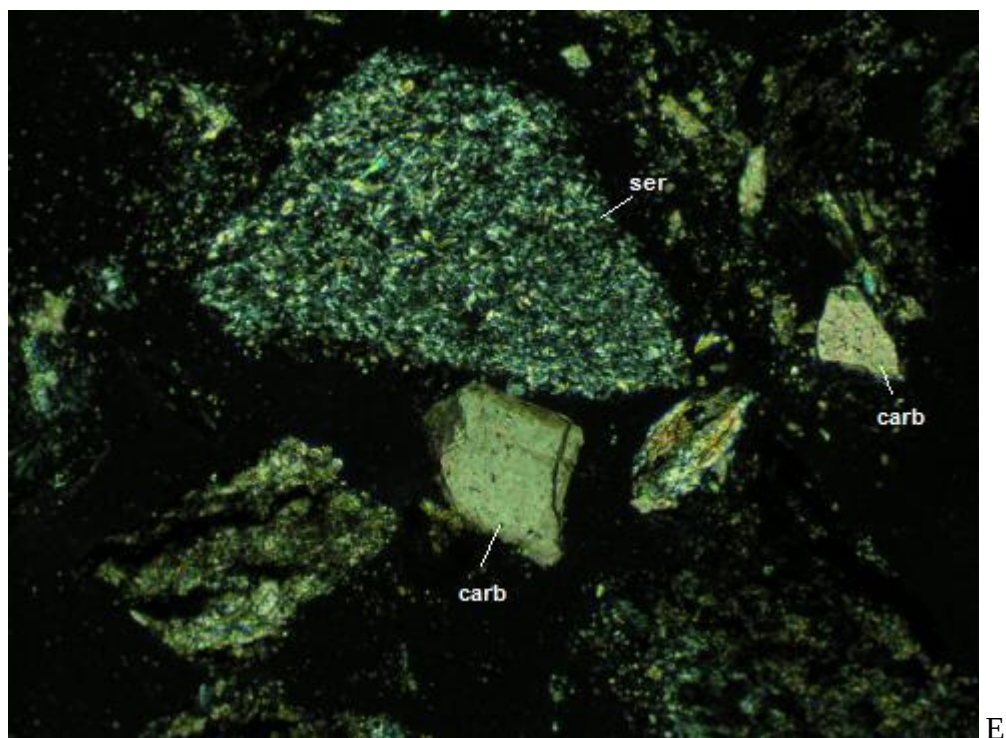


C

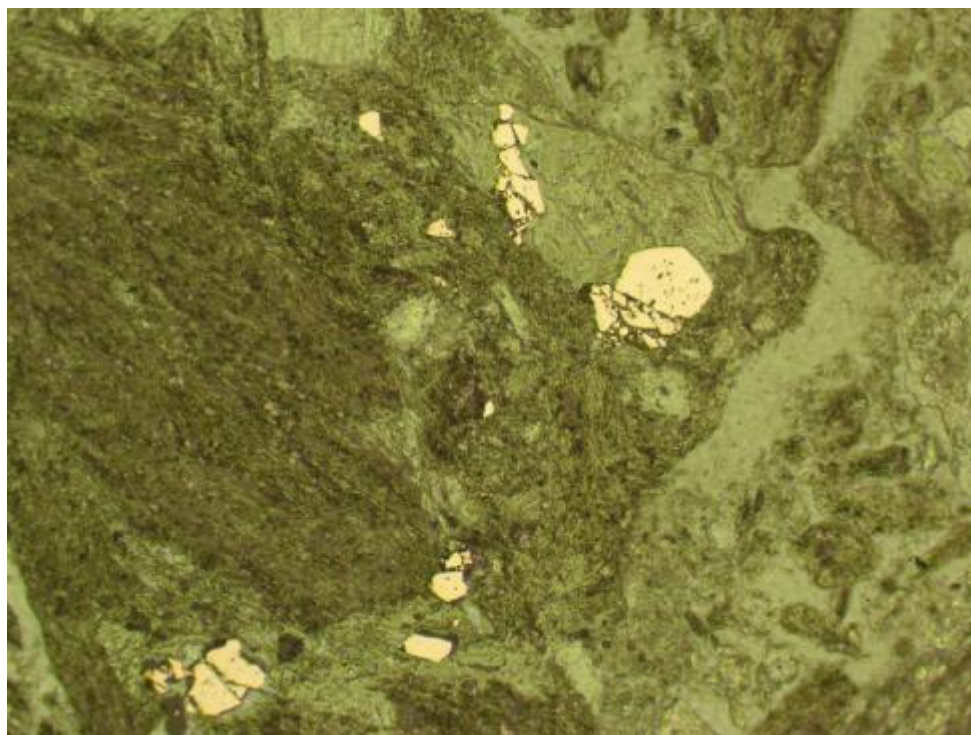


D

HC-17: C&D) Detailed view of foliated rutile-chlorite-carbonate rock fragment cut by carbonate-quartz stringers. Note disseminated pyrite and chalcopyrite. Note pyrite with pressure fringe (left). C) XPL, D) RL, FOV = ~ 2.6 mm



E



F

HC-17: E) Overview of sericite-altered rock fragment (ser), rutile-chlorite-carbonate rock fragments and liberated carbonate grains (carb). XPL, FOV $\approx$ 1.3 mm. F) Fractured anhedral pyrite grains within rutile-chlorite-carbonate rock fragment. PPL+RL, FOV $\approx$ 1.3 mm.

Project: Hope Bay**Deposit:** Madrid**Zone:** Naartok E**Rock Type:** Sedimentary units: Argillite**Sample ID:** HC-20**Offcut #:** AP-2**Crushed Rock and Offcut Mount Description:**

Fine to coarse angular chips (less than 9 mm size). Chips comprise dark grey fine-grained rock locally with white siliceous patches. Major disseminated fine-grained pyrite. No reaction of chips to cold dilute HCl. No reaction of chips to magnet. Reaction of rock chips to etching with HF and staining with sodium cobaltinitrite (traces of yellow stain).

Polished Thin Section Description:

Fine to coarse chips representing massive, pyritic rock comprising plagioclase-quartz-carbonate($\pm$ chlorite $\pm$ rutile) aggregate. Quartz occurs as fine-grained, irregular anhedral grains and patchy aggregates (up to 1 mm size) and as very fine-grained aggregates. Fine quartz grains display undulatory extinction and development of subgrains. Locally quartz occurs as very fine-grained pressure fringes to pyrite grains. The amount of quartz in the section is estimated at 30%. Plagioclase, likely mostly albite, occurs as fine-grained (< 0.3 mm) scattered tabular grains and as patchy very fine-grained aggregates with quartz. The amount of plagioclase in the section cannot be estimated accurately optically. Carbonate occurs as fine to very fine-grained anhedral aggregates within rock fragments (as described below) and rarely in veinlets with quartz. In a few fragments, minor chlorite, $\sim 1\%$, occurs as very fine-grained aggregates associated with rutile aggregate. Rutile occurs in minor amounts, $\sim 1\%$, in the section, disseminated as very fine-grained anhedral aggregates and in acicular form. Sericite occurs in trace amounts as very fine-grained flaky aggregates in pyrite pressure fringes and locally as fine ribbons with chlorite. K-feldspar occurs in trace amounts with patchy distribution in some fragments (based on stained offcut).

Carbonate occurs in major amounts ($\sim 50\%$) as colourless to cloudy brownish carbonate in the following forms: 1) fine to very fine-grained (< 0.5 mm), anhedral aggregates within quartz-carbonate aggregate, 2) fine-grained (< 0.4 mm) anhedral aggregates within carbonate $\pm$ quartz veinlets and 3) as fine-grained liberated grains (< 0.25 mm). Note some of the carbonate within quartz-carbonate aggregate is strained with local development of undulatory extinction and subgrains.

Sulphide occurs in major amounts ($\sim 5\%$) as pyrite and rarely as chalcopyrite, an unknown phase and sphalerite. Pyrite grains are fine to very fine grained (< 0.4 mm) and occur as disseminated to patchy eu-anhedral grains and aggregate in altered rock fragments and as liberated grains and aggregate. Pyrite grains have irregular to straight grain boundaries which are unaltered. Rare very fine-grained chalcopyrite occurs disseminated in rock fragments as inclusions in pyrite and as liberated grains. Rare very fine-grained sphalerite occurs as inclusions in pyrite. Rare traces of a very fine-grained, unknown, highly reflective phase (light grey in reflected light, isotropic) occur as aggregates associated with pyrite and as inclusions in pyrite. Rare traces of very fine-grained (~ 5 μ m) gold grains are observed as inclusions in pyrite.

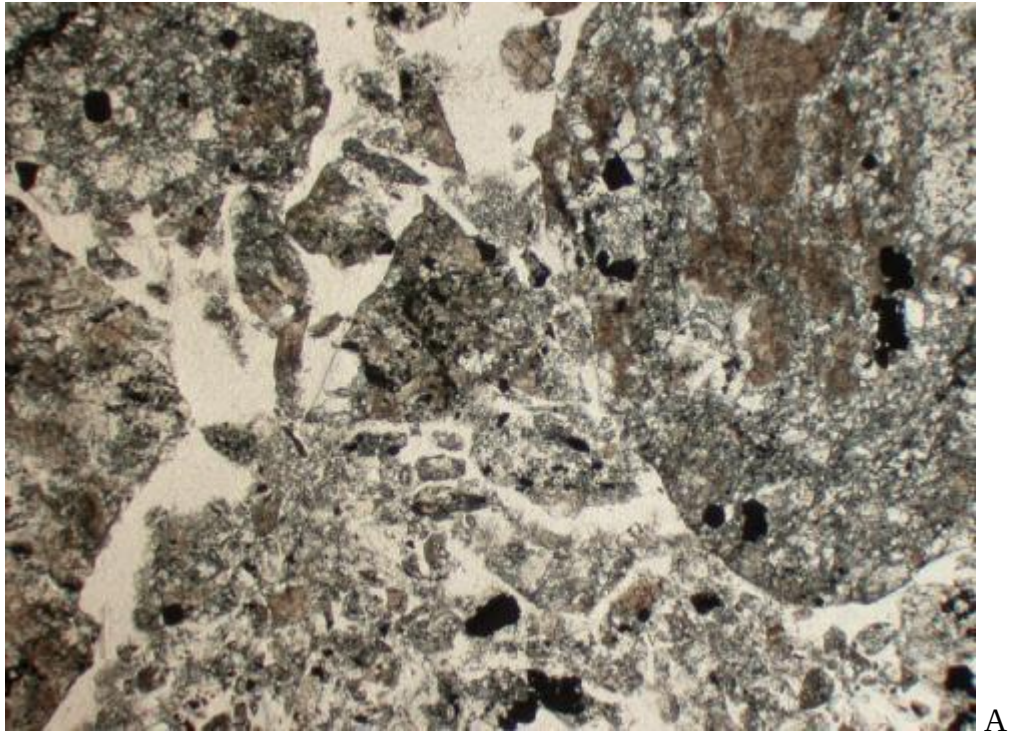
Project: Hope Bay**Deposit:** Madrid**Zone:** Naartok E**Rock Type:** Sedimentary units: Argillite**Sample ID:** HC-20**Offcut #:** AP-2Tabular summary (visual estimate):

Sample # -	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-20	pyrite	5	colourless to cloudy brownish, fine to very fine-grained	50		x	quartz	30
	chalcopyrite	r					plagioclase	?
	unknown	r					chlorite	1
	sphalerite	r					rutile	1
							sericite	tr
							K-feldspar	tr
							gold	r

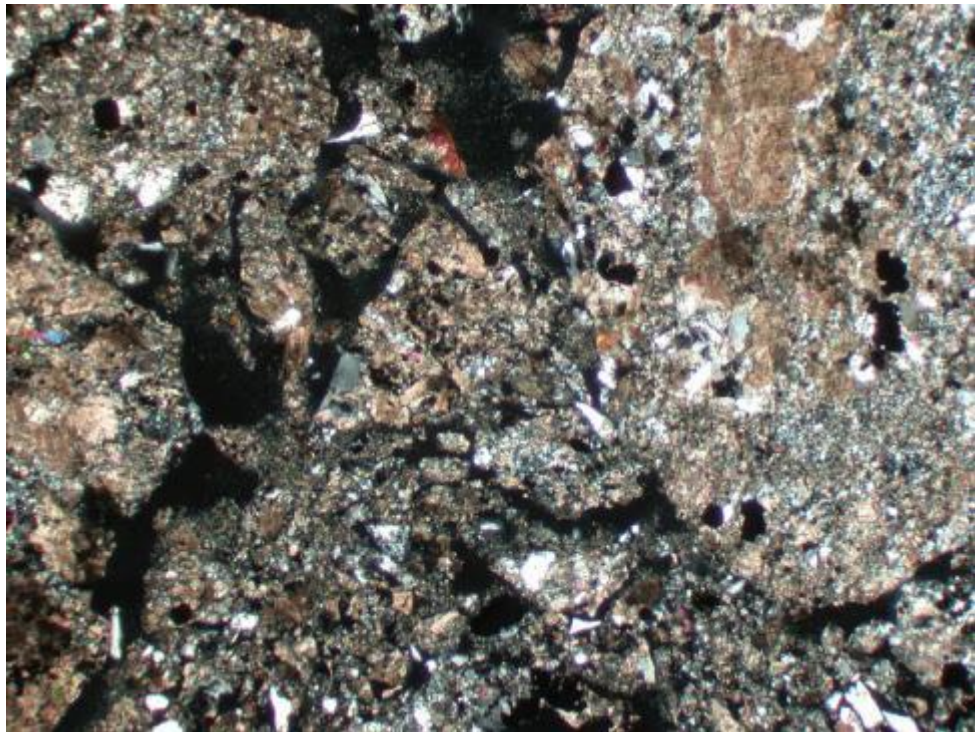
Abbreviations: tr = trace (< 1%); r. = rare; x = none observed

-fine-grained = > 0.05 mm and < 1 mm; very fine-grained = < 0.05 mm; medium-grained = 1-5 mm

-Fe-ox = iron and/or Fe-Ti-oxides, includes amorphous, very fine-grained poorly crystalline and/or crystalline ferric hydroxides, oxides, oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals

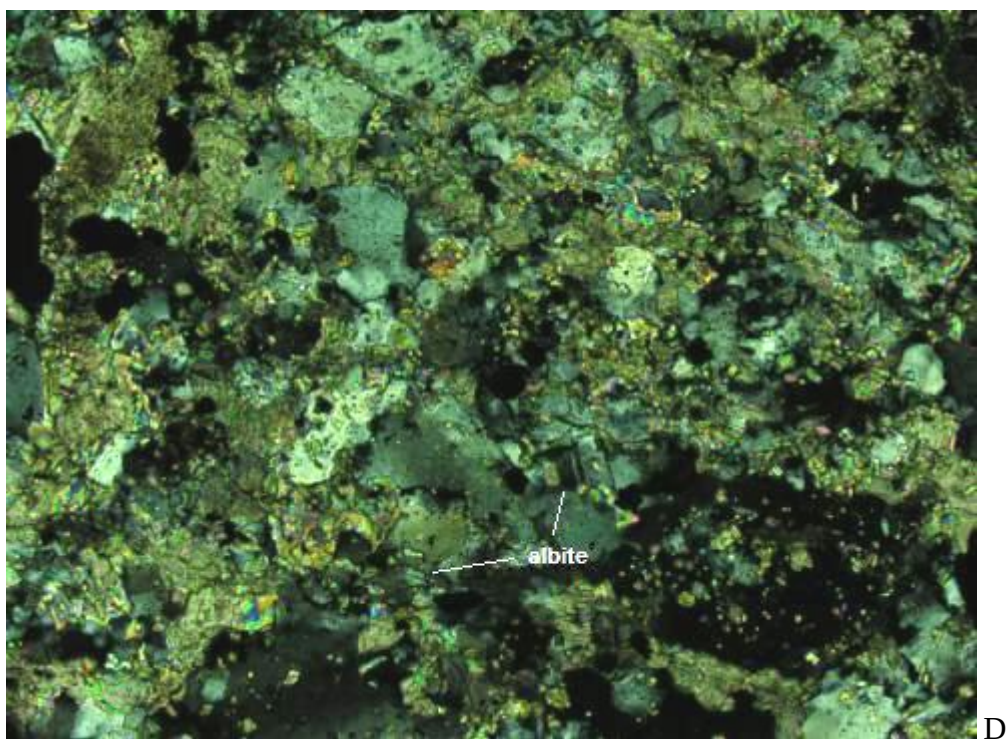
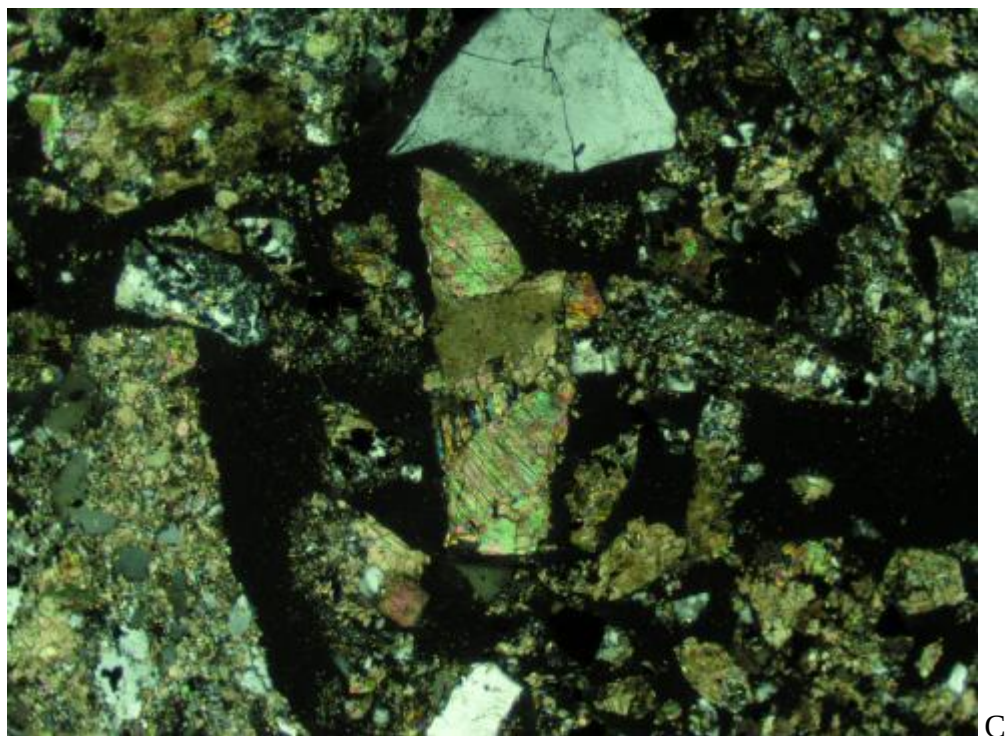


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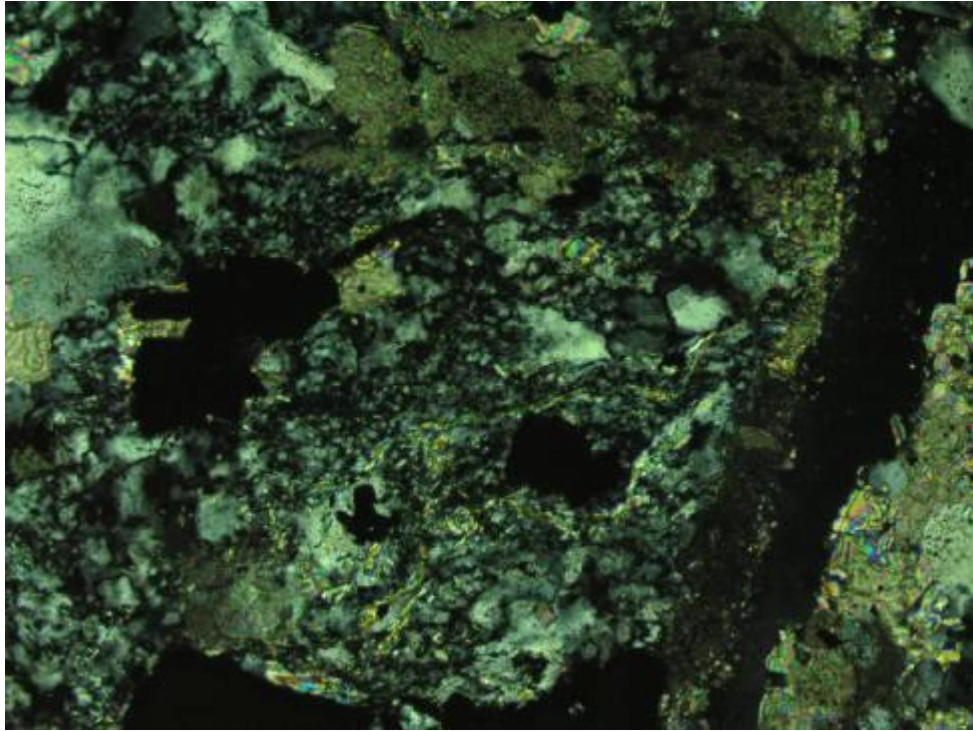


B

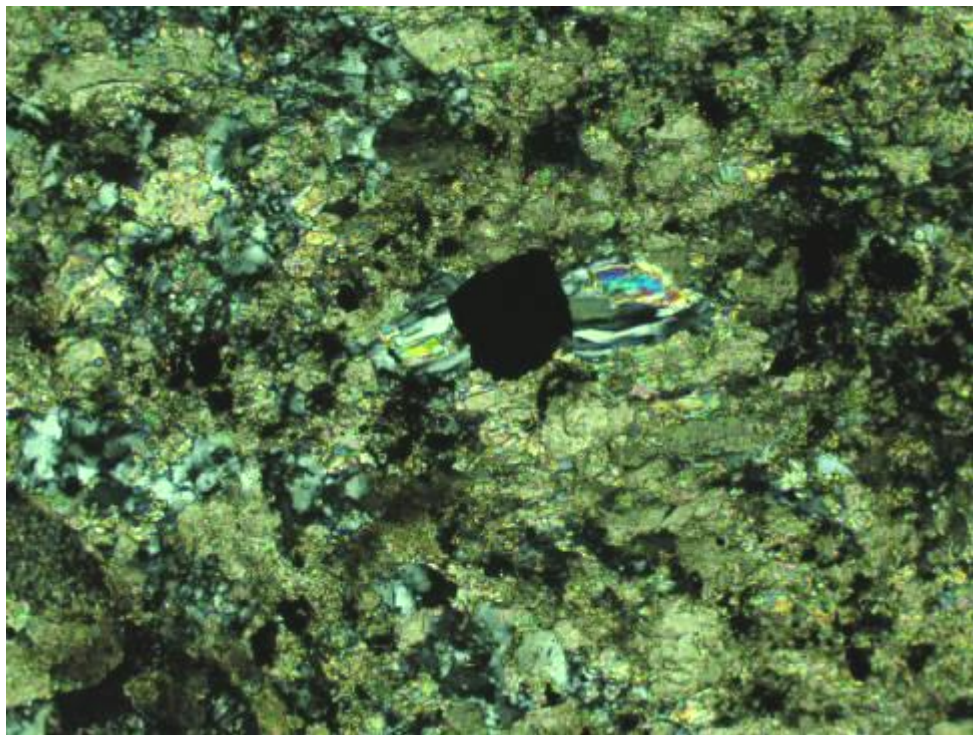
HC-20: A&B) View of pyritic rock comprising plagioclase-quartz-carbonate($\pm$ chlorite $\pm$ rutile) aggregate. A) PPL, B) XPL, FOV $\approx$ 4.5 mm.



HC-20: C) Liberated fine carbonate aggregate (centre). XPL, FOV $\approx$ 2.6 mm. D) Detailed view of plagioclase (albite)-quartz-carbonate aggregate. XPL, FOV $\approx$ 1.3 mm

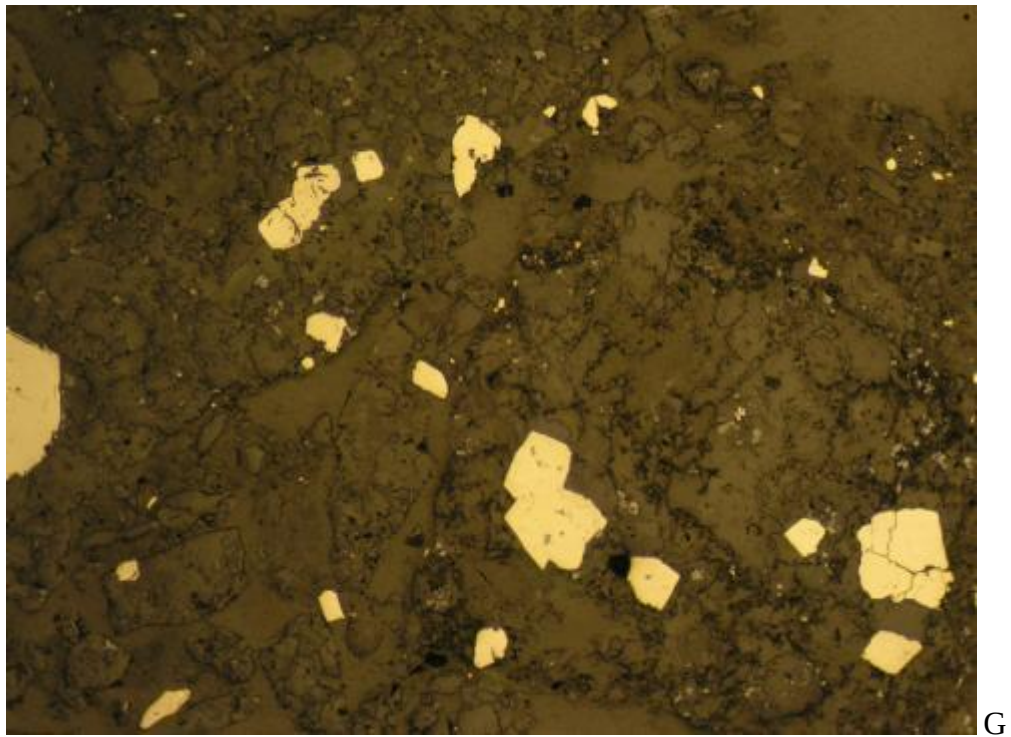


E

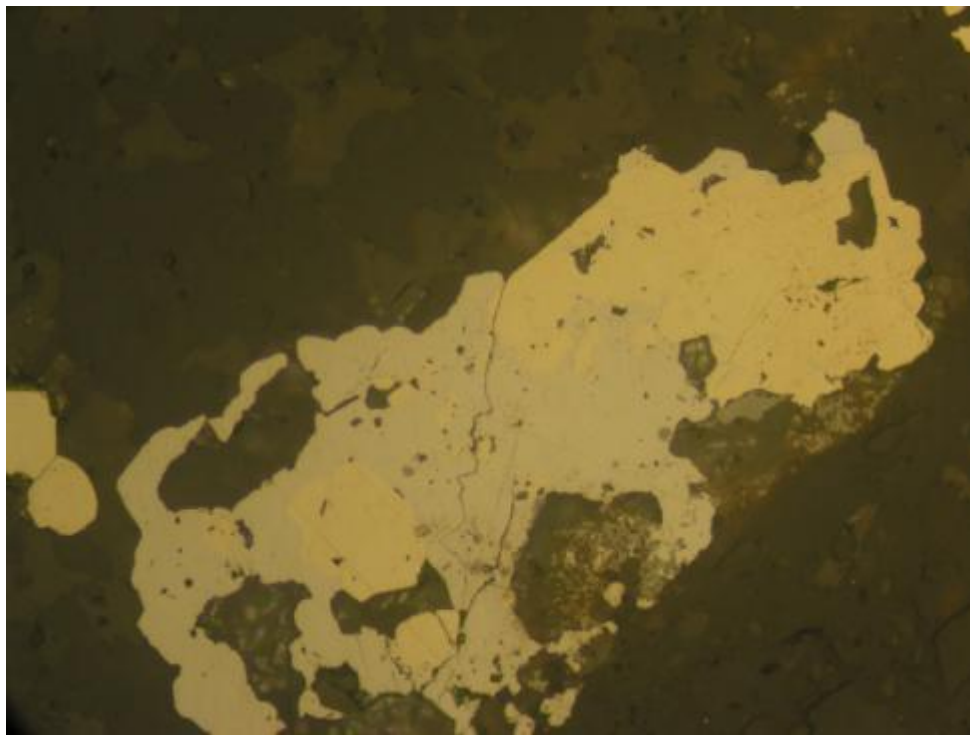


F

HC-20: E) Ribbons of sericite-chlorite within albite-quartz-carbonate aggregate. XPL, FOV $\approx$ 0.7 mm. F) Pyrite grain (opaque, centre) with quartz-sericite pressure fringe. XPL, FOV $\approx$ 1.3 mm.

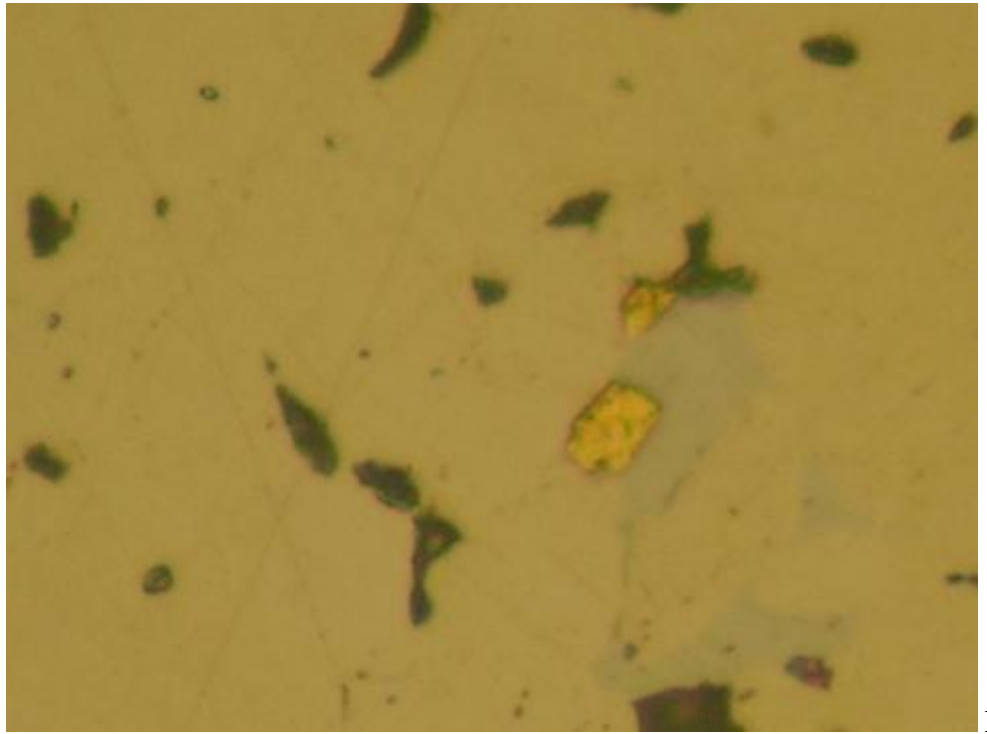


G



H

HC-20: G) Overview of disseminated pyrite within section. RL, FOV $\approx$ 2.6 mm. H) Pyrite and unknown aggregate (light grey). RL, FOV $\approx$ 1.3 mm.



HC-20: I) Inclusions of gold (bright yellow) associated with unknown phase (light grey) within pyrite (yellowish-white). RL, FOV $\approx$ 0.08 mm.

Project: Hope Bay**Deposit:** Madrid**Zone:** Naartok E**Rock Type:** Mafic volcanic: C-type**Sample ID:** HC-24**Offcut #:** AP-3**Crushed Rock and Offcut Mount Description:**

Fine to coarse angular chips (less than 8 mm size). Chips comprise dark grey, olive-brown and lesser brown very fine-grained rock and white granular carbonate aggregate. Minor fine-grained pyrite occurs locally disseminated. No reaction of chips to cold dilute HCl. No reaction of chips to magnet. Minor, ~1%, red-brown stain of some rock chips. Reaction of brown-stained rock chips to etching with HF and staining with sodium cobaltinitrite (minor yellow and strong orange stain).

Polished Thin Section Description:

Fine to coarse chips representing variably altered rock: 1) fine-grained plagioclase laths forming massive aggregate with patchy carbonate alteration, bands of and disseminated very fine-grained rutile and disseminated pyrite grains (note very fine-grained sericite can occur as ribbons in some chips and carbonate can occur in excess of plagioclase in some chips), 2) fine to very fine-grained albite-quartz-carbonate aggregate, 3) fine-grained massive quartz-carbonate aggregate, 4) fine-grained carbonate aggregate with very fine-grained sericite occurs as patchy aggregates in some chips, 5) very fine-grained carbonate with bands of graphite±rutile and chlorite, 6) fine to very fine-grained pyrite aggregate. Chlorite comprises ~ 10% of the section as very fine-grained aggregates. Rutile occurs in minor amounts, ~1%, disseminated as very fine-grained anhedral aggregates, in acicular form and replacing tabular forms. Quartz, ~ 7%, occurs as fine to very fine-grained (< 0.4 mm) patchy, anhedral aggregates commonly with undulose extinction. Sericite occurs in trace amounts as flaky aggregates forming patches and ribbons. Plagioclase, ~15%, occurs as fine-grained laths (< 0.3 mm) and as fine to very fine albite (< 0.3 mm) within altered rock aggregates.

Carbonate occurs in major amounts (~60%) as colourless carbonate in the following forms: 1) fine to very fine-grained (< 0.3 mm), anhedral aggregates as replacement of rock fragments, 2) fine to very fine-grained (< 0.6 mm) anhedral aggregates within quartz-carbonate and carbonate aggregate, and 3) as fine-grained liberated grains (< 0.6 mm). Note some of the carbonate within quartz-carbonate aggregate is strained with local development of undulatory extinction and subgrains. Note that Fe-ox, occurs as very fine-grained, red-brown unknown aggregates replacing carbonate in minor amounts, ~1%, resulting in a red-brown colouration of some chips.

Sulphide occurs in major amounts (~5%) as pyrite and in trace amounts as chalcopyrite. Pyrite grains are fine to very fine grained (< 0.25 mm) and occur disseminated, as clusters and in patchy sub-anhedral grains and aggregate in altered rock fragments and as liberated anhedral grains and aggregate. Some pyrite grains are strongly pitted. Pyrite grains have irregular to straight grain boundaries which are unaltered. Traces of fine to very fine-grained (< 0.2 mm) chalcopyrite occur disseminated in rock fragments, as anhedral grains associated with pyrite, as infill to pyrite and as inclusions in pyrite.

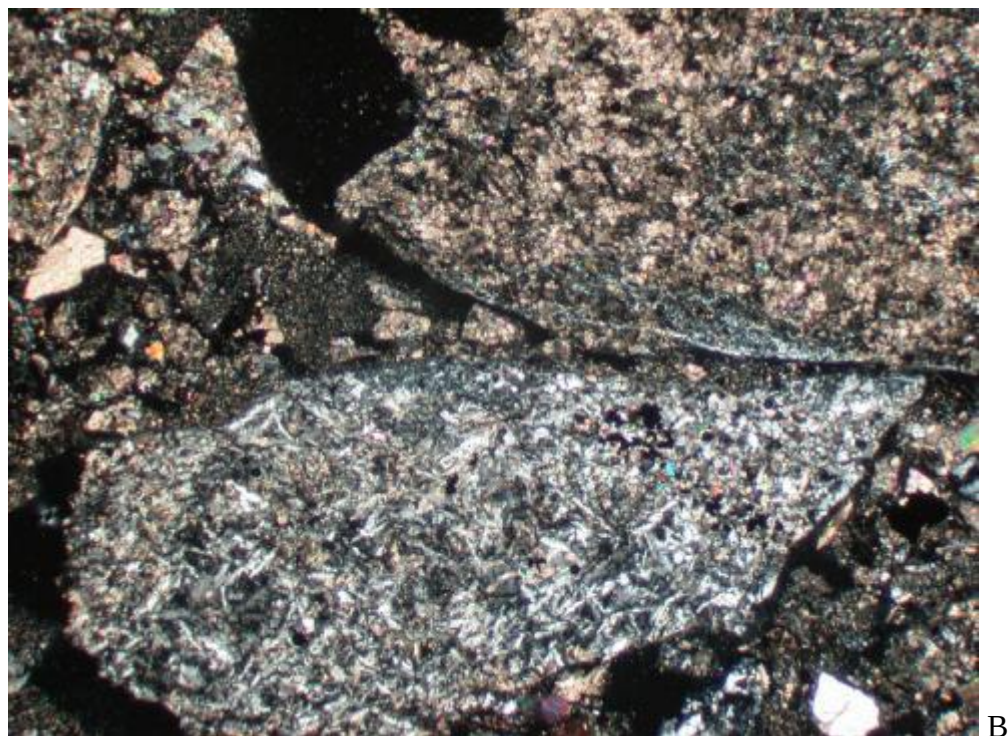
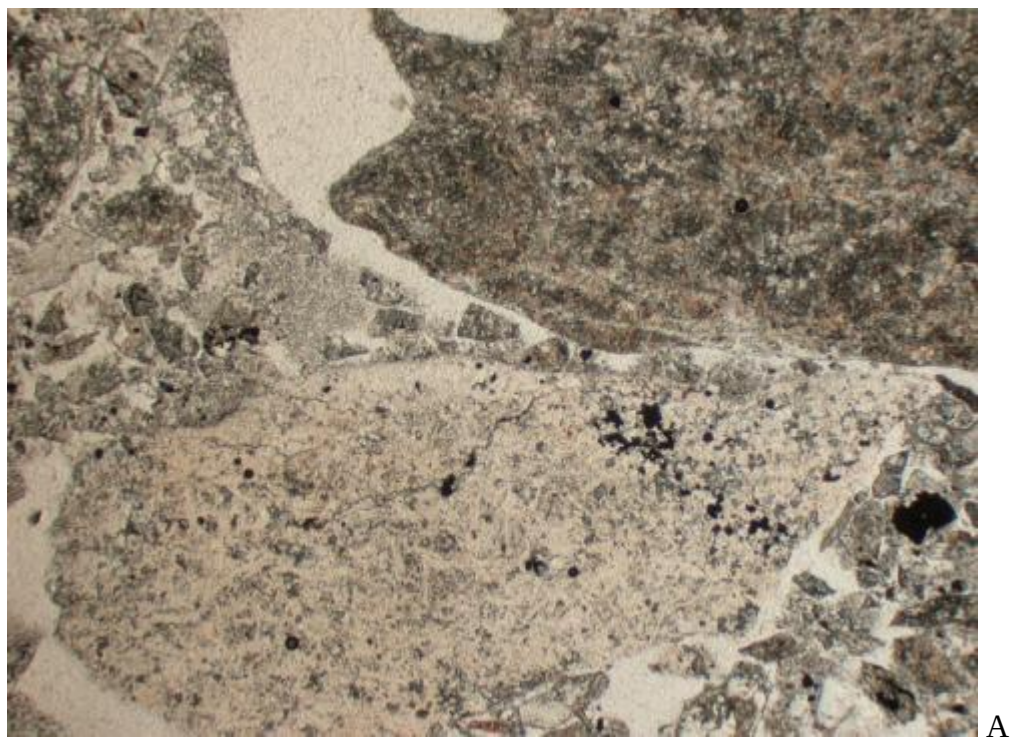
Tabular summary (visual estimate):

Sample # -	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-24	pyrite	5	colourless, fine to very fine-grained	60	very fine-grained, red-brown	1	plagioclase	15
	chalcopyrite	tr					chlorite	10
							quartz	7
							rutile	1
							sericite	tr

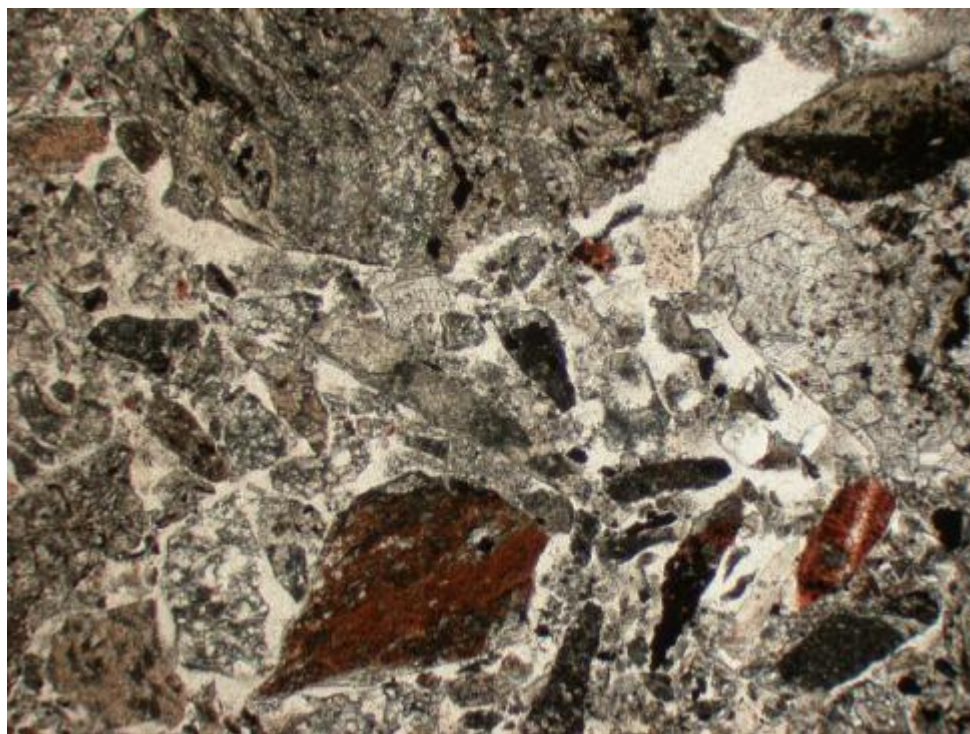
Abbreviations: tr = trace (< 1%); r. = rare; x = none observed

-fine-grained = > 0.05 mm and < 1 mm; very fine-grained = < 0.05 mm; medium-grained = 1-5 mm

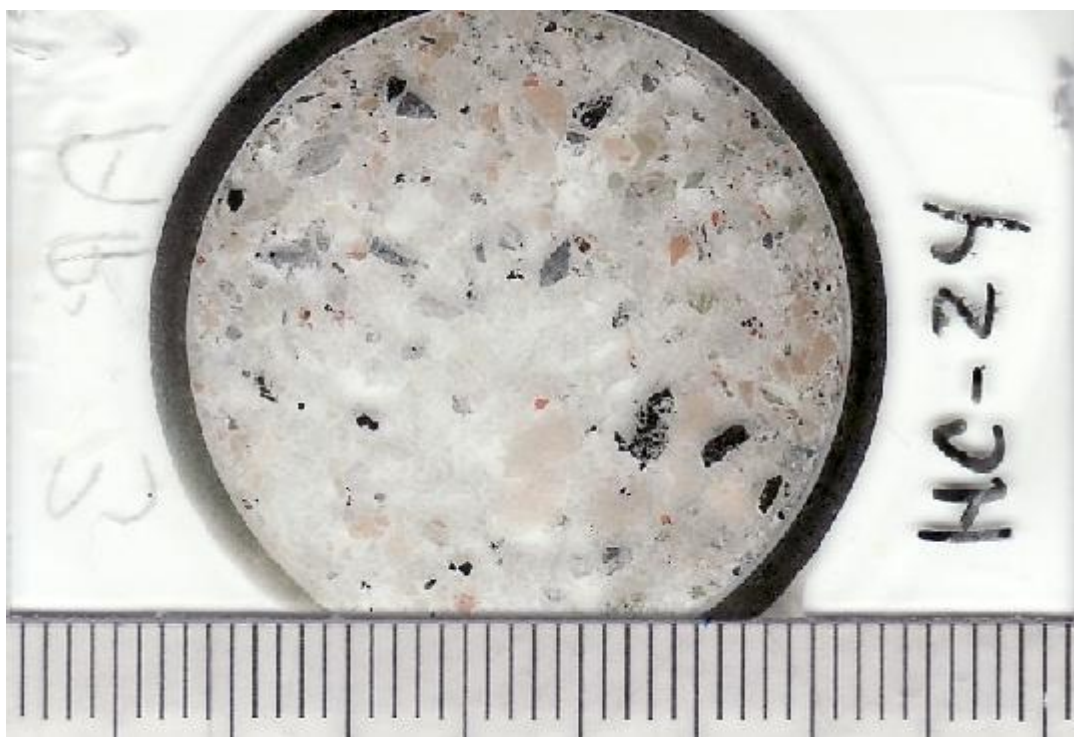
-Fe-ox = iron and/or Fe-Ti-oxides, includes amorphous, very fine-grained poorly crystalline and/or crystalline ferric hydroxides, oxides, oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals



HC-24: A&B) View of altered rock rock chips represented by fine-grained plagioclase laths forming aggregate partly replaced by carbonate (bottom of photo) and chlorite-carbonate aggregate with sericite ribbons (top). A) PPL, B) XPL, FOV $\approx$ 4.5 mm.

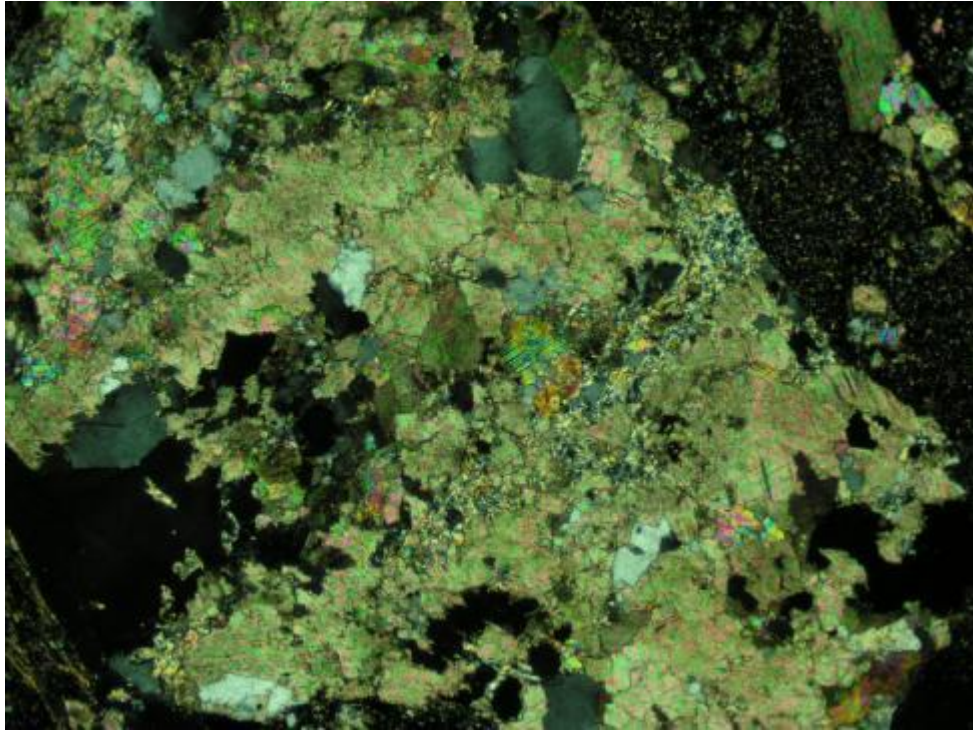


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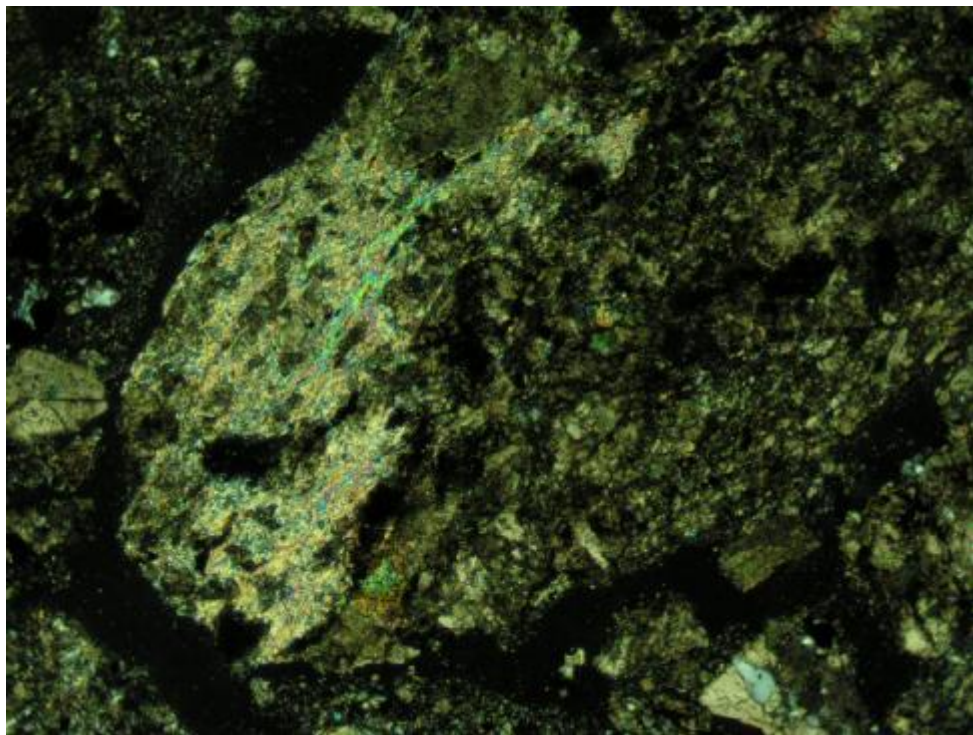


D

HC-24: C&D) Fe-ox as very fine-grained red-brown aggregates replacing carbonate in minor amounts, ~1%, resulting in a red-brown colouration of some chips. C) PPL, FOV = ~ 4.5 mm, D) scan of section, FOV = 4.7 cm.

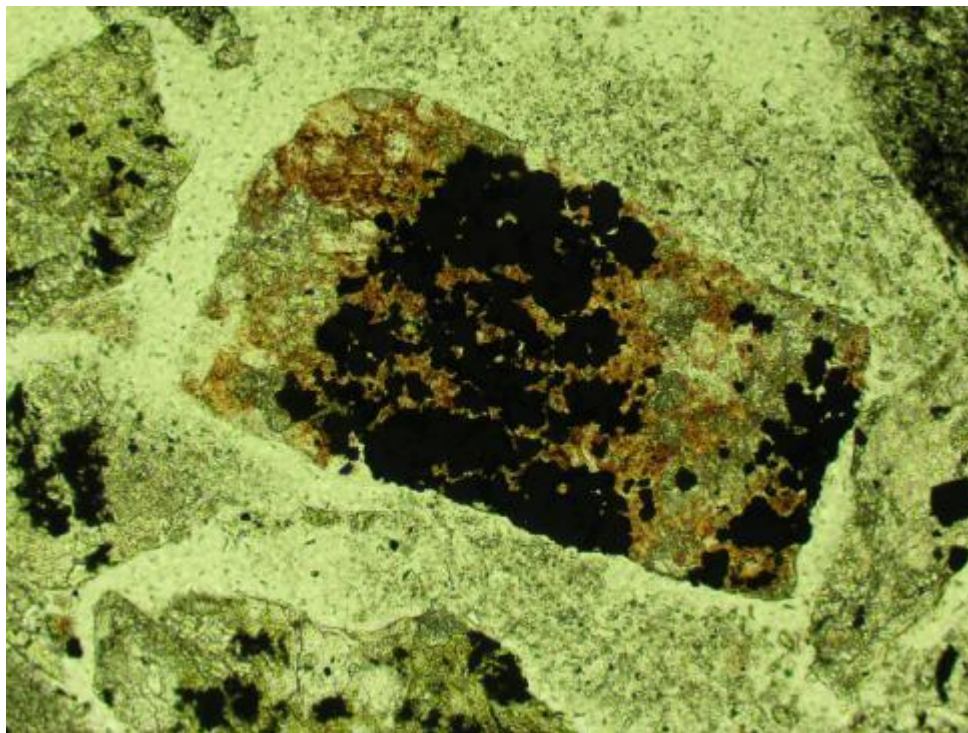


E

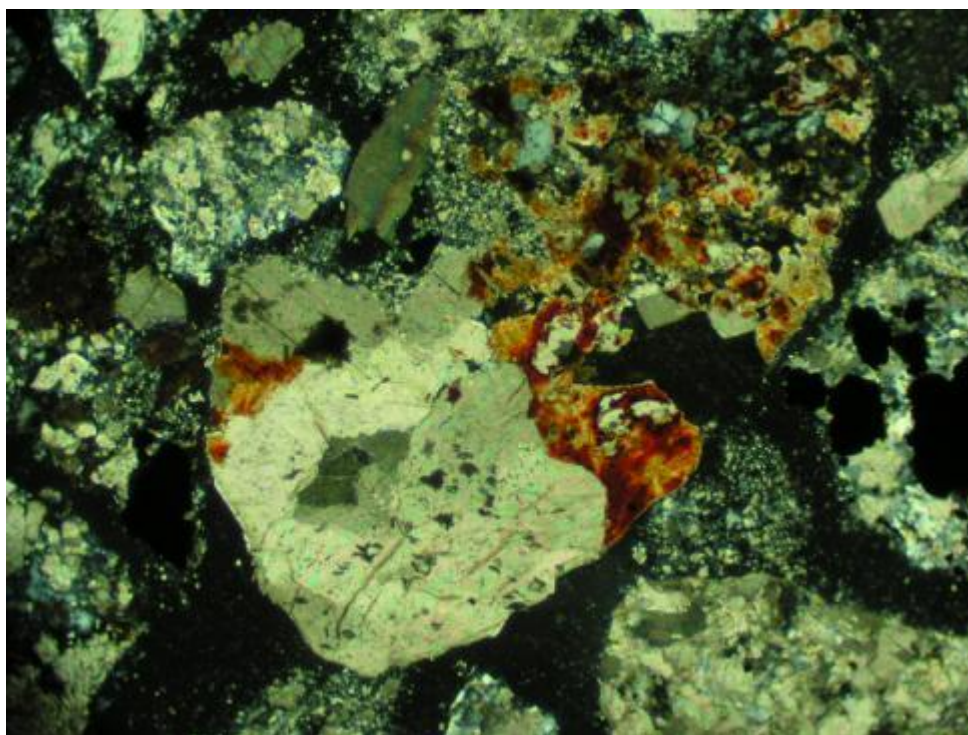


F

HC-24: E) Quartz-carbonate aggregate with patchy sericite. XPL, FOV $\approx$ 2.6 mm. F) Fine-grained carbonate with patchy sericite aggregate. XPL, FOV $\approx$ 2.6 mm.

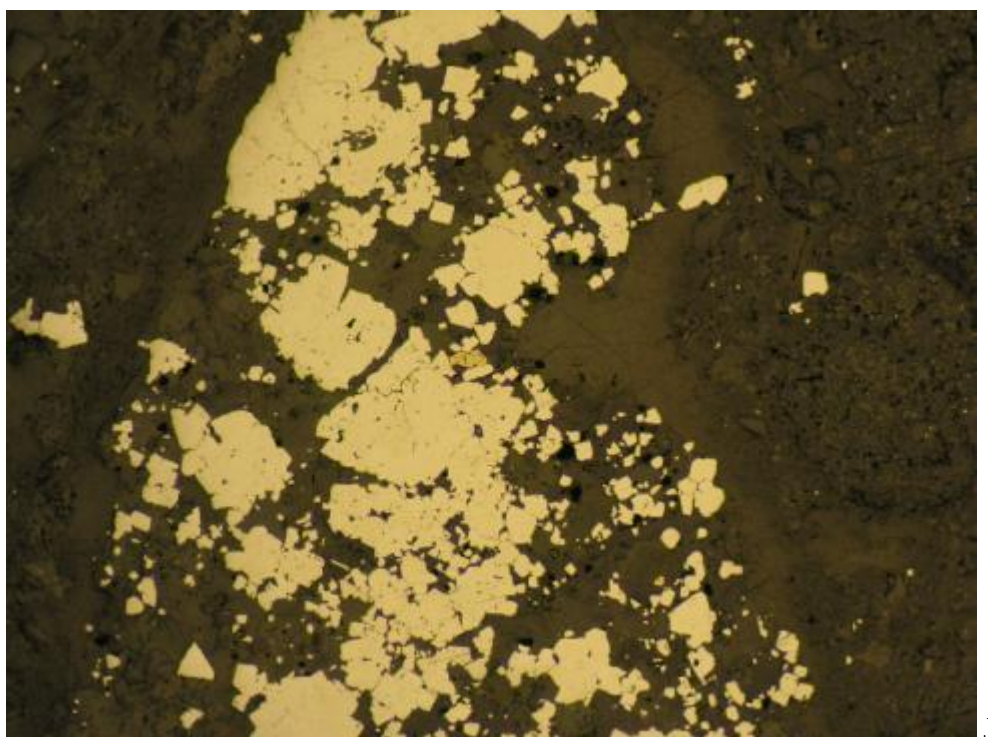
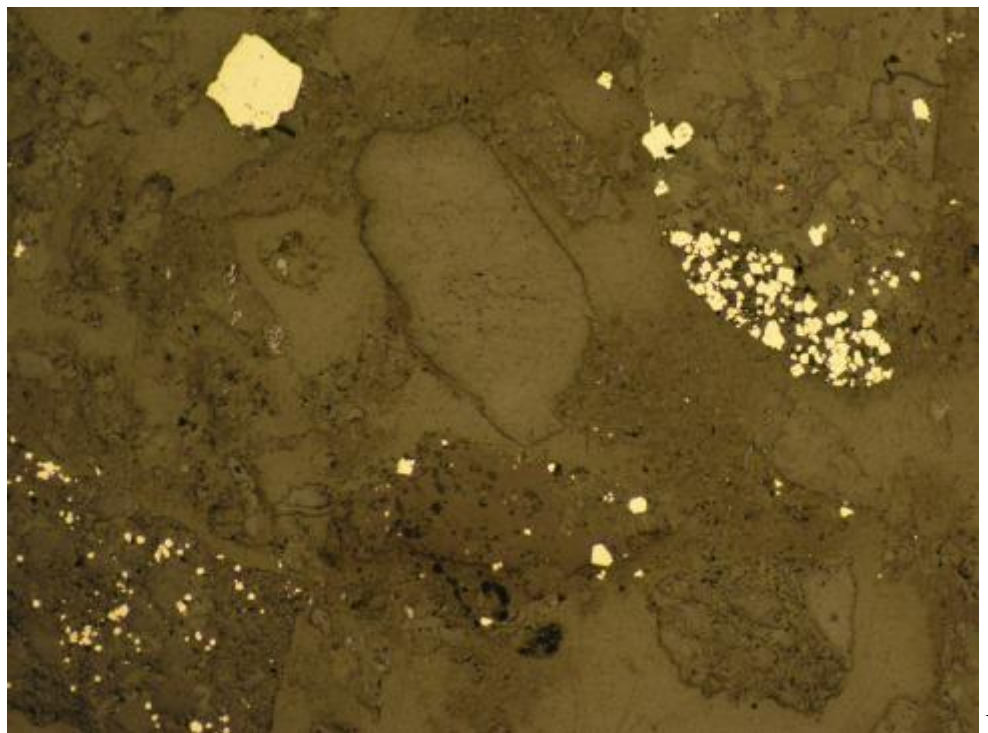


G



H

HC-24: G) Fragment of chlorite-opaques (pyrite)-carbonate with carbonate partly replaced by red-brown Fe-ox aggregate. PPL, FOV $\approx$ 1.3 mm. H) Patchy carbonate aggregate partly replaced by red-brown Fe-ox. XPL, FOV $\approx$ 1.3 mm.



HC-24: I) Representative view of pyrite distribution disseminated, in clusters and as liberated grains. RL, FOV $\approx$ 2.6 mm. J) Cluster of pyrite aggregate with trace chalcopyrite (yellow, centre). RL, FOV $\approx$ 1.6 mm.

Project: Hope Bay**Deposit:** Boston**Zone:** Boston**Rock Type:** Mafic volcanic with sediments: Heterolithic fragmental basalt with interflow chert/argillite/sandstone**Sample ID:** HC-32**Offcut #:** AP-4**Crushed Rock and Offcut Mount Description:**

Fine to coarse angular chips (less than 8 mm size). Chips comprise fine-grained greenish-grey banded rock, translucent material and white quartz vein fragments. Traces of fine-grained pyrite occurs locally disseminated. No reaction of chips to cold dilute HCl. No reaction of chips to magnet. No reaction of chips to etching with HF and staining with sodium cobaltinitrite (no yellow stain).

Polished Thin Section Description:

Fine to coarse chips representing variably altered and variably deformed rock: 1) strongly foliated, very fine-grained sericite aggregate with radiating fine tourmaline, very fine bands of rutile and disseminated pyrite, 2) fine to very fine-grained, strongly foliated and banded quartz-chlorite-rutile-sericite±carbonate and quartz-chlorite-rutile-carbonate aggregate, 3) fine to very fine-grained massive quartz-carbonate aggregate, 4) fine-grained quartz±carbonate±rarely tourmaline aggregate as vein fragments and 5) fine to medium-grained carbonate aggregate. Quartz, carbonate, tourmaline and pyrite occur as liberated grains. Chlorite comprises ~ 15% of the section as very fine-grained aggregates. Tourmaline, ~3%, occurs as fine to very fine-grained (< 0.35 mm), colourless to pale green, acicular and radiating aggregates. Rutile occurs in minor amounts, ~1%, as very fine-grained aggregates in bands, as fine disseminated grains and as patchy aggregates. Quartz, ~ 20%, occurs as very fine-grained patchy, anhedral aggregates in rock fragments and as fine to very fine anhedral aggregates (< 1 mm), commonly with undulose extinction and development of subgrains, in vein fragments. Sericite, ~7%, occurs as very fine-grained anhedral aggregates developed along foliation planes forming a banded texture.

Carbonate occurs in major amounts (~50%) as colourless to cloudy brownish carbonate in the following forms: 1) fine to very fine-grained (< 0.6 mm), anhedral aggregates as replacement of rock fragments, 2) fine to very fine-grained (< 1 mm) anhedral aggregates within quartz±carbonate vein fragments, and 3) as fine-grained liberated grains (< 0.7 mm). Note some of the carbonate is strained with local development of undulatory extinction and subgrains.

Sulphide occurs in minor amounts (~3%) as pyrite and rarely as chalcopyrite. Pyrite grains are fine to medium-grained (< 0.4 mm), subhedral and occur disseminated and as clusters and in altered rock fragments and as fine to medium-grained (< 3 mm) liberated anhedral grains and aggregate. Pyrite grains have irregular to straight grain boundaries which are unaltered. Rare fine to very fine-grained (< 0.1 mm) chalcopyrite occur disseminated in rock fragments and as inclusions in pyrite.

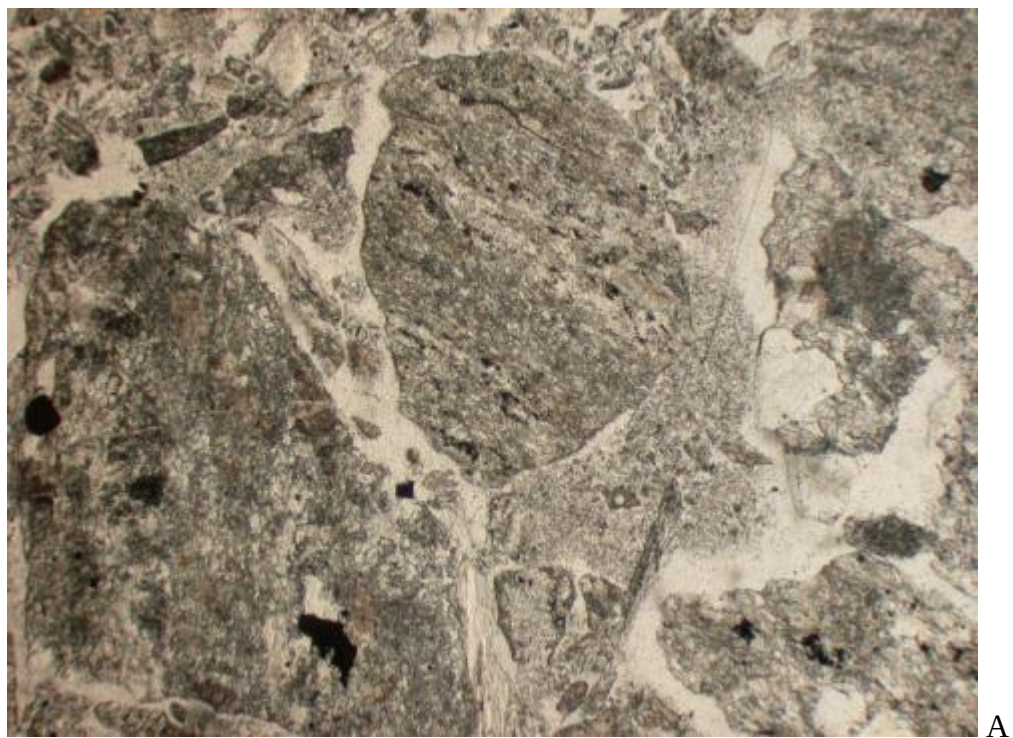
Tabular summary (visual estimate):

Sample # -	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-32	pyrite	3	colourless and cloudy brownish, fine to very fine-grained	50		x	quartz	20
	chalcopyrite	tr					chlorite	15
							sericite	7
							tourmaline	3
							rutile	1

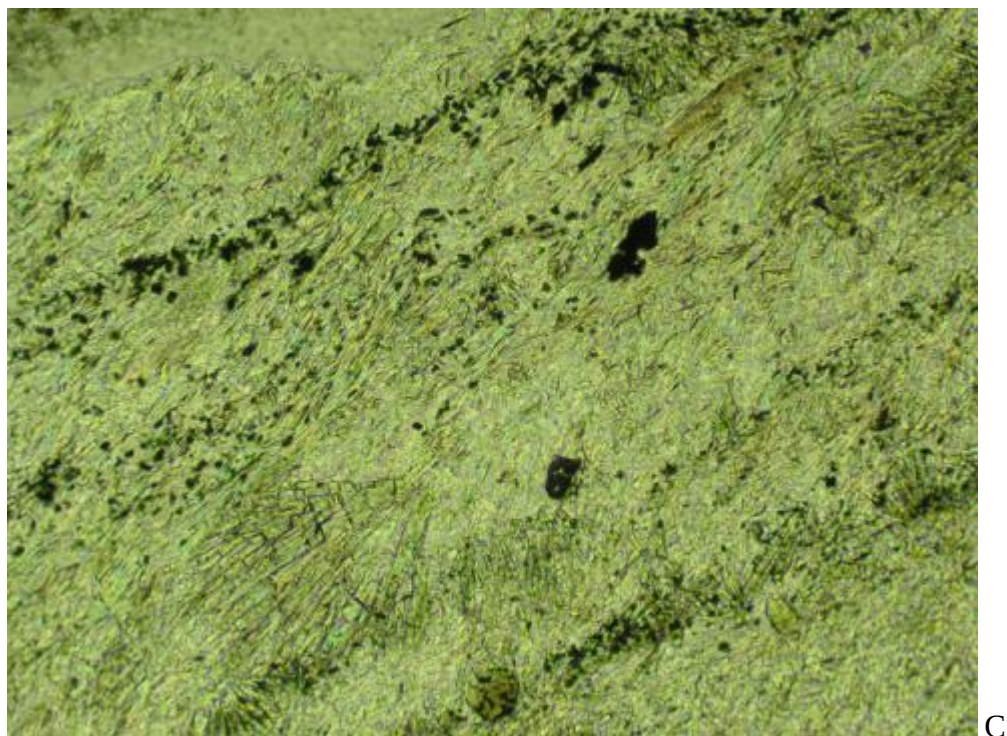
Abbreviations: tr = trace (< 1%); r. = rare; x = none observed

-fine-grained = > 0.05 mm and < 1 mm; very fine-grained = < 0.05 mm; medium-grained = 1-5 mm

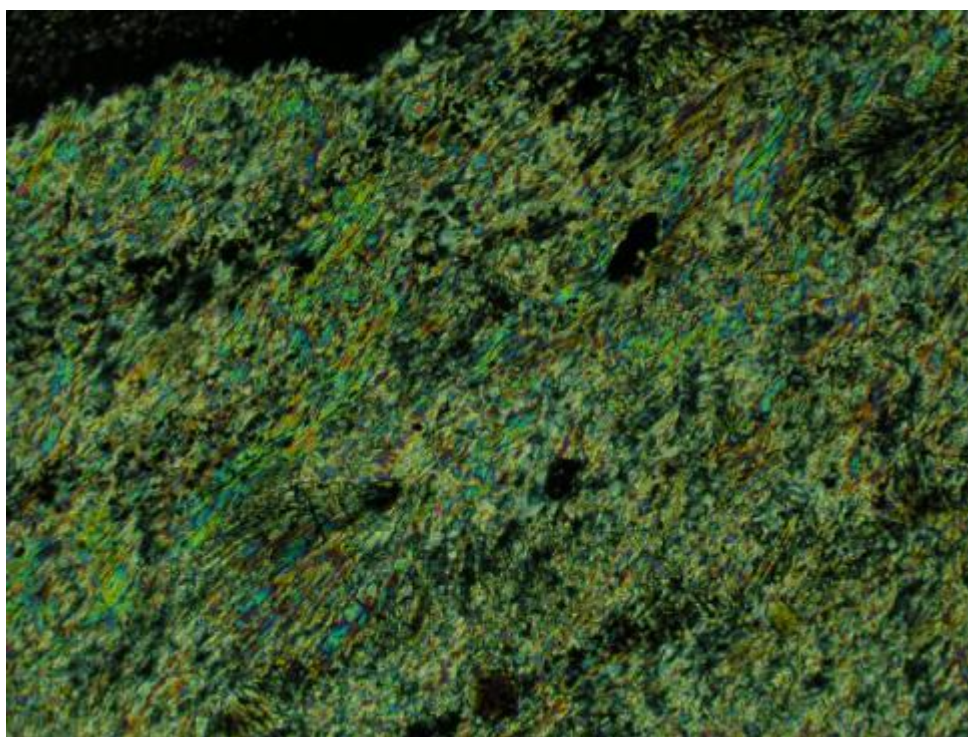
-Fe-ox = iron and/or Fe-Ti-oxides, includes amorphous, very fine-grained poorly crystalline and/or crystalline ferric hydroxides, oxides, oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals



HC-32: A&B) View of banded quartz-chlorite-rutile-sericite-carbonate aggregate with disseminated opaques (pyrite) and quartz-carbonate vein fragment (right). A) PPL, B) XPL, FOV $\approx$ 4.5 mm.

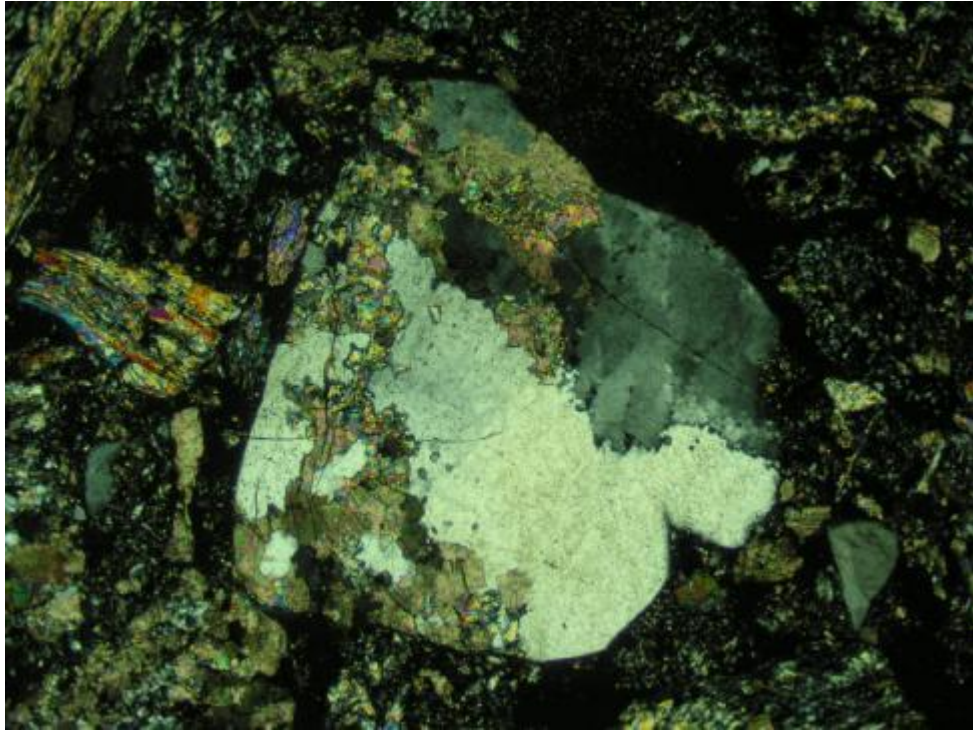


C

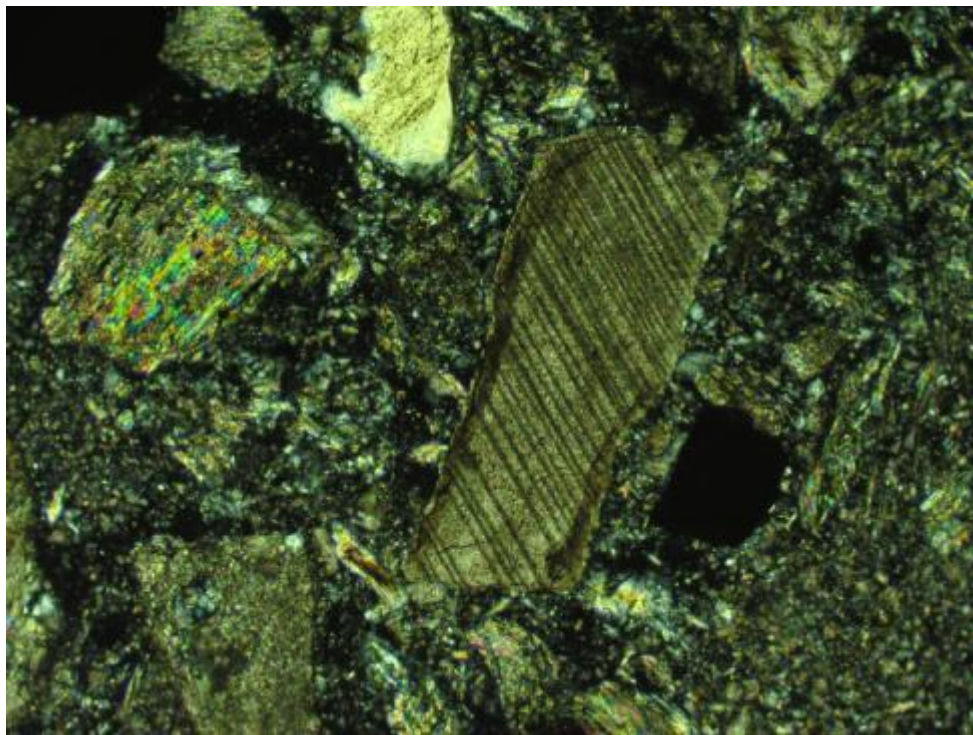


D

HC-32: C&D) Detailed view of sericite aggregate with radiating fine tourmaline, very fine bands of rutile and disseminated pyrite. FOV $\approx$ 4.5 mm, C) PPL, D) XPL.

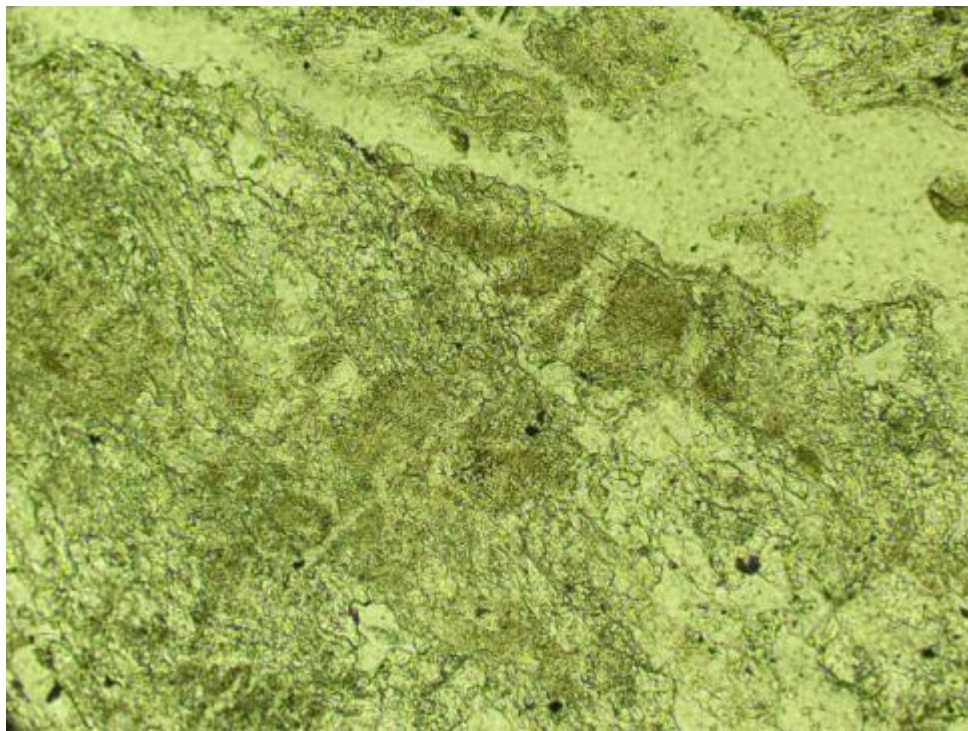


E

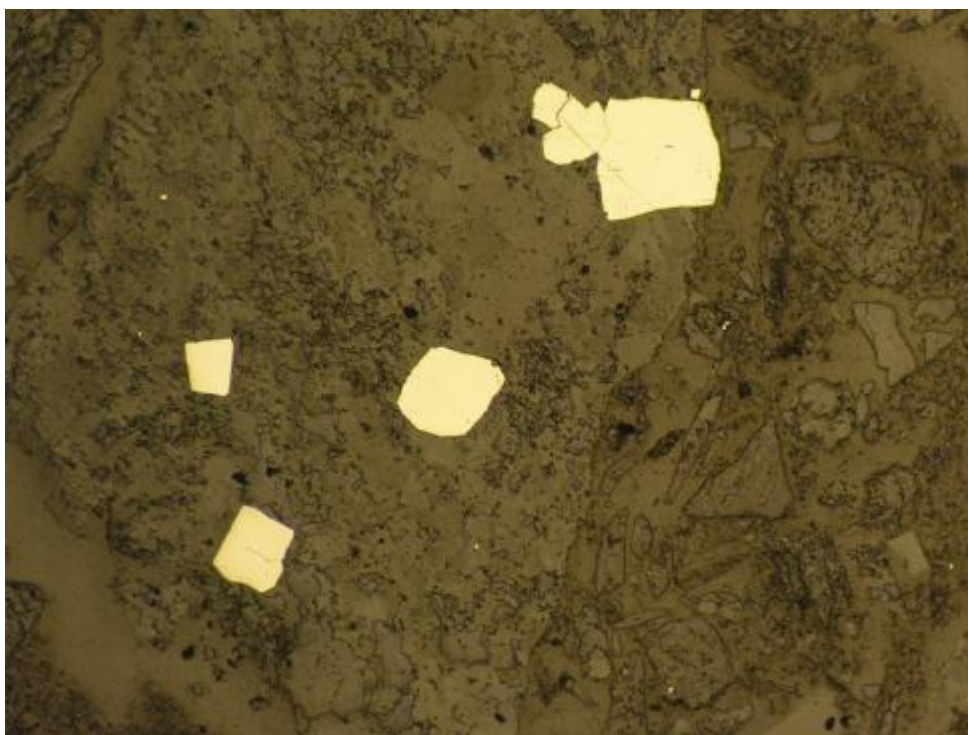


F

HC-32: E) Quartz-carbonate vein fragment (centre) and liberated tourmaline aggregate (left). XPL, FOV $\approx$ 2.6 mm.
F) Liberated cloudy carbonate grain (centre). XPL, FOV $\approx$ 1.3 mm.

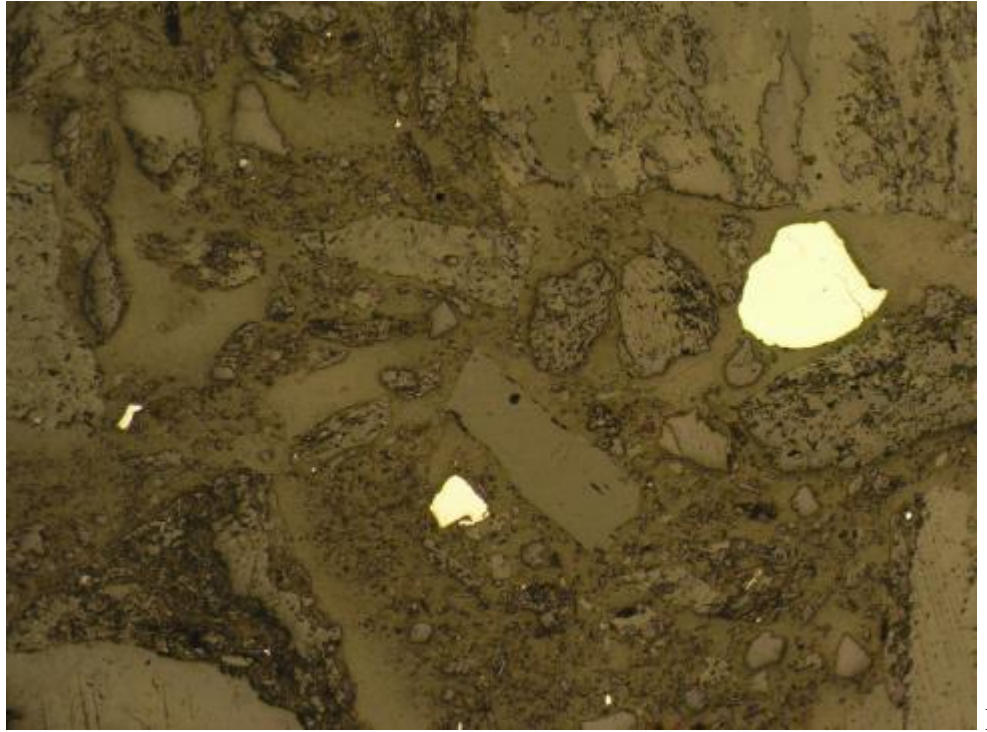


G



H

HC-32: G) Very fine-grained colourless to cloudy brownish carbonate aggregate. PPL, FOV $\approx$ 1.3 mm. H) Disseminated pyrite in quartz-carbonate aggregate. RL, FOV $\approx$ 2.6 mm.



HC-32: I) Liberated pyrite grains. RL, FOV $\approx$ 2.6 mm.

Project: Hope Bay**Deposit:** Boston**Zone:** Boston**Rock Type:** Sedimentary units: Wacke**Sample ID:** HC-35**Offcut #:** AP-5**Crushed Rock and Offcut Mount Description:**

Fine to coarse angular chips (less than 8 mm size). Chips comprise fine-grained greenish-grey and medium to dark grey foliated rock and white vein fragments. No reaction of chips to cold dilute HCl. No reaction of chips to magnet. No reaction of chips to etching with HF and staining with sodium cobaltinitrite (no yellow stain).

Polished Thin Section Description:

Fine to coarse chips representing variably altered and variably deformed rock: 1) foliated rock comprising very fine-grained plagioclase-quartz-chlorite-rutile±sericite aggregate with patchy fine to very fine carbonate aggregate and scattered porphyroclasts of fine-grained anhedral quartz and less commonly plagioclase, 2) fine to very fine-grained quartz aggregate as vein fragments, 3) fine to medium-grained carbonate±quartz aggregate as vein fragments and 4) fine-grained carbonate aggregate as vein fragments. Quartz, carbonate, plagioclase and trace pyrite occur as liberated grains. Chlorite comprises ~ 7% of the section as very fine-grained patchy aggregates within foliated rock fragments. Rutile occurs in minor amounts, ~2%, as very fine-grained aggregates in bands, as fine disseminated grains and as patchy aggregates. Quartz, ~ 20%, occurs as very fine-grained anhedral aggregates with plagioclase in foliated rock fragments, as fine-grained porphyroclasts and as fine to very fine anhedral aggregates (< 0.5 mm), commonly with undulose extinction and development of subgrains, in vein fragments. Plagioclase, ~ 20%, occurs as very fine-grained anhedral aggregates with quartz in foliated rock fragments and as fine-grained porphyroclasts. Sericite, ~25%, occurs as very fine-grained anhedral aggregates developed along foliation planes forming a banded texture. Traces of very fine-grained zircon occur rarely disseminated in the foliated rock fragments.

Carbonate occurs in major amounts (~25%) as colourless to cloudy brownish carbonate in the following forms: 1) fine to very fine-grained (< 0.15 mm), anhedral patchy aggregates as replacement of foliated rock fragments, 2) fine to medium-grained (< 1.5 mm) anhedral aggregates within carbonate±quartz vein fragments, and 3) as fine to medium-grained liberated grains (< 2 mm).

Sulphide occurs in minor amounts (~1%) as pyrite and rarely as chalcopyrite. Pyrite grains are fine to very fine-grained (< 0.1 mm), sub-anhedral and occur disseminated and as clusters and in altered rock fragments and as fine-grained (< 0.6 mm) liberated anhedral grains. Pyrite grains have irregular to straight grain boundaries which are unaltered. Rare fine to very fine-grained (< 0.1 mm) chalcopyrite occur disseminated and clusters in rock fragments.

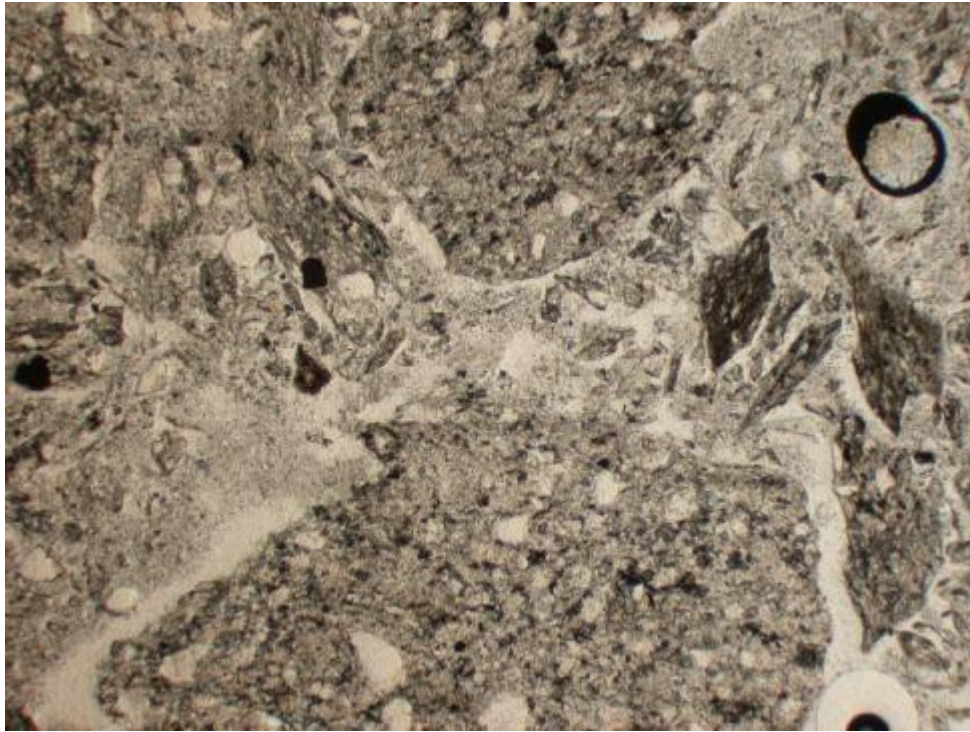
Tabular summary (visual estimate):

Sample # -	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-35	pyrite	1	cloudy and colourless brownish, very fine to medium-grained	25		x	sericite	25
	chalcopyrite	r.					quartz	20
							plagioclase	20
							chlorite	7
							rutile	2
							zircon	r.

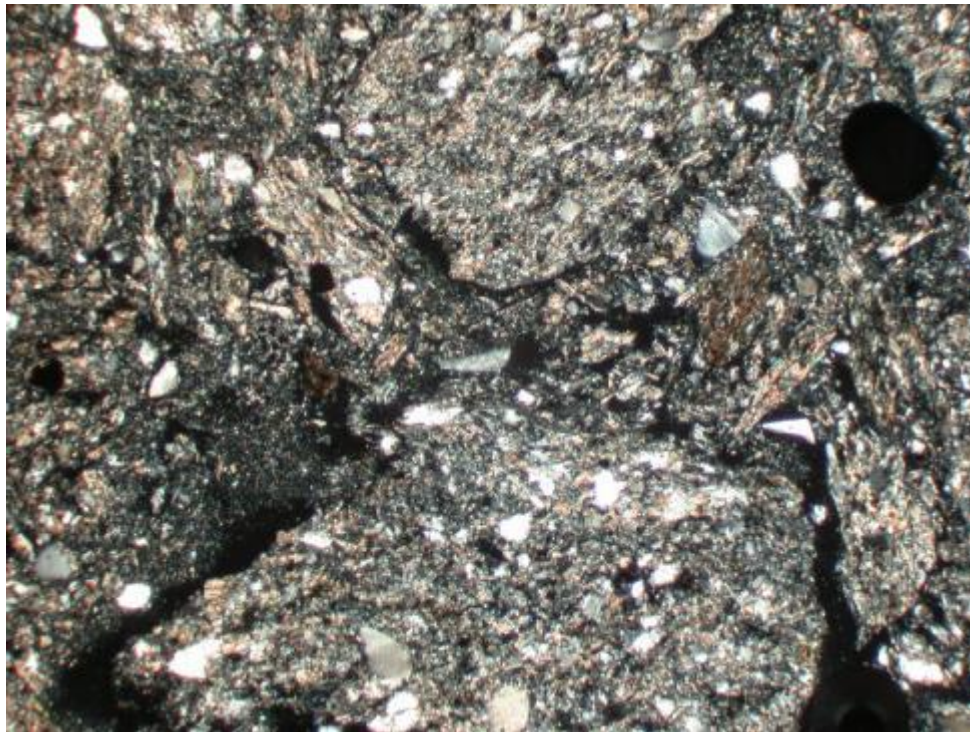
Abbreviations: tr = trace (< 1%); r. = rare; x = none observed

-fine-grained = > 0.05 mm and < 1 mm; very fine-grained = < 0.05 mm; medium-grained = 1-5 mm

-Fe-ox = iron and/or Fe-Ti-oxides, includes amorphous, very fine-grained poorly crystalline and/or crystalline ferric hydroxides, oxides, oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals

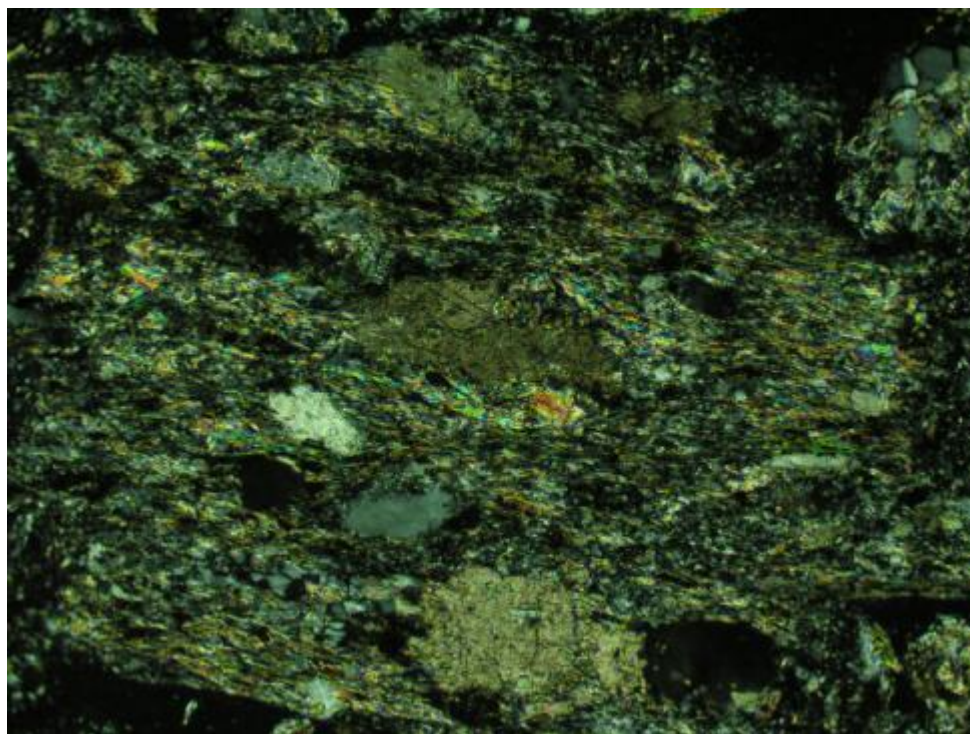


A

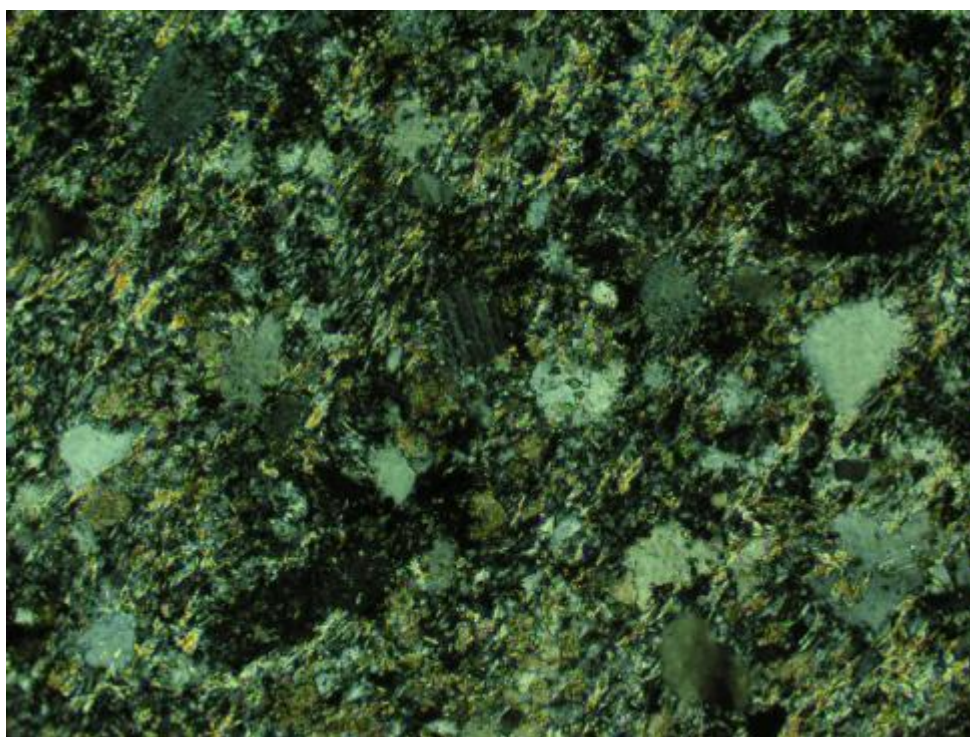


B

HC-35: A&B) View of foliated rock with scattered porphyroclasts of fine-grained anhedral quartz and plagioclase. A) PPL, B) XPL, FOV $\approx$ 4.5 mm.

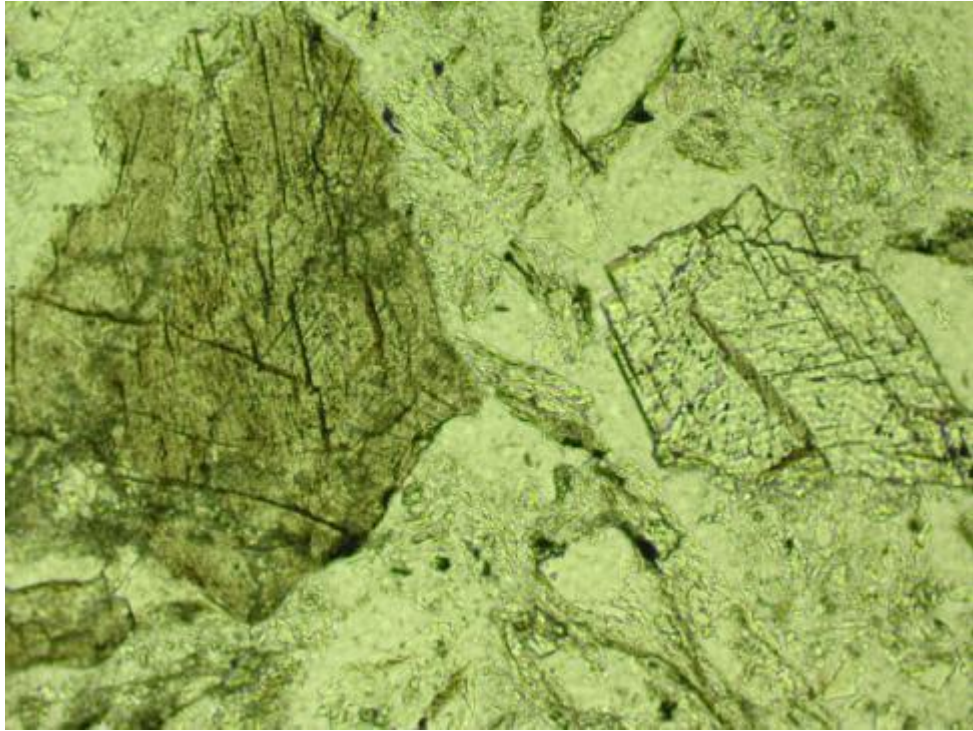


C

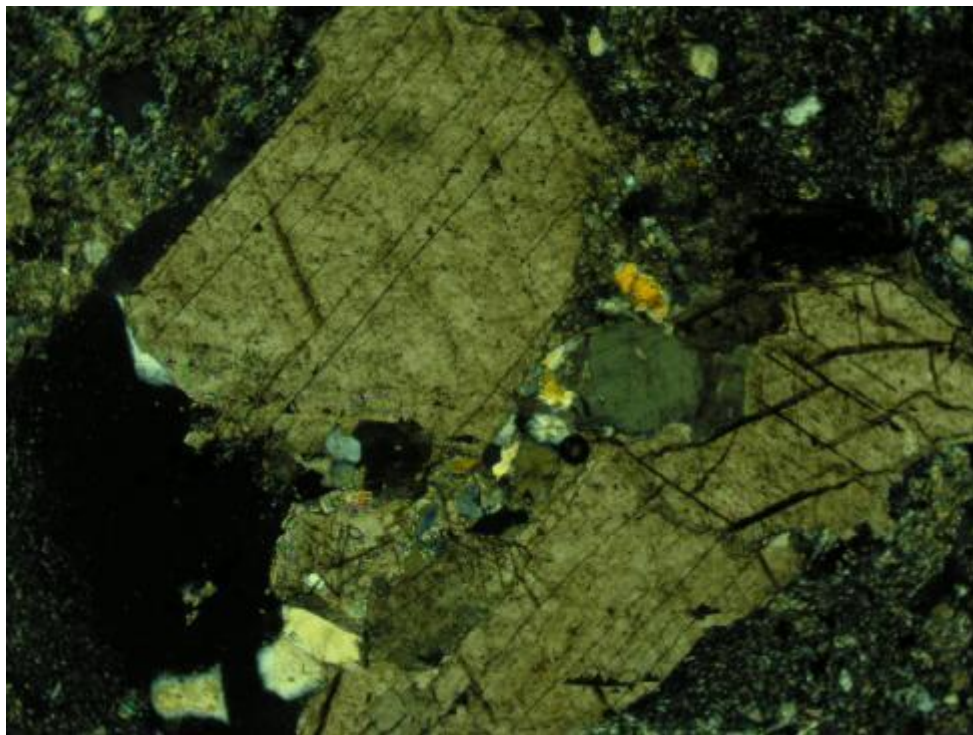


D

HC-35: C&D) Detailed separate views of foliated rock comprising very fine-grained plagioclase-quartz-chlorite-rutile±sericite aggregate with patchy fine to very fine carbonate aggregate and scattered porphyroclasts of fine-grained anhedral quartz and less commonly plagioclase. FOV ≈ 1.3 mm, XPL.

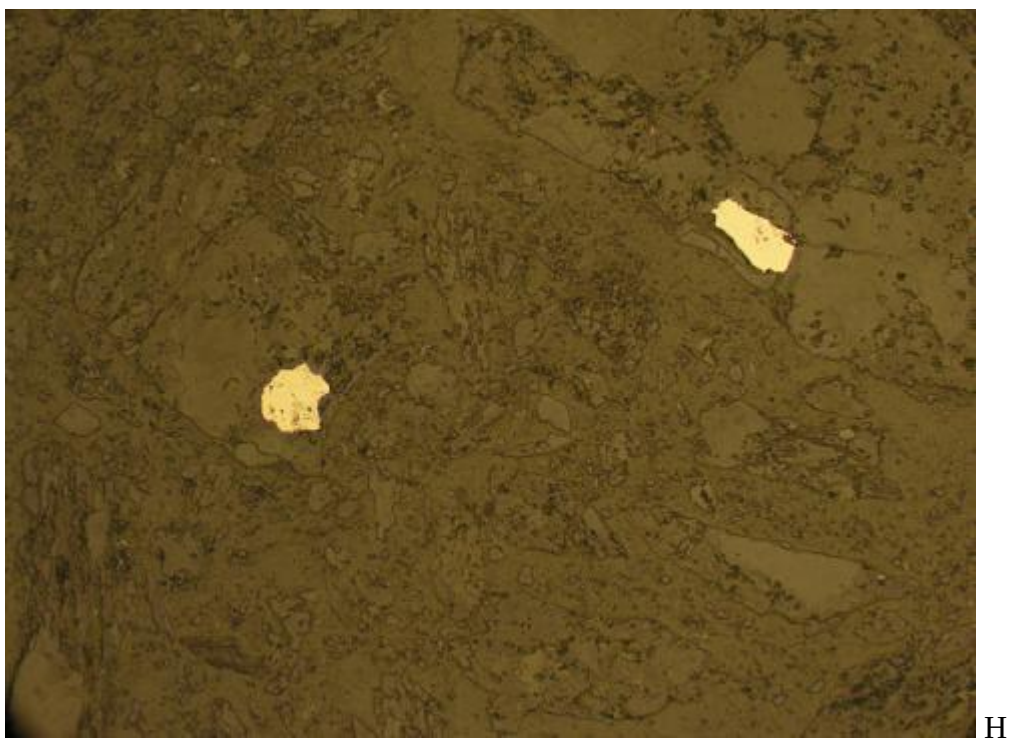
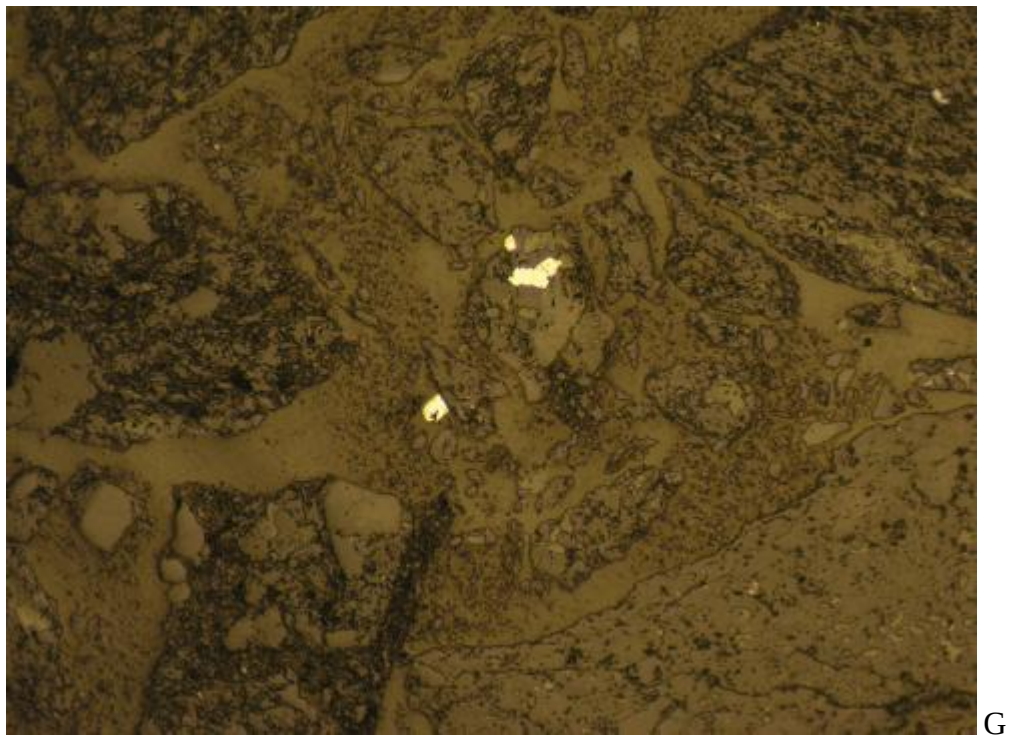


E



F

HC-35: E) Cloudy brownish carbonate aggregate (left) and colourless liberated carbonate grain (right). PPL, FOV ≈ 1.3 mm. F) Carbonate-quartz vein fragment. XPL, FOV ≈ 2.6 mm.



HC-35: G) Distribution of pyrite in section. RL, FOV $\approx$ 2.6 mm. H) Detailed view of anhedral disseminated pyrite. RL, FOV $\approx$ 1.3 mm.

Project: Hope Bay**Deposit:** Doris**Zone:****Rock Type:** Mafic volcanic: Flow basalt**Sample ID:** HC-50**Offcut #:** AP-6**Crushed Rock and Offcut Mount Description:**

Fine to coarse angular chips (less than 20 mm size). Chips comprise mostly light olive-grey strongly foliated rock and white quartz vein fragments. Trace to major amounts of fine-grained pyrite occur disseminated, in bands or in fractures. No reaction of chips to cold dilute HCl. No reaction of chips to magnet. No reaction of rock chips to etching with HF and staining with sodium cobaltinitrite (no yellow stain).

Polished Thin Section Description:

Fine to coarse chips representing altered and variably deformed rock: 1) fine to very fine-grained, strongly foliated quartz-sericite-carbonate-rutile aggregate with sericite and rutile defining the orientation of the foliation, 2) fine to very fine-grained massive quartz-carbonate aggregate locally with minor sericite and 3) very fine to medium-grained quartz, carbonate and carbonate-quartz vein fragments (approx. 25% of section). Carbonate, quartz and pyrite occur commonly as liberated grains. Sericite, ~ 20%, occurs as fine to very fine-grained (< 0.35 mm) flaky aggregates. Quartz, approximately 40%, occurs as fine to very fine-grained (< 0.1 mm) anhedral aggregates within massive quartz-carbonate aggregate and as fine to medium-grained aggregates (< 2 mm) in vein fragments. Vein quartz commonly has undulose extinction and development of subgrains. Traces of quartz and sericite occur as fine to very fine-grained pressure fringes to pyrite porphyroblasts. Minor rutile, ~ 4%, occurs as very fine-grained aggregates within the foliation of rock fragments, as clusters and disseminated. Rarely, chlorite occurs with quartz and carbonate as very fine aggregates in veinlets cutting foliated rock fragments.

Carbonate occurs in major amounts (~30%) as colourless to cloudy brownish carbonate in the following forms: 1) fine to very fine-grained (< 0.2 mm), anhedral to rhombic colourless to cloudy aggregates within foliated quartz-sericite-carbonate-rutile fragments, 2) fine to very fine-grained (< 0.2 mm), anhedral aggregates within massive quartz-carbonate±sericite fragments, 3) fine to medium-grained cloudy brownish aggregate (< 2 mm) in vein fragments and 4) as fine to medium-grained cloudy brownish liberated grains (< 2 mm). Approximately half the carbonate, particularly the vein carbonate is cloudy and brownish. Note some of the vein carbonate is strained with local development of undulatory extinction and subgrains. Rarely, very fine-grained red-brown Fe-ox occur partly replacing cloudy carbonate.

Sulphide occurs in major amounts (overall ~5%) as pyrite with rare chalcopyrite. Pyrite grains are fine to very fine grained (< 1 mm) and occur as disseminated to patchy sub-anhedral grains and aggregate in altered rock fragments and as liberated anhedral grains. The amount of pyrite in rock chips varies from absent to abundant. Pyrite grains have irregular to straight grain boundaries which are unaltered. Chalcopyrite occurs rarely as very fine inclusions in pyrite.

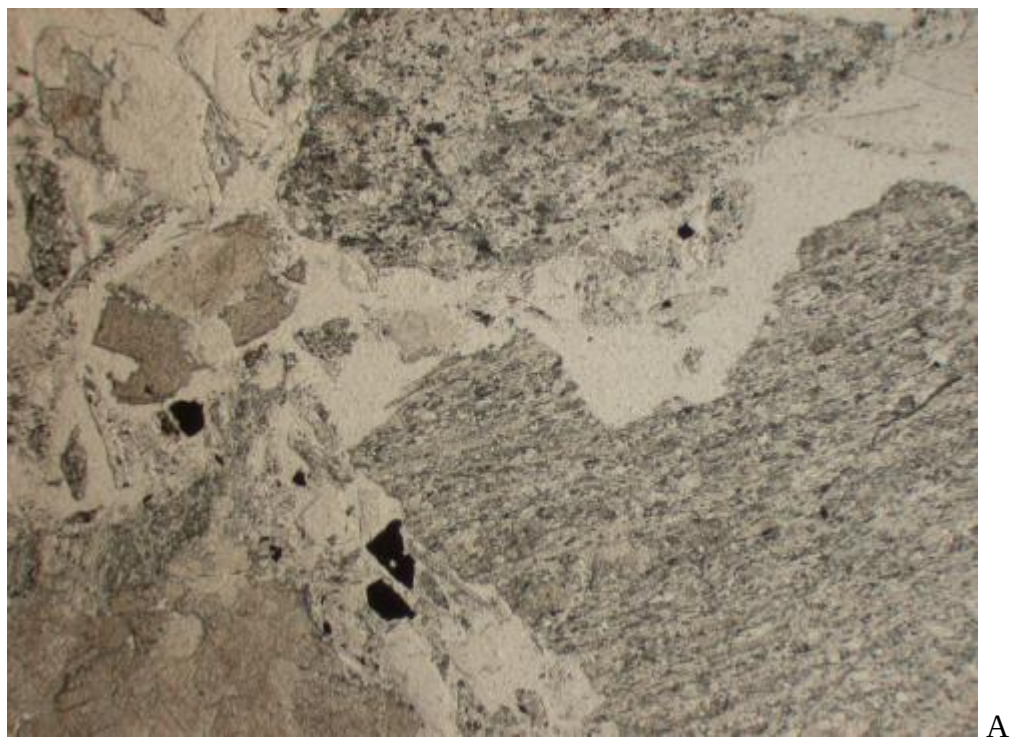
Tabular summary (visual estimate):

Sample # -	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-50	pyrite	5	colourless to cloudy	30	red-brown	r.	quartz	40
	chalcopyrite	r.	brownish, very fine to medium-grained		unknown		sericite	20
							rutile	4
							chlorite	r.

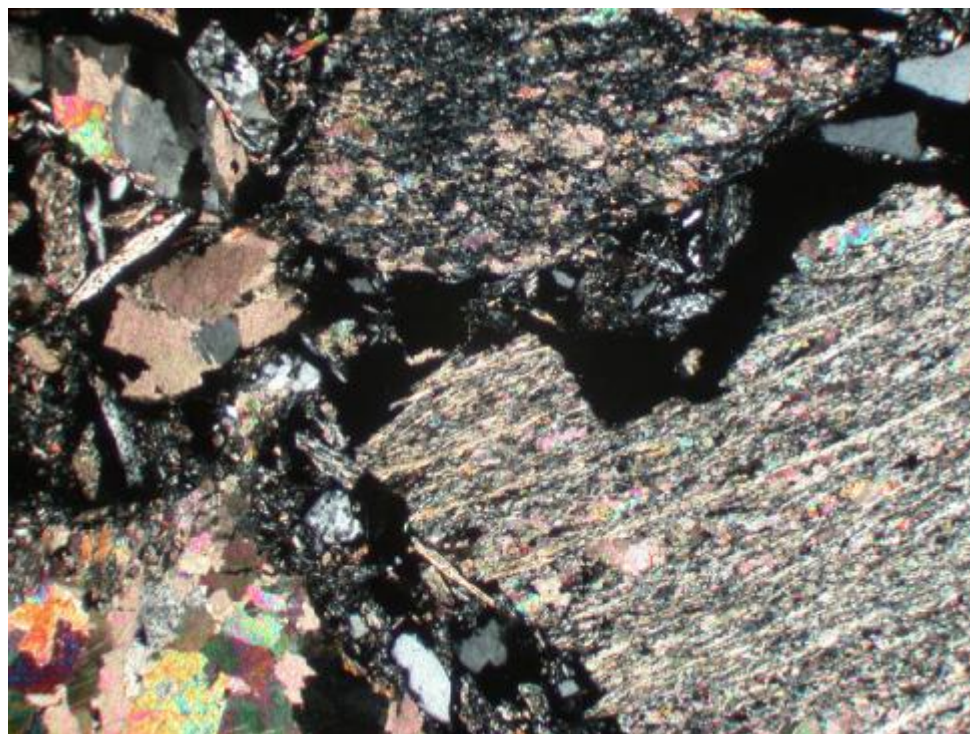
Abbreviations: tr = trace (< 1%); r. = rare; x = none observed

-fine-grained = > 0.05 mm and < 1 mm; very fine-grained = < 0.05 mm; medium-grained = 1-5 mm

-Fe-ox = iron and/or Fe-Ti-oxides, includes amorphous, very fine-grained poorly crystalline and/or crystalline ferric hydroxides, oxides, oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals

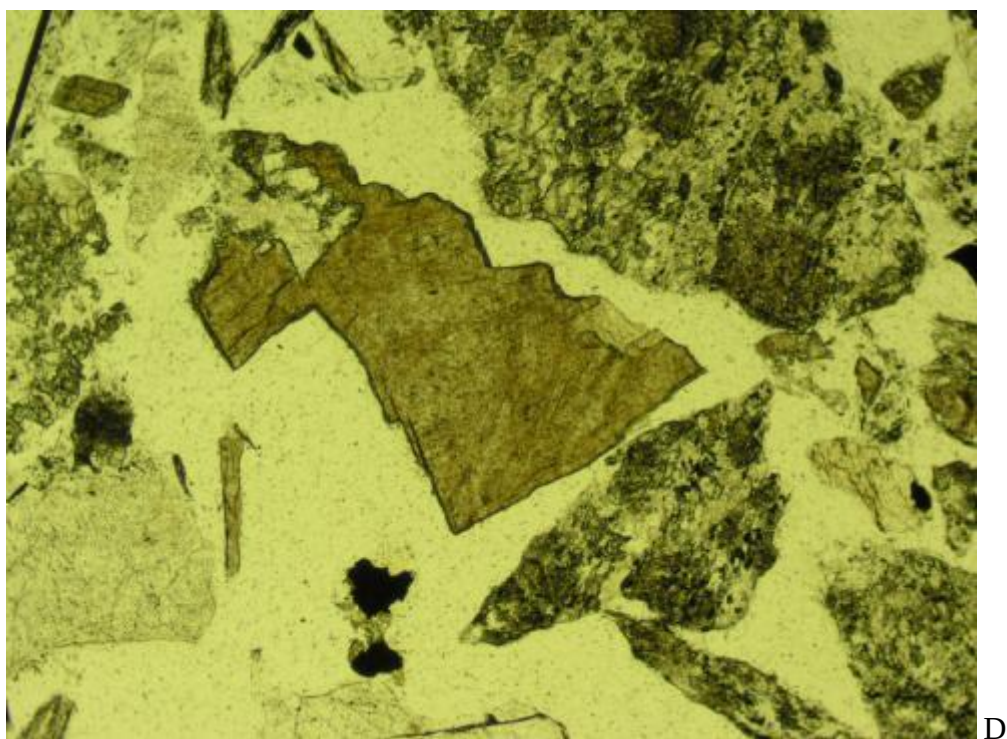


A

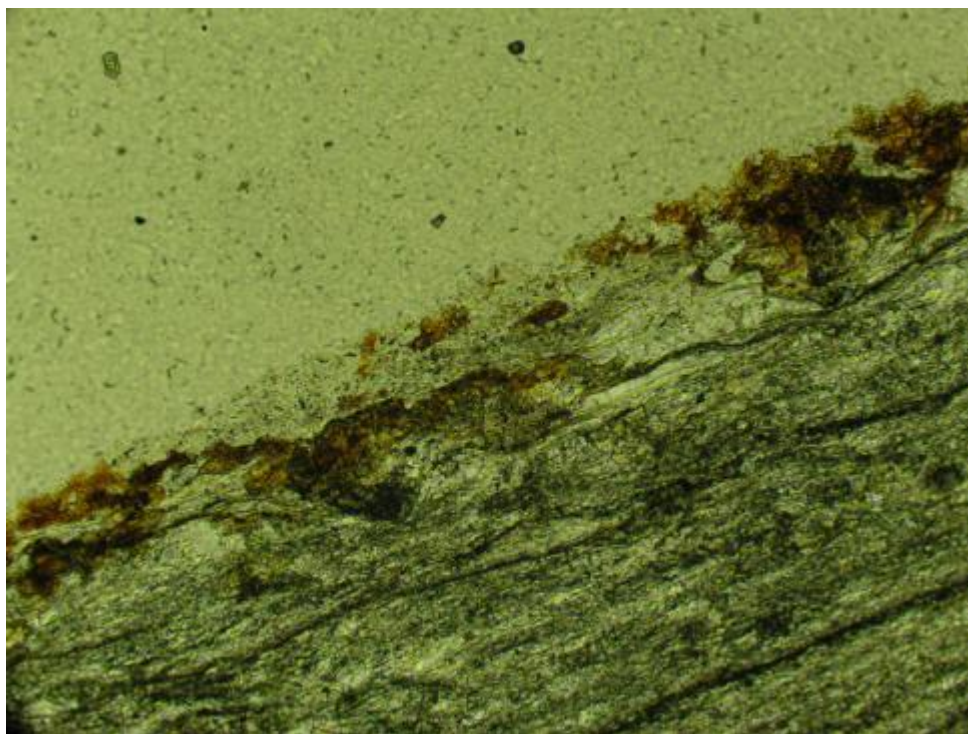


B

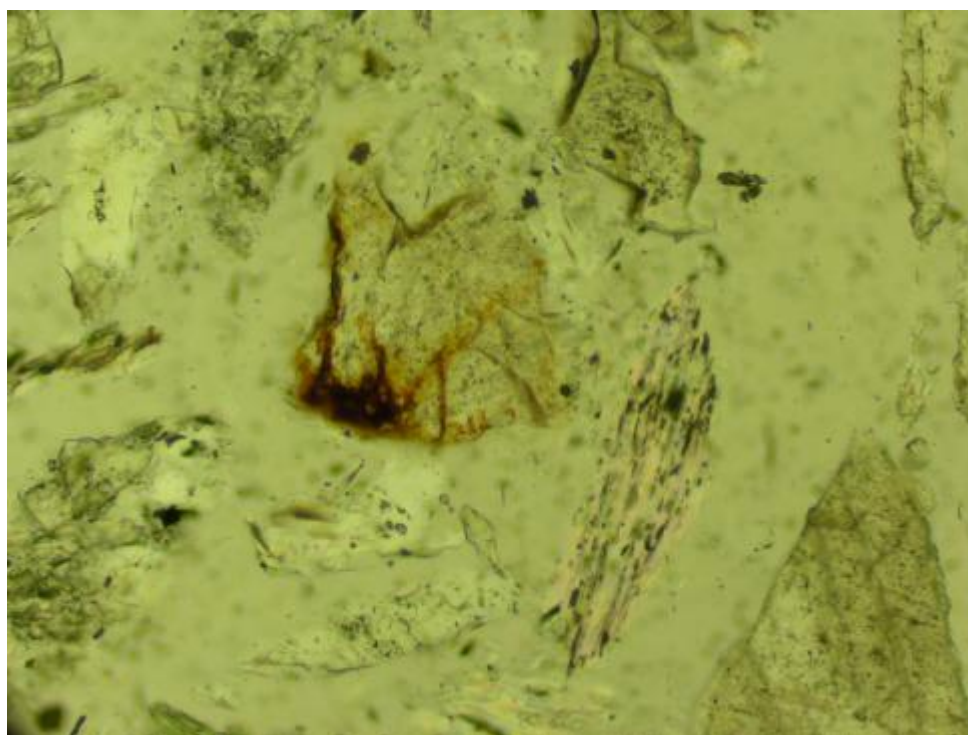
HC-50: A&B) View of altered and deformed rock rock chips including strongly foliated quartz-sericite-carbonate-rutile aggregate (right), massive quartz-carbonate±sericite aggregate (top) and carbonate and quartz-carbonate vein fragments (left). A) PPL, B) XPL, FOV ≈ 4.5 mm.



HC-50: C) Detailed view strongly foliated quartz-sericite-carbonate-rutile aggregate. Note patchy colourless to cloudy carbonate. FOV $\approx$ 1.3 mm, PPL, D) View of cloudy brownish carbonate vein fragment (centre). FOV $\approx$ 2.6 mm, PPL.

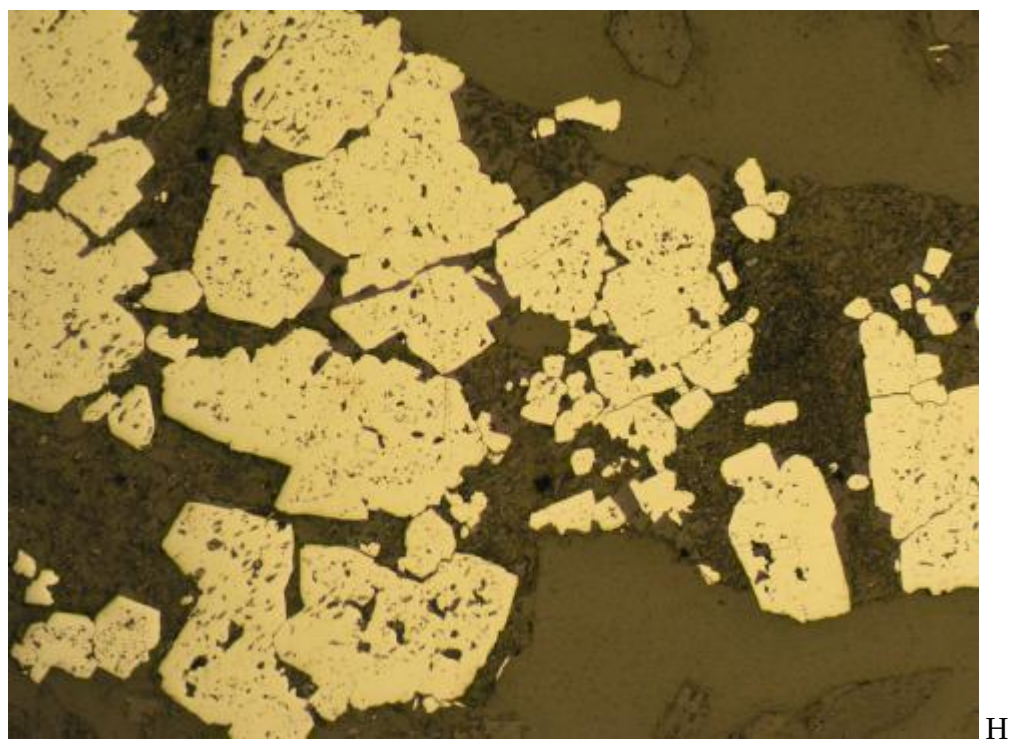
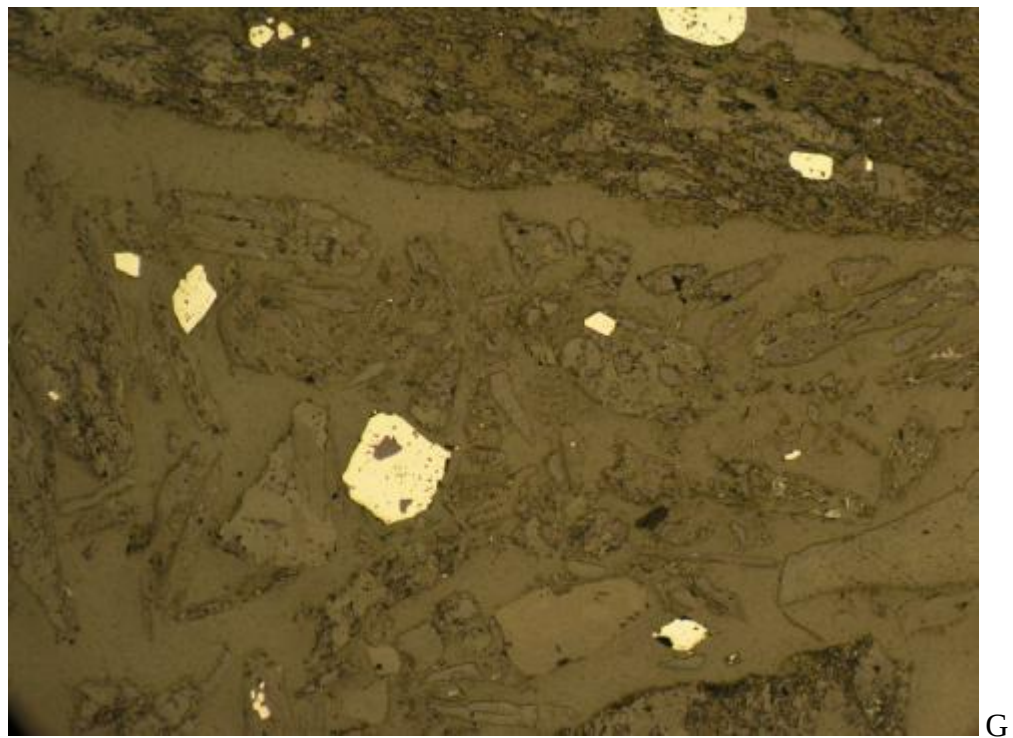


E



F

HC-50: E) Fine-grained anhedral carbonate aggregate partly replaced by red-brown Fe-ox at edge of foliated quartz-sericite-carbonate-rutile aggregate. PPL, FOV $\approx$ 1.3 mm. F) Liberated cloudy carbonate partly replaced by red-brown Fe-ox aggregate. PPL, FOV $\approx$ 0.7 mm.



HC-50: G) Liberated pyrite grains and disseminated pyrite within foliated rock fragment. RL, FOV $\approx$ 2.6 mm. H) Abundant fine-grained sub-anhedral pyrite aggregate within rock fragment. RL, FOV $\approx$ 2.6 mm.

Project: Hope Bay
Rock Type: Late gabbro
Sample ID: HC-51

Deposit: Doris

Zone:

Offcut #: AP-7

Crushed Rock and Offcut Mount Description:

Fine to coarse angular chips (less than 20 mm size). Chips comprise mostly dark greenish-grey granular rock and foliated greenish-brown fragments. Minor fine-grained pyrite occur disseminated. No reaction of chips to cold dilute HCl. No reaction of chips to magnet. No reaction of rock chips to etching with HF and staining with sodium cobaltinitrite (no yellow stain).

Polished Thin Section Description:

Fine to coarse chips representing altered and variably deformed rock: 1) fine to very fine-grained, weakly foliated carbonate-chlorite-rutile±quartz±sericite aggregate with chlorite and rutile defining the orientation of the foliation, 2) fine to very fine-grained massive to weakly foliated quartz-sericite-carbonate-rutile aggregate, 3) fine to medium-grained quartz-carbonate vein fragments and 4) very fine to fine-grained carbonate and carbonate±chlorite veinlets (0.2 mm to > 2 mm). Sericite, ~ 20%, occurs as fine to very fine-grained (< 0.1 mm) flaky aggregates. Quartz, approximately 13%, occurs as fine to very fine-grained (< 0.1 mm) anhedral aggregates within foliated and massive rock fragments and as fine to medium-grained aggregates (< 3 mm) in vein fragments. Vein quartz commonly has undulose extinction. Minor rutile, ~ 6%, occurs as very fine-grained aggregates forming discontinuous bands in rock fragments, as clusters and disseminated. Chlorite, ~10%, occurs as very fine-grained aggregates in weakly foliated carbonate-chlorite-rutile±quartz±sericite aggregate. Rarely, chlorite occurs with carbonate as very fine aggregates in veinlets cutting foliated rock fragments. Rare traces of very fine-grained red-brown Fe-ox occur in late fractures.

Carbonate occurs in major amounts (~50%) as colourless to cloudy brownish carbonate in the following forms: 1) fine to very fine-grained (typically < 0.15 mm, up to 0.35 mm), anhedral to rhombic colourless to cloudy aggregates within massive to foliated rock fragments and 2) fine to medium-grained cloudy brownish aggregate (< 2 mm) in vein fragments. Much of the carbonate, particularly the vein carbonate is cloudy and brownish. Note some of the vein carbonate is strained with local development of undulatory extinction and subgrains.

Sulphide occurs in trace amounts as pyrite with rare chalcopyrite. Pyrite grains are fine to very fine grained (< 0.5 mm) and occur disseminated in some altered rock fragments. Pyrite grains have irregular to straight grain boundaries which are unaltered. Chalcopyrite occurs rarely disseminated as very fine anhedral grains.

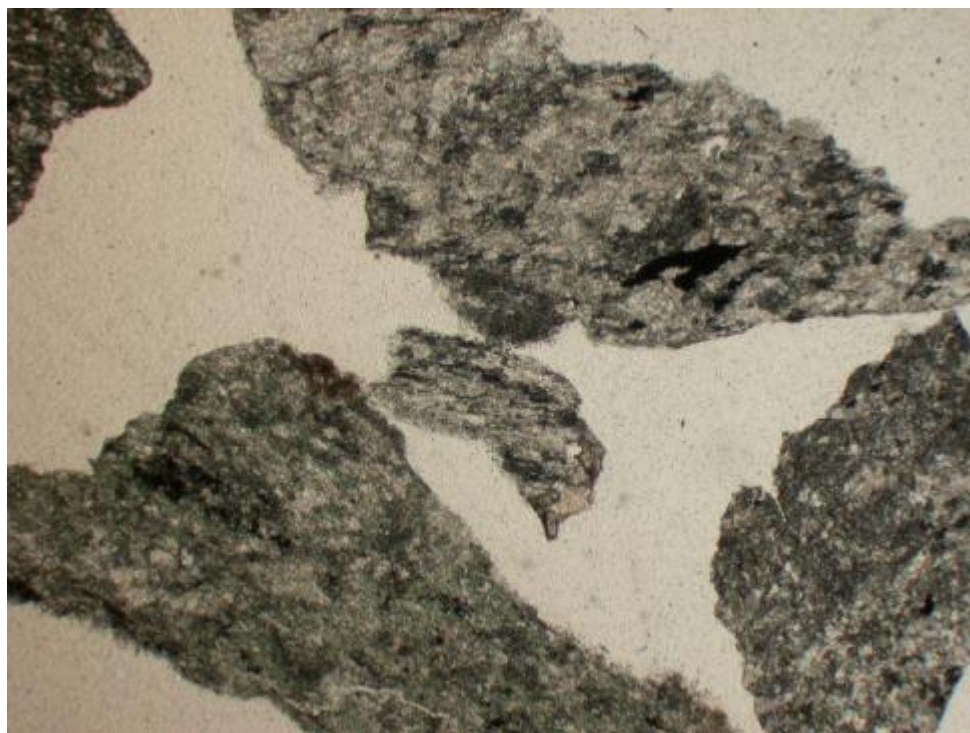
Tabular summary (visual estimate):

Sample # -	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-51	pyrite	tr	colourless to cloudy	50	red-brown	r.	sericite	20
	chalcopyrite	r.	brownish, very fine to medium-grained		unknown		quartz	13
							chlorite	10
							rutile	6

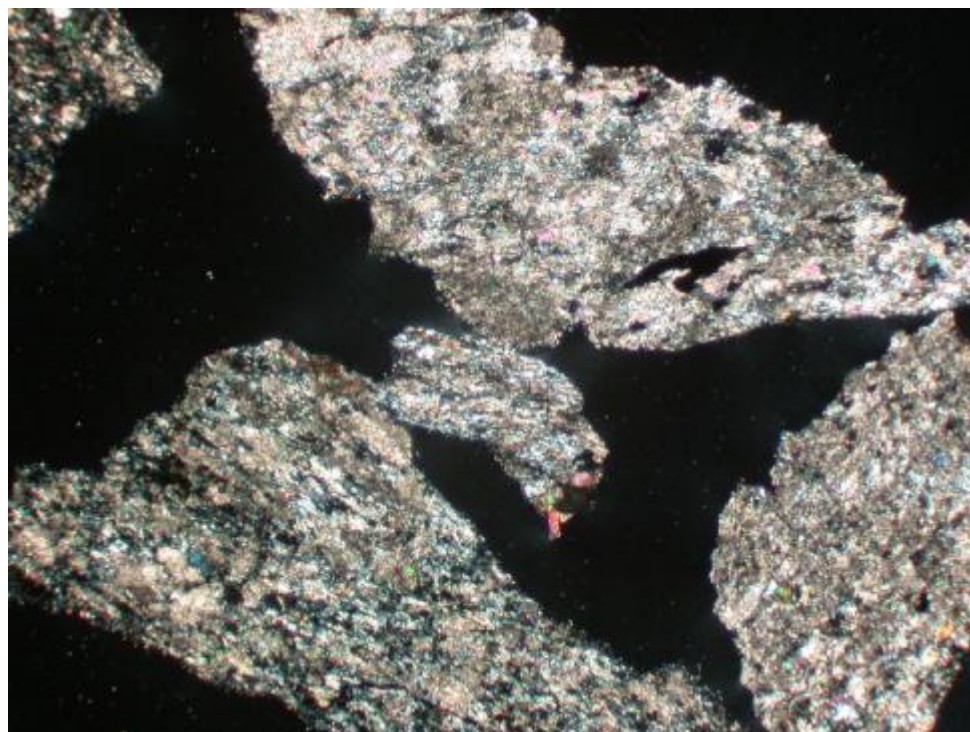
Abbreviations: tr = trace (< 1%); r. = rare; x = none observed

-fine-grained = > 0.05 mm and < 1 mm; very fine-grained = < 0.05 mm; medium-grained = 1-5 mm

-Fe-ox = iron and/or Fe-Ti-oxides, includes amorphous, very fine-grained poorly crystalline and/or crystalline ferric hydroxides, oxides, oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals

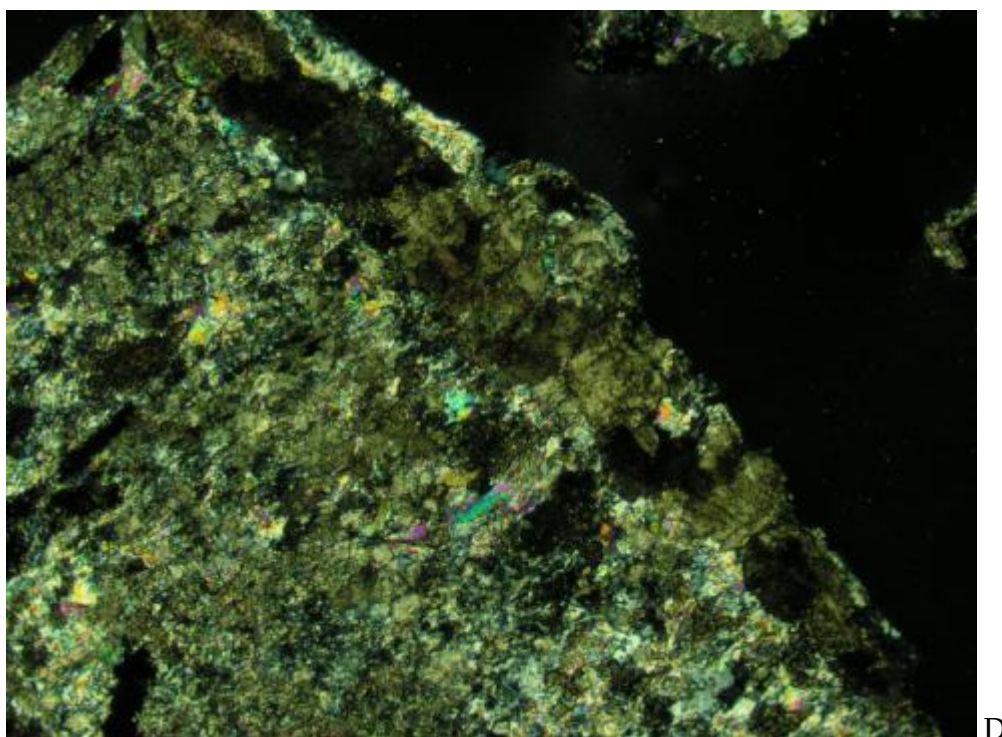
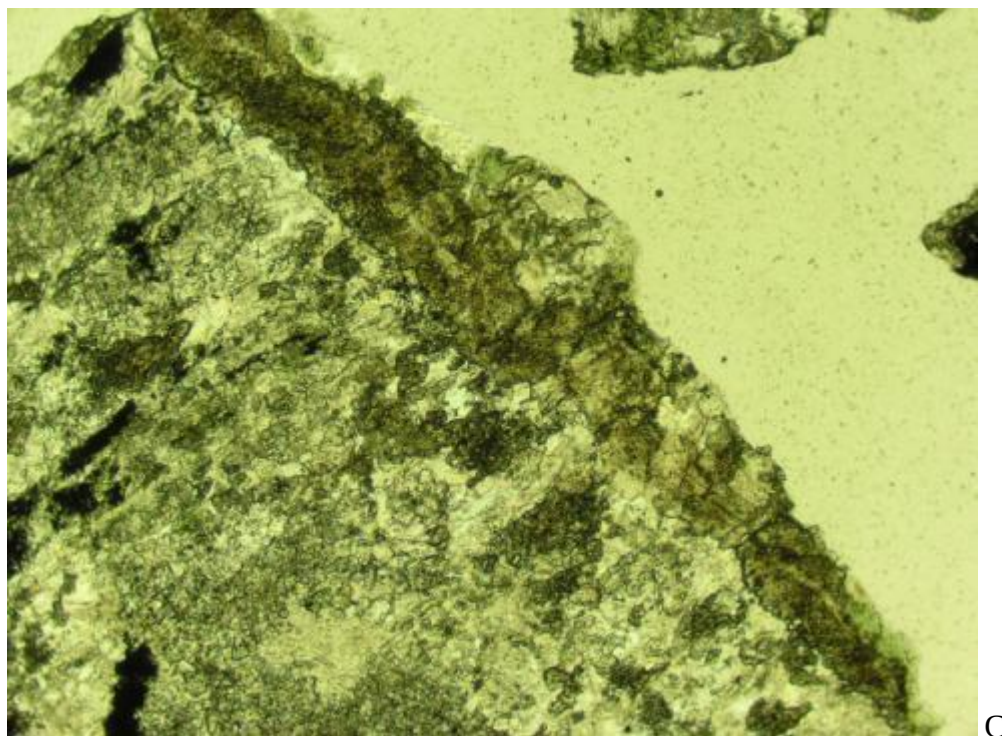


A

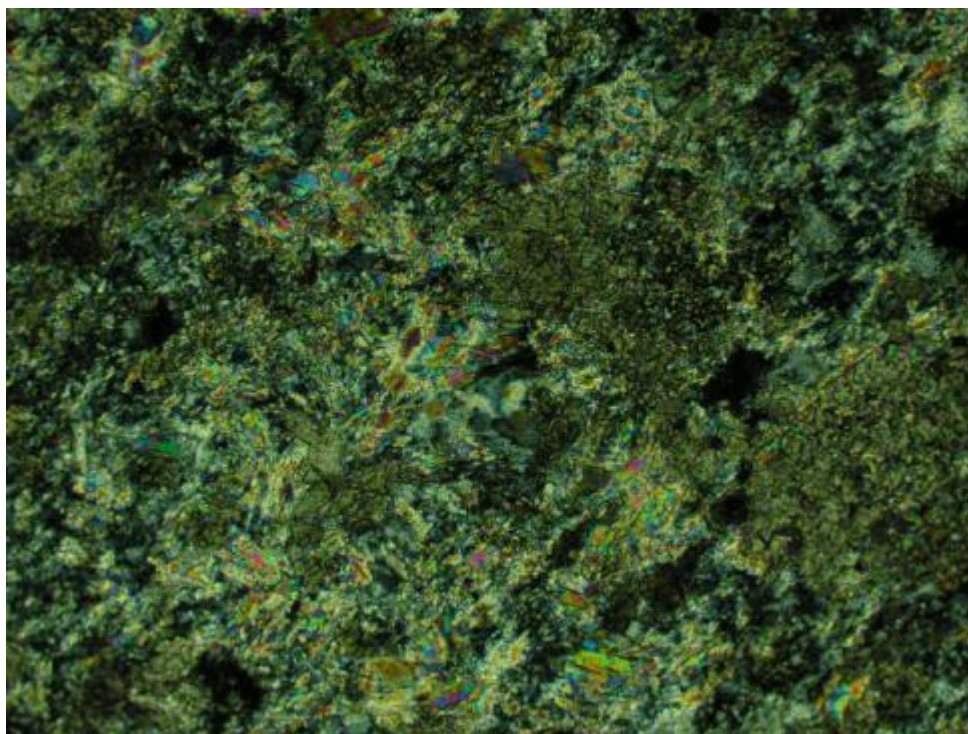


B

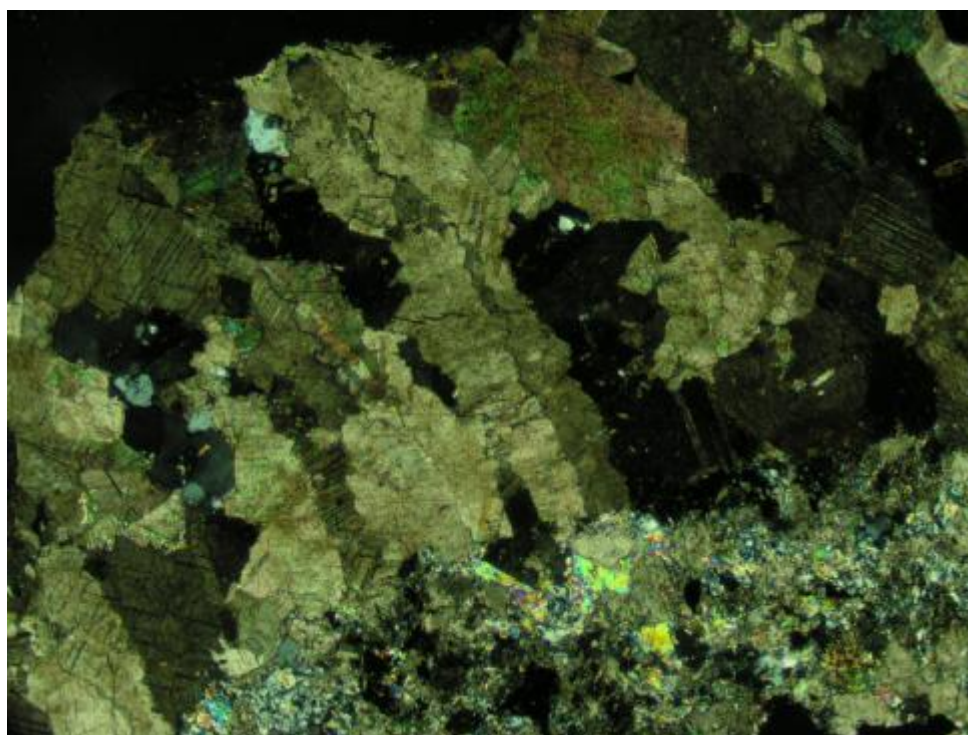
HC-51: A&B) View of altered and deformed rock rock chips including weakly foliated carbonate-chlorite-rutile±quartz±sericite aggregate (lower left) and massive to weakly foliated quartz-sericite-carbonate-rutile aggregate (top and right). A) PPL, B) XPL, FOV ≈ 4.5 mm.



HC-51: C&D) Detailed view of massive carbonate-sericite-quartz-rutile aggregate cut by cloudy brownish carbonate-chlorite veinlet. Note carbonate in rock fragment varies from colourless to cloudy brownish. FOV $\approx$ 2.6 mm, C) PPL, E) XPL.

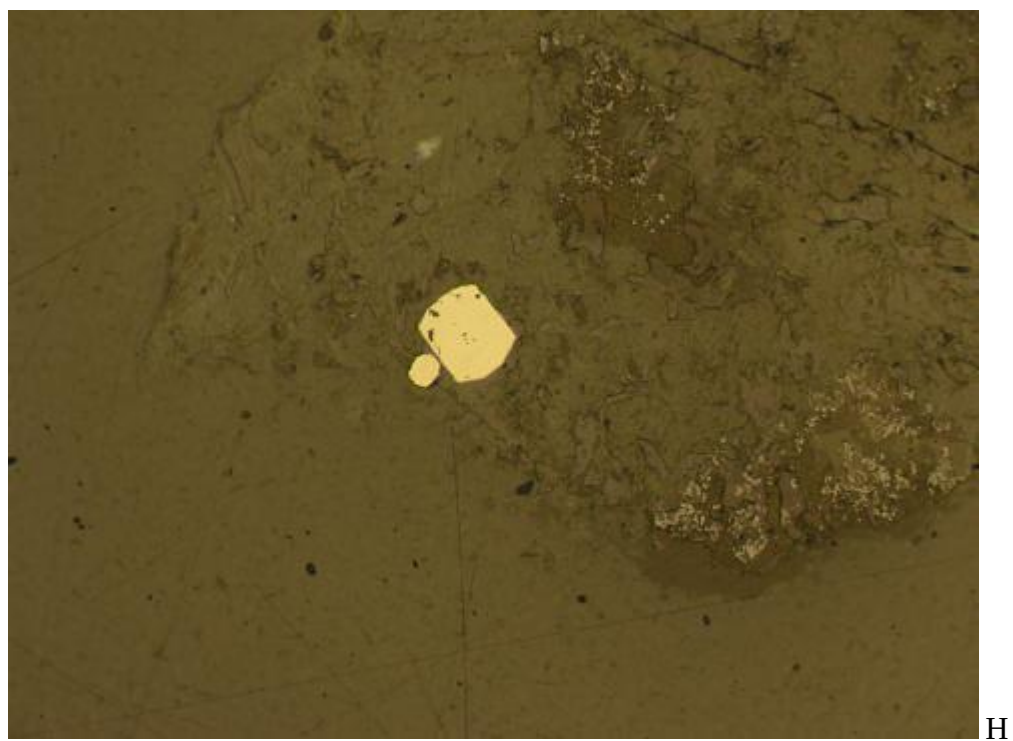
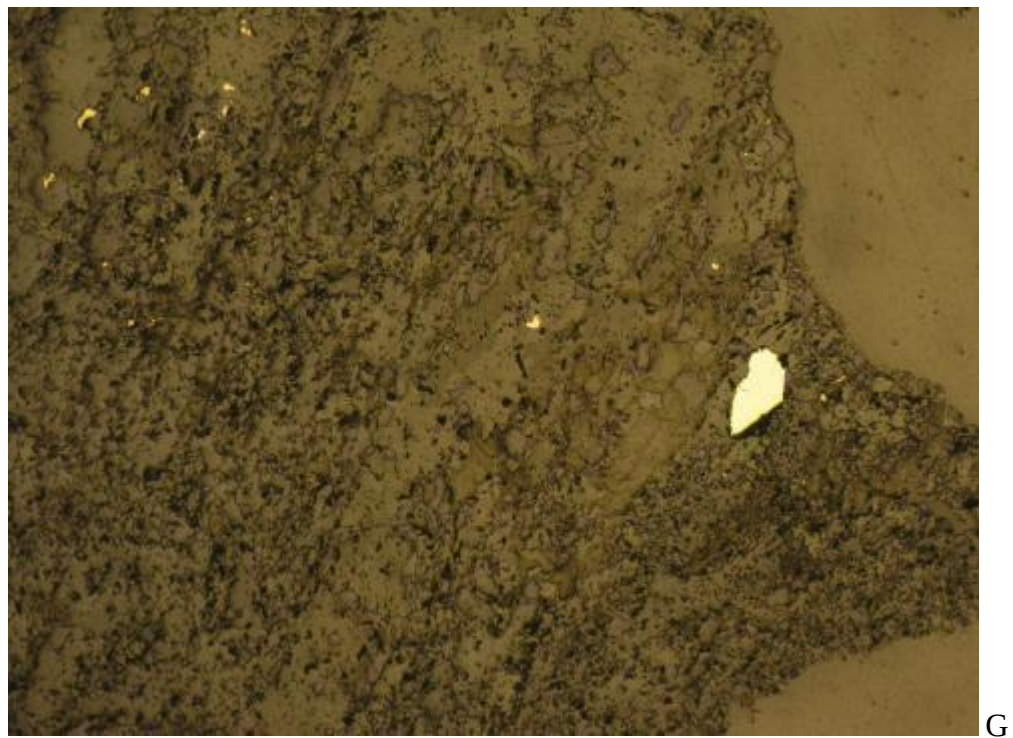


E



F

HC-51: E) Detailed view of massive carbonate-sericite-quartz-rutile aggregate. XPL, FOV $\approx$ 1.3 mm. F) Cloudy brown carbonate-quartz veinlet. XPL, FOV $\approx$ 2.6 mm.



HC-51: G) Disseminated unaltered pyrite (right) and traces of chalcopyrite (top left). RL, FOV $\approx$ 2.6 mm. H) Subhedral disseminated pyrite with straight unaltered boundaries. RL, FOV $\approx$ 1.3 mm.

Project: Hope Bay
Rock Type: Quartz vein
Sample ID: HC-52

Deposit: Doris

Zone:

Offcut #: AP-8

Crushed Rock and Offcut Mount Description:

Fine to coarse angular chips (less than 15 mm size). Chips comprise mostly white quartz vein (~80%) and foliated greyish-brown rock fragments with minor fine-grained pyrite disseminated and in bands parallel to the foliation. No reaction of chips to cold dilute HCl. No reaction of chips to magnet. No reaction of rock chips to etching with HF and staining with sodium cobaltinitrite (no yellow stain).

Polished Thin Section Description:

Fine to coarse chips representing altered rock and vein fragments: 1) fine to very fine-grained, strongly foliated sericite-rutile±carbonate±quartz ±pyrite aggregate with sericite and rutile defining the orientation of the foliation, 2) fine to very fine-grained, massive carbonate-quartz-sericite-rutile±?clay/chlorite ±pyrite aggregate and 3) fine to coarse-grained quartz vein fragments, locally with traces of patchy fine-grained carbonate and rarely with very fine chlorite as fracture infill. Quartz, approximately 80%, occurs as very fine to coarse-grained (< 8 mm) anhedral aggregates in vein fragments. Vein quartz commonly has undulose extinction and locally development of subgrains. Sericite, ~6%, occurs as very fine-grained flaky aggregates within rock fragments. Minor rutile, ~1%, occurs as very fine-grained aggregates forming discontinuous bands in rock fragments, as clusters and disseminated. Brownish-green ?clay/chlorite occurs in trace amounts as very fine-grained aggregates in some rock fragments and as rarely as fracture infill within quartz veinlets.

Carbonate occurs in major amounts (~10%) as colourless to cloudy carbonate in the following forms: 1) fine to very fine-grained (< 0.8 mm), anhedral colourless to cloudy aggregates within massive to foliated rock fragments and 2) very fine to fine-grained cloudy aggregate (< 0.2 mm) in vein fragments and rarely 3) as fine cloudy liberated grains. Note some of the carbonate is strained with local development of undulatory extinction. Rarely, very fine-grained red-brown Fe-ox occur partly replacing carbonate at edges of vein fragments.

Sulphide occurs in minor amounts (2%) as pyrite. Pyrite grains are fine to very fine grained (< 1 mm) and occur disseminated in some altered rock fragments and as liberated grains. Pyrite grains have irregular to straight grain boundaries which are unaltered.

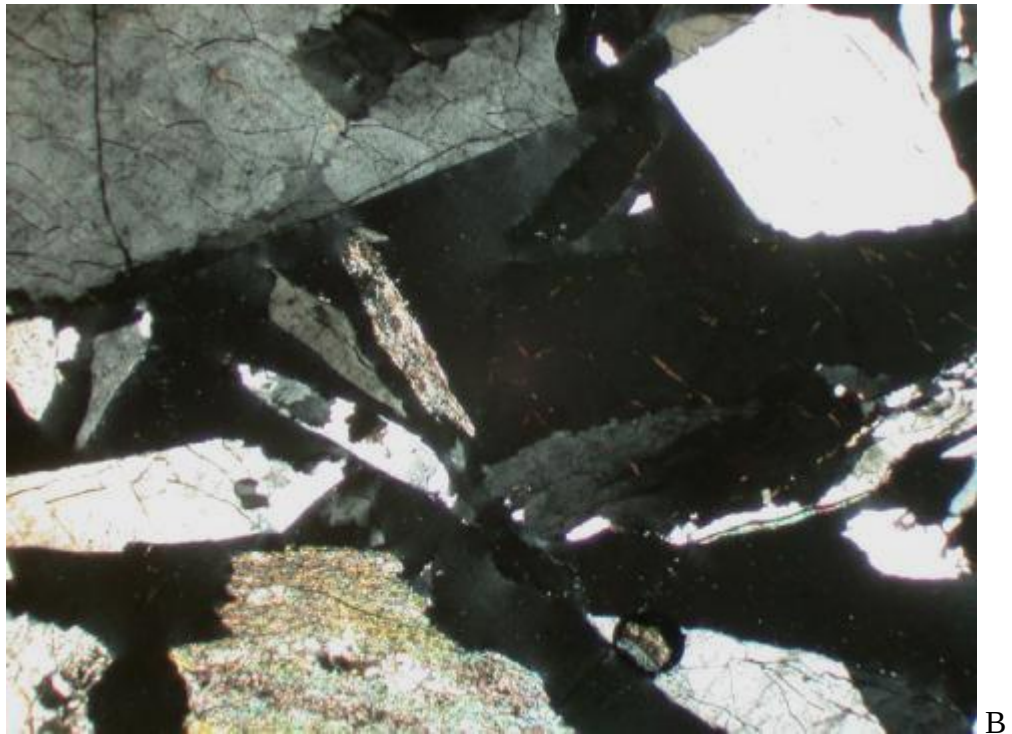
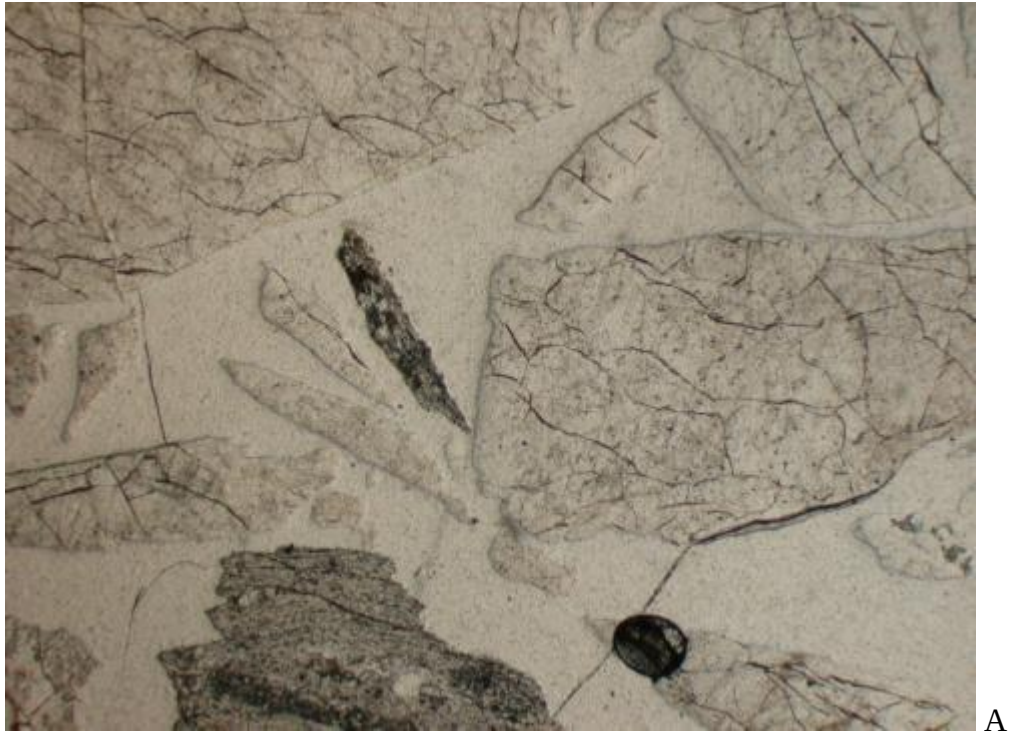
Tabular summary (visual estimate):

Sample # -	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-52	pyrite	2	colourless to cloudy	10	red-brown	r.	quartz	80
			very fine to fine-grained		unknown		sericite	6
							rutile	1
							?clay/chlorite	tr

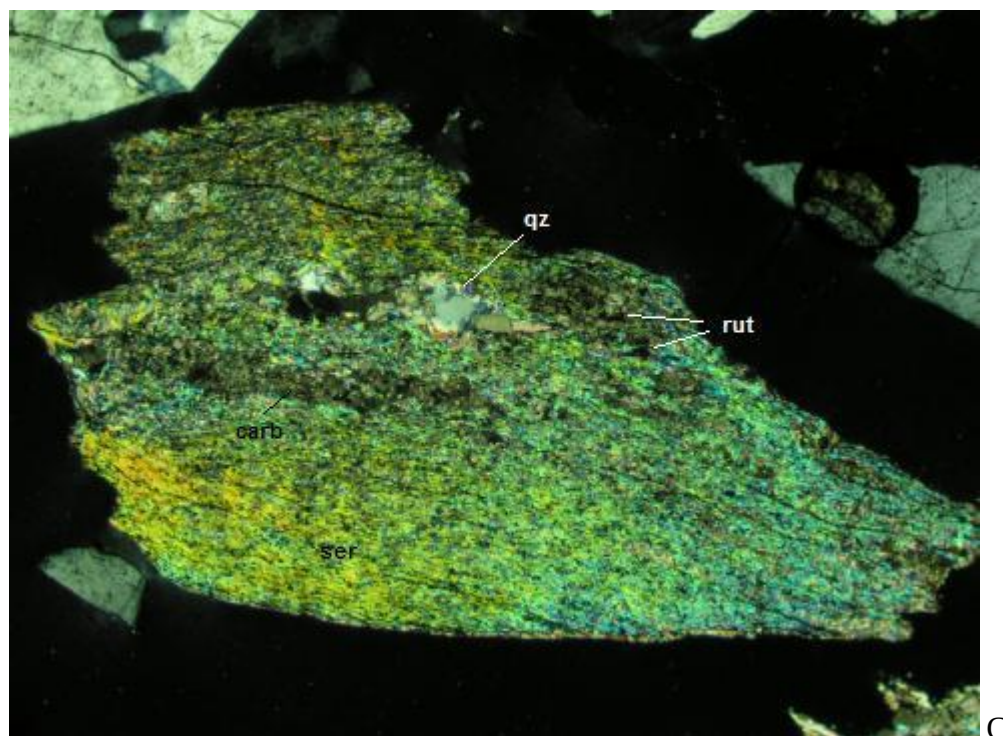
Abbreviations: tr = trace (< 1%); r. = rare; x = none observed

-fine-grained = > 0.05 mm and < 1 mm; very fine-grained = < 0.05 mm; medium-grained = 1-5 mm

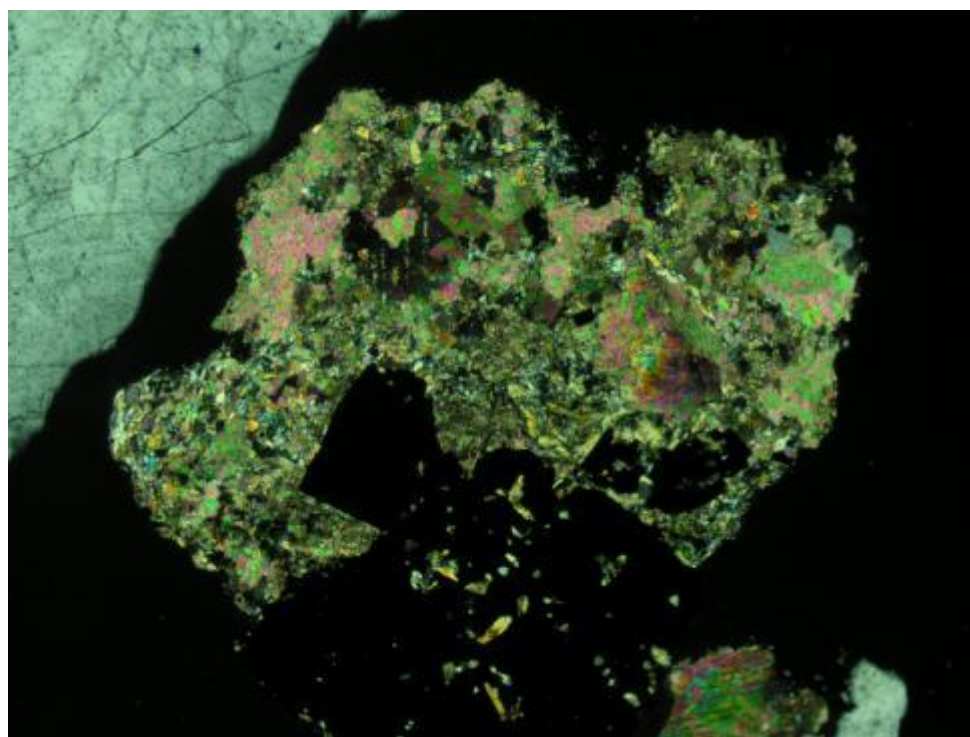
-Fe-ox = iron and/or Fe-Ti-oxides, includes amorphous, very fine-grained poorly crystalline and/or crystalline ferric hydroxides, oxides, oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals



HC-52: A&B) View of foliated sericite-rutile±carbonate±quartz aggregate (centre and lower left) and quartz vein fragments. A) PPL, B) XPL, FOV ≈ 4.5 mm.

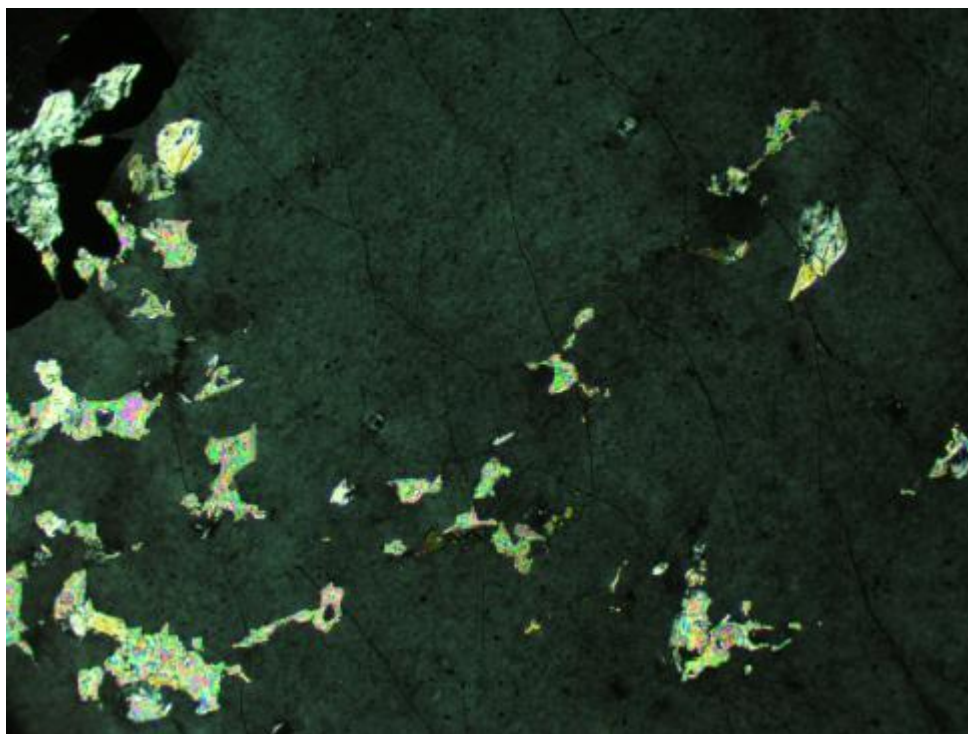


C

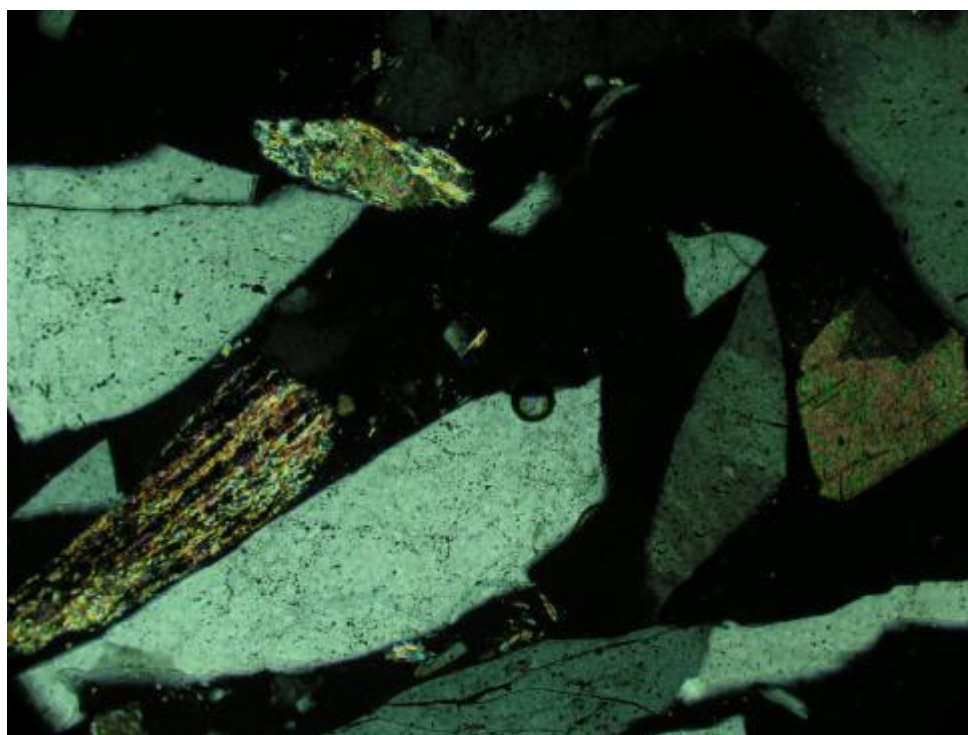


D

HC-52: C) Detailed view of fragment of foliated sericite-rutile±carbonate±quartz aggregate. FOV ≈ 2.6 mm, XPL. D) Detailed view of fragment of massive carbonate-sericite-quartz-rutile-pyrite aggregate. FOV ≈ 2.6 mm, XPL.

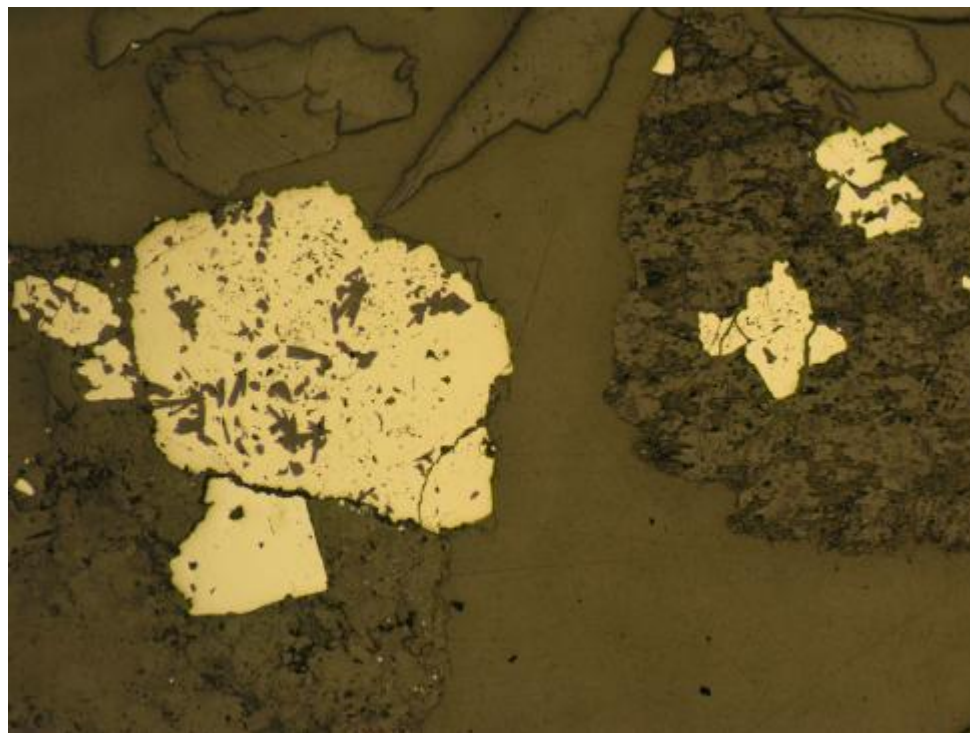


E

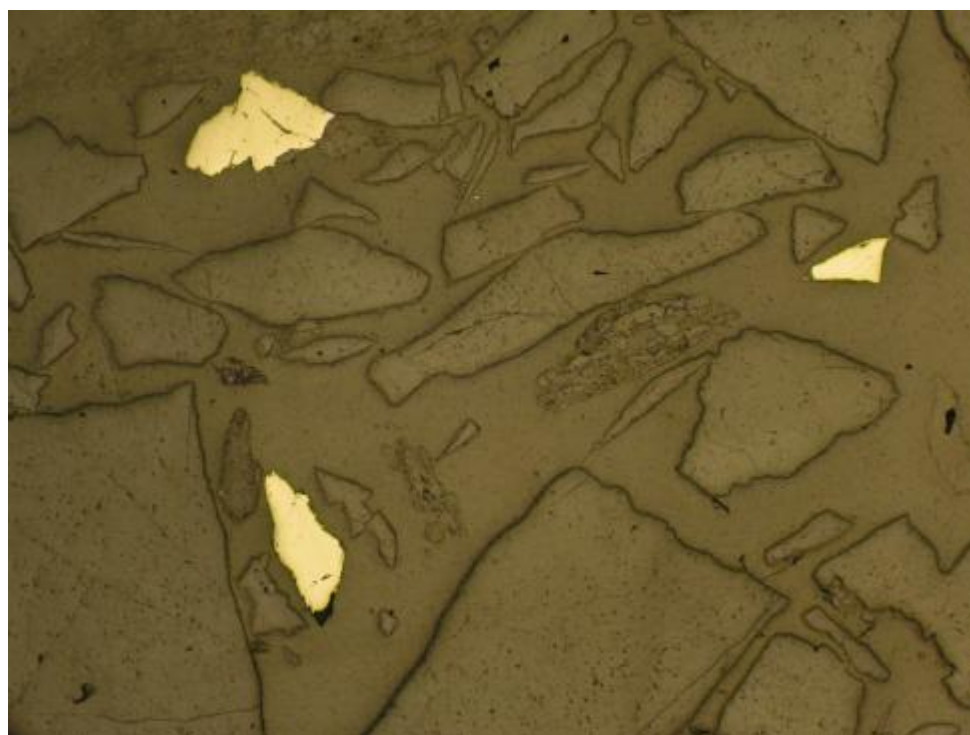


F

HC-52: E) Detailed view of patchy carbonate within quartz vein fragment. XPL, FOV $\approx$ 1.3 mm. F) Detailed view of quartz vein fragments, liberated carbonate grain (right) and sericite-rutile aggregate (left top and bottom). XPL, FOV $\approx$ 2.6 mm.



G



H

HC-52: G) Disseminated unaltered pyrite grains and aggregate within rock fragments. RL, FOV $\approx$ 2.6 mm. H) Liberated pyrite grains (unaltered). RL, FOV $\approx$ 2.6 mm.

Project: Hope Bay
Rock Type: Quartz vein
Sample ID: HC-53

Deposit: Doris

Zone:

Offcut #: AP-9

Crushed Rock and Offcut Mount Description:

Fine to coarse angular chips (less than 24 mm size). Chips comprise mostly white quartz vein (~99%) and minor foliated greyish-brown rock fragments. No reaction of chips to cold dilute HCl. No reaction of chips to magnet. No reaction of rock chips to etching with HF and staining with sodium cobaltinitrite (no yellow stain).

Polished Thin Section Description:

Fine to coarse chips representing quartz vein fragments. Traces of patchy fine to very fine-grained carbonate associated with sericite aggregate occur within some of the vein fragments. Traces of sericite±rutile, locally tourmaline and brownish-green ?clay/chlorite aggregate are developed at quartz grain boundaries in some fragments. Quartz, approximately 99%, occurs as very fine to coarse-grained (< 7 mm) anhedral aggregates in vein fragments. Vein quartz commonly has undulose extinction and locally development of subgrains. Trace sericite occurs as very fine-grained anhedral to flaky aggregates as patches in the vein fragments. Traces of rutile occurs as very fine-grained aggregates associated with sericite aggregate. Rare traces of tourmaline occur as very fine needles associated with patchy very fine brownish-green ?clay/chlorite aggregate and locally associated with sericite and carbonate aggregate.

Carbonate occurs in trace amounts as colourless to cloudy brownish carbonate. The carbonate is fine to very fine-grained (< 0.2 mm), anhedral and occurs as patchy aggregates commonly associated with sericite in the quartz vein fragments. Note some of the carbonate is strained with local development of undulatory extinction.

Sulphide occurs in trace amounts as pyrite. Pyrite grains are fine to very fine-grained (< 0.15 mm) and occur disseminated in quartz vein fragments and associated with patchy sericite±clay aggregate. Pyrite grains have irregular to straight grain boundaries which are unaltered.

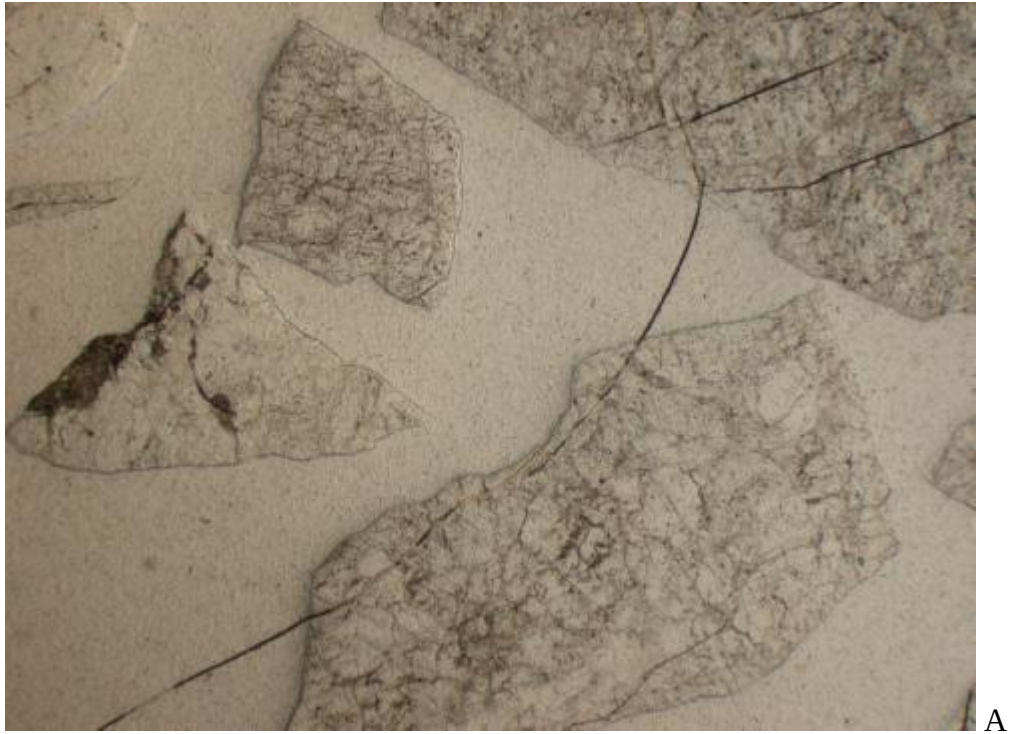
Tabular summary (visual estimate):

Sample # -	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-53	pyrite	tr	colourless to cloudy	tr		x	quartz	99
			brownish, very fine to				sericite	tr
			fine-grained				rutile	tr
							?clay/chlorite	tr
							tourmaline	r.

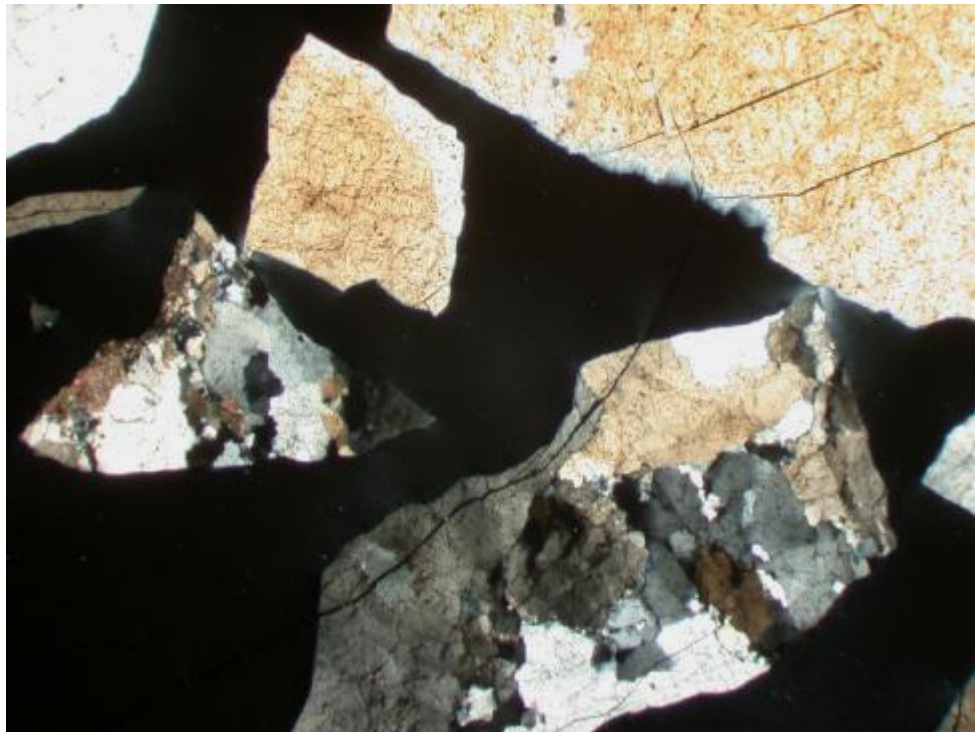
Abbreviations: tr = trace (< 1%); r. = rare; x = none observed

-fine-grained = > 0.05 mm and < 1 mm; very fine-grained = < 0.05 mm; medium-grained = 1-5 mm

-Fe-ox = iron and/or Fe-Ti-oxides, includes amorphous, very fine-grained poorly crystalline and/or crystalline ferric hydroxides, oxides, oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals

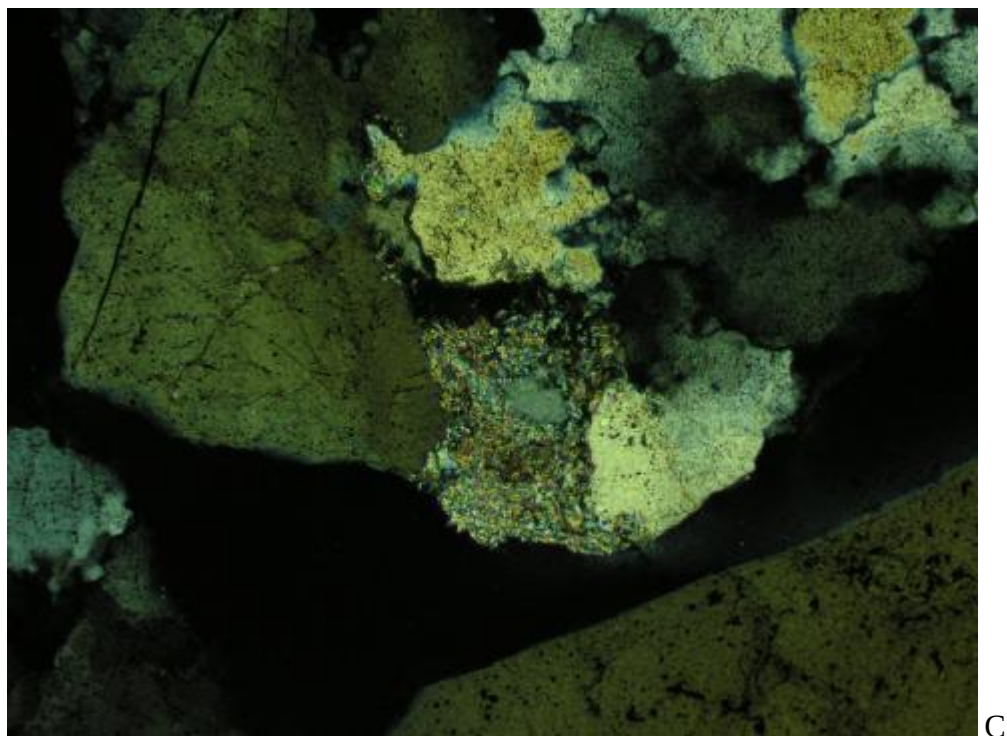


A

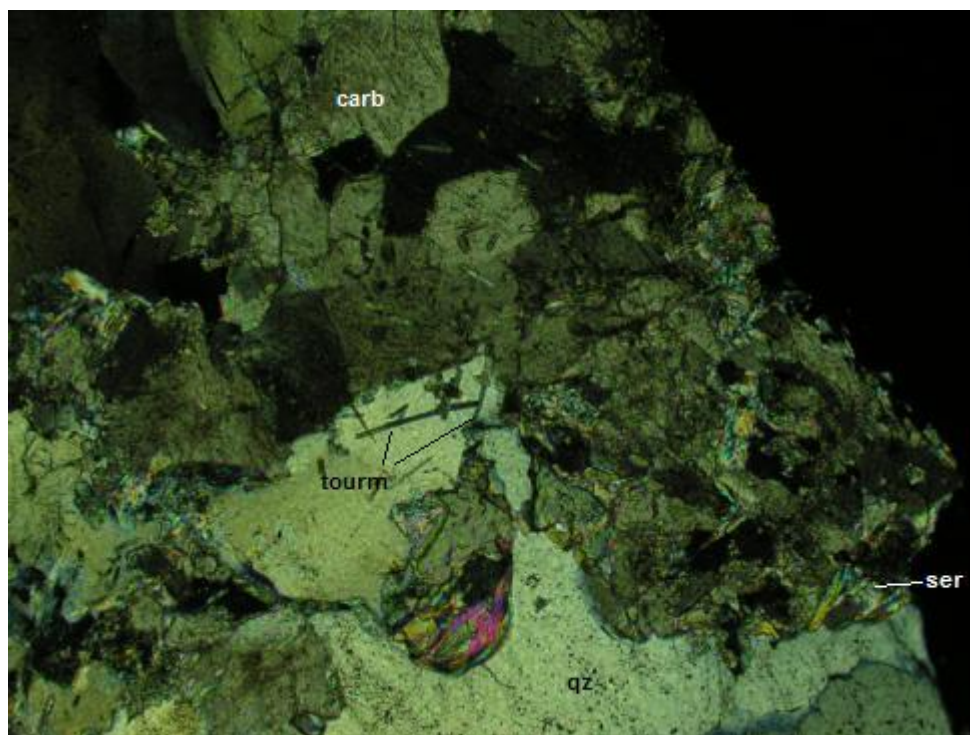


B

HC-53: A&B) View of quartz vein fragments. Note patchy carbonate aggregate within vein fragment (left). A) PPL, B) XPL, FOV $\approx$ 4.5 mm.

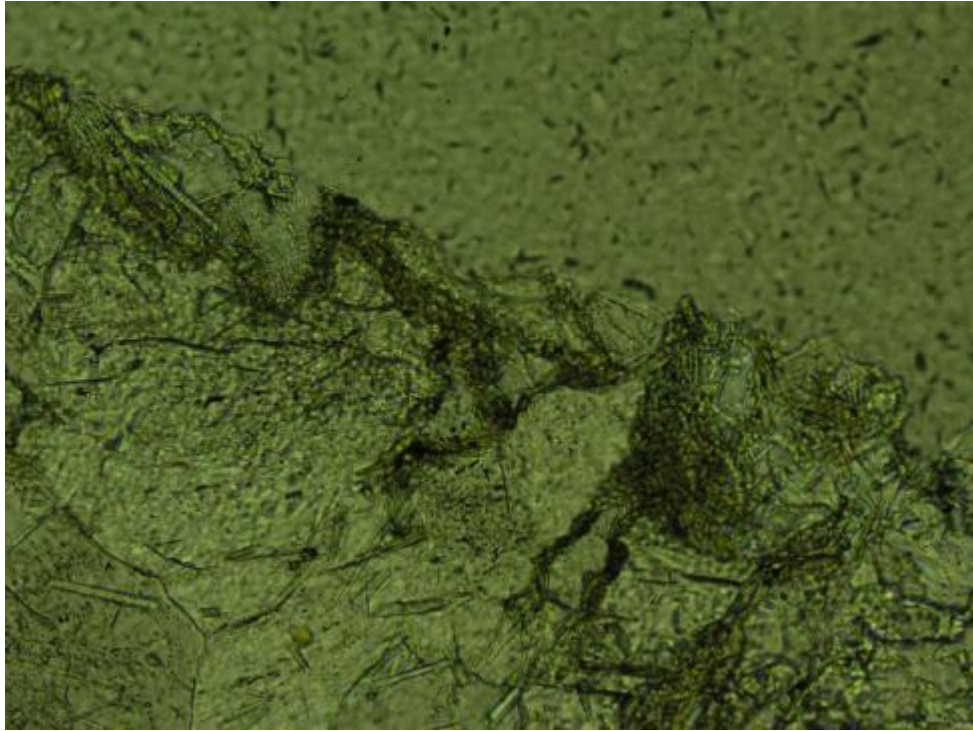


C

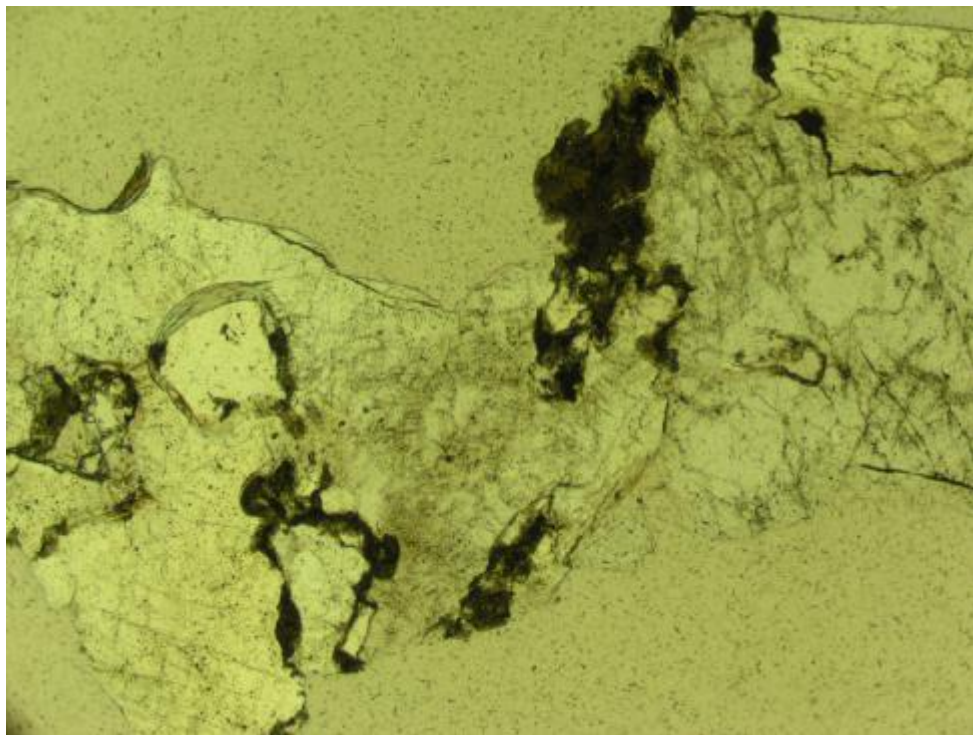


D

HC-53: C) Detailed view of very fine-grained sericite aggregate within quartz vein fragment. FOV $\approx$ 1.3 mm, XPL. D) Detailed view of patchy carbonate-sericite-(tourmaline) aggregate within quartz vein fragment. FOV $\approx$ 1.3 mm, XPL.

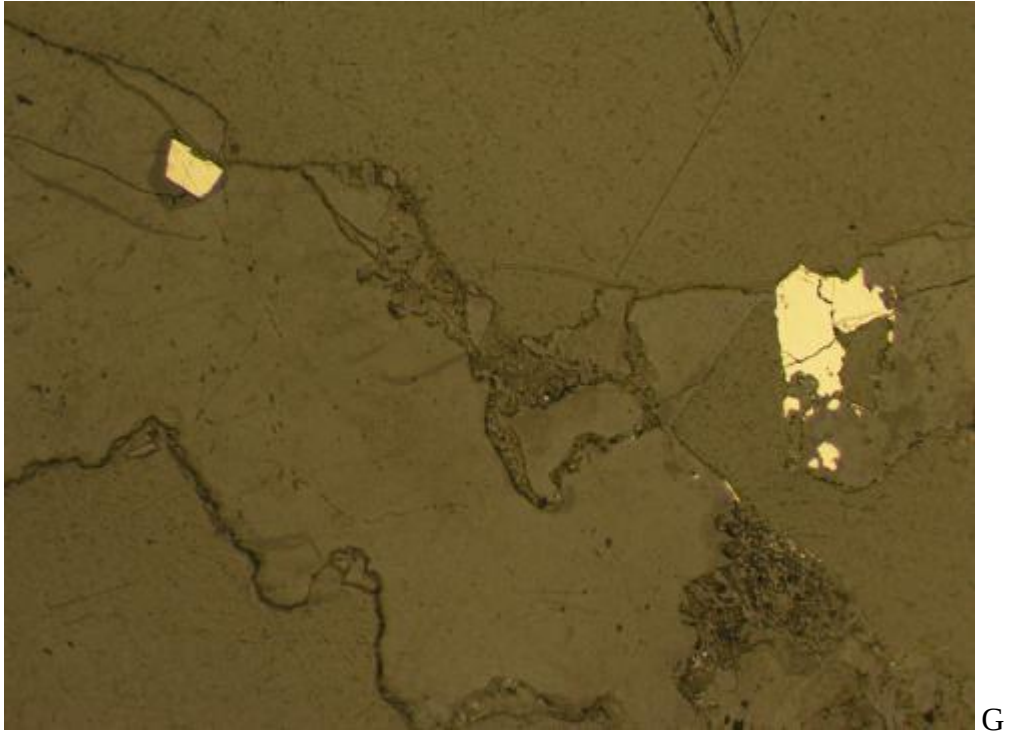


E



F

HC-53: E) Detailed view of acicular tourmaline and aphanitic brownish-green aggregate within quartz vein fragment. PPL, FOV $\approx$ 0.7 mm. F) Detailed view of quartz vein fragments with aphanitic brownish-green ?clay/chlorite aggregate developed at grain boundaries. PPL, FOV $\approx$ 2.6 mm.



HC-53: G) Detailed view of anhedral pyrite grains within quartz vein fragment. RL, FOV $\approx$ 0.7 mm.

Project: Hope Bay**Deposit:** Boston**Zone:****Rock Type:** Mafic volcanic: Basalt**Sample ID:** HC-55**Offcut #:** AP-10**Crushed Rock and Offcut Mount Description:**

Fine to coarse angular chips (less than 13 mm size). Chips comprise mostly light olive-grey strongly foliated rock, banded green-brown rock and white quartz vein fragments. Traces of fine-grained pyrite occurs disseminated. No reaction of chips to cold dilute HCl. No reaction of chips to magnet. Rare traces of reaction of rock chips to etching with HF and staining with sodium cobaltinitrite (trace yellow stain).

Polished Thin Section Description:

Fine to coarse chips representing altered and variably deformed rock: 1) fine to very fine-grained, strongly foliated chlorite-quartz-plagioclase-rutile-carbonate±sericite aggregate with chlorite and locally rutile and sericite defining the orientation of the foliation, 2) fine to very fine-grained massive quartz-carbonate aggregate locally with minor sericite, 3) fine-grained, anhedral carbonate aggregate, 4) very fine to medium-grained quartz and carbonate-quartz vein fragments and 5) rarely strongly foliated, very fine-grained sericite aggregate with radiating fine tourmaline, very fine bands of rutile and disseminated pyrite. Carbonate, quartz and pyrite occur commonly as liberated grains. Chlorite comprises approximately 10% of the section as very fine-grained aggregates within strongly foliated rock fragments. Minor rutile, approximately 1%, occurs as very fine-grained aggregates within the foliation, as clusters and disseminated. Quartz, approximately 25%, occurs as fine to very fine-grained (< 1 mm) patchy, anhedral aggregates commonly with undulose extinction and development of subgrains. Traces of quartz occur as fine to very fine-grained pressure fringes to pyrite and carbonate porphyroblasts. Sericite, ~ 10%, occurs as fine to very fine-grained (< 0.15 mm) flaky aggregates. Minor plagioclase, ~2% occurs as very fine aggregate within strongly foliated fragments.

Carbonate occurs in major amounts (~50%) as colourless and cloudy brownish carbonate in the following forms: 1) fine to very fine-grained (< 0.15 mm), anhedral to rhombic colourless aggregates within foliated chlorite-quartz-plagioclase-rutile-carbonate±sericite fragments, 2) fine to very fine-grained (< 0.1 mm), anhedral aggregates within carbonate and quartz-carbonate aggregate, 3) fine to medium-grained aggregate (< 2 mm) in vein fragments and 4) as fine-grained liberated grains (< 0.2 mm). Approximately half the carbonate, particularly the vein carbonate is cloudy and brownish. Note some of the carbonate is strained with local development of undulatory extinction and subgrains.

Sulphide occurs in minor amounts (~1%) as pyrite, in trace amounts as chalcopyrite and rarely as an unknown phase. Pyrite grains are fine to very fine grained (< 0.45 mm) and occur as disseminated to patchy sub-anhedral grains and aggregate in altered rock fragments and as liberated anhedral grains. Pyrite grains have irregular to straight grain boundaries which are unaltered. Traces of fine to very fine-grained (< 0.1 mm) chalcopyrite occur disseminated in rock fragments, as infill to pyrite and as inclusions in pyrite. Rarely grains of an unknown highly reflective, weakly anisotropic phase occur as patchy fine to very fine-grains (< 0.2 mm) in quartz-carbonate aggregate. The unknown grains resemble pyrite but are white rather than yellowish white in reflected light.

Project: Hope Bay
Rock Type: Mafic volcanic: Basalt
Sample ID: HC-55

Deposit: Boston

Zone:

Offcut #: AP-10

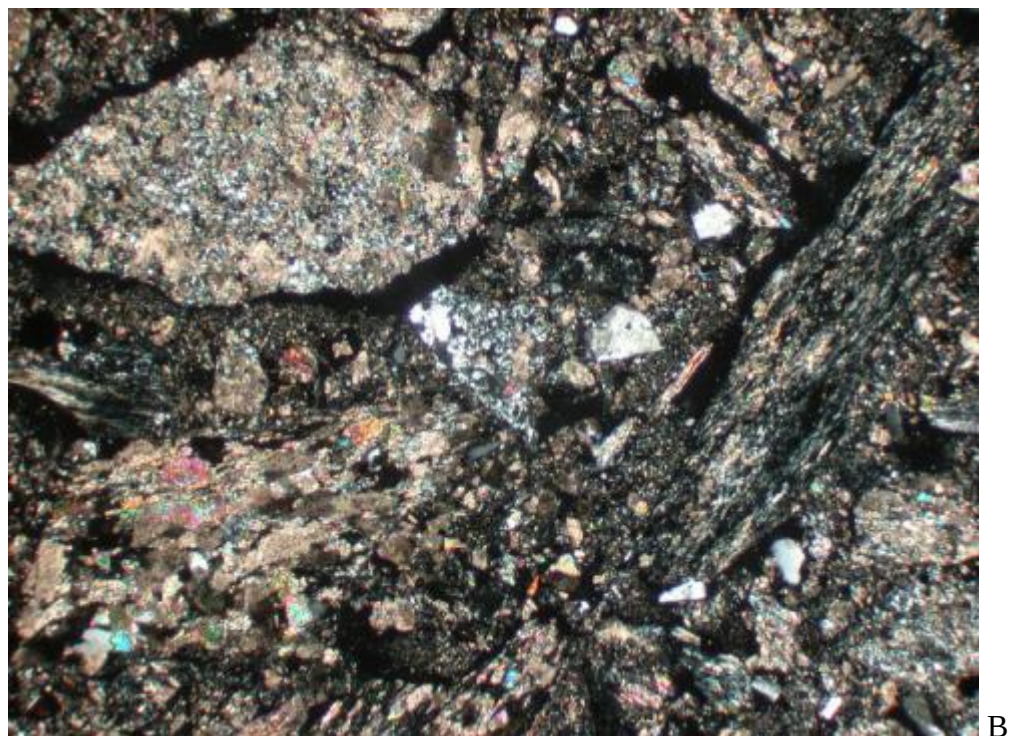
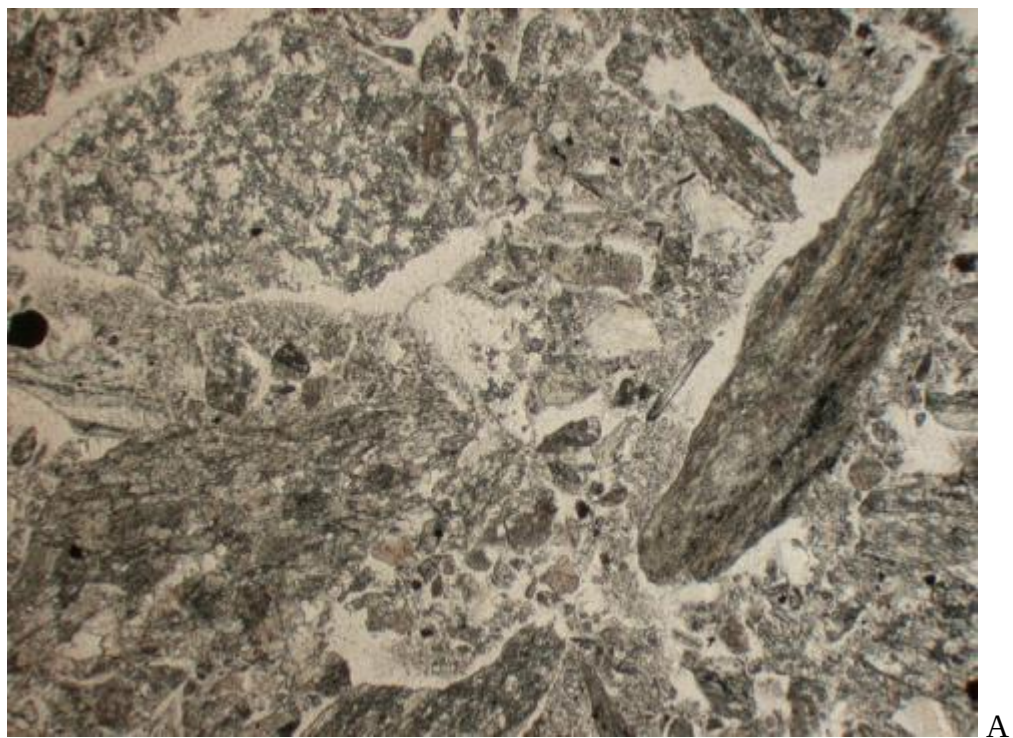
Tabular summary (visual estimate):

Sample # -	Sulphide	% ~	Carbonate occurrence	% ~	Fe-Ox	% ~	Other	% ~
HC-55	pyrite	1	colourless to cloudy	50		x	quartz	25
	chalcopryrite	tr	brownish, fine to very				chlorite	10
	unknown	r.	fine-grained				sericite	10
							plagioclase	2
							rutile	1
							tourmaline	r.

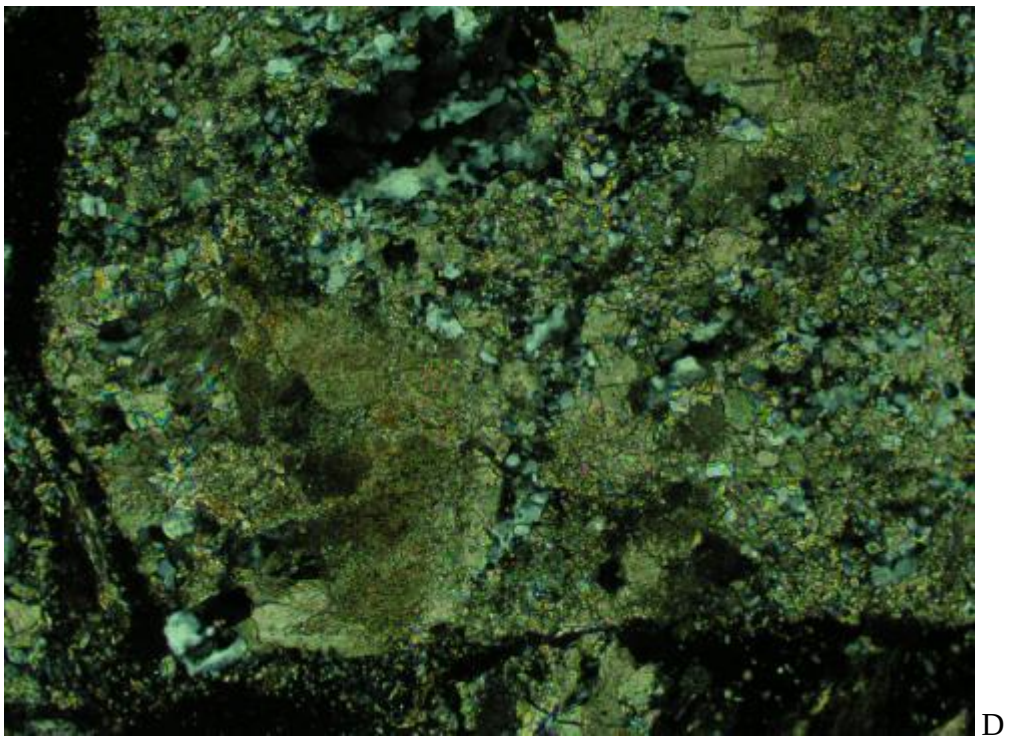
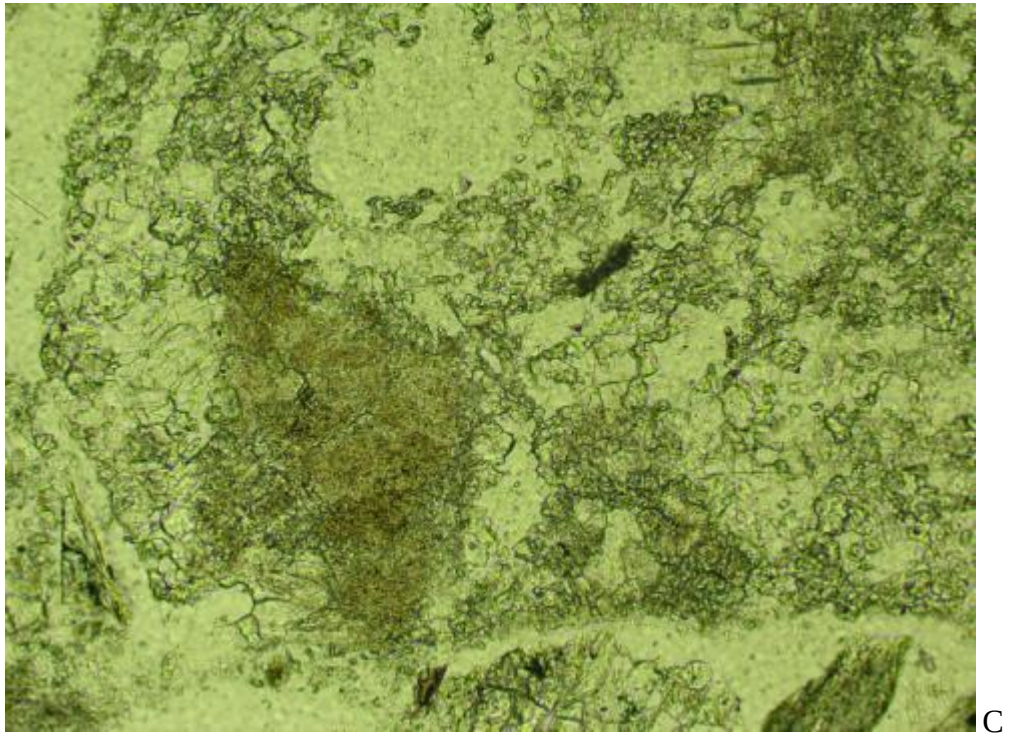
Abbreviations: tr = trace (< 1%); r. = rare; x = none observed

-fine-grained = > 0.05 mm and < 1 mm; very fine-grained = < 0.05 mm; medium-grained = 1-5 mm

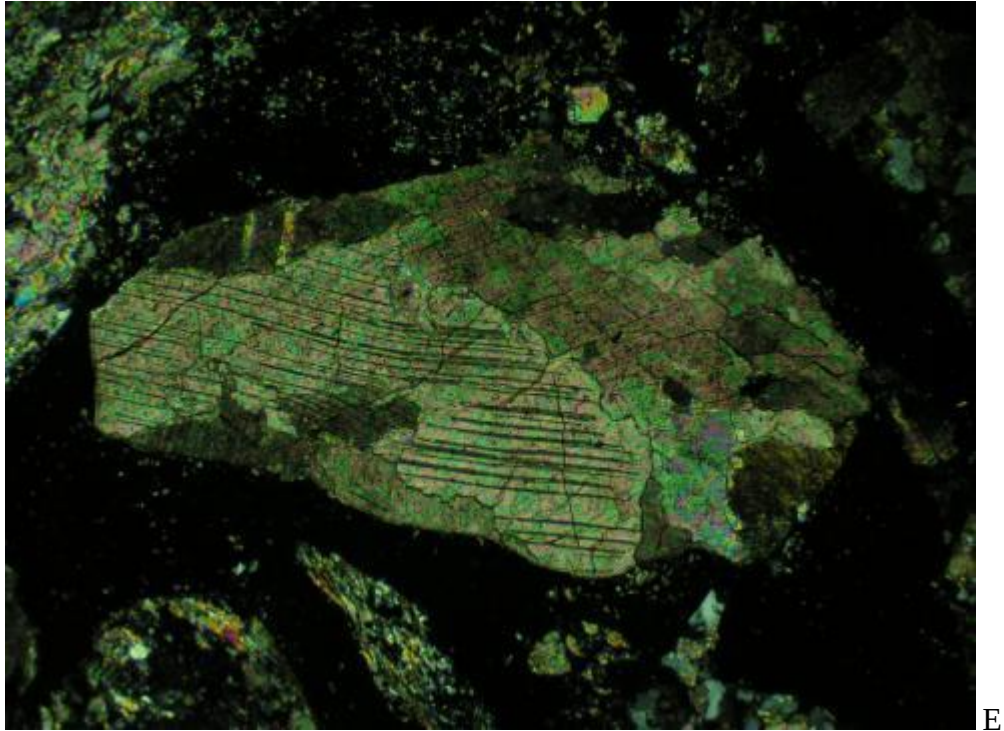
-Fe-ox = iron and/or Fe-Ti-oxides, includes amorphous, very fine-grained poorly crystalline and/or crystalline ferric hydroxides, oxides, oxyhydroxides, hydroxy-sulphate and/or oxyhydroxy-sulphate minerals



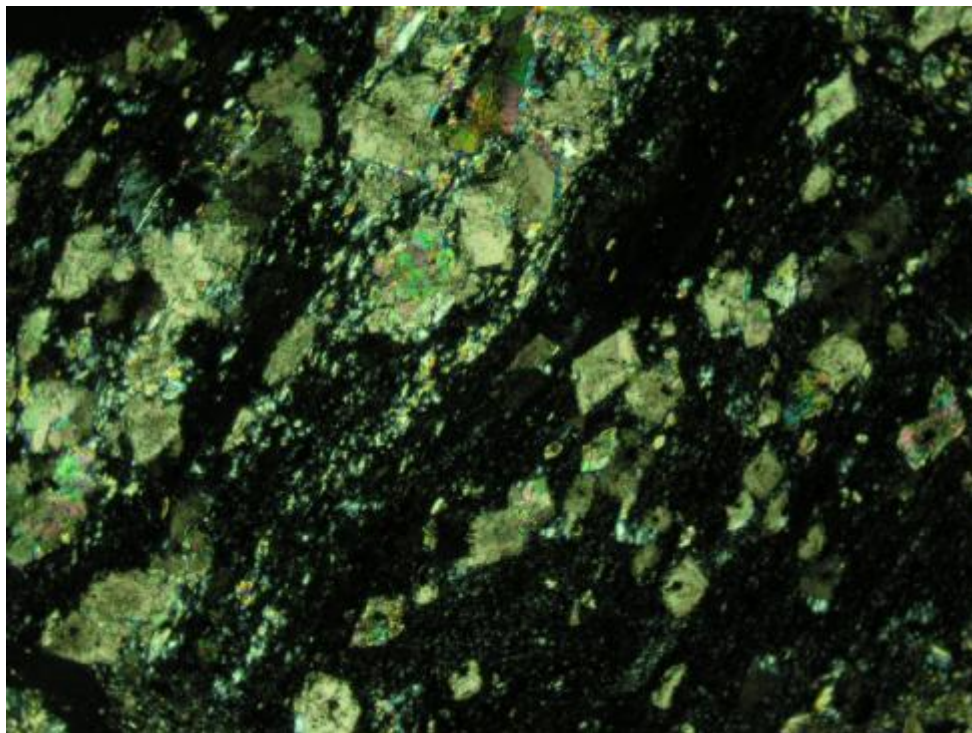
HC-55: A&B) View of altered and deformed rock rock chips including strongly foliated chlorite-quartz-plagioclase-rutile-carbonate-sericite aggregate (right), massive quartz-carbonate aggregate (top left) and carbonate aggregate (lower left). A) PPL, B) XPL, FOV $\approx$ 4.5 mm.



HC-55: C&D) Detailed view of massive quartz-carbonate rock fragment. Note patches of cloudy brownish carbonate. FOV $\approx$ 2.6 mm, C) PPL, D) XPL.

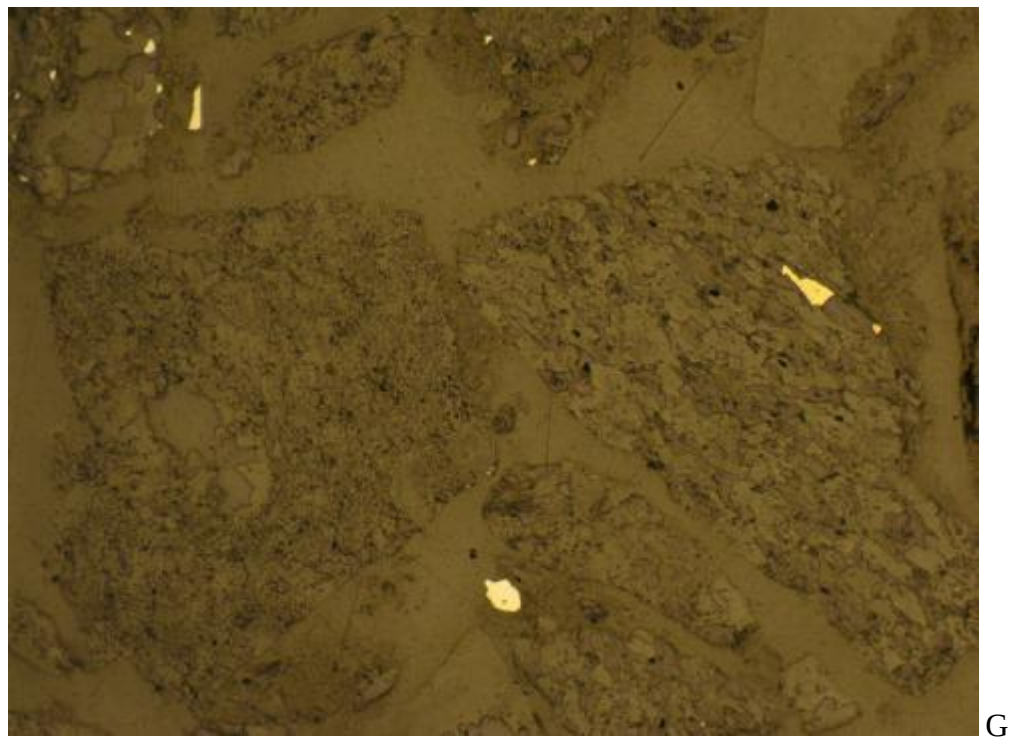


E

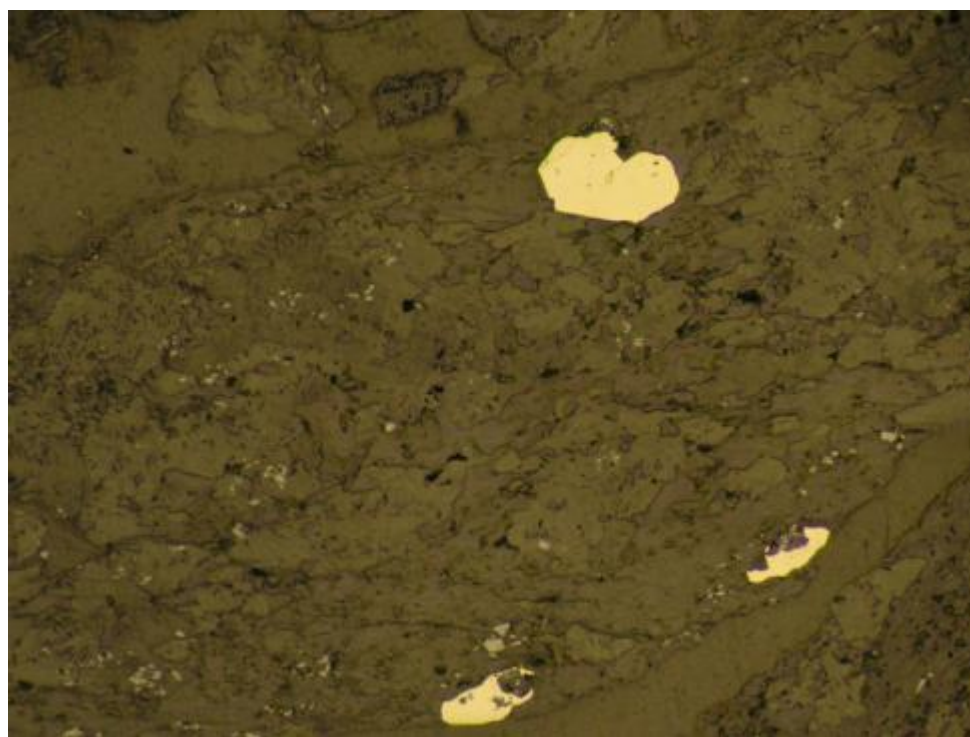


F

HC-55: E) Fragment of fine-grained anhedral carbonate aggregate. XPL, FOV $\approx$ 1.0 mm. F) Anhedral to rhombic colourless carbonate within foliated chloritic rock fragment. XPL, FOV $\approx$ 2.6 mm.

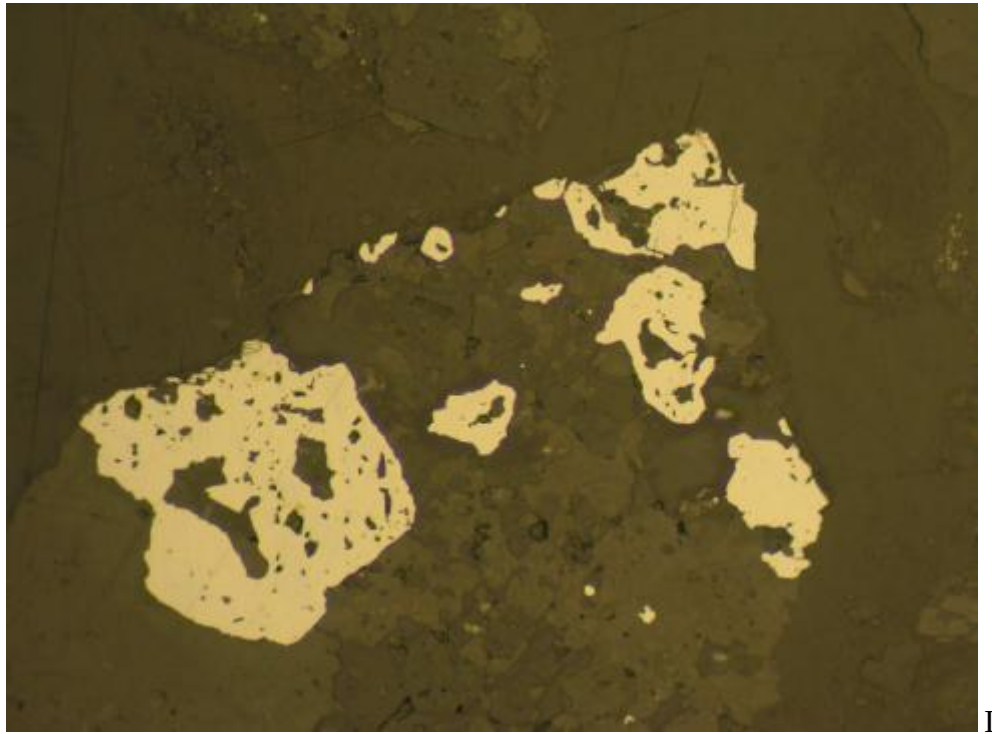


G



H

HC-55: G) Pyrite as disseminated and liberated grains. Traces of disseminated chalcopyrite. RL, FOV $\approx$ 2.6 mm.
H) Anhedral pyrite grains and traces of rutile within massive quartz-carbonate aggregate. RL, FOV $\approx$ 1.3 mm.



HC-55: I) White unknown grains within quartz-carbonate aggregate. RL, FOV $\approx$ 0.3 mm.

Statement of qualifications: Kathryn P.E. Dunne

I, Kathryn P.E. Dunne, of the City of Salmon Arm, province of British Columbia, do hereby certify that:

1. I am an independent consulting geologist, with a business office at 4610 Lakeshore Road NE, Salmon Arm, B.C., Canada. My business mailing address is: Bag 9000, # 207, 190B Trans Can Hwy NE, Salmon Arm, BC, V1E 1S3.
2. I am a graduate in geology, with a BSc in geology from The University of British Columbia (1985).
3. I received my Masters degree in geology from The University of British Columbia, Vancouver, B.C. in 1988.
4. I am a registered member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia (No. 18674).
5. I am a fellow of the Geological Association of Canada and a member of the Society of Economic Geologists and Mineralogical Association of Canada.
6. I have practiced my profession as a geologist for approximately 21 years: 4 years as geologist with the British Columbia Geological Survey Branch, 3 years as research coordinator at the Mineral Deposit Research Unit housed within the Department of Earth and Ocean Sciences at the University of British Columbia, and 14 years as an independent consultant.
7. The petrographic data of this report was collected by me in January and February 2011.

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Kathryn P.E. Dunne, M.Sc., P.Geo.
Consulting Geologist
February 7, 2011

Appendix M
Pre- and Post-Static Test Data for Humidity Cell Test Samples

Appendix M1 – Acid-Base Accounting Data for Pre- and Post-Humidity Cell
Test Samples

Appendix M-1: Acid-Base Accounting Data for Pre- and Post-Humidity Cell Test Samples

HC#	Lithology	Sample Type	Paste pH	Total Sulphur	Mod NP	TIC	TIC _(Ca+Mg)	NP/AP	TIC/AP	TIC _{(Ca+Mg)/AP}
				(Wt.%)	(Kg CaCO ₃ /t)	(Kg CaCO ₃ /t)	(Kg CaCO ₃ /t)			
HC-3	1	Pre-HCT	8.5	0.17	146	165	137	non-PAG	non-PAG	non-PAG
			8.7	0.12	145	148	123			
		Post-HCT	8.8	0.13	152	155	129			
HC-9	1	Pre-HCT	8.9	0.07	131	146	121	non-PAG	non-PAG	non-PAG
		Post-HCT	9.0	0.05	122	128	107			
HC-27	1	Pre-HCT	9.7	0.15	244	310	257	non-PAG	non-PAG	non-PAG
		Post-HCT	9.3	0.19	225	336	279			
HC-8a	1	Pre-HCT	8.4	0.35	270	303	251	non-PAG	non-PAG	non-PAG
		Pre-HCT	9.1	0.26	250	335	278			
		Post-HCT	8.6	0.27	283	354	294			
HC-24	1	Pre-HCT	8.5	2.17	337	409	339	non-PAG	non-PAG	non-PAG
		Post-HCT	8.9	1.86	321	445	369			
HC-25	1	Pre-HCT	9.6	0.40	239	321	267	non-PAG	non-PAG	non-PAG
		Post-HCT	9.3	0.43	238	318	264			
HC-26	1	Pre-HCT	8.5	3.93	294	367	305	Uncertain	Uncertain	Uncertain
		Post-HCT	9.0	3.65	309	359	298	Uncertain	non-PAG	Uncertain
HC-28	1	Pre-HCT	9.3	1.31	262	330	274	non-PAG	non-PAG	non-PAG
		Post-HCT	8.9	1.10	276	381	316			
HC-17	1 w. sediments	Pre-HCT	8.6	0.37	267	287	238	non-PAG	non-PAG	non-PAG
		Post-HCT	8.6	0.41	259	321	266			
HC-4	2pg	Pre-HCT	9.0	0.10	82	85	70	non-PAG	non-PAG	non-PAG
		Pre-HCT	9.1	0.14	82	84	70			
		Post-HCT	9.2	0.10	67	70	58			
HC-18	2pg	Pre-HCT	10.1	0.12	86	98	82	non-PAG	non-PAG	non-PAG
		Post-HCT	9.0	0.11	118	130	108			
HC-19	2pg mixed	Pre-HCT	9.1	0.24	85	88	73	non-PAG	non-PAG	non-PAG
		Post-HCT	9.0	0.19	80	69	57			
HC-20	5	Pre-HCT	9.2	3.30	214	246	204	Uncertain	Uncertain	Uncertain
		Post-HCT	9.2	2.72	386	455	377	non-PAG	non-PAG	non-PAG
HC-21	5	Pre-HCT	8.9	3.45	143	195	162	Uncertain	Uncertain	Uncertain
		Post-HCT	8.8	3.37	151	174	144			
HC-40	7a	Pre-HCT	9.0	0.11	114	120	100	non-PAG	non-PAG	non-PAG
		Post-HCT	8.7	0.10	106	126	105			
HC-41	7a	Pre-HCT	9.1	0.27	321	437	362	non-PAG	non-PAG	non-PAG
		Post-HCT	9.0	0.23	321	467	387			
HC-22	11c	Pre-HCT	9.3	0.02	22	11	9	non-PAG	non-PAG	non-PAG
		Post-HCT	9.0	0.04	29	14	12			
HC-23	11c	Pre-HCT	9.7	0.07	33	35	29	non-PAG	non-PAG	non-PAG
		Post-HCT	8.9	0.04	30	12	10			
HC-29	13a	Pre-HCT	9.6	0.19	316	403	335	non-PAG	non-PAG	non-PAG
		Post-HCT	9.2	0.13	311	483	400			
HC-30	13a	Pre-HCT	8.9	0.55	300	419	348	non-PAG	non-PAG	non-PAG
		Post-HCT	8.7	0.44	344	456	378			
HC-39	13a	Pre-HCT	9.0	0.54	191	235	195	non-PAG	non-PAG	non-PAG
		Post-HCT	9.4	0.47	207	221	184			
HC-5	13a	Pre-HCT	9.4	0.16	215	242	201	non-PAG	non-PAG	non-PAG
		Pre-HCT	9.4	0.24	203	269	223			
		Post-HCT	9.2	0.14	218	325	270			

¹Rock codes as follows: **1** = mafic volcanics; **1 w. sediments** = mafic volcanics with sediments; **2** = intermediate volcanics; **5** = sedimentary rocks; **7a** = early gabbro; **10b** = late intrusives; **11c** = diabase; **12q** = quartz vein; **13a** = deformation zone

Appendix M2 – Solid-Phase Trace Element Data by Aqua Regia Digestion with
ICP Finish for Pre- and Post-Humidity Cell Test Samples

Appendix M-2: Solid-Phase Trace Element Data by Aqua Regia Digestion with ICP Finish for Pre- and Post- Humiidty Cell Test Samples

HC#	Lithology ¹	Sample Type	Al	As	B	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Sc	Se	Sr	Th	Ti	Tl	U	V	W	Zn
			ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
HC-3	1	Pre-HCT	50,000	7	20	7	0.1	62,000	0.1	46	120	120	81,000	12	0.01	300	2	34,000	1,700	0.4	120	68	250	2.1	0.1	18	0.5	25	0.1	790	0.1	0.1	220	0.1	82
		Pre-HCT	53,000	4	20	7	0.1	58,000	0.1	46	130	130	82,000	13	0.01	330	2	34,000	1,600	0.2	270	75	290	3.8	0.1	19.0	0.6	28	0.1	960	0.1	0.1	230	0.1	96
HC-9	1	Post-HCT	47,000	4	<20	4	<0.1	60,000	0.1	43	130	130	76,000	11	<0.01	200	2	32,000	1,500	0.2	20	67	240	1.3	<0.1	20	0.6	22	<0.1	500	<0.1	<0.1	200	<0.1	83
		Pre-HCT	34,000	3	20	4	0.1	56,000	0.1	33	200	93	51,000	7	0.01	200	1	27,000	1,200	0.5	180	65	200	0.7	0.1	5.5	0.5	15	0.1	2,100	0.1	0.1	110	0.1	56
HC-27	1	Post-HCT	31,000	3	<20	3	<0.1	43,000	<0.1	33	200	94	48,000	6	<0.01	100	<1	27,000	1,100	0.5	90	70	210	0.3	<0.1	3.9	0.6	13	<0.1	1,700	<0.1	<0.1	98	<0.1	54
		Pre-HCT	13,000	120	20	3	0.1	63,000	0.1	45	110	100	44,000	3	0.01	200	1	22,000	1,200	0.1	510	140	180	0.5	0.3	15	0.7	25	0.1	20	0.1	0.1	56	0.1	60
HC-8a	1	Post-HCT	13,000	110	<20	5	<0.1	59,000	0.1	48	100	110	47,000	3	0.01	300	1	24,000	1,100	0.4	810	150	190	0.4	<0.1	15	0.9	21	<0.1	<10	<0.1	<0.1	64	<0.1	62
		Pre-HCT	32,000	93	20	44	0.1	72,000	0.1	73	570	200	91,000	13	0.01	1,500	9	50,000	1,800	0.6	450	490	750	1.7	0.2	16.0	0.6	150	0.5	1,600	0.1	0.1	240	0.1	71
		Pre-HCT	33,000	120	20	22	0.1	82,000	0.1	70	570	210	88,000	14	0.01	1,300	9	49,000	2,100	0.9	430	480	760	3.1	0.1	17	0.6	140	0.4	2,100	0.1	0.1	260	0.2	73
		Post-HCT	31,000	90	<20	24	<0.1	66,000	<0.1	66	470	190	86,000	13	<0.01	1,400	8	50,000	1,900	0.7	110	460	720	1.3	<0.1	14	<0.5	150	0.4	1,500	<0.1	<0.1	230	<0.1	65
HC-24	1	Pre-HCT	15,000	630	20	11	0.1	78,000	0.1	47	190	180	65,000	5	0.01	1,000	3	41,000	1,700	0.4	270	260	250	3.5	0.8	14	0.6	79	0.2	20	0.1	0.1	96	0.1	37
		Post-HCT	13,000	630	<20	6	<0.1	66,000	<0.1	52	200	140	64,000	5	0.01	600	3	45,000	1,700	1	180	280	270	2.5	0.4	12	<0.5	82	0.1	50	<0.1	<0.1	90	<0.1	35
HC-25	1	Pre-HCT	15,000	110	20	9	0.1	58,000	0.1	47	80	120	54,000	4	0.01	900	1	27,000	1,300	0.5	710	150	250	1	0.2	17	0.9	33	0.1	10	0.1	0.1	58	0.7	57
		Post-HCT	12,000	120	<20	5	<0.1	54,000	<0.1	55	82	130	56,000	3	<0.01	800	<1	29,000	1,200	0.6	810	160	200	0.7	<0.1	17	<0.5	26	<0.1	<10	<0.1	<0.1	53	0.2	52
HC-26	1	Pre-HCT	8,100	630	20	3	0.1	69,000	0.1	70	240	73	65,000	3	0.01	300	2	37,000	1,500	0.7	280	390	470	5.5	0.6	14	1.5	150	0.2	40	0.1	0.1	54	1.4	21
		Post-HCT	6,600	650	<20	2	<0.1	72,000	<0.1	69	230	95	64,000	3	<0.01	200	2	36,000	1,400	0.5	220	370	420	5.1	0.4	16	1.5	140	0.2	20	<0.1	<0.1	57	0.7	20
HC-28	1	Pre-HCT	16,000	430	20	18	0.1	64,000	0.1	44	82	97	68,000	5	0.01	1,700	1	26,000	1,600	0.2	680	130	320	1.8	0.2	13	0.5	78	0.1	20	0.1	0.1	67	0.2	67
		Post-HCT	12,000	430	<20	6	<0.1	59,000	<0.1	42	75	89	68,000	4	0.01	600	<1	29,000	1,700	0.4	270	130	270	1.6	0.2	12	0.6	76	<0.1	<10	<0.1	<0.1	58	<0.1	65
HC-17	1 w. sediments	Pre-HCT	41,000	11	<20	21	<0.1	73,000	<0.1	57	260	180	100,000	14	<0.01	500	8	41,000	2,100	0.9	110	190	790	2.2	0.2	17	<0.5	45	0.5	150	<0.1	<0.1	250	<0.1	110
		Post-HCT	42,000	13	<20	6	<0.1	58,000	<0.1	50	210	190	93,000	13	<0.01	200	5	43,000	2,000	0.8	30	170	770	1.2	<0.1	15	1	34	0.3	110	<0.1	<0.1	220	<0.1	99
HC-4	2pg	Pre-HCT	31,000	3	<20	6	0.2	35,000	0.1	42	210	130	43,000	5	<0.01	500	<1	21,000	920	1.4	280	140	200	3.4	<0.1	9	<0.5	20	<0.1	2700	<0.1	<0.1	120	<0.1	75
		Pre-HCT	29,000	3	23	8	0.1	35,000	0.26	44	220	130	41,000	6	0.01	430	1	19,000	950	0.1	560	140	190	4	0.1	9	0.6	25	0.1	2,900	0.1	0.1	110	0.1	92
		Post-HCT	26,000	3	<20	4	<0.1	34,000	0.1	42	250	140	42,000	5	<0.01	500	<1	20,000	930	0.3	370	140	180	3.3	<0.1	8.1	0.5	14	<0.1	2200	<0.1	<0.1	110	<0.1	83
HC-18	2pg	Pre-HCT	33,000	10	<20	10	<0.1	34,000	<0.1	46	240	110	47,000	8	<0.01	700	2	28,000	1,100	0.7	330	150	190	0.8	<0.1	13	0.7	14	0.9	1700	<0.1	0.1	140	<0.1	66
		Post-HCT	31,000	10	<20	5	<0.1	33,000	<0.1	44	230	110	44,000	7	<0.01	500	1	28,000	1,000	0.4	240	140	170	0.3	<0.1	10	<0.5	7	<0.1	1100	<0.1	<0.1	140	<0.1	57
HC-19	2pg mixed	Pre-HCT	29,000	8	<20	4	<0.1	35,000	0.2	51	210	160	45,000	5	<0.01	400	<1	18,000	1,300	0.2	490	140	170	1.3	0.1	7.3	0.8	22	<0.1	2800	<0.1	<0.1	100	<0.1	78
		Post-HCT	24,000	4	<20	2	<0.1	34,000	0.1	47	230	160	41,000	4	<0.01	300	<1	17,000	1,200	0.2	310	150	170	1.4	<0.1	5.7	<0.5	12	<0.1	2000	<0.1	<0.1	90	<0.1	70
HC-20	5	Pre-HCT*	5,900	160	20	11	0.1	48,000	0.1	15	22	45	32,000	2	0.01	900	5	22,000	770	0.7	370	95	230	1.2	0.4	3.6	0.5	120	1.1	10	0.1	0.2	16	0.1	13
		Post-HCT	2,100	1,100	<20	3	<0.1	95,000	<0.1	66	150	42	57,000	<1	<0.01	300	<1	41,000	1,500	0.3	140	650	30	3.2	1.2	12	1	310	<0.1	30	<0.1	<0.1	45	0.6	18
HC-21	5	Pre-HCT	5,200	86	20	51	0.3	35,000	0.2	41	53	120	52,000	2	0.02	2,000	6	15,000	750	2.3	340	76	930	9.3	0.9	3.4	2.6	64	0.9	20	0.3	0.2	13	0.1	68
		Post-HCT	2,500	55	<20	35	0.2	40,000	0.2	45	30	310	52,000	<1	<0.01	1,300	5	14,000	850	1.5	250	44	840	9.7	0.8	2.9	2.6	57	0.6	<10	0.4	0.1	8	0.1	86
HC-40	7a	Pre-HCT	43,000	7	20	6	0.1	25,000	0.1	45	170	100	83,000	11	0.01	500	3	52,000	1,400	0.2	390	110	400	0.8	0.1	17</									

Appendix N
Humidity Cell Test Interpretative Tables

Appendix N1 – Summary of ABA and Kinetic Test Results

Appendix N-1: Summary of ABA and Kinetic Test Results

Humidity Cell #	Lithology ¹	Total Sulphur % Rank ²	Preliminary Economic Classification	Static Test Results					Kinetic Test Results					
				Total Sulphur	NP	TIC	NP/AP	TIC/AP	pH		SO ⁴ Release Rates		As Release Rates	
											Initial	Stable	Initial	Stable
HC-3	1	11%	W	0.17	146	165	27.5	31.0	7.5	9.1	2.5	0.75	0.00063	0.0008
	1	17%	W	0.12	145	148	38.3	39.1						
HC-9	1	52%	W	0.07	131	146	59.9	66.6	7.9	9.3	1.2	0.66	0.00059	0.00023
HC-27	1	79%	W	0.15	244	310	52.1	66.1	8.5	9.5	1.1	1.3	0.046	0.16
HC-25	1	100%	W	0.40	239	321	19.2	25.7	7.8	9.5	6.5	2.1	0.16	0.065
HC-8	1	50%	mixed	0.26	250	335	30.7	41.2	7.5	9.5	2.4	2.2	0.016	0.013
	1	18%	mixed	0.35	270	303	24.9	27.9						
HC-28	1	100%	O	1.31	262	330	6.4	8.1	8.1	9.3	4.3	10	0.023	0.077
HC-26	1	43%	O	3.93	294	367	2.4	3.0	7.3	8.8	22	25	0.042	0.0067
HC-24	1	62%	O	2.17	337	409	5.0	6.0	7.7	9.1	20	3.1	0.089	0.16
HC-17	1 w. sediments	0.921	W	0.37	267	287	23.1	24.8	8.1	9.2	6	1.7	0.0015	0.00032
HC-4	2pg	0.521	mixed	0.10	82	85	26.4	27.2	7.3	9.1	1.2	1.1	0.00073	0.00021
	2pg	0.405	mixed	0.14	82	84	19.4	19.8						
HC-18	2pg	0.102	W	0.12	86	98	22.9	26.2	8.4	9.5	0.58	0.8	0.001	0.0073
HC-19	2pg mixed	0.468	W	0.24	85	88	11.3	11.7	7.3	9.6	0.62	4.8	0.0029	0.00032
HC-20	5	89%	W	3.30	214	246	2.1	2.4	7.4	8.9	19	2.9	0.66	0.33
HC-21	5	90%	W	3.45	143	195	1.3	1.8	7.5	8.3	130	41	0.00048	0.00018
HC-40	7a	20%	W	0.11	114	120	33.3	34.9	7.7	9.9	7.1	1.1	0.0037	0.0022
HC-41	7a	80%	W	0.27	321	437	38.0	51.7	8.1	9.2	17	1.6	0.12	0.27
HC-22	11c	0%	W	0.02	22	11	35.3	17.4	7.5	10.0	0.62	2.2	0.005	0.00062
HC-23	11c	100%	W	0.07	33	35	14.9	16.0	8.1	9.9	0.59	1.5	0.0094	0.0013
HC-5	13a	35%	W	0.16	215	242	42.9	48.4	7.5	9.1	3.6	0.87	0.021	0.037
	13a	72%	W	0.24	203	269	27.4	36.4						
HC-29	13a	50%	W	0.19	316	403	53.2	67.9	7.9	9.7	4.1	1	0.18	0.065
HC-39	13a	96%	W	0.54	191	235	11.3	13.9	7.3	9.1	58	1.7	0.039	0.0029
HC-30	13a	92%	W	0.55	300	419	17.5	24.4	8.0	9.2	4.3	4.1	0.0013	0.00016

¹Rock codes as follows: **1** = mafic volcanics; **1 w. sediments** = mafic volcanics with sediments; **2pg** = pale green pillows; **5** = sedimentary rocks; **7a** = early gabbro; **10b** = late intrusives; **11c** = diabase; **12q** = quartz vein; **13a** = deformation zone

²Rank for mafic metavolcanics (1) relative to rock type and economic classification for Madrid North sample set. Pale green pillow (2pg) and mixed pale green pillow (2pg mixed) were compared to intermediate metavolcanics waste (2) and mixed intermediate metavolcanics (2 mixed), respectively. All other samples were compared to relative rock type, irrespective of economic classification.

Appendix N2 – Summary of Trace Element (ICP) Stable Release Rates

Appendix N-2: Summary of Trace Element (ICP) Stable Release Rates for Humidity Cell Tests (mg/kg/week)

HC #	Rock Type ¹	Total Sulphur % Rock ²	Preliminary Economic Classification	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	Fe	Pb	Li	Mg	Mn	Hg	Mo	Ni	P	K	Se	Si	Ag	Na	Sr	Ti	Sn	Tl	U	V	Zn	Zr	
				mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week	mg/kg/week
HC-3	1	11%	W	0.000031	0.00006	0.00006	0.00002	0.000023	0.000022	0.018	0.0000084	3.4	0.000075	0.000033	0.0003	0.0045	0.000025	0.00024	0.53	0.0018	8E-06	0.000052	0.000055	0.0046	0.12	0.000057	0.14	0.000079	0.064	0.0027	0.000035	0.000038	0.000032	0.000014	0.00005	0.00016	0.00019	0.00046
HC-9	1	52%	W	0.053	0.00004	0.00023	0.00016	0.000035	0.000035	0.018	0.0000065	3.4	0.000079	0.000038	0.00032	0.01	0.000031	0.00027	0.56	0.0013	8E-06	0.000039	0.000065	0.0056	0.12	0.000054	0.27	0.000011	0.24	0.0048	0.000005	0.000038	0.000023	0.000017	0.00089	0.00031	0.00025	
HC-27	1	78%	W	0.011	0.0013	0.16	0.000075	0.000045	0.000022	0.025	0.0000025	2	0.000056	0.00005	0.000135	0.003	0.000014	0.00051	0.94	0.0032	9E-06	0.000046	0.00005	0.0023	0.23	0.000013	0.13	0.000022	0.12	0.0057	0.000001	0.000012	0.000006	0.00042	0.00018	0.00045		
HC-25	1	100%	W	0.012	0.00071	0.065	0.000088	0.000046	0.0000023	0.023	0.0000023	3.4	0.000069	0.00005	0.00024	0.0047	0.000063	0.00025	1.8	0.0039	3E-06	0.00018	0.00089	0.0026	0.15	0.000065	0.18	0.0000023	0.082	0.0035	0.0000069	0.000017	0.00023	0.0000037	0.0001	0.00033	0.00045	
HC-8	1	50%	mixed	0.0072	0.000097	0.013	0.00088	0.000045	0.0000022	0.022	0.0000022	1.5	0.000069	0.000039	0.00017	0.0045	0.000069	0.00022	0.56	0.00095	7E-06	0.00039	0.00012	0.001	0.14	0.000081	0.11	0.0000022	0.01	0.0046	0.0000069	0.000053	0.000075	0.00043	0.00045	0.00045		
HC-28	1	100%	O	0.025	0.00039	0.077	0.00011	0.000046	0.0000023	0.023	0.0000023	8.7	0.000046	0.0003	0.00016	0.0042	0.000064	0.00023	4.6	0.002	9E-07	0.0001	0.0021	0.0032	0.13	0.000071	0.09	0.0000023	0.03	0.011	0.000003	0.000079	0.00023	0.0000037	0.0001	0.00033	0.00045	
HC-26	1	43%	O	0.003	0.000061	0.0067	0.00013	0.000045	0.0000023	0.023	0.0000038	8.7	0.000046	0.0003	0.00016	0.0042	0.000064	0.00023	4.6	0.002	9E-07	0.0001	0.0021	0.0032	0.13	0.000071	0.09	0.0000023	0.03	0.011	0.000003	0.000079	0.00023	0.0000037	0.0001	0.00033	0.00045	
HC-24	1	62%	O	0.015	0.0011	0.16	0.00016	0.000047	0.0000023	0.023	0.0000023	1.8	0.00007	0.0005	0.00043	0.0046	0.000018	0.00017	1.2	0.0048	4E-06	0.00041	0.00039	0.0022	0.12	0.000052	0.11	0.0000022	0.044	0.0042	0.0000039	0.000015	0.00023	0.0000031	0.00012	0.00089	0.00044	
HC-17	1 w. sediment	0.921	W	0.015	0.000046	0.00032	0.00007	0.000044	0.0000022	0.022	0.0000026	2.3	0.000052	0.000022	0.00015	0.0037	0.00009	0.0005	1.3	0.0025	9E-06	0.00014	0.00039	0.0022	0.12	0.000052	0.11	0.0000022	0.044	0.0042	0.0000039	0.000015	0.00023	0.0000031	0.00012	0.00089	0.00044	
HC-4	2mg	0.521	mixed	0.01	0.000027	0.00021	0.0001	0.000023	0.0000022	0.02	0.000068	2.5	0.00007	0.000024	0.00029	0.0061	0.00008	0.00019	0.29	0.0013	8E-06	0.00043	0.00011	0.0049	0.12	0.000031	0.2	0.0000079	0.12	0.0033	0.000046	0.00003	0.00024	0.000011	0.00047	0.00018	0.00047	
HC-18	2mg	0.102	W	0.005	0.000051	0.0001	0.000011	0.000026	0.000011	0.0000091	0.004	0.0000038	3.1	0.000079	0.000029	0.00024	0.0048	0.000022	0.00065	0.75	0.0032	8E-06	0.00049	0.00005	0.0031	0.27	0.00013	0.29	0.0000039	0.32	0.0038	0.0000024	0.000023	0.000006	0.000175	0.00047		
HC-19	2mg mixed	0.498	W	0.027	0.000018	0.00012	0.000011	0.000045	0.0000022	0.022	0.0000046	5	0.000045	0.000056	0.00024	0.0041	0.000077	0.00013	0.22	0.0018	9E-07	0.00007	0.00022	0.0027	0.12	0.000098	0.18	0.0000032	0.1	0.0013	0.0000017	0.000019	0.00022	0.0000018	0.00018	0.00075	0.00045	
HC-20	5	89%	W	0.0052	0.0018	0.13	0.00025	0.000044	0.0000022	0.022	0.0000034	2.7	0.000044	0.0001	0.000088	0.0041	0.000088	0.00022	1.5	0.0027	9E-07	0.00012	0.00016	0.0036	0.12	0.000065	0.12	0.0000022	0.063	0.004	0.0000027	0.000033	0.00022	0.0000016	0.0002	0.0004	0.00044	
HC-21	5	90%	W	0.003	0.000054	0.00018	0.0001	0.000045	0.0000023	0.023	0.0000027	15	0.000045	0.0001	0.000037	0.0041	0.000042	0.00023	5.3	0.0027	9E-07	0.00069	0.00019	0.0031	0.15	0.00024	0.2	0.0000023	0.12	0.025	0.00006	0.000015	0.00023	0.000011	0.00029	0.00036	0.00045	
HC-40	7g	20%	W	0.037	0.00089	0.0022	0.00011	0.0000079	0.0000068	0.023	0.000025	1.3	0.000045	0.00017	0.00022	0.0061	0.000012	0.00042	1	0.0018	8E-06	0.00013	0.00007	0.003	0.48	0.000089	0.28	0.0000038	1.3	0.0077	0.0000016	0.000012	0.00022	0.0000033	0.00013	0.00018	0.00045	
HC-41	7g	87%	W	0.051	0.00096	0.07	0.00002	0.000047	0.0000023	0.023	0.0000023	1.8	0.00011	0.0001	0.00025	0.0097	0.000016	0.0006	1.3	0.0027	8E-06	0.000075	0.00002	0.0026	0.38	0.000042	0.24	0.0000037	0.084	0.0033	0.0000069	0.000016	0.00027	0.0000087	0.00012	0.00019	0.00046	
HC-22	11c	0%	W	0.024	0.000033	0.00062	0.00012	0.0000044	0.0000022	0.022	0.0000022	1.1	0.000058	0.000017	0.00036	0.0039	0.00003	0.00085	0.29	0.0014	3E-06	0.000077	0.00012	0.0036	0.36	0.000048	0.28	0.0000022	1.4	0.0043	0.00000088	0.00001	0.00022	0.0000021	0.00089	0.00018	0.00044	
HC-23	11c	100%	W	0.033	0.000017	0.0013	0.00017	0.000045	0.0000022	0.022	0.0000022	1.6	0.000052	0.000063	0.00026	0.004	0.000026	0.0004	0.72	0.00082	3E-06	0.000045	0.000015	0.0034	0.47	0.000054	0.46	0.0000022	1.6	0.0036	0.00000088	0.0000066	0.00022	0.0000016	0.0012	0.00018	0.00044	
HC-5	13a	36%	W	0.012	0.00027	0.037	0.000036	0.000033	0.0000022	0.022	0.000006	1.9	0.000079	0.000029	0.00028	0.00027	0.00028	0.00007	1.1	0.0023	8E-06	0.00006	0.00019	0.005	0.41	0.000072	0.13	0.0000011	0.1	0.006	0.0000047	0.000033	0.000019	0.00023	0.0000029	0.00012	0.00021	
HC-29	13a	96%	W	0.012	0.00077	0.095	0.00014	0.000044	0.0000022	0.024	0.000022	1.2	0.000052	0.00054	0.00019	0.0043	0.000018	0.00022	0.97	0.0019	5E-06	0.00016	0.00003	0.0024	0.74	0.000043	0.1	0.0000022	0.14	0.0038	0.0000089	0.000006	0.00023	0.000008	0.00017	0.00018	0.00044	
HC-39	13a	96%	W	0.0038	0.00016	0.0029	0.000093	0.0000046	0.0000023	0.023	0.0000023	2.4	0.000046	0.000056	0.00018	0.0048	0.000012	0.00022	1.2	0.00018	9E-07	0.00047	0.00029	0.0032	0.16	0.000024	0.069	0.0000023	0.056	0.0065	0.00000093	0.000038	0.00023	0.0000025	0.00001	0.00024	0.00046	
HC-30	13a	92%	W	0.0068	0.000077	0.00016	0.000015	0.000044	0.0000023	0.022	0.0000022	2.8	0.000051	0.000017	0.00005	0.0028	0.0000087	0.00001	2	0.003	2E-06	0.00022	0.00003	0.0025	0.12	0.00009	0.059	0.0000022	0.041	0.0046	0.00000088	0.0000087	0.00023	0.0000025	0.00001	0.00024	0.00046	

¹Rock codes as follows: 1 = mafic volcanic; 1 w. sediment = mafic volcanic with sediment; 2mg = pale green pillow; 5 = sedimentary rocks; 7a = early gabbro; 10b = rare intrusives; 11c = quartz vein; 13a = deformation zone
²Rank for mafic metavolcanics (1) relative to rock type and economic classification for Madrid North sample set. Pale green pillow (2mg) and mixed pale green pillow (5mg mixed) were compared to intermediate metavolcanics waste (2) and mixed intermediate metavolcanics (2 mixed), respectively. All other samples were compared to relative rock type, irrespective of economic classification.

Appendix N3 – Summary of General Parameters, Nutrients and Ions
Stable Release Rates

Appendix N-3: Summary of General Parameters, Nutrient & Ion Stable Release Rates

Humidity Cell #	Lithology ¹	Total Sulphur % Rank ²	Preliminary Economic Classification	SO4	Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS
mg/kw/week												
HC-3	1	11%	W	0.8	10	0.01	0.6	0.02	0.002	0.07	0.005	13
HC-9	1	52%	W	0.7	11	0.02	0.4	0.02	0.02	0.07	0.01	14
HC-27	1	79%	W	1.3	8.5	0.01	0.2	0.01	0.002	0.09	0.05	11
HC-25	1	100%	W	2.1	7.0	0.005	0.3	0.01	0.002	0.05	0.02	14
HC-8	1	50%	mixed	2.2	7.0	0.01	0.2	0.01	0.002	0.02	0.005	11
HC-28	1	100%	O	10	9.3	0.005	0.2	0.01	0.003	0.04	0.02	20
HC-26	1	43%	O	25	8.7	0.005	0.3	0.05	0.002	0.11	0.004	52
HC-24	1	62%	O	3.1	7.1	0.005	0.4	0.01	0.002	0.05	0.05	13
HC-17	1 w. sediments	92%	W	1.7	9.5	0.01	0.32	0.04	0.01	0.07	0.00	13
HC-4	2pg	52%	mixed	1.1	6.9	0.01	0.24	0.01	0.00	0.05	0.01	11
HC-18	2pg	10%	W	0.8	12	0.01	0.24	0.01	0.00	0.10	0.00	15
HC-19	2pg mixed	47%	W	4.8	7.6	0.00	0.38	0.01	0.00	0.13	0.00	15
HC-20	5	89%	W	2.9	10	0.004	0.2	0.01	0.002	0.11	0.13	15
HC-21	5	90%	W	41	12	0.005	1.2	0.01	0.002	0.13	0.003	79
HC-40	7a	20%	W	1.1	8.9	0.01	1.5	0.11	0.007	0.06	0.003	13
HC-41	7a	80%	W	1.6	8.9	0.01	0.4	0.01	0.002	0.08	0.09	12
HC-22	11c	0%	W	2.2	5.8	0.004	0.5	0.01	0.002	0.04	0.003	10
HC-23	11c	100%	W	1.5	10	0.005	0.5	0.01	0.002	0.05	0.003	14
HC-5	13a	35%	W	0.9	9.1	0.02	0.4	0.02	0.002	0.06	0.01	12
HC-29	13a	50%	W	1	7.7	0.004	0.2	0.01	0.002	0.08	0.02	10
HC-39	13a	96%	W	1.7	8.0	0.005	1	0.06	0.003	0.16	0.003	12
HC-30	13a	92%	W	4.1	11	0.004	0.2	0.01	0.002	0.04	0.003	17

¹Rock codes as follows: 1 = mafic volcanics; 1 w. sediments = mafic volcanics with sediments; 2pg = pale green pillows; 5 = sedimentary rocks; 7a = early gabbro; 10b = late intrusives; 11c = diabase; 12q = quartz vein; 13a = deformation zone

²Rank for mafic metavolcanics (1) relative to rock type and economic classification for Madrid North sample set. Pale green pillow (2pg) and mixed pale green pillow (2pg mixed) were compared to intermediate metavolcanics waste (2) and mixed intermediate metavolcanics (2 mixed), respectively. All other samples were compared to relative rock type, irrespective of economic classification.

Appendix N4 – Summary of Kinetic Test Depletion Calculations

Appendix N-4: Summary of Kinetic Test Depletion Rates

HC #	Rock Type ¹	Total Sulphur % Rank ²	Preliminary Economic Classification	Total Sulphur	NP/AP	TIC/AP	(Ca+Mg)/SO4	Stable SO4 Release Rate mg/kg/wk	Time to Depletion			NP Depletion > AP Depletion	TIC Depletion > AP Depletion	Ca+Mg/ SO4 < NP/AP	Ca+Mg/ SO4 < TIC/AP	Prediction	
									NP	TIC	Sulphide					Neutral	Acidic
				%S					years								
HC-3	1	11%	W	0.17	27	31	14	0.75	261	295	128	Yes	Yes	Yes	Yes	Likely	
	1	17%	W	0.12	38	39	14	0.75	260	265	83	Yes	Yes	Yes	Yes	Likely	
HC-9	1	52%	W	0.070	60	67	16	0.66	231	257	59	Yes	Yes	Yes	Yes	Likely	
HC-27	1	79%	W	0.15	52	66	6.6	1.3	521	661	65	Yes	Yes	Yes	Yes	Likely	
HC-25	1	100%	W	0.40	19	26	4.3	2.1	477	641	107	Yes	Yes	Yes	Yes	Likely	
HC-8	1	50%	mixed	0.26	31	41	3.3	2.2	625	838	65	Yes	Yes	Yes	Yes	Likely	
	1	18%	mixed	0.35	25	28	3.3	2.2	676	758	85	Yes	Yes	Yes	Yes	Likely	
HC-28	1	100%	O	1.31	6	8	1.5	10.0	315	396	74	Yes	Yes	Yes	Yes	Likely	
HC-26	1	43%	O	3.93	2	3	1.6	25	136	171	88	Yes	Yes	Yes	Yes	Likely	
HC-24	1	62%	O	2.17	5	6	2.9	3.1	676	820	397	Yes	Yes	Yes	Yes	Likely	
HC-17	1aj	92%	W	0.37	23	25	6.4	1.7	448	480	124	Yes	Yes	Yes	Yes	Likely	
HC-4	2pg	52%	mixed	0.10	26	27	6.6	1.1	213	219	51	Yes	Yes	Yes	Yes	Likely	
	2pg	41%	mixed	0.14	19	20	6.6	1.1	211	216	65	Yes	Yes	Yes	Yes	Likely	
HC-18	2pg	10%	W	0.12	23	26	13	0.80	150	172	85	Yes	Yes	Yes	Yes	Likely	
HC-19	2pg mixed	47%	W	0.24	11	12	2.7	4.8	120	124	26	Yes	Yes	Yes	Yes	Likely	
HC-20	5	89%	W	3.3	2	2	4.4	2.9	311	357	658	No	No	No	No		Theoretically possible Theoretically possible
HC-21	5	90%	W	3.5	1	2	1.4	41	44	60	46	No	Yes	No	Yes		
HC-40	7a	20%	W	0.11	33	35	6.2	1.1	295	310	54	Yes	Yes	Yes	Yes	Likely	
HC-41	7a	80%	W	0.27	38	52	5.9	1.6	627	854	97	Yes	Yes	Yes	Yes	Likely	
HC-22	11c	0%	W	0.020	35	17	1.8	2.2	106	52	4	Yes	Yes	Yes	Yes	Likely	
HC-23	11c	100%	W	0.070	15	16	4.4	1.5	89	96	26	Yes	Yes	Yes	Yes	Likely	
HC-5	13a	35%	W	0.16	43	48	10	0.87	430	486	103	Yes	Yes	Yes	Yes	Likely	
	13a	72%	W	0.24	27	36	10	0.87	406	540	147	Yes	Yes	Yes	Yes	Likely	
HC-29	13a	50%	W	0.19	53	68	6.7	1.0	858	1096	102	Yes	Yes	Yes	Yes	Likely	
HC-39	13a	96%	W	0.54	11	14	6.2	1.7	332	409	180	Yes	Yes	Yes	Yes	Likely	
HC-30	13a	92%	W	0.55	17	24	3.5	4.1	384	536	74	Yes	Yes	Yes	Yes	Likely	

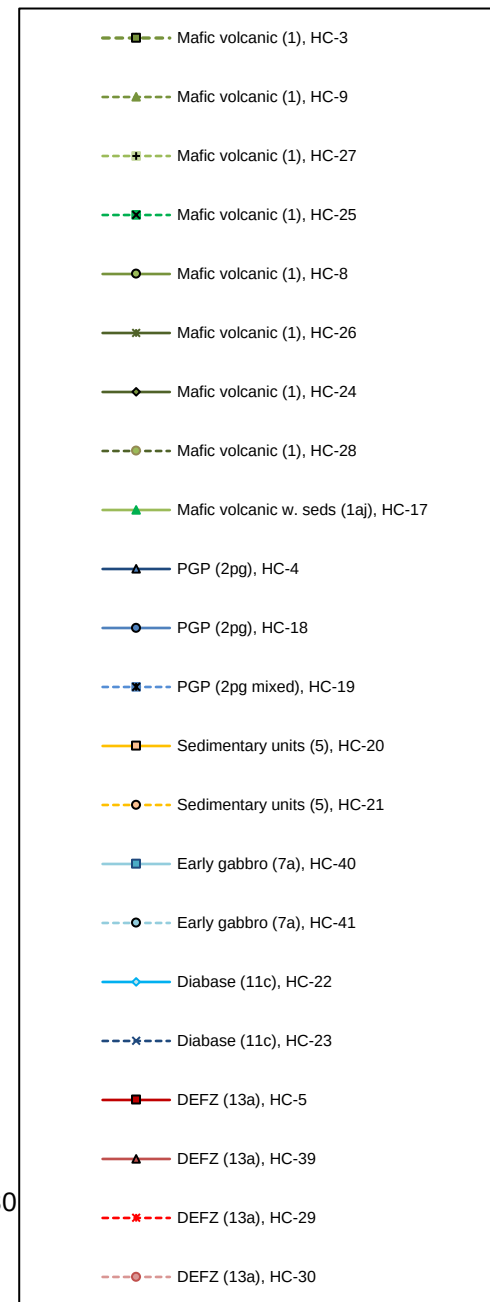
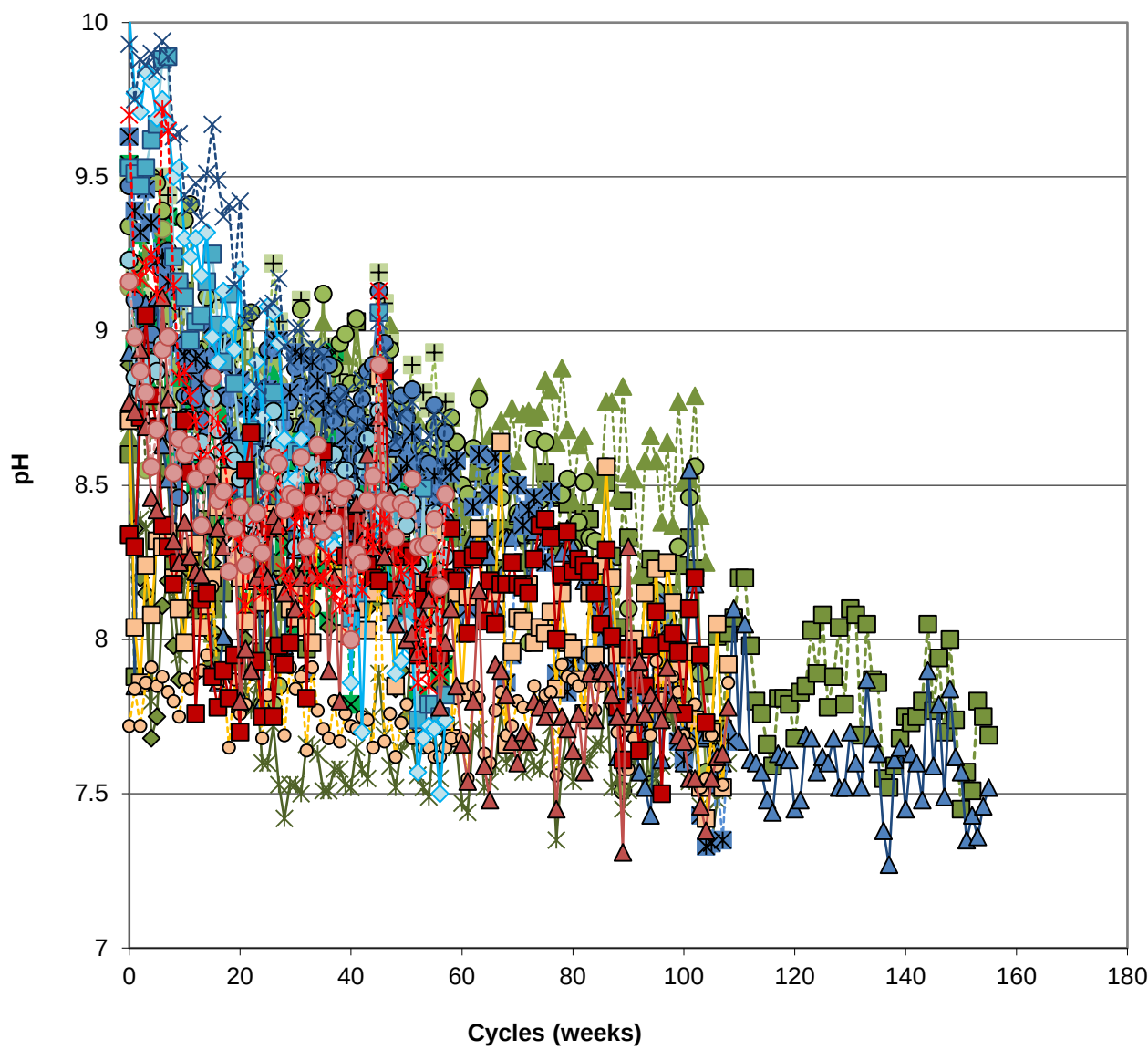
¹Rock codes as follows: **1** = mafic volcanics; **1 w. sediments** = mafic volcanics with sediments; **2pg** = pale green pillows; **5** = sedimentary rocks; **7a** = early gabbro; **10b** = late intrusives; **11c** = diabase; **12q** = quartz vein; **13a** = deformation zone

²Rank for mafic metavolcanics (1) relative to rock type and economic classification for Madrid North sample set. Pale green pillow (2pg) and mixed pale green pillow (2pg mixed) were compared to intermediate metavolcanics waste (2) and mixed intermediate metavolcanics (2 mixed), respectively. All other samples were compared to relative rock type, irrespective of economic classification.

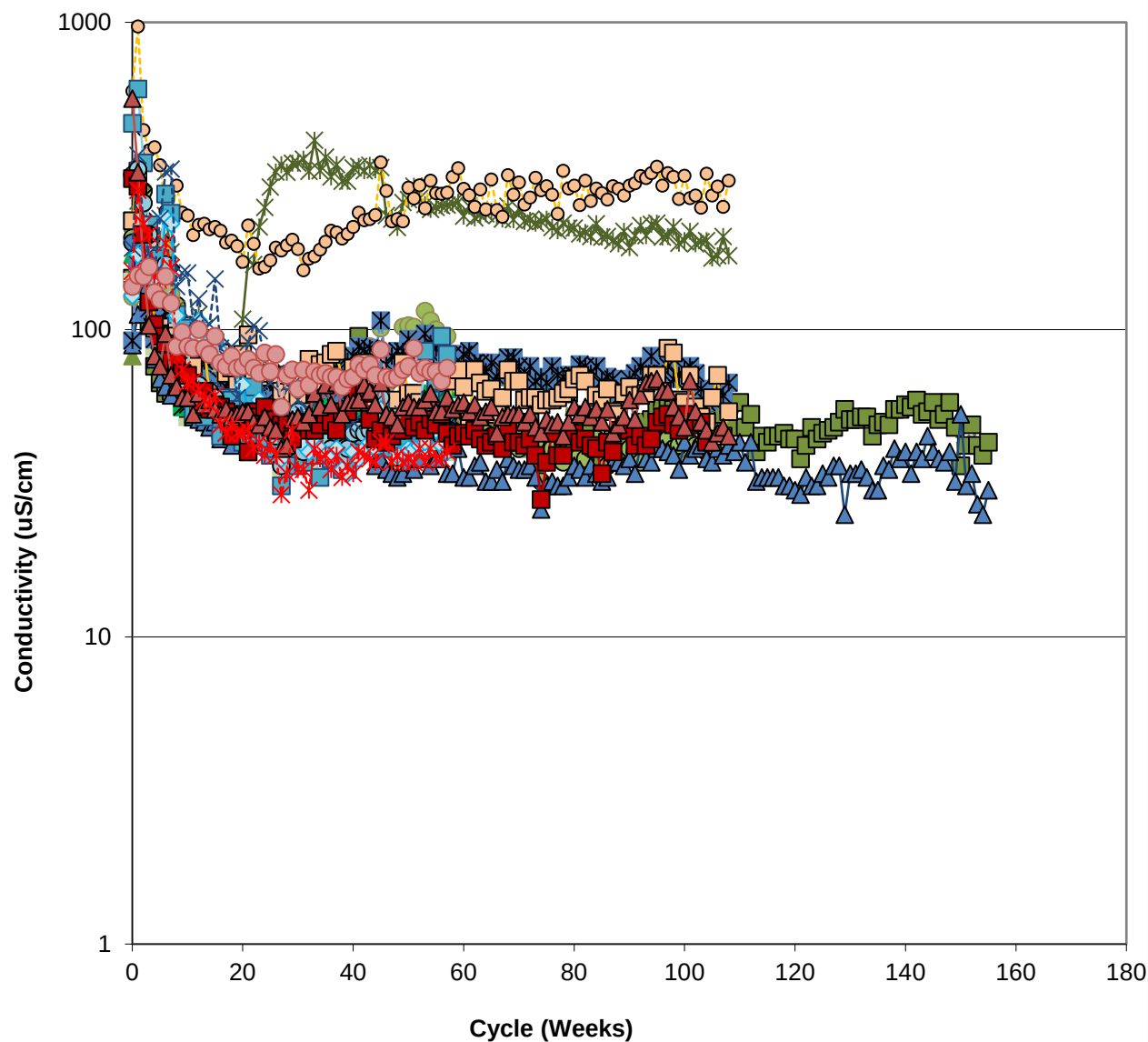
Appendix O
Humidity Cell Test Results

Appendix O1 – Concentration Figures

Hope Bay Waste Rock Humidity Cells

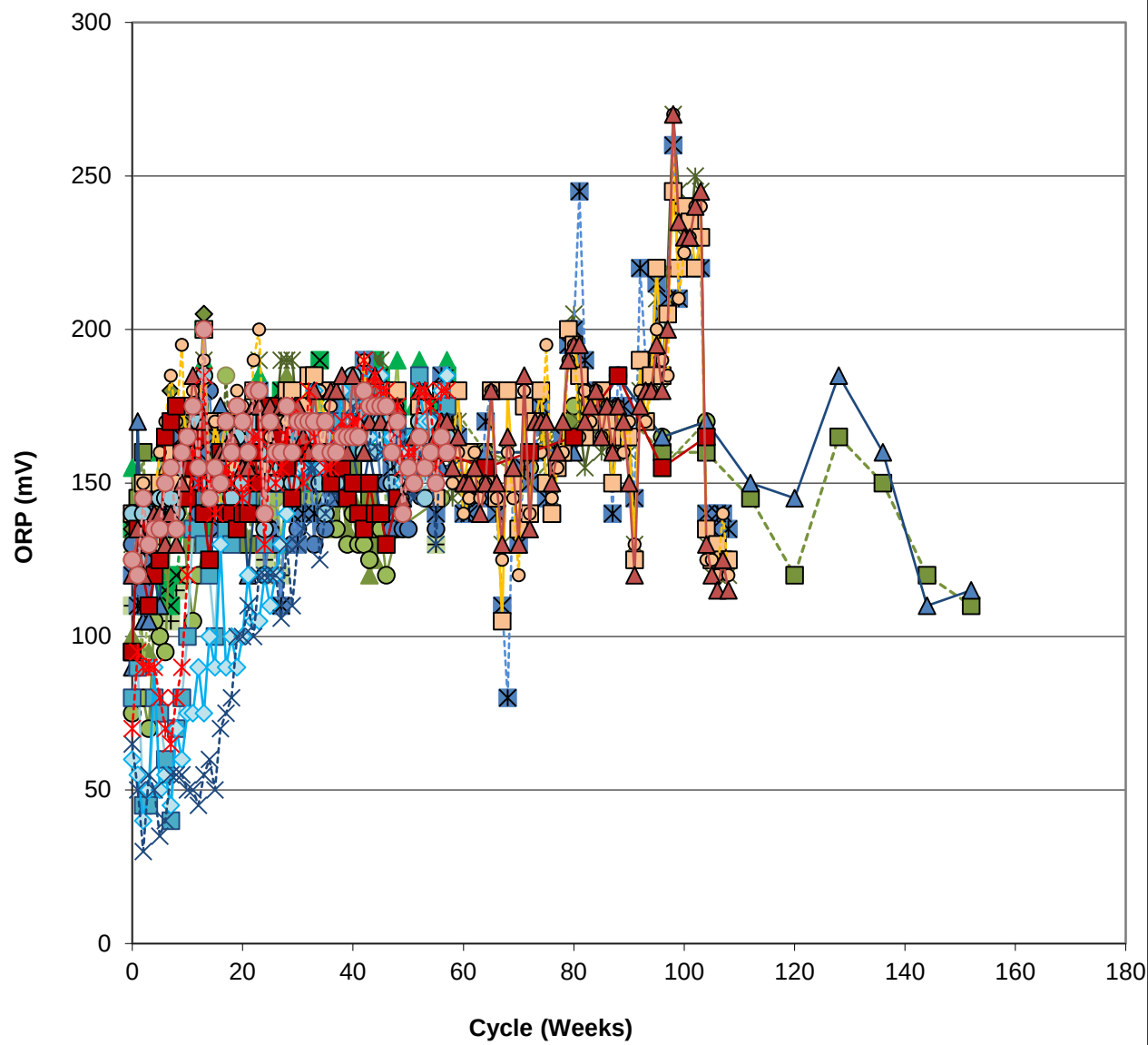


Hope Bay Waste Rock Humidity Cells

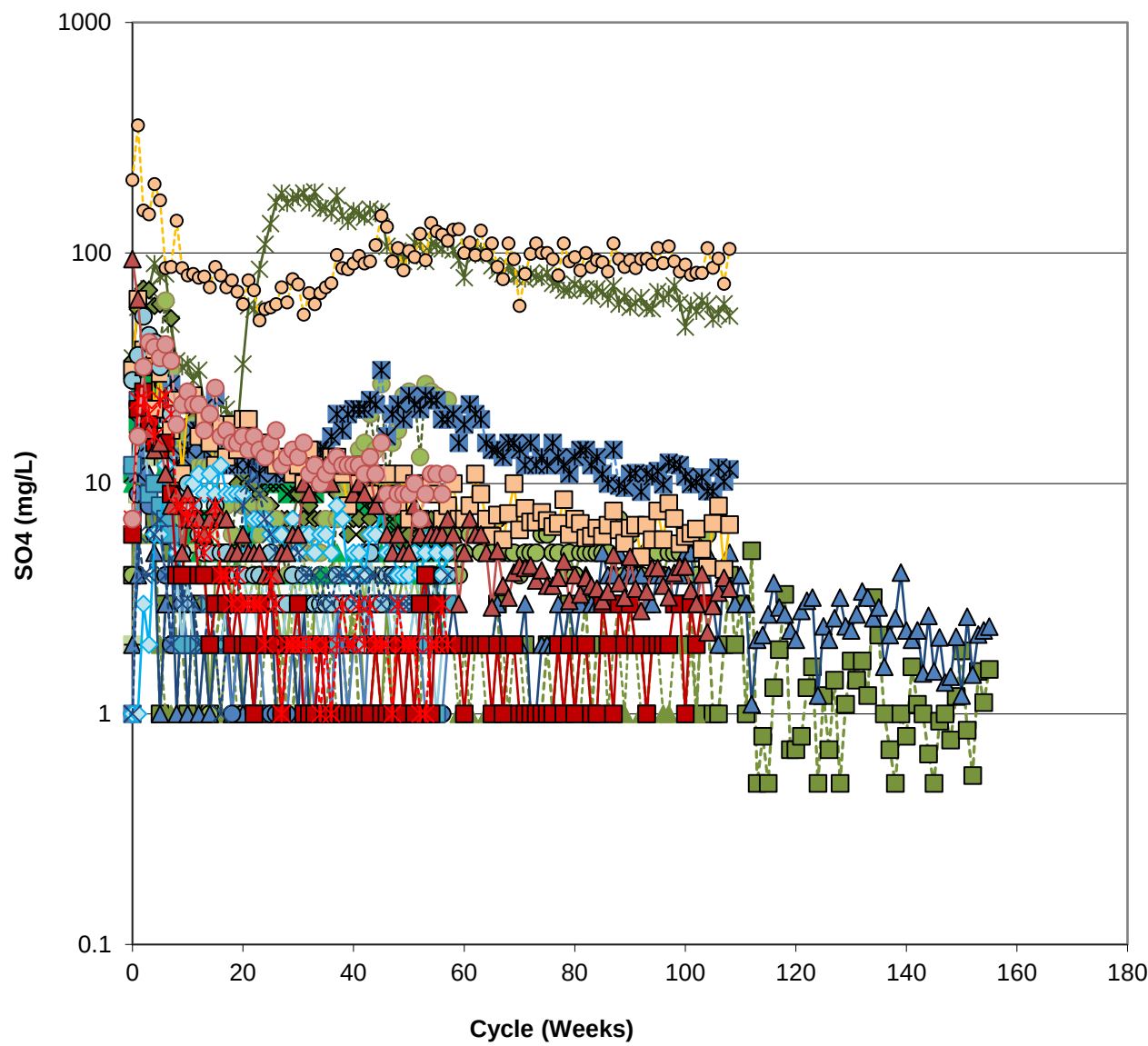


- Mafic volcanic (1), HC-3
- ▲— Mafic volcanic (1), HC-9
- *— Mafic volcanic (1), HC-27
- x— Mafic volcanic (1), HC-25
- Mafic volcanic (1), HC-8
- *— Mafic volcanic (1), HC-26
- ◇— Mafic volcanic (1), HC-24
- ◇— Mafic volcanic (1), HC-28
- ▲— Mafic volcanic w. seds (1aj), HC-17
- ▲— PGP (2pg), HC-4
- PGP (2pg), HC-18
- x— PGP (2pg mixed), HC-19
- Sedimentary units (5), HC-20
- Sedimentary units (5), HC-21
- Early gabbro (7a), HC-40
- Early gabbro (7a), HC-41
- ◇— Diabase (11c), HC-22
- x— Diabase (11c), HC-23
- DEFZ (13a), HC-5
- ▲— DEFZ (13a), HC-39
- x— DEFZ (13a), HC-29
- DEFZ (13a), HC-30

Hope Bay Waste Rock Humidity Cells

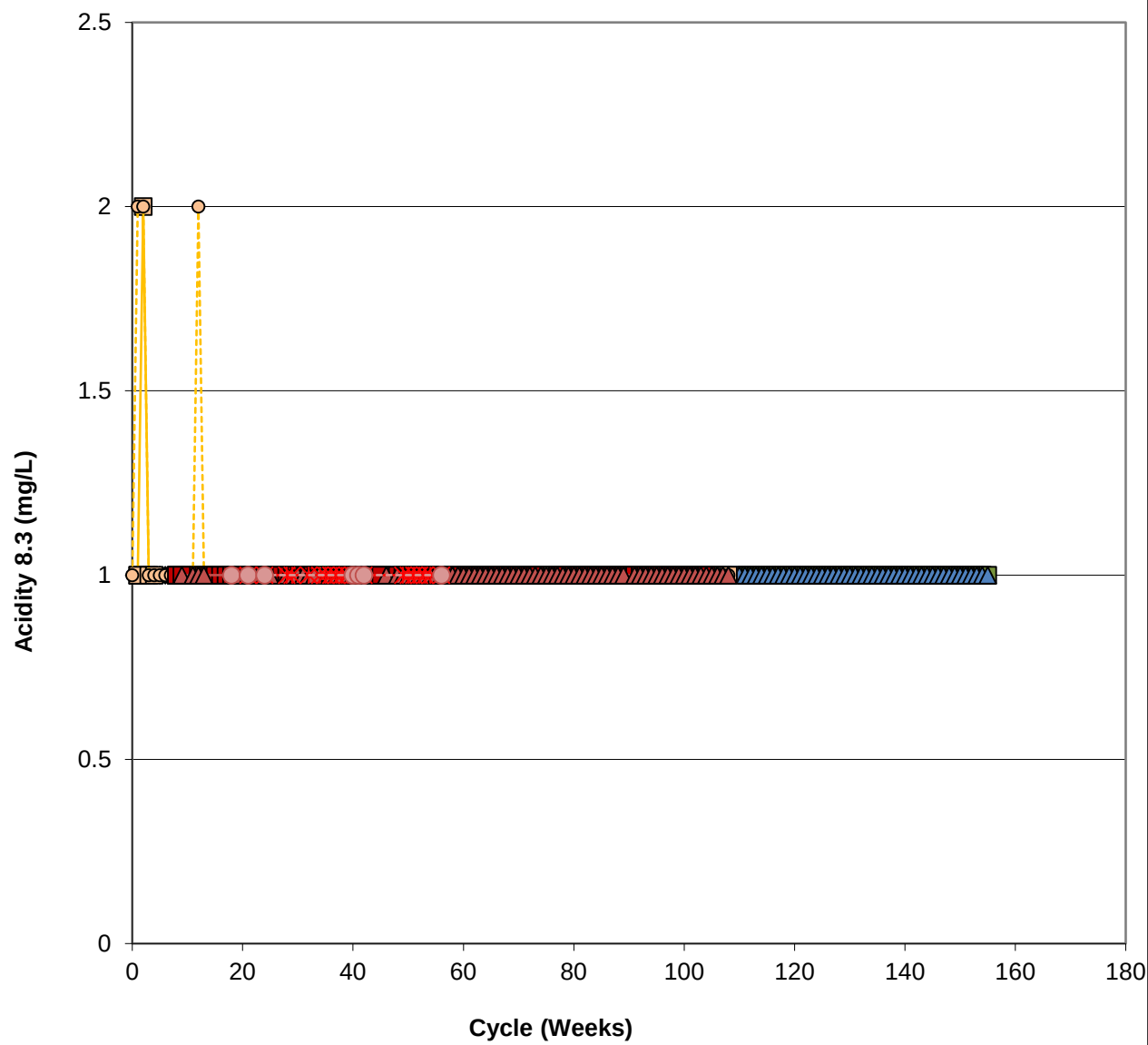


Hope Bay Waste Rock Humidity Cells

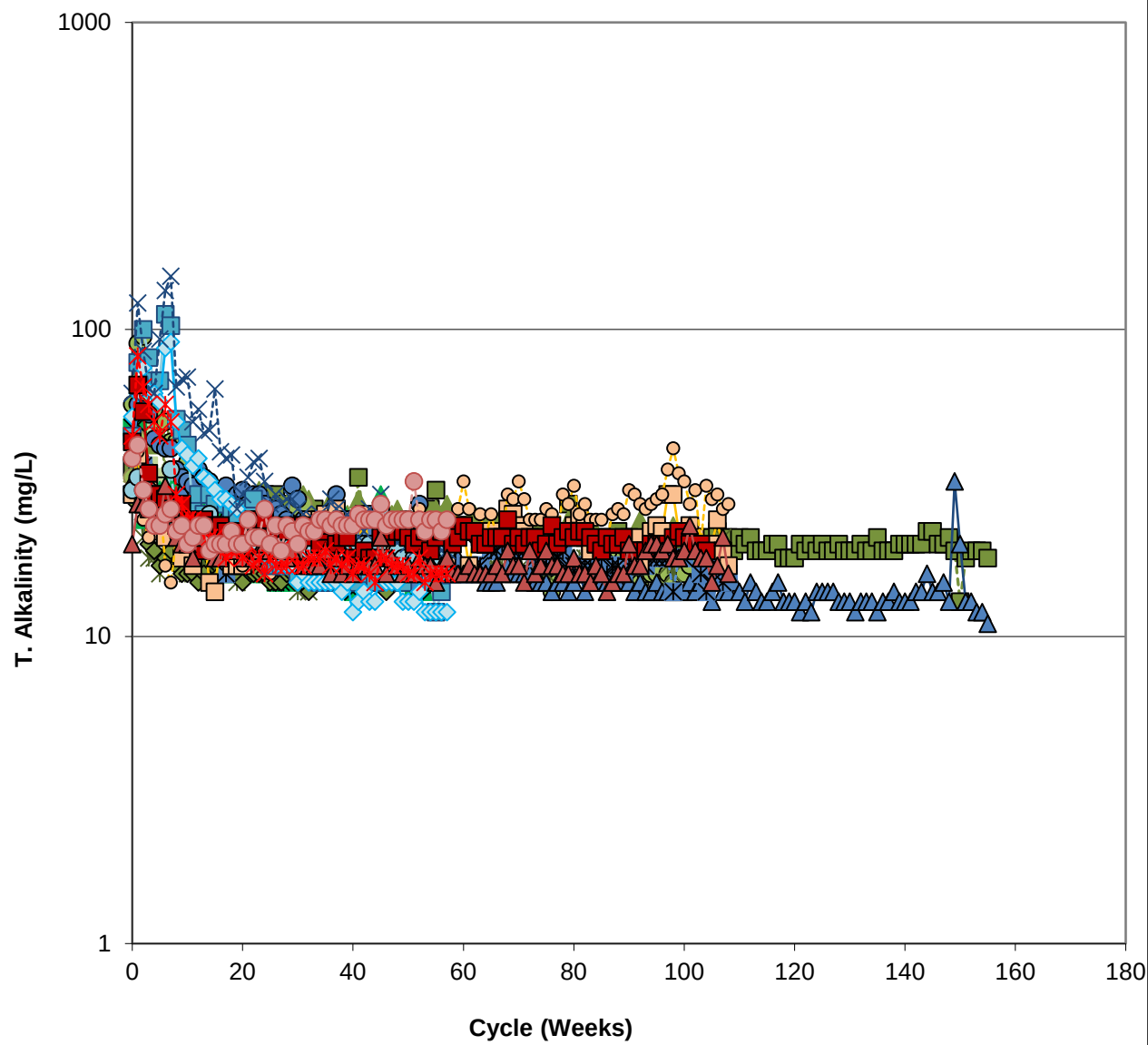


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- DEFZ (13a), HC-30

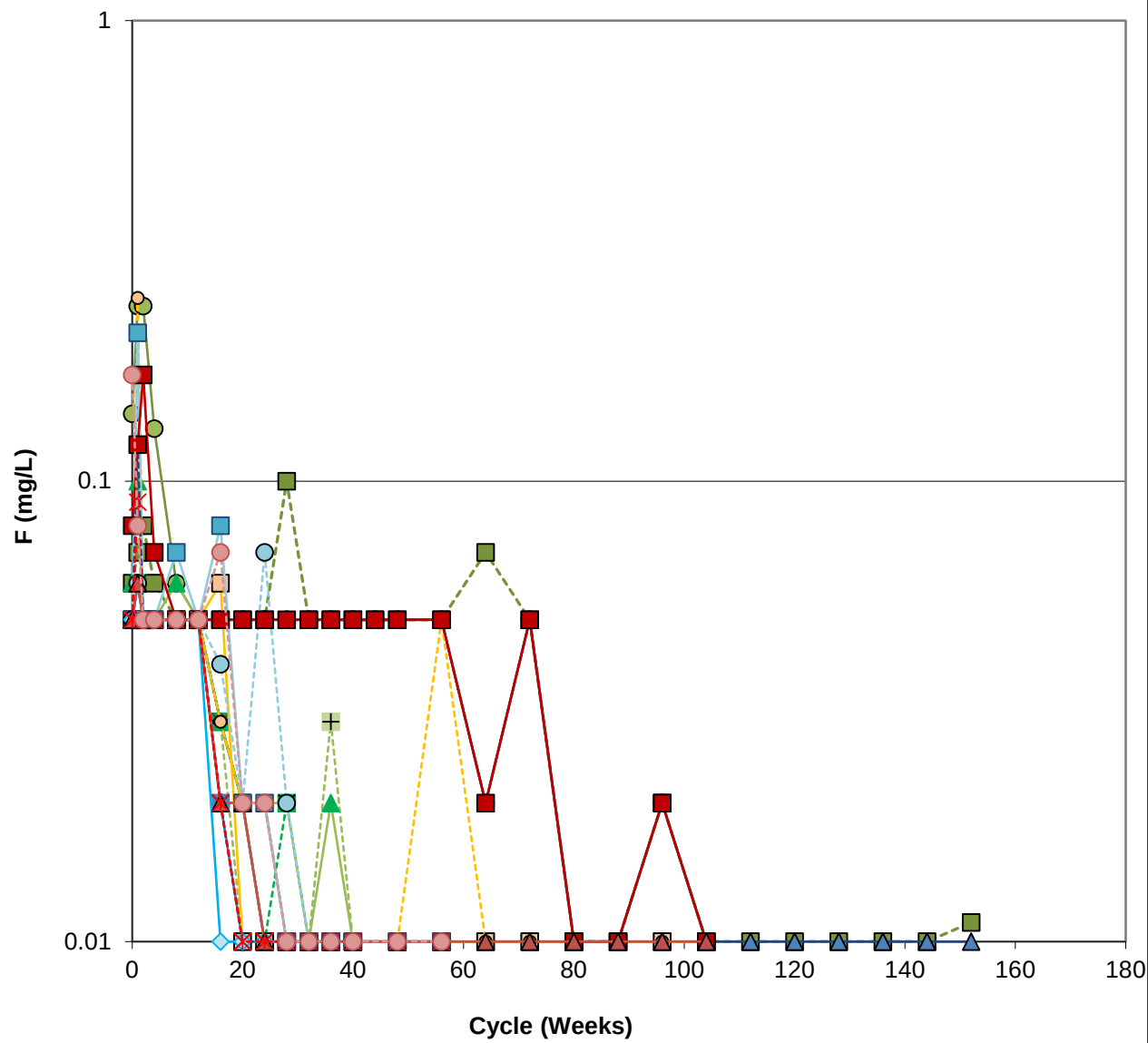
Hope Bay Waste Rock Humidity Cells



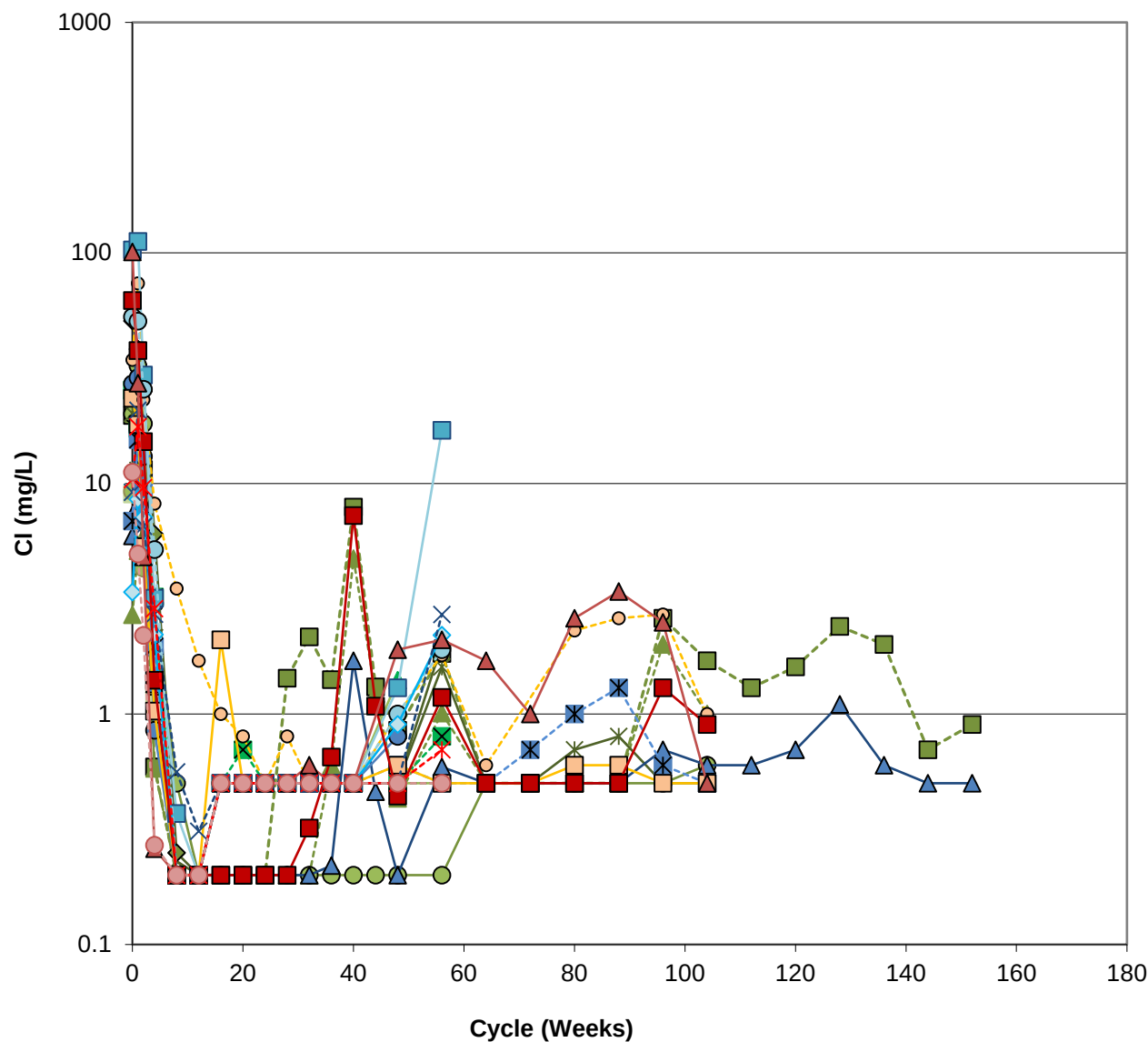
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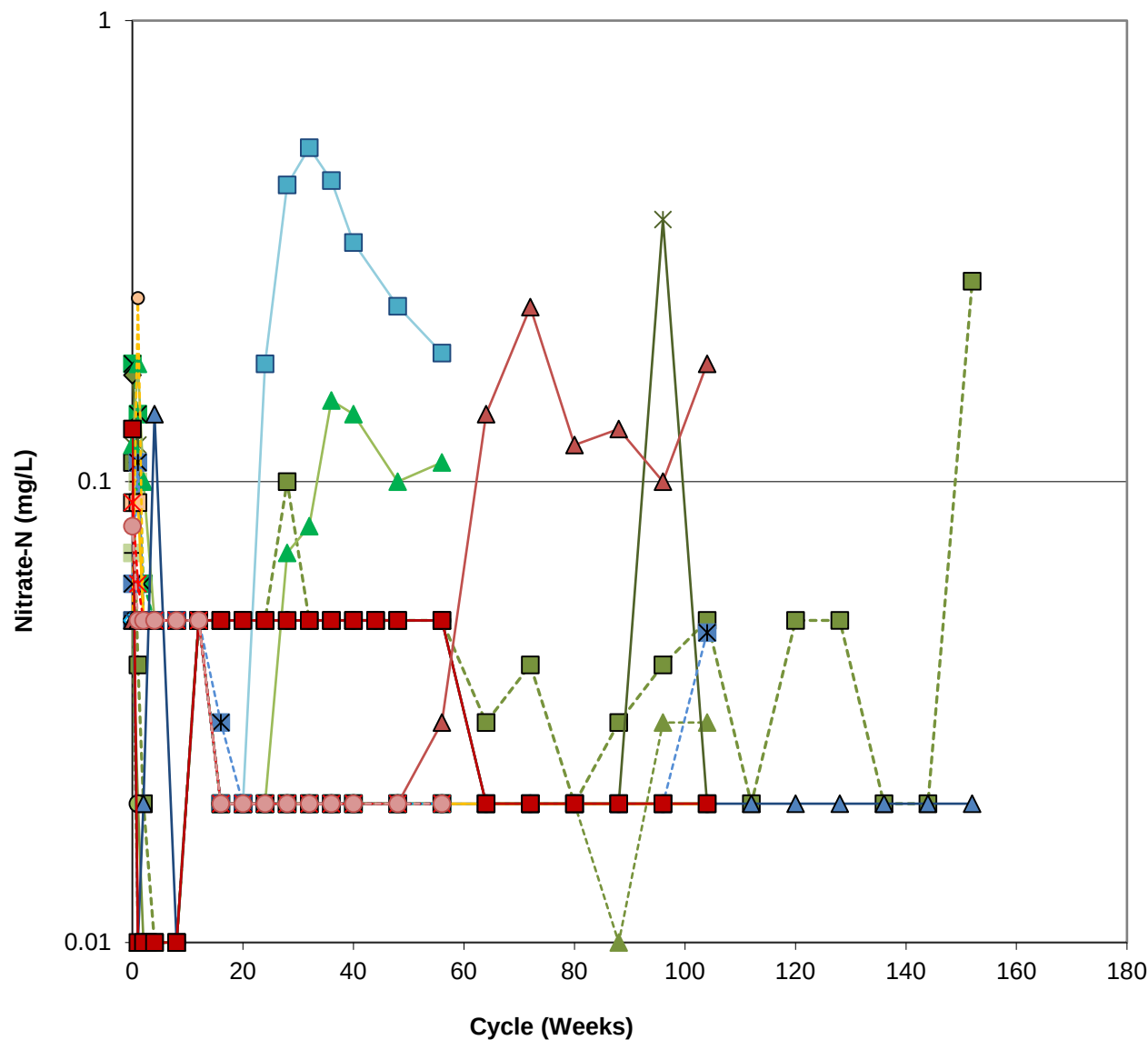
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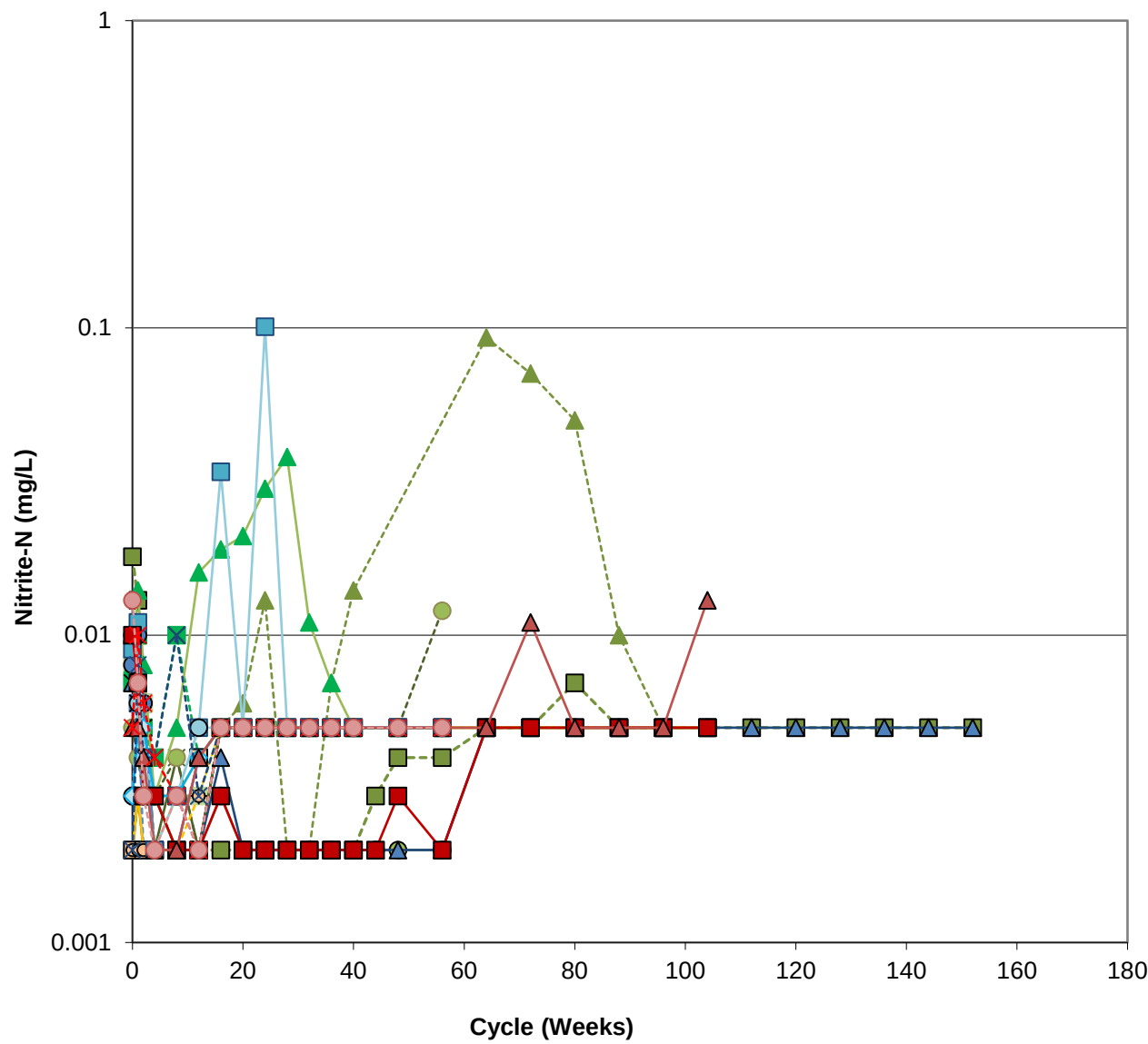
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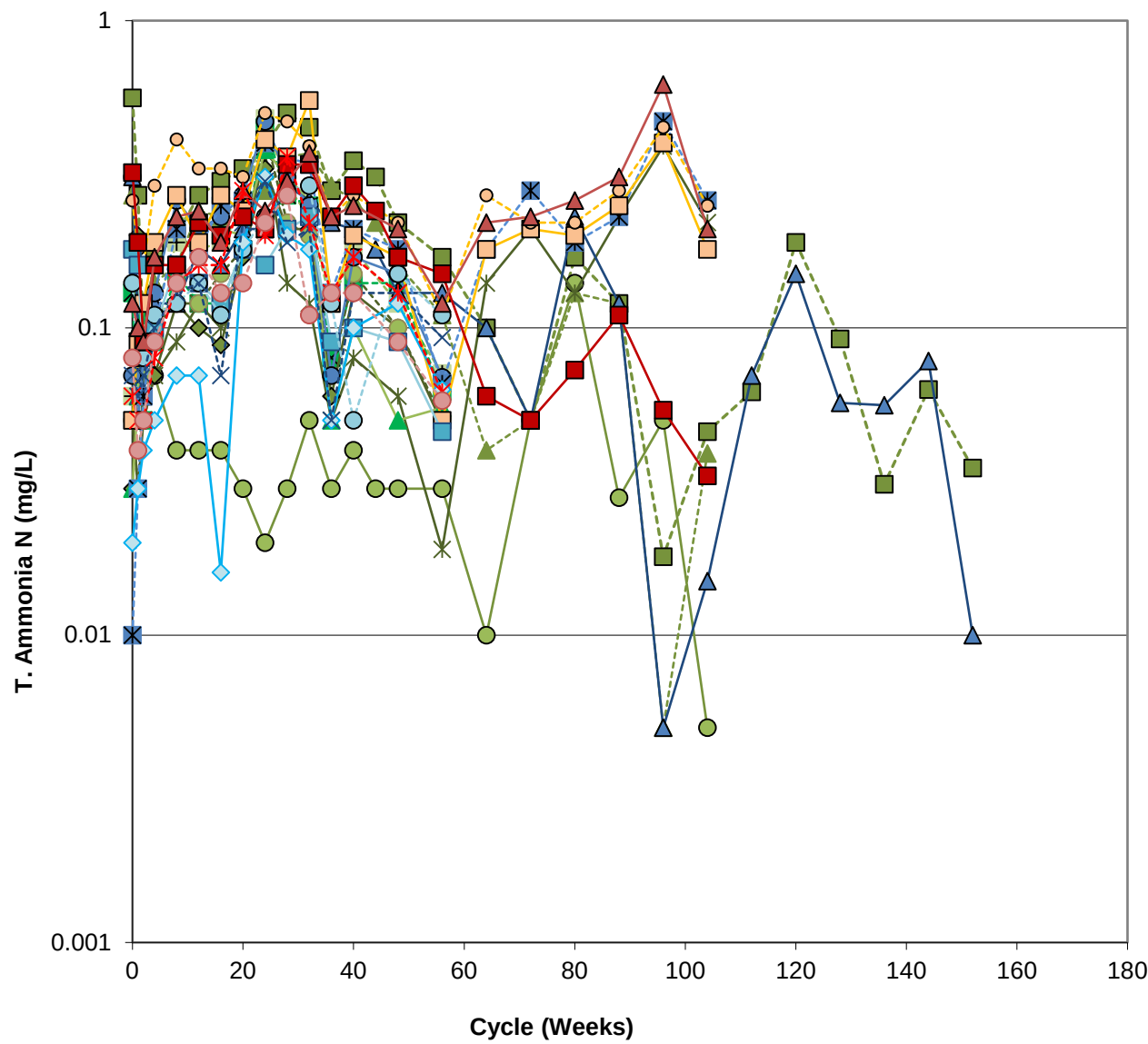
Hope Bay Waste Rock Humidity Cells



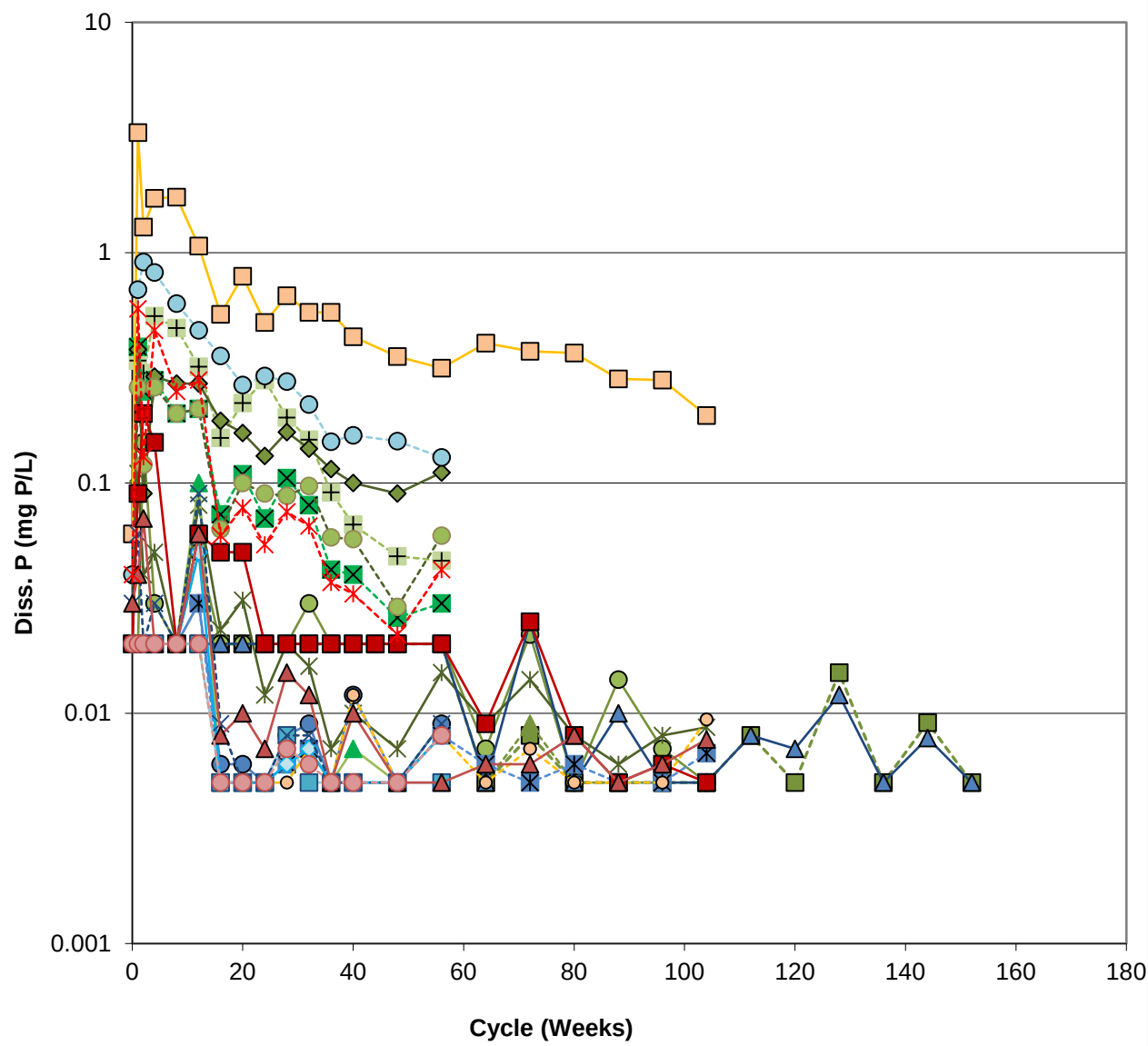
Hope Bay Waste Rock Humidity Cells



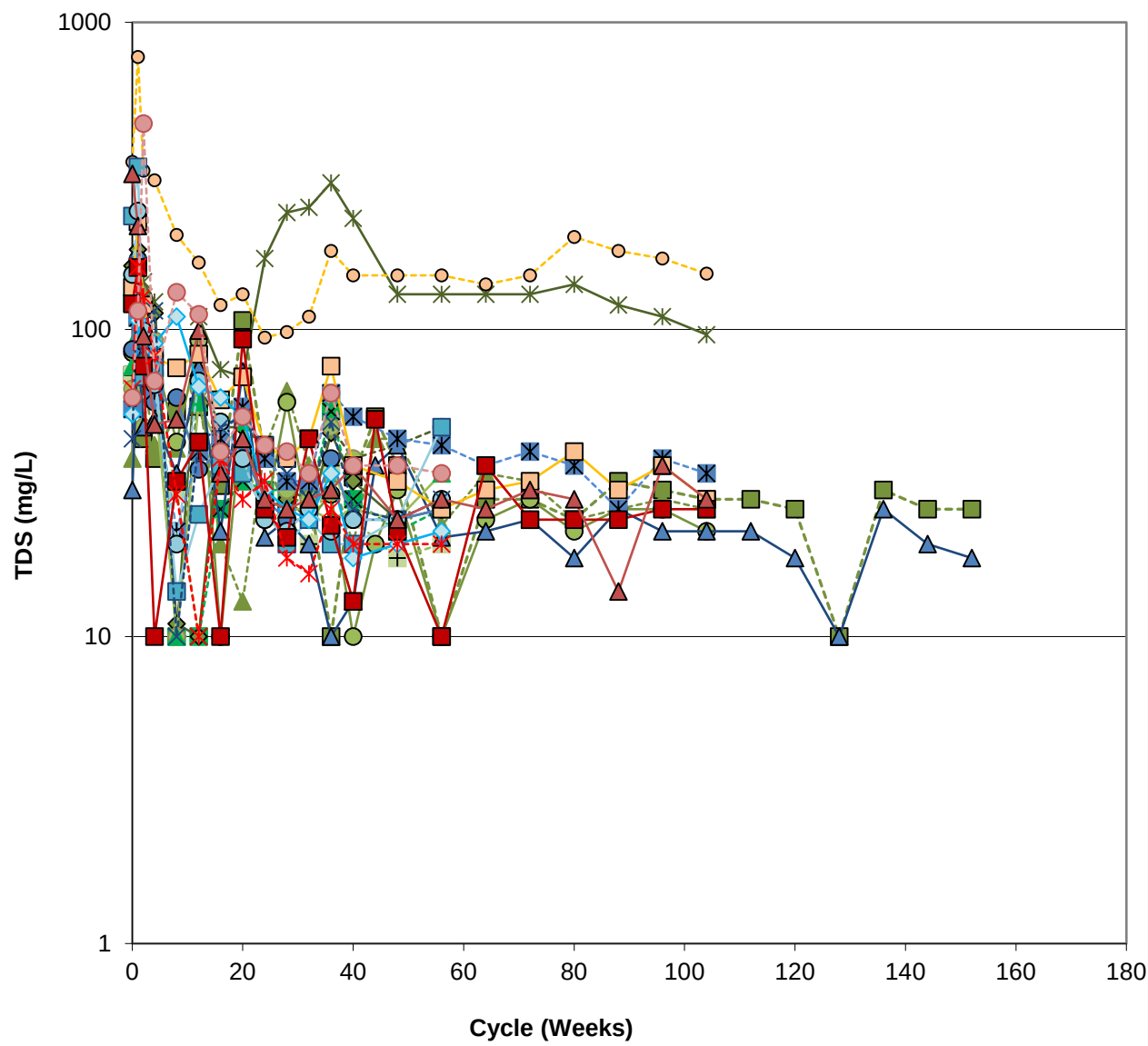
Hope Bay Waste Rock Humidity Cells



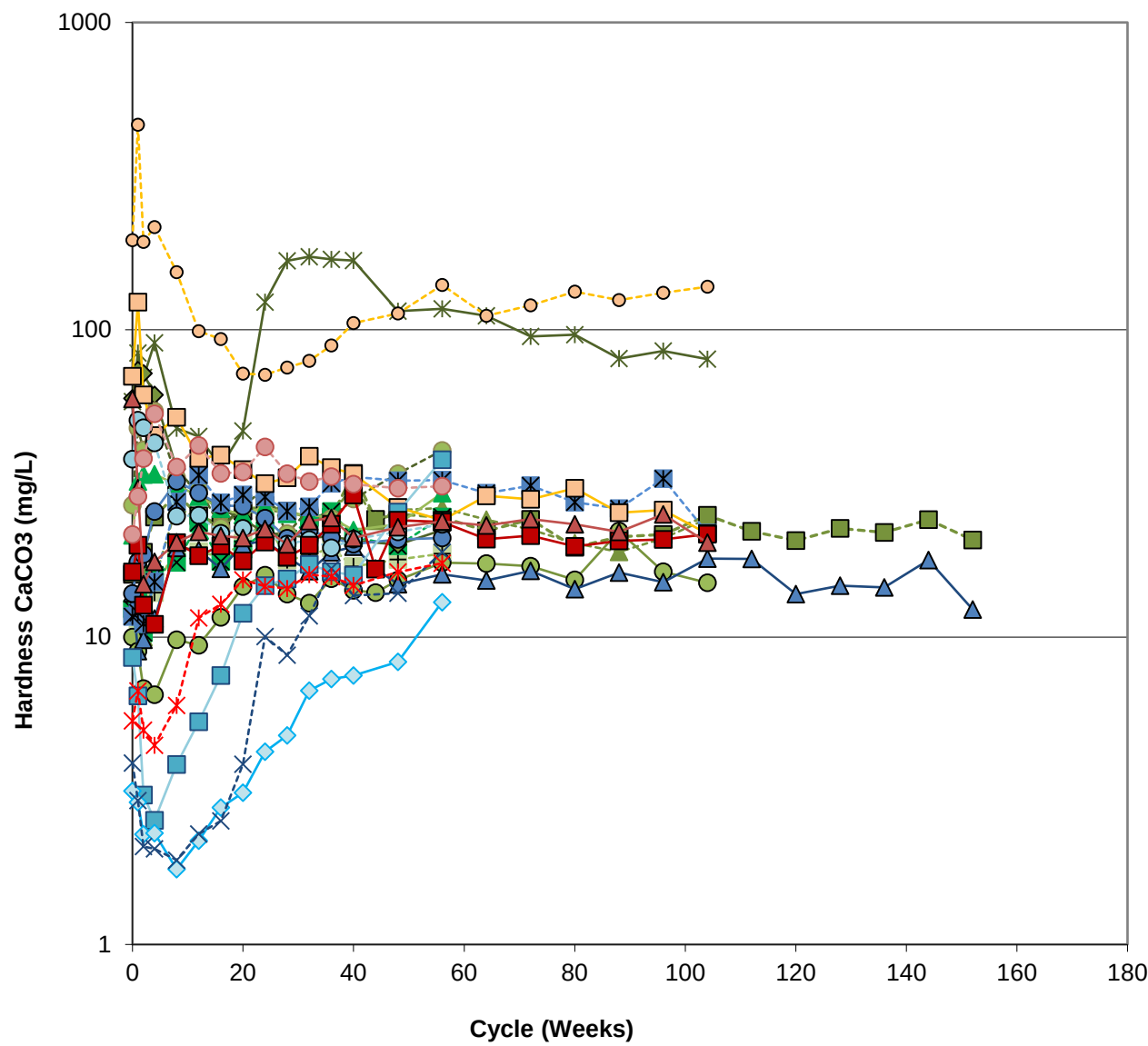
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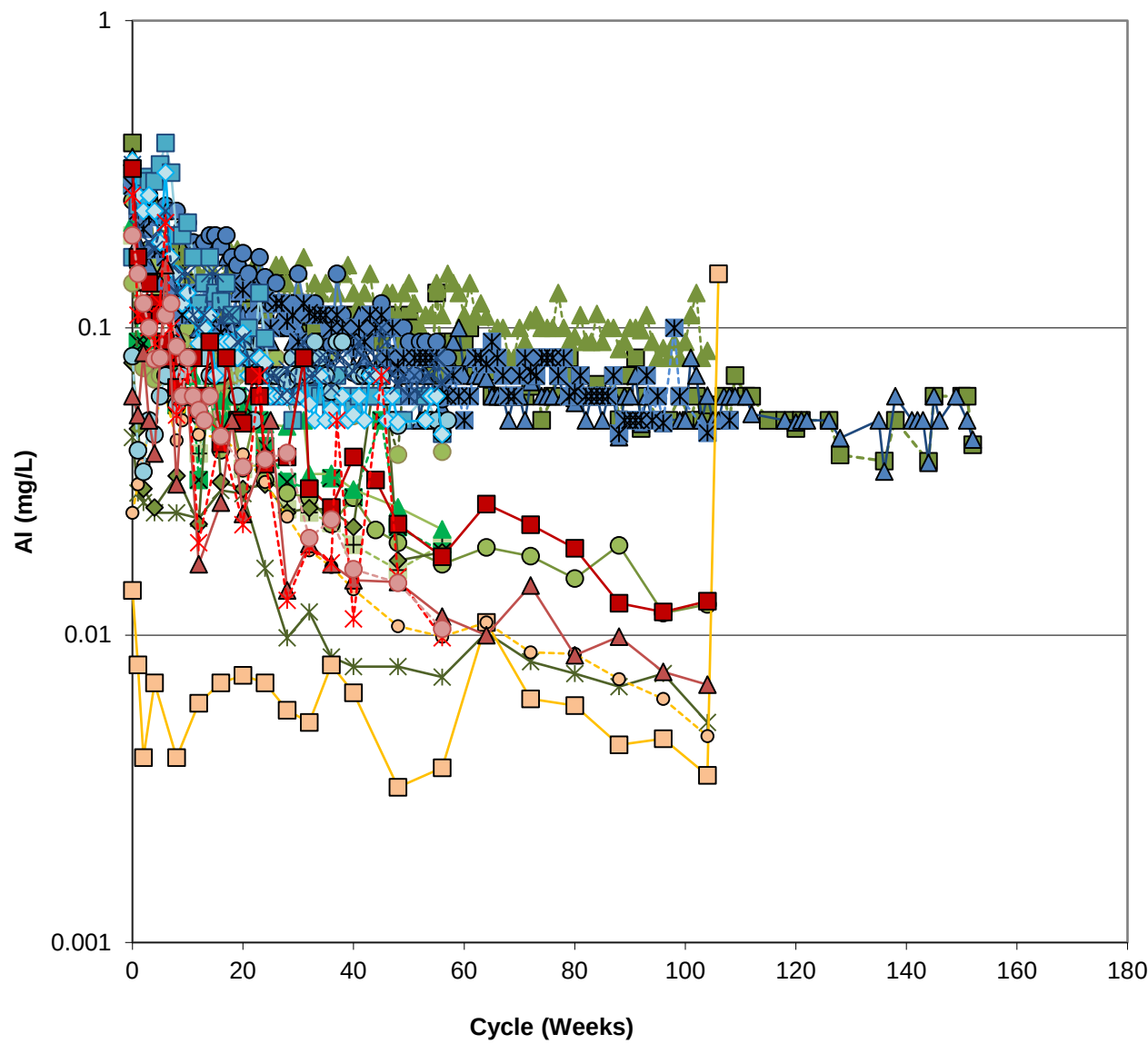
Hope Bay Waste Rock Humidity Cells



Hope Bay Waste Rock Humidity Cells

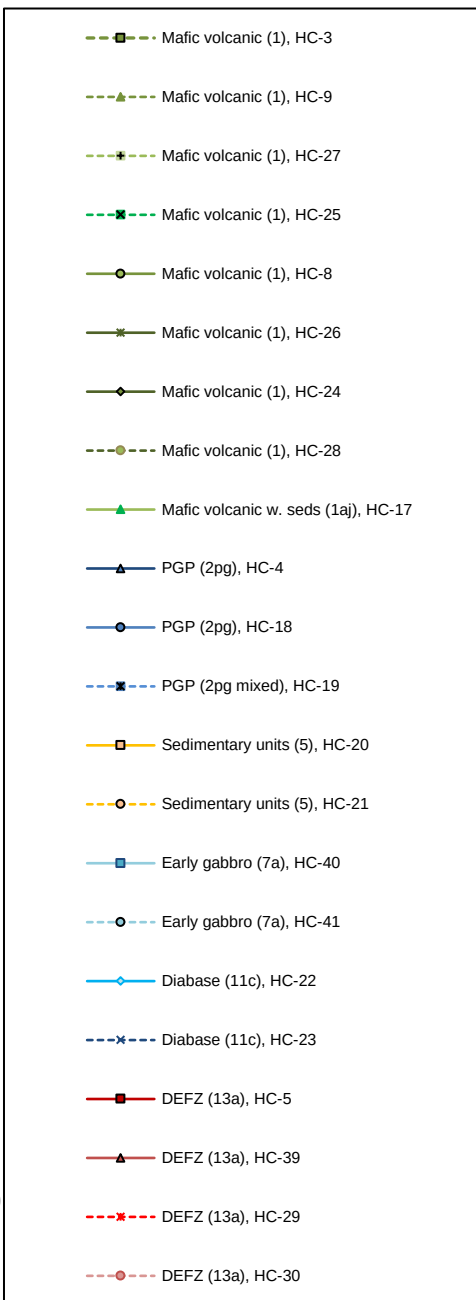
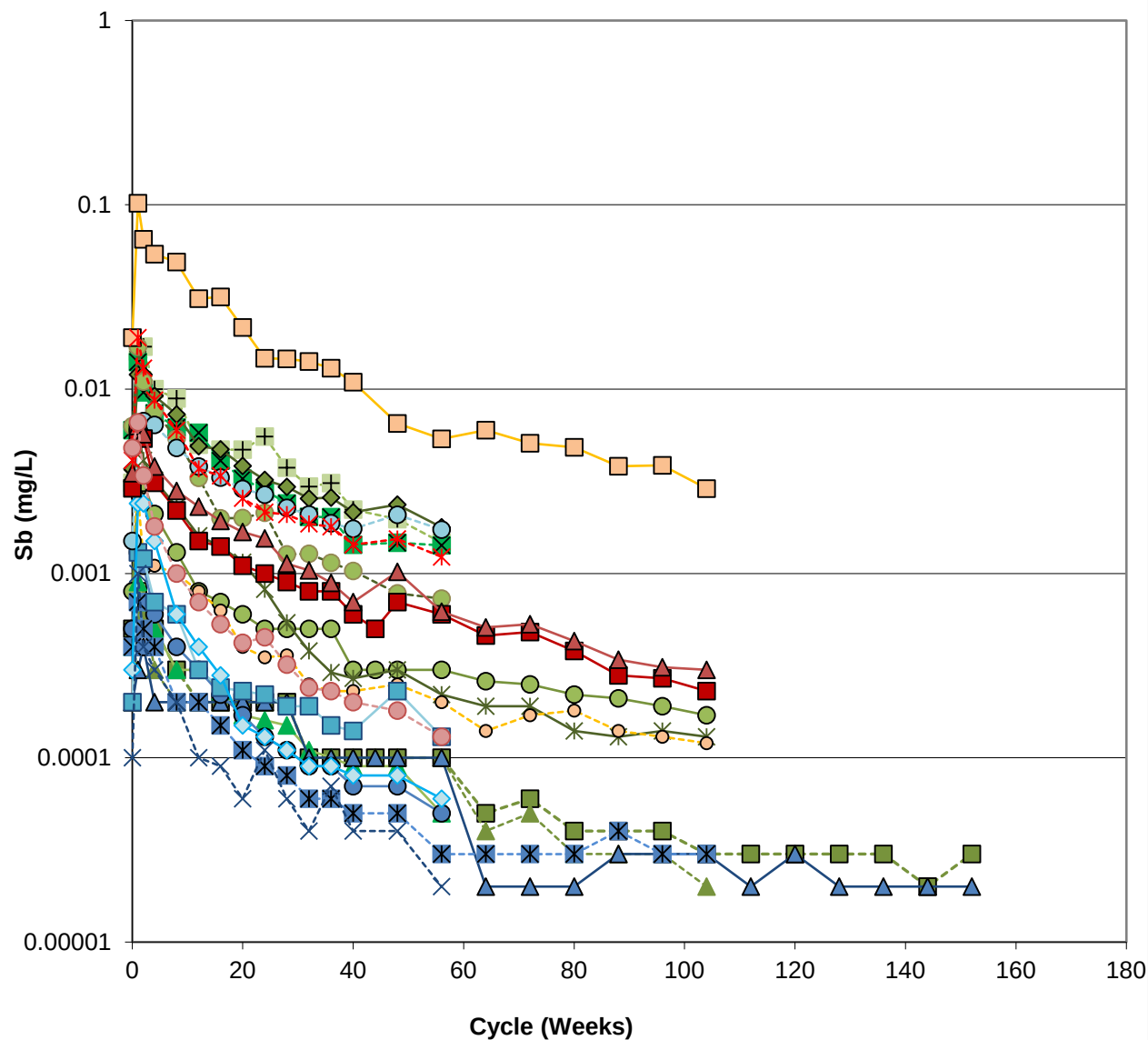


Hope Bay Waste Rock Humidity Cells

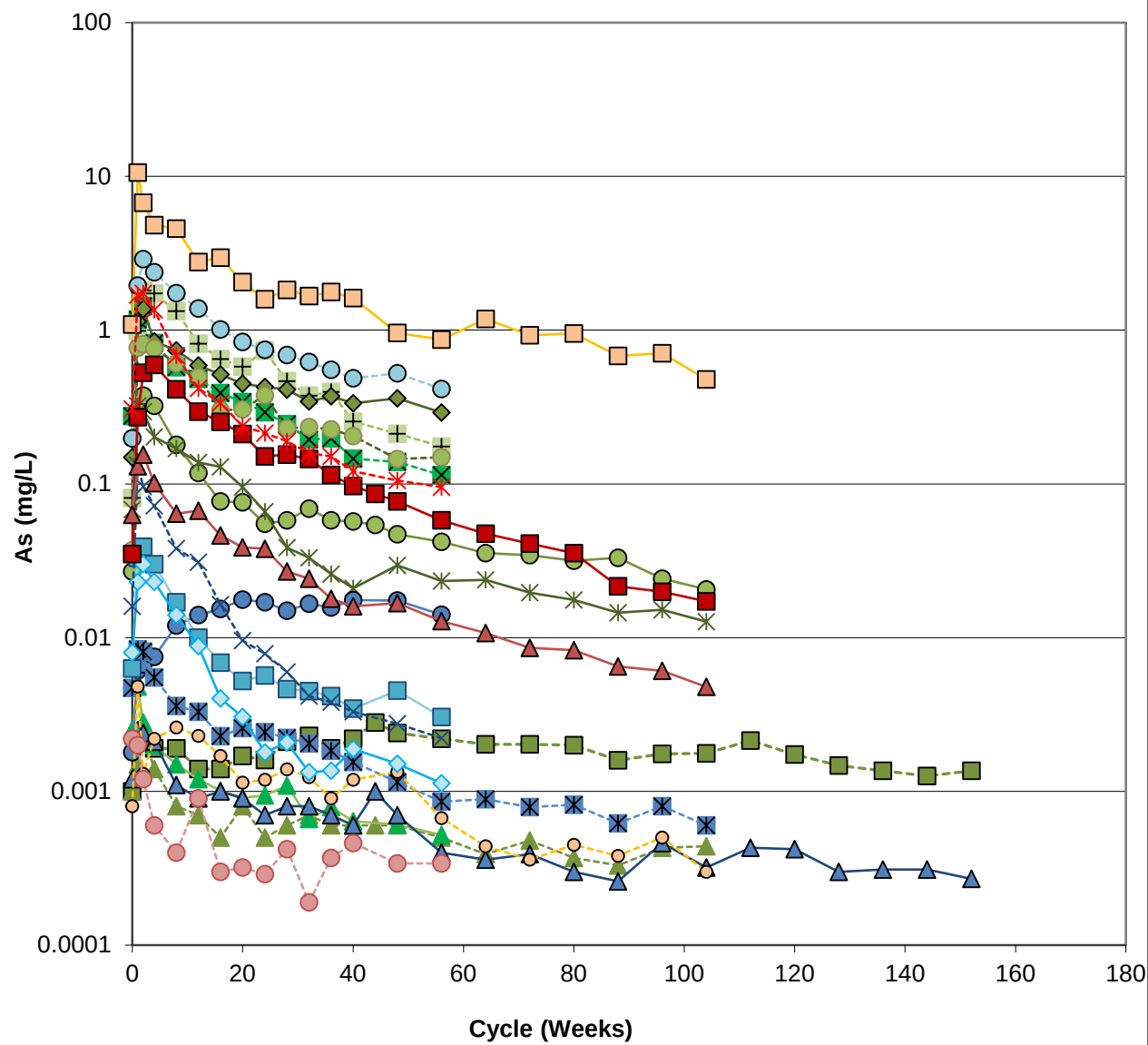


- Mafic volcanic (1), HC-3
- ▲--- Mafic volcanic (1), HC-9
- *--- Mafic volcanic (1), HC-27
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- Mafic volcanic (1), HC-28
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- ▲--- PGP (2pg), HC-4
- PGP (2pg), HC-18
- *--- PGP (2pg mixed), HC-19
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- Sedimentary units (5), HC-21
- Early gabbro (7a), HC-40
- Early gabbro (7a), HC-41
- ◇--- Diabase (11c), HC-22
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- DEFZ (13a), HC-5
- ▲--- DEFZ (13a), HC-39
- *--- DEFZ (13a), HC-29
- DEFZ (13a), HC-30

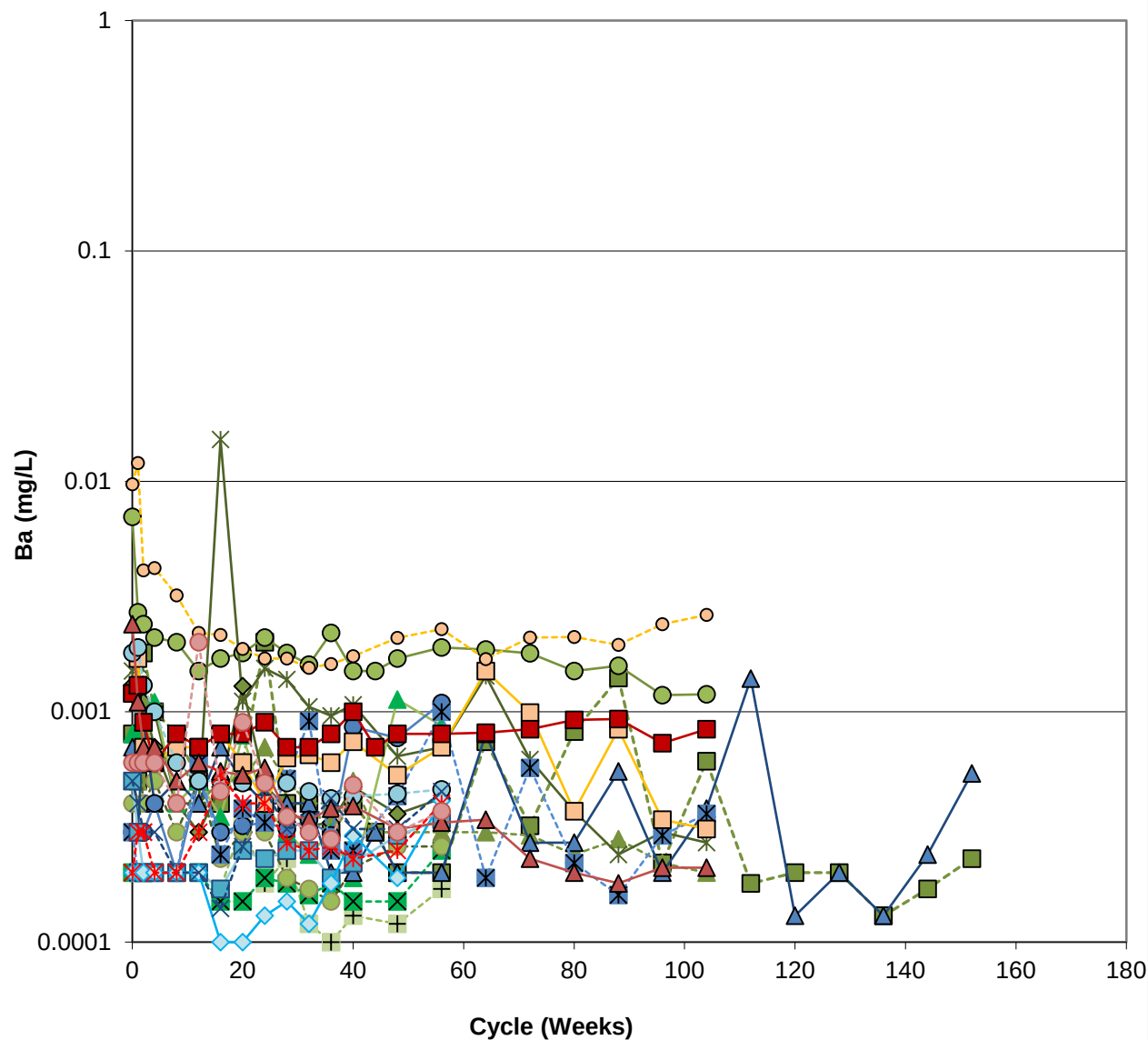
Hope Bay Waste Rock Humidity Cells



Hope Bay Waste Rock Humidity Cells

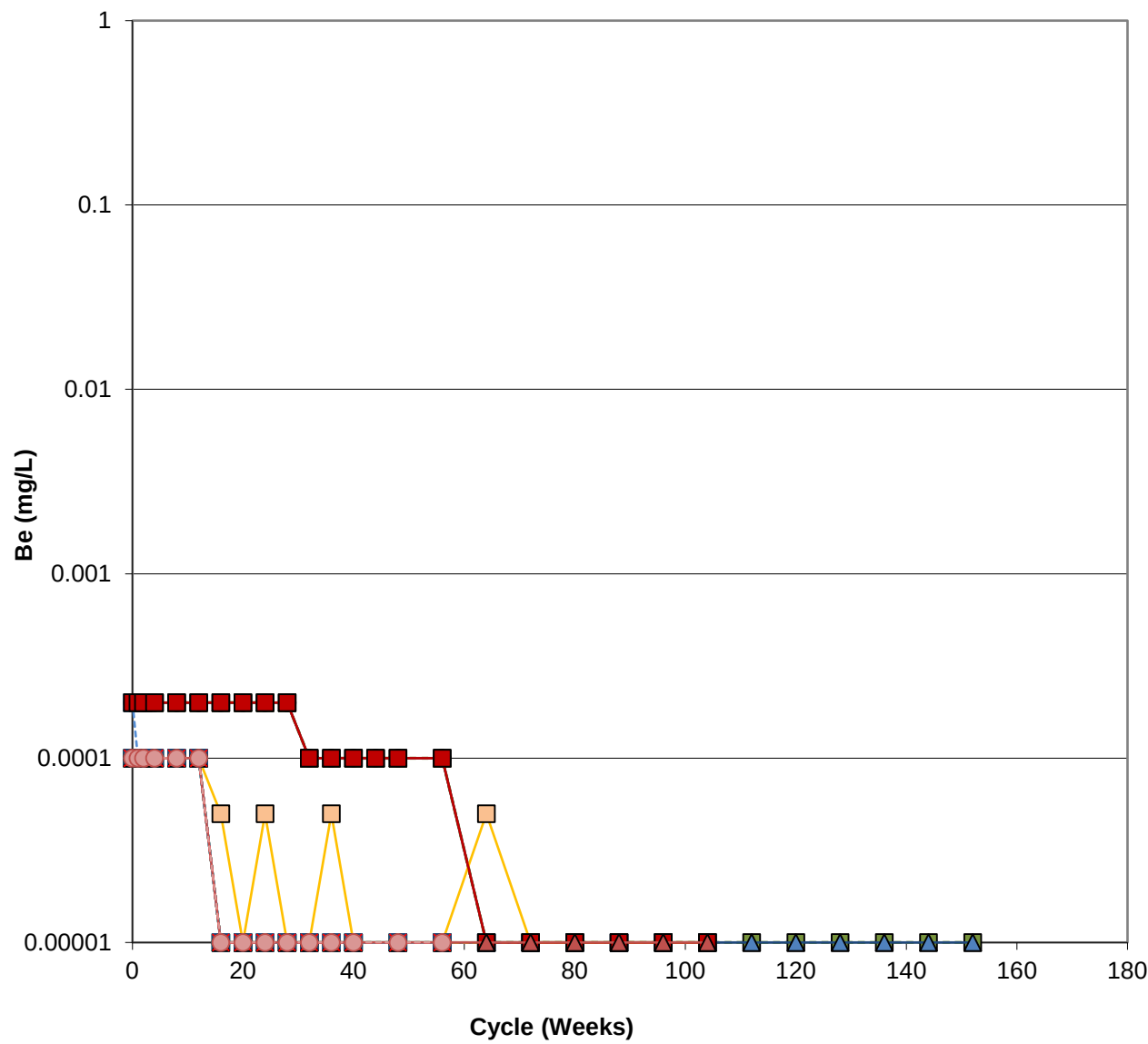


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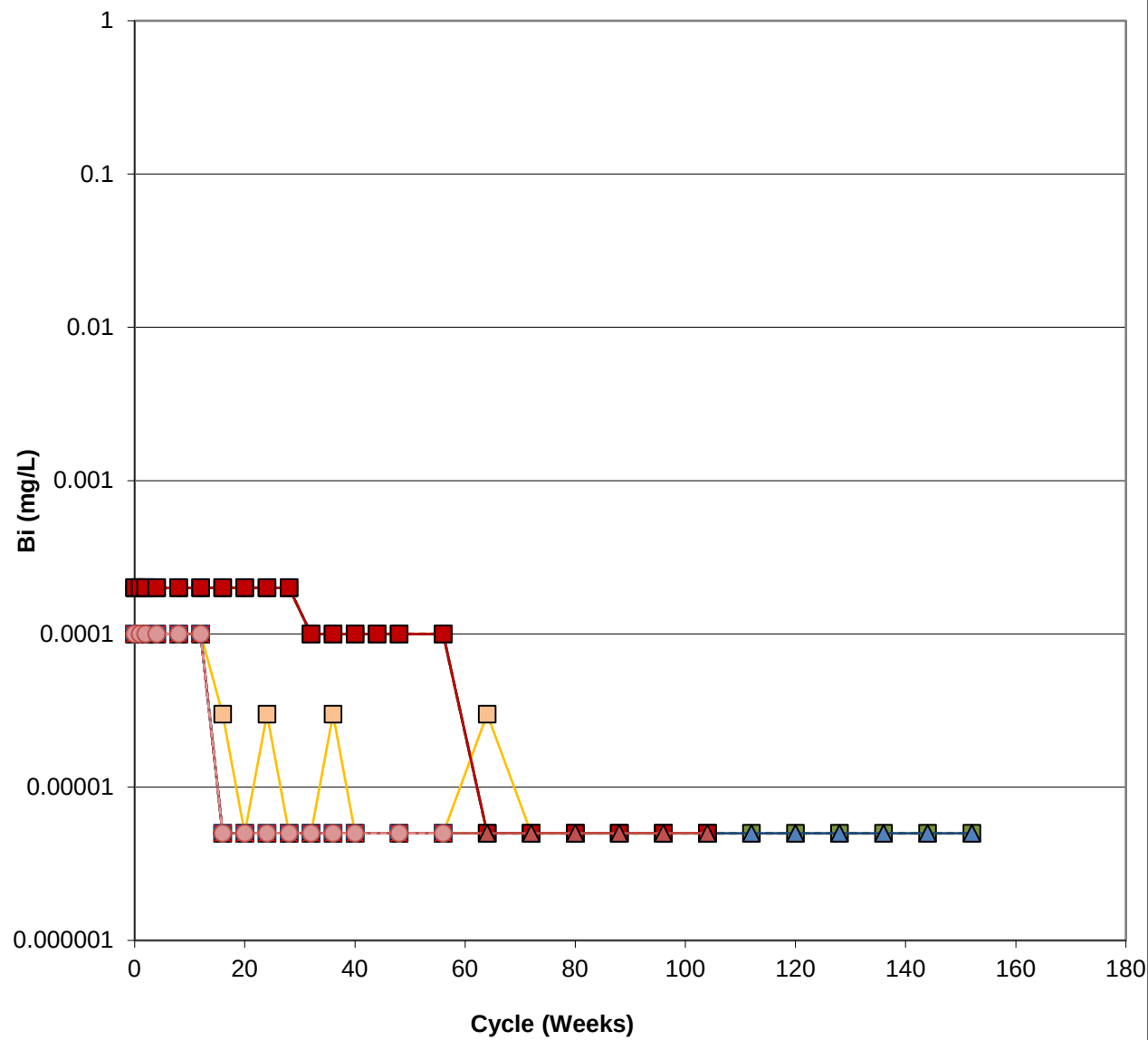


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- DEFZ (13a), HC-30

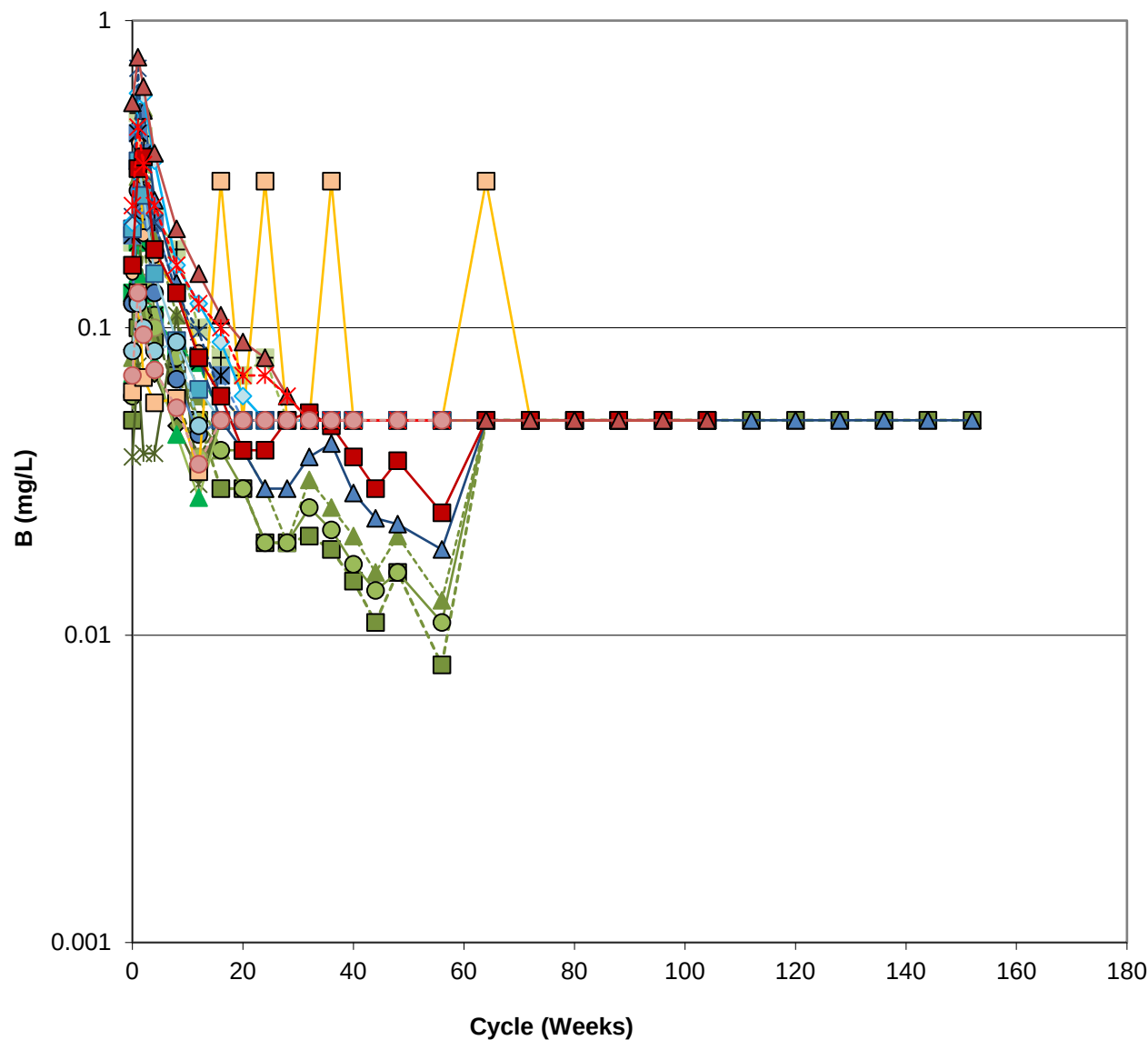
Hope Bay Waste Rock Humidity Cells



Hope Bay Waste Rock Humidity Cells

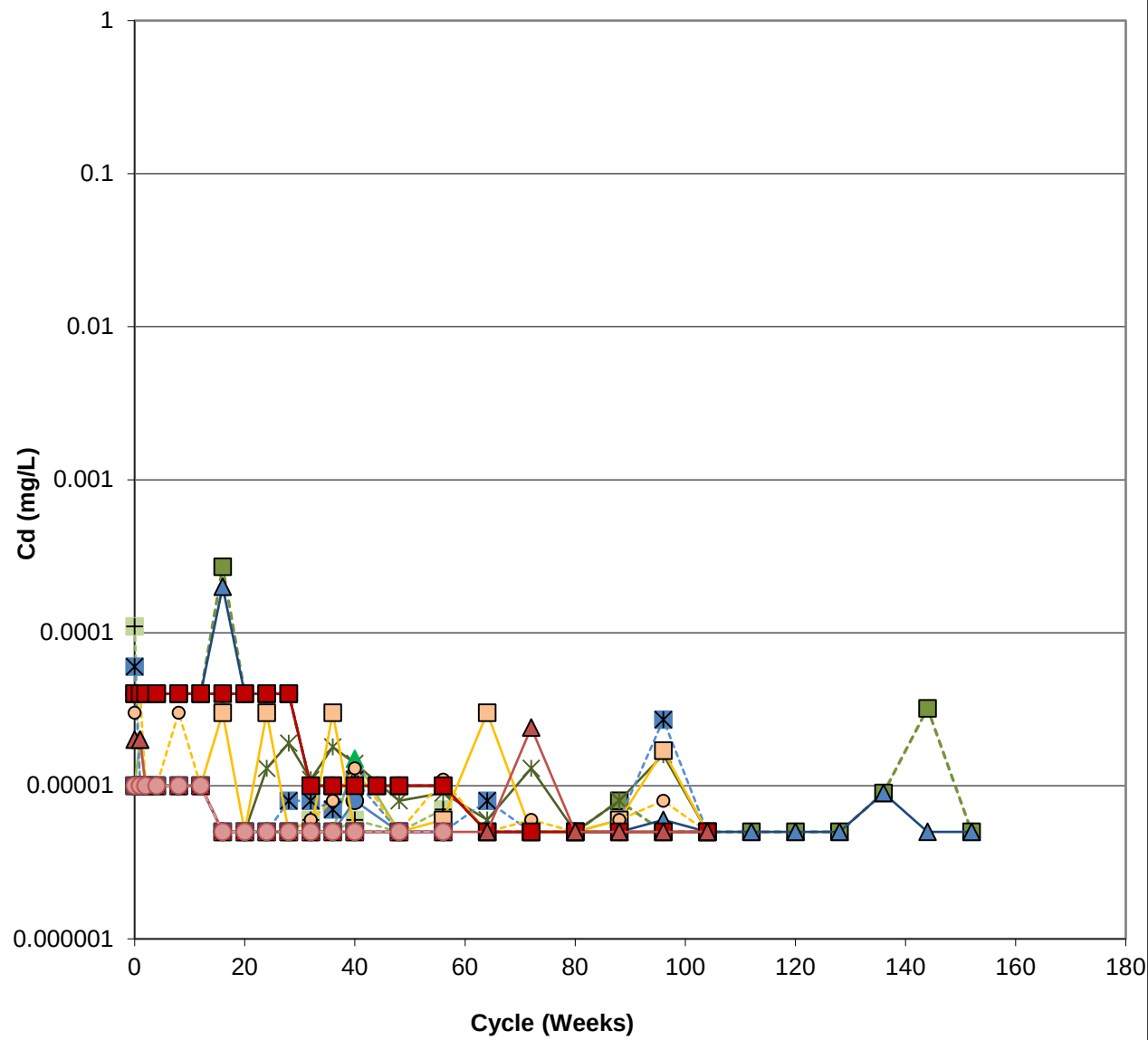


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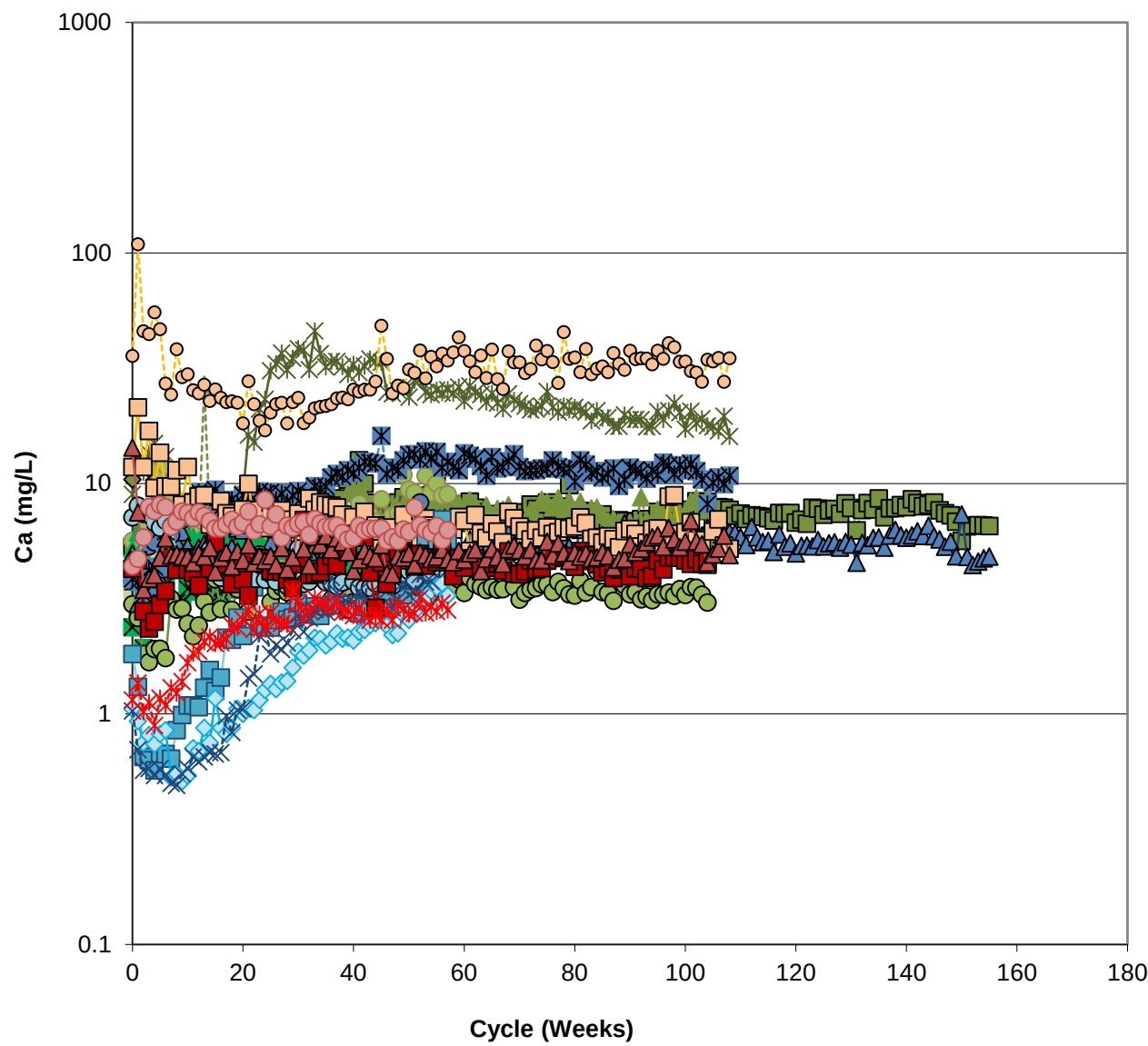


- Mafic volcanic (1), HC-3
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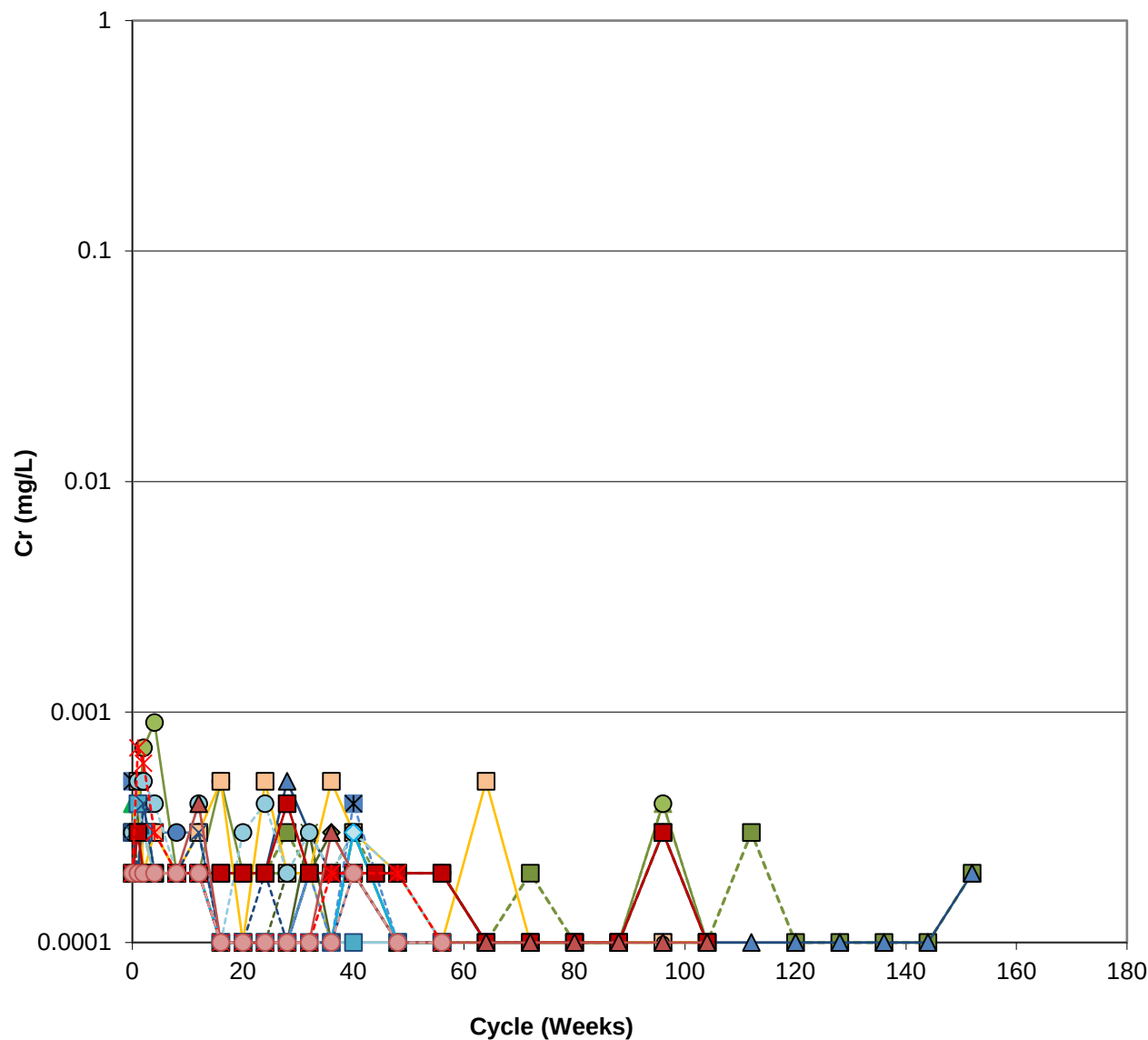
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Hope Bay Waste Rock Humidity Cells

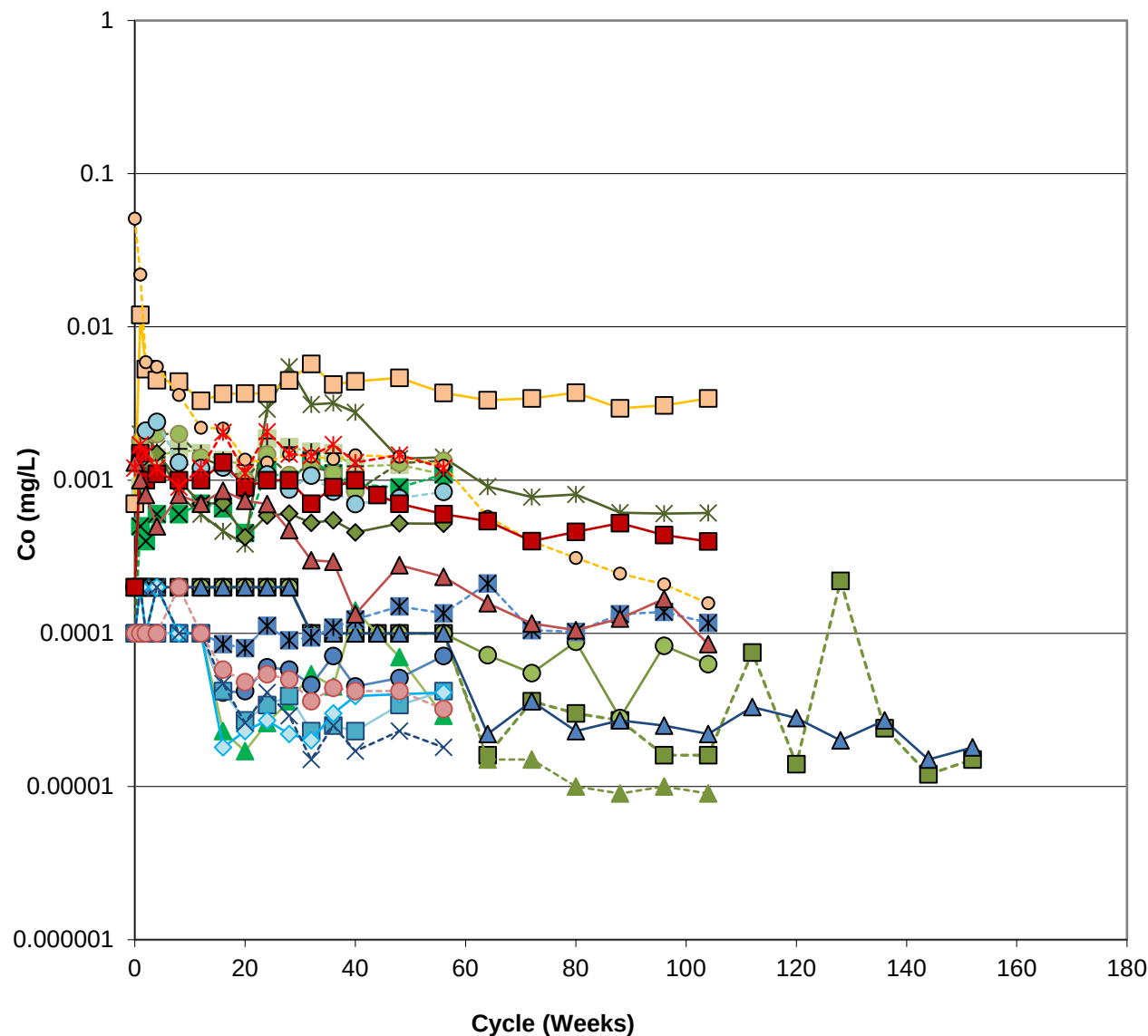


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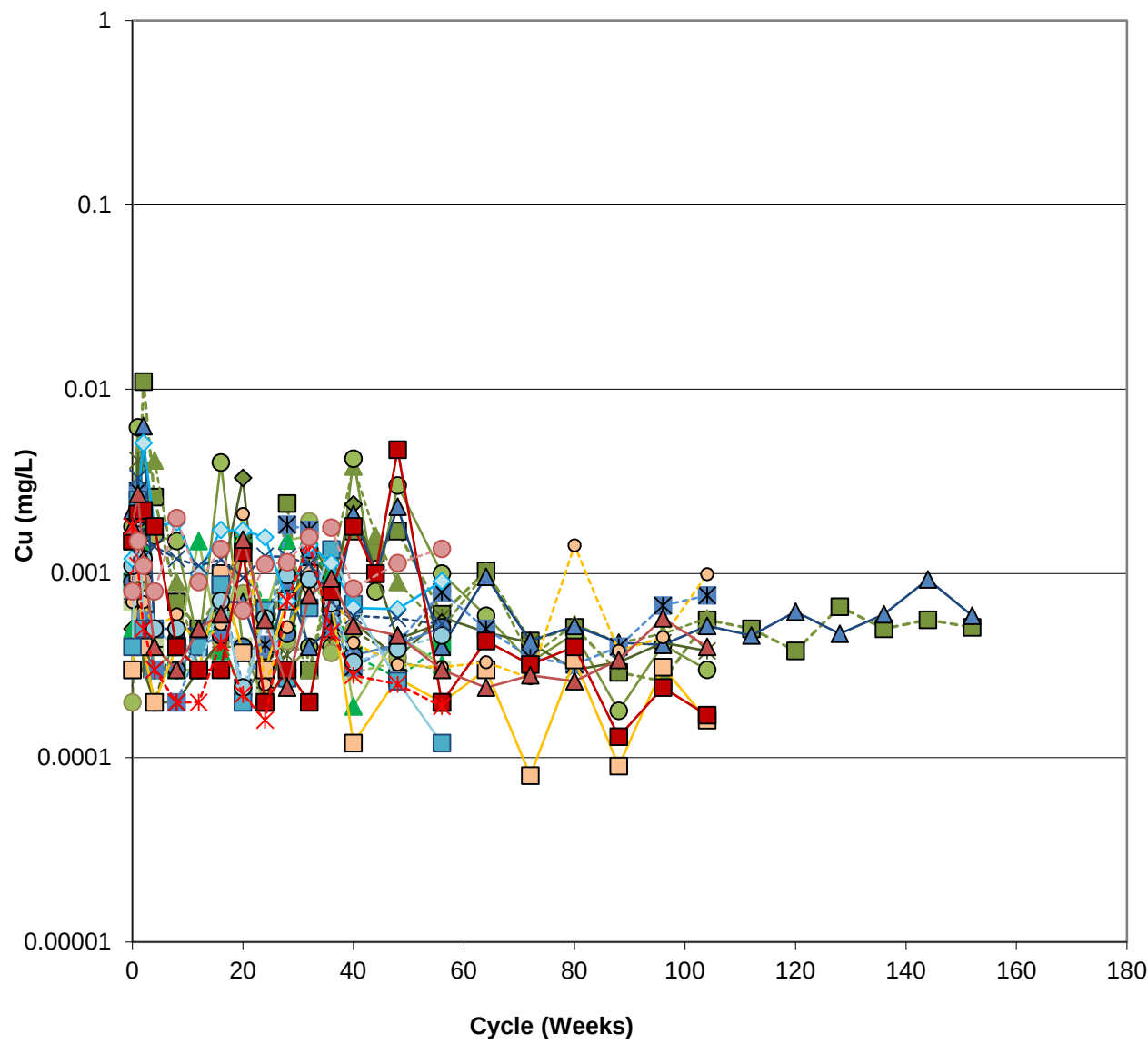


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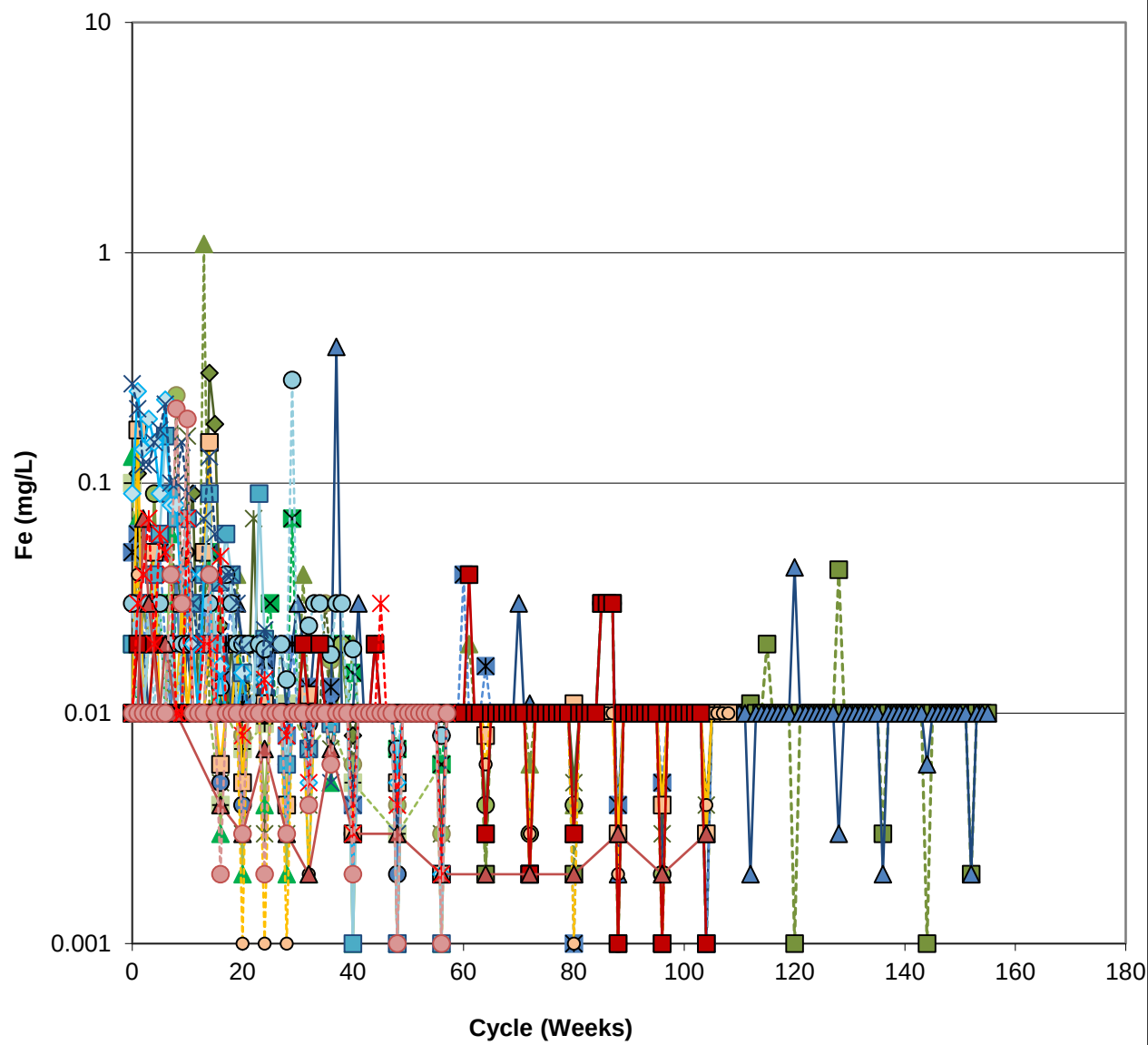
Hope Bay Waste Rock Humidity Cells



Hope Bay Waste Rock Humidity Cells

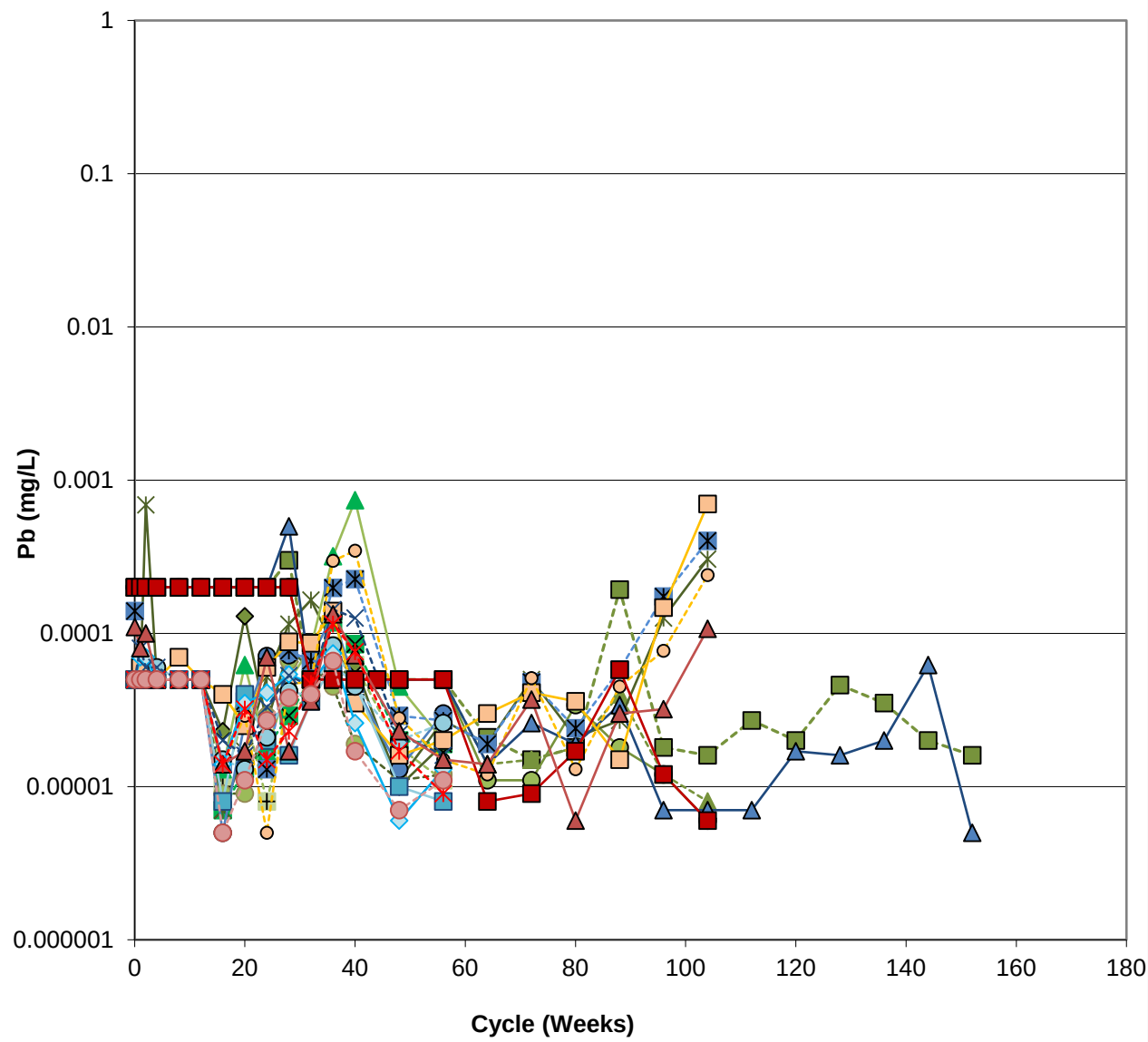


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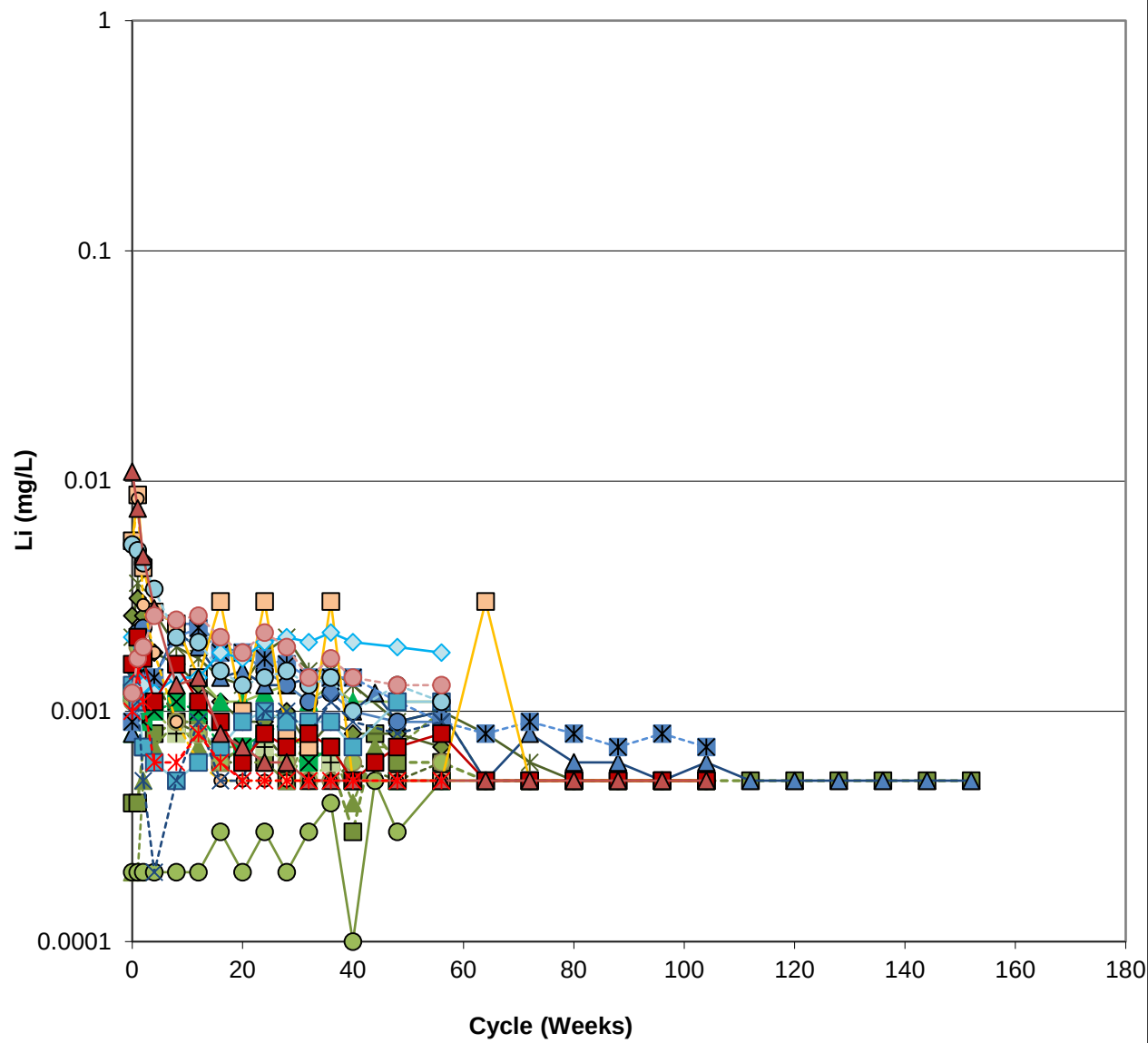


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Hope Bay Waste Rock Humidity Cells

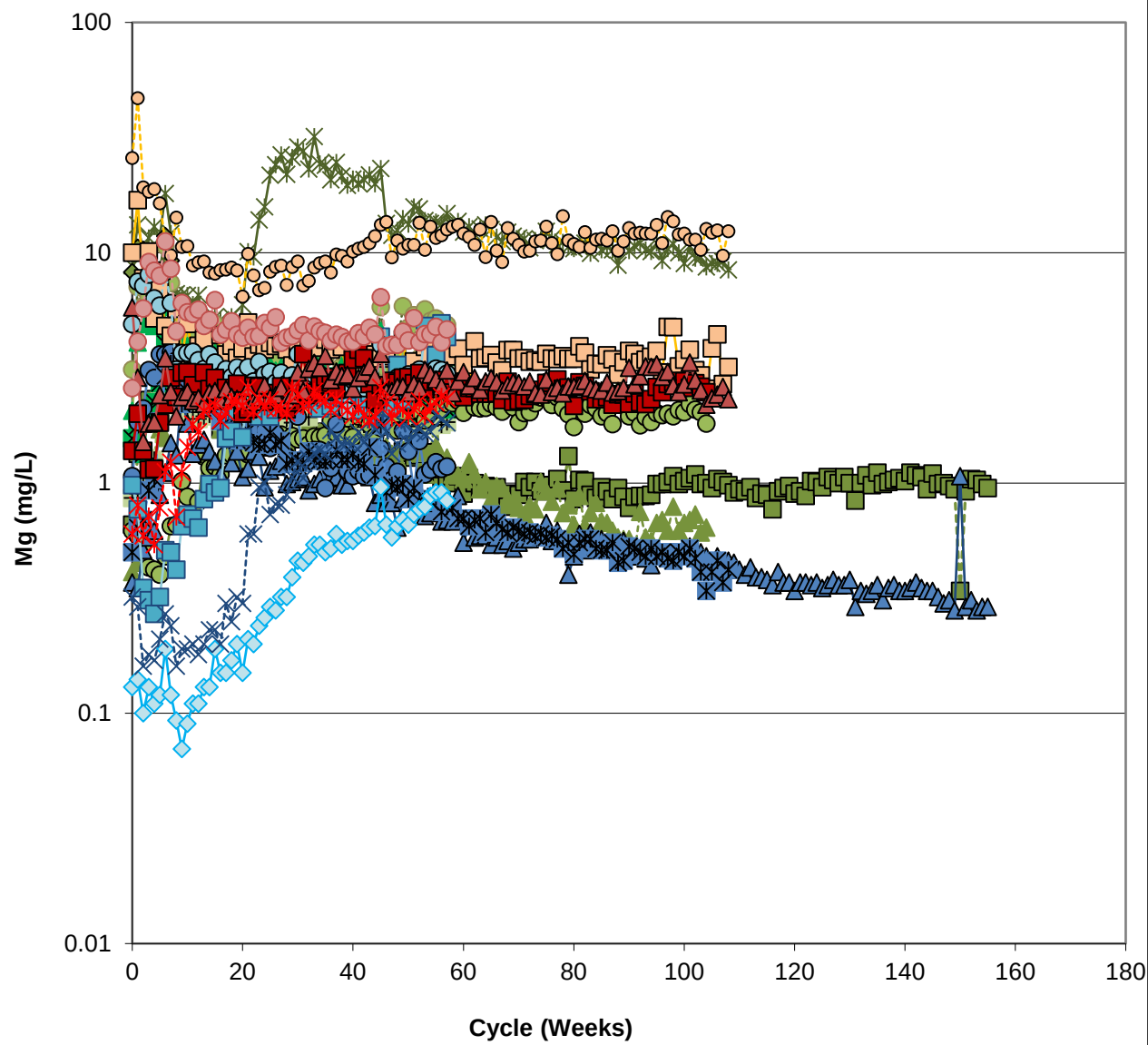


Hope Bay Waste Rock Humidity Cells



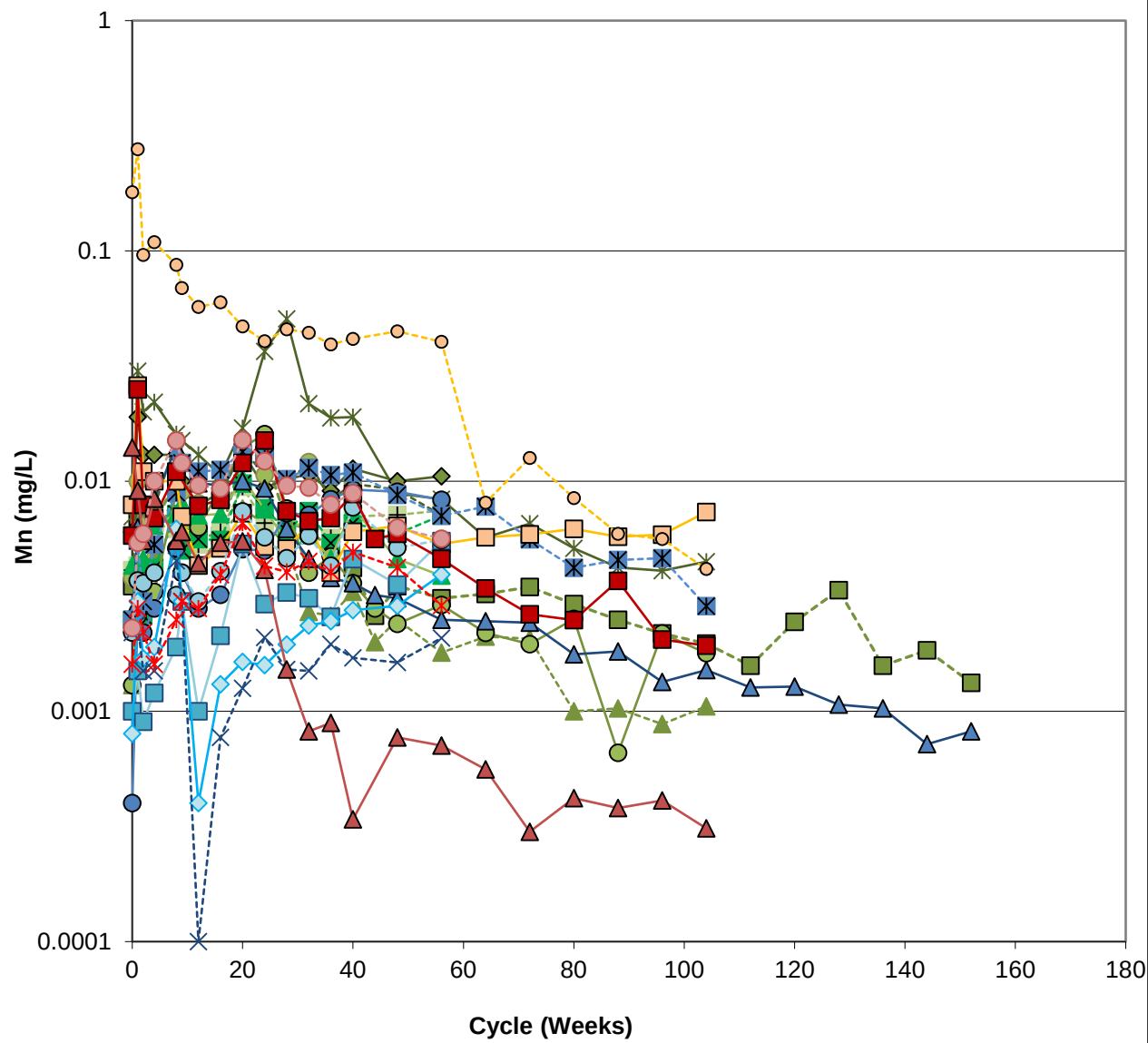
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Hope Bay Waste Rock Humidity Cells

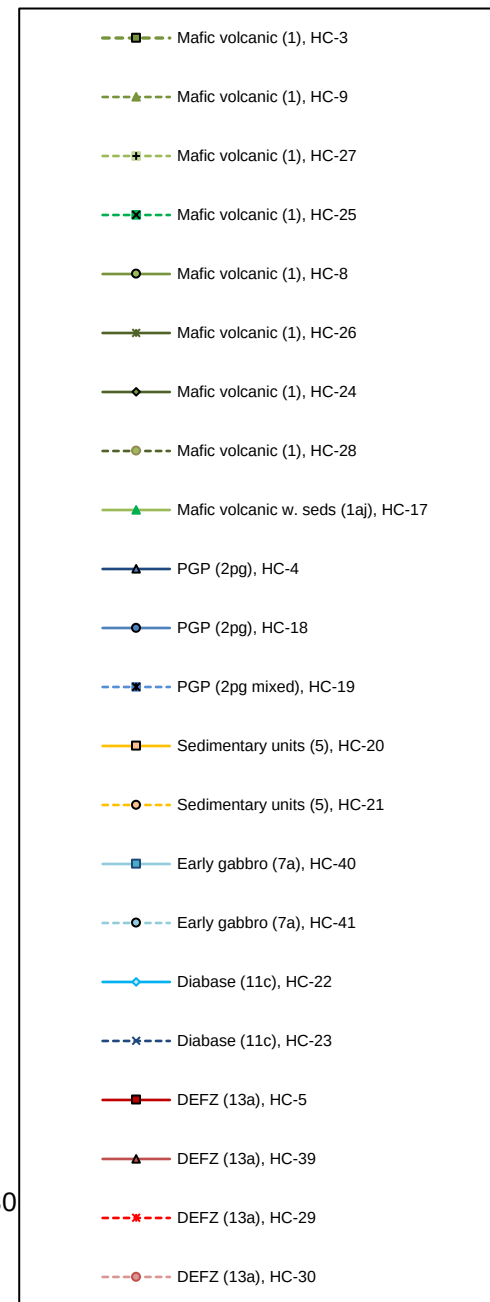
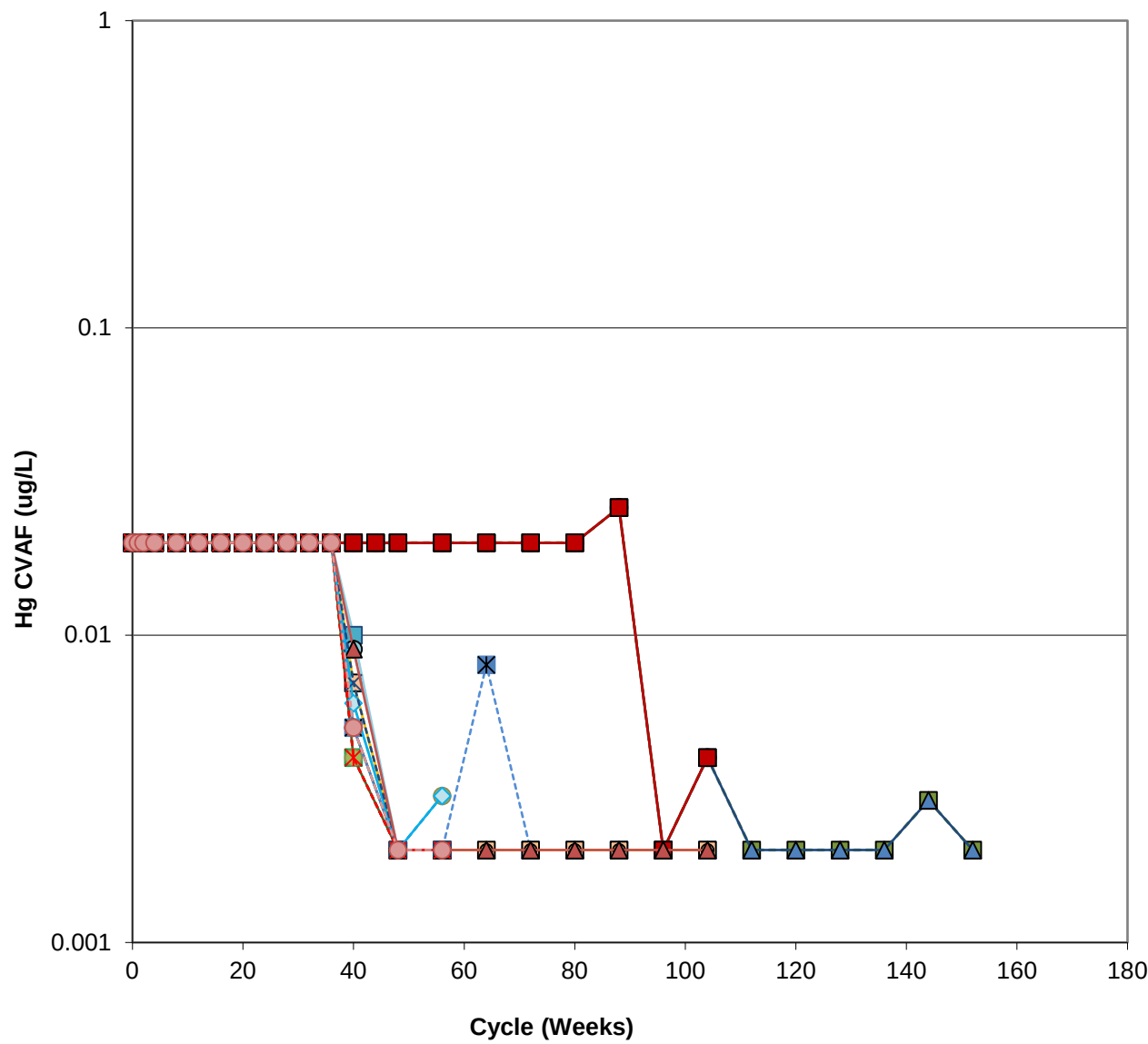


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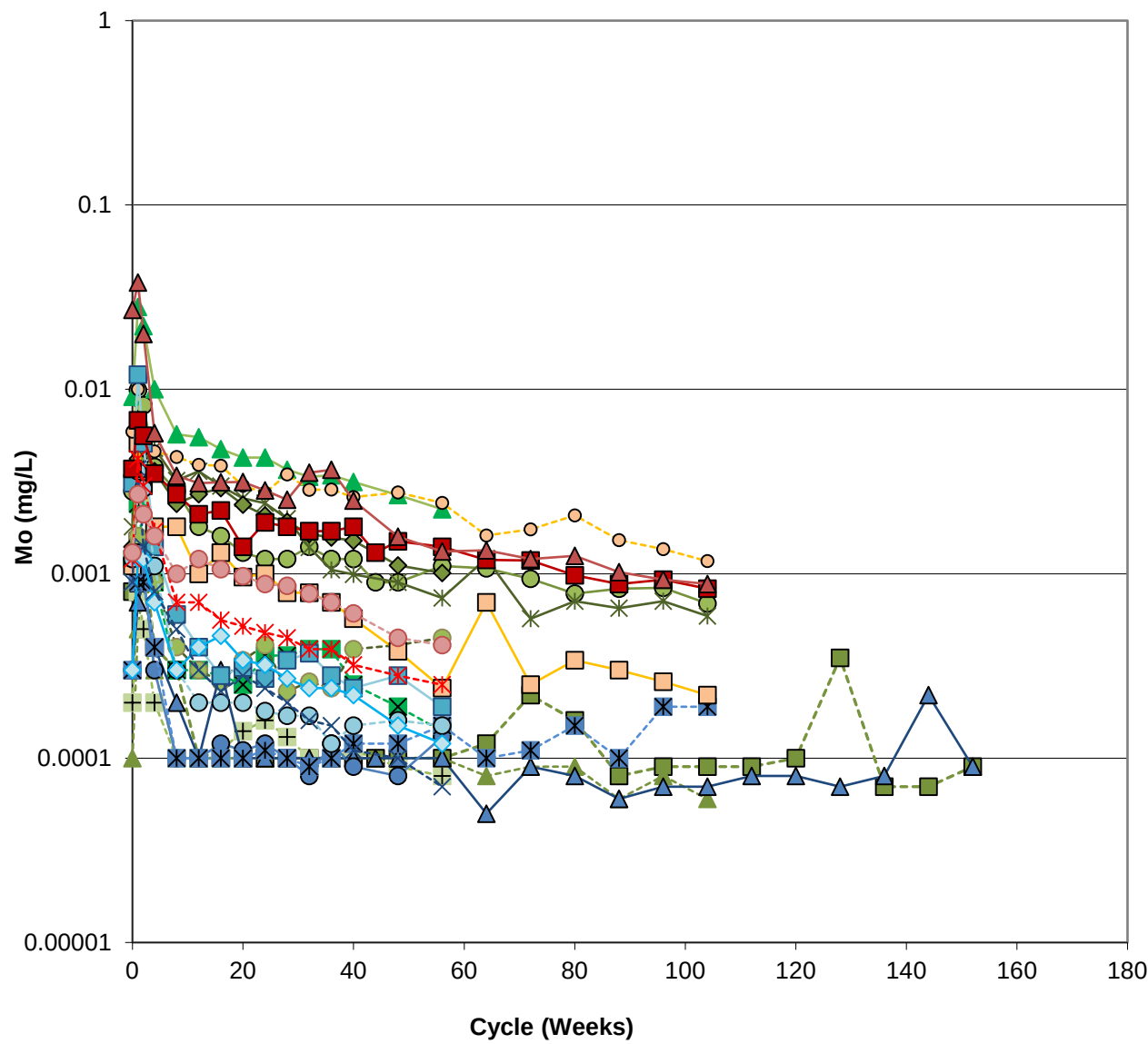
Hope Bay Waste Rock Humidity Cells



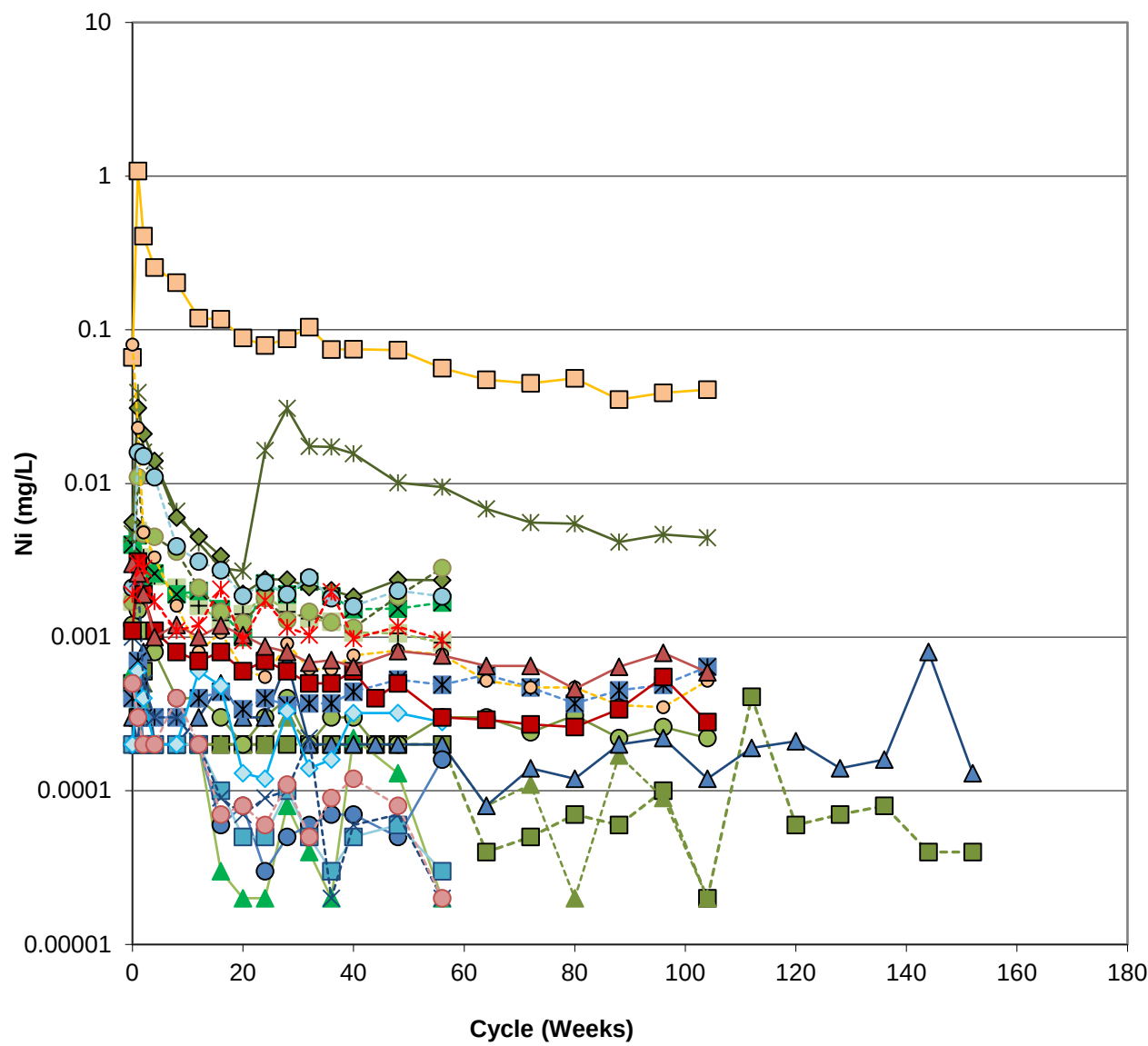
Hope Bay Waste Rock Humidity Cells



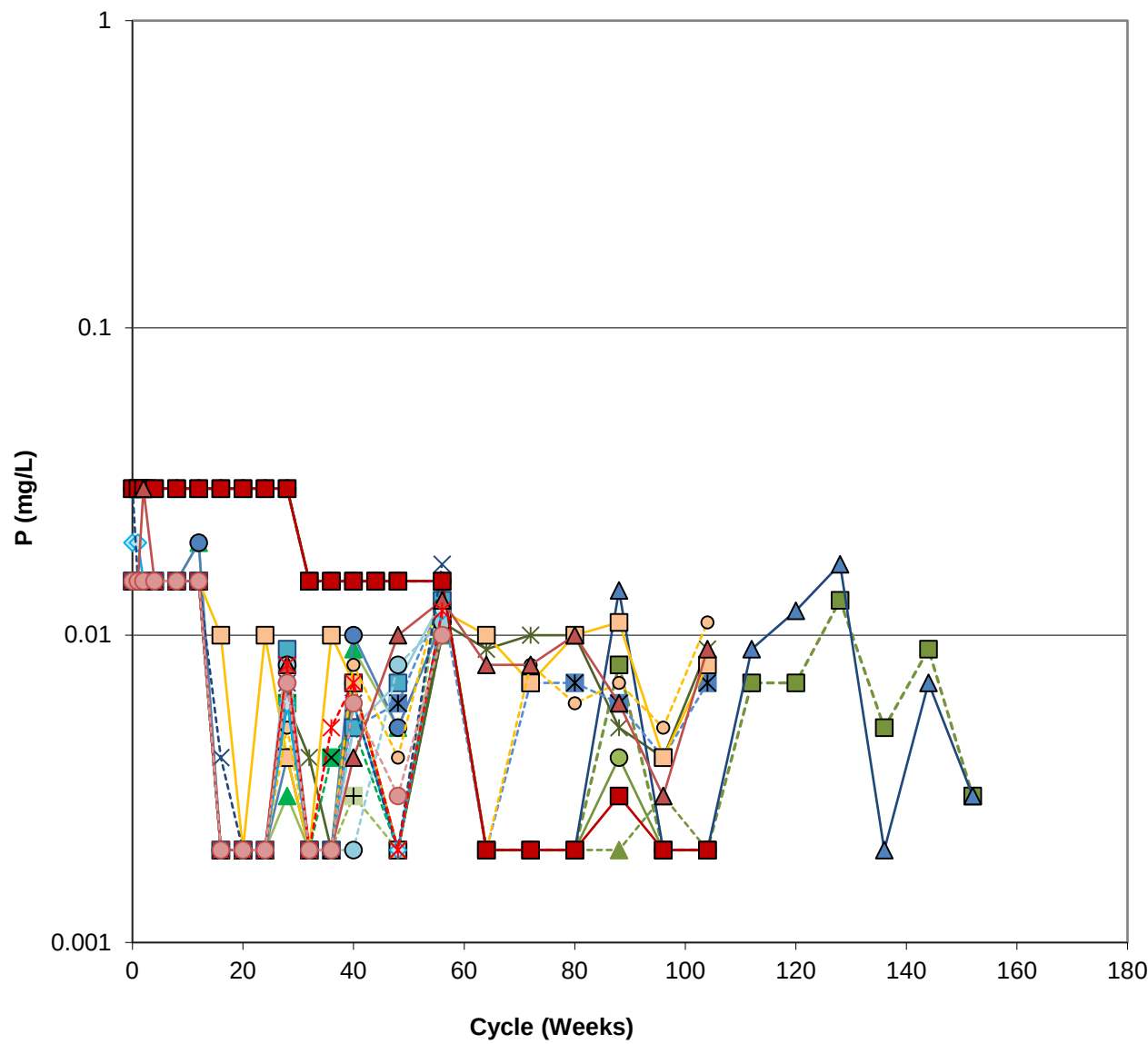
Hope Bay Waste Rock Humidity Cells



Hope Bay Waste Rock Humidity Cells

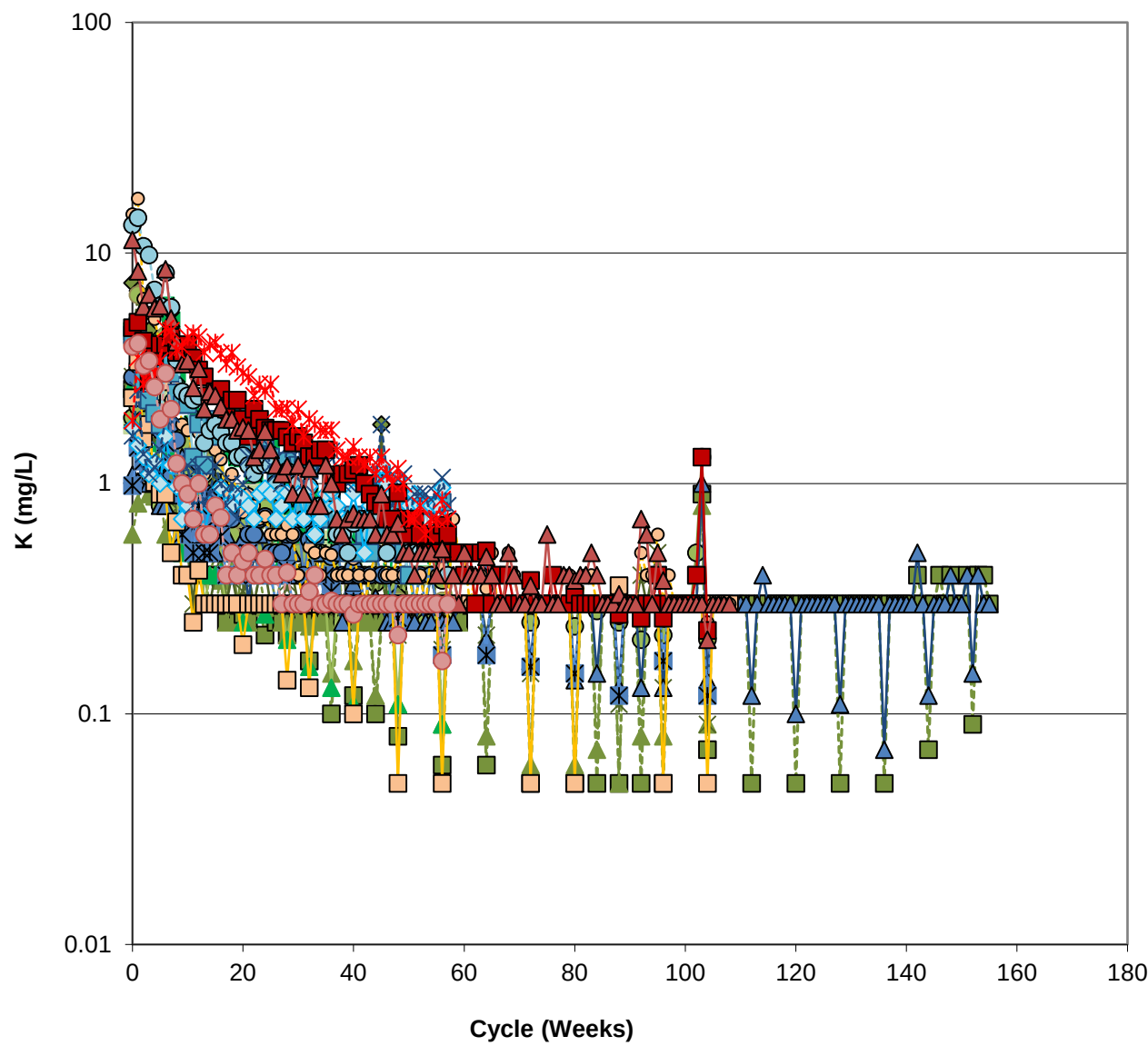


Hope Bay Waste Rock Humidity Cells



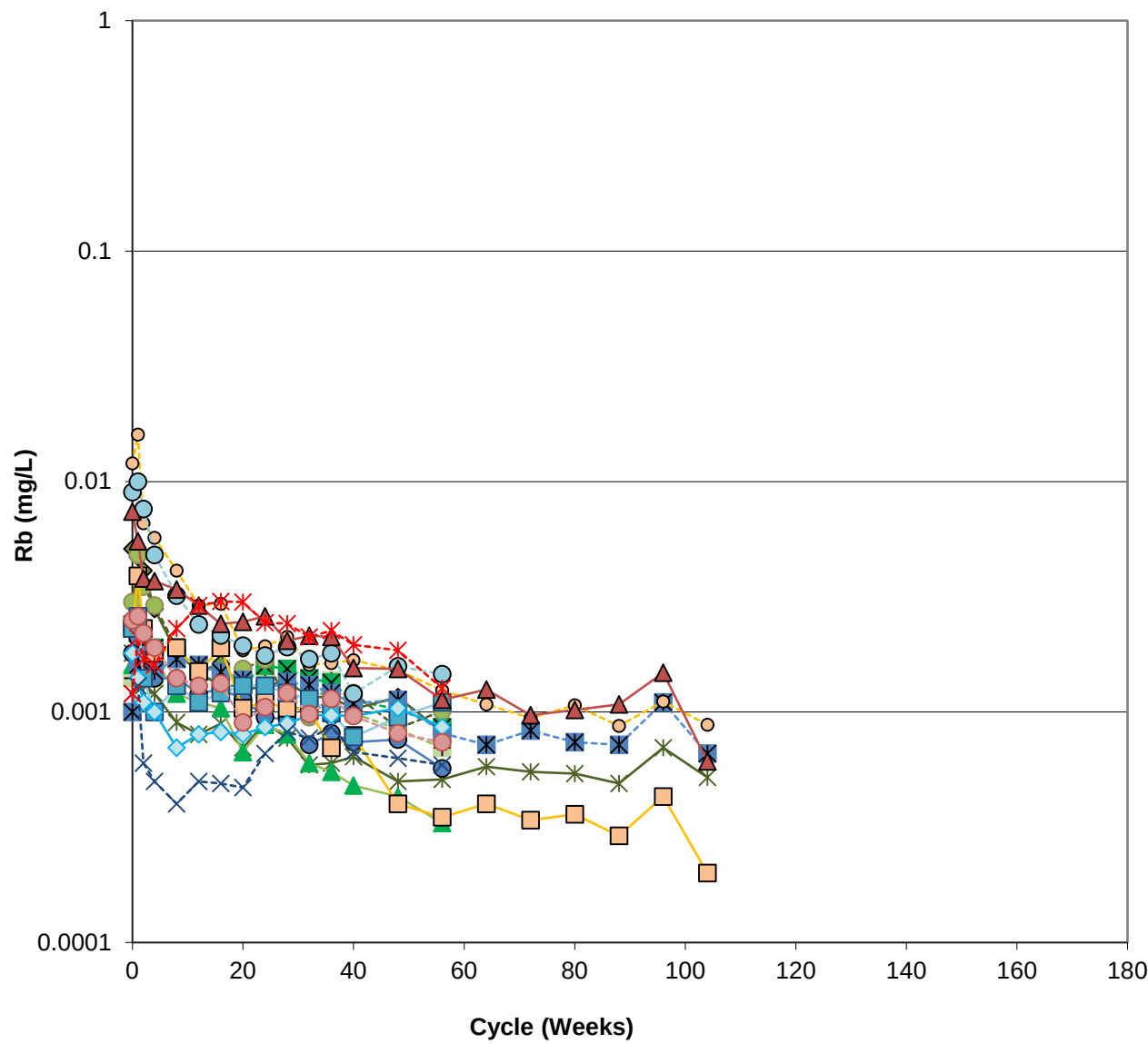
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Hope Bay Waste Rock Humidity Cells



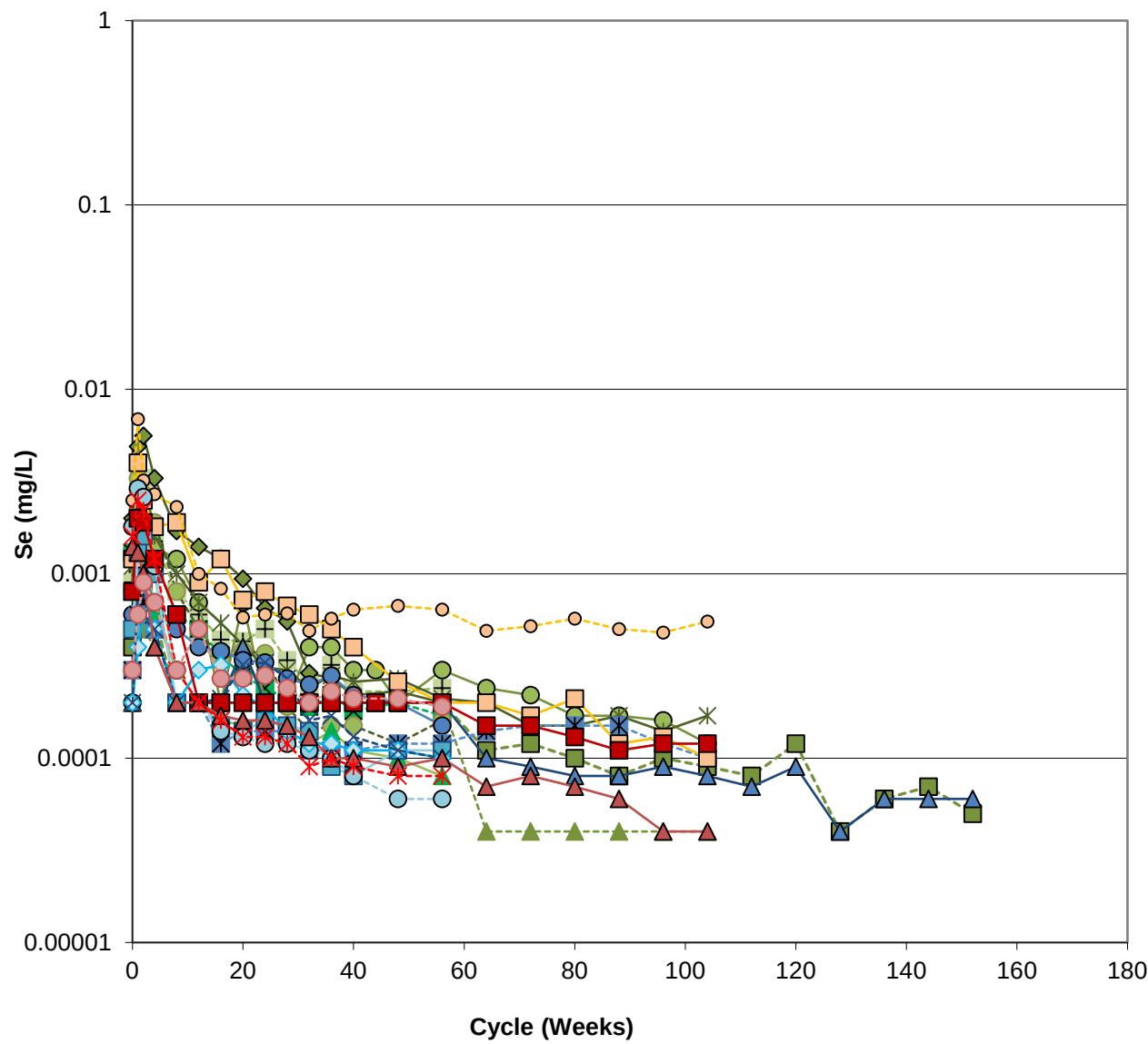
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Hope Bay Waste Rock Humidity Cells

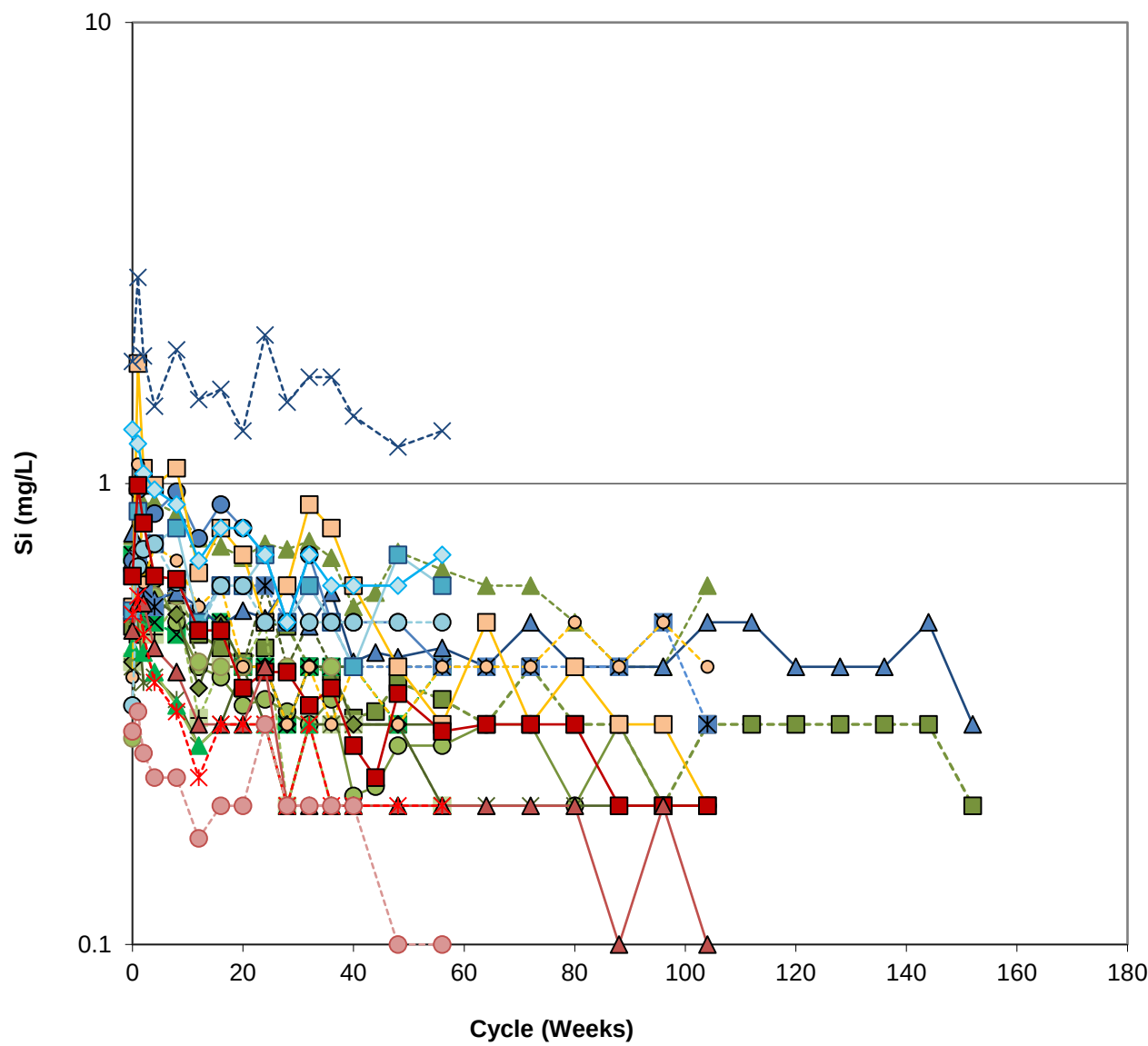


- Mafic volcanic (1), HC-3
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- *--- DEFZ (13a), HC-29
- DEFZ (13a), HC-30

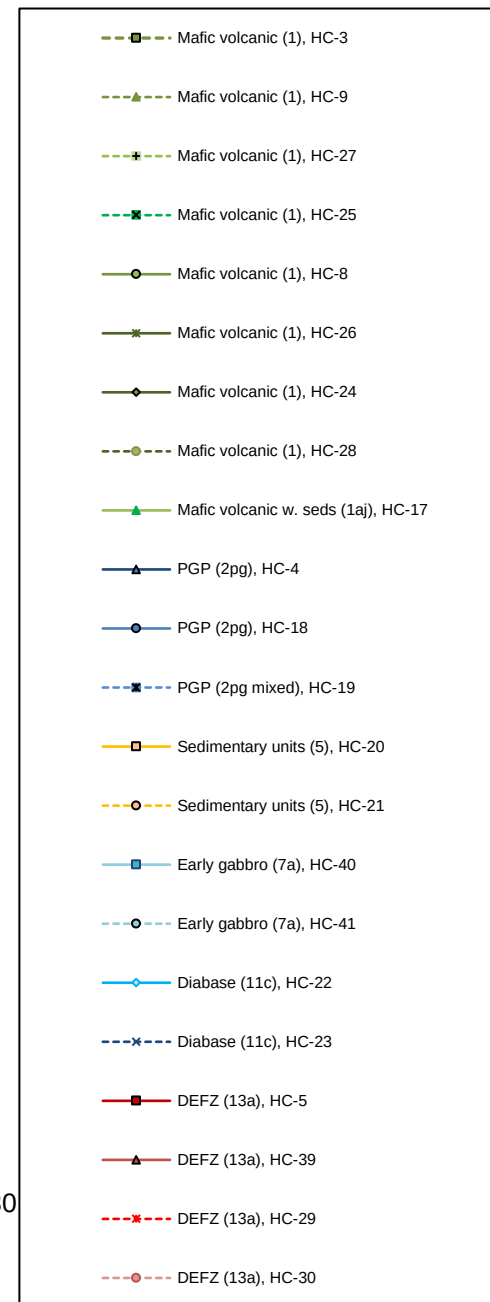
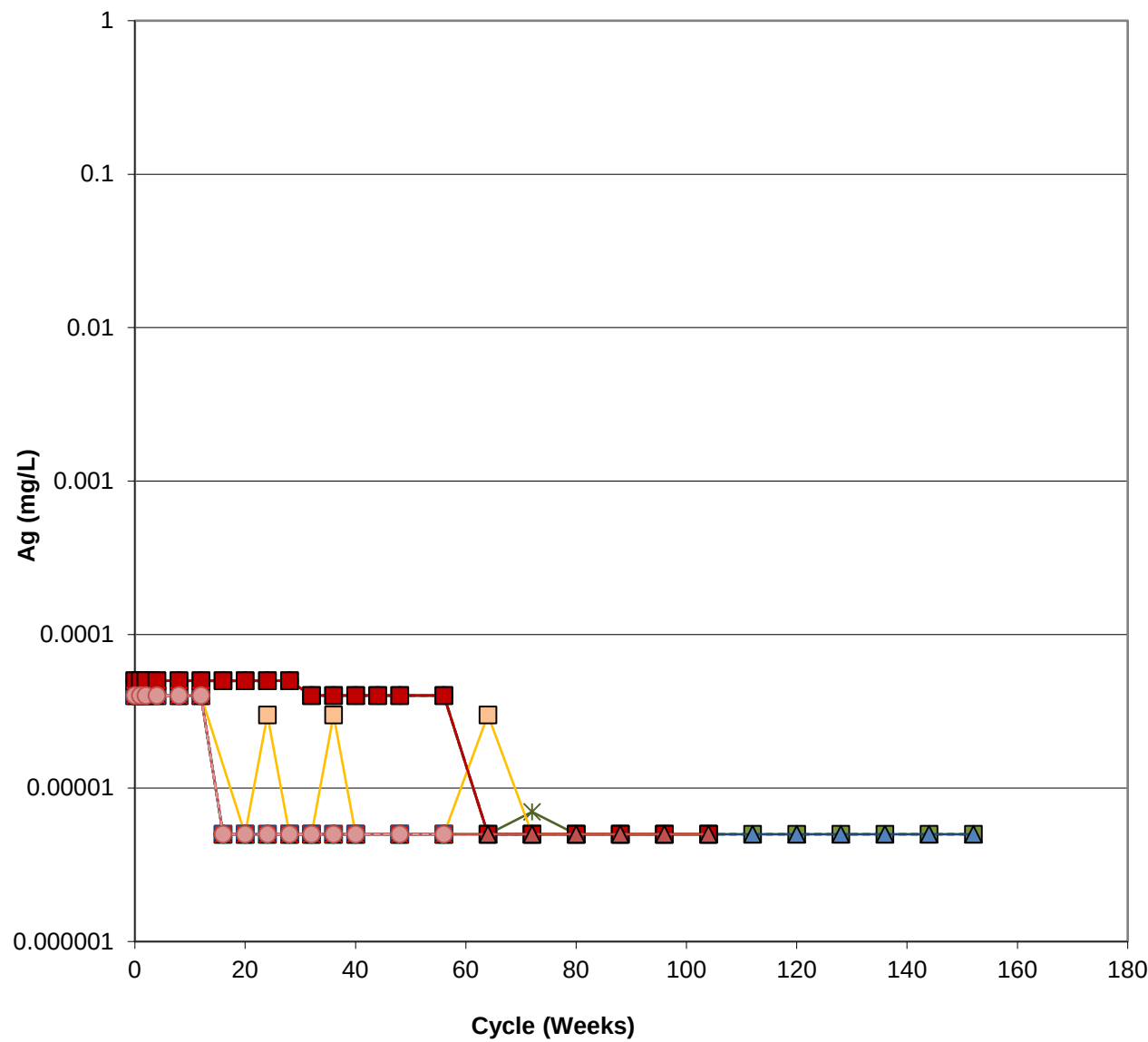
Hope Bay Waste Rock Humidity Cells



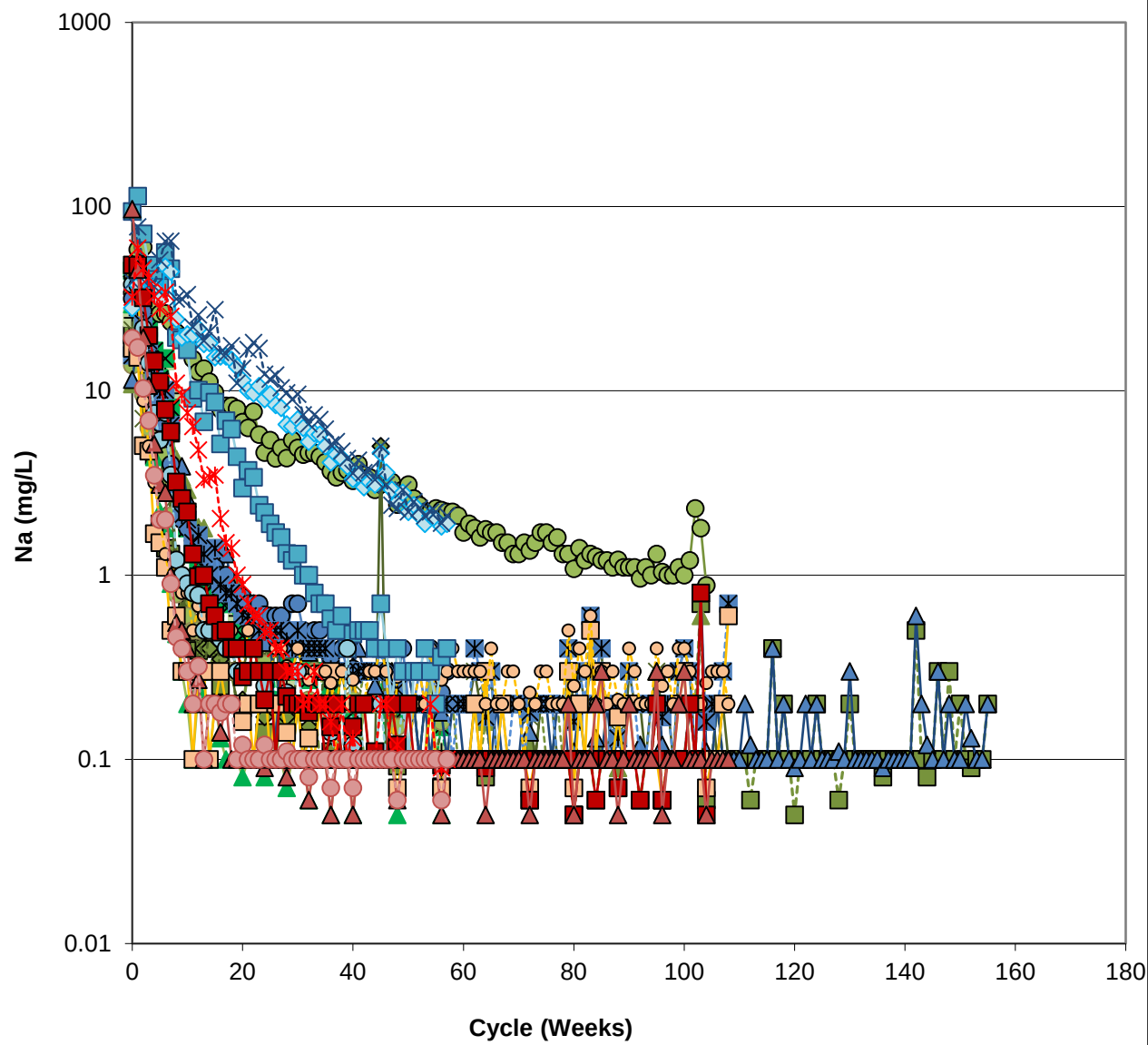
Hope Bay Waste Rock Humidity Cells



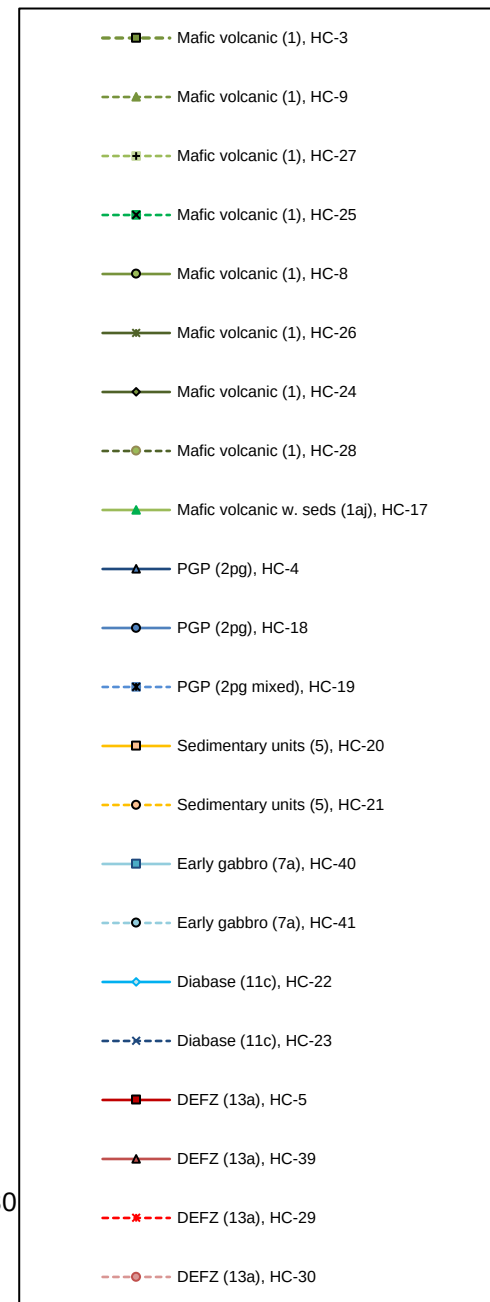
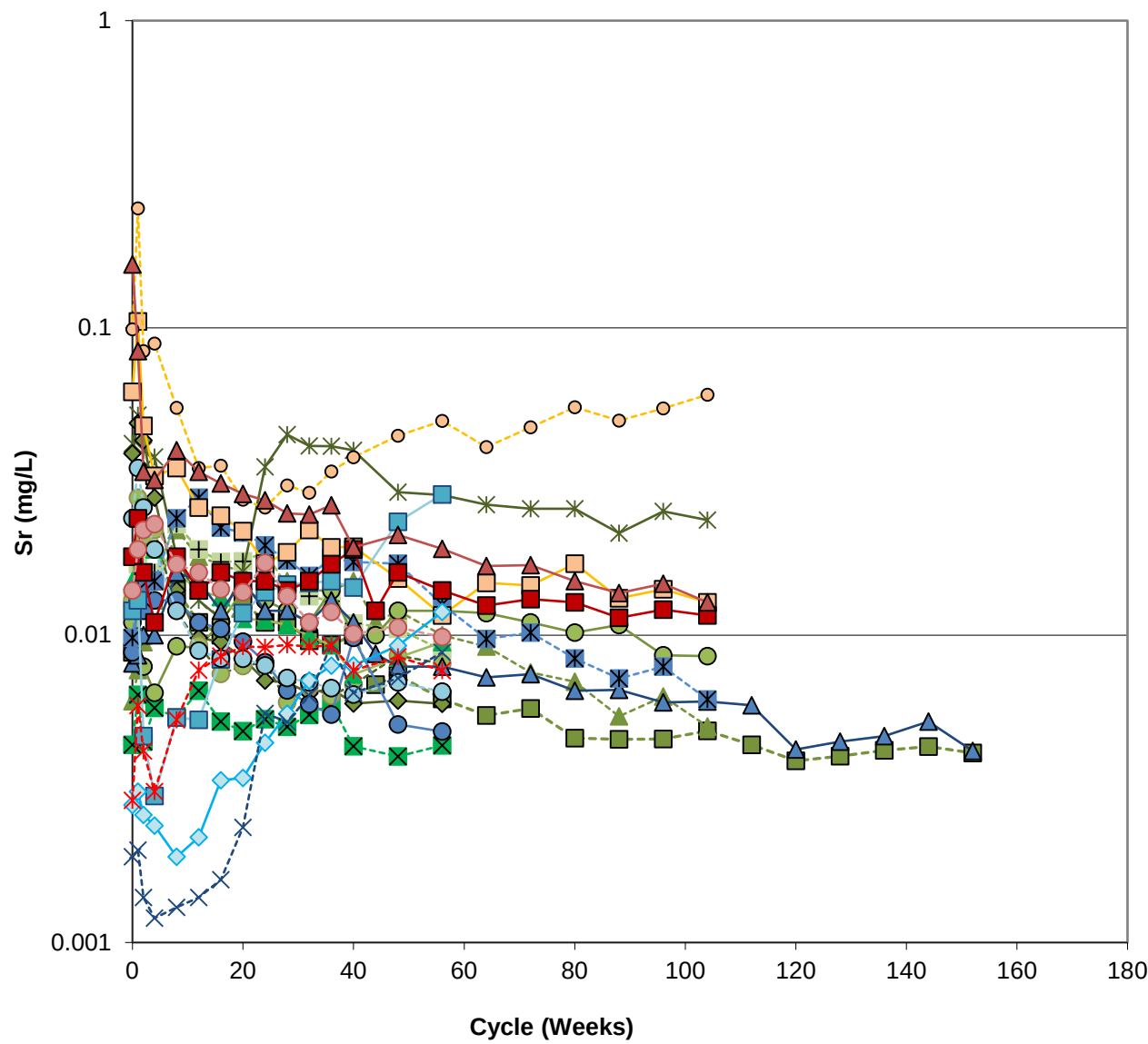
Hope Bay Waste Rock Humidity Cells



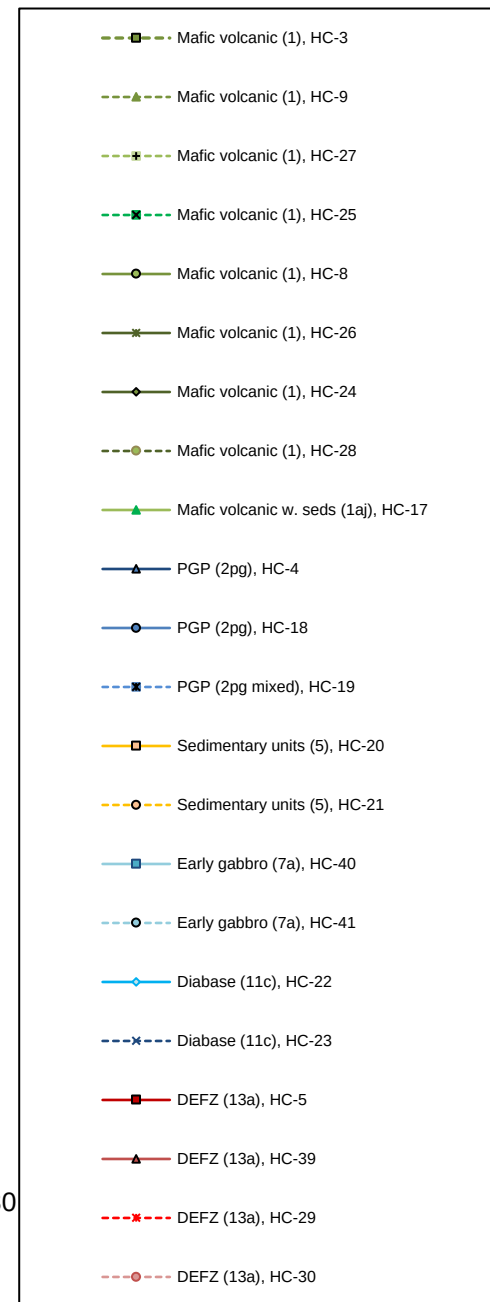
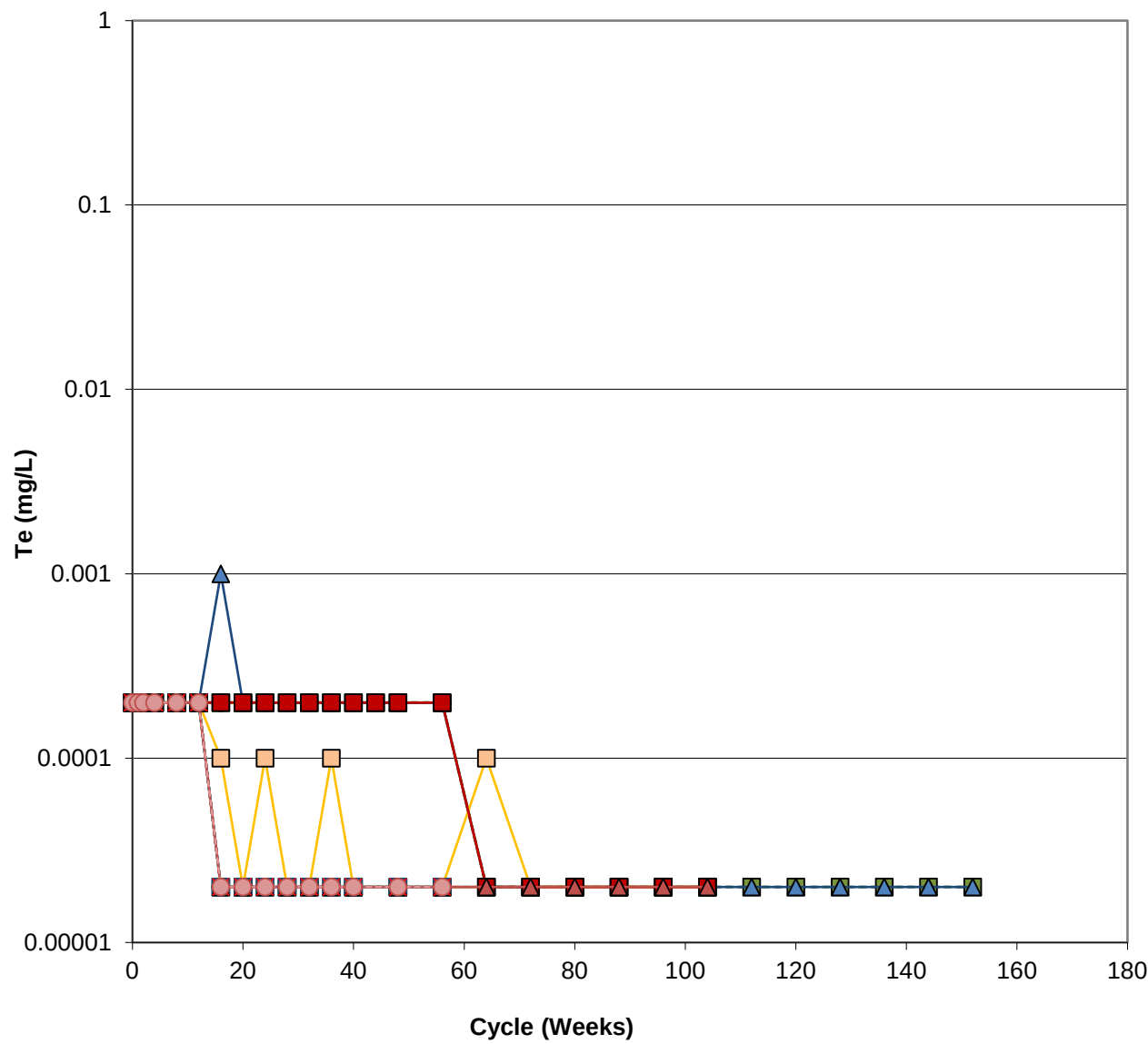
Hope Bay Waste Rock Humidity Cells



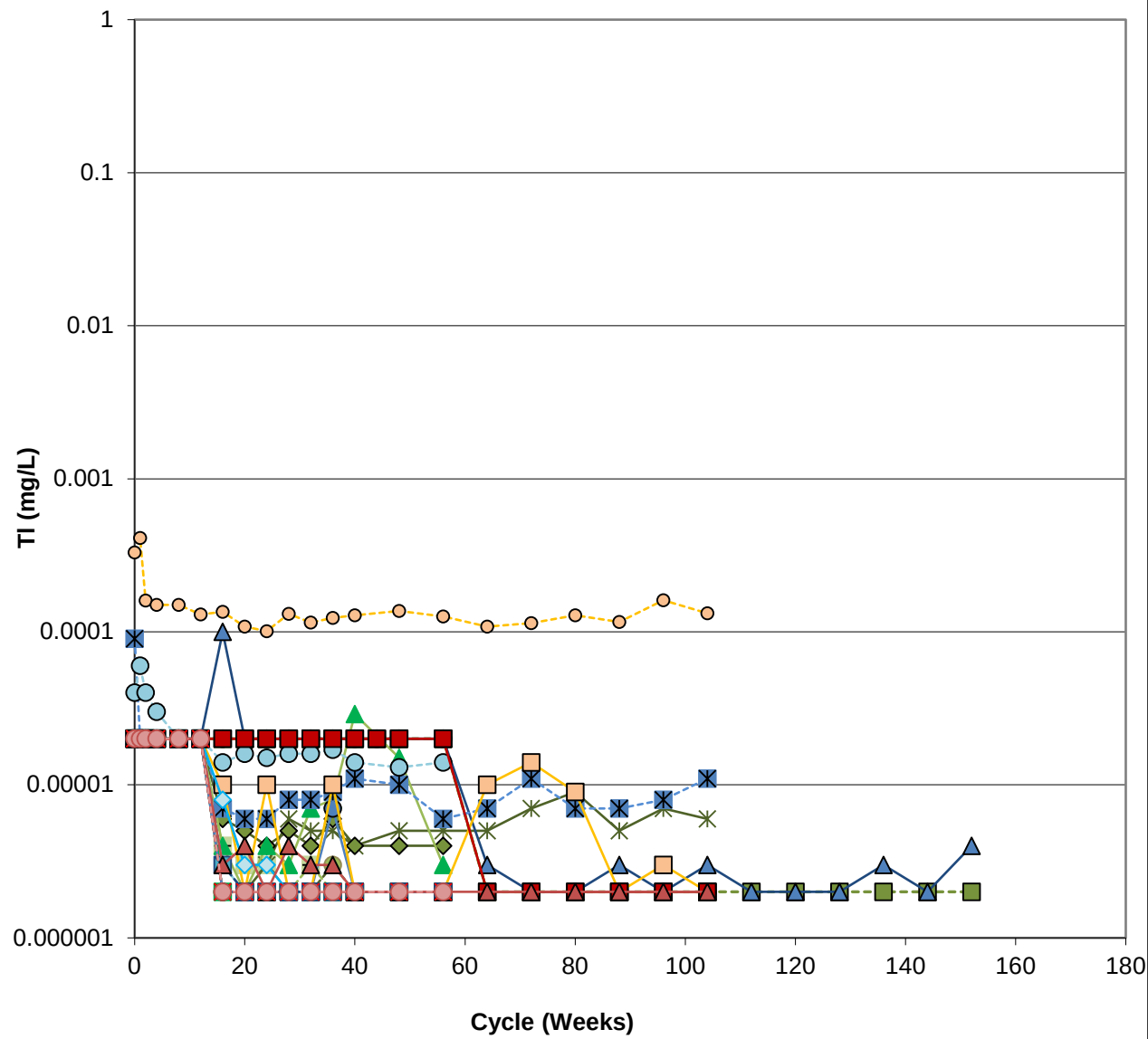
Hope Bay Waste Rock Humidity Cells



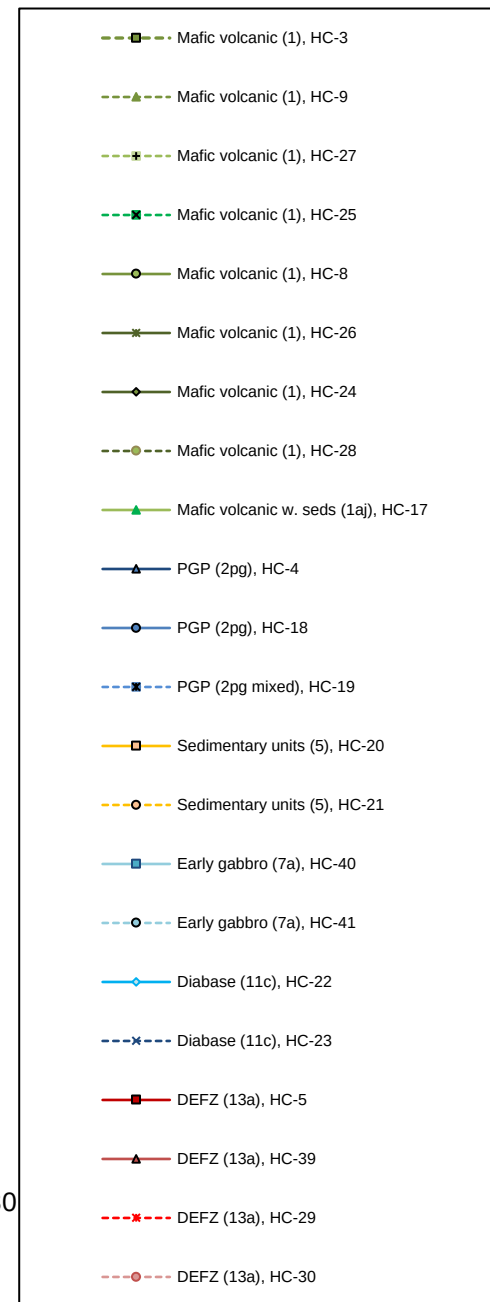
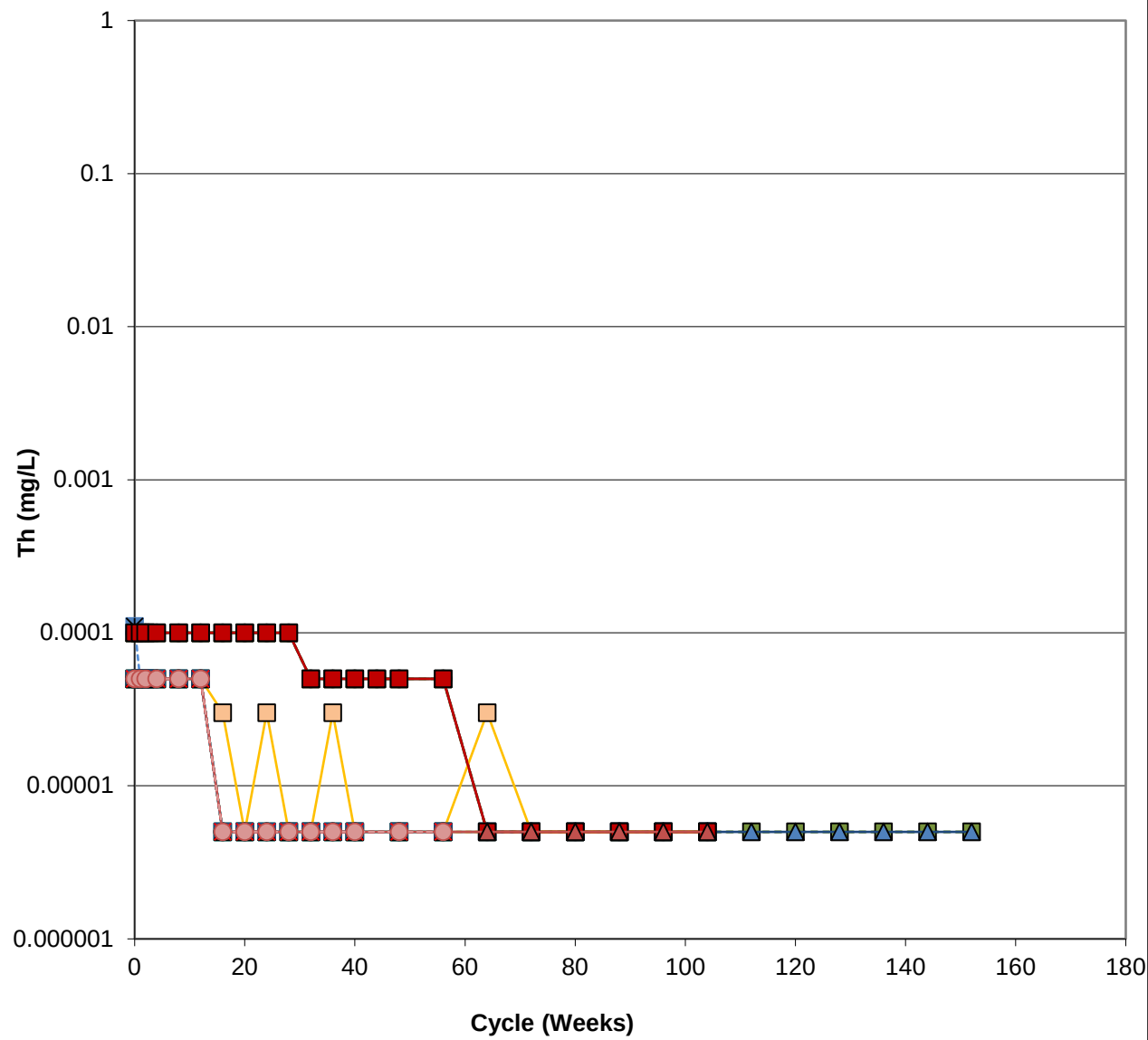
Hope Bay Waste Rock Humidity Cells



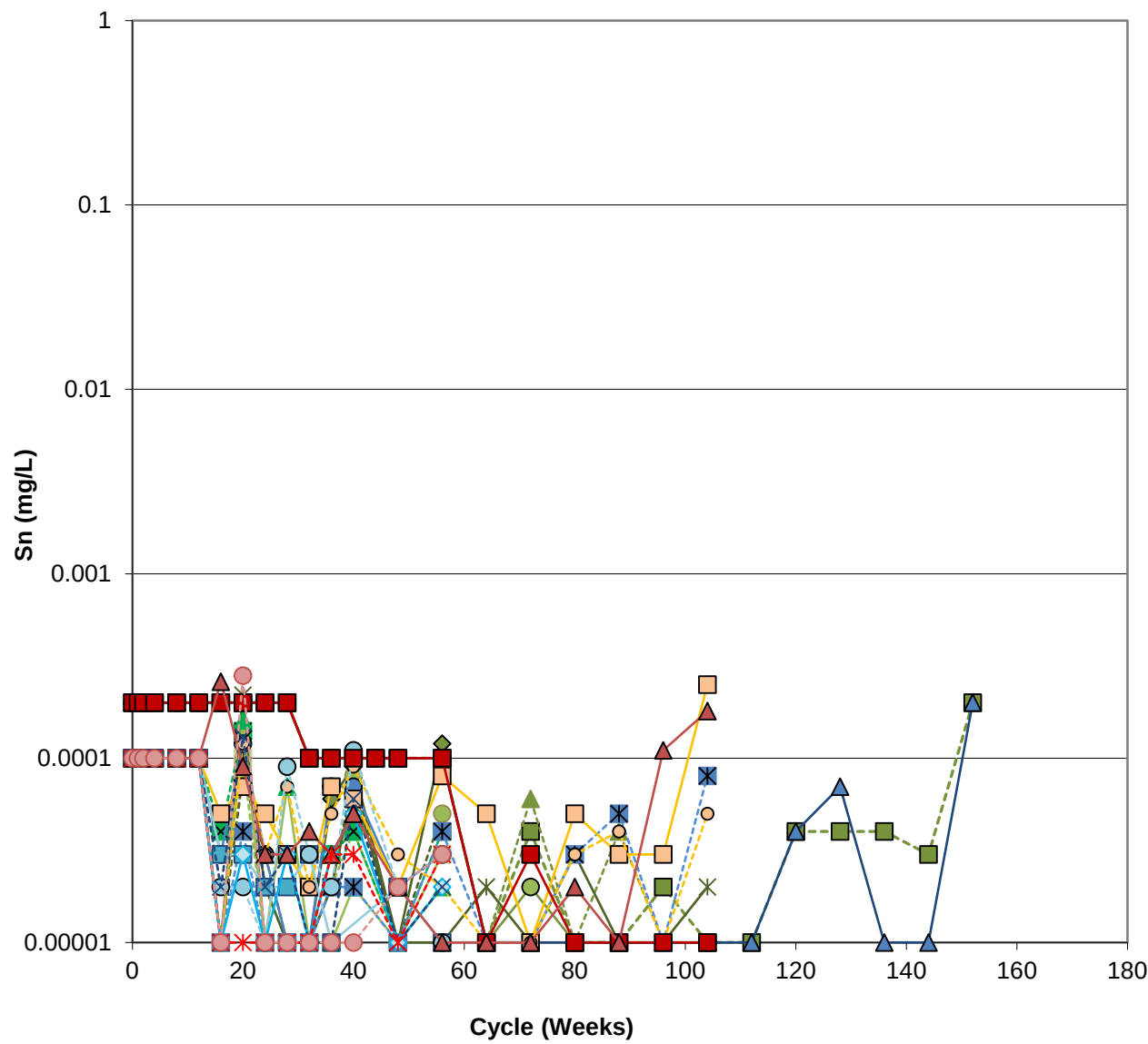
Hope Bay Waste Rock Humidity Cells



Hope Bay Waste Rock Humidity Cells

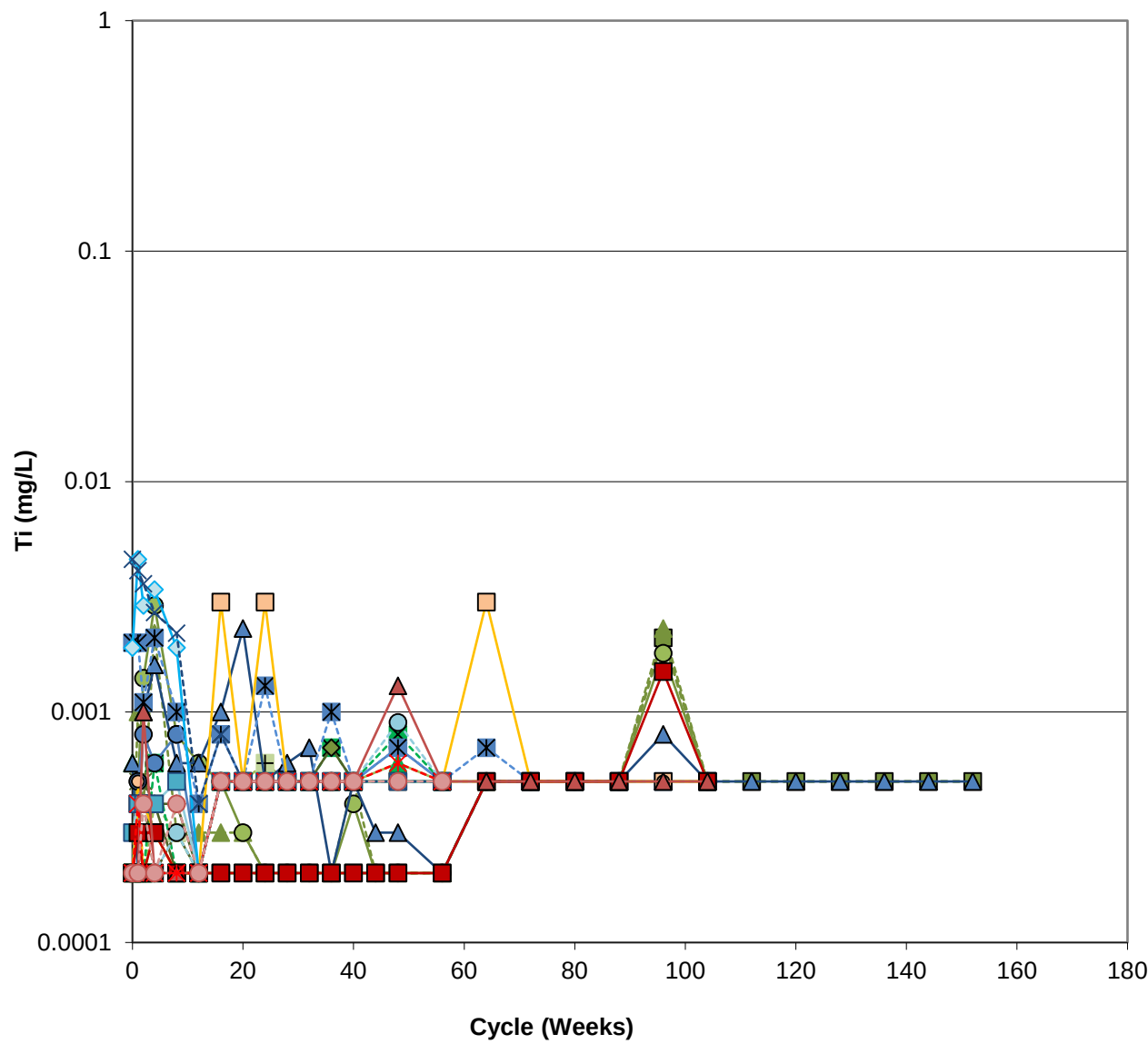


Hope Bay Waste Rock Humidity Cells



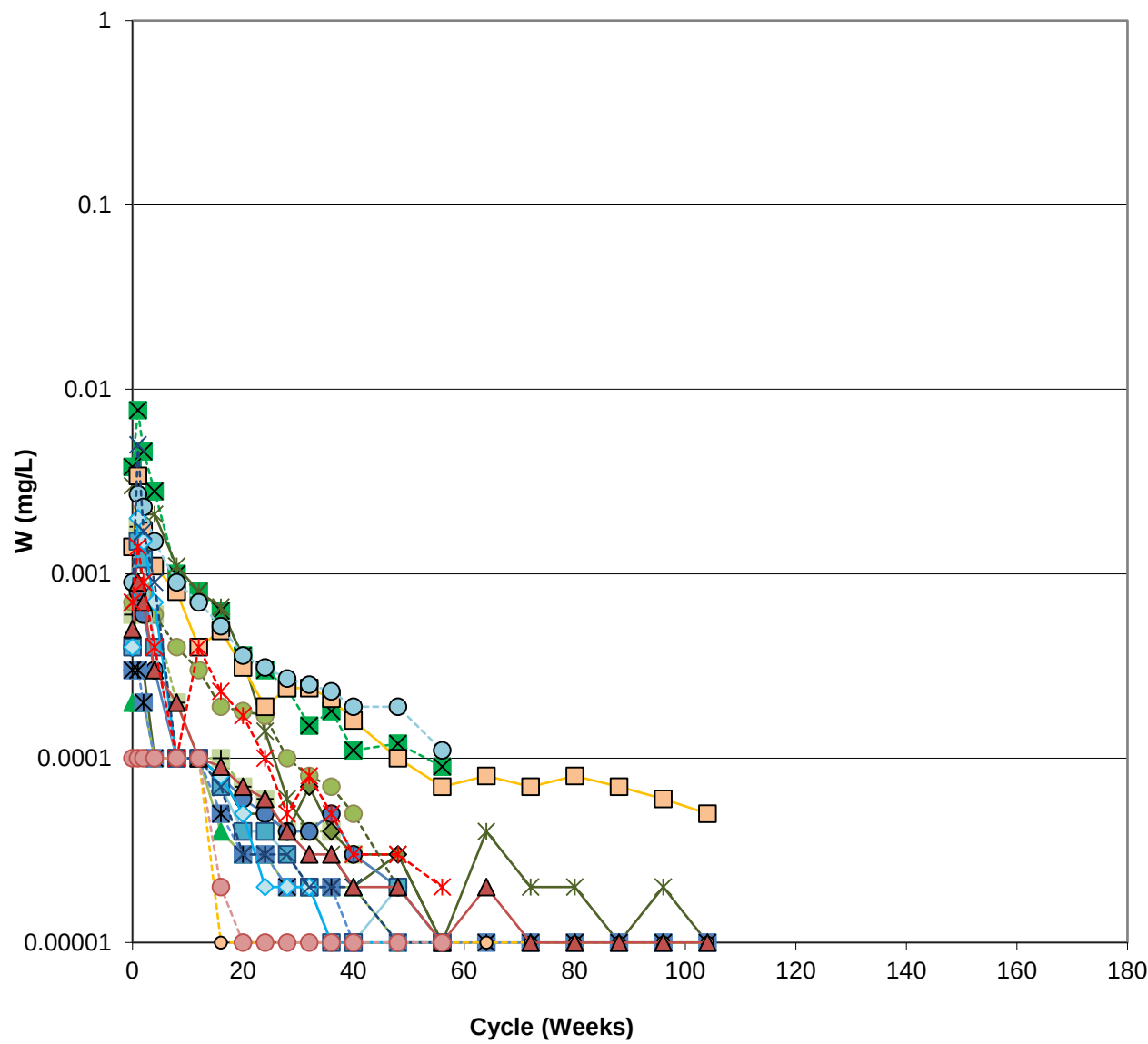
- Mafic volcanic (1), HC-3
- ▲--- Mafic volcanic (1), HC-9
- *--- Mafic volcanic (1), HC-27
- Mafic volcanic (1), HC-25
- Mafic volcanic (1), HC-8
- *--- Mafic volcanic (1), HC-26
- ◆--- Mafic volcanic (1), HC-24
- Mafic volcanic (1), HC-28
- ▲--- Mafic volcanic w. seds (1aj), HC-17
- ▲--- PGP (2pg), HC-4
- PGP (2pg), HC-18
- *--- PGP (2pg mixed), HC-19
- Sedimentary units (5), HC-20
- Sedimentary units (5), HC-21
- Early gabbro (7a), HC-40
- Early gabbro (7a), HC-41
- ◇--- Diabase (11c), HC-22
- *--- Diabase (11c), HC-23
- DEFZ (13a), HC-5
- ▲--- DEFZ (13a), HC-39
- *--- DEFZ (13a), HC-29
- DEFZ (13a), HC-30

Hope Bay Waste Rock Humidity Cells

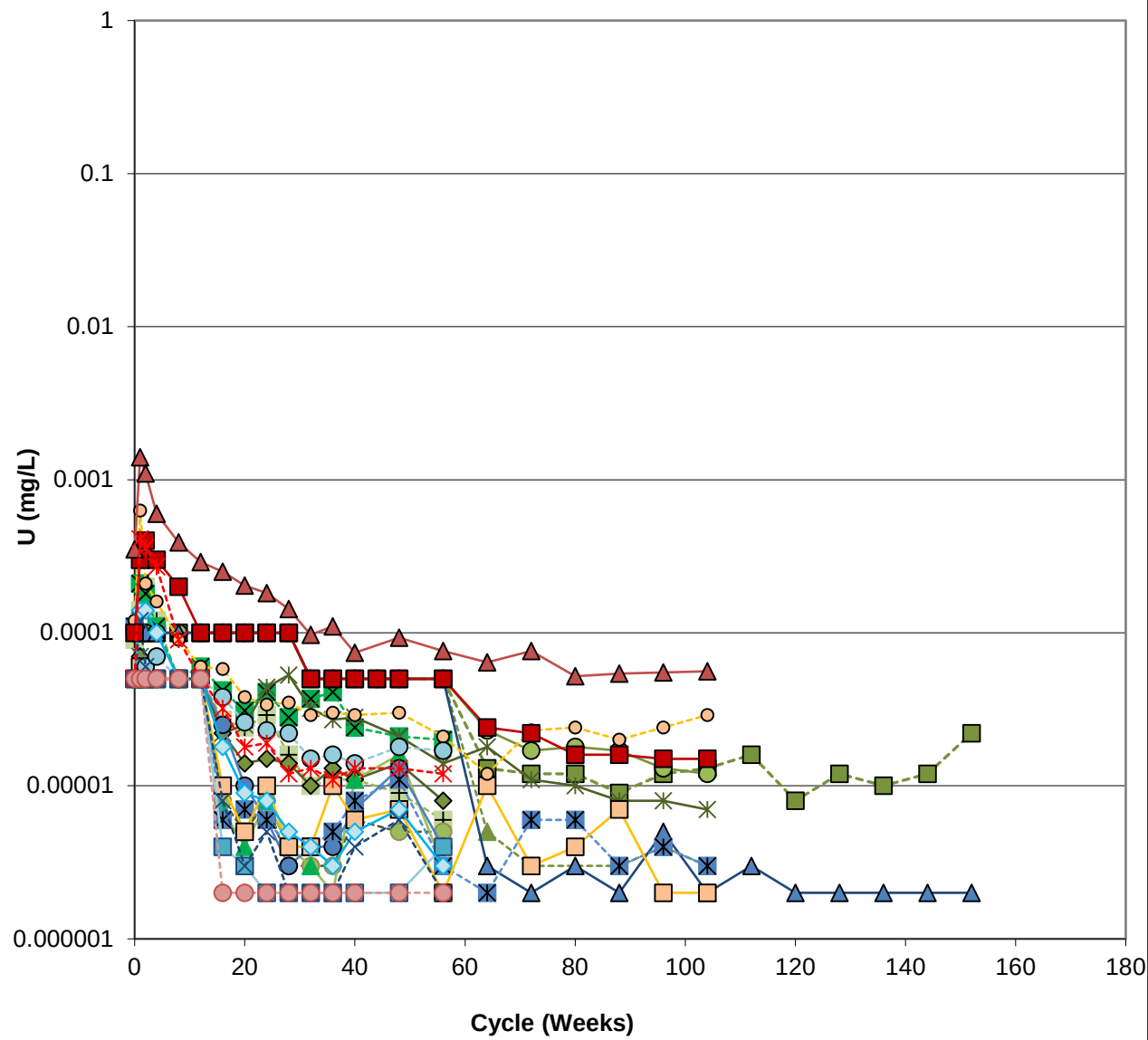


- Mafic volcanic (1), HC-3
- ▲--- Mafic volcanic (1), HC-9
- *--- Mafic volcanic (1), HC-27
- Mafic volcanic (1), HC-25
- Mafic volcanic (1), HC-8
- *--- Mafic volcanic (1), HC-26
- ◆--- Mafic volcanic (1), HC-24
- Mafic volcanic (1), HC-28
- ▲--- Mafic volcanic w. seds (1aj), HC-17
- ▲--- PGP (2pg), HC-4
- PGP (2pg), HC-18
- *--- PGP (2pg mixed), HC-19
- Sedimentary units (5), HC-20
- Sedimentary units (5), HC-21
- Early gabbro (7a), HC-40
- Early gabbro (7a), HC-41
- ◇--- Diabase (11c), HC-22
- *--- Diabase (11c), HC-23
- DEFZ (13a), HC-5
- ▲--- DEFZ (13a), HC-39
- *--- DEFZ (13a), HC-29
- DEFZ (13a), HC-30

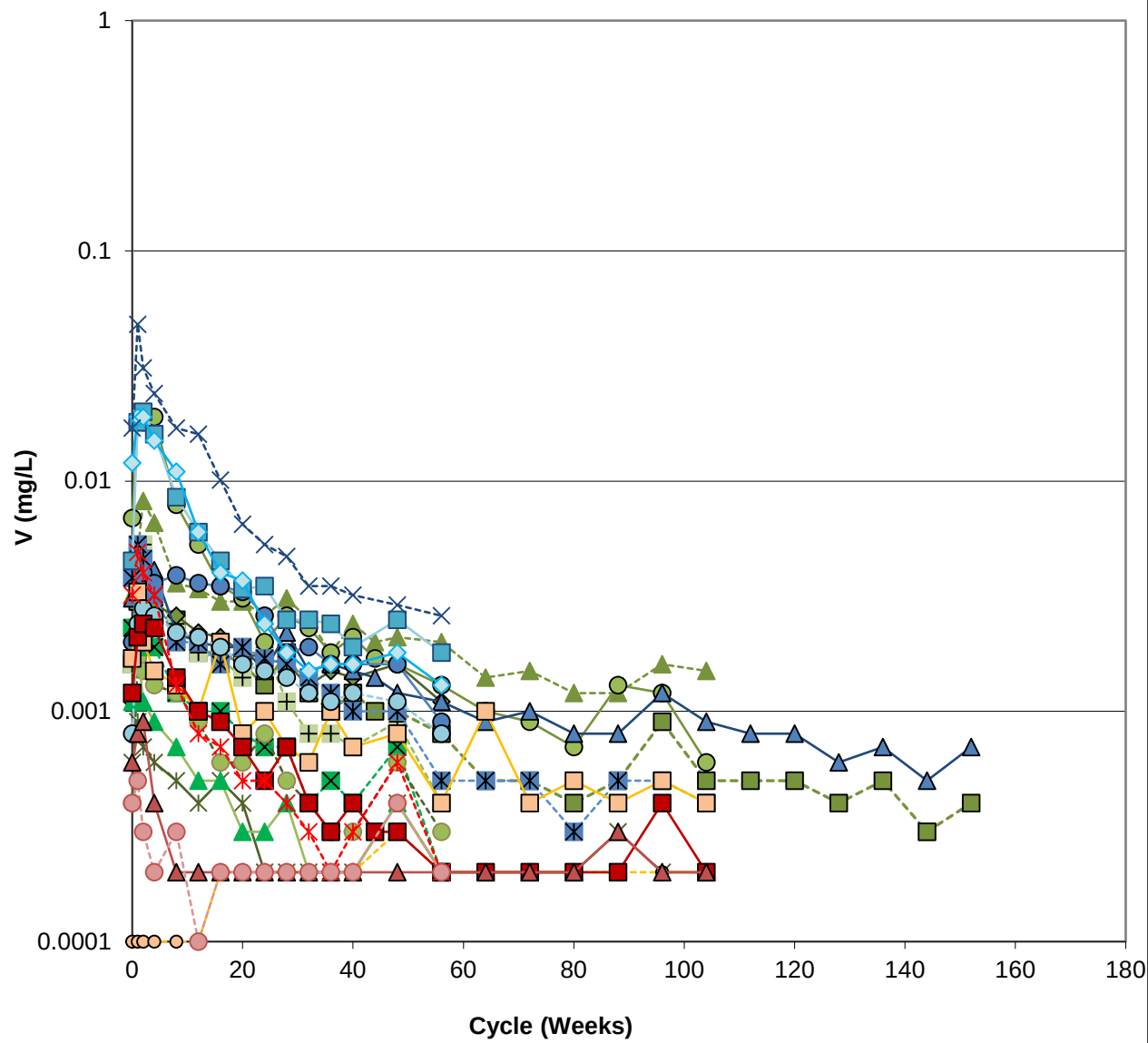
Hope Bay Waste Rock Humidity Cells



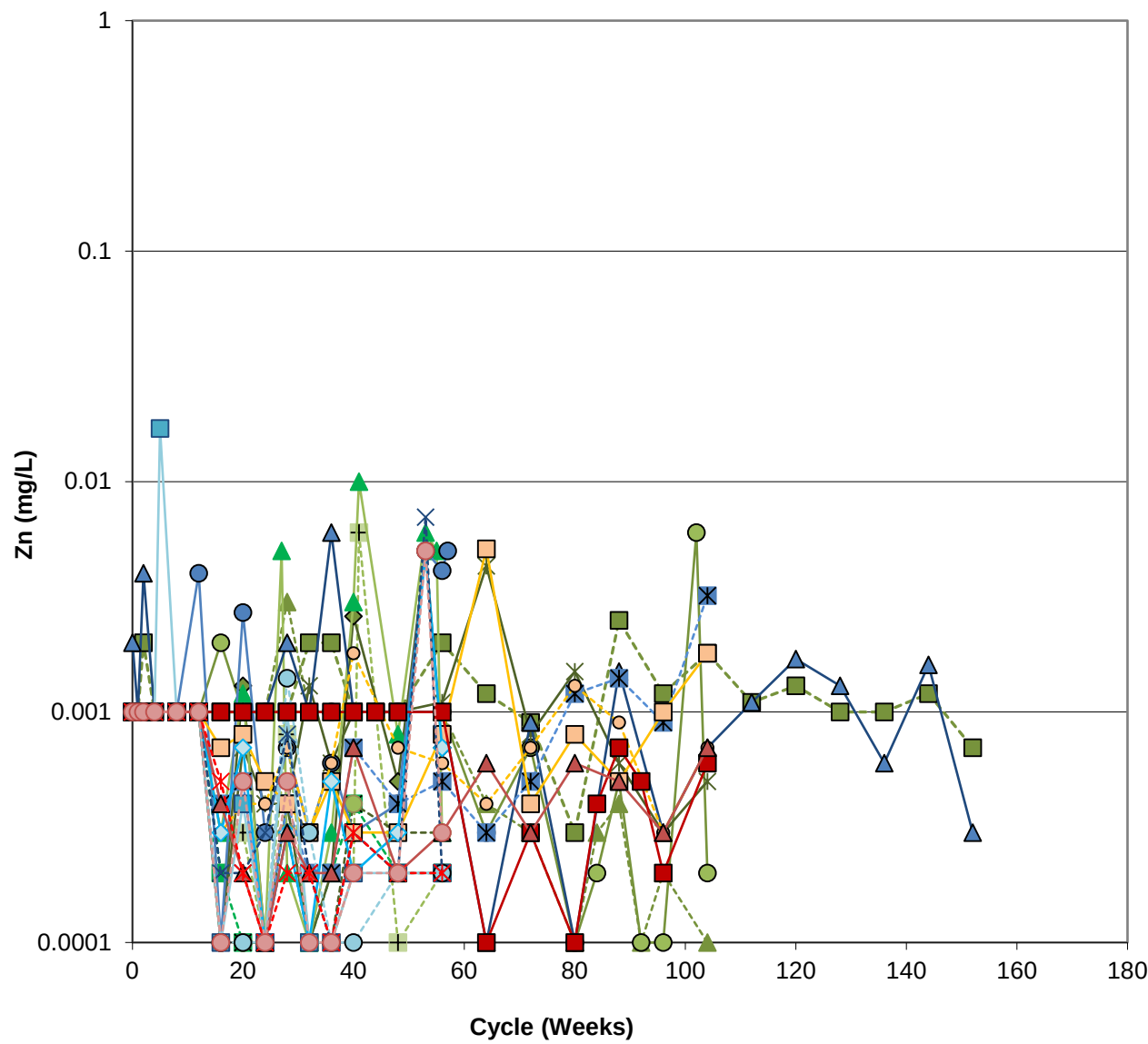
Hope Bay Waste Rock Humidity Cells

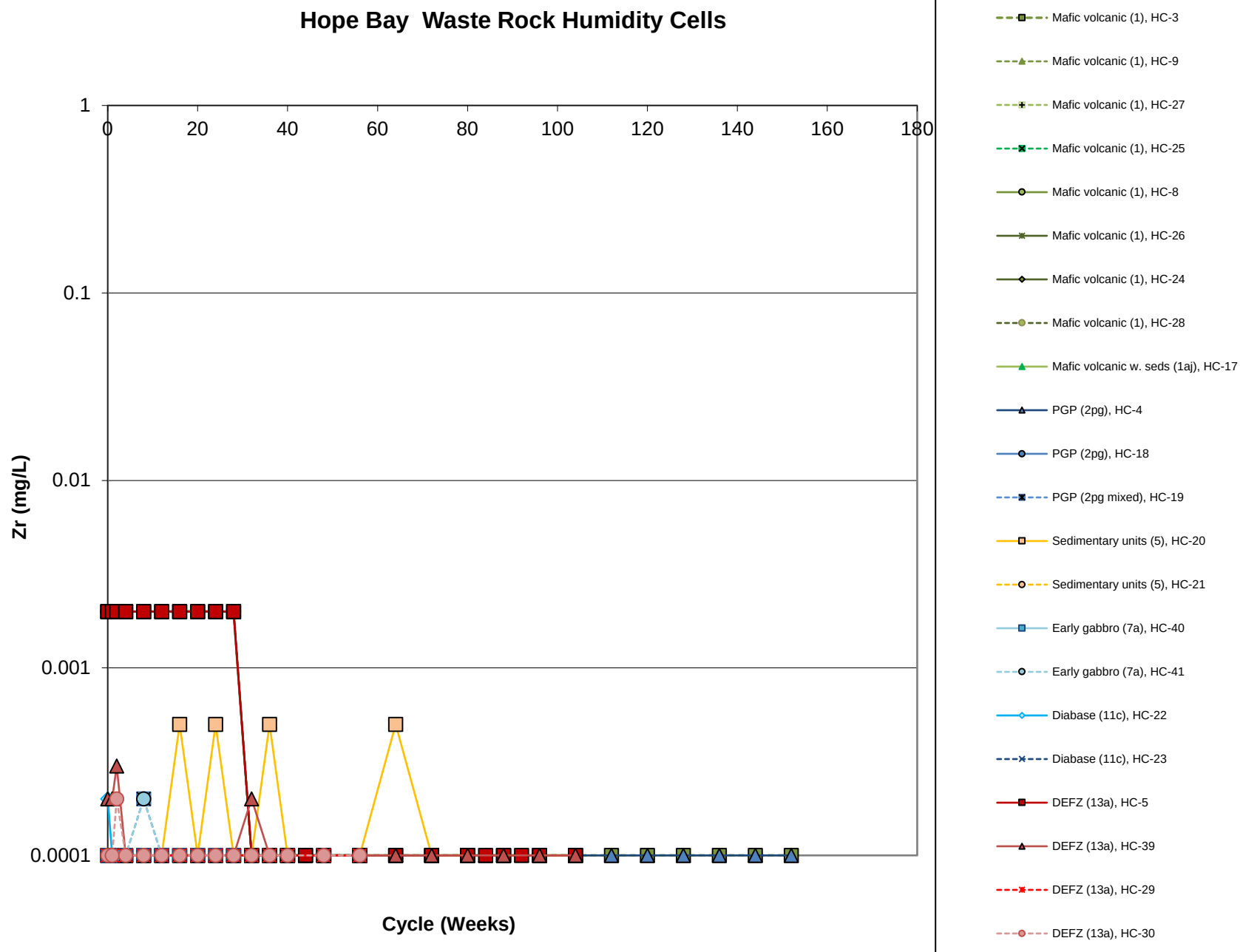


Hope Bay Waste Rock Humidity Cells

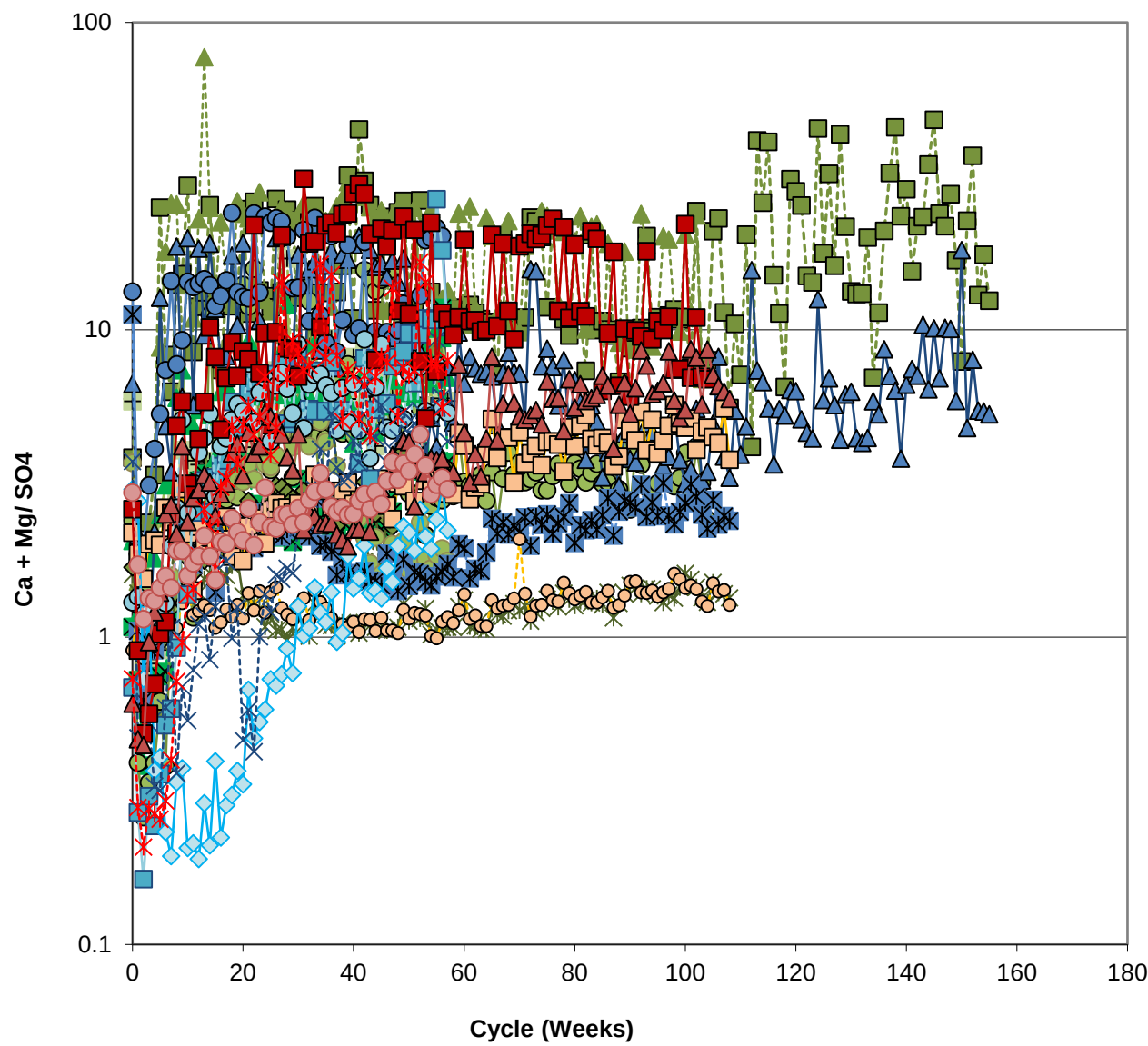


Hope Bay Waste Rock Humidity Cells





Hope Bay Waste Rock Humidity Cells



Appendix O2 – Raw Data

HC-3
Sample Weight = 1 kg

[illegible]

HC-3
Sample Weight = 1 kg

Dissolved Metals by ICP-MS (Cantest)																															
Date	Accum. Weeks	Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia (mgN/l)	Diss.-P	TDS	Hardness CaCO3 (mg/l)	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.06	0.02	--	--	Calculation	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001
26-Jan-11	102	500	435	8.23	59	--	1	--	1	21	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	8.37	--	--	0.02	
2-Feb-11	103	500	450	7.89	54	--	3	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.59	--	--	0.02	
9-Feb-11	104	500	450	7.85	51	160	3	--	1	21	0.01	1.7	0.05	0.005	0.046	0.005	28	24.89104	0.0562	0.00003	0.00177	0.00061	0.00001	0.000005	0.05	0.000005	0.0001	0.000016	0.00056		
16-Feb-11	105	500	430	7.68	50	--	1	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.18	--	--	0.02	
23-Feb-11	106	500	435	8.01	59	--	1	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.9	--	--	0.02	
2-Mar-11	107	500	445	7.71	53	--	2	--	1	21	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	7.85	--	--	0.02	
9-Mar-11	108	500	435	8.02	57	--	4	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.69	--	--	0.02	
16-Mar-11	109	500	445	8.07	48	--	2	--	1	19	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	7.23	--	--	0.02	
23-Mar-11	110	500	435	8.2	58	--	3	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.4	--	--	0.02	
30-Mar-11	111	500	425	8.2	48	--	1	--	1	20	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	7.01	--	--	0.02	
6-Apr-11	112	500	445	7.98	53	145	5.1	--	1	21	0.01	1.3	0.02	0.005	0.062	0.008	28	22.10455	0.0599	0.00003	0.00214	0.00018	0.00001	0.000005	0.05	0.000005	7.27	0.0003	0.000075	0.0005	
13-Apr-11	113	500	460	7.8	40	--	0.5	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.21	--	--	0.02	
20-Apr-11	114	500	450	7.76	45	--	0.8	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.18	--	--	0.02	
27-Apr-11	115	500	445	7.66	43	--	0.5	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.06	--	--	0.02	
4-May-11	116	500	500	7.59	45	--	1.3	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	6.9	--	--	0.02	
11-May-11	117	500	440	7.81	45	--	1.9	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.45	--	--	0.02	
18-May-11	118	500	435	7.81	46	--	3.3	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.41	--	--	0.02	
25-May-11	119	500	430	7.79	44	--	0.7	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.45	--	--	0.02	
1-Jun-11	120	500	440	7.68	44	120	0.7	--	1	18	0.01	1.6	0.05	0.005	0.19	0.005	26	20.6	0.0471	0.00003	0.00174	0.0002	0.00001	0.000005	0.05	0.000005	6.76	0.0001	0.000014	0.00038	
8-Jun-11	121	500	430	7.83	38	--	0.8	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	6.96	--	--	0.02	
15-Jun-11	122	500	450	7.82	42	--	1.3	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	6.68	--	--	0.02	
22-Jun-11	123	500	440	8.03	48	--	1.6	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.85	--	--	0.02	
29-Jun-11	124	500	440	7.89	44	--	0.5	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.77	--	--	0.02	
6-Jul-11	125	500	420	8.08	46	--	1.2	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.31	--	--	0.02	
13-Jul-11	126	500	420	7.78	47	--	0.7	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.65	--	--	0.02	
20-Jul-11	127	500	445	7.88	48	--	1.4	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.75	--	--	0.02	
27-Jul-11	128	500	435	8.04	50	165	0.5	--	1	20	0.01	2.4	0.05	0.005	0.092	0.015	10	22.6	0.0386	0.00003	0.00147	0.0002	0.00001	0.000005	0.05	0.000005	7.39	0.0001	0.00022	0.00066	
3-Aug-11	129	500	440	7.79	55	--	1.1	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	8.19	--	--	0.02	
10-Aug-11	130	500	445	8.1	51	--	1.7	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.82	--	--	0.02	
17-Aug-11	131	500	440	8.08	51	--	1.4	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	6.26	--	--	0.02	
24-Aug-11	132	500	440	7.69	52	--	1.7	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.66	--	--	0.02	
31-Aug-11	133	500	445	8.05	52	--	1.2	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	8.21	--	--	0.02	
7-Sep-11	134	500	460	7.87	45	--	3.2	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.71	--	--	0.02	
14-Sep-11	135	500	460	7.86	49	--	2.2	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	8.62	--	--	0.02	
21-Sep-11	136	500	450	7.55	50	150	1	--	1	19	0.01	2	0.02	0.005	0.031	0.005	30	21.9	0.0369	0.00003	0.00136	0.00013	0.00001	0.000005	0.05	0.000009	7.13	0.0001	0.000024	0.0005	
28-Sep-11	137	500	440	7.52	49	--	0.7	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.8	--	--	0.02	
5-Oct-11	138	500	440	7.59	55	--	0.5	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.82	--	--	0.02	
12-Oct-11	139	500	440	7.68	55	--	1	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	8.05	--	--	0.02	
19-Oct-11	140	500	475	7.75	57	--	0.8	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.9	--	--	0.02	
26-Oct-11	141	500	445	7.73	56	--	1.6	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	8.53	--	--	0.02	
2-Nov-11	142	500	445	7.75	59	--	1.1	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	8.21	--	--	0.02	
9-Nov-11	143	500	445	7.8	53	--	1	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.97	--	--	0.02	
16-Nov-11	144	500	493	8.05	48	120	0.67	--	1	20	0.01	0.7	0.02	0.005	0.063	0.0091	26	24.1	0.0368	0.00002	0.00126	0.00017	0.00001	0.000005	0.05	0.000032	8.09	0.0001	0.000012	0.00056	
23-Nov-11	145	500	440	7.77	58	--	0.5	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	8.26	--	--	0.02	
30-Nov-11	146	500	450	7.94	51	--	0.93	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.64	--	--	0.02	
7-Dec-11	147	500	440	7.7	53	--	1	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.43	--	--	0.02	
14-Dec-11	148	500	465	8	58	--	0.77	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	7.28	--	--	0.02	
21-Dec-11	149	500	450	7.74	48	--	1.19	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	6.82	--	--	0.02	
28-Dec-11	150	500	420	7.45	36	--	1.88	--	1	13	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	5.63	--	--	0.02	
4-Jan-12	151	500	425	7.57	42	--	0.85	--	1	18	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	6.52	--	--	0.02	
11-Jan-12	152	500	435	7.51	49	110	0.54	--	1	19	0.011	0.9	0.272	0.005	0.035	0.005	26	20.7	0.0417	0.00003	0.00136	0.00023	0.00001	0.000005	0.05	0.000005	6.58	0.0002	0.000015	0.00051	
18-Jan-12	153	500	410	7.8	42	--	1.53	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	6.59	--	--	0.02	
25-Jan-12	154	500	430	7.75	39	--	1.12	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	6.58	--	--	0.02	
1-Feb-12	155	500	440	7.69	43	--	1.56	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	6.54	--	--	0.02	
Terminated																															

HC-3
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	Hg (CVAF)	Mo	Ni	P	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.0002	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	ug/L 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.05	mg/l 0.001		mg/l 0.02	mg/l 0.0005	mg/l 0.001	mg/l 0.15	mg/l 0.1	mg/l 0.001	mg/l 0.25	mg/l 0.00025	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	mg/l 0.0001	mg/l 0.0005	mg/l 0.001
11-Feb-09	0	0.01	0.0002	0.0004	0.66	0.0035	0.02	0.0008	0.0005	0.03	2.57		0.0004	0.49	0.00005	20.1	0.0088	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0016	0.001	0.002
18-Feb-09	1	0.01	0.0002	0.0004	1.34	0.007	0.02	0.0015	0.0003	0.03	2.94		0.001	0.47	0.00005	23.3	0.013	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.003	0.001	0.002
25-Feb-09	2	0.01	0.0002	0.0007	1.81	0.006	0.02	0.0013	0.0006	0.03	2.82		0.0009	0.51	0.00005	17.4	0.015	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0029	0.002	0.002
4-Mar-09	3	0.01	--	--	2.29	--	--	--	--	--	2.1		--	--	--	11.3	--	--	--	--	--	--	--	--	--	--	--
11-Mar-09	4	0.01	0.0002	0.0008	2.31	0.0066	0.02	0.0004	0.0002	0.03	1.92		0.0006	0.52	0.00005	1.43	0.015	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0026	0.001	0.002
18-Mar-09	5	0.01	--	--	2.87	--	--	--	--	--	1.1		--	--	--	1.9	--	--	--	--	--	--	--	--	--	--	--
25-Mar-09	6	0.01	--	--	2.73	--	--	--	--	--	0.9		--	--	--	1.4	--	--	--	--	--	--	--	--	--	--	--
1-Apr-09	7	0.01	--	--	3.27	--	--	--	--	--	1		--	--	--	1.3	--	--	--	--	--	--	--	--	--	--	--
8-Apr-09	8	0.01	0.0002	0.0009	2.92	0.01	0.02	0.0003	0.0002	0.03	1.04		0.0002	0.57	0.00005	0.89	0.014	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0025	0.001	0.002
15-Apr-09	9	0.01	--	--	3.24	--	--	--	--	--	0.8		--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--
22-Apr-09	10	0.01	--	--	3.37	--	--	--	--	--	0.9		--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
29-Apr-09	11	0.01	--	--	2.58	--	--	--	--	--	0.6		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
6-May-09	12	0.01	0.0002	0.0009	2.28	0.0058	0.02	0.0001	0.0002	0.03	0.59		0.0002	0.47	0.00005	0.39	0.011	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0018	0.001	0.002
13-May-09	13	0.01	--	--	2.46	--	--	--	--	--	0.3		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
20-May-09	14	0.01	--	--	2.28	--	--	--	--	--	0.4		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
27-May-09	15	0.01	--	--	2.23	--	--	--	--	--	0.4		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
3-Jun-09	16	0.01	0.0002	0.0006	1.71	0.0058	0.02	0.0001	0.0002	0.03	0.39		0.0002	0.44	0.00005	0.25	0.01	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0018	0.001	0.002
10-Jun-09	17	0.01	--	--	2.19	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
17-Jun-09	18	0.01	--	--	1.92	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
24-Jun-09	19	0.01	--	--	1.89	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
1-Jul-09	20	0.01	0.0002	0.0007	1.55	0.013	0.02	0.0001	0.0002	0.03	0.27		0.0004	0.41	0.00005	0.19	0.013	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0016	0.001	0.002
8-Jul-09	21	0.01	--	--	1.74	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
15-Jul-09	22	0.01	--	--	1.69	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
22-Jul-09	23	0.01	--	--	1.76	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
29-Jul-09	24	0.01	0.0002	0.0006	1.43	0.013	0.02	0.0001	0.0002	0.03	0.22		0.0002	0.44	0.00005	0.14	0.011	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0013	0.001	0.002
5-Aug-09	25	0.01	--	--	1.62	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
12-Aug-09	26	0.01	--	--	1.8	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
19-Aug-09	27	0.01	--	--	1.79	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
26-Aug-09	28	0.01	0.0003	0.0005	1.47	0.0067	0.02	0.0001	0.0002	0.03	0.22		0.0002	0.49	0.00005	0.16	0.011	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0018	0.001	0.002
2-Sep-09	29	0.01	--	--	1.58	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
9-Sep-09	30	0.01	--	--	1.63	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
16-Sep-09	31	0.02	--	--	1.75	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
23-Sep-09	32	0.01	0.00005	0.0007	1.4	0.0061	0.02	0.0001	0.0002	0.015	0.17		0.0002	0.4	0.00004	0.14	0.0096	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0012	0.002	0.0001
30-Sep-09	33	0.01	--	--	1.56	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
7-Oct-09	34	0.01	--	--	1.63	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
14-Oct-09	35	0.01	--	--	1.67	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
21-Oct-09	36	0.01	0.00005	0.0006	1.29	0.0051	0.02	0.0001	0.0002	0.015	0.1		0.0002	0.39	0.00004	0.11	0.0093	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.001	0.002	0.0001
28-Oct-09	37	0.01	--	--	1.51	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
4-Nov-09	38	0.01	--	--	1.75	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
11-Nov-09	39	0.01	--	--	1.74	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
18-Nov-09	40	0.01	0.00005	0.0003	1.78	0.0042	0.02	0.0001	0.0002	0.015	0.12		0.0002	0.31	0.00004	0.12	0.01	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0012	0.001	0.0001
25-Nov-09	41	0.01	--	--	3.72	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
2-Dec-09	42	0.01	--	--	1.66	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
9-Dec-09	43	0.01	--	--	1.43	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
16-Dec-09	44	0.01	0.00005	0.0008	1.2	0.0026	0.02	0.0001	0.0002	0.015	0.1		0.0002	0.32	0.00004	0.1	0.0069	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.001	0.001	0.0001
23-Dec-09	45	0.01	--	--	1.22	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
30-Dec-09	46	0.01	--	--	1.06	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
6-Jan-10	47	0.01	--	--	1.22	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
13-Jan-10	48	0.01	0.00005	0.0006	1.09	0.0035	0.02	0.0001	0.0002	0.015	0.08		0.0002	0.37	0.00004	0.092	0.0074	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.001	0.001	0.0001
20-Jan-10	49	0.01	--	--	1.37	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
27-Jan-10	50	0.01	--	--	1.35	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
3-Feb-10	51	0.01	--	--	1.29	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
10-Feb-10	52	0.01	--	--	1.32	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
17-Feb-10	53	0.01	--	--	1.13	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
24-Feb-10	54	0.01	--	--	1.36	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
3-Mar-10	55	0.01	--	--	1.93	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
10-Mar-10	56	0.01	0.00005	0.0006	0.97	0.0031	0.02	0.0001	0.0002	0.015	0.06		0.0002	0.34	0.00004	0.071	0.0062	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0008	0.002	0.0001
17-Mar-10	57	0.01	--	--	1.02	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
24-Mar-10	58	0.01	--	--	1	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
31-Mar-10	59	0.01	--	--	1.07	--	--	--	--	--	0.25																

HC-3
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	Hg (CVAF)	Mo	Ni	P	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.0002	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	ug/L 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.05	mg/l 0.001		mg/l 0.02	mg/l 0.0005	mg/l 0.001	mg/l 0.15	mg/l 0.1	mg/l 0.001	mg/l 0.25	mg/l 0.00025	mg/l 0.05	mg/l 0.001	mg/l	mg/l 0.001	mg/l 0.0001	mg/l 0.0005	mg/l 0.001
26-Jan-11	102	0.01	--	--	1.09	--	--	--	--	--	0.4		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
2-Feb-11	103	0.01	--	--	0.99	--	--	--	--	--	0.9		--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
9-Feb-11	104	0.001	0.000016	0.0005	1	0.00197	0.004	0.00009	0.00002	0.002	0.07		0.00009	0.3	0.000005	0.06	0.00488	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000013	0.0005	0.0018	0.0001
16-Feb-11	105	0.01	--	--	0.95	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
23-Feb-11	106	0.01	--	--	1.04	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
2-Mar-11	107	0.01	--	--	1.01	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
9-Mar-11	108	0.01	--	--	0.98	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
16-Mar-11	109	0.01	--	--	0.91	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
23-Mar-11	110	0.01	--	--	0.94	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
30-Mar-11	111	0.01	--	--	0.92	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
6-Apr-11	112	0.011	0.000027	0.0005	0.96	0.00158	0.002	0.00009	0.00041	0.007	0.05		0.00008	0.3	0.000005	0.06	0.0044	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000016	0.0005	0.0011	0.0001
13-Apr-11	113	0.01	--	--	0.86	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
20-Apr-11	114	0.01	--	--	0.9	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
27-Apr-11	115	0.02	--	--	0.89	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
4-May-11	116	0.01	--	--	0.77	--	--	--	--	--	0.3		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
11-May-11	117	0.01	--	--	0.92	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
18-May-11	118	0.01	--	--	0.95	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
25-May-11	119	0.01	--	--	0.97	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
1-Jun-11	120	0.001	0.00002	0.0005	0.9	0.00245	0.002	0.0001	0.00006	0.007	0.05		0.00012	0.3	0.000005	0.05	0.0039	0.00002	0.000002	0.000005	0.00004	0.0005	--	0.000008	0.0005	0.0013	0.0001
8-Jun-11	121	0.01	--	--	0.92	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
15-Jun-11	122	0.01	--	--	0.88	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
22-Jun-11	123	0.01	--	--	1.02	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
29-Jun-11	124	0.01	--	--	1.01	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
6-Jul-11	125	0.01	--	--	0.96	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
13-Jul-11	126	0.01	--	--	1.06	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
20-Jul-11	127	0.01	--	--	1.03	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
27-Jul-11	128	0.042	0.000046	0.0005	1	0.00336	0.002	0.00035	0.00007	0.013	0.05		0.00004	0.3	0.000005	0.06	0.00404	0.00002	0.000002	0.000005	0.00004	0.0005	--	0.000012	0.0004	0.001	0.0001
3-Aug-11	129	0.01	--	--	1.06	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
10-Aug-11	130	0.01	--	--	1	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
17-Aug-11	131	0.01	--	--	0.84	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
24-Aug-11	132	0.01	--	--	1	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
31-Aug-11	133	0.01	--	--	1.08	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
7-Sep-11	134	0.01	--	--	0.98	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
14-Sep-11	135	0.01	--	--	1.11	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
21-Sep-11	136	0.003	0.000035	0.0005	0.99	0.00158	0.002	0.00007	0.00008	0.005	0.05		0.00006	0.3	0.000005	0.08	0.00422	0.00002	0.000002	0.000005	0.00004	0.0005	--	0.00001	0.0005	0.001	0.0001
28-Sep-11	137	0.01	--	--	1.01	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
5-Oct-11	138	0.01	--	--	1.03	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
12-Oct-11	139	0.01	--	--	1.05	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
19-Oct-11	140	0.01	--	--	1.02	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
26-Oct-11	141	0.01	--	--	1.11	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
2-Nov-11	142	0.01	--	--	1.08	--	--	--	--	--	0.4		--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
9-Nov-11	143	0.01	--	--	1.06	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
16-Nov-11	144	0.001	0.00002	0.0005	0.94	0.00184	0.0029	0.00007	0.00004	0.009	0.07		0.00007	0.3	0.000005	0.08	0.00434	0.00002	0.000002	0.000005	0.00003	0.0005	--	0.000012	0.0003	0.0012	0.0001
23-Nov-11	145	0.01	--	--	1.1	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
30-Nov-11	146	0.01	--	--	0.99	--	--	--	--	--	0.4		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
7-Dec-11	147	0.01	--	--	1	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
14-Dec-11	148	0.01	--	--	0.97	--	--	--	--	--	0.4		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
21-Dec-11	149	0.01	--	--	0.94	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
28-Dec-11	150	0.01	--	--	0.34	--	--	--	--	--	0.34		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
4-Jan-12	151	0.01	--	--	0.92	--	--	--	--	--	0.4		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
11-Jan-12	152	0.002	0.000016	0.0005	1.04	0.00133	0.002	0.00009	0.00004	0.003	0.09		0.00005	0.2	0.000005	0.09	0.00414	0.00002	0.000002	0.000005	0.0002	0.0005	--	0.000022	0.0004	0.0007	0.0001
18-Jan-12	153	0.01	--	--	1.03	--	--	--	--	--	0.4		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
25-Jan-12	154	0.01	--	--	0.99	--	--	--	--	--	0.4		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
1-Feb-12	155	0.01	--	--	0.95	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
Terminated																											

HC-4
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																													
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.02	0.02	0.02	0.0012	0.0007	0.0002	0.0002	0.0002	0.0002	0.0004	0.001	0.001	0.001
11-Feb-09	0	750	610	8.93	89	90	2	--	--	32	0.05	5.92	0.09	0.007	0.31	0.02	30	13.9	0.36	0.0002	0.0012	0.0007	0.0002	0.0002	0.35	0.00004	4.96	0.0002	0.0002	0.0022	
18-Feb-09	1	500	425	7.85	112	170	4	--	--	35	0.06	8.12	0.01	0.007	0.1	0.02	90	9	0.19	0.0003	0.0025	0.0003	0.0002	0.0002	0.51	0.00004	3.01	0.0002	0.0002	0.0014	
25-Feb-09	2	500	450	9.09	134	105	14	--	--	39	0.05	8.11	0.02	0.004	0.06	0.02	48	9.8	0.16	0.0004	0.0024	0.0009	0.0002	0.0002	0.51	0.00004	3.09	0.0004	0.0002	0.0063	
4-Mar-09	3	500	435	9.09	105	105	11	--	--	36	--	--	--	--	--	--	--	--	0.16	--	--	--	--	--	--	--	3.19	--	--	0.02	
11-Mar-09	4	500	435	8.97	80	120	5	--	--	30	0.05	1.35	0.14	0.002	0.12	0.02	51	11.5	0.14	0.0002	0.0021	0.0004	0.0002	0.0002	0.26	0.00004	3.56	0.0002	0.0002	0.0005	
18-Mar-09	5	500	445	9.11	69	110	1	--	--	29	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	3.84	--	--	0.02	
25-Mar-09	6	500	455	8.63	65	155	3	--	--	28	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	4.25	--	--	0.02	
1-Apr-09	7	500	450	8.52	61	150	6	--	--	27	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	6.18	--	--	0.02	
8-Apr-09	8	500	435	8.3	67	160	1	--	--	26	0.05	0.2	0.01	0.002	0.12	0.02	34	19.5	0.096	0.0002	0.0011	0.0005	0.0002	0.0002	0.14	0.00004	5.61	0.0002	0.0002	0.0005	
15-Apr-09	9	500	470	8.55	71	155	4	--	--	30	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	6.15	--	--	0.02	
22-Apr-09	10	500	415	8.88	67	150	1	--	--	24	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	5.31	--	--	0.02	
29-Apr-09	11	500	440	8.89	52	150	3	--	--	21	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	4.9	--	--	0.02	
6-May-09	12	500	435	8.2	51	160	1	--	1	23	0.05	0.2	0.05	0.002	0.18	0.02	75	19.2	0.099	0.0002	0.0009	0.0004	0.0002	0.0002	0.08	0.00004	5.25	0.0002	0.0002	0.0005	
13-May-09	13	500	450	8.93	50	155	2	--	--	22	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	5.47	--	--	0.02	
20-May-09	14	500	435	8.69	48	160	1	--	--	21	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	5.7	--	--	0.02	
27-May-09	15	500	440	7.9	50	160	2	--	1	22	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	7.72	--	--	0.02	
3-Jun-09	16	500	440	7.86	44	175	2	--	1	20	0.05	0.2	0.05	0.004	0.16	0.02	22	16.7	0.09	0.0002	0.001	0.0007	0.0002	0.0002	0.05	0.0002	4.9	0.0002	0.0002	0.0007	
10-Jun-09	17	500	460	8.01	61	150	3	--	1	25	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	--	7.14	--	--	0.02	
17-Jun-09	18	500	430	8.9	42	145	1	--	--	20	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	5.27	--	--	0.02	
24-Jun-09	19	500	425	8.5	48	135	2	--	--	22	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	6.39	--	--	0.02	
1-Jul-09	20	500	430	7.82	51	145	1	--	1	23	0.05	0.2	0.05	0.002	0.21	0.02	73	20	0.11	0.0002	0.0009	0.0005	0.0002	0.0002	0.04	0.00004	6.25	0.0002	0.0002	0.0007	
8-Jul-09	21	500	420	8.67	40	120	2	--	--	19	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	5.11	--	--	0.02	
15-Jul-09	22	500	430	8.8	52	140	1	--	--	24	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	7.03	--	--	0.02	
22-Jul-09	23	500	460	8.4	50	140	2	--	--	23	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	6.79	--	--	0.02	
29-Jul-09	24	500	445	7.8	54	165	2	--	1	23	0.05	0.2	0.05	0.002	0.21	0.02	21	20.6	0.093	0.0002	0.0007	0.0004	0.0002	0.0002	0.03	0.00004	6.65	0.0002	0.0002	0.0003	
5-Aug-09	25	500	430	8.61	45	160	4	--	--	19	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	5.51	--	--	0.02	
12-Aug-09	26	500	435	8.19	50	150	1	--	--	22	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	6.35	--	--	0.02	
19-Aug-09	27	500	430	7.94	47	160	1	--	1	21	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	6.31	--	--	0.02	
26-Aug-09	28	500	420	7.98	46	160	2	--	1	20	0.05	0.2	0.05	0.002	0.29	0.02	24	18.2	0.1	0.0002	0.0008	0.0004	0.0002	0.0002	0.03	0.00004	5.64	0.0005	0.0002	0.0009	
2-Sep-09	29	500	425	8.38	42	150	2	--	--	18	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	5.09	--	--	0.02	
9-Sep-09	30	500	430	8.29	41	155	1	--	1	18	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	5.62	--	--	0.02	
16-Sep-09	31	500	425	8.7	41	160	3	--	--	18	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	5.47	--	--	0.02	
23-Sep-09	32	500	420	7.9	39	160	1	--	1	18	0.05	0.2	0.05	0.002	0.26	0.02	20	16.4	0.079	0.0001	0.0008	0.0004	0.0001	0.0001	0.038	0.00001	5.04	0.0003			

HC-4
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																													
		Volume (ml)		pH (pH Units)	EC (µS/cm)	ORP (mV)	SO4	Acidity (mg CaCO3/l)		Alkalinity to pH 4.5	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia (mgN/l)	Diss.-P (mgP/l)	TDS (mg/l)	Hardness CaCO3 (mg/l)	Al (mg/l)	Sb (mg/l)	As (mg/l)	Ba (mg/l)	Be (mg/l)	Bi mg/l	B mg/l	Cd mg/l	Ca mg/l	Cr mg/l	Co mg/l	Cu mg/l	
		Input	Output					to pH 4.5	to pH 8.3																						
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.02	0.02	0.02	Calculation	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
27-Oct-10	89	500	500	7.85	36	--	4	--	1	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	6.73	--	--	0.02
3-Nov-10	90	500	450	7.87	38	--	4	--	1	15	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	5.55	--	--	0.02
10-Nov-10	91	500	435	7.7	34	--	4	--	1	14	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	5.4	--	--	0.02
17-Nov-10	92	500	450	7.57	42	--	4	--	1	15	--	--	--	--	--	--	--	--	0.0487	--	--	--	--	--	--	--	--	5.93	--	--	0.02
24-Nov-10	93	500	420	7.52	38	--	3	--	1	14	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	5.44	--	--	0.02
1-Dec-10	94	500	430	7.43	37	--	3	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.1	--	--	0.02
8-Dec-10	95	500	440	7.85	41	--	4	--	1	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.73	--	--	0.02
15-Dec-10	96	500	430	7.61	41	165	4	--	1	14	0.02	0.7	0.02	0.005	0.005	0.005	22	15.09234	0.0505	0.00003	0.00046	0.0002	0.00001	0.000005	0.05	0.000006	5.22	0.0003	0.000025	0.00041	
22-Dec-10	97	500	430	8	40	--	4	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.64	--	--	0.02
29-Dec-10	98	500	430	8.04	39	--	3	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.91	--	--	0.02
5-Jan-11	99	500	430	8.02	35	--	4	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.49	--	--	0.02
12-Jan-11	100	500	435	7.6	43	--	5	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.75	--	--	0.02
19-Jan-11	101	500	415	8.55	39	--	5	--	--	15	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	6.43	--	--	0.02
26-Jan-11	102	500	430	8.18	41	--	3	--	1	14	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	6.1	--	--	0.02
2-Feb-11	103	500	440	7.68	42	--	5	--	1	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.94	--	--	0.02
9-Feb-11	104	500	430	7.69	38	170	5	--	1	15	0.01	0.6	0.02	0.005	0.015	0.005	22	18.00642	0.0602	0.00003	0.00032	0.00038	0.00001	0.000005	0.05	0.000005	6.42	0.0001	0.000022	0.00052	
16-Feb-11	105	500	430	7.53	37	--	3	--	1	13	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.49	--	--	0.02
23-Feb-11	106	500	430	7.64	41	--	2	--	1	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.03	--	--	0.02
2-Mar-11	107	500	435	7.6	39	--	4	--	1	14	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	5.74	--	--	0.02
9-Mar-11	108	500	430	7.72	42	--	5	--	1	14	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	6.14	--	--	0.02
16-Mar-11	109	500	425	8.1	40	--	3	--	1	15	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	6.1	--	--	0.02
23-Mar-11	110	500	425	7.67	43	--	4	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.85	--	--	0.02
30-Mar-11	111	500	420	8.05	37	--	3	--	1	13	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	5.41	--	--	0.02
6-Apr-11	112	500	435	7.61	43	150	1.1	--	1	15	0.01	0.6	0.02	0.005	0.07	0.008	22	17.95044	0.0525	0.00002	0.00043	0.00139	0.00001	0.000005	0.05	0.000005	6.48	0.0001	0.000033	0.00046	
13-Apr-11	113	500	455	7.6	32	--	2.1	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.83	--	--	0.02
20-Apr-11	114	500	460	7.57	33	--	2.2	--	1	13	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.57	--	--	0.02
27-Apr-11	115	500	435	7.48	33	--	2.7	--	1	13	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.63	--	--	0.02
4-May-11	116	500	430	7.44	33	--	3.7	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.04	--	--	0.02
11-May-11	117	500	440	7.63	33	--	2.9	--	1	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.01	--	--	0.02
18-May-11	118	500	430	7.62	31	--	2.7	--	1	13	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.32	--	--	0.02
25-May-11	119	500	430	7.61	31	--	2.3	--	1	13	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.51	--	--	0.02
1-Jun-11	120	500	435	7.45	30	145	2.1	--	1	13	0.01	0.7	0.02	0.005	0.15	0.007	18	13.8	0.0493	0.00003	0.00042	0.00013	0.00001	0.000005	0.05	0.000005	4.98	0.0001	0.000028	0.00062	
8-Jun-11	121	500	420	7.48	29	--	2.8	--	1	12	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.37	--	--	0.02
15-Jun-11	122	500	435	7.69	33	--	3.1	--	1	13	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.38	--	--	0.02
22-Jun-11	123	500	435	7.68	31	--	3.2	--	1	12	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.33	--	--	0.02
29-Jun-11	124	500	460	7.57	31	--	1.2	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.69	--	--	0.02
6-Jul-11	125	500	445	7.62	34	--	2.4	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.34	--	--	0.02
13-Jul-11	126	500	420	7.6	33	--	2.1	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.51	--	--	0.02
20-Jul-11	127	500	425	7.68	36	--	2.6	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.55	--	--	0.02
27-Jul-11	128	500	440	7.52	36	185	3.2	--	1	13	0.01	1.1	0.02	0.005	0.057	0.012	10	14.7	0.0438	0.00002	0.0003	0.0002	0.00001	0.000005	0.05	0.000005	5.27	0.0001	0.00002	0.00047	
3-Aug-11	129	500	430	7.52	25	--	2.4	--	1	13	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.57	--	--	0.02
10-Aug-11	130	500	435	7.7	34	--	2.3	--	1	13	--	--	--	--	--	--	--	--	0.05	--	--										

HC-4
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	Hg (CVAF)	Mo	Ni	P	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.0002	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	ug/L 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.05	mg/l 0.001		mg/l 0.02	mg/l 0.0005	mg/l 0.001	mg/l 0.15	mg/l 0.1	mg/l 0.001	mg/l 0.25	mg/l 0.00025	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	mg/l 0.0001	mg/l 0.0005	mg/l 0.001
11-Feb-09	0	0.01	0.0002	0.0008	0.37	0.0024	0.02	0.0003	0.0003	0.03	1.09		0.0002	0.78	0.00005	11.5	0.0081	0.0002	0.00002	0.0001	0.0002	0.0006	--	0.0001	0.0031	0.002	0.002
18-Feb-09	1	0.01	0.0002	0.0012	0.35	0.0063	0.02	0.0007	0.0002	0.03	1.02		0.0006	0.57	0.00005	18.9	0.0086	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0046	0.001	0.002
25-Feb-09	2	0.02	0.0002	0.0014	0.51	0.0083	0.02	0.0009	0.0008	0.03	1.28		0.0006	0.61	0.00005	22	0.01	0.0002	0.00002	0.0001	0.0002	0.001	--	0.0001	0.0043	0.004	0.002
4-Mar-09	3	0.01	--	--	0.58	--	--	--	--	--	1		--	--	--	17.9	--	--	--	--	--	--	--	--	--	--	--
11-Mar-09	4	0.01	0.0002	0.0014	0.62	0.0084	0.02	0.0004	0.0002	0.03	1.09		0.0005	0.56	0.00005	11.6	0.01	0.0002	0.00002	0.0001	0.0002	0.0016	--	0.0001	0.0041	0.001	0.002
18-Mar-09	5	0.01	--	--	0.89	--	--	--	--	--	0.8		--	--	--	8.6	--	--	--	--	--	--	--	--	--	--	--
25-Mar-09	6	0.01	--	--	1.11	--	--	--	--	--	0.8		--	--	--	6.6	--	--	--	--	--	--	--	--	--	--	--
1-Apr-09	7	0.01	--	--	1.49	--	--	--	--	--	0.9		--	--	--	5.9	--	--	--	--	--	--	--	--	--	--	--
8-Apr-09	8	0.01	0.0002	0.0022	1.32	0.014	0.02	0.0002	0.0002	0.03	0.89		0.0002	0.58	0.00005	3.73	0.016	0.0002	0.00002	0.0001	0.0002	0.0006	--	0.0001	0.0022	0.001	0.002
15-Apr-09	9	0.01	--	--	2.4	--	--	--	--	--	1.3		--	--	--	3.9	--	--	--	--	--	--	--	--	--	--	--
22-Apr-09	10	0.02	--	--	1.81	--	--	--	--	--	0.7		--	--	--	2.6	--	--	--	--	--	--	--	--	--	--	--
29-Apr-09	11	0.01	--	--	1.34	--	--	--	--	--	0.6		--	--	--	1.7	--	--	--	--	--	--	--	--	--	--	--
6-May-09	12	0.01	0.0002	0.0019	1.47	0.0098	0.02	0.0001	0.0003	0.03	0.8		0.0002	0.54	0.00005	1.69	0.015	0.0002	0.00002	0.0001	0.0002	0.0006	--	0.0001	0.002	0.001	0.002
13-May-09	13	0.01	--	--	1.54	--	--	--	--	--	0.5		--	--	--	1.5	--	--	--	--	--	--	--	--	--	--	--
20-May-09	14	0.01	--	--	1.37	--	--	--	--	--	0.5		--	--	--	1.2	--	--	--	--	--	--	--	--	--	--	--
27-May-09	15	0.01	--	--	1.24	--	--	--	--	--	0.5		--	--	--	1.1	--	--	--	--	--	--	--	--	--	--	--
3-Jun-09	16	0.01	0.0002	0.0014	1.09	0.0096	0.02	0.0003	0.0005	0.03	0.59		0.0002	0.49	--	0.97	0.012	0.001	0.0001	0.0001	0.0002	0.001	--	0.0001	0.0019	0.001	0.002
10-Jun-09	17	0.02	--	--	1.91	--	--	--	--	--	0.6		--	--	--	1.3	--	--	--	--	--	--	--	--	--	--	--
17-Jun-09	18	0.01	--	--	1.22	--	--	--	--	--	0.5		--	--	--	0.9	--	--	--	--	--	--	--	--	--	--	--
24-Jun-09	19	0.03	--	--	1.37	--	--	--	--	--	0.4		--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--
1-Jul-09	20	0.02	0.0002	0.0015	1.06	0.01	0.02	0.0001	0.0003	0.03	0.58		0.0004	0.53	0.00005	0.67	0.015	0.0002	0.00002	0.0001	0.0002	0.0023	--	0.0001	0.0019	0.001	0.002
8-Jul-09	21	0.02	--	--	1.15	--	--	--	--	--	0.3		--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
15-Jul-09	22	0.02	--	--	1.37	--	--	--	--	--	0.5		--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
22-Jul-09	23	0.01	--	--	1.3	--	--	--	--	--	0.6		--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
29-Jul-09	24	0.01	0.0002	0.0013	0.96	0.0093	0.02	0.0001	0.0003	0.03	0.49		0.0002	0.51	0.00005	0.43	0.012	0.0002	0.00002	0.0001	0.0002	0.0005	--	0.0001	0.0015	0.001	0.002
5-Aug-09	25	0.01	--	--	1.13	--	--	--	--	--	0.5		--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
12-Aug-09	26	0.02	--	--	1.18	--	--	--	--	--	0.4		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
19-Aug-09	27	0.02	--	--	1.25	--	--	--	--	--	0.5		--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
26-Aug-09	28	0.01	0.0005	0.0013	0.99	0.0062	0.02	0.0001	0.0007	0.03	0.56		0.0002	0.6	0.00005	0.48	0.012	0.0002	0.00002	0.0001	0.0002	0.0006	--	0.0001	0.0022	0.002	0.002
2-Sep-09	29	0.02	--	--	1.01	--	--	--	--	--	0.5		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
9-Sep-09	30	0.03	--	--	1.04	--	--	--	--	--	0.4		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
16-Sep-09	31	0.02	--	--	1.06	--	--	--	--	--	0.4		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
23-Sep-09	32	0.01	0.00005	0.0014	0.93	0.0046	0.02	0.0001	0.0002	0.015	0.43		0.0002	0.49	0.00004	0.38	0.011	0.0002	0.00002	0.00005	0.0001	0.0007	--	0.00005	0.0015	0.001	0.0001
30-Sep-09	33	0.02	--	--	0.99	--	--	--	--	--	0.4		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
7-Oct-09	34	0.02	--	--	1.04	--	--	--	--	--	0.5		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
14-Oct-09	35	0.01	--	--	1.01	--	--	--	--	--	0.4		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
21-Oct-09	36	0.01	0.00005	0.0014	1.05	0.0038	0.02	0.0001	0.0002	0.015	0.39		0.0002	0.58	0.00004	0.33	0.013	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0016	0.006	0.0001
28-Oct-09	37	0.39	--	--	1.06	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
4-Nov-09	38	0.01	--	--	0.98	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
11-Nov-09	39	0.01	--	--	0.98	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
18-Nov-09	40	0.01	0.00005	0.001	1.09	0.0036	0.02	0.0001	0.0002	0.015	0.37		0.0002	0.41	0.00004	0.32	0.011	0.0002	0.00002	0.00005	0.0001	0.0005	--	0.00005	0.0015	0.001	0.0001
25-Nov-09	41	0.03	--	--	1.25	--	--	--	--	--	0.4		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
2-Dec-09	42	0.01	--	--	1.12	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
9-Dec-09	43	0.01	--	--	1.06	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
16-Dec-09	44	0.02	0.00005	0.0012	0.82	0.0032	0.02	0.0001	0.0002	0.015	0.32		0.0002	0.43	0.00004	0.25	0.0087	0.0002	0.00002	0.00005	0.0001	0.0003	--	0.00005	0.0014	0.001	0.0001
23-Dec-09	45	0.01	--	--	0.89	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
30-Dec-09	46	0.01	--	--	0.82	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
6-Jan-10	47	0.01	--	--	0.82	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
13-Jan-10	48	0.01	0.00005	0.0009	0.64	0.0031	0.02	0.0001	0.0002	0.015	0.26		0.0002	0.42	0.00004	0.2	0.0079	0.0002	0.00002	0.00005	0.0001	0.0003	--	0.00005	0.0012	0.001	0.0001
20-Jan-10	49	0.01	--	--	0.85	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
27-Jan-10	50	0.01	--	--	0.9	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
3-Feb-10	51	0.01	--	--	0.76	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
10-Feb-10	52	0.01	--	--	0.83	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
17-Feb-10	53	0.01	--	--	0.72	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
24-Feb-10	54	0.01	--	--	0.74	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
3-Mar-10	55	0.01	--	--	0.82	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
10-Mar-10	56	0.01	0.00005	0.001	0.68	0.0025	0.02	0.0001	0.0002	0.015	0.25		0.0002	0.44	0.00004	0.18	0.0079	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0011	0.001	0.0001
17-Mar-10	57	0.01	--	--	0.69	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
24-Mar-10	58	0.01	--	--	0.68	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
31-Mar-10	59	0.01	--	--	0.88	--	--	--	--	--	0.3		--														

HC-4
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	Hg (CVAF)	Mo	Ni	P	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.0002	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	ug/L 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.05	mg/l 0.001		mg/l 0.02	mg/l 0.0005	mg/l 0.001	mg/l 0.15	mg/l 0.1	mg/l 0.001	mg/l 0.25	mg/l 0.00025	mg/l 0.05	mg/l 0.001	mg/l	mg/l 0.001	mg/l 0.0001	mg/l 0.0005	mg/l 0.001
27-Oct-10	89	0.01	--	--	0.56	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
3-Nov-10	90	0.01	--	--	0.49	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
10-Nov-10	91	0.01	--	--	0.48	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
17-Nov-10	92	0.01	--	--	0.52	--	--	--	--	--	0.13		--	--	--	0.12	--	--	--	--	--	--	--	--	--	--	--
24-Nov-10	93	0.01	--	--	0.47	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
1-Dec-10	94	0.01	--	--	0.44	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
8-Dec-10	95	0.01	--	--	0.51	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
15-Dec-10	96	0.002	0.000007	0.0005	0.5	0.00134	0.002	0.00007	0.00022	0.002	0.13		0.00009	0.4	0.000005	0.12	0.00605	0.00002	0.000002	0.000005	0.00001	0.0008	--	0.000005	0.0012	0.0003	0.0001
22-Dec-10	97	0.01	--	--	0.49	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
29-Dec-10	98	0.01	--	--	0.5	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
5-Jan-11	99	0.01	--	--	0.49	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
12-Jan-11	100	0.01	--	--	0.52	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
19-Jan-11	101	0.01	--	--	0.53	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
26-Jan-11	102	0.01	--	--	0.5	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
2-Feb-11	103	0.01	--	--	0.5	--	--	--	--	--	1		--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--
9-Feb-11	104	0.001	0.000007	0.0006	0.48	0.00151	0.004	0.00007	0.00012	0.002	0.14		0.00008	0.5	0.000005	0.11	0.00609	0.00002	0.000003	0.000005	0.00001	0.0005	--	0.000002	0.0009	0.0007	0.0001
16-Feb-11	105	0.01	--	--	0.43	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
23-Feb-11	106	0.01	--	--	0.48	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
2-Mar-11	107	0.01	--	--	0.44	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
9-Mar-11	108	0.01	--	--	0.46	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
16-Mar-11	109	0.01	--	--	0.45	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
23-Mar-11	110	0.01	--	--	0.42	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
30-Mar-11	111	0.01	--	--	0.4	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
6-Apr-11	112	0.002	0.000007	0.0005	0.43	0.00127	0.002	0.00008	0.00019	0.009	0.12		0.00007	0.5	0.000005	0.12	0.00592	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000003	0.0008	0.0011	0.0001
13-Apr-11	113	0.01	--	--	0.39	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
20-Apr-11	114	0.01	--	--	0.39	--	--	--	--	--	0.4		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
27-Apr-11	115	0.01	--	--	0.38	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
4-May-11	116	0.01	--	--	0.36	--	--	--	--	--	0.3		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
11-May-11	117	0.01	--	--	0.41	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
18-May-11	118	0.01	--	--	0.37	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
25-May-11	119	0.01	--	--	0.37	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
1-Jun-11	120	0.043	0.000017	0.0005	0.34	0.00128	0.002	0.00008	0.00021	0.012	0.1		0.00009	0.4	0.000005	0.09	0.00425	0.00002	0.000002	0.000005	0.00004	0.0005	--	0.000002	0.0008	0.0017	0.0001
8-Jun-11	121	0.01	--	--	0.37	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
15-Jun-11	122	0.01	--	--	0.37	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
22-Jun-11	123	0.01	--	--	0.36	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
29-Jun-11	124	0.01	--	--	0.37	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
6-Jul-11	125	0.01	--	--	0.35	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
13-Jul-11	126	0.01	--	--	0.36	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
20-Jul-11	127	0.01	--	--	0.38	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
27-Jul-11	128	0.003	0.000016	0.0005	0.36	0.00107	0.002	0.00007	0.00014	0.017	0.11		0.00004	0.4	0.000005	0.11	0.0045	0.00002	0.000002	0.000005	0.00007	0.0005	--	0.000002	0.0006	0.0013	0.0001
3-Aug-11	129	0.01	--	--	0.36	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
10-Aug-11	130	0.01	--	--	0.38	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
17-Aug-11	131	0.01	--	--	0.29	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
24-Aug-11	132	0.01	--	--	0.34	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
31-Aug-11	133	0.01	--	--	0.33	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
7-Sep-11	134	0.01	--	--	0.34	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
14-Sep-11	135	0.01	--	--	0.36	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
21-Sep-11	136	0.002	0.00002	0.0005	0.31	0.00103	0.002	0.00008	0.00016	0.002	0.07		0.00006	0.4	0.000005	0.09	0.0047	0.00002	0.000003	0.000005	0.00001	0.0005	--	0.000002	0.0007	0.0006	0.0001
28-Sep-11	137	0.01	--	--	0.35	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
5-Oct-11	138	0.01	--	--	0.36	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
12-Oct-11	139	0.01	--	--	0.34	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
19-Oct-11	140	0.01	--	--	0.34	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
26-Oct-11	141	0.01	--	--	0.35	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
2-Nov-11	142	0.01	--	--	0.37	--	--	--	--	--	0.5		--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
9-Nov-11	143	0.01	--	--	0.35	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
16-Nov-11	144	0.006	0.000062	0.0005	0.34	0.00072	0.0029	0.00022	0.0008	0.007	0.12		0.00006	0.5	0.000005	0.12	0.00523	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000002	0.0005	0.0016	0.0001
23-Nov-11	145	0.01	--	--	0.34	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
30-Nov-11	146	0.01	--	--	0.32	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
7-Dec-11	147	0.01	--	--	0.3	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
14-Dec-11	148	0.01	--	--	0.31	--	--	--	--	--	0.4		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
21-Dec-11	149	0.01	--	--	0.28	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
28-Dec-11	150	0.01	--	--	1.07	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
4-Jan-12	151	0.01	--	--	0.29	--	--	--	--	--	0.4		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
11-Jan-12	152	0.002	0.000005	0.0005	0.31	0.00082	0.002	0.00009	0.00013	0.003	0.15		0.00006	0.3	0.000005	0.13	0.0042	0.00002	0.000004	0.000005	0.0002	0.0005	--	0.000002	0.0007	0.0003	0.0001
18-Jan-12	15																										

HC-5
Sample Weight = 1 kg

Dissolved Metals by ICP-MS (Cantest)																															
Date	Accum. Weeks	Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia (mgN/l)	Diss.-P	TDS	Hardness CaCO3 (mg/l)	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mgP/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.02	0.02	0.02	0.0012	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
11-Feb-09	0	750	595	8.34	310	95	6	--	--	43	0.08	62.2	0.13	0.01	0.32	0.02	121	16.3	0.33	0.0029	0.035	0.0012	0.0002	0.0002	0.16	0.00004	4.26	0.0002	0.0002	0.0015	
18-Feb-09	1	500	470	8.3	293	135	21	--	--	66	0.12	37.7	0.01	0.007	0.19	0.09	159	19.9	0.17	0.0058	0.271	0.0013	0.0002	0.0002	0.33	0.00004	4.64	0.0003	0.0015	0.0021	
25-Feb-09	2	500	480	8.72	204	120	25	--	--	54	0.17	15.2	0.01	0.003	0.09	0.2	76	12.7	0.11	0.0054	0.528	0.0009	0.0002	0.0002	0.36	0.00004	2.79	0.0002	0.001	0.0022	
4-Mar-09	3	500	450	9.05	123	110	18	--	--	34	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	--	--	0.02	
11-Mar-09	4	500	425	8.79	104	120	15	--	--	29	0.07	1.4	0.01	0.003	0.16	0.15	10	11	0.12	0.0031	0.595	0.0006	0.0002	0.0002	0.18	0.00004	2.51	0.0002	0.0011	0.0018	
18-Mar-09	5	500	445	8.69	95	125	14	--	--	29	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--	0.02	
25-Mar-09	6	500	445	8.37	90	165	15	--	--	28	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	--	0.02	
1-Apr-09	7	500	475	8.3	79	170	9	--	--	26	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	0.02	
8-Apr-09	8	500	440	8.18	79	175	4	--	1	25	0.05	0.2	0.01	0.002	0.16	0.02	32	20.3	0.064	0.0022	0.412	0.0008	0.0002	0.0002	0.13	0.00004	4.22	0.0002	0.001	0.0004	
15-Apr-09	9	500	460	8.25	72	160	4	--	1	27	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	0.02	
22-Apr-09	10	500	410	8.71	71	145	7	--	--	24	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	0.02	
29-Apr-09	11	500	440	8.54	62	155	7	--	--	24	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	0.02	
6-May-09	12	500	430	7.76	56	165	4	--	1	19	0.05	0.2	0.05	0.002	0.22	0.06	43	18.4	0.054	0.0015	0.295	0.0007	0.0002	0.0002	0.08	0.00004	3.6	0.0002	0.001	0.0003	
13-May-09	13	500	450	8.13	63	140	4	--	1	24	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	0.02	
20-May-09	14	500	430	8.15	55	125	2	--	1	22	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	--	0.02	
27-May-09	15	500	445	7.88	57	150	3	--	1	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
3-Jun-09	16	500	445	7.78	56	160	4	--	1	23	0.05	0.2	0.05	0.003	0.2	0.05	10	19.8	0.042	0.0014	0.253	0.0008	0.0002	0.0002	0.06	0.00004	4.17	0.0002	0.0013	0.0003	
10-Jun-09	17	500	455	7.9	54	140	3	--	1	22	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	0.02	
17-Jun-09	18	500	430	7.81	45	140	2	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
24-Jun-09	19	500	445	7.95	52	135	3	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
1-Jul-09	20	500	425	7.7	49	140	2	--	1	20	0.05	0.2	0.05	0.002	0.23	0.05	93	17.7	0.049	0.0011	0.211	0.0008	0.0002	0.0002	0.04	0.00004	3.81	0.0002	0.0009	0.0013	
8-Jul-09	21	500	420	8.55	40	140	2	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
15-Jul-09	22	500	430	8.67	54	160	1	--	--	24	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	0.02	
22-Jul-09	23	500	475	7.93	52	150	3	--	1	24	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	0.02	
29-Jul-09	24	500	440	7.75	56	170	2	--	1	24	0.05	0.2	0.05	0.002	0.21	0.02	26	20.4	0.036	0.001	0.151	0.0009	0.0002	0.0002	0.04	0.00004	4.45	0.0002	0.001	0.0002	
5-Aug-09	25	500	440	8.36	51	175	4	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
12-Aug-09	26	500	430	7.75	51	160	2	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
19-Aug-09	27	500	425	7.98	49	165	1	--	1	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
26-Aug-09	28	500	420	7.92	49	155	2	--	1	22	0.05	0.2	0.05	0.002	0.34	0.02	21	18.2	0.038	0.0009	0.155	0.0007	0.0002	0.0002	0.05	0.00004	3.82	0.0004	0.001	0.0003	
2-Sep-09	29	500	420	7.99	44	145	2	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
9-Sep-09	30	500	430	8.44	50	160	3	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
16-Sep-09	31	500	420	8.42	50	160	1	--	--	23	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	0.02	
23-Sep-09	32	500	415	7.81	47	160	1	--	1	22	0.05	0.32	0.05	0.002	0.34	0.02	44	19.9	0.03	0.0008	0.145	0.0007	0.0001	0.0001	0.053	0.00001	4	0.0002	0.0007	0.0002	
30-Sep-09	33	500	420	8.48	47	160	1	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
7-Oct-09	34	500	415	8.4	49	160	2	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
14-Oct-09	35	500	415	8.61	53	160	1	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
21-Oct-09	36	500	440	8.39	50	150	1	--	--	23	0.05	0.65	0.05	0.002	0.23	0.02	23	23.3	0.026	0.0008	0.114	0.0008	0.0001	0.0001	0.048	0.00001	4.83	0.0002	0.0009	0.0008	
28-Oct-09	37	500	430	8.48	47	155	1	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
4-Nov-09	38	500	425	8.4	54	155	1	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
11-Nov-09	39	500	420	8.27	54	145	1	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	0.02	
18-Nov-09	40	500	410	8.29	63	150	1	--	1	18	0.05	7.26	0.05	0.002	0.29	0.02	13	29	0.038	0.0006	0.097	0.001	0.								

HC-5
Sample Weight = 1 kg

Dissolved Metals by ICP-MS (Cantest)																															
Date	Accum. Weeks	Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu	
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mgN/l)	(mgP/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.02	0.02		Calculation	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
7-Apr-10	60	500	435	8.26	46	--	1	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.31	--	--	--	0.02
14-Apr-10	61	500	430	8.02	45	--	2	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.65	--	--	--	0.02
21-Apr-10	62	500	430	8.27	47	--	2	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.73	--	--	--	0.02
28-Apr-10	63	500	425	8.29	44	--	2	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.22	--	--	--	0.02
5-May-10	64	500	435	8.06	42	155	2	--	--	1	20	0.02	0.5	0.02	0.005	0.006	0.009	36	20.8213	0.0267	0.00046	0.0475	0.00081	0.00001	0.000005	0.05	0.000005	4.3	0.0001	0.00054	0.00043
12-May-10	65	500	435	8.19	43	--	1	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.47	--	--	--	0.02
19-May-10	66	500	440	8.05	45	--	2	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.51	--	--	--	0.02
26-May-10	67	500	435	8.18	41	--	1	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.18	--	--	--	0.02
2-Jun-10	68	500	490	8.18	48	--	2	--	--	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.08	--	--	--	0.02
9-Jun-10	69	500	435	8.25	43	--	2	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.06	--	--	--	0.02
16-Jun-10	70	500	435	8.18	43	--	1	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.04	--	--	--	0.02
23-Jun-10	71	500	430	8.17	42	--	1	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.17	--	--	--	0.02
30-Jun-10	72	500	450	8.15	44	160	1	--	--	21	0.05	0.5	0.02	0.005	0.05	0.025	24	21.39835	0.0229	0.00048	0.041	0.00084	0.00001	0.000005	0.05	0.000005	4.63	0.0001	0.000399	0.00032	
7-Jul-10	73	500	430	8.26	39	--	1	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.24	--	--	--	0.02
14-Jul-10	74	500	420	8.37	28	--	1	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.29	--	--	--	0.02
21-Jul-10	75	500	435	8.39	37	--	1	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.62	--	--	--	0.02
28-Jul-10	76	500	480	8.33	46	--	1	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.09	--	--	--	0.02
4-Aug-10	77	500	445	8	39	--	2	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.98	--	--	--	0.02
11-Aug-10	78	500	460	8.21	39	--	1	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.75	--	--	--	0.02
18-Aug-10	79	500	440	8.35	46	--	2	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.84	--	--	--	0.02
25-Aug-10	80	500	445	8.22	46	165	1	--	--	21	0.01	0.5	0.02	0.005	0.073	0.008	24	19.75251	0.0192	0.00038	0.0354	0.00092	0.00001	0.000005	0.05	0.000005	4.35	0.0001	0.00046	0.0004	
1-Sep-10	81	500	445	8.26	43	--	2	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.09	--	--	--	0.02
8-Sep-10	82	500	445	8.24	44	--	2	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.88	--	--	--	0.02
15-Sep-10	83	500	445	8.22	42	--	1	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.61	--	--	--	0.02
22-Sep-10	84	500	450	8.15	41	--	1	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.46	--	--	--	0.02
29-Sep-10	85	500	425	8.05	34	--	3	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.12	--	--	--	0.01
6-Oct-10	86	500	450	8.29	43	--	2	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.25	--	--	--	0.01
13-Oct-10	87	500	430	8.01	40	--	1	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.88	--	--	--	0.01
20-Oct-10	88	500	460	7.78	47	185	3	--	--	20	0.01	0.5	0.02	0.005	0.11	0.005	24	20.56419	0.0127	0.00028	0.0216	0.00093	0.00001	0.000005	0.05	0.000005	4.23	0.0001	0.000524	0.00013	
27-Oct-10	89	500	455	7.61	48	--	2	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.43	--	--	--	0.02
3-Nov-10	90	500	430	7.97	47	--	3	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.95	--	--	--	0.02
10-Nov-10	91	500	440	7.87	42	--	2	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.29	--	--	--	0.02
17-Nov-10	92	500	460	7.64	45	--	2	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.26	--	--	--	0.02
24-Nov-10	93	500	430	7.85	42	--	1	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.89	--	--	--	0.02
1-Dec-10	94	500	435	7.98	44	--	2	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.96	--	--	--	0.02
8-Dec-10	95	500	445	8.09	50	--	2	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.62	--	--	--	0.02
15-Dec-10	96	500	440	7.5	52	155	2	--	--	20	0.02	1.3	0.02	0.005	0.054	0.006	26	20.79496	0.0119	0.00027	0.0199	0.00073	0.00001	0.000005	0.05	0.000005	4.24	0.0003	0.000438	0.00024	
22-Dec-10	97	500	440	7.99	53	--	2	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.77	--	--	--	0.02
29-Dec-10	98	500	440	8.02	49	--	3	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.77	--	--	--	0.02
5-Jan-11	99	500	440	7.96	47	--	3	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.76	--	--	--	0.02
12-Jan-11	100	500	440	7.76	53	--	1	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.64	--	--	--	0.02
19-Jan-11	101	500	435	8.1	49	--	3	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.48	--	--	--	0.02
26-Jan-11	102	500	435	8.2	50	--	2	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.69	--	--	--	0.02
2-Feb-11	103	500	445	7.95	50	--	3	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.48	--	--	--	0.02
9-Feb-11	104	500	445	7.73	43	165	3	--	--	19	0.01	0.9	0.02	0.005	0.033	0.005	26	21.61897	0.0129	0.00023	0.0172	0.00084	0.00001	0.000005	0.05	0.000005	4.57	0.0001	0.000398	0.00017	
Terminated																															

HC-5
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	Hg (CVAF)	Mo	Ni	P	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.0002	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	ug/L 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.05	mg/l 0.001		mg/l 0.02	mg/l 0.0005	mg/l 0.001	mg/l 0.15	mg/l 0.1	mg/l 0.001	mg/l 0.25	mg/l 0.00025	mg/l 0.05	mg/l 0.001	mg/l 0.002	mg/l 0.001	mg/l 0.0001	mg/l 0.0005	mg/l 0.001
11-Feb-09	0	0.01	0.0002	0.0016	1.38	0.0058	0.02	0.0037	0.0011	0.03	4.74		0.0008	0.63	0.00005	48.3	0.018	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0012	0.001	0.002
18-Feb-09	1	0.02	0.0002	0.0021	2	0.025	0.02	0.0068	0.0031	0.03	5.01		0.002	0.99	0.00005	48.1	0.024	0.0002	0.00002	0.0001	0.0002	0.0003	--	0.0003	0.0021	0.001	0.002
25-Feb-09	2	0.01	0.0002	0.0017	1.38	0.0079	0.02	0.0056	0.0019	0.03	4.14		0.0019	0.82	0.00005	32	0.016	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0004	0.0024	0.001	0.002
4-Mar-09	3	0.01	--	--	1.14	--	--	--	--	--	2.8		--	--	--	20	--	--	--	--	--	--	--	--	--	--	0.005
11-Mar-09	4	0.02	0.0002	0.0011	1.15	0.0069	0.02	0.0035	0.0011	0.03	3.54		0.0012	0.63	0.00005	14.5	0.011	0.0002	0.00002	0.0001	0.0002	0.0003	--	0.0003	0.0023	0.001	0.002
18-Mar-09	5	0.01	--	--	1.83	--	--	--	--	--	4		--	--	--	11.2	--	--	--	--	--	--	--	--	--	--	0.005
25-Mar-09	6	0.01	--	--	2.19	--	--	--	--	--	4		--	--	--	7.9	--	--	--	--	--	--	--	--	--	--	0.005
1-Apr-09	7	0.01	--	--	2.87	--	--	--	--	--	4.3		--	--	--	6	--	--	--	--	--	--	--	--	--	--	0.005
8-Apr-09	8	0.01	0.0002	0.0016	2.37	0.011	0.02	0.0027	0.0008	0.03	3.7		0.0006	0.62	0.00005	3.2	0.018	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0002	0.0014	0.001	0.002
15-Apr-09	9	0.01	--	--	3.01	--	--	--	--	--	3.7		--	--	--	2.6	--	--	--	--	--	--	--	--	--	--	0.005
22-Apr-09	10	0.01	--	--	3.03	--	--	--	--	--	4		--	--	--	2.2	--	--	--	--	--	--	--	--	--	--	0.005
29-Apr-09	11	0.01	--	--	2.66	--	--	--	--	--	3.5		--	--	--	1.3	--	--	--	--	--	--	--	--	--	--	0.005
6-May-09	12	0.01	0.0002	0.0011	2.28	0.0078	0.02	0.0021	0.0007	0.03	3.11		0.0002	0.48	0.00005	0.98	0.014	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.001	0.001	0.002
13-May-09	13	0.01	--	--	3.01	--	--	--	--	--	2.9		--	--	--	1	--	--	--	--	--	--	--	--	--	--	0.005
20-May-09	14	0.01	--	--	2.56	--	--	--	--	--	2.4		--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	0.005
27-May-09	15	0.01	--	--	2.86	--	--	--	--	--	2.5		--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	0.005
3-Jun-09	16	0.01	0.0002	0.0009	2.27	0.0083	0.02	0.0022	0.0008	0.03	2.56		0.0002	0.48	0.00005	0.49	0.016	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0009	0.001	0.002
10-Jun-09	17	0.01	--	--	2.59	--	--	--	--	--	2.1		--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	0.005
17-Jun-09	18	0.01	--	--	2.38	--	--	--	--	--	2.3		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	0.005
24-Jun-09	19	0.01	--	--	2.7	--	--	--	--	--	2.3		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	0.005
1-Jul-09	20	0.01	0.0002	0.0006	2	0.012	0.02	0.0014	0.0006	0.03	1.9		0.0002	0.36	0.00005	0.28	0.015	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0007	0.001	0.002
8-Jul-09	21	0.01	--	--	2.09	--	--	--	--	--	1.6		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005
15-Jul-09	22	0.01	--	--	2.64	--	--	--	--	--	2.1		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	0.005
22-Jul-09	23	0.01	--	--	2.62	--	--	--	--	--	1.9		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005
29-Jul-09	24	0.01	0.0002	0.0008	2.25	0.015	0.02	0.0019	0.0007	0.03	1.74		0.0002	0.39	0.00005	0.21	0.015	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0005	0.001	0.002
5-Aug-09	25	0.01	--	--	2.43	--	--	--	--	--	1.7		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005
12-Aug-09	26	0.01	--	--	2.46	--	--	--	--	--	1.7		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
19-Aug-09	27	0.01	--	--	2.63	--	--	--	--	--	1.7		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005
26-Aug-09	28	0.01	0.0002	0.0007	2.09	0.0074	0.02	0.0018	0.0006	0.03	1.59		0.0002	0.39	0.00005	0.22	0.014	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0007	0.001	0.002
2-Sep-09	29	0.01	--	--	2.23	--	--	--	--	--	1.5		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005
9-Sep-09	30	0.01	--	--	2.64	--	--	--	--	--	1.6		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005
16-Sep-09	31	0.02	--	--	3.63	--	--	--	--	--	1.5		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005
23-Sep-09	32	0.01	0.00005	0.0008	2.41	0.0067	0.02	0.0017	0.0005	0.015	1.31		0.0002	0.33	0.00004	0.18	0.015	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0004	0.001	0.0001
30-Sep-09	33	0.01	--	--	2.47	--	--	--	--	--	1.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005
7-Oct-09	34	0.02	--	--	2.67	--	--	--	--	--	1.4		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005
14-Oct-09	35	0.01	--	--	2.88	--	--	--	--	--	1.4		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
21-Oct-09	36	0.01	0.00005	0.0007	2.73	0.0069	0.02	0.0017	0.0005	0.015	1.09		0.0002	0.36	0.00004	0.15	0.017	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0003	0.001	0.0001
28-Oct-09	37	0.01	--	--	2.54	--	--	--	--	--	1		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005
4-Nov-09	38	0.01	--	--	2.91	--	--	--	--	--	1.1		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
11-Nov-09	39	0.01	--	--	3	--	--	--	--	--	1.1		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
18-Nov-09	40	0.01	0.00005	0.0005	3.43	0.0088	0.02	0.0018	0.0006	0.015	1.14		0.0002	0.27	0.00004	0.15	0.019	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0004	0.001	0.0001
25-Nov-09	41	0.01	--	--	3.79	--	--	--	--	--	1.2		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005
2-Dec-09	42	0.01	--	--	3.48	--	--	--	--	--	1		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005
9-Dec-09	43	0.01	--	--	2.69	--	--	--	--	--	0.9		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
16-Dec-09	44	0.02	0.00005	0.0006	2.29	0.0056	0.02	0.0013	0.0004	0.015	0.83		0.0002	0.23	0.00004	0.11	0.012	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0003	0.001	0.0001
23-Dec-09	45	0.01	--	--	2.66	--	--	--	--	--	0.8		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
30-Dec-09	46	0.01	--	--	2.5	--	--	--	--	--	0.7		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
6-Jan-10	47	0.01	--	--	2.78	--	--	--	--	--	0.7		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005
13-Jan-10	48	0.01	0.00005	0.0007	2.73	0.0059	0.02	0.0015	0.0005	0.015	0.91		0.0002	0.35	0.00004	0.12	0.016	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0003	0.001	0.0001
20-Jan-10	49	0.01	--	--	2.87	--	--	--	--	--	0.6		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
27-Jan-10	50	0.01	--	--	2.88	--	--	--	--	--	0.7		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005
3-Feb-10	51	0.01	--	--	2.71	--	--	--	--	--	0.7		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
10-Feb-10	52	0.01	--	--	3	--	--	--	--	--	0.6		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
17-Feb-10	53	0.01	--	--	2.55	--	--	--	--	--	0.5		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
24-Feb-10	54	0.01	--	--	2.75	--	--	--	--	--	0.5		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
3-Mar-10	55	0.01	--	--	2.8	--	--	--	--	--	0.6		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
10-Mar-10	56	0.01	0.00005	0.0008	2.67	0.0046	0.02	0.0014	0.0003	0.015	0.66		0.0002	0.29	0.00004	0.093	0.014	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0002	0.001	0.0001
17-Mar-10	57	0.01	--	--	2.63	--	--	--	--	--	0.6		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005
24-Mar-10	58	0.01	--	--	2.47	--	--	--	--	--	0.5																

HC-5
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	Hg (CVAF)	Mo	Ni	P	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.0002	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	ug/L 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.05	mg/l 0.001		mg/l 0.02	mg/l 0.0005	mg/l 0.001	mg/l 0.15	mg/l 0.1	mg/l 0.001	mg/l 0.25	mg/l 0.00025	mg/l 0.05	mg/l 0.001	mg/l	mg/l 0.001	mg/l 0.0001	mg/l 0.0005	mg/l 0.001
7-Apr-10	60	0.01	--	--	2.36	--	--	--	--	--	0.4		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
14-Apr-10	61	0.04	--	--	2.59	--	--	--	--	--	0.5		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
21-Apr-10	62	0.01	--	--	2.58	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Apr-10	63	0.01	--	--	2.44	--	--	--	--	--	0.5		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
5-May-10	64	0.003	0.000008	0.0005	2.45	0.00342	0.02	0.00119	0.00029	0.002	0.51		0.00015	0.3	0.000005	0.09	0.0125	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000024	0.0002	0.0001	0.0001
12-May-10	65	0.01	--	--	2.44	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
19-May-10	66	0.01	--	--	2.46	--	--	--	--	--	0.4		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
26-May-10	67	0.01	--	--	2.29	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
2-Jun-10	68	0.01	--	--	2.75	--	--	--	--	--	0.4		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
9-Jun-10	69	0.01	--	--	2.25	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
16-Jun-10	70	0.01	--	--	2.28	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
23-Jun-10	71	0.01	--	--	2.3	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
30-Jun-10	72	0.002	0.000009	0.0005	2.39	0.00264	0.02	0.00118	0.00027	0.002	0.38		0.00015	0.3	0.000005	0.06	0.0131	0.00002	0.000002	0.000005	0.00003	0.0005	--	0.000022	0.0002	0.0003	0.0001
7-Jul-10	73	0.01	--	--	2.43	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
14-Jul-10	74	0.01	--	--	2.54	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
21-Jul-10	75	0.01	--	--	2.72	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Jul-10	76	0.01	--	--	2.73	--	--	--	--	--	0.4		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
4-Aug-10	77	0.01	--	--	2.82	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
11-Aug-10	78	0.01	--	--	2.57	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
18-Aug-10	79	0.01	--	--	2.6	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
25-Aug-10	80	0.003	0.000017	0.0005	2.16	0.00249	0.02	0.00098	0.00026	0.002	0.33		0.00013	0.3	0.000005	0.05	0.0128	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000016	0.0002	0.0001	0.0001
1-Sep-10	81	0.01	--	--	2.74	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
8-Sep-10	82	0.01	--	--	2.64	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
15-Sep-10	83	0.01	--	--	2.5	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
22-Sep-10	84	0.01	--	--	2.31	--	--	--	--	--	0.3		--	--	--	0.06	--	--	--	--	--	--	--	--	--	0.0004	0.0001
29-Sep-10	85	0.03	--	--	2.31	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
6-Oct-10	86	0.03	--	--	2.36	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
13-Oct-10	87	0.03	--	--	2.19	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
20-Oct-10	88	0.001	0.000058	0.0005	2.43	0.00369	0.026	0.00088	0.00034	0.003	0.27		0.00011	0.2	0.000005	0.07	0.0114	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000016	0.0002	0.0007	0.0001
27-Oct-10	89	0.01	--	--	2.42	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
3-Nov-10	90	0.01	--	--	2.21	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
10-Nov-10	91	0.01	--	--	2.44	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
17-Nov-10	92	0.01	--	--	2.24	--	--	--	--	--	0.26		--	--	--	0.06	--	--	--	--	--	--	--	--	--	0.0005	0.0001
24-Nov-10	93	0.01	--	--	2.2	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
1-Dec-10	94	0.01	--	--	2.31	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
8-Dec-10	95	0.01	--	--	2.61	--	--	--	--	--	0.4		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
15-Dec-10	96	0.001	0.000012	0.0005	2.48	0.00205	0.002	0.00093	0.00055	0.002	0.26		0.00012	0.2	0.000005	0.06	0.0121	0.00002	0.000002	0.000005	0.00001	0.0015	--	0.000015	0.0004	0.0002	0.0001
22-Dec-10	97	0.01	--	--	2.69	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
29-Dec-10	98	0.01	--	--	2.74	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
5-Jan-11	99	0.01	--	--	2.78	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
12-Jan-11	100	0.01	--	--	2.77	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
19-Jan-11	101	0.01	--	--	2.59	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
26-Jan-11	102	0.01	--	--	2.71	--	--	--	--	--	0.4		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
2-Feb-11	103	0.01	--	--	2.62	--	--	--	--	--	1.3		--	--	--	0.8	--	--	--	--	--	--	--	--	--	0.005	--
9-Feb-11	104	0.001	0.000006	0.0005	2.48	0.00193	0.004	0.00083	0.00028	0.002	0.23		0.00012	0.2	0.000005	0.05	0.0116	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000015	0.0002	0.0006	0.0001
Terminated																											

HC-8
Sample Weight = 1 kg

Dissolved Metals by ICP-MS (Cantest)																														
Date	Accum. Weeks	Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mgP/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.02	0.02	0.02	Calculation	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.001
11-Feb-09	0	750	605	9.34	199	75	4	--	--	57	0.14	20	0.05	0.01	0.31	0.02	84	10	0.26	0.0008	0.027	0.007	0.0002	0.0002	0.06	0.00004	2.99	0.0003	0.0002	0.0018
18-Feb-09	1	500	450	9.22	336	80	22	--	--	90	0.24	32.4	0.02	0.005	0.08	0.02	224	9	0.16	0.0029	0.3	0.0027	0.0002	0.0002	0.13	0.00004	2.61	0.0003	0.0002	0.0062
25-Feb-09	2	500	460	8.89	282	80	25	--	--	95	0.24	18.2	0.01	0.003	0.05	0.15	127	6.8	0.14	0.0031	0.374	0.0024	0.0002	0.0002	0.28	0.00004	1.82	0.0007	0.0002	0.0009
4-Mar-09	3	500	445	9.52	200	70	17	--	--	65	--	--	--	--	--	--	--	--	0.18	--	--	--	--	--	--	--	1.68	--	--	0.02
11-Mar-09	4	500	435	9.5	165	105	16	--	--	55	0.13	3.01	0.01	0.003	0.07	0.03	82	6.5	0.16	0.0021	0.322	0.0021	0.0002	0.0002	0.11	0.00004	1.91	0.0009	0.0002	0.0016
18-Mar-09	5	500	445	9.48	138	100	10	--	--	49	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	1.92	--	--	0.02
25-Mar-09	6	500	430	9.39	139	95	16	--	--	50	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	1.75	--	--	0.02
1-Apr-09	7	500	445	9.05	110	140	8	--	--	43	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	3.16	--	--	0.02
8-Apr-09	8	500	430	8.81	120	150	4	--	--	43	0.06	0.5	0.01	0.002	0.04	0.02	43	9.8	0.072	0.0013	0.18	0.002	0.0002	0.0002	0.08	0.00004	2.84	0.0002	0.0002	0.0015
15-Apr-09	9	500	470	8.84	104	145	7	--	--	42	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	2.87	--	--	0.02
22-Apr-09	10	500	415	9.36	100	120	6	--	--	37	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	2.46	--	--	0.02
29-Apr-09	11	500	435	9.41	90	105	7	--	--	35	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	2.17	--	--	0.02
6-May-09	12	500	430	8.8	80	120	4	--	--	33	0.05	0.2	0.05	0.002	0.04	0.05	92	9.4	0.053	0.0008	0.118	0.0015	0.0002	0.0002	0.05	0.00004	2.42	0.0002	0.0002	0.0004
13-May-09	13	500	460	8.94	80	130	6	--	--	32	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.08	--	--	0.02
20-May-09	14	500	440	9.11	75	140	1	--	--	28	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	2.76	--	--	0.02
27-May-09	15	500	440	8.02	71	145	4	--	--	30	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.84	--	--	0.02
3-Jun-09	16	500	450	7.99	71	150	5	--	--	28	0.05	0.2	0.05	0.003	0.04	0.02	10	11.6	0.04	0.0007	0.077	0.0017	0.0002	0.0002	0.04	0.00004	2.85	0.0005	0.0002	0.004
10-Jun-09	17	500	460	7.99	64	145	5	--	--	27	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	3.68	--	--	0.02
17-Jun-09	18	500	430	8.97	62	140	3	--	--	25	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	2.83	--	--	0.02
24-Jun-09	19	500	450	8.99	65	140	5	--	--	26	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.48	--	--	0.02
1-Jul-09	20	500	445	7.82	67	140	1	--	--	27	0.05	0.2	0.05	0.002	0.03	0.02	53	14.6	0.035	0.0006	0.076	0.0018	0.0002	0.0002	0.03	0.00004	3.78	0.0002	0.0002	0.0004
8-Jul-09	21	500	430	9.03	52	150	1	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	2.78	--	--	0.02
15-Jul-09	22	500	425	9.06	66	155	1	--	--	28	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.6	--	--	0.02
22-Jul-09	23	500	465	8.25	56	150	4	--	--	25	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.89	--	--	0.02
29-Jul-09	24	500	440	7.79	54	165	4	--	--	26	0.05	0.2	0.05	0.002	0.02	0.02	24	15.9	0.032	0.0005	0.055	0.0021	0.0002	0.0002	0.02	0.00004	4	0.0002	0.0002	0.0002
5-Aug-09	25	500	445	8.8	54	160	4	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.06	--	--	0.02
12-Aug-09	26	500	435	7.79	53	155	3	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.42	--	--	0.02
19-Aug-09	27	500	425	7.85	51	165	2	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.55	--	--	0.02
26-Aug-09	28	500	430	8.41	52	155	2	--	--	22	0.05	0.2	0.05	0.002	0.03	0.02	58	13.8	0.029	0.0005	0.058	0.0018	0.0002	0.0002	0.02	0.00004	3.37	0.0002	0.0002	0.0003
2-Sep-09	29	500	425	8.67	54	145	4	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	2.9	--	--	0.02
9-Sep-09	30	500	435	8.69	49	150	3	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.02	--	--	0.02
16-Sep-09	31	500	430	9.07	48	150	3	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	2.96	--	--	0.02
23-Sep-09	32	500	420	7.89	49	145	1	--	--	21	0.05	0.2	0.05	0.002	0.05	0.03	24	12.9	0.028	0.0005	0.069	0.0016	0.0001	0.0001	0.026	0.00001	2.75	0.0002	0.0001	0.0004
30-Sep-09	33	500	430	8.1	50	150	3	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	2.95	--	--	0.02
7-Oct-09	34	500	415	8.73	47	145	4	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	2.85	--	--	0.02
14-Oct-09	35	500	425	9.12	48	140	3	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	2.91	--	--	0.02
21-Oct-09	36	500	445	8.62	45	145	3	--	--	21	0.05	0.2	0.05	0.002	0.03	0.02	29	15.5	0.023	0.0005	0.058	0.0022	0.0001	0.0001	0.022	0.00001	3.14	0.0002	0.0001	0.0004
28-Oct-09	37	500	435	8.88	42	135	2	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.04	--	--	0.02
4-Nov-09	38	500	435	8.96	43	150	3	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.03	--	--	0.02
11-Nov-09	39	500	430	8.99	46	130	2	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.3	--	--	0.02
18-Nov-09	40	500	415	8.83	40	140	3	--	--	19	0.05	0.2	0.05	0.002	0.04	0.02	10	14.2	0.028	0.0003	0.057	0.0015	0.0001	0.0001	0.017	0.00001	3.06	0.0002	0.0001	0.0042
25-Nov-09	41	500	415	9.04	48	130	3	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.09	--	--	0.02
2-Dec-09	42	500	430	8.84	44	130	1	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.29	--	--	0.02
9-Dec-09	43	500	415	8.7	48	125	1	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.15	--	--	0.02
16-Dec-09	44	500	430	8.64	43	135	1	--	--	19	0.05	0.2	0.05	0.002	0.03	0.02	20	13.96053	0.022	0.0003	0.054	0.0015	0.0001	0.0001	0.014	0.00001	2.97	0.0002	0.0001	0.0008
23-Dec-09	45	500	440	8.63	42	135	1	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	3.2	--	--	0.02
30-Dec-09	46	500	420	8.94	44	120	3	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--								

HC-8
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																												
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu
		Input	Output	(pH Units)	(uS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mgP/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.02	0.02	0.02	0.02	0.0001	0.0001	0.001	0.001	0.001	0.001	0.001	0.001
6-Jan-10	47	500	420	8.94	43	--	1	--	--	20	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.44	--	--	0.02
13-Jan-10	48	500	445	8.65	43	135	3	--	--	19	0.05	0.2	0.05	0.002	0.03	0.02	30	15.32099	0.02	0.0003	0.047	0.0017	0.0001	0.0001	0.016	0.00001	3.35	0.0002	0.0001	0.003
20-Jan-10	49	500	430	8.76	43	--	4	--	--	18	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.55	--	--	0.02
27-Jan-10	50	500	435	8.52	49	--	6	--	--	19	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.67	--	--	0.02
3-Feb-10	51	500	415	8.55	46	--	4	--	--	18	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.39	--	--	0.02
10-Feb-10	52	500	435	8.47	44	--	3	--	--	18	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.52	--	--	0.02
17-Feb-10	53	500	440	8.62	45	--	7	--	--	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.18	--	--	0.02
24-Feb-10	54	500	430	8.6	46	--	6	--	--	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.36	--	--	0.02
3-Mar-10	55	500	425	8.69	48	--	6	--	--	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.55	--	--	0.02
10-Mar-10	56	500	430	8.57	57	145	6	--	--	17	0.05	0.2	0.05	0.002	0.03	0.02	10	17.46679	0.017	0.0003	0.042	0.0019	0.0001	0.0001	0.011	0.00001	3.55	0.0002	0.0001	0.001
17-Mar-10	57	500	435	8.6	46	--	5	--	--	18	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.65	--	--	0.02
24-Mar-10	58	500	420	8.72	47	--	6	--	--	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.54	--	--	0.02
31-Mar-10	59	500	440	8.64	46	--	4	--	--	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.84	--	--	0.02
7-Apr-10	60	500	440	8.5	46	--	5	--	--	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.35	--	--	0.02
14-Apr-10	61	500	440	8.47	46	--	6	--	--	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.9	--	--	0.02
21-Apr-10	62	500	440	8.62	47	--	6	--	--	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.66	--	--	0.02
28-Apr-10	63	500	430	8.78	45	--	5	--	--	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.56	--	--	0.02
5-May-10	64	500	445	8.58	46	160	6	--	--	16	0.02	0.5	0.02	0.005	0.01	0.007	24	17.34057	0.0193	0.00026	0.0354	0.00186	0.00001	0.000005	0.05	0.000005	3.45	0.0001	0.000072	0.00059
12-May-10	65	500	450	8.48	45	--	5	--	--	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.55	--	--	0.02
19-May-10	66	500	440	8.52	45	--	7	--	--	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.46	--	--	0.02
26-May-10	67	500	440	8.46	44	--	5	--	--	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.48	--	--	0.02
2-Jun-10	68	500	490	8.33	49	--	5	--	--	19	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.31	--	--	0.02
9-Jun-10	69	500	445	8.52	43	--	5	--	--	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.55	--	--	0.02
16-Jun-10	70	500	445	8.41	41	--	4	--	--	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.13	--	--	0.02
23-Jun-10	71	500	440	8.34	42	--	5	--	--	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.35	--	--	0.02
30-Jun-10	72	500	450	7.99	43	155	5	--	1	15	0.05	0.5	0.02	0.005	0.05	0.022	28	17.02007	0.0181	0.00025	0.0344	0.00179	0.00001	0.000005	0.05	0.000005	3.47	0.0001	0.000055	0.00033
7-Jul-10	73	500	440	8.65	43	--	5	--	--	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.52	--	--	0.02
14-Jul-10	74	500	425	8.45	32	--	6	--	--	15	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.66	--	--	0.02
21-Jul-10	75	500	435	8.64	38	--	6	--	--	15	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.64	--	--	0.02
28-Jul-10	76	500	430	8.47	41	--	5	--	--	14	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.38	--	--	0.02
4-Aug-10	77	500	445	8.47	38	--	5	--	--	15	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.74	--	--	0.02
11-Aug-10	78	500	445	8.47	37	--	4	--	--	15	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.51	--	--	0.02
18-Aug-10	79	500	450	8.52	41	--	5	--	--	15	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.3	--	--	0.02
25-Aug-10	80	500	435	8.3	42	175	4	--	--	16	0.01	0.5	0.02	0.005	0.14	0.005	22	15.34322	0.0153	0.00022	0.0316	0.0015	0.00001	0.000005	0.05	0.000005	3.26	0.0001	0.000088	0.00047
1-Sep-10	81	500	430	8.38	39	--	5	--	--	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.79	--	--	0.02
8-Sep-10	82	500	450	8.51	38	--	5	--	--	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.36	--	--	0.02
15-Sep-10	83	500	440	8.33	41	--	5	--	--	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.55	--	--	0.02
22-Sep-10	84	500	440	8.32	44	--	5	--	--	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.17	--	--	0.02
29-Sep-10	85	500	435	8.25	33	--	5	--	1	15	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.38	--	--	0.01
6-Oct-10	86	500	440	8.56	36	--	5	--	--	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.34	--	--	0.01
13-Oct-10	87	500	435	8.17	39	--	4	--	1	15	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.1	--	--	0.01
20-Oct-10	88	500	430	7.75	47	185	7	--	1	19	0.01	0.5	0.02	0.005	0.028	0.014	26	22.12609	0.0196	0.00021	0.0331	0.00158	0.00001	0.000005	0.05	0.000005	3.85	0.0001	0.000028	0.00018
27-Oct-10	89	500	460	7.51	48	--	4	--	1	18	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.61	--	--	0.02
3-Nov-10	90	500	445	8.1	41	--	6	--	1	15	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.3	--	--	0.02
10-Nov-10	91	500	435	7.95	40	--	4	--																						

HC-8
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	Hg (CVAF)	Mo	Ni	P	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr	
		mg/l 0.0002	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	ug/L 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.05	mg/l 0.001	mg/l 0.02	mg/l 0.0005	mg/l 0.001	mg/l 0.15	mg/l 0.1	mg/l 0.001	mg/l 0.25	mg/l 0.00025	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	mg/l 0.001	mg/l 0.0001	mg/l 0.0005	mg/l 0.001	
11-Feb-09	0	0.01	0.0002	0.0002	0.62	0.0013	0.02	0.0028	0.0012	0.03	1.93		0.0002	0.65	0.00005	34	0.011	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0069	0.001	0.002	
18-Feb-09	1	0.01	0.0002	0.0002	0.59	0.0026	0.02	0.0099	0.0015	0.03	2.15		0.0012	0.63	0.00005	58.6	0.0099	0.0002	0.00002	0.0001	0.0002	0.0005	--	0.0001	0.018	0.001	0.002	
25-Feb-09	2	0.03	0.0002	0.0002	0.54	0.0037	0.02	0.0082	0.0011	0.03	1.89		0.0014	0.64	0.00005	60.2	0.0079	0.0002	0.00002	0.0001	0.0002	0.0014	--	0.0001	0.018	0.001	0.002	
4-Mar-09	3	0.02	--	--	0.43	--	--	--	--	--	1.1		--	--	--	40.4	--	--	--	--	--	--	--	--	--	--	0.005	--
11-Mar-09	4	0.09	0.0002	0.0002	0.42	0.0033	0.02	0.0038	0.0008	0.03	1.18		0.0014	0.62	0.00005	30.4	0.0065	0.0002	0.00002	0.0001	0.0002	0.0029	--	0.0001	0.019	0.001	0.002	
18-Mar-09	5	0.02	--	--	0.4	--	--	--	--	--	0.8		--	--	--	26.2	--	--	--	--	--	--	--	--	--	--	0.005	--
25-Mar-09	6	0.02	--	--	0.48	--	--	--	--	--	0.8		--	--	--	26.3	--	--	--	--	--	--	--	--	--	--	0.005	--
1-Apr-09	7	0.02	--	--	0.65	--	--	--	--	--	0.8		--	--	--	23.7	--	--	--	--	--	--	--	--	--	--	0.005	--
8-Apr-09	8	0.01	0.0002	0.0002	0.66	0.009	0.02	0.0028	0.0004	0.03	0.81		0.0012	0.5	0.00005	20.8	0.0092	0.0002	0.00002	0.0001	0.0002	0.0008	--	0.0001	0.0079	0.001	0.002	
15-Apr-09	9	0.03	--	--	1.02	--	--	--	--	--	0.7		--	--	--	19.6	--	--	--	--	--	--	--	--	--	--	0.005	--
22-Apr-09	10	0.07	--	--	0.87	--	--	--	--	--	0.6		--	--	--	17.8	--	--	--	--	--	--	--	--	--	--	0.005	--
29-Apr-09	11	0.02	--	--	0.74	--	--	--	--	--	0.5		--	--	--	14.9	--	--	--	--	--	--	--	--	--	--	0.005	--
6-May-09	12	0.01	0.0002	0.0002	0.83	0.0063	0.02	0.0018	0.0004	0.03	0.61		0.0007	0.4	0.00005	12.7	0.0091	0.0002	0.00002	0.0001	0.0002	0.0006	--	0.0001	0.0053	0.001	0.002	
13-May-09	13	0.01	--	--	1.3	--	--	--	--	--	0.4		--	--	--	13.2	--	--	--	--	--	--	--	--	--	--	0.005	--
20-May-09	14	0.02	--	--	1.16	--	--	--	--	--	0.4		--	--	--	11.2	--	--	--	--	--	--	--	--	--	--	0.005	--
27-May-09	15	0.01	--	--	1.18	--	--	--	--	--	0.5		--	--	--	9.8	--	--	--	--	--	--	--	--	--	--	0.005	--
3-Jun-09	16	0.01	0.0002	0.0003	1.09	0.0093	0.02	0.0016	0.0003	0.03	0.5		0.0002	0.38	0.00005	7.93	0.011	0.0002	0.00002	0.0001	0.0002	0.0005	--	0.0001	0.0035	0.002	0.002	
10-Jun-09	17	0.02	--	--	1.32	--	--	--	--	--	0.3		--	--	--	8.3	--	--	--	--	--	--	--	--	--	--	0.005	--
17-Jun-09	18	0.01	--	--	1.33	--	--	--	--	--	0.5		--	--	--	8.3	--	--	--	--	--	--	--	--	--	--	0.005	--
24-Jun-09	19	0.01	--	--	1.5	--	--	--	--	--	0.3		--	--	--	8	--	--	--	--	--	--	--	--	--	--	0.005	--
1-Jul-09	20	0.01	0.0002	0.0002	1.25	0.014	0.02	0.0013	0.0002	0.03	0.46		0.0007	0.33	0.00005	6.76	0.014	0.0002	0.00002	0.0001	0.0002	0.0003	--	0.0001	0.0031	0.001	0.002	
8-Jul-09	21	0.01	--	--	1.33	--	--	--	--	--	0.3		--	--	--	6.3	--	--	--	--	--	--	--	--	--	--	0.005	--
15-Jul-09	22	0.01	--	--	1.82	--	--	--	--	--	0.5		--	--	--	7.7	--	--	--	--	--	--	--	--	--	--	0.005	--
22-Jul-09	23	0.01	--	--	1.7	--	--	--	--	--	0.4		--	--	--	5.8	--	--	--	--	--	--	--	--	--	--	0.005	--
29-Jul-09	24	0.01	0.0002	0.0003	1.43	0.016	0.02	0.0012	0.0003	0.03	0.41		0.0002	0.34	0.00005	4.63	0.013	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.002	0.001	0.002	
5-Aug-09	25	0.01	--	--	1.69	--	--	--	--	--	0.4		--	--	--	5.4	--	--	--	--	--	--	--	--	--	--	0.005	--
12-Aug-09	26	0.01	--	--	1.57	--	--	--	--	--	0.3		--	--	--	4.3	--	--	--	--	--	--	--	--	--	--	0.005	--
19-Aug-09	27	0.01	--	--	1.62	--	--	--	--	--	0.4		--	--	--	4.9	--	--	--	--	--	--	--	--	--	--	0.005	--
26-Aug-09	28	0.01	0.0002	0.0002	1.31	0.0076	0.02	0.0012	0.0004	0.03	0.42		0.0002	0.32	0.00005	4.32	0.012	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0026	0.001	0.002	
2-Sep-09	29	0.01	--	--	1.6	--	--	--	--	--	0.5		--	--	--	5.4	--	--	--	--	--	--	--	--	--	--	0.005	--
9-Sep-09	30	0.01	--	--	1.55	--	--	--	--	--	0.4		--	--	--	4.9	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Sep-09	31	0.02	--	--	1.56	--	--	--	--	--	0.3		--	--	--	4.5	--	--	--	--	--	--	--	--	--	--	0.005	--
23-Sep-09	32	0.01	0.00005	0.0003	1.47	0.004	0.02	0.0014	0.0002	0.015	0.44		0.0004	0.3	0.00004	4.61	0.011	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0023	0.001	0.0001	
30-Sep-09	33	0.01	--	--	1.59	--	--	--	--	--	0.4		--	--	--	4.6	--	--	--	--	--	--	--	--	--	--	0.005	--
7-Oct-09	34	0.02	--	--	1.58	--	--	--	--	--	0.5		--	--	--	4.4	--	--	--	--	--	--	--	--	--	--	0.005	--
14-Oct-09	35	0.01	--	--	1.61	--	--	--	--	--	0.3		--	--	--	4.1	--	--	--	--	--	--	--	--	--	--	0.005	--
21-Oct-09	36	0.01	0.00005	0.0004	1.86	0.0047	0.02	0.0012	0.0003	0.015	0.44		0.0004	0.34	0.00004	3.67	0.014	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0018	0.001	0.0001	
28-Oct-09	37	0.01	--	--	1.64	--	--	--	--	--	0.4		--	--	--	3.4	--	--	--	--	--	--	--	--	--	--	0.005	--
4-Nov-09	38	0.02	--	--	1.65	--	--	--	--	--	0.25		--	--	--	3.6	--	--	--	--	--	--	--	--	--	--	0.005	--
11-Nov-09	39	0.01	--	--	1.91	--	--	--	--	--	0.3		--	--	--	3.7	--	--	--	--	--	--	--	--	--	--	0.005	--
18-Nov-09	40	0.01	0.00005	0.0001	1.58	0.0036	0.02	0.0012	0.0003	0.015	0.36		0.0003	0.21	0.00004	3.25	0.01	0.0002	0.00002	0.00005	0.0001	0.0004	--	0.00005	0.0021	0.001	0.0001	
25-Nov-09	41	0.01	--	--	1.95	--	--	--	--	--	0.4		--	--	--	4	--	--	--	--	--	--	--	--	--	--	0.005	--
2-Dec-09	42	0.01	--	--	1.96	--	--	--	--	--	0.4		--	--	--	3.5	--	--	--	--	--	--	--	--	--	--	0.005	--
9-Dec-09	43	0.01	--	--	1.79	--	--	--	--	--	0.3		--	--	--	3.4	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Dec-09	44	0.01	0.00005	0.0005	1.59	0.0028	0.02	0.0009	0.0002	0.015	0.37		0.0003	0.22	0.00004	2.9	0.01	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0017	0.001	0.0001	
23-Dec-09	45	0.01	--	--	1.74	--	--	--	--	--	0.4		--	--	--	3.1	--	--	--	--	--	--	--	--	--	--	0.005	--
30-Dec-09	46	0.01	--	--	1.91	--	--	--	--	--	0.3		--	--	--	3.2	--	--	--	--	--	--	--	--	--	--	0.005	--

HC-8
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	Hg (CVAF)	Mo	Ni	P	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.0002	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	ug/L 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.05	mg/l 0.001		mg/l 0.02	mg/l 0.0005	mg/l 0.001	mg/l 0.15	mg/l 0.1	mg/l 0.001	mg/l 0.25	mg/l 0.00025	mg/l 0.05	mg/l 0.001	mg/l	mg/l 0.001	mg/l 0.0001	mg/l 0.0005	mg/l 0.001
6-Jan-10	47	0.01	--	--	1.9	--	--	--	--	--	0.3		--	--	--	3.2	--	--	--	--	--	--	--	--	--	0.005	--
13-Jan-10	48	0.01	0.00005	0.0003	1.69	0.0024	0.02	0.0009	0.0002	0.015	0.35		0.0002	0.27	0.00004	2.41	0.012	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0016	0.001	0.0001
20-Jan-10	49	0.01	--	--	2.04	--	--	--	--	--	0.3		--	--	--	2.9	--	--	--	--	--	--	--	--	--	0.005	--
27-Jan-10	50	0.01	--	--	2.22	--	--	--	--	--	0.3		--	--	--	3.1	--	--	--	--	--	--	--	--	--	0.005	--
3-Feb-10	51	0.01	--	--	2.06	--	--	--	--	--	0.3		--	--	--	2.6	--	--	--	--	--	--	--	--	--	0.005	--
10-Feb-10	52	0.01	--	--	2.05	--	--	--	--	--	0.3		--	--	--	2.4	--	--	--	--	--	--	--	--	--	0.005	--
17-Feb-10	53	0.01	--	--	1.87	--	--	--	--	--	0.25		--	--	--	2.2	--	--	--	--	--	--	--	--	--	0.005	--
24-Feb-10	54	0.01	--	--	2.02	--	--	--	--	--	0.25		--	--	--	2.2	--	--	--	--	--	--	--	--	--	0.005	--
3-Mar-10	55	0.01	--	--	2.17	--	--	--	--	--	0.4		--	--	--	2.3	--	--	--	--	--	--	--	--	--	0.005	--
10-Mar-10	56	0.01	0.00005	0.0005	2.09	0.0029	0.02	0.0011	0.0003	0.015	0.38		0.0003	0.27	0.00004	2.25	0.012	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0013	0.001	0.0001
17-Mar-10	57	0.01	--	--	2.21	--	--	--	--	--	0.4		--	--	--	2.2	--	--	--	--	--	--	--	--	--	0.005	--
24-Mar-10	58	0.01	--	--	2.22	--	--	--	--	--	0.3		--	--	--	2.2	--	--	--	--	--	--	--	--	--	0.005	--
31-Mar-10	59	0.01	--	--	2.28	--	--	--	--	--	0.3		--	--	--	2.1	--	--	--	--	--	--	--	--	--	0.005	--
7-Apr-10	60	0.01	--	--	2.02	--	--	--	--	--	0.3		--	--	--	1.7	--	--	--	--	--	--	--	--	--	0.005	--
14-Apr-10	61	0.01	--	--	2.36	--	--	--	--	--	0.3		--	--	--	1.9	--	--	--	--	--	--	--	--	--	0.005	--
21-Apr-10	62	0.01	--	--	2.13	--	--	--	--	--	0.3		--	--	--	1.8	--	--	--	--	--	--	--	--	--	0.005	--
28-Apr-10	63	0.01	--	--	2.11	--	--	--	--	--	0.3		--	--	--	1.6	--	--	--	--	--	--	--	--	--	0.005	--
5-May-10	64	0.004	0.000011	0.0005	2.12	0.00219	0.02	0.00107	0.0003	0.002	0.3		0.00024	0.3	0.000005	1.77	0.0118	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000023	0.001	0.0003	0.0001
12-May-10	65	0.01	--	--	2.21	--	--	--	--	--	0.3		--	--	--	1.7	--	--	--	--	--	--	--	--	--	0.005	--
19-May-10	66	0.01	--	--	2.13	--	--	--	--	--	0.3		--	--	--	1.7	--	--	--	--	--	--	--	--	--	0.005	--
26-May-10	67	0.01	--	--	2.04	--	--	--	--	--	0.3		--	--	--	1.5	--	--	--	--	--	--	--	--	--	0.005	--
2-Jun-10	68	0.01	--	--	2.44	--	--	--	--	--	0.3		--	--	--	1.5	--	--	--	--	--	--	--	--	--	0.005	--
9-Jun-10	69	0.01	--	--	2.13	--	--	--	--	--	0.3		--	--	--	1.3	--	--	--	--	--	--	--	--	--	0.005	--
16-Jun-10	70	0.01	--	--	1.84	--	--	--	--	--	0.3		--	--	--	1.3	--	--	--	--	--	--	--	--	--	0.005	--
23-Jun-10	71	0.01	--	--	2.01	--	--	--	--	--	0.3		--	--	--	1.5	--	--	--	--	--	--	--	--	--	0.005	--
30-Jun-10	72	0.003	0.000011	0.0005	2.03	0.00196	0.02	0.00094	0.00024	0.002	0.25		0.00022	0.3	0.000005	1.36	0.011	0.00002	0.000002	0.000005	0.00002	0.0005	--	0.000017	0.0009	0.0007	0.0001
7-Jul-10	73	0.01	--	--	2.22	--	--	--	--	--	0.3		--	--	--	1.5	--	--	--	--	--	--	--	--	--	0.005	--
14-Jul-10	74	0.01	--	--	2.35	--	--	--	--	--	0.3		--	--	--	1.7	--	--	--	--	--	--	--	--	--	0.005	--
21-Jul-10	75	0.01	--	--	2.36	--	--	--	--	--	0.3		--	--	--	1.7	--	--	--	--	--	--	--	--	--	0.005	--
28-Jul-10	76	0.01	--	--	2.18	--	--	--	--	--	0.3		--	--	--	1.5	--	--	--	--	--	--	--	--	--	0.005	--
4-Aug-10	77	0.01	--	--	2.36	--	--	--	--	--	0.3		--	--	--	1.6	--	--	--	--	--	--	--	--	--	0.005	--
11-Aug-10	78	0.01	--	--	2.11	--	--	--	--	--	0.3		--	--	--	1.3	--	--	--	--	--	--	--	--	--	0.005	--
18-Aug-10	79	0.01	--	--	1.99	--	--	--	--	--	0.3		--	--	--	1.3	--	--	--	--	--	--	--	--	--	0.005	--
25-Aug-10	80	0.004	0.000034	0.0005	1.75	0.00252	0.02	0.00078	0.00031	0.002	0.24		0.00017	0.2	0.000005	1.08	0.0102	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000018	0.0007	0.0001	0.0001
1-Sep-10	81	0.01	--	--	2.17	--	--	--	--	--	0.3		--	--	--	1.4	--	--	--	--	--	--	--	--	--	0.005	--
8-Sep-10	82	0.01	--	--	2	--	--	--	--	--	0.3		--	--	--	1.2	--	--	--	--	--	--	--	--	--	0.005	--
15-Sep-10	83	0.01	--	--	2.18	--	--	--	--	--	0.3		--	--	--	1.3	--	--	--	--	--	--	--	--	--	0.005	--
22-Sep-10	84	0.01	--	--	2.11	--	--	--	--	--	0.28		--	--	--	1.26	--	--	--	--	--	--	--	--	--	0.0002	--
29-Sep-10	85	0.03	--	--	1.95	--	--	--	--	--	0.3		--	--	--	1.2	--	--	--	--	--	--	--	--	--	0.005	--
6-Oct-10	86	0.03	--	--	2.01	--	--	--	--	--	0.3		--	--	--	1.2	--	--	--	--	--	--	--	--	--	0.005	--
13-Oct-10	87	0.03	--	--	1.8	--	--	--	--	--	0.3		--	--	--	1.1	--	--	--	--	--	--	--	--	--	0.005	--
20-Oct-10	88	0.001	0.000018	0.0005	3.04	0.00066	0.026	0.00083	0.00022	0.004	0.25		0.00017	0.3	0.000005	1.21	0.0108	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000017	0.0013	0.0005	0.0001
27-Oct-10	89	0.01	--	--	2.18	--	--	--	--	--	0.3		--	--	--	1.1	--	--	--	--	--	--	--	--	--	0.005	--
3-Nov-10	90	0.01	--	--	1.95	--	--	--	--	--	0.3		--	--	--	1.1	--	--	--	--	--	--	--	--	--	0.005	--
10-Nov-10	91	0.01	--	--	2.02	--	--	--	--	--	0.3		--	--	--	1.1	--	--	--	--	--	--	--	--	--	0.005	--
17-Nov-10	92	0.01	--	--	1.78	--	--	--	--	--	0.21		--	--	--	0.96	--	--	--	--	--	--	--	--	--	0.0001	--
24-Nov-10	93	0.01	--	--	1.93	--	--	--	--	--	0.3		--	--	--	1.1	--	--	--	--	--	--	--	--	--	0.005	--
1-Dec-10	94	0.01	--	--	1.84	--	--	--	--	--	0.3		--	--	--	1	--	--	--	--	--	--	--	--	--	0.005	--
8-Dec-10	95	0.01	--	--	2.01	--	--	--	--	--	0.3		--	--	--	1.3	--	--	--	--	--	--	--	--	--	0.005	--
15-Dec-10	96	0.002	0.000012	0.0005	1.97	0.00218	0.002	0.00084	0.00026	0.002	0.22		0.00016	0.2	0.000005	1.04	0.0086	0.00002	0.000002	0.000005	0.00001	0.0018	--	0.000013	0.0012	0.0001	0.0001
22-Dec-10	97	0.01	--	--	2	--	--	--	--	--	0.3		--	--	--	1	--	--	--	--	--	--	--	--	--	0.005	--
29-Dec-10	98	0.01	--	--	1.95	--	--	--	--	--	0.3		--	--	--	1	--	--	--	--	--	--	--	--	--	0.005	--
5-Jan-11	99	0.01	--	--	2.07	--	--	--	--	--	0.3		--	--	--	1.1	--	--	--	--	--	--	--	--	--	0.005	--
12-Jan-11	100	0.01	--	--	2.03	--	--	--	--	--	0.3		--	--	--	1	--	--	--	--	--	--	--	--	--	0.005	--
19-Jan-11	101	0.01	--	--	2.2	--	--	--	--	--	0.3		--	--	--	1.2	--	--	--	--	--	--	--	--	--	0.005	--
26-Jan-11	102	0.01	--	--	2.08	--	--	--	--	--	0.5		--	--	--	2.3	--	--	--	--	--	--	--	--	--	0.006	--
2-Feb-11	103	0.01	--	--	2.03	--	--	--	--	--	1.3		--	--	--	1.8	--	--	--	--	--	--	--	--	--	0.005	--
9-Feb-11	104	0.001	0.000006	0.0005	1.81	0.00179	0.004	0.00069	0.00022	0.002	0.21		0.00012	0.2	0.000005	0.88	0.00855	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000012	0.0006	0.0002	0.0001
Terminated																											

HC-9
Sample Weight = 1 kg

Dissolved Metals by ICP-MS (Cantest)																														
Date	Accum. Weeks	Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cd	Ca	Cr	Co	Cu
		Input	Output					(pH Units)	(µS/cm)																					
				5	5	0.01	1	50	1	1	1		0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.02	0.02		Calculation	0.005	0.005	0.001	0.001	0.001	0.001
11-Feb-09	0	750	590	8.66	82	100	2	--	--	34	0.05	2.69	0.05	0.01	0.27	0.02	38	13.2	0.36	0.0002	0.001	0.0005	0.0002	0.0002	0.08	0.00004	4.62	0.0004	0.0002	0.0017
18-Feb-09	1	500	460	8.73	132	120	6	--	--	52	0.05	5.1	0.01	0.01	0.13	0.02	109	9.5	0.21	0.0005	0.0015	0.0005	0.0002	0.0002	0.31	0.00004	3.06	0.0002	0.0002	0.0025
25-Feb-09	2	500	450	9.17	186	95	14	--	--	68	0.05	5.88	0.01	0.006	0.11	0.02	69	10	0.28	0.0007	0.0024	0.0008	0.0002	0.0002	0.52	0.00004	2.77	0.0003	0.0002	0.0039
4-Mar-09	3	500	440	9.25	122	95	6	--	--	52	--	--	--	--	--	--	--	--	0.3	--	--	--	--	--	--	--	3.49	--	--	0.02
11-Mar-09	4	500	425	9	96	130	6	--	--	42	0.05	0.58	0.01	0.002	0.14	0.02	42	15.3	0.25	0.0003	0.0014	0.0006	0.0002	0.0002	0.2	0.00004	4.25	0.0003	0.0002	0.0041
18-Mar-09	5	500	440	8.9	98	105	2	--	--	46	--	--	--	--	--	--	--	--	0.24	--	--	--	--	--	--	--	4.5	--	--	0.02
25-Mar-09	6	500	450	8.7	72	130	1	--	--	35	--	--	--	--	--	--	--	--	0.19	--	--	--	--	--	--	--	4.92	--	--	0.02
1-Apr-09	7	500	470	8.55	71	165	1	--	--	34	--	--	--	--	--	--	--	--	0.2	--	--	--	--	--	--	--	7.1	--	--	0.02
8-Apr-09	8	500	440	8.36	76	170	1	--	--	35	0.05	0.2	0.01	0.002	0.16	0.02	41	26.7	0.16	0.0002	0.0008	0.0007	0.0002	0.0002	0.11	0.00004	7.09	0.0002	0.0002	0.0009
15-Apr-09	9	500	480	8.66	72	165	3	--	--	34	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	7.32	--	--	0.02
22-Apr-09	10	500	415	8.62	72	150	2	--	--	33	--	--	--	--	--	--	--	--	0.19	--	--	--	--	--	--	--	7.08	--	--	0.02
29-Apr-09	11	500	435	8.95	60	140	2	--	--	27	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	--	5.87	--	--	0.02
6-May-09	12	500	435	8.27	60	150	1	--	1	29	0.05	0.2	0.05	0.002	0.24	0.02	61	23.9	0.15	0.0002	0.0007	0.0004	0.0002	0.0002	0.06	0.00004	5.97	0.0002	0.0002	0.0003
13-May-09	13	500	460	8.79	63	150	1	--	--	29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	26.8	--	--	0.02
20-May-09	14	500	445	8.73	58	145	1	--	--	27	--	--	--	--	--	--	--	--	0.16	--	--	--	--	--	--	--	6.83	--	--	0.02
27-May-09	15	500	445	8.02	53	150	2	--	1	28	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	7.65	--	--	0.02
3-Jun-09	16	500	440	8.1	58	150	1	--	1	25	0.05	0.2	0.05	0.005	0.23	0.02	20	23.4	0.14	0.0002	0.0005	0.0005	0.0002	0.0002	0.04	0.00004	6.54	0.0002	0.0002	0.0004
10-Jun-09	17	500	475	8.19	63	140	2	--	1	29	--	--	--	--	--	--	--	--	0.19	--	--	--	--	--	--	--	8.08	--	--	0.02
17-Jun-09	18	500	430	8.97	54	145	2	--	--	27	--	--	--	--	--	--	--	--	0.16	--	--	--	--	--	--	--	7	--	--	0.02
24-Jun-09	19	500	430	8.8	57	135	1	--	--	27	--	--	--	--	--	--	--	--	0.18	--	--	--	--	--	--	--	7.38	--	--	0.02
1-Jul-09	20	500	450	7.93	62	135	1	--	1	28	0.05	0.2	0.05	0.006	0.26	0.02	13	24.9	0.14	0.0002	0.0008	0.0005	0.0002	0.0002	0.04	0.00004	7.17	0.0002	0.0002	0.0004
8-Jul-09	21	500	420	8.79	51	140	1	--	--	26	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	6.49	--	--	0.02
15-Jul-09	22	500	420	8.92	55	140	1	--	--	28	--	--	--	--	--	--	--	--	0.16	--	--	--	--	--	--	--	7.25	--	--	0.02
22-Jul-09	23	500	470	8.44	62	140	1	--	--	30	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	8.14	--	--	0.02
29-Jul-09	24	500	445	7.93	66	155	2	--	1	30	0.05	0.2	0.05	0.013	0.28	0.02	41	26.1	0.14	0.0002	0.0005	0.0007	0.0002	0.0002	0.03	0.00004	7.71	0.0002	0.0002	0.0004
5-Aug-09	25	500	440	8.76	55	165	2	--	--	25	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	6.71	--	--	0.02
12-Aug-09	26	500	425	8.04	57	150	2	--	1	28	--	--	--	--	--	--	--	--	0.16	--	--	--	--	--	--	--	7.05	--	--	0.02
19-Aug-09	27	500	430	8.09	56	160	1	--	1	27	--	--	--	--	--	--	--	--	0.16	--	--	--	--	--	--	--	7.49	--	--	0.02
26-Aug-09	28	500	420	8.44	58	185	1	--	--	27	0.05	0.2	0.05	0.002	0.36	0.02	63	25.3	0.14	0.0002	0.0006	0.0005	0.0002	0.0002	0.02	0.00004	7.73	0.0002	0.0002	0.0005
2-Sep-09	29	500	430	8.61	55	145	1	--	--	25	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	6.75	--	--	0.02
9-Sep-09	30	500	440	8.91	53	150	3	--	--	26	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	6.89	--	--	0.02
16-Sep-09	31	500	415	8.86	59	150	1	--	--	29	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	--	7.46	--	--	0.02
23-Sep-09	32	500	430	8.15	56	150	1	--	1	28	0.05	0.2	0.05	0.002	0.37	0.02	36	25	0.12	0.0001	0.0007	0.0004	0.0001	0.0001	0.032	0.00001	7.18	0.0002	0.0001	0.0003
30-Sep-09	33	500	420	8.93	51	150	1	--	--	25	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	6.87	--	--	0.02
7-Oct-09	34	500	410	8.94	55	140	1	--	--	24	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	7.02	--	--	0.02
14-Oct-09	35	500	405	9.03	53	150	1	--	--	23	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	6.82	--	--	0.02
21-Oct-09	36	500	430	8.62	60	140	2	--	--	28	0.05	0.6	0.05	0.007	0.29	0.02	34	24.8	0.098	0.0001	0.0006	0.0004	0.0001	0.0001	0.026	0.00001	7.52	0.0002	0.0001	0.0011
28-Oct-09	37	500	445	8.79	55	135	1	--	--	26	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	7.9	--	--	0.02
4-Nov-09	38	500	450	8.85	59	145	1	--	--	24	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	8.27	--	--	0.02
11-Nov-09	39	500	410	8.92	68	135	1	--	--	25	--	--	--	--	--	--	--	--	0.16	--	--	--	--	--	--	--	9.05	--	--	0.02
18-Nov-09	40	500	410	8.71	63	145	1	--	--	24	0.05	4.72	0.05	0.014	0.26	0.02	20	31.4	0.13	0.0001	0.0006	0.0005	0.0001	0.0001	0.021	0.00001	9.48	0.0003	0.0001	0.0038
25-Nov-09	41	500	440	8.68	61	140	1	--	--	28	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	9.28	--	--	0.02
2-Dec-09	42	500	415	8.73	59	135	1	--	--	24	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	8.67	--	--	0.02
9-Dec-09	43	500	425	8.72	60	120	1	--	--	25	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	8.07	--	--	0.02
16-Dec-09	44	500	435	8.61	54	125	1	--	--	22	0.05	1.23	0.05	--	0.22	0.02	44	23.88128	0.11	0.0001	0.0006	0.0003	0.0001	0.0001	0.016	0.00001	7.52</			

HC-9
Sample Weight = 1 kg

Dissolved Metals by ICP-MS (Cantest)																															
Date	Accum. Weeks	Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia (mgN/l)	Diss.-P (mgP/l)	TDS (mg/l)	Hardness CaCO3 (mg/l)	Al (mg/l)	Sb (mg/l)	As (mg/l)	Ba (mg/l)	Be (mg/l)	Bi (mg/l)	B (mg/l)	Cd (mg/l)	Ca (mg/l)	Cr (mg/l)	Co (mg/l)	Cu (mg/l)	
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5																					
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.02	0.02	0.02	0.02	Calculation	0.005	0.001	0.001	0.001	0.001	0.001	0.001	0.02
20-Jan-10	49	500	435	8.79	50	--	1	--	--	24	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	8.16	--	--	--	0.02
27-Jan-10	50	500	415	8.79	57	--	2	--	--	24	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	8.34	--	--	--	0.02
3-Feb-10	51	500	420	8.62	55	--	1	--	--	24	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	8.13	--	--	--	0.02
10-Feb-10	52	500	445	8.71	54	--	2	--	--	24	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	8.58	--	--	--	0.02
17-Feb-10	53	500	440	8.8	50	--	3	--	--	24	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	7.42	--	--	--	0.02
24-Feb-10	54	500	435	8.78	54	--	1	--	--	24	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	8.28	--	--	--	0.02
3-Mar-10	55	500	420	8.76	60	--	4	--	--	26	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	8.95	--	--	--	0.02
10-Mar-10	56	500	425	8.64	58	180	2	--	--	25	0.05	1.01	0.05	--	0.11	0.02	23	26.27977	0.11	0.0001	0.0005	0.0003	0.0001	0.0001	0.013	0.00001	8.53	0.0002	0.0001	0.0005	
17-Mar-10	57	500	430	8.64	55	--	2	--	--	27	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	9.04	--	--	--	0.02
24-Mar-10	58	500	415	8.72	49	--	2	--	--	23	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	7.7	--	--	--	0.02
31-Mar-10	59	500	440	8.2	48	--	1	--	1	23	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	8.21	--	--	--	0.02
7-Apr-10	60	500	440	8.4	49	--	2	--	--	23	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	6.99	--	--	--	0.02
14-Apr-10	61	500	435	8.32	51	--	1	--	--	24	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	8.47	--	--	--	0.02
21-Apr-10	62	500	430	8.62	53	--	2	--	--	25	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	8.03	--	--	--	0.02
28-Apr-10	63	500	425	8.82	46	--	2	--	--	22	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	7.32	--	--	--	0.02
5-May-10	64	500	445	8.55	51	160	1	--	--	24	0.02	0.5	0.02	0.093	0.04	0.005	34	24.13316	0.109	0.00004	0.00039	0.0003	0.00001	0.000005	0.05	0.000005	8	0.0001	0.000015	0.00102	
12-May-10	65	500	445	8.66	44	--	1	--	--	21	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	7.03	--	--	--	0.02
19-May-10	66	500	440	8.49	49	--	2	--	--	22	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	7.76	--	--	--	0.02
26-May-10	67	500	430	8.71	48	--	2	--	--	25	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	7.7	--	--	--	0.02
2-Jun-10	68	500	490	8.6	50	--	1	--	--	25	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	8.04	--	--	--	0.02
9-Jun-10	69	500	435	8.75	48	--	2	--	--	22	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	7.08	--	--	--	0.02
16-Jun-10	70	500	435	8.58	45	--	2	--	--	22	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	6.93	--	--	--	0.02
23-Jun-10	71	500	435	8.73	41	--	1	--	--	20	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	6.64	--	--	--	0.02
30-Jun-10	72	500	440	8.74	45	150	1	--	--	21	0.05	0.5	0.02	0.071	0.05	0.009	32	22.39485	0.106	0.00005	0.00048	0.00029	0.00001	0.000005	0.05	0.000005	7.65	0.0001	0.000015	0.00035	
7-Jul-10	73	500	420	8.72	42	--	1	--	--	21	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	7.05	--	--	--	0.02
14-Jul-10	74	500	440	8.74	37	--	1	--	--	23	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	8.49	--	--	--	0.02
21-Jul-10	75	500	435	8.84	41	--	1	--	--	22	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	8.27	--	--	--	0.02
28-Jul-10	76	500	425	8.81	45	--	1	--	--	21	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	7.87	--	--	--	0.02
4-Aug-10	77	500	440	8.64	44	--	2	--	--	22	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	8.64	--	--	--	0.02
11-Aug-10	78	500	450	8.88	39	--	1	--	--	21	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	7.48	--	--	--	0.02
18-Aug-10	79	500	440	8.68	50	--	2	--	--	24	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	8.4	--	--	--	0.02
25-Aug-10	80	500	440	8.45	45	165	1	--	--	22	0.01	0.5	0.02	0.05	0.13	0.005	24	20.22053	0.0936	0.00003	0.00037	0.00024	0.00001	0.000005	0.05	0.000005	7.01	0.0001	0.00001	0.00053	
1-Sep-10	81	500	430	8.63	46	--	1	--	--	22	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	8.31	--	--	--	0.02
8-Sep-10	82	500	450	8.66	42	--	2	--	--	21	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	7.3	--	--	--	0.02
15-Sep-10	83	500	435	8.55	44	--	1	--	--	22	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	7.81	--	--	--	0.02
22-Sep-10	84	500	435	8.52	46	--	1	--	--	22	--	--	--	--	--	--	--	--	0.111	--	--	--	--	--	--	--	7.84	--	--	--	0.02
29-Sep-10	85	500	440	8.47	38	--	3	--	--	21	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	7.32	--	--	--	0.01
6-Oct-10	86	500	440	8.77	42	--	1	--	--	21	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	6.86	--	--	--	0.01
13-Oct-10	87	500	435	8.77	43	--	2	--	--	20	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	7.01	--	--	--	0.01
20-Oct-10	88	500	455	8.46	39	185	2	--	--	19	0.01	0.5	0.01	0.01	0.12	0.005	26	18.94239	0.0853	0.00003	0.00033	0.00028	0.00001	0.000005	0.05	0.000005	6.63	0.0001	0.000009	0.00042	
27-Oct-10	89	500	445	8.82	44	--	1	--	--	19	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	6.57	--	--	--	0.02
3-Nov-10	90	500	435	8.54	41	--	3	--	--	20	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	6.74	--	--	--	0.02
10-Nov-10	91	500	435	8.52	38	--	2	--	--	18	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	6.38	--	--	--	0.02
17-Nov-10	92	500	455	8.21	50	--	1	--	1	24	--	--	--	--	--	--	--	--	0.0983	--	--	--	--	--	--	--	8.7	--	--	--</	

HC-9
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	Hg (CVAF)	Mo	Ni	P	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.0002	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	ug/L 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.05	mg/l 0.001		mg/l 0.02	mg/l 0.0005	mg/l 0.001	mg/l 0.15	mg/l 0.1	mg/l 0.001	mg/l 0.25	mg/l 0.00025	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	mg/l 0.0001	mg/l 0.0005	mg/l 0.001
11-Feb-09	0	0.01	0.0002	0.0002	0.41	0.0013	0.02	0.0001	0.0002	0.03	0.6		0.0002	0.77	0.00005	10.9	0.0061	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0032	0.001	0.002
18-Feb-09	1	0.03	0.0002	0.0002	0.45	0.0036	0.02	0.0005	0.0002	0.03	0.82		0.0005	0.63	0.00005	22.6	0.0077	0.0002	0.00002	0.0001	0.0002	0.001	--	0.0001	0.0049	0.001	0.002
25-Feb-09	2	0.02	0.0002	0.0005	0.74	0.0036	0.02	0.0009	0.0005	0.03	1.32		0.0005	0.9	0.00005	33.3	0.0095	0.0002	0.00002	0.0001	0.0002	0.0004	--	0.0001	0.0082	0.001	0.002
4-Mar-09	3	0.02	--	--	1.01	--	--	--	--	--	0.9		--	--	--	22.3	--	--	--	--	--	--	--	--	--	--	--
11-Mar-09	4	0.03	0.0002	0.0007	1.13	0.005	0.02	0.0003	0.0002	0.03	0.88		0.0004	0.91	0.00005	14.2	0.013	0.0002	0.00002	0.0001	0.0002	0.0022	--	0.0001	0.0066	0.001	0.002
18-Mar-09	5	0.02	--	--	1.71	--	--	--	--	--	0.9		--	--	--	13.9	--	--	--	--	--	--	--	--	--	--	--
25-Mar-09	6	0.02	--	--	1.57	--	--	--	--	--	0.6		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1-Apr-09	7	0.01	--	--	2.22	--	--	--	--	--	0.7		--	--	--	6.7	--	--	--	--	--	--	--	--	--	--	--
8-Apr-09	8	0.01	0.0002	0.0009	2.18	0.0096	0.02	0.0001	0.0002	0.03	0.69		0.0002	0.86	0.00005	4.26	0.022	0.0002	0.00002	0.0001	0.0002	0.0003	--	0.0001	0.0036	0.001	0.002
15-Apr-09	9	0.01	--	--	2.66	--	--	--	--	--	0.6		--	--	--	3.4	--	--	--	--	--	--	--	--	--	--	--
22-Apr-09	10	0.02	--	--	2.77	--	--	--	--	--	0.6		--	--	--	2.9	--	--	--	--	--	--	--	--	--	--	--
29-Apr-09	11	0.01	--	--	1.95	--	--	--	--	--	0.4		--	--	--	1.8	--	--	--	--	--	--	--	--	--	--	--
6-May-09	12	0.01	0.0002	0.0007	2.18	0.0043	0.02	0.0001	0.0002	0.03	0.53		0.0002	0.76	0.00005	1.82	0.018	0.0002	0.00002	0.0001	0.0002	0.0003	--	0.0001	0.0034	0.001	0.002
13-May-09	13	1.09	--	--	3.27	--	--	--	--	--	0.4		--	--	--	1.8	--	--	--	--	--	--	--	--	--	--	--
20-May-09	14	0.01	--	--	2.17	--	--	--	--	--	0.3		--	--	--	1.2	--	--	--	--	--	--	--	--	--	--	--
27-May-09	15	0.01	--	--	2.01	--	--	--	--	--	0.3		--	--	--	1.1	--	--	--	--	--	--	--	--	--	--	--
3-Jun-09	16	0.01	0.0002	0.0006	1.71	0.0058	0.02	0.0001	0.0002	0.03	0.38		0.0002	0.73	0.00005	0.91	0.017	0.0002	0.00002	0.0001	0.0002	0.0003	--	0.0001	0.003	0.001	0.002
10-Jun-09	17	0.02	--	--	2.27	--	--	--	--	--	0.25		--	--	--	1	--	--	--	--	--	--	--	--	--	--	--
17-Jun-09	18	0.01	--	--	1.98	--	--	--	--	--	0.3		--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--
24-Jun-09	19	0.04	--	--	2.16	--	--	--	--	--	0.3		--	--	--	0.9	--	--	--	--	--	--	--	--	--	--	--
1-Jul-09	20	0.01	0.0002	0.0006	1.69	0.0076	0.02	0.0001	0.0002	0.03	0.32		0.0002	0.69	0.00005	0.69	0.016	0.0002	0.00002	0.0001	0.0002	0.0003	--	0.0001	0.003	0.001	0.002
8-Jul-09	21	0.01	--	--	1.9	--	--	--	--	--	0.25		--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
15-Jul-09	22	0.01	--	--	2.16	--	--	--	--	--	0.3		--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
22-Jul-09	23	0.01	--	--	2.16	--	--	--	--	--	0.4		--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
29-Jul-09	24	0.01	0.0002	0.0006	1.66	0.0065	0.02	0.0001	0.0002	0.03	0.29		0.0002	0.74	0.00005	0.48	0.015	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0026	0.001	0.002
5-Aug-09	25	0.01	--	--	1.76	--	--	--	--	--	0.3		--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
12-Aug-09	26	0.01	--	--	1.82	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
19-Aug-09	27	0.02	--	--	1.81	--	--	--	--	--	0.25		--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
26-Aug-09	28	0.01	0.0002	0.0005	1.46	0.0053	0.02	0.0001	0.0003	0.03	0.22		0.0002	0.72	0.00005	0.39	0.015	0.0002	0.00002	0.0001	0.0002	0.0002	--	0.0001	0.0031	0.003	0.002
2-Sep-09	29	0.01	--	--	1.65	--	--	--	--	--	0.3		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
9-Sep-09	30	0.01	--	--	1.71	--	--	--	--	--	0.25		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
16-Sep-09	31	0.04	--	--	1.99	--	--	--	--	--	0.25		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
23-Sep-09	32	0.01	0.00005	0.0008	1.73	0.0027	0.02	0.0001	0.0002	0.015	0.24		0.0002	0.75	0.00004	0.42	0.014	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0025	0.001	0.0001
30-Sep-09	33	0.01	--	--	1.49	--	--	--	--	--	0.25		--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
7-Oct-09	34	0.02	--	--	1.66	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
14-Oct-09	35	0.02	--	--	1.59	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
21-Oct-09	36	0.01	0.00005	0.0007	1.46	0.0026	0.02	0.0001	0.0002	0.015	0.15		0.0002	0.69	0.00004	0.28	0.014	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0018	0.001	0.0001
28-Oct-09	37	0.01	--	--	1.59	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
4-Nov-09	38	0.01	--	--	1.75	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
11-Nov-09	39	0.01	--	--	2.18	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
18-Nov-09	40	0.02	0.00006	0.0004	1.86	0.0033	0.02	0.0001	0.0002	0.015	0.17		0.0002	0.54	0.00004	0.3	0.015	0.0002	0.00002	0.00005	0.0001	0.0005	--	0.00005	0.0024	0.001	0.0001
25-Nov-09	41	0.01	--	--	1.51	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
2-Dec-09	42	0.01	--	--	1.6	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
9-Dec-09	43	0.01	--	--	1.44	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
16-Dec-09	44	0.01	0.00005	0.0007	1.24	0.002	0.02	0.0001	0.0002	0.015	0.12		0.0002	0.58	0.00004	0.22	0.011	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.002	0.001	0.0001
23-Dec-09	45	0.01	--	--	1.44	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
30-Dec-09	46	0.01	--	--	1.44	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
6-Jan-10	47	0.01	--	--	1.34	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
13-Jan-10	48	0.01	0.00005	0.0007	1.27	0.0025	0.02	0.0001	0.0002	0.015	0.11		0.0002	0.71	0.00004	0.22	0.012	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.0021	0.001	0.0001

HC-9
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	Hg (CVAF)	Mo	Ni	P	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.0002	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	ug/L 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.05	mg/l 0.001		mg/l 0.02	mg/l 0.0005	mg/l 0.001	mg/l 0.15	mg/l 0.1	mg/l 0.001	mg/l 0.25	mg/l 0.00025	mg/l 0.05	mg/l 0.001	mg/l 0.001	mg/l 0.001	mg/l 0.0001	mg/l 0.0005	mg/l 0.001
20-Jan-10	49	0.01	--	--	1.39	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
27-Jan-10	50	0.01	--	--	1.49	--	--	--	--	--	0.25		--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
3-Feb-10	51	0.01	--	--	1.38	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
10-Feb-10	52	0.01	--	--	1.35	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
17-Feb-10	53	0.01	--	--	1.09	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
24-Feb-10	54	0.01	--	--	1.22	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
3-Mar-10	55	0.01	--	--	1.45	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
10-Mar-10	56	0.01	0.00005	0.001	1.21	0.0018	0.02	0.0001	0.0002	0.015	0.09		0.0002	0.65	0.00004	0.18	0.01	0.0002	0.00002	0.00005	0.0001	0.0002	--	0.00005	0.002	0.001	0.0001
17-Mar-10	57	0.01	--	--	1.29	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
24-Mar-10	58	0.01	--	--	1.09	--	--	--	--	--	0.25		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
31-Mar-10	59	0.01	--	--	1.08	--	--	--	--	--	0.25		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
7-Apr-10	60	0.01	--	--	1.04	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
14-Apr-10	61	0.02	--	--	1.23	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
21-Apr-10	62	0.01	--	--	1.09	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
28-Apr-10	63	0.01	--	--	0.94	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
5-May-10	64	0.002	0.000014	0.0005	1.01	0.00211	0.02	0.00008	0.00008	0.002	0.08		0.00004	0.6	0.000005	0.16	0.00919	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000005	0.0014	0.0004	0.0001
12-May-10	65	0.01	--	--	0.85	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
19-May-10	66	0.01	--	--	0.97	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
26-May-10	67	0.01	--	--	0.95	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
2-Jun-10	68	0.01	--	--	0.85	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
9-Jun-10	69	0.01	--	--	0.83	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
16-Jun-10	70	0.01	--	--	0.78	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
23-Jun-10	71	0.01	--	--	0.73	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
30-Jun-10	72	0.006	0.000015	0.0005	0.8	0.00207	0.02	0.00009	0.00011	0.002	0.06		0.00004	0.6	0.000005	0.12	0.00756	0.00002	0.000002	0.000005	0.00006	0.0005	--	0.000003	0.0015	0.0003	0.0001
7-Jul-10	73	0.01	--	--	0.77	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
14-Jul-10	74	0.01	--	--	1.01	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
21-Jul-10	75	0.01	--	--	0.92	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Jul-10	76	0.01	--	--	0.83	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
4-Aug-10	77	0.01	--	--	0.95	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
11-Aug-10	78	0.01	--	--	0.74	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
18-Aug-10	79	0.01	--	--	0.8	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
25-Aug-10	80	0.004	0.000018	0.0005	0.66	0.001	0.02	0.00009	0.00002	0.002	0.06		0.00004	0.5	0.000005	0.1	0.00706	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000003	0.0012	0.0001	0.0001
1-Sep-10	81	0.01	--	--	0.88	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
8-Sep-10	82	0.01	--	--	0.65	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
15-Sep-10	83	0.01	--	--	0.74	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
22-Sep-10	84	0.01	--	--	0.82	--	--	--	--	--	0.07		--	--	--	0.12	--	--	--	--	--	--	--	--	--	0.0003	0.0001
29-Sep-10	85	0.03	--	--	0.68	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
6-Oct-10	86	0.03	--	--	0.67	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
13-Oct-10	87	0.03	--	--	0.62	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
20-Oct-10	88	0.002	0.00004	0.0005	0.58	0.00103	0.026	0.00006	0.00017	0.002	0.05		0.00004	0.4	0.000005	0.09	0.00544	0.00002	0.000002	0.000005	0.00004	0.0005	--	0.000003	0.0012	0.0004	0.0001
27-Oct-10	89	0.01	--	--	0.57	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
3-Nov-10	90	0.01	--	--	0.57	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
10-Nov-10	91	0.01	--	--	0.5	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
17-Nov-10	92	0.01	--	--	0.75	--	--	--	--	--	0.08		--	--	--	0.12	--	--	--	--	--	--	--	--	--	0.0001	0.0001
24-Nov-10	93	0.01	--	--	0.58	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
1-Dec-10	94	0.01	--	--	0.56	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
8-Dec-10	95	0.01	--	--	0.67	--	--	--	--	--	0.3		--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
15-Dec-10	96	0.002	0.000012	0.0005	0.69	0.00088	0.002	0.00008	0.00009	0.003	0.03		0.00004	0.4	0.000005	0.11	0.00632	0.00002	0.000002	0.000005	0.00001	0.0023	--	0.000004	0.0016	0.0002	0.0001
22-Dec-10	97	0.01	--	--	0.62	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
29-Dec-10	98	0.01	--	--	0.79	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
5-Jan-11	99	0.01	--	--	0.62	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
12-Jan-11	100	0.01	--	--	0.67	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
19-Jan-11	101	0.01	--	--	0.69	--	--	--	--	--	0.3		--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
26-Jan-11	102	0.01	--	--	0.73	--	--	--	--	--	0.3		--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
2-Feb-11	103	0.01	--	--	0.61	--	--	--	--	--	0.8		--	--	--	0.6	--	--	--	--	--	--	--	--	--	0.005	--
9-Feb-11	104	0.001	0.000008	0.0005	0.64	0.00105	0.004	0.00006	0.00002	0.002	0.09		0.00004	0.6	0.000005	0.1	0.00505	0.00002	0.000002	0.000005	0.00001	0.0005	--	0.000003	0.0015	0.0001	0.0001
Terminated																											

HC-17
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Contest)																													
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Total Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mgN/l)	(mgP/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.005	0.0001	0.0001	0.0001	0.0001	0.01	0.0002	0.0001
5-Jan-10	0	750	595	9.24	176	155	10	--	--	30	0.06	25.3	0.12	0.008	0.02	76	21.43839	0.22	0.0004	0.0025	0.0008	0.0001	0.0001	0.071	0.0001	0.00001	5.19	0.0004	0.0001		
12-Jan-10	1	500	425	9.14	232	135	26	--	--	38	0.1	27.5	0.18	0.014	0.06	97	32.09989	0.17	0.0009	0.0048	0.0008	0.0001	0.0001	0.15	0.0001	0.00002	6.13	0.0003	0.0001		
19-Jan-10	2	500	420	8.75	193	140	30	--	--	24	0.05	16	0.1	0.008	0.11	86	33.78583	0.11	0.0007	0.0028	0.0006	0.0001	0.0001	0.13	0.0001	0.00001	5.47	0.0002	0.0001		
26-Jan-10	3	500	435	9.03	130	130	20	--	--	32	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	6.13	--	--		
2-Feb-10	4	500	415	8.82	95	145	18	--	--	28	0.05	1.38	0.05	0.003	0.16	65	33.88104	0.094	0.0005	0.002	0.0011	0.0001	0.0001	0.077	0.0001	0.00001	5.64	0.0002	0.0001		
9-Feb-10	5	500	435	8.89	87	160	15	--	--	30	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	6.79	--	--		
16-Feb-10	6	500	405	8.98	91	145	12	--	--	31	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	5.72	--	--		
23-Feb-10	7	500	410	9.13	85	145	11	--	--	32	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	5.28	--	--		
2-Mar-10	8	500	435	8.6	66	150	5	--	--	26	0.06	0.2	0.05	0.005	0.23	0.02	10	31.31293	0.072	0.0003	0.0015	0.0004	0.0001	0.0001	0.045	0.0001	0.00001	5.65	0.0002	0.0001	
9-Mar-10	9	500	435	8.85	65	165	4	--	--	27	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	5.77	--	--		
16-Mar-10	10	500	440	8.73	63	150	6	--	--	26	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	5.94	--	--		
23-Mar-10	11	500	440	8.75	63	160	6	--	--	26	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	5.85	--	--		
30-Mar-10	12	500	440	8.57	74	170	5	--	--	26	0.05	0.2	0.05	0.016	0.22	0.1	58	28.63753	0.057	0.0003	0.0012	0.0005	0.0001	0.0001	0.028	0.0001	0.00001	5.65	0.0002	0.0001	
6-Apr-10	13	500	460	8.65	63	190	5	--	--	26	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	5.97	--	--		
13-Apr-10	14	500	440	8.75	56	135	5	--	--	24	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	5.48	--	--		
20-Apr-10	15	500	410	8.95	68	155	7	--	--	24	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	5.14	--	--		
27-Apr-10	16	500	430	8.81	56	150	4	--	--	24	0.03	0.5	0.02	0.019	0.21	0.005	40	26.21102	0.0579	0.00023	0.00101	0.00035	0.00001	0.000005	0.05	0.00005	0.000005	5.42	0.0001	0.000023	
4-May-10	17	500	440	8.73	56	150	4	--	--	24	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.63	--	--		
11-May-10	18	500	440	8.46	56	160	5	--	--	24	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	5.35	--	--		
18-May-10	19	500	450	8.48	55	155	5	--	--	23	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.69	--	--		
25-May-10	20	500	425	8.42	56	150	4	--	--	24	0.02	0.5	0.02	0.021	0.2	0.005	50	24.9614	0.0535	0.00017	0.00091	0.00079	0.00001	0.000005	0.05	0.00005	0.000005	5.48	0.0001	0.000017	
1-Jun-10	21	500	470	8.53	57	150	3	--	--	25	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.93	--	--		
8-Jun-10	22	500	455	8.65	55	180	4	--	--	24	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.21	--	--		
15-Jun-10	23	500	430	8.76	54	185	4	--	--	24	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.66	--	--		
22-Jun-10	24	500	425	8.52	54	140	4	--	--	24	0.02	0.5	0.02	0.03	0.38	0.005	30	26.66708	0.0486	0.00016	0.00094	0.00039	0.00001	0.000005	0.05	0.00005	0.000005	5.24	0.0001	0.000026	
29-Jun-10	25	500	430	8.74	53	160	4	--	--	23	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.55	--	--		
6-Jul-10	26	500	425	8.86	51	150	4	--	--	23	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.17	--	--		
13-Jul-10	27	500	430	8.82	42	130	3	--	--	23	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.47	--	--		
20-Jul-10	28	500	440	8.55	52	150	2	--	--	23	0.02	0.5	0.07	0.038	0.31	0.006	26	25.18999	0.0478	0.00015	0.00109	0.0003	0.00001	0.000005	0.05	0.00005	0.000005	5.11	0.0001	0.000036	
27-Jul-10	29	500	445	8.58	52	140	4	--	--	22	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.17	--	--		
3-Aug-10	30	500	440	8.65	52	155	4	--	--	22	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.65	--	--		
10-Aug-10	31	500	425	8.66	48	150	4	--	--	22	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.16	--	--		
17-Aug-10	32	500	450	8.5	50	165	4	--	--	22	0.01	0.5	0.08	0.011	0.26	0.007	26	25.03139	0.0334	0.00011	0.00066	0.00024	0.00001	0.000005	0.05	0.00005	0.000005	5.03	0.0001	0.000054	
24-Aug-10	33	500	430	8.6	53	160	3	--	--	22	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.72	--	--		
31-Aug-10	34	500	435	8.59	48	180	4	--	--	22	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.17	--	--		
7-Sep-10	35	500	445	8.49	56	150	4	--	--	22	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.18	--	--		
14-Sep-10	36	500	440	8.62	48	180	4	--	--	21	0.02	0.5	0.15	0.007	0.05	0.005	24	24.40795	0.0335	0.0001	0.00079	0.0003	0.00001	0.000005	0.05	0.00005	0.000005	5.11	0.0001	0.000045	
21-Sep-10	37	500	435	8.66	49	160	5	--	--	21	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.1	--	--		
28-Sep-10	38	500	485	8.37	51	170	4	--	--	26	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.01	--	--		
5-Oct-10	39	500	450	8.45	48	180	4	--	--	22	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.05	--	--		
12-Oct-10	40	500	420	8.05	54	180	5	--	1	20	0.01	0.5	0.14	0.005	0.1	0.007	26	22.30854	0.0298	0.00009	0.00064	0.00019	0.00001	0.000005	0.05	0.00005	0.000015	4.5	0.0003	0.000141	
19-Oct-10	41	500	450	8.48	54	180	5	--	--	21	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.17	--	--		
26-Oct-10	42	500	430	8.5	51	190	3	--	--	20	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.74	--	--		
2-Nov-10	43	500	435	8.65	52	190	5	--	--	20	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.63	--	--		
9-Nov-10	44	500	425	8.63	51	180	5	--	--	20	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.9	--	--		
16-Nov-10	45	500	410	8.73	72	180	5	--	--	29	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.22	--	--		
23-Nov-10	46	500	430	8.74	51	175	4	--	--	21	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.86	--	--		
30-Nov-10	47	500	420	8.37	48	170	3	--	--	21	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.61	--	--		
7-Dec-10	48	500	445	8.15	48	190	4	--	1	20	0.01	1.4	0.1	0.005	0.05	0.005	24	23.3	0.0261	0.00009	0.00061	0.00113	0.00001	0.000005	0.05	0.00005	0.000005	4.99	0.0001	0.00007	
14-Dec-10	49	500	425	8.48	56	155	4	--	--	20	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.44	--	--		
21-Dec-10	50	500	430	8.53	59	160	3	--	--	19	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.22	--	--		
28-Dec-10	51	500	430	8.51	54	175	4	--	--	19	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.08	--	--		
4-Jan-11	52	500	460	8.2	54	190	3	--	1	21	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.47	--	--		
11-Jan-11	53	500	440																												

HC-17
Sample Weight = 1 kg

Date	Accum. Weeks	Cu	La	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr	
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
		0.0001	0.0001	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001	
5-Jan-10	0	0.0005	0.0001	0.13	0.00005	0.0008	2.06	0.0043	0.015	0.02	0.0091	0.0006	0.0001	2.66	0.0016	0.0008	0.44	0.00004	29.6	0.015	0.0002	0.00002	0.00005	0.0001	0.0006	0.0002	0.00005	0.0011	0.001	0.0001	
12-Jan-10	1	0.0021	0.0001	0.07	0.00005	0.0013	4.08	0.0044	0.015	0.02	0.028	0.0004	0.0001	4.16	0.0025	0.0021	0.54	0.00004	32.4	0.026	0.0002	0.00002	0.00005	0.0001	0.0003	0.0002	0.00005	0.0019	0.001	0.0001	
19-Jan-10	2	0.0014	0.0001	0.01	0.00005	0.0012	4.89	0.0046	0.015	0.02	0.022	0.0002	0.0001	3.3	0.0023	0.0018	0.43	0.00004	21.6	0.024	0.0002	0.00002	0.00005	0.0001	0.0002	0.0002	0.00005	0.0011	0.001	0.0001	
26-Jan-10	3	0.02	--	0.01	--	--	5.48	--	--	--	--	--	--	2.9	--	--	--	--	10.5	--	--	--	--	--	--	--	--	--	--	0.005	--
2-Feb-10	4	0.0003	0.0001	0.02	0.00005	0.0011	4.81	0.0064	0.015	0.02	0.01	0.0002	0.0001	2.17	0.0017	0.0006	0.39	0.00004	4.38	0.019	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0009	0.001	0.0001	
9-Feb-10	5	0.02	--	0.01	--	--	5.37	--	--	--	--	--	--	1.5	--	--	--	--	2.2	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Feb-10	6	0.02	--	0.01	--	--	6.01	--	--	--	--	--	--	1.9	--	--	--	--	1.8	--	--	--	--	--	--	--	--	--	--	0.005	--
23-Feb-10	7	0.02	--	0.06	--	--	5.82	--	--	--	--	--	--	1.4	--	--	--	--	0.9	--	--	--	--	--	--	--	--	--	--	0.005	--
2-Mar-10	8	0.0004	0.0001	0.01	0.00005	0.0013	4.18	0.0072	0.015	0.02	0.0057	0.0002	0.0001	0.91	0.0012	0.0003	0.33	0.00004	0.48	0.016	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0007	0.001	0.0001	
9-Mar-10	9	0.02	--	0.01	--	--	3.98	0.008	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Mar-10	10	0.02	--	0.01	--	--	3.93	--	--	--	--	--	--	0.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
23-Mar-10	11	0.02	--	0.01	--	--	3.84	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
30-Mar-10	12	0.0015	0.0001	0.01	0.00005	0.0014	3.53	0.0071	0.02	0.02	0.0055	0.0002	0.0001	0.61	0.0011	0.0002	0.27	0.00004	0.24	0.014	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0005	0.001	0.0001	
6-Apr-10	13	0.02	--	0.01	--	--	3.71	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
13-Apr-10	14	0.02	--	0.03	--	--	3.36	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
20-Apr-10	15	0.02	--	0.01	--	--	3.67	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
27-Apr-10	16	0.00038	0.00005	0.003	0.000013	0.0011	3.08	0.0072	0.002	0.02	0.00474	0.00003	--	0.41	0.00104	0.00016	0.3	0.000005	0.13	0.0133	0.00002	0.000004	0.000005	0.00001	0.0005	0.00004	0.000007	0.0005	0.0003	0.0001	
4-May-10	17	0.02	--	0.01	--	--	3.31	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
11-May-10	18	0.02	--	0.01	--	--	3.23	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
18-May-10	19	0.02	--	0.01	--	--	3.37	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
25-May-10	20	0.0015	0.00005	0.002	0.000062	0.0011	2.74	0.0103	0.002	0.02	0.00427	0.00002	--	0.25	0.00067	0.00015	0.3	0.000005	0.08	0.0113	0.00002	0.000002	0.000005	0.00016	0.0005	0.00003	0.000004	0.0003	0.0012	0.0001	
1-Jun-10	21	0.02	--	0.01	--	--	3.41	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
8-Jun-10	22	0.02	--	0.01	--	--	2.99	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
15-Jun-10	23	0.02	--	0.01	--	--	3.09	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
22-Jun-10	24	0.00059	0.00005	0.004	0.000017	0.0012	3.3	0.00753	0.002	0.02	0.00427	0.00002	--	0.27	0.00088	0.00017	0.3	0.000005	0.08	0.0112	0.00002	0.000004	0.000005	0.00001	0.0005	0.00003	0.000008	0.0003	0.0001	0.0001	
29-Jun-10	25	0.02	--	0.01	--	--	3.23	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
6-Jul-10	26	0.02	--	0.01	--	--	3.07	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
13-Jul-10	27	0.02	--	0.01	--	--	3.17	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
20-Jul-10	28	0.00151	0.00005	0.002	0.000049	0.0013	3.02	0.00548	0.003	0.02	0.00366	0.00008	--	0.21	0.0008	0.00014	0.2	0.000005	0.07	0.0108	0.00002	0.000003	0.000005	0.00007	0.0005	0.00002	0.000004	0.0004	0.0002	0.0001	
27-Jul-10	29	0.02	--	0.01	--	--	2.94	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
3-Aug-10	30	0.02	--	0.01	--	--	3.29	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
10-Aug-10	31	0.02	--	0.01	--	--	3.05	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
17-Aug-10	32	0.0016	0.00005	0.002	0.000081	0.0011	3.03	0.00583	0.002	0.02	0.00336	0.00004	--	0.16	0.0006	0.00012	0.3	0.000005	0.06	0.00995	0.00002	0.000007	0.000005	0.00001	0.0005	0.00002	0.000003	0.0002	0.0001	0.0001	
24-Aug-10	33	0.02	--	0.01	--	--	3.42	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
31-Aug-10	34	0.02	--	0.01	--	--	2.99	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
7-Sep-10	35	0.02	--	0.01	--	--	3	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
14-Sep-10	36	0.00101	0.00005	0.005	0.000318	0.0013	2.83	0.00461	0.002	0.02	0.00342	0.00002	--	0.13	0.00055	0.00014	0.2	0.000005	0.05	0.00926	0.00002	0.000008	0.000005	0.00001	0.0005	0.00002	0.000002	0.0002	0.0003	0.0001	
21-Sep-10	37	0.02	--	0.01	--	--	2.89	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
28-Sep-10	38	0.02	--	0.01	--	--	3.22	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
5-Oct-10	39	0.02	--	0.01	--	--	2.86	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
12-Oct-10	40	0.00019	0.00005	0.001	0.000739	0.0011	2.69	0.00759	0.009	0.007	0.00314	0.00022	--	0.11	0.00048	0.00011	0.2	0.000005	0.05	0.00745	0.00002	0.000029	0.000005	0.00002	0.0005	0.00002	0.000011	0.0002	0.003	0.0001	
19-Oct-10	41	0.02	--	0.01	--	--	2.78	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.01	--
26-Oct-10	42	0.02	--	0.01	--	--	2.71	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
2-Nov-10	43	0.02	--	0.01	--	--	3.09	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
9-Nov-10	44	0.02	--	0.01	--	--	2.91	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Nov-10	45	0.02	--	0.01	--	--	4.57	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
23-Nov-10	46	0.02	--	0.01	--	--	2.76	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
30-Nov-10	47	0.02	--	0.01	--	--	2.41	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
7-Dec-10	48	0.00046	0.00005	0.001	0.000045	0.0011	2.63	0.00459	0.005	0.002	0.00267	0.00013	--	0.11	0.00043	0.0001	0.2	0.000005	0.05	0.00846	0.00002	0.000015	0.000005	0.00001	0.0006	0.00001	0.				

HC-18
Sample Weight = 1 kg

Dissolved Metals by ICP-MS (Contest)																																
Date	Accum. Weeks	Volume (ml)		pH (pH Units)	EC (µS/cm)	ORP (mV)	SO4 (mg/l)	Acidity (mg CaCO3/l)		Total Alkalinity (mg CaCO3/l)	Fluoride (mg/l)	Chloride (mg/l)	Nitrate-N (mg/l)	Nitrite-N (mg/l)	Total Ammonia (mg/N/l)	Diss.-P (mg/P/l)	TDS	Hardness CaCO3 (mg/l)	Al (mg/l)	Sb (mg/l)	As (mg/l)	Ba (mg/l)	Be (mg/l)	Bi (mg/l)	B (mg/l)	Cs (mg/l)	Cd (mg/l)	Ca (mg/l)	Cr (mg/l)	Co (mg/l)	Cu (mg/l)	
		to pH 8.3						to pH 4.5																								
		Input	Output																													
5-Jan-10	0	750	580	9.07	192	130	1	1	50	38	0.05	27.1	0.05	0.008	0.02	86	13.86775	0.28	0.0013	0.0003	0.0001	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	
12-Jan-10	1	500	445	9.1	228	120	9	--	--	57	0.05	28.8	0.05	0.01	0.05	0.02	169	17.58641	0.28	0.0013	0.0001	0.0003	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0011
19-Jan-10	2	500	440	8.88	173	115	9	--	--	55	0.05	13.1	0.05	0.006	0.08	0.02	91	18.54791	0.24	0.0011	0.0007	0.0003	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0006	
26-Jan-10	3	500	455	8.99	132	120	8	--	--	53	--	--	--	--	--	--	--	--	0.27	--	--	--	--	--	--	--	--	--	5.33	--	0.02	
2-Feb-10	4	500	435	8.99	93	140	6	--	--	44	0.05	0.85	0.05	0.002	0.13	0.02	58	25.63011	0.23	0.0006	0.0075	0.0004	0.0001	0.0001	0.13	0.0001	0.00001	5.55	0.0003	0.0001	0.0003	
9-Feb-10	5	500	460	8.89	91	140	6	--	--	42	--	--	--	--	--	--	--	--	0.23	--	--	--	--	--	--	--	--	--	7.34	--	0.02	
16-Feb-10	6	500	415	9.2	88	135	4	--	--	41	--	--	--	--	--	--	--	--	0.25	--	--	--	--	--	--	--	--	--	6.38	--	0.02	
23-Feb-10	7	500	420	9.26	85	135	2	--	--	41	--	--	--	--	--	--	--	--	0.24	--	--	--	--	--	--	--	--	--	5.97	--	0.02	
2-Mar-10	8	500	445	8.66	75	140	4	--	--	35	0.05	0.2	0.05	0.002	0.26	0.02	60	32.17256	0.24	0.0004	0.012	0.0002	0.0001	0.0001	0.068	0.0001	0.00001	7.28	0.0003	0.0001	0.0003	
9-Mar-10	9	500	455	8.46	68	155	3	--	--	33	--	--	--	--	--	--	--	--	0.21	--	--	--	--	--	--	--	--	--	6.96	--	--	0.02
16-Mar-10	10	500	445	8.79	67	155	2	--	--	32	--	--	--	--	--	--	--	--	0.22	--	--	--	--	--	--	--	--	--	7.4	--	0.02	
23-Mar-10	11	500	465	8.75	64	150	3	--	--	35	--	--	--	--	--	--	--	--	0.19	--	--	--	--	--	--	--	--	--	7.34	--	0.02	
30-Mar-10	12	500	450	8.78	82	140	2	--	--	32	0.05	0.2	0.05	0.004	0.21	0.03	35	29.47163	0.18	0.0003	0.014	0.0005	0.0001	0.0001	0.045	0.0001	0.00001	7.55	0.0003	0.0001	0.0004	
6-Apr-10	13	500	455	8.71	70	180	2	--	--	33	--	--	--	--	--	--	--	--	0.19	--	--	--	--	--	--	--	--	--	7.92	--	--	0.02
13-Apr-10	14	500	440	8.85	63	180	2	--	--	32	--	--	--	--	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	7.56	--	--	0.02
20-Apr-10	15	500	430	8.92	60	150	2	--	--	30	--	--	--	--	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	6.31	--	--	0.02
27-Apr-10	16	500	440	8.89	60	140	2	--	--	29	0.02	0.5	0.02	0.005	0.23	0.006	40	26.83384	0.184	0.00022	0.0154	0.0003	0.00001	0.000005	0.05	0.00005	0.000005	7.12	0.0001	0.000041	0.00046	
4-May-10	17	500	465	8.79	67	140	2	--	--	31	--	--	--	--	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	8.13	--	--	0.02
11-May-10	18	500	445	8.78	56	155	1	--	--	28	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	--	--	--	7.15	--	--	0.02
18-May-10	19	500	460	8.85	58	140	2	--	--	29	--	--	--	--	--	--	--	--	0.16	--	--	--	--	--	--	--	--	--	7.53	--	--	0.02
25-May-10	20	500	450	8.84	67	160	2	--	--	30	0.01	0.5	0.02	0.005	0.27	0.006	40	26.65656	0.175	0.00017	0.0177	0.00032	0.00001	0.000005	0.05	0.00005	0.000005	7.56	0.0001	0.000042	0.0004	
1-Jun-10	21	500	465	8.76	57	150	2	--	--	27	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	7.7	--	--	0.02
8-Jun-10	22	500	455	8.74	58	170	1	--	--	29	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	7.01	--	--	0.02
15-Jun-10	23	500	445	8.78	60	160	2	--	--	29	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	--	--	--	7.79	--	--	0.02
22-Jun-10	24	500	455	8.68	54	120	1	--	--	27	0.01	0.5	0.02	0.005	0.47	0.005	28	24.36013	0.146	0.00013	0.017	0.00033	0.00001	0.000005	0.05	0.00005	0.000005	6.97	0.0001	0.00006	0.00038	
29-Jun-10	25	500	430	8.94	48	135	1	--	--	25	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--	6.98	--	--	0.02
6-Jul-10	26	500	440	8.94	51	130	1	--	--	26	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	--	6.96	--	--	0.02
13-Jul-10	27	500	430	8.97	38	110	1	--	--	25	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--	6.97	--	--	0.02
20-Jul-10	28	45	440	8.7	40	160	4	--	--	31	0.01	0.5	0.02	0.005	0.31	0.008	24	20.95705	0.1	0.00011	0.015	0.00031	0.00001	0.000005	0.05	0.00005	0.000005	6.25	0.0001	0.000058	0.00047	
27-Jul-10	29	500	450	8.77	64	130	2	--	--	25	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--	7.87	--	--	0.02
3-Aug-10	30	500	450	8.88	60	135	2	--	--	28	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	8.26	--	--	0.02
10-Aug-10	31	500	445	8.82	44	140	1	--	--	24	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--	6.72	--	--	0.02
17-Aug-10	32	500	450	8.68	45	165	2	--	--	23	0.01	0.5	0.02	0.005	0.25	0.009	24	22.26427	0.111	0.00009	0.0166	0.00034	0.00001	0.000005	0.05	0.00005	0.000005	6.79	0.0002	0.000046	0.00135	
24-Aug-10	33	500	440	8.61	49	130	1	--	--	23	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--	7.38	--	--	0.02
31-Aug-10	34	500	435	8.77	46	160	3	--	--	24	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	7.03	--	--	0.02
7-Sep-10	35	500	460	8.92	40	135	2	--	--	20	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	6.04	--	--	0.02
14-Sep-10	36	500	450	8.89	44	165	1	--	--	22	0.01	0.5	0.02	0.005	0.07	0.005	38	21.055	0.0879	0.00009	0.0157	0.00029	0.00001	0.000005	0.05	0.00005	0.000005	6.52	0.0002	0.000071	0.00061	
21-Sep-10	37	500	455	8.71	59	175	3	--	--	29	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	7.66	--	--	0.02
28-Sep-10	38	500	480	8.8	44	150	2	--	--	24	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	6.85	--	--	0.02
5-Oct-10	39	500	445	8.75	44	140	1	--	--	24	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	6.02	--	--	0.02
12-Oct-10	40	500	450	8.53	46	180	2	--	--	23	0.01	0.5	0.02	0.005	0.17	0.012	24	20.08528	0.0966	0.00007	0.0175	0.00086	0.00001	0.000005	0.05	0.00005	0.000008	6.28	0.0002	0.000045	0.00036	
19-Oct-10	41	500	455	8.73	48	175	2	--	--	22	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	6.59	--	--	0.02
26-Oct-10	42	500	440	8.78	48	185	1	--	--	22	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	6.31	--	--	0.02
2-Nov-10	43	500	440	8.87	47	180	3	--	--	22	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	6.32	--	--	0.02
9-Nov-10	44	500	450	8.89	47	170	2	--	--	22	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	6.45	--	--	0.02
16-Nov-10	45	500	445	8.13	46	150	2	--	--	21	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--	5.59	--	--	0.02
23-Nov-10	46	500	440	8.96	47	150	2	--	--	21	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	6.27	--	--	0.02
30-Nov-10	47	500	445	8.64	46	135	2	--	--	22	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	6.14	--	--	0.02
7-Dec-10	48	500	460	8.64	47	165	2	--	--	22	0.01	0.8	0.02	0.005	0.15	0.005	24	20.8	0.0789	0.00007	0.0174	0.00077	0.00001	0.000005	0.05	0.00005	0.000005	6.48	0.0002	0.000051	0.00041	
14-Dec-10	49	500	435	8.79	56	135	2	--	--	24	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	7.35	--	--	0.02
21-Dec-10	50	500	460	8.72	57	135	2	--	--	24	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	6.76	--	--	0.02

HC-18
Sample Weight = 1 kg

Date	Accum. Weeks	La	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
5-Jan-10	0	0.0001	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.0001	
12-Jan-10	1	0.0001	0.03	0.00005	0.0012	1.07	0.0004	0.015	0.02	0.0003	0.0002	0.0001	2.89	0.0018	0.0006	0.68	0.00004	31.7	0.0088	0.0002	0.00002	0.00005	0.0001	0.0002	0.0004	0.00005	0.002	0.001	
19-Jan-10	2	0.0001	0.01	0.00005	0.0023	2.11	0.0022	0.015	0.02	0.001	0.0002	0.0001	2.7	0.0018	0.001	0.83	0.00004	27.1	0.012	0.0002	0.00002	0.00005	0.0001	0.0008	0.0006	0.00005	0.004	0.001	
26-Jan-10	3	--	0.01	--	--	3.09	--	--	--	--	--	--	2.7	--	--	--	--	18.4	--	--	--	--	--	--	--	--	--	--	--
2-Feb-10	4	0.0001	0.01	0.00005	0.0027	2.86	0.0028	0.015	0.02	0.0003	0.0002	0.0001	2.09	0.0014	0.0007	0.86	0.00004	8.89	0.013	0.0002	0.00002	0.00005	0.0001	0.0006	0.0003	0.00005	0.0036	0.001	
9-Feb-10	5	--	0.01	--	--	3.62	--	--	--	--	--	--	1.7	--	--	--	--	6.7	--	--	--	--	--	--	--	--	--	--	--
16-Feb-10	6	--	0.01	--	--	3.62	--	--	--	--	--	--	1.9	--	--	--	--	9.5	--	--	--	--	--	--	--	--	--	--	--
23-Feb-10	7	--	0.01	--	--	3.69	--	--	--	--	--	--	1.8	--	--	--	--	4	--	--	--	--	--	--	--	--	--	--	--
2-Mar-10	8	0.0001	0.04	0.00005	0.0024	3.4	0.0051	0.015	0.02	0.0001	0.0002	0.0001	1.54	0.0014	0.0005	0.96	0.00004	2.78	0.013	0.0002	0.00002	0.00005	0.0001	0.0008	0.0001	0.00005	0.0039	0.001	
9-Mar-10	9	--	0.01	--	--	2.8	0.004	--	--	--	--	--	1	--	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--
16-Mar-10	10	--	0.04	--	--	2.77	--	--	--	--	--	--	1	--	--	--	--	1.8	--	--	--	--	--	--	--	--	--	--	--
23-Mar-10	11	--	0.01	--	--	2.52	--	--	--	--	--	--	0.8	--	--	--	--	1.4	--	--	--	--	--	--	--	--	--	--	--
30-Mar-10	12	0.0001	0.01	0.00005	0.0024	2.58	0.0028	0.02	0.02	0.0001	0.0002	0.0001	1.23	0.0012	0.0004	0.76	0.00004	1.58	0.011	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0036	0.004	
6-Apr-10	13	--	0.01	--	--	2.6	--	--	--	--	--	--	0.7	--	--	--	--	1.4	--	--	--	--	--	--	--	--	--	--	--
13-Apr-10	14	--	0.03	--	--	2.49	--	--	--	--	--	--	0.9	--	--	--	--	1.2	--	--	--	--	--	--	--	--	--	--	--
20-Apr-10	15	--	0.01	--	--	2.23	--	--	--	--	--	--	0.9	--	--	--	--	1.1	--	--	--	--	--	--	--	--	--	--	--
27-Apr-10	16	0.00005	0.005	0.000005	0.0019	2.2	0.00321	0.002	0.02	0.00012	0.00006	--	0.95	0.00126	0.00038	0.9	0.000005	1	0.0105	0.00002	0.000002	0.000005	0.00003	0.0005	0.00008	0.000025	0.0035	0.0001	
4-May-10	17	--	0.01	--	--	2.4	--	--	--	--	--	--	0.8	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--
11-May-10	18	--	0.01	--	--	1.75	--	--	--	--	--	--	0.7	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--
18-May-10	19	--	0.01	--	--	2.14	--	--	--	--	--	--	0.8	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--
25-May-10	20	0.00005	0.004	0.000026	0.0018	1.89	0.00506	0.002	0.02	0.00011	0.00008	--	0.83	0.00114	0.00034	0.8	0.000005	0.76	0.00953	0.00002	0.000002	0.000005	0.00012	0.0005	0.00006	0.00001	0.0033	0.0027	
1-Jun-10	21	--	0.01	--	--	1.74	--	--	--	--	--	--	0.6	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
8-Jun-10	22	--	0.01	--	--	1.8	--	--	--	--	--	--	0.6	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
15-Jun-10	23	--	0.01	--	--	1.97	--	--	--	--	--	--	0.7	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
22-Jun-10	24	0.00005	0.011	0.000071	0.0015	1.69	0.00499	0.002	0.02	0.00012	0.00003	--	0.72	0.00095	0.00033	0.7	0.000005	0.61	0.00817	0.00002	0.000002	0.000005	0.00003	0.0005	0.00005	0.00006	0.0026	0.0003	
29-Jun-10	25	--	0.01	--	--	1.42	--	--	--	--	--	--	0.5	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
6-Jul-10	26	--	0.01	--	--	1.63	--	--	--	--	--	--	0.5	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
13-Jul-10	27	--	0.01	--	--	1.47	--	--	--	--	--	--	0.5	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
20-Jul-10	28	0.00005	0.004	0.000072	0.0013	1.3	0.00725	0.004	0.02	0.0001	0.00005	--	0.6	0.00093	0.00027	0.5	0.000005	0.47	0.00661	0.00002	0.000002	0.000005	0.00001	0.0005	0.00004	0.000003	0.0018	0.0007	
27-Jul-10	29	--	0.01	--	--	2.14	--	--	--	--	--	--	0.6	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
3-Aug-10	30	--	0.01	--	--	1.94	--	--	--	--	--	--	0.7	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
10-Aug-10	31	--	0.01	--	--	1.27	--	--	--	--	--	--	0.4	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
17-Aug-10	32	0.00005	0.009	0.00007	0.0011	1.29	0.00714	0.002	0.02	0.00008	0.00006	--	0.57	0.00072	0.00025	0.7	0.000005	0.44	0.00597	0.00002	0.000002	0.000005	0.00001	0.0005	0.00004	0.000004	0.0019	0.0003	
24-Aug-10	33	--	0.01	--	--	1.39	--	--	--	--	--	--	0.4	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
31-Aug-10	34	--	0.01	--	--	1.39	--	--	--	--	--	--	0.4	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
7-Sep-10	35	--	0.01	--	--	0.95	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
14-Sep-10	36	0.00005	0.012	0.000131	0.0012	1.16	0.00833	0.002	0.02	0.00012	0.00007	--	0.48	0.00081	0.00028	0.5	0.000005	0.36	0.00552	0.00002	0.000007	0.000005	0.00007	0.0005	0.00005	0.000004	0.0016	0.0006	
21-Sep-10	37	--	0.01	--	--	1.8	--	--	--	--	--	--	0.5	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
28-Sep-10	38	--	0.01	--	--	1.3	--	--	--	--	--	--	0.4	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
5-Oct-10	39	--	0.01	--	--	1.13	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
12-Oct-10	40	0.00005	0.003	0.000046	0.001	1.07	0.00918	0.01	0.005	0.00009	0.00007	--	0.43	0.00074	0.00022	0.5	0.000005	0.31	0.0098	0.00002	0.000002	0.000005	0.00007	0.0005	0.00003	0.000007	0.0016	0.0003	
19-Oct-10	41	--	0.01	--	--	1.13	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
26-Oct-10	42	--	0.01	--	--	1.07	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
2-Nov-10	43	--	0.01	--	--	1.08	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
9-Nov-10	44	--	0.01	--	--	1.1	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
16-Nov-10	45	--	0.01	--	--	1.41	--	--	--	--	--	--	0.4	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
23-Nov-10	46	--	0.01	--	--	1.18	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
30-Nov-10	47	--	0.01	--	--	1.03	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
7-Dec-10	48	0.00005	0.002	0.000013	0.0009	1.12	0.00899	0.005	0.002	0.00008	0.00005	--	0.4	0.00076	0.0002	0.5	0.000005	0.27	0.00512	0.00002	0.000002	0.000005	0.00002	0.0007	0.00002	0.000013	0.0016	0.0004	
14-Dec-10	49	--	0.01	--	--	1.69	--	--	--	--	--	--	0.4	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
21-Dec-10	50	--	0.01	--	--	1.37	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
28-Dec-10	51	--	0.01	--	--	0.93	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
4-Jan-11	52	--	0.01	--	--	1.52	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
11-Jan-11	53	--	0.01	--	--	1.09	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
18-Jan-11	54	--	0.01	--	--	1.14	--	--	--	--	--	--	0.4	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
25-Jan-11	55	--	0.01	--	--	1.23	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
1-Feb-11	56	0.00005	0.002	0.00003	0.0009																								

HC-19
Sample Weight = 1 kg

		Dissolved Metals by ICP-MS (Cantest)																													
Date	Accum. Weeks	Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Total Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	(mg CaCO3/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mgN/l)	(mgP/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0005	0.0001	0.00001	0.01	0.0002	0.0001	
5-Jan-10	0	750	615	9.63	92	120	1	--	--	29	0.05	6.87	0.06	0.002	0.01	0.02	55	11.67145	0.29	0.0004	0.0047	0.0003	0.0002	0.0001	0.0005	0.0001	0.00001	0.01	0.0002	0.0001	
12-Jan-10	1	500	440	9.39	163	110	11	--	--	38	0.05	15.5	0.11	0.006	0.03	0.02	109	11.99799	0.24	0.0007	0.0084	0.0002	0.0001	0.0001	0.43	0.0001	0.00001	3.75	0.0005	0.0001	
19-Jan-10	2	500	425	9.32	147	110	17	--	--	36	0.05	9.49	0.05	0.002	0.06	0.02	76	11.05517	0.21	0.0005	0.0081	0.0002	0.0001	0.0001	0.37	0.0001	0.00001	3.29	0.0002	0.0001	
26-Jan-10	3	500	425	9.46	117	110	15	--	--	31	--	--	--	--	--	--	--	--	0.23	--	--	--	--	--	--	--	--	4.22	--	--	
2-Feb-10	4	500	430	9.35	93	125	16	--	--	25	0.05	1.96	0.05	0.002	0.1	0.02	63	15.11762	0.18	0.0004	0.0055	0.0002	0.0001	0.0001	0.22	0.0001	0.00001	4.34	0.0002	0.0001	
9-Feb-10	5	500	430	9.23	92	140	20	--	--	25	--	--	--	--	--	--	--	--	0.18	--	--	--	--	--	--	--	--	6.27	--	--	
16-Feb-10	6	500	415	9.24	114	140	24	--	--	24	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	--	--	6.19	--	--	
23-Feb-10	7	500	410	9.16	105	140	27	--	--	23	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	6.69	--	--	
2-Mar-10	8	500	450	8.96	72	145	12	--	--	22	0.05	0.2	0.05	0.002	0.21	0.02	22	27.54838	0.13	0.0002	0.0036	0.0002	0.0001	0.0001	0.13	0.0002	0.00001	7.06	0.0002	0.0001	
9-Mar-10	9	500	435	9.14	70	165	13	--	--	21	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	7.22	--	--	
16-Mar-10	10	500	450	8.92	74	160	14	--	--	22	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	--	8.11	--	--	
23-Mar-10	11	500	445	8.95	73	160	17	--	--	19	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	8.35	--	--	
30-Mar-10	12	500	460	8.91	91	160	17	--	--	22	0.05	0.2	0.05	0.004	0.18	0.03	40	33.66522	0.11	0.0002	0.0033	0.0006	0.0001	0.0001	0.081	0.0002	0.00001	9.18	0.0002	0.0001	
6-Apr-10	13	500	465	8.83	79	180	14	--	--	21	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	8.65	--	--	
13-Apr-10	14	500	435	8.89	80	140	15	--	--	20	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	--	8.66	--	--	
20-Apr-10	15	500	415	9.02	91	165	24	--	--	20	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	9.4	--	--	
27-Apr-10	16	500	440	8.92	68	135	13	--	--	19	0.02	0.5	0.03	0.005	0.25	0.005	44	27.33212	0.0967	0.00015	0.00229	0.00024	0.00001	0.000005	0.07	0.00016	0.000005	7.88	0.0001	0.000085	
4-May-10	17	500	450	8.95	65	155	12	--	--	16	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	8.12	--	--	
11-May-10	18	500	440	8.66	69	150	14	--	--	20	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	8.49	--	--	
18-May-10	19	500	450	8.85	62	160	12	--	--	18	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	8.16	--	--	
25-May-10	20	500	420	8.84	70	170	14	--	--	18	0.02	0.5	0.02	0.005	0.26	0.005	56	29.0147	0.133	0.00011	0.00258	0.00038	0.00001	0.000005	0.05	0.00016	0.000005	8.9	0.0001	0.00008	
1-Jun-10	21	500	490	8.75	69	150	12	--	--	21	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	9.07	--	--	
8-Jun-10	22	500	455	8.8	66	170	13	--	--	19	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	8.1	--	--	
15-Jun-10	23	500	480	8.74	68	180	11	--	--	21	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	9.23	--	--	
22-Jun-10	24	500	445	8.62	67	160	12	--	--	20	0.01	0.5	0.02	0.005	0.4	0.005	38	28.56468	0.123	0.00009	0.00243	0.00033	0.00001	0.000005	0.05	0.00017	0.000005	9	0.0001	0.000112	
29-Jun-10	25	500	425	8.81	67	150	13	--	--	20	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	9.16	--	--	
6-Jul-10	26	500	430	8.97	63	150	11	--	--	18	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	8.5	--	--	
13-Jul-10	27	500	445	8.97	55	110	13	--	--	19	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	9.04	--	--	
20-Jul-10	28	500	440	8.48	61	160	11	--	--	19	0.01	0.5	0.02	0.005	0.36	0.006	32	25.68049	0.105	0.00008	0.00223	0.00051	0.00001	0.000005	0.05	0.00019	0.000008	8.29	0.0001	0.00009	
27-Jul-10	29	500	465	8.8	63	140	11	--	--	19	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	8.88	--	--	
3-Aug-10	30	500	445	8.93	62	130	11	--	--	17	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	9.27	--	--	
10-Aug-10	31	500	435	8.92	59	140	11	--	--	19	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	8.82	--	--	
17-Aug-10	32	500	445	8.64	61	155	12	--	--	19	0.01	0.5	0.02	0.005	0.34	0.007	32	26.56378	0.112	0.00006	0.00205	0.00091	0.00001	0.000005	0.05	0.00017	0.000008	8.38	0.0002	0.000094	
24-Aug-10	33	500	440	8.9	64	140	10	--	--	19	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	9.74	--	--	
31-Aug-10	34	500	440	8.84	64	155	14	--	--	19	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	9.53	--	--	
7-Sep-10	35	500	435	8.75	67	150	14	--	--	18	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	9.7	--	--	
14-Sep-10	36	500	450	8.79	70	155	16	--	--	17	0.01	0.5	0.02	0.005	0.13	0.005	62	31.65436	0.0995	0.00006	0.00184	0.00025	0.00001	0.000005	0.05	0.0002	0.000007	10.6	0.0001	0.000109	
21-Sep-10	37	500	440	8.6	75	165	20	--	--	19	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	11	--	--	
28-Sep-10	38	500	435	8.6	70	165	17	--	--	19	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	10.7	--	--	
5-Oct-10	39	500	455	8.66	79	170	20	--	--	20	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	11.4	--	--	
12-Oct-10	40	500	42																												

HC-19
Sample Weight = 1 kg

Dissolved Metals by ICP-MS (Cantest)																														
Date	Accum. Weeks	Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Total Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	(mg CaCO3/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mgN/l)	(mgP/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0005	0.0001	0.00001	0.01	0.0002	0.0001
4-Jan-11	52	500	455	8.5	86	165	21	--	--	17	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	12.7	--	--
11-Jan-11	53	500	450	8.49	97	165	24	--	--	16	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	13.8	--	--
18-Jan-11	54	500	455	8.4	90	170	23	--	--	16	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	12.8	--	--
25-Jan-11	55	500	435	8.53	87	140	23	--	--	17	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	13.7	--	--
1-Feb-11	56	500	435	8.42	77	185	19	--	--	16	0.01	0.5	0.02	0.005	0.066	0.008	42	32.4	0.0609	0.00003	0.00086	0.001	0.00001	0.000005	0.05	0.00013	0.000005	11.7	0.0001	0.000135
8-Feb-11	57	500	450	8.56	82	170	19	--	--	16	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	12.4	--	--
15-Feb-11	58	500	428	8.54	83	170	20	--	--	16	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	11.8	--	--
22-Feb-11	59	500	435	8.58	75	165	15	--	--	16	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	11.4	--	--
1-Mar-11	60	500	475	8.24	83	140	18	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	13.5	--	--
8-Mar-11	61	500	460	8.1	85	140	22	--	1	16	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	13.2	--	--
15-Mar-11	62	500	445	8.43	78	150	20	--	--	17	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	12.8	--	--
22-Mar-11	63	500	425	8.6	78	145	19	--	--	17	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	11.9	--	--
29-Mar-11	64	500	440	8.35	73	170	15	--	--	16	0.01	0.5	0.02	0.005	0.18	0.006	36	29.4	0.0762	0.00003	0.00089	0.00019	0.00001	0.000005	0.05	0.00013	0.000008	10.8	0.0001	0.000212
5-Apr-11	65	500	425	8.47	78	180	14	--	--	19	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	13	--	--
12-Apr-11	66	500	430	8.59	70	140	14	--	--	19	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	11.6	--	--
19-Apr-11	67	500	455	8.57	74	110	13	--	--	20	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	11.8	--	--
26-Apr-11	68	500	445	7.86	81	80	15	--	1	19	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	12.5	--	--
3-May-11	69	500	470	7.95	81	150	15	--	1	19	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	13.4	--	--
10-May-11	70	500	435	8.5	76	130	14	--	--	19	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	11.8	--	--
17-May-11	71	500	450	8.37	71	155	12	--	--	19	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	11.3	--	--
24-May-11	72	500	440	8.42	76	150	15	--	--	19	0.01	0.7	0.02	0.005	0.28	0.005	40	31.1	0.0718	0.00003	0.00079	0.00057	0.00001	0.000005	0.05	0.00014	0.000005	11.4	0.0001	0.000105
31-May-11	73	500	430	8.46	68	160	12	--	--	18	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	11.4	--	--
7-Jun-11	74	500	435	8.38	70	175	13	--	--	18	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	11.6	--	--
14-Jun-11	75	500	445	8.25	67	145	12	--	1	17	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	11.6	--	--
21-Jun-11	76	500	460	8.48	76	140	15	--	--	19	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	12.6	--	--
28-Jun-11	77	500	440	7.89	71	160	13	--	--	18	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	11.8	--	--
5-Jul-11	78	500	480	8.16	70	165	12	--	1	19	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	11.5	--	--
12-Jul-11	79	500	450	7.83	71	195	11	--	1	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	11.6	--	--
19-Jul-11	80	500	450	7.92	71	200	13	--	1	17	0.01	1	0.02	0.005	0.19	0.006	36	27.5	0.0619	0.00003	0.00082	0.00022	0.00001	0.000005	0.05	0.00015	0.000005	10.2	0.0001	0.000102
26-Jul-11	81	500	440	7.95	77	245	14	--	1	17	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	12.6	--	--
2-Aug-11	82	500	435	7.76	76	190	14	--	1	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	12.1	--	--
9-Aug-11	83	500	435	8.16	72	175	12	--	1	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	11.1	--	--
16-Aug-11	84	500	460	7.91	76	180	13	--	1	19	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	11.3	--	--
23-Aug-11	85	500	410	8.08	68	170	11	--	1	18	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	10.6	--	--
30-Aug-11	86	500	455	8.27	70	175	10	--	1	16	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	11	--	--
6-Sep-11	87	500	425	8.2	69	140	14	--	1	17	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	11.6	--	--
13-Sep-11	88	500	450	7.76	60	185	9.8	--	1	17	0.01	1.3	0.02	0.005	0.23	0.005	26	26.2	0.0453	0.00004	0.00062	0.00016	0.00001	0.000005	0.05	0.00013	0.000006	9.76	0.0001	0.000133
20-Sep-11	89	500	455	7.96	64	175	9.6	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	10.4	--	--
27-Sep-11	90	500	440	7.82	69	165	11	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	11.7	--	--
4-Oct-11	91	500	445	7.82	72	145	11.1	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	11.4	--	--
11-Oct-11	92	500	420	7.88	76	220	9.2	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	11.2	--	--
18-Oct-11	93	500	430	7.71	72	190	11	--	1	17	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	10.5	--	--
25-Oct-11	94	500	440</																											

HC-19
Sample Weight = 1 kg

Date	Accum. Weeks	Cu	La	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Ti	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
5-Jan-10	0	0.0001	0.0001	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
12-Jan-10	1	0.0003	0.0001	0.05	0.00014	0.0009	0.5	0.0025	0.015	0.02	0.0003	0.0004	0.0001	0.98	0.001	0.0003	0.63	0.00004	15.6	0.0098	0.0002	0.00009	0.00011	0.0001	0.002	0.0003	0.00011	0.0038	0.001	0.0001
19-Jan-10	2	0.0028	0.0001	0.06	0.00005	0.0013	0.64	0.0055	0.015	0.02	0.0009	0.0007	0.0001	1.43	0.0016	0.0006	0.68	0.00004	28.4	0.014	0.0002	0.00002	0.00005	0.0001	0.002	0.0003	0.00005	0.0053	0.001	0.0001
26-Jan-10	3	0.0005	0.0001	0.02	0.00005	0.0011	0.69	0.003	0.015	0.02	0.0009	0.0003	0.0001	1.25	0.0016	0.0007	0.59	0.00004	23.2	0.013	0.0002	0.00002	0.00005	0.0001	0.0011	0.0002	0.00005	0.0046	0.001	0.0001
2-Feb-10	4	0.02	--	0.03	--	--	0.93	--	--	--	--	--	--	1.2	--	--	--	--	18.7	--	--	--	--	--	--	--	--	--	--	--
9-Feb-10	5	0.0003	0.0001	0.02	0.00005	0.0014	1.04	0.0053	0.015	0.02	0.0004	0.0003	0.0001	1.18	0.0015	0.0005	0.54	0.00004	12.2	0.015	0.0002	0.00002	0.00005	0.0001	0.0021	0.0001	0.00005	0.0032	0.001	0.0001
16-Feb-10	6	0.02	--	0.05	--	--	1.85	--	--	--	--	--	--	1.1	--	--	--	--	10.1	--	--	--	--	--	--	--	--	--	--	--
23-Feb-10	7	0.02	--	0.02	--	--	2.92	--	--	--	--	--	--	1.5	--	--	--	--	10.1	--	--	--	--	--	--	--	--	--	--	--
2-Mar-10	8	0.02	--	0.01	--	--	3.31	--	--	--	--	--	--	1.2	--	--	--	--	6.5	--	--	--	--	--	--	--	--	--	--	--
9-Mar-10	9	0.0002	0.0001	0.01	0.00005	0.0021	2.41	0.0089	0.015	0.02	0.0001	0.0003	0.0001	0.95	0.0017	0.0002	0.61	0.00004	3.19	0.024	0.0002	0.00002	0.00005	0.0001	0.001	0.0001	0.00005	0.002	0.001	0.0002
16-Mar-10	10	0.02	--	0.02	--	--	2.21	0.012	--	--	--	--	--	0.6	--	--	--	--	2.1	--	--	--	--	--	--	--	--	--	--	--
23-Mar-10	11	0.02	--	0.03	--	--	2.5	--	--	--	--	--	--	0.7	--	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--
30-Mar-10	12	0.02	--	0.01	--	--	2.35	--	--	--	--	--	--	0.5	--	--	--	--	1.5	--	--	--	--	--	--	--	--	--	--	--
6-Apr-10	13	0.0004	0.0001	0.01	0.00005	0.0023	2.61	0.011	0.015	0.02	0.0001	0.0004	0.0001	0.8	0.0016	0.0002	0.51	0.00004	1.64	0.028	0.0002	0.00002	0.00005	0.0001	0.0004	0.0001	0.00005	0.002	0.001	0.0001
13-Apr-10	14	0.02	--	0.03	--	--	2.34	--	--	--	--	--	--	0.5	--	--	--	--	1.3	--	--	--	--	--	--	--	--	--	--	--
20-Apr-10	15	0.02	--	0.02	--	--	2.17	--	--	--	--	--	--	0.5	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--
27-Apr-10	16	0.02	--	0.02	--	--	2.8	--	--	--	--	--	--	0.7	--	--	--	--	1.4	--	--	--	--	--	--	--	--	--	--	--
4-May-10	17	0.00086	0.00005	0.014	0.000014	0.0018	1.86	0.0112	0.002	0.02	0.0001	0.00044	--	0.59	0.00149	0.00012	0.6	0.000005	0.89	0.0224	0.00002	0.000007	0.000005	0.00001	0.0008	0.00005	0.000006	0.0016	0.0004	0.0001
11-May-10	18	0.02	--	0.02	--	--	1.75	--	--	--	--	--	--	0.4	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--
18-May-10	19	0.02	--	0.03	--	--	1.94	--	--	--	--	--	--	0.5	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--
25-May-10	20	0.02	--	0.01	--	--	1.53	--	--	--	--	--	--	0.4	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
1-Jun-10	21	0.00024	0.00005	0.011	0.000036	0.0018	1.65	0.0134	0.002	0.02	0.0001	0.00034	--	0.5	0.00138	0.00014	0.6	0.000005	0.61	0.0216	0.00002	0.000006	0.000005	0.00004	0.0005	0.00003	0.000007	0.0019	0.0005	0.0001
8-Jun-10	22	0.02	--	0.01	--	--	1.69	--	--	--	--	--	--	0.5	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
15-Jun-10	23	0.02	--	0.01	--	--	1.5	--	--	--	--	--	--	0.4	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
22-Jun-10	24	0.02	--	0.01	--	--	1.47	--	--	--	--	--	--	0.4	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
29-Jun-10	25	0.00041	0.00005	0.017	0.000013	0.0017	1.48	0.0126	0.002	0.02	0.00011	0.0004	--	0.43	0.00126	0.00014	0.6	0.000005	0.49	0.0196	0.00002	0.000006	0.000005	0.00001	0.0013	0.00003	0.000006	0.0017	0.0001	0.0001
6-Jul-10	26	0.02	--	0.01	--	--	1.65	--	--	--	--	--	--	0.4	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
13-Jul-10	27	0.02	--	0.01	--	--	1.47	--	--	--	--	--	--	0.3	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
20-Jul-10	28	0.02	--	0.01	--	--	1.52	--	--	--	--	--	--	0.4	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
27-Jul-10	29	0.00184	0.00005	0.008	0.000077	0.0016	1.21	0.0102	0.008	0.02	0.0001	0.00036	--	0.42	0.00135	0.00014	0.5	0.000005	0.44	0.0175	0.00002	0.000008	0.000005	0.00001	0.0005	0.00002	0.000004	0.0016	0.0004	0.0001
3-Aug-10	30	0.02	--	0.02	--	--	1.25	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
10-Aug-10	31	0.02	--	0.01	--	--	1.22	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
17-Aug-10	32	0.00172	0.00005	0.013	0.000066	0.0014	1.37	0.0114	0.002	0.02	0.00009	0.00037	--	0.39	0.00131	0.00011	0.6	0.000005	0.4	0.0156	0.00002	0.000008	0.000005	0.00001	0.0005	0.00002	0.000004	0.0014	0.0002	0.0001
24-Aug-10	33	0.02	--	0.01	--	--	1.26	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
31-Aug-10	34	0.02	--	0.02	--	--	1.25	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
7-Sep-10	35	0.02	--	0.01	--	--	1.24	--	--	--	--	--	--	0.4	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
14-Sep-10	36	0.00054	0.00005	0.013	0.000198	0.0014	1.26	0.0106	0.002	0.02	0.0001	0.00037	--	0.34	0.00121	0.00011	0.5	0.000005	0.31	0.0178	0.00002	0.000009	0.000005	0.00002	0.001	0.00002	0.000005	0.0012	0.0002	0.0001
21-Sep-10	37	0.02	--	0.01	--	--	1.39	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
28-Sep-10	38	0.02	--	0.01	--	--	1.26	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
5-Oct-10	39	0.02	--	0.01	--	--	1.26	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
12-Oct-10	40	0.00031	0.00005	0.004	0.000226	0.0014	1.34	0.0109	0.005	0.005	0.00012	0.00044	--	0.31	0.00109	0.00011	0.4	0.000005	0.29	0.0173	0.00002	0.000011	0.000005	0.00002	0.0005	0.00001	0.000008	0.001	0.0007	0.0001
19-Oct-10	41	0.02	--	0.01	--	--	1.23	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
26-Oct-10	42	0.02	--	0.01	--	--	1.21	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
2-Nov-10	43	0.02	--	0.01	--	--	1.43	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
9-Nov-10	44	0.02	--	0.01	--	--	1.08	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
16-Nov-10	45	0.02	--	0.01	--	--	1.78	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
23-Nov-10	46	0.02	--	0.01	--	--	0.91	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
30-Nov-10	47	0.02	--	0.01	--	--	0.98	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
7-Dec-10	48	0.00042	0.00005	0.001	0.000029	0.0011	0.96	0.00871	0.006	0.002	0.00012	0.00053	--	0.26	0.00113	0.00012	0.4	0.000005	0.24	0.0171	0.00002	0.00001	0.000005	0.00001	0.0007	0.00001	0.000011	0.001	0.0004	0.0001
14-Dec-10	49	0.02	--	0.01	--	--	0.99	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
21-Dec-10	50	0.02	--	0.01	--	--	0.85	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
28-Dec-10	51	0.02	--	0.01	--	--	0.95	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--

HC-19
Sample Weight = 1 kg

Date	Accum. Weeks	Cu	La	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
4-Jan-11	52	0.0001	0.0001	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
11-Jan-11	53	0.02	--	0.01	--	--	0.84	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
18-Jan-11	54	0.02	--	0.01	--	--	0.83	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
25-Jan-11	55	0.02	--	0.01	--	--	0.87	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
1-Feb-11	56	0.00079	0.00005	0.002	0.000027	0.0009	0.75	0.00706	0.013	0.002	0.00015	0.00049	--	0.18	0.00081	0.00012	0.4	0.000005	0.2	0.0126	0.00002	0.000006	0.000005	0.00004	0.0005	0.00001	0.000003	0.0005	0.0005	0.0001
8-Feb-11	57	0.02	--	0.01	--	--	0.79	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
15-Feb-11	58	0.02	--	0.01	--	--	0.78	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
22-Feb-11	59	0.02	--	0.01	--	--	0.7	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
1-Mar-11	60	0.02	--	0.04	--	--	0.7	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
8-Mar-11	61	0.02	--	0.01	--	--	0.65	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
15-Mar-11	62	0.02	--	0.01	--	--	0.69	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
22-Mar-11	63	0.02	--	0.01	--	--	0.7	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
29-Mar-11	64	0.0005	0.00005	0.016	0.000019	0.0008	0.61	0.00775	0.002	0.008	0.0001	0.00057	--	0.18	0.00072	0.00014	0.4	0.000005	0.17	0.00971	0.00002	0.000007	0.000005	0.00001	0.0007	0.00001	0.000002	0.0005	0.0003	0.0001
5-Apr-11	65	0.02	--	0.01	--	--	0.73	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
12-Apr-11	66	0.02	--	0.01	--	--	0.67	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
19-Apr-11	67	0.02	--	0.01	--	--	0.63	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
26-Apr-11	68	0.02	--	0.01	--	--	0.61	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
3-May-11	69	0.02	--	0.01	--	--	0.64	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
10-May-11	70	0.02	--	0.01	--	--	0.62	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
17-May-11	71	0.02	--	0.01	--	--	0.6	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
24-May-11	72	0.00035	0.00005	0.002	0.000048	0.0009	0.61	0.00558	0.007	0.002	0.00011	0.00047	--	0.16	0.00083	0.00015	0.4	0.000005	0.18	0.0102	0.00002	0.000011	0.000005	0.00001	0.0005	0.00001	0.000006	0.0005	0.0005	0.0001
31-May-11	73	0.02	--	0.01	--	--	0.59	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
7-Jun-11	74	0.02	--	0.01	--	--	0.6	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
14-Jun-11	75	0.02	--	0.01	--	--	0.58	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
21-Jun-11	76	0.02	--	0.01	--	--	0.59	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
28-Jun-11	77	0.02	--	0.01	--	--	0.57	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
5-Jul-11	78	0.02	--	0.01	--	--	0.52	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
12-Jul-11	79	0.02	--	0.01	--	--	0.55	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
19-Jul-11	80	0.00032	0.00005	0.001	0.000024	0.0008	0.49	0.0042	0.007	0.002	0.00015	0.00037	--	0.15	0.00074	0.00015	0.4	0.000005	0.16	0.0084	0.00002	0.000007	0.000005	0.00003	0.0005	0.00001	0.000006	0.0003	0.0012	0.0001
26-Jul-11	81	0.02	--	0.01	--	--	0.55	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
2-Aug-11	82	0.02	--	0.01	--	--	0.57	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
9-Aug-11	83	0.02	--	0.01	--	--	0.57	--	--	--	--	--	--	0.3	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
16-Aug-11	84	0.02	--	0.01	--	--	0.52	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
23-Aug-11	85	0.02	--	0.01	--	--	0.51	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
30-Aug-11	86	0.02	--	0.01	--	--	0.51	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
6-Sep-11	87	0.02	--	0.01	--	--	0.55	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
13-Sep-11	88	0.0004	0.00005	0.004	0.000058	0.0007	0.45	0.00455	0.006	0.002	0.0001	0.00045	--	0.12	0.00072	0.00015	0.4	0.000005	0.13	0.00722	0.00002	0.000007	0.000005	0.00005	0.0005	0.00001	0.000003	0.0005	0.0014	0.0001
20-Sep-11	89	0.02	--	0.01	--	--	0.46	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
27-Sep-11	90	0.02	--	0.01	--	--	0.53	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
4-Oct-11	91	0.02	--	0.01	--	--	0.52	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
11-Oct-11	92	0.02	--	0.01	--	--	0.5	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
18-Oct-11	93	0.02	--	0.01	--	--	0.48	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
25-Oct-11	94	0.02	--	0.01	--	--	0.52	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
1-Nov-11	95	0.02	--	0.01	--	--	0.48	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
8-Nov-11	96	0.00067	0.00005	0.005	0.000174	0.0008	0.5	0.00462	0.004	0.002	0.00019	0.00049	--	0.17	0.0011	0.00012	0.5	0.000005	0.17	0.00791	0.00002	0.000008	0.000005	0.00001	0.0005	0.00001	0.000004	0.0005	0.0009	0.0001
15-Nov-11	97	0.02	--	0.01	--	--	0.47	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
22-Nov-11	98	0.02	--	0.01	--	--	0.46	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
29-Nov-11	99	0.02	--	0.01	--	--	0.5	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
6-Dec-11	100	0.02	--	0.01	--	--	0.48	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
13-Dec-11	101	0.02	--	0.01	--	--	0.52	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
20-Dec-11	102	0.02	--	0.01	--	--	0.47	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
27-Dec-11	103	0.02	--	0.01	--	--	0.41	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
3-Jan-12	104	0.00076	0.00005	0.001	0.000401	0.0007	0.34	0.00286	0.007	0.002	0.00019	0.00064	--	0.12	0.00066	0.0001	0.3	0.000005	0.16	0.00618	0.00002	0.000011	0.000005	0.00008	0.0005	0.00001	0.000003	0.0004	0.0032	0.0001
10-Jan-12	105	0.02	--	0.01	--	--	0.41	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
17-Jan-12	106	0.02	--	0.01	--	--	0.46	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
24-Jan-12	107	0.02	--	0.01	--	--	0.37	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
31-Jan-12	108	0.02	--	0.01	--	--	0.42	--	--	--	--	--	--	0.3	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
Terminated																														

HC-20
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	Cu	La																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		Input	Output					to pH 4.5	to pH 8.3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
																																	5	5	0.01	1	50	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001

HC-20
Sample Weight = 1 kg

Date	Accum. Weeks	Volume (ml)		pH (pH Units)	EC (µS/cm)	ORP (mV)	SO4 (mg/l)	Acidity (mg CaCO3/l)		Alkalinity to pH 4.5	Fluoride (mg/l)	Chloride (mg/l)	Nitrate-N (mg/l)	Nitrite-N (mg/l)	Total Ammonia (mgN/l)	Diss.-P (mgP/l)	TDS (mg/l)	Hardness CaCO3 (mg/l)	Dissolved Metals by ICP-MS (Cantest)																	
		Input	Output					to pH 4.5	to pH 8.3										Al (mg/l)	Sb (mg/l)	As (mg/l)	Ba (mg/l)	Be (mg/l)	Bi mg/l	B mg/l	Cs mg/l	Cd mg/l	Ca mg/l	Cr mg/l	Co mg/l	Cu mg/l	La mg/l				
		5	5	0.01	1	50	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001	--	--	--	--	--	
9-Nov-10	44	500	445	8.15	67	180	11	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.57	--	--	0.02	--	--	--	--	--
16-Nov-10	45	500	420	8.85	60	180	8	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.24	--	--	0.02	--	--	--	--	--
23-Nov-10	46	500	435	8.39	69	175	11	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.44	--	--	0.02	--	--	--	--	--
30-Nov-10	47	500	425	8.09	52	170	9	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.76	--	--	0.02	--	--	--	--	--
7-Dec-10	48	500	460	7.85	59	180	8	--	1	19	0.01	0.6	0.02	0.005	0.17	0.354	32	26.4	0.0032	0.00652	0.959	0.00053	0.00001	0.000005	0.05	0.00005	0.000005	5.58	0.0002	0.00466	0.00027	0.00005	--	--	--	
14-Dec-10	49	500	435	8.36	78	150	11	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	7.29	--	--	0.02	--	--	--	--	--
21-Dec-10	50	500	450	8.14	62	155	7	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.51	--	--	0.02	--	--	--	--	--
28-Dec-10	51	500	440	8.08	62	155	10	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.03	--	--	0.02	--	--	--	--	--
4-Jan-11	52	500	445	7.92	58	175	7	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.57	--	--	0.02	--	--	--	--	--
11-Jan-11	53	500	450	8.2	80	170	10	--	1	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	7.04	--	--	0.02	--	--	--	--	--
18-Jan-11	54	500	440	8.03	73	160	10	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.58	--	--	0.02	--	--	--	--	--
25-Jan-11	55	500	430	8.35	65	145	9	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.39	--	--	0.02	--	--	--	--	--
1-Feb-11	56	500	430	7.75	49	180	7	--	1	17	0.01	0.5	0.02	0.005	0.05	0.315	26	24	0.0037	0.00537	0.869	0.0007	0.00001	0.000005	0.05	0.00005	0.000006	5.25	0.0001	0.00371	0.0002	0.00005	--	--	--	
8-Feb-11	57	500	435	7.72	53	180	8	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.11	--	--	0.02	--	--	--	--	--
15-Feb-11	58	500	432	7.68	68	160	10	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.32	--	--	0.02	--	--	--	--	--
22-Feb-11	59	500	440	8.15	74	180	7	--	1	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	7.16	--	--	0.02	--	--	--	--	--
1-Mar-11	60	500	485	7.83	65	150	7	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.88	--	--	0.02	--	--	--	--	--
8-Mar-11	61	500	435	8.14	52	160	8	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.09	--	--	0.02	--	--	--	--	--
15-Mar-11	62	500	440	8.26	74	150	11	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	7.29	--	--	0.02	--	--	--	--	--
22-Mar-11	63	500	430	8.36	67	150	9	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.09	--	--	0.02	--	--	--	--	--
29-Mar-11	64	500	430	8.1	63	150	7	--	1	20	0.01	0.5	0.02	0.005	0.18	0.405	30	28.8	0.011	0.006	1.18	0.0015	0.00005	0.00003	0.3	0.0003	0.00003	5.8	0.0005	0.00332	0.0003	0.0003	--	--	--	
5-Apr-11	65	500	425	8.19	65	180	10	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.68	--	--	0.02	--	--	--	--	--
12-Apr-11	66	500	450	8.15	53	145	7.3	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.18	--	--	0.02	--	--	--	--	--
19-Apr-11	67	500	435	8.64	60	105	5.7	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.56	--	--	0.02	--	--	--	--	--
26-Apr-11	68	500	450	7.66	74	180	7.4	--	1	26	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	7.53	--	--	0.02	--	--	--	--	--
3-May-11	69	500	445	7.96	68	150	10	--	1	25	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	7.06	--	--	0.02	--	--	--	--	--
10-May-11	70	500	430	8.07	68	135	6.3	--	1	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.5	--	--	0.02	--	--	--	--	--
17-May-11	71	500	430	8.06	59	175	7.8	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.23	--	--	0.02	--	--	--	--	--
24-May-11	72	500	435	8.18	60	140	6.8	--	1	21	0.01	0.5	0.02	0.005	0.21	0.373	32	28.1	0.0062	0.00508	0.925	0.00099	0.00001	0.000005	0.05	0.00005	0.000005	5.72	0.0001	0.00342	0.00008	0.00005	--	--	--	
31-May-11	73	500	435	7.99	60	170	6.8	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.26	--	--	0.02	--	--	--	--	--
7-Jun-11	74	500	435	8.04	57	180	7.5	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.81	--	--	0.02	--	--	--	--	--
14-Jun-11	75	500	445	8.02	59	150	6.9	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.45	--	--	0.02	--	--	--	--	--
21-Jun-11	76	500	430	8.09	59	140	6.5	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.05	--	--	0.02	--	--	--	--	--
28-Jun-11	77	500	425	7.84	60	155	6.7	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.14	--	--	0.02	--	--	--	--	--
5-Jul-11	78	500	460	8.15	62	160	8.5	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.44	--	--	0.02	--	--	--	--	--
12-Jul-11	79	500	445	7.99	64	200	6	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.36	--	--	0.02	--	--	--	--	--
19-Jul-11	80	500	450	7.97	69	195	7	--	1	23	0.01	0.6	0.02	0.005	0.2	0.366	40	30.5	0.0059	0.00483	0.95	0.00037	0.00001	0.000005	0.05	0.00007	0.000005	6.5	0.0001	0.00372	0.00034	0.00005	--	--	--	
26-Jul-11	81	500	450	7.87	71	185	6.7	--	1	25	--	--	--	--	--																					

HC-20
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
5-Jan-10	0	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
12-Jan-10	1	0.17	0.00006	0.0087	16.9	0.026	0.015	0.02	0.0051	1.08	0.0001	3.37	0.0039	0.004	1.82	0.00004	15.2	0.105	0.0002	0.00002	0.00005	0.0001	0.0004	0.0034	0.00006	0.0033	0.001	0.0001
19-Jan-10	2	0.01	0.00005	0.0042	7.75	0.011	0.015	0.02	0.003	0.407	0.0001	1.56	0.0023	0.0025	1.08	0.00004	5.04	0.048	0.0002	0.00002	0.00005	0.0001	0.0004	0.0017	0.00005	0.002	0.001	0.0001
26-Jan-10	3	0.02	--	--	10.1	--	--	--	--	--	--	1.8	--	--	--	--	4.7	--	--	--	--	--	--	--	--	--	--	--
2-Feb-10	4	0.05	0.00005	0.0027	5.19	0.01	0.015	0.02	0.0018	0.254	0.0001	1.01	0.0018	0.0018	0.99	0.00004	1.68	0.033	0.0002	0.00002	0.00005	0.0001	0.0003	0.0011	0.00005	0.0015	0.001	0.0001
9-Feb-10	5	0.01	--	--	6.92	--	--	--	--	--	--	0.9	--	--	--	--	1.5	--	--	--	--	--	--	--	--	--	--	--
16-Feb-10	6	0.01	--	--	4.81	--	--	--	--	--	--	0.9	--	--	--	--	1.1	--	--	--	--	--	--	--	--	--	--	--
23-Feb-10	7	0.01	--	--	4.35	--	--	--	--	--	--	0.5	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
2-Mar-10	8	0.01	0.00007	0.0024	5.71	0.01	0.015	0.02	0.0018	0.203	0.0001	0.68	0.0019	0.0019	1.08	0.00004	0.6	0.035	0.0002	0.00002	0.00005	0.0001	0.0002	0.0008	0.00005	0.0013	0.001	0.0001
9-Mar-10	9	0.03	--	--	3.54	0.007	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
16-Mar-10	10	0.01	--	--	4.91	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
23-Mar-10	11	0.02	--	--	3.61	--	--	--	--	--	--	0.25	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
30-Mar-10	12	0.01	0.00005	0.0014	3.95	0.0043	0.015	0.02	0.001	0.119	0.0001	0.42	0.0015	0.0009	0.64	0.00004	0.3	0.026	0.0002	0.00002	0.00005	0.0001	0.0002	0.0004	0.00005	0.001	0.001	0.0001
6-Apr-10	13	0.05	--	--	4.18	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
13-Apr-10	14	0.15	--	--	3.03	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
20-Apr-10	15	0.01	--	--	2.76	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
27-Apr-10	16	0.006	0.00004	0.003	4.4	0.0051	0.01	0.02	0.0013	0.117	--	0.3	0.0019	0.0012	0.8	--	0.3	0.0245	0.0001	0.00001	0.00003	0.00005	0.003	0.00049	0.00001	0.002	0.0007	0.0005
4-May-10	17	0.01	--	--	3.62	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
11-May-10	18	0.01	--	--	3.95	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
18-May-10	19	0.02	--	--	3.49	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
25-May-10	20	0.005	0.000025	0.001	3.84	0.00725	0.002	0.02	0.00096	0.0887	--	0.2	0.00104	0.00072	0.7	0.000005	0.16	0.0218	0.00002	0.000002	0.000005	0.00007	0.0005	0.00031	0.000005	0.0008	0.0008	0.0001
1-Jun-10	21	0.01	--	--	4.98	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
8-Jun-10	22	0.01	--	--	3.54	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
15-Jun-10	23	0.01	--	--	3.99	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
22-Jun-10	24	0.011	0.00006	0.003	3.8	0.0052	0.01	0.02	0.001	0.0792	--	0.3	0.0011	0.0008	0.5	0.00003	0.3	0.0171	0.0001	0.00001	0.00003	0.00005	0.003	0.00019	0.00001	0.001	0.0005	0.0005
29-Jun-10	25	0.01	--	--	4.06	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
6-Jul-10	26	0.01	--	--	3.93	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
13-Jul-10	27	0.01	--	--	4.03	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
20-Jul-10	28	0.004	0.000088	0.0008	3.8	0.00509	0.004	0.02	0.00079	0.0876	--	0.14	0.00104	0.00067	0.6	0.000005	0.14	0.0186	0.00002	0.000002	0.000005	0.00003	0.0005	0.00024	0.000004	0.0007	0.0004	0.0001
27-Jul-10	29	0.01	--	--	3.24	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
3-Aug-10	30	0.01	--	--	3.78	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
10-Aug-10	31	0.01	--	--	3.08	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
17-Aug-10	32	0.012	0.000086	0.0007	4.19	0.00656	0.002	0.02	0.00079	0.104	--	0.13	0.00102	0.0006	0.9	0.000005	0.13	0.022	0.00002	0.000002	0.000005	0.00002	0.0005	0.00024	0.000004	0.0006	0.0003	0.0001
24-Aug-10	33	0.01	--	--	3.87	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
31-Aug-10	34	0.01	--	--	4.39	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
7-Sep-10	35	0.01	--	--	4.2	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
14-Sep-10	36	0.01	0.00014	0.003	3.8	0.004	0.01	0.02	0.0007	0.0743	--	0.3	0.0007	0.0005	0.8	0.00003	0.3	0.0193	0.0001	0.00001	0.00003	0.00007	0.0005	0.00021	0.00001	0.001	0.0005	0.0005
21-Sep-10	37	0.01	--	--	4.15	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
28-Sep-10	38	0.01	--	--	3.9	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
5-Oct-10	39	0.01	--	--	2.91	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
12-Oct-10	40	0.003	0.000035	0.0005	3.91	0.00603	0.007	0.007	0.00057	0.0747	--	0.1	0.00079	0.0004	0.6	0.000005	0.11	0.0194	0.00002	0.000002	0.000005	0.00006	0.0005	0.00016	0.000006	0.0007	0.0003	0.0001
19-Oct-10	41	0.01	--	--	3.15	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
26-Oct-10	42	0.01	--	--	4.14	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
2-Nov-10	43	0.01	--	--	2.99	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--

HC-20
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
9-Nov-10	44	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
16-Nov-10	45	0.01	--	--	3.62	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
23-Nov-10	46	0.01	--	--	3.47	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
30-Nov-10	47	0.01	--	--	3.55	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
7-Dec-10	48	0.005	0.000016	0.0005	2.63	0.00639	0.002	0.002	0.00038	0.0739	--	0.3	0.0004	0.00026	0.4	0.000005	0.07	0.0153	0.00002	0.000002	0.000005	0.00002	0.0005	0.0001	0.000007	0.0008	0.0003	0.0001
14-Dec-10	49	0.01	--	--	4.21	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
21-Dec-10	50	0.01	--	--	2.88	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
28-Dec-10	51	0.01	--	--	3.37	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
4-Jan-11	52	0.01	--	--	2.87	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
11-Jan-11	53	0.01	--	--	3.9	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
18-Jan-11	54	0.01	--	--	3.6	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
25-Jan-11	55	0.01	--	--	3.48	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
1-Feb-11	56	0.002	0.00002	0.0005	2.64	0.00534	0.012	0.002	0.00024	0.0564	--	0.05	0.00035	0.0002	0.3	0.000005	0.07	0.0116	0.00002	0.000002	0.000005	0.00008	0.0005	0.00007	0.000002	0.0004	0.0008	0.0001
8-Feb-11	57	0.01	--	--	2.85	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
15-Feb-11	58	0.01	--	--	3.54	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
22-Feb-11	59	0.01	--	--	3.93	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
1-Mar-11	60	0.01	--	--	3.26	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
8-Mar-11	61	0.01	--	--	2.6	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
15-Mar-11	62	0.01	--	--	4.12	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
22-Mar-11	63	0.01	--	--	3.47	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
29-Mar-11	64	0.008	0.00003	0.003	3.5	0.0057	0.01	0.002	0.0007	0.0472	--	0.3	0.0004	0.0002	0.5	0.00003	0.3	0.0148	0.0001	0.00001	0.00003	0.00005	0.003	0.00008	0.00001	0.001	0.0051	0.0005
5-Apr-11	65	0.01	--	--	3.6	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
12-Apr-11	66	0.01	--	--	3.33	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
19-Apr-11	67	0.01	--	--	3.08	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
26-Apr-11	68	0.01	--	--	3.78	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
3-May-11	69	0.01	--	--	3.78	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
10-May-11	70	0.01	--	--	3.47	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
17-May-11	71	0.01	--	--	3.48	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
24-May-11	72	0.002	0.000041	0.0005	3.36	0.00587	0.007	0.002	0.00025	0.0448	--	0.05	0.00034	0.00017	0.3	0.000005	0.07	0.0145	0.00002	0.000014	0.000005	0.00001	0.0005	0.00007	0.000003	0.0004	0.0004	0.0001
31-May-11	73	0.01	--	--	3.41	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
7-Jun-11	74	0.01	--	--	3.36	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
14-Jun-11	75	0.01	--	--	3.64	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
21-Jun-11	76	0.01	--	--	3.47	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
28-Jun-11	77	0.01	--	--	3.45	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
5-Jul-11	78	0.01	--	--	3.55	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
12-Jul-11	79	0.01	--	--	3.46	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
19-Jul-11	80	0.011	0.000036	0.0005	3.46	0.0062	0.01	0.002	0.00034	0.0483	--	0.05	0.00036	0.00021	0.4	0.000005	0.07	0.0171	0.00002	0.000009	0.000005	0.00005	0.0005	0.00008	0.000004	0.0005	0.0008	0.0001
26-Jul-11	81	0.01	--	--	3.92	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
2-Aug-11	82	0.01	--	--	3.68	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
9-Aug-11	83	0.01	--	--	3.11	--	--	--	--	--	--	0.3	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
16-Aug-11	84	0.01	--	--	3.3	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
23-Aug-11	85	0.01	--	--	3.28	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
30-Aug-11	86	0.01	--	--	3.59	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
6-Sep-11	87	0.01	--	--	3.44	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
13-Sep-11	88	0.003	0.000015	0.0005	2.96	0.00573	0.011	0.002	0.0003	0.0351	--	0.36	0.00029	0.00012	0.3	0.000005	0.17	0.0132	0.00002	0.000002	0.000005	0.00003	0.0005	0.00007	0.000007	0.0004	0.0005	0.0001
20-Sep-11	89	0.01	--	--	3.34	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
27-Sep-11	90	0.01	--	--	3.75	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
4-Oct-11	91	0.01	--	--	3.64	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
11-Oct-11	92	0.01	--	--	3.34	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
18-Oct-11	93	0.01	--	--	3.43	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
25-Oct-11	94	0.01	--	--	3.53	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
1-Nov-11	95	0.01	--	--	3.74	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
8-Nov-11	96	0.004	0.000147	0.0005	3.02	0.00586	0.004	0.002	0.00026	0.0388	--	0.05	0.00043	0.00013	0.3	0.000005	0.06	0.0141	0.00002	0.000003	0.000005	0.00003	0.0005	0.00006	0.000002	0.0005	0.001	0.0001
15-Nov-11	97	0.01	--	--	4.77	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
22-Nov-11	98	0.01	--	--	4.75	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
29-Nov-11	99	0.01	--	--	3.21	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
6-Dec-11	100	0.01	--	--	3.43	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
13-Dec-11	101	0.01	--	--	3.79	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
20-Dec-11	102	0.01	--	--	3.09	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
27-Dec-11	103	0.01	--	--	2.93	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
3-Jan-12	104	0.003	0.0007	0.0005	2.57	0.00733	0.008	0.002	0.00022	0.0407	--	0.05	0.0002	0.0001	0.2	0.000005	0.07	0.0128	0.00002	0.000002	0.000005	0.00025	0.0005	0.00005	0.000002	0.0004	0.0018	0.0001
10-Jan-12	105	0.01	--	--	3.84	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--								

HC-21
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Contest)																															
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	Cu	La	
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001	
5-Jan-10	0	750	605	7.72	597	140	207	--	1	30	0.05	34.4	0.05	0.002	0.26	0.02	351	195.5854	0.025	0.0015	0.0008	0.0097	0.0001	0.0001	0.15	0.0002	0.00003	35.8	0.0002	0.051	0.0007	0.0001	
12-Jan-10	1	500	475	7.84	969	135	358	--	2	40	0.25	73.7	0.25	0.002	0.18	0.02	772	465.2134	0.031	0.0026	0.0048	0.012	0.0001	0.0001	0.4	0.0002	0.00004	109	0.0002	0.022	0.0014	0.0001	
19-Jan-10	2	500	440	7.72	446	150	153	--	2	24	0.05	23.1	0.05	0.002	0.16	0.02	329	193.1401	0.036	0.0012	0.0013	0.0041	0.0001	0.0001	0.2	0.0001	0.00001	45.7	0.0002	0.0059	0.0007	0.0001	
26-Jan-10	3	500	430	7.86	383	145	147	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	44.4	--	--	0.02	--
2-Feb-10	4	500	425	7.91	192	141	421	--	1	23	0.05	8.17	0.05	0.002	0.29	0.02	306	215.8765	0.046	0.0011	0.0022	0.0042	0.0001	0.0001	0.17	0.0001	0.00001	55.3	0.0002	0.0055	0.0005	0.0001	
9-Feb-10	5	500	436	7.85	343	160	169	--	1	29	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	46.7	--	--	0.02	--
16-Feb-10	6	500	405	7.88	243	170	86	--	1	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	27.1	--	--	0.02	--
23-Feb-10	7	500	415	7.83	228	185	87	--	1	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	24.3	--	--	0.02	--
2-Mar-10	8	500	435	7.8	294	170	138	--	1	21	0.05	3.5	0.05	0.002	0.41	0.02	203	153.8326	0.043	0.001	0.0026	0.0032	0.0001	0.0001	0.13	0.0001	0.00003	38.2	0.0002	0.0036	0.0006	0.0001	
9-Mar-10	9	500	445	7.75	240	195	86	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	28.9	--	--	0.02	--
16-Mar-10	10	500	445	7.87	235	150	80	--	1	24	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	29.8	--	--	0.02	--
23-Mar-10	11	500	440	7.84	203	180	81	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	25.4	--	--	0.02	--
30-Mar-10	12	500	445	7.89	219	155	78	--	2	23	0.05	1.7	0.05	0.003	0.33	0.02	165	98.84064	0.045	0.0008	0.0023	0.0022	0.0001	0.0001	0.084	0.0001	0.00001	24.6	0.0002	0.0022	0.0004	0.0001	
6-Apr-10	13	500	450	7.9	221	190	79	--	1	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	26.8	--	--	0.02	--
13-Apr-10	14	500	435	7.95	150	71	71	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	22.8	--	--	0.02	--
20-Apr-10	15	500	410	8.17	216	170	87	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	25.6	--	--	0.02	--
27-Apr-10	16	500	430	7.86	210	140	80	--	1	21	0.03	1	0.02	0.005	0.33	0.005	120	93.29506	0.0439	0.00063	0.0017	0.00215	0.00001	0.000005	0.06	0.00011	0.000005	23.5	0.0001	0.00217	0.00053	0.00005	
4-May-10	17	500	440	7.89	192	150	71	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	22.5	--	--	0.02	--
11-May-10	18	500	430	7.65	195	170	76	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	22.7	--	--	0.02	--
18-May-10	19	500	435	7.87	187	180	68	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	22.4	--	--	0.02	--
25-May-10	20	500	435	7.76	166	175	60	--	1	17	0.02	0.8	0.02	0.005	0.31	0.005	130	71.95244	0.0388	0.0004	0.00114	0.00187	0.00001	0.000005	0.05	0.00007	0.000005	18.2	0.0001	0.00136	0.0021	0.00005	
1-Jun-10	21	500	460	7.79	218	155	76	--	1	26	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	27.8	--	--	0.02	--
8-Jun-10	22	500	440	7.89	190	190	69	--	1	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	22.1	--	--	0.02	--
15-Jun-10	23	500	440	7.92	158	200	51	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	18.7	--	--	0.02	--
22-Jun-10	24	500	430	7.68	160	155	57	--	1	19	0.01	0.5	0.02	0.005	0.5	0.005	94	71.42564	0.0315	0.00035	0.00119	0.00017	0.00001	0.000005	0.05	0.00007	0.000005	20.3	0.0001	0.0013	0.00025	0.00005	
29-Jun-10	25	500	420	7.82	168	165	58	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	20.3	--	--	0.02	--
6-Jul-10	26	500	430	7.98	185	175	60	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	22.1	--	--	0.02	--
13-Jul-10	27	500	430	7.95	181	170	71	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	22.4	--	--	0.02	--
20-Jul-10	28	500	430	7.69	188	170	61	--	1	18	0.01	0.8	0.02	0.005	0.47	0.005	98	75.2864	0.0243	0.00036	0.00139	0.00017	0.00001	0.000005	0.05	0.00007	0.000005	18.2	0.0001	0.00148	0.00051	0.00005	
27-Jul-10	29	500	435	7.91	196	160	77	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	22.5	--	--	0.02	--
3-Aug-10	30	500	445	7.84	183	155	73	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	23.5	--	--	0.02	--
10-Aug-10	31	500	425	7.88	156	160	54	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	18.3	--	--	0.02	--
17-Aug-10	32	500	455	7.64	170	160	67	--	1	17	0.01	0.5	0.02	0.005	0.39	0.007	110	79.22674	0.0189	0.00025	0.00124	0.00155	0.00001	0.000005	0.05	0.00008	0.000006	19.3	0.0001	0.00143	0.00084	0.00005	
24-Aug-10	33	500	425	7.91	173	180	60	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	21.2	--	--	0.02	--
31-Aug-10	34	500	435	7.77	182	180	67	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	21.5	--	--	0.02	--
7-Sep-10	35	500	445	7.71	170	171	68	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	21.7	--	--	0.02	--
14-Sep-10	36	500	435	7.68	210	175	74	--	1	15	0.01	0.5	0.02	0.005	0.23	0.005	180	88.97606	0.0167	0.00023	0.0009	0.00161	0.00001	0.000005	0.05	0.00008	0.000008	22.1	0.0001	0.00137	0.00088	0.00005	
21-Sep-10	37	500	425	7.8	207	150	98	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	23.4	--	--	0.02	--
28-Sep-10	38	500	435	7.67	198	180	86	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	23.6	--	--	0.02	--
5-Oct-10	39	500	440	7.76	205	180	85	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	23.2	--	--	0.02	--
12-Oct-10	40	500	435	7.72	216	180	90	--	1	17	0.01	0.5	0.02	0.005	0.27	0.012	150	105.2451	0.0141	0.00023	0.00119	0.00174	0.00001	0.000005	0.05	0.00009	0.000013	25.5	0.0003	0.00145	0.00042	0.00005	
19-Oct-10	41	500	440	7.71	240	175	97	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	25	--	--	0.02	--
26-Oct-10	42	500	430	7.75	227	190	90	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	25.5	--	--	0.02	--
2-Nov-10	43	500	425	7.74	229	165	92	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	25.5	--	--	0.02	--
9-Nov-10	44	500	440	7.65	198	180	86	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	27.7	--	--	0.02	--
16-Nov-10	45	500	410	8.32	350	185	145	--	1	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	49.3	--	--	0.02	--
23-Nov-10	46	500	430	7.67	283	175	130	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	34.7	--	--	0.02	--
30-Nov-10	47	500	425	7.76	225	170	92	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--								

HC-21
Sample Weight = 1 kg

Date	Accum. Weeks	Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia (mgN/l)	Diss.-P	TDS	Hardness CaCO3 (mg/l)	Dissolved Metals by ICP-MS (Cantest)															
																			Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	Cu	La		
		Input	Output					(pH Units)	(µS/cm)																								(mV)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001	0.0001	
21-Dec-10	50	500	435	7.79	290	150	102	--	1	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	31.2	--	--	0.02	--	
28-Dec-10	51	500	440	7.68	267	155	96	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	30.2	--	--	0.02	--	
4-Jan-11	52	500	445	7.72	295	145	121	--	1	26	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	37.8	--	--	0.02	--	
11-Jan-11	53	500	440	7.65	248	175	93	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	28.6	--	--	0.02	--	
18-Jan-11	54	500	435	7.65	305	160	135	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	35.4	--	--	0.02	--	
25-Jan-11	55	500	425	7.62	278	160	124	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	32.2	--	--	0.02	--	
1-Feb-11	56	500	435	7.62	277	180	120	--	1	20	0.05	1.8	0.02	0.005	0.11	0.008	150	140	0.0099	0.0002	0.00067	0.00228	0.00001	0.000005	0.05	0.00007	0.000011	36.6	0.0001	0.00124	0.00031	0.00005		
8-Feb-11	57	500	420	7.65	279	175	113	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	34.1	--	--	0.02	--	
15-Feb-11	58	500	420	7.68	314	150	126	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	37	--	--	0.02	--	
22-Feb-11	59	500	435	7.81	335	160	127	--	1	26	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	43.1	--	--	0.02	--	
1-Mar-11	60	500	475	7.68	287	140	100	--	1	32	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	37.6	--	--	0.02	--	
8-Mar-11	61	500	425	7.55	274	145	111	--	1	26	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	33.9	--	--	0.02	--	
15-Mar-11	62	500	435	7.85	251	160	98	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	30.4	--	--	0.02	--	
22-Mar-11	63	500	430	7.81	286	145	125	--	1	25	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	36	--	--	0.02	--	
29-Mar-11	64	500	435	7.63	246	150	98	--	1	21	0.01	0.6	0.02	0.005	0.27	0.005	140	111	0.011	0.00014	0.00044	0.00169	0.00001	0.000005	0.05	0.00006	0.000005	28.7	0.0001	0.000576	0.00033	0.00005		
5-Apr-11	65	500	430	7.6	308	180	110	--	1	25	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	38.1	--	--	0.02	--	
12-Apr-11	66	500	450	7.77	245	145	87	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	28.3	--	--	0.02	--	
19-Apr-11	67	500	445	7.83	233	125	77	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	25.7	--	--	0.02	--	
26-Apr-11	68	500	450	7.69	318	160	110	--	1	29	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	37.4	--	--	0.02	--	
3-May-11	69	500	445	7.72	275	145	94	--	1	28	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	33.5	--	--	0.02	--	
10-May-11	70	500	480	7.8	301	120	59	--	1	32	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	33.5	--	--	0.02	--	
17-May-11	71	500	435	7.78	255	180	81	--	1	28	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	30.1	--	--	0.02	--	
24-May-11	72	500	440	7.68	269	140	99	--	1	24	0.01	--	0.02	0.005	0.22	0.007	150	120	0.0088	0.00017	0.00036	0.0021	0.00001	0.000005	0.05	0.00005	0.000006	31.4	0.0001	0.000398	0.00027	0.00005		
31-May-11	73	500	445	7.85	312	160	110	--	1	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	39.7	--	--	0.02	--	
7-Jun-11	74	500	435	7.78	284	160	100	--	1	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	34.5	--	--	0.02	--	
14-Jun-11	75	500	450	7.82	293	195	100	--	1	26	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	37.6	--	--	0.02	--	
21-Jun-11	76	500	440	7.83	275	145	94	--	1	25	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	33.6	--	--	0.02	--	
28-Jun-11	77	500	445	7.56	238	155	80	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	27.3	--	--	0.02	--	
5-Jul-11	78	500	465	7.92	329	160	110	--	1	29	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	45.3	--	--	0.02	--	
12-Jul-11	79	500	435	7.88	288	190	92	--	1	27	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	34.7	--	--	0.02	--	
19-Jul-11	80	500	455	7.87	294	195	96	--	1	31	0.01	2.3	0.02	0.005	0.22	0.005	200	133	0.0087	0.00018	0.00045	0.00211	0.00001	0.000005	0.05	0.00008	0.000005	35.2	0.0001	0.000311	0.00142	0.00005		
26-Jul-11	81	500	445	7.85	254	165	84	--	1	25	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	30.4	--	--	0.02	--	
2-Aug-11	82	500	435	7.73	305	180	100	--	1	27	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	38.3	--	--	0.02	--	
9-Aug-11	83	500	445	7.88	262	170	87	--	1	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	29.8	--	--	0.02	--	
16-Aug-11	84	500	440	7.77	288	180	93	--	1	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	31.5	--	--	0.02	--	
23-Aug-11	85	500	435	7.85	278	165	91	--	1	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	32.2	--	--	0.02	--	
30-Aug-11	86	500	455	7.88	265	175	83	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	30.4	--	--	0.02	--	
6-Sep-11	87	500	435	7.79	293	160	110	--	1	25	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	36.8	--	--	0.02	--	
13-Sep-11	88	500	440	7.7	287	175	94	--	1	26	0.01	2.6	0.02	0.005	0.28	0.005	180	125	0.0072	0.00014	0.00038	0.00195	0.00001	0.000005	0.05	0.00005	0.000006	33.1	0.0001	0.000245	0.00038	0.00005		
20-Sep-11	89	500	450	7.58	273	160	87	--	1	25	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	31.1	--	--	0.02	--	
27-Sep-11	90	500	440	7.58	294	170	93	--	1	30	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	37.7	--	--	0.02	--	
4-Oct-11	91	500	450	7.68	299	130	86	--	1	29	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	34.6	--	--	0.02		

HC-21
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
		0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
5-Jan-10	0	0.01	0.00005	0.0052	25.8	0.18	0.015	0.02	0.0059	0.08	0.0001	14.7	0.012	0.0025	0.38	0.00004	49.3	0.099	0.0002	0.00033	0.00005	0.0001	0.0002	0.0001	0.00012	0.0001	0.001	0.0001
12-Jan-10	1	0.01	0.00005	0.0034	46.3	0.16	0.015	0.02	0.0057	0.07	0.0001	17.2	0.016	0.0069	0.42	0.00004	41.2	0.092	0.0002	0.00041	0.00005	0.0001	0.0002	0.0001	0.00013	0.0001	0.001	0.0001
19-Jan-10	2	0.01	0.00005	0.0029	19.2	0.096	0.015	0.02	0.0057	0.0048	0.0001	6.32	0.0066	0.0032	0.61	0.00004	8.86	0.084	0.0002	0.00016	0.00005	0.0001	0.0002	0.0001	0.00021	0.0001	0.001	0.0001
26-Jan-10	3	0.01	--	--	18.4	--	--	--	--	--	--	5.5	--	--	--	--	5	--	--	--	--	--	--	--	--	--	--	--
2-Feb-10	4	0.01	0.00005	0.0018	18.9	0.109	0.015	0.02	0.0046	0.0033	0.0001	5.17	0.0057	0.0027	0.73	0.00004	3.18	0.089	0.0002	0.00015	0.00005	0.0001	0.0003	0.0001	0.00016	0.0001	0.001	0.0001
9-Feb-10	5	0.01	--	--	16.4	--	--	--	--	--	--	4	--	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--
16-Feb-10	6	0.01	--	--	11.2	--	--	--	--	--	--	2.7	--	--	--	--	1.3	--	--	--	--	--	--	--	--	--	--	--
23-Feb-10	7	0.01	--	--	9.74	--	--	--	--	--	--	2.3	--	--	--	--	0.9	--	--	--	--	--	--	--	--	--	--	--
2-Mar-10	8	0.01	0.00005	0.0009	14.2	0.087	0.015	0.02	0.0043	0.0016	0.0001	2.67	0.0041	0.0023	0.68	0.00004	1.22	0.055	0.0002	0.00015	0.00005	0.0001	0.0002	0.0001	0.00009	0.0001	0.001	0.0001
9-Mar-10	9	0.01	--	--	10.6	0.069	--	--	--	--	--	1.8	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--
16-Mar-10	10	0.05	--	--	10.7	--	--	--	--	--	--	1.7	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	--
23-Mar-10	11	0.01	--	--	8.79	--	--	--	--	--	--	1.3	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
30-Mar-10	12	0.01	0.00005	0.0006	9.09	0.057	0.015	0.02	0.0039	0.0008	0.0001	1.66	0.0029	0.001	0.54	0.00004	0.68	0.035	0.0002	0.00013	0.00005	0.0001	0.0002	0.0001	0.00006	0.0001	0.001	0.0001
6-Apr-10	13	0.01	--	--	9.16	--	--	--	--	--	--	1.1	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
13-Apr-10	14	0.02	--	--	8.2	--	--	--	--	--	--	1.2	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
20-Apr-10	15	0.01	--	--	8.11	--	--	--	--	--	--	1.4	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
27-Apr-10	16	0.013	0.000014	0.0005	8.41	0.0598	0.002	0.02	0.00386	0.00107	--	1.27	0.00295	0.00083	0.6	0.000005	0.49	0.0356	0.00002	0.000135	0.000005	0.00001	0.0005	0.00001	0.000058	0.0002	0.0003	0.0001
4-May-10	17	0.01	--	--	8.45	--	--	--	--	--	--	0.9	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
11-May-10	18	0.01	--	--	8.63	--	--	--	--	--	--	1.1	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
18-May-10	19	0.01	--	--	8.37	--	--	--	--	--	--	0.9	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
25-May-10	20	0.001	0.000029	0.0005	6.44	0.047	0.002	0.02	0.003	0.00061	--	0.75	0.00185	0.00058	0.4	0.000005	0.31	0.0276	0.00002	0.000108	0.000005	0.00012	0.0005	0.00001	0.000038	0.0002	0.0004	0.0001
1-Jun-10	21	0.02	--	--	9.87	--	--	--	--	--	--	0.9	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
8-Jun-10	22	0.01	--	--	7.96	--	--	--	--	--	--	0.8	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
15-Jun-10	23	0.01	--	--	6.88	--	--	--	--	--	--	0.7	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
22-Jun-10	24	0.001	0.000005	0.0005	7.04	0.0405	0.002	0.02	0.00275	0.00055	--	0.72	0.00193	0.0006	0.4	0.000005	0.31	0.026	0.00002	0.000101	0.000005	0.00003	0.0005	0.00001	0.000034	0.0002	0.0004	0.0001
29-Jun-10	25	0.01	--	--	8.28	--	--	--	--	--	--	0.6	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
6-Jul-10	26	0.01	--	--	8.66	--	--	--	--	--	--	0.6	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
13-Jul-10	27	0.01	--	--	8.79	--	--	--	--	--	--	0.6	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
20-Jul-10	28	0.001	0.000047	0.0005	7.25	0.0456	0.005	0.02	0.00346	0.00091	--	0.66	0.00212	0.00061	0.3	0.000005	0.32	0.0307	0.00002	0.000131	0.000005	0.00007	0.0005	0.00001	0.000035	0.0002	0.0007	0.0001
27-Jul-10	29	0.01	--	--	8.66	--	--	--	--	--	--	0.6	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
3-Aug-10	30	0.01	--	--	9.16	--	--	--	--	--	--	0.4	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
10-Aug-10	31	0.01	--	--	7.2	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
17-Aug-10	32	0.002	0.000048	0.0005	7.54	0.0441	0.002	0.02	0.00285	0.00062	--	0.53	0.0016	0.00049	0.4	0.000005	0.27	0.0291	0.00002	0.000115	0.000005	0.00002	0.0005	0.00001	0.000029	0.0002	0.0003	0.0001
24-Aug-10	33	0.01	--	--	8.63	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
31-Aug-10	34	0.01	--	--	9	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
7-Sep-10	35	0.01	--	--	9.17	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
14-Sep-10	36	0.006	0.000297	0.0005	8.21	0.0392	0.002	0.02	0.00286	0.00062	--	0.49	0.00163	0.00057	0.3	0.000005	0.26	0.0341	0.00002	0.000123	0.000005	0.00005	0.0005	0.00001	0.00003	0.0002	0.0006	0.0001
21-Sep-10	37	0.01	--	--	9.83	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
28-Sep-10	38	0.01	--	--	9.68	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
5-Oct-10	39	0.01	--	--	9.17	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
12-Oct-10	40	0.002	0.000346	0.0005	10.1	0.0414	0.008	0.006	0.0026	0.00076	--	0.47	0.00168	0.00064	0.4	0.000005	0.27	0.0379	0.00002	0.000128	0.000005	0.00009	0.0005	0.00001	0.000029	0.0002	0.0018	0.0001
19-Oct-10	41	0.01	--	--	10.4	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
26-Oct-10	42	0.01	--	--	10.6	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
2-Nov-10	43	0.01	--	--	11	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
9-Nov-10	44	0.01	--	--	11.8	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
16-Nov-10	45	0.01	--	--	13.2	--	--	--	--	--	--	0.6	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
23-Nov-10	46	0.01	--	--	13.6	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
30-Nov-10	47	0.01	--	--	9.55	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
7-Dec-10	48	0.001	0.000028	0.0005	11.3	0.0447	0.004	0.002	0.00276	0.00082	--	0.48	0.00152	0.00067	0.3	0.000005	0.28	0.0446	0.00002	0.000137	0.000005	0.00003	0.0005	0.00001	0.00003	0.0003	0.0007	0.0001
14-Dec-10	49	0.01	--	--	10.4	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--

HC-21
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.01	mg/l 0.00005	mg/l 0.0001	mg/l 0.005	mg/l 0.0001	mg/L 0.015	µg/L 0.02	mg/l 0.0001	mg/l 0.0002	mg/l 0.0001	mg/l 0.01	mg/l 0.0001	mg/l 0.0002	mg/l 0.05	mg/l 0.00004	mg/l 0.005	mg/l 0.0001	mg/l 0.0002	mg/l 0.00002	mg/l 0.00005	mg/l 0.0001	mg/l 0.0002	mg/l 0.0001	mg/l 0.00005	mg/l 0.0001	mg/l 0.001	mg/l 0.0001
21-Dec-10	50	0.01	--	--	10.8	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
28-Dec-10	51	0.01	--	--	10.8	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
4-Jan-11	52	0.01	--	--	13.5	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
11-Jan-11	53	0.01	--	--	10.3	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
18-Jan-11	54	0.01	--	--	13	--	--	--	--	--	--	0.5	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
25-Jan-11	55	0.01	--	--	11.6	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
1-Feb-11	56	0.001	0.000015	0.0005	11.9	0.0403	0.015	0.002	0.00242	0.00077	--	0.43	0.00124	0.00064	0.4	0.000005	0.27	0.0498	0.00002	0.000126	0.000005	0.00002	0.0005	0.00001	0.000021	0.0002	0.0006	0.0001
8-Feb-11	57	0.01	--	--	12.6	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
15-Feb-11	58	0.01	--	--	13	--	--	--	--	--	--	0.7	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
22-Feb-11	59	0.01	--	--	13.2	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
1-Mar-11	60	0.01	--	--	12.1	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
8-Mar-11	61	0.01	--	--	11.7	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
15-Mar-11	62	0.01	--	--	10.8	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
22-Mar-11	63	0.01	--	--	12.6	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
29-Mar-11	64	0.006	0.000012	0.0005	9.58	0.00805	0.002	0.002	0.00161	0.00052	--	0.35	0.00108	0.00049	0.4	0.000005	0.2	0.0409	0.00002	0.000108	0.000005	0.00001	0.0005	0.00001	0.000012	0.0002	0.0004	0.0001
5-Apr-11	65	0.01	--	--	13.6	--	--	--	--	--	--	0.5	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
12-Apr-11	66	0.01	--	--	10.2	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
19-Apr-11	67	0.01	--	--	9.1	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
26-Apr-11	68	0.01	--	--	12.8	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
3-May-11	69	0.01	--	--	11.5	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
10-May-11	70	0.01	--	--	10.8	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
17-May-11	71	0.01	--	--	10.1	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
24-May-11	72	0.003	0.000051	0.0005	10.2	0.0126	0.008	0.002	0.00174	0.00047	--	0.33	0.00094	0.00052	0.4	0.000005	0.23	0.0475	0.00002	0.000114	0.000005	0.00001	0.0005	0.00001	0.000023	0.0002	0.0007	0.0001
31-May-11	73	0.01	--	--	11.2	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
7-Jun-11	74	0.01	--	--	11.3	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
14-Jun-11	75	0.01	--	--	13	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
21-Jun-11	76	0.01	--	--	11	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
28-Jun-11	77	0.01	--	--	9.85	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
5-Jul-11	78	0.01	--	--	14.4	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
12-Jul-11	79	0.01	--	--	11.3	--	--	--	--	--	--	0.4	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
19-Jul-11	80	0.001	0.000013	0.0005	10.9	0.00843	0.006	0.002	0.00207	0.00047	--	0.35	0.00107	0.00057	0.5	0.000005	0.25	0.0552	0.00002	0.000128	0.000005	0.00003	0.0005	0.00001	0.000024	0.0002	0.0013	0.0001
26-Jul-11	81	0.01	--	--	10.6	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
2-Aug-11	82	0.01	--	--	12.3	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
9-Aug-11	83	0.01	--	--	10.5	--	--	--	--	--	--	0.4	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
16-Aug-11	84	0.01	--	--	11.4	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
23-Aug-11	85	0.01	--	--	11.5	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
30-Aug-11	86	0.01	--	--	11.3	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
6-Sep-11	87	0.01	--	--	12.4	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
13-Sep-11	88	0.002	0.000045	0.0005	10.2	0.00591	0.007	0.002	0.00152	0.00036	--	0.26	0.00087	0.0005	0.4	0.000005	0.21	0.0499	0.00002	0.000116	0.000005	0.00004	0.0005	0.00001	0.00002	0.0002	0.0009	0.0001
20-Sep-11	89	0.01	--	--	11.2	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
27-Sep-11	90	0.01	--	--	12.8	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
4-Oct-11	91	0.01	--	--	12.1	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
11-Oct-11	92	0.01	--	--	12.2	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
18-Oct-11	93	0.01	--	--	12.1	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
25-Oct-11	94	0.01	--	--	12.1	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
1-Nov-11	95	0.01	--	--	13.2	--	--	--	--	--	--	0.6	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
8-Nov-11	96	0.001	0.000077	0.0005	11	0.0056	0.005	0.002	0.00136	0.00035	--	0.3	0.00111	0.00048	0.5	0.000005	0.25	0.0547	0.00002	0.000161	0.000005	0.00001	0.0005	0.00001	0.000024	0.0002	0.0003	0.0001
15-Nov-11	97	0.01	--	--	14.3	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
22-Nov-11	98	0.01	--	--	13.7	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
29-Nov-11	99	0.01	--	--	12	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
6-Dec-11	100	0.01	--	--	12.1	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
13-Dec-11	101	0.01	--	--	11.4	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
20-Dec-11	102	0.01	--	--	11.4	--	--	--	--	--	--	0.3																

HC-23
Sample Weight = 1 kg

Date	Accum. Weeks	Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness	Dissolved Metals by ICP-MS (Cantest)															
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5		to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	CaCO3 (mg/l)	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	Cu	La	
																					(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
5-Jan-10	0	750	590	9.93	184	65	1	1	1	62	0.05	9.15	0.05	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0001	0.0001	0.0001	0.005	0.0001	0.00001	1.03	0.0002	0.0001	0.0001	0.0001	0.0001	
12-Jan-10	1	500	410	9.75	369	50	6	--	--	93	0.06	9.15	0.05	0.002	0.12	0.06	163	3.88903	0.34	0.0001	0.016	0.0005	0.0001	0.0001	0.23	0.0001	0.00001	0.01	0.0003	0.0001	0.0008	0.0001		
19-Jan-10	2	500	415	9.88	221	30	4	--	--	85	0.12	20.8	0.05	0.008	0.12	0.06	163	2.94154	0.21	0.001	0.132	0.0004	0.0001	0.0001	0.7	0.0001	0.00001	0.01	0.0002	0.0002	0.0033	0.0001		
26-Jan-10	3	500	410	9.86	177	55	4	--	--	64	0.05	6.51	0.05	0.004	0.07	0.02	85	2.08185	0.17	0.0004	0.096	0.0003	0.0001	0.0001	0.32	0.0001	0.00001	0.57	0.0004	0.0001	0.0015	0.0001		
2-Feb-10	4	500	415	9.9	153	50	6	--	--	62	0.05	2.71	0.05	0.004	0.1	0.03	115	2.0481	0.18	0.0003	0.072	0.0003	0.0001	0.0001	0.22	0.0001	0.00001	0.54	0.0002	0.0002	0.0014	0.0001		
9-Feb-10	5	500	415	9.84	230	35	7	--	--	93	--	--	--	--	--	--	--	--	0.21	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
16-Feb-10	6	500	405	9.94	326	40	4	--	--	134	--	--	--	--	--	--	--	--	0.24	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
23-Feb-10	7	500	410	9.89	333	55	2	--	--	149	--	--	--	--	--	--	--	--	0.16	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
2-Mar-10	8	500	415	9.63	138	55	5	--	--	65	0.05	0.56	0.05	0.01	0.13	0.02	10	1.88209	0.13	0.0002	0.038	0.0002	0.0001	0.0001	0.13	0.0001	0.00001	0.49	0.0002	0.0001	0.0012	0.0001		
9-Mar-10	9	500	430	9.64	153	55	3	--	--	69	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
16-Mar-10	10	500	435	9.44	153	50	4	--	--	70	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
23-Mar-10	11	500	435	9.4	106	50	3	--	--	50	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
30-Mar-10	12	500	425	9.48	126	45	2	--	--	55	0.05	0.31	0.05	0.003	0.14	0.09	43	2.28902	0.1	0.0001	0.031	0.0002	0.0001	0.0001	0.097	0.0001	0.00001	0.62	0.0003	0.0001	0.0011	0.0001		
6-Apr-10	13	500	450	9.36	101	55	2	--	--	46	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
13-Apr-10	14	500	430	9.51	104	60	3	--	--	47	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
20-Apr-10	15	500	415	9.67	146	50	2	--	--	64	--	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
27-Apr-10	16	500	425	9.49	87	70	1	--	--	40	0.02	0.5	0.02	0.005	0.07	0.009	48	2.52116	0.104	0.00009	0.0164	0.00014	0.00001	0.000005	0.06	0.00005	0.000005	0.68	0.0001	4.7E-05	0.00119	0.00005		
4-May-10	17	500	440	9.37	81	75	2	--	--	38	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
11-May-10	18	500	420	9.41	88	80	3	--	--	39	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
18-May-10	19	500	435	9.15	60	100	3	--	--	26	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
25-May-10	20	500	410	9.42	76	100	8	--	--	29	0.01	0.5	0.02	0.005	0.22	0.005	52	3.85665	0.0922	0.00006	0.00958	0.00026	0.00001	0.000005	0.05	0.00005	0.000005	1.05	0.0001	2.6E-05	0.00095	0.00005		
1-Jun-10	21	500	465	9.03	91	110	10	--	--	33	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
8-Jun-10	22	500	440	9.07	103	100	14	--	--	37	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
15-Jun-10	23	500	485	8.82	99	120	9	--	--	38	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
22-Jun-10	24	500	485	8.36	79	120	7	--	--	32	0.01	0.5	0.02	0.005	0.3	0.005	42	10.03389	0.0722	0.00011	0.00787	0.00046	0.00001	0.000005	0.05	0.00005	0.000005	2.37	0.0002	4.1E-05	0.00124	0.00005		
29-Jun-10	25	500	438	9.08	67	120	6	--	--	27	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
6-Jul-10	26	500	435	9.09	72	120	5	--	--	29	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
13-Jul-10	27	500	435	9.17	54	106	5	--	--	27	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
20-Jul-10	28	500	435	8.95	66	130	5	--	--	28	0.01	0.5	0.02	0.005	0.19	0.008	34	8.73215	0.0734	0.00006	0.00598	0.00031	0.00001	0.000005	0.05	0.00005	0.000005	2.03	0.0001	2.9E-05	0.00123	0.00005		
27-Jul-10	29	500	440	8.9	66	110	6	--	--	28	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
3-Aug-10	30	500	430	9.01	59	130	5	--	--	26	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
10-Aug-10	31	500	435	9.01	53	135	4	--	--	25	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
17-Aug-10	32	500	450	8.75	55	155	4	--	--	24	0.01	0.5	0.02	0.005	0.21	0.008	28	11.71952	0.0695	0.00004	0.00417	0.00033	0.00001	0.000005	0.05	0.00005	0.000005	2.6	0.0001	1.5E-05	0.00112	0.00005		
24-Aug-10	33	500	435	8.95	59	155	4	--	--	24	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
31-Aug-10	34	500	440	8.94	54	125	3	--	--	25	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
7-Sep-10	35	500	440	8.92	53	140	4	--	--	24	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
14-Sep-10	36	500	485	8.56	59	150	3	--	--	28	0.01	0.5	0.02	0.005	0.05	0.005	50	16.71931	0.0639	0.00007	0.00381	0.00042	0.00001	0.000005	0.05	0.00005	0.000005	3.91	0.0001	2.5E-05	0.0007	0.00005		
21-Sep-10	37	500	475	8.74	57	145	4	--	--	26	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
28-Sep-10	38	500	440	8.78	46	160	4	--	--	24	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
5-Oct-10	39	500	445	8.8	49	150	4	--	--	25	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	0.02	--		
12-Oct-10	40	500	440	8.13	50	175	3	--	1	22	0.01	0.5	0.02	0.005	0.13	0.005	26	13.6414	0.0723	0.00004	0.00329	0.00031	0.00001	0.000005	0.05	0.00005	0.000.							

HC-23
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Ti	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
5-Jan-10	0	0.27	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
12-Jan-10	1	0.21	0.00008	0.0011	0.29	0.0024	0.015	0.02	0.0037	0.0024	0.0001	2.54	0.0013	0.0008	2.8	0.00004	77.8	0.002	0.0002	0.00002	0.00005	0.0001	0.0041	0.005	0.00012	0.048	0.001	0.0001
19-Jan-10	2	0.12	0.00006	0.0005	0.16	0.0015	0.015	0.02	0.0014	0.0005	0.0001	1.34	0.0006	0.0006	1.89	0.00004	46.7	0.0014	0.0002	0.00002	0.00005	0.0001	0.0036	0.0017	0.00006	0.031	0.001	0.0001
26-Jan-10	3	0.12	--	--	0.18	--	--	--	--	--	--	1.1	--	--	--	37.2	--	--	--	--	--	--	--	--	--	--	0.005	--
2-Feb-10	4	0.15	0.00006	0.0002	0.17	0.0015	0.015	0.02	0.0008	0.0003	0.0001	1.18	0.0005	0.0005	1.47	0.00004	36.7	0.0012	0.0002	0.00002	0.00005	0.0001	0.0027	0.0009	0.00005	0.024	0.001	0.0001
9-Feb-10	5	0.17	--	--	0.21	--	--	--	--	--	--	1.4	--	--	--	51.4	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Feb-10	6	0.22	--	--	0.27	--	--	--	--	--	--	1.9	--	--	--	--	64.7	--	--	--	--	--	--	--	--	--	0.005	--
23-Feb-10	7	0.1	--	--	0.24	--	--	--	--	--	--	2	--	--	--	--	64.9	--	--	--	--	--	--	--	--	--	0.005	--
2-Mar-10	8	0.1	0.00005	0.0005	0.16	0.0045	0.015	0.02	0.0005	0.0003	0.0001	1.23	0.0004	0.0002	1.95	0.00004	31.6	0.0013	0.0002	0.00002	0.00005	0.0001	0.0022	0.0001	0.00005	0.017	0.001	0.0001
9-Mar-10	9	0.15	--	--	0.19	0.003	--	--	--	--	--	1	--	--	--	--	31.6	--	--	--	--	--	--	--	--	--	0.005	--
16-Mar-10	10	0.09	--	--	0.19	--	--	--	--	--	--	1.2	--	--	--	--	33.3	--	--	--	--	--	--	--	--	--	0.005	--
23-Mar-10	11	0.03	--	--	0.2	--	--	--	--	--	--	0.8	--	--	--	--	22.2	--	--	--	--	--	--	--	--	--	0.005	--
30-Mar-10	12	0.02	0.00005	0.0009	0.18	0.0001	0.015	0.02	0.0003	0.0002	0.0001	1.18	0.0005	0.0002	1.52	0.00004	25.8	0.0014	0.0002	0.00002	0.00005	0.0001	0.0004	0.0001	0.00005	0.016	0.001	0.0001
6-Apr-10	13	0.07	--	--	0.2	--	--	--	--	--	--	0.8	--	--	--	--	18.7	--	--	--	--	--	--	--	--	--	0.005	--
13-Apr-10	14	0.13	--	--	0.23	--	--	--	--	--	--	0.9	--	--	--	--	20.9	--	--	--	--	--	--	--	--	--	0.005	--
20-Apr-10	15	0.06	--	--	0.23	--	--	--	--	--	--	1.2	--	--	--	--	27.6	--	--	--	--	--	--	--	--	--	0.005	--
27-Apr-10	16	0.037	0.00002	0.0005	0.2	0.00077	0.004	0.02	0.00023	0.00009	--	1	0.00049	0.00021	1.6	0.000005	16.2	0.0016	0.00002	0.000003	0.000005	0.00002	0.0008	0.00007	0.000008	0.0101	0.0002	0.0001
4-May-10	17	0.04	--	--	0.3	--	--	--	--	--	--	0.8	--	--	--	--	15.9	--	--	--	--	--	--	--	--	--	0.005	--
11-May-10	18	0.04	--	--	0.25	--	--	--	--	--	--	1	--	--	--	--	17.6	--	--	--	--	--	--	--	--	--	0.005	--
18-May-10	19	0.03	--	--	0.32	--	--	--	--	--	--	0.7	--	--	--	--	11	--	--	--	--	--	--	--	--	--	0.005	--
25-May-10	20	0.019	0.000016	0.0005	0.3	0.00126	0.002	0.02	0.00028	0.00007	--	0.99	0.00047	0.00032	1.3	0.000005	13.3	0.00237	0.00002	0.000002	0.000005	0.00013	0.0005	0.00003	0.000003	0.0065	0.0002	0.0001
1-Jun-10	21	0.01	--	--	0.6	--	--	--	--	--	--	1.3	--	--	--	--	16.8	--	--	--	--	--	--	--	--	--	0.005	--
8-Jun-10	22	0.01	--	--	0.6	--	--	--	--	--	--	1.3	--	--	--	--	18.3	--	--	--	--	--	--	--	--	--	0.005	--
15-Jun-10	23	0.01	--	--	0.96	--	--	--	--	--	--	1.6	--	--	--	--	17	--	--	--	--	--	--	--	--	--	0.005	--
22-Jun-10	24	0.023	0.000033	0.001	1	0.00209	0.002	0.02	0.00024	0.00009	--	1.43	0.00066	0.00033	2.1	0.000005	12.3	0.00557	0.00002	0.000002	0.000005	0.00002	0.0005	0.00003	0.000005	0.0053	0.00009	0.0001
29-Jun-10	25	0.02	--	--	0.73	--	--	--	--	--	--	1.2	--	--	--	--	11.6	--	--	--	--	--	--	--	--	--	0.005	--
6-Jul-10	26	0.01	--	--	0.81	--	--	--	--	--	--	1.1	--	--	--	--	12.2	--	--	--	--	--	--	--	--	--	0.005	--
13-Jul-10	27	0.01	--	--	0.8	--	--	--	--	--	--	1	--	--	--	--	10.4	--	--	--	--	--	--	--	--	--	0.005	--
20-Jul-10	28	0.008	0.000053	0.001	0.89	0.00152	0.007	0.02	0.0002	0.0001	--	1.43	0.00082	0.00027	1.5	0.000005	9.75	0.00522	0.00002	0.000002	0.000005	0.00003	0.0005	0.00003	0.000002	0.0047	0.0008	0.0001
27-Jul-10	29	0.01	--	--	1.06	--	--	--	--	--	--	1.1	--	--	--	--	9	--	--	--	--	--	--	--	--	--	0.005	--
3-Aug-10	30	0.01	--	--	1.24	--	--	--	--	--	--	1.5	--	--	--	--	9.6	--	--	--	--	--	--	--	--	--	0.005	--
10-Aug-10	31	0.01	--	--	1.05	--	--	--	--	--	--	1	--	--	--	--	7.4	--	--	--	--	--	--	--	--	--	0.005	--
17-Aug-10	32	0.007	0.000045	0.0008	1.27	0.0015	0.002	0.02	0.00016	0.00022	--	1.4	0.00077	0.00016	1.7	0.000005	6.63	0.00636	0.00002	0.000002	0.000005	0.00001	0.0005	0.00002	0.000002	0.0035	0.0002	0.0001
24-Aug-10	33	0.01	--	--	1.35	--	--	--	--	--	--	1.2	--	--	--	--	7.4	--	--	--	--	--	--	--	--	--	0.005	--
31-Aug-10	34	0.01	--	--	1.38	--	--	--	--	--	--	1.2	--	--	--	--	7	--	--	--	--	--	--	--	--	--	0.005	--
7-Sep-10	35	0.01	--	--	1.34	--	--	--	--	--	--	1.2	--	--	--	--	6.2	--	--	--	--	--	--	--	--	--	0.005	--
14-Sep-10	36	0.005	0.000143	0.0011	1.69	0.00196	0.002	0.02	0.00015	0.00002	--	1.38	0.00086	0.00017	1.7	0.000005	5.09	0.00933	0.00002	0.000002	0.000005	0.00001	0.0005	0.00002	0.000002	0.0035	0.0001	0.0001
21-Sep-10	37	0.01	--	--	1.57	--	--	--	--	--	--	1.1	--	--	--	--	5.3	--	--	--	--	--	--	--	--	--	0.005	--
28-Sep-10	38	0.01	--	--	1.47	--	--	--	--	--	--	1	--	--	--	--	4.7	--	--	--	--	--	--	--	--	--	0.005	--
5-Oct-10	39	0.01	--	--	1.49	--	--	--	--	--	--	1	--	--	--	--	4.3	--	--	--	--	--	--	--	--	--	0.005	--
12-Oct-10	40	0.004	0.000126	0.0009	1.47	0.00171	0.006	0.007	0.00011	0.00006	--	1.2	0.00067	0.00013	1.4	0.000005	3.57	0.0065	0.00002	0.000002	0.000005	0.00006	0.0005	0.00002	0.000004	0.0032	0.0003	0.0001
19-Oct-10	41	0.01	--	--	1.66	--	--	--	--	--	--	1.2	--	--	--	--	4.2	--	--	--	--	--	--	--	--	--	0.005	--
26-Oct-10	42	0.01	--	--	1.5	--	--	--	--	--	--	1.1	--	--	--	--	3.6	--	--	--	--	--	--	--	--	--	0.005	--
2-Nov-10	43	0.01	--	--	1.85	--	--	--	--	--	--	1	--	--	--	--	3.7	--	--	--	--	--	--	--	--	--	0.005	--
9-Nov-10	44	0.01	--	--	1.72	--	--	--	--	--	--	1	--	--	--	--	3.3	--	--	--	--	--	--	--	--	--	0.005	--
16-Nov-10	45	0.01	--	--	2.06	--	--	--	--	--	--	1.8	--	--	--	--	5	--	--	--	--	--	--	--	--	--	0.005	--
23-Nov-10	46	0.01	--	--	1.67	--	--	--	--	--	--	1.1	--	--	--	--	3.1	--	--	--	--	--	--	--	--	--	0.005	--
30-Nov-10	47	0.01	--	--	1.34	--	--	--	--	--	--	0.8	--	--	--	--	2.4	--	--	--	--	--	--	--	--	--	0.005	--
7-Dec-10	48	0.003	0.000022	0.0008	1.48	0.00163	0.002	0.002	0.0001	0.00007	--	1.04	0.00063	0.00011	1.2	0.000005	2.3	0.00724	0.00002	0.000002	0.000005	0.00001	0.0005	0.00001	0.000006	0.0029	0.0002	0.0001
14-Dec-10	49	0.01	--	--	1.83	--	--	--	--	--	--	1.1	--	--	--	--	2.9	--	--	--	--	--	--	--	--	--	0.005	--
21-Dec-10	50	0.01	--	--	1.5	--	--	--	--	--	--	0.7	--	--	--	--	2.2	--	--	--	--	--	--	--	--	--	0.005	--
28-Dec-10	51	0.01	--	--	1.68	--	--	--	--	--	--	0.9	--	--	--	--	2.5	--	--	--	--	--	--	--	--	--	0.005	--
4-Jan-11	52	0.01	--	--	1.71	--	--	--	--	--	--	0.9	--	--	--	--	2.3	--	--	--	--	--	--	--	--	--	0.005	--
11-Jan-11	53	0.01	--	--	1.64	--	--	--	--	--	--	0.9	--	--	--	--	2.1	--	--	--	--	--	--	--	--	--	0.007	--
18-Jan-11	54	0.01	--	--	1.67	--	--	--	--	--	--	0.7	--	--	--	--	2.2	--	--	--	--	--	--	--	--	--	0.005	--
25-Jan-11	55	0.01	--	--	1.98	--	--	--	--	--	--	0.9	--	--	--	--	2.2	--	--	--	--	--	--	--	--	--	0.005	--
1-Feb-11	56	0.002	0.000016	0.0009	1.89	0.00208	0.017	0.002																				

HC-22
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Contest)																														
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia (mg/N/l)	Diss.-P	TDS	Hardness CaCO3 (mg/l)	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	Cu	La
		Input	Output	(µH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	10.01	1	50	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0001	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001	0.0001
5-Jan-10	0	750	620	10.03	129	60	1	--	--	52	0.05	3.38	0.05	0.003	0.02	0.02	53	3.15693	0.35	0.0003	0.008	0.0002	0.0001	0.0001	0.22	0.0001	0.00001	1.05	0.0002	0.0001	0.0012	0.0001
12-Jan-10	1	500	430	9.77	175	55	1	--	--	62	0.05	8.53	0.05	0.005	0.03	0.02	107	2.89845	0.27	0.0024	0.023	0.0002	0.0001	0.0001	0.58	0.0001	0.00001	0.93	0.0002	0.0002	0.0025	0.0001
19-Jan-10	2	500	430	9.71	196	40	3	--	--	75	0.05	7.13	0.05	0.005	0.04	0.02	77	2.28435	0.24	0.0024	0.03	0.0002	0.0001	0.0001	0.57	0.0001	0.00001	0.75	0.0002	0.0001	0.0051	0.0001
26-Jan-10	3	500	425	9.84	160	50	2	--	--	63	--	--	--	--	--	--	--	--	0.27	--	--	--	--	--	--	--	--	--	--	--	0.02	--
2-Feb-10	4	500	415	9.81	145	90	6	--	--	62	0.05	2.21	0.05	0.003	0.05	0.02	90	2.30054	0.24	0.0015	0.023	0.0002	0.0001	0.0001	0.35	0.0001	0.00001	0.81	0.0002	0.0002	0.0018	0.0001
9-Feb-10	5	500	435	9.68	144	50	6	--	--	58	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
16-Feb-10	6	500	415	9.75	232	55	12	--	--	57	--	--	--	--	--	--	--	--	0.32	--	--	--	--	--	--	--	--	--	--	--	0.02	--
23-Feb-10	7	500	410	9.67	221	45	9	--	--	91	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	--	--	--	--	--	0.02	--
2-Mar-10	8	500	430	9.5	111	70	5	--	--	50	0.05	0.2	0.05	0.003	0.07	0.02	110	1.756138	0.15	0.0006	0.014	0.0002	0.0001	0.0001	0.16	0.0001	0.00001	0.55	0.0002	0.0001	0.0019	0.0001
9-Mar-10	9	500	430	9.53	97	60	4	--	--	41	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--	--	--	0.02	--
16-Mar-10	10	500	440	9.3	95	75	8	--	--	39	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	--	--	--	--	0.02	--
23-Mar-10	11	500	445	9.24	98	75	10	--	--	36	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--	--	0.02	--
30-Mar-10	12	500	440	9.3	107	90	11	--	--	38	0.05	0.2	0.05	0.004	0.07	0.05	65	2.17569	0.089	0.0004	0.0088	0.0002	0.0001	0.0001	0.12	0.0001	0.00001	0.69	0.0002	0.0001	0.001	0.0001
6-Apr-10	13	500	455	9.18	93	75	9	--	--	33	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--	0.02	--
13-Apr-10	14	500	430	9.32	100	11	11	--	--	32	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--	--	0.02	--
20-Apr-10	15	500	495	8.98	81	90	9	--	--	30	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	0.02	--
27-Apr-10	16	500	430	8.9	85	130	12	--	--	28	0.01	0.5	0.02	0.005	0.016	0.005	60	2.78979	0.0892	0.00028	0.00402	0.0001	0.00001	0.000005	0.09	0.00005	0.000005	0.87	0.0001	1.8E-05	0.00172	0.00005
4-May-10	17	500	435	9.13	80	90	9	--	--	28	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	--	--	0.02	--
11-May-10	18	500	435	9.02	77	100	9	--	--	27	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	--	--	0.02	--
18-May-10	19	500	460	8.94	74	90	9	--	--	26	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.02	--
25-May-10	20	500	410	9.2	66	100	9	--	--	23	0.01	0.5	0.02	0.005	0.19	0.005	52	3.1144	0.0961	0.00015	0.00305	0.0001	0.00001	0.000005	0.06	0.00005	0.000005	1	0.0001	2.3E-05	0.00171	0.00005
1-Jun-10	21	500	470	8.55	54	120	5	--	--	22	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	0.02	--
8-Jun-10	22	500	450	8.81	55	105	7	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
15-Jun-10	23	500	420	8.9	59	105	7	--	--	21	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.02	--
22-Jun-10	24	500	425	8.72	53	120	7	--	--	19	0.01	0.5	0.02	0.005	0.31	0.005	30	4.24135	0.0769	0.00013	0.00179	0.00013	0.00001	0.000005	0.05	0.00005	0.000005	1.27	0.0001	2.7E-05	0.00157	0.00005
29-Jun-10	25	500	420	9.08	54	110	6	--	--	14	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--
6-Jul-10	26	500	420	9.06	49	120	6	--	--	18	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--
13-Jul-10	27	500	425	8.96	38	130	6	--	--	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--
20-Jul-10	28	500	425	8.65	42	140	5	--	--	17	0.01	0.5	0.02	0.005	0.2	0.006	26	4.78795	0.0595	0.00011	0.00208	0.00015	0.00001	0.000005	0.05	0.00005	0.000005	1.39	0.0001	2.2E-05	0.00071	0.00005
27-Jul-10	29	500	445	8.5	45	160	7	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
3-Aug-10	30	500	435	8.52	44	155	5	--	--	15	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--
10-Aug-10	31	500	420	8.65	42	155	6	--	--	16	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.02	--
17-Aug-10	32	500	435	8.34	40	160	6	--	--	15	0.01	0.5	0.02	0.005	0.18	0.007	24	6.69501	0.0567	0.00009	0.00133	0.00012	0.00001	0.000005	0.05	0.00005	0.000005	1.89	0.0001	0.00002	0.00142	0.00005
24-Aug-10	33	500	435	8.38	43	180	5	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
31-Aug-10	34	500	430	8.41	155	155	6	--	--	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
7-Sep-10	35	500	430	8.53	39	160	6	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
14-Sep-10	36	500	440	8.31	38	160	5	--	--	15	0.01	0.5	0.02	0.005	0.05	0.005	34	7.30911	0.0542	0.00009	0.00136	0.00018	0.00001	0.000005	0.05	0.00005	0.000005	2.07	0.0001	0.00003	0.00114	0.00005
21-Sep-10	37	500	450	8.3	41	160	8	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
28-Sep-10	38	500	420	8.36	35	180	7	--	--	14	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--
5-Oct-10	39	500	435	8.42	34	165	4	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
12-Oct-10	40	500	420	7.86	40	170	5	--	1	12	0.01	0.5	0.02	0.005	0.1	0.005	18	7.49872	0.0521	0.00008	0.00189	0.00029	0.00001	0.000005	0.05	0.00005	0.000005	2.08	0.0003	3.9E-05	0.00065	0.00005
19-Oct-10	41	500	440	8.26	38	170	5	--	1	13	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--
26-Oct-10	42	500	450	7.7	41	175	4	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
2-Nov-10	43	500	425	8.27	43	165	6	--	1	13	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	0.02	--
9-Nov-10	44	500	425	8.26	41	185	6	--	1	13	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	0.02	--
16-Nov-10	45	500	405	8.41	55	185	8	--	--	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--
23-Nov-10	46	500	420	8.35	43	160	5	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
30-Nov-10	47	500	415	8.15	41	165	5	--	1	15	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--
7-Dec-10	48	500	450	7.89	39	170	4	--	1	15	0.01	0.9	0.02	0.005	0.12	0.005	20	8.3	0.0494	0.00008	0.00151	0.00019	0.00001	0.000005	0.05	0.00005	0.000005	2.24	0.0001	0.00004	0.00064	0.00005
14-Dec-10	49	500	425	7.93	40	150	4	--	1	13	--	--	--	--	--	--																

HC-22
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Ti	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
5-Jan-10	0	0.09	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
12-Jan-10	1	0.25	0.00007	0.0016	0.14	0.0008	0.02	0.02	0.0012	0.0006	0.0001	1.46	0.0014	0.0004	1.22	0.00004	28.2	0.0028	0.0002	0.00002	0.00005	0.0001	0.0019	0.0004	0.00005	0.012	0.001	0.0002
19-Jan-10	2	0.14	0.00007	0.0013	0.1	0.0017	0.015	0.02	0.0012	0.0004	0.0001	1.3	0.0011	0.0006	1.05	0.00004	41.3	0.0026	0.0002	0.00002	0.00005	0.0001	0.0029	0.0015	0.00014	0.019	0.001	0.0001
26-Jan-10	3	0.19	--	--	0.13	--	--	--	--	--	--	1.1	--	--	--	--	34	--	--	--	--	--	--	--	--	--	0.005	--
2-Feb-10	4	0.15	0.00005	0.0012	0.11	0.0019	0.015	0.02	0.0007	0.0002	0.0001	1.23	0.001	0.0005	0.97	0.00004	36.7	0.0024	0.0002	0.00002	0.00005	0.0001	0.0034	0.0007	0.0001	0.015	0.001	0.0001
9-Feb-10	5	0.09	--	--	0.12	--	--	--	--	--	--	1	--	--	--	--	31.2	--	--	--	--	--	--	--	--	--	0.005	--
16-Feb-10	6	0.23	--	--	0.19	--	--	--	--	--	--	1.6	--	--	--	--	47.3	--	--	--	--	--	--	--	--	--	0.005	--
23-Feb-10	7	0.08	--	--	0.12	--	--	--	--	--	--	1.2	--	--	--	--	44.4	--	--	--	--	--	--	--	--	--	0.005	--
2-Mar-10	8	0.08	0.00005	0.0014	0.093	0.0062	0.015	0.02	0.0003	0.0002	0.0001	0.97	0.0007	0.0002	0.9	0.00004	24.5	0.0019	0.0002	0.00002	0.00005	0.0001	0.0019	0.0001	0.00005	0.011	0.001	0.0001
9-Mar-10	9	0.03	--	--	0.07	0.003	--	--	--	--	--	0.7	--	--	--	--	19.5	--	--	--	--	--	--	--	--	--	0.005	--
16-Mar-10	10	0.04	--	--	0.09	--	--	--	--	--	--	0.8	--	--	--	--	20.3	--	--	--	--	--	--	--	--	--	0.005	--
23-Mar-10	11	0.02	--	--	0.11	--	--	--	--	--	--	0.7	--	--	--	--	20.2	--	--	--	--	--	--	--	--	--	0.005	--
30-Mar-10	12	0.01	0.00005	0.0014	0.11	0.0004	0.015	0.02	0.0004	0.0006	0.0001	1.04	0.0008	0.0003	0.68	0.00004	21.7	0.0022	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.006	0.001	0.0001
6-Apr-10	13	0.04	--	--	0.13	--	--	--	--	--	--	0.6	--	--	--	--	18	--	--	--	--	--	--	--	--	--	0.005	--
13-Apr-10	14	0.04	--	--	0.13	--	--	--	--	--	--	0.8	--	--	--	--	18.2	--	--	--	--	--	--	--	--	--	0.005	--
20-Apr-10	15	0.01	--	--	0.19	--	--	--	--	--	--	0.8	--	--	--	--	15.2	--	--	--	--	--	--	--	--	--	0.005	--
27-Apr-10	16	0.016	0.000014	0.0018	0.15	0.00131	0.002	0.02	0.00046	0.00048	--	0.96	0.00082	0.00032	0.8	0.000005	15.4	0.00337	0.00002	0.000008	0.000005	0.00001	0.0005	0.00008	0.000018	0.004	0.0003	0.0001
4-May-10	17	0.01	--	--	0.15	--	--	--	--	--	--	0.8	--	--	--	--	15.4	--	--	--	--	--	--	--	--	--	0.005	--
11-May-10	18	0.01	--	--	0.17	--	--	--	--	--	--	0.8	--	--	--	--	14.7	--	--	--	--	--	--	--	--	--	0.005	--
18-May-10	19	0.01	--	--	0.2	--	--	--	--	--	--	0.9	--	--	--	--	13.5	--	--	--	--	--	--	--	--	--	0.005	--
25-May-10	20	0.015	0.000035	0.0017	0.15	0.00164	0.002	0.02	0.00034	0.00013	--	0.86	0.0008	0.00022	0.8	0.000005	11.4	0.00343	0.00002	0.000003	0.000005	0.00003	0.0005	0.00005	0.000009	0.0037	0.0007	0.0001
1-Jun-10	21	0.01	--	--	0.21	--	--	--	--	--	--	0.8	--	--	--	--	10	--	--	--	--	--	--	--	--	--	0.005	--
8-Jun-10	22	0.01	--	--	0.2	--	--	--	--	--	--	0.7	--	--	--	--	9.7	--	--	--	--	--	--	--	--	--	0.005	--
15-Jun-10	23	0.01	--	--	0.24	--	--	--	--	--	--	0.9	--	--	--	--	10.6	--	--	--	--	--	--	--	--	--	0.005	--
22-Jun-10	24	0.014	0.000041	0.002	0.26	0.00159	0.002	0.02	0.00032	0.00012	--	0.95	0.00086	0.00019	0.7	0.000005	9.03	0.00447	0.00002	0.000003	0.000005	0.00001	0.0005	0.00002	0.000008	0.0024	0.0001	0.0001
29-Jun-10	25	0.01	--	--	0.29	--	--	--	--	--	--	0.9	--	--	--	--	9.6	--	--	--	--	--	--	--	--	--	0.005	--
6-Jul-10	26	0.01	--	--	0.28	--	--	--	--	--	--	0.7	--	--	--	--	8.4	--	--	--	--	--	--	--	--	--	0.005	--
13-Jul-10	27	0.01	--	--	0.32	--	--	--	--	--	--	0.8	--	--	--	--	8.1	--	--	--	--	--	--	--	--	--	0.005	--
20-Jul-10	28	0.003	0.000054	0.0021	0.32	0.00195	0.006	0.02	0.00027	0.00033	--	0.91	0.00089	0.00014	0.5	0.000005	6.57	0.00555	0.00002	0.000002	0.000005	0.00003	0.0005	0.00002	0.000005	0.0018	0.0003	0.0001
27-Jul-10	29	0.01	--	--	0.39	--	--	--	--	--	--	0.7	--	--	--	--	6.4	--	--	--	--	--	--	--	--	--	0.005	--
3-Aug-10	30	0.01	--	--	0.46	--	--	--	--	--	--	0.9	--	--	--	--	7	--	--	--	--	--	--	--	--	--	0.005	--
10-Aug-10	31	0.01	--	--	0.45	--	--	--	--	--	--	0.7	--	--	--	--	6.3	--	--	--	--	--	--	--	--	--	0.005	--
17-Aug-10	32	0.005	0.000047	0.002	0.48	0.00236	0.002	0.02	0.00024	0.00014	--	0.97	0.00097	0.00012	0.7	0.000005	5.28	0.00712	0.00002	0.000002	0.000005	0.00001	0.0005	0.00002	0.000004	0.0015	0.0001	0.0001
24-Aug-10	33	0.01	--	--	0.54	--	--	--	--	--	--	0.6	--	--	--	--	5.9	--	--	--	--	--	--	--	--	--	0.005	--
31-Aug-10	34	0.01	--	--	0.54	--	--	--	--	--	--	0.7	--	--	--	--	5.8	--	--	--	--	--	--	--	--	--	0.005	--
7-Sep-10	35	0.01	--	--	0.5	--	--	--	--	--	--	0.9	--	--	--	--	5	--	--	--	--	--	--	--	--	--	0.005	--
14-Sep-10	36	0.006	0.000074	0.0022	0.52	0.00246	0.002	0.02	0.00024	0.00016	--	0.93	0.00097	0.00012	0.6	0.000005	4.08	0.00796	0.00002	0.000002	0.000005	0.00003	0.0005	0.00001	0.000003	0.0016	0.0005	0.0001
21-Sep-10	37	0.01	--	--	0.6	--	--	--	--	--	--	0.8	--	--	--	--	4.5	--	--	--	--	--	--	--	--	--	0.005	--
28-Sep-10	38	0.01	--	--	0.54	--	--	--	--	--	--	0.7	--	--	--	--	4.3	--	--	--	--	--	--	--	--	--	0.005	--
5-Oct-10	39	0.01	--	--	0.56	--	--	--	--	--	--	0.7	--	--	--	--	3.9	--	--	--	--	--	--	--	--	--	0.005	--
12-Oct-10	40	0.002	0.000026	0.002	0.56	0.00275	0.006	0.006	0.00022	0.00032	--	0.91	0.00096	0.00011	0.6	0.000005	3.32	0.00798	0.00002	0.000002	0.000005	0.00005	0.00001	0.000005	0.0016	0.0002	0.0001	
19-Oct-10	41	0.01	--	--	0.59	--	--	--	--	--	--	0.7	--	--	--	--	3.5	--	--	--	--	--	--	--	--	--	0.005	--
26-Oct-10	42	0.01	--	--	0.61	--	--	--	--	--	--	0.5	--	--	--	--	3	--	--	--	--	--	--	--	--	--	0.005	--
2-Nov-10	43	0.01	--	--	0.64	--	--	--	--	--	--	0.8	--	--	--	--	3.2	--	--	--	--	--	--	--	--	--	0.005	--
9-Nov-10	44	0.01	--	--	0.65	--	--	--	--	--	--	0.8	--	--	--	--	3.1	--	--	--	--	--	--	--	--	--	0.005	--
16-Nov-10	45	0.01	--	--	0.96	--	--	--	--	--	--	1.2	--	--	--	--	4.6	--	--	--	--	--	--	--	--	--	0.005	--
23-Nov-10	46	0.01	--	--	0.66	--	--	--	--	--	--	1	--	--	--	--	3.6	--	--	--	--	--	--	--	--	--	0.005	--
30-Nov-10	47	0.01	--	--	0.58	--	--	--	--	--	--	0.9	--	--	--	--	2.9	--	--	--	--	--	--	--	--	--	0.005	--
7-Dec-10	48	0.005	0.000006	0.0019	0.65	0.00287	0.002	0.002	0.00015	0.00032	--	1.05	0.00104	0.00011	0.6	0.000005	2.48	0.00924	0.00002	0.000002	0.000005	0.00001	0.0005	0.00001	0.000007	0.0018	0.0003	0.0001
14-Dec-10	49	0.01	--	--	0.69	--	--	--	--	--	--	0.9	--	--	--	--	2.8	--	--	--	--	--	--	--	--	--	0.005	--
21-Dec-10	50	0.01	--	--	0.66	--	--	--	--	--	--	0.8	--	--	--	--	2.2	--	--	--	--	--	--	--	--	--	0.005	--
28-Dec-10	51	0.01	--	--	0.73	--	--	--	--	--	--	0.9	--	--	--	--	2.4	--	--	--	--	--	--	--	--	--	0.005	--
4-Jan-11	52	0.01	--	--	0.77	--	--	--	--	--	--	0.8	--	--	--	--	2.1	--	--	--	--	--	--	--	--	--	0.005	--
11-Jan-11	53	0.01	--	--	0.79	--	--	--	--	--	--	0.8	--	--	--	--	1.9	--	--	--	--	--	--	--	--	--	0.005	--
18-Jan-11	54	0.01	--	--	0.88	--	--	--	--	--	--	0.8	--	--	--	--	2.1	--	--	--	--	--	--	--	--	--	0.005	--
25-Jan-11	55	0.01	--	--	0.91	--	--	--	--	--	--	0.8	--	--	--	--	2	--	--	--	--	--	--	--	--	--	0.005	--
1-Feb-11	56	0.002	0.000013	0.0018	0.91	0.00393	0.																					

HC-24
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																														
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia (mgN/l)	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	Cu	La
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001
5-Jan-10	0	750	600	8.89	322	135	34	--	--	28	0.05	50.7	0.17	0.002	0.03	0.02	161	59.84348	0.077	0.0037	0.149	0.0013	0.0001	0.0001	0.085	0.0001	0.00001	10.4	0.0002	0.0002	0.0005	0.0001
12-Jan-10	1	500	440	8.36	330	125	57	--	--	28	0.05	38.3	0.11	0.003	0.2	0.38	182	73.9311	0.047	0.012	1.14	0.0012	0.0001	0.0001	0.14	0.0001	0.00001	12.3	0.0004	0.0016	0.0024	0.0001
19-Jan-10	2	500	440	8.2	287	150	70	--	1	24	0.05	25.1	0.05	0.003	0.06	0.09	112	72.1091	0.03	0.012	1.37	0.0011	0.0001	0.0001	0.11	0.0001	0.00001	11.9	0.0002	0.0015	0.0004	0.0001
26-Jan-10	3	500	440	8.15	225	140	69	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	11.6	--	--	0.02	--
2-Feb-10	4	500	430	7.68	172	140	59	--	1	19	0.05	6.02	0.05	0.003	0.07	0.29	113	61.44598	0.026	0.0092	0.844	0.0007	0.0001	0.0001	0.071	0.0001	0.00001	10.3	0.0002	0.0015	0.0003	0.0001
9-Feb-10	5	500	435	7.75	152	145	60	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	10.1	--	--	0.02	--
16-Feb-10	6	500	420	8.11	190	150	61	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	10.4	--	--	0.02	--
23-Feb-10	7	500	405	8.19	159	180	52	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	8.61	--	--	0.02	--
2-Mar-10	8	500	435	7.98	85	155	25	--	1	17	0.05	0.25	0.05	0.002	0.12	0.27	11	35.22886	0.033	0.0073	0.739	0.0004	0.0001	0.0001	0.048	0.0001	0.00001	6.46	0.0002	0.001	0.0003	0.0001
9-Mar-10	9	500	440	7.87	73	170	15	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.74	--	--	0.02	--
16-Mar-10	10	500	445	8.1	73	165	17	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.17	--	--	0.02	--
23-Mar-10	11	500	440	8.22	73	175	19	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.09	--	--	0.02	--
30-Mar-10	12	500	435	8.21	77	170	16	--	1	15	0.05	0.2	0.05	0.002	0.1	0.27	10	29.30076	0.023	0.0049	0.59	0.0003	0.0001	0.0001	0.034	0.0001	0.00001	5.52	0.0002	0.0007	0.0004	0.0001
6-Apr-10	13	500	460	8.05	74	205	16	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.83	--	--	0.02	--
13-Apr-10	14	500	440	8.09	69	155	17	--	1	15	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	6.22	--	--	0.02	--
20-Apr-10	15	500	415	8.25	81	160	23	--	1	15	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	6.37	--	--	0.02	--
27-Apr-10	16	500	430	8.32	64	160	13	--	16	0.03	0.5	0.02	0.005	0.088	0.186	48	26.06506	0.0315	0.00471	0.514	0.00047	0.00001	0.000005	0.05	0.00005	0.000005	4.9	0.0001	0.000707	0.00088	0.00005	
4-May-10	17	500	440	8.33	67	160	14	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.63	--	--	0.02	--
11-May-10	18	500	440	8.35	59	155	12	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.87	--	--	0.02	--
18-May-10	19	500	445	8.36	57	160	10	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.85	--	--	0.02	--
25-May-10	20	500	440	8.34	56	170	11	--	--	15	0.02	0.5	0.02	0.005	0.17	0.165	48	24.20408	0.0299	0.00383	0.447	0.00129	0.00001	0.000005	0.05	0.00005	0.000005	4.88	0.0001	0.000425	0.0033	0.00005
1-Jun-10	21	500	470	8	63	155	10	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.02	--	--	0.02	--
8-Jun-10	22	500	400	8.08	55	180	10	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.77	--	--	0.02	--
15-Jun-10	23	500	455	8.3	53	180	9	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.76	--	--	0.02	--
22-Jun-10	24	500	430	8.1	49	140	8	--	1	16	0.02	0.5	0.02	0.005	0.33	0.131	26	21.81985	0.0309	0.00322	0.427	0.00048	0.00001	0.000005	0.05	0.00007	0.000005	4.09	0.0001	0.000586	0.0002	0.00005
29-Jun-10	25	500	425	8.48	50	160	8	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.51	--	--	0.02	--
6-Jul-10	26	500	435	8.46	47	175	7	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.25	--	--	0.02	--
13-Jul-10	27	500	435	8.38	39	170	7	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.45	--	--	0.02	--
20-Jul-10	28	500	440	8.16	46	180	7	--	1	16	0.01	0.5	0.02	0.005	0.21	0.166	28	21.55944	0.0251	0.00295	0.411	0.00038	0.00001	0.000005	0.05	0.00006	0.000005	4.2	0.0001	0.000604	0.00046	0.00005
27-Jul-10	29	500	445	8.34	48	170	7	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.18	--	--	0.02	--
3-Aug-10	30	500	440	8.21	47	160	9	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.25	--	--	0.02	--
10-Aug-10	31	500	440	8.33	44	165	7	--	1	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.5	--	--	0.02	--
17-Aug-10	32	500	440	8.05	44	170	8	--	1	14	0.01	0.5	0.02	0.005	0.21	0.141	24	21.02162	0.0259	0.00255	0.344	0.00032	0.00001	0.000005	0.05	0.00006	0.000005	4.1	0.0002	0.000527	0.00174	0.00005
24-Aug-10	33	500	440	8.35	49	180	7	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.94	--	--	0.02	--
31-Aug-10	34	500	435	8.32	48	180	7	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.71	--	--	0.02	--
7-Sep-10	35	500	445	8.43	45	160	7	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.36	--	--	0.02	--
14-Sep-10	36	500	425	8.04	50	170	7	--	1	16	0.01	0.5	0.02	0.005	0.06	0.115	46	21.27954	0.0256	0.00258	0.371	0.00033	0.00001	0.000005	0.05	0.00006	0.000005	4.5	0.0003	0.000548	0.00087	0.00005
21-Sep-10	37	500	445	8.24	51	160	9	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.28	--	--	0.02	--
</																																

HC-24
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
5-Jan-10	0	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
12-Jan-10	1	0.11	0.00005	0.0031	10.5	0.019	0.015	0.02	0.0042	0.031	0.0001	6.86	0.0047	0.0049	0.72	0.00004	31.2	0.049	0.0002	0.00002	0.00005	0.0001	0.0003	0.0003	0.00007	0.0039	0.001	0.0001
19-Jan-10	2	0.01	0.00005	0.0026	10.3	0.013	0.015	0.02	0.0048	0.021	0.0001	5.45	0.0041	0.0056	0.66	0.00004	21.9	0.043	0.0002	0.00002	0.00005	0.0001	0.0003	0.0003	0.00006	0.0035	0.001	0.0001
26-Jan-10	3	0.01	--	--	10.1	--	--	--	--	--	--	4.6	--	--	--	--	13.7	--	--	--	--	--	--	--	--	--	0.005	--
2-Feb-10	4	0.01	0.00005	0.0018	8.88	0.013	0.015	0.02	0.0036	0.014	0.0001	3.62	0.0028	0.0033	0.56	0.00004	7.98	0.028	0.0002	0.00002	0.00005	0.0001	0.0004	0.0001	0.00005	0.0029	0.001	0.0001
9-Feb-10	5	0.01	--	--	8.41	--	--	--	--	--	--	2.8	--	--	--	--	5.2	--	--	--	--	--	--	--	--	--	0.005	--
16-Feb-10	6	0.01	--	--	11.8	--	--	--	--	--	--	3.9	--	--	--	--	5.9	--	--	--	--	--	--	--	--	--	0.005	--
23-Feb-10	7	0.02	--	--	9.25	--	--	--	--	--	--	2.9	--	--	--	--	3.2	--	--	--	--	--	--	--	--	--	0.005	--
2-Mar-10	8	0.04	0.00005	0.0016	4.64	0.013	0.015	0.02	0.0024	0.006	0.0001	1.57	0.0018	0.0017	0.52	0.00004	1.2	0.014	0.0002	0.00002	0.00005	0.0001	0.0004	0.0001	0.00005	0.0026	0.001	0.0001
9-Mar-10	9	0.03	--	--	3.91	0.01	--	--	--	--	--	1	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--	0.005	--
16-Mar-10	10	0.05	--	--	3.98	--	--	--	--	--	--	0.9	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	0.005	--
23-Mar-10	11	0.09	--	--	4.04	--	--	--	--	--	--	0.9	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	0.005	--
30-Mar-10	12	0.01	0.00005	0.0013	3.77	0.0079	0.015	0.02	0.0027	0.0045	0.0001	1.06	0.0015	0.0014	0.36	0.00004	0.56	0.0098	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0022	0.001	0.0001
6-Apr-10	13	0.02	--	--	3.65	--	--	--	--	--	--	0.6	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
13-Apr-10	14	0.3	--	--	3.99	--	--	--	--	--	--	0.7	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
20-Apr-10	15	0.19	--	--	4.88	--	--	--	--	--	--	1	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	0.005	--
27-Apr-10	16	0.024	0.000023	0.0011	3.36	0.00888	0.002	0.02	0.00291	0.00337	--	0.85	0.00162	0.00121	0.5	0.000005	0.35	0.00952	0.00002	0.000006	0.000005	0.00001	0.0005	0.00008	0.000022	0.0021	0.0001	0.0001
4-May-10	17	0.01	--	--	3.68	--	--	--	--	--	--	0.7	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
11-May-10	18	0.02	--	--	3.25	--	--	--	--	--	--	0.6	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
18-May-10	19	0.01	--	--	3.07	--	--	--	--	--	--	0.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
25-May-10	20	0.013	0.000129	0.0009	2.92	0.0134	0.002	0.02	0.00237	0.00191	--	0.59	0.00124	0.00094	0.4	0.000005	0.21	0.00841	0.00002	0.000005	0.000005	0.00014	0.0005	0.00005	0.000014	0.0018	0.0013	0.0001
1-Jun-10	21	0.01	--	--	3.38	--	--	--	--	--	--	0.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
8-Jun-10	22	0.01	--	--	2.82	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
15-Jun-10	23	0.02	--	--	2.83	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
22-Jun-10	24	0.017	0.000026	0.0009	2.82	0.00938	0.002	0.02	0.00207	0.00238	--	0.53	0.0013	0.00065	0.4	0.000005	0.17	0.00712	0.00002	0.000004	0.000005	0.00002	0.0005	0.00005	0.000015	0.0017	0.0001	0.0001
29-Jun-10	25	0.01	--	--	2.93	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
6-Jul-10	26	0.01	--	--	2.95	--	--	--	--	--	--	1.2	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	0.005	--
13-Jul-10	27	0.01	--	--	2.77	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
20-Jul-10	28	0.006	0.00008	0.001	2.69	0.0102	0.007	0.02	0.00191	0.00237	--	0.51	0.00136	0.00055	0.3	0.000005	0.17	0.00703	0.00002	0.000005	0.000005	0.00001	0.0005	0.00004	0.000014	0.0016	0.0004	0.0001
27-Jul-10	29	0.01	--	--	2.49	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
3-Aug-10	30	0.01	--	--	3.09	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
10-Aug-10	31	0.01	--	--	2.58	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
17-Aug-10	32	0.013	0.000058	0.0007	2.62	0.0107	0.002	0.02	0.00164	0.00212	--	0.44	0.00116	0.00029	0.4	0.000005	0.15	0.00647	0.00002	0.000004	0.000005	0.00001	0.0005	0.00007	0.00001	0.0013	0.0001	0.0001
24-Aug-10	33	0.01	--	--	2.9	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
31-Aug-10	34	0.01	--	--	2.91	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
7-Sep-10	35	0.01	--	--	2.82	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
14-Sep-10	36	0.018	0.000049	0.0009	2.44	0.00907	0.002	0.02	0.00157	0.00202	--	0.39	0.00116	0.00027	0.4	0.000005	0.11	0.00671	0.00002	0.000006	0.000005	0.00006	0.0007	0.00004	0.000013	0.0015	0.0002	0.0001
21-Sep-10	37	0.01	--	--	2.65	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Sep-10	38	0.01	--	--	2.59	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
5-Oct-10	39	0.01	--	--	2.4	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
12-Oct-10	40	0.008	0.000063	0.0008	2.64	0.0113	0.007	0.005	0.00151	0.00183	--	0.39	0.00103	0.00022	0.3	0.000005	0.12	0.00599	0.00002	0.000004	0.000005	0.00009	0.0005	0.00003	0.000011	0.0014	0.0026	0.0001
19-Oct-10	41	0.01	--	--	2.55	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
26-Oct-10	42	0.01	--	--	2.51	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
2-Nov-10	43	0.01	--	--	2.81	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
9-Nov-10	44	0.01	--	--	2.51	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
16-Nov-10	45	0.01	--	--	2.06	--	--	--	--	--	--	1.8	--	--	--	--	5	--	--	--	--	--	--	--	--	--	0.005	--
23-Nov-10	46	0.01	--	--	2.49	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
30-Nov-10	47	0.01	--	--	2.38	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
7-Dec-10	48	0.005	0.00001	0.0008	2.52	0.01	0.002	0.002	0.00111	0.00236	--	0.33	0.00116	0.00023	0.3	0.000005	0.1	0.00612	0.00002	0.000004	0.000005	0.00001	0.0005	0.00003	0.000014	0.0016	0.0005	0.0001
14-Dec-10	49	0.01	--	--	2.82	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
21-Dec-10	50	0.01	--	--	2.21	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Dec-10	51	0.01	--	--	2.43	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
4-Jan-11	52	0.01	--	--	2.67	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
11-Jan-11	53	0.01	--	--	2.45	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
18-Jan-11	54	0.01	--	--	2.64	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
25-Jan-11	55	0.01	--	--	2.66	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
1-Feb-11	56	0.008	0.000019	0.0007	2.51	0.0105	0.01</																					

HC-25
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																															
		Volume (ml)		pH (pH Units)	EC (µS/cm)	ORP (mV)	SO4 (mg/l)	Acidity (mg CaCO3/l)		Alkalinity to pH 4.5	Fluoride (mg/l)	Chloride (mg/l)	Nitrate-N (mg/l)	Nitrite-N (mg/l)	Total Ammonia (mgN/l)	Diss.-P (mgP/l)	TDS (mg/l)	Hardness CaCO3 (mg/l)	Al (mg/l)	Sb (mg/l)	As (mg/l)	Ba (mg/l)	Be (mg/l)	Bi (mg/l)	B (mg/l)	Cs (mg/l)	Cd (mg/l)	Ca (mg/l)	Cr (mg/l)	Co (mg/l)	Cu (mg/l)	La (mg/l)	
		Input	Output					to pH 4.5	to pH 8.3																								
5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0005	0.0001	0.00001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001		
5-Jan-10	0	750	595	9.54	226	135	11	--	--	48	0.05	25.5	0.18	0.007	0.13	0.02	122	12.36382	0.29	0.006	0.276	0.0002	0.0001	0.0001	0.13	0.0001	0.00001	0.00001	2.38	0.0002	0.0001	0.0009	0.0001
12-Jan-10	1	500	455	8.95	220	125	18	--	--	49	0.06	17.3	0.14	0.01	0.05	0.39	124	13.60273	0.09	0.014	1.17	0.0002	0.0001	0.0001	0.19	0.0001	0.00001	0.00001	2.53	0.0003	0.0005	0.0016	0.0001
19-Jan-10	2	500	420	9.31	161	110	26	--	--	35	0.05	8.53	0.06	0.005	0.05	0.25	92	10.33465	0.089	0.0096	1.43	0.0002	0.0001	0.0001	0.13	0.0001	0.00001	0.00001	1.93	0.0002	0.0004	0.0006	0.0001
26-Jan-10	3	500	420	9.06	145	120	23	--	--	28	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	2.62	--	--	0.02	--
2-Feb-10	4	500	415	9.02	115	135	27	--	--	24	0.05	3.22	0.05	0.004	0.09	0.28	69	15.9118	0.076	0.0074	0.824	0.0002	0.0001	0.0001	0.11	0.0001	0.00001	0.00001	2.68	0.0002	0.0006	0.0003	0.0001
9-Feb-10	5	500	425	8.95	103	140	25	--	--	23	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	3.32	--	--	0.02	--
16-Feb-10	6	500	405	9.3	145	115	32	--	--	27	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	3.63	--	--	0.02	--
23-Feb-10	7	500	415	9.37	104	110	18	--	--	29	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	2.99	--	--	0.02	--
2-Mar-10	8	500	415	8.84	70	120	7	--	--	20	0.05	0.2	0.05	0.01	0.15	0.2	10	17.51044	0.056	0.0062	0.573	0.0002	0.0001	0.0001	0.086	0.0001	0.00001	0.00001	3.04	0.0002	0.0006	0.0003	0.0001
9-Mar-10	9	500	425	8.87	56	135	7	--	--	18	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	3.07	--	--	0.02	--
16-Mar-10	10	500	435	8.83	57	155	8	--	--	18	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	3.49	--	--	0.02	--
23-Mar-10	11	500	435	8.7	52	175	7	--	--	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	3.4	--	--	0.02	--
30-Mar-10	12	500	495	8.5	71	170	7	--	--	23	0.05	0.2	0.05	0.004	0.12	0.21	10	23.56227	0.032	0.0058	0.483	0.0002	0.0001	0.0001	0.077	0.0001	0.00001	0.00001	4.59	0.0002	0.0007	0.0004	0.0001
6-Apr-10	13	500	485	8.34	58	200	6	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	4.16	--	--	0.02	--
13-Apr-10	14	500	440	8.57	50	160	7	--	--	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	3.47	--	--	0.02	--
20-Apr-10	15	500	410	8.68	54	155	7	--	--	16	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	3.28	--	--	0.02	--
27-Apr-10	16	500	435	8.51	47	150	5	--	--	16	0.03	0.5	0.02	0.005	0.12	0.073	26	17.61717	0.0484	0.00409	0.389	0.00015	0.00001	0.000005	0.05	0.00005	0.000005	3.33	0.0001	0.000655	0.00056	0.00005	
4-May-10	17	500	470	8.4	54	165	5	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	4.67	--	--	0.02	--
11-May-10	18	500	425	8.54	46	150	4	--	--	16	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	3.46	--	--	0.02	--
18-May-10	19	500	445	8.46	44	160	5	--	--	16	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	3.55	--	--	0.02	--
25-May-10	20	500	420	8.42	49	155	5	--	--	18	0.02	0.7	0.02	0.005	0.18	0.109	32	19.32117	0.0563	0.00327	0.34	0.00015	0.00001	0.000005	0.05	0.00005	0.000005	3.93	0.0001	0.000451	0.00142	0.00005	
1-Jun-10	21	500	470	8.12	53	160	6	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	4.61	--	--	0.02	--
8-Jun-10	22	500	430	8.42	48	170	7	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	3.56	--	--	0.02	--
15-Jun-10	23	500	420	8.32	54	180	8	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	4.28	--	--	0.02	--
22-Jun-10	24	500	415	8.15	54	140	10	--	1	16	0.01	0.5	0.02	0.005	0.45	0.07	30	22.24901	0.0412	0.00283	0.293	0.00019	0.00001	0.000005	0.05	0.00005	0.000005	4.13	0.0001	0.00118	0.00065	0.00005	
29-Jun-10	25	500	415	8.5	58	160	10	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	4.58	--	--	0.02	--
6-Jul-10	26	500	420	8.48	54	160	10	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	4.3	--	--	0.02	--
13-Jul-10	27	500	420	8.5	44	180	10	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	4.22	--	--	0.02	--
20-Jul-10	28	500	420	8.3	49	175	9	--	--	15	0.02	0.5	0.02	0.005	0.27	0.105	30	20.89403	0.0315	0.0024	0.245	0.00018	0.00001	0.000005	0.05	0.00005	0.000005	3.95	0.0001	0.000979	0.00047	0.00005	
27-Jul-10	29	500	435	8.62	56	175	11	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	4.61	--	--	0.02	--
3-Aug-10	30	500	480	8.05	58	175	9	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	6.6	--	--	0.02	--
10-Aug-10	31	500	435	8.31	48	170	9	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	4.62	--	--	0.02	--
17-Aug-10	32	500	450	8.05	53	165	10	--	1	15	0.01	0.5	0.02	0.005	0.25	0.08	28	24.17444	0.03	0.00203	0.194	0.00016	0.00001	0.000005	0.05	0.00005	0.000005	5	0.0002	0.00134	0.00174	0.00005	
24-Aug-10	33	500	435	8.19	55	180	9	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	5.46	--	--	0.02	--
31-Aug-10	34	500	440	8.2	54	190	10	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	5.24	--	--	0.02	--
7-Sep-10	35	500	435	8.25	54	170	10	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	4.96	--	--	0.02	--
14-Sep-10	36	500	445	8.06	57	180	11	--	1	16	0.01	0.5	0.02	0.005	0.08	0.042	54	25.60925	0.0324	0.00202	0.198	0.00018	0.00001	0.000005	0.05	0.00005	0.000005	5.69	0.0002	0.00111	0.00074	0.00005	
21-Sep-10	37	500	455	8.93	57	175	11	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	5.06	--	--	0.02	--
28-Sep-10	38	500	435	8.19	47	180	9	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	4.65	--	--	0.02	--
5-Oct-10	39	500	445	8.21	49	170	8	--	1	17</																							

HC-25
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr	
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
5-Jan-10	0	0.02	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001	
12-Jan-10	1	0.01	0.00005	0.0015	1.77	0.0041	0.015	0.02	0.0024	0.0046	0.0001	4.58	0.0022	0.002	0.67	0.00004	37.6	0.0064	0.0002	0.00002	0.00005	0.0001	0.0002	0.0077	0.00021	0.0032	0.001	0.0001	
19-Jan-10	2	0.01	0.00005	0.0009	1.34	0.0026	0.015	0.02	0.0014	0.002	0.0001	3.4	0.0017	0.0018	0.52	0.00004	24.5	0.0045	0.0002	0.00002	0.00005	0.0001	0.0002	0.0046	0.00018	0.0031	0.001	0.0001	
26-Jan-10	3	0.02	--	--	2.05	--	--	--	--	--	--	4.1	--	--	--	--	21.8	--	--	--	--	--	--	--	--	--	0.005	--	
2-Feb-10	4	0.03	0.00005	0.001	2.24	0.0042	0.015	0.02	0.0009	0.0026	0.0001	4.04	0.0019	0.0012	0.5	0.00004	16.5	0.0058	0.0002	0.00002	0.00005	0.0001	0.0006	0.0028	0.00011	0.0019	0.001	0.0001	
9-Feb-10	5	0.03	--	--	2.71	--	--	--	--	--	--	3.7	--	--	--	--	11.6	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Feb-10	6	0.01	--	--	4.03	--	--	--	--	--	--	5.9	--	--	--	--	15	--	--	--	--	--	--	--	--	--	--	0.005	--
23-Feb-10	7	0.01	--	--	3.53	--	--	--	--	--	--	5.1	--	--	--	--	8.1	--	--	--	--	--	--	--	--	--	--	0.005	--
2-Mar-10	8	0.03	0.00005	0.0011	2.41	0.0072	0.015	0.02	0.0003	0.0019	0.0001	2.99	0.0019	0.0006	0.47	0.00004	3	0.0054	0.0002	0.00002	0.00005	0.0001	0.0002	0.001	0.00005	0.0012	0.001	0.0001	
9-Mar-10	9	0.03	--	--	2.47	0.005	--	--	--	--	--	2.3	--	--	--	--	2.1	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Mar-10	10	0.02	--	--	2.75	--	--	--	--	--	--	2.3	--	--	--	--	1.8	--	--	--	--	--	--	--	--	--	--	0.005	--
23-Mar-10	11	0.01	--	--	2.51	--	--	--	--	--	--	1.8	--	--	--	--	1.3	--	--	--	--	--	--	--	--	--	--	0.005	--
30-Mar-10	12	0.01	0.00005	0.001	2.94	0.0056	0.015	0.02	0.0003	0.002	0.0001	2.03	0.0015	0.0005	0.52	0.00004	1.17	0.0066	0.0002	0.00002	0.00005	0.0001	0.0002	0.0008	0.00006	0.001	0.001	0.0001	
6-Apr-10	13	0.03	--	--	2.63	--	--	--	--	--	--	1.4	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--	--	0.005	--
13-Apr-10	14	0.05	--	--	2.5	--	--	--	--	--	--	1.7	--	--	--	--	0.9	--	--	--	--	--	--	--	--	--	--	0.005	--
20-Apr-10	15	0.01	--	--	2.34	--	--	--	--	--	--	1.7	--	--	--	--	0.9	--	--	--	--	--	--	--	--	--	--	0.005	--
27-Apr-10	16	0.012	0.000007	0.0007	2.26	0.00554	0.002	0.02	0.00028	0.00152	--	1.57	0.00128	0.00036	0.5	0.000005	0.72	0.00523	0.00002	0.000002	0.000005	0.00004	0.0005	0.00063	0.000042	0.001	0.0002	0.0001	
4-May-10	17	0.01	--	--	2.81	--	--	--	--	--	--	1.4	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	0.005	--
11-May-10	18	0.02	--	--	2.37	--	--	--	--	--	--	1.5	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	0.005	--
18-May-10	19	0.02	--	--	2.28	--	--	--	--	--	--	1.3	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	0.005	--
25-May-10	20	0.015	0.000013	0.0007	2.31	0.00975	0.002	0.02	0.00025	0.001	--	1.29	0.00132	0.00028	0.4	0.000005	0.47	0.00487	0.00002	0.000002	0.000005	0.00014	0.0005	0.00036	0.000031	0.0008	0.0001	0.0001	
1-Jun-10	21	0.01	--	--	2.78	--	--	--	--	--	--	1.3	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	0.005	--
8-Jun-10	22	0.01	--	--	2.31	--	--	--	--	--	--	1.1	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	0.005	--
15-Jun-10	23	0.02	--	--	2.89	--	--	--	--	--	--	1.4	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	0.005	--
22-Jun-10	24	0.021	0.000018	0.0008	2.9	0.00763	0.002	0.02	0.00036	0.00224	--	1.36	0.00159	0.00024	0.4	0.000005	0.46	0.00533	0.00002	0.000002	0.000005	0.00002	0.0005	0.0003	0.000041	0.0007	0.0001	0.0001	
29-Jun-10	25	0.03	--	--	3.35	--	--	--	--	--	--	1.5	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	0.005	--
6-Jul-10	26	0.01	--	--	2.74	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
13-Jul-10	27	0.01	--	--	2.97	--	--	--	--	--	--	1	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	0.005	--
20-Jul-10	28	0.01	0.000029	0.0009	2.68	0.00608	0.006	0.02	0.00036	0.0019	--	1.15	0.00154	0.00021	0.3	0.000005	0.34	0.00503	0.00002	0.000002	0.000005	0.00001	0.0005	0.00024	0.000028	0.0007	0.0004	0.0001	
27-Jul-10	29	0.07	--	--	2.9	--	--	--	--	--	--	0.8	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
3-Aug-10	30	0.01	--	--	3.46	--	--	--	--	--	--	1	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	0.005	--
10-Aug-10	31	0.01	--	--	2.47	--	--	--	--	--	--	0.6	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
17-Aug-10	32	0.012	0.000051	0.0006	2.84	0.0074	0.002	0.02	0.00039	0.0023	--	0.88	0.0014	0.00019	0.4	0.000005	0.27	0.00551	0.00002	0.000002	0.000005	0.00001	0.0005	0.00015	0.000037	0.0004	0.0001	0.0001	
24-Aug-10	33	0.01	--	--	3.05	--	--	--	--	--	--	0.6	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
31-Aug-10	34	0.02	--	--	2.99	--	--	--	--	--	--	0.7	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
7-Sep-10	35	0.02	--	--	2.9	--	--	--	--	--	--	0.8	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
14-Sep-10	36	0.018	0.000118	0.0007	2.77	0.00538	0.004	0.02	0.00039	0.00185	--	0.84	0.00134	0.00022	0.4	0.000005	0.23	0.00597	0.00002	0.000002	0.000005	0.00003	0.0007	0.00018	0.000041	0.0005	0.0002	0.0001	
21-Sep-10	37	0.01	--	--	2.89	--	--	--	--	--	--	0.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
28-Sep-10	38	0.02	--	--	2.6	--	--	--	--	--	--	0.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
5-Oct-10	39	0.01	--	--	2.6	--	--	--	--	--	--	0.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
12-Oct-10	40	0.015	0.000085	0.0005	2.42	0.00656	0.005	0.004	0.00025	0.00152	--	0.68	0.00112	0.00018	0.4	0.000005	0.18	0.00435	0.00002	0.000002	0.000005	0.00004	0.0005	0.00011	0.000024	0.0004	0.0004	0.0001	
19-Oct-10	41	0.01	--	--	2.48	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
26-Oct-10	42	0.01	--	--	2.49	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
2-Nov-10	43	0.01	--	--	2.67	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
9-Nov-10	44	0.01	--	--	2.52	--	--	--	--	--	--	0.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Nov-10	45	0.01	--	--	3.48	--	--	--	--	--	--	0.7	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
23-Nov-10	46	0.01	--	--	2.49	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
30-Nov-10	47	0.01	--	--	2.21	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
7-Dec-10	48	0.007	0.00002	0.0005	2.28	0.00591	0.002	0.002	0.00019	0.00153	--	0.58	0.00103	0.0002	0.3	0.000005	0.17	0.00403	0.00002	0.000002	0.000005	0.00001	0.0008	0.00012	0.000021	0.0007	0.0002	0.0001	
14-Dec-10	49	0.01	--	--	2.24	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
21-Dec-10	50	0.01	--	--	2.02	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
28-Dec-10	51	0.01	--	--	2.02	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
4-Jan-11	52	0.01	--	--	2.3	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
11-Jan-11	53	0.01	--	--	2.09	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
18-Jan-11	54	0.01	--	--	2.19	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
25-Jan-11	55	0.01	--	--	2.28	--																							

HC-26
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																															
		Volume (ml)		pH (pH Units)	EC (µS/cm)	ORP (mV)	SO4 (mg/l)	Acidity (mg CaCO3/l)		Alkalinity to pH 4.5	Fluoride (mg/l)	Chloride (mg/l)	Nitrate-N (mg/l)	Nitrite-N (mg/l)	Total Ammonia (mgN/l)	Diss.-P (mgP/l)	TDS (mg/l)	Hardness CaCO3 (mg/l)	Al (mg/l)	Sb (mg/l)	As (mg/l)	Ba (mg/l)	Be (mg/l)	Bi mg/l	B mg/l	Cs mg/l	Cd mg/l	Ca mg/l	Cr mg/l	Co mg/l	Cu mg/l	La mg/l	
		Input	Output					to pH 4.5	to pH 8.3																								
5-Jan-10	0	750	620	8.01	1	50	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001	0.0001
12-Jan-10	1	500	455	8.32	262	130	35	--	--	31	0.05	20.1	0.12	0.002	0.05	0.02	122	58.45425	0.044	0.0033	0.068	0.0015	0.0001	0.0001	0.038	0.0001	0.00001	8.97	0.0002	0.0002	0.0003	0.0001	
19-Jan-10	2	500	425	8.39	196	145	68	--	--	21	0.05	4.36	0.05	0.002	0.05	0.04	143	69.9496	0.027	0.0041	0.295	0.001	0.0001	0.0001	0.039	0.0001	0.00001	11.2	0.0002	0.0012	0.0003	0.0002	
26-Jan-10	3	500	430	8.36	199	140	70	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
2-Feb-10	4	500	420	7.8	199	140	90	--	1	18	0.05	2.14	0.05	0.002	0.07	0.05	123	90.7133	0.025	0.0032	0.202	0.001	0.0001	0.0001	0.039	0.0001	0.00001	14.9	0.0002	0.0016	0.0002	0.0001	
9-Feb-10	5	500	420	8.4	195	150	79	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
16-Feb-10	6	500	405	8.64	235	160	81	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
23-Feb-10	7	500	420	8.51	179	170	49	--	--	28	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
2-Mar-10	8	500	430	8.14	117	150	34	--	1	18	0.05	0.23	0.05	0.004	0.09	0.02	10	47.83061	0.025	0.0023	0.17	0.0004	0.0001	0.0001	0.11	0.0001	0.00001	8.21	0.0002	0.0008	0.0002	0.0001	
9-Mar-10	9	500	425	7.95	104	175	32	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
16-Mar-10	10	500	435	8.19	98	160	33	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
23-Mar-10	11	500	435	8.28	100	170	28	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
30-Mar-10	12	500	430	8.18	112	160	31	--	1	18	0.05	0.2	0.05	0.002	0.12	0.08	110	44.97195	0.024	0.0016	0.138	0.0004	0.0001	0.0001	0.031	0.0001	0.00001	7.23	0.0002	0.0006	0.0003	0.0001	
6-Apr-10	13	500	455	8.32	85	190	22	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
13-Apr-10	14	500	440	8.57	76	160	20	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
20-Apr-10	15	500	425	8.75	91	165	23	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
27-Apr-10	16	500	425	8.49	85	150	22	--	--	16	0.03	0.5	0.02	0.005	0.1	0.023	74	35.86494	0.0296	0.0014	0.129	0.0152	0.00001	0.000005	0.05	0.00005	0.000005	5.47	0.0001	0.000464	0.00044	0.00005	
4-May-10	17	500	430	8.54	77	150	21	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
11-May-10	18	500	420	8.49	75	155	19	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
18-May-10	19	500	425	8.39	71	165	17	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
25-May-10	20	500	435	8.36	108	170	33	--	--	17	0.02	0.5	0.02	0.005	0.18	0.031	70	46.89707	0.0289	0.00115	0.0951	0.00111	0.00001	0.000005	0.05	0.00005	0.000005	8.99	0.0001	0.000383	0.00022	0.00005	
1-Jun-10	21	500	465	7.85	168	155	59	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
8-Jun-10	22	500	435	7.77	163	165	57	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
15-Jun-10	23	500	445	7.86	216	190	85	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
22-Jun-10	24	500	415	7.6	250	150	109	--	1	16	0.01	0.5	0.02	0.005	0.37	0.012	170	122.9632	0.0165	0.00082	0.066	0.00154	0.00001	0.000005	0.05	0.00005	0.000013	23.2	0.0001	0.0029	0.00032	0.00005	
29-Jun-10	25	500	425	7.6	291	175	134	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
6-Jul-10	26	500	430	7.72	326	170	166	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
13-Jul-10	27	500	435	7.53	344	190	182	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
20-Jul-10	28	500	435	7.42	325	190	164	--	1	17	0.01	0.5	0.02	0.005	0.14	0.02	240	167.5474	0.0098	0.00054	0.0385	0.00138	0.00001	0.000005	0.05	0.00005	0.000019	31	0.0001	0.0055	0.00036	0.00005	
27-Jul-10	29	500	440	7.53	348	190	173	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
3-Aug-10	30	500	440	7.53	348	170	175	--	1	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
10-Aug-10	31	500	430	7.5	359	170	182	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
17-Aug-10	32	500	440	7.66	327	170	165	--	1	14	0.01	0.5	0.02	0.005	0.12	0.016	250	172.986	0.0119	0.00038	0.033	0.00105	0.00001	0.000005	0.05	0.00005	0.000011	31.2	0.0003	0.00312	0.00131	0.00005	
24-Aug-10	33	500	445	7.65	413	170	184	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
31-Aug-10	34	500	435	7.63	329	160	156	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
7-Sep-10	35	500	435	7.51	364	160	157	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
14-Sep-10	36	500	445	7.51	314	165	149	--	1	16	0.01	0.5	0.02	0.005	0.05	0.007	300	169.5998	0.0085	0.00029	0.0259	0.00096	0.00001	0.000005	0.05	0.00005	0.000018	33.8	0.0001	0.00318	0.0009	0.00005	
21-Sep-10	37	500	445	7.58	344	160	177	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
28-Sep-10	38	500	435	7.58	304	180	145	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
5-Oct-10	39	500	440	7.53	304	165	137	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
12-Oct-10	40	500	450	7.52	336	180	153	--	1	17	0.01	0.5	0.02	0.005	0.08	0.01	230	168.1757	0.0079	0.00027	0.0209	0.00107	0.00001	0.000005	0.05	0.00005	0.000014	32.9	0.0003	0.00277	0.00054	0.00005	
19-Oct-10	41	500	440	7.65	340	170	147	--	1	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
26-Oct-10	42	500	445	7.58	329	180	143	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--	
2-Nov-10	43	500	430	7.55	343	160	155	--	1	17	--	--	--	--	--																		

HC-26
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																															
		Volume (ml)		pH (pH Units)	EC (µS/cm)	ORP (mV)	SO4 (mg/l)	Acidity (mg CaCO3/l)		Alkalinity (to pH 4.5)	Fluoride (mg/l)	Chloride (mg/l)	Nitrate-N	Nitrite-N	Total Ammonia (mgN/l)	Diss.-P (mgP/l)	TDS (mg/l)	Hardness CaCO3 (mg/l)	Al (mg/l)	Sb (mg/l)	As (mg/l)	Ba (mg/l)	Be (mg/l)	Bi (mg/l)	B (mg/l)	Cs (mg/l)	Cd (mg/l)	Ca (mg/l)	Cr (mg/l)	Co (mg/l)	Cu (mg/l)	La (mg/l)	
		Input	Output					to pH 4.5	to pH 8.3																								
18-Jan-11	54	500	435	0.01	1	50	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001	0.0001	
25-Jan-11	55	500	435	7.49	246	160	109	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	24.3	--	--	--	0.02	--
1-Feb-11	56	500	435	7.55	253	170	104	--	1	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	25.4	--	--	--	0.02	--
8-Feb-11	57	500	430	7.68	254	165	111	--	1	17	0.01	1.6	0.02	0.005	0.019	0.015	130	117	0.0073	0.00022	0.0233	0.0007	0.00001	0.000005	0.05	0.00005	0.000009	24.7	0.0001	0.00141	0.00058	0.00005	
15-Feb-11	58	500	440	7.71	257	145	103	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	24.6	--	--	--	0.02	--
22-Feb-11	59	500	440	7.65	260	170	93	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	26.2	--	--	--	0.02	--
1-Mar-11	60	500	435	7.47	234	145	78	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	22.8	--	--	--	0.02	--
8-Mar-11	61	500	460	7.44	252	140	106	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	26.5	--	--	--	0.02	--
15-Mar-11	62	500	445	7.7	231	155	98	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	24.8	--	--	--	0.02	--
22-Mar-11	63	500	445	7.71	236	145	102	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	24.3	--	--	--	0.02	--
29-Mar-11	64	500	415	7.52	238	150	100	--	1	17	0.01	0.5	0.02	0.005	0.14	0.009	130	111	0.0102	0.00019	0.0237	0.00143	0.00001	0.000005	0.05	0.00005	0.000006	22.5	0.0001	0.000907	0.00048	0.00005	
5-Apr-11	65	500	440	7.54	243	180	88	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	24.6	--	--	--	0.02	--
12-Apr-11	66	500	450	7.59	235	145	84	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	22.3	--	--	--	0.02	--
19-Apr-11	67	500	435	7.77	229	130	81	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	21.1	--	--	--	0.02	--
26-Apr-11	68	500	460	7.6	252	160	88	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	24.5	--	--	--	0.02	--
3-May-11	69	500	450	7.63	228	150	79	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	22.9	--	--	--	0.02	--
10-May-11	70	500	430	7.66	247	130	81	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	22.2	--	--	--	0.02	--
17-May-11	71	500	445	7.57	225	175	77	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	21.6	--	--	--	0.02	--
24-May-11	72	500	440	7.65	227	140	81	--	1	18	0.01	0.5	0.02	0.005	0.21	0.014	130	95.1	0.0082	0.00019	0.0196	0.00062	0.00001	0.000005	0.05	0.00005	0.000013	20.8	0.0001	0.000775	0.00042	0.00005	
31-May-11	73	500	435	7.59	222	170	79	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	21	--	--	--	0.02	--
7-Jun-11	74	500	430	7.58	225	165	78	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	21.6	--	--	--	0.02	--
14-Jun-11	75	500	445	7.65	229	165	82	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	25.1	--	--	--	0.02	--
21-Jun-11	76	500	435	7.72	215	145	74	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	21.4	--	--	--	0.02	--
28-Jun-11	77	500	440	7.35	210	165	73	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	20.4	--	--	--	0.02	--
5-Jul-11	78	500	465	7.59	222	165	69	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	21.7	--	--	--	0.02	--
12-Jul-11	79	500	455	7.72	214	200	69	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	20.8	--	--	--	0.02	--
19-Jul-11	80	500	455	7.54	214	205	73	--	1	17	0.01	0.7	0.02	0.005	0.13	0.008	140	96.3	0.0075	0.00014	0.0176	0.00037	0.00001	0.000005	0.05	0.00005	0.000005	21.4	0.0001	0.000807	0.0003	0.00005	
26-Jul-11	81	500	455	7.62	205	170	70	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	20.8	--	--	--	0.02	--
2-Aug-11	82	500	445	7.61	207	155	70	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	20.4	--	--	--	0.02	--
9-Aug-11	83	500	445	7.61	201	165	65	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	18.7	--	--	--	0.02	--
16-Aug-11	84	500	470	7.66	221	175	70	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	20.7	--	--	--	0.02	--
23-Aug-11	85	500	445	7.66	200	160	68	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	19.2	--	--	--	0.02	--
30-Aug-11	86	500	440	7.85	201	165	63	--	1	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	19.3	--	--	--	0.02	--
6-Sep-11	87	500	440	7.52	195	150	72	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	17.7	--	--	--	0.02	--
13-Sep-11	88	500	440	7.55	190	175	60	--	1	17	0.01	0.8	0.02	0.005	0.23	0.006	120	80.6	0.0068	0.00013	0.0145	0.00024	0.00001	0.000005	0.05	0.00005	0.000008	17.7	0.0001	0.000614	0.00033	0.00005	
20-Sep-11	89	500	460	7.45	209	160	65	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	19.8	--	--	--	0.02	--
27-Sep-11	90	500	450	7.51	185	160	58	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	18.9	--	--	--	0.02	--
4-Oct-11	91	500	440	7.6	202	130	60.7	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	19	--	--	--	0.02	--
11-Oct-11	92	500	435	7.68	218	180	64.1	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	18.9	--	--	--	0.02	--
18-Oct-11	93	500	425	7.53	202	185	57.6	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	17.6	--	--	--	0.02	--
25-Oct-11	94	500	445	7.69	220	190	57.3	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	17.7	--	--	--	0.02	--
1-Nov-11	95	500	435	7.55	222	210	68	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	20.5	--	--	--	0.02	--
8-Nov-11	96	500	445	7.59	200	180	63.1	--	1	19	0.01	0.5	0.37	0.005	0.39	0.008	110	85.3	0.0075	0.00014	0.0152	0.0003	0.00001	0.000005	0.05	0.00005	0.000016	18.9	0.0001	0.000605	0.00042	0.00005	
15-Nov-11	97	500	455	7.84	201	220	66.3	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	20.7	--	--	--	0.02	--
22-Nov-11	98	500	460	7.73	216	270	72.1	--	1	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--						

HC-26
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.01	mg/l 0.00005	mg/l 0.0001	mg/l 0.005	mg/l 0.0001	mg/L 0.015	µg/L 0.02	mg/l 0.0001	mg/l 0.0002	mg/L 0.0001	mg/l 0.01	mg/l 0.0001	mg/l 0.0002	mg/l 0.05	mg/l 0.00004	mg/l 0.005	mg/l 0.0001	mg/l 0.0002	mg/l 0.00002	mg/l 0.00005	mg/l 0.0001	mg/l 0.0002	mg/l 0.0001	mg/l 0.00005	mg/l 0.0001	mg/l 0.0001	mg/l 0.0001
5-Jan-10	0	0.01	0.00005	0.0021	8.76	0.007	0.015	0.02	0.0018	0.0047	0.0001	2.91	0.0018	0.0011	0.4	0.00004	21.4	0.042	0.0002	0.00002	0.00005	0.0001	0.0002	0.003	0.00005	0.0006	0.001	0.0001
12-Jan-10	1	0.03	0.00005	0.0036	13.2	0.03	0.015	0.02	0.0053	0.039	0.0001	2.79	0.0017	0.0034	0.52	0.00004	15.9	0.052	0.0002	0.00002	0.00005	0.0001	0.0005	0.003	0.00007	0.0009	0.001	0.0001
19-Jan-10	2	0.01	0.00069	0.0027	10.2	0.02	0.015	0.02	0.0041	0.016	0.0001	1.72	0.0013	0.0023	0.37	0.00004	7.07	0.04	0.0002	0.00002	0.00005	0.0001	0.0005	0.0021	0.00005	0.0007	0.001	0.0001
26-Jan-10	3	0.01	--	--	11.6	--	--	--	--	--	--	1.5	--	--	--	--	5.8	--	--	--	--	--	--	--	--	--	--	--
2-Feb-10	4	0.01	0.00005	0.0027	13	0.022	0.015	0.02	0.0048	0.014	0.0001	1.55	0.0012	0.0016	0.38	0.00004	4.97	0.038	0.0002	0.00002	0.00005	0.0001	0.0004	0.0021	0.00005	0.0006	0.001	0.0001
9-Feb-10	5	0.01	--	--	11.6	--	--	--	--	--	--	1	--	--	--	--	3.3	--	--	--	--	--	--	--	--	--	--	--
16-Feb-10	6	0.01	--	--	18.1	--	--	--	--	--	--	2.1	--	--	--	--	4.7	--	--	--	--	--	--	--	--	--	--	--
23-Feb-10	7	0.01	--	--	12.1	--	--	--	--	--	--	1.4	--	--	--	--	2.5	--	--	--	--	--	--	--	--	--	--	--
2-Mar-10	8	0.01	0.00005	0.0019	6.64	0.016	0.015	0.02	0.0032	0.0066	0.0001	0.78	0.0009	0.001	0.34	0.00004	1.04	0.018	0.0002	0.00002	0.00005	0.0001	0.0002	0.0011	0.00005	0.0005	0.001	0.0001
9-Mar-10	9	0.01	--	--	6.57	0.015	--	--	--	--	--	0.6	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	--	--
16-Mar-10	10	0.16	--	--	6.53	--	--	--	--	--	--	0.5	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	--
23-Mar-10	11	0.01	--	--	5.96	--	--	--	--	--	--	0.3	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
30-Mar-10	12	0.01	0.00005	0.0017	6.54	0.013	0.015	0.02	0.0036	0.0041	0.0001	0.6	0.0008	0.0007	0.27	0.00004	0.62	0.013	0.0002	0.00002	0.00005	0.0001	0.0002	0.0008	0.00005	0.0004	0.001	0.0001
6-Apr-10	13	0.01	--	--	4.88	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
13-Apr-10	14	0.02	--	--	4.76	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
20-Apr-10	15	0.01	--	--	5.25	--	--	--	--	--	--	0.4	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
27-Apr-10	16	0.005	0.000007	0.0014	5.11	0.0106	0.002	0.02	0.00299	0.00282	--	0.49	0.00089	0.00054	0.3	0.000005	0.42	0.0113	0.00002	0.000002	0.000005	0.00001	0.0005	0.00066	0.000022	0.0005	0.0001	0.0001
4-May-10	17	0.01	--	--	4.92	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
11-May-10	18	0.01	--	--	5.27	--	--	--	--	--	--	0.4	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
18-May-10	19	0.01	--	--	4.19	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
25-May-10	20	0.003	0.000017	0.0013	5.94	0.017	0.002	0.02	0.00257	0.00269	--	0.34	0.0007	0.00041	0.4	0.000005	0.3	0.0161	0.00002	0.000002	0.000005	0.00022	0.0005	0.00035	0.000025	0.0004	0.0007	0.0001
1-Jun-10	21	0.01	--	--	10.1	--	--	--	--	--	--	0.4	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
8-Jun-10	22	0.07	--	--	9.56	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
15-Jun-10	23	0.01	--	--	13.9	--	--	--	--	--	--	0.4	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
22-Jun-10	24	0.003	0.000052	0.0018	15.8	0.0366	0.002	0.02	0.00241	0.0164	--	0.42	0.0009	0.00031	0.3	0.000005	0.34	0.0353	0.00002	0.000003	0.000005	0.00001	0.0005	0.00014	0.000044	0.0002	0.0004	0.0001
29-Jun-10	25	0.01	--	--	21.7	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
6-Jul-10	26	0.01	--	--	24.1	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
13-Jul-10	27	0.01	--	--	26.6	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
20-Jul-10	28	0.003	0.000115	0.0021	21.9	0.0506	0.006	0.02	0.00199	0.0308	--	0.37	0.00077	0.0003	0.2	0.000005	0.34	0.045	0.00002	0.000006	0.000005	0.00001	0.0005	0.00006	0.000053	0.0002	0.0004	0.0001
27-Jul-10	29	0.01	--	--	25.9	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
3-Aug-10	30	0.01	--	--	28.8	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
10-Aug-10	31	0.01	--	--	27.6	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
17-Aug-10	32	0.004	0.000165	0.0015	23.1	0.0217	0.004	0.02	0.00139	0.0174	--	0.32	0.00059	0.00024	0.3	0.000005	0.29	0.0413	0.00002	0.000005	0.000005	0.00001	0.0005	0.00004	0.000032	0.0002	0.0013	0.0001
24-Aug-10	33	0.01	--	--	32	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
31-Aug-10	34	0.01	--	--	24.3	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
7-Sep-10	35	0.01	--	--	24	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
14-Sep-10	36	0.007	0.000084	0.0015	20.7	0.0188	0.002	0.02	0.00105	0.0173	--	0.29	0.0006	0.00028	0.3	0.000005	0.24	0.0412	0.00002	0.000005	0.000005	0.00002	0.0005	0.00003	0.000027	0.0002	0.0006	0.0001
21-Sep-10	37	0.01	--	--	24.7	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
28-Sep-10	38	0.01	--	--	21.5	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
5-Oct-10	39	0.01	--	--	19.6	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
12-Oct-10	40	0.003	0.000047	0.0013	20.9	0.019	0.007	0.004	0.00099	0.0156	--	0.29	0.00064	0.00026	0.3	0.000005	0.26	0.04	0.00002	0.000004	0.000005	0.00007	0.0005	0.00002	0.000028	0.0002	0.001	0.0001
19-Oct-10	41	0.01	--	--	20	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
26-Oct-10	42	0.01	--	--	20.8	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
2-Nov-10	43	0.01	--	--	21.8	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
9-Nov-10	44	0.01	--	--	19.9	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
16-Nov-10	45	0.01	--	--	23.2	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
23-Nov-10	46	0.01	--	--	13.4	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
30-Nov-10	47	0.01	--	--	11.9	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
7-Dec-10	48	0.004	0.000011	0.0009	12.5	0.00885	0.002	0.002	0.0009	0.0101	--	0.22	0.0005	0.00027	0.3	0.000005	0.21	0.0292	0.00002	0.000005	0.000005	0.00001	0.0005	0.00003</				

HC-26
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.01	mg/l 0.00005	mg/l 0.0001	mg/l 0.005	mg/l 0.0001	mg/L 0.015	µg/L 0.02	mg/l 0.0001	mg/l 0.0002	mg/l 0.0001	mg/l 0.0001	mg/l 0.01	mg/l 0.0001	mg/l 0.0002	mg/l 0.05	mg/l 0.00004	mg/l 0.005	mg/l 0.0001	mg/l 0.0002	mg/l 0.00002	mg/l 0.00005	mg/l 0.0001	mg/l 0.0002	mg/l 0.0001	mg/l 0.00005	mg/l 0.0001	mg/l 0.0001
18-Jan-11	54	0.01	--	--	13.4	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
25-Jan-11	55	0.01	--	--	13.6	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
1-Feb-11	56	0.003	0.000027	0.001	13.3	0.00834	0.011	0.002	0.00074	0.00949	--	0.19	0.00051	0.00021	0.2	0.000005	0.21	0.0286	0.00002	0.000005	0.000005	0.00001	0.0005	0.00001	0.000014	0.0002	0.0011	0.0001
8-Feb-11	57	0.01	--	--	14.8	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
15-Feb-11	58	0.01	--	--	13.1	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
22-Feb-11	59	0.01	--	--	13.7	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
1-Mar-11	60	0.01	--	--	12.3	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
8-Mar-11	61	0.01	--	--	13	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
15-Mar-11	62	0.01	--	--	12	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
22-Mar-11	63	0.01	--	--	12.7	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
29-Mar-11	64	0.003	0.000019	0.0008	13.2	0.00568	0.009	0.002	0.00121	0.00683	--	0.22	0.00058	0.0002	0.2	0.000005	0.26	0.0266	0.00002	0.000005	0.000005	0.00002	0.0005	0.00004	0.000018	0.0002	0.0043	0.0001
5-Apr-11	65	0.01	--	--	12.6	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
12-Apr-11	66	0.01	--	--	11.7	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
19-Apr-11	67	0.01	--	--	11.2	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
26-Apr-11	68	0.01	--	--	12.3	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
3-May-11	69	0.01	--	--	11.8	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
10-May-11	70	0.01	--	--	11.6	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
17-May-11	71	0.01	--	--	11.5	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
24-May-11	72	0.002	0.00005	0.0006	10.5	0.00653	0.01	0.002	0.00057	0.00556	--	0.15	0.00055	0.00015	0.2	0.000007	0.17	0.0258	0.00002	0.000007	0.000005	0.00001	0.0005	0.00002	0.000011	0.0002	0.0008	0.0001
31-May-11	73	0.01	--	--	11.3	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
7-Jun-11	74	0.01	--	--	11.4	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
14-Jun-11	75	0.01	--	--	12.4	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
21-Jun-11	76	0.01	--	--	11.5	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
28-Jun-11	77	0.01	--	--	10.8	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
5-Jul-11	78	0.01	--	--	11.1	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
12-Jul-11	79	0.01	--	--	10.6	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
19-Jul-11	80	0.005	0.000021	0.0005	10.4	0.00511	0.01	0.002	0.00071	0.00546	--	0.14	0.00054	0.00015	0.2	0.000005	0.18	0.0258	0.00002	0.000009	0.000005	0.00003	0.0005	0.00002	0.00001	0.0002	0.0015	0.0001
26-Jul-11	81	0.01	--	--	10.6	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
2-Aug-11	82	0.01	--	--	11	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
9-Aug-11	83	0.01	--	--	9.95	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
16-Aug-11	84	0.01	--	--	11.2	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
23-Aug-11	85	0.01	--	--	10.3	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
30-Aug-11	86	0.01	--	--	10.6	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
6-Sep-11	87	0.01	--	--	10.3	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
13-Sep-11	88	0.004	0.000027	0.0005	8.82	0.00422	0.005	0.002	0.00065	0.00416	--	0.11	0.00049	0.00017	0.2	0.000005	0.14	0.0215	0.00002	0.000005	0.000005	0.00001	0.0005	0.00001	0.000008	0.0003	0.0006	0.0001
20-Sep-11	89	0.01	--	--	10.8	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
27-Sep-11	90	0.01	--	--	10.2	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
4-Oct-11	91	0.01	--	--	10.7	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
11-Oct-11	92	0.01	--	--	11	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
18-Oct-11	93	0.01	--	--	10.3	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
25-Oct-11	94	0.01	--	--	10.1	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
1-Nov-11	95	0.01	--	--	11	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
8-Nov-11	96	0.003	0.000126	0.0005	9.25	0.00408	0.004	0.002	0.00071	0.00466	--	0.13	0.0007	0.00014	0.2	0.000005	0.18	0.0253	0.00002	0.000007	0.000005	0.00001	0.0005	0.00002	0.000008	0.0002	0.0003	0.0001
15-Nov-11	97	0.01	--	--	10.4	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
22-Nov-11	98	0.01	--	--	10.9	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
29-Nov-11	99	0.01	--	--	10	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
6-Dec-11	100	0.01	--	--	8.98	--	--	--	--	--	--	0.3	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
13-Dec-11	101	0.01	--	--	10.7	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--
20-Dec-11	102	0.01	--	--	9.47	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
27-Dec-11	103	0.01	--	--	9.54	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
3-Jan-12	104	0.004	0.000305	0.0005	8.68	0.00446	0.009	0.002	0.00059	0.00444	--	0.09	0.00052	0.00017	0.2	0.000005	0.16	0.0237	0.00002	0.000006	0.000005	0.00002	0.0005	0.00001	0.000007	0.0002	0.0005	0.0001
10-Jan-12	105	0.01	--	--	8.97	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
17-Jan-12	106	0.01	--	--	8.99	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
24-Jan-12	107	0.01	--	--	9.17	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
31-Jan-12	108	0.01	--	--	8.42	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
Terminated																												

HC-27
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																														
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	Cu	La
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mgN/l)	(mgP/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001
5-Jan-10	0	750	570	9.48	143	110	2	--	--	45	0.05	9	0.07	0.008	0.06	0.02	71	12.20435	0.2	0.0031	0.081	0.0002	0.0001	0.0001	0.19	0.0001	0.00011	3.47	0.0003	0.0002	0.0007	0.0001
12-Jan-10	1	500	435	9.19	185	110	9	--	--	57	0.05	9.45	0.1	0.01	0.06	0.34	124	10.14666	0.14	0.016	0.989	0.0002	0.0001	0.0001	0.5	0.0001	0.00001	2.58	0.0003	0.0009	0.0012	0.0001
19-Jan-10	2	500	440	9.11	152	90	13	--	--	48	0.05	5.17	0.05	0.006	0.09	0.3	65	10.47594	0.12	0.017	1.81	0.0002	0.0001	0.0001	0.42	0.0001	0.00001	2.58	0.0003	0.0011	0.001	0.0001
26-Jan-10	3	500	445	9.09	120	110	16	--	--	36	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	3.37	--	--	0.02	--
2-Feb-10	4	500	445	9.1	88	125	13	--	--	26	0.05	1.21	0.05	0.003	0.11	0.53	61	13.95063	0.084	0.01	1.73	0.0002	0.0001	0.0001	0.23	0.0001	0.00001	3.51	0.0002	0.0014	0.0004	0.0001
9-Feb-10	5	500	450	9.05	108	130	22	--	--	30	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	4.56	--	--	0.02	--
16-Feb-10	6	500	415	9.5	128	110	22	--	--	33	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	4.49	--	--	0.02	--
23-Feb-10	7	500	420	9.44	115	105	18	--	--	34	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	5.05	--	--	0.02	--
2-Mar-10	8	500	440	9.2	67	115	7	--	--	33	0.05	0.2	0.05	0.003	0.19	0.47	30	19.88477	0.058	0.0089	1.33	0.0002	0.0001	0.0001	0.18	0.0001	0.00001	4.37	0.0002	0.0016	0.0003	0.0001
9-Mar-10	9	500	455	9.07	60	135	5	--	--	22	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	4.64	--	--	0.02	--
16-Mar-10	10	500	450	8.83	52	160	5	--	--	20	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	4.49	--	--	0.02	--
23-Mar-10	11	500	450	8.89	53	150	6	--	--	19	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	4.7	--	--	0.02	--
30-Mar-10	12	500	445	8.74	59	150	5	--	--	19	0.05	0.2	0.05	0.003	0.18	0.32	10	18.98199	0.039	0.005	0.817	0.0002	0.0001	0.0001	0.1	0.0001	0.00001	4.47	0.0002	0.0015	0.0003	0.0001
6-Apr-10	13	500	465	8.88	52	180	5	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.57	--	--	0.02	--
13-Apr-10	14	500	445	8.9	49	140	5	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.56	--	--	0.02	--
20-Apr-10	15	500	420	9.1	58	145	8	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.71	--	--	0.02	--
27-Apr-10	16	500	440	8.95	47	140	4	--	--	18	0.03	0.5	0.02	0.005	0.19	0.157	42	18.22685	0.0422	0.0047	0.649	0.00017	0.00001	0.000005	0.08	0.00007	0.000005	4.25	0.0001	0.00135	0.0008	0.00005
4-May-10	17	500	450	9.02	47	170	4	--	--	19	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	4.44	--	--	0.02	--
11-May-10	18	500	445	8.9	48	160	4	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.67	--	--	0.02	--
18-May-10	19	500	450	8.84	46	155	4	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.42	--	--	0.02	--
25-May-10	20	500	445	8.94	46	145	4	--	--	19	0.01	0.5	0.02	0.005	0.24	0.222	38	20.19537	0.0348	0.00469	0.58	0.00033	0.00001	0.000005	0.07	0.00008	0.000005	4.89	0.0001	0.00126	0.0004	0.00005
1-Jun-10	21	500	470	8.62	56	145	5	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.65	--	--	0.02	--
8-Jun-10	22	500	460	8.78	43	160	4	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.02	--	--	0.02	--
15-Jun-10	23	500	460	8.83	43	150	3	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.54	--	--	0.02	--
22-Jun-10	24	500	450	8.92	54	125	4	--	--	16	0.01	0.5	0.02	0.005	0.48	0.28	26	24.29929	0.0364	0.00553	0.735	0.00018	0.00001	0.000005	0.08	0.00009	0.000005	5.05	0.0001	0.00187	0.00024	0.00005
29-Jun-10	25	500	435	8.92	42	145	3	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.26	--	--	0.02	--
6-Jul-10	26	500	445	9.22	50	120	3	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.76	--	--	0.02	--
13-Jul-10	27	500	440	9.03	35	120	1	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.98	--	--	0.02	--
20-Jul-10	28	500	450	8.73	40	160	1	--	--	19	0.01	0.5	0.02	0.005	0.29	0.192	24	17.79962	0.0257	0.00375	0.465	0.00023	0.00001	0.000005	0.05	0.00009	0.000005	4.61	0.0001	0.00164	0.00043	0.00005
27-Jul-10	29	500	450	8.78	41	160	3	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.25	--	--	0.02	--
3-Aug-10	30	500	445	8.95	47	140	3	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.06	--	--	0.02	--

HC-27
Sample Weight = 1 kg

Date	Accum. Weeks	Volume (ml)		pH (pH Units)	EC (µS/cm)	ORP (mV)	SO4 (mg/l)	Acidity (mg CaCO3/l)		Alkalinity to pH 4.5	Fluoride (mg/l)	Chloride (mg/l)	Nitrate-N (mg/l)	Nitrite-N (mg/l)	Total Ammonia (mgN/l)	Diss.-P (mgP/l)	TDS (mg/l)	Hardness CaCO3 (mg/l)	Dissolved Metals by ICP-MS (Cantest)															
		Input 5	Output 5					to pH 4.5 1	to pH 8.3 1										Al (mg/l)	Sb (mg/l)	As (mg/l)	Ba (mg/l)	Be (mg/l)	Bi mg/l	B (mg/l)	Cs mg/l	Cd mg/l	Ca mg/l	Cr mg/l	Co mg/l	Cu mg/l	La mg/l		
10-Aug-10	31	500	440	9.1	50	140	5	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.1	--	--	0.02	--		
17-Aug-10	32	500	450	8.75	37	165	2	--	--	18	0.01	0.5	0.02	0.005	0.23	0.154	20	18.45625	0.0251	0.00296	0.375	0.00012	0.00001	0.000005	0.05	0.0001	0.000006	4.21	0.0002	0.00153	0.00112	0.00005		
24-Aug-10	33	500	445	8.94	58	160	3	--	--	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.18	--	--	0.02	--		
31-Aug-10	34	500	440	8.88	42	150	2	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.93	--	--	0.02	--		
7-Sep-10	35	500	455	8.77	44	140	3	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.85	--	--	0.02	--		
14-Sep-10	36	500	450	8.95	40	160	2	--	--	18	0.03	0.5	0.02	0.005	0.12	0.091	36	19.5157	0.0232	0.00309	0.396	0.0001	0.00001	0.000005	0.05	0.00009	0.000005	4.42	0.0001	0.0015	0.0005	0.00005		
21-Sep-10	37	500	450	8.95	46	160	3	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.02	--	--	0.02	--		
28-Sep-10	38	500	440	8.86	35	155	3	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.29	--	--	0.02	--		
5-Oct-10	39	500	460	8.68	39	160	3	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.36	--	--	0.02	--		
12-Oct-10	40	500	450	8.6	43	180	2	--	--	18	0.01	0.5	0.02	0.005	0.18	0.066	24	16.99124	0.0197	0.00222	0.254	0.00013	0.00001	0.000005	0.05	0.00007	0.000006	3.92	0.0003	0.00123	0.00029	0.00005		
19-Oct-10	41	500	445	8.6	44	180	4	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.42	--	--	0.02	--		
26-Oct-10	42	500	450	8.71	47	190	2	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.15	--	--	0.02	--		
2-Nov-10	43	500	440	8.88	48	175	3	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.14	--	--	0.02	--		
9-Nov-10	44	500	445	8.82	42	185	4	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.06	--	--	0.02	--		
16-Nov-10	45	500	415	9.19	48	175	3	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.11	--	--	0.02	--		
23-Nov-10	46	500	435	9.09	54	140	3	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.47	--	--	0.02	--		
30-Nov-10	47	500	445	8.96	47	135	3	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.19	--	--	0.02	--		
7-Dec-10	48	500	450	8.6	36	165	2	--	--	19	0.01	0.5	0.02	0.005	0.12	0.048	18	17.9	0.0163	0.00197	0.212	0.00012	0.00001	0.000005	0.05	0.00007	0.000005	4.13	0.0001	0.00126	0.00033	0.00005		
14-Dec-10	49	500	460	8.62	45	150	2	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.07	--	--	0.02	--		
21-Dec-10	50	500	450	8.75	45	150	2	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.43	--	--	0.02	--		
28-Dec-10	51	500	450	8.89	49	150	3	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.8	--	--	0.02	--		
4-Jan-11	52	500	460	8.5	46	170	2	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.55	--	--	0.02	--		
11-Jan-11	53	500	435	8.8	48	160	2	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.66	--	--	0.02	--		
18-Jan-11	54	500	445	8.75	45	165	3	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.18	--	--	0.02	--		
25-Jan-11	55	500	430	8.93	48	130	2	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.67	--	--	0.02	--		
1-Feb-11	56	500	445	8.57	40	170	3	--	--	18	0.01	0.5	0.02	0.005	0.071	0.046	20	18.7	0.0197	0.00147	0.175	0.00017	0.00001	0.000005	0.05	0.00007	0.000007	4.54	0.0001	0.00109	0.0003	0.00005		
8-Feb-11	57	500	445	8.77	40	175	3	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.31	--	--	0.02	--		
Terminated																																		

HC-27
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
		0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.0001	0.0001
5-Jan-10	0	0.1	0.00005	0.0012	0.86	0.0041	0.015	0.02	0.0002	0.0017	0.0001	1.79	0.0014	0.0009	0.41	0.00004	24.9	0.013	0.0002	0.00002	0.00005	0.0001	0.0002	0.0006	0.00009	0.0016	0.001	0.0001
12-Jan-10	1	0.02	0.00005	0.0015	0.9	0.0043	0.015	0.02	0.0008	0.0049	0.0001	2.24	0.0017	0.0023	0.64	0.00004	35.7	0.017	0.0002	0.00002	0.00005	0.0001	0.0002	0.0018	0.00014	0.0043	0.001	0.0001
19-Jan-10	2	0.01	0.00005	0.0013	0.98	0.0035	0.015	0.02	0.0005	0.0033	0.0001	2.1	0.0017	0.0033	0.64	0.00004	25.9	0.016	0.0002	0.00002	0.00005	0.0001	0.0002	0.0014	0.0002	0.0053	0.001	0.0001
26-Jan-10	3	0.02	--	--	1.28	--	--	--	--	--	--	2.1	--	--	--	--	19.9	--	--	--	--	--	--	--	--	--	--	--
2-Feb-10	4	0.02	0.00005	0.001	1.26	0.0065	0.015	0.02	0.0002	0.0025	0.0001	1.91	0.0014	0.0015	0.47	0.00004	12.6	0.016	0.0002	0.00002	0.00005	0.0001	0.0004	0.0006	0.00012	0.0031	0.001	0.0001
9-Feb-10	5	0.01	--	--	2.3	--	--	--	--	--	--	2.3	--	--	--	--	13.8	--	--	--	--	--	--	--	--	--	0.005	--
16-Feb-10	6	0.01	--	--	3.19	--	--	--	--	--	--	3	--	--	--	--	14.5	--	--	--	--	--	--	--	--	--	0.005	--
23-Feb-10	7	0.01	--	--	3.5	--	--	--	--	--	--	2.6	--	--	--	--	9.7	--	--	--	--	--	--	--	--	--	0.005	--
2-Mar-10	8	0.01	0.00005	0.0008	2.18	0.0062	0.015	0.02	0.0001	0.0021	0.0001	1.7	0.0018	0.0008	0.55	0.00004	3.15	0.023	0.0002	0.00002	0.00005	0.0001	0.0003	0.0002	0.00005	0.0024	0.001	0.0001
9-Mar-10	9	0.01	--	--	2.33	0.007	--	--	--	--	--	1.3	--	--	--	--	2.4	--	--	--	--	--	--	--	--	--	0.005	--
16-Mar-10	10	0.01	--	--	2.03	--	--	--	--	--	--	1.1	--	--	--	--	1.8	--	--	--	--	--	--	--	--	--	0.005	--
23-Mar-10	11	0.01	--	--	2.1	--	--	--	--	--	--	1	--	--	--	--	1.5	--	--	--	--	--	--	--	--	--	0.005	--
30-Mar-10	12	0.01	0.00005	0.0008	1.9	0.0053	0.015	0.02	0.0001	0.0016	0.0001	1.24	0.0015	0.0006	0.31	0.00004	1.46	0.019	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0018	0.001	0.0001
6-Apr-10	13	0.01	--	--	1.95	--	--	--	--	--	--	0.8	--	--	--	--	1	--	--	--	--	--	--	--	--	--	0.005	--
13-Apr-10	14	0.01	--	--	1.98	--	--	--	--	--	--	0.9	--	--	--	--	1	--	--	--	--	--	--	--	--	--	0.005	--
20-Apr-10	15	0.01	--	--	2.39	--	--	--	--	--	--	1.1	--	--	--	--	1.4	--	--	--	--	--	--	--	--	--	0.005	--
27-Apr-10	16	0.004	0.00001	0.0007	1.85	0.00602	0.002	0.02	0.00011	0.00129	--	1.01	0.00155	0.00044	0.4	0.000005	0.83	0.0173	0.00002	0.000004	0.000005	0.00001	0.0005	0.0001	0.000027	0.0017	0.0002	0.0001
4-May-10	17	0.01	--	--	2.2	--	--	--	--	--	--	0.7	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	0.005	--
11-May-10	18	0.01	--	--	2.09	--	--	--	--	--	--	0.9	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	0.005	--
18-May-10	19	0.01	--	--	2.05	--	--	--	--	--	--	0.7	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	0.005	--
25-May-10	20	0.007	0.000031	0.0007	1.94	0.00946	0.002	0.02	0.00014	0.00141	--	0.76	0.00136	0.00043	0.4	0.000005	0.49	0.0174	0.00002	0.000003	0.000005	0.0001	0.0005	0.00007	0.000024	0.0014	0.0003	0.0001
1-Jun-10	21	0.01	--	--	2.54	--	--	--	--	--	--	0.9	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	0.005	--
8-Jun-10	22	0.01	--	--	1.76	--	--	--	--	--	--	0.6	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
15-Jun-10	23	0.01	--	--	1.88	--	--	--	--	--	--	0.7	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
22-Jun-10	24	0.009	0.000008	0.0007	2.84	0.00658	0.002	0.02	0.00016	0.00187	--	0.92	0.00156	0.0005	0.5	0.000005	0.5	0.0187	0.00002	0.000003	0.000005	0.00001	0.0006	0.00006	0.000029	0.0019	0.0001	0.0001
29-Jun-10	25	0.01	--	--	1.91	--	--	--	--	--	--	0.7	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
6-Jul-10	26	0.01	--	--	2.71	--	--	--	--	--	--	0.7	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	0.005	--
13-Jul-10	27	0.01	--	--	2.19	--	--	--	--	--	--	0.6	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
20-Jul-10	28	0.011	0.000032	0.0006	1.91	0.00634	0.006	0.02	0.00013	0.00146	--	0.66	0.00125	0.00034	0.2	0.000005	0.28	0.0144	0.00002	0.000002	0.000005	0.00001	0.0005	0.00004	0.000016	0.0011	0.0008	0.0001
27-Jul-10	29	0.01	--	--	1.83	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
3-Aug-10	30	0.01	--	--	2.46	--	--	--	--	--	--	0.7	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--

HC-27
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l 0.01	mg/l 0.00005	mg/l 0.0001	mg/l 0.005	mg/l 0.0001	mg/L 0.015	µg/L 0.02	mg/l 0.0001	mg/l 0.0002	mg/L 0.0001	mg/l 0.01	mg/l 0.0001	mg/l 0.0002	mg/l 0.05	mg/l 0.00004	mg/l 0.005	mg/l 0.0001	mg/l 0.0002	mg/l 0.00002	mg/l 0.00005	mg/l 0.0001	mg/l 0.0002	mg/l 0.0001	mg/l 0.00005	mg/l 0.0001	mg/l 0.0001	mg/l 0.0001
10-Aug-10	31	0.01			2.83						--	0.5					0.3										0.005	
17-Aug-10	32	0.007	0.000038	0.0005	1.93	0.00659	0.002	0.02	0.0001	0.00132	--	0.55	0.00104	0.00025	0.3	0.000005	0.2	0.0134	0.00002	0.000003	0.000005	0.00001	0.0005	0.00004	0.00001	0.0008	0.0001	0.0001
24-Aug-10	33	0.01	--	--	3.2	--	--	--	--	--	--	0.6	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
31-Aug-10	34	0.01	--	--	2.14	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
7-Sep-10	35	0.01	--	--	2.13	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
14-Sep-10	36	0.009	0.000083	0.0006	2.06	0.00567	0.002	0.02	0.0001	0.00126	--	0.57	0.00137	0.00032	0.3	0.000005	0.18	0.0129	0.00002	0.000002	0.000005	0.00002	0.0005	0.00004	0.000011	0.0008	0.0001	0.0001
21-Sep-10	37	0.01	--	--	2.5	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Sep-10	38	0.01	--	--	1.84	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
5-Oct-10	39	0.01	--	--	1.88	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
12-Oct-10	40	0.005	0.000062	0.0005	1.75	0.00702	0.003	0.004	0.00011	0.00107	--	0.43	0.00099	0.00023	0.3	0.000005	0.14	0.0109	0.00002	0.000002	0.000005	0.00004	0.0005	0.00003	0.000011	0.0007	0.0002	0.0001
19-Oct-10	41	0.01	--	--	1.91	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.006	--
26-Oct-10	42	0.01	--	--	1.79	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
2-Nov-10	43	0.01	--	--	2.08	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
9-Nov-10	44	0.01	--	--	1.78	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
16-Nov-10	45	0.01	--	--	2.38	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
23-Nov-10	46	0.01	--	--	2.56	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
30-Nov-10	47	0.01	--	--	2.09	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
7-Dec-10	48	0.003	0.000018	0.0005	1.85	0.00714	0.002	0.002	0.00009	0.00106	--	0.35	0.00084	0.00023	0.3	0.000005	0.11	0.0105	0.00002	0.000002	0.000005	0.00001	0.0005	0.00002	0.000009	0.0009	0.0001	0.0001
14-Dec-10	49	0.01	--	--	2.06	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
21-Dec-10	50	0.01	--	--	1.76	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Dec-10	51	0.01	--	--	2.14	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
4-Jan-11	52	0.01	--	--	1.79	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
11-Jan-11	53	0.01	--	--	2.06	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
18-Jan-11	54	0.01	--	--	1.77	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
25-Jan-11	55	0.01	--	--	2.36	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
1-Feb-11	56	0.006	0.000011	0.0005	1.79	0.00744	0.015	0.002	0.00008	0.00092	--	0.29	0.0007	0.00024	0.2	0.000005	0.11	0.00895	0.00002	0.000002	0.000005	0.00003	0.0005	0.00001	0.000006	0.0004	0.0002	0.0001
8-Feb-11	57	0.01	--	--	1.84	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
Terminated																												

HC-28
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																															
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	Cu	La	
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mgN/l)	(mgP/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	
		5	5	0.01	1	50	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001	
5-Jan-10	0	750	610	9.14	128	125	7	--	--	33	0.05	9.23	0.05	0.005	0.05	0.02	64	26.88384	0.14	0.0063	0.037	0.0004	0.0001	0.0001	0.12	0.0001	0.00001	0.00001	5.64	0.0002	0.0001	0.0002	0.0001
12-Jan-10	1	500	445	8.98	219	120	27	--	--	44	0.06	11.5	0.05	0.004	0.03	0.26	132	47.93491	0.078	0.017	0.768	0.0007	0.0001	0.0001	0.21	0.0001	0.00001	0.00001	7.51	0.0003	0.0018	0.0023	0.0001
19-Jan-10	2	500	440	8.97	149	115	28	--	--	30	0.05	4.29	0.05	0.003	0.07	0.12	48	40.69106	0.074	0.011	0.808	0.0004	0.0001	0.0001	0.14	0.0001	0.00001	0.00001	6.62	0.0002	0.0014	0.0004	0.0001
26-Jan-10	3	500	445	8.55	135	120	33	--	--	24	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
2-Feb-10	4	500	445	8.68	145	135	37	--	--	23	0.05	1.42	0.05	0.003	0.1	0.26	92	54.32972	0.068	0.0076	0.763	0.0005	0.0001	0.0001	0.1	0.0001	0.00001	0.00001	9.56	0.0002	0.002	0.0002	0.0001
9-Feb-10	5	500	435	8.79	142	150	40	--	--	25	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
16-Feb-10	6	500	425	9.33	183	135	62	--	--	24	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
23-Feb-10	7	500	415	9.24	130	140	31	--	--	28	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
2-Mar-10	8	500	435	8.8	88	140	14	--	--	23	0.05	0.2	0.05	0.004	0.12	0.2	10	33.0523	0.087	0.0054	0.607	0.0003	0.0001	0.0001	0.059	0.0001	0.00001	0.00001	6.94	0.0002	0.002	0.0005	0.0001
9-Mar-10	9	500	450	8.89	98	155	16	--	--	26	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
16-Mar-10	10	500	455	8.7	76	150	14	--	--	26	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
23-Mar-10	11	500	440	8.78	53	155	18	--	--	22	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
30-Mar-10	12	500	445	8.8	79	160	12	--	--	21	0.05	0.2	0.05	0.002	0.12	0.21	64	30.56296	0.055	0.0033	0.498	0.0005	0.0001	0.0001	0.038	0.0001	0.00001	0.00001	6.52	0.0002	0.0014	0.0003	0.0001
6-Apr-10	13	500	470	8.69	73	185	12	--	--	22	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
13-Apr-10	14	500	445	8.88	72	135	12	--	--	22	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
20-Apr-10	15	500	420	8.98	84	140	17	--	--	24	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
27-Apr-10	16	500	445	8.73	53	150	7	--	--	19	0.02	0.5	0.02	0.005	0.15	0.063	50	22.75003	0.0665	0.00199	0.301	0.00023	0.00001	0.000005	0.05	0.00005	0.000005	0.000005	4.99	0.0001	0.00123	0.00043	0.00005
4-May-10	17	500	445	8.69	54	185	8	--	--	18	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
11-May-10	18	500	440	8.54	55	150	6	--	--	18	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
18-May-10	19	500	445	8.68	66	165	9	--	--	22	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
25-May-10	20	500	450	8.52	62	165	8	--	--	20	0.02	0.5	0.02	0.005	0.18	0.1	50	26.71783	0.0718	0.002	0.305	0.0003	0.00001	0.000005	0.05	0.00005	0.000005	0.000005	5.59	0.0001	0.00101	0.00078	0.00005
1-Jun-10	21	500	475	8.46	66	150	8	--	--	23	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
8-Jun-10	22	500	435	8.6	55	165	7	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
15-Jun-10	23	500	460	8.64	54	175	6	--	--	20	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
22-Jun-10	24	500	435	8.58	66	140	8	--	--	23	0.01	0.5	0.02	0.005	0.43	0.09	40	30.47435	0.0837	0.00213	0.377	0.0003	0.00001	0.000005	0.05	0.00005	0.000005	0.000005	5.99	0.0001	0.00147	0.0006	0.00005
29-Jun-10	25	500	435	8.88	55	140	7	--	--	21	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
6-Jul-10	26	500	430	8.89	60	145	7	--	--	23	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
13-Jul-10	27	500	440	8.83	40	160	5	--	--	20	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
20-Jul-10	28	500	445	8.63	49	175	4	--	--	19	0.01	0.5	0.02	0.005	0.22	0.088	30	21.69525	0.0602	0.00127	0.23	0.00019	0.00001	0.000005	0.05	0.00005	0.000005	0.000005	4.65	0.0002	0.00108	0.00043	0.00005
27-Jul-10	29	500	450	8.67	57	150	6	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
3-Aug-10	30	500	470	8.68	62	145	6	--	--	26	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
10-Aug-10	31	500	490	8.43	60	160	5	--	--	27	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
17-Aug-10	32	500	455	8.49	66	145	6	--	--	22	0.01	0.5	0.02	0.005	0.2	0.097	28	26.13829	0.0647	0.00128	0.234	0.00017	0.00001	0.000005	0.05	0.00005	0.000005	0.000005	5.77	0.0002	0.00124	0.00192	0.00005
24-Aug-10	33	500	440	8.71	57	150	5	--	--	22	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
31-Aug-10	34	500	445	8.7	52	155	5	--	--	22	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
7-Sep-10	35	500	445	8.62	73	150	7	--	--	25	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	--	0.02	--
14-Sep-10	36	500	445	8.74	50	155	4	--	--	20	0.01	0.5	0.02	0.005	0.07	0.058	48	24.31766	0.0605	0.00114	0.226	0.00015	0.00001	0.000005	0.05	0.00005	0.000005	0.000005	5.42	0.0002	0.00111	0.00037	0.00005
21-Sep-10	37	500	475	8.68	52	155	7	--																									

HC-28
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr	
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l		
5-Jan-10	0	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001	
12-Jan-10	1	0.05	0.00005	0.0019	7.09	0.01	0.015	0.02	0.0016	0.011	0.0001	6.58	0.0048	0.0033	0.63	0.00004	19.8	0.028	0.0002	0.00002	0.00005	0.0001	0.0002	0.0014	0.00005	0.0017	0.001	0.0001	
19-Jan-10	2	0.01	0.00005	0.0013	5.87	0.0064	0.015	0.02	0.0012	0.0047	0.0001	4.15	0.0035	0.0027	0.54	0.00004	9.57	0.021	0.0002	0.00002	0.00005	0.0001	0.0004	0.0008	0.00005	0.0015	0.001	0.0001	
26-Jan-10	3	0.01	--	--	6.35	--	--	--	--	--	--	3.7	--	--	--	--	6.3	--	--	--	--	--	--	--	--	--	0.005	--	
2-Feb-10	4	0.01	0.00005	0.0014	7.4	0.0077	0.015	0.02	0.0009	0.0045	0.0001	3.78	0.0029	0.0019	0.57	0.00004	5.03	0.022	0.0002	0.00002	0.00005	0.0001	0.0002	0.0006	0.00005	0.0013	0.001	0.0001	
9-Feb-10	5	0.01	--	--	7.31	--	--	--	--	--	--	3	--	--	--	--	3.3	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Feb-10	6	0.01	--	--	10.7	--	--	--	--	--	--	4.4	--	--	--	--	4.6	--	--	--	--	--	--	--	--	--	--	0.005	--
23-Feb-10	7	0.01	--	--	7.39	--	--	--	--	--	--	3.1	--	--	--	--	2.1	--	--	--	--	--	--	--	--	--	--	0.005	--
2-Mar-10	8	0.24	0.00005	0.0009	3.82	0.015	0.015	0.02	0.0004	0.0036	0.0001	1.62	0.0019	0.0008	0.57	0.00004	0.79	0.012	0.0002	0.00002	0.00005	0.0001	0.0003	0.0004	0.00005	0.0012	0.001	0.0001	
9-Mar-10	9	0.03	--	--	4.86	0.009	--	--	--	--	--	1.5	--	--	--	--	0.9	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Mar-10	10	0.01	--	--	3.76	--	--	--	--	--	--	1.1	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	0.005	--
23-Mar-10	11	0.01	--	--	4.21	--	--	--	--	--	--	1	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	0.005	--
30-Mar-10	12	0.01	0.00005	0.0008	3.47	0.008	0.015	0.02	0.0003	0.0021	0.0001	1.1	0.0015	0.0005	0.41	0.00004	0.5	0.0093	0.0002	0.00002	0.00005	0.0001	0.0002	0.0003	0.00005	0.0009	0.001	0.0001	
6-Apr-10	13	0.01	--	--	3.31	--	--	--	--	--	--	0.7	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
13-Apr-10	14	0.03	--	--	3.71	--	--	--	--	--	--	0.8	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	0.005	--
20-Apr-10	15	0.01	--	--	4.9	--	--	--	--	--	--	1.3	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	--	0.005	--
27-Apr-10	16	0.01	0.00009	0.0006	2.5	0.00867	0.002	0.02	0.00026	0.00146	--	0.71	0.00129	0.00034	0.4	0.000005	0.29	0.00749	0.00002	0.000002	0.000005	0.00001	0.0005	0.00019	0.000008	0.0006	0.0001	0.0001	
4-May-10	17	0.01	--	--	2.79	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
11-May-10	18	0.02	--	--	2.88	--	--	--	--	--	--	0.6	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
18-May-10	19	0.02	--	--	3.47	--	--	--	--	--	--	0.7	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
25-May-10	20	0.008	0.00009	0.0006	3.1	0.0138	0.002	0.02	0.00034	0.00124	--	0.73	0.00154	0.00038	0.4	0.000005	0.3	0.00793	0.00002	0.000002	0.000005	0.00008	0.0005	0.00018	0.000005	0.0006	0.0001	0.0001	
1-Jun-10	21	0.01	--	--	3.38	--	--	--	--	--	--	0.7	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
8-Jun-10	22	0.01	--	--	2.71	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
15-Jun-10	23	0.01	--	--	2.7	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
22-Jun-10	24	0.01	0.000029	0.0008	3.77	0.0106	0.002	0.02	0.00041	0.00179	--	0.78	0.00169	0.00037	0.6	0.000005	0.33	0.00817	0.00002	0.000002	0.000005	0.00003	0.0005	0.00017	0.000008	0.0008	0.0001	0.0001	
29-Jun-10	25	0.01	--	--	3.19	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
6-Jul-10	26	0.01	--	--	3.44	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
13-Jul-10	27	0.01	--	--	2.74	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
20-Jul-10	28	0.01	0.000066	0.0006	2.45	0.00975	0.007	0.02	0.00023	0.00129	--	0.47	0.00113	0.00019	0.4	0.000005	0.2	0.00605	0.00002	0.000002	0.000005	0.00001	0.0005	0.0001	0.000003	0.0005	0.0003	0.0001	
27-Jul-10	29	0.01	--	--	2.94	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
3-Aug-10	30	0.01	--	--	3.83	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
10-Aug-10	31	0.01	--	--	3.11	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
17-Aug-10	32	0.012	0.000064	0.0005	2.85	0.0121	0.002	0.02	0.00026	0.00146	--	0.48	0.00095	0.00014	0.5	0.000005	0.21	0.00679	0.00002	0.000002	0.000005	0.00001	0.0005	0.00008	0.000003	0.0004	0.0001	0.0001	
24-Aug-10	33	0.01	--	--	3.19	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
31-Aug-10	34	0.01	--	--	2.95	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
7-Sep-10	35	0.03	--	--	3.5	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
14-Sep-10	36	0.017	0.000045	0.0005	2.62	0.0083	0.002	0.02	0.00024	0.00125	--	0.39	0.00117	0.00015	0.4	0.000005	0.16	0.00635	0.00002	0.000003	0.000005	0.00002	0.0005	0.00007	0.000003	0.0003	0.0001	0.0001	
21-Sep-10	37	0.01	--	--	2.84	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
28-Sep-10	38	0.01	--	--	3.22	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
5-Oct-10	39	0.01	--	--	3.41	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
12-Oct-10	40	0.006	0.000019	0.0006	3.36	0.00974	0.007	0.004	0.00039	0.00115	--	0.38	0.00121	0.00015	0.4	0.000005	0.21	0.0069	0.00002	0.000002	0.000005	0.00008	0.0005	0.00005	0.000006	0.0003	0.0004	0.0001	
19-Oct-10	41	0.01	--	--	3.66	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
26-Oct-10	42	0.01	--	--	3.64	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
2-Nov-10	43	0.01	--	--	4.4	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
9-Nov-10	44	0.01	--	--	3.34	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
16-Nov-10	45	0.01	--	--	5.8	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
23-Nov-10	46	0.01	--	--	3.13	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
30-Nov-10	47	0.01	--	--	3.23	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
7-Dec-10	48	0.004	0.000011	0.0005	3.74	0.00919	0.002	0.002	0.00041	0.00184	--	0.31	0.00085	0.00012	0.4	0.000005	0.15	0.00859	0.00002	0.000002	0.000005	0.00001	0.0005	0.00002	0.000005	0.0006	0.0003	0.0001	
14-Dec-10	49	0.01	--	--	5.85	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
21-Dec-10	50	0.01	--	--	4.72	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
28-Dec-10	51	0.01	--	--	5.35	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
4-Jan-11	52	0.01	--	--	3.48	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	0.005	--
11-Jan-11	53	0.01	--	--	5.67	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	0.005	--
18-Jan-11	54	0.01	--	--	5.05	--	--	--	--	--	--	0.4	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	0.005	--
25-Jan-11	55	0.01	--	--	5.18	--	--																						

HC-29
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Contest)																															
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	Cu	La	
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)			(mg/l)			(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	
		5	5	0.01	1	50	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001		
5-Jan-10	0	750	580	9.7	155	70	1	--	--	45	0.05	10.4	0.09	0.005	0.06	0.04	64	5.34115	0.27	0.0041	0.307	0.0002	0.0001	0.0001	0.25	0.0001	0.00001	1.15	0.0002	0.0012	0.0018	0.0001	
12-Jan-10	1	500	445	9.14	284	95	23	--	--	82	0.09	17.6	0.06	0.01	0.05	0.57	160	6.68872	0.11	0.019	1.69	0.0003	0.0001	0.0001	0.45	0.0001	0.00001	1.36	0.0007	0.0017	0.0011	0.0001	
19-Jan-10	2	500	445	9.17	221	90	23	--	--	65	0.05	9.58	0.05	0.006	0.05	0.13	128	4.97538	0.12	0.013	1.73	0.0003	0.0001	0.0001	0.34	0.0001	0.00001	1.02	0.0006	0.0015	0.0005	0.0001	
26-Jan-10	3	500	455	9.21	204	90	20	--	--	57	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	1.12	--	--	0.02	--
2-Feb-10	4	500	430	9.25	149	90	16	--	--	56	0.05	2.86	0.05	0.004	0.08	0.46	82	4.44497	0.089	0.0087	1.35	0.0002	0.0001	0.0001	0.25	0.0001	0.00001	0.89	0.0003	0.0012	0.0003	0.0001	
9-Feb-10	5	500	440	9.12	144	80	5	--	--	45	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--	1.17	--	--	0.02	--
16-Feb-10	6	500	405	9.72	191	70	24	--	--	57	--	--	--	--	--	--	--	--	0.22	--	--	--	--	--	--	--	--	--	1.09	--	--	0.02	--
23-Feb-10	7	500	410	9.65	159	65	20	--	--	50	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	1.3	--	--	0.02	--
2-Mar-10	8	500	440	9.15	84	80	8	--	--	29	0.05	0.2	0.05	0.003	0.14	0.25	29	5.99367	0.052	0.006	0.682	0.0002	0.0001	0.0001	0.16	0.0001	0.00001	1.23	0.0002	0.0009	0.0002	0.0001	
9-Mar-10	9	500	445	8.85	74	90	8	--	--	27	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	1.38	--	--	0.02	--
16-Mar-10	10	500	445	8.87	67	120	7	--	--	24	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	1.67	--	--	0.02	--
23-Mar-10	11	500	440	8.79	68	160	8	--	--	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	1.83	--	--	0.02	--
30-Mar-10	12	500	445	8.71	64	150	6	--	--	22	0.05	0.2	0.05	0.002	0.16	0.28	10	11.54311	0.02	0.0037	0.418	0.0003	0.0001	0.0001	0.12	0.0001	0.00001	1.87	0.0002	0.0012	0.0002	0.0001	
6-Apr-10	13	500	460	8.58	59	185	5	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.06	--	--	0.02	--
13-Apr-10	14	500	440	8.6	50	160	6	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.16	--	--	0.02	--
20-Apr-10	15	500	425	8.72	61	140	8	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.02	--	--	0.02	--
27-Apr-10	16	500	435	8.7	49	150	4	--	--	19	0.02	0.5	0.02	0.005	0.16	0.059	38	12.7908	0.0457	0.00338	0.336	0.00053	0.00001	0.000005	0.1	0.00005	0.000005	2.04	0.0001	0.00205	0.00042	0.00005	
4-May-10	17	500	440	8.6	46	155	4	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.11	--	--	0.02	--
11-May-10	18	500	445	8.46	49	150	3	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.41	--	--	0.02	--
18-May-10	19	500	445	8.35	46	160	4	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.37	--	--	0.02	--
25-May-10	20	500	430	8.31	46	145	3	--	--	18	0.01	0.5	0.02	0.005	0.28	0.078	28	15.34901	0.0229	0.00256	0.237	0.0004	0.00001	0.000005	0.07	0.00005	0.000005	2.57	0.0001	0.00111	0.00022	0.00005	
1-Jun-10	21	500	470	8.11	47	150	3	--	1	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.83	--	--	0.02	--
8-Jun-10	22	500	450	8.32	41	165	3	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.33	--	--	0.02	--
15-Jun-10	23	500	460	8.4	43	165	3	--	--	18	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	2.72	--	--	0.02	--
22-Jun-10	24	500	430	8.16	24	130	4	--	1	16	0.01	0.5	0.02	0.005	0.2	0.054	32	14.65122	0.0578	0.00215	0.214	0.0004	0.00001	0.000005	0.07	0.00005	0.000005	2.34	0.0001	0.00207	0.00016	0.00005	
29-Jun-10	25	500	425	8.48	42	160	4	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.74	--	--	0.02	--
6-Jul-10	26	500	435	8.52	39	150	3	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.52	--	--	0.02	--
13-Jul-10	27	500	440	8.59	29	155	1	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.47	--	--	0.02	--
20-Jul-10	28	500	440	8.22	34	165	2	--	1	17	0.01	0.5	0.02	0.005	0.36	0.075	18	14.39081	0.013	0.00209	0.189	0.00027	0.00001	0.000005	0.06	0.00005	0.000005	2.45	0.0001	0.00148	0.00071	0.00005	
27-Jul-10	29	500	480	8.17	47	175	2	--	1	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	3.41	--	--	0.02	--
3-Aug-10	30	500	440	8.38	35	170	2	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	3.02	--	--	0.02	--
10-Aug-10	31	500	425	8.42	35	150	2	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.62	--	--	0.02	--
17-Aug-10	32	500	445	8.1	30	180	2	--	1	18	0.01	0.5	0.02	0.005	0.22	0.065	16	15.96448	0.0194	0.00186	0.158	0.00025	0.00001	0.000005	0.05	0.00005	0.000005	2.8	0.0001	0.00144	0.00145	0.00005	
24-Aug-10	33	500	445	8.32	41	165	2	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	3.18	--	--	0.02	--
31-Aug-10	34	500	460	8.2	39	160	1	--	1	34	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	3.03	--	--	0.02	--
7-Sep-10	35	500	450	8.27	35	155	2	--	1	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.98	--	--	0.02	--
14-Sep-10	36	500	435	8.27	35	155	1	--	--	17	0.01	0.5	0.02	0.005	0.13	0.037	26	15.72767	0.0172	0.00179	0.151	0.00026	0.00001	0.000005	0.05	0.00005	0.000005	2.87	0.0002	0.00171	0.00048	0.00005	
21-Sep-10	37	500	460	8.15	39	165	2	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	3.07	--	--	0.02	--
28-Sep-10	38	500	435	8.11	33	170	3	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.76	--	--	0.02	--
5-Oct-10	39	500	455	8.18	36	165	2	--	1	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.78	--	--	0.02	--
12-Oct-10	40	500	435	8.01	34	170	2	--	1	16	0.01	0.5	0.02	0.005	0.17	0.033	20	14.73435	0.0113	0.00143	0.121	0.00023	0.00001	0.000005	0.05	0.00005	0.000005	2.67	0.0002	0.0013	0.00028	0.00005	
19-Oct-10	41	500	455	8.28	40	170	3	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.89	--	--	0.02	--
26-Oct-10	42	500	450	8.16	39	190	2	--	1	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.67	--	--	0.02	--
2-Nov-10	43	500	440	8.35	38	180	3	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.55	--	--	0.02	--
9-Nov-10	44	500	440	8.3	37	185	2	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.66	--	--	0.02	--
16-Nov-10	45	500	410	9.13	43	180	2	--	--	18	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	2.56	--	--	0.02	--
23-Nov-10	46	500	440	8.39	43	180	2	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.85	--	--	0.02	--
30-Nov-10	47	500	435	8.33	37	160	1	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	2.55	--	--	0.02	--
7-Dec-10	48	500	455	8.3	39	175	3	--	--	17	0.01	0.5	0.02	0.005	0.13	0.022	20	16.3															

HC-29
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
5-Jan-10	0	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
12-Jan-10	1	0.03	0.00005	0.0015	0.8	0.0028	0.015	0.02	0.0042	0.003	0.0001	3.51	0.0021	0.0025	0.57	0.00004	59.5	0.0059	0.0002	0.00002	0.00005	0.0001	0.0004	0.0014	0.00041	0.0049	0.001	0.0001
19-Jan-10	2	0.04	0.00005	0.0011	0.59	0.0022	0.015	0.02	0.003	0.0028	0.0001	2.7	0.0017	0.0022	0.47	0.00004	46	0.0042	0.0002	0.00002	0.00005	0.0001	0.0002	0.0009	0.00036	0.004	0.001	0.0001
26-Jan-10	3	0.07	--	--	0.72	--	--	--	--	--	--	3.2	--	--	--	--	41.1	--	--	--	--	--	--	--	--	--	0.005	--
2-Feb-10	4	0.02	0.00005	0.0006	0.54	0.0016	0.015	0.02	0.0017	0.0017	0.0001	3.02	0.0016	0.0012	0.37	0.00004	32.7	0.0031	0.0002	0.00002	0.00005	0.0001	0.0002	0.0004	0.00027	0.0032	0.001	0.0001
9-Feb-10	5	0.06	--	--	0.78	--	--	--	--	--	--	4.7	--	--	--	--	28	--	--	--	--	--	--	--	--	--	0.005	--
16-Feb-10	6	0.05	--	--	1.12	--	--	--	--	--	--	3.4	--	--	--	--	34.3	--	--	--	--	--	--	--	--	--	0.005	--
23-Feb-10	7	0.04	--	--	1.23	--	--	--	--	--	--	4.6	--	--	--	--	25.4	--	--	--	--	--	--	--	--	--	0.005	--
2-Mar-10	8	0.01	0.00005	0.0006	0.71	0.0025	0.015	0.02	0.0007	0.0011	0.0001	3.8	0.0023	0.0003	0.32	0.00004	11	0.0053	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00009	0.0013	0.001	0.0001
9-Mar-10	9	0.01	--	--	1.11	0.003	--	--	--	--	--	3.9	--	--	--	--	9.5	--	--	--	--	--	--	--	--	--	0.005	--
16-Mar-10	10	0.07	--	--	1.43	--	--	--	--	--	--	4.3	--	--	--	--	7.6	--	--	--	--	--	--	--	--	--	0.005	--
23-Mar-10	11	0.01	--	--	1.8	--	--	--	--	--	--	4.5	--	--	--	--	6.4	--	--	--	--	--	--	--	--	--	0.005	--
30-Mar-10	12	0.01	0.00005	0.0008	1.67	0.0028	0.015	0.02	0.0007	0.0012	0.0001	4.32	0.0029	0.0002	0.23	0.00004	4.78	0.0077	0.0002	0.00002	0.00005	0.0001	0.0002	0.0004	0.00005	0.0008	0.001	0.0001
6-Apr-10	13	0.02	--	--	2.05	--	--	--	--	--	--	3.7	--	--	--	--	3.3	--	--	--	--	--	--	--	--	--	0.005	--
13-Apr-10	14	0.02	--	--	2.15	--	--	--	--	--	--	4	--	--	--	--	3.4	--	--	--	--	--	--	--	--	--	0.005	--
20-Apr-10	15	0.01	--	--	2.18	--	--	--	--	--	--	4.1	--	--	--	--	3.5	--	--	--	--	--	--	--	--	--	0.005	--
27-Apr-10	16	0.048	0.000014	0.0006	1.87	0.00392	0.002	0.02	0.00056	0.00205	--	3.66	0.00302	0.00016	0.3	0.000005	2.03	0.00855	0.00002	0.000002	0.000005	0.00001	0.0005	0.00023	0.000032	0.0007	0.0005	0.0001
4-May-10	17	0.01	--	--	2.03	--	--	--	--	--	--	3.3	--	--	--	--	1.5	--	--	--	--	--	--	--	--	--	0.005	--
11-May-10	18	0.01	--	--	2.26	--	--	--	--	--	--	3.7	--	--	--	--	1.4	--	--	--	--	--	--	--	--	--	0.005	--
18-May-10	19	0.01	--	--	2.26	--	--	--	--	--	--	3.2	--	--	--	--	1	--	--	--	--	--	--	--	--	--	0.005	--
25-May-10	20	0.008	0.000032	0.0005	2.17	0.00659	0.002	0.02	0.00052	0.00095	--	3.01	0.003	0.00013	0.3	0.000005	0.89	0.00919	0.00002	0.000002	0.000005	0.00001	0.0005	0.00017	0.000018	0.0005	0.0002	0.0001
1-Jun-10	21	0.01	--	--	2.6	--	--	--	--	--	--	2.9	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	0.005	--
8-Jun-10	22	0.01	--	--	2.04	--	--	--	--	--	--	2.4	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	0.005	--
15-Jun-10	23	0.01	--	--	2.31	--	--	--	--	--	--	2.7	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	0.005	--
22-Jun-10	24	0.014	0.000015	0.0005	2.14	0.00427	0.002	0.02	0.00048	0.00173	--	2.51	0.00244	0.00013	0.3	0.000005	0.49	0.00914	0.00002	0.000002	0.000005	0.00001	0.0005	0.0001	0.000019	0.0005	0.0001	0.0001
29-Jun-10	25	0.01	--	--	2.3	--	--	--	--	--	--	2.7	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	0.005	--
6-Jul-10	26	0.01	--	--	2.11	--	--	--	--	--	--	2.1	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
13-Jul-10	27	0.01	--	--	2.11	--	--	--	--	--	--	2.1	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
20-Jul-10	28	0.008	0.000023	0.0005	2.01	0.00404	0.008	0.02	0.00045	0.00116	--	2.12	0.00242	0.00012	0.2	0.000005	0.3	0.0093	0.00002	0.000002	0.000005	0.00001	0.0005	0.00005	0.000012	0.0004	0.0002	0.0001
27-Jul-10	29	0.01	--	--	2.59	--	--	--	--	--	--	1.8	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
3-Aug-10	30	0.01	--	--	2.42	--	--	--	--	--	--	2.1	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
10-Aug-10	31	0.01	--	--	2.15	--	--	--	--	--	--	1.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
17-Aug-10	32	0.005	0.000047	0.0005	2.18	0.00448	0.002	0.02	0.00039	0.00103	--	1.91	0.00212	0.00009	0.3	0.000005	0.21	0.00919	0.00002	0.000002	0.000005	0.00001	0.0005	0.00008	0.000013	0.0003	0.0002	0.0001
24-Aug-10	33	0.01	--	--	2.5	--	--	--	--	--	--	1.8	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
31-Aug-10	34	0.01	--	--	2.3	--	--	--	--	--	--	1.7	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
7-Sep-10	35	0.01	--	--	2.28	--	--	--	--	--	--	1.7	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
14-Sep-10	36	0.01	0.000115	0.0005	2.08	0.00403	0.005	0.02	0.00039	0.00197	--	1.71	0.00226	0.0001	0.2	0.000005	0.16	0.00925	0.00002	0.000002	0.000005	0.00003	0.0005	0.00005	0.000011	0.0002	0.0001	0.0001
21-Sep-10	37	0.01	--	--	2.31	--	--	--	--	--	--	1.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Sep-10	38	0.01	--	--	2.16	--	--	--	--	--	--	1.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
5-Oct-10	39	0.01	--	--	2.07	--	--	--	--	--	--	1.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
12-Oct-10	40	0.003	0.000076	0.0005	1.96	0.00491	0.007	0.004	0.00032	0.00098	--	1.45	0.00196	0.00009	0.2	0.000005	0.13	0.00769	0.00002	0.000002	0.000005	0.00003	0.0005	0.00003	0.000013	0.0003	0.0003	0.0001
19-Oct-10	41	0.01	--	--	2.14	--	--	--	--	--	--	1.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
26-Oct-10	42	0.01	--	--	1.97	--	--	--	--	--	--	1.2	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
2-Nov-10	43	0.01	--	--	1.88	--	--	--	--	--	--	1.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
9-Nov-10	44	0.01	--	--	1.94	--	--	--	--	--	--	1.1	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
16-Nov-10	45	0.03	--	--	2.6	--	--	--	--	--	--	1.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
23-Nov-10	46	0.01	--	--	2.23	--	--	--	--	--	--	1.1	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
30-Nov-10	47	0.01	--	--	1.91	--	--	--	--	--	--	1	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
7-Dec-10	48	0.004	0.000017	0.0005	2.17	0.00422	0.002	0.002	0.00028	0.00117	--	1.16	0.00185	0.00008	0.2	0.000005	0.12	0.00851	0.00002	0.000002	0.000005	0.00001	0.0006	0.00003	0.000013	0.0006	0.0002	0.0001
14-Dec-10	49	0.01	--	--	2.09	--	--	--	--	--	--	1	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
21-Dec-10	50	0.01	--	--	1.94	--	--	--	--	--	--	0.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Dec-10	51	0.01	--	--	2.09	--	--	--	--	--	--	0.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
4-Jan-11	52	0.01	--	--	2.27	--	--	--	--	--	--	0.8	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
11-Jan-11	53	0.01	--	--	1.95	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
18-Jan-11	54	0.01	--	--	2.16	--	--	--	--	--	--	0.7	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
25-Jan-11	55	0.01	--	--	2.23	--	--	--	--	--	--	0.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
1-Feb-11	56	0.002	0.000009	0.0005	2.38	0.00288																						

HC-30
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																														
		Volume (ml)		pH (pH Units)	EC (µS/cm)	ORP (mV)	SO4 (mg/l)	Acidity (mg CaCO3/l)		Alkalinity (mg/l)	Fluoride (mg/l)	Chloride (mg/l)	Nitrate-N (mg/l)	Nitrite-N (mg/l)	Total Ammonia (mgN/l)	Diss.-P (mgP/l)	TDS (mg/l)	Hardness CaCO3 (mg/l)	Al (mg/l)	Sb (mg/l)	As (mg/l)	Ba (mg/l)	Be (mg/l)	Bi (mg/l)	B (mg/l)	Cs (mg/l)	Cd (mg/l)	Ca (mg/l)	Cr (mg/l)	Co (mg/l)	Cu (mg/l)	La (mg/l)
		Input	Output					to pH 4.5	to pH 8.3																							
11-Jan-11	0	750	610	9.16	138	125	7	--	--	38	0.17	11.2	0.08	0.013	0.08	0.02	60	21.55614	0.2	0.0048	0.0022	0.0006	0.0001	0.0001	0.07	0.0001	0.00001	4.38	0.0002	0.0001	0.0008	0.0001
12-Jan-10	1	500	445	8.98	150	120	16	--	--	42	0.08	4.94	0.05	0.007	0.04	0.02	115	28.67763	0.15	0.0066	0.002	0.0006	0.0001	0.0001	0.13	0.0001	0.00001	4.71	0.0002	0.0001	0.0015	0.0001
19-Jan-10	2	500	430	8.87	149	145	32	--	--	30	0.05	2.19	0.05	0.003	0.05	0.02	468	38.14219	0.12	0.0034	0.0012	0.0006	0.0001	0.0001	0.095	0.0001	0.00001	5.83	0.0002	0.0001	0.0011	0.0001
26-Jan-10	3	500	430	8.8	160	130	41	--	--	26	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--	0.02	--
2-Feb-10	4	500	440	8.56	132	135	39	--	--	23	0.05	0.27	0.05	0.002	0.09	0.02	68	53.31205	0.079	0.0018	0.0006	0.0006	0.0001	0.0001	0.073	0.0001	0.00001	7.57	0.0002	0.0001	0.0008	0.0001
9-Feb-10	5	500	435	8.68	125	135	35	--	--	23	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.02	--
16-Feb-10	6	500	405	8.94	149	150	40	--	--	25	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	--	--	--	0.02	--
23-Feb-10	7	500	410	8.98	122	155	34	--	--	26	--	--	--	--	--	--	--	--	0.12	--	--	--	--	--	--	--	--	--	--	--	0.02	--
2-Mar-10	8	500	435	8.54	88	135	18	--	--	22	0.05	0.2	0.05	0.003	0.14	0.02	132	35.80728	0.087	0.001	0.0004	0.0004	0.0001	0.0001	0.055	0.0001	0.00001	6.84	0.0002	0.0002	0.002	0.0001
9-Mar-10	9	500	445	8.65	98	160	22	--	--	23	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--
16-Mar-10	10	500	445	8.6	87	165	25	--	--	20	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.02	--
23-Mar-10	11	500	445	8.63	87	175	22	--	--	21	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--
30-Mar-10	12	500	440	8.52	100	155	22	--	--	23	0.05	0.2	0.05	0.002	0.17	0.02	112	42.02406	0.054	0.0007	0.0009	0.002	0.0001	0.0001	0.036	0.0001	0.00001	7.5	0.0002	0.0001	0.0009	0.0001
6-Apr-10	13	500	465	8.37	87	200	17	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
13-Apr-10	14	500	440	8.56	83	145	20	--	--	19	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	0.02	--
20-Apr-10	15	500	430	8.85	95	155	26	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
27-Apr-10	16	500	435	8.45	78	150	16	--	--	20	0.07	0.5	0.02	0.005	0.13	0.005	40	34.10739	0.0444	0.00053	0.0003	0.00045	0.00001	0.000005	0.05	0.00005	0.000005	6.39	0.0001	0.000058	0.00136	0.00005
4-May-10	17	500	445	8.48	76	170	17	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
11-May-10	18	500	435	8.22	82	160	15	--	1	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
18-May-10	19	500	445	8.36	75	175	15	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
25-May-10	20	500	445	8.43	76	170	16	--	--	20	0.02	0.5	0.02	0.005	0.14	0.005	52	34.44626	0.0353	0.00042	0.00032	0.0009	0.00001	0.000005	0.05	0.00005	0.000005	6.74	0.0001	0.000048	0.00063	0.00005
1-Jun-10	21	500	475	8.24	80	160	14	--	1	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
8-Jun-10	22	500	440	8.31	75	180	16	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
15-Jun-10	23	500	445	8.41	72	180	14	--	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
22-Jun-10	24	500	480	8.28	84	140	13	--	1	26	0.02	0.5	0.02	0.005	0.22	0.005	42	41.54876	0.0374	0.00045	0.00029	0.00049	0.00001	0.000005	0.05	0.00005	0.000005	8.48	0.0001	0.000054	0.00112	0.00005
29-Jun-10	25	500	430	8.51	73	170	15	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
6-Jul-10	26	500	430	8.59	83	160	17	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
13-Jul-10	27	500	435	8.57	56	160	12	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
20-Jul-10	28	500	440	8.42	71	175	13	--	--	23	0.01	0.5	0.02	0.005	0.27	0.007	40	33.9968	0.0392	0.00032	0.00042	0.00035	0.00001	0.000005	0.05	0.00005	0.000005	6.56	0.0001	0.00005	0.00115	0.00005
27-Jul-10	29	500	445	8.47	74	160	14	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
3-Aug-10	30	500	440	8.46	64	170	13	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
10-Aug-10	31	500	430	8.59	74	170	15	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
17-Aug-10	32	500	445	8.3	66	170	11	--	--	22	0.01	0.5	0.02	0.005	0.11	0.006	34	32.07959	0.0207	0.00024	0.00019	0.0003	0.00001	0.000005	0.05	0.00005	0.000005	5.99	0.0001	0.000036	0.00157	0.00005
24-Aug-10	33	500	440	8.44	73	170	12	--	--	22	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
31-Aug-10	34	500	440	8.63	71	160	10	--	--	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
7-Sep-10	35	500	435	8.35	72	170	11	--	--	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
14-Sep-10	36	500	440	8.51	70	160	12	--	--	23	0.01	0.5	0.02	0.005	0.13	0.005	62	33.28693	0.0238	0.00023	0.00037	0.00028	0.00001	0.000005	0.05	0.00005	0.000005	6.49	0.0001	0.000044	0.00177	0.00005
21-Sep-10	37	500	465	8.38	70	160	13	--	--	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
28-Sep-10	38	500	435	8.46	65	165	12	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
5-Oct-10	39	500	435	8.49	69	165	12	--	--	23	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	0.02	--
12-Oct-10	40	500	445	8	70	165	12	--	1	23	0.01	0.5	0.02	0.005	0.13	0.005	36	31.42433														

HC-30
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
5-Jan-10	0	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
12-Jan-10	1	0.01	0.00005	0.0017	4.11	0.0054	0.015	0.02	0.0027	0.0003	0.0001	4.05	0.0026	0.0006	0.32	0.00004	17.2	0.019	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0005	0.001	0.0001
19-Jan-10	2	0.01	0.00005	0.0019	5.73	0.0059	0.015	0.02	0.0021	0.0002	0.0001	3.24	0.0022	0.0009	0.26	0.00004	10.3	0.022	0.0002	0.00002	0.00005	0.0001	0.0004	0.0001	0.00005	0.0003	0.001	0.0002
26-Jan-10	3	0.01	--	--	9.1	--	--	--	--	--	--	3.4	--	--	--	--	6.9	--	--	--	--	--	--	--	--	--	0.005	--
2-Feb-10	4	0.01	0.00005	0.0026	8.36	0.01	0.015	0.02	0.0016	0.0002	0.0001	2.62	0.0019	0.0007	0.23	0.00004	3.48	0.023	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0002	0.001	0.0001
9-Feb-10	5	0.01	--	--	7.94	--	--	--	--	--	--	1.9	--	--	--	--	2	--	--	--	--	--	--	--	--	--	0.005	--
16-Feb-10	6	0.01	--	--	11.2	--	--	--	--	--	--	3	--	--	--	--	2	--	--	--	--	--	--	--	--	--	0.005	--
23-Feb-10	7	0.04	--	--	8.53	--	--	--	--	--	--	2.1	--	--	--	--	0.9	--	--	--	--	--	--	--	--	--	0.005	--
2-Mar-10	8	0.21	0.00005	0.0025	4.55	0.015	0.015	0.02	0.001	0.0004	0.0001	1.22	0.0014	0.0003	0.23	0.00004	0.46	0.017	0.0002	0.00002	0.00005	0.0001	0.0004	0.0001	0.00005	0.0003	0.001	0.0001
9-Mar-10	9	0.03	--	--	6.05	0.012	--	--	--	--	--	1	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
16-Mar-10	10	0.19	--	--	5.51	--	--	--	--	--	--	0.9	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
23-Mar-10	11	0.01	--	--	5.41	--	--	--	--	--	--	0.7	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
30-Mar-10	12	0.01	0.00005	0.0026	5.66	0.0096	0.015	0.02	0.0012	0.0002	0.0001	1	0.0013	0.0005	0.17	0.00004	0.32	0.016	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
6-Apr-10	13	0.01	--	--	4.81	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
13-Apr-10	14	0.04	--	--	5.11	--	--	--	--	--	--	0.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
20-Apr-10	15	0.01	--	--	6.22	--	--	--	--	--	--	0.8	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
27-Apr-10	16	0.002	0.000005	0.0021	4.41	0.0093	0.002	0.02	0.00106	0.00007	--	0.71	0.00133	0.00027	0.2	0.000005	0.18	0.0141	0.00002	0.000002	0.000005	0.00001	0.0005	0.00002	0.000002	0.0002	0.0001	0.0001
4-May-10	17	0.01	--	--	4.63	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
11-May-10	18	0.01	--	--	5.03	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
18-May-10	19	0.01	--	--	4.41	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
25-May-10	20	0.003	0.000011	0.0018	4.28	0.0151	0.002	0.02	0.00097	0.00008	--	0.46	0.0009	0.00027	0.2	0.000005	0.12	0.0138	0.00002	0.000002	0.000005	0.00028	0.0005	0.00001	0.000002	0.0002	0.0005	0.0001
1-Jun-10	21	0.01	--	--	4.73	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
8-Jun-10	22	0.01	--	--	4.3	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
15-Jun-10	23	0.01	--	--	4.35	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
22-Jun-10	24	0.002	0.000027	0.0022	4.95	0.0122	0.002	0.02	0.00088	0.00006	--	0.47	0.00105	0.00028	0.3	0.000005	0.12	0.0172	0.00002	0.000002	0.000005	0.00001	0.0005	0.00001	0.000002	0.0002	0.0001	0.0001
29-Jun-10	25	0.01	--	--	4.72	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
6-Jul-10	26	0.01	--	--	5.24	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
13-Jul-10	27	0.01	--	--	4.06	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
20-Jul-10	28	0.003	0.000038	0.0019	4.28	0.00955	0.007	0.02	0.00086	0.00011	--	0.41	0.00121	0.00024	0.2	0.000005	0.11	0.0134	0.00002	0.000002	0.000005	0.00001	0.0005	0.00001	0.000002	0.0002	0.0005	0.0001
27-Jul-10	29	0.01	--	--	4.34	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
3-Aug-10	30	0.01	--	--	4.6	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
10-Aug-10	31	0.01	--	--	4.85	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
17-Aug-10	32	0.004	0.00004	0.0014	4.16	0.00936	0.002	0.02	0.00078	0.00005	--	0.34	0.00098	0.0002	0.2	0.000005	0.08	0.011	0.00002	0.000002	0.000005	0.00001	0.0005	0.00001	0.000002	0.0002	0.0001	0.0001
24-Aug-10	33	0.01	--	--	4.78	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
31-Aug-10	34	0.01	--	--	4.56	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
7-Sep-10	35	0.01	--	--	4.48	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
14-Sep-10	36	0.006	0.000066	0.0017	4.15	0.00791	0.002	0.02	0.0007	0.00009	--	0.31	0.00114	0.00023	0.2	0.000005	0.07	0.0119	0.00002	0.000002	0.000005	0.00001	0.0005	0.00001	0.000002	0.0002	0.0001	0.0001
21-Sep-10	37	0.01	--	--	4.41	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Sep-10	38	0.01	--	--	4.31	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
5-Oct-10	39	0.01	--	--	4.11	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
12-Oct-10	40	0.002	0.000017	0.0014	4.11	0.00886	0.006	0.005	0.00061	0.00012	--	0.27	0.00096	0.00021	0.2	0.000005	0.07	0.0101	0.00002	0.000002	0.000005	0.00001	0.0005	0.00001	0.000002	0.0002	0.0002	0.0001
19-Oct-10	41	0.01	--	--	4.47	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
26-Oct-10	42	0.01	--	--	4.32	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
2-Nov-10	43	0.01	--	--	4.72	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
9-Nov-10	44	0.01	--	--	4.42	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
16-Nov-10	45	0.01	--	--	6.41	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
23-Nov-10	46	0.01	--	--	3.93	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
30-Nov-10	47	0.01	--	--	3.98	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
7-Dec-10	48	0.001	0.000007	0.0013	3.98	0.00627	0.003	0.002	0.00045	0.00008	--	0.22	0.00081	0.00021	0.1	0.000005	0.06	0.0106	0.00002	0.000002	0.000005	0.00002	0.0005	0.00001	0.000002	0.0004	0.0002	0.0001
14-Dec-10	49	0.01	--	--	4.53	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
21-Dec-10	50	0.01	--	--	4.16	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Dec-10	51	0.01	--	--	5.2	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
4-Jan-11	52	0.01	--	--	4.09	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
11-Jan-11	53	0.01	--	--	4.43	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
18-Jan-11	54	0.01	--	--	4.42	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
25-Jan-11	55	0.01	--	--	4.77	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
1-Feb-11	56	0.001	0.000011	0.0013	4.08	0.00562	0.01																					

HC-39
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Contest)																														
		Volume (ml)		pH Units	EC (µS/cm)	ORP (mV)	SO4 (mg/l)	Acidity (mg CaCO3/l)		Alkalinity to pH 4.5	Fluoride (mg/l)	Chloride (mg/l)	Nitrate-N (mg/l)	Nitrite-N (mg/l)	Total Ammonia (mgN/l)	Diss.-P (mg/l)	TDS (mg/l)	Hardness CaCO3 (mg/l)	Al (mg/l)	Sb (mg/l)	As (mg/l)	Ba (mg/l)	Be (mg/l)	Bi (mg/l)	B (mg/l)	Cs (mg/l)	Cd (mg/l)	Ca (mg/l)	Cr (mg/l)	Co (mg/l)	Cu (mg/l)	La (mg/l)
		Input	Output					to pH 4.5	to pH 8.3																							
		5	5	0.01	1	50	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.001	0.0002	0.0001	0.0001
5-Jan-10	0	750	615	8.77	564	120	94	--	20	0.05	101	0.05	0.005	0.12	0.03	321	59.53874	0.06	0.0035	0.063	0.0024	0.0001	0.0001	0.54	0.0001	0.00002	14.3	0.0002	0.0013	0.0018	0.0001	
12-Jan-10	1	500	465	8.74	325	135	63	--	27	0.06	27.2	0.05	0.005	0.1	0.04	217	30.54042	0.052	0.0063	0.13	0.0011	0.0001	0.0001	0.76	0.0001	0.00002	7.5	0.0002	0.001	0.0027	0.0001	
19-Jan-10	2	500	435	8.94	157	120	32	--	27	0.05	4.8	0.05	0.004	0.09	0.07	95	14.85478	0.083	0.0057	0.155	0.0007	0.0001	0.0001	0.61	0.0001	0.00001	3.6	0.0002	0.0008	0.0012	0.0001	
26-Jan-10	3	500	445	8.69	103	130	17	--	26	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.86	--	--	0.02	--	
2-Feb-10	4	500	440	8.46	82	140	14	--	24	0.05	0.26	0.05	0.002	0.17	0.02	49	17.58641	0.039	0.0038	0.101	0.0007	0.0001	0.0001	0.37	0.0001	0.00001	4.01	0.0002	0.0005	0.0004	0.0001	
9-Feb-10	5	500	435	8.42	76	140	15	--	24	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.76	--	--	0.02	--	
16-Feb-10	6	500	405	9.11	97	130	11	--	31	--	--	--	--	--	--	--	--	0.16	--	--	--	--	--	--	--	--	5.79	--	--	0.02	--	
23-Feb-10	7	500	410	8.78	71	140	8	--	26	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.88	--	--	0.02	--	
2-Mar-10	8	500	455	8.32	65	130	9	--	21	0.05	0.2	0.05	0.002	0.23	0.02	51	20.33641	0.031	0.0028	0.064	0.0005	0.0001	0.0001	0.21	0.0001	0.00001	4.93	0.0002	0.0008	0.0003	0.0001	
9-Mar-10	9	500	460	8.25	60	150	5	--	20	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	4.83	--	--	0.02	--	
16-Mar-10	10	500	445	8.38	60	160	9	--	20	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	4.79	--	--	0.02	--	
23-Mar-10	11	500	455	8.27	53	185	7	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.53	--	--	0.02	--	
30-Mar-10	12	500	450	8.22	62	175	7	--	21	0.05	0.2	0.05	0.004	0.24	0.06	99	22.01656	0.017	0.0023	0.067	0.0006	0.0001	0.0001	0.15	0.0001	0.00001	4.96	0.0004	0.0007	0.0005	0.0001	
6-Apr-10	13	500	475	8.21	57	170	6	--	1	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.81	--	--	0.02	--	
13-Apr-10	14	500	450	8.37	57	145	7	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.25	--	--	0.02	--	
20-Apr-10	15	500	450	8.53	55	150	8	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.13	--	--	0.02	--	
27-Apr-10	16	500	450	8.36	53	160	7	--	18	0.02	0.5	0.02	0.005	0.19	0.008	34	21.32755	0.027	0.00193	0.0463	0.00055	0.00001	0.000005	0.11	0.00005	0.000005	4.75	0.0001	0.000855	0.0006	0.00005	
4-May-10	17	500	465	8.3	55	160	7	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.02	--	--	0.02	--	
11-May-10	18	500	455	8.42	52	165	5	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.37	--	--	0.02	--	
18-May-10	19	500	460	8.38	53	160	5	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.07	--	--	0.02	--	
25-May-10	20	500	450	7.8	54	155	6	--	1	18	0.02	0.5	0.02	0.005	0.28	0.01	44	21.01172	0.0248	0.00168	0.0386	0.00053	0.00001	0.000005	0.09	0.00007	0.000005	4.64	0.0001	0.000733	0.00153	0.00005
1-Jun-10	21	500	475	7.97	54	155	5	--	1	21	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.41	--	--	0.02	--	
8-Jun-10	22	500	455	7.9	50	175	5	--	1	18	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.52	--	--	0.02	--	
15-Jun-10	23	500	435	8.2	49	175	5	--	1	19	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.85	--	--	0.02	--	
22-Jun-10	24	500	430	8.23	40	140	4	--	1	24	0.01	0.5	0.02	0.005	0.24	0.007	28	22.50967	0.039	0.00155	0.0378	0.00057	0.00001	0.000005	0.08	0.00007	0.000005	4.63	0.0001	0.000699	0.00056	0.00005
29-Jun-10	25	500	440	8.2	48	175	4	--	1	19	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.84	--	--	0.02	--	
6-Jul-10	26	500	445	8.4	47	170	4	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.41	--	--	0.02	--	
13-Jul-10	27	500	445	8.37	41	175	5	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.25	--	--	0.02	--	
20-Jul-10	28	500	445	8.15	42	175	5	--	1	18	0.01	0.5	0.02	0.005	0.3	0.015	26	20.05408	0.014	0.00113	0.0269	0.00036	0.00001	0.000005	0.06	0.00007	0.000005	4.24	0.0001	0.000472	0.00024	0.00005
27-Jul-10	29	500	450	8.21	51	175	6	--	1	19	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.78	--	--	0.02	--	
3-Aug-10	30	500	480	8.1	52	175	6	--	1	21	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	6.45	--	--	0.02	--	
10-Aug-10	31	500	425	8.2	50	165	10	--	1	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.2	--	--	0.02	--	
17-Aug-10	32	500	430	8.25	53	160	9	--	1	17	0.01	0.6	0.02	0.005	0.37	0.012	28	23.86988	0.0198	0.00104	0.0242	0.00034	0.00001	0.000005	0.05	0.00006	0.000005	4.4	0.0001	0.0003	0.00076	0.00005
24-Aug-10	33	500	435	8.21	62	180	11	--	1	17	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.85	--	--	0.02	--	
31-Aug-10	34	500	460	8.4	50	160	11	--	1	17	0.01	0.4	0.02	0.005	0.17	0.01	34	20.00000	0.019	0.0009	0.0242	0.00034	0.00001	0.000005	0.05	0.00006	0.000005	5.43	--	--	0.02	--
7-Sep-10	35	500	460	8.49	66	160	12	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.92	--	--	0.02	--	
14-Sep-10	36	500	440	7.9	57	180	10	--	1	16	0.01	0.5	0.02	0.005	0.23	0.005	30	24.43429	0.017	0.00089	0.0179	0.00038	0.00001	0.000005	0.05	0.00008	0.000005	5.17	0.0003	0.000293	0.00094	0.00005
21-Sep-10	37	500	465	8.2	67	180	12	--	1	18	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.79	--	--	0.02	--	
28-Sep-10	38	500	445	7.8	53	185	12	--	1	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.55	--	--	0.02	--	
5-Oct-10	39	500	435	8.48	58	160	12	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.03	--	--	0.02	--	
12-Oct-10	40	500	440	8.12	58	185	9	--	1	16	0.01	0.5	0.02	0.005	0.25	0.01	36	21.01558	0.0151	0.0007	0.016	0.00039	0.00001	0.000005	0.05	0.00005	0.000005	4.18	0.0002	0.000133	0.00052	0.00005
19-Oct-10	41	500	435	8.44	59	170	10	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.66	--	--	0.02	--	
26-Oct-10	42	500	435	8.32	66	160	9	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.11	--	--	0.02	--	
2-Nov-10	43	500	425	8.6	63	170	11	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.86	--	--	0.02	--	
9-Nov-10	44	500	445	8.3	53	185	8	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.73	--	--	0.02	--	
16-Nov-10	45	500	415	8.72	67	170	9	--	21	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	5.41	--	--	0.02	--	
23-Nov-10	46	500	435	8.27	53	175	6	--	1	16	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.07	--	--	0.02	--	
30-Nov-10	47	500	425	8.47	52	170	5	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	4.03	--	--	0.02	--	
7-Dec-10	48	500	445	8.05	49	175	6	--	1	17	0.01	1.9	0.02	0.005	0.21	0.005	24	22.8	0.0149	0.00102	0.0168	0.00031	0.00001	0.000005	0.05	0.00005	0.000005	4.83	0.0001	0.000279	0.00046	0.00005
14-Dec-10	49	500	425	8.17	56	145	5	--</																								

HC-39
Sample Weight = 1 kg

Date	Accum. Weeks	Volume (ml)		pH (pH Units)	EC (µS/cm)	ORP (mV)	SO4 (mg/l)	Acidity (mg CaCO3/l)		Alkalinity (mg/l) to pH 4.5	Fluoride (mg/l)	Chloride (mg/l)	Nitrate-N (mg/l)	Nitrite-N (mg/l)	Total Ammonia (mgN/l)	Diss.-P (mgP/l)	TDS (mg/l)	Hardness CaCO3 (mg/l)	Dissolved Metals by ICP-MS (Cantest)															
		Input	Output					to pH 4.5	to pH 8.3										Al (mg/l)	Sb (mg/l)	As (mg/l)	Ba (mg/l)	Be (mg/l)	Bi mg/l	B mg/l	Cs mg/l	Cd mg/l	Ca mg/l	Cr mg/l	Co mg/l	Cu mg/l	La mg/l		
		5	5	0.01	1	50	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
21-Dec-10	50	500	450	8	58	150	5	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.96	--	--	0.02	--	--	--	--
28-Dec-10	51	500	440	8.02	56	165	8	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.44	--	--	0.02	--	--	--	
4-Jan-11	52	500	455	7.96	56	180	6	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.01	--	--	0.02	--	--	--	
11-Jan-11	53	500	425	8.07	59	180	7	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.89	--	--	0.02	--	--	--	
18-Jan-11	54	500	430	8.13	62	160	6	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.7	--	--	0.02	--	--	--	
25-Jan-11	55	500	430	8.23	54	165	6	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.8	--	--	0.02	--	--	--	
1-Feb-11	56	500	450	7.78	54	170	6	--	--	17	0.01	2.1	0.03	0.005	0.12	0.005	28	23.8	0.0115	0.00062	0.0128	0.00033	0.00001	0.000005	0.05	0.00005	0.000005	5.17	0.0001	0.000234	0.0003	0.00005		
8-Feb-11	57	500	430	7.99	60	170	7	--	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.68	--	--	0.02	--	--	--	
15-Feb-11	58	500	435	8.1	55	155	6	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.55	--	--	0.02	--	--	--	
22-Feb-11	59	500	435	7.85	57	165	3	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.09	--	--	0.02	--	--	--	
1-Mar-11	60	500	425	7.66	58	150	5	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.66	--	--	0.02	--	--	--	
8-Mar-11	61	500	440	7.54	54	150	7	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.97	--	--	0.02	--	--	--	
15-Mar-11	62	500	440	7.8	57	155	6	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.15	--	--	0.02	--	--	--	
22-Mar-11	63	500	435	8.16	52	140	6	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.16	--	--	0.02	--	--	--	
29-Mar-11	64	500	490	7.59	54	150	5	--	--	16	0.01	1.7	0.14	0.005	0.22	0.006	26	23.1	0.01	0.00051	0.0107	0.00034	0.00001	0.000005	0.05	0.00005	0.000005	4.7	0.0001	0.000157	0.00024	0.00005		
5-Apr-11	65	500	430	7.48	56	180	2.9	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.2	--	--	0.02	--	--	--	
12-Apr-11	66	500	445	7.92	46	150	5.1	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.79	--	--	0.02	--	--	--	
19-Apr-11	67	500	440	7.9	52	130	3.6	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.18	--	--	0.02	--	--	--	
26-Apr-11	68	500	460	7.82	53	165	3.2	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.8	--	--	0.02	--	--	--	
3-May-11	69	500	460	7.67	53	155	4.1	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.38	--	--	0.02	--	--	--	
10-May-11	70	500	440	7.6	53	130	4.4	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.14	--	--	0.02	--	--	--	
17-May-11	71	500	450	7.7	50	185	4.3	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.83	--	--	0.02	--	--	--	
24-May-11	72	500	490	7.67	53	135	4.4	--	--	19	0.01	1	0.239	0.011	0.23	0.006	30	24.2	0.0145	0.00053	0.00858	0.00023	0.00001	0.000005	0.05	0.00005	0.000024	5.15	0.0001	0.000116	0.00028	0.00005		
31-May-11	73	500	440	7.8	48	170	3.8	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.65	--	--	0.02	--	--	--	
7-Jun-11	74	500	445	7.78	46	170	4.2	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.65	--	--	0.02	--	--	--	
14-Jun-11	75	500	480	7.75	51	170	3.6	--	--	19	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.59	--	--	0.02	--	--	--	
21-Jun-11	76	500	445	7.79	49	150	3.6	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.87	--	--	0.02	--	--	--	
28-Jun-11	77	500	475	7.45	50	160	3.9	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.49	--	--	0.02	--	--	--	
5-Jul-11	78	500	465	7.75	45	170	4.6	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.98	--	--	0.02	--	--	--	
12-Jul-11	79	500	425	7.71	50	190	3.1	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.61	--	--	0.02	--	--	--	
19-Jul-11	80	500	445	7.64	56	195	4	--	--	18	0.01	2.6	0.12	0.005	0.26	0.008	28	23.3	0.0086	0.00043	0.00829	0.0002	0.00001	0.000005	0.05	0.00006	0.000005	5	0.0001	0.000105	0.00026	0.00005		
26-Jul-11	81	500	440	7.76	53	195	3.3	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.82	--	--	0.02	--	--	--	
2-Aug-11	82	500	445	7.57	56	170	3.9	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.97	--	--	0.02	--	--	--	
9-Aug-11	83	500	430	7.89	52	175	3.6	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.74	--	--	0.02	--	--	--	
16-Aug-11	84	500	440	7.74	55	180	3.5	--	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.77	--	--	0.02	--	--	--	
23-Aug-11	85	500	465	7.9	50	165	3.1	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	5.03	--	--	0.02	--	--	--	
30-Aug-11	86	500	440	7.89	55	175	3.4	--	--	14	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.85	--	--	0.02	--	--	--	
6-Sep-11	87	500	445	7.82	46	160	4.9	--	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.33	--	--	0.02	--	--	--	
13-Sep-11	88	500	450	7.75	49	175	3.7	--	--	16	0.01	3.4	0.13	0.005	0.31	0.005	14	22	0.0099	0.00034	0.00649	0.00018	0.00001	0.000005	0.05	0.00005	0.000005	4.67	0.0001	0.000125	0.00034	0.00005		
20-Sep-11	89	500	460	7.31	52	170	3.2	--	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	4.71	--	--	0.02	--	--	--	
27-Sep-11	90	500	430	8.3	59	150	4.8	--	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--											

HC-39
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
5-Jan-10	0	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.0001	0.0001
12-Jan-10	1	0.01	0.00011	0.011	5.79	0.014	0.015	0.02	0.027	0.003	0.0001	11.4	0.0074	0.0014	0.48	0.00004	96.9	0.161	0.0002	0.00002	0.00005	0.0001	0.0002	0.0005	0.00035	0.0006	0.001	0.0002
19-Jan-10	2	0.01	0.00008	0.0076	2.87	0.0091	0.015	0.02	0.038	0.0026	0.0001	8.32	0.0055	0.0013	0.55	0.00004	45.6	0.084	0.0002	0.00002	0.00005	0.0001	0.0002	0.0009	0.0014	0.0008	0.001	0.0002
26-Jan-10	3	0.03	0.0001	0.0047	1.51	0.0055	0.03	0.02	0.02	0.0019	0.0001	5.85	0.0038	0.001	0.55	0.00004	19.5	0.034	0.0002	0.00002	0.00005	0.0001	0.001	0.0007	0.0011	0.0009	0.001	0.0003
2-Feb-10	4	0.01	0.00005	0.0028	1.84	0.0084	0.015	0.02	0.0058	0.001	0.0001	5.75	0.0037	0.0004	0.44	0.00004	5.14	0.032	0.0002	0.00002	0.00005	0.0001	0.0002	0.0003	0.0006	0.0004	0.001	0.0001
9-Feb-10	5	0.01	--	--	2.41	--	--	--	--	--	--	5.9	--	--	--	--	3.1	--	--	--	--	--	--	--	--	--	--	--
16-Feb-10	6	0.02	--	--	3.48	--	--	--	--	--	--	8.5	--	--	--	--	2.8	--	--	--	--	--	--	--	--	--	--	--
23-Feb-10	7	0.01	--	--	2.49	--	--	--	--	--	--	5.2	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--
2-Mar-10	8	0.01	0.00005	0.0013	1.95	0.0055	0.015	0.02	0.0034	0.0012	0.0001	4.11	0.0034	0.0002	0.39	0.00004	0.55	0.04	0.0002	0.00002	0.00005	0.0001	0.0002	0.0002	0.00039	0.0002	0.001	0.0001
9-Mar-10	9	0.01	--	--	2.36	0.006	--	--	--	--	--	3.3	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	--	--
16-Mar-10	10	0.01	--	--	2.49	--	--	--	--	--	--	3.4	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	--	--
23-Mar-10	11	0.01	--	--	2.27	--	--	--	--	--	--	2.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
30-Mar-10	12	0.01	0.00005	0.0014	2.34	0.0044	0.015	0.02	0.0031	0.001	0.0001	3.15	0.0029	0.0002	0.3	0.00004	0.27	0.034	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00029	0.0002	0.001	0.0001
6-Apr-10	13	0.01	--	--	2.21	--	--	--	--	--	--	2.1	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
13-Apr-10	14	0.01	--	--	2.47	--	--	--	--	--	--	2.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
20-Apr-10	15	0.01	--	--	2.51	--	--	--	--	--	--	2.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
27-Apr-10	16	0.004	0.000014	0.0008	2.3	0.0054	0.002	0.02	0.00313	0.00119	--	2.15	0.00241	0.00017	0.3	0.000005	0.14	0.0312	0.00002	0.000003	0.000005	0.00026	0.0005	0.00009	0.000251	0.0002	0.0004	0.0001
4-May-10	17	0.01	--	--	2.56	--	--	--	--	--	--	1.9	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	--
11-May-10	18	0.01	--	--	2.37	--	--	--	--	--	--	1.9	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
18-May-10	19	0.01	--	--	2.32	--	--	--	--	--	--	1.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
25-May-10	20	0.003	0.000017	0.0007	2.29	0.00548	0.002	0.02	0.00315	0.00103	--	1.75	0.00246	0.00016	0.3	0.000005	0.1	0.0288	0.00002	0.000004	0.000005	0.00009	0.0005	0.00007	0.000203	0.0002	0.0002	0.0001
1-Jun-10	21	0.01	--	--	2.59	--	--	--	--	--	--	1.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
8-Jun-10	22	0.01	--	--	2.25	--	--	--	--	--	--	1.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
15-Jun-10	23	0.01	--	--	2.35	--	--	--	--	--	--	1.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
22-Jun-10	24	0.007	0.00007	0.0006	2.66	0.00412	0.002	0.02	0.00283	0.00087	--	1.68	0.0026	0.00016	0.4	0.000005	0.09	0.0275	0.00002	0.000002	0.000005	0.00003	0.0005	0.00006	0.000182	0.0002	0.0001	0.0001
29-Jun-10	25	0.01	--	--	2.35	--	--	--	--	--	--	1.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
6-Jul-10	26	0.01	--	--	2.41	--	--	--	--	--	--	1.2	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
13-Jul-10	27	0.01	--	--	2.59	--	--	--	--	--	--	1.1	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
20-Jul-10	28	0.003	0.000017	0.0006	2.3	0.00152	0.008	0.02	0.00252	0.0008	--	1.19	0.00204	0.00015	0.2	0.000005	0.08	0.0249	0.00002	0.000004	0.000005	0.00003	0.0005	0.00004	0.000143	0.0002	0.0003	0.0001
27-Jul-10	29	0.01	--	--	2.41	--	--	--	--	--	--	0.9	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
3-Aug-10	30	0.01	--	--	3.02	--	--	--	--	--	--	1.2	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
10-Aug-10	31	0.01	--	--	2.51	--	--	--	--	--	--	0.9	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
17-Aug-10	32	0.002	0.000036	0.0005	3.13	0.00082	0.002	0.02	0.00353	0.00068	--	1.16	0.00214	0.00013	0.2	0.000005	0.06	0.0247	0.00002	0.000003	0.000005	0.00004	0.0005	0.00003	0.000097	0.0002	0.0002	0.0002
24-Aug-10	33	0.01	--	--	3.32	--	--	--	--	--	--	0.8	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
31-Aug-10	34	0.01	--	--	3.16	--	--	--	--	--	--	0.8	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
7-Sep-10	35	0.01	--	--	3.56	--	--	--	--	--	--	1.2	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
14-Sep-10	36	0.007	0.000133	0.0005	2.8	0.00089	0.002	0.02	0.00366	0.00071	--	1	0.00212	0.0001	0.2	0.000005	0.05	0.0265	0.00002	0.000003	0.000005	0.00003	0.0005	0.00003	0.00011	0.0002	0.0002	0.0001
21-Sep-10	37	0.01	--	--	3.05	--	--	--	--	--	--	0.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
28-Sep-10	38	0.01	--	--	2.92	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
5-Oct-10	39	0.01	--	--	2.95	--	--	--	--	--	--	0.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
12-Oct-10	40	0.003	0.000072	0.0005	2.57	0.00034	0.004	0.009	0.00249	0.00064	--	0.74	0.00155	0.0001	0.2	0.000005	0.05	0.0193	0.00002	0.000002	0.000005	0.00005	0.0005	0.00002	0.000074	0.0002	0.0007	0.0001
19-Oct-10	41	0.01	--	--	2.86	--	--	--	--	--	--	0.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
26-Oct-10	42	0.01	--	--	3.01	--	--	--	--	--	--	0.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
2-Nov-10	43	0.01	--	--	3.2	--	--	--	--	--	--	0.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
9-Nov-10	44	0.01	--	--	2.89	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
16-Nov-10	45	0.01	--	--	3.64	--	--	--	--	--	--	0.9	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
23-Nov-10	46	0.01	--	--	2.49	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
30-Nov-10	47	0.01	--	--	2.51	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--
7-Dec-10	48	0.003	0.000023	0.0005	2.62	0.00077	0.01	0.002	0.00159	0.00081	--	0.67	0.00154	0.00009	0.2	0.000005	0.06	0.0212	0.00002	0.000002	0.000005	0.00002	0.0013	0.00002	0.000093	0.0002	0.0002	0.0001
14-Dec-10	49	0.01	--	--	2.63	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	--

HC-39
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
21-Dec-10	50	0.01	--	--	2.46	--	--	--	--	--	--	0.5	--	--	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	--	--	--	--	--	
28-Dec-10	51	0.01	--	--	2.69	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
4-Jan-11	52	0.01	--	--	2.58	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
11-Jan-11	53	0.01	--	--	3.1	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
18-Jan-11	54	0.01	--	--	2.96	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
25-Jan-11	55	0.01	--	--	2.82	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
1-Feb-11	56	0.002	0.000015	0.0005	2.63	0.00071	0.013	0.002	0.00132	0.00076	--	0.52	0.00113	0.0001	0.2	0.000005	0.05	0.0191	0.00002	0.000002	0.000005	0.00001	0.0005	0.00001	0.000076	0.0002	0.0003	0.0001
8-Feb-11	57	0.01	--	--	3.08	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
15-Feb-11	58	0.01	--	--	2.46	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
22-Feb-11	59	0.01	--	--	2.76	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
1-Mar-11	60	0.01	--	--	3.03	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
8-Mar-11	61	0.01	--	--	2.64	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
15-Mar-11	62	0.01	--	--	2.86	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
22-Mar-11	63	0.01	--	--	2.54	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
29-Mar-11	64	0.002	0.000014	0.0005	2.76	0.00056	0.008	0.002	0.00134	0.00065	--	0.48	0.00125	0.00007	0.2	0.000005	0.05	0.0168	0.00002	0.000002	0.000005	0.00001	0.0005	0.00002	0.000064	0.0002	0.0006	0.0001
5-Apr-11	65	0.01	--	--	2.85	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
12-Apr-11	66	0.01	--	--	2.74	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
19-Apr-11	67	0.01	--	--	2.52	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
26-Apr-11	68	0.01	--	--	2.66	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
3-May-11	69	0.01	--	--	2.74	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
10-May-11	70	0.01	--	--	2.71	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
17-May-11	71	0.01	--	--	2.63	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
24-May-11	72	0.002	0.000037	0.0005	2.75	0.0003	0.008	0.002	0.0012	0.00065	--	0.36	0.00097	0.00008	0.2	0.000005	0.05	0.0169	0.00002	0.000002	0.000005	0.00001	0.0005	0.00001	0.000076	0.0002	0.0003	0.0001
31-May-11	73	0.01	--	--	2.46	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
7-Jun-11	74	0.01	--	--	2.42	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
14-Jun-11	75	0.01	--	--	2.81	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
21-Jun-11	76	0.01	--	--	2.49	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
28-Jun-11	77	0.01	--	--	2.59	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
5-Jul-11	78	0.01	--	--	2.45	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
12-Jul-11	79	0.01	--	--	2.63	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	
19-Jul-11	80	0.002	0.000006	0.0005	2.62	0.00042	0.01	0.002	0.00125	0.00046	--	0.38	0.00102	0.00007	0.2	0.000005	0.05	0.015	0.00002	0.000002	0.000005	0.00002	0.0005	0.00001	0.000052	0.0002	0.0006	0.0001
26-Jul-11	81	0.01	--	--	2.64	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
2-Aug-11	82	0.01	--	--	2.78	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
9-Aug-11	83	0.01	--	--	2.59	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
16-Aug-11	84	0.01	--	--	2.55	--	--	--	--	--	--	0.4	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	
23-Aug-11	85	0.01	--	--	2.52	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	
30-Aug-11	86	0.01	--	--	2.73	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
6-Sep-11	87	0.01	--	--	2.47	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
13-Sep-11	88	0.003	0.00003	0.0005	2.51	0.00038	0.006	0.002	0.00102	0.00064	--	0.33	0.00108	0.00006	0.1	0.000005	0.05	0.0137	0.00002	0.000002	0.000005	0.00001	0.0005	0.00001	0.000054	0.0003	0.0005	0.0001
20-Sep-11	89	0.01	--	--	2.59	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
27-Sep-11	90	0.01	--	--	3.16	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	
4-Oct-11	91	0.01	--	--	2.68	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
11-Oct-11	92	0.01	--	--	2.91	--	--	--	--	--	--	0.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
18-Oct-11	93	0.01	--	--	3.21	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
25-Oct-11	94	0.01	--	--	3.19	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	
1-Nov-11	95	0.01	--	--	3.28	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	
8-Nov-11	96	0.002	0.000032	0.0005	2.89	0.00041	0.003	0.002	0.00093	0.00079	--	0.38	0.00148	0.00004	0.2	0.000005	0.05	0.0147	0.00002	0.000002	0.000005	0.00011	0.0005	0.00001	0.000055	0.0002	0.0003	0.0001
15-Nov-11	97	0.01	--	--	3.04	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
22-Nov-11	98	0.01	--	--	2.64	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
29-Nov-11	99	0.01	--	--	2.48	--	--	--	--	--	--	0.3	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	--	
6-Dec-11	100	0.01	--	--	2.68	--	--	--	--	--	--	0.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	
13-Dec-11	101	0.01	--	--	3.33	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
20-Dec-11	102	0.01	--	--	2.79	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
27-Dec-11	103	0.01	--	--	2.52	--	--	--	--	--	--	0.3	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	--	
3-Jan-12	104	0.003	0.000107	0.0005	2.19	0.00031	0.009	0.002	0.00088	0.00059	--	0.21	0.00061	0.00004	0.1	0.00000												

HC-40
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Contest)																														
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Dissolved Metals by ICP-MS (Contest)													
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)			(mg/l)			(mg/l)	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	Cu	La
		5	5	0.01	1	50	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001	
5-Jan-10	0	750	595	9.53	469	80	12	--	45	0.05	103	0.05	0.009	0.18	0.02	234	8.57822	0.17	0.0002	0.0063	0.0005	0.0001	0.0001	0.21	0.0001	0.00001	1.82	0.0003	0.0001	0.0004	0.0001	
12-Jan-10	1	500	470	9.51	607	90	23	--	78	0.21	112	0.05	0.011	0.16	0.02	338	6.44039	0.25	0.0013	0.033	0.0003	0.0001	0.0001	0.35	0.0001	0.00001	1.31	0.0004	0.0001	0.0025	0.0001	
19-Jan-10	2	500	455	9.47	349	45	18	--	100	0.05	29.5	0.05	0.004	0.08	0.02	70	3.06365	0.31	0.0012	0.039	0.0002	0.0001	0.0001	0.27	0.0001	0.00001	0.65	0.0003	0.0001	0.0005	0.0001	
26-Jan-10	3	500	440	9.53	219	45	9	--	81	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.63	--	--	0.02	--	
2-Feb-10	4	500	445	9.62	174	80	10	--	68	0.05	3.18	0.05	0.002	0.1	0.02	75	2.53461	0.3	0.0007	0.03	0.0002	0.0001	0.0001	0.15	0.0001	0.00001	0.57	0.0002	0.0001	0.0005	0.0001	
9-Feb-10	5	500	425	9.67	170	75	8	--	75	--	--	--	--	--	--	--	--	0.34	--	--	--	--	--	--	--	--	0.67	--	--	0.02	--	
16-Feb-10	6	500	405	9.88	276	60	7	--	112	--	--	--	--	--	--	--	--	0.4	--	--	--	--	--	--	--	--	0.67	--	--	0.02	--	
23-Feb-10	7	500	415	9.89	239	40	6	--	103	--	--	--	--	--	--	--	--	0.32	--	--	--	--	--	--	--	--	0.64	--	--	0.02	--	
2-Mar-10	8	500	445	9.24	112	70	4	--	51	0.07	0.37	0.05	0.003	0.16	0.02	14	3.85117	0.2	0.0006	0.017	0.0002	0.0001	0.0001	0.091	0.0001	0.00001	0.85	0.0002	0.0001	0.0004	0.0001	
9-Mar-10	9	500	450	9.16	101	80	2	--	47	--	--	--	--	--	--	--	--	0.2	--	--	--	--	--	--	--	--	0.99	--	--	0.02	--	
16-Mar-10	10	500	450	9.11	90	100	4	--	42	--	--	--	--	--	--	--	--	0.22	--	--	--	--	--	--	--	--	1.09	--	--	0.02	--	
23-Mar-10	11	500	450	8.97	53	135	2	--	26	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	--	--	1.09	--	--	0.02	--	
30-Mar-10	12	500	450	9.03	61	135	2	--	29	0.05	0.2	0.05	0.005	0.14	0.02	25	5.30603	0.12	0.0003	0.01	0.0002	0.0001	0.0001	0.063	0.0001	0.00001	1.07	0.0002	0.0001	0.0004	0.0001	
6-Apr-10	13	500	460	9.05	52	130	2	--	25	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	1.3	--	--	0.02	--	
13-Apr-10	14	500	440	9.16	61	120	3	--	29	--	--	--	--	--	--	--	--	0.17	--	--	--	--	--	--	--	--	1.55	--	--	0.02	--	
20-Apr-10	15	500	435	9.25	61	100	2	--	27	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	--	1.26	--	--	0.02	--	
27-Apr-10	16	500	430	9.02	45	140	2	--	21	0.08	0.5	0.02	0.034	0.12	0.005	36	7.50588	0.122	0.00024	0.00687	0.00017	0.00001	0.000005	0.05	0.00005	0.000005	1.44	0.0001	0.000042	0.00087	0.00005	
4-May-10	17	500	440	8.9	60	135	3	--	27	--	--	--	--	--	--	--	--	0.14	--	--	--	--	--	--	--	--	2.14	--	--	0.02	--	
11-May-10	18	500	430	9.12	59	130	2	--	26	--	--	--	--	--	--	--	--	0.11	--	--	--	--	--	--	--	--	2.1	--	--	0.02	--	
18-May-10	19	500	450	8.83	55	140	3	--	25	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	2.62	--	--	0.02	--	
25-May-10	20	500	460	8.62	43	140	2	--	20	0.02	0.5	0.02	0.005	0.18	0.005	34	11.94674	0.0944	0.00023	0.00523	0.00025	0.00001	0.000005	0.05	0.00005	0.000005	2.18	0.0001	0.000027	0.0002	0.00005	
1-Jun-10	21	500	460	8.49	59	145	3	--	26	--	--	--	--	--	--	--	--	0.1	--	--	--	--	--	--	--	--	3.41	--	--	0.02	--	
8-Jun-10	22	500	460	8.66	65	165	3	--	28	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	3.54	--	--	0.02	--	
15-Jun-10	23	500	445	8.68	42	160	2	--	19	--	--	--	--	--	--	--	--	0.13	--	--	--	--	--	--	--	--	2.4	--	--	0.02	--	
22-Jun-10	24	500	435	8.36	43	130	2	--	19	0.02	0.5	0.18	0.101	0.16	0.005	26	14.70253	0.0924	0.00022	0.00568	0.00023	0.00001	0.000005	0.05	0.00005	0.000005	2.41	0.0001	0.000034	0.00063	0.00005	
29-Jun-10	25	500	435	8.78	39	150	2	--	17	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	2.37	--	--	0.02	--	
6-Jul-10	26	500	435	8.8	41	160	2	--	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	2.56	--	--	0.02	--	
13-Jul-10	27	500	430	8.74	31	150	2	--	17	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	2.77	--	--	0.02	--	
20-Jul-10	28	500	440	8.46	38	165	3	--	17	0.01	0.5	0.44	0.005	0.21	0.008	20	15.47249	0.0655	0.00019	0.00463	0.00025	0.00001	0.000005	0.05	0.00005	0.000005	2.57	0.0001	0.000039	0.00027	0.00005	
27-Jul-10	29	500	440	8.61	42	165	3	--	17	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	2.62	--	--	0.02	--	
3-Aug-10	30	500	445	8.61	36	170	2	--	16	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	3.03	--	--	0.02	--	
10-Aug-10	31	500	445	8.6	37	165	3	--	17	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	2.78	--	--	0.02	--	
17-Aug-10	32	500	430	8.42	43	160	3	--	17	0.01	0.5	0.53	0.005	0.23	0.005	24	17.24648	0.061	0.00019	0.00448	0.00025	0.00001	0.000005	0.05	0.00005	0.000005	2.72	0.0001	0.000023	0.00065	0.00005	
24-Aug-10	33	500	435	8.45	39	170	3	--	16	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	2.93	--	--	0.02	--	
31-Aug-10	34	500	435	8.45	39	155	2	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	2.66	--	--	0.02	--	
7-Sep-10	35	500	440	8.4	39	150	2	--	15	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	2.93	--	--	0.02	--	
14-Sep-10	36	500	460	8.32	38	170	2	--	15	0.01	0.5	0.45	0.005	0.09	0.005	20	16.33162	0.0544	0.00015	0.00417	0.00019	0.00001	0.000005	0.05	0.00005	0.000005	2.98	0.0001	0.000025	0.00135	0.00005	
21-Sep-10	37	500	425	8.51	44	170	3	--	16	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	3.13	--	--	0.02	--	
28-Sep-10	38	500	425	8.39	35	170	3	--	15	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	2.97	--	--	0.02	--	
5-Oct-10	39	500	450	8.45	35	160	3	--	16	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	2.84	--	--	0.02	--	
12-Oct-10	40	500	455	8.07	41	180	3	--	1	0.16	0.5	0.33	0.005	0.1	0.005	20	15.91591	0.0544	0.00014	0.00345	0.00022	0.00001	0.000005	0.05	0.00005	0.000005	2.83	0.0001	0.000023	0.00068	0.00005	
19-Oct-10	41	500	440	8.15	40	160	4	--	15	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	2.73	--	--	0.02	--	
26-Oct-10	42	500	445	8.3	45	160	2	--	16	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	2.92	--	--	0.02	--	
2-Nov-10	43	500	430	8.56	46	170	5	--	16	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	2.79	--	--	0.02	--	
9-Nov-10	44	500	450	8.45	42	180	3	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.05	--	--	0.02	--	
16-Nov-10	45	500	410	9.06	60	170	3	--	24	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	3.85	--	--	0.02	--	
23-Nov-10	46	500	450	8.46	46	170	3	--	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	3.14	--	--	0.02	--	
30-Nov-10	47	500	440	8.4	41	165	2	--	17	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	2.87	--	--	0.02	--	
7-Dec-10	48	500	495	8.05	46	170	3	--	23	0.01	1.3	0.24	0.005	0.09	0.005	24	25.5	0.05	0.00023	0.00453	0.00029	0.00001	0.000005	0.05	0.00005	0.000005	4.83	0.0001	0.000034	0.00026	0.00005	
14-Dec-10	49	500	425	8.27	45	150	2	--	15	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.28	--	--	0.02	--	
21-Dec-10	50	500	465	8.19	54	160	2	--	16	--	--	--	--	--	--	--	--	0.05														

HC-40
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
5-Jan-10	0	0.02	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.001	0.0001
12-Jan-10	1	0.03	0.00005	0.0011	0.77	0.0015	0.015	0.02	0.0031	0.0002	0.0001	4.41	0.0023	0.0005	0.53	0.00004	94.2	0.012	0.0002	0.00002	0.00005	0.0001	0.0003	0.0004	0.00005	0.0045	0.001	0.0001
19-Jan-10	2	0.01	0.00005	0.0007	0.35	0.0009	0.015	0.02	0.0051	0.0002	0.0001	2.8	0.0014	0.0016	0.82	0.00004	71.2	0.0047	0.0002	0.00002	0.00005	0.0001	0.0004	0.0015	0.00005	0.018	0.001	0.0001
26-Jan-10	3	0.02	--	--	0.31	--	--	--	--	--	--	2.3	--	--	--	--	48.1	--	--	--	--	--	--	--	--	--	0.005	--
2-Feb-10	4	0.04	0.00005	0.0006	0.27	0.0012	0.015	0.02	0.0014	0.0002	0.0001	2.01	0.001	0.001	0.74	0.00004	40.3	0.003	0.0002	0.00002	0.00005	0.0001	0.0004	0.0004	0.00005	0.016	0.001	0.0001
9-Feb-10	5	0.06	--	--	0.32	--	--	--	--	--	--	1.8	--	--	--	--	36.5	--	--	--	--	--	--	--	--	--	0.017	--
16-Feb-10	6	0.16	--	--	0.51	--	--	--	--	--	--	3.3	--	--	--	--	56.5	--	--	--	--	--	--	--	--	--	0.005	--
23-Feb-10	7	0.09	--	--	0.5	--	--	--	--	--	--	3	--	--	--	--	46	--	--	--	--	--	--	--	--	--	0.005	--
2-Mar-10	8	0.07	0.00005	0.0005	0.42	0.0019	0.015	0.02	0.0006	0.0002	0.0001	2.47	0.0013	0.0002	0.8	0.00004	19.5	0.0054	0.0002	0.00002	0.00005	0.0001	0.0005	0.0001	0.00005	0.0085	0.001	0.0001
9-Mar-10	9	0.04	--	--	0.65	0.003	--	--	--	--	--	2.2	--	--	--	--	18.9	--	--	--	--	--	--	--	--	--	0.005	--
16-Mar-10	10	0.07	--	--	0.73	--	--	--	--	--	--	2.2	--	--	--	--	16.7	--	--	--	--	--	--	--	--	--	0.005	--
23-Mar-10	11	0.03	--	--	0.7	--	--	--	--	--	--	1.3	--	--	--	--	9.1	--	--	--	--	--	--	--	--	--	0.005	--
30-Mar-10	12	0.02	0.00005	0.0006	0.64	0.001	0.015	0.02	0.0004	0.0002	0.0001	1.81	0.0011	0.0002	0.5	0.00004	10.1	0.0053	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.006	0.001	0.0001
6-Apr-10	13	0.04	--	--	0.85	--	--	--	--	--	--	1.2	--	--	--	--	6.8	--	--	--	--	--	--	--	--	--	0.005	--
13-Apr-10	14	0.09	--	--	0.99	--	--	--	--	--	--	1.9	--	--	--	--	9.8	--	--	--	--	--	--	--	--	--	0.005	--
20-Apr-10	15	0.02	--	--	0.91	--	--	--	--	--	--	1.8	--	--	--	--	8.7	--	--	--	--	--	--	--	--	--	0.005	--
27-Apr-10	16	0.037	0.000008	0.0007	0.95	0.00213	0.002	0.02	0.00028	0.0001	--	1.6	0.00121	0.00015	0.6	0.000005	5.16	0.00835	0.00002	0.000003	0.000005	0.00003	0.0005	0.00007	0.000004	0.0045	0.0001	0.0001
4-May-10	17	0.06	--	--	1.56	--	--	--	--	--	--	2.1	--	--	--	--	6.9	--	--	--	--	--	--	--	--	--	0.005	--
11-May-10	18	0.04	--	--	1.68	--	--	--	--	--	--	2.1	--	--	--	--	6.2	--	--	--	--	--	--	--	--	--	0.005	--
18-May-10	19	0.01	--	--	2.05	--	--	--	--	--	--	2	--	--	--	--	4.4	--	--	--	--	--	--	--	--	--	0.005	--
25-May-10	20	0.015	0.00004	0.0009	1.58	0.00533	0.002	0.02	0.00031	0.00005	--	1.48	0.0013	0.00014	0.6	0.000005	2.97	0.0118	0.00002	0.000002	0.000005	0.00003	0.0005	0.00004	0.000003	0.0034	0.0004	0.0001
1-Jun-10	21	0.01	--	--	2.71	--	--	--	--	--	--	2	--	--	--	--	3.7	--	--	--	--	--	--	--	--	--	0.005	--
8-Jun-10	22	0.01	--	--	2.96	--	--	--	--	--	--	1.9	--	--	--	--	3.4	--	--	--	--	--	--	--	--	--	0.005	--
15-Jun-10	23	0.09	--	--	1.94	--	--	--	--	--	--	1.4	--	--	--	--	2.4	--	--	--	--	--	--	--	--	--	0.005	--
22-Jun-10	24	0.021	0.00002	0.001	2.11	0.00292	0.002	0.02	0.00027	0.00005	--	1.58	0.0013	0.00016	0.7	0.000005	2.19	0.0138	0.00002	0.000002	0.000005	0.00002	0.0005	0.00004	0.000002	0.0035	0.0001	0.0001
29-Jun-10	25	0.01	--	--	1.94	--	--	--	--	--	--	1.3	--	--	--	--	1.9	--	--	--	--	--	--	--	--	--	0.005	--
6-Jul-10	26	0.01	--	--	2.08	--	--	--	--	--	--	1.1	--	--	--	--	1.7	--	--	--	--	--	--	--	--	--	0.005	--
13-Jul-10	27	0.01	--	--	2.27	--	--	--	--	--	--	1.2	--	--	--	--	1.6	--	--	--	--	--	--	--	--	--	0.005	--
20-Jul-10	28	0.006	0.000016	0.0009	2.2	0.00328	0.009	0.02	0.00034	0.0001	--	1.25	0.00121	0.00015	0.5	0.000005	1.31	0.0146	0.00002	0.000002	0.000005	0.00002	0.0005	0.00003	0.000002	0.0025	0.001	0.0001
27-Jul-10	29	0.01	--	--	2.3	--	--	--	--	--	--	0.9	--	--	--	--	1.2	--	--	--	--	--	--	--	--	--	0.005	--
3-Aug-10	30	0.01	--	--	2.55	--	--	--	--	--	--	1.2	--	--	--	--	1.3	--	--	--	--	--	--	--	--	--	0.005	--
10-Aug-10	31	0.01	--	--	2.31	--	--	--	--	--	--	0.8	--	--	--	--	1	--	--	--	--	--	--	--	--	--	0.005	--
17-Aug-10	32	0.007	0.000036	0.0009	2.54	0.0031	0.002	0.02	0.00037	0.00005	--	1.14	0.00114	0.00014	0.6	0.000005	1	0.0148	0.00002	0.000002	0.000005	0.00003	0.0005	0.00002	0.000002	0.0025	0.0001	0.0001
24-Aug-10	33	0.01	--	--	2.35	--	--	--	--	--	--	0.6	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--	0.005	--
31-Aug-10	34	0.01	--	--	2.11	--	--	--	--	--	--	0.7	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	0.005	--
7-Sep-10	35	0.01	--	--	2.35	--	--	--	--	--	--	0.7	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	0.005	--
14-Sep-10	36	0.009	0.000062	0.0009	2.16	0.00257	0.002	0.02	0.00028	0.00003	--	0.91	0.00099	0.00009	0.5	0.000005	0.58	0.015	0.00002	0.000002	0.000005	0.00001	0.0005	0.00001	0.000002	0.0024	0.0001	0.0001
21-Sep-10	37	0.01	--	--	2.41	--	--	--	--	--	--	0.7	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	0.005	--
28-Sep-10	38	0.01	--	--	2.35	--	--	--	--	--	--	0.6	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	0.005	--
5-Oct-10	39	0.01	--	--	2.06	--	--	--	--	--	--	0.5	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
12-Oct-10	40	0.001	0.000047	0.0007	2.15	0.00459	0.005	0.01	0.00024	0.00005	--	0.73	0.00078	0.00008	0.4	0.000005	0.48	0.0143	0.00002	0.000002	0.000005	--	0.0005	0.00001	0.000002	0.0019	0.0002	0.0001
19-Oct-10	41	0.01	--	--	2.07	--	--	--	--	--	--	0.5	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	0.005	--
26-Oct-10	42	0.01	--	--	2.32	--	--	--	--	--	--	0.6	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	0.005	--
2-Nov-10	43	0.01	--	--	2.46	--	--	--	--	--	--	0.5	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	0.005	--
9-Nov-10	44	0.01	--	--	2.32	--	--	--	--	--	--	0.6	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
16-Nov-10	45	0.01	--	--	4.32	--	--	--	--	--	--	1.1	--	--	--	--	0.7	--	--	--	--	--	--	--	--	--	0.005	--
23-Nov-10	46	0.01	--	--	2.46	--	--	--	--	--	--	0.7	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
30-Nov-10	47	0.01	--	--	2.12	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
7-Dec-10	48	0.001	0.00001	0.0011	3.26	0.00355	0.007	0.002	0.00028	0.00006	--	0.79	0.00095	0.00011	0.7	0.000005	0.4	0.0234	0.00002	0.000002	0.000005	0.00002	0.0005	0.00002	0.000002	0.0025	0.0002	0.0001
14-Dec-10	49	0.01	--	--	2.3	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
21-Dec-10	50	0.01	--	--	2.6	--	--	--	--	--	--	0.4	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Dec-10	51	0.01	--	--	2.81	--	--	--	--	--	--	0.6	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
4-Jan-11	52	0.01	--	--	2.65	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
11-Jan-11	53	0.01	--	--	4.81	--	--	--	--	--	--	0.8	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
18-Jan-11	54	0.01	--	--	2.93	--	--	--	--	--	--	0.5	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
25-Jan-11	55	0.01	--	--	3.59	--	--	--	--	--	--	0.5	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
1-Feb-11	56	0.001	0.000008	0.0011	4.94	0.00549	0.013	0.002	0																			

HC-41
Sample Weight = 1 kg

Date	Accum. Weeks	Dissolved Metals by ICP-MS (Cantest)																														
		Volume (ml)		pH	EC	ORP	SO4	Acidity (mg CaCO3/l)		Alkalinity	Fluoride	Chloride	Nitrate-N	Nitrite-N	Total Ammonia	Diss.-P	TDS	Hardness CaCO3	Al	Sb	As	Ba	Be	Bi	B	Cs	Cd	Ca	Cr	Co	Cu	La
		Input	Output	(pH Units)	(µS/cm)	(mV)	(mg/l)	to pH 4.5	to pH 8.3	to pH 4.5	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
		5	5	0.01	1	50	1	1	1	1	0.1	0.2	0.02	0.002	0.01	0.001	10	0.02	0.001	0.0001	0.0002	0.0002	0.0001	0.0001	0.005	0.0001	0.00001	0.01	0.0002	0.0001	0.0001	0.0001
5-Jan-10	0	500	595	9.23	318	140	28	--	30	0.05	52.8	0.05	0.003	0.14	0.04	151	37.93085	0.081	0.0015	0.098	0.0018	0.0001	0.0001	0.084	0.0001	0.00001	7.13	0.0003	0.0002	0.0011	0.0001	
12-Jan-10	1	500	460	8.85	332	125	36	--	33	0.06	50.6	0.05	0.006	0.08	0.69	243	50.74749	0.04	0.006	1.95	0.0019	0.0001	0.0001	0.12	0.0001	0.00001	8.01	0.0005	0.0014	0.002	0.0001	
19-Jan-10	2	500	430	8.8	258	140	53	--	30	0.05	25.6	0.05	0.004	0.08	0.91	99	47.96455	0.034	0.0067	2.89	0.0013	0.0001	0.0001	0.1	0.0001	0.00001	7.39	0.0005	0.0021	0.0012	0.0001	
26-Jan-10	3	500	455	8.85	204	135	44	--	30	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	7.88	--	--	0.02	--	
2-Feb-10	4	500	445	8.9	143	135	41	--	26	0.05	5.16	0.05	0.003	0.11	0.82	66	42.88406	0.045	0.0064	2.38	0.001	0.0001	0.0001	0.084	0.0001	0.00001	6.74	0.0004	0.0024	0.0005	0.0001	
9-Feb-10	5	500	440	8.87	125	145	32	--	27	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	6.42	--	--	0.02	--	
16-Feb-10	6	500	420	8.96	163	145	38	--	27	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	6.85	--	--	0.02	--	
23-Feb-10	7	500	410	8.98	125	145	20	--	35	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	6.52	--	--	0.02	--	
2-Mar-10	8	500	460	8.71	73	140	9	--	24	0.05	0.2	0.05	0.003	0.12	0.6	20	24.73642	0.056	0.0048	1.74	0.0006	0.0001	0.0001	0.09	0.0001	0.00001	4.78	0.0002	0.0013	0.0005	0.0001	
9-Mar-10	9	500	465	8.64	68	155	5	--	24	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	4.57	--	--	0.02	--	
16-Mar-10	10	500	450	8.72	66	160	10	--	22	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	4.53	--	--	0.02	--	
23-Mar-10	11	500	445	8.72	64	165	8	--	22	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	4.47	--	--	0.02	--	
30-Mar-10	12	500	450	8.61	66	170	6	--	22	0.05	0.2	0.05	0.005	0.14	0.46	68	24.89751	0.052	0.0038	1.38	0.0005	0.0001	0.0001	0.048	0.0001	0.00001	4.35	0.0004	0.0012	0.0003	0.0001	
6-Apr-10	13	500	465	8.64	61	185	5	--	22	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	4.12	--	--	0.02	--	
13-Apr-10	14	500	495	8.58	63	150	5	--	25	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	5.16	--	--	0.02	--	
20-Apr-10	15	500	450	8.78	60	155	8	--	20	0.07	--	--	--	0.11	0.356	50	21.75702	0.0706	0.00331	1.01	0.0005	0.00001	0.000005	0.05	0.00005	0.000005	3.9	0.0001	0.00121	0.00071	0.00005	
27-Apr-10	16	500	440	8.68	54	140	5	--	20	0.04	0.5	0.02	0.005	0.11	0.356	50	21.75702	0.0706	0.00331	1.01	0.0005	0.00001	0.000005	0.05	0.00005	0.000005	3.9	0.0001	0.00121	0.00071	0.00005	
4-May-10	17	500	445	8.61	51	140	5	--	20	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	4.1	--	--	0.02	--	
11-May-10	18	500	440	8.61	50	145	4	--	19	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	3.76	--	--	0.02	--	
18-May-10	19	500	480	8.58	53	165	4	--	22	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	4.34	--	--	0.02	--	
25-May-10	20	500	450	8.52	52	150	4	--	20	0.02	0.5	0.02	0.005	0.18	0.266	38	22.59585	0.0851	0.00287	0.837	0.00049	0.00001	0.000005	0.05	0.00005	0.000005	4.17	0.0003	0.000868	0.00024	0.00005	
1-Jun-10	21	500	475	8.3	51	160	3	--	21	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	4.49	--	--	0.02	--	
8-Jun-10	22	500	465	8.39	49	170	4	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.81	--	--	0.02	--	
15-Jun-10	23	500	495	8.34	56	160	4	--	24	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	4.91	--	--	0.02	--	
22-Jun-10	24	500	455	8.34	49	135	3	--	19	0.07	0.5	0.02	0.005	0.23	0.291	24	21.7219	0.0733	0.00267	0.745	0.00051	0.00001	0.000005	0.05	0.00005	0.000005	3.82	0.0004	0.00109	0.00057	0.00005	
29-Jun-10	25	500	440	8.6	49	150	5	--	20	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	4.05	--	--	0.02	--	
6-Jul-10	26	500	440	8.74	45	150	3	--	19	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	3.75	--	--	0.02	--	
13-Jul-10	27	500	445	8.63	36	155	3	--	19	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	4.11	--	--	0.02	--	
20-Jul-10	28	500	440	8.5	41	160	3	--	19	0.02	0.5	0.02	0.005	0.28	0.276	22	20.07743	0.0668	0.00227	0.888	0.00049	0.00001	0.000005	0.05	0.00005	0.000005	3.59	0.0002	0.00087	0.00098	0.00005	
27-Jul-10	29	500	450	8.52	46	150	4	--	20	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	4.1	--	--	0.02	--	
3-Aug-10	30	500	480	8.3	54	160	3	--	23	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	5.22	--	--	0.02	--	
10-Aug-10	31	500	420	8.58	40	160	4	--	19	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	3.67	--	--	0.02	--	
17-Aug-10	32	500	445	8.32	43	165	3	--	19	0.01	0.5	0.02	0.005	0.29	0.219	26	20.76507	0.0705	0.00209	0.621	0.00045	0.00001	0.000005	0.05	0.00005	0.000005	3.75	0.0003	0.00107	0.00093	0.00005	
24-Aug-10	33	500	445	8.57	45	160	3	--	19	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	4.08	--	--	0.02	--	
31-Aug-10	34	500	445	8.53	45	150	3	--	19	--	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	4.1	--	--	0.02	--	
7-Sep-10	35	500	445	8.53	43	140	3	--	19	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	3.73	--	--	0.02	--	
14-Sep-10	36	500	440	8.46	41	150	3	--	19	0.01	0.5	0.02	0.005	0.12	0.151	22	19.51271	0.0621	0.00187	0.553	0.00042	0.00001	0.000005	0.05	0.00005	0.000005	3.71	0.0002	0.000841	0.00069	0.00005	
21-Sep-10	37	500	445	8.6	46	150	4	--	19	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	3.58	--	--	0.02	--	
28-Sep-10	38	500	445	8.53	38	160	3	--	20	--	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	3.72	--	--	0.02	--	
5-Oct-10	39	500	460	8.55	41	165	3	--	20	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	2.84	--	--	0.02	--	
12-Oct-10	40	500	445	8.5	46	185	3	--	20	0.01	0.5	0.02	0.005	0.05	0.161	24	20.84739	0.0715	0.00175	0.487	0.00043	0.00001	0.000005	0.05	0.00005	0.000005	3.75	0.0003	0.000698	0.00033	0.00005	
19-Oct-10	41	500	450	8.46	47	170	4	--	20	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	3.53	--	--	0.02	--	
26-Oct-10	42	500	440	8.58	46	160	2	--	20	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	3.52	--	--	0.02	--	
2-Nov-10	43	500	435	8.65	47	160	5	--	19	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	3.53	--	--	0.02	--	
9-Nov-10	44	500	450	8.56	46	170	3	--	19	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	3.69	--	--	0.02	--	
16-Nov-10	45	500	415	8.74	40	170	3	--	20	--	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	4.65	--	--	0.02	--	
23-Nov-10	46	500	445	8.66	47	170	4	--	18	--	--	--	--	--	--	--	--	0.06	--	--	--	--	--	--	--	--	3.69	--	--	0.02	--	
30-Nov-10	47	500	430	8.48	48	150	4	--	18	--	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	3.59	--	--	0.02	--	
7-Dec-10	48	500	455	8.3	48	160	4	--	19	0.01	1	0.02	0.005	0.15	0.152	24	22	0.0481	0.00208	0.524	0.00044	0.00001	0.000005	0.05	0.00005	0.000005	4.05	0.0002	0.000762	0.00039	0.00005	
14-Dec-10	49	500	425	8.46	50	155	4	--	18	--	--	--	--	--	--	--	--	0.05	--													

HC-41
Sample Weight = 1 kg

Date	Accum. Weeks	Fe	Pb	Li	Mg	Mn	P	Hg (CVAF)	Mo	Ni	Re	K	Rb	Se	Si	Ag	Na	Sr	Te	Tl	Th	Sn	Ti	W	U	V	Zn	Zr
		mg/l	mg/l	mg/l	mg/l	mg/l	mg/L	µg/L	mg/l	mg/l	mg/L	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	
5-Jan-10	0	0.01	0.00005	0.0001	0.005	0.0001	0.015	0.02	0.0001	0.0002	0.0001	0.01	0.0001	0.0002	0.05	0.00004	0.005	0.0001	0.0002	0.00002	0.00005	0.0001	0.0002	0.0001	0.00005	0.0001	0.0001	0.0001
12-Jan-10	1	0.01	0.00005	0.005	7.47	0.0037	0.015	0.02	0.0036	0.016	0.0001	14.2	0.01	0.0029	0.66	0.00004	37.3	0.035	0.0002	0.00004	0.00005	0.0001	0.0002	0.0027	0.00005	0.0024	0.001	0.0001
19-Jan-10	2	0.01	0.00005	0.0044	7.17	0.0036	0.015	0.02	0.0029	0.015	0.0001	10.7	0.0076	0.0026	0.72	0.00004	21.9	0.026	0.0002	0.00004	0.00005	0.0001	0.0002	0.0023	0.00006	0.0028	0.001	0.0001
26-Jan-10	3	0.03	--	--	8.05	--	--	--	--	--	--	--	--	--	--	--	14.2	--	--	--	--	--	--	--	--	--	0.005	--
2-Feb-10	4	0.01	0.00006	0.0034	6.33	0.004	0.015	0.02	0.0011	0.011	0.0001	6.91	0.0048	0.0011	0.74	0.00004	7.55	0.019	0.0002	0.00003	0.00005	0.0001	0.0002	0.0015	0.00007	0.0026	0.001	0.0001
9-Feb-10	5	0.03	--	--	5.89	--	--	--	--	--	--	5.9	--	--	--	--	5.4	--	--	--	--	--	--	--	--	--	0.005	--
16-Feb-10	6	0.01	--	--	8.25	--	--	--	--	--	--	8.2	--	--	--	--	7.6	--	--	--	--	--	--	--	--	--	0.005	--
23-Feb-10	7	0.02	--	--	6.04	--	--	--	--	--	--	5.8	--	--	--	--	3.5	--	--	--	--	--	--	--	--	--	0.005	--
2-Mar-10	8	0.01	0.00005	0.0021	3.11	0.0032	0.015	0.02	0.0003	0.0039	0.0001	3.43	0.0032	0.0003	0.61	0.00004	1.21	0.012	0.0002	0.00002	0.00005	0.0001	0.0003	0.0009	0.00005	0.0022	0.001	0.0002
9-Mar-10	9	0.02	--	--	3.67	0.004	--	--	--	--	--	2.5	--	--	--	--	1	--	--	--	--	--	--	--	--	--	0.005	--
16-Mar-10	10	0.02	--	--	3.67	--	--	--	--	--	--	2.4	--	--	--	--	0.9	--	--	--	--	--	--	--	--	--	0.005	--
23-Mar-10	11	0.02	--	--	3.71	--	--	--	--	--	--	2.3	--	--	--	--	0.8	--	--	--	--	--	--	--	--	--	0.005	--
30-Mar-10	12	0.01	0.00005	0.002	3.41	0.003	0.015	0.02	0.0002	0.0031	0.0001	2.39	0.0024	0.0002	0.48	0.00004	0.78	0.0089	0.0002	0.00002	0.00005	0.0001	0.0002	0.0007	0.00005	0.0021	0.001	0.0001
6-Apr-10	13	0.02	--	--	3.13	--	--	--	--	--	--	1.5	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	0.005	--
13-Apr-10	14	0.03	--	--	3.62	--	--	--	--	--	--	1.7	--	--	--	--	0.5	--	--	--	--	--	--	--	--	--	0.005	--
20-Apr-10	15	0.01	--	--	3.33	--	--	--	--	--	--	1.8	--	--	--	--	0.6	--	--	--	--	--	--	--	--	--	0.005	--
27-Apr-10	16	0.013	0.000015	0.0015	2.92	0.00406	0.002	0.02	0.0002	0.00272	--	1.67	0.00215	0.00014	0.6	0.000005	0.45	0.0084	0.00002	0.000014	0.000005	0.00002	0.0005	0.00052	0.000038	0.0019	0.0001	0.0001
4-May-10	17	0.04	--	--	3.12	--	--	--	--	--	--	1.5	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
11-May-10	18	0.03	--	--	2.88	--	--	--	--	--	--	1.5	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
18-May-10	19	0.02	--	--	3.17	--	--	--	--	--	--	1.3	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
25-May-10	20	0.02	0.000013	0.0013	2.96	0.00738	0.002	0.02	0.0002	0.00186	--	1.32	0.00194	0.00013	0.6	0.000005	0.3	0.00839	0.00002	0.000016	0.000005	0.00002	0.0005	0.00036	0.000026	0.0016	0.0001	0.0001
1-Jun-10	21	0.02	--	--	3.18	--	--	--	--	--	--	1.2	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
8-Jun-10	22	0.01	--	--	2.76	--	--	--	--	--	--	1.1	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
15-Jun-10	23	0.02	--	--	3.35	--	--	--	--	--	--	1.2	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
22-Jun-10	24	0.019	0.000021	0.0014	2.96	0.0057	0.002	0.02	0.00018	0.00227	--	1.21	0.00176	0.00012	0.5	0.000005	0.25	0.00797	0.00002	0.000015	0.000005	0.00001	0.0005	0.00031	0.000023	0.0015	0.0001	0.0001
29-Jun-10	25	0.01	--	--	3.04	--	--	--	--	--	--	1.2	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
6-Jul-10	26	0.01	--	--	2.73	--	--	--	--	--	--	1	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
13-Jul-10	27	0.02	--	--	3.01	--	--	--	--	--	--	0.9	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
20-Jul-10	28	0.014	0.000042	0.0015	2.7	0.00462	0.008	0.02	0.00017	0.0019	--	1.13	0.00191	0.00012	0.5	0.000005	0.23	0.00726	0.00002	0.000016	0.000005	0.00009	0.0005	0.00027	0.000022	0.0014	0.0014	0.0001
27-Jul-10	29	0.28	--	--	2.93	--	--	--	--	--	--	0.9	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
3-Aug-10	30	0.01	--	--	3.63	--	--	--	--	--	--	1	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	0.005	--
10-Aug-10	31	0.01	--	--	2.61	--	--	--	--	--	--	0.7	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
17-Aug-10	32	0.024	0.000039	0.0013	2.77	0.00578	0.002	0.02	0.00017	0.00244	--	0.97	0.0017	0.00011	0.5	0.000005	0.2	0.00702	0.00002	0.000016	0.000005	0.00003	0.0005	0.00025	0.000015	0.0012	0.0003	0.0001
24-Aug-10	33	0.03	--	--	2.94	--	--	--	--	--	--	0.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
31-Aug-10	34	0.03	--	--	2.96	--	--	--	--	--	--	0.8	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
7-Sep-10	35	0.02	--	--	2.74	--	--	--	--	--	--	0.8	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
14-Sep-10	36	0.018	0.000083	0.0014	2.49	0.00429	0.002	0.02	0.00012	0.00179	--	0.91	0.0018	0.0001	0.5	0.000005	0.14	0.00672	0.00002	0.000017	0.000005	0.00002	0.0005	0.00023	0.000016	0.0011	0.0001	0.0001
21-Sep-10	37	0.03	--	--	2.6	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Sep-10	38	0.03	--	--	2.66	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
5-Oct-10	39	0.01	--	--	2.06	--	--	--	--	--	--	0.5	--	--	--	--	0.4	--	--	--	--	--	--	--	--	--	0.005	--
12-Oct-10	40	0.019	0.000045	0.001	2.79	0.0077	0.002	0.009	0.00015	0.00159	--	0.67	0.0012	0.00008	0.5	0.000005	0.12	0.00641	0.00002	0.000014	0.000005	0.00011	0.0005	0.00019	0.000014	0.0012	0.0001	0.0001
19-Oct-10	41	0.01	--	--	2.63	--	--	--	--	--	--	0.7	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
26-Oct-10	42	0.01	--	--	2.58	--	--	--	--	--	--	0.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
2-Nov-10	43	0.01	--	--	2.69	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
9-Nov-10	44	0.01	--	--	2.7	--	--	--	--	--	--	0.7	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
16-Nov-10	45	0.01	--	--	3.98	--	--	--	--	--	--	1	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
23-Nov-10	46	0.01	--	--	2.62	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
30-Nov-10	47	0.01	--	--	2.59	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
7-Dec-10	48	0.007	0.00002	0.0013	2.87	0.00514	0.008	0.002	0.00016	0.00201	--	0.71	0.00158	0.00006	0.5	0.000005	0.11	0.00702	0.00002	0.000013	0.000005	0.00002	0.0009	0.00019	0.000018	0.0011	0.0002	0.0001
14-Dec-10	49	0.01	--	--	2.82	--	--	--	--	--	--	0.6	--	--	--	--	0.2	--	--	--	--	--	--	--	--	--	0.005	--
21-Dec-10	50	0.01	--	--	2.96	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
28-Dec-10	51	0.01	--	--	2.85	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
4-Jan-11	52	0.01	--	--	3.11	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
11-Jan-11	53	0.01	--	--	2.97	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
18-Jan-11	54	0.01	--	--	2.91	--	--	--	--	--	--	0.6	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
25-Jan-11	55	0.01	--	--	3.14	--	--	--	--	--	--	0.5	--	--	--	--	0.1	--	--	--	--	--	--	--	--	--	0.005	--
1-Feb-11	56	0.008	0.000026	0.0011	3.09	0.00555	0.011																					

Appendix P
Barrel Test Static Data

Appendix P1 – XRD Raw Data

Appendix P-1: Mineralogy (XRD) Data, Barrel Test Samples

Mineral	Mineral Formula
Albite Plagioclase	$\text{NaAlSi}_3\text{O}_8$
Amphibole	$\text{Ca}_2(\text{Mg,Fe,Al})_5(\text{Al,Si})_8\text{O}_{22}(\text{OH})_2$
Ankerite/Dolomite	$\text{Ca}(\text{Fe,Mg})(\text{CO}_3)_2$
Calcite	CaCO_3
Chamosite Chlorite	$(\text{Fe,Mg})_5\text{Al}(\text{AlSi}_3\text{O}_{10})(\text{OH})_8$
Chlorite	$(\text{Mg,Fe,Al})_6(\text{Al,Si})_4\text{O}_{10}(\text{OH})_8$
Epidote	$\text{Ca}_2(\text{Al, Fe})_3(\text{SiO}_4)_3(\text{OH})$
Muscovite	$\text{KAl}_2(\text{AlSi}_3\text{O}_{10})(\text{OH})_2$
Muscovite/Sericite	
Paragonite	$\text{NaAl}_3\text{Si}_3\text{O}_{10}(\text{OH})_2$
Plagioclase	$(\text{Ca,Na})(\text{Al,Si})\text{AlSi}_2\text{O}_8$
Pyrite	FeS_2
Quartz	SiO_2
Rutile	TiO_2
Sepiolite	$\text{Mg}_4\text{Si}_6\text{O}_{15}(\text{OH})_2 \cdot 6(\text{H}_2\text{O})$
Siderite	FeCO_3
Siderite/Magnesite	$(\text{Fe}_{0.xx}\text{Mg}_{0.xx})\text{CO}_3$
Stilpnomelane	$\text{K}(\text{Fe,Mg})_8(\text{Si,Al})_{12}(\text{O,OH})_{27} \cdot n(\text{H}_2\text{O})$
Talc	$\text{Mg}_3\text{Si}_4\text{O}_{10}(\text{OH})_2$
Titanite	CaTiSiO_5

Appendix P-1: Mineralogy (XRD) Data, Barrel Test Samples

Barrel ID	Sample type	Lithology ¹	Preliminary Economic Classification	Albite Plagioclase	Amphibole	Ferroan Dolomite	Calcite	Chamosite Chlorite	Chlorite	Epidote	Muscovite	Muscovite/ Sericite	Paragonite	Plagioclase	Pyrite	Quartz	Rutile	Sepiolite	Siderite	Siderite/ Magnesite	Stilpnomelane	Talc	Titanite	Sum
W6	barrel pulp	1	Ore/Waste	bd	bd	23	7	bd	41	bd	bd	bd	bd	4	bd	14	bd	1	bd	bd	3	5	1	99
				bd	2.9	26	5.9	bd	38	bd	38	bd	1.5	bd	2.2	bd	16	bd	1.9	bd	bd	1.5	2.4	1.1
W4	barrel pulp	1	Waste	bd	bd	2	13	bd	48	bd	bd	12	bd	8	bd	17	bd	bd	bd	bd	bd	bd	bd	100
				bd	bd	1.8	13	bd	43	bd	1.4	bd	7.3	bd	12	bd	21	bd	bd	bd	bd	bd	bd	bd
W7	barrel	1	Waste	bd	13	bd	14	bd	39	8	bd	bd	bd	12	bd	13	1	bd	bd	bd	bd	bd	bd	100
W11	barrel	1 w. sediments	Ore/Waste	17	7.2	6	20	22	bd	bd	6.3	bd	bd	bd	bd	19	1.8	bd	bd	bd	1	bd	bd	100
W3	barrel pulp	2	Ore/Waste	bd	9	bd	9	bd	30	16	bd	bd	bd	20	bd	13	bd	bd	bd	bd	bd	bd	3	100
				bd	8.7	bd	8.5	bd	22	16	bd	4	bd	23	bd	14	bd	bd	bd	bd	bd	bd	2	100
W14	barrel pulp	5 mixed	Ore/Waste	10	bd	32	5.2	9.7	bd	bd	5.7	bd	bd	bd	1.6	31	1.8	bd	3.7	bd	bd	bd	100	
				bd	bd	36	2.5	bd	11	bd	bd	9.1	bd	9.7	1.1	23	bd	bd	bd	5.5	bd	bd	bd	100
W8	barrel	7a	Waste	24	12	3.1	11	22	bd	7.4	bd	bd	bd	bd	bd	22	1	bd	bd	bd	bd	bd	100	
W2	barrel pulp	13a	Waste	bd	bd	28	bd	bd	16	bd	bd	7	10	bd	bd	37	1	bd	1	bd	bd	bd	100	
				bd	bd	29	bd	bd	11	bd	bd	11	7.4	2.4	bd	37	1	bd	bd	bd	bd	bd	100	

bd: below detection

¹Rock codes as follows: **1** = mafic volcanics; **1 w. sediments** = mafic volcanics with sediments; **2** = intermediate volcanics; **5** = sedimentary rocks; **7a** = early gabbro; **10b** = late intrusives; **11c** = diabase; **12q** = quartz vein; **13a** = deformation zone

Appendix P2 – Solid-Phase Trace Element Data

Appendix P-2: Solid-Phase Trace Metal Data - ICP Metals by Aqua Regia Digestion for Barrel Test Samples

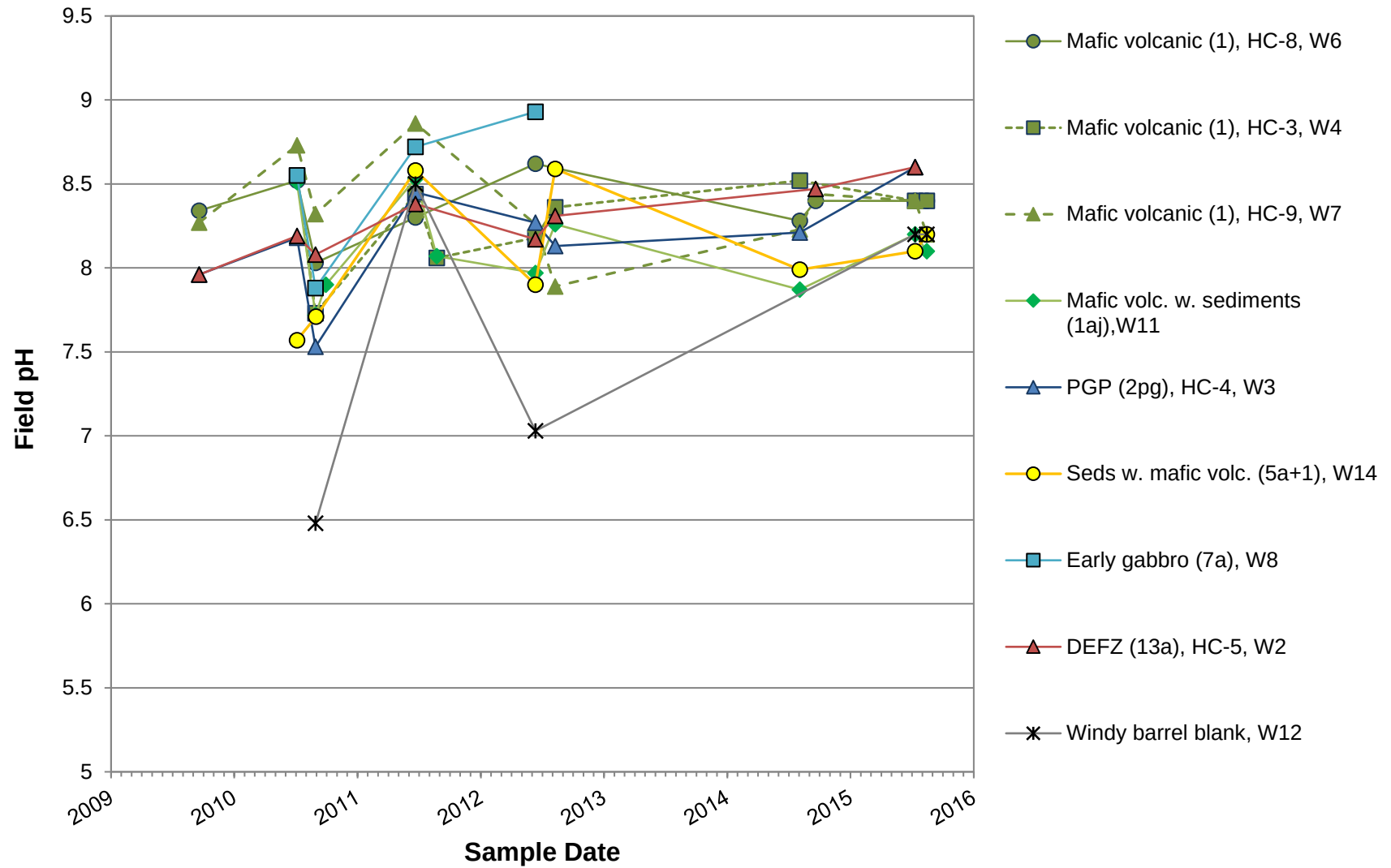
Barrel ID	Sample type	Lithology ¹	Preliminary Economic Classification	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb	ppm	ppm	%	ppm	ppm
W6	barrel pulp	1	Ore/Waste	0.9 0.64	210 200	3.1 1.7	73 71	<0.1 0.15	480 490	70 73	2100 1800	8.8 9.1	120 93	<0.1 <0.1	90 300	0.4 0.49	140 150	<0.1 <0.1	<0.1 0.15	<0.1 <0.1	260 240	8.2 7.2	0.076 0.075	9 9.1	570 570	4.9 5	22 44	0.21 0.16	<20 <20	3.3 3.2	0.043 0.045	0.13 0.15	0.2 0.13	<10 <10	17 16	<0.1 0.12	0.27 0.34	14 13	0.6 0.58
W4	barrel pulp	1	Waste	0.4 0.17	120 130	2.1 3.8	82 96	<0.1 <0.1	68 75	46 46	1700 1600	8.1 8.2	6.7 4.1	<0.1 <0.1	<0.5 2.2	<0.1 <0.1	25 28	<0.1 0.13	<0.1 <0.1	<0.1 <0.1	220 230	6.2 5.8	0.025 0.029	2 1.9	120 130	3.4 3.4	7 7.1	0.079 0.096	<20 <20	5 5.3	0.012 0.027	0.03 0.033	0.1 <0.1	<10 <10	18 19	<0.1 <0.1	0.15 0.12	12 13	<0.5 0.59
W7	barrel	1	Waste	0.5	93	0.7	56	<0.1	65	33	1200	5.1	2.6	<0.1	3.4	<0.1	15	<0.1	<0.1	<0.1	110	5.6	0.02	<1	200	2.7	4	0.21	<20	3.4	0.018	0.02	0.1	<10	5.5	<0.1	0.06	7	<0.5
W11	barrel	1 w. sediments	Ore/Waste	0.8	230	2.4	90	0.2	420	76	1500	7.2	160	<0.1	350	0.6	150	0.2	0.2	<0.1	220	8.6	0.075	9	450	3.1	34	0.27	<20	3.2	0.046	0.15	0.3	<10	14	<0.1	0.76	13	0.8
W3	barrel pulp	2	Ore/Waste	1.4 0.1	130 130	3.4 3.5	75 92	<0.1 <0.1	140 140	42 44	920 950	4.3 4.1	3.1 3.2	<0.1 <0.1	4.8 3.3	<0.1 <0.1	20 25	0.1 0.26	<0.1 <0.1	0.2 <0.1	120 110	3.5 3.5	0.02 0.019	<1 1.1	210 220	2.1 1.9	6 8.1	0.27 0.29	<20 23	3.1 2.9	0.028 0.056	0.05 0.043	<0.1 0.11	<10 <10	9 8.6	<0.1 <0.1	0.11 0.1	5 5.7	<0.5 0.62
W14	barrel pulp	5 mixed	Ore/Waste	1.1 0.94	160 160	2.4 2.2	48 37	0.2 0.19	340 420	55 61	1500 1500	6.8 6.1	410 550	<0.1 <0.1	270 390	0.5 0.46	180 170	<0.1 <0.1	1 1.2	<0.1 <0.1	130 79	8.2 7.7	0.056 0.049	6 5.3	170 170	4 4.1	16 18	0.051 0.038	<20 <20	1.9 1.1	0.023 0.022	0.1 0.11	0.2 0.86	<10 <10	12 12	<0.1 <0.1	0.98 0.83	7 4.8	0.7 0.72
W8	barrel	7a	Waste	0.4	100	1.8	56	<0.1	70	33	990	4.7	8.5	<0.1	1.5	<0.1	43	<0.1	<0.1	<0.1	130	5.4	0.024	1	260	3.4	5	0.17	<20	2.9	0.026	0.02	<0.1	<10	10	<0.1	0.09	8	<0.5
W2	barrel pulp	13a	Waste	3.5 0.89	60 71	2.6 2	73 62	<0.1 <0.1	45 49	30 31	1200 1100	5.1 5.3	73 93	0.1 0.12	4.8 8.4	0.5 0.43	120 150	0.1 0.11	0.2 0.1	<0.1 <0.1	46 45	5.2 5.1	0.044 0.041	3 2.3	67 42	2.2 2.1	21 30	0.001 0.001	<20 <20	1.4 1.5	0.076 0.12	0.08 0.13	0.1 <0.1	<10 <10	13 12	<0.1 <0.1	0.16 0.24	3 3.7	<0.5 0.52

¹Rock codes as follows: 1 = mafic volcanics; 1 w. sediments = mafic volcanics with sediments; 2 = intermediate volcanics; 5 = sedimentary rocks; 7a = early gabbro; 10b = late intrusives; 11c = diabase; 12q = quartz vein; 13a = deformation zone

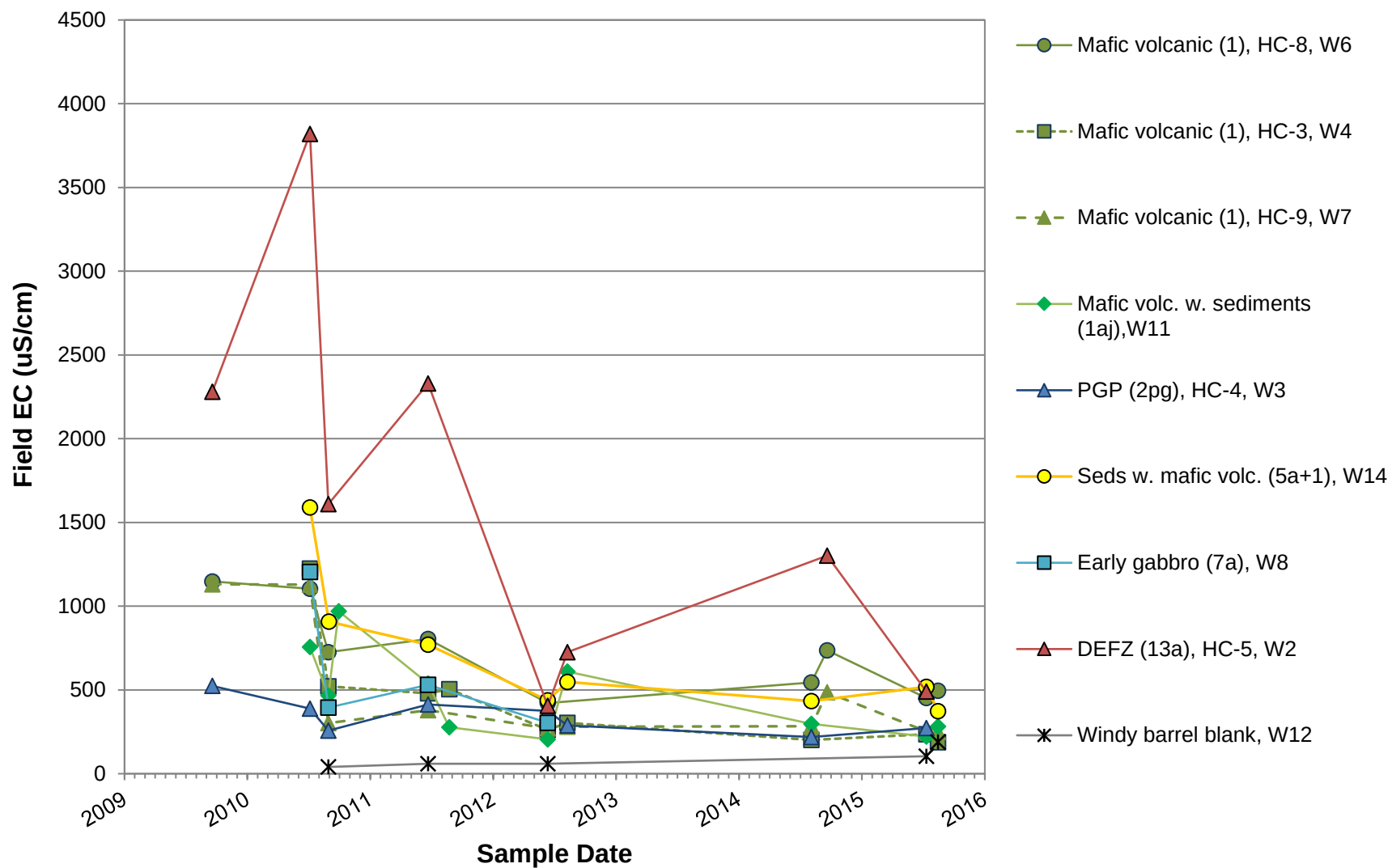
Appendix Q
Barrel Test Leachate Data

Appendix Q1 – Concentration Figures

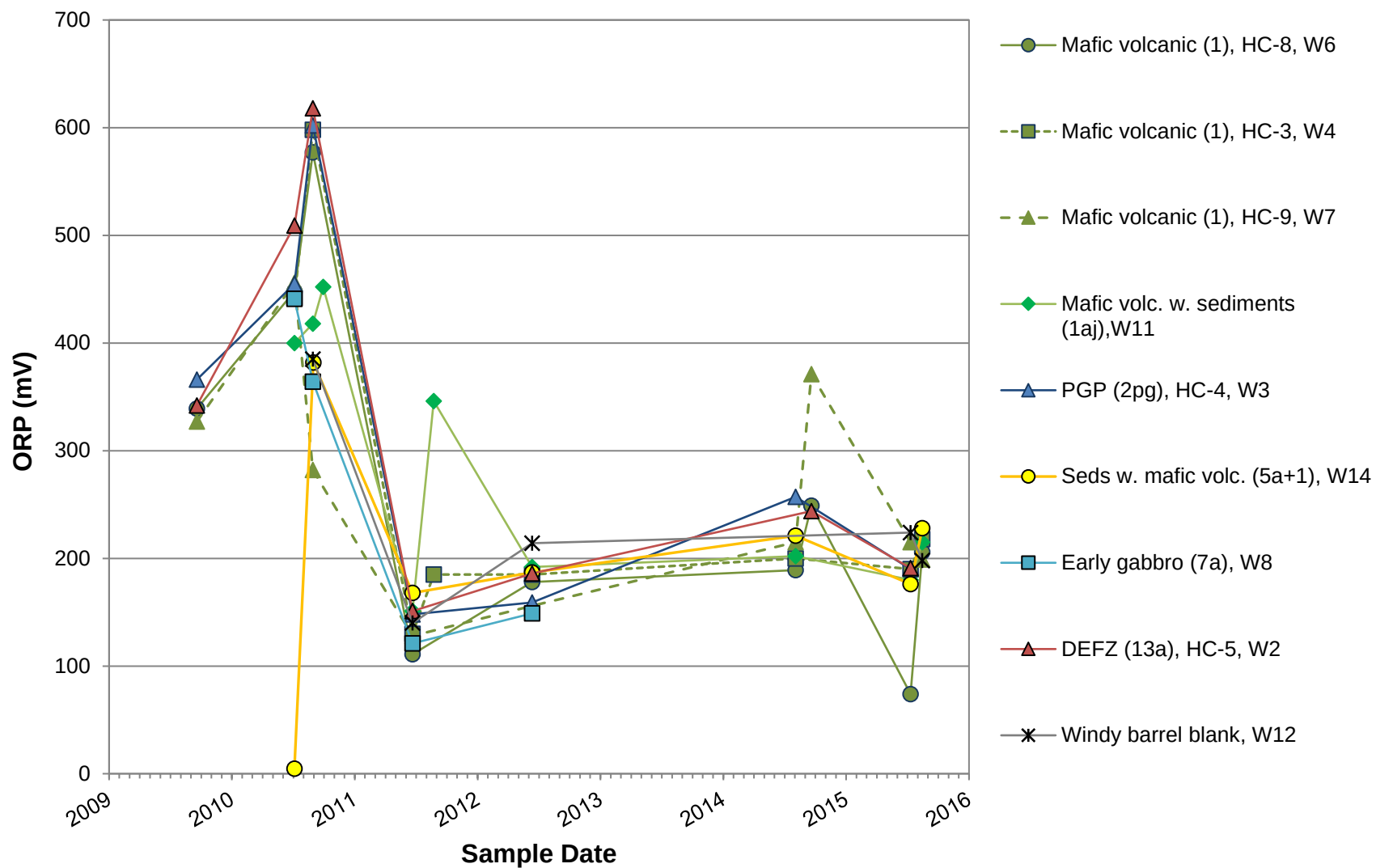
Hope Bay Barrel Tests



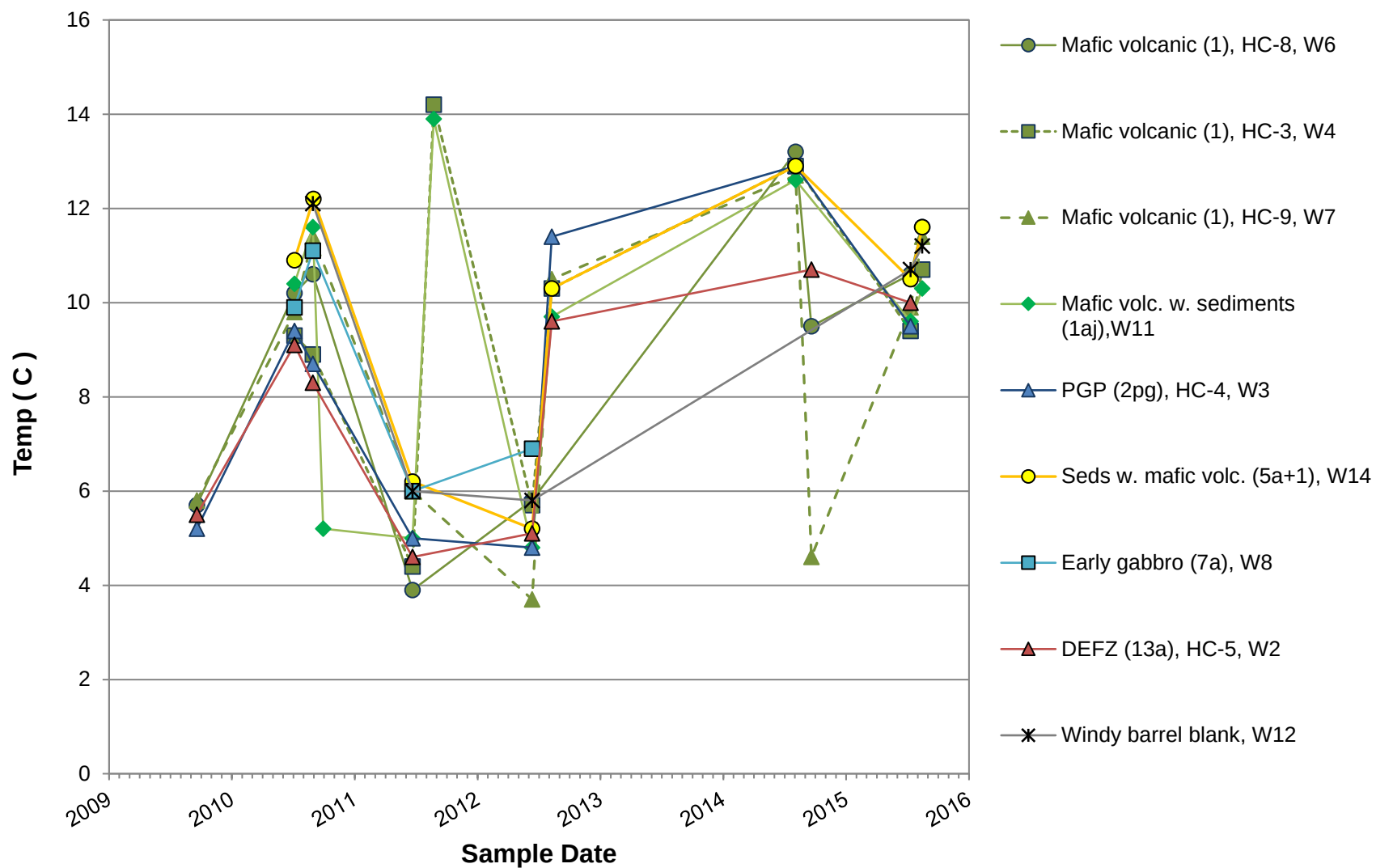
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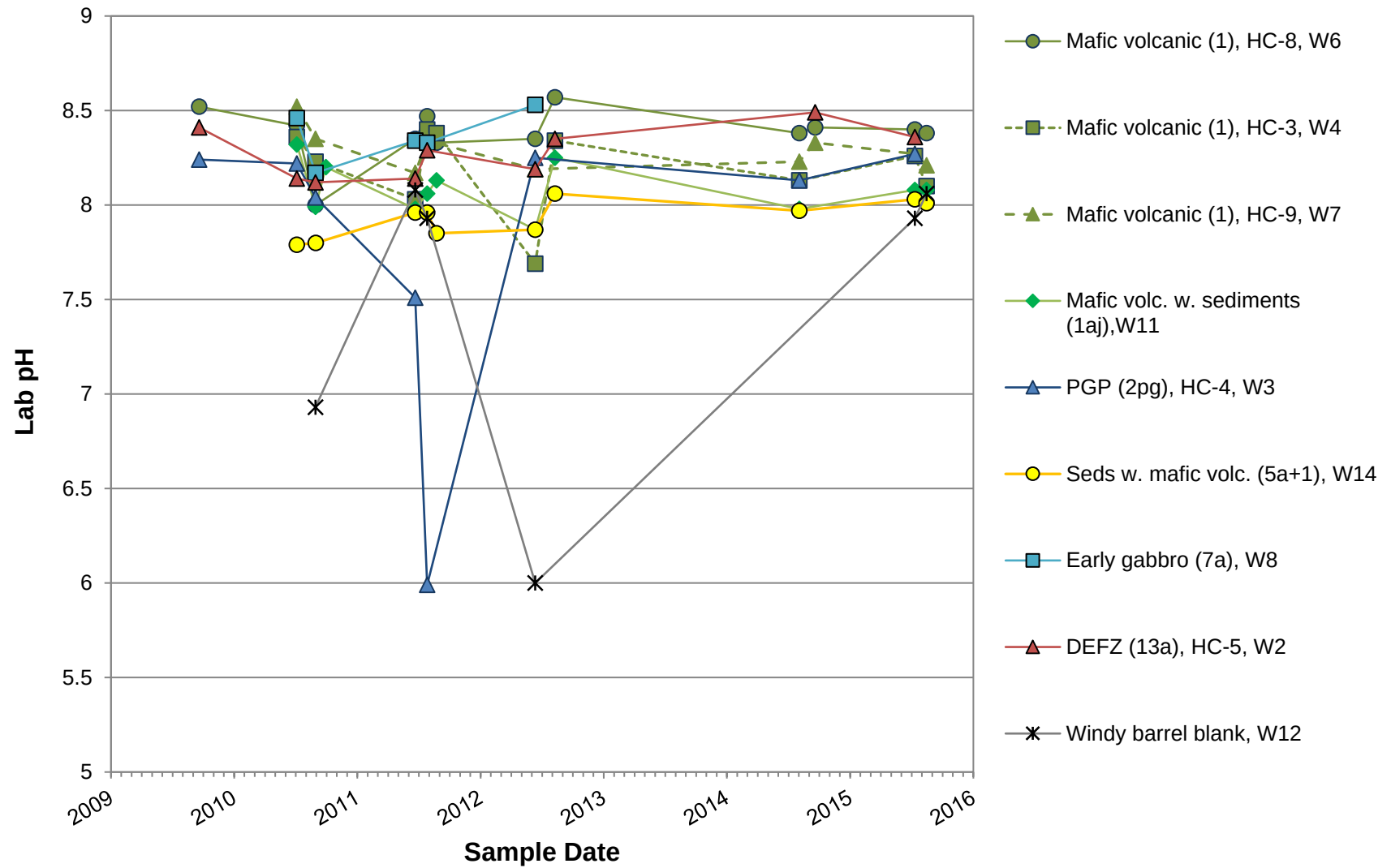
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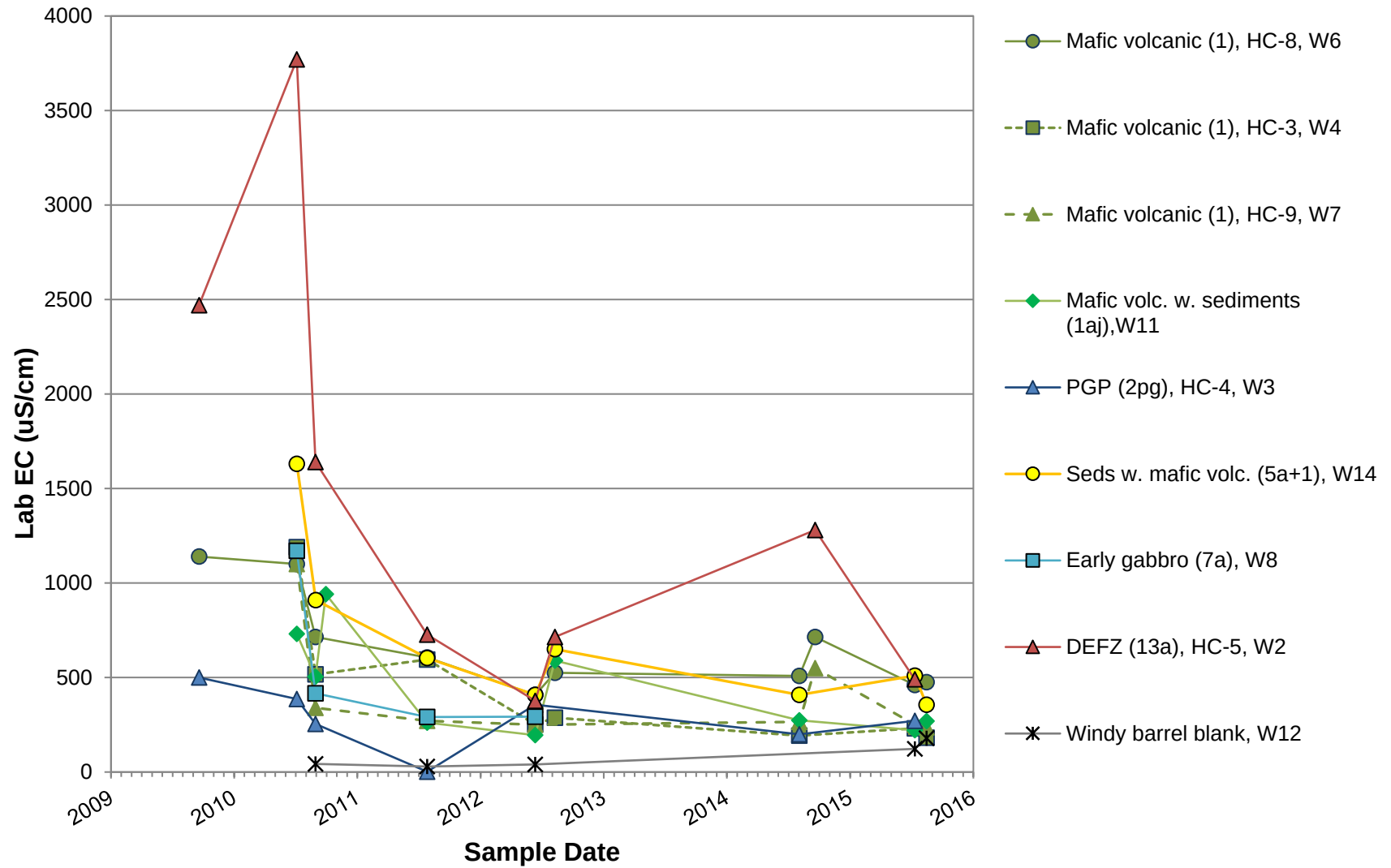
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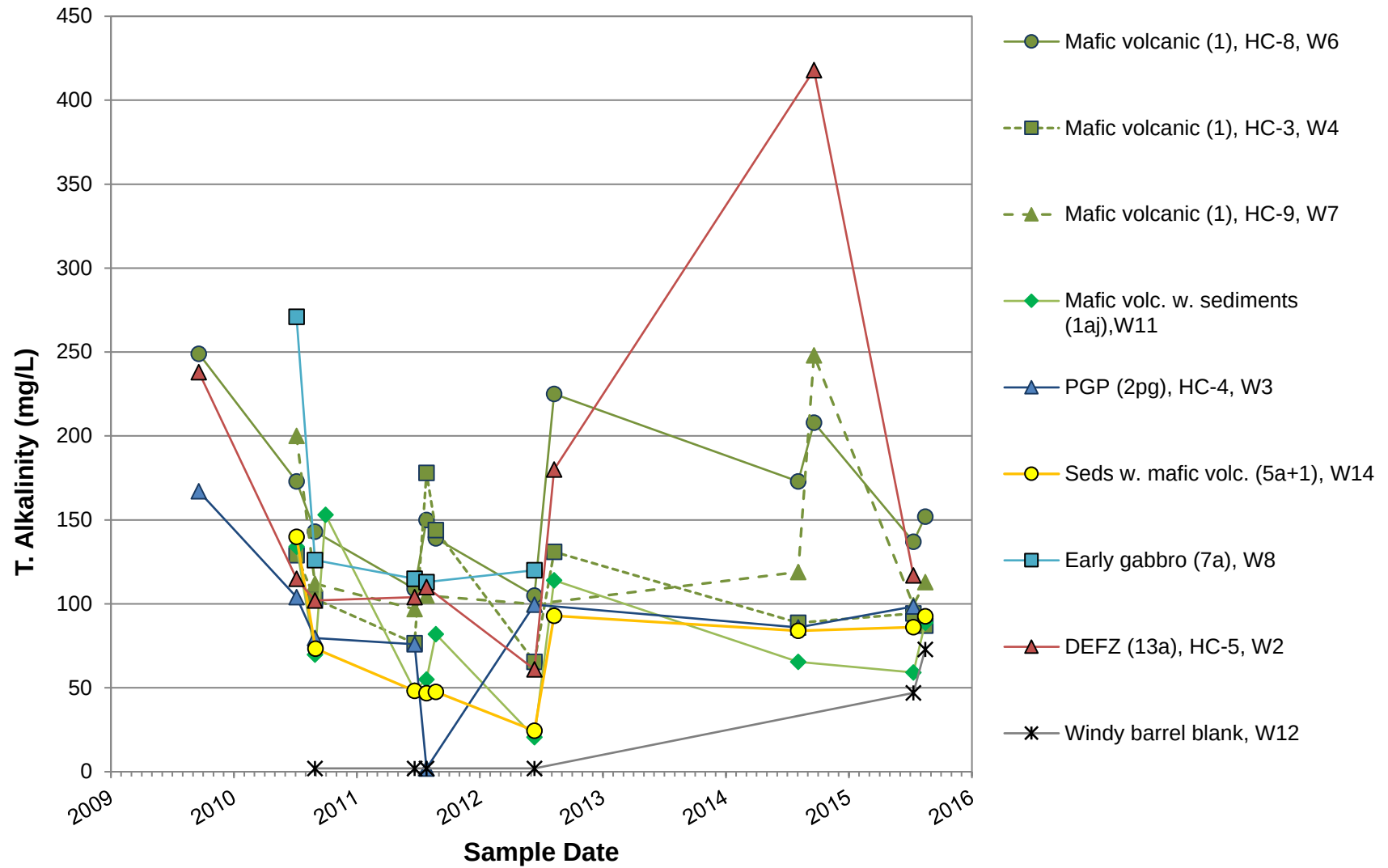
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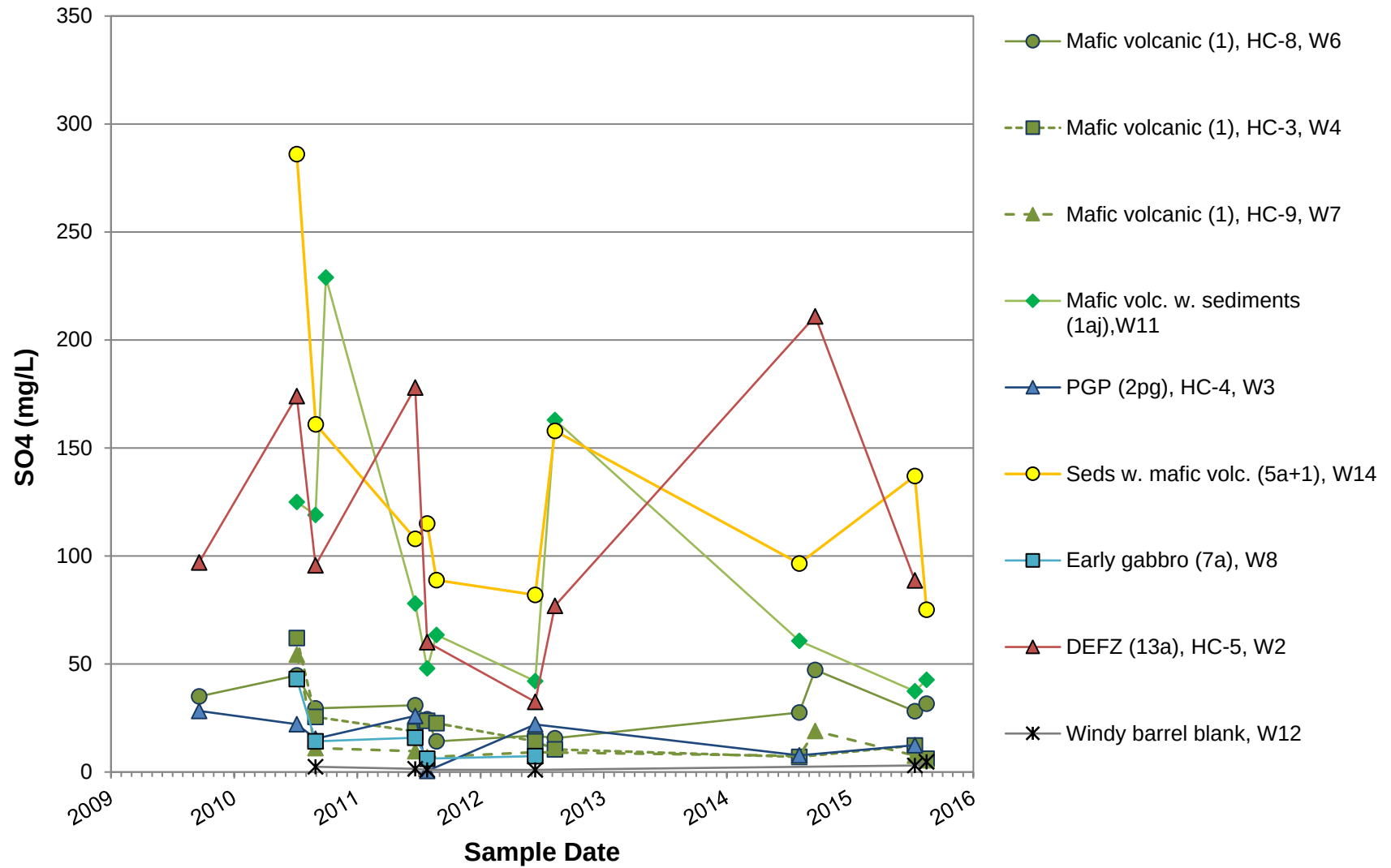
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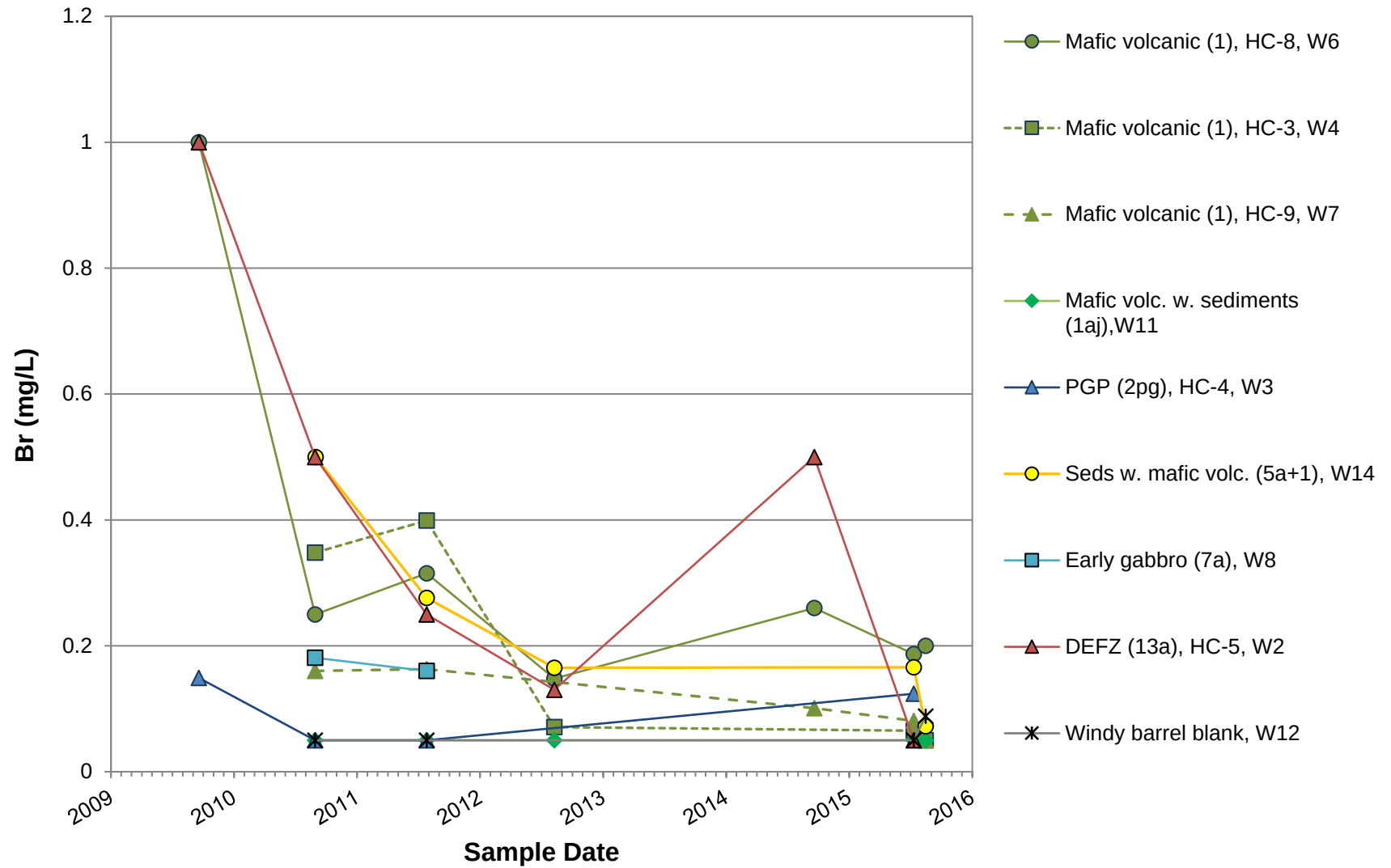
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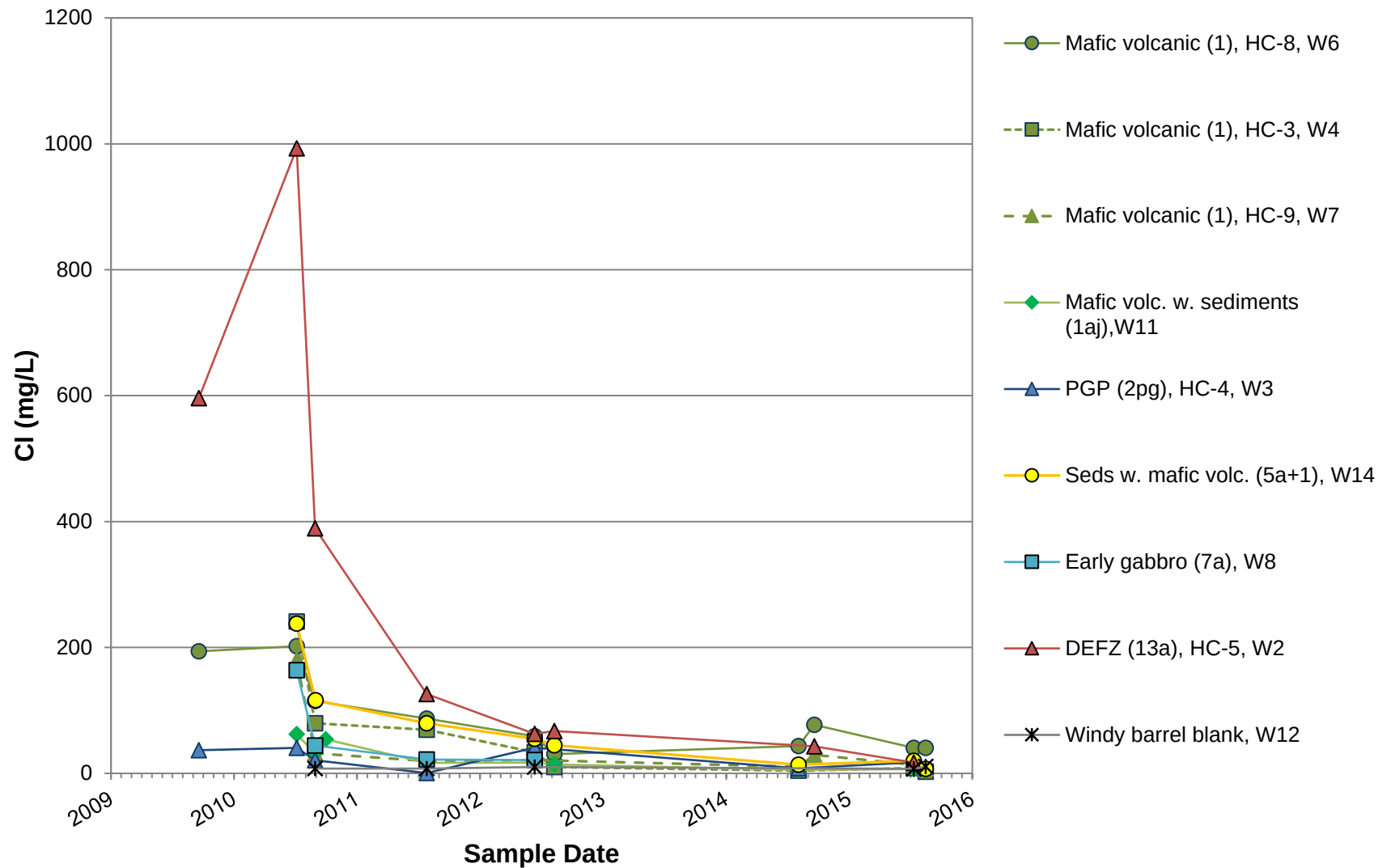
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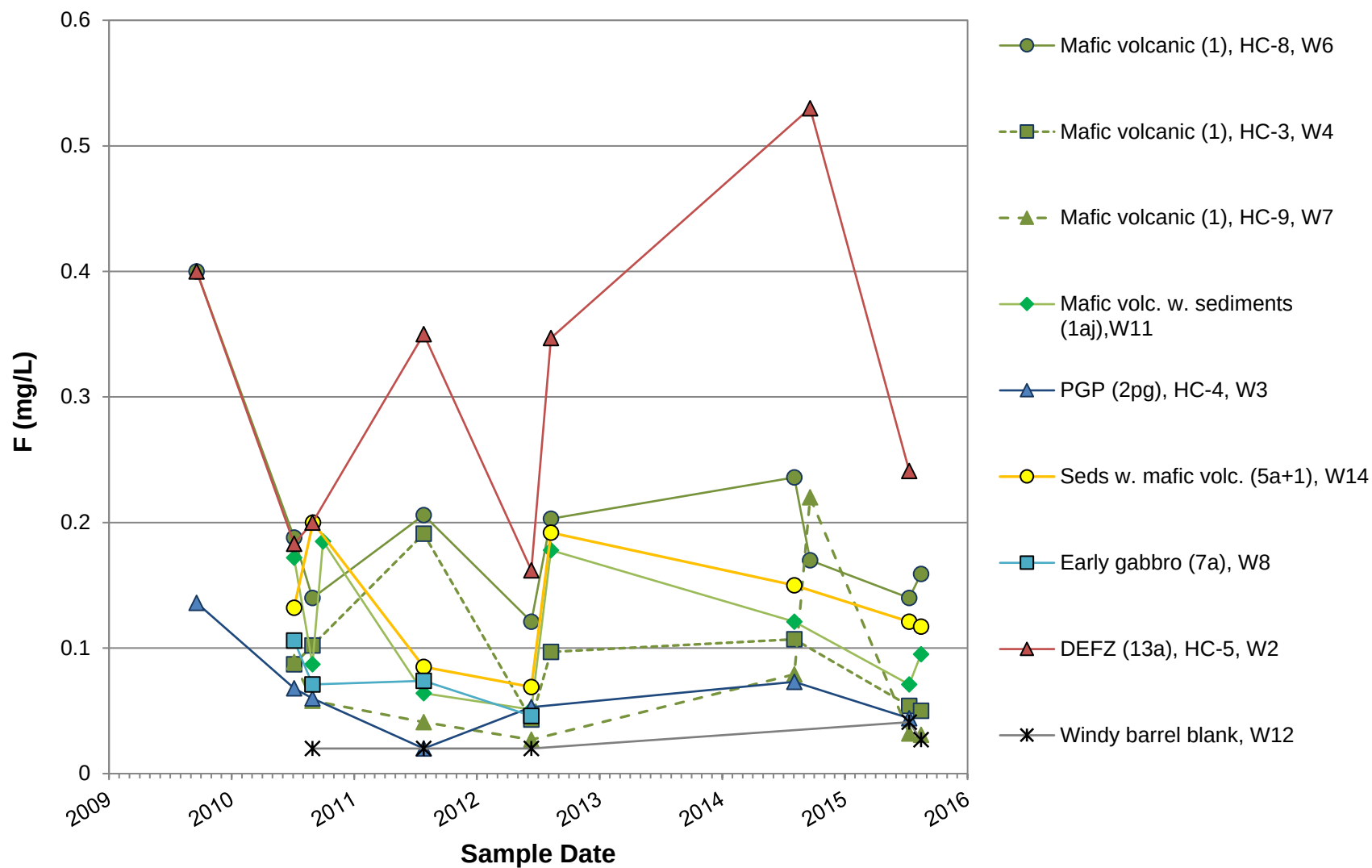
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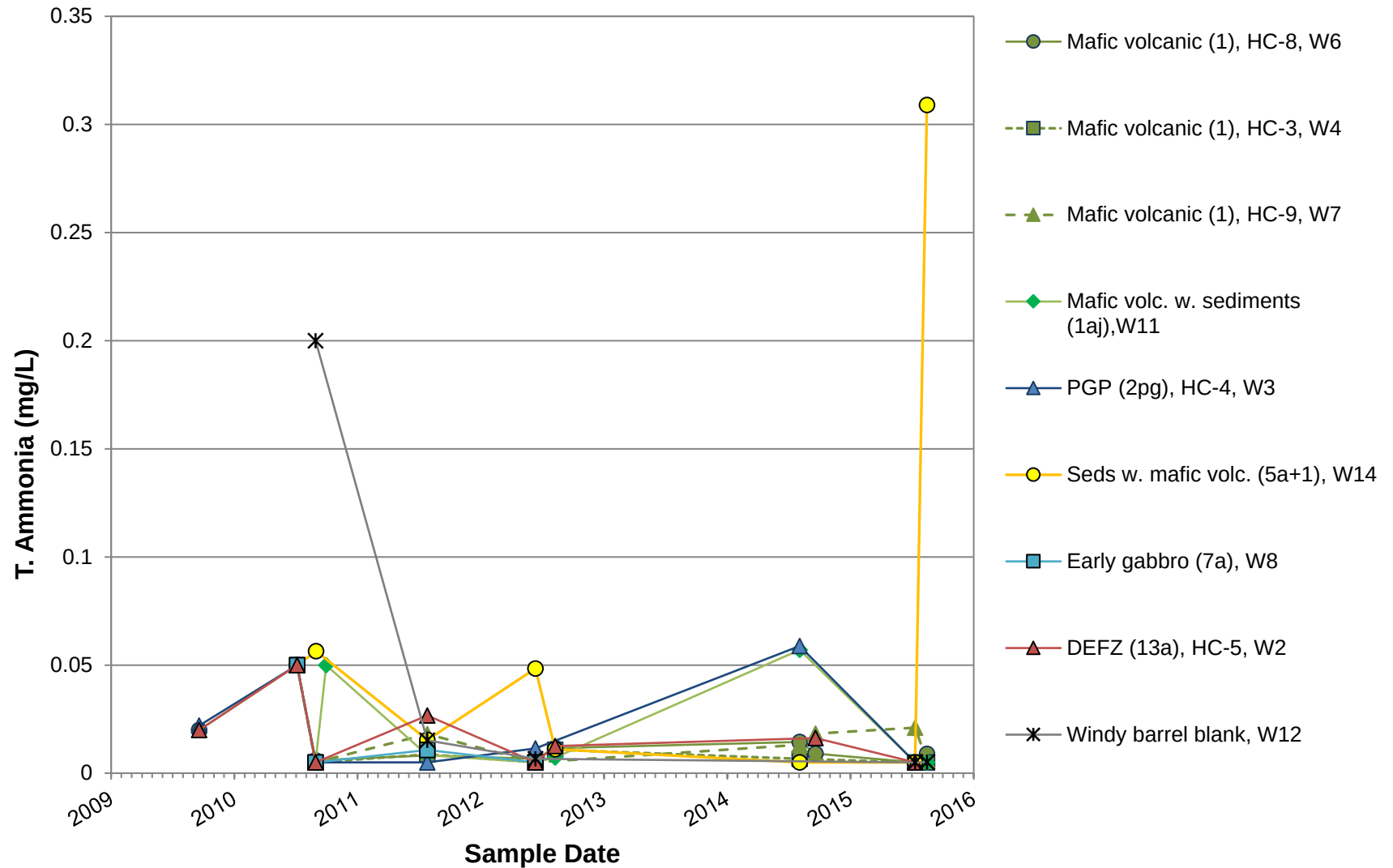
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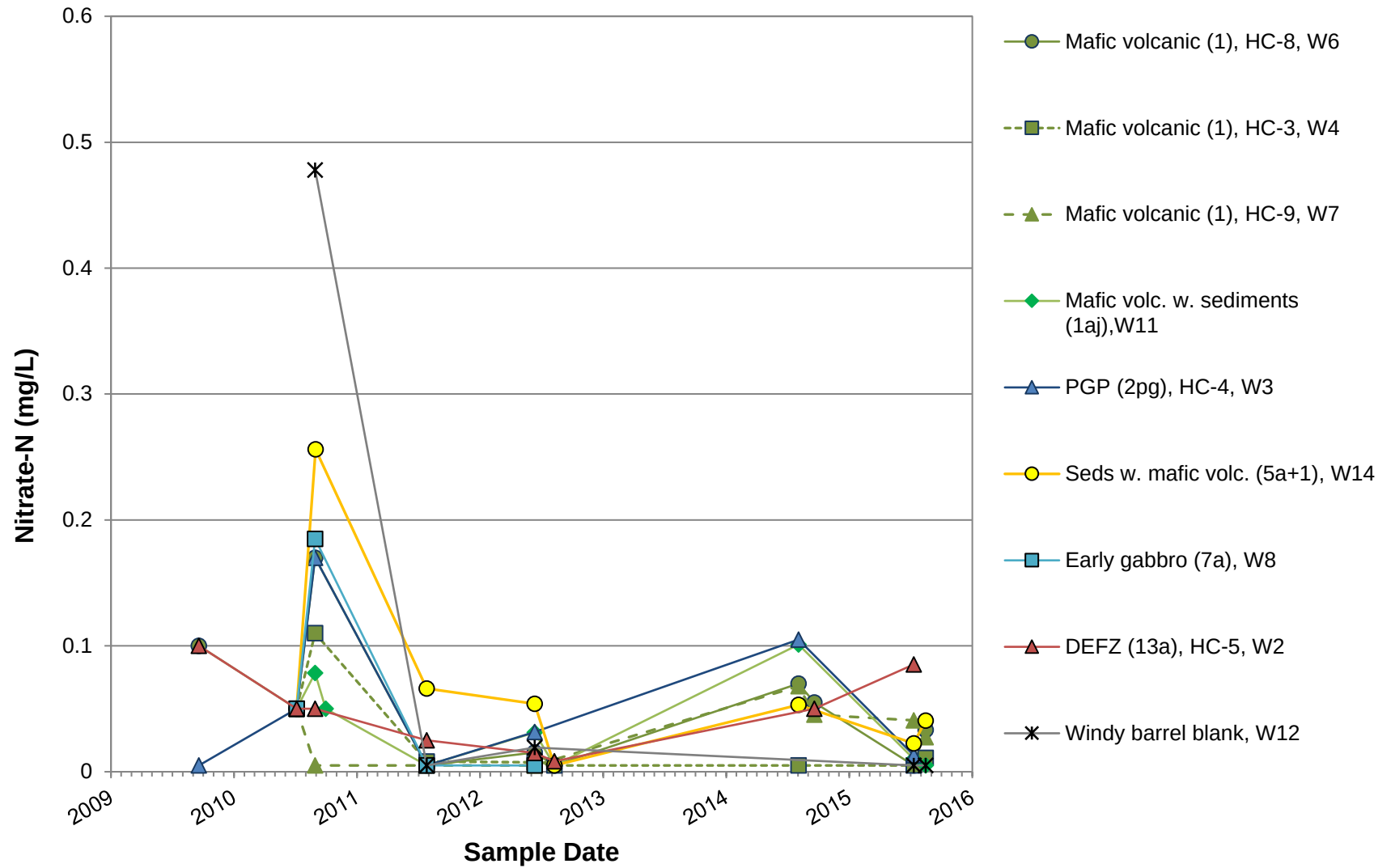
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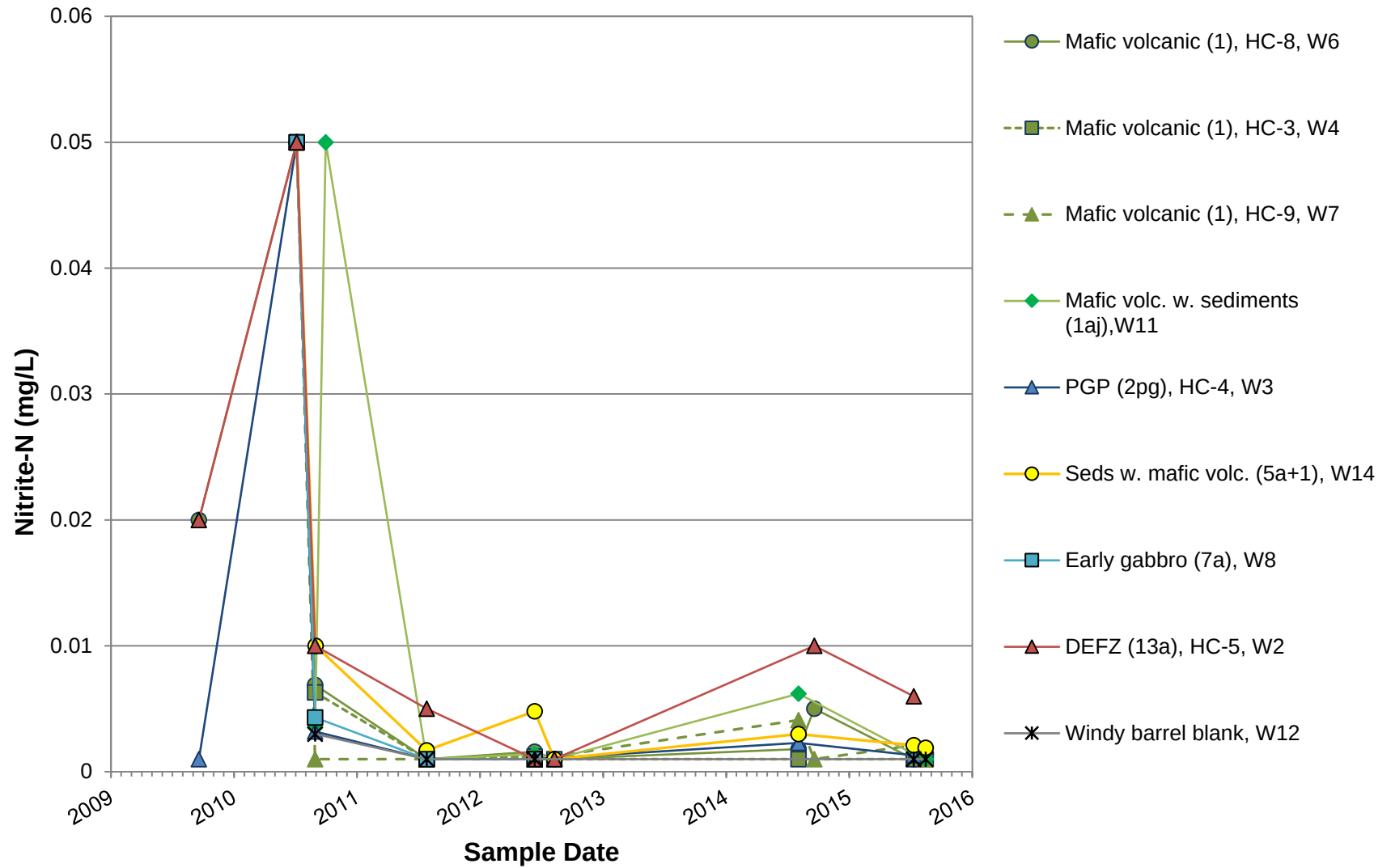
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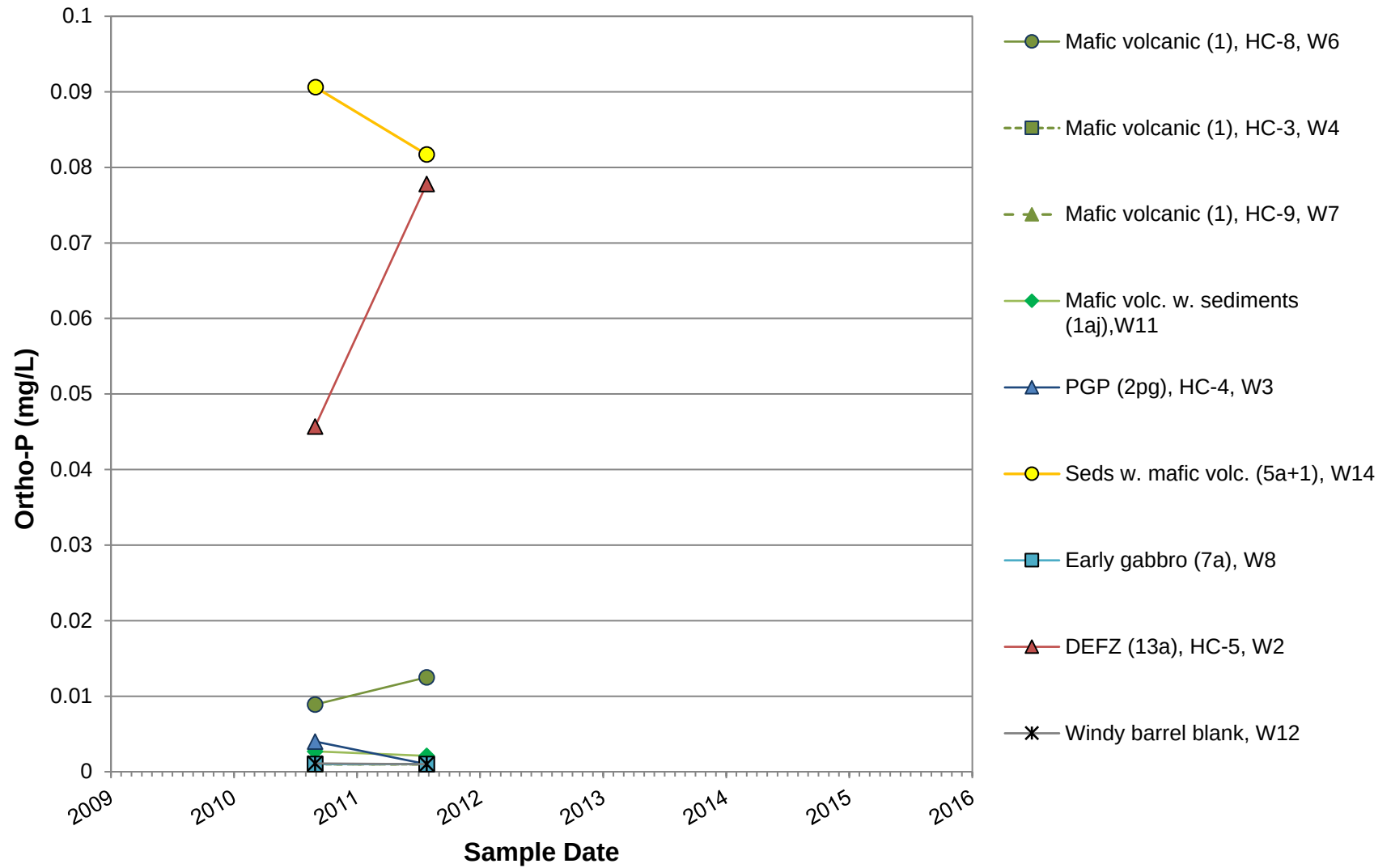
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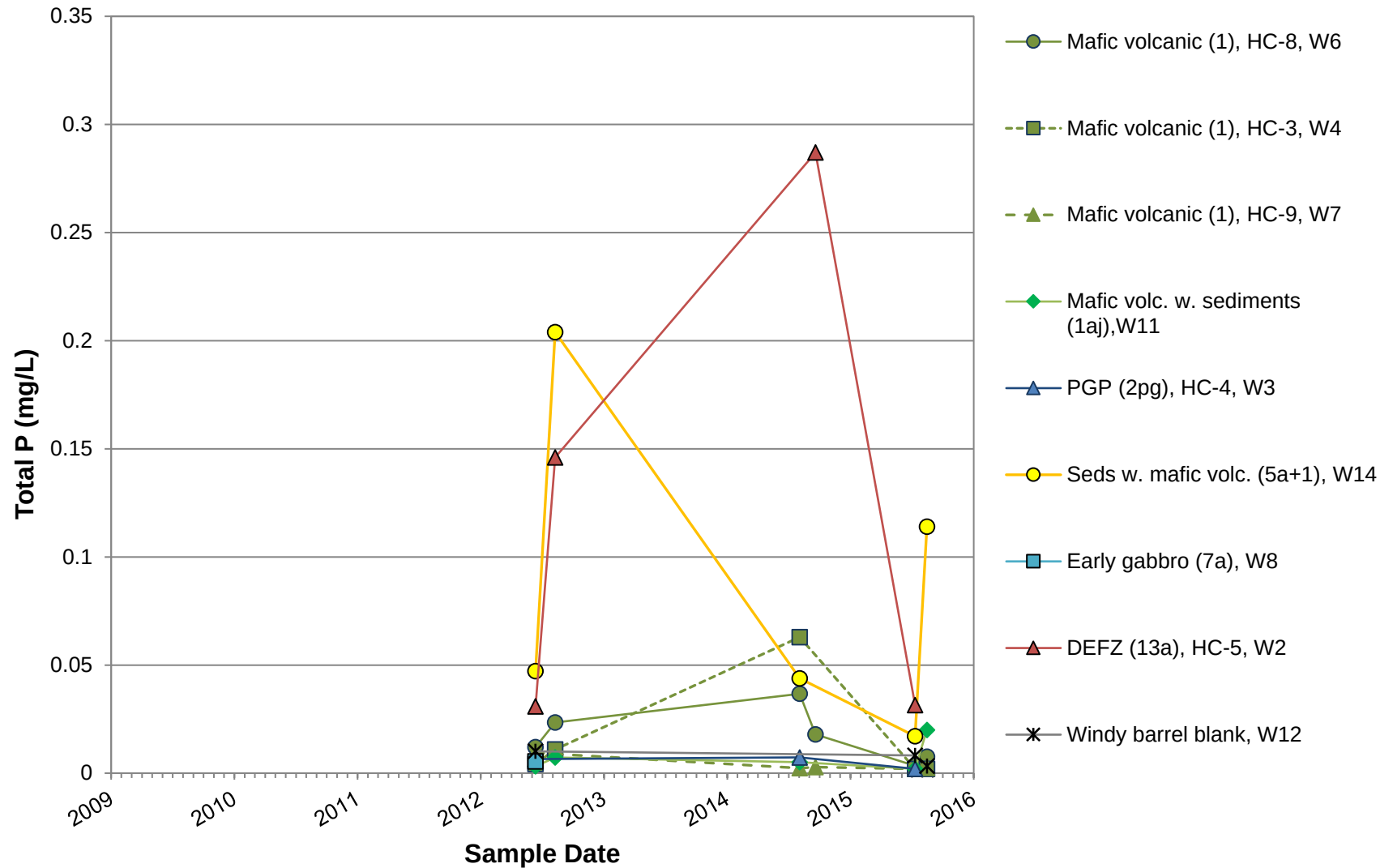
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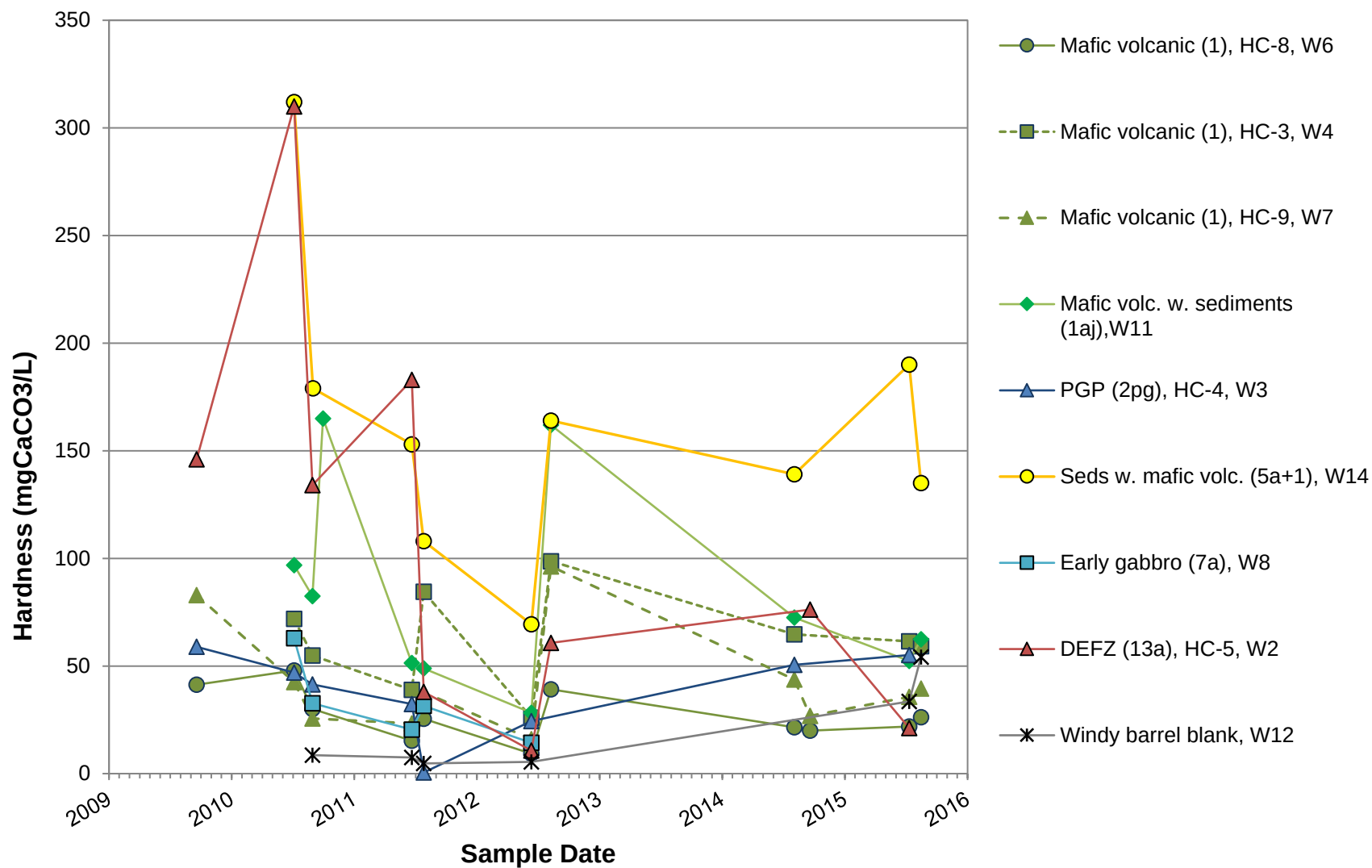
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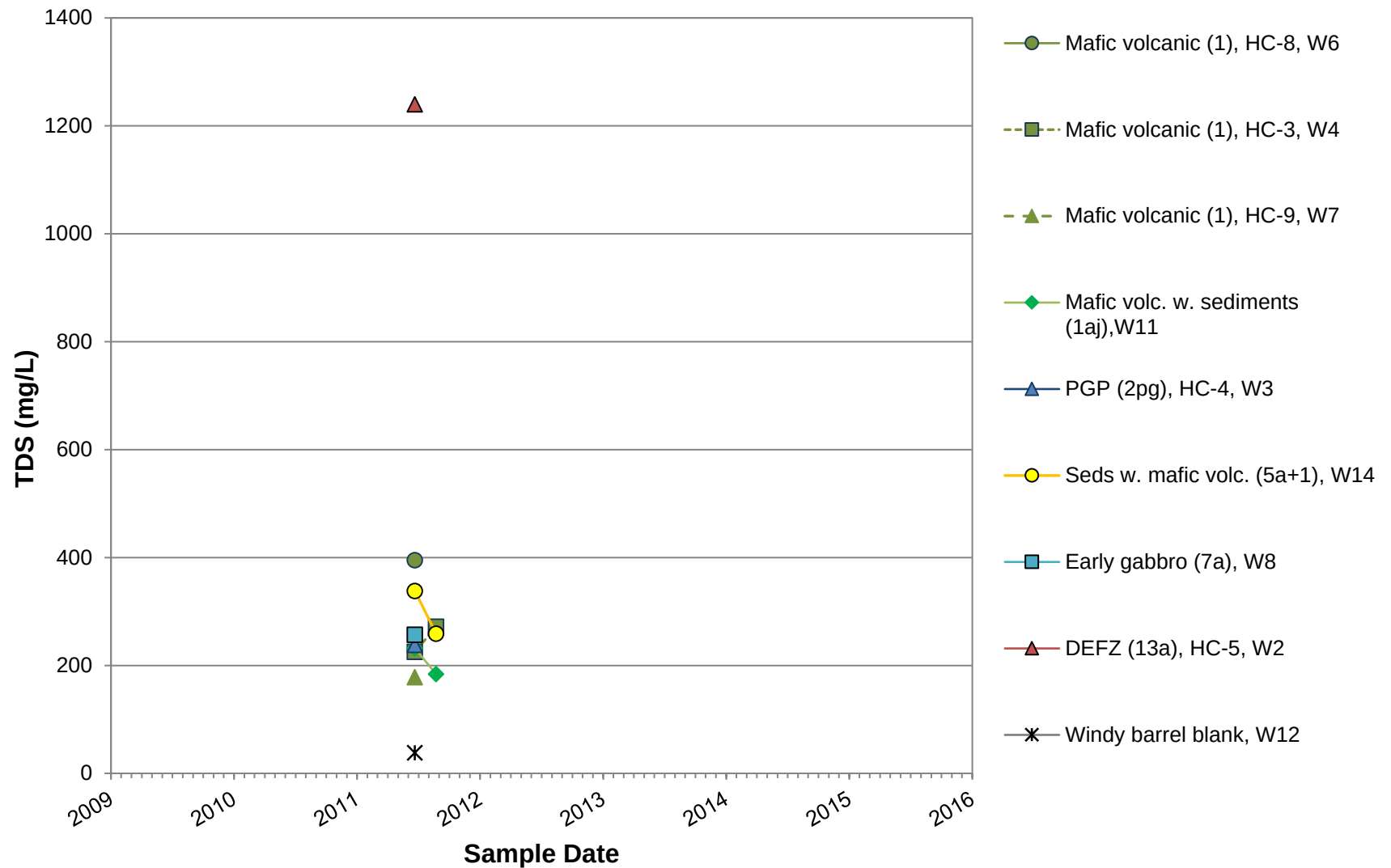
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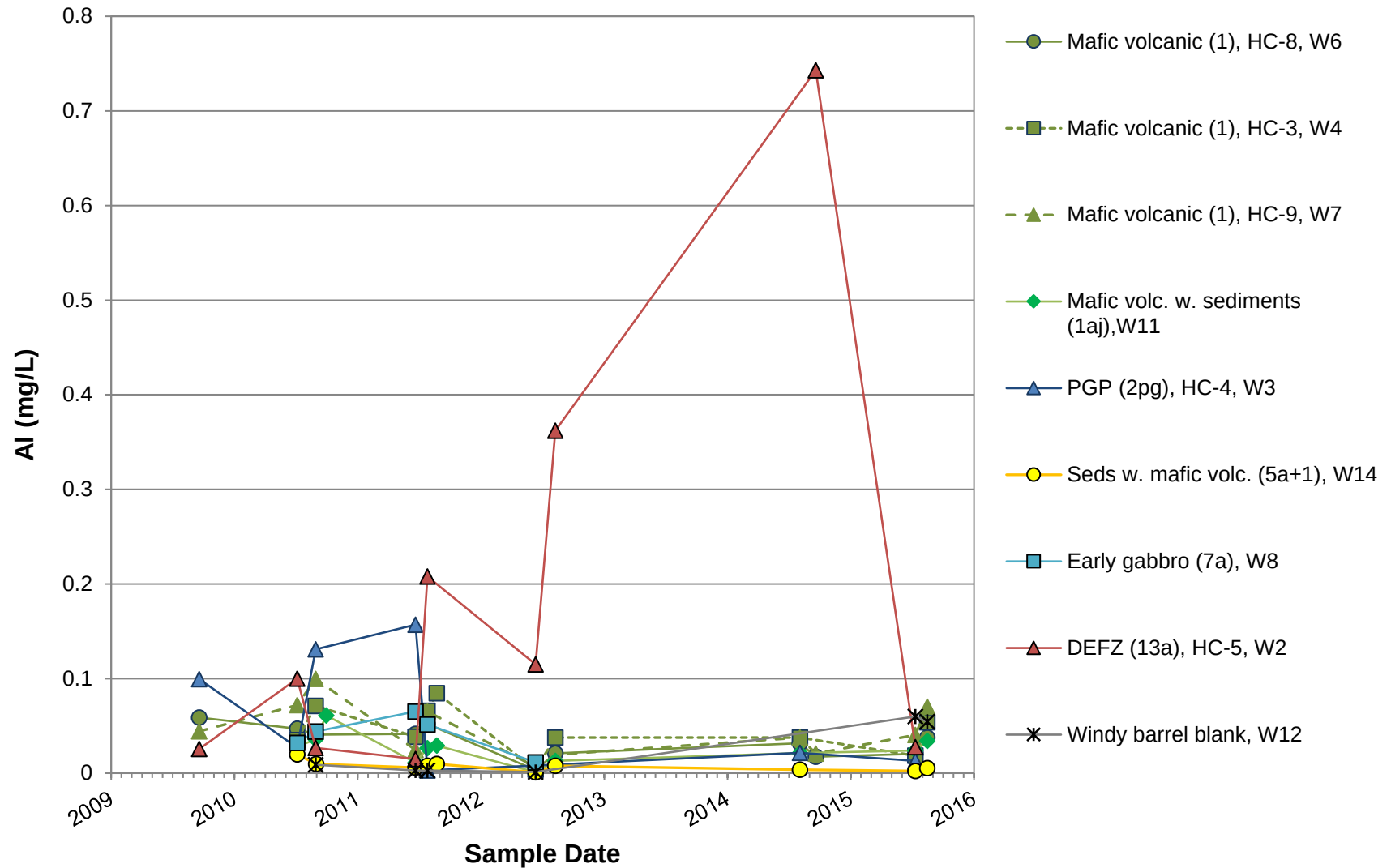
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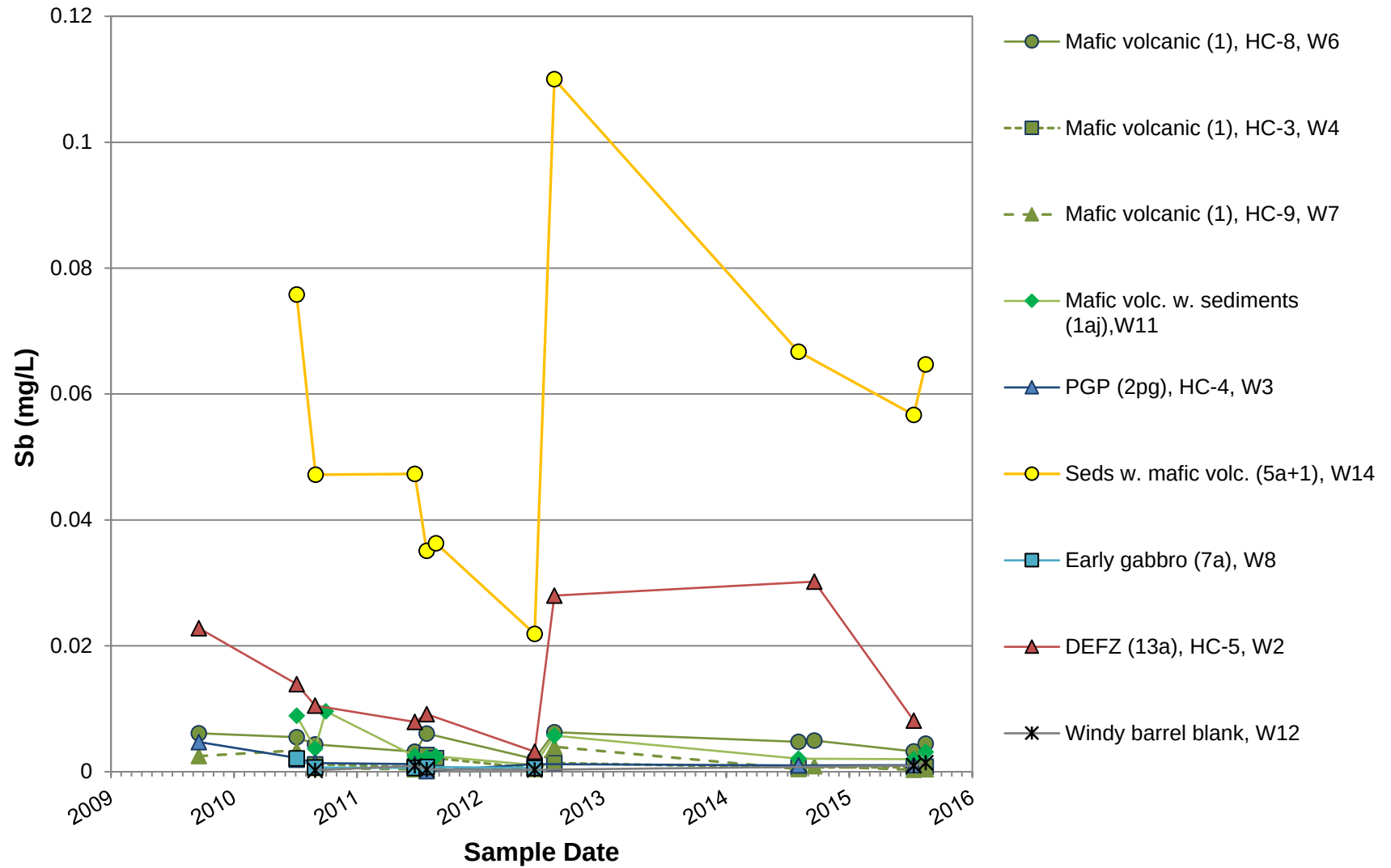
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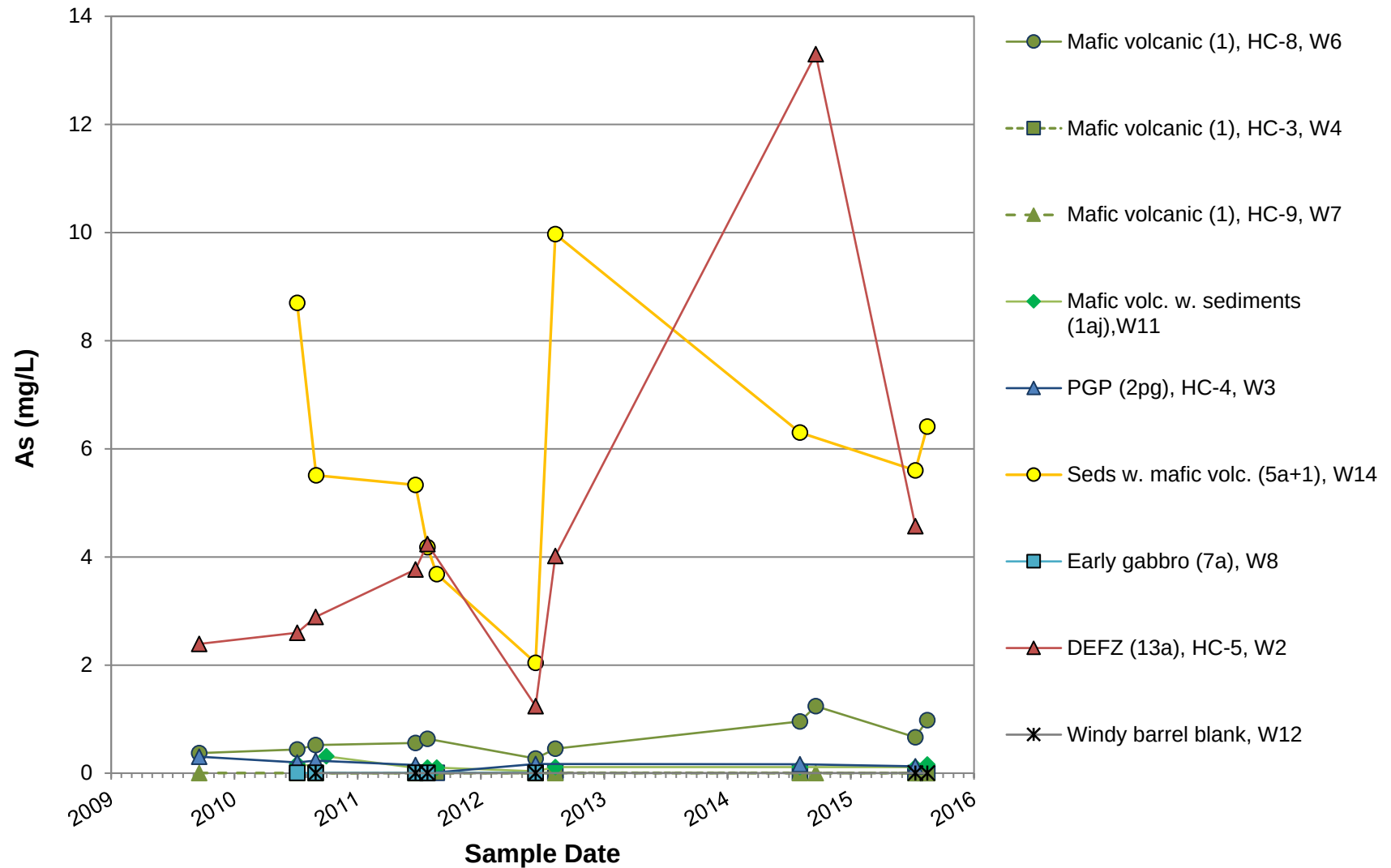
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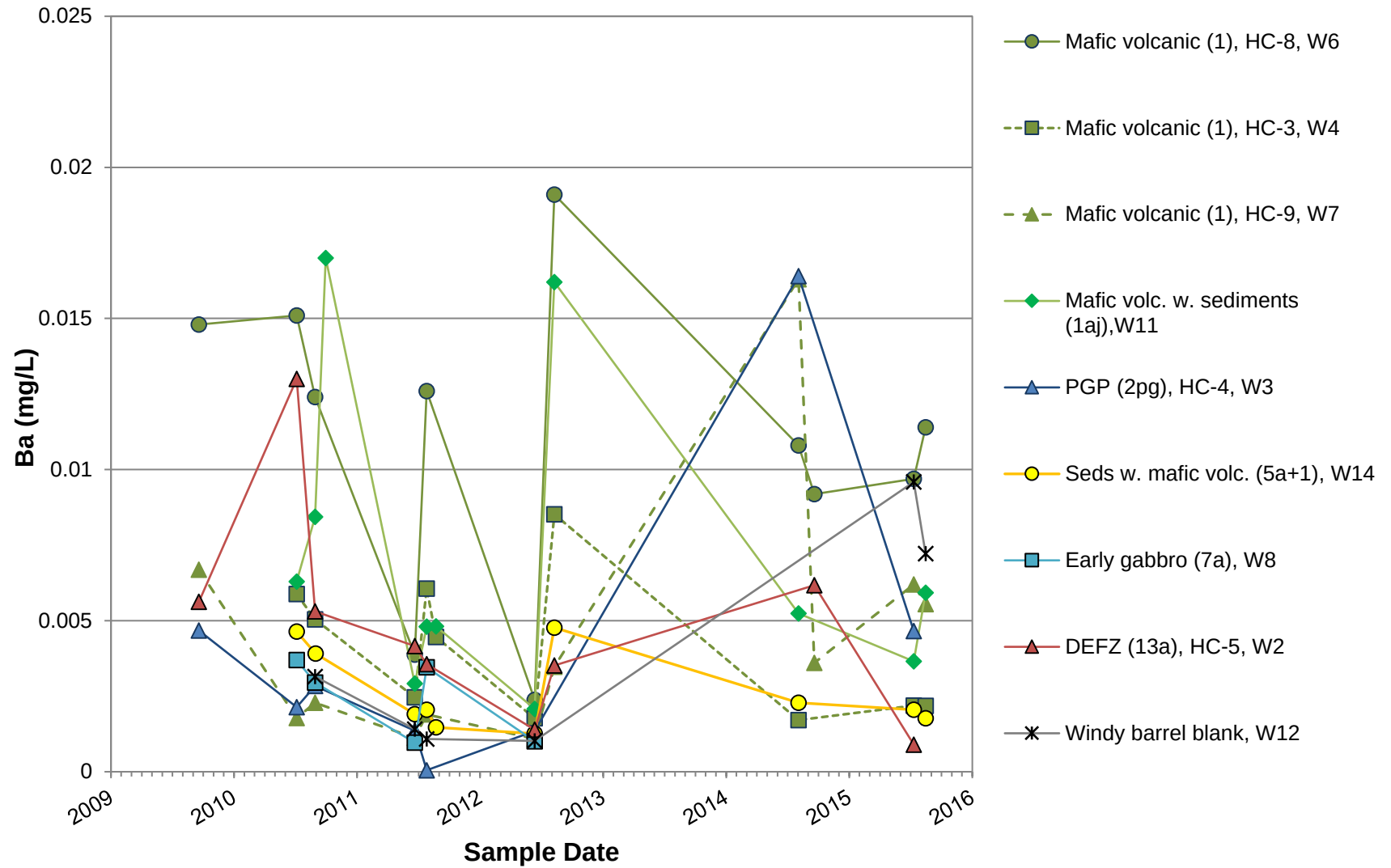
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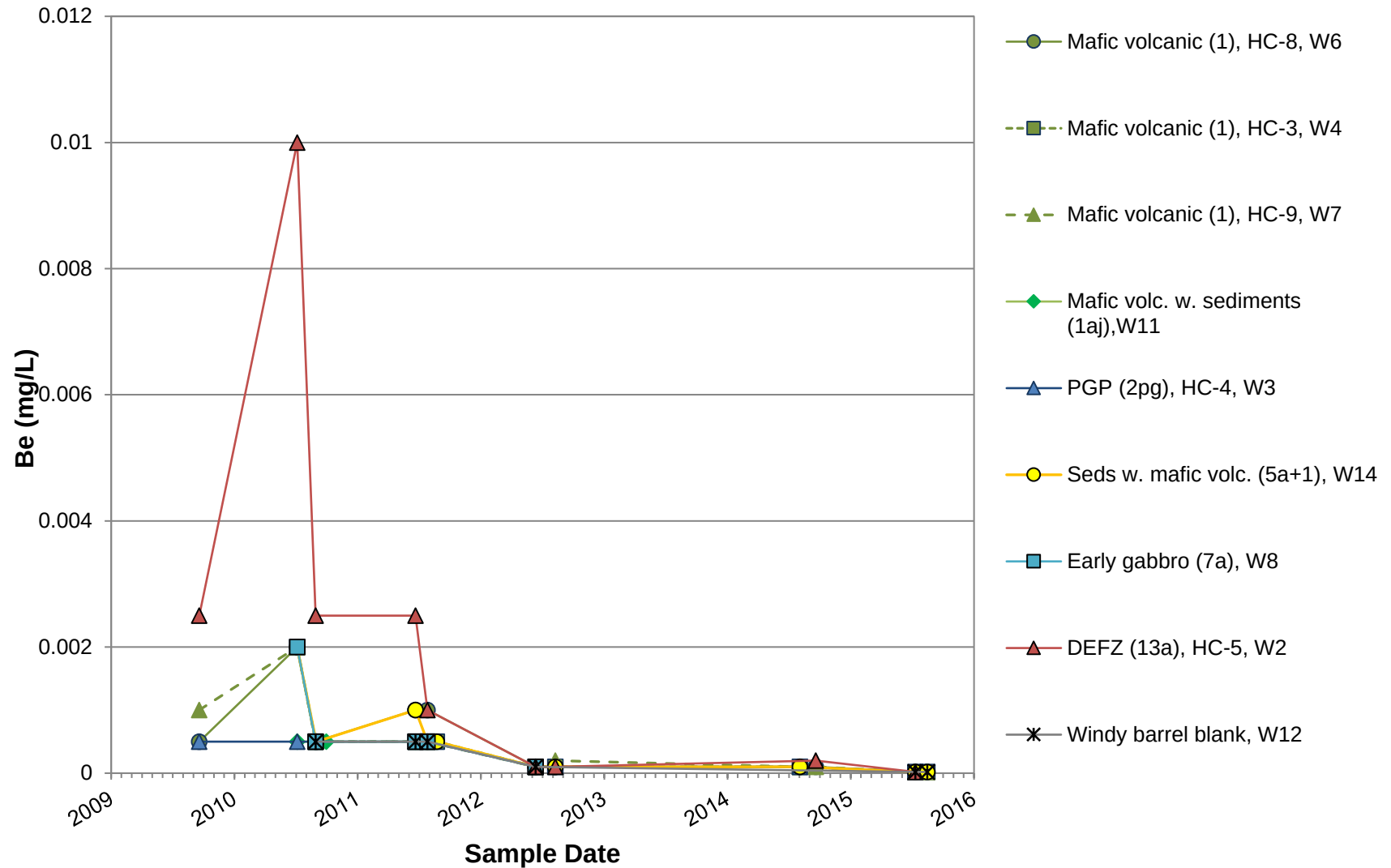
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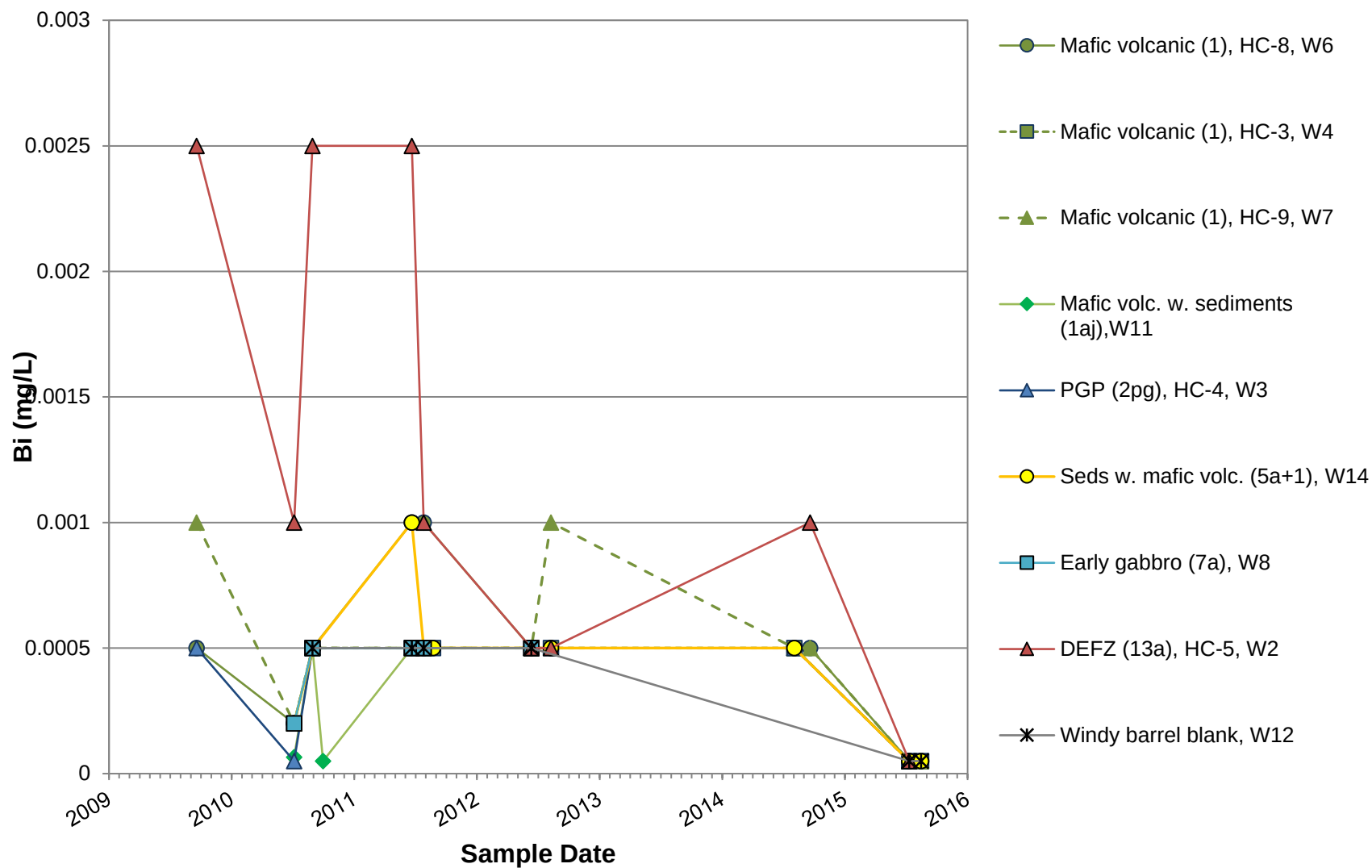
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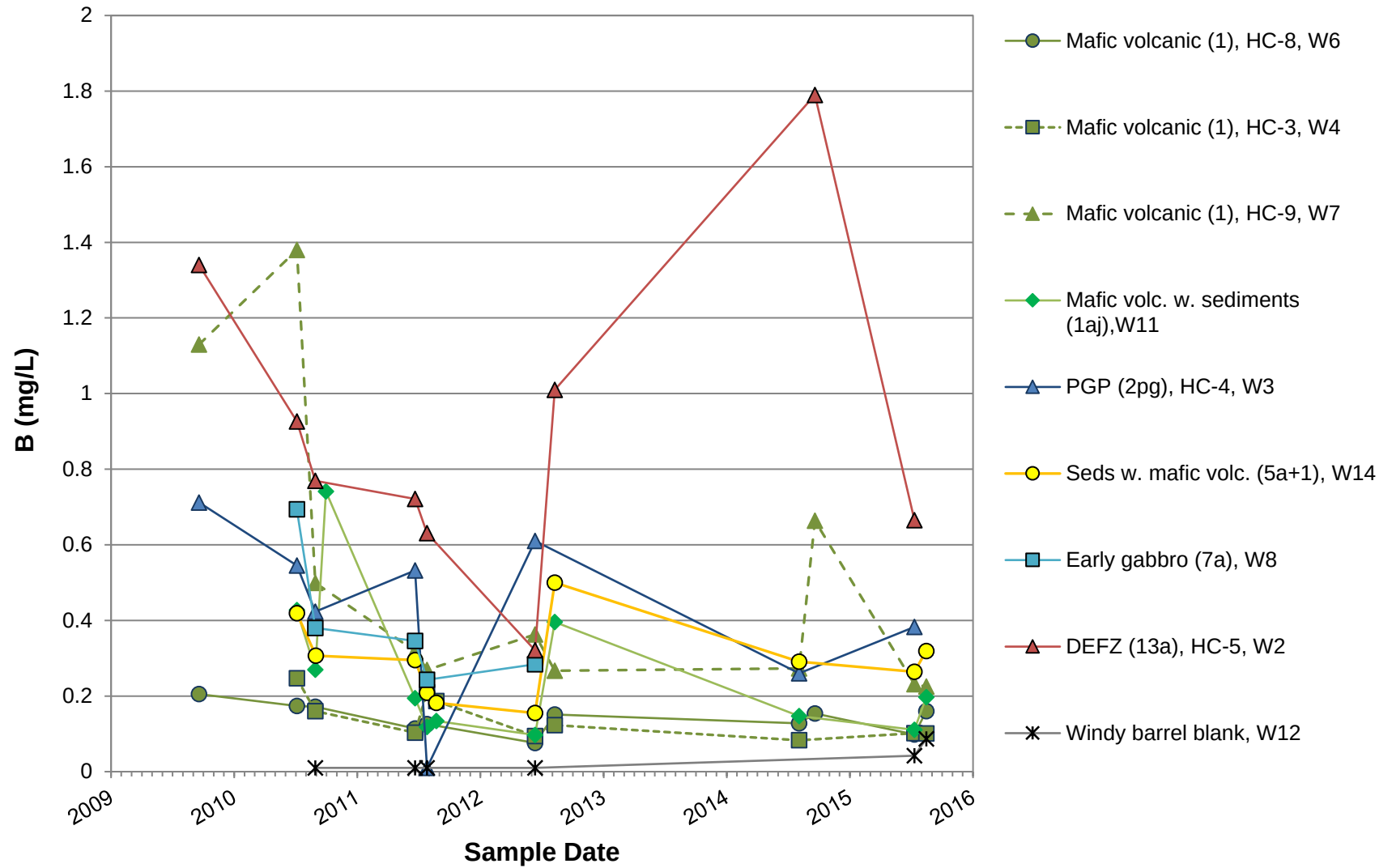
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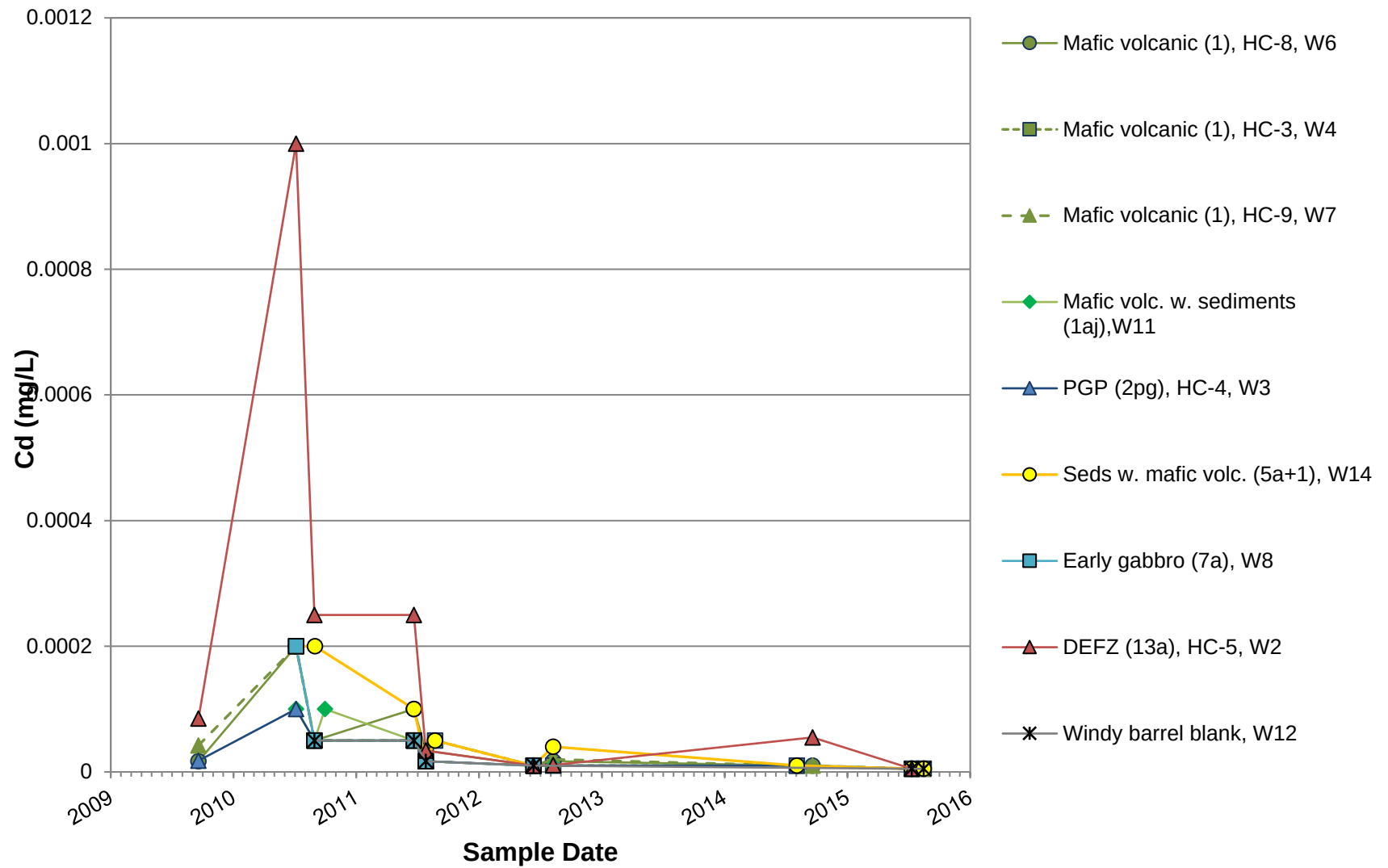
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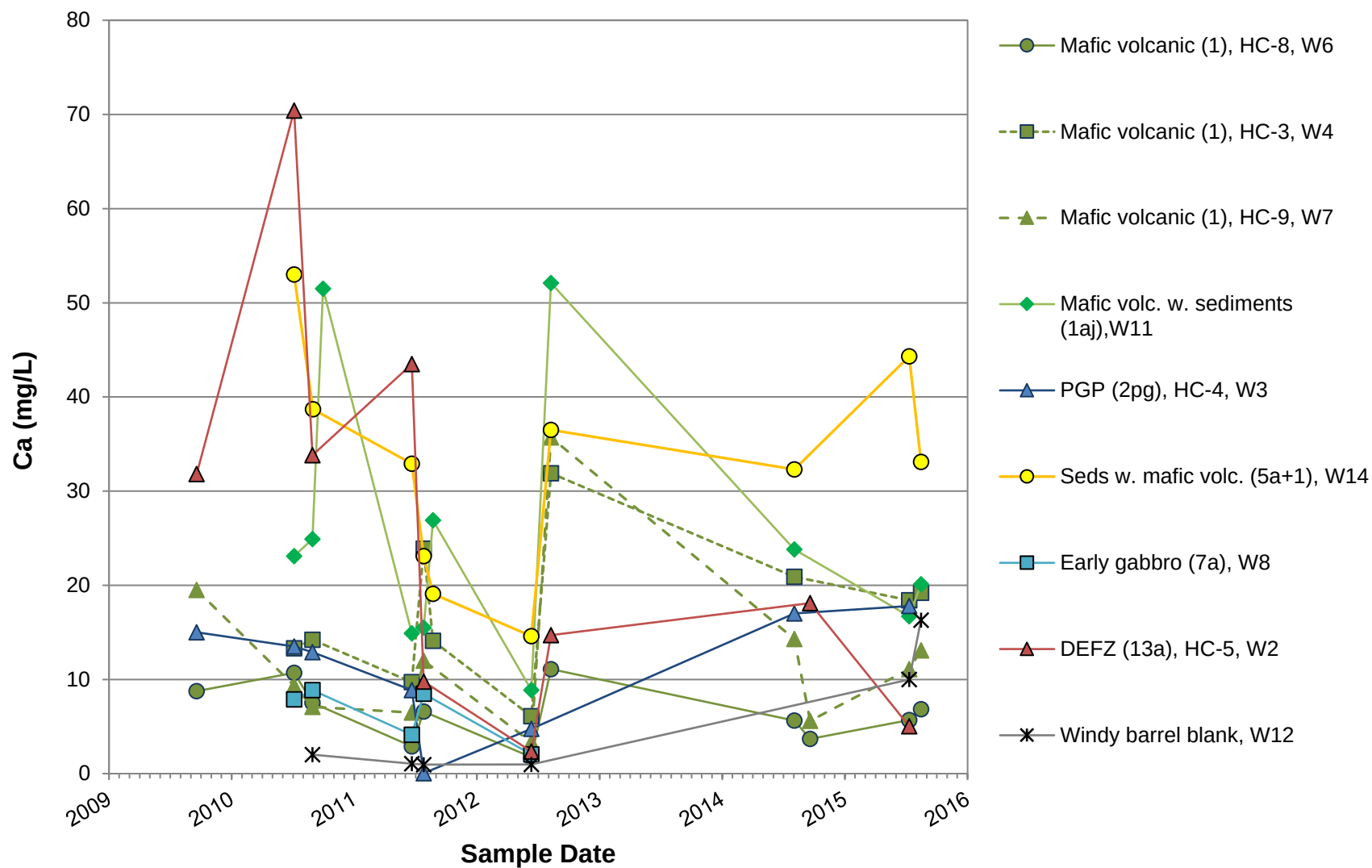
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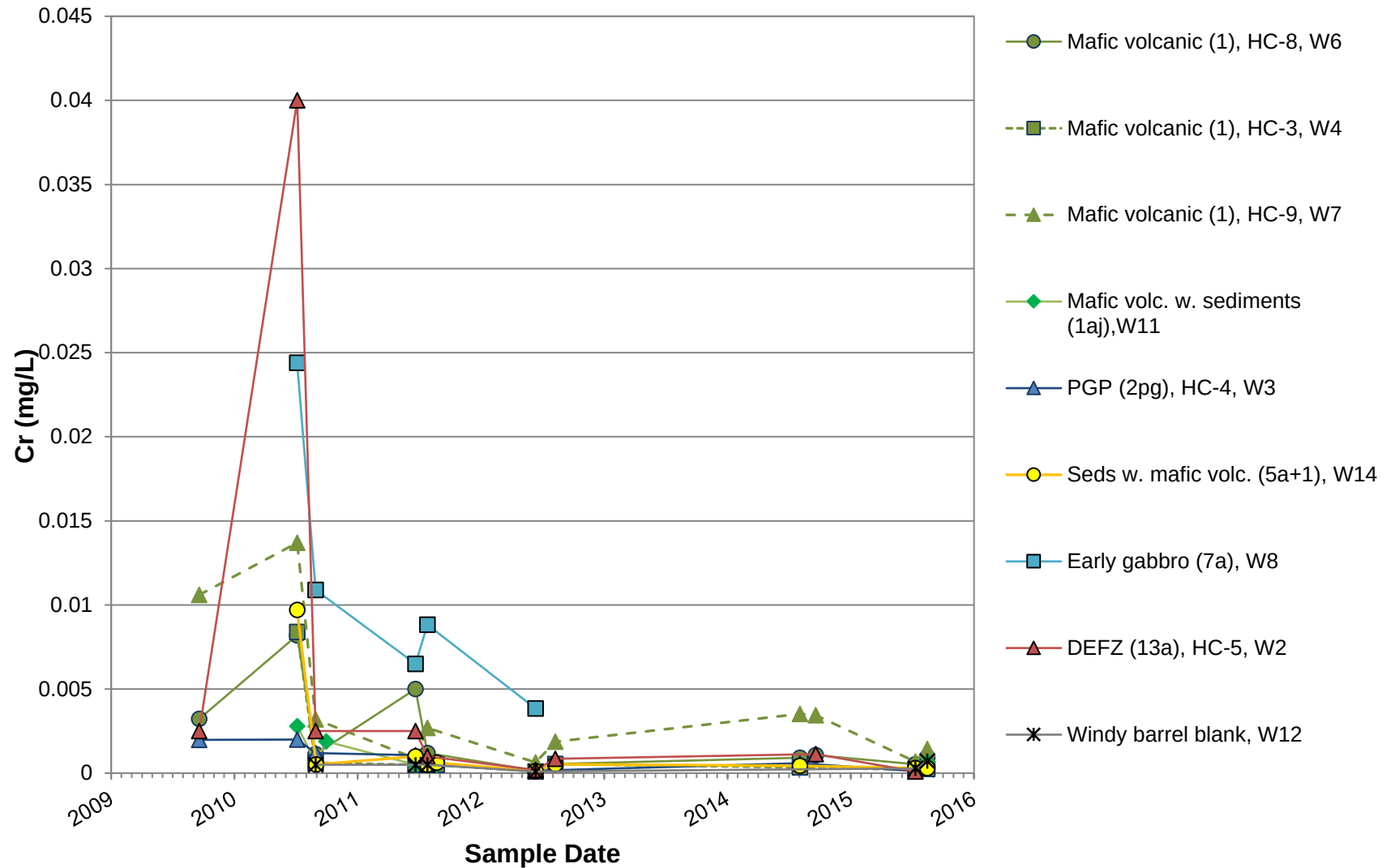
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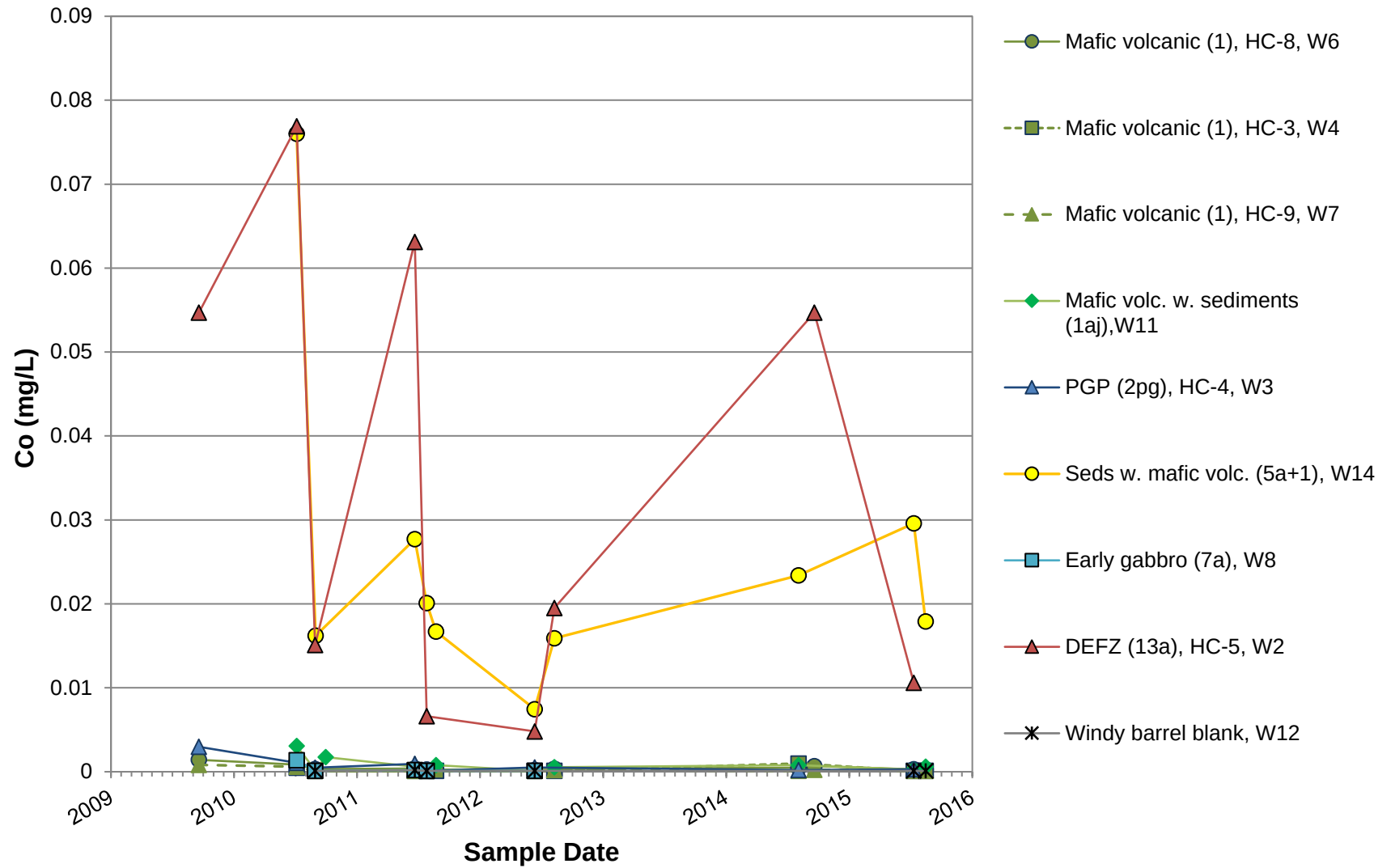
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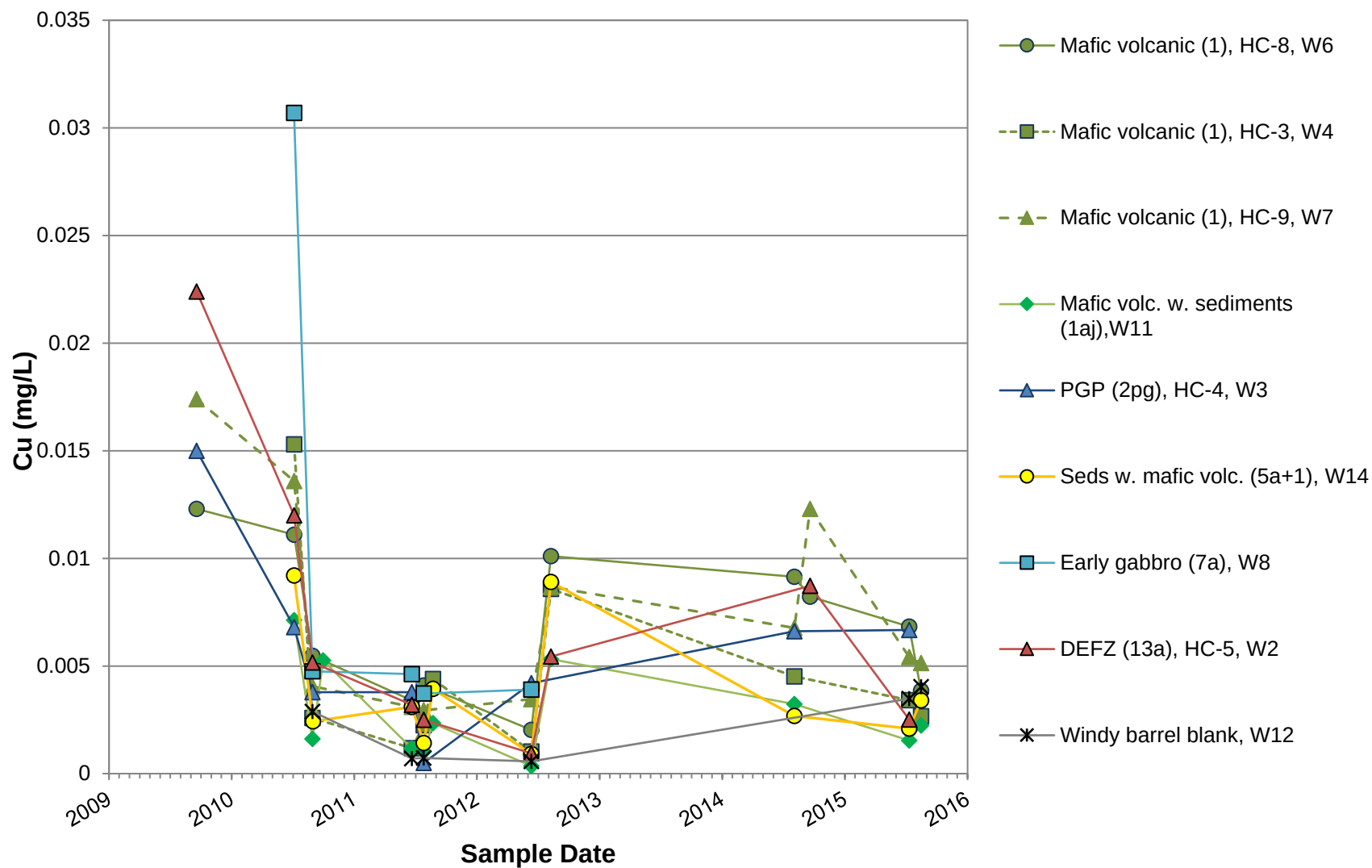
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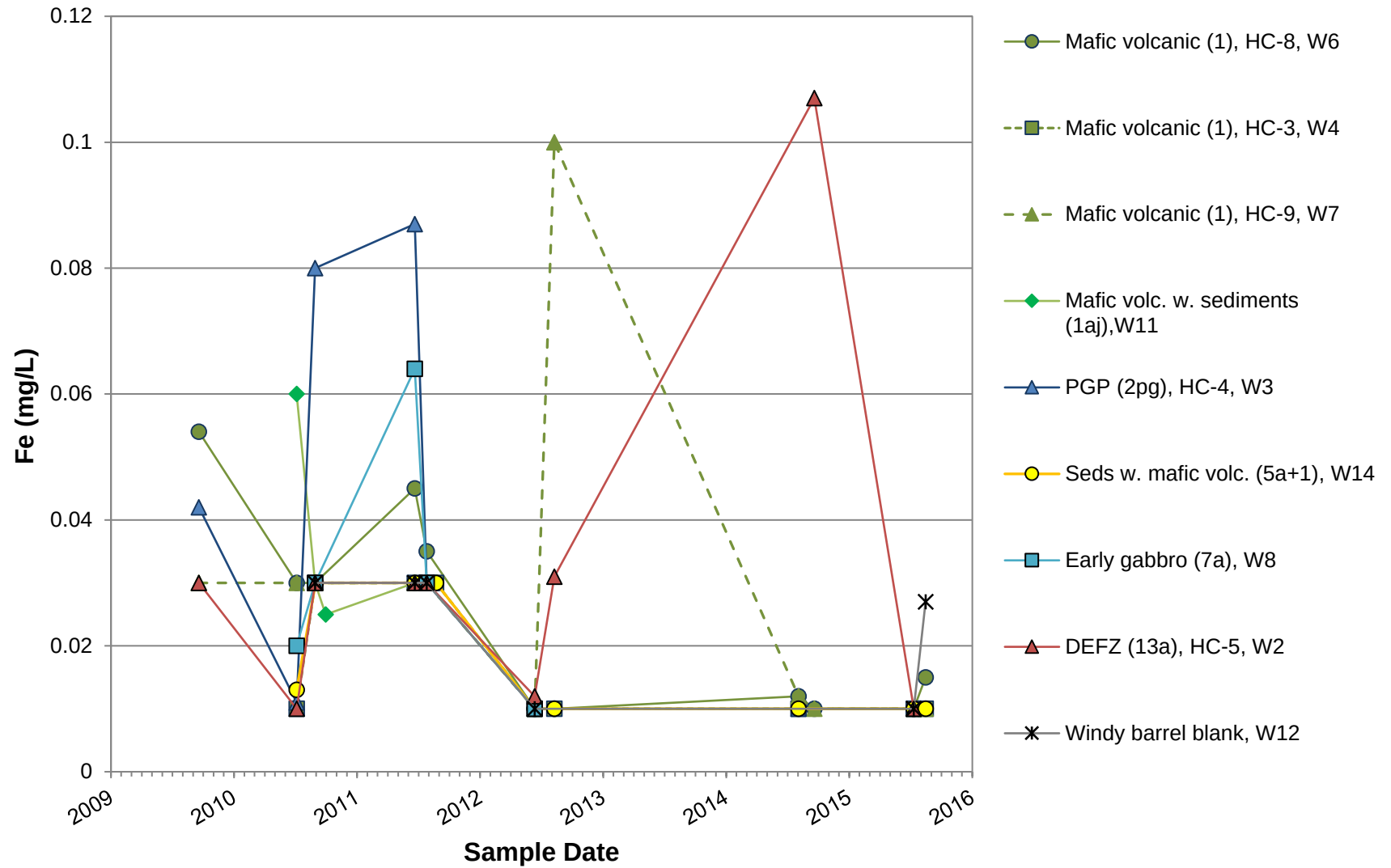
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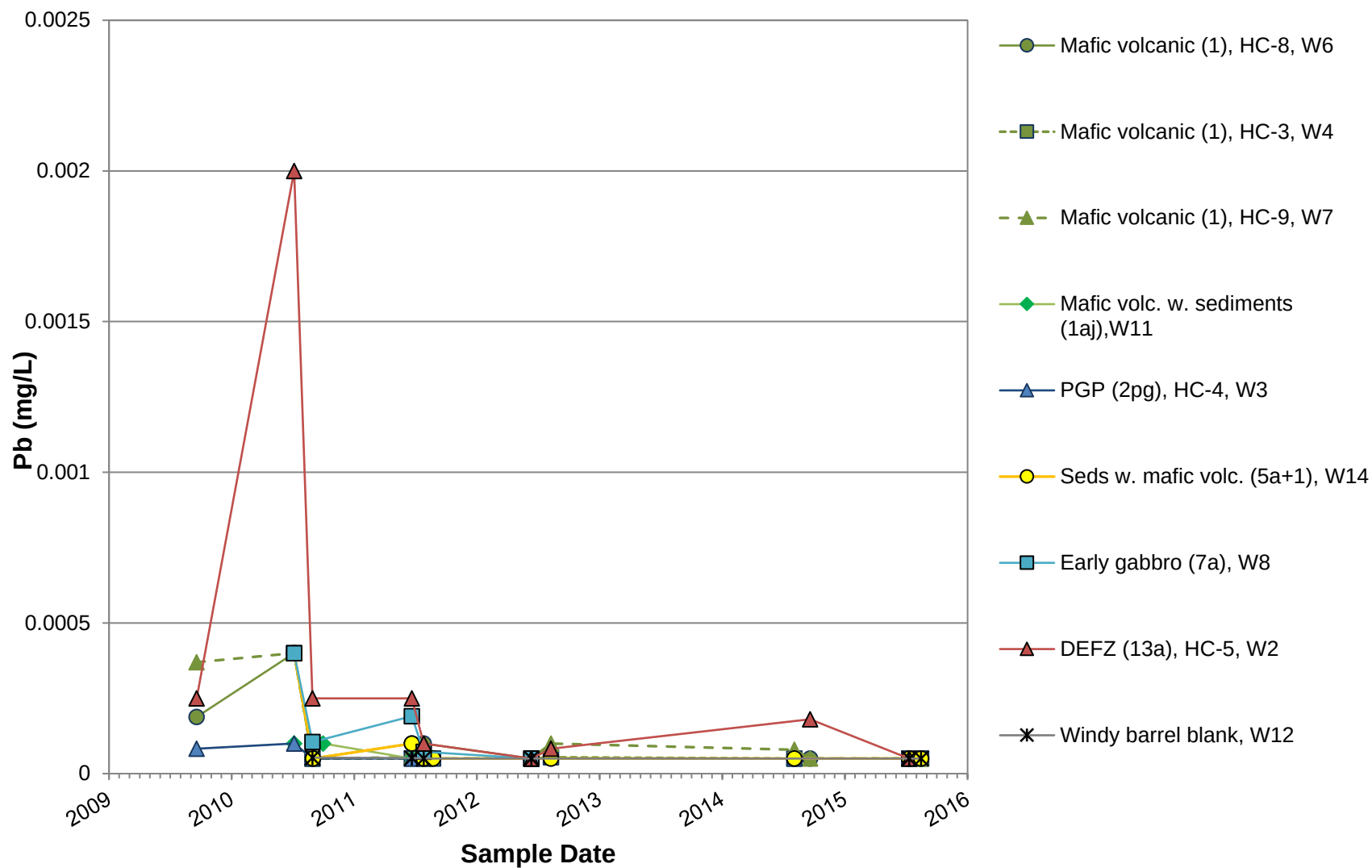
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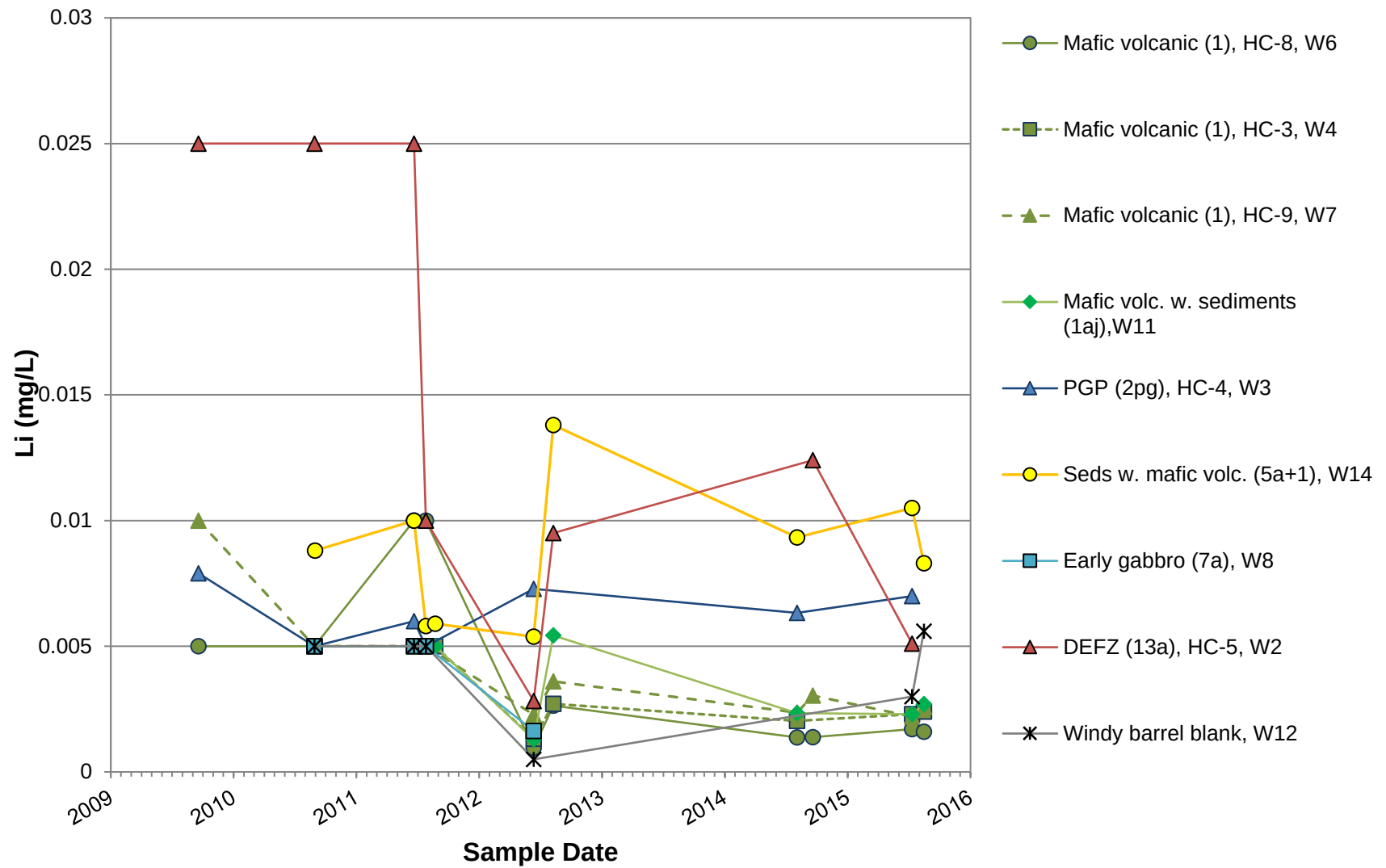
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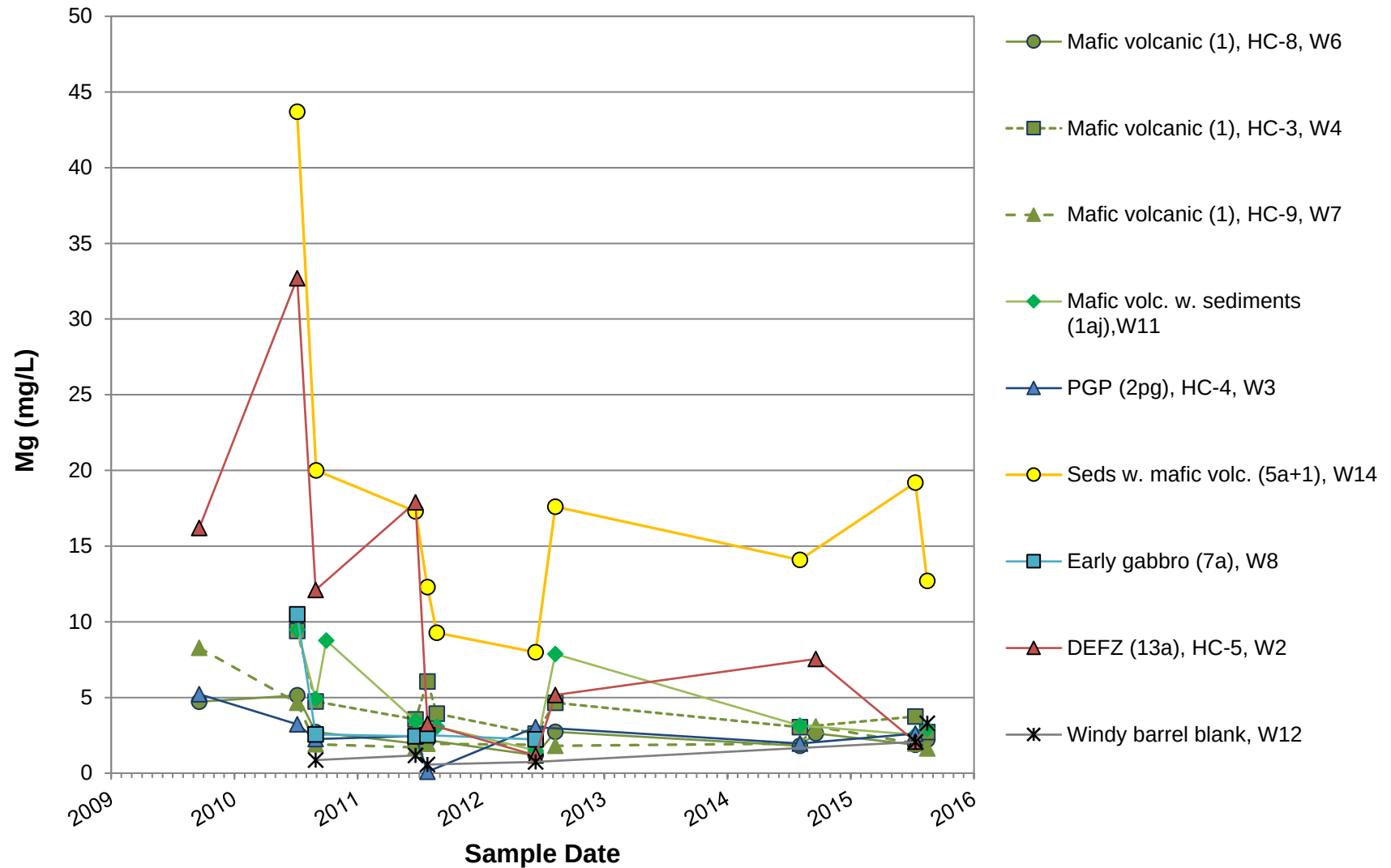
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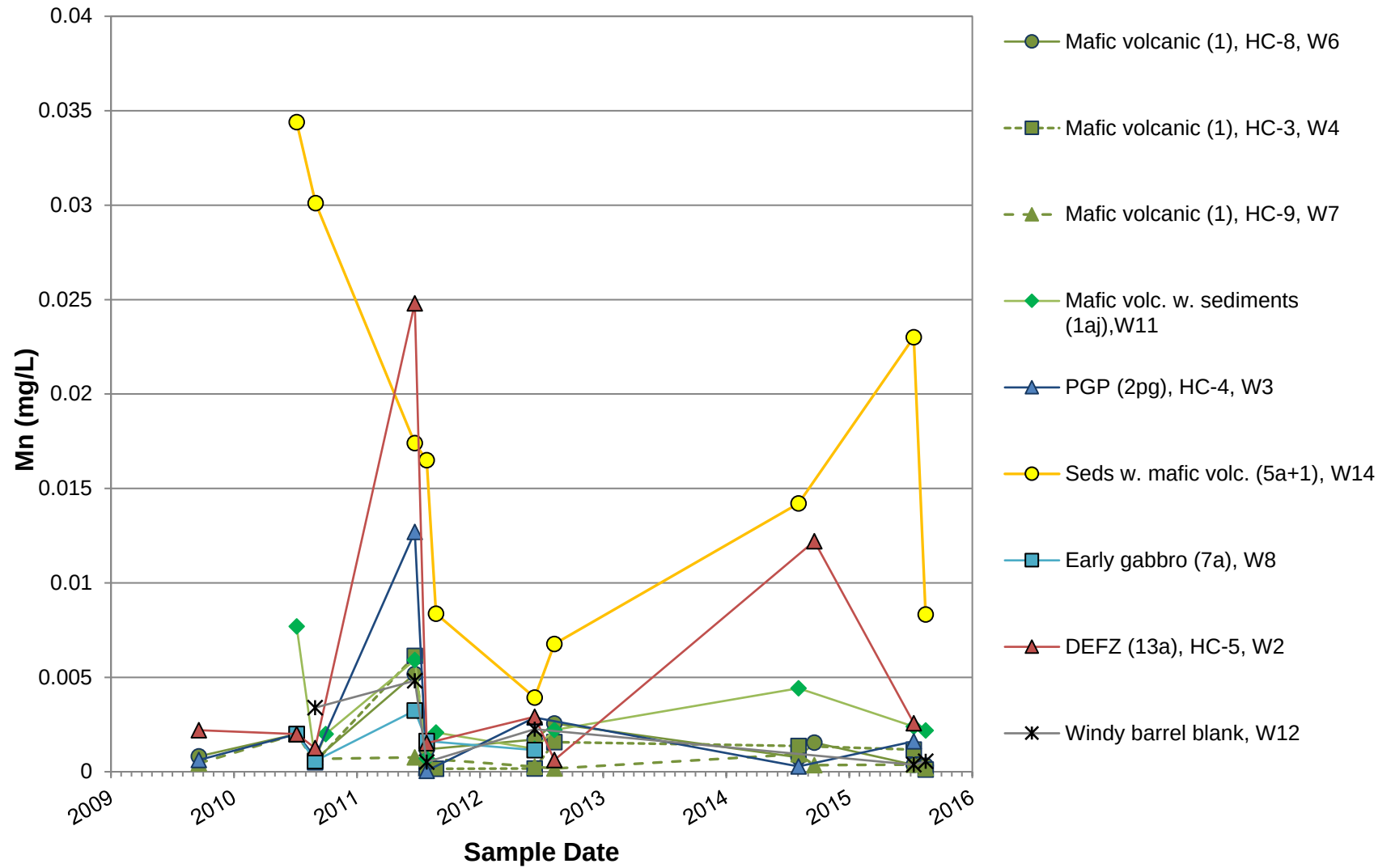
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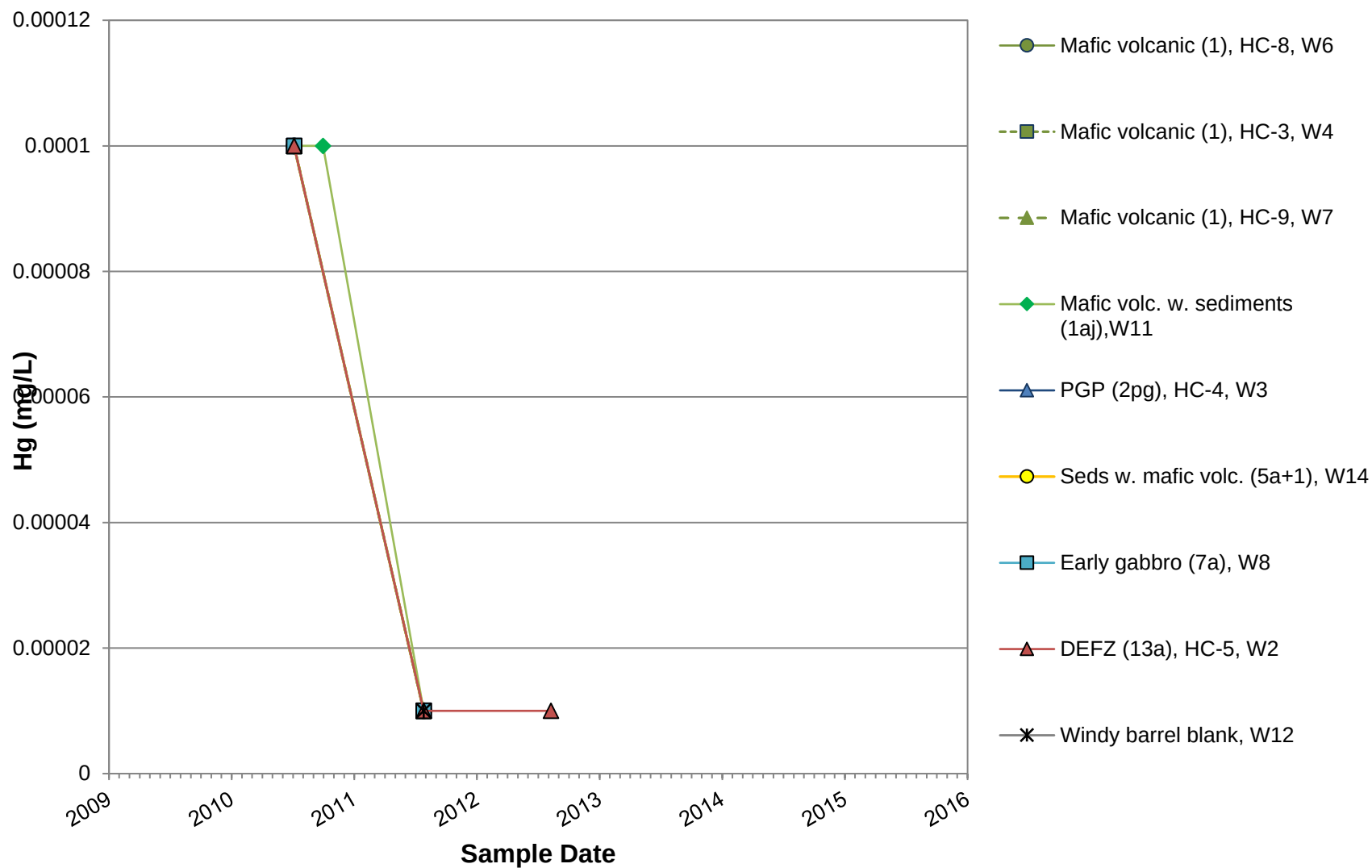
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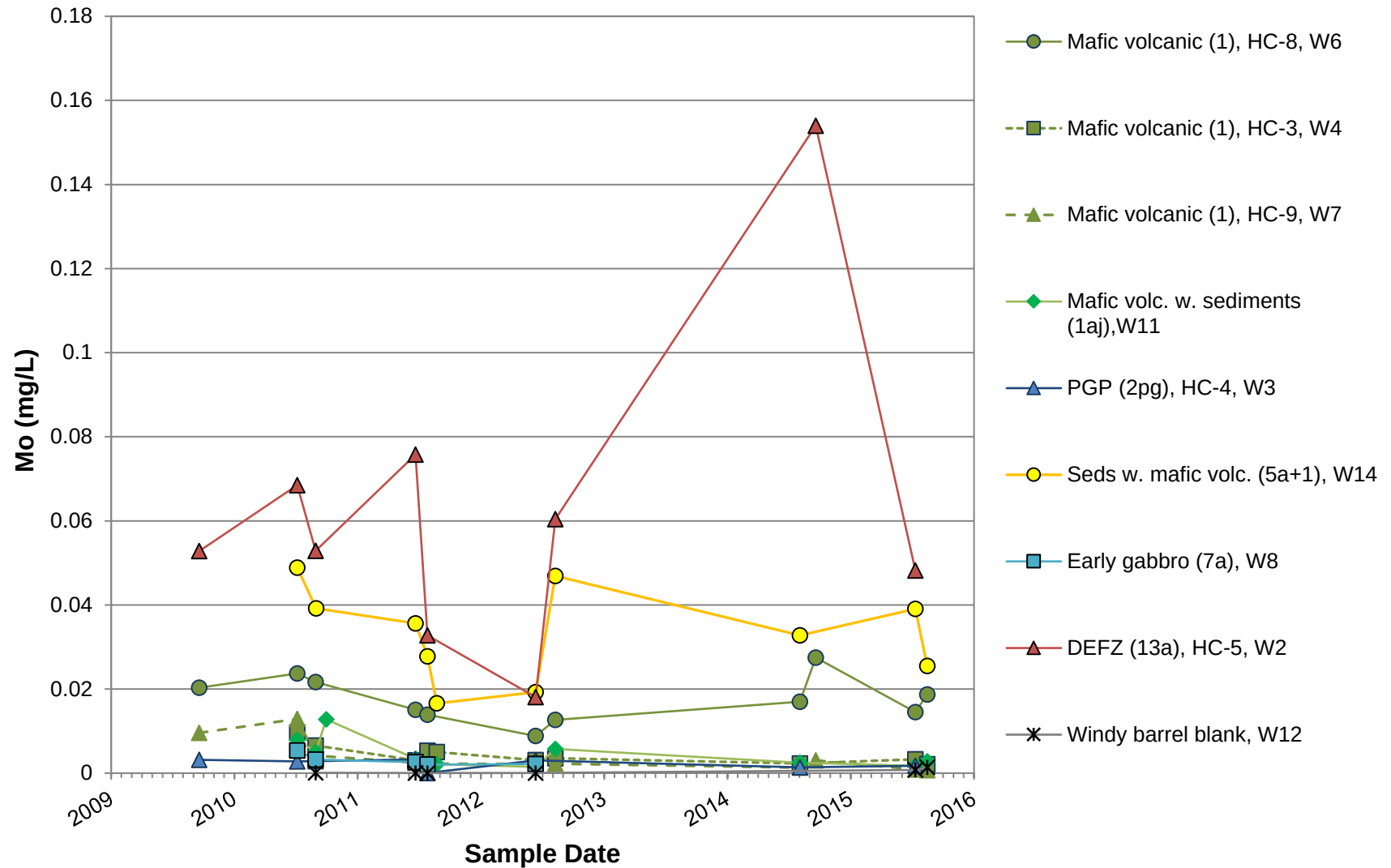
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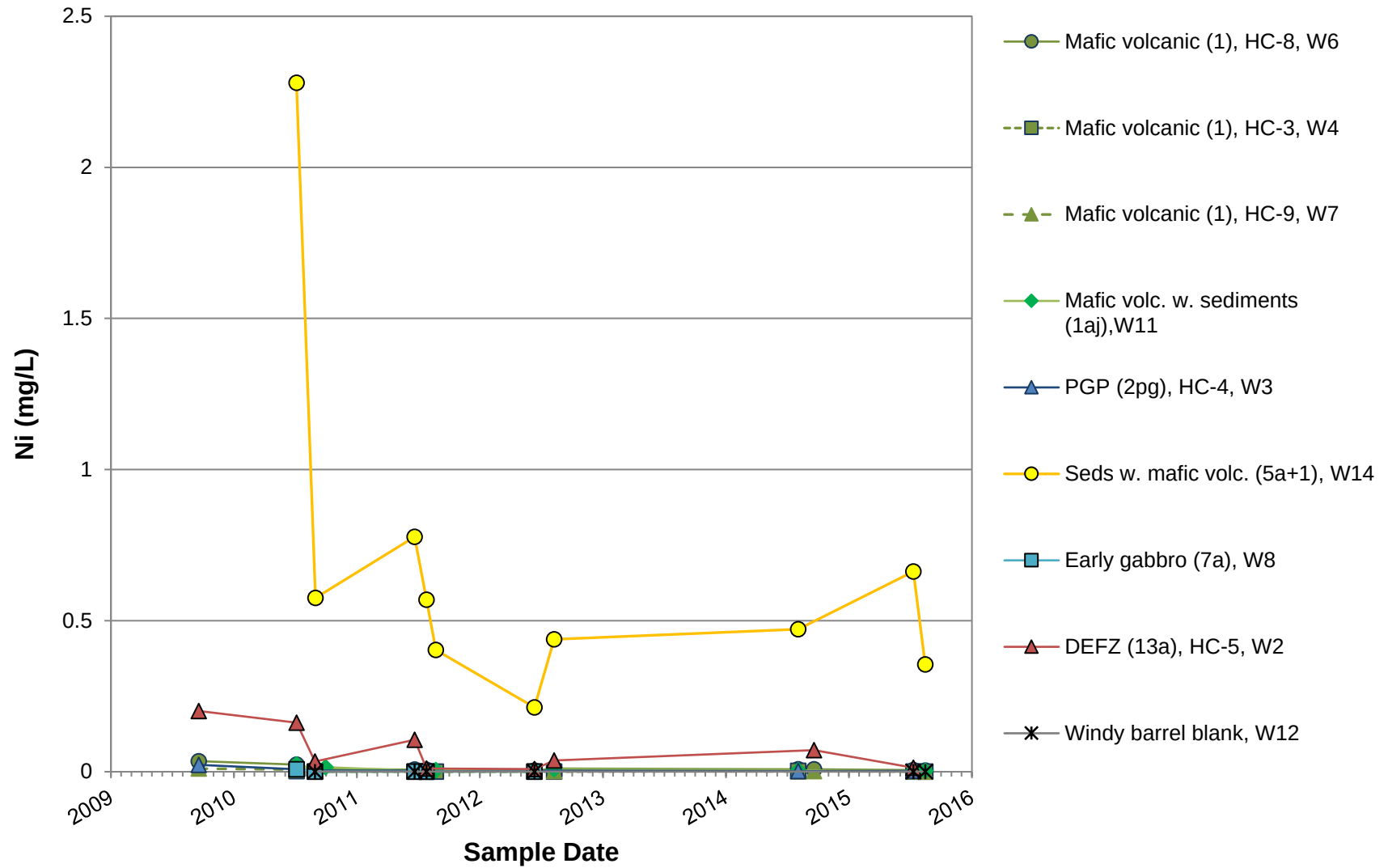
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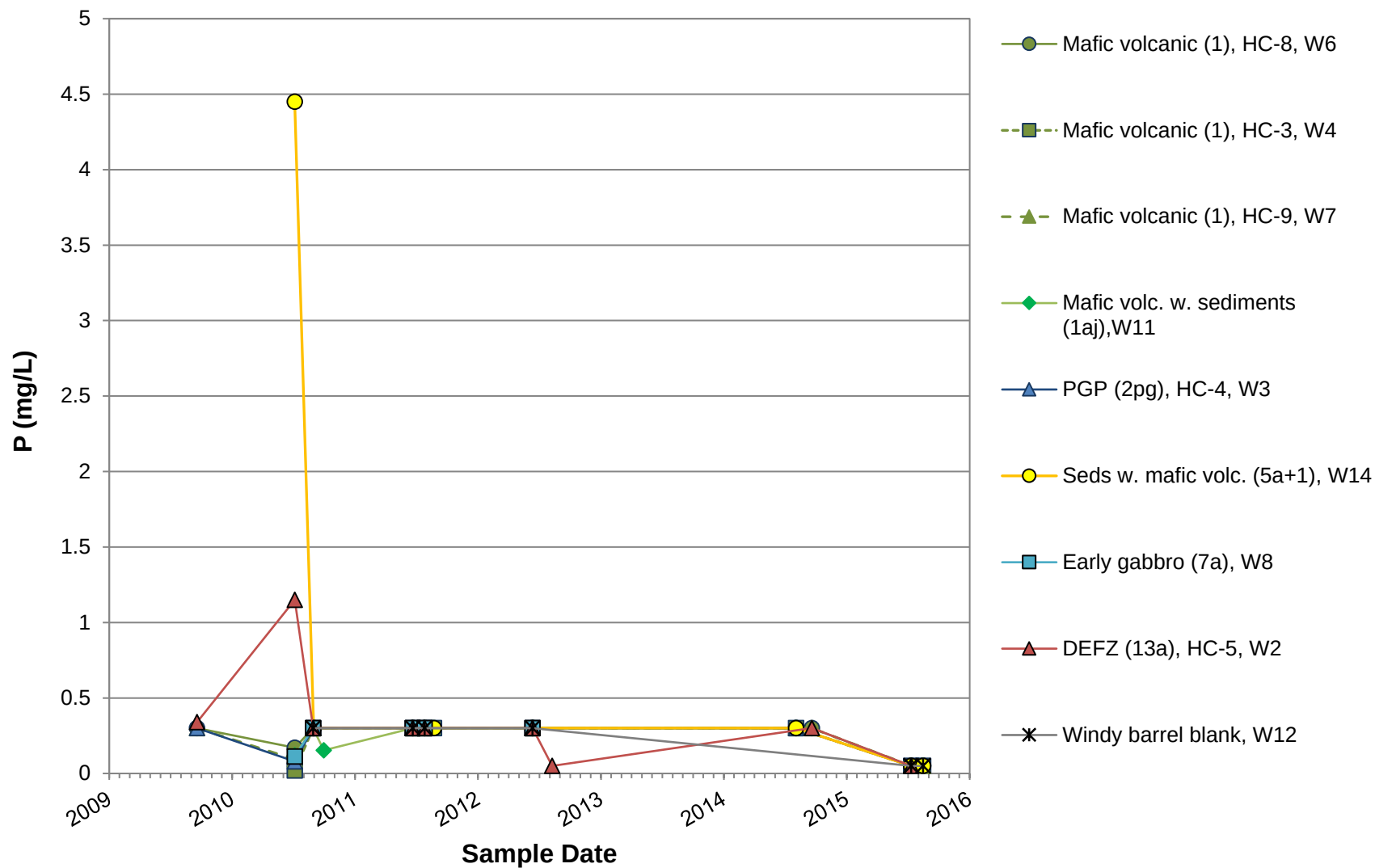
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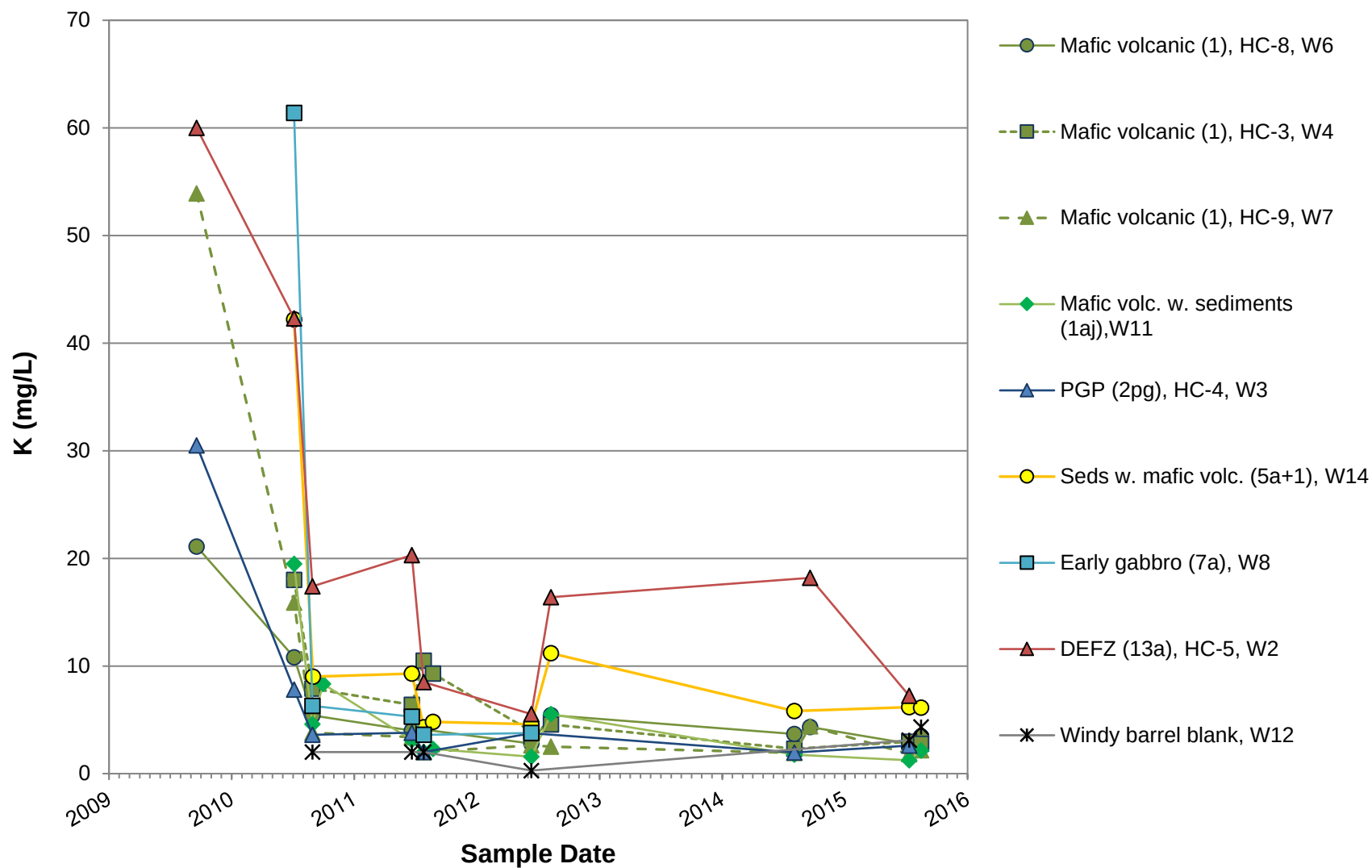
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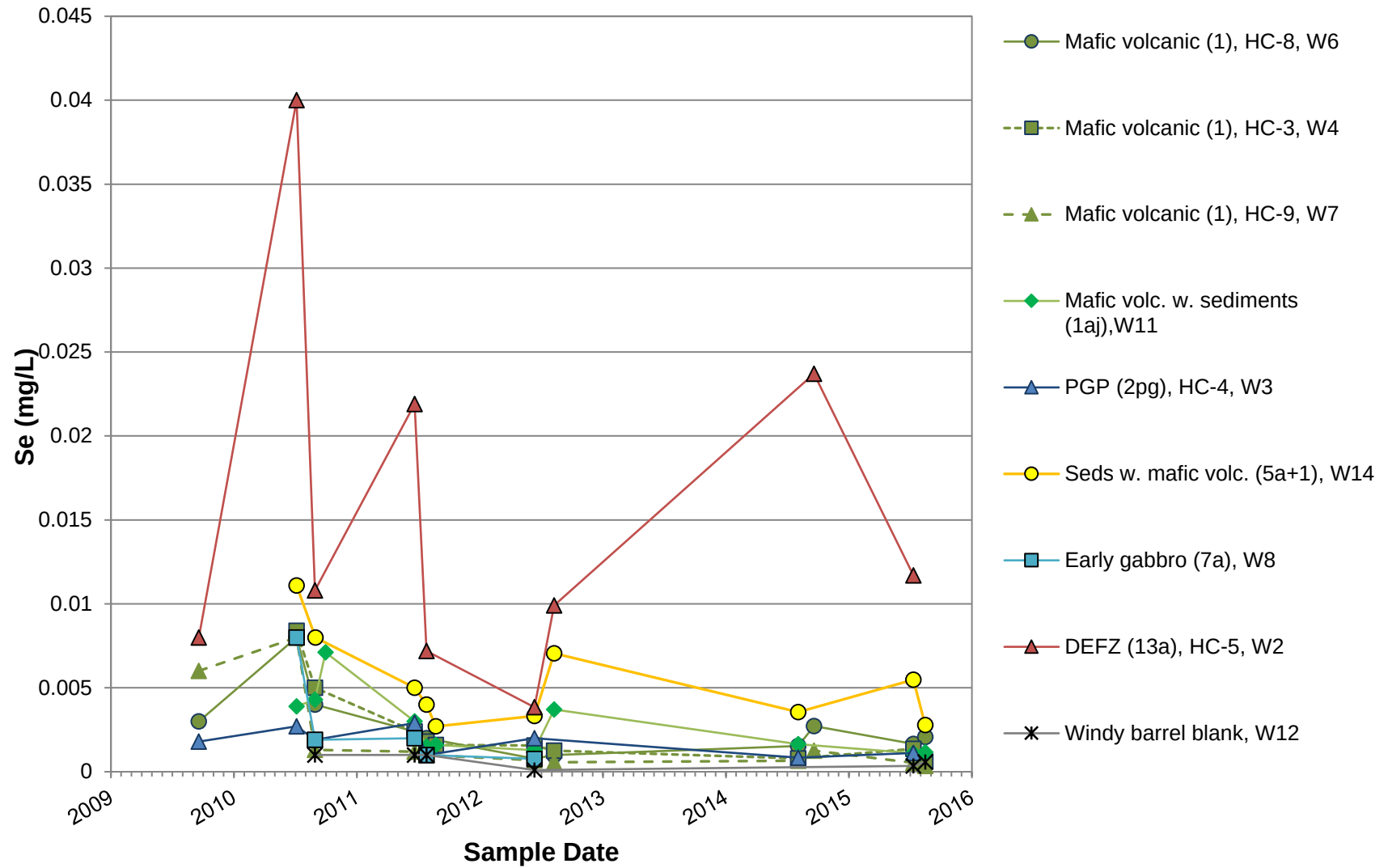
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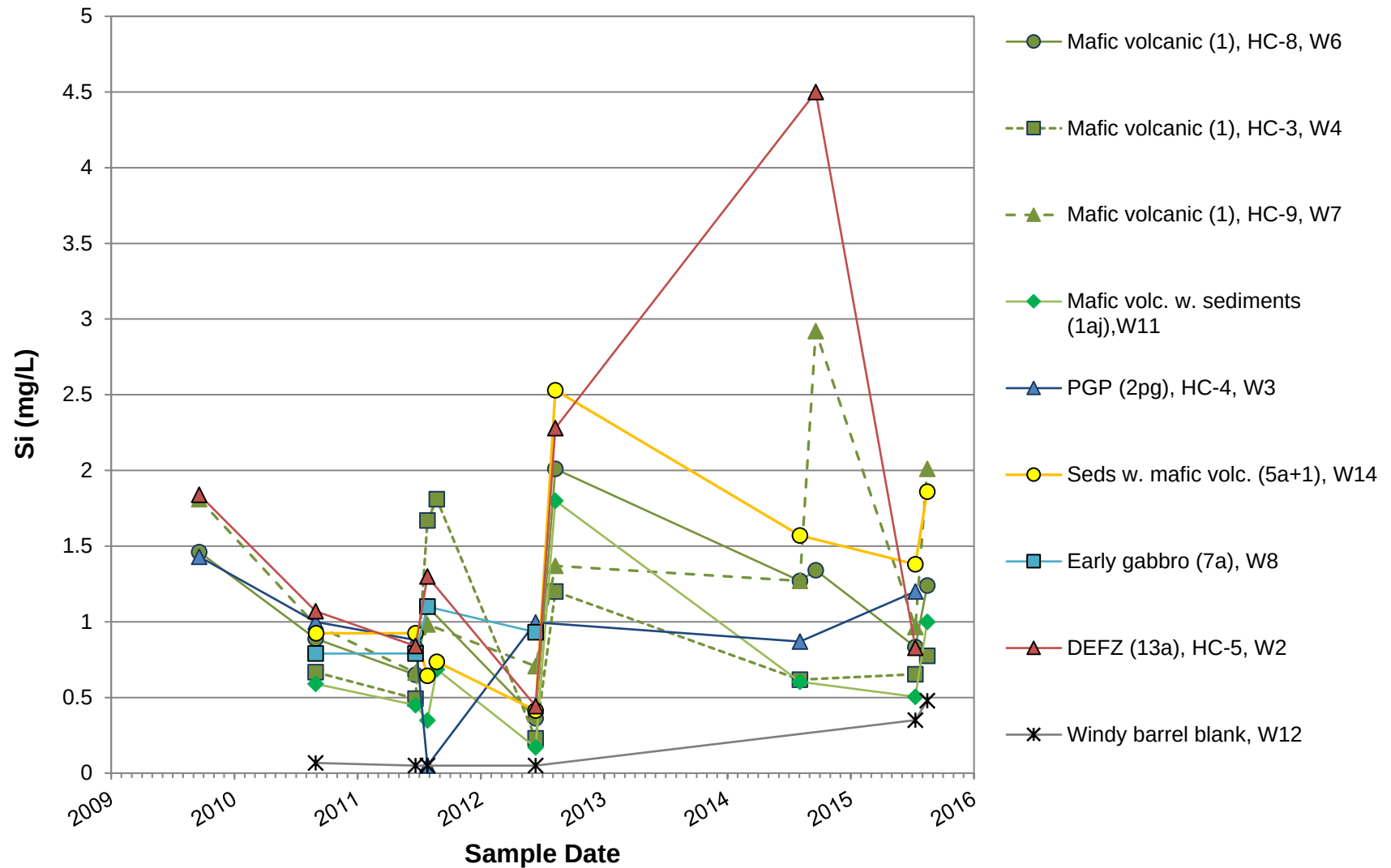
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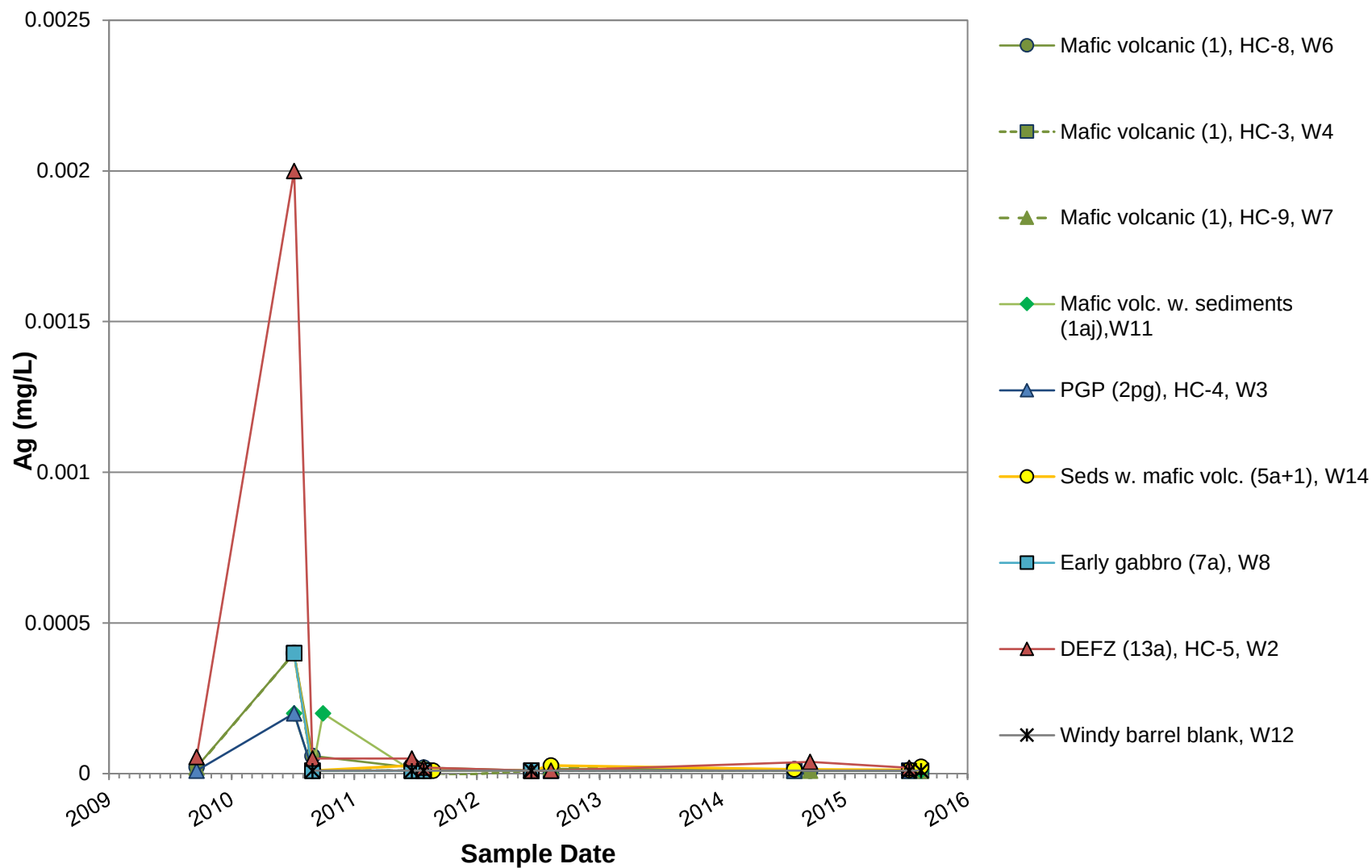
Hope Bay Barrel Tests



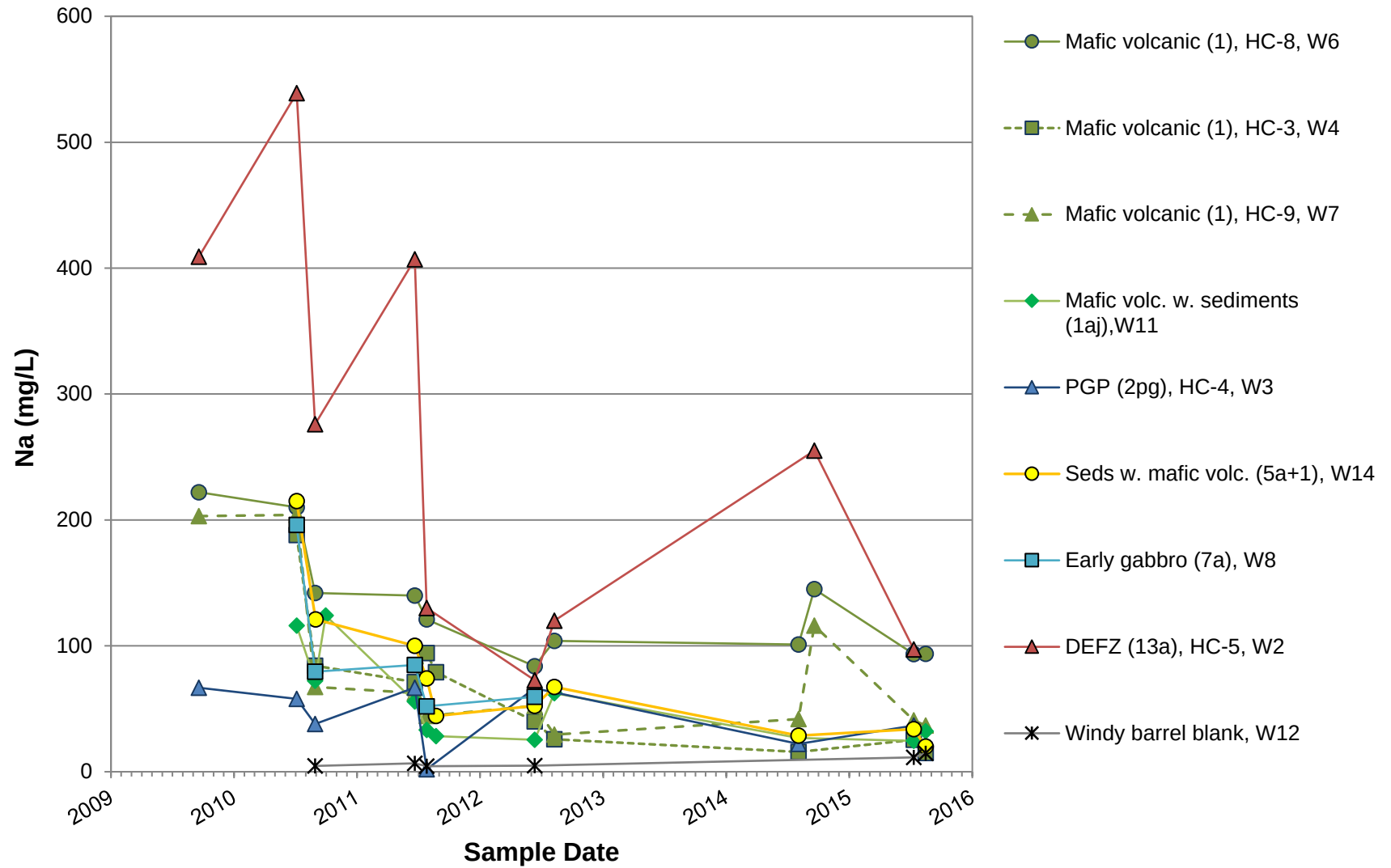
Hope Bay Barrel Tests



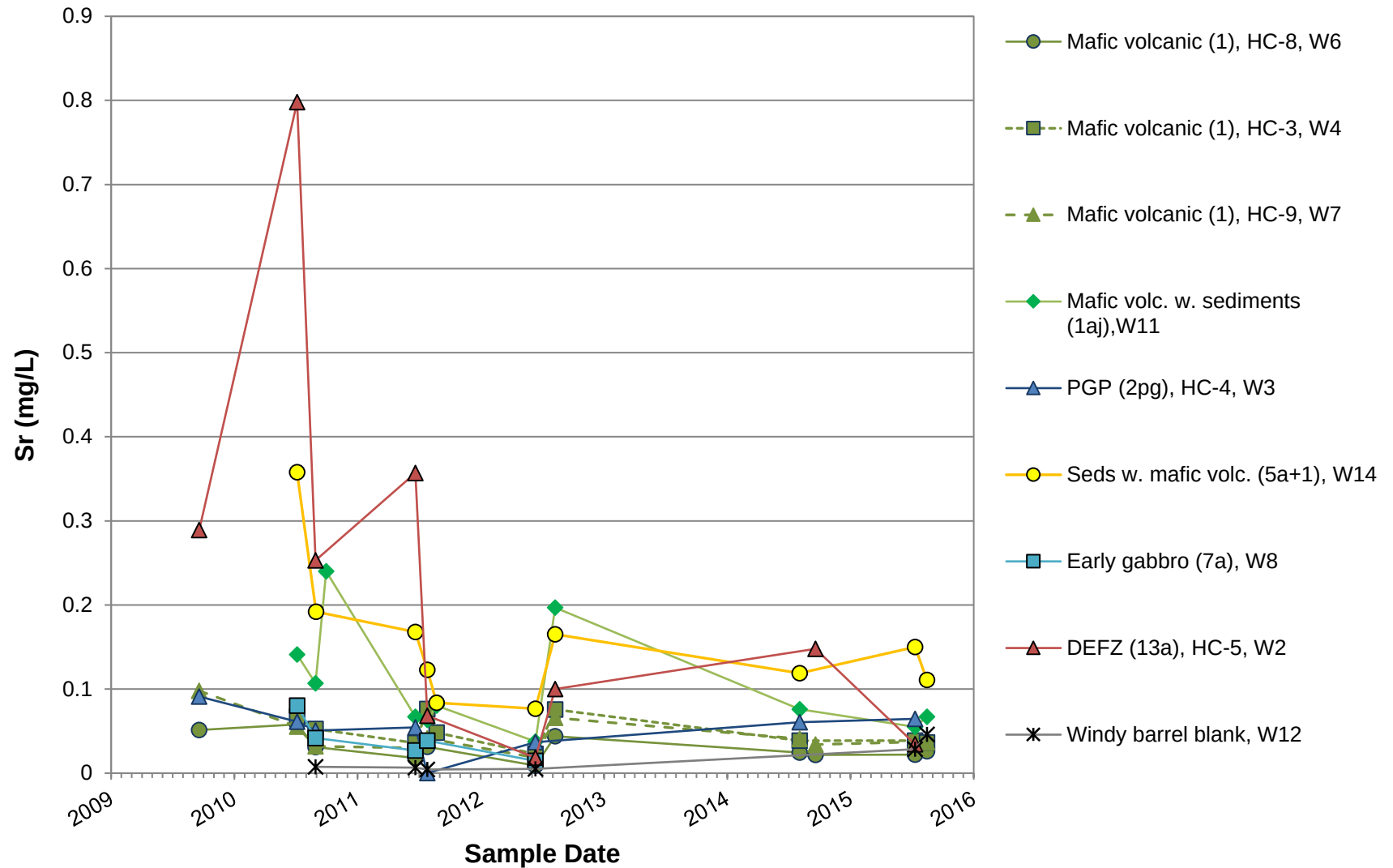
Hope Bay Barrel Tests



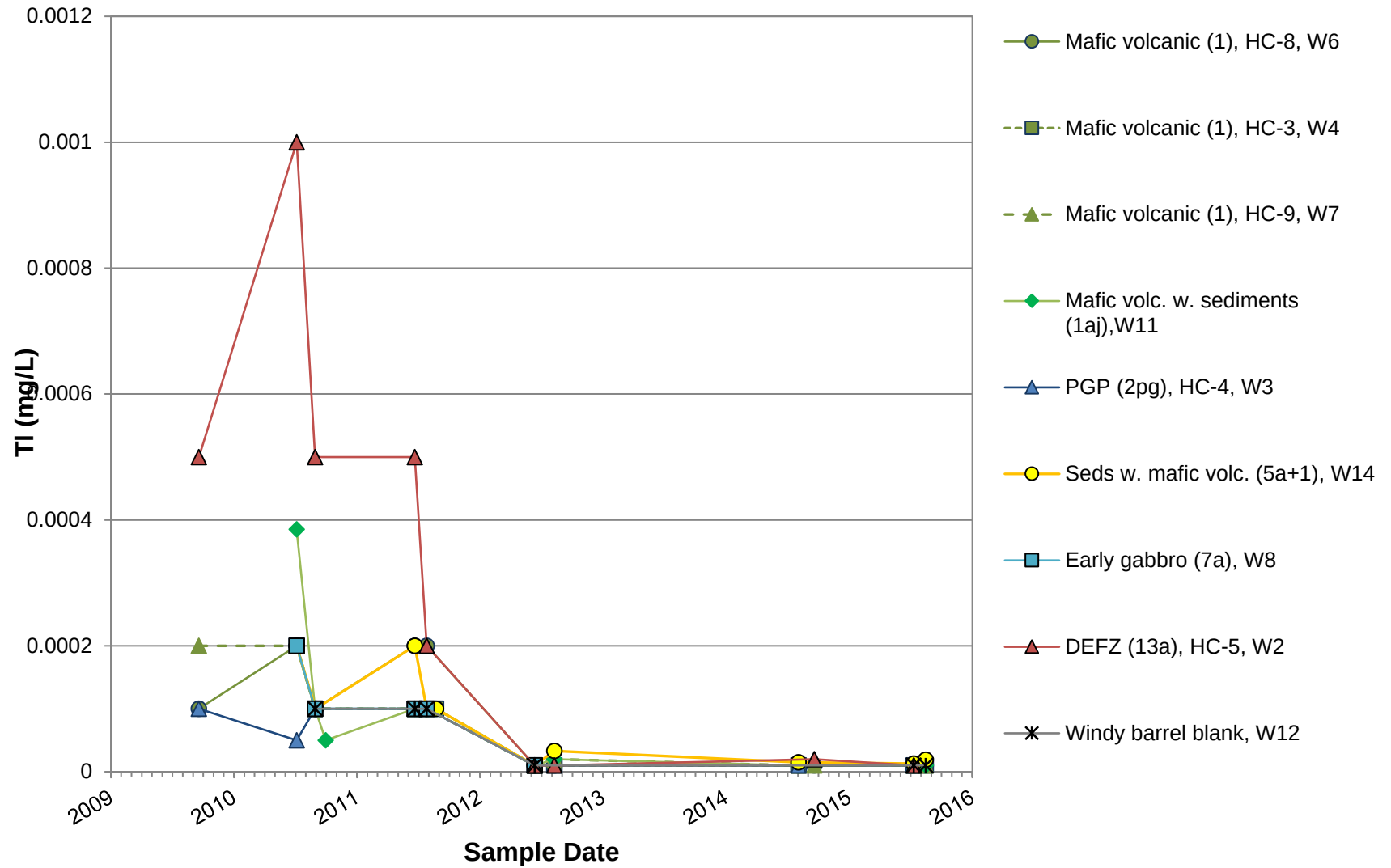
Hope Bay Barrel Tests



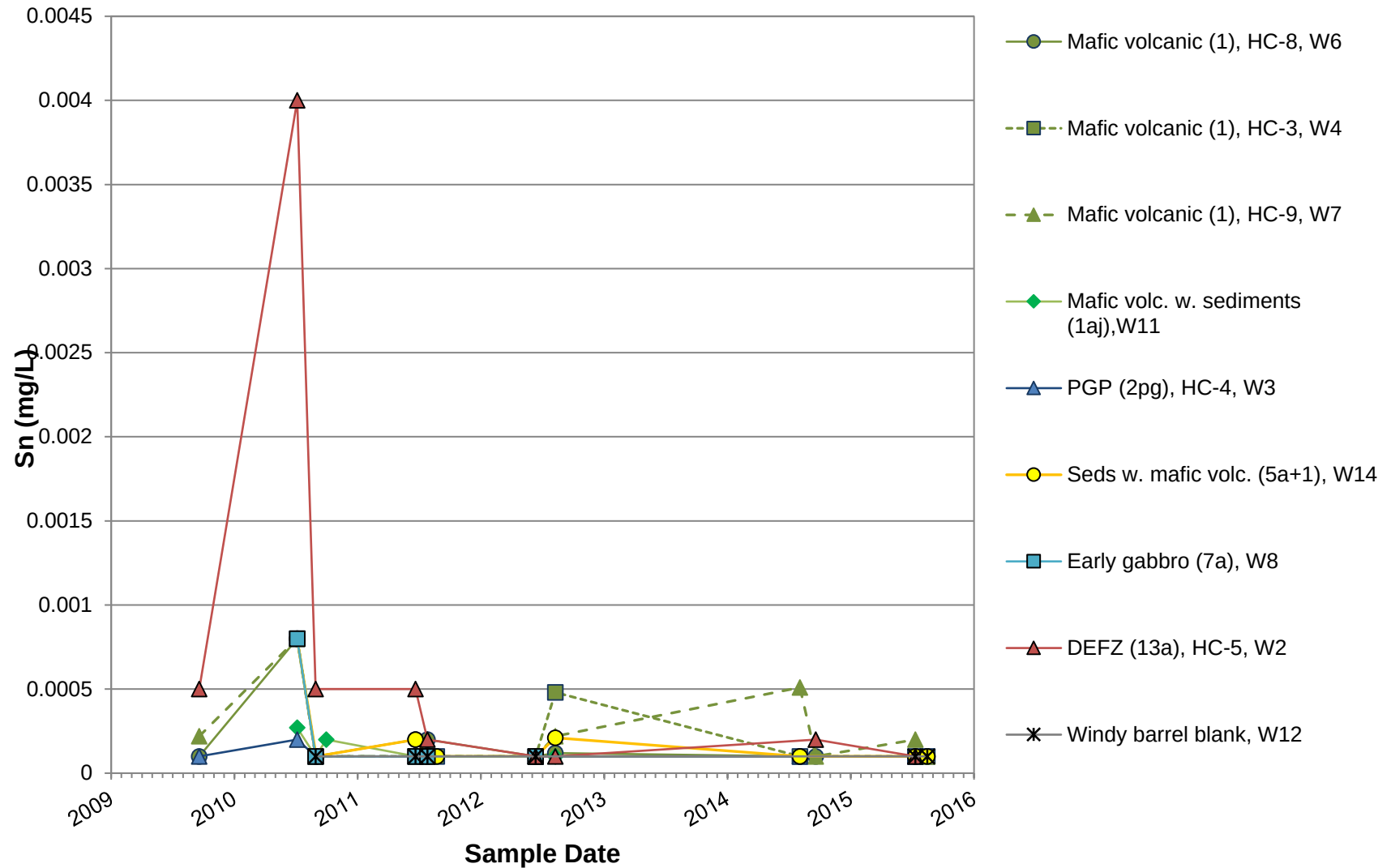
Hope Bay Barrel Tests



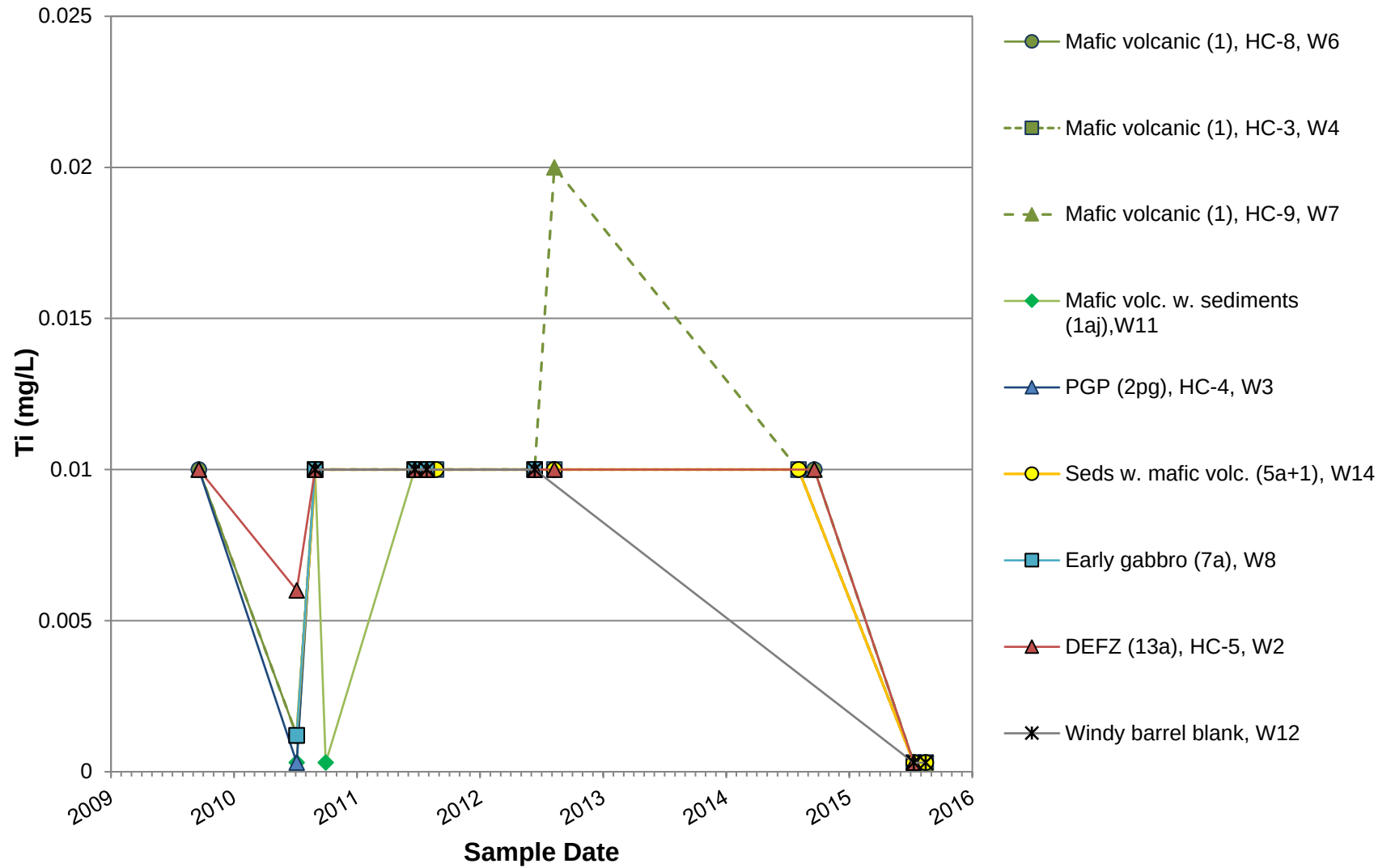
Hope Bay Barrel Tests



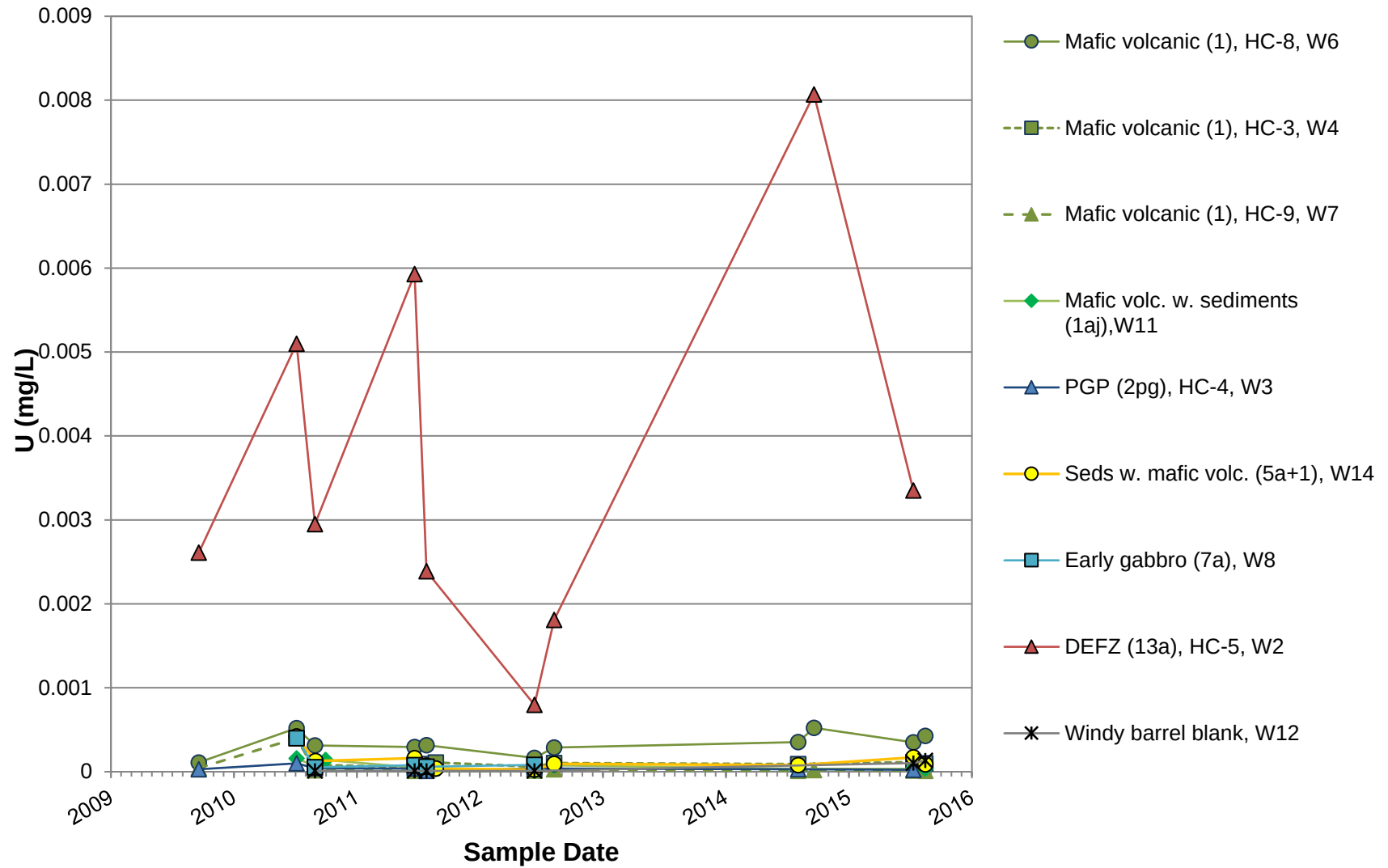
Hope Bay Barrel Tests



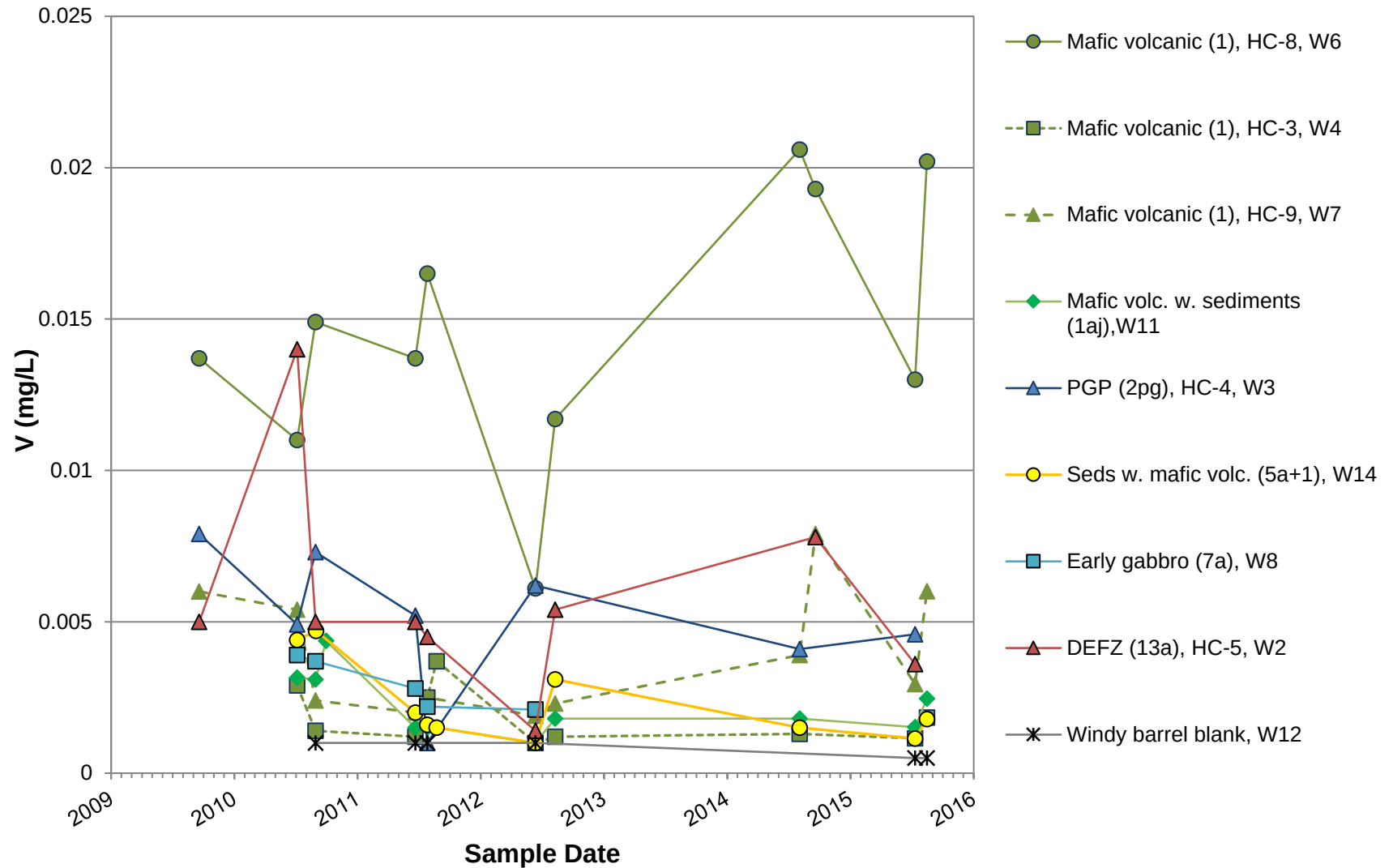
Hope Bay Barrel Tests



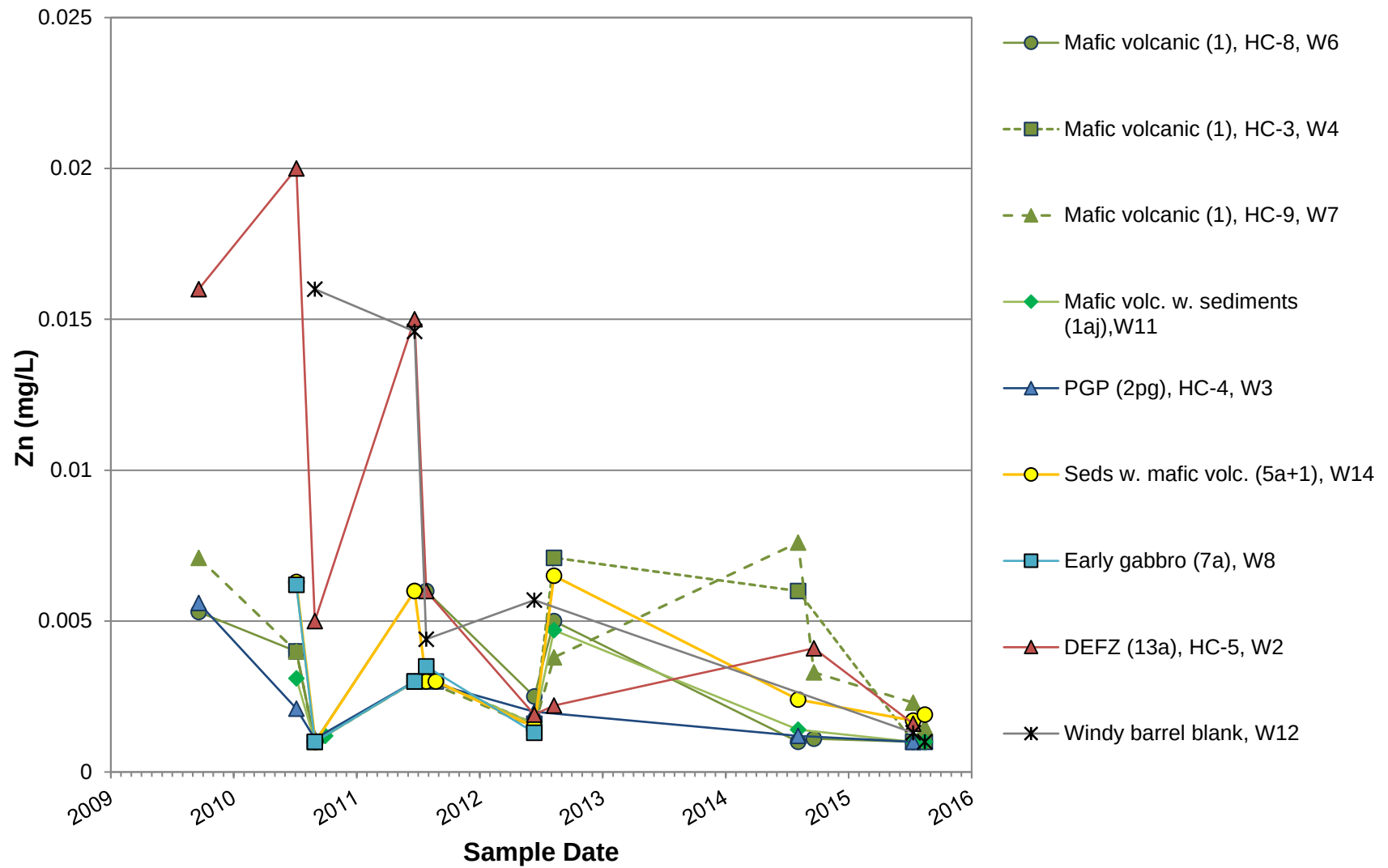
Hope Bay Barrel Tests



Hope Bay Barrel Tests



Hope Bay Barrel Tests



Appendix Q2 – Raw Data

Appendix Q-2: Barrel Test Leachate Raw Data

Sample ID	Date	Volume	ALS Sample ID	Field pH	EC uS/cm	ORP mV	Temp C	Lab pH	EC uS/cm	Acidity mgCaCO3/L	Alkalinity mgCaCO3/L	SO4 mg/L	Br mg/L	Cl mg/L	F mg/L	Ammonia mg N/L	NO3 mg N/L	NO2 mg N/L	Ortho Phosphate mg P/L	Total Phosphate mg/L	Hardness mgCaCO3/L	TDS mg/L	Al mg/L	Sb mg/L	As mg/L	Ba mg/L	Be mg/L	Bi mg/L	B mg/L	Cd mg/L	Ca mg/L	Cr mg/L	Co mg/L	Cu mg/L	Fe mg/L	Pb mg/L
W2	19-Sep-09	1.2	L820839-5	8	2300	340	5.5	8.4	2500	-	240	97	1	600	0.4	0.02	0.1	0.02	-	-	150	-	0.026	0.023	2.4	0.0056	0.0025	0.0025	1.3	8.5E-05	32	0.0025	0.055	0.022	0.03	0.00025
W2	06-Jul-10	2.2	L905797-7	8.2	3800	510	9.1	8.10	3800	-	120	170	-	990	0.180	0.05	0.05	0.05	-	-	310	-	0.1	0.0140	2.60	0.0130	0.01	0.001	0.930	0.001	70.0	0.04	0.0770	0.012	0.01	0.002
W2	30-Aug-10	9.7	L928581-8	8.1	1600	620	8.3	8.1	1600	-	100	96	0.5	390	0.2	0.005	0.05	0.01	0.046	-	130	-	0.027	0.011	2.9	0.0025	0.0025	0.0025	0.77	0.00025	34	0.0025	0.015	0.052	0.03	0.00025
W2	30-Sep-10	0.3	L939391-2	8.3	4400	470	6.2	8.4	4400	-	400	290	-	1000	1.1	0.05	0.5	0.5	-	-	290	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W2	22-Jun-11	8.4	L1024966-2	8.4	2300	150	4.6	8.1	-	3.3	100	180	-	-	-	-	-	-	-	-	180	1200	0.015	0.0079	3.8	0.0042	0.0025	0.0025	0.72	0.00025	44	0.0025	0.063	0.032	0.03	0.00025
W2	27-Jul-11	-	L1038624-8	-	-	-	-	8.3	730	1	110	60	0.25	130	0.35	0.027	0.005	0.005	0.078	-	38	-	0.21	0.0092	4.2	0.0036	0.0001	0.0001	0.63	3.4E-05	9.8	0.0001	0.066	0.0025	0.03	0.0001
W2	24-Aug-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
W2	12-Jun-12	11.4	L1163258-8	8.2	410	190	5.1	8.2	380	1.9	61	33	-	63	0.16	0.005	0.015	0.001	-	0.031	11	-	0.12	0.0032	1.2	0.0014	0.0001	0.0005	0.32	0.00001	2.4	0.00019	0.0048	0.00094	0.012	0.00005
W2	09-Aug-12	0.7	L1193740-1	8.3	730	-	9.6	8.4	710	1	180	77	0.13	67	0.35	0.013	0.0083	0.001	-	0.15	61	-	0.36	0.028	4	0.0035	0.0001	0.0005	1	1.1E-05	15	0.00085	0.02	0.0054	0.031	0.00083
W2	04-Aug-14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
W2	20-Sep-14	3.3	L1523137-3	8.5	1300	240	11	8.5	1300	1	420	210	0.5	43	0.53	0.016	0.05	0.01	-	0.29	76	-	0.74	0.03	13	0.0062	0.0002	0.0001	1.8	5.5E-05	18	0.0011	0.055	0.0087	0.11	0.00018
W2	12-Jul-15	12.3	L1642342-5	8.6	490	190	10	8.4	490	1	120	89	0.05	17	0.24	0.005	0.085	0.006	-	0.032	21	-	0.028	0.001	4.6	0.0009	0.00002	0.00005	0.67	5E-06	5	0.0001	0.011	0.0025	0.01	0.00005
W3	19-Sep-09	2.2	L820839-6	8	520	370	5.2	8.2	500	-	170	28	0.15	37	0.14	0.022	0.005	0.001	-	-	59	-	0.1	0.0047	0.31	0.0047	0.0005	0.0005	0.71	1.8E-05	15	0.002	0.003	0.015	0.042	0.00083
W3	06-Jul-10	8.2	L905797-8	8.2	390	460	9.4	8.2	390	-	100	22	-	41	0.068	0.05	0.05	0.05	-	-	47	-	0.027	0.0022	0.2	0.0021	0.0005	0.00005	0.55	0.0001	14	0.002	0.0011	0.068	0.011	0.0001
W3	30-Aug-10	9.4	L928581-9	7.5	260	600	8.7	8	250	-	80	15	0.05	21	0.06	0.005	0.17	0.0032	0.004	41	-	0.13	0.0014	0.23	0.0028	0.0005	0.0005	0.42	0.00005	13	0.0012	0.0047	0.038	0.08	0.00005	
W3	22-Jun-11	7.6	L1024966-3	8.5	410	150	5	7.5	-	4.8	76	26	-	-	-	-	-	-	-	-	32	240	0.16	0.0012	0.15	0.0014	0.0005	0.0005	0.53	0.00005	8.9	0.0011	0.00094	0.038	0.08	0.00005
W3	27-Jul-11	-	L1038624-9	-	-	-	-	6	2	1	2	0.5	0.05	0.5	0.02	0.005	0.005	0.001	0.001	0.5	-	-	0.003	0.0001	0.0001	0.00005	0.0005	0.0005	0.01	1.7E-05	0.05	0.0005	0.0001	0.0005	0.03	0.00005
W3	24-Aug-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
W3	12-Jun-12	14.5	L1163258-6	8.3	370	160	4.8	8.3	360	1	100	22	-	41	0.053	0.011	0.005	0.032	0.001	0.065	24	-	0.008	0.0012	0.17	0.0014	0.0001	0.0005	0.61	0.00001	4.8	0.00015	0.00051	0.0042	0.01	0.00005
W3	09-Aug-12	-	8.1	290	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
W3	04-Aug-14	5.1	L1497358-2	8.2	220	260	13	8.1	200	1.3	86	7.7	13	8.2	0.073	0.059	0.11	0.0023	-	0.0073	51	-	0.022	0.001	0.17	0.016	0.0001	0.0005	0.26	0.00001	17	0.0006	0.00019	0.066	0.01	0.00005
W3	12-Jul-15	16.6	L1642342-6	8.6	270	190	9.5	8.3	270	1	99	12	0.12	18	0.044	0.005	0.013	0.0013	-	0.002	55	-	0.013	0.001	0.13	0.0047	0.00002	0.00005	0.38	5E-06	18	0.00012	0.0003	0.0067	0.01	0.00005
W4	06-Jul-10	5.3	L905797-9	8.6	1200	440	9.3	8.4	1200	-	130	62	-	240	0.087	0.05	0.05	0.05	-	-	72	-	0.035	0.0019	0.006	0.0059	0.0002	0.0002	0.25	0.0002	13	0.0084	0.00048	0.015	0.01	0.0004
W4	30-Aug-10	8.7	L928581-10	7.7	520	600	8.9	8.2	520	-	100	26	0.35	79	0.1	0.005	0.11	0.0063	0.001	-	55	-	0.071	0.0012	0.0045	0.005	0.0005	0.0005	0.16	0.00005	14	0.0061	0.00011	0.026	0.03	0.00005
W4	30-Sep-10	0.3	L939391-4	8	1400	450	7.3	8.5	1400	-	310	79	-	200	0.3	0.05	0.05	0.05	-	-	140	-	0.093	0.0036	0.014	0.013	0.0005	0.00005	0.68	0.0001	39	0.0014	0.00502	0.017	0.02	0.0001
W4	22-Jun-11	11.2	L1024966-4	8.4	480	130	4.4	8	-	3.9	77	19	-	-	-	-	-	-	-	-	-	230	0.038	0.00076	0.0028	0.0025	0.0005	0.0005	0.1	0.00005	9.7	0.0005	0.0001	0.0012	0.03	0.00005
W4	27-Jul-11	-	L1038624-10	-	-	-	-	8.4	600	1	180	24	0.4	69	0.19	0.0087	0.0081	0.001	0.001	-	85	-	0.066	0.0026	0.0059	0.0061	0.0005	0.0005	0.21	1.7E-05	24	0.0005	0.0001	0.0023	0.03	0.00005
W4	24-Aug-11	3.7	L1052916-2	8.1	510	190	14	8.4	-	1	140	23	-	-	-	-	-	-	-	-	-	270	0.085	0.0022	0.0063	0.0045	0.0005	0.0005	0.19	0.00005	14	0.0005	0.00011	0.0044	0.03	0.00005
W4	12-Jun-12	15.1	L1163258-11	8.2	260	190	5.7	7.7	250	3.9	65	14	-	34	0.043	0.005	-	0.0012	-	0.0043	26	-	0.0058	0.00052	0.00016	0.00018	0.0005	0.0005	0.094	0.00001	6.1	0.0001	0.0001	0.001	0.01	0.00005
W4	09-Aug-12	1.5	L1193740-2	8.4	300	-	10	8.3	290	1	130	11	0.071	10	0.097	0.011	0.005	0.001	0.011	99	-	0.038	0.0014	0.0051	0.0085	0.0001	0.0005	0.12	0.00001	32	0.00055	0.0001	0.0086	0.01	0.000054	
W4	04-Aug-14	9.6	L1497358-5	8.5	200	200	13	8.1	190	1	89	7	-	4.3	0.11	0.0066	0.005	0.001	-	0.063	65	-	0.038	0.00069	0.0069	0.0017	0.0001	0.0005	0.083	0.00001	21	0.00034	0.00098	0.0045	0.01	0.00005
W4	12-Jul-15	16.0	L1642342-10	8.4	240	190	9.4	8.3	230	1	94	12	0.065	8.4	0.054	0.005	0.005	0.001	-	0.002	62	-	0.019	0.0007	0.0036	0.0022	0.00002	0.00005	0.1	5E-06	18	0.00021	0.0001	0.0034	0.01	0.00005
W4	16-Aug-15	13.5	L1659572-6	8.4	190	220	11	8.10	180.00	1.10	87.00	6.20	0.05	2.90	0.05	0.01	0.001	0.0013	-	0.002	59.00	-	0.054	0.00079	0.0035	0.0022	0.00002	0.00005	0.1	5E-06	19.00	0.00025	0.0001	0.0027	0.01	0.00001
W5	19-Sep-09	2.8	L820839-11	8.3	1100	340	5.7	8.5	1100	-	250	35	1	190	0.4	0.02	0.1	0.02	-	-	41	-	0.059	0.0061	0.37	0.015	0.0005	0.0005	0.21	1.7E-05	8.8	0.0032	0.00014	0.012	0.054	0.00019
W5	06-Jul-10	4.1	L905797-11	8.5	1100	450	10	8.4	1100	-	100	45	-	10	0.05	0.05	0.05	0.05	-	-	48	-	0.047	0.0043	0.52	0.014	0.0005	0.0005	0.17	0.00005	7.5	0.0002	0.0004	0.011	0.03	0.00004
W5	30-Aug-10	10.0	L928581-12	8	730	580	11	8	710	-	140	100	0.25	120	0.14	0.0059	0.17	0.0069	0.0089	30	-	0.041	0.0043	0.52	0.012	0.0005	0.0005	0.17	0.00005	7.8	0.0011	0.00032	0.0055	0.03	0.00005	
W5	30-Sep-10	4.1	L939391-5	8.3	2200	500	1.2	8.7	2200	-	550	97	-	320	0.6	0.43	0.05	0.05	-	-	72	-	0.13	0.017	2.4	0.033	0.0005	0.00005	0.8	0.0001	18	0.006	0.0027	0.048	0.053	0.00012
W5	22-Jun-11	15.7	L1024966-6	8.3	810	110	3.9	8.4	-	1	110	31	-	-	-	-	-	-	-	-	15	400	0.042	0.0032	0.56	0.0039	0.0001	0.0001	0.11							

Appendix Q-2: Barrel Test

Sample ID	Date	Li mg/L	Mg mg/L	Mn mg/L	Hg mg/L	Mo mg/L	Ni mg/L	P mg/L	K mg/L	Se mg/L	Si mg/L	Ag mg/L	Na mg/L	Sr mg/L	Ti mg/L	Sn mg/L	Ti mg/L	U mg/L	V mg/L	Zn mg/L
W2	19-Sep-09	0.025	16	0.0022	-	0.053	0.2	0.34	60	0.008	1.8	0.000055	410	0.29	0.0005	0.0005	0.01	0.0026	0.005	0.016
W2	06-Jul-10	-	33.0	0.002	0.0001	0.0690	0.160	1.20	42.0	0.04	-	0.002	540	0.800	0.001	0.004	0.006	0.0051	0.014	0.02
W2	30-Aug-10	0.025	12	0.0013	-	0.053	0.034	0.3	17	0.011	1.1	0.00005	280	0.25	0.0005	0.0005	0.01	0.003	0.005	0.005
W2	30-Sep-10	-	27	-	-	-	-	4.8	66	-	-	-	830	-	-	-	-	-	-	-
W2	22-Jun-11	0.025	18	0.025	-	0.076	0.11	0.3	20	0.022	0.84	0.00005	410	0.36	0.0005	0.0005	0.01	0.0059	0.005	0.015
W2	27-Jul-11	0.01	3.3	0.0015	0.00001	0.033	0.011	0.3	8.5	0.0072	1.3	0.00002	130	0.068	0.0002	0.0002	0.01	0.0024	0.0045	0.006
W2	24-Aug-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W2	12-Jun-12	0.0028	1.2	0.0029	-	0.018	0.0088	0.3	5.5	0.0038	0.44	0.00001	73	0.018	0.00001	0.0001	0.01	0.0008	0.0014	0.0019
W2	09-Aug-12	0.0095	5.2	0.00062	0.00001	0.06	0.037	0.05	16	0.0099	2.3	0.00001	120	0.1	0.00001	0.0001	0.01	0.0018	0.0054	0.0022
W2	04-Aug-14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W2	20-Sep-14	0.012	7.5	0.012	-	0.15	0.071	0.3	18	0.024	4.5	0.000039	260	0.15	0.00002	0.0002	0.01	0.0081	0.0078	0.0041
W2	12-Jul-15	0.0051	2.1	0.0026	-	0.048	0.013	0.05	7.2	0.012	0.83	0.000019	97	0.034	0.00001	0.0001	0.0003	0.0034	0.0036	0.0016
W3	19-Sep-09	0.0079	5.2	0.00062	-	0.0032	0.023	0.3	31	0.0018	1.4	0.00001	67	0.091	0.0001	0.0001	0.01	0.00003	0.0079	0.0056
W3	06-Jul-10	-	3.2	0.002	0.0001	0.0028	0.0082	0.08	7.8	0.0027	-	0.002	58	0.061	0.00005	0.0002	0.0003	0.0001	0.0049	0.0021
W3	30-Aug-10	0.005	2.3	0.00078	-	0.0029	0.0035	0.3	3.6	0.0019	1	0.00001	38	0.051	0.0001	0.0001	0.01	0.000042	0.0073	0.0011
W3	22-Jun-11	0.006	2.5	0.013	-	0.0033	0.0041	0.3	3.8	0.0029	0.88	0.00001	67	0.054	0.0001	0.0001	0.01	0.000038	0.0052	0.003
W3	27-Jul-11	0.005	0.1	0.00005	0.00001	0.00005	0.0005	0.3	2	0.001	0.05	0.00001	2	0.0001	0.0001	0.0001	0.01	0.00001	0.001	0.003
W3	24-Aug-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W3	12-Jun-12	0.0073	3	0.0029	-	0.003	0.0038	0.3	3.8	0.002	1	0.00001	66	0.037	0.00001	0.0001	0.01	0.000037	0.0062	0.002
W3	09-Aug-12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W3	04-Aug-14	0.0063	2	0.00028	-	0.0014	0.0023	0.3	2	0.00084	0.87	0.00001	22	0.061	0.00001	0.0001	0.01	0.000029	0.0041	0.0012
W3	12-Jul-15	0.007	2.6	0.0016	-	0.0017	0.0033	0.05	2.6	0.0011	1.2	0.00001	37	0.065	0.00001	0.0001	0.0003	0.000022	0.0046	0.001
W4	06-Jul-10	-	9.4	0.002	0.0001	0.0096	0.0026	0.02	18	0.0084	-	0.0004	190	0.067	0.0002	0.0008	0.0012	0.0004	0.0029	0.004
W4	30-Aug-10	0.005	4.7	0.0005	-	0.0066	0.00059	0.3	7.9	0.005	0.67	0.00001	84	0.053	0.0001	0.0001	0.01	0.000083	0.0014	0.001
W4	30-Sep-10	-	10	0.002	0.0001	0.019	0.002	0.04	19	0.0079	-	0.002	210	0.14	0.00005	0.0002	0.0003	0.00033	0.002	0.0014
W4	22-Jun-11	0.005	3.6	0.0061	-	0.0031	0.0005	0.3	6.4	0.0024	0.49	0.00001	71	0.036	0.0001	0.0001	0.01	0.000054	0.0012	0.003
W4	27-Jul-11	0.005	6.1	0.00019	0.00001	0.0054	0.0005	0.3	11	0.0018	1.7	0.00001	94	0.076	0.0001	0.0001	0.01	0.00009	0.0025	0.003
W4	24-Aug-11	0.005	3.9	0.00016	-	0.005	0.0005	0.3	9.3	0.0016	1.8	0.00001	79	0.048	0.0001	0.0001	0.01	0.00011	0.0037	0.003
W4	12-Jun-12	0.0013	2.6	0.00017	-	0.0031	0.0005	0.3	3.9	0.0016	0.23	0.00001	40	0.023	0.00001	0.0001	0.01	0.000059	0.001	0.0016
W4	09-Aug-12	0.0027	4.7	0.0016	-	0.0036	0.00058	-	4.6	0.0013	1.2	0.00001	26	0.076	0.00001	0.0001	0.01	0.00001	0.0012	0.0071
W4	04-Aug-14	0.002	3	0.0014	-	0.0023	0.0032	0.3	2.3	0.00079	0.62	0.00001	16	0.039	0.00001	0.0001	0.01	0.000092	0.0013	0.006
W4	12-Jul-15	0.0023	3.8	0.0012	-	0.0033	0.0005	0.05	3	0.0014	0.65	0.00001	25	0.039	0.00001	0.0001	0.0003	0.00012	0.0012	0.001
W4	16-Aug-15	0.0024	2.70	0.00011	-	0.0021	0.0005	0.05	2.80	0.00	0.780	0.00001	15.00	0.04	0.00001	0.00010	0.00030	0.00010	0.00180	0.00100
W5	19-Sep-09	0.005	4.7	0.00082	-	0.02	0.035	0.3	21	0.003	1.5	0.000022	220	0.051	0.0001	0.0001	0.01	0.00011	0.014	0.0053
W5	06-Jul-10	5.1	0.002	0.0023	0.0001	0.024	0.023	0.17	17	0.004	0.000022	0.0004	210	0.058	0.0002	0.0008	0.0012	0.001	0.004	0.004
W5	30-Aug-10	0.005	2.7	0.00063	-	0.0067	0.0087	0.3	5.4	0.004	0.89	0.000059	140	0.031	0.0001	0.0001	0.01	0.00031	0.015	0.001
W5	30-Sep-10	-	6.7	0.002	0.0001	0.069	0.052	1.4	19	0.0046	-	0.002	440	0.097	0.00005	0.0002	0.0003	0.00087	0.051	0.0024
W5	22-Jun-11	0.01	2	0.0052	-	0.015	0.0074	0.3	4	0.0024	0.65	0.00002	140	0.018	0.0002	0.0002	0.01	0.0003	0.014	0.006
W5	27-Jul-11	0.01	2.2	0.0012	0.00001	0.014	0.0064	0.3	4.1	0.002	1.1	0.00002	120	0.031	0.0002	0.0002	0.01	0.00032	0.017	0.006
W5	24-Aug-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W5	12-Jun-12	0.00096	1.2	0.0017	-	0.0088	0.0039	0.3	2.8	0.00078	0.36	0.00001	84	0.0901	0.00001	0.0001	0.01	0.00017	0.0061	0.0025
W5	09-Aug-12	0.0026	2.7	0.0026	-	0.013	0.011	-	5.4	0.001	2	0.000016	100	0.044	0.00001	0.00012	0.01	0.00029	0.012	0.005
W5	04-Aug-14	0.0014	1.8	0.00076	-	0.017	0.0077	0.3	3.7	0.0015	1.3	0.000014	100	0.025	0.00001	0.0001	0.01	0.00035	0.021	0.001
W5	20-Sep-14	0.0014	2.6	0.0015	-	0.028	0.0081	0.3	4.3	0.0027	1.3	0.00001	150	0.022	0.00001	0.0001	0.01	0.00052	0.019	0.0011
W5	12-Jul-15	0.0017	1.9	0.00036	-	0.015	0.006	0.05	2.8	0.0017	0.83	0.00001	94	0.022	0.00001	0.0001	0.0003	0.00035	0.013	0.001
W5	16-Aug-15	0.0016	2.2	0.00032	-	0.019	0.0038	0.05	3.5	0.0021	1.2	0.00001	94	0.026	0.00001	0.0001	0.0003	0.00043	0.02	0.001
W7	19-Sep-09	0.01	8.3	0.00044	-	0.0096	0.01	0.3	54	0.006	1.8	0.00002	200	0.098	0.0002	0.00022	0.01	0.000044	0.006	0.0071
W7	06-Jul-10	-	4.7	0.002	0.0001	0.013	0.0072	0.093	16	0.008	-	0.0004	200	0.055	0.0002	0.0008	0.0012	0.0004	0.0054	0.004
W7	30-Aug-10	0.005	1.9	0.00068	-	0.0042	0.0011	0.3	3.8	0.0013	0.98	0.00001	67	0.032	0.0001	0.0001	0.01	0.000018	0.0024	0.001
W7	30-Sep-10	-	4.9	0.002	0.0001	0.012	0.0053	0.11	11	0.0029	-	0.0002	200	0.1	0.00005	0.0002	0.00058	0.0001	0.008	0.0026
W7	22-Jun-11	0.005	1.7	0.00076	-	0.0025	0.00088	0.3	3.4	0.0012	0.66	0.00001	63	0.03	0.0001	0.0001	0.01	0.000012	0.002	0.003
W7	27-Jul-11	0.005	1.9	0.00069	0.00001	0.0023	0.00063	0.3	2	0.001	0.98	0.00001	44	0.041	0.0001	0.0001	0.01	0.000013	0.0025	0.003
W7	24-Aug-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W7	12-Jun-12	0.0023	1.9	0.00026	-	0.0022	0.001	0.3	2.6	0.00069	0.71	0.00001	52	0.019	0.00001	0.0001	0.01	0.000015	0.0019	0.0015
W7	09-Aug-12	0.0036	1.8	0.00017	-	0.0023	0.0019	-	2.5	0.00057	1.4	0.00002	30	0.066	0.00002	0.00022	0.02	0.000029	0.0023	0.0038
W7	04-Aug-14	0.0024	2	0.00093	-	0.0014	0.0012	0.3	1.9	0.00066	1.3	0.00001	42	0.041	0.00001	0.00051	0.01	0.000012	0.0039	0.0076
W7	20-Sep-14	0.003	3.1	0.00035	-	0.0031	0.0025	0.3	4.4	0.0013	2.9	0.00001	120	0.034	0.00001	0.0001	0.01	0.00002	0.0079	0.0033
W7	12-Jul-15	0.0022	2	0.00037	-	0.00092	0.0012	0.05	1.8	0.00054	0.97	0.00001	41	0.037	0.00001	0.0002	0.0003	0.000015	0.0029	0.0023
W7	16-Aug-15	0.0026	1.6	0.0002	-	0.00073	0.00074	0.05	2.2	0.00035	2	0.00001	37	0.037	0.00001	0.0001	0.0003	0.00001	0.006	0.0015
W8	06-Jul-10	-	11	0.002	0.0001	0.0054	0.008	0.11	61	0.008	-	0.0004	200	0.08	0.0002	0.0008	0.0012	0.0004	0.0039	0.0062
W8	30-Aug-10	0.005	2.6	0.00057	-	0.0032	0.00085	0.3	6.3	0.0019	0.79	0.00001	80	0.042	0.0001	0.0001	0.01	0.000053	0.0037	0.001

Appendix Q3 – Release Rates

Appendix Q-3: Barrel Test Release Rates

Sample ID	Date	Volume L	Acidity mgCaCO3/kg/wk	Alkalinity mgCaCO3/kg/wk	SO4 mg/kg/week	Br mg/kg/week	Cl mg/kg/week	F mg/kg/week	Ammonia mg N/kg/wk	NO3 mg N/kg/wk	NO2 mg N/kg/wk	Ortho Phosphate mg P/kg/wk	Total Phosphate mg/kg/wk	Hardness mgCaCO3/kg/wk	TDS	Al mg/kg/wk	Sb mg/kg/wk	As mg/kg/wk	Ba mg/kg/wk	Be mg/kg/wk	Bi mg/kg/wk	B mg/kg/wk	Cd mg/kg/wk	Ca mg/kg/wk	Cr mg/kg/wk	Co mg/kg/wk	Cu mg/kg/wk	Fe mg/kg/wk	Pb mg/kg/wk	Li mg/kg/wk	Mg mg/kg/wk	Mn mg/kg/wk	Hg mg/kg/wk	Mo mg/kg/wk	Ni mg/kg/wk	
W2	19-Sep-09	1.2	--	0.02	0.0081	0.000084	0.05	0.000034	0.000017	0.000084	0.000017	--	--	0.012	--	0.000021	0.000019	0.0002	0.0000047	0.0000021	0.0000021	0.00011	7.1E-09	0.0027	0.0000021	0.0000046	0.0000019	0.0000025	2.1E-08	0.0000021	0.0014	0.0000018	--	0.000044	0.000017	
W2	6-Jul-10	2.2	--	0.021	0.031	--	0.18	0.000033	0.000089	0.000089	0.000089	--	--	0.055	--	0.000018	0.000025	0.00046	0.0000023	0.0000018	0.0000018	0.00017	0.00000018	0.013	0.0000071	0.0000014	0.0000021	0.0000018	0.0000036	--	0.0058	0.0000036	1.8E-08	0.000012	0.000029	
W2	30-Aug-10	9.7	--	0.43	0.4	0.0021	1.6	0.00083	0.000021	0.000021	0.000042	0.00019	--	0.56	--	0.00011	0.000044	0.012	0.000022	0.00001	0.00001	0.0032	0.000001	0.14	0.000001	0.0000063	0.0000022	0.000001	0.0000052	--	0.05	0.0000052	0.000012	0.000014		
W2	30-Sep-10	0.31	--	0.095	0.069	--	0.24	0.00026	0.000012	0.00012	0.00012	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W2	22-Jun-11	8.4	0.0025	0.078	0.13	--	--	--	--	--	--	--	--	0.14	0.93	0.000011	0.0000059	0.0028	0.0000031	0.0000019	0.0000019	0.00054	0.00000019	0.033	0.0000019	0.000047	0.0000024	0.000022	0.00000019	0.000019	0.013	0.000019	--	0.000057	0.000079	
W2	27-Jul-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W2	24-Aug-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W2	12-Jun-12	11	0.0017	0.056	0.03	--	0.058	0.00015	0.0000046	0.000014	0.0000082	--	0.000028	0.0099	--	0.00011	0.0000029	0.0011	0.0000013	9.2E-08	0.0000046	0.0003	9.2E-09	0.0022	0.00000017	0.0000044	0.00000087	0.000011	4.6E-08	0.0000026	0.0011	0.0000027	--	0.000017	0.000081	
W2	9-Aug-12	0.71	0.00029	0.052	0.022	0.000038	0.019	0.0001	0.0000036	0.0000024	0.0000029	--	0.000042	0.018	--	0.0001	0.0000081	0.0012	0.000001	2.9E-08	0.0000014	0.00029	3.2E-09	0.0042	0.00000025	0.0000056	0.0000016	0.000009	2.4E-08	0.0000027	0.0015	0.0000018	2.9E-09	0.000017	0.000011	
W2	4-Aug-14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W2	20-Sep-14	3.3	0.0017	0.7	0.35	0.00083	0.071	0.00088	0.000027	0.000083	0.000017	--	0.00048	0.13	--	0.0012	0.00005	0.022	0.00001	0.00000033	0.0000017	0.003	9.1E-08	0.03	0.0000019	0.000091	0.000015	0.00018	0.0000003	0.000021	0.013	0.00002	--	0.00026	0.00012	
W2	12-Jul-15	12	0.00099	0.12	0.088	0.000049	0.017	0.00024	0.0000049	0.000084	0.0000059	--	0.000031	0.021	--	0.000027	0.000008	0.0045	0.00000089	0.000000002	4.9E-08	0.00066	4.9E-09	0.005	9.9E-08	0.00001	0.0000025	0.0000099	4.9E-08	0.000005	0.0021	0.0000025	--	0.000048	0.000013	
W3	19-Sep-09	2.2	--	0.024	0.0041	0.000021	0.0053	0.00002	0.0000032	0.0000072	0.0000014	--	--	0.0085	--	0.000014	0.0000068	0.000044	0.0000067	7.2E-08	0.0001	2.6E-09	0.0022	0.00000028	0.00000043	0.0000022	0.0000006	1.2E-08	0.0000011	0.00075	8.9E-08	--	0.0000046	0.000033		
W3	6-Jul-10	3.4	--	0.029	0.0061	--	0.011	0.000019	0.000014	0.000014	0.000014	--	--	0.013	--	0.0000074	0.0000061	0.000055	0.0000059	0.000000014	1.4E-08	0.00015	2.8E-08	0.0037	0.00000055	0.00000029	0.0000019	0.00003	2.8E-08	--	0.00089	0.0000055	--	0.0000077	0.000022	
W3	30-Aug-10	9.4	--	0.32	0.061	0.0002	0.082	0.00024	0.00002	0.00067	0.000013	0.000016	--	0.16	--	0.00052	0.0000054	0.00093	0.000011	0.000002	0.000002	0.0017	0.0000002	0.051	0.0000047	0.0000019	0.000015	0.00032	0.0000002	0.00002	0.00089	0.0000031	--	0.000011	0.000014	
W3	22-Jun-11	7.6	0.0028	0.045	0.015	--	--	--	--	--	--	--	--	0.019	0.14	0.000093	0.0000072	0.000091	0.0000081	0.0000003	0.0000003	0.00032	0.00000003	0.0053	0.00000063	0.00000056	0.0000022	0.0000003	0.0000036	0.0015	0.0000075	--	0.0000019	0.0000024		
W3	27-Jul-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W3	24-Aug-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W3	12-Jun-12	14	0.0011	0.11	0.025	--	0.047	0.000061	0.000013	0.000036	0.0000011	--	0.0000075	0.028	--	0.0000092	0.0000014	0.00019	0.0000015	0.00000011	0.00000057	0.0007	1.1E-08	0.0055	0.00000017	0.00000059	0.0000048	0.000011	5.7E-08	0.0000084	0.0035	0.0000033	--	0.0000035	0.0000043	
W3	9-Aug-12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W3	4-Aug-14	5.1	0.00021	0.014	0.0013	--	0.0013	0.000012	0.0000096	0.000017	0.0000038	--	0.0000012	0.0083	--	0.0000035	0.00000017	0.000027	0.0000027	1.6E-08	8.2E-08	0.000043	1.6E-09	0.0028	9.8E-08	3.1E-08	0.0000011	0.0000016	8.2E-09	0.000001	0.00032	4.6E-08	--	0.0000022	0.0000037	
W3	12-Jul-15	17	0.0011	0.11	0.014	0.00014	0.02	0.00005	0.0000056	0.000015	0.0000015	--	0.0000023	0.062	--	0.000015	0.0000012	0.00015	0.0000053	2.3E-08	5.6E-08	0.00043	5.6E-09	0.02	0.00000014	0.00000034	0.0000075	0.000011	5.6E-08	0.0000079	0.003	0.0000018	--	0.000002	0.0000037	
W4	6-Jul-10	5.3	--	0.026	0.012	--	0.048	0.000017	0.00001	0.00001	0.00001	--	--	0.014	--	0.000007	0.0000038	0.0000012	0.0000012	0.0000004	0.00000004	0.00005	0.00000004	0.0027	0.0000017	9.6E-08	0.0000031	0.000002	0.0000008	--	0.0019	0.0000004	0.00000002	0.0000019	0.0000051	
W4	30-Aug-10	8.7	--	0.4	0.099	0.0013	0.31	0.00039	0.000019	0.000043	0.000024	0.0000039	--	0.21	--	0.00028	0.0000045	0.000017	0.0000019	0.0000019	0.0000062	0.000000019	0.055	0.00000024	0.00000043	0.00001	0.00012	0.0000019	--	0.0000019	0.018	0.0000019	--	0.000025	0.0000023	
W4	30-Sep-10	0.31	--	0.076	0.019	--	0.049	0.000072	0.000012	0.000012	0.000012	--	--	0.034	--	0.000023	0.00000088	0.0000034	0.0000001	0.000000012	1.2E-08	0.00017	2.5E-08	0.0094	0.00000035	0.00000013	0.0000042	0.0000049	2.5E-08	--	0.0025	0.0000049	2.5E-08	0.0000047	0.0000049	
W4	22-Jun-11	11	0.004	0.079	0.019	--	--	--	--	--	--	--	--	0.23	--	0.000039	0.00000078	0.0000029	0.0000025	0.00000051	0.00000051	0.00011	5.1E-08	0.001	0.00000047	0.00000012	0.0000031	5.1E-08	0.0000051	0.0037	0.0000063	--	0.0000032	0.0000051		
W4	27-Jul-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W4	24-Aug-11	3.7	0.0032	0.46	0.073	--	--	--	--	--	--	--	--	0.88	--	0.00027	0.0000069	0.000002	0.000014	0.0000016	0.0000016	0.0006	0.00000016	0.045	0.0000016	0.00000035	0.000014	0.000097	0.00000016	0.000016	0.013	0.0000052	--	0.000016	0.0000016	
W4	12-Jun-12	15	0.0049	0.082	0.018	--	0.042	0.000054	0.000063	0.0000095	0.0000015	--	0.0000054	0.033	--	0.0000048	0.0000065	0.000002	0.0000002	0.00000013	0.00000063	0.00012	1.3E-08	0.0076	0.00000013	0.00000013	0.0000013	6.3E-08	0.0000017	0.0033	0.00000021	--	0.0000039	0.00000063		
W4	9-Aug-12	1.5	0.00061	0.08	0.064	0.000044	0.0061	0.00006	0.0000031	0.0000061	0.0000031	--	0.0000067	0.061	--	0.000023	0.00000084	0.0000031	0.0000052	6.1E-08	0.0000003	0.000075	6.1E-09	0.02	0.00000034	6.1E-08	0.0000053	0.0000061	3.3E-08	0.0000017	0.0029	0.0000096	--	0.0000022	0.00000036	
W4	4-Aug-14	9.6	0.00032	0.029	0.022	--	0.0014	0.000034	0.0000021	0.0000016	0.0000032	--	0.00002	0.021	--	0.000012	0.0000022	0.0000022	0.0000055	3.2E-08	0.00000016	0.0000027	3.2E-09	0.0067	0.000000011	0.00000031	0.0000015	0.0000032	1.6E-08	0.00000065	0.00098	0.0000044	--	0.0000074	0.000001	
W4	12-Jul-15	16	0.0011	0.11	0.014	0.000074	0.0096	0.000062	0.0000057	0.0000057	0.0000011	--	0.0000023	0.07	--	0.000021	0.0000008	0.0000025	0.0000001	0.00000025	2.3E-08	5.7E-08	0.0012	5.7E-09	0.021	0.00000024	0.00000011	0.0000039	0.0000013	5.7E-08	0.0000026	0.0043	0.0000013	--	0.0000038	0.0000057
W4	16-Aug-15	14	0.01	0.82	0.058	0.00047	0.027	0.00047	0.000047	0.0001	0.0000094	--	0.000019	0.56	--	0.00051	0.0000074	0.000033	0.000021	0.00000019	0.00000047	0.00095	4.7E-08	0.18	0.0000024	0.00000094	0.000025	0.000094	0.0000023	0.026	0.000001	--	0.00002	0.0000047		
W6	19-Sep-09	2.8	--	0.063	0.0089	0.00025	0.049	0.0001	0.0000051	0.000025	0.000																									

Appendix Q-3: Barrel Test Rele

Sample ID	Date	Volume L	P mg/kg/wk	K mg/kg/wk	Se mg/kg/wk	Si mg/kg/wk	Ag mg/kg/wk	Na mg/kg/wk	Sr mg/kg/wk	Ti mg/kg/wk	Sn mg/kg/wk	Ti mg/kg/wk	U mg/kg/wk	V mg/kg/wk	Zn mg/kg/wk
W2	19-Sep-09	1.2	0.000029	0.0005	0.00000067	0.00015	4.6E-09	0.034	0.000024	4.2E-08	4.2E-08	0.00000084	0.00000022	0.00000042	0.0000013
W2	6-Jul-10	2.2	0.00021	0.0076	0.0000071	--	0.00000036	0.096	0.00014	0.00000018	0.00000071	0.0000011	0.00000091	0.0000025	0.0000036
W2	30-Aug-10	9.7	0.0013	0.073	0.000045	0.0045	0.00000021	1.2	0.0011	0.00000021	0.0000021	0.000042	0.000012	0.000021	0.000021
W2	30-Sep-10	0.31	0.0011	0.016	--	--	--	0.2	--	--	--	--	--	--	--
W2	22-Jun-11	8.4	0.00022	0.015	0.000016	0.00063	3.7E-08	0.3	0.00027	0.00000037	0.00000037	0.0000075	0.0000044	0.0000037	0.000011
W2	27-Jul-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W2	24-Aug-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W2	12-Jun-12	11	0.00028	0.0051	0.0000035	0.00041	9.2E-09	0.067	0.000017	9.2E-09	9.2E-08	0.0000092	0.00000073	0.0000013	0.0000017
W2	9-Aug-12	0.71	0.000014	0.0047	0.0000029	0.00066	2.9E-09	0.035	0.000029	2.9E-09	2.9E-08	0.0000029	0.00000052	0.0000016	0.0000064
W2	4-Aug-14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W2	20-Sep-14	3.3	0.0005	0.03	0.000039	0.0075	6.5E-08	0.42	0.00025	3.3E-08	0.00000033	0.000017	0.000013	0.000013	0.0000068
W2	12-Jul-15	12	0.000049	0.0071	0.000012	0.00082	1.9E-08	0.096	0.000034	9.9E-09	9.9E-08	0.0000003	0.0000033	0.0000036	0.0000016
W3	19-Sep-09	2.2	0.000043	0.0044	0.00000026	0.00021	1.4E-09	0.0096	0.000013	1.4E-08	1.4E-08	0.0000014	4.3E-09	0.0000011	0.00000081
W3	6-Jul-10	3.4	0.000022	0.0021	0.00000074	--	5.5E-08	0.016	0.000017	1.4E-08	5.5E-08	8.3E-08	2.8E-08	0.0000014	0.00000058
W3	30-Aug-10	9.4	0.0012	0.014	0.0000075	0.004	0.00000004	0.15	0.0002	0.00000004	0.00000004	0.00004	0.00000017	0.0000029	0.0000044
W3	22-Jun-11	7.6	0.00018	0.0023	0.0000017	0.00052	5.9E-09	0.04	0.000032	5.9E-08	5.9E-08	0.0000059	2.3E-08	0.0000031	0.0000018
W3	27-Jul-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W3	24-Aug-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W3	12-Jun-12	14	0.00034	0.0043	0.0000023	0.0011	1.1E-08	0.076	0.000042	1.1E-08	0.00000011	0.000011	4.2E-08	0.0000071	0.0000023
W3	9-Aug-12	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W3	4-Aug-14	5.1	0.000049	0.00032	0.00000014	0.00014	1.6E-09	0.0036	0.0000099	1.6E-09	1.6E-08	0.0000016	4.7E-09	0.00000067	0.0000002
W3	12-Jul-15	17	0.000056	0.0029	0.0000013	0.0014	1.1E-08	0.041	0.000073	1.1E-08	0.00000011	0.00000034	2.5E-08	0.0000052	0.0000011
W4	6-Jul-10	5.3	0.000004	0.0036	0.0000017	--	0.00000008	0.038	0.000014	0.00000004	0.00000016	0.00000024	0.00000008	0.00000058	0.0000008
W4	30-Aug-10	8.7	0.0012	0.031	0.000019	0.0026	3.9E-08	0.33	0.0002	0.00000039	0.00000039	0.000039	0.00000032	0.0000054	0.0000039
W4	30-Sep-10	0.31	0.0000098	0.0046	0.0000019	--	4.9E-08	0.052	0.000033	1.2E-08	4.9E-08	7.4E-08	8.1E-08	0.0000005	0.00000034
W4	22-Jun-11	11	0.00031	0.0066	0.0000025	0.00051	0.00000001	0.073	0.000037	0.00000001	0.00000001	0.00001	5.5E-08	0.0000012	0.0000031
W4	27-Jul-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W4	24-Aug-11	3.7	0.00097	0.03	0.0000051	0.0058	--	0.25	0.00016	0.00000032	0.00000032	0.000032	0.00000035	0.000012	0.0000097
W4	12-Jun-12	15	0.00038	0.0049	0.000002	0.00029	1.3E-08	0.05	0.000029	1.3E-08	0.00000013	0.000013	7.4E-08	0.0000013	0.0000002
W4	9-Aug-12	1.5	--	0.0028	0.00000077	0.00074	6.1E-09	0.016	0.000047	6.1E-09	0.00000029	0.0000061	6.4E-08	0.00000074	0.0000044
W4	4-Aug-14	9.6	0.000096	0.00074	0.00000025	0.0002	3.2E-09	0.0051	0.000012	3.2E-09	3.2E-08	0.0000032	0.00000003	0.00000042	0.0000019
W4	12-Jul-15	16	0.000057	0.0034	0.0000016	0.00075	1.1E-08	0.029	0.000044	1.1E-08	0.00000011	0.00000034	0.00000013	0.0000013	0.0000011
W4	16-Aug-15	14	0.00047	0.026	0.0000058	0.0073	9.4E-08	0.14	0.00034	9.4E-08	0.00000094	0.0000028	0.00000093	0.000017	0.0000094
W6	19-Sep-09	2.8	0.000076	0.0054	0.00000076	0.00037	5.6E-09	0.057	0.000013	2.5E-08	2.5E-08	0.0000025	2.8E-08	0.0000035	0.0000014
W6	6-Jul-10	4.1	0.000076	0.0048	0.0000036	--	0.00000018	0.094	0.000026	0.00000009	0.00000036	0.00000054	0.00000023	0.0000049	0.0000018
W6	30-Aug-10	10	0.0017	0.031	0.000023	0.0052	0.00000034	0.83	0.00018	0.00000058	0.00000058	0.000058	0.0000018	0.0000087	0.0000058
W6	30-Sep-10	4.1	0.0057	0.08	0.000019	--	0.00000084	1.9	0.0041	0.00000021	0.00000084	0.0000013	0.0000036	0.00021	0.00001
W6	22-Jun-11	16	0.00057	0.0076	0.0000046	0.0012	3.8E-08	0.27	0.000034	0.00000038	0.00000038	0.000019	0.00000056	0.000026	0.000011
W6	27-Jul-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W6	24-Aug-11	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--
W6	12-Jun-12	13	0.00042	0.0039	0.0000011	0.00051	1.4E-08	0.12	0.000013	1.4E-08	0.00000014	0.000014	0.00000023	0.0000086	0.0000035
W6	9-Aug-12	1.1	--	0.0034	0.00000062	0.0013	0.00000001	0.065	0.000027	6.2E-09	7.5E-08	0.0000062	0.00000018	0.0000073	0.0000031
W6	4-Aug-14	8.9	0.00012	0.0014	0.0000006	0.0005	5.5E-09	0.04	0.0000097	3.9E-09	3.9E-08	0.0000039	0.00000014	0.0000081	0.0000039
W6	20-Sep-14	1.4	0.00029	0.0042	0.0000026	0.0013	9.6E-09	0.14	0.000021	9.6E-09	9.6E-08	0.0000096	0.00000005	0.0000019	0.0000011
W6	12-Jul-15	12	0.000067	0.0037	0.0000022	0.0011	1.3E-08	0.12	0.000029	1.3E-08	0.00000013	0.0000004	0.00000047	0.000017	0.0000013
W6	16-Aug-15	16	0.00073	0.051	0.00003	0.018	0.00000015	1.4	0.00038	0.00000015	0.00000015	0.0000044	0.0000063	0.0003	0.0000015
W7	19-Sep-09	2.3	0.000058	0.01	0.0000012	0.00035	3.8E-09	0.039	0.000019	3.8E-08	4.2E-08	0.0000019	8.5E-09	0.0000012	0.0000014
W7	6-Jul-10	4.1	0.000038	0.0065	0.0000033	--	0.00000016	0.084	0.000023	8.2E-08	0.00000033	0.00000049	0.00000016	0.0000022	0.0000016
W7	30-Aug-10	10	0.0016	0.02	0.0000069	0.0052	5.3E-08	0.36	0.00017	0.00000053	0.00000053	0.000053	9.6E-08	0.0000013	0.0000053
W7	30-Sep-10	2.2	0.00023	0.0022	0.000006	--	0.00000041	0.41	0.00021	0.00000001	0.00000001	0.00000012	0.00000021	0.0000017	0.0000054
W7	22-Jun-11	7.6	0.00025	0.0029	0.000001	0.00056	8.4E-09	0.052	0.000025	8.4E-08	8.4E-08	0.0000084	0.00000001	0.0000017	0.0000025
W7	27-Jul-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W7	24-Aug-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W7	12-Jun-12	13	0.00039	0.0034	0.0000009	0.00092	1.3E-08	0.068	0.000024	1.3E-08	0.00000013	0.000013	1.9E-08	0.0000025	0.0000019
W7	9-Aug-12	0.24	--	0.0003	6.8E-08	0.00016	2.4E-09	0.0035	0.0000079	2.4E-09	2.6E-08	0.0000024	3.5E-09	0.00000027	0.0000045
W7	4-Aug-14	3.8	0.000047	0.0003	0.0000001	0.0002	1.6E-09	0.0065	0.0000063	1.6E-09	7.9E-08	0.0000016	1.9E-09	0.00000061	0.0000012
W7	20-Sep-14	2.4	0.00044	0.0065	0.0000019	0.0043	1.5E-08	0.17	0.00005	1.5E-08	0.00000015	0.0000015	2.9E-08	0.000012	0.0000049
W7	12-Jul-15	15	0.000077	0.0028	0.00000082	0.0015	1.5E-08	0.063	0.000057	1.5E-08	0.00000031	0.00000046	2.3E-08	0.0000045	0.0000035
W7	16-Aug-15	4.3	0.00018	0.0078	0.0000013	0.0073	3.6E-08	0.13	0.00013	3.6E-08	0.00000036	0.0000011	3.6E-08	0.000022	0.0000054
W8	6-Jul-10	4.1	0.00004	0.0022	0.0000029	--	0.00000014	0.071	0.000029	7.2E-08	0.00000029	0.00000043	0.00000014	0.0000014	0.0000022
W8	30-Aug-10	8.4	0.0013	0.028	0.0000084	0.0035	4.4E-08	0.35	0.00019	0.00000044	0.00000044	0.000044	0.00000023	0.000016	0.0000044
W8	30-Sep-10	2.2	0.00024	0.025	0.0000064	--	0.00000041	0.36	0.00019	0.00000001	0.00000041	0.00000075	0.00000045	0.000012	0.000002
W8	22-Jun-11	8.2	0.00027	0.0048	0.0000018	0.00071	9E-09	0.076	0.000024	0.00000009	0.00000009	0.000009	0.00000007	0.0000025	0.0000027
W8	27-Jul-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W8	24-Aug-11	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W8	12-Jun-12	9.9	0.00029	0.0037	0.00000075	0.00091	9.8E-09	0.058	0.000014	9.8E-09	9.8E-08	0.0000098	7.9E-08	0.000002	0.0000013
W8	9-Aug-12	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W8	4-Aug-14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W11	6-Jul-10	8.1	0.00011	0.017	0.0000035	--	0.00000018	0.1	0.00013	0.00000035	0.00000024	0.00000027	0.00000014	0.0000028	0.0000028
W11	30-Aug-10	11	0.0022	0.034	0.000032	0.0043	7.3E-08	0.53	0.00078	0.00000073	0.00000073	0.000073	0.00000048	0.000023	0.0000073
W11	30-SEP-10	0.94	0.00017	0.009	0.0000077	--	0.00000022	0.13	0.00026	5.4E-08	0.00000022				