APPENDIX 1-B

Geochemical Characterization of Waste Rock, Ore, and Talus

IDM MINING

Red Mountain Underground Gold Project, Geochemical Characterization of Waste Rock, Ore, and Talus

Prepared for

IDM Mining Ltd.

Prepared by

srk consulting

SRK Consulting (Canada) Inc.
1CI019.002
June 2017

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List of Abbreviations

ABA	acid-base accounting
AP	acid potential
CRF	cemented rock fill
km^2	square kilometres
MDL	method detection limit
NP	neutralization potential
QEMSCAN	quantitative evaluation of minerals by scanning electron microscopy
QRXD	quantitative x-ray diffraction
t	tonne
TIC	total inorganic carbon
TSF	tailings storage facility
UBC	University of British Columbia

1 Introduction

The Red Mountain Underground Gold Project (the Project) is a proposed gold project located near Stewart, BC. SRK Consulting was retained by IDM Mining Ltd. (IDM) to assess the metal leaching and acid rock drainage (ML/ARD) potential of waste rock, ore, talus, metallurgical tailings and construction rock and create geochemical source terms in support of the water and load balance model for the Project.

This report presents the results of geochemical characterization programs for waste rock, ore, and talus. The findings are based on the results of acid-base accounting (ABA) analyses and laboratory-based kinetic data derived from historical geochemical characterization programs completed by MDAG (1996a) and Frostad (1999), and an extensive site monitoring program that has spanned approximately 20 years (i.e., SRK 2001, 2003, 2004 through 2012 and 2014). The site monitoring program includes two field crib tests, legacy waste rock and ore stockpiles from an underground exploration adit developed in the1990s, and more recent site water quality monitoring data. Furthermore, additional samples of gossanous talus were recently sampled to evaluate the potential for reductive dissolution of iron and manganese (oxy)hydroxides and associated release of metals and quantify readily soluble oxidation products

The characterization program meets the requirements for characterizing the metal leaching and acid rock drainage (ML/ARD) potential of waste rock, ore, and talus described in *Policy for Metal Leaching and Acid Rock Drainage at Minesites in British Columbia* (MEM 1998); *Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials* (Price 2009); and Section 2 and Appendix 4 of the *Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operators* (MOE 2016). The geochemical characterization programs for metallurgical tailings, roads and construction rock, and derivation of geochemical source terms are reported separately (Appendix 14-B, Appendix 1-L, and Appendix 1-K).

2 Background

2.1 Project Setting

2.1.1 Physical and Hydrological Setting

The Project is located west of the Cambria Ice Field and north of the Bromley Glacier (Figure 2-1) and is characterized by rugged, steep terrain with weather conditions typical of the northern coastal mountains. The deposit is under the summit of Red Mountain at elevations ranging between 1,600 and 2,000 meters above sea level (masl). Temperatures are moderated year-round by the coastal influence. Precipitation is significant throughout the year; October is typically the wettest month and there is significant snow accumulation in the winter. The snowfall, steep terrain, and frequently windy conditions present blizzard and avalanche hazards during the winter (JDS 2016).

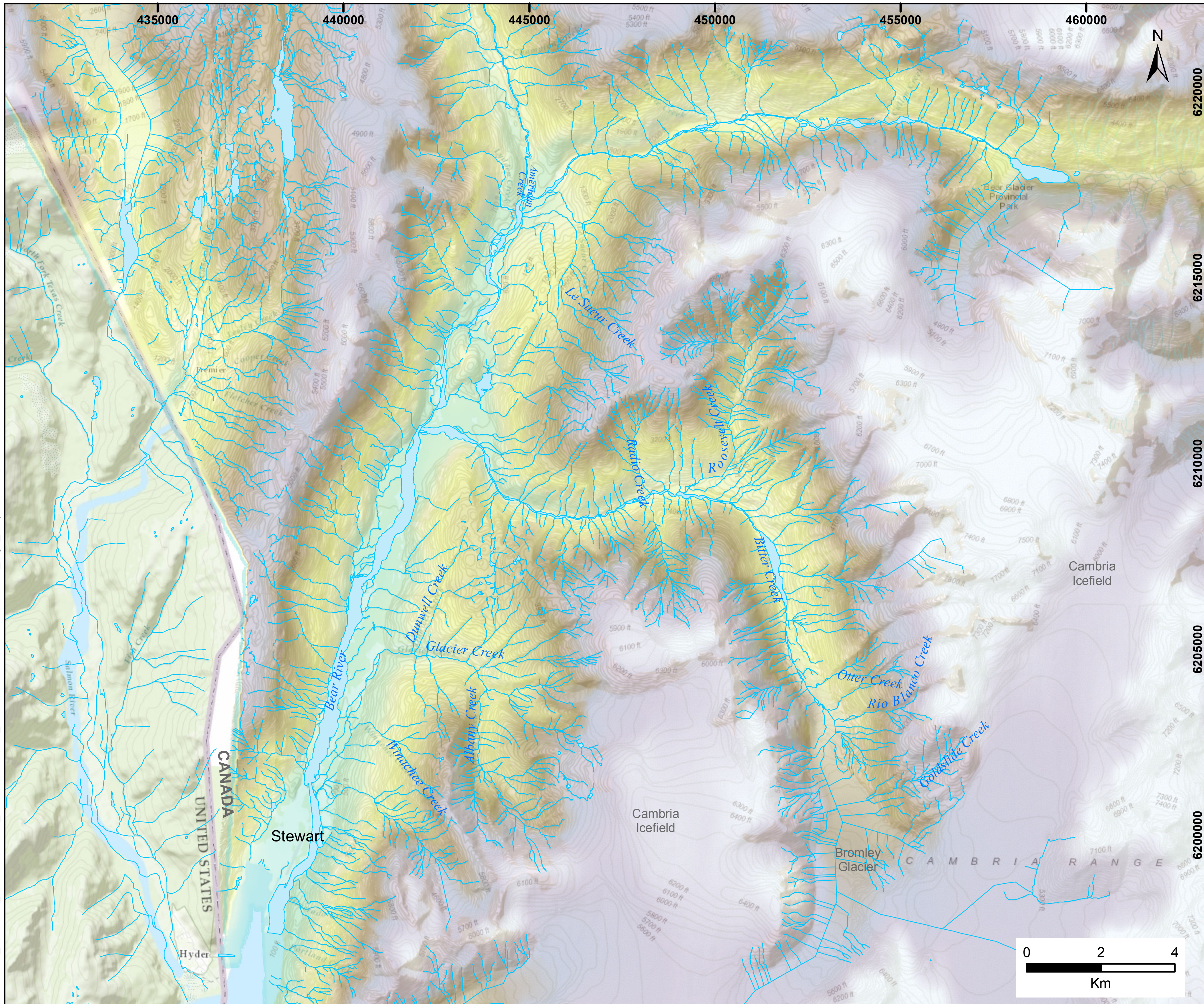
2.1.2 Geological Setting

The following summary of the Project geology was adapted from the NI 43-101 Preliminary Economic Assessment Technical Report (JDS 2016).

Red Mountain is near the western margin of the Stikine terrain in the Intermontane Belt. The three primary stratigraphic units are the Stuhini Group clastic rocks from the Middle and Upper Triassic, the Hazelton Group volcanic and clastic rocks from the Lower and Middle Jurassic, and the Bowser Lake Group sedimentary rocks from the Upper Jurassic. Many primary textures are preserved in rocks in all three groups, and the mineralogy suggests that the regional metamorphic grade is likely lower greenschist facies. There are several suites of intrusions in the region from the Late Triassic through the Eocene, including the Stikine plutonic suite that is coeval with the Stuhini Group and plutons that are roughly coeval with the Hazelton Group.

Structurally, Red Mountain is on the western edge of a complex, northwest-southeast trending, double-plunging, Cretaceous structure in which the Stuhini, Hazelton, and Bowser Lake Groups were folded and/or faulted by the Skeena fold belt. The Red Mountain deposits are in the core of the Bitter Creek antiform, which was created during this deformation event.

Figure 2-2 is a map of the Red Mountain property-scale geology. The Stuhini Group mudstones, siltstones, and chert from the Middle and Upper Triassic outcrops cover about two-thirds of the mapped area. The Hazelton Group clastic and volcanoclastic rocks from the Lower Jurassic outcrop in the northeastern portion of the mapped area. Rocks from both groups are folded and plunge towards 345°, dipping deeply to the southwest. The contact between the Stuhini and Hazelton Groups follows this trend and occurs along the projected trace of the Bitter Creek antiform to the northwest of the mapped area. Structural deformation at the property scale is consistent with the regional and tectonic scales.

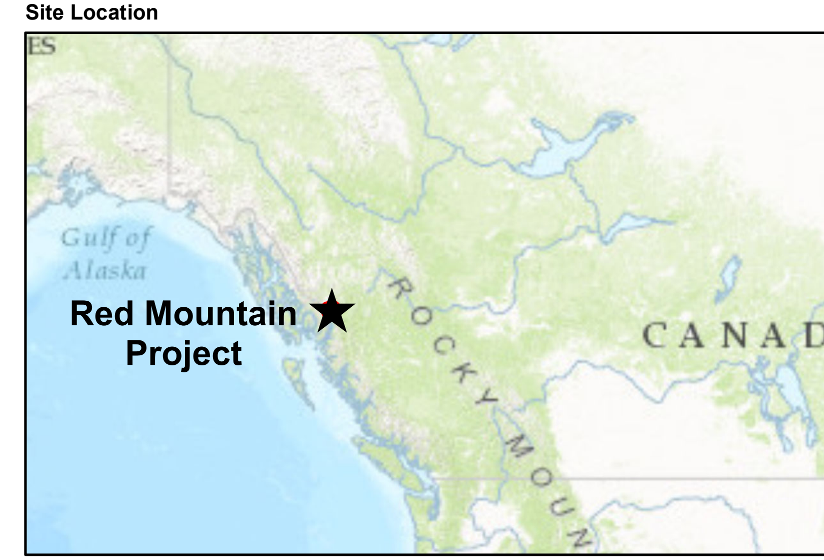


Legend

Watercourse

Waterbody

Site Location



Notes:
Coordinate System: NAD 1983 UTM Zone 9N

srk consulting

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Red Mountain Underground Gold Project

Project Location

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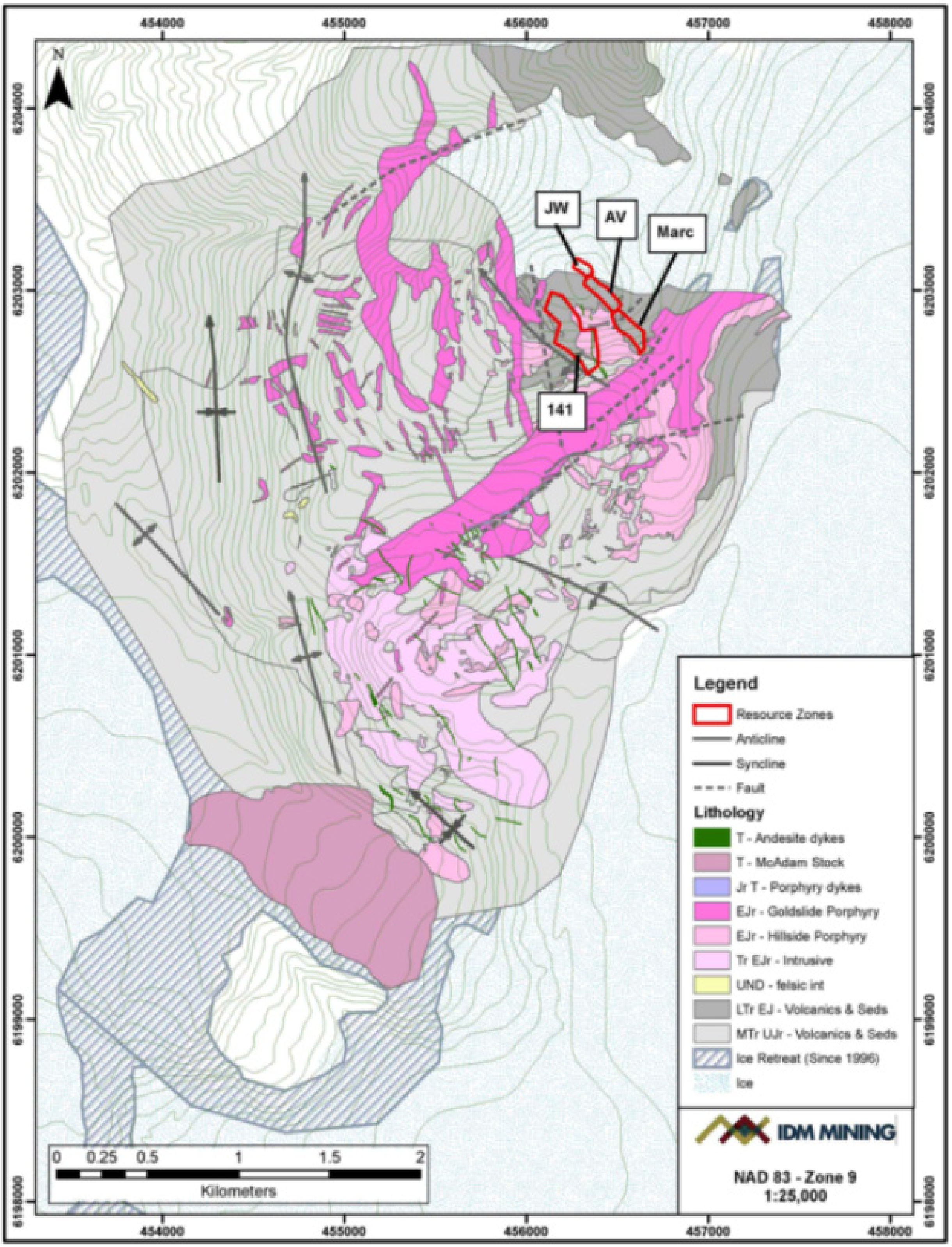

Figure 2-2: Property-Scale Geology

Three Early Jurassic intrusions are exposed in the mapped area (Figure 2-1): the Hillside porphyry exposed near the summit of Red Mountain and along the ridge southeast of the summit; the Goldslide porphyry exposed along the Goldslide Creek valley; and the Biotite porphyry sills intruding Upper Triassic sediments on the western side of Red Mountain. The Hillside porphyry is a fine- to medium-grained hornblende and plagioclase porphyry that contains rafts of sedimentary rocks one to tens of meters across. The Goldslide porphyry is a medium- to coarse-grained hornblende, biotite, and quartz porphyry that is distinguished from the Hillside porphyry by mineralogy and phenocryst size. The Biotite porphyry is distinguished from the Hillside porphyry by the presence of biotite phenocrysts and from the Goldslide porphyry by the small size of the hornblende and plagioclase phenocrysts. The McAdam Point stock, a medium- to coarse-grained biotite quartz monzonite, is a Tertiary intrusion exposed in the southern part of the mapped area next to the Bromley Glacier.

Red Mountain is characterized by an approximately 12 square kilometre (km^2) gossan located between the Bromley Glacier and Cambria Icefield. The gossanous appearance of Red Mountain is a result of the extensive zone of pyritization and sericitization surrounding the Goldslide Intrusion.

The four main mineable mineralized zones are Marc, AV, JW, and 141. The mineralized zones are northwesterly trending and moderately to steeply southwesterly dipping and are crudely tabular, gold- and silver-bearing iron sulphide stockworks. Pyrite is the dominant sulphide, but locally pyrrhotite is also important. The stockwork zones are developed primarily in the Hillside porphyry and, to a lesser extent, in rafts of sedimentary and volcanoclastic rocks.

The stockwork zones have pyrite microveins, coarse-grained pyrite veins, irregular coarse-grained pyrite masses, and breccia matrix pyrite hosted in a pale, strongly sericite altered porphyry. Veins are 0.1 to 80 cm wide, but are most commonly 1 to 3 cm wide, and are variably spaced, averaging 2 to 10 per metre. The veins are often heavily fractured or brecciated with fibrous quartz and calcite infilling.

The pyrite veins typically carry gold grades ranging from about 3 g/t to more than 100 g/t. Gold occurs as native gold grains, electrum, petzite, and a variety of gold tellurides and sulphosalts. The mineral grains are typically 0.5 to 15 microns wide and occur along cracks in pyrite grains, within quartz- and calcite-filled fractures in pyrite veins, and to a lesser extent, as inclusions within pyrite grains.

The stockwork zones are surrounded by a zone of disseminated pyrite and pyrrhotite alteration. Pyrite and pyrrhotite comprise about 1.5 to 2% of the wall rocks to the stockwork zones and also occur as sparsely-distributed stringers. While the disseminated pyrite occurs within the stockwork zones, the disseminated pyrrhotite abruptly disappears at the edges of the bleached pyrite stockwork zones, often over distances of less than a metre. Pyrrhotite occurs locally within the pyrite stockwork, but generally only where bleaching and pyrite vein density is weak.

The stockwork zones are also partially surrounded by a halo of red sphalerite, which comprises 0.5 to 4% of the rock and is more abundant in the footwalls. While the sphalerite halo contains low-grade gold (0.5 to 2 g/t), these areas also have pyrite and pyrrhotite veinlets that may contain the gold.

2.2 Project Information

2.2.1 Existing Infrastructure

Existing infrastructure on the site includes an underground decline and drift development developed in the mid-1990s that produced a bulk sample of the mineralized Marc zone, a 50,000 tonne (t) legacy waste rock pile, a surface tote road network, camp buildings, helipads, and used mobile equipment (JDS 2016). The existing underground workings were developed in 1993/94 by LAC Minerals Inc. and then extended by an additional 304 m in 1996 by Royal Oak Mines Inc. The underground decline intersects the Marc, AV and JW zones.

2.2.2 Proposed Mine Plan

Figure 2-3 illustrates the currently proposed mine plan, historic underground workings, and the geochemical sample set (i.e., both drill core samples and blast round samples collected during development of the underground). The proposed mine plan makes use of the existing portal, and includes a second portal located at a lower elevation, which is accessed by the main haul road.

The mine plan proposes operational management and conceptual closure plans for ore and waste rock stockpiles:

- Ore that is not immediately processed will be stockpiled on surface adjacent to the Process Plant. Ore will be processed in the Process Plant, producing tailings to be stored in the tailings management facility (TMF) at an area referred to as Bromley Humps.
- Newly mined waste rock will be either directly placed underground as backfill[1] or temporarily stockpiled on surface. By the time of mine closure, all waste rock stockpiled on surface will have been placed underground as backfill. The residence time of fresh waste rock on surface will not exceed the proposed operating mine life.
- A portion of the backfill will be placed as cemented rock backfill (CRF), including all legacy waste rock that is presently in stockpiles on surface
- There is a deficit of backfill required for underground stope support. Talus from the immediate vicinity of the mine is the primary source being considered as imported backfill.
- Upon closure, all portals will be sealed, and the underground mine will be flooded up to the 1,790 masl elevation. Above this elevation, the mine will fluctuate seasonally (Appendix 10-A).

[1] Backfill types include legacy waste rock stockpile material currently on surface, waste rock generated as part of the Project, and talus.

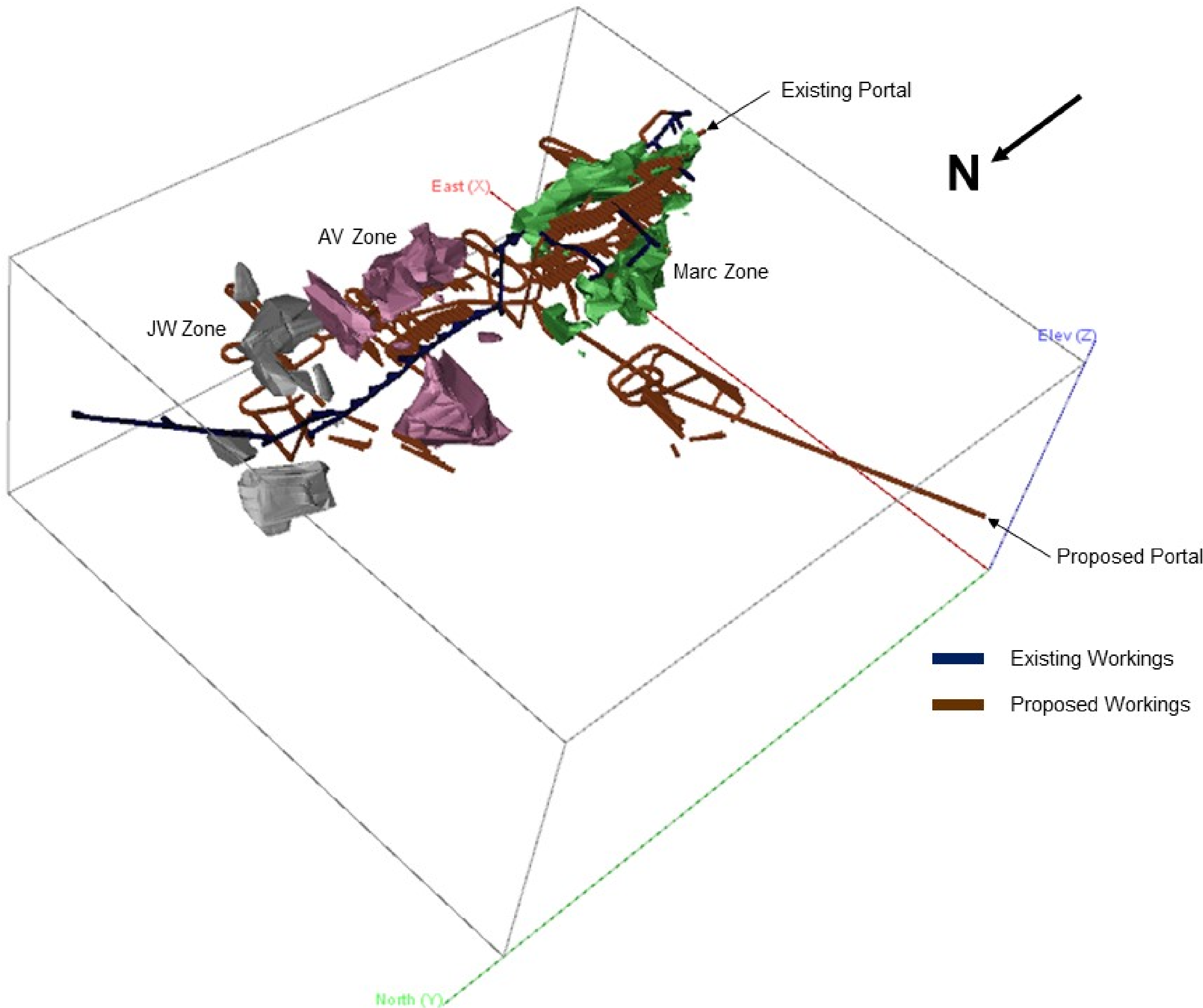

Figure 2-3: View of Marc, JW and AV Ore Bodies, Proposed Mine Plan (JDS 2016) and Existing Underground Workings

2.3 Overview of Existing ML/ARD Characterization Studies

For geochemical characterization, rock samples were collected at Red Mountain beginning in 1991, when Lac Minerals acquired the property. MDAG (1996a) reported on mineralogy, static and kinetic test results for waste rock, ore, tailings and natural talus (gossan) from samples collected between 1991 and 1994. Samples were collected from surface drilling on the Marc, AV, and JW zones in 1991 through 1994, from underground exploration of the Marc zone in 1993 and 1994 and from surface as grab samples in 1994. The results for waste rock, ore, and talus are presented and discussed in this report.

Frostad (1999) and Frostad et al. (1999) presented preliminary findings of a research project comparing laboratory- and field-based kinetic testing programs on waste rock from the site. The samples were tested using seven different lab-based kinetic test methods to evaluate the effects of testing under a variety of controlled conditions. The test methods included different variables including: sample size (i.e., 1 to 50 kg), grain size, column height and width, aeration, leach duration, method of water application, and rinse water pH. The Frostad laboratory test results were compared to two 20-tonne field tests to evaluate scaling up of laboratory data. The laboratory kinetic tests were analyzed for major ions, but not trace elements, and are therefore of limited use for understanding metal leaching. Frostad (1999) concluded that laboratory data could not be scaled up to represent the results of the field scale tests. Selected test data for the five samples are presented and discussed in this report. Monitoring of the field cribs has been ongoing for over 20 years, with results presented and discussed in this report.

Compliance monitoring activities were initiated in 2000 and continued from 2003 through 2013. The monitoring program included annual paste pH and conductivity surveys and periodic ABA testing of legacy material in the portal and Marc Zone stockpiles (2003, 2006, 2009, and 2013), annual seep surveys around the stockpiles, and sampling of the field cribs and underground mine pool (SRK 2001, 2004 through 2012, and 2014). All monitoring results are presented and discussed in this report.

All of the aforementioned geochemical studies concluded that waste rock is potentially acid generating (PAG); however, monitoring indicated that ARD was not being produced from the legacy waste rock stockpiles or the field cribs, indicating there is a substantial delay to the onset of acidic conditions in this material.

3 Methods

The geochemical data includes the following: mineralogy, static testing on waste rock, ore and talus; bottle roll tests; laboratory- and field-based kinetic tests; monitoring of legacy waste rock and ore stockpiles; site water quality data, including seepage from the legacy waste rock stockpile and underground mine pool; and sequential extraction tests and shake flask tests on gossanous talus.

3.1 Sampling and Testing Programs

3.1.1 Mineralogy

Available bulk mineralogy data for the Red Mountain geochemical characterization program includes:

- Quantitative x-ray diffraction (QXRD) of five legacy stockpile samples collected by SRK (2004) and five talus samples collected on behalf of SRK in 2016.
- Hand sample and petrographic examination of the five underground waste rock samples from Frostad (1999).
- Petrographic examination of 12 of the 13 waste rock and ore humidity cell samples from MDAG (1996a). Mineralogy was not determined for kinetic test sample containing talus rock.
- QXRD and QEMSCAN of the five gossanous talus samples collected in 2016.

A subset of five SRK (2004) test pit samples from the Marc Zone legacy waste rock stockpile were selected for QXRD using Rietveld refinement. This analysis was carried out at the Department of Earth and Ocean Sciences at the University of British Columbia (UBC). The objective of the mineralogical program was to provide a quantitative measurement of mineral phases that contribute to the neutralizing capacity of the tested material.

The mineralogy for the five samples from Frostad (1999) was determined by hand sample and petrographic examination of thin sections. The report contained modal mineralogy of sulphides for each sample and a general mineralogical description of the two rock types under investigation.

The mineralogy of the MDAG (1996a) of 12 waste rock and ore humidity cell tests was determined by petrographic examination by Harris Explorations Services of North Vancouver, BC. More information on the petrographic examinations are provided in Appendix C of the MDAG report (1996a).

The bulk mineralogy of five gossanous talus samples collected in 2016 was determined by QXRD and QEMSCAN at SGS Canada in Burnaby, BC and Lakefield, Ontario. Additional mineralogy was conducted on the iron (oxy)hydroxide phase, as discussed in Section 3.1.8.

3.1.2 Static Testing

Sample Set

The ABA sample set is a compilation of data sourced from MDAG (1996a) and Frostad (1999). Table 3-3 summarizes the static testing data from these two sources, which includes 543 samples and Figure 3-1 illustrates their location, with the blue blast round samples denoting the location of the existing underground decline. The complete list of samples included in the characterization data set is provided in Appendix A and includes 53 ore samples, 400 waste rock samples, and 90 talus samples. The original MDAG (1996a) sample set comprised a total of 587 samples collected for static testing between 1991 and 1994 by Bond Gold, Lac Minerals, Royal Oak, and MDAG, of which 532 of those samples were included in the current dataset. The MDAG (1996a) sample set is described in Table 3-1 and includes

- Core intervals representing waste rock and ore from the Marc, AV, and JW zones of the deposit (108 samples in total, all included in the sample set).
- Metallurgical residues, intended to be analogues to tailings (five samples in total). Four of the samples were excluded from the sample set because historical tailings and metallurgical samples are considered not representative for the Project. The remaining sample was reclassified as ore and included in the dataset.
- Grab samples of gossanous talus from the cirque (17 samples), one composited talus sample, and 24 samples of talus that were divided into three sub-samples based on grain size (+10 mesh, -10 to +230 mesh, and -230 mesh), with each sub-sample analyzed separately, for a total of 90 talus samples. The talus samples with location information are shown on Figure 3-2.
- One waste rock sample that was divided into three sub-samples based on grain size (+10 mesh, -10 to +230 mesh, and -230 mesh), with each sub-sample analyzed separately.
- Surface rock near the formerly proposed tramway infrastructure (six samples in total), all excluded from the dataset because of their location outside of the deposit area.
- 324 muck or blast round samples from underground development and exploration by Lac Minerals. These samples represent the 1993/94 ore and waste rock material in the legacy stockpiles on site.
- 51 unknown samples, of which 45 were excluded from the sample set because of their location outside of the deposit area.

All samples from MDAG (1996a) were analyzed for total sulphur and neutralization potential (NP). All but 59 samples were also analyzed for paste pH. A subset of 154 of the samples was also analyzed for leachable sulphate, and inorganic carbonate, termed “expanded ABA” in the MDAG report (1996a). No information on the specific analytical methods employed was provided in the MDAG report. Two laboratories in North Vancouver, BC were identified as having conducted the analyses: Min En Laboratories and Chemex Laboratories (now ALS Minerals).

Table 3-1: MDAG ABA Dataset

MDAG Sample Location or Type	MDAG Classification	Total Number of MDAG Samples	Samples Included in Combined Dataset	Notes
Marc Zone	Ore	39	39	
	Waste Rock	64	64	
	Tailings[1]	4	1	Marc Composite sample reclassified as ore and included. Remaining three samples excluded.
AV Zone	Ore	2	2	
	Waste Rock	2	2	
	Tailings[1]	1	0	Tailings sample excluded.
JW Zone	Ore	1	1	
Upper Tram		6	0	All six samples excluded based on their location outside of the deposit area.
Talus Rock		17	17	
Talus Composite		1	1	
Size-Fractionated Samples		75	75	From 25 samples (one waste rock and 24 talus samples).
Unknown Rock Type		51	6	45 samples excluded based on their location outside of the deposit area.
1993 Underground Muck	BdT	78	78	Reclassified as MSI.
	HfP	22	22	Reclassified as Hlp.
	HFxl	189	189	Reclassified as xTF.
	HFxl ore	10	10	Reclassified as xTF ore.
	HFxl-BdT	21	21	Reclassified as HFxl-BdT.
	Unknown	4	4	
Totals		**587**	**532**	

Source: compiled in text.

Note:

(1) Metallurgical residues were intended to be analogous to tailings. These samples are not considered representative for the Project.

Five samples, as summarized in Table 3-2, were analyzed for ABA as part of a UBC research project (Frostad 1999). All samples were included in this report. Analyses included total sulphur and sulphate assays conducted by Chemex Laboratories (now ALS Minerals; Vancouver, BC). Modified Sobek NP (Lawrence 1990) and total carbon using a Coulimetrics Model 5030 Carbonate Carbon apparatus linked to a Coulimetrics Model 5010 CO_3 Coulometer at UBC. Total carbon was determined as a proxy for total inorganic carbon (TIC), with the assumption that the samples did not contain organic carbon. Paste pH values were averaged from underground samples collected along the same portion of drift as the five samples while the exploration decline was being built. Paste pH was measured by Eco-Tech Laboratories in Kamloops, BC.

All five of the Frostad (1999) samples and 415 of the MDAG (1996a) waste rock and ore samples were analyzed for trace elements (Table 3-2). The database contains a 14-parameter suite (i.e., Ag, Al, As, Cr, Hg, K, Mg, Mn, Na, P, Sr, V, W, Zn) for all samples with a sub-set of samples having an extended suite (i.e., B, Ba, Be, Bi, Ca, Cd, Co, Cu, Fe, La, Mo, Ni, Pb, Sb, Se, Sn, Te, Ti, Tl, U, and/or Y). Only the MDAG humidity cell test samples (Section 3.1.4) include Se data. None of the talus samples were analyzed for trace elements, with the exception of the composite sample that underwent kinetic testing (Section 3.1.4). There are no trace element data for the ground ore sample from the metallurgical program that was included in the humidity cell test program. No information on the specific analytical methods employed is available.

Table 3-2: Summary of Static Test Samples from Frostad 1999

Sample ID	Source	Description
HC-1	Underground slash, used to fill field cribs (Section 3.1.5)	Feldspar porphyry intrusive material
HC-2	Underground slash, used to fill field cribs (Section 3.1.5)	Sedimentary with minor feldspar porphyry dyke material
ABA-1	Collected from Lac Minerals' ABA sample stockpile	Sedimentary
ABA-2	Collected from Lac Minerals' ABA sample stockpile	Feldspar porphyry intrusive material
ABA-3	Collected from Lac Minerals' ABA sample stockpile	Feldspar porphyry intrusive material

Source: compiled in text from Frostad 1999.

In addition to the samples from MDAG (1996a) and Frostad (1999), SRK received the original working files used to generate the MDAG report from Kevin Morin. There were an additional six muck or blast round samples from underground development and exploration by Lac Minerals, for a total of 330. SRK included these samples in the dataset, for a total of 543 samples. The combined dataset is summarized in Table 3-3.

Table 3-3: Summary of Static Test Samples in Combined Dataset

Economic Classification	Unit Name	Unit Code	Total Number of Samples	Samples with Paste pH	Samples with Total Sulphur Data	Samples with Sulphate Data	Samples with NP Data	Samples with TIC Data	Samples with Trace Element Data
Ore	Fault zone	FZ	1	0	1	0	1	0	1
	Hillside porphyry, fragmented	xHlp	4	0	4	0	4	0	4
	Tuffs, bedded (volcaniclastic)	TfB	8	4	8	4	8	4	8
	Tuffs, fragmented (volcaniclastic)	xTF	37	18	37	8	37	8	37
	Unknown or Composite Lithology	N/A	3	3	3	3	3	3	2
Waste Rock	Contact breccia	xTF-TfB	21	21	21	0	21	0	16
	Goldslide porphyry	GOp	1	1	1	0	1	0	0
	Hillside porphyry	Hlp	29	29	29	7	29	7	28
	Hillside porphyry, fragmented	xHlp	6	2	6	1	6	1	5
	Mudstone, interbedded[1]	MSI	84	84	84	2	84	2	78
	Tuffs, bedded (volcaniclastic)	TfB	23	16	23	13	23	13	20
	Tuffs, fragmented (volcaniclastic)	xTF	225	205	225	15	225	15	218
	Unknown or Composite Lithology	N/A	11	11	11	5	11	5	2
Talus	Talus	N/A	90	90	90	90	90	90	1
Total			**543**	**484**	**543**	**148**	**543**	**148**	**420**

Source: compiled in text from \\VAN-SVR0\Projects\01_SITES\Red_Mountain_BC\1CI019.001_2015_2016_EA\Geochemistry\ABA\Red_Mtn_ABA_Analysis_1CI019-002_rev19_lmc.xlsx

Note:

(1) One sample (HC-2 from Frostad 1999) is a mixed sample: 2/3 MSI and 1/3 Hillside porphyry (Hlp). It is classified as MSI in the sample set.

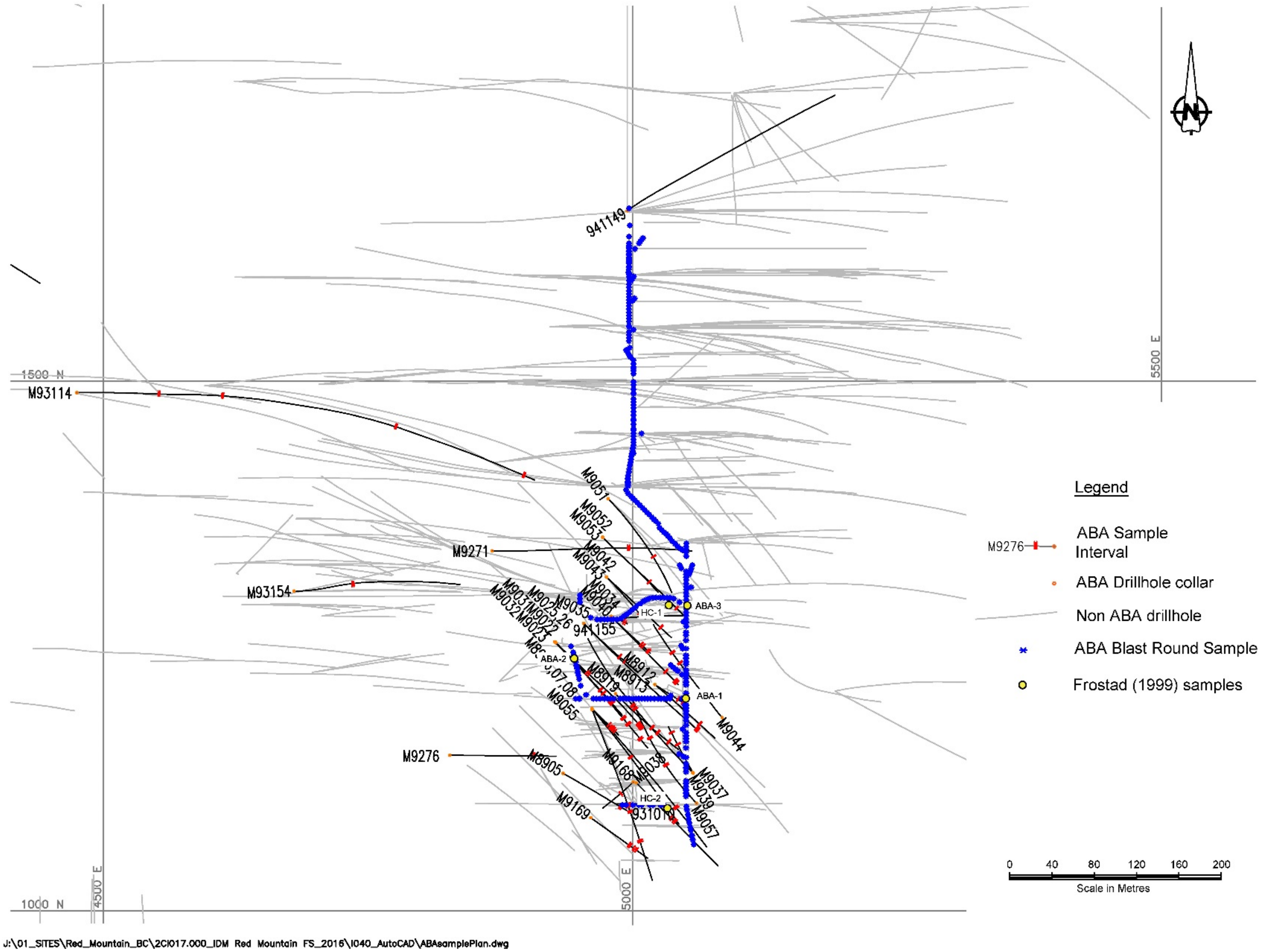

Figure 3-1: Location Map of Waste Rock and Ore Samples

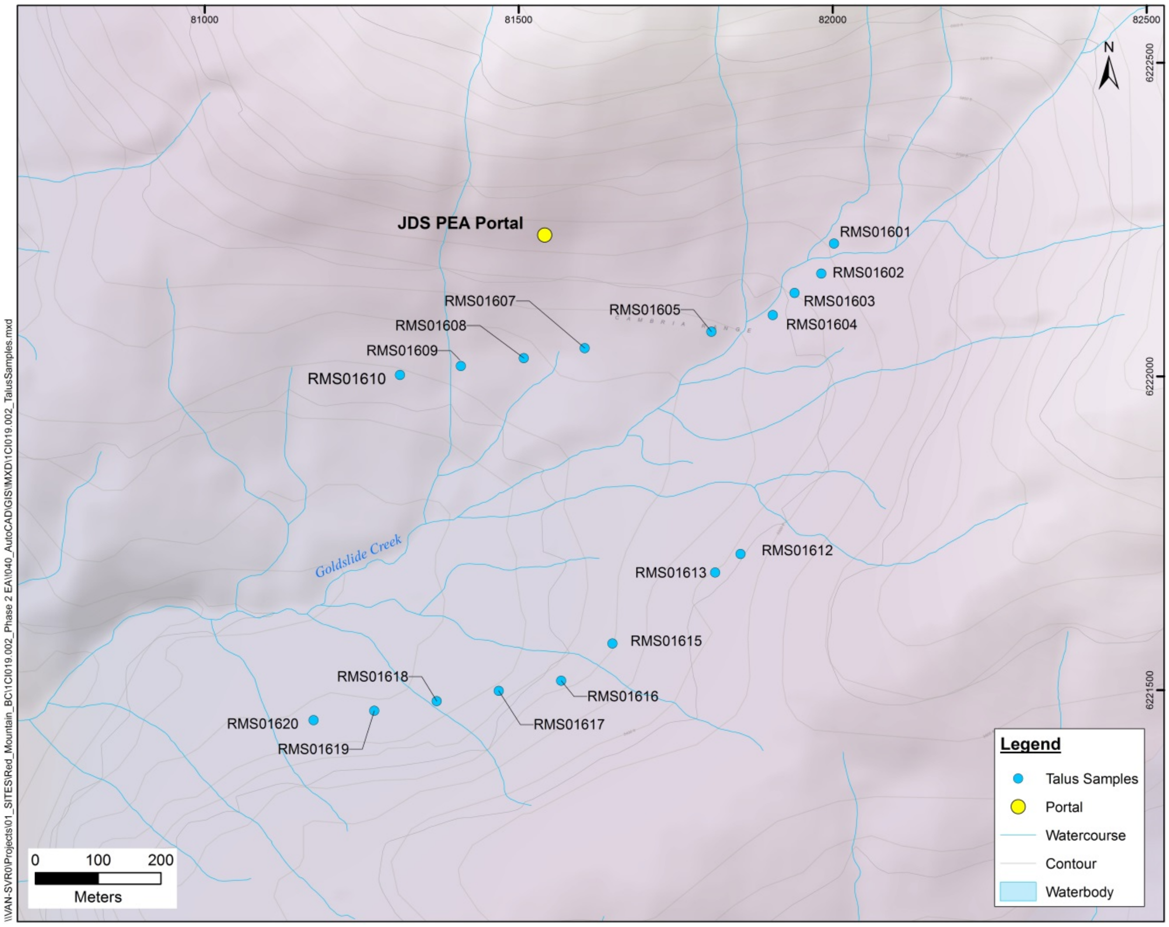

Figure 3-2: Location Map for Talus Samples Collected by Lac Minerals

Assignment of Geology

The geological nomenclature has varied over the years, resulting in static test samples with geological names that are not consistent with those currently being used by IDM. Appendix B provides the historical geological codes used and the equivalent standardized codes used by IDM. The geological unit names for the ABA samples have been standardized using IDM's conventions for logging geological samples (*personal communication*; Andrew Hamilton, IDM geologist).

For five of the underground samples[2] in the dataset, it was not clear whether they had been classified as waste rock or ore. For the purposes of this evaluation, these five samples were assumed to be waste rock as the majority of the samples collected during this time were waste rock.

[2]Samples MC93-114 427-429 (lithology xHlp), MC93-114 615-617 (GOp), MC93-147 107-109 (TfB), MC93-147 191-193 (TfB), and RMU-9439 (unknown lithology).

3.1.3 Bottle Roll Tests

In 1994, MDAG conducted bottle roll tests at Chemex Labs (North Vancouver, BC) to determine the amount of soluble products. The testing involved rolling a sample in excess water (solid to liquid ratio of approximately 1.5 to 1 by volume) for 24 hours and then analyzing the supernatant. The grain size of the sample was not specified. Excess water was used to ensure that all readily-removable reaction products were dissolved without being limited by mineral solubility (MDAG 1996a). The grain size of the samples and water type was not indicated, but the tests are assumed to have been completed using de-ionized water. One waste rock of unidentified lithology (sample ID WR 1) and five talus (TAL 4, TAL 8, TAL 10, TAL 12, TAL 21) samples were tested. The sample selection rationale was not documented. These samples were also analyzed for ABA (Section 3.1.2).

3.1.4 Laboratory-Based Kinetic Tests

MDAG Samples

In 1993, MDAG initiated 15 laboratory-based humidity cell tests, including six tests on waste rock from the Marc and AV Zones, seven tests on ore from the Marc, AV and JW zones, one sample of talus, and one test on tailings. The humidity cell test method and laboratory were not documented.

Table 3-4 presents the available background information on the humidity cell tests included in this report. The one test of tailings is not presented in this report because it is not considered representative of the proposed Project tailings. More details on these tests are available in the MDAG report (1996a).

Testing was conducted on a weekly basis and leachates were analyzed for pH, EC, acidity, alkalinity, sulphate and trace elements (i.e., Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, P, K, Se, Ag, Na, Sr, Ti, V and Zn). Selenium was analyzed for in all but six humidity cell tests (Porphyry FHp, ABA-024, Black Tuff, ABA-031, Crystal Tuff, ABA-010) and only for selected cycles near the end of operation. Detection limits varied over the duration of the tests for selected parameters. Specifically, during humidity cell test operation, detection limits were lowered for antimony and copper and increased for silver. Ion balances for each cycle were reviewed. Many humidity cell tests had one or two cycles with ion balances outside acceptable limits (±20%). An exception was sample “Talus Composite”, which had 16 cycles with poor ion balances, suggesting that there was a key parameter excluded from the analysis. As there was no opportunity for re-analysis of the leachates, all data were accepted as documented and used in this evaluation.

Static testing was conducted on the humidity cell samples prior to operation and included of the ABA parameters outlined in Section 3.1.2. Trace element data was available for all samples except the “Marc Composite”. As previously discussed in Section 3.1.1, mineralogy for all kinetic test samples was conducted by Harrison Exploration Services (North Vancouver, BC), with the exception of the “Talus Composite” sample.

Table 3-4: Summary of Humidity Cell Tests

Economic Classification	Sample ID	IDM Rock Type	Zone	Date Started	No. of Cycles
Waste Rock	Porphyry FHp	Hlp	Marc	20-Sep-93	42
	ABA-024	TfB	Marc	20-Sep-93	42
	Black Tuff	TfB	Marc	20-Sep-93	42
	ABA-031	xTF	Marc	20-Sep-93	42
	ABA A.V.1	Mixed	AV	6-Dec-93	45
	ABA A.V.2	Mixed	AV	6-Dec-93	45
Ore	Crystal Tuff	TfB	Marc	20-Sep-93	42
	Ore Avg Pyritic	TfB	Marc	20-Sep-93	73
	Ore Avg ZnS2	TfB	Marc	20-Sep-93	56
	ABA J.W.5	TfB	JW	6-Dec-93	45
	ABA-010	xTF	Marc	20-Sep-93	42
	ABA A.V.4	Mixed	AV	6-Dec-93	45
	Marc Composite[1]	Unknown	Marc	25-Oct-93	51
Talus	Talus Composite	Talus	NA	2-May-94	41

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Note:

(1) Ground ore sample (5 to 100 microns) from historic metallurgical studies.

Frostad Samples

As part of Frostad (1999), 32 laboratory-based kinetic tests were conducted with five different waste rock samples using seven different methods (Table 3-5, Table 3-6, and Figure 2-3). Samples were selected based on the preliminary mine development plans, which at the time projected that the waste rock pile would contain approximately 60 to 70% feldspar porphyritic intrusive (Hillside porphyry; Hlp) and 30 to 40% interbedded mudstone (MSI).

Table 3-6 summarizes the Frostad (1999) laboratory-based kinetic test methods. Frostad (1999) contains a more comprehensive explanation of each method. The standard test method is similar to a humidity cell test. The three test methods conducted under oxidizing conditions with water applied as a trickle (standard, tall and 50 kg) were included in this report. All five samples were subjected to the standard and tall test methods and two samples (i.e., HC-1 and HC-2) were tested using the 50 kg method. As noted in Table 3-6, three samples were run in duplicate for the standard test method. The tests not included in this report (see Table 3-6 for rationale) included the shaken, non-aerated, simulated precipitation and NP column methods.

Testing was typically conducted on a weekly basis for all tests, and leachates were analyzed for pH, EC, alkalinity, sulphate, calcium, magnesium, potassium and sodium. As there was no opportunity for re-analysis of the leachates, all data were accepted as documented.

Static testing was conducted on the humidity cell samples prior to operation and included the ABA parameters outlined in Section 3.1.2. The suite for trace element analysis included: Al, Sb, As, Ba, Be, Bi, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Pb, K, Ag, Na, Sr, Tl, Ti, W, V and Zn. Notably, Se was not analyzed as part of this suite. As previously discussed in Section 3.1.1, mineralogy was conducted by Frostad.

Table 3-5: Frostad (1999) Waste Rock Samples

Rock Type	Sample ID	Sample Provenance	Notes
Hillside Porphyry (Hlp)	HC-1	Underground slash	
	ABA-2	Lac Mineral's ABA waste rock stockpile	
	ABA-3		
Mudstone, interbedded (MSI)	HC-2	Underground slash	Mixture: 2/3 MSI, 1/3 Hlp
	ABA-1	Lac Mineral's ABA waste rock stockpile	

Source: compiled in text from Frostad 1999.

Table 3-6: Overview of Frostad (1999) Laboratory-Based Kinetic Test Methods and Samples Tested

Test Type	Sample Quantity (kg)	Particle Size (mm)	Cell Diameter (cm)	Cell Height (cm)	Summary of Test Conditions	Hillside Porphyry (Hlp)			Sedimentary (MSI)		Test Included in Report?
						HC-1	ABA-2	ABA-3	HC-2	ABA-1	
Standard	1	-6.4	10	20	Dry/wet air cycles; 500 mL trickle leach using deionized water; upflow of air (0.5 L/min).	1	2	2	1	2	Yes
Tall	3	-6.4	10	40	Dry/wet air cycles; 500 mL trickle leach using deionized water; upflow of air (0.5 L/min).	1	1	1	1	1	Yes
50 kg	50	-38.1	30	75	Dry/wet air cycles for 31 cycles then no air applied; 500 mL trickle leach using deionized water; upflow of air (0.5 L/min).	1			1		Yes
Shaken	1	-6.4	10	240	1 kg cell with dry/wet air cycles - flooded, 1 hr soak, lifted and swirled for 30 sec, drained, fines returned; upflow of air (0.5 L/min).	1	1	1	1	1	No, because samples were soaked and swirled.
NP Column	5	-6.4	5	188	Closed system purged with nitrogen, continuous trickle leach with water of pH 3.0	1	1	1	1	1	No, because leachate was acidic.
Non-aerated	1	-6.4	10	20	No air applied; 500 mL trickle leach using deionized water	1					Yes
Simulated Precipitation	1	-6.4	10	20	No air applied for latter half of test. Leach duration, volume and/or, frequency varied for each test.	6					No, because non-aerated.

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3.1.5 Field-Based Kinetic Tests

Two of the samples (HC-1 and HC-2) tested using laboratory-based kinetic tests were also subjected to field-based kinetic tests.

Two wooden field cribs containing approximately 20 tonnes of blasted rock from the exploration adit were constructed near the exploration portal in October 1994 as part of a UBC research project (Frostad 1999). Prior to loading the cribs, the samples were sieved and the cribs loaded with the -400 mm size fraction. The walls of the cribs were slatted and lined with geotextile to permit limited oxygen entry. The field crib locations are presented in Figure 3-3 and Table 3-7 provides the details of the crib contents.

Samples were analyzed for grain size distribution, mineralogy (by hand sample and petrography), trace element content (method and laboratory not noted) and ABA (methods described in Section 3.1.2).

Leachate from the cribs were collected and monitored by UBC (1995 to 1996), Royal Oak (1997), SRK (2000 and 2005 to 2011) and Avison (2015 to present) and analyzed for pH (field and lab), conductivity, alkalinity, acidity, sulphate and trace elements (i.e., Al, Sb, As, Ba, Be, C, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, K, Se, Ag, Na, Th, Ti, U, V and Zn). Since 2015, monitoring of the field cribs has been part of the baseline monitoring program designed to support IDM's mine plan and EA application (Appendix 14-A).

Table 3-7: Field Crib Attributes

Field Crib ID	IDM Station ID[1]	IDM Rock Type[2]	Mass (tonnes)
HC-1	NCrib-S	Hillside Porphyry (Hlp)	17.4
HC-2	NCrib-N	2/3 Mudstone (MS), 1/3 Hillside Porphyry (Hlp)	19.8

Source: compiled in text from Frostad 1999.

Notes:

(1) Monitored as part of IDM's baseline groundwater quality monitoring program (Appendix 14-A).

(2) See Table 3-5

3.1.6 Waste Rock Stockpile Monitoring

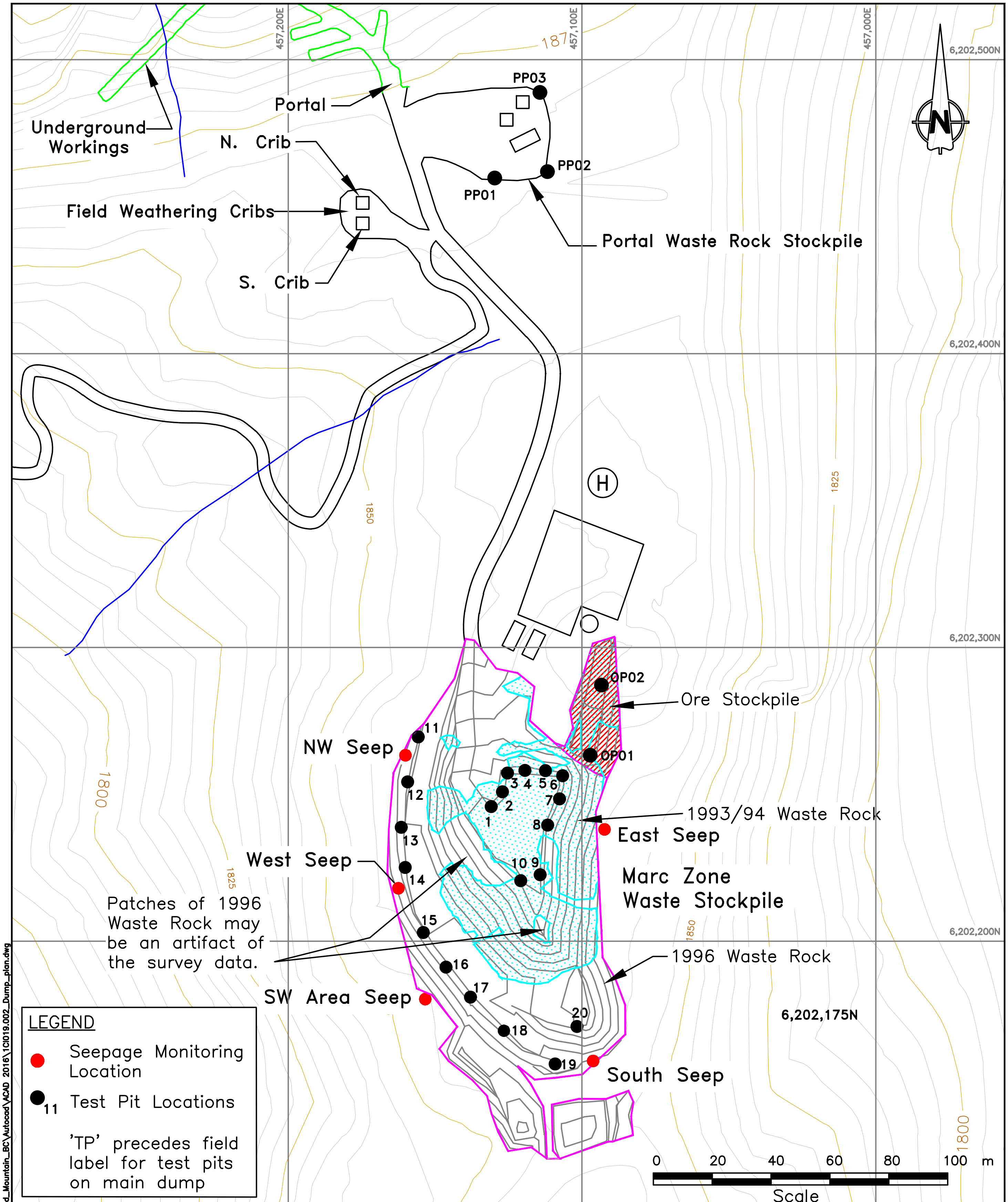
Waste rock produced during Lac Minerals' bulk sampling program in the early 1990s was stockpiled in the Marc Zone waste stockpile and a smaller waste rock stockpile located adjacent to the portal, referred to as the portal waste stockpile (Figure 3-3). Crushed ore was also stockpiled to the northeast of the Marc Zone waste stockpile. As discussed in Section 2.3, the stockpile contents are classified as PAG and the progress of stockpile weathering has been monitored at representative test pit locations using a combination of annual rinse pH and conductivity surveys and periodic ABA analyses (SRK 2001, 2003 to 2010, and 2013).

The annual monitoring program was conducted during the period 2000 to 2013 (except for 2001, 2002, and 2012) and included collecting approximately 1 to 3 kg of the <1 cm fraction from test pits. Test pit locations were at the same approximate location each year and included 20 locations within the Marc Zone waste stockpile (10 pits in the upper [1994] and 10 pits in the lower [1996] waste rock lifts), two test pits in the crushed ore stockpile, and three test pits in the portal waste stockpile adjacent to the portal (Figure 3-3). Monitoring of the ore stockpile and portal waste stockpiles was initiated in 2006, which was the first year of the program where these areas were clear of snow.

Samples were air dried and contact tests were conducted by SRK on the <2 mm fraction, by thoroughly mixing 100 g of sample with 100 mL of distilled water and letting the mixture stand for 15-30 minutes to allow for settling of solids. The pH and conductivity of the supernatant were then measured and reported as rinse pH and conductivity.

In 2003, 2006, 2009 and 2013, a subset of 8 to 10 test pit samples (<1 cm fraction) were submitted to SGS Canada (Burnaby, BC) for ABA, including paste pH, total sulphur by Leco, sulphate sulphur (HCl leach), TIC by coloumetry and Modified NP (MEND 2001).

In 2003, mineralogy was also determined by QXRD for five samples of waste rock from the Marc Zone waste stockpile. As indicated above, the QXRD analysis was conducted by the Department of Earth and Ocean Sciences at UBC (Vancouver, BC).



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SEABRIDGE GOLD

Test Pit and Seepage Monitoring Locations, Legacy Waste Rock and Ore Stockpiles

SRK JOB NO.: 1CI019.002	Red Mountain Project Geochemical Characterization of Waste Rock and Ore	DATE: Nov. 2016	APPROVED: LNB	FIGURE: 3-3
FILE NAME: 1CI019.002_Dump_plan.dwg				

3.1.7 Site Water Quality Monitoring

Site water quality monitoring includes opportunistic sampling of seepage from the toe of the Marc Zone waste rock stockpile and water from the underground mine (Figure 3-3). Data from the underground mine pool were also discussed in SRK (2016), however the results presented and discussed herein are in the context of the geochemical characterization of waste rock.

A total of five seepage sites have been sampled from the Marc Zone waste rock stockpile (Table 3-8). The seepage monitoring program of the Marc Zone waste rock stockpile was initiated in 2003 as part of ongoing regulatory monitoring requirements (e.g. SRK 2004). Between 2003 and 2013, seep surveys were conducted by SRK by walking the toe of the waste rock pile and looking for surface water draining from the pile. Sampling was conducted opportunistically. For example, no flows were observed from the toe of the stockpile in 2004 despite good sampling conditions (e.g., waste rock pile free of drifted snow, fresh and melting snow on surface and temperatures above zero). Since 2014, three seepage stations (east, southwest and northwest) have been monitored annually and sampled by Avison as part of the ongoing baseline monitoring program designed to support IDM's mine plan and EA application (Appendix 14-A).

Monitoring of water from the underground has been conducted periodically since 1993 and part of IDM's baseline monitoring program since 2014 (Appendix 14-A). Historically, samples were collected by Rescan (1994 and 1995), Royal Oak (1996 and 1998), and SRK (2001, 2004, 2005, 2006 and 2007). The historical water quality results for the pooled water in the adit includes samples collected during periods of active dewatering prior to 2000. Some of these samples had extremely elevated TSS levels (up to 6,400 mg/L) compared to background water quality. Samples in which TSS exceeded 15 mg/L were excluded from the dataset because high TSS levels were associated with active pumping, during which selected metals were elevated and postulated to be associated with suspended sediments and not dissolved drainage chemistry. The complete data set is presented in SRK (2016). Samples collected from 2000 onward were collected from the mine pool within the underground or discharge from the portal.

Samples collected by SRK and Avison for IDM's baseline EA program were analyzed by ALS Environmental (Burnaby, BC) for analysis of pH, conductivity, TDS, acidity, alkalinity, sulphate, ammonia, nitrate, nitrite and dissolved metals (i.e., Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Hg, Mo, Ni, K, Se, Ag, Na, Tl, Sn, Ti, U, V and Zn). Samples collected by Rescan and Royal Oak from 1993 to 1997 were submitted for analysis to Elemental Research Inc. (ERI) (North Vancouver, BC) for the same parameter suite as the baseline EA program.

Table 3-8: Overview of Site Water Quality Monitoring for the Red Mountain Project, 1993-2106

Area		IDM Station ID[2]	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Marc Zone Waste Rock Stockpile[1]	East Seep	RMS1											x							x				x		
	South Seep														x		x			x	x					
	Southwest Area Seeps	RMS2											x		x	x	x		x	x	x			x		
	Northwest Seep	RMS3											x		x	x	x		x	x	x		x	x		
	West Seep														x	x	x	x	x	x	x		x			
Pooled water in adit, exploration decline		RMS4	x	x		x	x			x			x	x	x	x								x	x	x

Source: P:\01_SITES\Red_Mountain_BC\1CI019.001_2015_2016_EA\Geochemistry\[Red_Mtn_SiteWQ_1CI019-002_rev00_lnb.xlsx

Notes:

(1) Seepage surveys were initiated in 2003. Between 2003 and 2013, five seepage sites were sampled. Between 2014 and 2016, seepage monitoring was conducted at RMS1 to RMS3. Except for 2012, no sample indicated the absence of flowing seepage.

(2) Monitored as part of IDM's baseline groundwater quality monitoring program (Appendix 14-A).

3.1.8 Sequential Extraction Tests

Conceptual Model

Talus is the proposed source of imported source of backfill in the underground mine. Geochemically, the gossanous talus rock from the mine area can be described as follows:

- Gossanous talus material is potentially acid generating (PAG);
- Finer size fractions are already acid generating and are a potential source of acidity with associated metal leaching; and
- Gossanous talus contains secondary sulphate minerals and iron and manganese (oxy)hydroxides.

The plan at closure is to flood the underground mine, thereby submerging the talus. If suboxic conditions develop within this material, reductive dissolution of the iron and manganese (oxy)hydroxides and metals that area associated with these minerals may occur.

A test work program for talus was developed to i) evaluate the potential for reductive dissolution of iron and manganese (oxy)hydroxides and associated release of metals and ii) quantify readily soluble oxidation products.

Sample Collection and Test Work Program

Six samples of talus, approximately 20 to 60 kg each, were collected in December 2016 by IDM Mining under the instruction of SRK (Figure 3-4). Sample locations were selected by IDM. All samples were visibly weathered and gossanous except sample Talus-E. Samples were shipped to SGS Canada for geochemical test work.

Talus-E did not have visible iron staining and accordingly, was excluded from the sequential extraction test program. The as-received fraction of Talus E was analyzed for paste pH and EC, total sulphur and carbon by Leco, sulphate by HCl leach, total inorganic carbon by coulmetry, Modified NP and element content by aqua regia digestion.

Sample preparation and analysis of the weathered samples are outlined in Figure 3-5. In brief, the -1 cm screened fraction was analyzed for the following:

- ABA and elemental content, as described for sample Talus E;
- Shake flask extractions (MEND 2009);
- Rinse pH and EC on -2 mm size fraction (MEND 2009);
- Sequential extractions (described below);
- Bulk mineralogy by QXRD and QEMSCAN (Section 3.1.1) with elemental deportment on iron (oxy)hydroxide mineral grains using SEM/EDS; and

- Based on the QEMSCAN data, Talus-D contained the highest levels of iron oxides, which also includes iron (oxy)hydroxides. Accordingly, the -1 cm fraction from this sample was submitted for subsequent mineralogical analysis by QEMSCAN to determine the thickness of the oxidation rim.

Sequential chemical extractions involve a series of progressively more aggressive chemical extraction steps applied to the same sample in order to subdivide the total metal content into operationally-defined geochemical fractions reported in units of mg/kg. The procedure was developed based on methods previously used for soils and sediments (Tessier et al. 1979, Chao and Zhou 1983), and mine wastes (Leinz et al. 2000, Dold 2003). Sequential chemical extractions are typically modified to target the phases of interest based on the study objective, and understanding of sample mineralogy.

SRK designed the procedure to target water soluble, weakly acid soluble, weakly reducible, strongly reducible, and oxidizable fractions (Table 3-9). Hydroxylamine hydrochloride was chosen in preference to other reagents (e.g. ammonium oxalate) because it has been shown to be more selective in the presence of magnetite (Chao and Zhou 1983) and will not form sparingly soluble oxalate salts with metal cations (Davidson et al. 2004). Each fraction is indicative of the dissolution of certain minerals using the specific reagent (i.e. weakly reducible iron oxyhydroxides) (Table 3-9). However, sequential chemical extractions are an indirect method of determining element-mineral associations and should be interpreted cautiously when making mineralogical inferences.

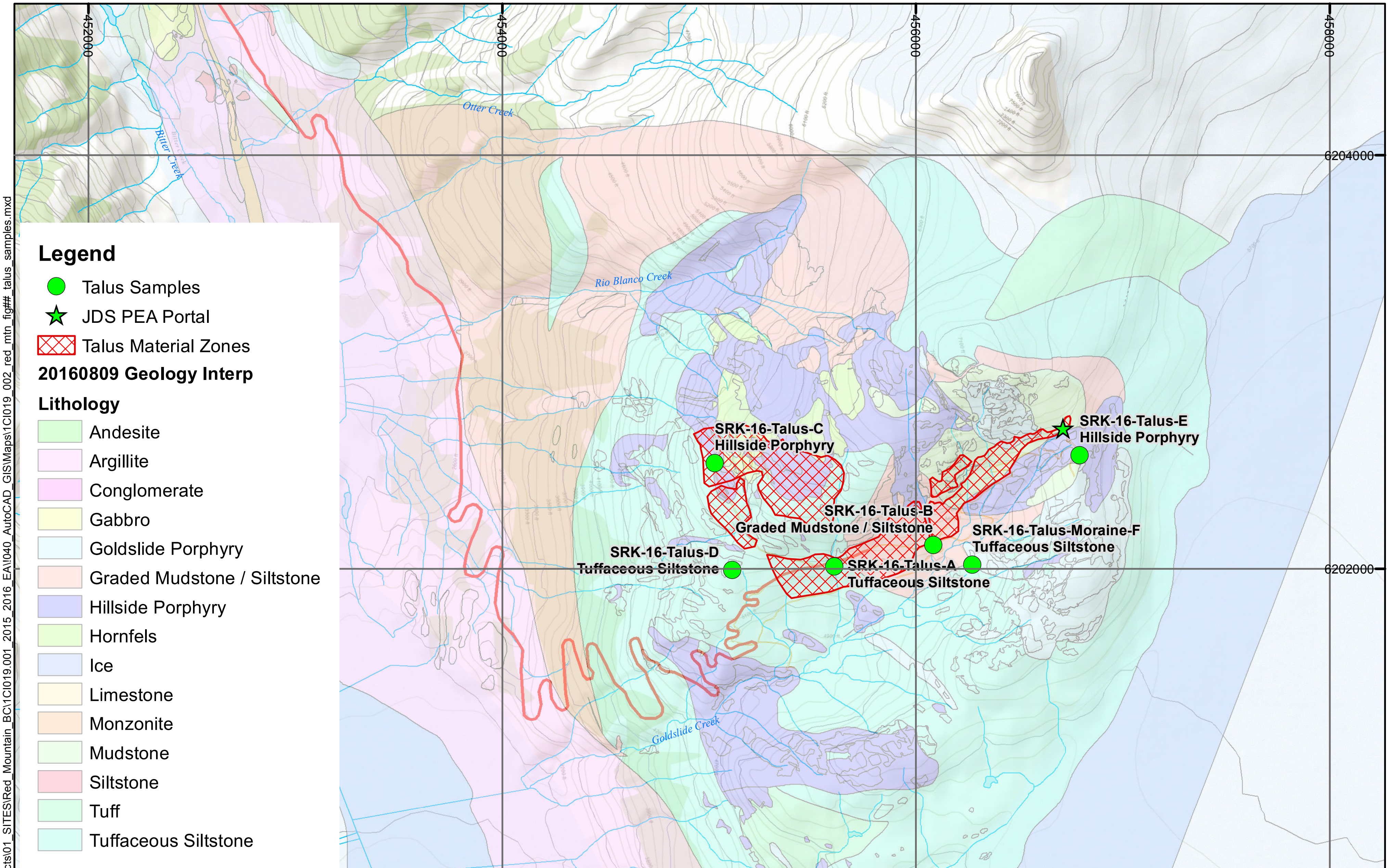
For each sample, 1 g of pulverized material was sequentially reacted with the reagents listed in Table 3-9. Extracted solutions were analyzed by ICP-OES, and reported as solid concentrations (mg/kg) calculated as:

$$\textit{Solid concentration (mg/kg)} = \textit{extract concentration (mg/L)} \times \frac{\textit{extract volume (L)}}{\textit{sample weight (kg)}} \qquad \textbf{[1]}$$

Sample weights for extraction steps 2 to 6 were corrected for mass loss from the preceding steps.

Table 3-9: Sequential Chemical Extraction Method Steps for a 1 g Starting Weight Sample

Extraction Step	Likely Target Phases	Mineral Origin	Reagents	Equilibration Time	Method Reference
1. Water soluble	Sulfates and hydroxysulfates, including: • gypsum ($CaSO_4 \cdot 2H_2O$) • epsomite ($MgSO_4 \cdot 7H_2O$) • morenosite ($NiSO_4 \cdot 7H_2O$), • hexahydrite ($MgSO_4 \cdot 6H_2O$) • pickeringite ($MgAl_2(SO_4)_4 \cdot 22H_2O$) • chalcanthite ($CuSO_4 \cdot 5H_2O$) • melanterite ($FeSO_4 \cdot 7H_2O$)	Weathering	30 mL deionized water	1 hour end-over-end shaking	Dold 2003
2. Weakly acid soluble (pH 5)	• Carbonates • Apatite • Adsorption to Fe, Al, and Mn oxides, and clay minerals including kaolinite and montmorillonite	Weathering and primary	40 mL of 1 M sodium acetate (CH_3COONa) solution adjusted to pH 5 with acetic acid (CH_3COOH)	2 hours end-over-end shaking	Tessier et al. 1979
3. Weakly reducible	• Amorphous to poorly crystalline Fe, Al, and Mn oxides • Fe and Al hydroxysulfates, including jarosite ($KFe_3(SO_4)_2(OH)_6$) and alunite ($KAl_3(SO_4)_2(OH)_6$)	Weathering	20 mL of 0.25 M hydroxylamine hydrochloride ($NH_2OH \cdot HCl$) in 0.25M hydrochloric acid (HCl)	1 hour in 50°C water bath with occasional agitation	Chao and Zhou 1983
4. Strongly reducible	• Crystalline Fe, Al, Mn oxides • Cu oxides including tenorite (CuO) and cuprite (Cu_2O) • Ti oxides including ilmenite ($FeTiO_3$)	Weathering and primary	40 mL hydroxylamine hydrochloride in 25% acetic acid (CH_3COOH)	2 hours in 90°C water bath with occasional agitation	Chao and Zhou 1983
5. Oxidizable	Sulfides including: • Chalcopyrite ($CuFeS_2$) • Pyrite (FeS_2) • Pyrrhotite ($Fe_{1-x}S$) • Pentlandite ($(Fe,Ni)_9S_8$)	Primary	Two parts, analyzed separately by reported together: a. 2 g potassium chlorate ($KClO_3$), 10 mL concentrated HCl, & 25 mL deionized water. b. 25 mL 4 M nitric acid (HNO_3)	a. 45 minutes standing in fumehood, or until reaction is no longer visible. b. 40 minutes in boiling water bath.	Chao and Sanzolone 1977 in Leinz et al. 2000
6. Residual	• Various silicates	Primary	4-acid digestion (HCl, HF, $HClO_4$, HNO_3)	-	-



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2016 Talus Sample Set

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2015-16 EA

Date:	Approved:	Figure:
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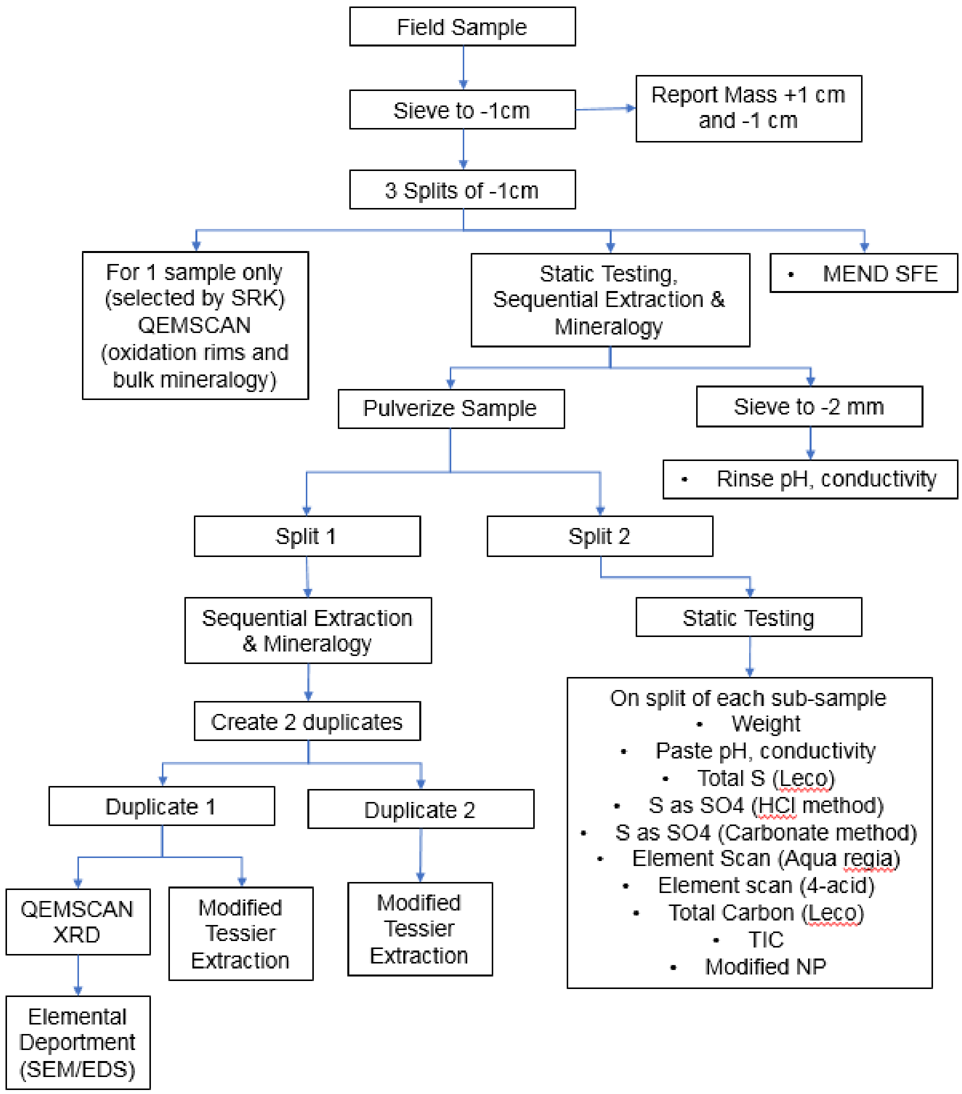

Figure 3-5: Flow Chart of Preparation and Analysis Program for 2016 Gossanous Talus Samples

4 Results and Discussion

4.1 Mineralogy

4.1.1 Legacy Marc Zone Waste Rock Stockpile Samples

Table 4-1 presents the QXRD data and the rock types of the samples for the five Marc zone waste rock stockpile samples. The rock types were determined at the time sampling and represent varying proportions of sedimentary and porphyry rock types.

Pyrite and pyrrhotite were the sulphide minerals indicated by QXRD in all samples, with sulphide levels somewhat higher in the porphyry-dominated samples (6-10%) compared to the sedimentary-dominated samples (≈6%). Sphalerite was not detected in the samples. Carbonate minerals included calcite (4 to 7%) and siderite (≤1%). Major minerals for the samples included feldspars (plagioclase and K-feldspar) and chlorite.

4.1.2 Frostad (1999) Waste Rock Kinetic Samples

Frostad (1999) reported the modal mineralogy of sulphides for each sample and a general mineralogical description of the two rock types under investigation. Table 4-2 presents the sulphide mineralogy of three Hillside porphyry (Hlp) and two mudstone (MSI) samples. HC-1 and HC-2 (field crib samples; see Section 4.6) contained pyrite, pyrrhotite and sphalerite whereas the other samples contained either pyrite or pyrrhotite, exclusively. All samples were described as containing 1 to 3% carbonate with K-feldspar, quartz and sericite as the major minerals (Frostad 1999).

4.1.3 MDAG (1996a) Waste Rock and Ore Kinetic Samples

Table 4-3 presents the sulphide mineralogy of the MDAG waste rock and ore kinetic test samples. Mineralogy was not determined for kinetic test samples containing talus rock.

Pyrite was the dominant sulphide mineral, and was observed in all samples. Pyrite levels for waste rock samples (typically less than 5%, though two samples yielded levels of 9% and 14%) were lower than ore (levels ranged from 12 to 38%). Pyrrhotite was observed in all but one sample with levels ranging from trace to 6%, when detected. Other sulphides detected in most samples but at trace to low levels, included chalcopyrite and sphalerite. Trace levels of the following sulphides were observed in selected samples only: galena (ore only), arsenopyrite, tetrahedrite, and unspecified sulfosalts. Bulk carbonate content was low for most samples (≤1%) with the exception of the waste rock samples "Porphyry FHp" and "ABA-024", which contained 4% and 19%, respectively. Major minerals included: felsite, felsite-plagioclase, plagioclase and sericite (MDAG 1996a). A major component of many of the samples was described as felsite, a rock type used to describe the minutely fine-grained mineral matrix when the minerals were indistinguishable.

4.1.4 SRK (2016) Talus Sequential Extraction Test Samples

Table 4-4 and Table 4-5 present the bulk mineralogy of the weathered talus sequential extraction test samples, as determined by QXRD and QEMSCAN, respectively. The complete QEMSCAN report is presented in Appendix I.

The mineralogy of the gossanous and weathered talus samples was dominated by quartz, feldspars (plagioclase and K-feldspar), chlorite (by QXRD only), micas (muscovite with sericite and biotite indicated by QEMSCAN), clays (kaolinite) and iron oxides, with levels greater than 5%. Iron oxides are defined by QEMSCAN as both crystalline and amorphous oxides, the latter which includes (oxy)hydroxides. QXRD, which cannot detect amorphous minerals, indicated the iron oxide mineral goethite in Talus-D.

Levels of sulphide, as determined by QEMSCAN, were <0.15% for all samples except Talus-D, which had levels of 0.4%. The dominant sulphide mineral was pyrite with lesser pyrrhotite, however levels for the latter were near analytical detection. Covellite (CuS) was also detected at levels near detection for Talus-B only. In terms of carbonate minerals, calcite was detected at levels near the limit of analytical detection. Gypsum ($CaSO_4{\cdot}2H_2O$) was detected at levels near the limit of analytical detection for sample Talus-A. Sulphide, carbonate and sulphate minerals were below the level of detection (1%) of the QXRD method.

Table 4-1: QXRD Mineralogy for Marc Zone Waste Rock Stockpile Samples (Expressed as Mineral %)

Phase	Ideal Formula	Dominant Rock type				
		Porphyry			Sediment	
		SRKTP0306	SRKTP0307	SRKTP0314	SRKTP0301	SRKTP0317
Pyrite	FeS_2	4	3.8	5.3	3.2	3.8
Pyrrhotite	$Fe_{1-x}S$	2.2	2.5	4.7	2.6	2.2
Calcite	$CaCO_3$	6.9	5	5.5	3.8	7.3
Siderite	$Fe^{2+}CO_3$	0.7	0.6	0.7	1.1	0.5
Quartz	SiO_2	8	5.4	8.9	4.4	7.7
Plagioclase	$NaAlSi_3O_8$-$CaAl_2Si_2O_8$	27.2	32.9	27.4	27.2	33.6
K-Feldspar	$KAlSi_3O_8$	22.5	22.4	22.1	32.1	18.3
Muscovite	$KAl_2AlSi_3O_{10}(OH)_2$	4.2	6.8	5.4	5.5	
Chlorite	$(Mg,Fe^{2+})_5Al(Si_3Al)O10(OH)_8$	19.8	18.9	16.5	22.9	14.4
Tremolite	$Ca_2Mg_5Si_8O_{22}(OH)_2$	3	4.2	1.8	2.4	6.4
Magnetite	$Fe^{2+}Fe_2^{3+}O_4$	0.3	0.2	0.3	0.3	0.4
Total		100	100	100	100	100
Ratio of sediment to porphyry observed in the field		30:70	10:90	10:90	90:10	70:30

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Table 4-2: Sulphide Mineralogy of Frostad (1999) Samples (Expressed as Mineral %)

Mineral	Hillside Porphyry (Hlp)			Mudstone (MSl)	
	HC-1	ABA-2	ABA-3	HC-2[1]	ABA-1
Pyrite	5		5	2	
Pyrrhotite	3	7		3	7
Sphalerite	0.5			1	

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Note:

(1) Composition is 2/3 MSl and 1/3 Hlp

Table 4-3: Mineralogy of MDAG (1996a) Kinetic Samples by Petrographic Analysis

Economic Classification	Rock Type	Sample ID	Pyrite	Pyrrhotite	Chalcopyrite	Sphalerite	Galena	Arsenopyrite	Tetrahedrite	Sulfosalt	Carbonates
			Mineral %								
Waste Rock	Hlp	Porphyry FHp	3	1		trace					4
	TfB	ABA-024	9	1	trace						19
	TfB	Black Tuff	3	6							
	xTF	ABA-031	14	trace	trace	trace		trace		trace	
	Mixed	ABA A.V.1	1	3	trace						trace
	Mixed	ABA A.V.2	4	4	trace					trace	trace
Ore	TfB	Crystal Tuff	12	1	trace	trace	trace				1
	TfB	Ore Avg Pyritic	38	-	1	trace		trace		trace	trace
	TfB	Ore Avg ZnS2	15	1	trace	2					1
	TfB	ABA J.W.5	15	2	trace						1
	xTF	ABA-010	20	trace	trace	trace	trace	trace		trace	1
	Mixed	ABA A.V.4	21	1	trace			trace	trace		trace

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Table 4-4: Bulk Mineralogy of 2016 Talus Sequential Extraction Test Samples by QXRD

Mineral	Formula	SRK-16-TALUS-A (wt %)	SRK-16-TALUS-B (wt %)	SRK-16-TALUS-C (wt %)	SRK-16-TALUS-D (wt %)	SRK-16-MORAINE-F (wt %)
Quartz	SiO_2	57	40	48	34	29
Plagioclase	$(NaSi,CaAl)AlSi_2O_8$	14	32	23	14	30
Orthoclase	$KAlSi_3O_8$	3	8	10	27	14
Chlorite	$(Fe,(Mg,Mn)_5,Al)(Si_3Al)O_{10}(OH)_8$	8	13	9	8	11
Muscovite	$KA_{l2}(AlSi_3O_{10})(OH)_2$	17	8	10	10	14
Kaolinite	$Al_2Si_2O_5(OH)_4$	0	0	0	0	1
Goethite	αFeO·OH	-	-	-	5	-
TOTAL		100	100	100	100	100

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Notes:

Zero values indicate that the mineral was included in the refinement, but the calculated concentration is below a measurable value.

Dashes indicate that the mineral was not identified by the analyst and not included in the refinement calculation for the sample.

Table 4-5: Bulk Mineralogy of 2016 Talus Sequential Extraction Test Samples by QEMSCAN

Sample	Mineral	SRK-16-TALUS-A	SRK-16-TALUS-B	SRK-16-TALUS-C	SRK-16-TALUS-D	SRK-16-MORAINE-F
Mineral Mass (%)	Pyrite	0.09	0.09	0.03	0.38	0.14
	Pyrrhotite	0.02	0.01	0.00	0.02	0.00
	Covellite	0.00	0.01	0.00	0.00	0.00
	Quartz	47.1	32.8	40.1	26.8	22.4
	Plagioclase	10.5	24.3	16.3	7.21	21.2
	K-Feldspar	12.0	14.7	19.1	33.1	24.1
	Sericite/Muscovite	10.7	5.18	6.89	8.84	9.43
	Biotite	2.62	1.75	1.95	2.51	2.01
	Amphibole/Pyroxene	0.50	0.27	0.31	0.33	0.71
	Chlorite/Clays	11.1	15.9	10.4	8.64	10.7
	Titanite/sphene	0.03	0.07	0.06	0.29	0.15
	Other Silicates	0.31	0.64	0.68	0.54	0.70
	Fe-Oxides	3.45	2.94	3.31	10.0	7.56
	Rutile	1.24	0.99	0.74	0.99	0.72
	Ilmenite	0.03	0.00	0.03	0.11	0.07
	Calcite	0.01	0.02	0.02	0.03	0.01
	Apatite	0.13	0.29	0.07	0.03	0.12
	Gypsum	0.01	0.00	0.00	0.00	0.00
	Other	0.16	0.05	0.02	0.11	0.06
	Total	100.0	100.0	100.0	100.0	100.0

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4.2 Static Testing

This section presents the results of MDAG (1996a) and Frostad (1999) sample sets. Result for the talus samples collected in 2016 are presented in Section 4.8.

4.2.1 Distribution of Rock Types

The ABA dataset includes 400 waste rock, 53 ore and 90 talus samples (Table 3-3). The talus samples were not described geologically other than being categorized as gossanous material. Figure 2-3 illustrates the distribution of waste rock and ore ABA samples and Figure 3-2 illustrates the location of selected talus samples.

In the ABA sample set, the dominant waste rock types are fragmented tuff (xTF) and interbedded mudstone (MS). Other waste rock types include: Hillside porphyry (Hlp and xHlp), Goldslide porphyry (GOp), bedded tuff (TfB) and contact breccia. Rock types classified as ore include: Hillside porphyry, bedded and fragmented tuff and fault zone. There are three ore and 11 waste rock samples of unknown lithology that have been included in the sample set (Table 3-2).

4.2.2 Acid-Base Accounting Data

Selected ABA results for the dominant rock types are illustrated in Figure 4-1 through Figure 4-9.

Paste pH values were acidic (defined as pH < 6) for the finest size fraction (-230 mesh) of selected samples of talus (Figure 4-1). The pH of all other samples was greater than 6, but lower pH values were observed for selected samples with NP <20 kg $CaCO_3$/t.

Total sulphur levels were at parity with sulphide (calculated as the difference between total sulphur and sulphate sulphur) for all waste rock and ore samples (Figure 4-2), indicating that total sulphur can be used to calculate the acid potential (AP). Talus samples with total sulphur less than 0.1% contained appreciable amounts of sulphate (Figure 4-3). For talus samples only, AP is calculated on the basis of sulphide sulphur.

Total sulphur levels in ore tended to be higher than in waste rock, with levels ranging from 0.99% to 13% (5^{th} and 95^{th} percentile values, respectively) for ore and from 1.0% to 7.2% (5^{th} and 95^{th} percentile values, respectively) for waste rock. Overall, for both ore and waste rock, total sulphur levels were equivalent and uniformly high among the different rock types. The samples with the highest total sulphur content (>15%) included rock types samples classified as xTF (waste), TfB (ore and waste), and MSI (waste), as illustrated in Figure 4-4. Talus samples yielded much lower total sulphur levels, ranging from 0.026% to 0.67% (5^{th} and 95^{th} percentile values, respectively). Sulphide levels for talus samples ranged from below detection (denoted as 0.001%) to 1%.

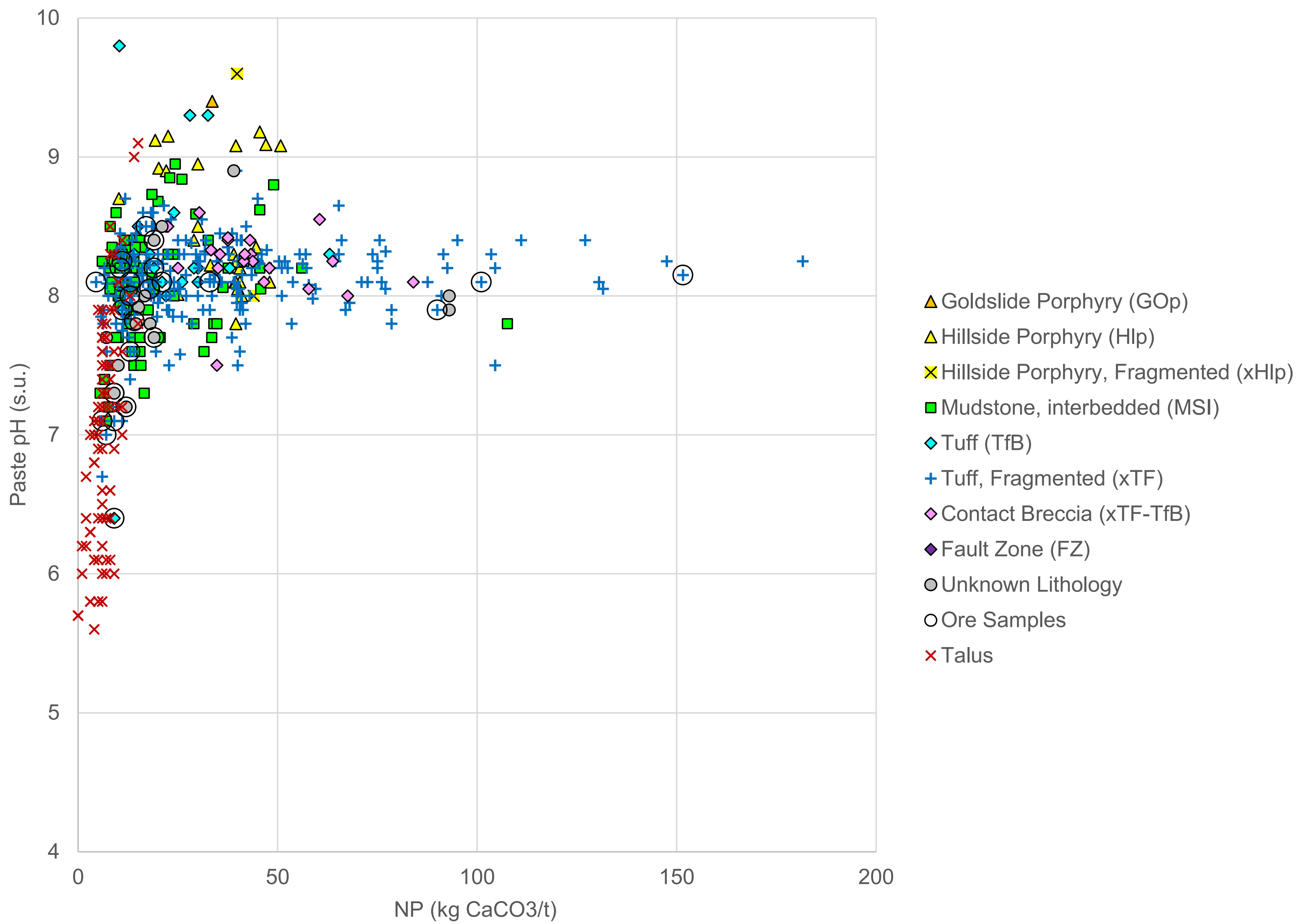

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Figure 4-1: Comparison of Paste pH and NP by Rock Type

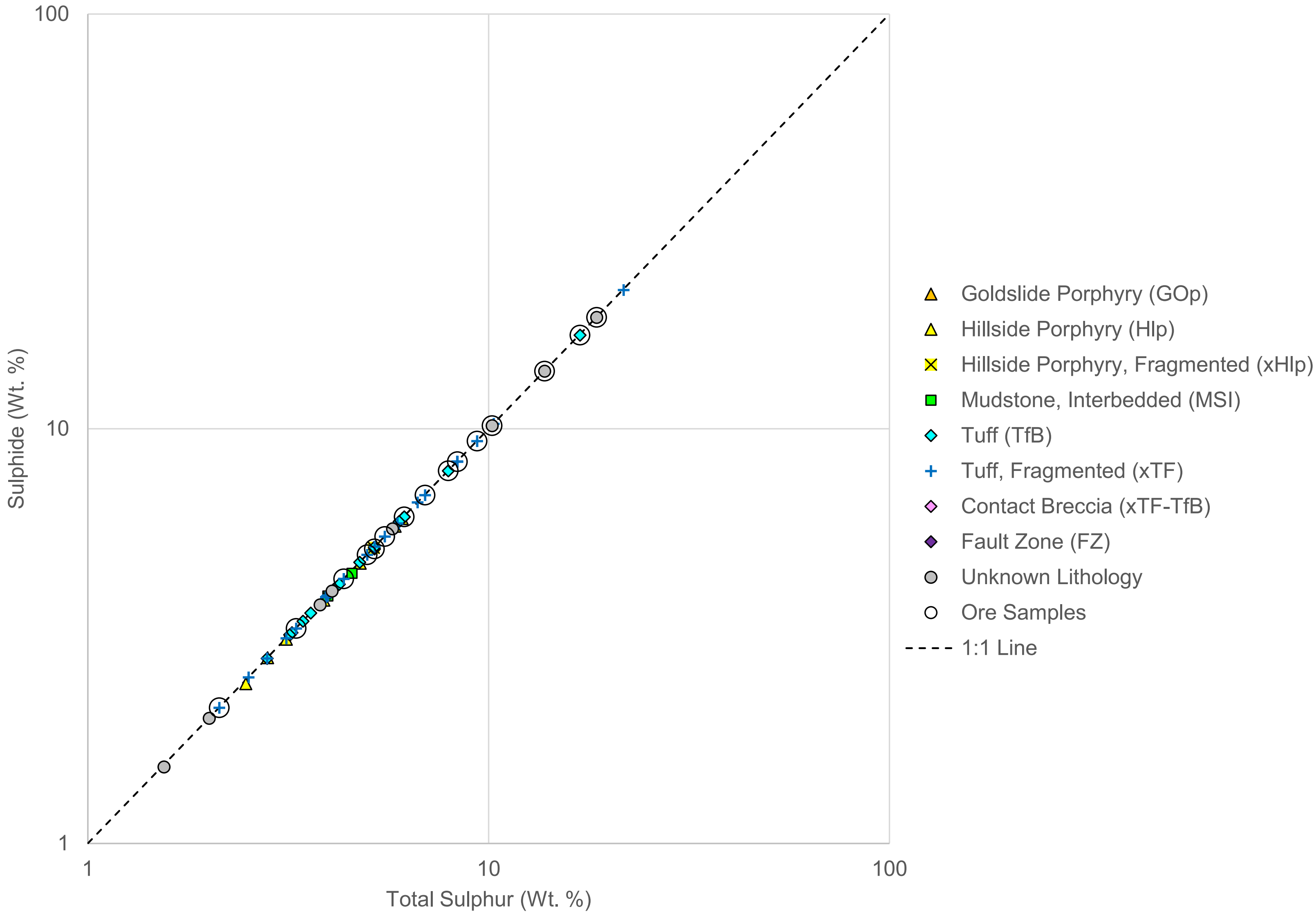

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Figure 4-2: Comparison of Sulphide to Total Sulphur by Rock Type for Waste Rock and Ore Samples

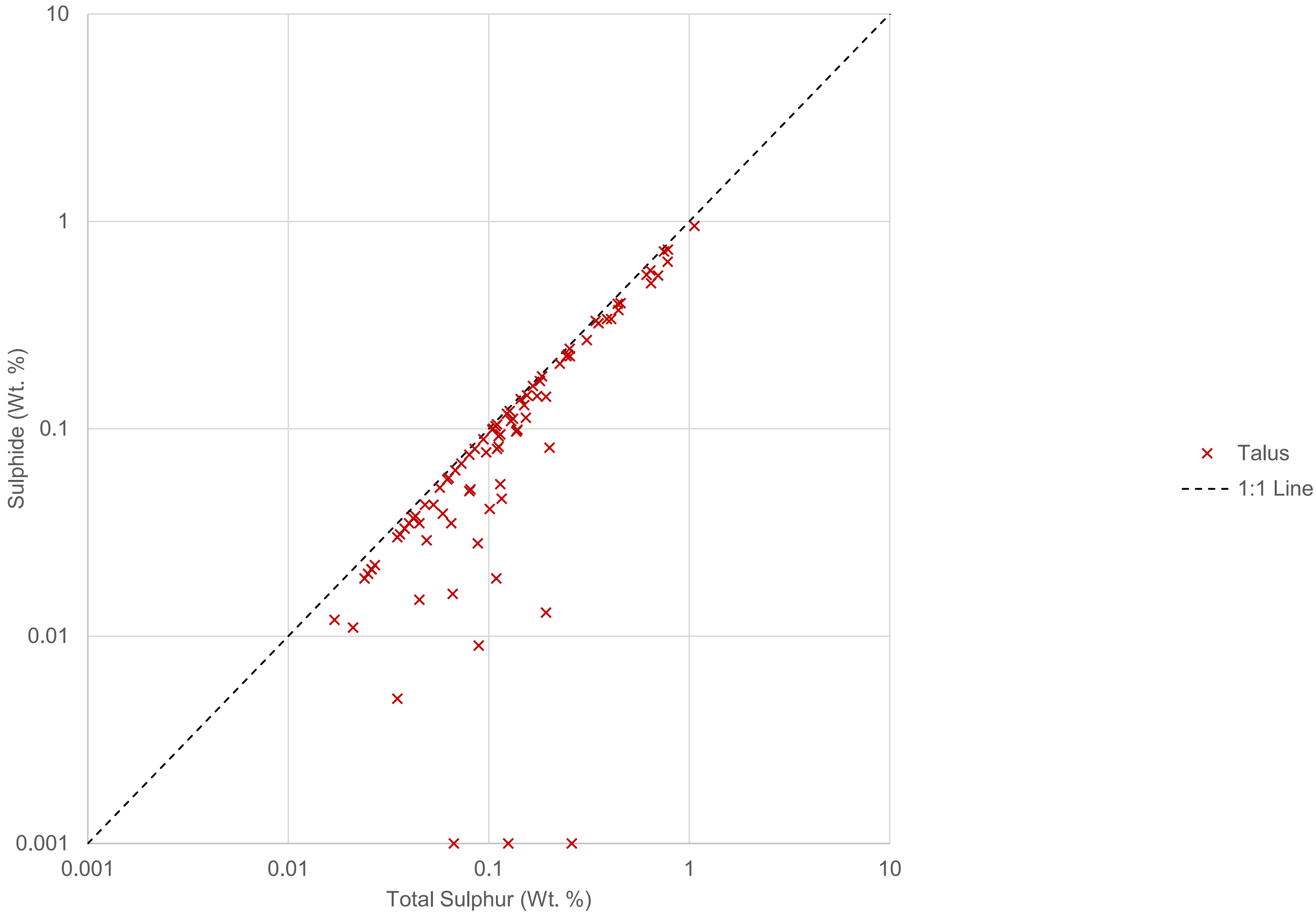

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Figure 4-3: Comparison of Sulphide to Total Sulphur by Rock Type for Talus Samples

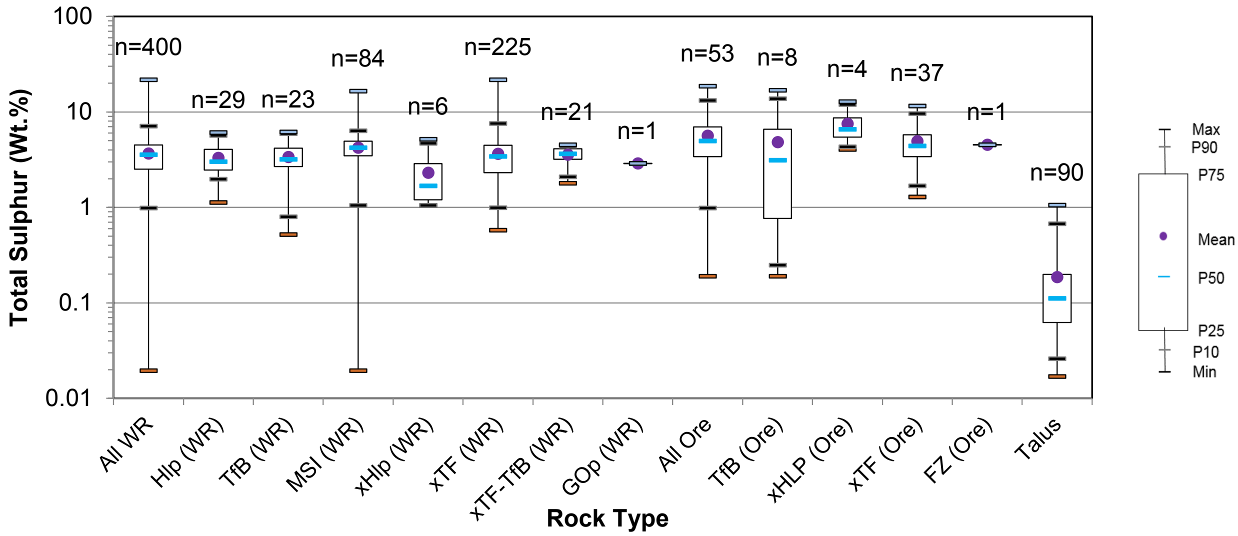

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Figure 4-4: Distribution of Total Sulphur by Rock Type

The analytical NP method is unknown for the samples included in the ABA dataset (Section 3.1.2), with the exception of the 5 samples analyzed using the modified Sobek method (Frostad 1999). NP ranged from 8.0 to 91 kg $CaCO_3$/t (5th and 95th percentile values, respectively) for waste rock and from 8.2 to 100 kg $CaCO_3$/t (5th and 95th percentile values, respectively) for ore (Figure 4-5). Waste rock samples of interbedded mudstone (MSI) yielded lower levels of NP compared to the other rock types (7.5 to 46 kg $CaCO_3$/t; 5th and 95th percentile values, respectively). Approximately 5% of fragmented tuff (xTF) waste rock samples yielded NP levels less than 10 kg $CaCO_3$/t. Talus samples yielded low levels of NP, ranging from 2 to 11 kg $CaCO_3$/t (5th and 95th percentile values, respectively).

There were TIC results for a total of 148 of the 540 samples, many of which yielded low levels equivalent to the detection limit (2.3 kg $CaCO_3$/t). TIC ranged from 2.3 to 49 kg $CaCO_3$/t (5th and 95th percentile values, respectively) for waste rock and from 2.3 to 47 kg $CaCO_3$/t (5th and 95th percentile values, respectively) for ore (Figure 4-6). Of the waste rock samples, interbedded mudstone (MSI) and fragmented tuff (xTF) tended to yield lower TIC levels (median levels of 5.7 and 11 $CaCO_3$/t, respectively). All but two of the talus samples yielded TIC at the detection limit (2.3 kg $CaCO_3$/t).

NP values were generally higher than TIC (Figure 4-7), suggesting the presence of silicate minerals with buffering capacity that is quantifiable using this method. A discussion of TIC compared to the mineralogical results is presented in Section 4.6.

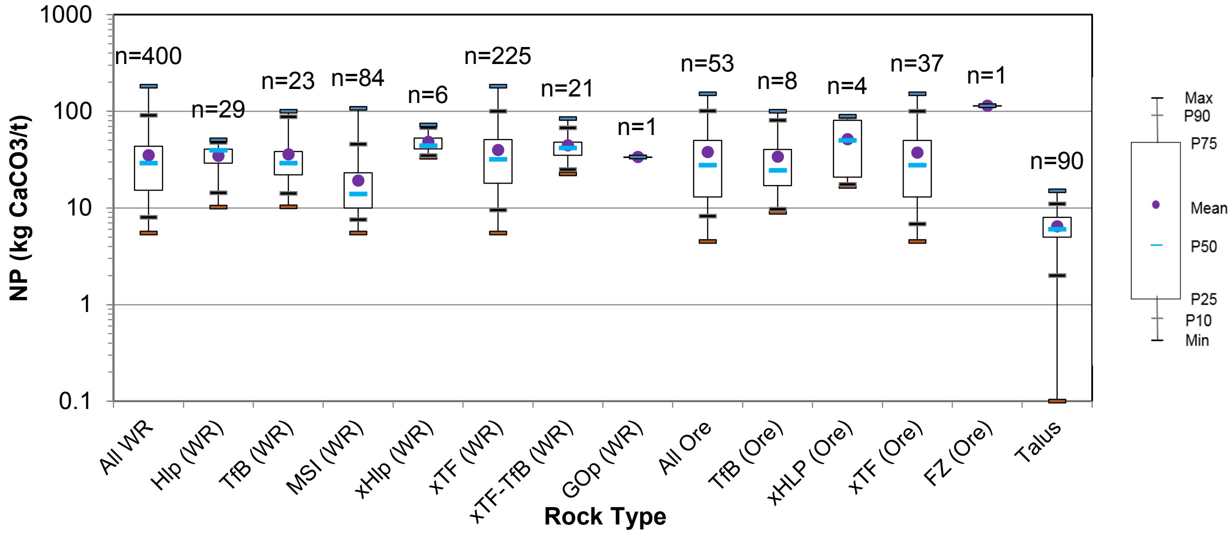

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Figure 4-5: Distribution of NP by Rock Type

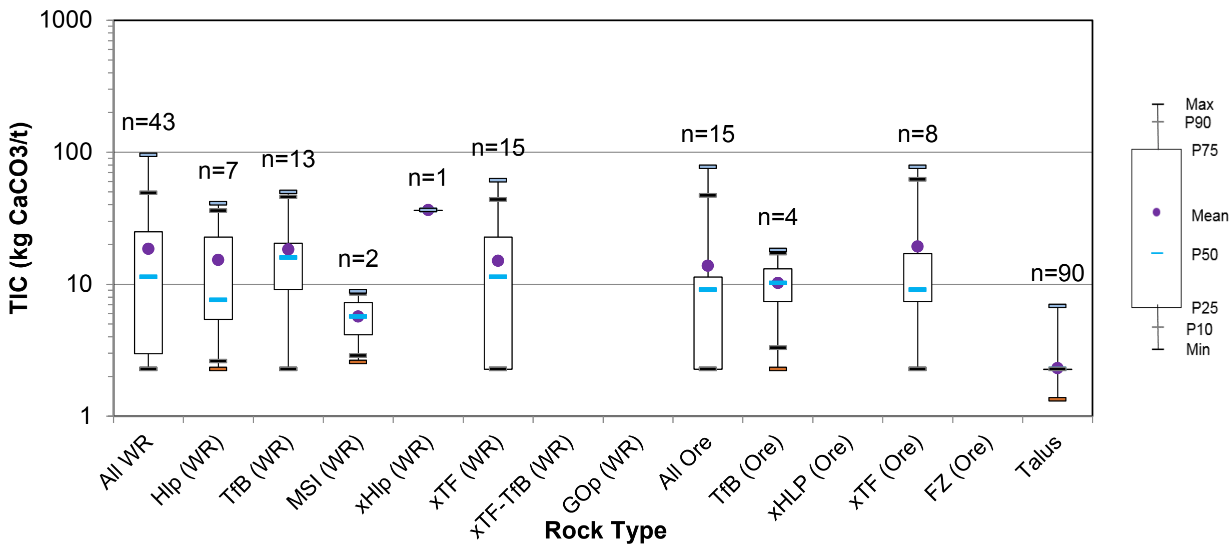

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Figure 4-6: Distribution of TIC by Rock Type

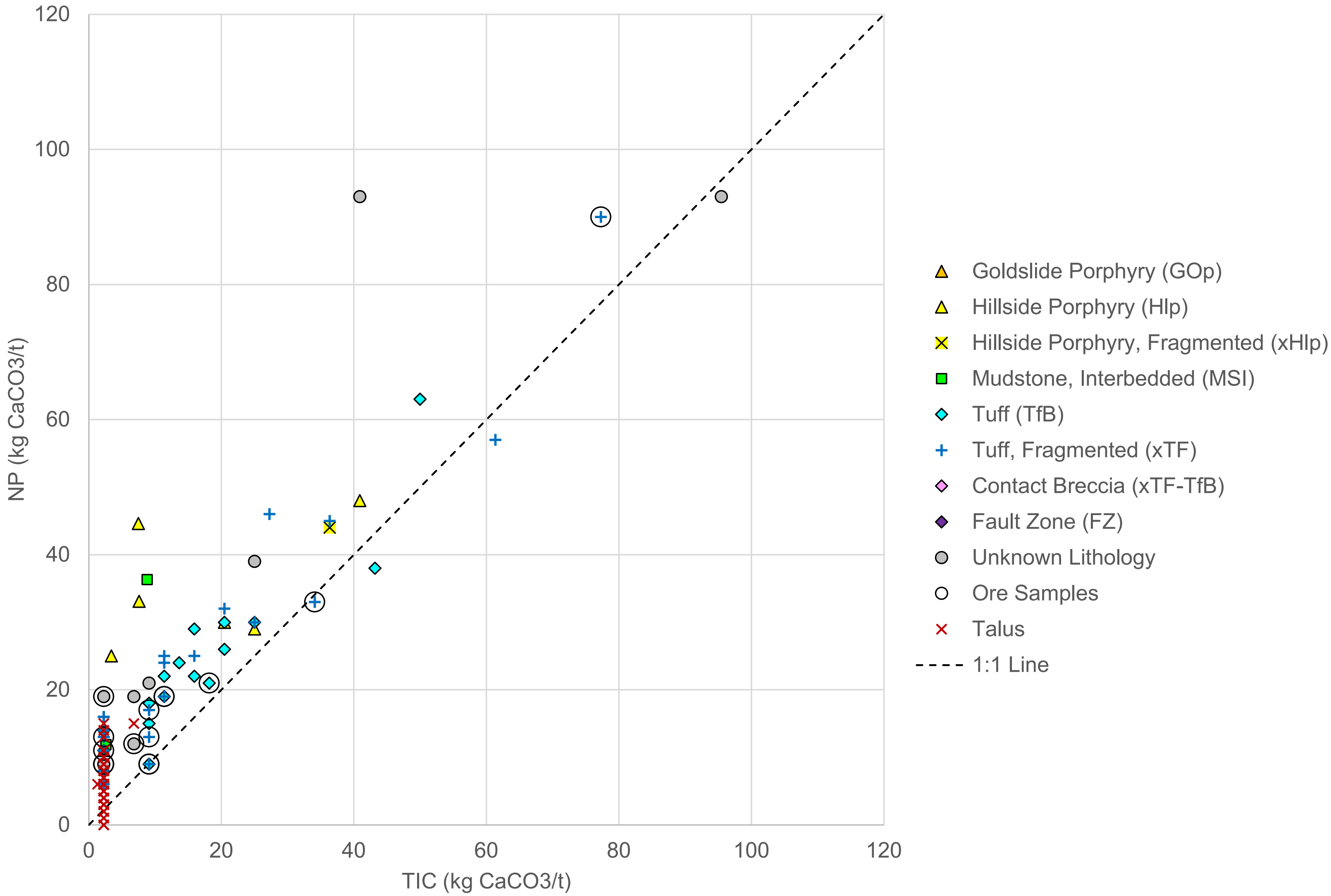

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Figure 4-7: Comparison of NP to TIC by Rock Type

The ARD potential of the sample set was classified using NP/AP and TIC/AP(Table 4-6, Figure 4-8 and Figure 4-9). AP was calculated using sulphide for talus samples and total sulphur for waste rock and ore samples.

Waste rock and ore samples were typically classified as PAG. Based on NP/AP, approximately 90% of waste rock (n=400) and ore (n=53) samples were classified as PAG with the remaining 10% classified as uncertain or non-PAG. In terms of rock type, 97% of Hillside porphyry (Hlp) and 94% of mudstone (MSI) samples were classified as PAG using NP/AP. ARD classifications on the basis of TIC/AP are more conservative. All waste rock and ore samples with TIC data (n=68) were classified as PAG based on TIC/AP ratios.

For the talus samples (n=90), 56% of samples were classified as PAG on the basis of TIC/AP, whereas 24% were classified as PAG, using NP/AP. Of the 7 talus samples with acidic paste pH, three samples were classified as non-PAG by either NP/AP or TIC/AP and one sample was classified as non-PAG using both methods. For all four samples, TIC was below the level of detection and NP levels ranged from 0 to 6 kg$CaCO_3$/t. For the 24 talus samples and the one waste rock sample analyzed according to 3 size fractions, ARD classifications were typically consistent across grain sizes for any given sample.

Table 4-6: ARD Classifications According to Rock Type

Unit Name	Unit Code	Economic Classification	Total Number of Samples	Number of Samples		ARD Classification (% of samples)					
						Non-PAG[1]		Uncertain[2]		PAG[3]	
				NP/AP	TIC/AP	NP/AP	TIC/AP	NP/AP	TIC/AP	NP/AP	TIC/AP
Hillside porphyry	Hlp	Waste Rock	29	29	7	0%	0%	3%	0%	97%	100%
	xHlp (fragmented)	Ore	4	4	0	0%	--	0%	--	100%	--
		Waste Rock	6	6	1	0%	0%	33%	0%	67%	100%
Goldslide porphyry	GOp	Waste Rock	1	1	0	0%	--	0%	--	100%	--
Mudstone, interbedded	MSI	Waste Rock	84	84	2	2%	0%	4%	0%	94%	100%
Tuffs, bedded (volcaniclastic)	TfB	Ore	8	8	4	25%	0%	13%	0%	63%	100%
		Waste Rock	23	23	13	4%	0%	9%	0%	87%	100%
Tuffs, fragmented (volcaniclastic)	xTF	Ore	37	37	8	0%	0%	11%	0%	89%	100%
		Waste Rock	225	225	15	1%	0%	12%	0%	87%	100%
Contact breccia	xTF-TfB	Waste Rock	21	21	0	0%	--	0%	--	100%	--
Fault zone	FZ	Ore	1	1	0	0%	--	0%	--	100%	--
Unknown/Composite Lithology	N/A	Ore	3	3	3	0%	0%	0%	0%	100%	100%
		Waste Rock	11	11	5	0%	0%	18%	0%	82%	100%
Talus	N/A	N/A	90	90	90	41%	19%	34%	26%	24%	56%
Total Number of Samples			**543**	**543**	**148**	**32**	**3**	**79**	**25**	**432**	**120**

Source: compiled in text from \\VAN-SVR0\Projects\01_SITES\Red_Mountain_BC\1CI019.001_2015_2016_EA\Geochemistry\ABA\Red_Mtn_ABA_Analysis_1CI019-002_rev15_lmc.xlsx

Notes:

(1) Samples were classified as non-PAG if NP/AP or TIC/AP were greater than 3.

(2) Samples were classified as uncertain if NP/AP or TIC/AP were greater than 1 or less than 3.

(3) Samples were classified as PAG if NP/AP or TIC/AP were less than 1.

(4) AP calculated using sulphide sulphur for talus samples and total suphur for waste rock and ore samples.

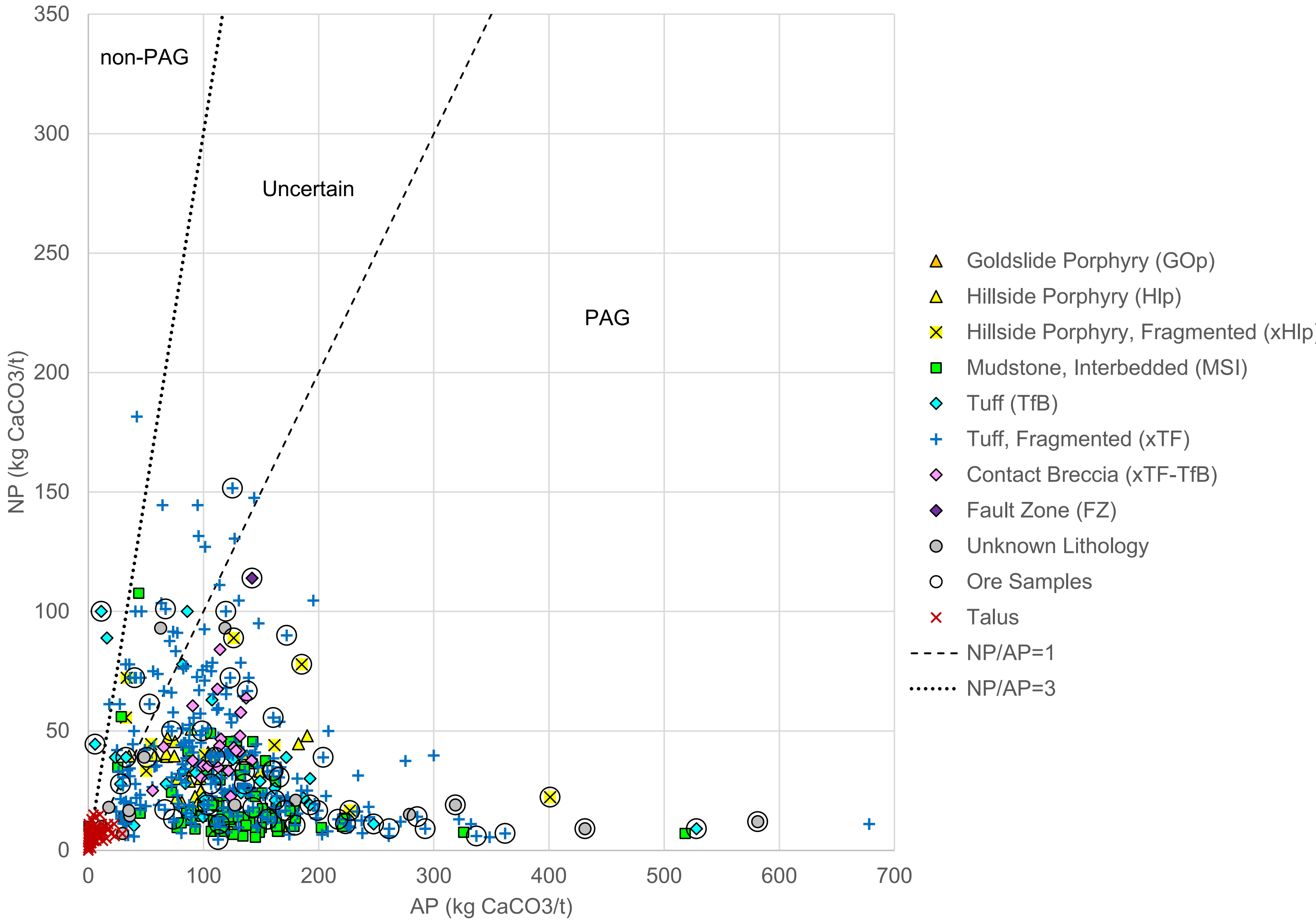

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Figure 4-8: ARD Classifications by Rock Type based on NP/AP

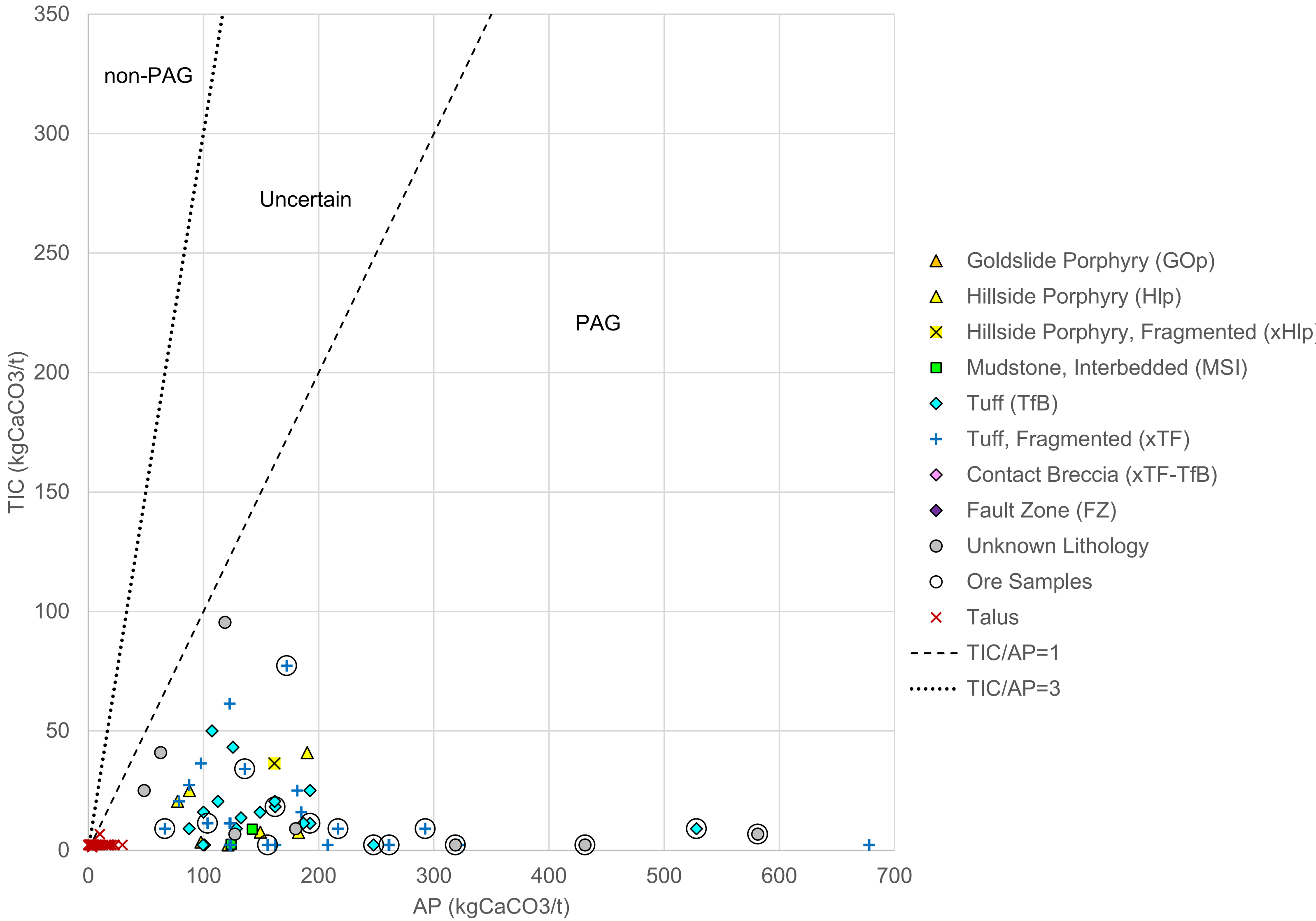

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Figure 4-9: ARD Classifications by Rock Type based on TIC/AP

4.2.3 Elemental Analysis

A subset of 420 of the 540 samples in the ABA dataset was analyzed for elemental analysis, of which 367 of the samples were waste rock, 52 ore and 1 talus. As noted in Section 3.1.2, the database included a 14-parameter suite (i.e., Ag, Al, As, Cr, Hg, K, Mg, Mn, Na, P, Sr, V, W, Zn) for all samples with a subset of samples having an extended suite (i.e., B, Ba, Be, Bi, Ca, Cd, Co, Cu, Fe, La, Mo, Ni, Pb, Sb, Se, Sn, Te, Ti, Tl, U, and/or Y). Notably, selenium was included for only 13 samples.

The results were compared to ten times average crustal abundance values (Price 1997) to screen for parameters that were anomalously high. The talus and igneous samples (i.e., Hlp, xHlp, TfB, xTF, and xTF-TfB) were compared to both low and high calcium granite (342 samples total) and the interbedded mudstone (lithology MSI) were compared to shales (78 samples total). The detection limit for mercury was marginally higher than ten times the crustal abundance, which precluded a comparison for most samples.

Table 4-7 summarizes elements for which at least one sample exceeded ten times the average crustal abundance. A summary of the findings is described as follows.

- Ore samples (rock types: FZ, TfB, xHlp, xTF, and unknown/composite):
  - Silver and arsenic were elevated in greater than 90% of samples (n=52).
  - Most samples were elevated in bismuth (97%, n=33), cobalt (94%, n=34), copper (89%, n=36), and cadmium (78%, n=36).
  - Other notable parameters that exhibited enrichment included: chromium (50%, n=52), zinc (38%, n=52), magnesium (25%, n=52), and nickel (21%, n=34).
  - The parameters for which a limited sub-set of samples yielded data, but the available samples were elevated, included antimony (90%, n=10) and selenium (100%, n=6).
  - 17 of the 42 samples for which there were mercury data were clearly above the detection limit (greater than 1 ppm).
  - Other parameters that exhibited enrichment in only a few samples included iron and lead.
- Igneous waste rock samples (rock types: Hlp, xHlp, TfB, xTF, xTF-TfB, and unknown/composite):
  - Bismuth and cobalt were elevated in greater than 90% of samples (n=289).
  - Most samples were elevated in arsenic (77%, n=289), cadmium (58%, n=289), copper (80%, n=289), magnesium (77%, n=289), and antimony (100%, n=220).
  - Other notable parameters that exhibited enrichment included: silver (43%, n=289), chromium (49%, n=289), and zinc (17%, n=289).
  - The parameters for which a limited subset of samples yielded data, but the available samples were elevated, included selenium (67%, n=6).

    - 33 of the 38 samples for which there were mercury data were clearly above the detection limit (greater than 1 ppm).
    - Other parameters that exhibited enrichment to a lesser degree included: boron, iron, molybdenum, nickel, lead, tin, and tungsten.

- Sedimentary waste rock samples (rock type MSI):
    - Most samples were elevated in arsenic (88%, n=78), cadmium (78%, n=78), and antimony (87%, n=76).
    - Other notable parameters that exhibited enrichment included: silver (27%, n=78), tungsten (9%, n=78), and zinc (21%, n=78).
    - Other parameters that exhibited enrichment in only a few samples included: copper, lead, and tin.
- Talus:
    - One talus sample yielded trace element data and was enriched in silver, arsenic, chromium, copper, magnesium, mercury, molybdenum, and selenium.
- All other elements not mentioned above were below the screening criteria, suggesting no appreciable enrichment in the samples.

Table 4-7: Results of Elemental Analysis (Elements Exceeding Ten Times Crustal Abundance)

Economic Classifications	Unit Name	Unit Code	Number of Samples	Elements exceeding 10x Crustal Abundance[1]
Ore	Fault zone	FZ	1	Ag, As, Bi, Co, Cu, Hg
	Hillside porphyry, fragmented	xHlp (fragmented)	4	Ag, As, Bi, Cd, Co, Cu, Hg, Mg, Pb, Zn
	Tuffs, bedded (volcaniclastic)	TfB (volcaniclastic)	8	Ag, As, Bi, Cd, Co, Cr, Cu, Fe, Hg, Mg, Ni, Pb, Se, Zn
	Tuffs, fragmented (volcaniclastic)	xTF	36	Ag, As, Bi, Cd, Co, Cr, Cu, Hg, Mg, Mo, Ni, Pb, Sb, Se, W, Zn
	Unknown/Composite Lithology	N/A	2	Ag, As, Cd, Co, Cr, Cu, Fe, Hg, Se, Zn
Waste Rock	Contact breccia	xTF-TfB	16	Ag, As, Bi, Cd, Co, Cr, Cu, Mg, Pb, Sb, Zn
	Hillside porphyry	Hlp	28	Ag, As, Bi, Cd, Co, Cr, Cu, Hg, Mg, Ni, Pb, Sb, Se, W, Zn
	Hillside porphyry, fragmented	xHlp (fragmented)	5	Ag, As, Bi, Co, Cu, Hg
	Mudstone, interbedded	MSI	78	Ag, As, Cd, Cu, Pb, Sb, Sn, W, Zn
	Tuffs, bedded (volcaniclastic)	TfB (volcaniclastic)	20	Ag, As, Bi, Cd, Co, Cr, Cu, Hg, Mg, Ni, Se, Zn
	Tuffs, fragmented (volcaniclastic)	xTF	219	Ag, As, B, Bi, Ca, Cd, Co, Cr, Cu, Fe, Hg, Mg, Mo, Ni, Pb, Sb, Se, Sn, U, W, Zn
	Unknown/Composite Lithology	N/A	2	Ag, As, Cd, Co, Cr, Cu, Hg, Mg, Se, Zn
Talus	Talus	N/A	1	Ag, As, Cr, Cu, Hg, Mg, Mo, Se

Source: compiled in text from \\VAN-SVR0\Projects\01_SITES\Red_Mountain_BC\1CI019.001_2015_2016_EA\Geochemistry\ABA\Red_Mtn_ABA_Analysis_1CI019-002_rev19_lmc.xlsx

Notes:

(1) All samples except MSI were compared to high and low calcium granite.

(2) MSI samples were compared to shales.

4.3 Bottle Roll Tests

Table 4-8 presents the results from the bottle roll tests for 1 waste rock and 5 talus samples, all of unidentified lithology. The weathering history of sample WR-1 was not documented, however, leachable sulphate levels were near the level of detection. The paste pH of all samples was greater than 6, with the exception of the -230 mesh size fraction of sample TAL 8, which was 5.7. The size fraction of the samples used for the bottle roll tests was unspecified.

The pH for all samples was near neutral, with one sample of talus (TAL 8) having a slightly lower pH (6.4). Sulphate levels, which are an indicator of sulphide oxidation in the absence of secondary sulphate minerals such as gypsum, ranged from 23 to 130 mg/L. In contrast to the acidic talus humidity cell test sample (Section 4.4.1) trace element levels were low and typically below detection, in particular for cadmium, cobalt, nickel and zinc. A review of the detection limits suggests trace element analysis was conducted using ICP-OES, which has higher detection limits than ICP-MS. Mercury, selenium, and manganese levels were slightly elevated for selected talus samples. Selenium was also elevated for the one waste rock sample.

Table 4-8: Results of Bottle Roll Tests

Parameter	Units	Waste Rock	Talus				
		WR 1	TAL 4	TAL 8	TAL 10	TAL 12	TAL 21
pH	pH units	7.1	7.5	6.4	7.2	7.6	7.5
Conductivity	µS/cm	590	270	330	290	180	140
Acidity	mg $CaCO_3$/L	20	10	20	10	10	15
SO_4	mg/L	130	88	120	111	29	23
Alkalinity	mg $CaCO_3$/L	95	21	22	16	41	30
Ag	mg/L	0.009	<0.001	<0.001	0.004	0.001	<0.001
Alkalinity	mg/L	<1	1	<1	<1	<1	<1
As	mg/L	0.006	0.001	<0.001	0.002	0.004	0.003
Ba	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Be	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ca	mg/L	38	0.5	0.5	4.5	<0.5	0.5
Cd	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Co	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Cr	mg/L	0.02	<0.02	<0.02	0.12	<0.02	0.06
Cu	mg/L	0.002	0.012	0.01	0.01	0.016	0.015
Fe	mg/L	1	2	1	1	1	1
Hg	mg/L	0.0008	0.0012	0.0012	0.0002	0.0004	0.0004
K	mg/L	25	15	20	20	5	5
Mg	mg/L	17	0.8	0.4	6	0.8	1
Mn	mg/L	0.06	0.06	0.08	0.21	0.08	0.1
Mo	mg/L	<0.01	0.08	0.17	0.28	0.06	0.04
Na	mg/L	45	41	49	30	31	22
Ni	mg/L	0.02	<0.01	<0.01	0.06	<0.01	<0.01
P	mg/L	<1	<1	<1	<1	<1	<1
Pb	mg/L	0.05	<0.05	0.05	<0.05	<0.05	0.05
Sb	mg/L	0.022	<0.004	0.004	<0.004	<0.004	<0.004
Se	mg/L	0.01	0.008	0.011	0.004	0.004	0.008
Sr	mg/L	0.58	<0.01	<0.01	0.03	<0.01	<0.01
Ti	mg/L	<1	<1	<1	<1	<1	<1
V	mg/L	0.02	<0.01	<0.01	0.02	0.01	0.01
Zn	mg/L	<0.01	0.08	0.01	<0.01	<0.01	0.05

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4.4 Laboratory-Based Kinetic Tests

4.4.1 MDAG Sample Characteristics

Static Testing

Mineralogy

The mineralogy for the waste rock and ore kinetic test samples is presented in Section 4.1.3. There was no available mineralogy data for the talus sample.

Acid-Base Accounting

Table 4-9 presents selected ABA data for the MDAG humidity cell tests and the percent rank of total sulphur, NP and TIC relative to the ABA data set, specifically in comparison to: i) other samples with the same economic classification (i.e., ore vs. waste); and, ii) samples of the same rock type and economic classification.

With the exception of the talus sample, the paste pH for all samples was neutral to alkaline. The grain size of the talus sample was not specified; however, humidity cell tests are typically conducted on a -0.25 mesh (-1/4") size fraction and less frequently on a -10 mesh size fraction. In contrast to the ABA sample set, the humidity cell test sample represents a larger size fraction that has an acidic paste pH.

Total sulphur levels were greater than the 65^{th} percentile levels except for samples "Porphyry FHp" and "ABA-031". All samples except "Porphyry FHp" and "Talus" had NP levels less than 40^{th} percentile levels, whereas TIC levels tended to be closer to median levels. All samples were classified as PAG on the basis of NP/AP and TIC/AP.

Trace Element Content

Appendix C presents the trace element data for the MDAG humidity cell tests. Trace element data are available for the complete Red Mountain sample set, as discussed in Section 4.2.3. Table 4-10 presents selected trace element content and percent rank compared to the full dataset of samples within the same economic classification (i.e., waste rock or ore).

There is only one talus sample in the sample set, so percent ranks are not presented.

Table 4-9: Static Test Data, MDAG Humidity Cell Tests

Economic Classification	Rock Type	Sample ID	Paste pH	Total S			NP			TIC			Sample Count		NP/AP	TIC/AP
				Wt %	Percent Rank		kgCaCO3/t	Percent Rank		kgCaCO3/t	Percent Rank		Rock Type	Econ. Classif.		
					Rock Type	Econ. Classif.		Rock Type	Econ. Classif.		Rock Type	Econ. Classif.				
Waste Rock	Hlp	Porphyry FHp	8.5	2.5	33%	24%	30	30%	51%	20	33%	55%	28 (Tot S/NP); 7 (TIC)	398 (Tot S/NP); 43 (TIC)	0.4	0.27
	TfB (volc)	ABA-024	8.3	3.4	59%	47%	63	86%	87%	50	100%	95%	23 (Tot S/NP); 13 (TIC)	398 (Tot S/NP); 43 (TIC)	0.59	0.47
	TfB (volc)	Black Tuff	8.6	4.2	77%	70%	24	32%	44%	14	42%	45%	23 (Tot S/NP); 13 (TIC)	398 (Tot S/NP); 43 (TIC)	0.18	0.1
	xTF	ABA-031	6.7	8.4	97%	97%	6	1%	1%	4.5	45%	23%	225 (Tot S/NP); 15 (TIC)	398 (Tot S/NP); 43 (TIC)	0.023	0.017
	Mixed	ABA A.V.1	8.4	4.1	--	65%	19	--	34%	6.8	--	24%	0	398 (Tot S/NP); 43 (TIC)	0.15	0.054
	Mixed	ABA A.V.2	8.5	5.8	--	90%	21	--	38%	9.1	--	26%	0	398 (Tot S/NP); 43 (TIC)	0.12	0.051
Ore	TfB (volc)	Crystal Tuff	8.1	5.2	67%	57%	21	33%	47%	18	100%	86%	8 (Tot S/NP); 4 (TIC)	52 (Tot S/NP); 15 (TIC)	0.13	0.11
	TfB (volc)	Ore Avg Pyritic	6.4	17	100%	98%	9	0%	6%	9.1	--	43%	8 (Tot S/NP); 4 (TIC)	52 (Tot S/NP); 15 (TIC)	0.017	0.017
	TfB (volc)	Ore Avg ZnS2	8.2	6.2	83%	69%	19	17%	41%	11	50%	71%	8 (Tot S/NP); 4 (TIC)	52 (Tot S/NP); 15 (TIC)	0.099	0.059
	TfB (volc)	ABA J.W.5	7.9	7.9	86%	80%	11	3%	16%	4.5	--	32%	8 (Tot S/NP); 4 (TIC)	52 (Tot S/NP); 15 (TIC)	0.044	0.018
	xTF	ABA-010	7.6	6.9	83%	75%	13	26%	25%	9.1	29%	43%	36 (Tot S/NP); 8 (TIC)	52 (Tot S/NP); 15 (TIC)	0.06	0.042
	Unknown	Marc Composite	7.7	10	--	88%	19	--	41%	4.5	--	32%	0	52 (Tot S/NP); 15 (TIC)	0.06	0.014
	Mixed	ABA A.V.4	7.2	19	--	100%	12	--	22%	6.8	--	36%	0	52 (Tot S/NP); 15 (TIC)	0.021	0.012
Talus	Talus	Talus Composite	--	0.78	98%	0%	7	55%	0%	4.5	99%	0%	90	90	0.35	0.23

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Table 4-10: Selected Trace Element Data and Percent Rank According to Economic Classification, MDAG Humidity Cell Tests

Economic Classification	Rock Type	Sample ID	Cd	Cd	Co	Co	Cu	Cu	Mn	Mn	Ni	Ni	Pb	Pb	Zn	Zn
			ppm	% Rank	ppm	% Rank	ppm	% Rank	ppm	% Rank	ppm	% Rank	ppm	% Rank	ppm	% Rank
Waste Rock	Hlp	Porphyry FHp	0.25	5.7	15	11	38	4.3	2400	99	6	14	49	67	36	13
	TfB	ABA-024	0.25	5.7	18	27	58	6.2	1100	74	75	88	38	54	70	38
	TfB	Black Tuff	0.25	5.7	22	60	160	60	900	63	100	98	58	71	74	41
	xTF	ABA-031	12	80	15	11	94	14	220	2.1	11	43	130	90	910	86
	Mixed	ABA A.V.1	1	27	18	27	160	56	700	47	12	51	30	43	160	66
	Mixed	ABA A.V.2	6	66	16	13	470	99	700	46	28	74	50	68	470	81
Ore	TfB	Crystal Tuff	25	91	19	50	150	24	860	74	31	72	71	56	1900	84
	TfB	Ore Avg Pyritic	2.5	32	25	88	550	85	620	60	13	53	540	100	400	62
	TfB	Ore Avg ZnS2	150	100	17	31	220	44	1800	98	25	66	170	88	10000	100
	TfB	ABA J.W.5	5.5	56	19	50	310	68	130	12	77	94	27	5.8	580	70
	xTF	ABA-010	3	35	19	50	680	88	1300	90	12	47	120	82	210	44
	Unknown	Marc Composite	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Mixed	ABA A.V.4	17	82	14	16	2500	100	200	24	45	78	75	65	1000	80
Talus	Talus	Talus Composite	0.25	100	10	100	110	100	470	100	12	100	22	100	78	100

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Notes:

No trace element data available for sample Marc Composite

Leachate Chemistry

Figures illustrating selected parameter trends are presented in Figure 4-10 to Figure 4-20. Appendix C provides figures for all parameters. Table 4-11 presents humidity cell test release rates for selected parameters. For samples that remained pH-neutral for the duration of the test, the release rates in Table 4-11 represent stable rates, calculated based on uniform sulphate concentrations over a period of time. For tests in which metal leaching had not yet stabilized, the stable rate for that parameter was based on the last five cycles of data. For samples with acidic leachate, the rates are representative of all cycles with pH < 6 (although, at test closure, the pH was 4 or lower for all tests).

The following noteworthy trends observed for the MDAG (1996a) waste rock, ore and talus humidity cell test samples are described as follows:

- pH (Figure 4-10):
  - Sample “Talus” and waste rock sample “ABA-031” (xTF) yielded acidic pH’s for all cycles of the test. The paste pH for sample “ABA-031” was near neutral (6.7), but lower than the other waste rock samples (≥8.3).
  - Ore sample “Marc composite” was initially acidic, and the pH oscillating between acidic and neutral pH conditions until cycle 38, after which leachates were consistently acidic. Stable rates for this sample are presented from cycle 39 onward.
  - The following 3 ore samples developed acidic pH’s over the course of the test: “ABA JW5” (TfB volcanic) and “ABA AV4” (mixed rock type) at 32 and 36 weeks, respectively and “Ore Pyritic” (TfB volcanic) at approximately 55 weeks.
  - All other humidity cell tests remained pH-neutral for the duration of the test.
- SO_4 (Figure 4-11 and Figure 4-12):
  - Sulphate levels typically exhibited an initial increase and then a decrease, representing an initial flush of oxidation products typical for humidity cell tests.
  - For waste rock samples, sulphate release rates ranged from between 26 to 100 mg/kg/week (Figure 4-11). Selected pH-neutral humidity cell tests had equivalent or higher sulphate release rates than the one acidic test (78 mg/kg/week).
  - For ore samples, acidic humidity cell tests had higher release rates (i.e., 200 to 290 mg/kg/week) than the pH-neutral tests (i.e., 14 to 56 mg/kg/week). There was no apparent correlation between sulphate release rates and total sulphur content for tests producing non-acidic leachate.
  - For the talus sample, the sulphate release rate (i.e., 100 mg/kg/week) was more similar to the acidic rates for waste rock in comparison to the ore samples.
- Cd and Zn (Figure 4-13, Figure 4-14 and Figure 4-15):

- Cadmium and zinc release rates were lowest (<0.001 and <0.05 mg/kg/week, respectively) for samples that were pH-neutral and yielded low solid-phase zinc levels (<500 ppm). (Zinc concentrations were considered to be indicative of the mineral sphalerite, of which cadmium occurs as a trace element). There was no apparent relationship between cadmium or zinc release rates and petrographic observations of sphalerite.
- Acidic samples, including talus, yielded higher release rates of cadmium and zinc release, irrespective of zinc content.

- Co and Ni (Figure 4-16 and Figure 4-17):
  - Cobalt flushing levels were highest (>0.04 mg/L) during the initial acidic cycles of "Talus"; waste rock samples "ABA-031" (cycle 0) and "ABA JW5" (cycle 31); and ore sample "Marc Composite" (cycle 47), after which time levels decreased to near or below the MDL (0.02 mg/L). Sample "Talus" exhibited the highest levels of cobalt leaching.
  - Nickel exhibited a similar trend, in that selected humidity cell tests yielded higher nickel release rates under acidic conditions (Talus; ore samples Marc composite, ABA JW5 and ABA AV4; and possibly waste rock sample ABA-031). Nickel levels for ABA-031 were within the range of analytical uncertainty so there was not a clear trend. Nickel trends were increasing for samples Marc composite and ABA AV4.
- Cu (Figure 4-18):
  - Copper release rates were correlated with pH, with highest rates exhibited for acidic samples.
  - There was no relationship with solid-phase copper or petrographic observations of chalcopyrite.
- Mn:
  - There was no clear relationship between manganese release rates and pH or solid-phase content of manganese or total sulphur. Manganese release rates were greater than 0.4 mg/kg/week for both acidic and pH-neutral samples of waste rock, ore and/or talus.
- Pb (Figure 4-19):
  - Lead release rates exhibited a positive trend with lead solid-phase content (suggestive of the mineral, galena) for waste rock, ore and talus samples (r^2=0.8). There was no apparent relationship between release rate and pH, sulphate release rates or petrographic observations of galena in the samples.
- Se (Figure 4-20):
  - Selenium was analyzed for eight humidity cell tests and only for cycles near the end of operation. Based on the available data, there is a weak correlation between selenium and sulphate release rates, (r^2=0.5) suggesting that selenium could occur as a trace element in sulphides.

Table 4-11: Stable and Acidic Release Rates, MDAG (1996a) Humidity Cell Tests

Economic Classification	Rock Type	Sample ID	Leachate pH	Rate Type	Trace Element Content									Release Rate (mg/kg/week)								
					Total S	Cd	Co	Cu	Mn	Ni	Pb	Se	Zn	SO_4	Cd	Co	Cu	Mn	Ni	Pb	Se[1]	Zn
					%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm									
Waste Rock	Hlp	Porphyry FHp	Neutral	Stable	2.5	0.25	15	38	2400	6	49	4	36	29	0.00078	0.011	0.00061	0.41	0.009	0.029	--	0.0055
	TfB	ABA-024	Neutral	Stable	3.4	0.25	18	58	1100	75	38	9	70	26	0.00082	0.011	0.00062	0.067	0.0071	0.027	--	0.011
	TfB	Black Tuff	Neutral	Stable	4.2	0.25	22	160	900	100	58	7	74	77	0.00069	0.0099	0.0048	0.15	0.0074	0.025	--	0.0047
	xTF	ABA-031	Acidic	Acidic	8.4	12	15	94	220	11	130	14	910	78	0.025	0.013	0.017	0.57	0.016	0.035	--	2
	Mixed	ABA A.V.1	Neutral	Stable	4.1	1	18	160	700	12	30	5.2	160	100	0.0007	0.0091	0.0011	0.14	0.0063	0.024	0.0028	0.049
	Mixed	ABA A.V.2	Neutral	Stable	5.8	6	16	470	700	28	50	4.9	470	81	0.00092	0.0095	0.00051	0.18	0.0058	0.026	0.0027	0.017
Ore	TfB	Crystal Tuff	Neutral	Stable	5.2	25	19	150	860	31	71	9	1900	23	0.003	0.01	0.0043	0.42	0.0072	0.026	--	0.084
	TfB	Ore Avg Pyritic	Acidic	Acidic	17	2.5	25	550	620	13	540	34	400	56	0.0041	0.011	0.062	3	0.0076	0.11	0.0082	0.26
	TfB	Ore Avg ZnS2	Neutral	Stable	6.2	150	17	220	1800	25	170	9	10000	35	0.025	0.011	0.00062	1.8	0.0055	0.028	0.0022	1.4
	TfB	ABA J.W.5	Acidic	Acidic	7.9	5.5	19	310	130	77	27	13	580	290	0.0063	0.028	0.015	0.58	0.44	0.033	0.21	0.42
	xTF	ABA-010	Neutral	Stable	6.9	3	19	680	1300	12	120	7	210	14	0.00077	0.0053	0.00064	0.58	0.0059	0.017	--	0.021
	Unknown	Marc Composite	Acidic	Acidic	10	na	na	na	na	na	na	na	na	220	0.03	0.013	0.031	7.7	0.24	0.029	0.0099	3.3
	Mixed	ABA A.V.4	Acidic	Acidic	19	17	14	2500	200	45	75	30	1000	200	0.067	0.014	3.4	0.52	0.05	0.05	0.025	4
Talus	Talus	Talus Composite	Acidic	Acidic	0.78	0.25	10	110	470	12	22	5	78	100	0.0022	0.028	0.1	1.2	0.045	0.027	0.0019	0.18

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Notes:

1. Selenium analyzed for selected humidity cell tests, and only for selected cycles near the end of operation.

na denotes data not available

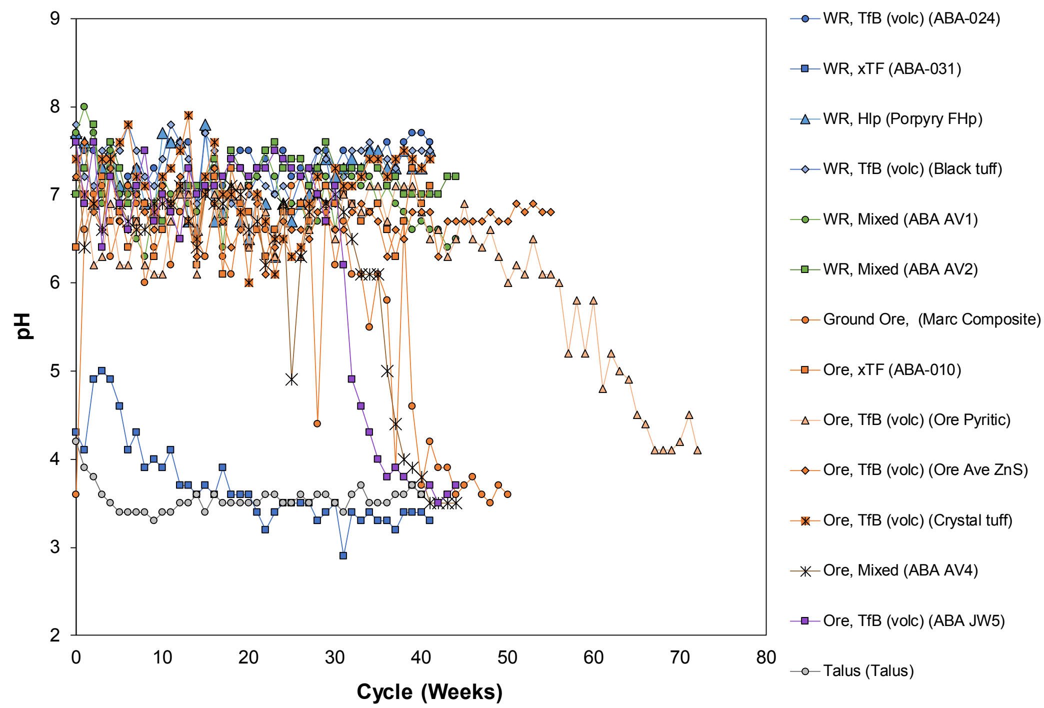

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Figure 4-10: pH trends, MDAG (1996a) Humidity Cell Tests

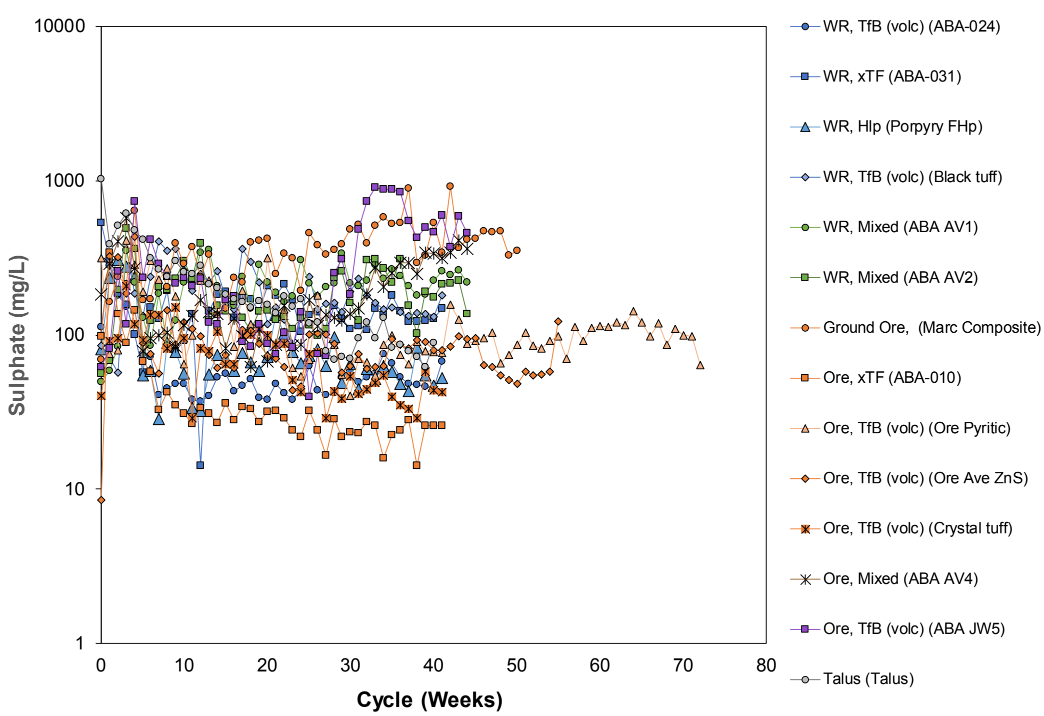

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Figure 4-11: Sulphate Concentration Trends, MDAG (1996a) Humidity Cell Tests

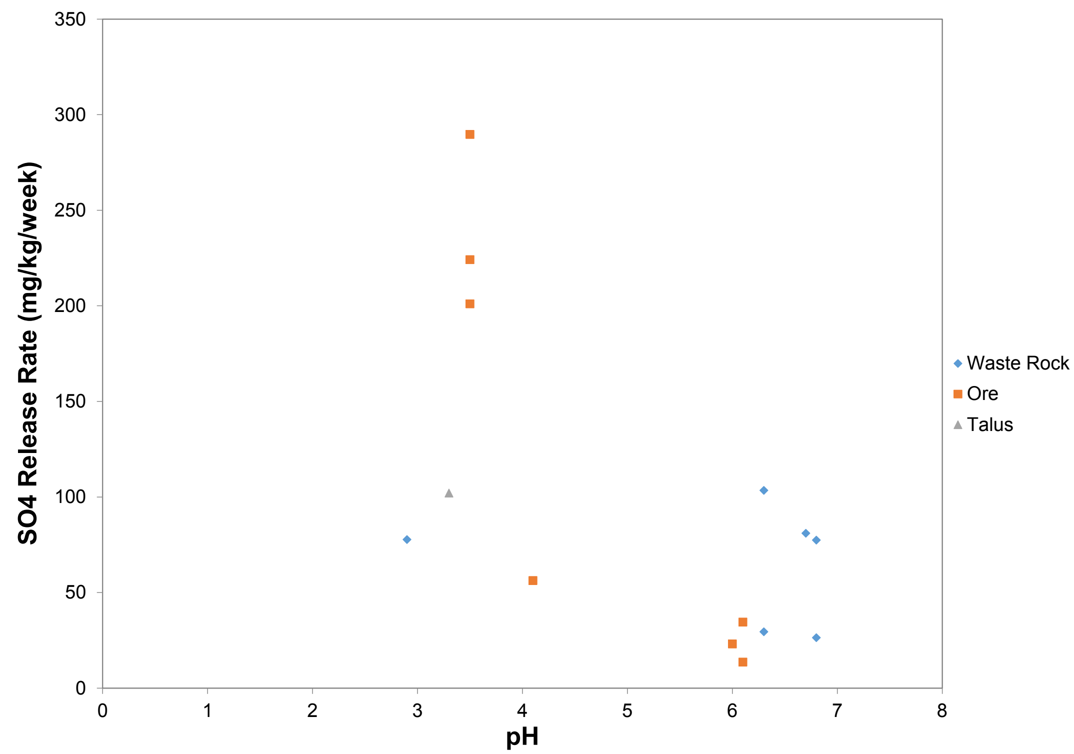

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Figure 4-12: Comparison of Sulphate Release Rates and pH, MDAG (1996a) Humidity Cell Tests

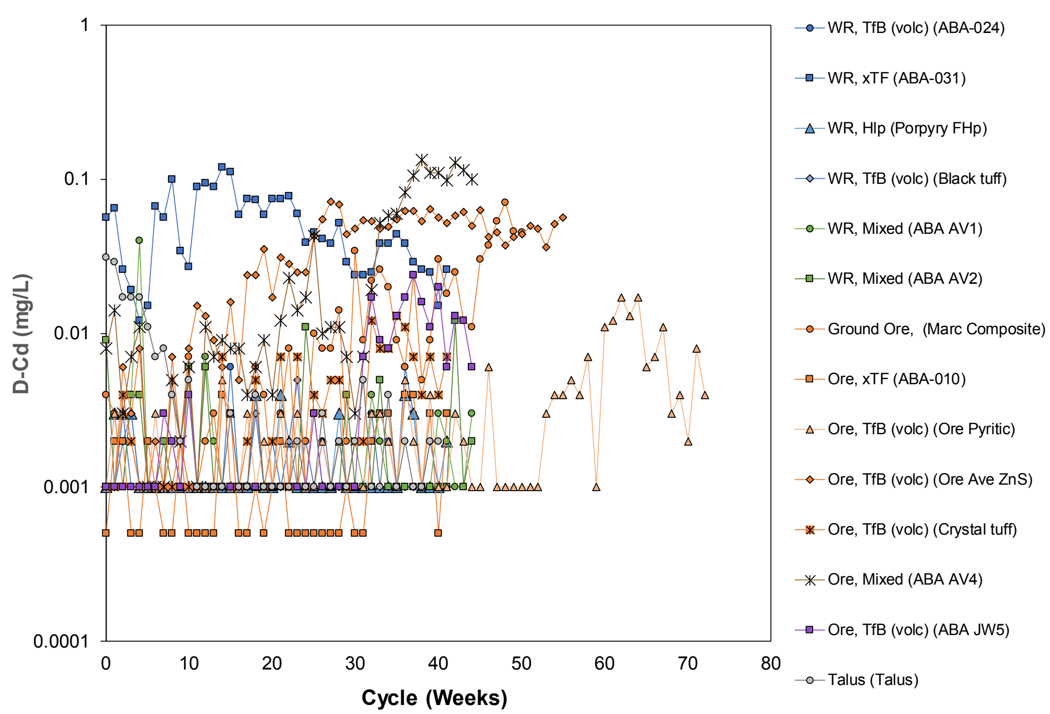

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Figure 4-13: Cadmium Concentration Trends, MDAG (1996a) Humidity Cell Tests

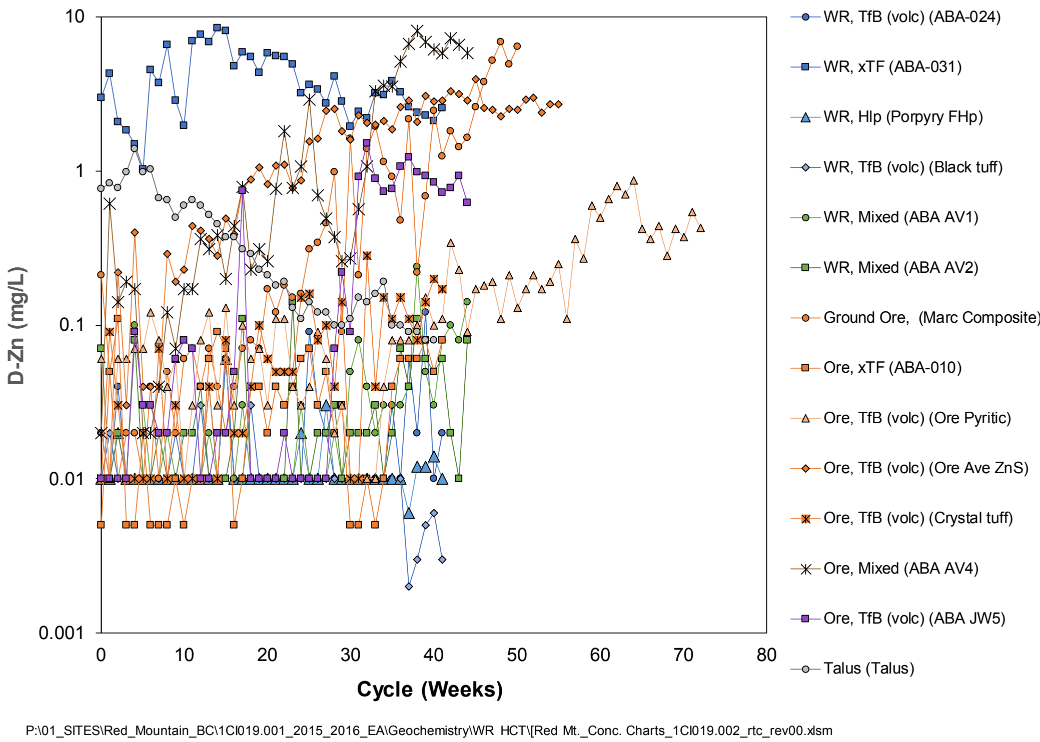

Figure 4-14: Zinc Concentration Trends, MDAG (1996a) Humidity Cell Tests

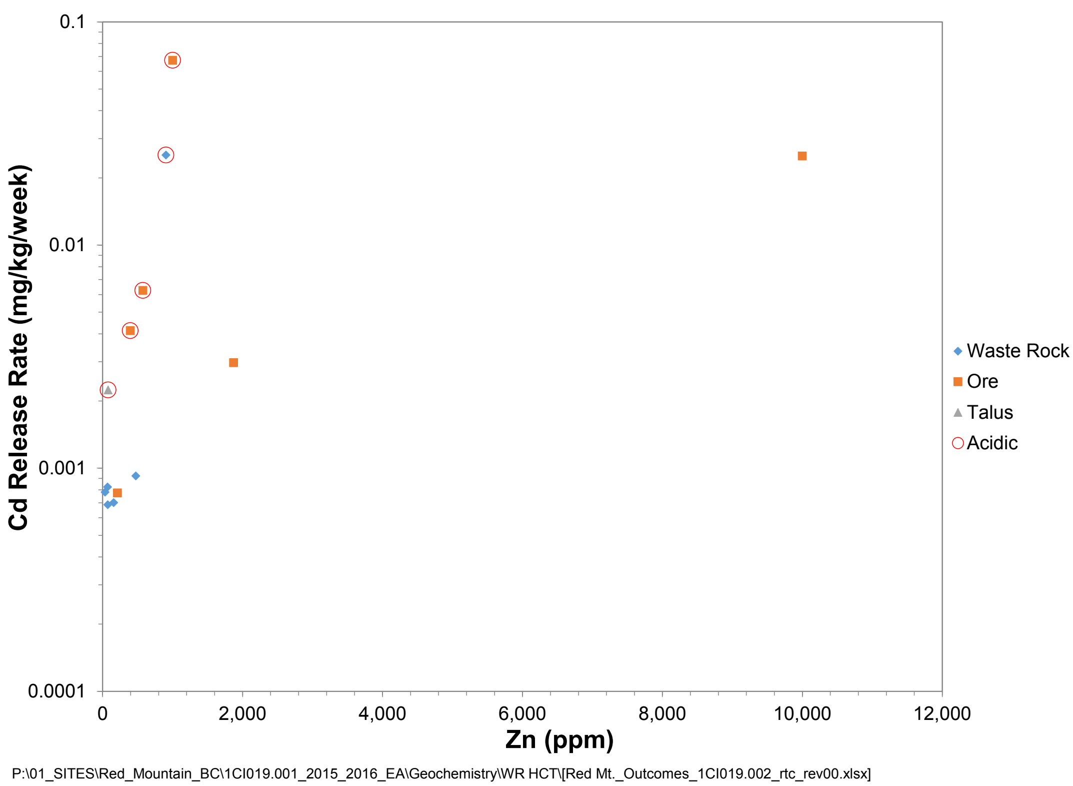

Figure 4-15: Comparison of Cd Release Rates and Zinc Content, MDAG (1996a) Humidity Cell Tests

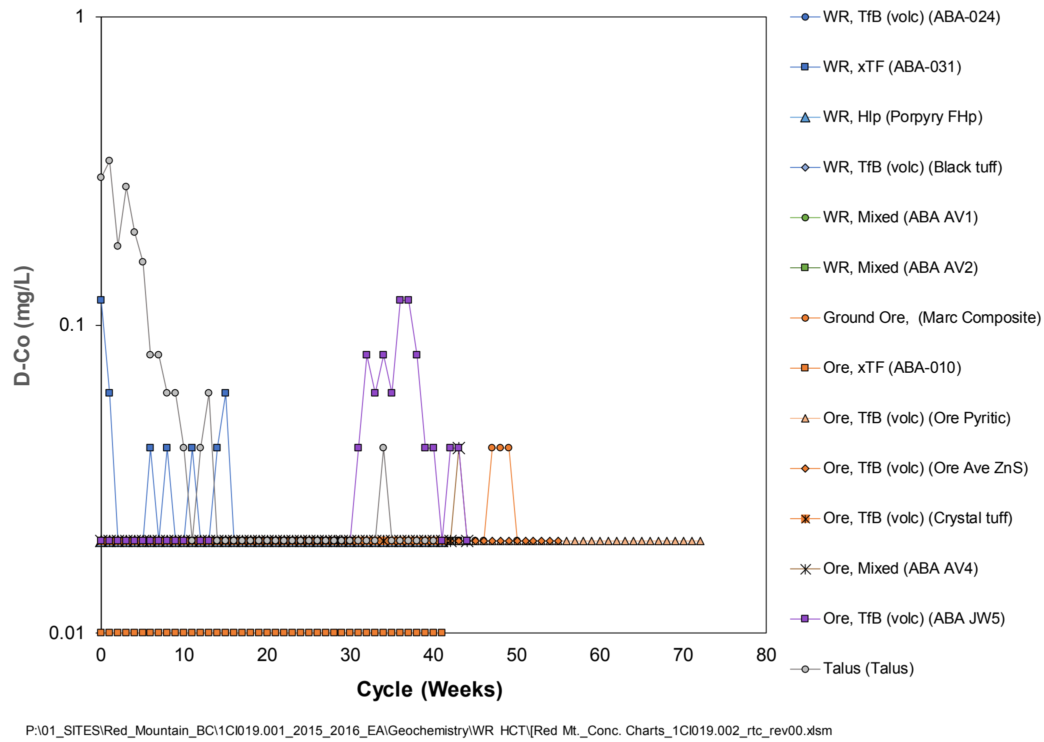

Figure 4-16: Cobalt Concentration Trends, MDAG (1996a) Humidity Cell Tests

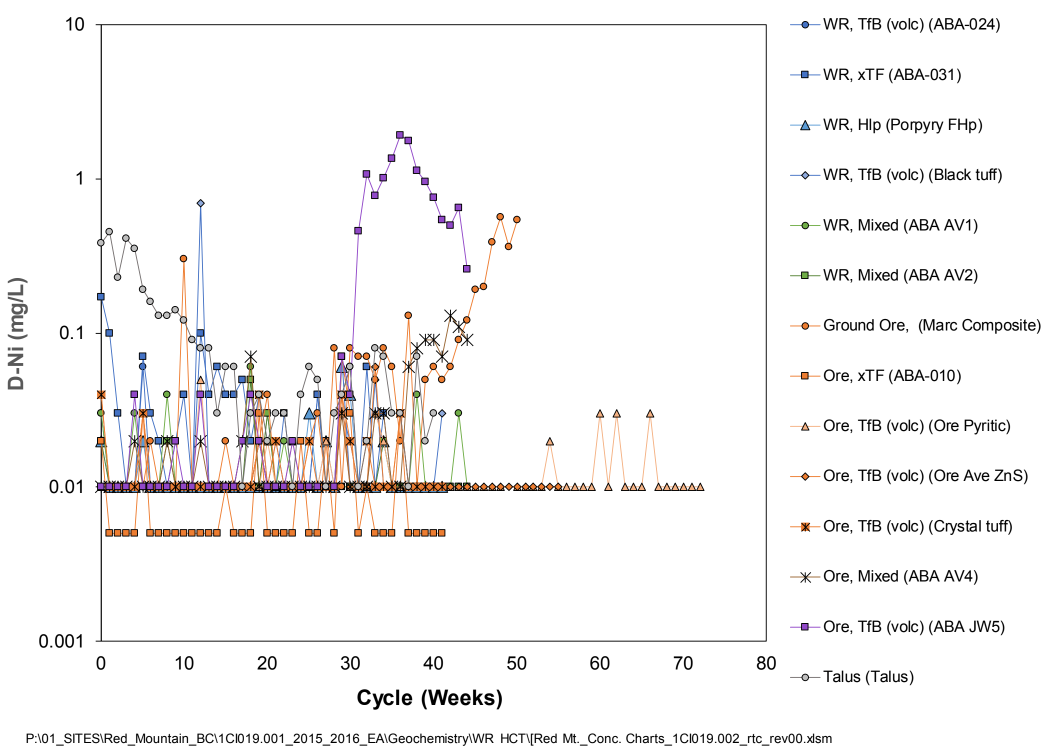

Figure 4-17: Nickel Concentration Trends, MDAG (1996a) Humidity Cell Tests

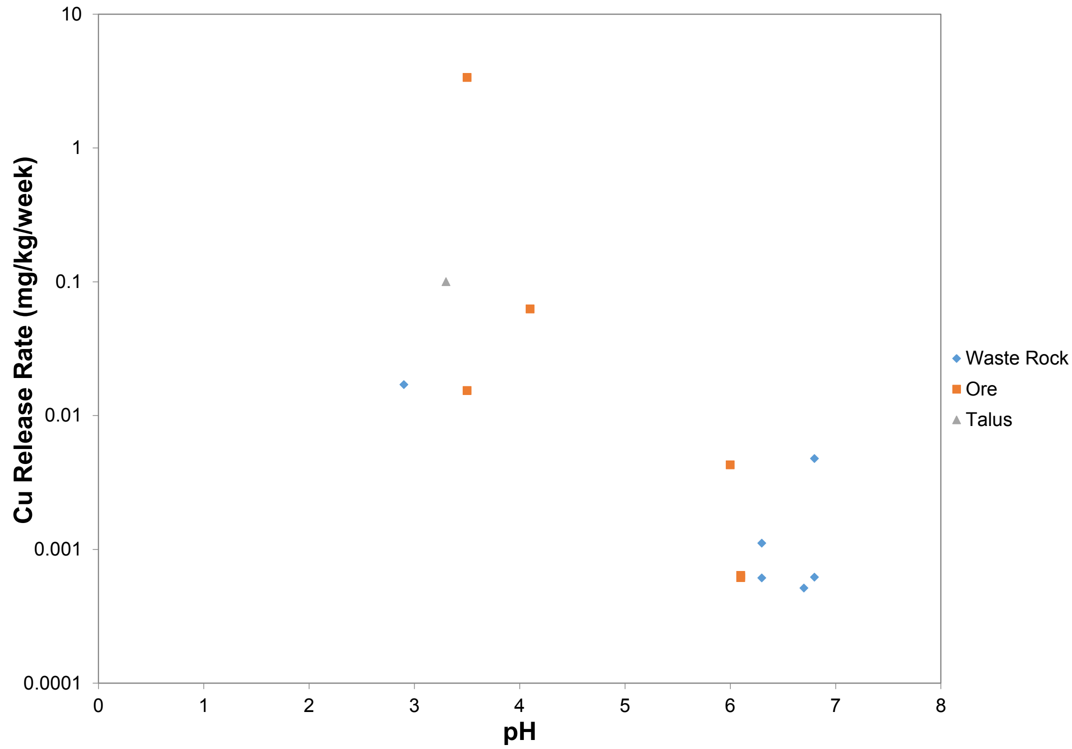

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Figure 4-18: Comparison of Cu Release Rates and pH, MDAG (1996a) Humidity Cell Tests

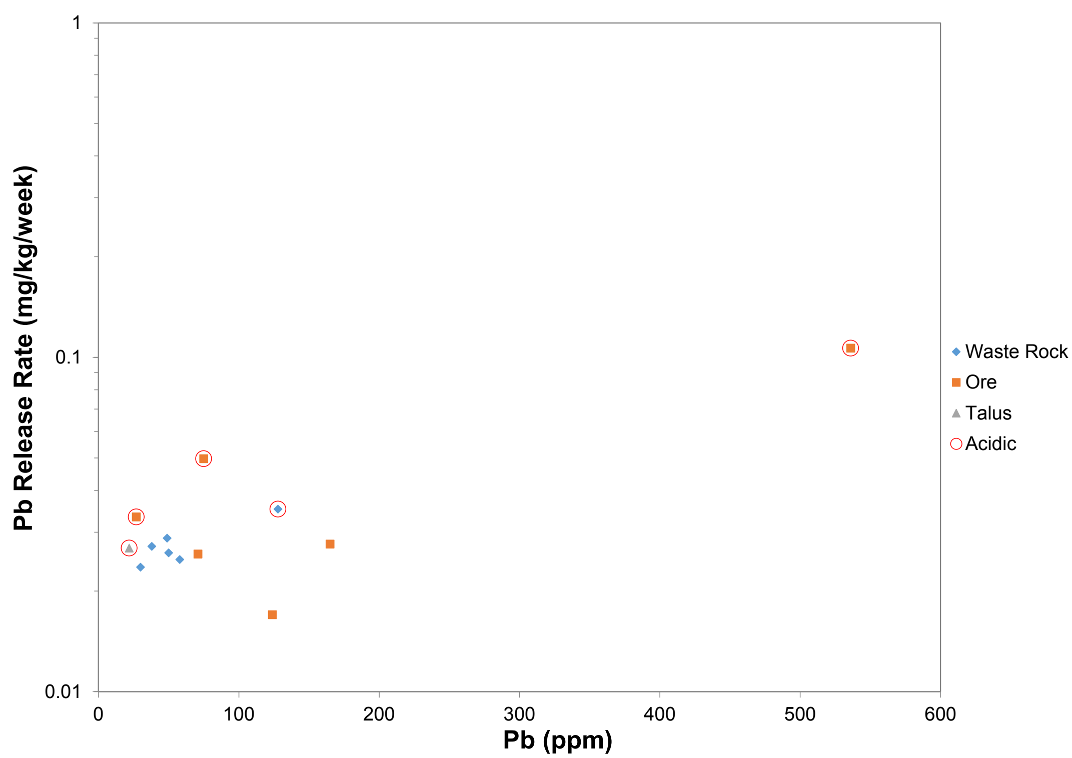

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Figure 4-19: Comparison of Pb Release Rates and Content, MDAG (1996a) Humidity Cell Tests

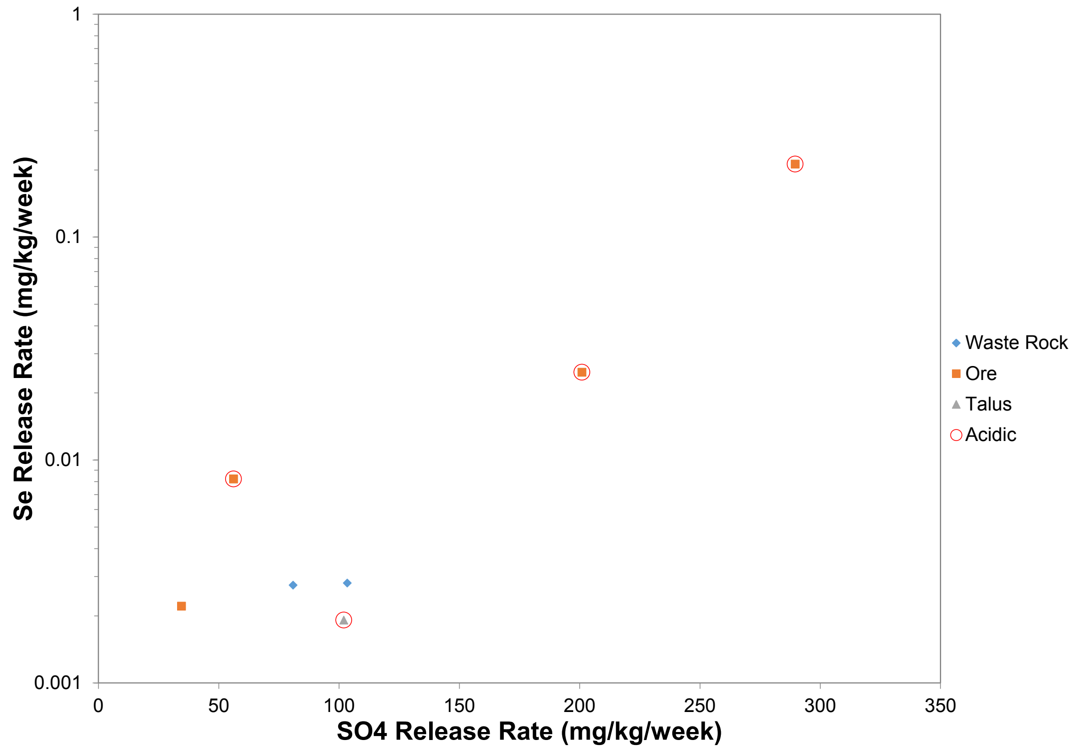

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Figure 4-20: Comparison of Se and SO_4 Release Rates, MDAG (1996a) Humidity Cell Tests

Depletion Calculations

The purpose of depletion calculations is to assess whether the humidity cell tests will eventually produce acidic leachate, based on the depletion rates of sulphide, NP and TIC and also the calcium-plus-magnesium to sulphate molar ratio. Depletion calculations for humidity cell tests that were pH-neutral throughout the duration of the test are presented in Table 4-12. Depletion calculations were not produced for samples that generated acidic leachate during the test because the acidic pH confirmed the ARD potential of these samples.

Depletion calculations based on stable rates suggest that all samples would eventually develop acidic leachates, except for samples “Porphyry Hlp” (Hillside porphyry) and “ABA-024” (bedded tuff). Sample “Porphyry Hlp” had statistically lower sulphur content with median levels of NP and TIC whereas “ABA-025” had median levels of sulphur and anomalously-high levels of NP and TIC (85^{th} and 95^{th} percentile levels, respectively; Table 4-9). For these samples, AP is expected to be depleted prior to NP, however, it is uncertain if acidic leachates would be produced based on carbonate molar ratio (CMR) values between 1 and 3. CMR is the ratio of NP consumption (indicated by calcium and magnesium) to acid generation (indicated by sulphate) and is expressed as the molar ratio of $(Ca+Mg)/SO_4$ (Table 4-12). For the humidity cell tests that remained neutral throughout the test period (Figure 4-21), the maximum CMR of 1.6 is interpreted to be the critical NP/AP to distinguish PAG samples from non-PAG samples.

Table 4-12: Depletion Calculations, MDAG (1996a) Humidity Cell Tests

Economic Classification	Rock Type	Sample ID	Total S Wt %	NP/AP	TIC/AP	(Ca+Mg)/ SO_4	Stable SO_4 Release Rate	Time-to-Depletion			Leachate pH	NP Depletion > AP Depletion	TIC Depletion > AP Depletion	Prediction	
								NP	TIC	Sulphide				Neutral	Acidic
								Years							
Waste Rock	Hlp	Porphyry FHp	2.5	0.4	0.27	1.5	29	13	8.6	4.7	Neutral	Yes	Yes	Uncertain	Uncertain
	TfB	ABA-024	3.4	0.59	0.47	1.6	26	28	22	7.5	Neutral	Yes	Yes	Uncertain	Uncertain
	TfB	Black Tuff	4.2	0.18	0.1	1.3	77	4.5	2.5	3.1	Neutral	Yes	No		Likely
	xTF	ABA-031	8.4	0.023	0.017	0.49	--	2.9	2.2	6.2	Acidic	--	--		Already acidic
	Mixed	ABA A.V.1	4.1	0.15	0.054	0.97	100	3.5	1.2	2.3	Neutral	Yes	No		Likely
	Mixed	ABA A.V.2	5.8	0.12	0.051	1.1	81	4.2	1.8	4.1	Neutral	Yes	No		Likely
Ore	TfB	Crystal Tuff	5.2	0.13	0.11	1.5	23	11	9.7	13	Neutral	No	No		Likely
	TfB	Ore Avg Pyritic	17	0.017	0.017	0.89	--	3.3	3.3	17	Acidic	--	--		Already acidic
	TfB	Ore Avg ZnS_2	6.2	0.099	0.059	0.89	35	11	6.8	10	Neutral	Yes	No		Likely
	TfB	ABA J.W.5	7.9	0.044	0.018	0.56	--	1.2	0.51	1.6	Acidic	--	--		Already acidic
	xTF	ABA-010	6.9	0.06	0.042	1.2	14	15	11	29	Neutral	No	No		Likely
	Unknown	Marc Composite	10	0.06	0.014	0.62	--	2.5	0.59	2.6	Acidic	--	--	--	Already acidic
	Mixed	ABA A.V.4	19	0.021	0.012	0.66	--	1.6	0.93	5.3	Acidic	--	--		Already acidic
Talus	Talus	Talus Composite	0.78	0.35	0.23	0.34	--	3.7	2.4	0.36	Acidic	--	--		Already acidic

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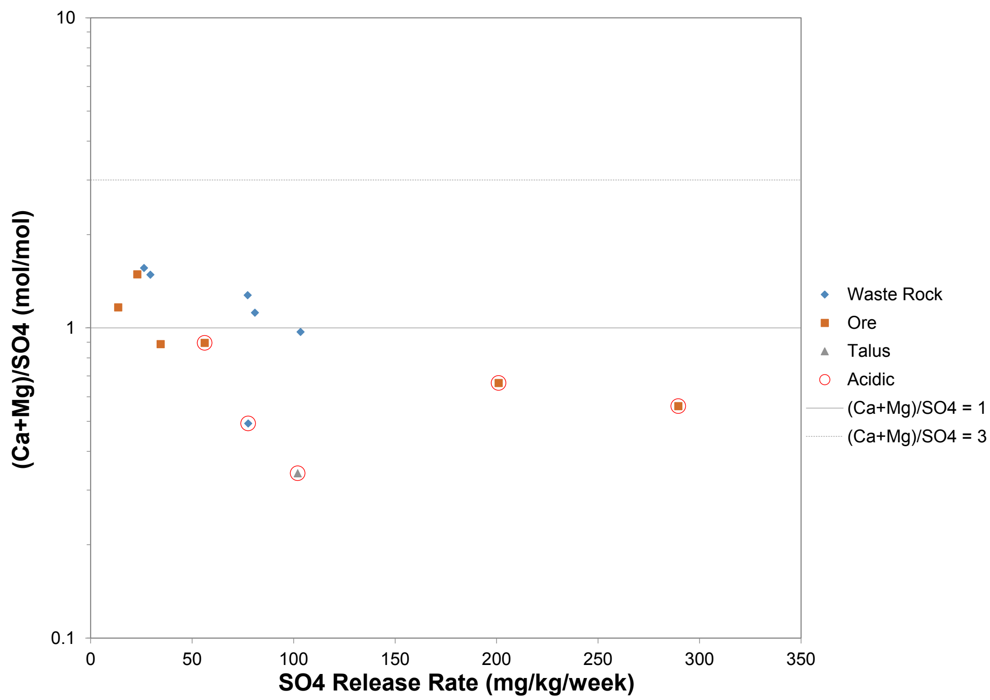

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Figure 4-21: Carbonate Molar Ratio Compared to Sulphate Release Rate, MDAG (1996a) Humidity Cell Tests

4.4.2 Frostad Sample Characteristics

Static Testing

Mineralogy

The mineralogy for the kinetic test samples is presented in Section 4.1.3.

Acid-Base Accounting

Table 4-13 presents selected ABA data for the Frostad laboratory-based kinetic tests and the percent rank of total sulphur, NP and TIC to the ABA data set, specifically in comparison to: i) other samples with the same economic classification (i.e., ore vs. waste); and, ii) samples of the same rock type and economic classification.

The paste pH for all samples was alkaline. For the Hillside Porphyry samples, total sulphur levels ranged from 40^{th} to 98^{th} percentile levels and 40^{th} to 75^{th} percentile levels for sediment samples. NP and TIC levels ranged from approximately 25^{th} to 75^{th} percentile levels. All samples were classified as PAG based on NP/AP and TIC/AP ratios.

Trace Element Content

Trace element content for the Frostad lab-based kinetic samples is presented in Appendix D. Trace element data are available for the complete Red Mountain sample set, as discussed in Section 4.2.3. Table 4-14 presents selected trace element content and percent rank compared to the full dataset of samples within the same economic classification (i.e., waste rock or ore).

Table 4-13: Static Test Data, Frostad Laboratory-Based Kinetic Tests

Rock Type	Sample ID	Paste pH	Total S			NP			TIC			NP/AP	TIC/AP
			Wt %	Percent Rank		kgCaCO$_3$/t	Percent Rank		kgCaCO$_3$/t	Percent Rank			
				Rock Type	Econ. Classif.		Rock Type	Econ. Classif.		Rock Type[1]	Econ. Classif.		
Hillside Porphyry (Hlp)	HC-1	8.4	5.8	98%	91%	45	85%	77%	27	67%	74%	0.25	0.15
	ABA-2	8.2	4.8	93%	79%	33	37%	56%	28	81%	78%	0.22	0.19
	ABA-3	8	3.1	59%	39%	25	22%	45%	12	17%	43%	0.26	0.13
Sediment	HC-2	8.4	4	43%	62%	12	34%	15%	9.4	--	33%	0.096	0.076
	ABA-1	8.1	4.6	61%	76%	36	90%	61%	32	--	81%	0.26	0.23

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Notes:

[1] The sediment samples presented here are the only samples that yielded TIC data (n=2), therefore percent rank is not presented.

Table 4-14: Selected Trace Element Data, Frostad Laboratory-Based Kinetic Tests

Rock Type	Sample ID	Cd		Co		Cu		Mn		Ni		Pb		Zn	
		ppm	% Rank	ppm	% Rank	ppm	% Rank	ppm	% Rank	ppm	% Rank	ppm	% Rank	ppm	% Rank
Hillside Porphyry (Hlp)	HC-1	24	88	17	20	310	94	400	14	18	70	72	79	3000	96
	ABA-2	1	27	17	20	170	63	690	45	20	72	26	34	88	48
	ABA-3	1	27	14	7.4	120	31	600	36	85	93	26	34	60	33
Sediment	HC-2	65	96	14	7.4	220	81	880	61	51	77	54	70	5600	98
	ABA-1	11	78	15	11	230	82	580	31	75	88	28	38	1200	89
Sample Count			368		365		368		368		362		368		368

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Leachate Chemistry

Appendix D presents figures for all parameters. The Frostad (1999) "standard" test method is most comparable to humidity cell tests. Leachate analysis was limited to pH, EC, alkalinity, sulphate and major ions. This section does not endeavour to compare the various test methods employed by Frostad (1999) but rather use the available data to validate the ARD classifications of the waste rock.

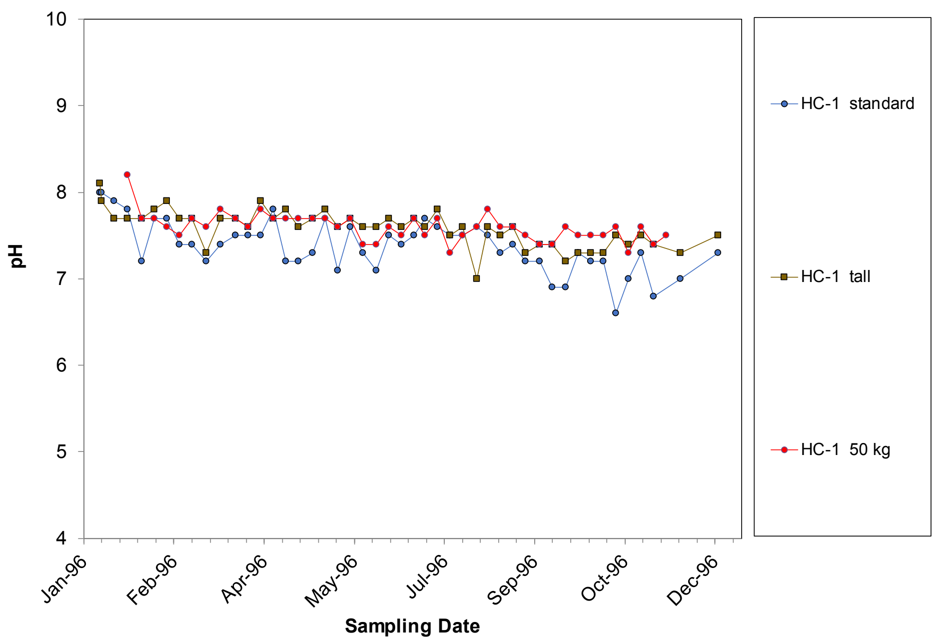
Figure 4-22 presents the pH trends for the 5 samples and various test methods. The three samples of Hillside porphyry (Hlp) remained pH-neutral for the duration of the test. Leachates for samples of mudstone samples (MSI) became acidic (i.e., pH < 6). The duration to develop acidic leachate in the sediment sample varied by test type, however all methods eventually yielded acidic leachates.

Figure 4-23 illustrates sulphate release rates. For each sample, sulphate concentrations (and therefore sulphide oxidation rates) varied by approximately an order of magnitude between test types. This was also observed for calcium and magnesium concentrations (Appendix D), which were used to calculate the rate of NP depletion for the samples.

Depletion Calculations

Depletion calculations for the Frostad laboratory kinetic tests that were pH-neutral throughout the duration of the test are presented in Table 4-12. All test types for the mudstone samples developed acidic leachates during test operation. Depletion calculations based on stable release rates suggest that all Hillside porphyry (Hlp) kinetic tests would eventually develop acidic leachates. For the kinetic tests that remained pH-neutral throughout the test period (Table 4-15), the maximum CMR was 1.6, which is consistent with the critical NP/AP ratio derived from the MDAG humidity cell test samples (Section 4.4.1).

a) Hillside Porphyry (Hlp)



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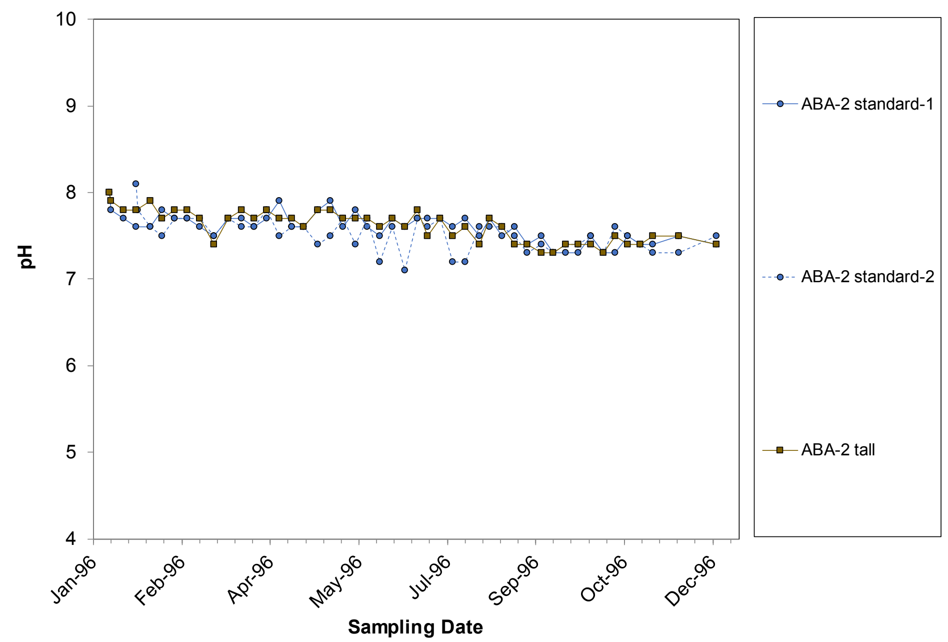
b) Hillside Porphyry (Hlp)



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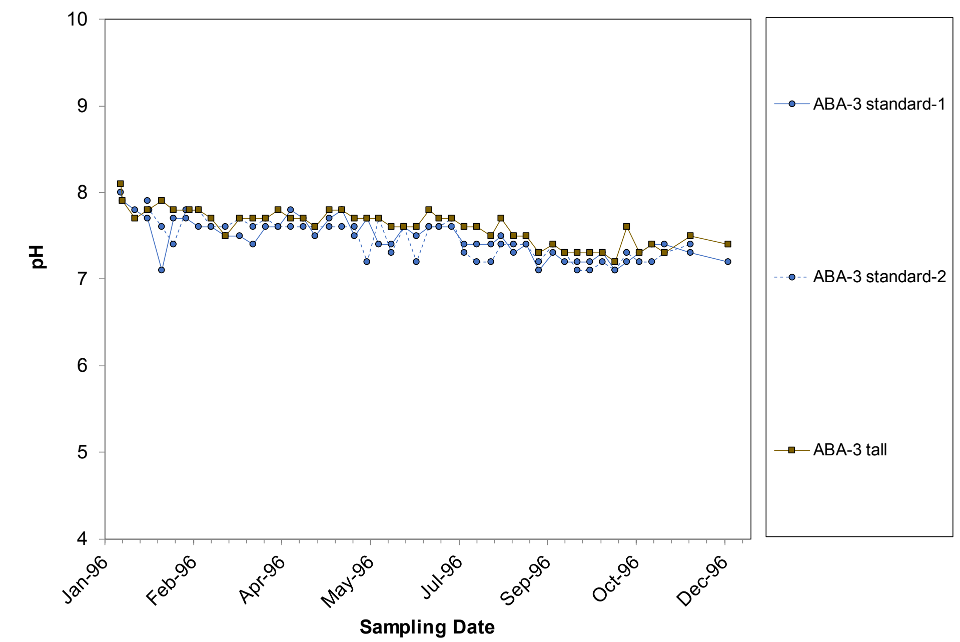
c) Hillside Porphyry (Hlp)



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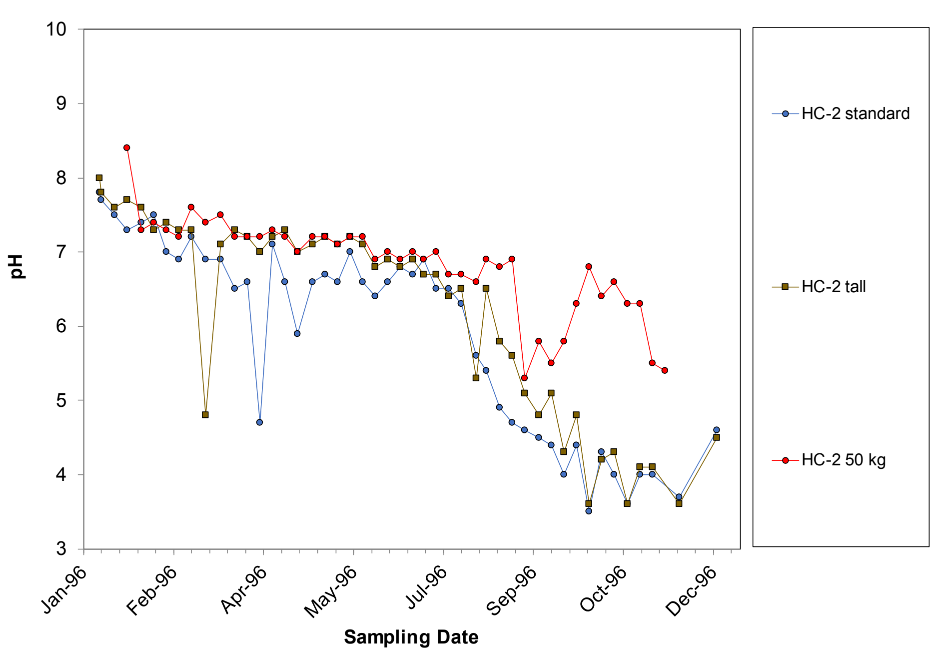
d) Mudstone (MSl)



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e) Mudstone (MSl)

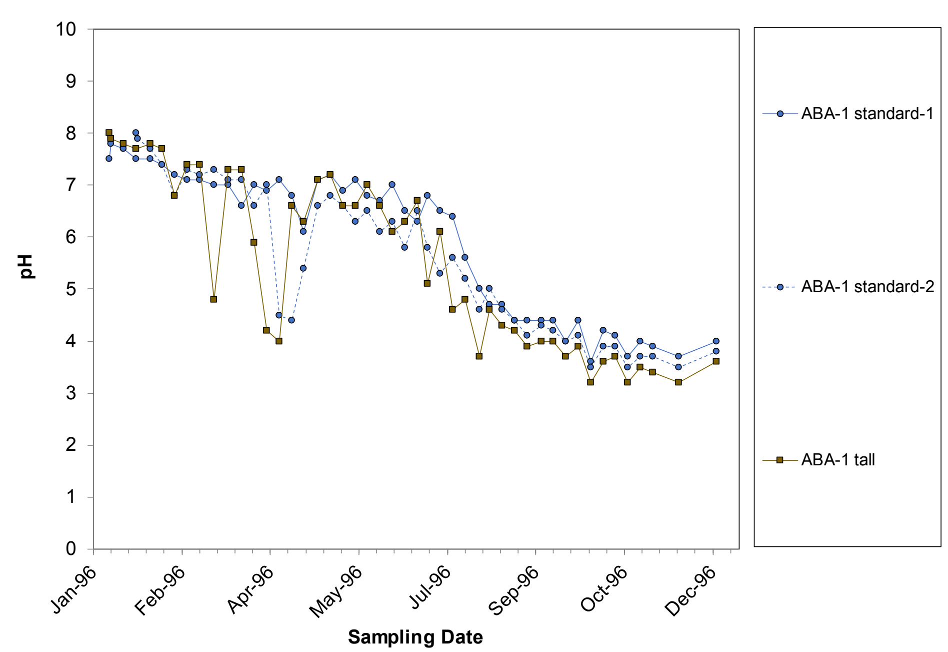

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Figure 4-22: pH Trends for Frostad (1999) Laboratory-Based Kinetic Tests for Rock types Hillside Porphyry (Hlp, Figures a to c) and Sedimentary Bedded Tuff (TfB sediments, Figures d and e)

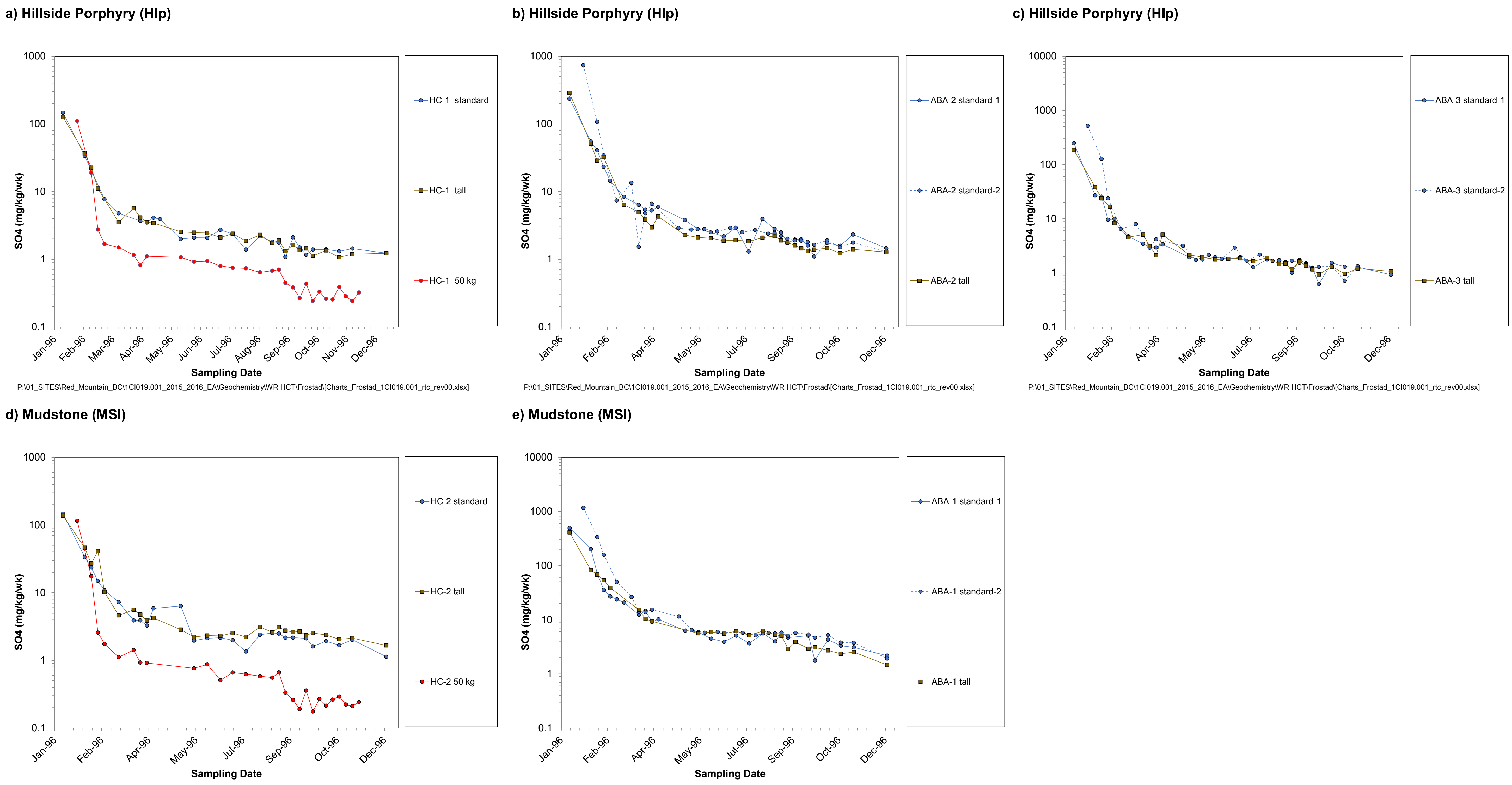

Figure 4-23: Sulphate Release Rate Trends for Frostad (1999) Laboratory-Based Kinetic Tests for Rock types Hillside Porphyry (Hlp, Figures a to c) and Sedimentary Bedded Tuff (TfB sediments, Figures d and e)

Table 4-15: Depletion Calculations, Frostad Laboratory Kinetic Tests

Rock Type	Sample ID	Test Type	Total S wt %	NP/AP	TIC/AP	(Ca+Mg)/ SO_4	Stable SO4 Release Rate	Time-to-Depletion NP Years	TIC Years	Sulphide Years	Leachate pH	NP Depletion > AP Depletion	TIC Depletion > AP Depletion	Prediction Neutral	Acidic
Hillside Porphyry (Hlp)	HC-1	standard	5.8	0.25	0.15	1.1	1.8	400	5.8	1900	Neutral	No	No		Likely
	HC-1	tall				1.2	1.9	350	210	1800	Neutral	No	No		Likely
	HC-1	shaken				0.99	1.8	460	280	1900	Neutral	No	No		Likely
	HC-1	50 kg				0.81	0.76	1300	810	4400	Neutral	No	No		Likely
	HC-1	NP column				2.6	4.3	72	43	780	Neutral	No	No		Likely
	ABA-2	standard-1	4.8	0.22	0.19	0.98	2.1	300	250	1300	Neutral	No	No		Likely
	ABA-2	standard-2				1.1	2.1	250	210	1300	Neutral	No	No		Likely
	ABA-2	tall				1.1	1.4	410	340	1900	Neutral	No	No		Likely
	ABA-2	shaken				1.1	1.1	530	450	2600	Neutral	No	No		Likely
	ABA-2	NP column				2.6	4.9	48	40	560	Neutral	No	No		Likely
	ABA-3	standard-1	3.1	0.26	0.13	1.6	1.8	160	80	1000	Neutral	No	No		Likely
	ABA-3	standard-2				1.4	2.8	120	58	640	Neutral	No	No		Likely
	ABA-3	tall				0.93	1.3	370	180	1400	Neutral	No	No		Likely
	ABA-3	shaken				1.1	1.4	310	150	1300	Neutral	No	No		Likely
	ABA-3	NP column				2.5	4.3	42	20	420	Neutral	No	No		Likely
Mudstone (MSI)	HC-2	standard	4	0.096	0.076	0.63	--	--	--	--	Acidic	--	--		Already acidic
	HC-2	tall				0.61	--	--	--	--	Acidic	--	--		Already acidic
	HC-2	shaken				0.82	--	--	--	--	Acidic	--	--		Already acidic
	HC-2	50 kg				0.88	--	--	--	--	Acidic	--	--		Already acidic
	HC-2	NP column				0.39	--	--	--	--	Acidic	--	--		Already acidic
	ABA-1	standard-1	4.6	0.26	0.23	0.95	--	--	--	--	Acidic	--	--		Already acidic
	ABA-1	standard-2				0.85	--	--	--	--	Acidic	--	--		Already acidic
	ABA-1	tall				0.83	--	--	--	--	Acidic	--	--		Already acidic
	ABA-1	shaken				0.98	--	--	--	--	Acidic	--	--		Already acidic
	ABA-1	NP column				1.2	--	--	--	--	Acidic	--	--		Already acidic

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4.5 Field-Based Kinetic Tests

The field cribs were constructed for the Frostad (1996) study. The static data (i.e., mineralogy, ABA and trace element content) and the results of the companion laboratory-based kinetic test work are presented and discussed in Section 4.4.2. The leachate data for the two field cribs and graphs of all parameters are presented in Appendix E.

4.5.1 Leachate Chemistry

The field pH for the crib tests has remained circum-neutral, except for the most recent sampling event for HC-2, which yielded an acidic pH of 5.9 (Figure 4-24). This suggests that the onset to acidity for Hillside porphyry rock (HC-1) is on the order of decades and that 20 years is a possible upper bound for mudstone (HC-2). As HC-2 contains both mudstone (MSI) and Hillside porphyry (Hlp) waste rock, the time period for onset of acidic conditions in a sample of unmixed mudstone may be shorter than indicated by the crib. Sulphate trends for both cribs exhibited a downward trend until 2008, after which time levels stabilized around 200 mg/L for HC-1 (Figure 4-25). For HC-2, sulphate levels have since exhibited an increasing trend from approximately 450 to 650 mg/L.

Trace element concentrations were stable for HC-1 and HC-2, with the following exceptions (for HC-2 only):

- Cadmium, nickel and zinc concentrations have exhibited an increasing trend since the 2010 sampling event.
- Cobalt and manganese concentrations have exhibited an increasing trend since the 2015 sampling event.

Frostad (1999) compared the laboratory test results with the two 20-tonne field tests to evaluate "scaling up" of laboratory data. It was concluded that the laboratory rates of weathering could not be scaled up to predict field results with confidence, possibly due to inadequate hydrogeological assumptions and deficiencies in experimental protocols.

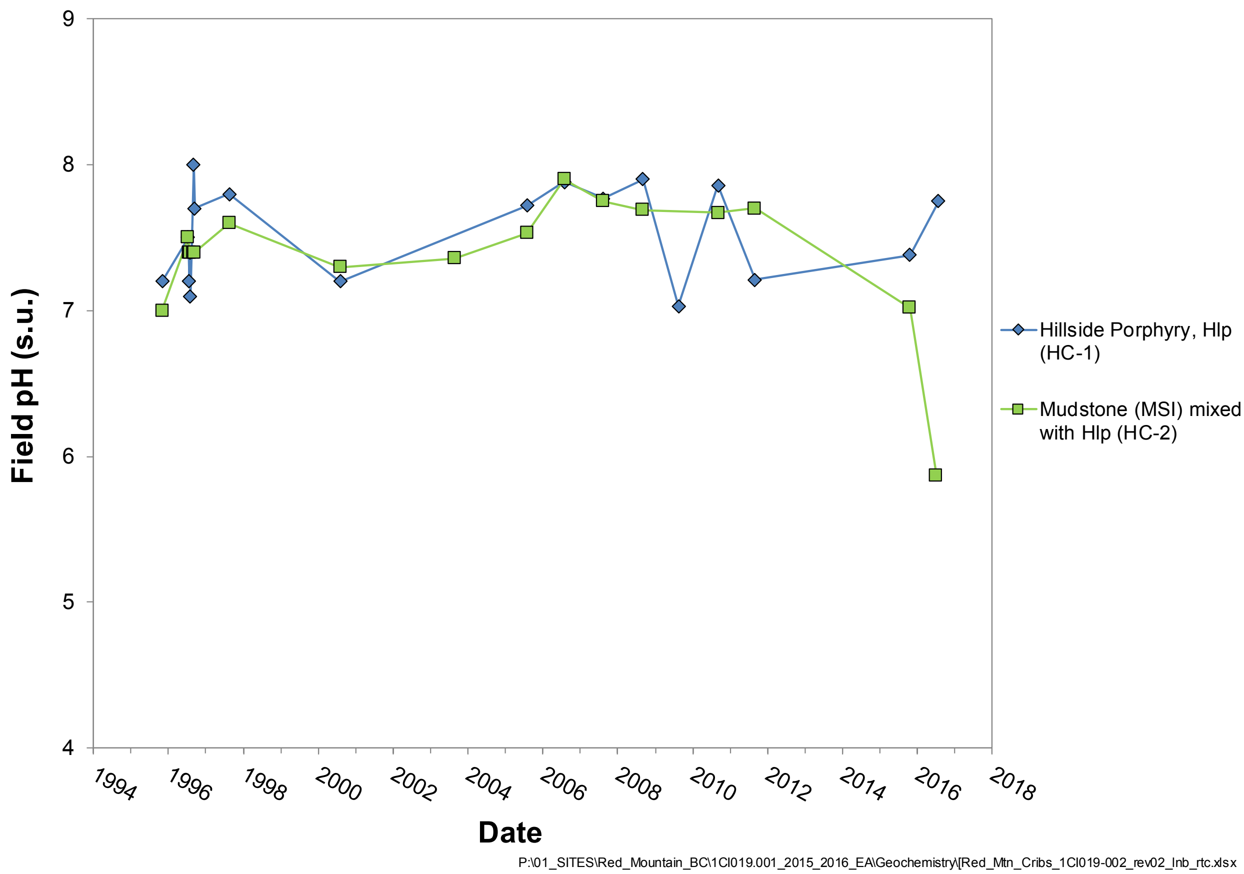

Figure 4-24: pH Trends for Field Crib Tests – HC-1 and HC-2

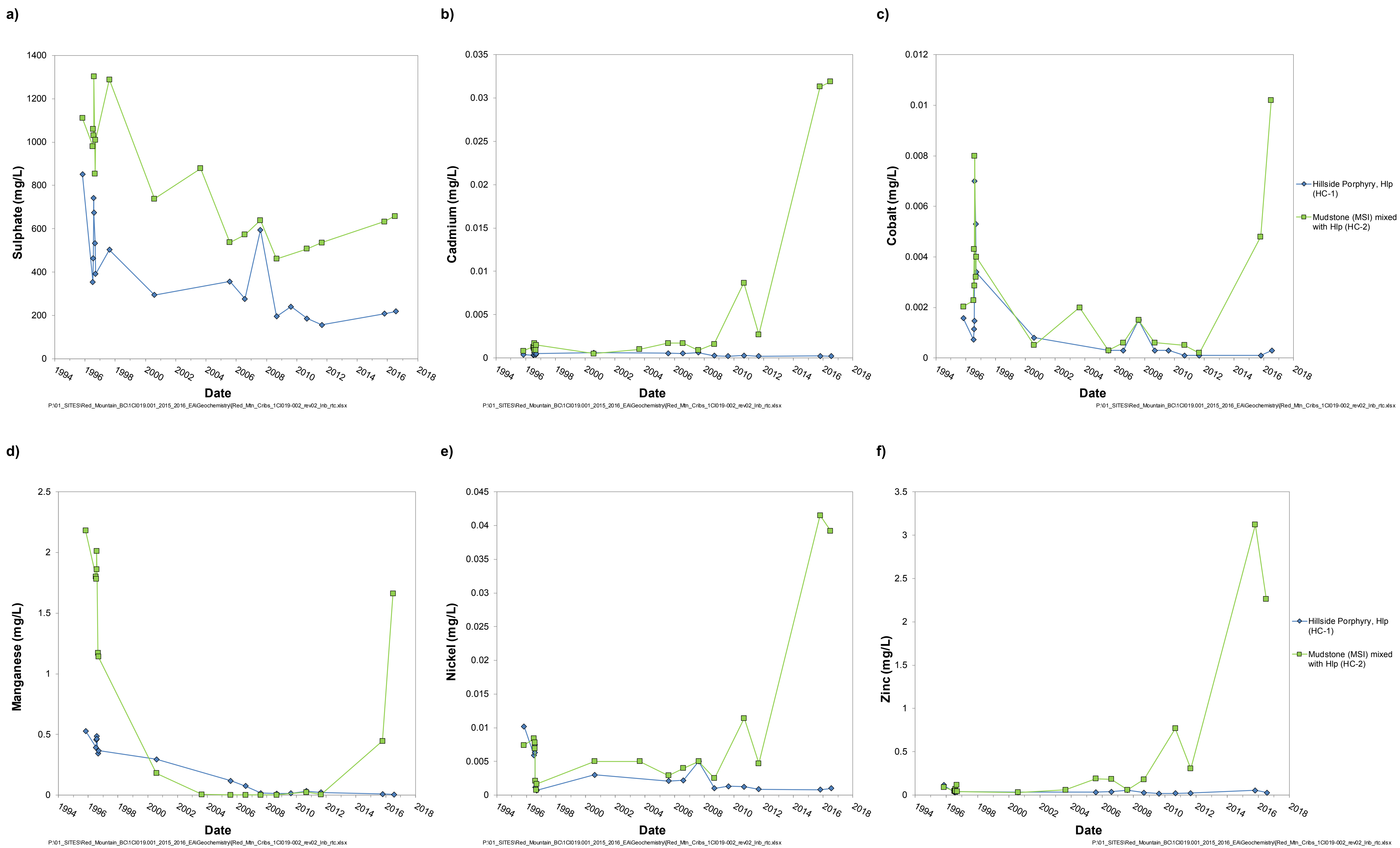

Figure 4-25: Sulphate, Cadmium, Cobalt, Manganese, Nickel and Zinc Field Crib Leachate Trends – HC-1 and HC-2

4.6 Waste Rock Stockpile Monitoring

The Marc Zone and portal waste rock stockpiles and crushed ore stockpile are the result of a bulk ore sampling program conducted in 1993/94 by LAC Minerals and in 1996 by Royal Oak. The waste rock on the surface of the middle and eastern flank of the stockpile tends to be from the 1993/94 development, with the remainder from the 1996 campaign (Figure 3-3). This section discusses the results from the geochemical characterization program conducted during the period of the underground development (Section 4.6.1) and subsequent rinse pH and conductivity and ABA monitoring of the stockpiles (Section 4.6.2).

4.6.1 Characterization of Underground Blast Round Samples

During development of the underground from 1993 to 1994, 317 blast round samples of waste rock and 9 of ore were collected, geologically classified and characterized for ABA by LAC Minerals. The analytical program and results for these samples were discussed in Sections 3.1.2 and 4.2, respectively. As presented in Figure 2-3, blast round samples were collected from all areas of the underground, except for the northernmost extent.

Using IDM's lithological terms, the waste rock stockpile contents were described geologically as a combination of mudstone (MSI), fragmented volcaniclastic tuff (xTF), and Hillside porphyry (Hlp). The ore was described as fragmented volcaniclastic tuff (xTF). The results of the blast round sampling program indicated that the waste rock and ore stockpile material had relatively high sulphur levels (median ~4% for both waste rock and ore) and variable NP content, ranging from below 10 kg$CaCO_3$/t and up to 180 kg$CaCO_3$/t for waste rock and 100 kg$CaCO_3$/t for ore (Table 4-16). The stockpile contents were primarily classified as PAG. Three waste rock samples were classified as non-PAG and 19 samples (18 waste rock and 1 ore) were classified as uncertain. TIC was not determined for the samples.

Table 4-16: ABA Data Statistics for Underground Waste Rock and Ore Samples

Sample Type	Statistic	Paste pH	Total S %	NP kg$CaCO_3$/t	NP/AP
Waste Rock	P0	7.1	0.02	5.5	0.014
	P5	7.6	0.99	7.9	0.05
	P25	8	2.6	14	0.12
	P50	8.2	3.6	25	0.29
	Average	8.1	3.7	33	0.28
	P75	8.3	4.5	41	0.5
	P95	8.7	7.1	80	1.2
	P100	9.2	17	180	16
	Count	317	317	317	317
Ore	P0	7	2.1	4.5	0.018
	P5	7	2.2	5.1	0.019
	P25	7.8	3.6	7	0.04
	P50	8.1	4.6	11	0.059
	Average	7.800	6	21	0.11
	P75	8.1	9.1	14	0.13
	P95	8.2	11	68	0.97
	P100	8.3	12	100	1.5
	Count	9	9	9	9

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4.6.2 Monitoring Program of Surface Stockpiles

Between 2000 and 2013, annual contact tests (rinse pH and conductivity) and periodic ABA tests were conducted to monitor the progress of waste rock weathering at representative test pit locations on the stockpiles. Test pit locations were sampled at the same approximate location each year and included 20 locations within the Marc Zone waste stockpile (10 pits in the upper (1993/94) and 10 pits in the lower (1996) waste rock lifts), 2 test pits in the crushed ore stockpile and 3 test pits in the portal waste stockpile adjacent to the existing portal (Figure 3-3). Appendix F presents the geological descriptions of the 2003 samples and the contact test and ABA data.

The test pits within the Marc Zone waste stockpile were described as a mixture of meta-sediments and porphyry material. The fizz rating (indicating the presence of carbonates) of the fine fraction was consistently rated as very strong, whereas ratings were less strong for the rock chips. This suggests that the distribution of carbonate minerals is related to grain size and not rock type. As the fine fraction has a higher surface area, this suggests that alkalinity due to carbonate weathering is readily available throughout the stockpile.

Rinse pH results indicated that the legacy waste rock and ore stockpile materials have remained circum-neutral to alkaline and that the onset of acidic conditions has not yet been observed in the sample locations (Figure 4-26). One sample of ore in 2013 had a lower rinse pH (pH of 6) relative to the overall sample set. Similarly, rinse conductivity results have been relatively constant, indicating no appreciable change in the solubility products over the course of the monitoring period (Figure 4-27). Samples with higher rinse conductivity levels tended to be from the portal waste stockpile or ore stockpiles. The rinse conductivity for one portal waste stockpile sample (PP01) was relatively high in 2009, however, levels were comparable for all other years (both before and after 2009).

Given that the legacy stockpile materials are classified as PAG (Table 4-16), the buffering capacity of the stockpile material is projected to be depleted before sulphide oxidation ceases. Therefore, the purpose of the monitoring program is to track the weathering and more specifically, depletion, of buffering minerals, as measured by NP and TIC levels, as an indicator of timing to onset of ARD.

Modified NP and TIC levels are near parity with NP levels slightly higher, indicating the presence of silicate minerals with buffering capacity (Figure 4-28). Similarly, TIC and calcite levels, as indicated by QXRD (Section 4.1) are also near parity, with calcite levels slightly higher than TIC (Figure 4-29). QXRD results also indicated the presence of iron carbonates (siderite or $FeCO_3$; Section 4.1), which do not provide any buffering capacity due to the hydrolysis of iron upon dissolution. However, the mineralogy data indicates that TIC levels are mainly due to calcite (Figure 4-28 and Figure 4-29). These results suggest that TIC is a more conservative measure of buffering than modified NP and calcite content, as indicated by QXRD.

TIC levels within the waste rock and ore stockpiles have remained relatively constant over the monitoring period (Figure 4-30). One sample of ore had a lower value of TIC in 2013, however, the result was comparable to previous ore samples.

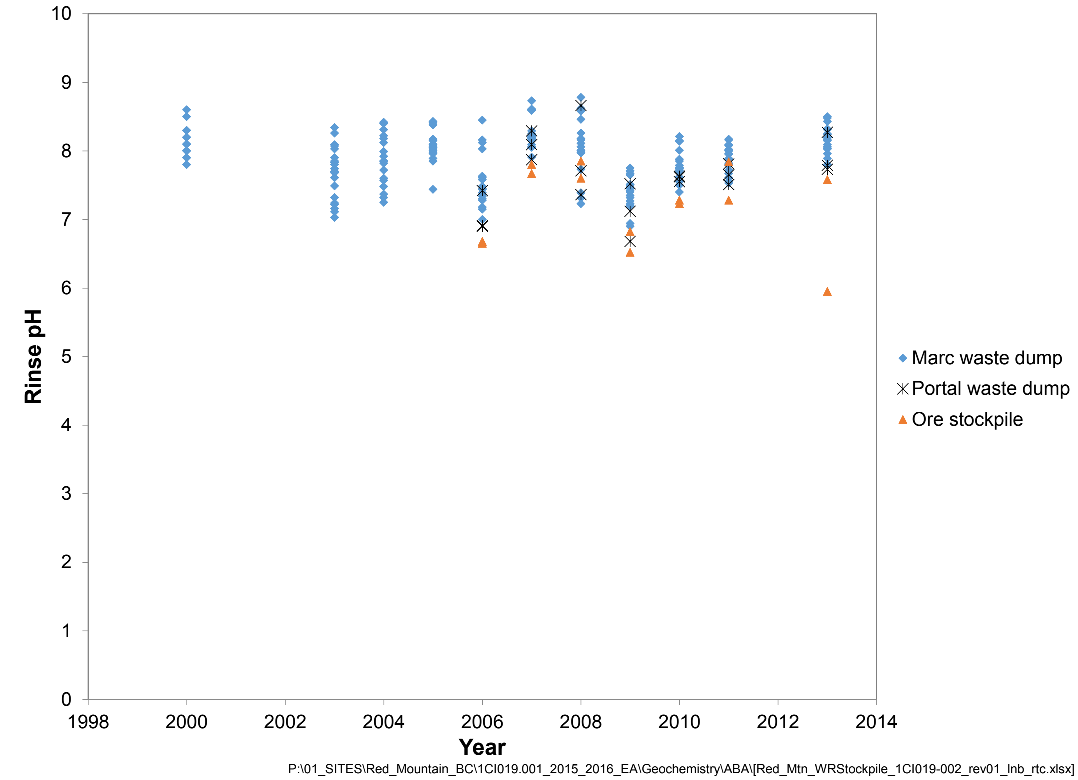

Figure 4-26: Rinse pH Monitoring, Legacy Waste Rock and Ore Stockpile Samples

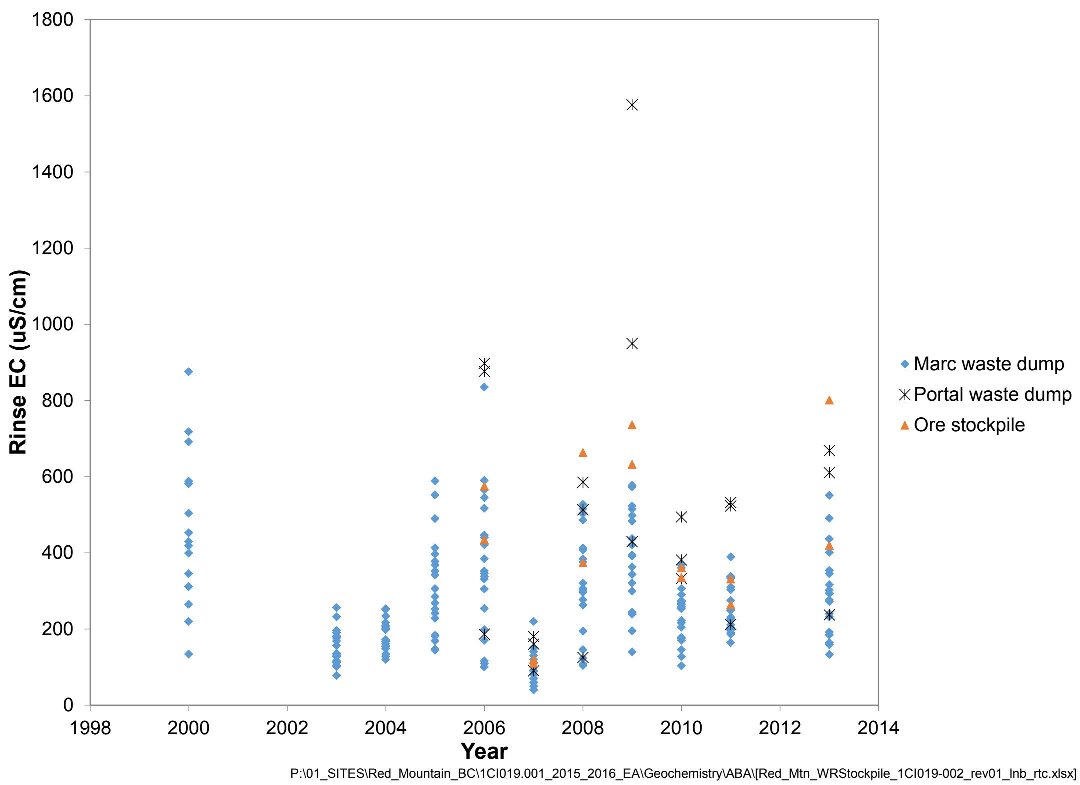

Figure 4-27: Rinse Conductivity Monitoring, Legacy Waste Rock and Ore Stockpile Samples

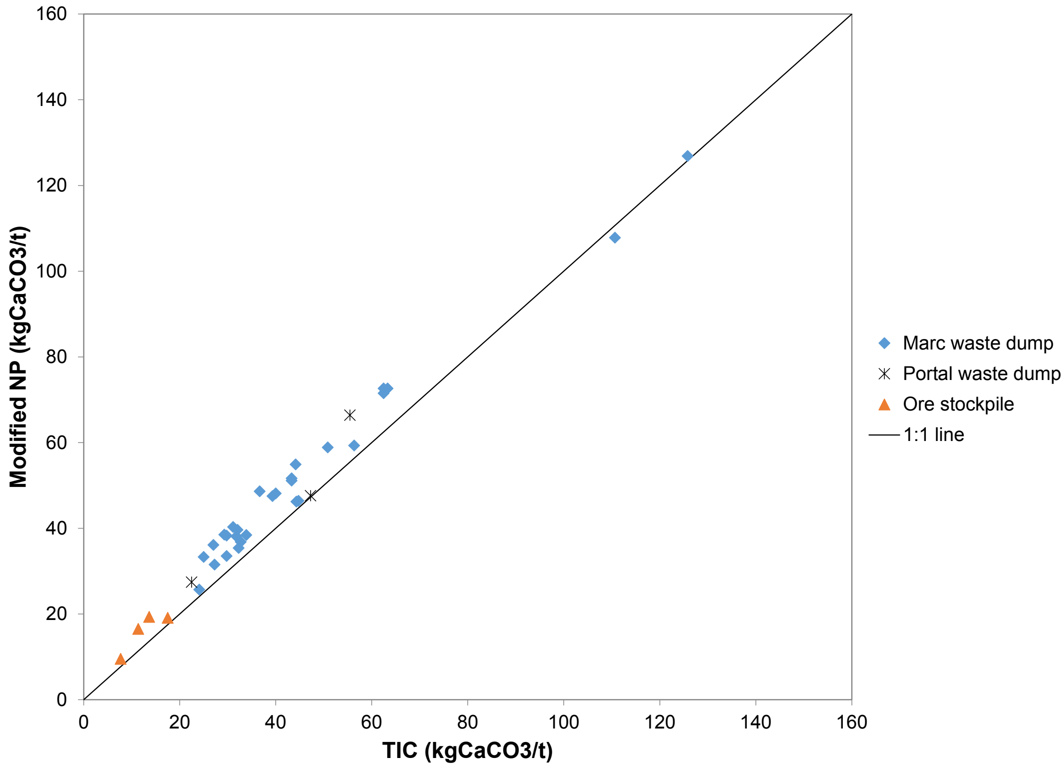

Figure 4-28: Comparison of Modified NP and TIC, Legacy Waste Rock and Ore Monitoring Stockpile Samples

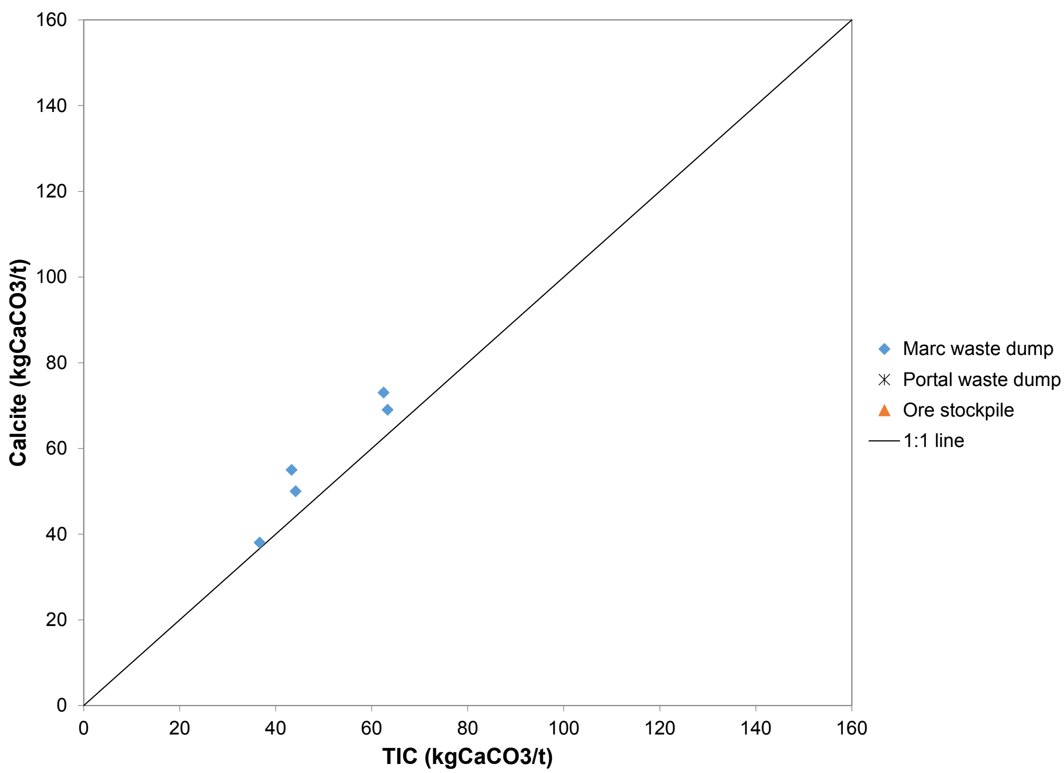

Figure 4-29: Comparison of Calcite and TIC, Legacy Waste Rock Monitoring Stockpile Samples

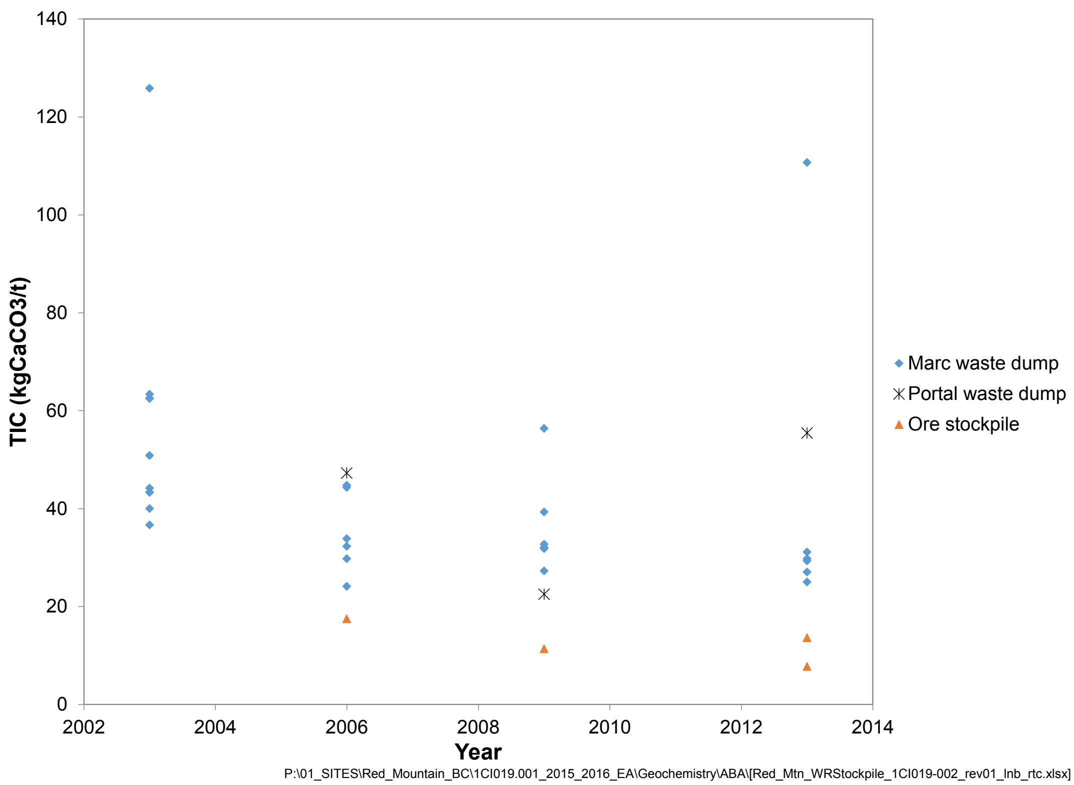

Figure 4-30: TIC Monitoring, Legacy Waste Rock and Ore Monitoring Stockpile Samples

4.7 Site Water Quality Monitoring

4.7.1 Waste Rock Seepage

Seepage from the toe of the Marc Zone waste rock stockpile has been monitored since 2003, resulting in sample collection at 5 different locations (Figure 3-3 and Table 3-8). Table 4-17 and Table 4-18 present summaries of the seepage data, and Appendix G presents the complete water quality data set.

The pH of seepage from the northwest (NW), southwest (SW) and south seep stations has remained circumneutral (Figure 4-31). Selected samples of east and west seepages were acidic (pH < 6). Two west seep samples with pH <5 and 1 sample from the east seep (pH = 5.7) had anomalously low sulphate levels that are not indicative of sulphide oxidation (Figure 4-32). The flow rate for all of the seeps were noted as trace and the samples were collected within talus and/or native ground directly adjacent to the stockpile. On this basis, it is possible that the chemistry is influenced by interaction with the native ground and/or talus.

Figure 4-33 illustrates selected trace element trends for the seepage stations. The SW seep neutral pH samples had periodic elevated concentrations of cadmium, cobalt, nickel and zinc. Humidity cell test results suggested that cobalt and nickel mobility was related to acidic conditions (Section 4.4.1). Accordingly, there may be localized acidic areas within the stockpile but the overall buffering capacity along the flow path of the seepage is maintaining neutral pH. Cadmium and zinc release are inferred to be a result of sphalerite (ZnS) oxidation, which occurred at both pH-neutral and acidic conditions in the humidity cell tests. Manganese was also intermittently elevated in SW and east seep samples. Aluminum, copper and iron concentrations were elevated in west and east seepage samples, with depressed pH. Copper and iron were elevated in the acidic waste rock and ore humidity cell tests (Section 4.4.1). Aluminum had high detection limits for the humidity cell tests (i.e., 1 mg/L) resulting in concentrations below or near the level of analytical detection for the waste rock and ore samples.

For the purposes of source-term predictions (Appendix 14-A), the seepage data are considered to be representative of the waste rock stockpile though the data suggest that there could be other loading sources. Accordingly, the data set is considered to be conservative.

Table 4-17: Water Quality Summary for East and West Seeps from the Marc Zone Waste Rock Stockpile

Sample ID	East Seep			West Seep							
	2003	2010	2014	2005	2006	2007	2008	2009	2010	2011	2013
pH	4.9	6.5	5.7	5.9	5.3	5.1	5.6	5.9	6.1	3.9	4.6
Conductivity (µS/cm) - lab	500	470	0	520	710	1100	620	590	780	300	450
Conductivity (µS/cm) - field	--	540	220	0	700	1100	610	580	850	310	450
Total Alkalinity $CaCO_3$	2	5	2.4	3.5	4.4	3.6	4.2	3.3	5.1	2	2.2
Sulphate SO_4	370	260	100	240	360	580	290	290	460	110	220
Flow volume (L/min)	1	5	0	0.15	1	Trace	Trace	Trace	Trace	trace	trace
Aluminum D-Al	2	0.15	0.11	0.45	0.83	1.2	0.29	0.29	0.38	0.64	0.15
Antimony D-Sb	0.001	0.00043	0.00014	0.0005	0.0005	0.0025	0.001	0.0005	0.0002	0.0001	0.0001
Arsenic D-As	0.003	0.00026	0.0001	0.0005	0.0005	0.0025	0.001	0.0005	0.0002	0.0001	0.00013
Cadmium D-Cd	0.0037	0.0011	0.0011	0.00063	0.00032	0.0018	0.0005	0.00049	0.0013	0.00054	0.0004
Calcium D-Ca	130	110	37	97	140	260	130	120	190	36	86
Chromium D-Cr	0.002	0.0005	0.0001	0.001	0.001	0.005	0.002	0.001	0.001	0.0005	0.0001
Cobalt D-Co	0.047	0.011	0.0037	0.0091	0.0055	0.015	0.006	0.0063	0.008	0.0047	0.0033
Copper D-Cu	0.32	0.035	0.043	0.12	0.11	0.14	0.083	0.053	0.057	0.11	0.043
Iron D-Fe	0.04	0.059	0.01	0.03	0.045	0.03	0.03	0.03	0.03	1.1	0.46
Lead D-Pb	0.001	0.000077	0.00005	0.0005	0.0005	0.0025	0.001	0.0005	0.0001	0.00011	0.00005
Magnesium D-Mg	5.6	3.6	1.5	3.6	4.4	8	3.7	4.2	4.9	1.6	3.2
Manganese D-Mn	2.3	2	0.24	0.19	0.095	0.8	0.18	0.22	0.62	0.11	0.11
Molybdenum D-Mo	0.002	0.00069	0.00017	0.001	0.001	0.005	0.002	0.001	0.00019	0.00005	0.00015
Nickel D-Ni	0.024	0.014	0.0097	0.019	0.01	0.11	0.023	0.028	0.076	0.014	0.015
Selenium D-Se	0.002	0.0022	0.00078	0.0022	0.0034	0.0053	0.0023	0.0023	0.0043	0.001	0.0019
Zinc D-Zn	0.25	0.048	0.079	0.04	0.018	0.18	0.036	0.034	0.097	0.054	0.03

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Table 4-18: Water Quality Summary South, Southwest and Northwest Seeps from the Marc Zone Waste Rock Stockpile

Sample ID	South Seep				Southwest Area Seeps								Northwest Seep									
	2005	2007	2010	2011	2003	2005	2006	2007	2009	2010	2011	2014	2003	2005	2006	2007	2007	2009	2010	2011	2013	2014
pH	6.9	7.6	7.3	7.6	7.3	7.3	7.5	7.2	6.7	6.8	7.1	6.8	6.5	7.1	6.6	6.9	7.9	7.1	7.9	7.3	6.7	7.6
Conductivity (µS/cm) - lab	550	470	310	320	960	510	630	930	1300	350	710	--	1200	730	440	790	150	1300	740	280	770	--
Conductivity (µS/cm) - field	--	470	460	280	--	--	610	930	1300	390	720	1200	0--	--	440	790	150	1300	810	290	760	1100
Total Alkalinity $CaCO_3$	21	19	40	39	56	73	36	28	22	24	32	13	12	10	4.4	7.9	39	16	29	7.1	7.7	19
Sulphate SO_4	270	210	190	96	470	190	280	480	740	160	330	71	700	360	200	410	34	790	410	120	420	67
Flow volume (L/min)	0.3	0.5	5	1	1	Trace	5	Trace	Trace	Trace	trace		Trace	0.25	Trace	Trace	Trace	Trace	2	trace	trace	
Aluminum D-Al	0.005	0.005	0.0041	0.0056	0.01	0.0066	0.012	0.01	0.01	0.0019	0.02	0.0091	0.03	0.023	0.023	0.012	0.0055	0.01	0.015	0.011	0.01	0.0078
Antimony D-Sb	0.0029	0.0029	0.01	0.0061	0.008	0.016	0.0044	0.0048	0.0023	0.0021	0.0023	0.0007	0.001	0.00053	0.0005	0.001	0.003	0.001	0.00045	0.00045	0.00022	0.00026
Arsenic D-As	0.0007	0.0005	0.0004	0.0004	0.001	0.00061	0.0005	0.001	0.001	0.0003	0.0001	0.00015	0.001	0.0005	0.0005	0.001	0.0005	0.001	0.0002	0.0001	0.0001	0.00018
Cadmium D-Cd	0.000083	0.000024	0.00005	0.00022	0.0002	0.000071	0.011	0.017	0.016	0.00005	0.0039	0.016	0.0005	0.00023	0.00049	0.00016	0.00006	0.00017	0.00016	0.00015	0.000075	0.0003
Calcium D-Ca	100	83	76	46	180	89	120	200	270	68	140	250	270	150	77	180	31	300	180	46	160	250
Chromium D-Cr	0.001	0.001	0.0005	0.0005	0.002	0.001	0.001	0.002	0.002	0.0005	0.0005	0.00011	0.002	0.001	0.001	0.002	0.001	0.002	0.001	0.0005	0.0001	0.0001
Cobalt D-Co	0.00033	0.0003	0.0001	0.0001	0.0006	0.0003	0.019	0.038	0.045	0.0001	0.0068	0.041	0.012	0.0037	0.0048	0.0006	0.0003	0.0006	0.0014	0.00011	0.00078	0.0038
Copper D-Cu	0.0016	0.0015	0.00081	0.0012	0.002	0.001	0.001	0.002	0.002	0.00049	0.0005	0.0014	0.032	0.014	0.016	0.0034	0.001	0.0034	0.008	0.0024	0.0071	0.0041
Iron D-Fe	0.03	0.03	0.03	0.03	0.03	0.03	0.42	0.28	0.03	0.03	0.03	0.33	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.012	0.01
Lead D-Pb	0.0005	0.0005	0.00005	0.00005	0.001	0.0005	0.0005	0.001	0.001	0.0027	0.00005	0.00005	0.001	0.0005	0.0005	0.001	0.00053	0.001	0.0001	0.00005	0.00005	0.00005
Magnesium D-Mg	16	12	13	7.3	21	12	7.1	17	21	6.7	8.1	16	9.8	5.3	3.8	6.9	1.3	9.1	5.2	1.8	4.7	8.9
Manganese D-Mn	0.025	0.0025	0.00089	0.00096	0.046	0.0003	1.3	2.4	3.5	0.00036	0.46	3.1	0.42	0.072	0.077	0.0059	0.0014	0.043	0.053	0.0035	0.024	0.23
Molybdenum D-Mo	0.0085	0.016	0.012	0.017	0.006	0.0077	0.001	0.002	0.002	0.0045	0.00083	0.00024	0.003	0.0018	0.001	0.0031	0.001	0.0053	0.0037	0.0018	0.0031	0.0028
Nickel D-Ni	0.0024	0.0015	0.0009	0.00059	0.012	0.0016	0.21	0.37	0.42	0.0016	0.1	0.33	0.012	0.0031	0.004	0.002	0.001	0.0034	0.0046	0.0007	0.0014	0.0059
Selenium D-Se	0.0021	0.0014	0.0011	0.001	0.002	0.0012	0.0032	0.004	0.0047	0.001	0.0022	0.0045	0.003	0.0019	0.0019	0.002	0.001	0.0027	0.0023	0.001	0.0028	0.004
Zinc D-Zn	0.23	0.084	0.038	0.036	0.01	0.005	1.8	2.8	2.7	0.001	0.49	2.2	0.02	0.0091	0.027	0.01	0.0054	0.005	0.0028	0.012	0.004	0.0084

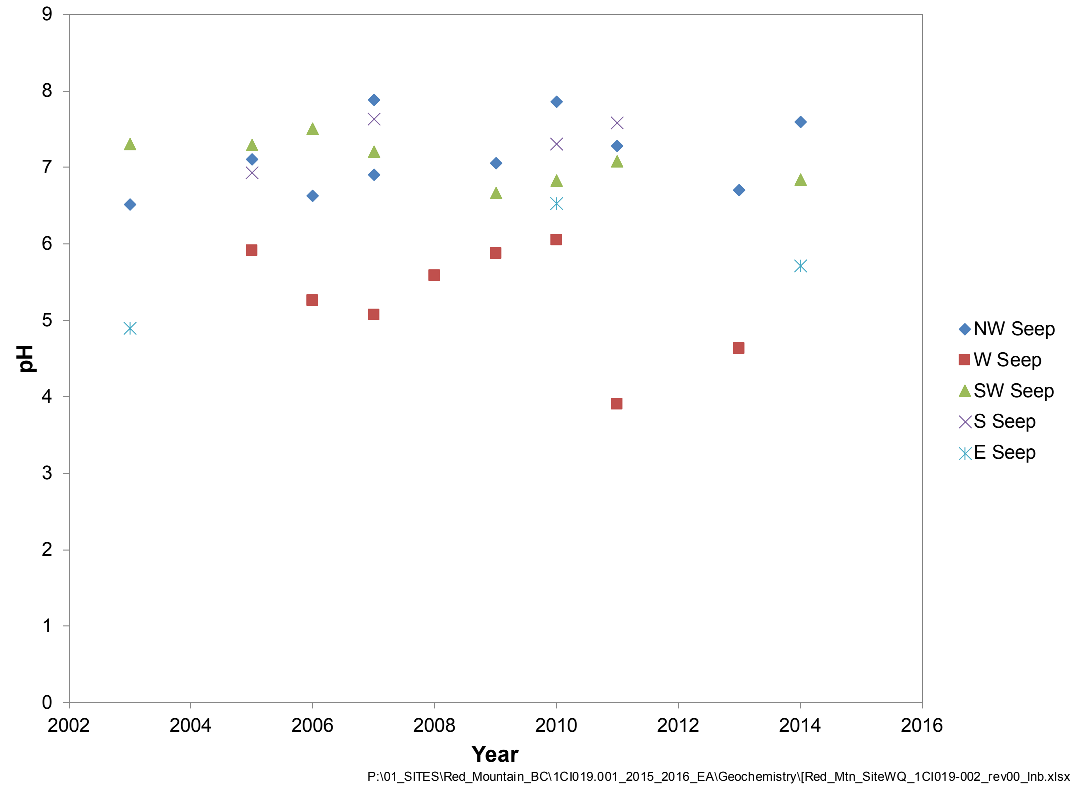

Figure 4-31: pH Trends, Marc Zone Waste Rock Stockpile Seepage Monitoring

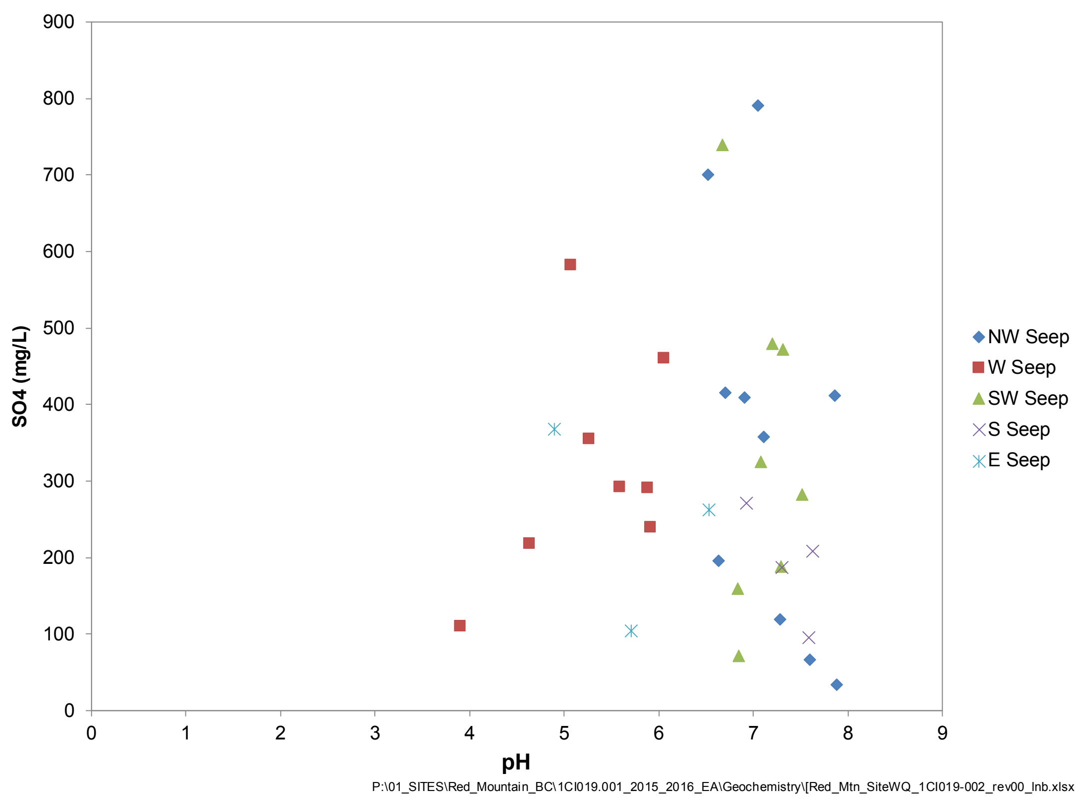

Figure 4-32: Comparison of pH and Sulphate, Marc Zone Waste Rock Stockpile Seepage Monitoring

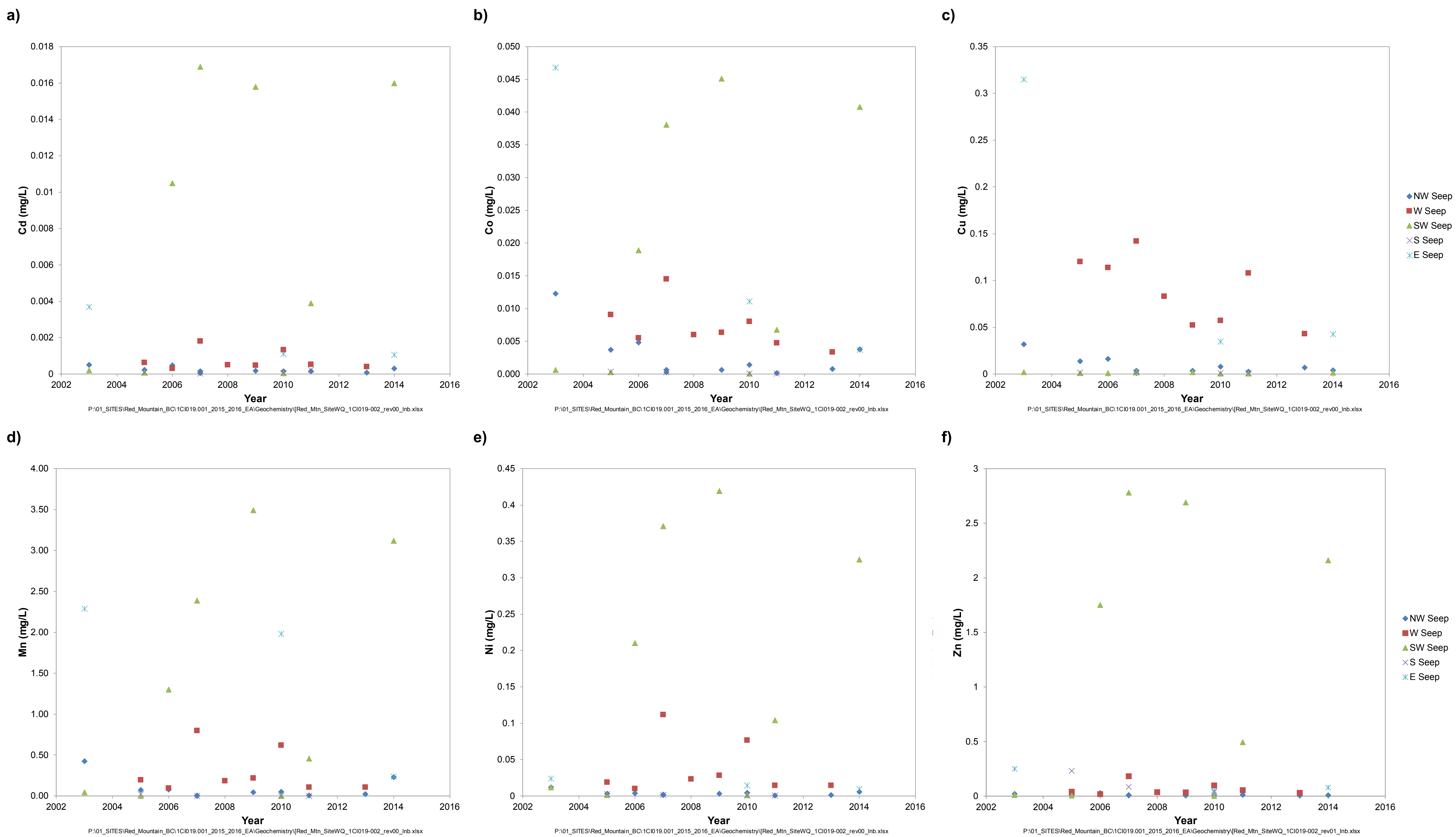

Figure 4-33: Cadmium, Cobalt, Copper, Manganese, Nickel and Zinc Trends, Marc Zone Waste Rock Stockpile Seepage Monitoring

4.7.2 Underground Mine Water Quality

Monitoring of the underground mine water quality has been conducted periodically since 1993, with most samples collected during periods of mine dewatering prior to 2000. After 2000, samples were collected from the underground mine pool or naturally-flowing discharge from the portal. The underground mine water quality data mostly represents groundwater, but also interaction of the decline ramp. Table 4-19 presents a summary of the underground water quality data and Appendix G presents the complete water quality data set.

Sulphate levels indicate the occurrence of sulphide oxidation within the underground mine rock, however, the underground mine water has consistently been pH-neutral (Figure 4-34). Monitoring data since 2000 indicate that sulphate levels have been relatively stable and moderate (<150 mg/L). As illustrated in Figure 4-35, selected metals concentrations tended to be higher during periods of active pumping but have been stable (e.g., arsenic, cobalt, manganese and nickel) or decreasing (e.g., cadmium and zinc) while the mine has been flooded.

Table 4-19: Summary of Selected Underground Mine Water Quality Parameters

Parameter*	Statistical Distribution					
	P05	**P25**	**P50**	**P75**	**P95**	**Count**
pH (pH units)	7.2	7.5	7.7	7.8	8	25
Specific Conductance (µS/cm)	250	360	430	470	550	21
Total Alkalinity	38	47	50	59	69	22
Sulfate	9.4	110	150	180	210	24
Aluminum, dissolved	0.0005	0.001	0.0031	0.0058	0.0079	26
Antimony, dissolved	0.0021	0.0058	0.0078	0.011	0.048	26
Arsenic, dissolved	0.0016	0.004	0.0072	0.012	0.03	26
Cadmium, dissolved	0.0001	0.0001	0.00014	0.00046	0.00078	26
Calcium, dissolved	30	55	63	72	80	26
Chromium, dissolved	0.00029	0.0005	0.00085	0.001	0.002	26
Cobalt, dissolved	0.00004	0.0002	0.00031	0.00038	0.00068	26
Copper, dissolved	0.0001	0.00022	0.0004	0.001	0.002	26
Iron, dissolved	0.01	0.01	0.03	0.03	0.058	26
Lead, dissolved	0.00005	0.00005	0.00009	0.00025	0.0005	26
Magnesium, dissolved	4	6.3	8.1	9.2	13	26
Manganese, dissolved	0.0051	0.033	0.052	0.09	0.13	26
Molybdenum, dissolved	0.00097	0.0013	0.0018	0.0027	0.0055	26
Nickel, dissolved	0.0004	0.00084	0.0013	0.0022	0.0033	26
Selenium, dissolved	0.00089	0.001	0.001	0.001	0.002	26
Zinc, dissolved	0.001	0.0052	0.011	0.022	0.076	26

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Notes:

*All units expressed in mg/L, unless otherwise specified.

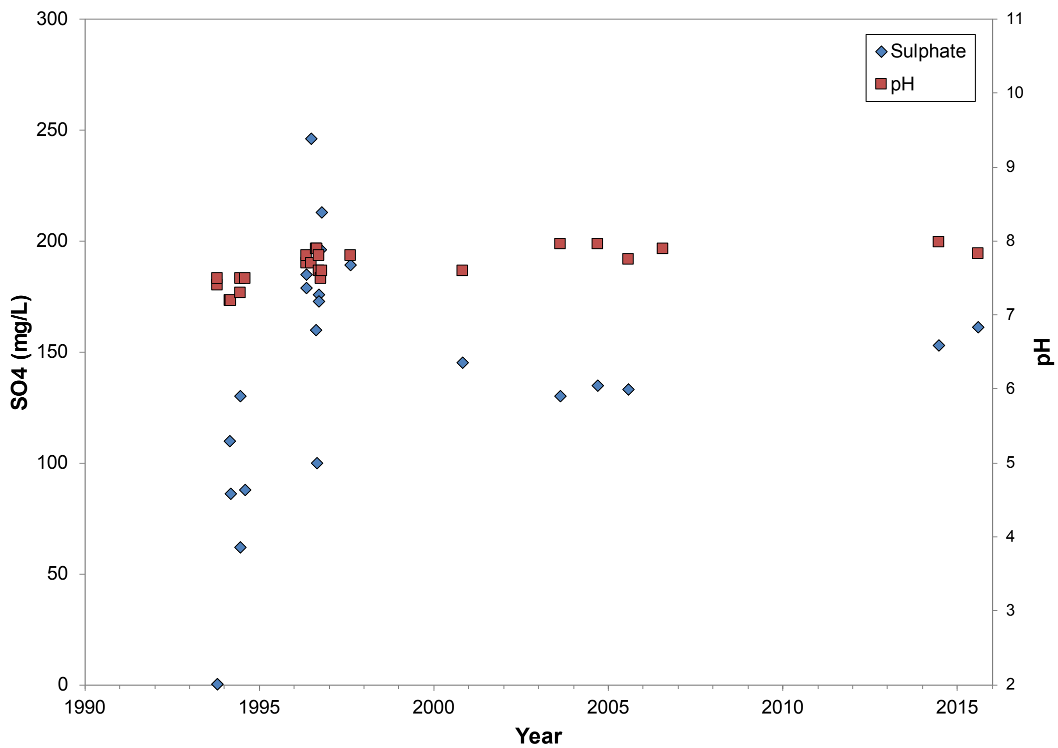

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Figure 4-34: pH and Sulphate Trends, Underground Mine Water Quality Monitoring

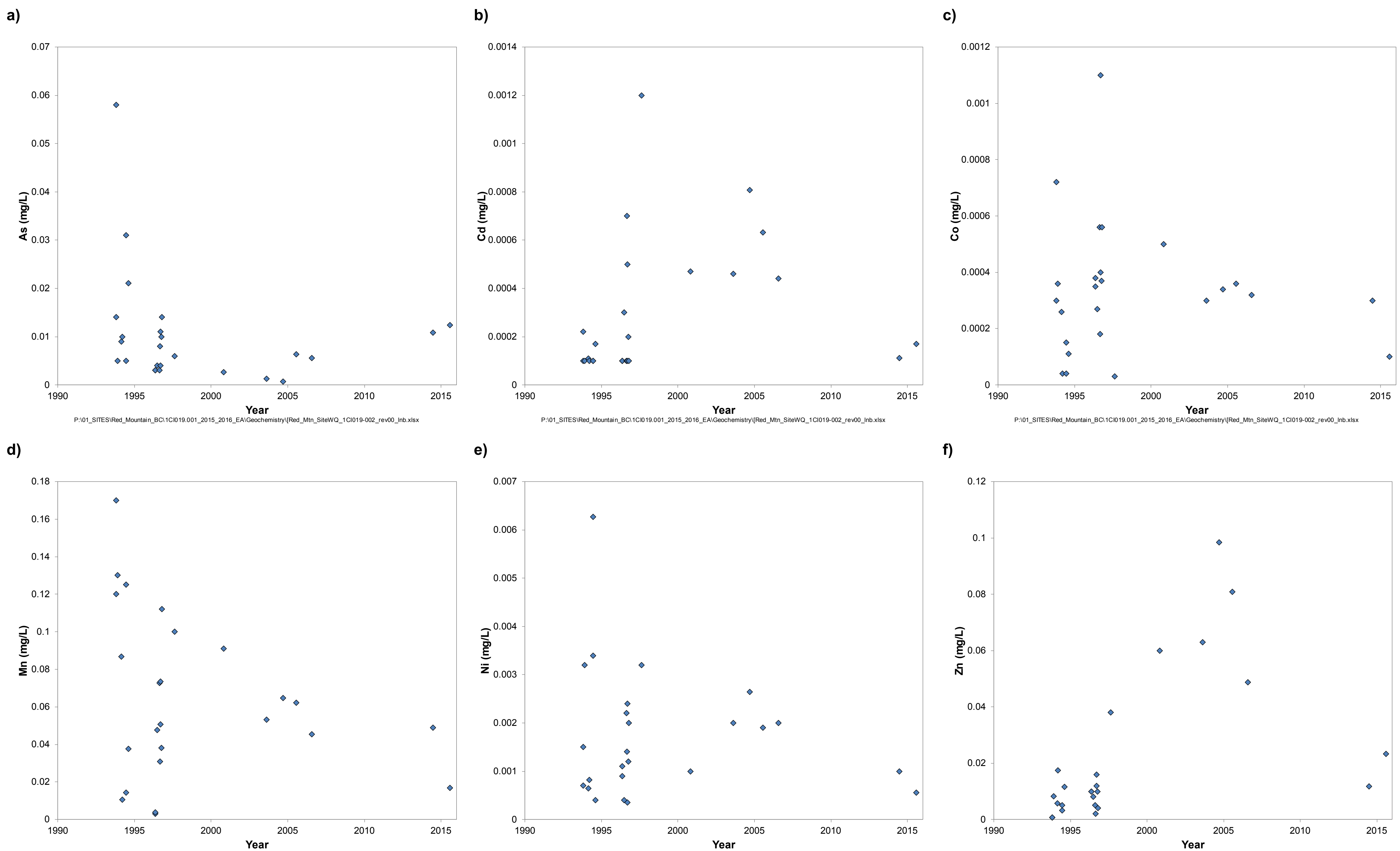

Figure 4-35: Arsenic, Cadmium, Cobalt, Manganese, Nickel and Zinc Trends, Underground Mine Water Quality Monitoring

4.8 Sequential Extraction Tests

This section presents the results for the six talus samples collected in 2016. The objective of the test work program was to evaluate the potential for reductive dissolution of iron and manganese (oxy)hydroxides and associated release of metals and quantify readily soluble oxidation products.

All samples were visibly weathered with iron oxides except sample Talus-E. Accordingly, Talus-E was not included in the sequential extraction program. All tests were conducted on the -1 cm fraction with the following exceptions:

- Test work for Talus-E (ABA and elemental content only) was on the as received bulk fraction.
- Rinse pH and EC was conducted on the -2 mm fraction.

All data were underwent QA/QC by SRK and were deemed acceptable.

4.8.1 Static Testing

Size Fraction Analysis

The five weathered samples were screened and the -1 cm size fraction tested. The -1 cm fraction constituted between 7 and 51% of the sample collected (Table 4-20).

Table 4-20: Size Fraction Analysis for 2016 Talus Weathered Samples

Sample ID	+1 cm (+3/8")	-1 cm (-3/8")	Total (kg)	% of -1 cm
SRK-16-Talus-A	13.72 kg	6.83 kg	20.53	33%
SRK-16-Talus-B	19.89 kg	0.51 kg	20.31	3%
SRK-16-Talus-C	14.71 kg	15.39 kg	30	51%
SRK-16-Talus-D	38.37 kg	2.73 kg	41.03	7%
SRK-16-Moraine-F	35.74 kg	24.23 kg	59.9	40%

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Mineralogy

A discussion of the bulk mineralogy of the gossanous talus samples is presented in Section 4.1.4. The focus of this section is the mineralogy related to the iron (oxy)hydroxides in the talus samples. Table 4-21 presents detectable trace element content within iron (oxy)hydroxide mineral grains analyzed by SEM/EDS. Table 4-22 presents the thickness of the iron oxidation rim on the -1 cm size fraction of sample Talus-D, as measured by QEMSCAN.

Trace element content was variable between samples. Arsenic, zinc, lead, nickel and molybdenum were the dominant trace elements, with levels greater than 1% in iron (oxy)hydroxides. Other trace elements identified include vanadium and copper.

Table 4-21: Trace Element Content (wt%) of Iron (Oxy)Hydroxides, 2016 Talus Sample Set

Sample ID	As	V	Zn	Pb	Cu	Ni	Mo
Talus-A	-	0.31	1.12	-	-	-	-
Talus-B	2.45	-	1.04	4.72	0.78	0.33	-
Talus-C	1.42	-	0.65	-	-	-	4.33
Talus-D	-	0.52	-	-	0.78	-	-
Moraine-F	2.49	0.58	0.25	-	-	-	-

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Table 4-22: Thickness of Iron Oxidation Rim as Measured by QEMSCAN, Sample Talus-D

Statistic	Thickness (mm)
Min	0.007
Average	0.12
97^{th} Percentile*	0.5
Max	1.5

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Notes:

*Thickness assumed for source terms predictions (SRK 2017)

Acid-Base Accounting

ABA data for the six talus samples are summarized in Table 4-23. The complete data set is presented in Appendix H.

The weathered (gossanous) talus samples were currently acid generating, as indicated by the rinse pH values < 6. Paste pH values were higher, which is an artefact of sample preparation, specifically sample pulverization and increased surface area of minerals with neutralization potential. The paste pH was alkaline for the unweathered talus sample (Talus-E).

Total sulphur in the weathered samples tended to be low, ranging from 0.038 to 0.25% whereas levels in the unweathered sample were 2.6%. Sulphate levels for all samples tended to be near or below the level of analytical detection, with the exception of sample Talus-D (0.13%). Sulphide was calculated as the difference between total sulphur and sulphate sulphur. Acid potential (AP) was calculated on the basis of sulphide sulphur.

The buffering capacity of the weathered samples was low, with TIC levels below detection and maximum Modified NP levels of 4.3 kg$CaCO_3$/t. In the case of sample Talus-D, Modified NP levels were negative, indicating acid generating conditions. For the unweathered sample, the TIC and NP levels were higher and roughly equivalent (30 and 37 kg$CaCO_3$/t, respectively).

The QEMSCAN mineralogy confirms the findings of the ABA data. On the basis of NP/AP and TIC/AP, the unweathered sample is classified as PAG. All weathered samples are currently acid generating, as indicated by the rinse pH.

Table 4-23: ABA Data for 2016 Talus Samples

Sample Description	Sample ID	Rinse pH	Rinse EC	Paste pH	Paste EC	Total S	SO_4	Sulphide	TIC	Mod. NP	NP/AP	TIC/AP	Status
		Std. Units	µS/cm	Std. Units	µS/cm	%S	%S	%S	kg CaCO3/t				
Gossanous	Talus-A	4.9	53	6.9	230	0.086	0.04	0.046	<0.8	3.7	2.6	0.56	Acid generating
	Talus-B	5.7	150	6.9	250	0.073	0.02	0.053	<0.8	4.3	2.6	0.48	Acid generating
	Talus-C	5	61	7.2	190	0.038	0.02	0.018	<0.8	2.3	4.1	1.4	Acid generating
	Talus-D	4.7	150	5.5	200	0.25	0.13	0.12	<0.8	-0.9	-0.2	0.21	Acid generating
	Moraine-F	4.9	76	6.4	270	0.12	0.06	0.062	<0.8	0.6	0.31	0.41	Acid generating
Unweathered	Talus-E	-	-	8.5	340	2.6	0.01	2.6	30	37	0.46	0.37	PAG

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Elemental Analysis

Elemental data for the six talus samples are summarized in Table 4-24. The complete data set is presented in Appendix H.

The results were compared to ten times average crustal abundance values (Price 1997) for low and high calcium granite to screen for parameters that were anomalously high. One weathered sample was enriched in arsenic and two were enriched in selenium. All other parameters for the weathered sample were below the screening criteria, suggesting no appreciable enrichment. All parameters for the unweathered sample (Talus-E) were below the screening criteria.

Table 4-24: Selected SFE Data for 2016 Talus Sample Set

Parameter	Unit	Gossanous					Unweathered	Granite*	
		Talus-A	Talus-B	Talus-C	Talus-D	Moraine-F	Talus-E	Low Calcium	High Calcium
Mo	ppm	25	15	11	24	7.1	2.5	13	10
Cu	ppm	100	90	83	170	110	200	100	300
Pb	ppm	32	35	22	7.1	41	34	190	150
Zn	ppm	160	170	68	28	130	170	390	600
Ag	ppb	1000	820	620	340	580	350	370	510
Ni	ppm	31	42	13	15	13	17	45	150
Co	ppm	5.8	11	3.1	2.2	5	20	10	70
Mn	ppm	330	980	320	160	510	900	3900	5400
Fe	%	3.4	4.3	3.2	7.9	5.4	5.8	14	30
As	ppm	52	60	39	11	160	150	15	19
U	ppm	2.3	1.3	1	1	0.5	0.3	30	30
Cd	ppm	0.46	1.3	0.16	0.07	0.36	2	1.3	1.3
Sb	ppm	8.1	8.2	3.7	3.8	3	2	2	2
Ca	%	0.23	0.21	0.12	0.09	0.09	1.6	5.1	25
Cr	ppm	74	89	79	65	59	52	41	220
Mg	%	1	1.4	1.1	0.94	1.1	1.9	1.6	9.4
Ti	%	0.014	0.029	0.057	0.24	0.063	0.071	1.2	3.4
B	ppm	<20	<20	<20	<20	<20	<20	100	90
Al	%	1.5	1.9	1.5	1.2	1.5	1.9	72	82
Na	%	0.01	0.025	0.025	0.018	0.027	0.056	26	28
K	%	0.16	0.11	0.14	0.15	0.15	0.12	42	25
Tl	ppm	0.06	0.05	0.05	0.04	0.05	0.05	23	7.2
Hg	ppb	10	27	8	<5	13	21	800	800
Se	ppm	4.1	5.6	2.9	13	5	3	0.5	0.5

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Notes:

*Average crustal abundance (Price 1997)

Shake Flask Extractions

The objective of the SFE is to assess the readily soluble products for the talus samples. Selected SFE data for the -1 cm fraction of the weathered talus samples are presented in Table 4-25. The complete data set is presented in Appendix H.

The pH for the test leachates range from 5.0 to 6.3, with four of the tests reporting acidic leachates (pH<6). Consistent with the mineralogy (Section 4.1.4), sulphate levels are low (<10 mg/L), suggesting the absence of secondary sulphate minerals. Soluble constituents of interest included cadmium (maximum 0.00047 mg/L), copper (0.0088 mg/L), iron (0.011 mg/L), manganese (0.091 mg/L), nickel (0.0022 mg/L), selenium (0.0011 mg/L), and zinc (0.013 mg/L).

Table 4-25: Selected SFE Data for 2016 Gossanous Talus Samples

Parameter	Talus-A	Talus-B	Talus-C	Talus-D	Moraine-F
pH	5.5	6.3	5.6	5	5.4
Redox	570	520	560	570	550
Conductivity	12	27	4.9	24	14
Total Acidity (to pH 8.3)	4	3.8	3.8	4.5	4.1
Alkalinity	1.4	2.5	1.3	0.91	1.1
Sulphate	4	7	3	5	4
Aluminum Al	0.015	0.0074	0.013	0.052	0.024
Antimony Sb	0.00033	0.00046	0.000072	0.000062	0.000048
Arsenic As	0.00028	0.00026	0.00014	0.00016	0.00016
Barium Ba	0.13	0.049	0.01	0.079	0.023
Boron B	<0.01	0.021	0.014	<0.01	0.012
Cadmium Cd	0.000084	0.00047	0.00002	0.00008	0.00023
Calcium Ca	0.91	2.7	0.17	0.94	0.99
Chromium Cr	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cobalt Co	0.00049	0.00043	0.00012	0.00049	0.00037
Copper Cu	0.0033	0.0011	0.0016	0.0088	0.0036
Iron Fe	0.0034	0.0042	0.0025	0.011	0.003
Lead Pb	0.00012	0.00012	0.000058	0.0002	0.00023
Magnesium Mg	0.14	0.45	0.075	0.3	0.19
Manganese Mn	0.038	0.091	0.014	0.034	0.022
Mercury Hg	<0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum Mo	0.000065	0.00016	<0.00005	<0.00005	<0.00005
Nickel Ni	0.0013	0.0022	0.00062	0.0016	0.001
Potassium K	0.23	0.3	0.15	0.54	0.37
Selenium Se	0.00066	0.0011	0.0003	0.00067	0.0005
Silicon Si	0.67	1.2	0.62	2.6	1.4
Silver Ag	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005
Sodium Na	0.37	0.54	0.26	1.2	0.44
Thallium Tl	0.000013	0.000016	0.000008	0.000012	0.000011
Uranium U	0.000007	0.000003	0.000003	0.000006	0.000003
Zinc Zn	0.0051	0.0033	0.0023	0.013	0.01

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4.8.2 Sequential Extractions

Sequential chemical extraction results are presented and discussed in terms of each target fraction. The objective of the sequential extraction tests was to evaluate the potential for reductive dissolution of iron and manganese (oxy)hydroxides and associated release of metals, which is operationally defined as the weakly reducible fraction. The results of the weakly reducible extraction step were incorporated into the source term water quality estimates for the underground mine at closure (Appendix 14-B).

Graphical results for six selected trace elements (arsenic, chromium, copper, lead, nickel, and) are presented in Figure 4-36. Table 4-26 presents the sequential extraction results in tabular format as percentages of the total concentration extracted for each element. Appendix H contains a complete listing of sequential chemical extraction results for each sample.

Water Soluble

The water soluble fraction was important to characterize due to the presence of sulfate precipitates that may host co-precipitated trace elements. Mineralogical examination of the samples indicated gypsum ($CaSO_4 \cdot H_2O$) at levels near the limit of detection for sample Talus-A only.

Extract solution pH ranged from 5.1 to 6.8, with a blank pH of 6.5. Sample Talus-D and Moraine-F had the lowest water soluble extraction pH's (5.1 and 6.0, respectively) and contained the highest water soluble concentrations of Mg and Ca. Sulphate and metal loadings in this step of the extraction were insignificant in comparison to other steps of the extraction.

Weakly Acid Soluble

The weakly acid (pH 5) soluble fraction will include trace elements co-precipitated with phosphates, and adsorbed to the surface of minerals with notable cation exchange capacity, including Fe oxides, kaolinite, and montmorillonite.

Parameters associated with the weakly acid soluble phase include aluminum, calcium, iron, magnesium, manganese and zinc. Zinc loadings ranged from below detection to 4 mg/kg.

Weakly and Strongly Reducible

The reducible fraction is divided into weakly and strongly reducible fractions.

The weakly reducible fraction includes trace elements co-precipitated with Fe and Mn (oxy)hydroxides, whereas the strongly reducible fraction includes trace elements co-precipitated with Fe and Mn oxides (i.e. ferrihydrite versus magnetite, respectively).

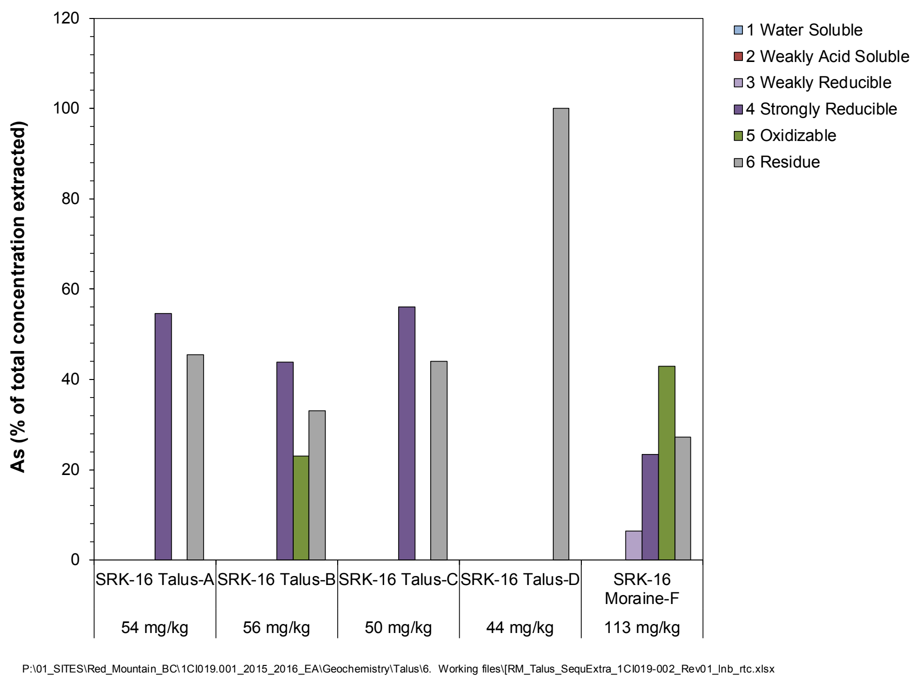
Iron was the dominant element associated with the weakly and strongly reducible fraction, consistent with the dissolution of Fe (oxy)hydroxides and oxides. Up to 6.5% of total arsenic, 34% of total chromium, 25% of total copper, 61% of total lead, 21% of total nickel, and 51% of total zinc was associated with the weakly reducible phase. Analysis of iron (oxy)hydroxide minerals by SEM/EDS identified all aforementioned trace elements with the exception of Cr (Section 4.8.1). The following parameters were associated with the strongly reducible phase: up to 58% of total arsenic, 10% of total chromium chromium, 34% of total copper, 89% of total lead, 57% of total nickel, and 24% of total zinc.

Oxidizable and Residual

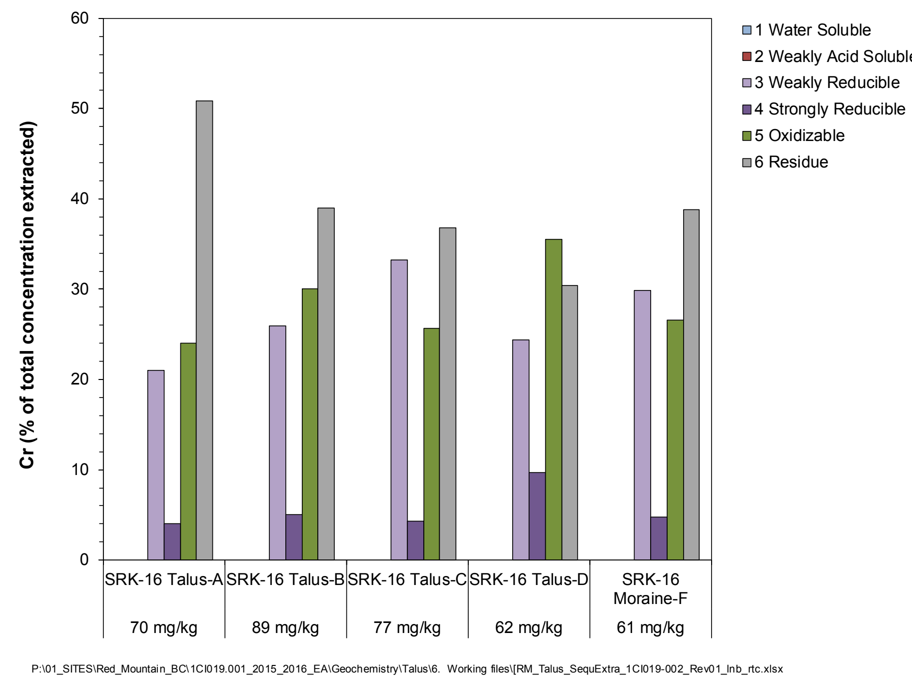
The oxidizable fraction includes trace elements associated within sulfide minerals. The method of Chao and Sanzalone (1977) was chosen in preference to other methods, such as that by Tessier et al. (1979), because of its shorter equilibration time (~2 hours as compared to 5.5 hours) and lower likelihood of dissolving silicates (Leinz et al. 2000).

The last step, four-acid digestion of the residual material, was undertaken to check total element recovery in relation to original assay concentrations. The residual phase is comprised largely of silicate minerals that were resistant to dissolution in the preceding extraction steps.

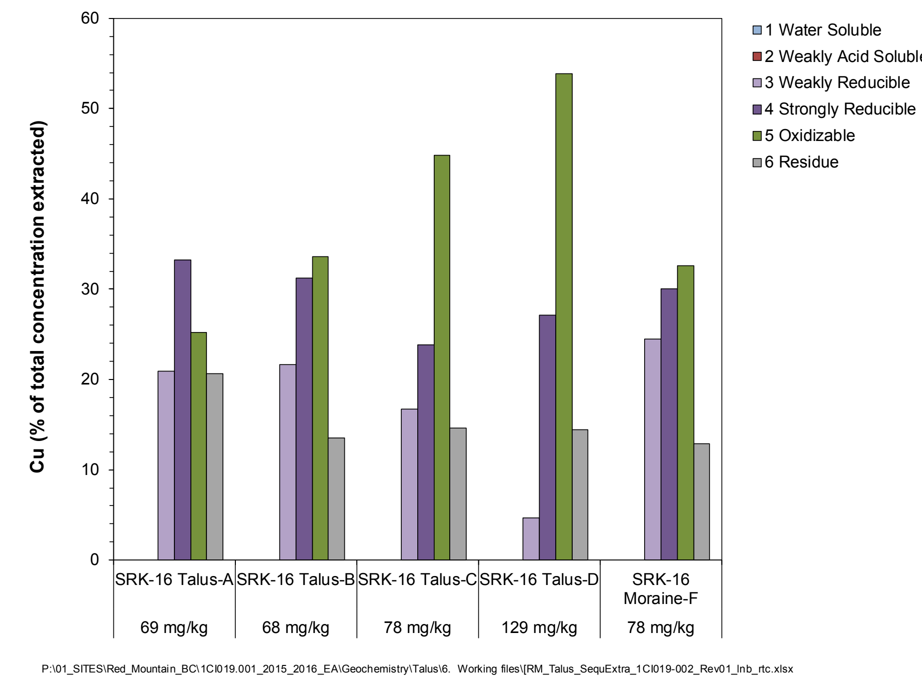
Much of the total arsenic (up to 100%), chromium (up to 75%), copper (up to 70%), manganese (up to 89%), vanadium (up to 96%), and zinc (up to 84%) were extracted in the oxidizable and residual fractions.



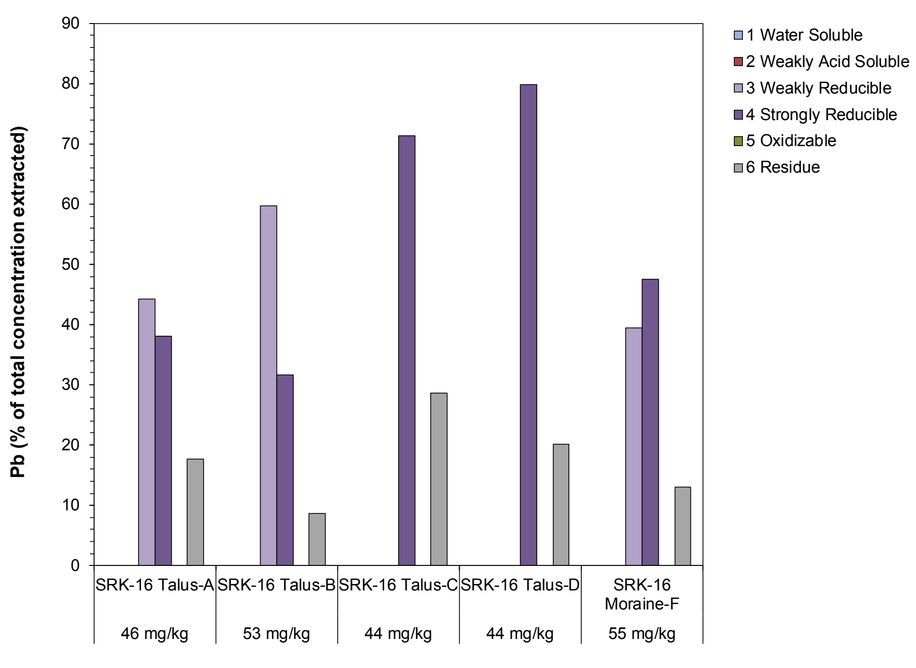
(a) **Arsenic**



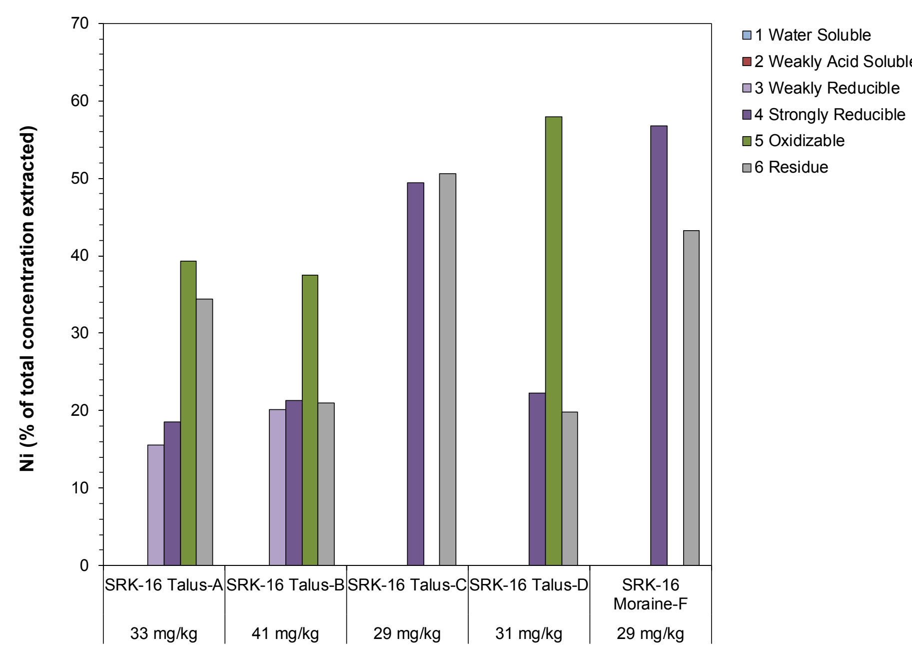
(b) **Chromium**



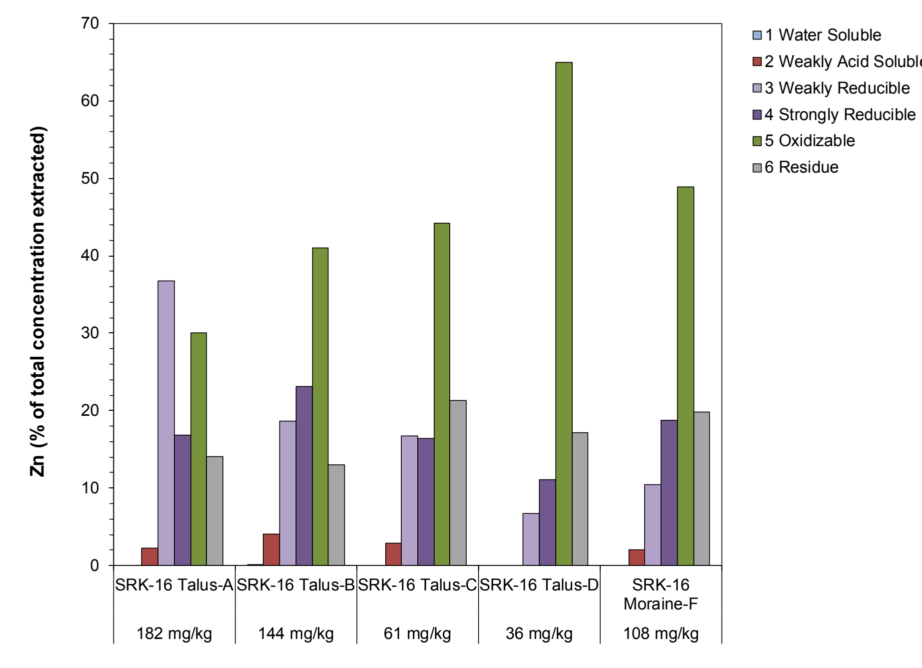
(c) **Copper**



(d) **Lead**



(e) **Nickel**



(f) **Zinc**

Figure 4-36: Sequential Chemical Extraction Results for Selected Trace Elements

Notes:

Refer to Appendix H for a complete listing.

Table 4-26: Sequential chemical extraction results as percentage of total extracted

Metal	Unit	Readily Mobile Fraction (e.g. surface sorption)	Weakly Reducible Fraction (e.g. secondary iron (oxy)hydroxides)	Strongly Reducible Fraction (e.g. cyrstalling and primary iron oxides)	Non-mobile Fraction (e.g. sulphides and silicates)
Al	mg/kg	238 to 416	1254 to 2120	784 to 1680	54593 to 68593
	%	0.4 to 0.7	2 to 3.5	1.2 to 2.7	93 to 96
Sb	mg/kg	0 to 0	0 to 0	0 to 0	4 to 10
	%	0 to 0	0 to 0	0 to 0	100 to 100
As	mg/kg	0 to 0	0 to 9	0 to 33	6 to 98
	%	0 to 0	0 to 6.5	0 to 57.3	43 to 100
Cd	mg/kg	0 to 0	0 to 0	0 to 0	0 to 0
	%	0 to 0	0 to 0	0 to 0	100 to 100
Ca	mg/kg	42 to 255	598 to 2120	17 to 25	1004 to 2630
	%	1.4 to 7	18.2 to 65	0.6 to 0.8	31 to 79
Cr	mg/kg	0 to 0	20 to 37	4 to 8	51 to 99
	%	0 to 0	21 to 34	4 to 10	62 to 75
Co	mg/kg	0 to 0	0 to 0	0 to 0	0 to 2
	%	0 to 0	0 to 0	0 to 0	100 to 100
Cu	mg/kg	0 to 0	6 to 20	18 to 40	29 to 100
	%	0 to 0	4.6 to 25	20 to 34	45 to 70
Fe	mg/kg	184 to 300	2560 to 6000	6300 to 19500	22770 to 47485
	%	0.3 to 0.8	7.8 to 10	19 to 28	64 to 72
Pb	mg/kg	0 to 0	0 to 14	6 to 13	1 to 4
	%	0 to 0	0 to 60.6	30 to 80	7.8 to 29
Mg	mg/kg	135 to 240	366 to 828	430 to 1258	12644 to 15693
	%	0.9 to 1.4	2.6 to 4.8	2.9 to 7.3	87 to 94
Mn	mg/kg	5 to 114	9 to 256	11 to 73	201 to 712
	%	1.7 to 10	4.1 to 22	4.5 to 6.5	62 to 89
Ni	mg/kg	0 to 0	0 to 7	4 to 8	3 to 22
	%	0 to 0	0 to 21.1	18 to 57	43 to 81
V	mg/kg	0 to 0	6 to 21	9 to 44	206 to 412
	%	0 to 0	1.9 to 6.5	2.1 to 14	80 to 96
Zn	mg/kg	0 to 7	3 to 139	5 to 39	35 to 95
	%	0 to 4.2	6.7 to 51	11 to 24	34 to 83

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5 Conclusions and Implications for Management

The conclusions of the geochemical characterization program of waste rock, ore and talus are described as follows:

- Operationally, waste rock and ore are classified as PAG. Mudstone waste rock tends to have less buffering capacity than volcanic rocks.
- TIC measurements approximate calcite content, and are a more conservative estimate of buffering capacity than NP.
- Two field cribs have been monitored for more than 20 years. The field crib of mudstone rock (mixed with Hillside porphyry) (HC-2) produced acidic leachate for the first time in 2016. The field crib of Hillside porphyry has maintained pH-neutral conditions. The site monitoring of the field cribs and Marc zone waste rock stockpile suggests that the upper bound of onset to acidity for the HC-2 mudstone field crib is twenty years and longer for volcanic rocks. The time period for onset of acidic conditions in a sample of unmixed mudstone may be shorter than indicated by the crib.
- Cadmium, zinc, cobalt, nickel and manganese leaching has been observed in seepage from the Marc Zone legacy waste rock stockpile, which is composed of a mixture of PAG sediments and volcanics from underground development in the mid-1990's. Localized acidic conditions are occurring within the pile, but the overall buffering capacity within the stockpile is maintaining neutral pH drainage. Acidic seepages from the legacy waste rock stockpile have been observed, but the source of acidity is likely influenced by the underlying rock and talus.
- For gossanous talus rock, more than half of the historic samples were classified as PAG and approximately 1/3 of the fine fraction samples were already acidic when tested. Humidity cell testing was conducted on an acidic sample of talus and indicated leaching of cadmium, cobalt, copper, nickel and zinc. Subsequent testing on five gossanous talus samples confirmed that talus is already acidic.
- Shake flask extraction tests on gossanous talus samples indicated that the leachate is mildly acidic (pH between 5 and 6) with soluble levels of cadmium, copper, iron, manganese, nickel, selenium, and zinc
- At closure the mine will be permanently flooded. Sequential extraction tests of weathered talus (which will be used as backfill) was conducted in order to evaluate the potential for reductive dissolution of iron and manganese oxides and associated release of metals. Up to 6.5% of total arsenic, 34% of total chromium, 25% of total copper, 61% of total lead, 21% of total nickel, and 51% of total zinc were associated with the extraction phase operationally defined with amorphous to poorly crystalline iron, aluminum, and manganese oxides. Results have been included in the source term water quality estimates (Appendix 14-B).
- Monitoring of the underground mine pool indicates that concentrations of arsenic, cobalt, manganese, nickel, cadmium and zinc were higher during periods of active pumping but stable or decreasing while the mine has been flooded.

- The site monitoring data set is suitable for development of source terms (aquatic effects assessment of the EA) for the ore stockpiles, waste rock stockpiles, and backfilled mine.
- Companion reports will discuss the conclusions of the geochemical characterization program of construction materials and metallurgical tailings and associated management recommendations (Appendix 1-L and Appendix 1-K).

Management and mitigation measures for waste rock, ore and talus are provided in Chapter 29 of the Materials Handling and ML/ARD Management Plan.

This report, Geochemical Characterization for Waste Rock, Ore, and Talus, was prepared 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.

6 References

Chao, T. T. & Zhou, L. 1983. Extraction techniques for selective dissolution of amorphous iron oxides from soils and sediments. *Soil Science Society of America Journal*, 47, 225-232.

Dold, B. 2003. Speciation of the most soluble phases in a sequential extraction procedure adapted for geochemical studies of copper sulfide mine waste. *Journal of Geochemical Exploration*, 80, 55-68.

Frostad, S. 1999. Prediction of Acid Rock Drainage, Red Mountain Project. Thesis prepared for the University of British Columbia. April 1999.

Frostad, S., Klein, B., and Lawrence, R.W. 1999. Prediction of Acid Rock Drainage, Red Mountain Project, Northwestern British Columbia. Proceedings of the 23rd Annual British Columbia Mine Reclamation Symposium. Kamloops, BC.

Lawrence, R.W. 1990. Prediction of the Behavior of Mining and Processing Wastes in the Environment. In Proceedings of the Western Regional Symposium on Mining and Mineral Processing Wastes, Berkeley, California, pp. 115 – 121.

Leinz, R. W., Sutley, S. J., Desborough, G. A. & Briggs, P. 2000. An investigation of the partitioning of metals in mine wastes using sequential extractions. *International Conference on Acid Rock Drainage (ICARD2000)*. Society for Mining, Metallurgy and Exploration Inc., Denver, Colorado, 1513-1523.

[JDS] JDS Energy & Mining Ltd. 2016. NI 43-101 Preliminary Economic Assessment Technical Report for the Red Mountain Project. August 2016.

[MDAG] Minesite Drainage Assessment Group. 1996a. Static and Kinetic Testwork for Predictions of Acid Drainage and Metal Leaching at the Red Mountain Project, British Columbia, Canada. Prepared by Kevin A. Morin and Nora M. Hutt for Royal Oak Mines Inc. April 26, 1996.

MDAG. 1996b. Expanded Diagrams for Acid-Base Accounting at the Red Mountain Project, British Columbia, Canada. Prepared by Kevin A. Morin and Nora M. Hutt for Dr. William Price, Ministry of Employment and Investment. May 31, 1996.

MEM. 1998. Policy for Metal Leaching and Acid Rock Drainage at Minesites in British Columbia.

MEND 2001. Acid Rock Drainage Prediction Manual. MEND Project 1.16.1b, March 2001.

[MOE] British Columbia Ministry of Environment. 2016. Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operators. Version 2. Accessed August 2016. June 2016.

Price. 1997. Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia, DRAFT. British Columbia Ministry of Employment and Investment, April 1997.

Price. 2009. Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials. MEND Report 1.20.1, December 2009.

[Rescan] Rescan Consultants Inc. 1994. Red Mountain Project 1994: Synopsis of Environmental Programs Undertaken, with Springs/Seeps Sample Locations & Environmental Files Location and Description. Prepared for Lac Minerals.

[Rescan] Rescan Consultants Inc. 1995. Draft Application for Mine Development Certificate. Prepared for Lac North America Ltd. February 1995.

[Royal Oak] Royal Oak Mines Inc. 1996. 1996 Project Development Review. Prepared for the Environmental Assessment Office, Victoria, British Columbia. July 18, 1996.

Royal Oak. 1998. Re: Approval AE-14658 Final Report, Red Mountain Project. Underground Discharge and Waste Stock Pile Discharge. Correspondence from Royal Oak to Mr. Jim Hofweber, Ministry of Environment. February 6, 1998.

[SRK] SRK Consulting (Canada) Inc. 2000a. Red Mountain. Memorandum to Dunham Craig. June 2, 2000.

SRK. 2000b. Review of Baseline Studies at Red Mountain. Letter to Dunham Craig, North American Metals Corp. October 25, 2000.

SRK. 2000c. Evaluation of ARD Potential along Proposed Road Corridor to the Red Mountain Project Site. Draft. Letter to Dunham Craig, North American Metals Corp, November 6, 2000.

SRK. 2001. Assessment of Impacts on Receiving Water Concentrations from the Development Waste Rock Dumps at Red Mountain. Prepared for Randy Smallwood, North American Metals Corporation

SRK. 2004. Results of 2003 Field Investigation, Red Mountain Project, British Columbia. Prepared for Seabridge Gold Inc. February 2004.

SRK. 2005. Results of 2004 Field Investigations, Red Mountain Project, British Columbia. Prepared for Seabridge Gold Inc. January 2005.

SRK. 2006. Results of 2005 Field Investigations, Red Mountain Project, British Columbia. Prepared for Seabridge Gold Inc. February 2006.

SRK. 2007. Results of 2006 Field Investigations, Red Mountain Project, British Columbia. Prepared for Seabridge Gold Inc. March 2007.

SRK. 2008. Results of 2007 Field Investigations, Red Mountain Project, British Columbia. Prepared for Seabridge Gold Inc. March 2008.

SRK. 2009. Results of 2008 Field Investigations, Red Mountain Project, British Columbia. Prepared for Seabridge Gold Inc. March 2009.

SRK. 2010. Results of 2009 Field Investigations, Red Mountain Project, British Columbia. Prepared for Seabridge Gold Inc. March 2010.

SRK. 2011. Results of 2010 Field Investigations, Red Mountain Project, British Columbia. Prepared for Seabridge Gold Inc. March 2011.

SRK. 2012. Results of 2011 Field Investigations, Red Mountain Project, British Columbia. Prepared for Seabridge Gold Inc. February 2012.

SRK. 2014. Results of 2013 Field Investigations, Red Mountain Project, British Columbia. Prepared for Seabridge Gold Inc. November 2014.

SRK. 2015. Red Mountain Environmental Assessment: Detailed Data Review and Gap Analysis for Hydrology, Hydrogeology, and Geochemistry – DRAFT. Memo prepared for Guy Gilron, IDM Mining. August 13, 2015.

Tessier, A., Campbell, P. G. C. & Bisson, M. 1979. Sequential extraction procedure for speciation of particulate trace metals. *Analytical Chemistry*, 51, 844-851.

Appendix A – Static Testing Data

ABA Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Sample Lithology and Description	Location
164	13977	Ore	FZ	Marc Zone ore highwall; plagioclase-hornblende porphyry	MC 90-43
191	27629	Ore	TfB	Marc Zone ore high wall; weakly mineralized zone	MC90-55
192	27630	Ore	TfB	Marc Zone ore high wall; altered argillite; tuff with chlorite and silicic alteration	MC90-55
193	27637	Ore	TfB	Marc Zone ore footwall; pyrite (avg 1.5%) and pyrrhotite (avg 4%)	MC90-55
194	27638	Ore	TfB	Marc Zone ore footwall; altered lapilli tuff; pyrite (1.5%) and sphalerite (1.5%)	MC90-55
370	ABA-JW5	Ore	TfB	JW Zone ore	JW Zone
374	Crystal Tuff	Ore	TfB	Underground mine wall bulk sample, within ore zone; pyrite (5%); pyrrhotite (5%); sphalerite (1.5%)	Underground mine wall, Marc Zone
547	Ore Av. Pyrite	Ore	TfB	Underground mine wall, bulk sample; altered crystal tuff; disseminated and vein pyrite (12.5%)	Underground mine wall, Marc Zone
548	Ore Av. ZnS	Ore	TfB	Underground mine wall, bulk sample; altered crystal tuff; patchy sphalerite (12.5%) and hematite	Underground mine wall, Marc Zone
144	11105	Ore	xHlp	Marc Zone ore highwall; pyrite (1.5%) and sphalerite (1.5%)	MC90-31
165	13978	Ore	xHlp	Marc Zone ore highwall; local pyrite (10%) and pyrrhotite (10%)	MC 90-43
166	13997	Ore	xHlp	Marc Zone ore footwall; altered plagioclase porphyry	MC 90-43
167	13998	Ore	xHlp	Marc Zone ore footwall; strong sericitic and moderate silicic alterations	MC 90-43
145	11106	Ore	xTF	Marc Zone ore highwall; pyrite (2%) and sphalerite (1.5%)	MC90-31
146	11113	Ore	xTF	Marc Zone ore footwall; pyrite (2.5%) and sphalerite (1.5%)	MC90-31
147	11114	Ore	xTF	Marc Zone ore footwall; stringer pyrite (1.5%) and sphalerite (2.5%)	MC90-31
148	11257	Ore	xTF	Marc Zone ore highwall; altered crystal ash tuff	MC 90-32
149	11258	Ore	xTF	Marc Zone ore highwall; sulphides (7%)	MC 90-32
150	11265	Ore	xTF	Marc Zone ore footwall; interbedded argillite and greywacke	MC 90-32
151	11266	Ore	xTF	Marc Zone ore footwall; pyrite (4.5%) and pyrrhotite (4.5%)	MC 90-32
187	27605	Ore	xTF	Marc Zone ore highwall; altered intrusive	MC90-55
188	27606	Ore	xTF	Marc Zone ore highwall; sphalerite (avg 4%)	MC90-55
189	27622	Ore	xTF	Marc Zone ore footwall; hydrothermal breccia	MC90-55
190	27623	Ore	xTF	Marc Zone ore footwall; chlorite and sericite alteration	MC90-55
195	31021	Ore	xTF	Marc Zone low grade ore; altered hornblende porphyry	MC 90-35
196	31022	Ore	xTF	Marc Zone low grade ore; strong sericitic and moderate silicic alterations	MC 90-35
197	20017B	Ore	xTF	Marc Zone ore highwall; pyrite/sphalerite zone	MC 90-26
198	20018B	Ore	xTF	Marc Zone ore highwall; sphalerite (5%) and chalcopyrite (3%)	MC 90-26
199	20038B	Ore	xTF	Marc Zone ore footwall; weakly mineralized zone	MC 90-26
200	20039B	Ore	xTF	Marc Zone ore footwall; pyrite and sphalerite	MC 90-26
201	20993B	Ore	xTF	Marc Zone ore highwall; lapilli luff	MC 90-35
202	20994B	Ore	xTF	Marc Zone ore highwall; felsic intrusive	MC 90-35
270	ABA-009	Ore	xTF	Andesite and feldspar-homblende-porphyry lapilli tuff; patchy coarse grains and veins of pyrite (13.7%)	Section 1100N, MC89-06
272	ABA-010	Ore	xTF	Andesitic tuff: scattered semi-massive and disseminated pyrite and pyrite-carbonate veins (9% pyrite)	Section 1100N, MC89-06
286	ABA-017	Ore	xTF	Feldspar-hornblende-porphyry and agglomerate tuff; fine-to-medium-grained disseminated and fracture-fill pyrite (15.3%); fine disseminated pyrrhotite (1%)	Section 1150N, MC89-19
294	ABA-021	Ore	xTF	Feldspar crystal tuff, with quartz-carbonate veins; disseminated to patchy stringers of pyrite (6.2%), pyrrhotite (0.6%), and sphalerite (2.4%)	Section 1175N, MC90-55
296	ABA-022	Ore	xTF	Feldspar crystal tuff; with quartz-carbonate veins; disseminated to patchy stringers of pyrite (2%) and pyrrbotite (2.7%)	Section 1175N, MC90-55
310	ABA-030	Ore	xTF	Marc Zone ore	Section 1225N, MC90-23
543	MC90-23 169-172	Ore	xTf	Sample not originally requested by Rescan, but analysed anyway. On same certificate as substitute samples, but not replacing any other sample.	MC90-23
472	MC90-32 175-178	Ore	xTf	Ore	MC90-32
674	RMS-10094	Ore	xTf	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1100 x-cut
682	RMS-10159	Ore	xTf	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1100 x-cut
690	RMS-10176	Ore	xTf	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1100 x-cut
873	RMS-10575	Ore	xTf	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
877	RMS-10583	Ore	xTf	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
881	RMS-10591	Ore	xTf	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
887	RMS-10603	Ore	xTf	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
891	RMS-10611	Ore	xTf	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
895	RMS-10619	Ore	xTf	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
966	RMS-10792	Ore	xTF		MHW drift
365	ABA-AV3	Ore	Composite	AV Zone ore	AV Zone
366	ABA-AV4	Ore	Composite	AV Zone ore	AV Zone
385	Marc Composite	Ore	Composite	Ore collected across four sections and various depths for wide spatial sampling (metallurgical studies)	
37	RMS01601	Talus	Talus	Talus	Talus slope
39	RMS01602	Talus	Talus	Talus	Talus slope
41	RMS01603	Talus	Talus	Talus	Talus slope
43	RMS01604	Talus	Talus	Talus	Talus slope
45	RMS01605	Talus	Talus	Talus	Talus slope
47	RMS01607	Talus	Talus	Talus	Talus slope
49	RMS01608	Talus	Talus	Talus	Talus slope
51	RMS01609	Talus	Talus	Talus	Talus slope
53	RMS01610	Talus	Talus	Talus	Talus slope
55	RMS01612	Talus	Talus	Talus	Talus slope
57	RMS01613	Talus	Talus	Talus	Talus slope
59	RMS01615	Talus	Talus	Talus	Talus slope
61	RMS01616	Talus	Talus	Talus	Talus slope
63	RMS01617	Talus	Talus	Talus	Talus slope
65	RMS01618	Talus	Talus	Talus	Talus slope
67	RMS01619	Talus	Talus	Talus	Talus slope
69	RMS01620	Talus	Talus	Talus	Talus slope
70	TAL-01+10	Talus	Talus	Porphyry intrusive (PI), weathering = 1 to 10 mm, mostly fines, sample depth ~5 cm, from flat area	Talus slope
71	TAL-01-10+230	Talus	Talus	Porphyry intrusive (PI), weathering = 1 to 10 mm, mostly fines, sample depth ~5 cm, from flat area	Talus slope
72	TAL-01-230	Talus	Talus	Porphyry intrusive (PI), weathering = 1 to 10 mm, mostly fines, sample depth ~5 cm, from flat area	Talus slope
73	TAL-02+10	Talus	Talus	Metavolcanics (MV), weathering = < 1 to 5 mm, mostly coarse grained, sample depth ~20 cm	Talus slope
74	TAL-02-10+230	Talus	Talus	Metavolcanics (MV), weathering = < 1 to 5 mm, mostly coarse grained, sample depth ~20 cm	Talus slope
75	TAL-02-230	Talus	Talus	Metavolcanics (MV), weathering = < 1 to 5 mm, mostly coarse grained, sample depth ~20 cm	Talus slope

No.	Sample ID	Dataset	Standardized Lithocode	Date	Other Testing?	Paste pH (s.u.)	Total Sulphur	Sulphate Sulphur	Calculated Sulphide	Calculated AP (kg $CaCO_3$/t)	CO2 (Wt.%)	Calculated TIC (kg $CaCO_3$/t)	Neutralization Potential	NP/AP	TIC/AP	ARD Classification (NP/AP)	ARD Classification (TIC/AP)
164	13977	Ore	FZ	1-Jan-1991		#N/A	4.55	#N/A	#N/A	142.19	#N/A	#N/A	113.9	0.80	#N/A	PAG	#N/A
191	27629	Ore	TfB	1-Jan-1991		#N/A	1.05	#N/A	#N/A	32.81	#N/A	#N/A	38.9	1.19	#N/A	Uncertain	#N/A
192	27630	Ore	TfB	1-Jan-1991		#N/A	0.90	#N/A	#N/A	28.13	#N/A	#N/A	27.8	0.99	#N/A	PAG	#N/A
193	27637	Ore	TfB	1-Jan-1991		#N/A	0.19	#N/A	#N/A	5.94	#N/A	#N/A	44.4	7.48	#N/A	non-PAG	#N/A
194	27638	Ore	TfB	1-Jan-1991		#N/A	0.36	#N/A	#N/A	11.25	#N/A	#N/A	100.1	8.89	#N/A	non-PAG	#N/A
370	ABA-JW5	Ore	TfB	12-Nov-1993	HCT	7.9	7.93	0.01	7.92	247.81	0.10	2.27	11.0	0.04	0.01	PAG	PAG
374	Crystal Tuff	Ore	TfB	1-Aug-1993	HCT	8.1	5.19	0.06	5.13	162.19	0.80	18.18	21.0	0.13	0.11	PAG	PAG
547	Ore Av. Pyrite	Ore	TfB	1-Aug-1993	HCT	6.4	16.90	0.08	16.82	528.13	0.40	9.09	9.0	0.02	0.02	PAG	PAG
548	Ore Av. ZnS	Ore	TfB	1-Aug-1993	HCT	8.2	6.16	0.03	6.13	192.50	0.50	11.37	19.0	0.10	0.06	PAG	PAG
144	11105	Ore	xHlp	1-Jan-1991		#N/A	4.04	#N/A	#N/A	126.25	#N/A	#N/A	88.9	0.70	#N/A	PAG	#N/A
165	13978	Ore	xHlp	1-Jan-1991		#N/A	5.93	#N/A	#N/A	185.31	#N/A	#N/A	77.8	0.42	#N/A	PAG	#N/A
166	13997	Ore	xHlp	1-Jan-1991		#N/A	12.83	#N/A	#N/A	400.94	#N/A	#N/A	22.2	0.06	#N/A	PAG	#N/A
167	13998	Ore	xHlp	1-Jan-1991		#N/A	7.27	#N/A	#N/A	227.19	#N/A	#N/A	16.7	0.07	#N/A	PAG	#N/A
145	11106	Ore	xTF	1-Jan-1991		#N/A	4.34	#N/A	#N/A	135.63	#N/A	#N/A	27.8	0.20	#N/A	PAG	#N/A
146	11113	Ore	xTF	1-Jan-1991		#N/A	5.14	#N/A	#N/A	160.63	#N/A	#N/A	33.3	0.21	#N/A	PAG	#N/A
147	11114	Ore	xTF	1-Jan-1991		#N/A	3.52	#N/A	#N/A	110.00	#N/A	#N/A	38.9	0.35	#N/A	PAG	#N/A
148	11257	Ore	xTF	1-Jan-1991		#N/A	5.30	#N/A	#N/A	165.63	#N/A	#N/A	30.6	0.18	#N/A	PAG	#N/A
149	11258	Ore	xTF	1-Jan-1991		#N/A	3.41	#N/A	#N/A	106.56	#N/A	#N/A	27.8	0.26	#N/A	PAG	#N/A
150	11265	Ore	xTF	1-Jan-1991		#N/A	2.32	#N/A	#N/A	72.50	#N/A	#N/A	50.0	0.69	#N/A	PAG	#N/A
151	11266	Ore	xTF	1-Jan-1991		#N/A	3.16	#N/A	#N/A	98.75	#N/A	#N/A	50.0	0.51	#N/A	PAG	#N/A
187	27605	Ore	xTF	1-Jan-1991		#N/A	4.42	#N/A	#N/A	138.13	#N/A	#N/A	66.7	0.48	#N/A	PAG	#N/A
188	27606	Ore	xTF	1-Jan-1991		#N/A	5.14	#N/A	#N/A	160.63	#N/A	#N/A	55.6	0.35	#N/A	PAG	#N/A
189	27622	Ore	xTF	1-Jan-1991		#N/A	3.82	#N/A	#N/A	119.46	#N/A	#N/A	100.0	0.84	#N/A	PAG	#N/A
190	27623	Ore	xTF	1-Jan-1991		#N/A	3.94	#N/A	#N/A	123.13	#N/A	#N/A	72.3	0.59	#N/A	PAG	#N/A
195	31021	Ore	xTF	1-Jan-1991		#N/A	7.15	#N/A	#N/A	223.44	#N/A	#N/A	11.1	0.05	#N/A	PAG	#N/A
196	31022	Ore	xTF	1-Jan-1991		#N/A	6.38	#N/A	#N/A	199.37	#N/A	#N/A	16.7	0.08	#N/A	PAG	#N/A
197	20017B	Ore	xTF	1-Jan-1991		#N/A	5.11	#N/A	#N/A	159.69	#N/A	#N/A	33.3	0.21	#N/A	PAG	#N/A
198	20018B	Ore	xTF	1-Jan-1991		#N/A	5.48	#N/A	#N/A	171.25	#N/A	#N/A	16.7	0.10	#N/A	PAG	#N/A
199	20038B	Ore	xTF	1-Jan-1991		#N/A	1.70	#N/A	#N/A	53.12	#N/A	#N/A	61.2	1.15	#N/A	Uncertain	#N/A
200	20039B	Ore	xTF	1-Jan-1991		#N/A	1.29	#N/A	#N/A	40.31	#N/A	#N/A	72.3	1.79	#N/A	Uncertain	#N/A
201	20993B	Ore	xTF	1-Jan-1991		#N/A	1.63	#N/A	#N/A	50.94	#N/A	#N/A	38.9	0.76	#N/A	PAG	#N/A
202	20994B	Ore	xTF	1-Jan-1991		#N/A	6.53	#N/A	#N/A	204.06	#N/A	#N/A	38.9	0.19	#N/A	PAG	#N/A
270	ABA-009	Ore	xTF	5-Jul-1993		7.3	9.36	0.020	9.34	292.50	0.40	9.09	9.0	0.03	0.03	PAG	PAG
272	ABA-010	Ore	xTF	5-Jul-1993	HCT	7.6	6.94	0.020	6.92	216.88	0.40	9.09	13.0	0.06	0.04	PAG	PAG
286	ABA-017	Ore	xTF	5-Jul-1993		7.1	8.36	0.030	8.33	261.25	0.10	2.27	9.0	0.03	0.01	PAG	PAG
294	ABA-021	Ore	xTF	5-Jul-1993		8.1	4.98	0.010	4.97	155.63	0.10	2.27	13.0	0.08	0.01	PAG	PAG
296	ABA-022	Ore	xTF	5-Jul-1993		8.5	2.13	0.005	2.13	66.56	0.40	9.09	17.0	0.26	0.14	PAG	PAG
310	ABA-030	Ore	xTF	5-Jul-1993		8.4	3.31	0.010	3.30	103.44	0.50	11.37	19.0	0.18	0.11	PAG	PAG
543	MC90-23 169-172	Ore	xTf	5-Jul-1993		7.9	5.51	0.01	5.50	172.19	3.40	77.28	90.0	0.52	0.45	PAG	PAG
472	MC90-32 175-178	Ore	xTf	5-Jul-1993		8.1	4.35	0.01	4.35	135.94	1.50	34.10	33.0	0.24	0.25	PAG	PAG
674	RMS-10094	Ore	xTf	11-Aug-1993		7	11.58	#N/A	#N/A	361.84	#N/A	#N/A	7.0	0.02	#N/A	PAG	#N/A
682	RMS-10159	Ore	xTf	15-Aug-1993		7.1	10.78	#N/A	#N/A	336.93	#N/A	#N/A	6.0	0.02	#N/A	PAG	#N/A
690	RMS-10176	Ore	xTf	16-Aug-1993		8.2	5.75	#N/A	#N/A	179.54	#N/A	#N/A	10.5	0.06	#N/A	PAG	#N/A
873	RMS-10575	Ore	xTf	5-Oct-1993		8.1	2.15	#N/A	#N/A	67.16	#N/A	#N/A	101.0	1.50	#N/A	Uncertain	#N/A
877	RMS-10583	Ore	xTf	6-Oct-1993		8.05	4.58	#N/A	#N/A	143.00	#N/A	#N/A	18.0	0.13	#N/A	PAG	#N/A
881	RMS-10591	Ore	xTf	7-Oct-1993		8.25	3.65	#N/A	#N/A	114.01	#N/A	#N/A	11.0	0.10	#N/A	PAG	#N/A
887	RMS-10603	Ore	xTf	9-Oct-1993		8.1	3.61	#N/A	#N/A	112.69	#N/A	#N/A	4.5	0.04	#N/A	PAG	#N/A
891	RMS-10611	Ore	xTf	10-Oct-1993		8	2.37	#N/A	#N/A	74.00	#N/A	#N/A	13.0	0.18	#N/A	PAG	#N/A
895	RMS-10619	Ore	xTf	11-Oct-1993		7.82	9.14	#N/A	#N/A	285.69	#N/A	#N/A	14.1	0.05	#N/A	PAG	#N/A
966	RMS-10792	Ore	xTF	6-Nov-1993		8.15	4.01	#N/A	#N/A	125.24	#N/A	#N/A	151.6	1.21	#N/A	Uncertain	#N/A
365	ABA-AV3	Ore	Composite	12-Nov-1993		7.3	13.80	0.04	13.76	431.25	0.10	2.27	9.0	0.02	0.01	PAG	PAG
366	ABA-AV4	Ore	Composite	12-Nov-1993	HCT	7.2	18.60	0.04	18.56	581.25	0.30	6.82	12.0	0.02	0.01	PAG	PAG
385	Marc Composite	Ore	Composite	1-Oct-1993	HCT	7.7	10.20	0.03	10.17	318.75	0.10	2.27	19.0	0.06	0.01	PAG	PAG
37	RMS01601	Talus	Talus	Unknown		7.4	0.31	0.04	0.27	8.38	0.10	2.27	8.0	0.96	0.27	PAG	PAG
39	RMS01602	Talus	Talus	Unknown		7.8	0.35	0.03	0.32	10.09	0.30	6.82	15.0	1.49	0.68	Uncertain	PAG
41	RMS01603	Talus	Talus	Unknown		7.3	0.14	0.04	0.10	3.09	0.10	2.27	7.0	2.26	0.73	Uncertain	PAG
43	RMS01604	Talus	Talus	Unknown		7.3	0.14	0.04	0.10	3.06	0.10	2.27	6.0	1.96	0.74	Uncertain	PAG
45	RMS01605	Talus	Talus	Unknown		6.9	0.15	0.04	0.11	3.53	0.10	2.27	5.0	1.42	0.64	Uncertain	PAG
47	RMS01607	Talus	Talus	Unknown		7.1	0.11	0.06	0.05	1.69	0.10	2.27	5.0	2.96	1.35	Uncertain	Uncertain
49	RMS01608	Talus	Talus	Unknown		6.8	0.20	0.12	0.08	2.53	0.10	2.27	4.0	1.58	0.90	Uncertain	PAG
51	RMS01609	Talus	Talus	Unknown		7.1	0.11	0.02	0.09	2.88	0.10	2.27	6.0	2.09	0.79	Uncertain	PAG
53	RMS01610	Talus	Talus	Unknown		6.4	0.18	0.01	0.18	5.59	0.10	2.27	7.0	1.25	0.41	Uncertain	PAG
55	RMS01612	Talus	Talus	Unknown		7.2	0.25	0.03	0.22	7.00	0.10	2.27	10.0	1.43	0.32	Uncertain	PAG
57	RMS01613	Talus	Talus	Unknown		7.6	0.75	0.03	0.72	22.41	0.10	2.27	11.0	0.49	0.10	PAG	PAG
59	RMS01615	Talus	Talus	Unknown		7.6	0.18	0.01	0.17	5.31	0.10	2.27	9.0	1.69	0.43	Uncertain	PAG
61	RMS01616	Talus	Talus	Unknown		6.9	0.78	0.05	0.73	22.88	0.10	2.27	6.0	0.26	0.10	PAG	PAG
63	RMS01617	Talus	Talus	Unknown		6	1.06	0.11	0.95	29.69	0.10	2.27	7.0	0.24	0.08	PAG	PAG
65	RMS01618	Talus	Talus	Unknown		6.9	0.64	0.06	0.58	18.13	0.10	2.27	9.0	0.50	0.13	PAG	PAG
67	RMS01619	Talus	Talus	Unknown		7	0.61	0.06	0.55	17.28	0.10	2.27	11.0	0.64	0.13	PAG	PAG
69	RMS01620	Talus	Talus	Unknown		7.2	0.39	0.05	0.34	10.56	0.10	2.27	8.0	0.76	0.22	PAG	PAG
70	TAL-01+10	Talus	Talus	Unknown		7.2	0.15	0.02	0.13	4.06	0.10	2.27	5.0	1.23	0.56	Uncertain	PAG
71	TAL-01-10+230	Talus	Talus	Unknown		7.4	0.13	0.02	0.11	3.41	0.10	2.27	8.0	2.35	0.67	Uncertain	PAG
72	TAL-01-230	Talus	Talus	Unknown		6.2	0.14	0.04	0.10	3.03	0.10	2.27	6.0	1.98	0.75	Uncertain	PAG
73	TAL-02+10	Talus	Talus	Unknown		7	0.45	0.05	0.40	12.63	0.10	2.27	4.0	0.32	0.18	PAG	PAG
74	TAL-02-10+230	Talus	Talus	Unknown		7.3	0.41	0.07	0.34	10.56	0.10	2.27	7.0	0.66	0.22	PAG	PAG
75	TAL-02-230	Talus	Talus	Unknown		5.8	0.64	0.14	0.50	15.75	0.10	2.27	5.0	0.32	0.14	PAG	PAG

No.	Sample ID	Dataset	Standardized Lithocode	Sample Lithology and Description	Location
76	TAL-03+10	Talus	Talus	Metavolcanics (MV), weathering = 2 to 10 mm, sample depth ~10 cm	Talus slope
77	TAL-03-10+230	Talus	Talus	Metavolcanics (MV), weathering = 2 to 10 mm, sample depth ~10 cm	Talus slope
78	TAL-03-230	Talus	Talus	Metavolcanics (MV), weathering = 2 to 10 mm, sample depth ~10 cm	Talus slope
79	TAL-04+10	Talus	Talus	Mixed metavolcanics and porphyry instrusives, weathering = < 1 to 3 mm, mostly fines, sample depth ~20cm	Talus slope
80	TAL-04-10+230	Talus	Talus	Mixed metavolcanics and porphyry instrusives, weathering = < 1 to 3 mm, mostly fines, sample depth ~20cm	Talus slope
81	TAL-04-230	Talus	Talus	Mixed metavolcanics and porphyry instrusives, weathering = < 1 to 3 mm, mostly fines, sample depth ~20cm	Talus slope
82	TAL-05+10	Talus	Talus	Porphyry intrusive (PI), weathering = <1 to 10 mm, sample depth ~10 cm	Talus slope
83	TAL-05-10+230	Talus	Talus	Porphyry intrusive (PI), weathering = <1 to 10 mm, sample depth ~10 cm	Talus slope
84	TAL-05-230	Talus	Talus	Porphyry intrusive (PI), weathering = <1 to 10 mm, sample depth ~10 cm	Talus slope
85	TAL-06+10	Talus	Talus	Mixed MV and PI, some fines, weathering = < 1 to 5 mm (MV) and up to 10 mm (PI), sample depth ~10 cm	Talus slope
86	TAL-06-10+230	Talus	Talus	Mixed MV and PI, some fines, weathering = < 1 to 5 mm (MV) and up to 10 mm (PI), sample depth ~10 cm	Talus slope
87	TAL-06-230	Talus	Talus	Mixed MV and PI, some fines, weathering = < 1 to 5 mm (MV) and up to 10 mm (PI), sample depth ~10 cm	Talus slope
88	TAL-07+10	Talus	Talus	Metavolcanics (MV), highly silicified, weathering = 1 to 5 mm, some fines, sample depth ~5 cm	Talus slope
89	TAL-07-10+230	Talus	Talus	Metavolcanics (MV), highly silicified, weathering = 1 to 5 mm, some fines, sample depth ~5 cm	Talus slope
90	TAL-07-230	Talus	Talus	Metavolcanics (MV), highly silicified, weathering = 1 to 5 mm, some fines, sample depth ~5 cm	Talus slope
91	TAL-08+10	Talus	Talus	Mostly metavolcanics with minor porphyry intrusive, weathering = 5 to 20 mm, mostly fines, sample depth ~8 cm	Talus slope
92	TAL-08-10+230	Talus	Talus	Mostly metavolcanics with minor porphyry intrusive, weathering = 5 to 20 mm, mostly fines, sample depth ~8 cm	Talus slope
93	TAL-08-230	Talus	Talus	Mostly metavolcanics with minor porphyry intrusive, weathering = 5 to 20 mm, mostly fines, sample depth ~8 cm	Talus slope
94	TAL-09A+10	Talus	Talus	Red fines, sample depth ~10 cm	Talus slope
95	TAL-09A-10+230	Talus	Talus	Red fines, sample depth ~10 cm	Talus slope
96	TAL-09A-230	Talus	Talus	Red fines, sample depth ~10 cm	Talus slope
97	TAL-09B+10	Talus	Talus	Coarse material, mostly porphyry intrusives with minor metavolcanics (near contact of rock units), weathering = 1 to 3 mm, sample depth ~7 cm	Talus slope
98	TAL-09B-10+230	Talus	Talus	Coarse material, mostly porphyry intrusives with minor metavolcanics (near contact of rock units), weathering = 1 to 3 mm, sample depth ~7 cm	Talus slope
99	TAL-09B-230	Talus	Talus	Coarse material, mostly porphyry intrusives with minor metavolcanics (near contact of rock units), weathering = 1 to 3 mm, sample depth ~7 cm	Talus slope
100	TAL-10+10	Talus	Talus	Mixed metavolcanics and porphyry instrusives, weathering = <1 to 3 cm, coarse and fines, sample depth ~10 cm	Talus slope
101	TAL-10-10+230	Talus	Talus	Talus	Talus slope
102	TAL-10-230	Talus	Talus	Talus	Talus slope
103	TAL-11+10	Talus	Talus	Talus	Talus slope
104	TAL-11-10+230	Talus	Talus	Talus	Talus slope
105	TAL-11-230	Talus	Talus	Talus	Talus slope
106	TAL-12+10	Talus	Talus	Talus	Talus slope
107	TAL-12-10+230	Talus	Talus	Talus	Talus slope
108	TAL-12-230	Talus	Talus	Talus	Talus slope
109	TAL-13+10	Talus	Talus	Talus	Talus slope
110	TAL-13-10+230	Talus	Talus	Talus	Talus slope
111	TAL-13-230	Talus	Talus	Talus	Talus slope
112	TAL-14+10	Talus	Talus	Talus	Talus slope
113	TAL-14-10+230	Talus	Talus	Talus	Talus slope
114	TAL-14-230	Talus	Talus	Talus	Talus slope
115	TAL-15+10	Talus	Talus	Talus	Talus slope
116	TAL-15-10+230	Talus	Talus	Talus	Talus slope
117	TAL-15-230	Talus	Talus	Talus	Talus slope
118	TAL-16+10	Talus	Talus	Talus	Talus slope
119	TAL-16-10+230	Talus	Talus	Talus	Talus slope
120	TAL-16-230	Talus	Talus	Talus	Talus slope
121	TAL-17+10	Talus	Talus	Talus	Talus slope
122	TAL-17-10+230	Talus	Talus	Talus	Talus slope
123	TAL-17-230	Talus	Talus	Talus	Talus slope
124	TAL-18+10	Talus	Talus	Talus	Talus slope
125	TAL-18-10+230	Talus	Talus	Talus	Talus slope
126	TAL-18-230	Talus	Talus	Talus	Talus slope
127	TAL-19+10	Talus	Talus	Talus	Talus slope
128	TAL-19-10+230	Talus	Talus	Talus	Talus slope
129	TAL-19-230	Talus	Talus	Talus	Talus slope
130	TAL-20+10	Talus	Talus	Talus	Talus slope
131	TAL-20-10+230	Talus	Talus	Talus	Talus slope
132	TAL-20-230	Talus	Talus	Talus	Talus slope
133	TAL-21+10	Talus	Talus	Talus	Talus slope
134	TAL-21-10+230	Talus	Talus	Talus	Talus slope
135	TAL-21-230	Talus	Talus	Talus	Talus slope
136	TAL-22+10	Talus	Talus	Talus	Talus slope
137	TAL-22-10+230	Talus	Talus	Talus	Talus slope
138	TAL-22-230	Talus	Talus	Talus	Talus slope
139	TAL-23+10	Talus	Talus	Talus	Talus slope
140	TAL-23-10+230	Talus	Talus	Talus	Talus slope
141	TAL-23-230	Talus	Talus	Talus	Talus slope
142&143	Talus Composite	Talus	Talus	Composite sample (RMS-1613, -1616, 1617, and -1618)	Talus slope
529	MC93-114_615-617	Waste Rock	GOp	Klohn-Crippen number: KC-94-08	MC93-114
217	ABA-002	Waste Rock	Hlp	Marc Zone waste rock	Section 1050N, MC91-69
219	ABA-003	Waste Rock	Hlp	Marc Zone waste rock	Section 1075N, MC91-68
290	ABA-019	Waste Rock	Hlp	Feldspar-hornblende porphyry (Fhp); calcite veins; disseminated and fracture-fill pyrite (4.7%); disseminated and bleb pyrrhotite (1%)	Section 1175N, MC89-12
Frostad	ABA-2	Waste Rock	Hlp	Collected from Lac's ABA sample stockpile, Feldspar porphyryr intrustive material	
Frostad	ABA-3	Waste Rock	Hlp	Collected from Lac's ABA sample stockpile, Feldspar porphyryr intrustive material	
Frostad	HC-1	Waste Rock	Hlp	Underground slash (used to fill large-scale field humidity cells), Feldspar porphyryr intrustive material	
549	Porphry Fhp	Waste Rock	Hlp	Underground mine wall, bulk sample; disseminated pyrite (1%)	Underground mine wall, Marc Zone
611	RMS-09127	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline

No.	Sample ID	Dataset	Standardized Lithocode	Date	Other Testing?	Paste pH (s.u.)	Total Sulphur	Sulphate Sulphur	Calculated Sulphide	Calculated AP (kg $CaCO_3$/t)	CO2 (Wt.%)	Calculated TIC (kg $CaCO_3$/t)	Neutralization Potential	NP/AP	TIC/AP	ARD Classification (NP/AP)	ARD Classification (TIC/AP)
76	TAL-03+10	Talus	Talus	Unknown		6.6	0.44	0.04	0.40	12.50	0.10	2.27	8.0	0.64	0.18	PAG	PAG
77	TAL-03-10+230	Talus	Talus	Unknown		7.2	0.44	0.07	0.37	11.66	0.10	2.27	11.0	0.94	0.20	PAG	PAG
78	TAL-03-230	Talus	Talus	Unknown		6	0.70	0.15	0.55	17.13	0.10	2.27	9.0	0.53	0.13	PAG	PAG
79	TAL-04+10	Talus	Talus	Unknown		9	0.23	0.02	0.21	6.44	0.10	2.27	14.0	2.17	0.35	Uncertain	PAG
80	TAL-04-10+230	Talus	Talus	Unknown		7.7	0.16	0.01	0.15	4.53	0.10	2.27	6.0	1.32	0.50	Uncertain	PAG
81	TAL-04-230	Talus	Talus	Unknown		6.3	0.08	0.03	0.05	1.56	0.10	2.27	3.0	1.92	1.45	Uncertain	Uncertain
82	TAL-05+10	Talus	Talus	Unknown		7.5	0.13	0.02	0.11	3.50	0.10	2.27	7.0	2.00	0.65	Uncertain	PAG
83	TAL-05-10+230	Talus	Talus	Unknown		8	0.11	0.02	0.09	2.94	0.10	2.27	13.0	4.43	0.77	non-PAG	PAG
84	TAL-05-230	Talus	Talus	Unknown		5.8	0.10	0.06	0.04	1.28	0.10	2.27	6.0	4.68	1.77	non-PAG	Uncertain
85	TAL-06+10	Talus	Talus	Unknown		7.3	0.11	0.01	0.10	3.22	0.06	1.34	6.0	1.86	0.42	Uncertain	PAG
86	TAL-06-10+230	Talus	Talus	Unknown		7.3	0.06	0.02	0.04	1.22	0.10	2.27	7.0	5.74	1.87	non-PAG	Uncertain
87	TAL-06-230	Talus	Talus	Unknown		5.8	0.07	0.03	0.04	1.09	0.10	2.27	3.0	2.74	2.08	Uncertain	Uncertain
88	TAL-07+10	Talus	Talus	Unknown		7.9	0.34	0.01	0.33	10.34	0.10	2.27	6.0	0.58	0.22	PAG	PAG
89	TAL-07-10+230	Talus	Talus	Unknown		7.9	0.25	0.01	0.24	7.59	0.10	2.27	8.0	1.05	0.30	Uncertain	PAG
90	TAL-07-230	Talus	Talus	Unknown		6.5	0.25	0.02	0.23	7.13	0.10	2.27	6.0	0.84	0.32	PAG	PAG
91	TAL-08+10	Talus	Talus	Unknown		9.1	0.17	0.03	0.14	4.50	0.10	2.27	15.0	3.33	0.51	non-PAG	PAG
92	TAL-08-10+230	Talus	Talus	Unknown		6.2	0.10	0.02	0.08	2.41	0.10	2.27	1.0	0.42	0.94	PAG	PAG
93	TAL-08-230	Talus	Talus	Unknown		5.7	0.13	0.13	0.001	0.03	0.10	2.27	0	0.00	72.74	PAG	non-PAG
94	TAL-09A+10	Talus	Talus	Unknown		8.4	0.02	0.01	0.01	0.34	0.10	2.27	11	32.00	6.61	non-PAG	non-PAG
95	TAL-09A-10+230	Talus	Talus	Unknown		6.7	0.04	0.03	0.01	0.16	0.10	2.27	2	12.80	14.55	non-PAG	non-PAG
96	TAL-09A-230	Talus	Talus	Unknown		5.7	0.07	0.07	0.001	0.03	0.10	2.27	0	0.00	72.74	PAG	non-PAG
97	TAL-09B+10	Talus	Talus	Unknown		8.5	0.05	0.01	0.04	1.09	0.10	2.27	8.0	7.31	2.08	non-PAG	Uncertain
98	TAL-09B-10+230	Talus	Talus	Unknown		7.8	0.05	0.01	0.04	1.34	0.10	2.27	6.0	4.47	1.69	non-PAG	Uncertain
99	TAL-09B-230	Talus	Talus	Unknown		6.4	0.05	0.02	0.03	0.91	0.10	2.27	8.0	8.83	2.51	non-PAG	Uncertain
100	TAL-10+10	Talus	Talus	Unknown		8.3	0.11	0.03	0.08	2.50	0.10	2.27	8.0	3.20	0.91	non-PAG	PAG
101	TAL-10-10+230	Talus	Talus	Unknown		6.4	0.11	0.09	0.02	0.59	0.10	2.27	2.0	3.37	3.83	non-PAG	non-PAG
102	TAL-10-230	Talus	Talus	Unknown		6	0.26	0.29	0.001	0.03	0.10	2.27	1.0	32.00	72.74	non-PAG	non-PAG
103	TAL-11+10	Talus	Talus	Unknown		7.6	0.05	0.03	0.02	0.47	0.10	2.27	6.0	12.80	4.85	non-PAG	non-PAG
104	TAL-11-10+230	Talus	Talus	Unknown		7.7	0.07	0.05	0.02	0.50	0.10	2.27	7.0	14.00	4.55	non-PAG	non-PAG
105	TAL-11-230	Talus	Talus	Unknown		6.1	0.09	0.08	0.01	0.28	0.10	2.27	7.0	24.89	8.08	non-PAG	non-PAG
106	TAL-12+10	Talus	Talus	Unknown		8.3	0.06	0.01	0.05	1.63	0.10	2.27	9.0	5.54	1.40	non-PAG	Uncertain
107	TAL-12-10+230	Talus	Talus	Unknown		7.3	0.07	0.01	0.06	1.97	0.10	2.27	6.0	3.05	1.15	non-PAG	Uncertain
108	TAL-12-230	Talus	Talus	Unknown		6.6	0.02	0.01	0.02	0.59	0.10	2.27	6.0	10.11	3.83	non-PAG	non-PAG
109	TAL-13+10	Talus	Talus	Unknown		7.9	0.11	0.01	0.11	3.28	0.10	2.27	5.0	1.52	0.69	Uncertain	PAG
110	TAL-13-10+230	Talus	Talus	Unknown		7.9	0.09	0.01	0.09	2.78	0.10	2.27	6.0	2.16	0.82	Uncertain	PAG
111	TAL-13-230	Talus	Talus	Unknown		6.3	0.06	0.01	0.06	1.81	0.10	2.27	3.0	1.66	1.25	Uncertain	Uncertain
112	TAL-14+10	Talus	Talus	Unknown		7.7	0.10	0.01	0.10	3.09	0.10	2.27	7.0	2.26	0.73	Uncertain	PAG
113	TAL-14-10+230	Talus	Talus	Unknown		7.2	0.12	0.07	0.05	1.44	0.10	2.27	7.0	4.87	1.58	non-PAG	Uncertain
114	TAL-14-230	Talus	Talus	Unknown		6.4	0.19	0.18	0.01	0.41	0.10	2.27	5.0	12.31	5.60	non-PAG	non-PAG
115	TAL-15+10	Talus	Talus	Unknown		7.7	0.06	0.01	0.06	1.78	0.10	2.27	6.0	3.37	1.28	non-PAG	Uncertain
116	TAL-15-10+230	Talus	Talus	Unknown		7.6	0.04	0.01	0.04	1.16	0.10	2.27	6.0	5.19	1.97	non-PAG	Uncertain
117	TAL-15-230	Talus	Talus	Unknown		6.1	0.04	0.01	0.04	1.19	0.10	2.27	4.0	3.37	1.91	non-PAG	Uncertain
118	TAL-16+10	Talus	Talus	Unknown		7.5	0.03	0.01	0.02	0.66	0.10	2.27	8.0	12.19	3.46	non-PAG	non-PAG
119	TAL-16-10+230	Talus	Talus	Unknown		7.4	0.03	0.01	0.02	0.63	0.10	2.27	6.0	9.60	3.64	non-PAG	non-PAG
120	TAL-16-230	Talus	Talus	Unknown		6	0.03	0.01	0.02	0.66	0.10	2.27	6.0	9.14	3.46	non-PAG	non-PAG
121	TAL-17+10	Talus	Talus	Unknown		7	0.02	0.01	0.01	0.38	0.10	2.27	5.0	13.33	6.06	non-PAG	non-PAG
122	TAL-17-10+230	Talus	Talus	Unknown		6.8	0.17	0.01	0.16	5.03	0.10	2.27	4.0	0.80	0.45	PAG	PAG
123	TAL-17-230	Talus	Talus	Unknown		5.6	0.19	0.05	0.14	4.47	0.10	2.27	4.0	0.90	0.51	PAG	PAG
124	TAL-18+10	Talus	Talus	Unknown		7.1	0.24	0.02	0.22	7.00	0.10	2.27	4.0	0.57	0.32	PAG	PAG
125	TAL-18-10+230	Talus	Talus	Unknown		7	0.11	0.03	0.08	2.56	0.10	2.27	3.0	1.17	0.89	Uncertain	PAG
126	TAL-18-230	Talus	Talus	Unknown		6.2	0.09	0.06	0.03	0.88	0.10	2.27	2.0	2.29	2.60	Uncertain	Uncertain
127	TAL-19+10	Talus	Talus	Unknown		7.7	0.13	0.01	0.12	3.81	0.10	2.27	6.0	1.57	0.60	Uncertain	PAG
128	TAL-19-10+230	Talus	Talus	Unknown		7.5	0.12	0.01	0.12	3.69	0.10	2.27	6.0	1.63	0.62	Uncertain	PAG
129	TAL-19-230	Talus	Talus	Unknown		6.1	0.08	0.01	0.08	2.34	0.10	2.27	5.0	2.13	0.97	Uncertain	PAG
130	TAL-20+10	Talus	Talus	Unknown		7.5	0.14	0.01	0.14	4.34	0.10	2.27	8.0	1.84	0.52	Uncertain	PAG
131	TAL-20-10+230	Talus	Talus	Unknown		7.4	0.11	0.01	0.10	3.13	0.10	2.27	6.0	1.92	0.73	Uncertain	PAG
132	TAL-20-230	Talus	Talus	Unknown		6.4	0.08	0.03	0.05	1.59	0.10	2.27	6.0	3.76	1.43	non-PAG	Uncertain
133	TAL-21+10	Talus	Talus	Unknown		7.9	0.04	0.01	0.03	0.94	0.10	2.27	9.0	9.60	2.42	non-PAG	Uncertain
134	TAL-21-10+230	Talus	Talus	Unknown		7.2	0.04	0.01	0.03	1.03	0.10	2.27	6.0	5.82	2.20	non-PAG	Uncertain
135	TAL-21-230	Talus	Talus	Unknown		6.1	0.03	0.01	0.02	0.66	0.10	2.27	4.0	6.10	3.46	non-PAG	non-PAG
136	TAL-22+10	Talus	Talus	Unknown		8.1	0.04	0.01	0.03	0.97	0.10	2.27	10.0	10.32	2.35	non-PAG	Uncertain
137	TAL-22-10+230	Talus	Talus	Unknown		7.3	0.04	0.01	0.04	1.09	0.10	2.27	7.0	6.40	2.08	non-PAG	Uncertain
138	TAL-22-230	Talus	Talus	Unknown		5.8	0.03	0.01	0.02	0.69	0.10	2.27	3.0	4.36	3.31	non-PAG	non-PAG
139	TAL-23+10	Talus	Talus	Unknown		7.8	0.07	0.01	0.07	2.13	0.10	2.27	7.0	3.29	1.07	non-PAG	Uncertain
140	TAL-23-10+230	Talus	Talus	Unknown		7.5	0.09	0.01	0.08	2.50	0.10	2.27	8.0	3.20	0.91	non-PAG	PAG
141	TAL-23-230	Talus	Talus	Unknown		6.1	0.05	0.01	0.04	1.34	0.10	2.27	8.0	5.95	1.69	non-PAG	Uncertain
142&143	Talus Composite	Talus	Talus	Unknown	HCT	6.4	0.78	0.14	0.64	20.00	0.10	2.27	7.0	0.35	0.11	PAG	PAG
529	MC93-114 615-617	Waste Rock	GOp	8-Apr-1994		9.4	2.89	#N/A	#N/A	90.31	#N/A	#N/A	33.6	0.37	#N/A	PAG	#N/A
217	ABA-002	Waste Rock	Hlp	5-Jul-1993		8.1	6.08	0.005	6.08	190.00	1.80	40.91	48.0	0.25	0.22	PAG	PAG
219	ABA-003	Waste Rock	Hlp	5-Jul-1993		8.4	2.81	0.005	2.81	87.81	1.10	25.00	29.0	0.33	0.28	PAG	PAG
290	ABA-019	Waste Rock	Hlp	5-Jul-1993		8.1	3.88	0.020	3.86	121.25	0.10	2.27	11.0	0.09	0.02	PAG	PAG
Frostad	ABA-2	Waste Rock	Hlp	1999		8.22	4.78	0.04	4.74	149.38	0.33	7.59	33.1	0.22	0.05	PAG	PAG
Frostad	ABA-3	Waste Rock	Hlp	1999		8.01	3.13	0.02	3.11	97.81	0.15	3.39	25.0	0.26	0.03	PAG	PAG
Frostad	HC-1	Waste Rock	Hlp	1999		8.35	5.84	0.02	5.82	182.50	0.33	7.48	44.6	0.24	0.04	PAG	PAG
549	Porphry Fhp	Waste Rock	Hlp	1-Aug-1993	HCT	8.5	2.48	0.05	2.43	77.50	0.90	20.46	30.0	0.39	0.26	PAG	PAG
611	RMS-09127	Waste Rock	Hlp	28-Apr-1994		8.3	4.07	#N/A	#N/A	127.08	#N/A	#N/A	39.0	0.31	#N/A	PAG	#N/A

No.	Sample ID	Dataset	Standardized Lithocode	Sample Lithology and Description	Location
615	RMS-09135	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
617	RMS-09139	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
619	RMS-09143	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
621	RMS-09147	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline+1500
623	RMS-10001	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
625	RMS-10004	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
627	RMS-10007	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
629	RMS-10011	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
631	RMS-10015	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
633	RMS-10021	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
635	RMS-10025	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
637	RMS-10029	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
639	RMS-10033	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
641	RMS-10037	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
1242	RMU-09151	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	
1052	RMU-9155	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
1054	RMU-9159	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	1500DDH stn
1056	RMU-9163	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
1058	RMU-9167	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
1060	RMU-9171	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
1062	RMU-9175	Waste Rock	Hlp	Intrusive, Hornblende-Feldspar porphyry, >3mm Hornblende phenocrysts in a close packed <1mm Felspar matrix	Decline
Frostad	ABA-1	Waste Rock	MSI	Collected from Lac's ABA sample stockpile, Sedimentary	
Frostad	HC-2	Waste Rock	MSI	Underground slash (used to fill large-scale field humidity cells), Sedimentary with minor feldspar porphyry dyke material	
643	RMS-10041	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
645	RMS-10047	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
647	RMS-10049	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
649	RMS-10053	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
651	RMS-10057	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
653	RMS-10061	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1100 x-cut
655	RMS-10065	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
657	RMS-10067	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1100 x-cut
659	RMS-10069	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
661	RMS-10073	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
663	RMS-10077	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
665	RMS-10077R	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
666	RMS-10080	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1100 x-cut
668	RMS-10084	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1100 x-cut
678	RMS-10152	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
680	RMS-10156	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1150DDH st
684	RMS-10163	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
686	RMS-10170	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
688	RMS-10173	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
692	RMS-10180	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
696	RMS-10186	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
698	RMS-10188	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
700	RMS-10190	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1175DDH st
702	RMS-10193	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
704	RMS-10197	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
706	RMS-10208	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
708	RMS-10212	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
710	RMS-10215	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
712	RMS-10219	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
714	RMS-10226	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
716	RMS-10230	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
718	RMS-10233	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1200 x-cut
720	RMS-10236	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
722	RMS-10254	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
724	RMS-10258	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
726	RMS-10265	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
728	RMS-10265R	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
729	RMS-10268	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1200 x-cut
731	RMS-10272	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
733	RMS-10276	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
735	RMS-10280	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1200 x-cut
737	RMS-10283	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
739	RMS-10287	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1225DDH st
741	RMS-10291	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
743	RMS-10295	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1200 x-cut
745	RMS-10299	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
751	RMS-10311	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1200 x-cut
761	RMS-10331	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
763	RMS-10335	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
765	RMS-10339	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1250DDH st
767	RMS-10343	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1250DDH st
769	RMS-10343R	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1250DDH st
770	RMS-10351	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline

No.	Sample ID	Dataset	Standardized Lithocode	Date	Other Testing?	Paste pH (s.u.)	Total Sulphur	Sulphate Sulphur	Calculated Sulphide	Calculated AP (kg $CaCO_3$/t)	CO2 (Wt.%)	Calculated TIC (kg $CaCO_3$/t)	Neutralization Potential	NP/AP	TIC/AP	ARD Classification (NP/AP)	ARD Classification (TIC/AP)
615	RMS-09135	Waste Rock	Hlp	30-Apr-1994		8.25	4.35	#N/A	#N/A	135.82	#N/A	#N/A	39.5	0.29	#N/A	PAG	#N/A
617	RMS-09139	Waste Rock	Hlp	30-Apr-1994		8.25	3.49	#N/A	#N/A	108.97	#N/A	#N/A	40.3	0.37	#N/A	PAG	#N/A
619	RMS-09143	Waste Rock	Hlp	5-Jan-1994		8.1	2.18	#N/A	#N/A	68.07	#N/A	#N/A	39.3	0.58	#N/A	PAG	#N/A
621	RMS-09147	Waste Rock	Hlp	5-Jan-1994		8	3.33	#N/A	#N/A	103.97	#N/A	#N/A	41.0	0.39	#N/A	PAG	#N/A
623	RMS-10001	Waste Rock	Hlp	16-Jul-1993		9.09	2.20	#N/A	#N/A	68.69	#N/A	#N/A	47.1	0.68	#N/A	PAG	#N/A
625	RMS-10004	Waste Rock	Hlp	18-Jul-1993		9.08	2.86	#N/A	#N/A	89.31	#N/A	#N/A	50.7	0.57	#N/A	PAG	#N/A
627	RMS-10007	Waste Rock	Hlp	19-Jul-1993		9.18	2.41	#N/A	#N/A	75.23	#N/A	#N/A	45.5	0.61	#N/A	PAG	#N/A
629	RMS-10011	Waste Rock	Hlp	20-Jul-1993		8.95	3.12	#N/A	#N/A	97.48	#N/A	#N/A	30.0	0.31	#N/A	PAG	#N/A
631	RMS-10015	Waste Rock	Hlp	21-Jul-1993		9.08	1.13	#N/A	#N/A	35.32	#N/A	#N/A	39.5	1.12	#N/A	Uncertain	#N/A
633	RMS-10021	Waste Rock	Hlp	22-Jul-1993		9.15	2.97	#N/A	#N/A	92.78	#N/A	#N/A	22.6	0.24	#N/A	PAG	#N/A
635	RMS-10025	Waste Rock	Hlp	23-Jul-1993		8.92	2.60	#N/A	#N/A	81.25	#N/A	#N/A	20.2	0.25	#N/A	PAG	#N/A
637	RMS-10029	Waste Rock	Hlp	23-Jul-1993		9.12	3.02	#N/A	#N/A	94.31	#N/A	#N/A	19.3	0.20	#N/A	PAG	#N/A
639	RMS-10033	Waste Rock	Hlp	25-Jul-1993		8.9	2.46	#N/A	#N/A	76.76	#N/A	#N/A	22.0	0.29	#N/A	PAG	#N/A
641	RMS-10037	Waste Rock	Hlp	26-Jul-1993		8.7	5.42	#N/A	#N/A	169.44	#N/A	#N/A	10.2	0.06	#N/A	PAG	#N/A
1242	RMU-09151	Waste Rock	Hlp	05-Feb-94		8.05	2.77	#N/A	#N/A	86.48	#N/A	#N/A	40.0	0.46	#N/A	PAG	#N/A
1052	RMU-9155	Waste Rock	Hlp	5-Mar-1994		8.2	2.17	#N/A	#N/A	67.75	#N/A	#N/A	40.5	0.60	#N/A	PAG	#N/A
1054	RMU-9159	Waste Rock	Hlp	5-Apr-1994		8.25	1.85	#N/A	#N/A	57.76	#N/A	#N/A	39.8	0.69	#N/A	PAG	#N/A
1056	RMU-9163	Waste Rock	Hlp	5-May-1994		7.8	2.39	#N/A	#N/A	74.62	#N/A	#N/A	39.5	0.53	#N/A	PAG	#N/A
1058	RMU-9167	Waste Rock	Hlp	5-May-1994		8.25	4.41	#N/A	#N/A	137.69	#N/A	#N/A	39.5	0.29	#N/A	PAG	#N/A
1060	RMU-9171	Waste Rock	Hlp	5-Jun-1994		8.1	4.29	#N/A	#N/A	133.95	#N/A	#N/A	40.5	0.30	#N/A	PAG	#N/A
1062	RMU-9175	Waste Rock	Hlp	5-Jul-1994		8.1	3.39	#N/A	#N/A	105.85	#N/A	#N/A	39.5	0.37	#N/A	PAG	#N/A
Frostad	ABA-1	Waste Rock	MSI	1999		8.06	4.56	0.08	4.48	142.50	0.39	8.82	36.3	0.25	0.06	PAG	PAG
Frostad	HC-2	Waste Rock	MSI	1999		8.35	3.97	0.02	3.95	124.06	0.11	2.57	11.9	0.10	0.02	PAG	PAG
643	RMS-10041	Waste Rock	MSI	28-Jul-1993		8.8	3.40	#N/A	#N/A	106.15	#N/A	#N/A	49.0	0.46	#N/A	PAG	#N/A
645	RMS-10047	Waste Rock	MSI	29-Jul-1993		8.68	3.63	#N/A	#N/A	113.30	#N/A	#N/A	20.0	0.18	#N/A	PAG	#N/A
647	RMS-10049	Waste Rock	MSI	30-Jul-1993		8.95	4.51	#N/A	#N/A	140.86	#N/A	#N/A	24.3	0.17	#N/A	PAG	#N/A
649	RMS-10053	Waste Rock	MSI	31-Jul-1993		8.85	3.85	#N/A	#N/A	120.44	#N/A	#N/A	23.0	0.19	#N/A	PAG	#N/A
651	RMS-10057	Waste Rock	MSI	2-Aug-1993		8.73	5.72	#N/A	#N/A	178.62	#N/A	#N/A	18.5	0.10	#N/A	PAG	#N/A
653	RMS-10061	Waste Rock	MSI	3-Aug-1993		8.62	4.57	#N/A	#N/A	142.90	#N/A	#N/A	45.5	0.32	#N/A	PAG	#N/A
655	RMS-10065	Waste Rock	MSI	4-Aug-1993		8.84	4.28	#N/A	#N/A	133.71	#N/A	#N/A	26.0	0.19	#N/A	PAG	#N/A
657	RMS-10067	Waste Rock	MSI	4-Aug-1993		8.59	3.66	#N/A	#N/A	114.32	#N/A	#N/A	29.5	0.26	#N/A	PAG	#N/A
659	RMS-10069	Waste Rock	MSI	5-Aug-1993		8.05	4.12	#N/A	#N/A	128.61	#N/A	#N/A	45.7	0.36	#N/A	PAG	#N/A
661	RMS-10073	Waste Rock	MSI	6-Aug-1993		8.05	4.02	#N/A	#N/A	125.55	#N/A	#N/A	18.8	0.15	#N/A	PAG	#N/A
663	RMS-10077	Waste Rock	MSI	7-Aug-1993		7.6	2.73	#N/A	#N/A	85.23	#N/A	#N/A	15.5	0.18	#N/A	PAG	#N/A
665	RMS-10077R	Waste Rock	MSI	Unknown		8.2	2.87	#N/A	#N/A	89.61	#N/A	#N/A	14.5	0.16	#N/A	PAG	#N/A
666	RMS-10080	Waste Rock	MSI	8-Aug-1993		7.3	2.85	#N/A	#N/A	89.01	#N/A	#N/A	16.5	0.19	#N/A	PAG	#N/A
668	RMS-10084	Waste Rock	MSI	8-Aug-1993		7.9	5.60	#N/A	#N/A	175.15	#N/A	#N/A	16.5	0.09	#N/A	PAG	#N/A
678	RMS-10152	Waste Rock	MSI	12-Aug-1993		7.1	16.59	#N/A	#N/A	518.31	#N/A	#N/A	7.0	0.01	#N/A	PAG	#N/A
680	RMS-10156	Waste Rock	MSI	14-Aug-1993		8.2	3.96	#N/A	#N/A	123.61	#N/A	#N/A	45.5	0.37	#N/A	PAG	#N/A
684	RMS-10163	Waste Rock	MSI	15-Aug-1993		8	4.83	#N/A	#N/A	150.86	#N/A	#N/A	24.0	0.16	#N/A	PAG	#N/A
686	RMS-10170	Waste Rock	MSI	15-Aug-1993		7.2	10.43	#N/A	#N/A	326.01	#N/A	#N/A	7.6	0.02	#N/A	PAG	#N/A
688	RMS-10173	Waste Rock	MSI	16-Aug-1993		8.3	5.21	#N/A	#N/A	162.70	#N/A	#N/A	11.0	0.07	#N/A	PAG	#N/A
692	RMS-10180	Waste Rock	MSI	16-Aug-1993		8.2	7.06	#N/A	#N/A	220.78	#N/A	#N/A	10.0	0.05	#N/A	PAG	#N/A
696	RMS-10186	Waste Rock	MSI	17-Aug-1993		8.1	5.23	#N/A	#N/A	163.31	#N/A	#N/A	12.0	0.07	#N/A	PAG	#N/A
698	RMS-10188	Waste Rock	MSI	17-Aug-1993		7.5	5.30	#N/A	#N/A	165.76	#N/A	#N/A	8.0	0.05	#N/A	PAG	#N/A
700	RMS-10190	Waste Rock	MSI	18-Jul-1993		8.05	7.11	#N/A	#N/A	222.31	#N/A	#N/A	13.5	0.06	#N/A	PAG	#N/A
702	RMS-10193	Waste Rock	MSI	18-Aug-1993		8.95	2.31	#N/A	#N/A	72.16	#N/A	#N/A	24.3	0.34	#N/A	PAG	#N/A
704	RMS-10197	Waste Rock	MSI	19-Aug-1993		8.2	5.26	#N/A	#N/A	164.23	#N/A	#N/A	8.0	0.05	#N/A	PAG	#N/A
706	RMS-10208	Waste Rock	MSI	19-Aug-1993		8.08	5.72	#N/A	#N/A	178.62	#N/A	#N/A	10.0	0.06	#N/A	PAG	#N/A
708	RMS-10212	Waste Rock	MSI	20-Aug-1993		7.9	4.49	#N/A	#N/A	140.24	#N/A	#N/A	11.5	0.08	#N/A	PAG	#N/A
710	RMS-10215	Waste Rock	MSI	21-Aug-1993		8	5.30	#N/A	#N/A	165.76	#N/A	#N/A	10.5	0.06	#N/A	PAG	#N/A
712	RMS-10219	Waste Rock	MSI	21-Aug-1993		8.3	4.80	#N/A	#N/A	150.15	#N/A	#N/A	9.5	0.06	#N/A	PAG	#N/A
714	RMS-10226	Waste Rock	MSI	21-Aug-1993		8	5.25	#N/A	#N/A	163.92	#N/A	#N/A	10.0	0.06	#N/A	PAG	#N/A
716	RMS-10230	Waste Rock	MSI	22-Aug-1993		7.8	4.34	#N/A	#N/A	135.55	#N/A	#N/A	34.0	0.25	#N/A	PAG	#N/A
718	RMS-10233	Waste Rock	MSI	21-Aug-1993		8.1	6.47	#N/A	#N/A	202.30	#N/A	#N/A	9.5	0.05	#N/A	PAG	#N/A
720	RMS-10236	Waste Rock	MSI	23-Aug-1993		8.2	4.93	#N/A	#N/A	153.92	#N/A	#N/A	37.6	0.24	#N/A	PAG	#N/A
722	RMS-10254	Waste Rock	MSI	26-Aug-1993		7.3	4.76	#N/A	#N/A	148.61	#N/A	#N/A	7.6	0.05	#N/A	PAG	#N/A
724	RMS-10258	Waste Rock	MSI	26-Aug-1993		7.7	5.24	#N/A	#N/A	163.62	#N/A	#N/A	10.0	0.06	#N/A	PAG	#N/A
726	RMS-10265	Waste Rock	MSI	27-Aug-1993		8.4	5.08	#N/A	#N/A	158.62	#N/A	#N/A	15.5	0.10	#N/A	PAG	#N/A
728	RMS-10265R	Waste Rock	MSI	Unknown		8.2	4.92	#N/A	#N/A	153.62	#N/A	#N/A	16.0	0.10	#N/A	PAG	#N/A
729	RMS-10268	Waste Rock	MSI	27-Aug-1993		7.5	4.21	#N/A	#N/A	131.47	#N/A	#N/A	14.0	0.11	#N/A	PAG	#N/A
731	RMS-10272	Waste Rock	MSI	28-Aug-1993		7.9	4.84	#N/A	#N/A	151.17	#N/A	#N/A	17.6	0.12	#N/A	PAG	#N/A
733	RMS-10276	Waste Rock	MSI	28-Aug-1993		8.25	4.30	#N/A	#N/A	134.22	#N/A	#N/A	6.0	0.04	#N/A	PAG	#N/A
735	RMS-10280	Waste Rock	MSI	29-Aug-1993		8.35	4.64	#N/A	#N/A	145.14	#N/A	#N/A	8.5	0.06	#N/A	PAG	#N/A
737	RMS-10283	Waste Rock	MSI	29-Aug-1993		7.6	5.21	#N/A	#N/A	162.70	#N/A	#N/A	13.5	0.08	#N/A	PAG	#N/A
739	RMS-10287	Waste Rock	MSI	29-Aug-1993		8.05	5.76	#N/A	#N/A	179.85	#N/A	#N/A	13.5	0.07	#N/A	PAG	#N/A
741	RMS-10291	Waste Rock	MSI	31-Aug-1993		7.3	4.64	#N/A	#N/A	145.14	#N/A	#N/A	5.5	0.04	#N/A	PAG	#N/A
743	RMS-10295	Waste Rock	MSI	31-Aug-1993		7.7	5.22	#N/A	#N/A	163.01	#N/A	#N/A	20.5	0.13	#N/A	PAG	#N/A
745	RMS-10299	Waste Rock	MSI	31-Aug-1993		7.4	4.03	#N/A	#N/A	125.85	#N/A	#N/A	6.6	0.05	#N/A	PAG	#N/A
751	RMS-10311	Waste Rock	MSI	1-Sep-1993		8.6	0.03	#N/A	#N/A	0.92	#N/A	#N/A	9.5	10.33	#N/A	non-PAG	#N/A
761	RMS-10331	Waste Rock	MSI	4-Sep-1993		8.3	4.51	#N/A	#N/A	140.86	#N/A	#N/A	23.8	0.17	#N/A	PAG	#N/A
763	RMS-10335	Waste Rock	MSI	4-Sep-1993		8.1	0.02	#N/A	#N/A	0.61	#N/A	#N/A	10.0	16.33	#N/A	non-PAG	#N/A
765	RMS-10339	Waste Rock	MSI	4-Sep-1993		8.1	3.87	#N/A	#N/A	120.85	#N/A	#N/A	13.5	0.11	#N/A	PAG	#N/A
767	RMS-10343	Waste Rock	MSI	5-Sep-1993		7.95	3.53	#N/A	#N/A	110.24	#N/A	#N/A	10.5	0.10	#N/A	PAG	#N/A
769	RMS-10343R	Waste Rock	MSI	Unknown		8.5	3.42	#N/A	#N/A	106.79	#N/A	#N/A	8.0	0.07	#N/A	PAG	#N/A
770	RMS-10351	Waste Rock	MSI	6-Sep-1993		7.8	3.48	#N/A	#N/A	108.70	#N/A	#N/A	12.6	0.12	#N/A	PAG	#N/A

No.	Sample ID	Dataset	Standardized Lithocode	Sample Lithology and Description	Location
772	RMS-10359	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1200 x-cut
774	RMS-10363	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
776A	RMS-10367A	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1200 x-cut
776B	RMS-10367B	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1200 x-cut
778	RMS-10375	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1200 x-cut
780	RMS-10379	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
782	RMS-10379R	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
785	RMS-10387	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
789	RMS-10395	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
793	RMS-10403	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
797	RMS-10411	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1275DDH st
799	RMS-10415	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
803	RMS-10423	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
807	RMS-10431	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
809	RMS-10435	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
813	RMS-10447	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
815	RMS-10451	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline/1295XC
819	RMS-10459	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1295 x-cut
821	RMS-10463	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1295 x-cut
825	RMS-10471	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1295 x-cut
827	RMS-10475	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
833	RMS-10487	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
837	RMS-10499	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1295 x-cut
869	RMS-10567	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1200 slash
883	RMS-10595	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1200 x-cut
1162	RMU-9375	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1625N DDH
1186	RMU-9423	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1625 remuck
1188	RMU-9427	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	Decline
1192	RMU-9435	Waste Rock	MSI	Sedimentary, Bedded Tuff, very finely bedded mudstones and siltstones, sometimes graphitic	1625 remuck
152	11284	Waste Rock	TfB	Marc Zone waste rock; interbedded argillite and greywacke; interbedded sulphide stringers	MC 90-32
153	11285	Waste Rock	TfB	Marc Zone waste rock; thin laminations and blebs of pyrite (4.5%) and pyrrhotite (4.5%); interbedded sulphide stringers	MC 90-32
154	11286	Waste Rock	TfB	Marc Zone waste rock; 65% argillite and 35% greywacke; interbedded sulphide stringers	MC 90-32
155	11287	Waste Rock	TfB	Marc Zone waste rock; sphalerite (2%); interbedded sulphide stringers	MC 90-32
156	11288	Waste Rock	TfB	Marc Zone waste rock; interbedded sulphide stringers	MC 90-32
157	11289	Waste Rock	TfB	Marc Zone waste rock; interbedded sulphide stringers	MC 90-32
181	20872	Waste Rock	TfB	Marc Zone waste rock; dacite lapilli tuff with some disseminated pyrite in patches and veins	MC 90-34
215	ABA-001	Waste Rock	TfB	Marc Zone waste rock	Section 1050N, MC91-69
221	ABA-004	Waste Rock	TfB	Marc Zone waste rock	Section 1100N, MC91-68
268	ABA-008	Waste Rock	TfB	Andesitic lapilli; carbonate alteration; disseminated to granular pyrite (1%); disseminated pyrrhotite (2%)	Section 1100N, MC89-07
274	ABA-011	Waste Rock	TfB	Marc Zone waste rock	Section 1125N, MC90-57
278	ABA-013	Waste Rock	TfB	Marc Zone waste rock	Section 1150N, MC90-39
280	ABA-014	Waste Rock	TfB	Marc Zone waste rock	Section 1175N, MC90-39
298	ABA-023	Waste Rock	TfB	Andesitic lapilli tuff; moderate to strong calcite alteratioon; disseminated and patchy medium granular pyrite (3%); disseminated pyrrhotite (2.3%)	Section 1200N, MC89-13
300	ABA-024	Waste Rock	TfB	Andesitic and feldspar-hornblende-porphyry tuff; pyrite (3.3%); pyrrhotite (3.3%)	Section 1200N, MC89-13
304	ABA-027	Waste Rock	TfB	Marc Zone waste rock	Section 1225N, MC90-44
306	ABA-028	Waste Rock	TfB	Marc Zone waste rock	Section 1250N, MC90-44
308	ABA-029	Waste Rock	TfB	Andesitic and fine-lappili tuff; pyrite (2%)	Section 1225N, MC90-34
318	ABA-036	Waste Rock	TfB	Marc Zone waste rock	Section 1300N, MC90-52
373	Black Tuff	Waste Rock	TfB	Underground mine wall, bulk sample; bedded fine-grained calcareous andesitic tuff; pyrite (5%) and pyrrhotite (5%)	Underground mine wall, Marc Zone
530	MC93-147 107-109	Waste Rock	TfB	Klohn-Crippen number: KC-94-05	MC93-114
532	MC93-147 191-193	Waste Rock	TfB	Klohn-Crippen number: KC-94-06	MC93-114
541	MC93-154 97-100	Waste Rock	TfB	Klohn-Crippen number: KC-94-11	MC93-154
168	19403	Waste Rock	xHlp	Marc Zone waste rock; dacite lapilli tuff; disseminated pyrite	MC 90-25
169	19404	Waste Rock	xHlp	Marc Zone waste rock; weakly mineralized zone; disseminated pyrite	MC 90-25
170	19405	Waste Rock	xHlp	Marc Zone waste rock; disseminated pyrite (4.5%)	MC 90-25
171	19406	Waste Rock	xHlp	Marc Zone waste rock; disseminated pyrite	MC 90-25
282	ABA-015	Waste Rock	xHlp	Feldspar-hornblende porphyry (Fhp); fine disseminated pyrite (1%); fracture-fill pyrrhotite (2%)	Section 1150N, MC89-19
528	MC93-114 427-429	Waste Rock	xHlp	Klohn-Crippen number: KC-94-07	MC93-114
158	13289	Waste Rock	xTF	Marc Zone waste rock; tuff with fragmental pyrite porphyry with local carbonates; heterolithic fragments	MC 90-40
159	13290	Waste Rock	xTF	Marc Zone waste rock; tuff with fragmental pyrite porphyry with local carbonates; 10% angular fragments in ash matrix	MC 90-40
160	13291	Waste Rock	xTF	Marc Zone waste rock; tuff with fragmental pyrite porphyry with local carbonates; hornblende-plagioclase porphyry; argillic; dacitic volcanic	MC 90-40
161	13292	Waste Rock	xTF	Marc Zone waste rock; tuff with fragmental pyrite porphyry with local carbonates; pyrite (4%); disseminated sphalerite (1.5%)	MC 90-40
162	13294	Waste Rock	xTF	Marc Zone waste rock; tuff with fragmental pyrite porphyry with local carbonates; hornblende-plagioclase porphyry	MC 90-40
163	13295	Waste Rock	xTF	Marc Zone waste rock; tuff with fragmental pyrite porphyry with local carbonates; weakly sericitic, moderate-to-strong chloritic alternation; pyrite (1.5%) and pyrrhotite (2%)	MC 90-40
172	19659	Waste Rock	xTF	Marc Zone waste rock; crystal ash tuff with minor pyrite	MC 90-22
173	19660	Waste Rock	xTF	Marc Zone waste rock; tuff with minor pyrite; moderate sericitic alteration	MC 90-22
174	19661	Waste Rock	xTF	Marc Zone waste rock; tuff with disseminated pyrite (2.5%)	MC 90-22
175	19662	Waste Rock	xTF	Marc Zone waste rock; tuff with minor pyrite; pyrrhotite (5%)	MC 90-22
176	19663	Waste Rock	xTF	Marc Zone waste rock; tuff with minor pyrite	MC 90-22
177	19664	Waste Rock	xTF	Marc Zone waste rock; tuff with minor pyrite	MC 90-22
178	19665	Waste Rock	xTF	Marc Zone waste rock; tuff with minor pyrite	MC 90-22
179	19666	Waste Rock	xTF	Marc Zone waste rock; tuff with minor pyrite	MC 90-22
180	19667	Waste Rock	xTF	Marc Zone waste rock; tuff with minor pyrite	MC 90-22
182	20873	Waste Rock	xTF	Marc Zone waste rock; tuff with 4% lapilli fragments; strong chlorite alteration; disseminated pyrite in patches and veins	MC 90-34
183	20874	Waste Rock	xTF	Marc Zone waste rock; tuff with pyrite and pyrrhotite patches and veins (6%)	MC 90-34
184	20875	Waste Rock	xTF	Marc Zone waste rock; tuff with some disseminated pyrite patches and small cubes (5%)	MC 90-34

No.	Sample ID	Dataset	Standardized Lithocode	Date	Other Testing?	Paste pH (s.u.)	Total Sulphur	Sulphate Sulphur	Calculated Sulphide	Calculated AP (kg $CaCO_3$/t)	CO2 (Wt.%)	Calculated TIC (kg $CaCO_3$/t)	Neutralization Potential	NP/AP	TIC/AP	ARD Classification (NP/AP)	ARD Classification (TIC/AP)
772	RMS-10359	Waste Rock	MSI	6-Sep-1993		8.4	3.93	#N/A	#N/A	122.69	#N/A	#N/A	13.0	0.11	#N/A	PAG	#N/A
774	RMS-10363	Waste Rock	MSI	6-Sep-1993		7.9	2.84	#N/A	#N/A	88.70	#N/A	#N/A	12.6	0.14	#N/A	PAG	#N/A
776A	RMS-10367A	Waste Rock	MSI	7-Sep-1993		8.2	3.58	#N/A	#N/A	111.77	#N/A	#N/A	12.0	0.11	#N/A	PAG	#N/A
776B	RMS-10367B	Waste Rock	MSI	7-Sep-1993		8.35	3.74	#N/A	#N/A	116.77	#N/A	#N/A	16.0	0.14	#N/A	PAG	#N/A
778	RMS-10375	Waste Rock	MSI	7-Sep-1993		7.9	3.91	#N/A	#N/A	122.08	#N/A	#N/A	14.0	0.11	#N/A	PAG	#N/A
780	RMS-10379	Waste Rock	MSI	9-Sep-1993		8.13	3.58	#N/A	#N/A	111.77	#N/A	#N/A	18.5	0.17	#N/A	PAG	#N/A
782	RMS-10379R	Waste Rock	MSI	Unknown		8.08	3.48	#N/A	#N/A	108.65	#N/A	#N/A	19.0	0.17	#N/A	PAG	#N/A
785	RMS-10387	Waste Rock	MSI	9-Sep-1993		8.1	3.67	#N/A	#N/A	114.62	#N/A	#N/A	8.5	0.07	#N/A	PAG	#N/A
789	RMS-10395	Waste Rock	MSI	10-Sep-1993		7.7	2.47	#N/A	#N/A	77.17	#N/A	#N/A	9.5	0.12	#N/A	PAG	#N/A
793	RMS-10403	Waste Rock	MSI	11-Sep-1993		8.25	2.97	#N/A	#N/A	92.78	#N/A	#N/A	9.0	0.10	#N/A	PAG	#N/A
797	RMS-10411	Waste Rock	MSI	12-Sep-1993		8.1	4.32	#N/A	#N/A	134.94	#N/A	#N/A	14.0	0.10	#N/A	PAG	#N/A
799	RMS-10415	Waste Rock	MSI	12-Sep-1993		8.35	3.15	#N/A	#N/A	98.40	#N/A	#N/A	14.3	0.15	#N/A	PAG	#N/A
803	RMS-10423	Waste Rock	MSI	12-Sep-1993		8.05	3.78	#N/A	#N/A	117.99	#N/A	#N/A	8.0	0.07	#N/A	PAG	#N/A
807	RMS-10431	Waste Rock	MSI	14-Sep-1993		8.4	3.29	#N/A	#N/A	102.68	#N/A	#N/A	32.6	0.32	#N/A	PAG	#N/A
809	RMS-10435	Waste Rock	MSI	14-Sep-1993		8.4	2.58	#N/A	#N/A	80.53	#N/A	#N/A	11.5	0.14	#N/A	PAG	#N/A
813	RMS-10447	Waste Rock	MSI	16-Sep-1993		7.5	4.62	#N/A	#N/A	144.23	#N/A	#N/A	15.7	0.11	#N/A	PAG	#N/A
815	RMS-10451	Waste Rock	MSI	17-Sep-1993		7.9	4.17	#N/A	#N/A	130.24	#N/A	#N/A	14.0	0.11	#N/A	PAG	#N/A
819	RMS-10459	Waste Rock	MSI	17-Sep-1993		8.2	4.38	#N/A	#N/A	136.77	#N/A	#N/A	10.5	0.08	#N/A	PAG	#N/A
821	RMS-10463	Waste Rock	MSI	18-Sep-1993		8.3	4.63	#N/A	#N/A	144.84	#N/A	#N/A	22.6	0.16	#N/A	PAG	#N/A
825	RMS-10471	Waste Rock	MSI	19-Sep-1993		7.6	4.23	#N/A	#N/A	132.08	#N/A	#N/A	31.5	0.24	#N/A	PAG	#N/A
827	RMS-10475	Waste Rock	MSI	18-Sep-1993		7.8	5.21	#N/A	#N/A	162.70	#N/A	#N/A	29.0	0.18	#N/A	PAG	#N/A
833	RMS-10487	Waste Rock	MSI	22-Sep-1993		7.7	3.84	#N/A	#N/A	119.93	#N/A	#N/A	33.5	0.28	#N/A	PAG	#N/A
837	RMS-10499	Waste Rock	MSI	23-Sep-1993		8.25	4.93	#N/A	#N/A	153.92	#N/A	#N/A	14.0	0.09	#N/A	PAG	#N/A
869	RMS-10567	Waste Rock	MSI	3-Oct-1993		8.25	2.77	#N/A	#N/A	86.45	#N/A	#N/A	41.5	0.48	#N/A	PAG	#N/A
883	RMS-10595	Waste Rock	MSI	8-Oct-1993		7.8	1.40	#N/A	#N/A	43.69	#N/A	#N/A	107.6	2.46	#N/A	Uncertain	#N/A
1162	RMU-9375	Waste Rock	MSI	6-Jun-1994		8.2	0.92	#N/A	#N/A	28.72	#N/A	#N/A	56.0	1.95	#N/A	Uncertain	#N/A
1186	RMU-9423	Waste Rock	MSI	18-Jun-1994		7.7	0.99	#N/A	#N/A	30.91	#N/A	#N/A	13.5	0.44	#N/A	PAG	#N/A
1188	RMU-9427	Waste Rock	MSI	16-Jun-1994		7.7	1.44	#N/A	#N/A	44.96	#N/A	#N/A	15.5	0.34	#N/A	PAG	#N/A
1192	RMU-9435	Waste Rock	MSI	20-Jun-1994		7.8	0.82	#N/A	#N/A	25.60	#N/A	#N/A	34.8	1.36	#N/A	Uncertain	#N/A
152	11284	Waste Rock	TfB	1-Jan-1991		#N/A	5.50	#N/A	#N/A	171.88	#N/A	#N/A	38.9	0.23	#N/A	PAG	#N/A
153	11285	Waste Rock	TfB	1-Jan-1991		#N/A	0.52	#N/A	#N/A	16.25	#N/A	#N/A	88.9	5.47	#N/A	non-PAG	#N/A
154	11286	Waste Rock	TfB	1-Jan-1991		#N/A	0.75	#N/A	#N/A	23.44	#N/A	#N/A	38.9	1.66	#N/A	Uncertain	#N/A
155	11287	Waste Rock	TfB	1-Jan-1991		#N/A	2.16	#N/A	#N/A	67.50	#N/A	#N/A	27.8	0.41	#N/A	PAG	#N/A
156	11288	Waste Rock	TfB	1-Jan-1991		#N/A	2.62	#N/A	#N/A	81.88	#N/A	#N/A	77.8	0.95	#N/A	PAG	#N/A
157	11289	Waste Rock	TfB	1-Jan-1991		#N/A	2.64	#N/A	#N/A	82.50	#N/A	#N/A	33.3	0.40	#N/A	PAG	#N/A
181	20872	Waste Rock	TfB	1-Jan-1991		#N/A	2.75	#N/A	#N/A	85.94	#N/A	#N/A	100.0	1.16	#N/A	Uncertain	#N/A
215	ABA-001	Waste Rock	TfB	5-Jul-1993		8.2	4.02	0.005	4.02	125.63	1.90	43.19	38.0	0.30	0.34	PAG	PAG
221	ABA-004	Waste Rock	TfB	5-Jul-1993		8.1	5.18	0.005	5.18	161.88	0.90	20.46	26.0	0.16	0.13	PAG	PAG
268	ABA-008	Waste Rock	TfB	5-Jul-1993		8.2	3.60	0.005	3.60	112.50	0.90	20.46	30.0	0.27	0.18	PAG	PAG
274	ABA-011	Waste Rock	TfB	5-Jul-1993		8.1	6.16	0.030	6.13	192.50	1.10	25.00	30.0	0.16	0.13	PAG	PAG
278	ABA-013	Waste Rock	TfB	5-Jul-1993		8.5	3.20	0.010	3.19	100.00	0.70	15.91	22.0	0.22	0.16	PAG	PAG
280	ABA-014	Waste Rock	TfB	5-Jul-1993		8.5	2.80	0.005	2.80	87.50	0.40	9.09	15.0	0.17	0.10	PAG	PAG
298	ABA-023	Waste Rock	TfB	5-Jul-1993		8	5.98	0.005	5.98	186.88	0.50	11.37	22.0	0.12	0.06	PAG	PAG
300	ABA-024	Waste Rock	TfB	5-Jul-1993	HCT	8.3	3.44	0.005	3.44	107.50	2.20	50.01	63.0	0.59	0.47	PAG	PAG
304	ABA-027	Waste Rock	TfB	5-Jul-1993		8.4	3.23	0.005	3.23	100.94	0.10	2.27	19.0	0.19	0.02	PAG	PAG
306	ABA-028	Waste Rock	TfB	5-Jul-1993		8.2	4.77	0.005	4.77	149.06	0.70	15.91	29.0	0.19	0.11	PAG	PAG
308	ABA-029	Waste Rock	TfB	5-Jul-1993		8.3	3.19	0.005	3.19	99.69	0.10	2.27	14.0	0.14	0.02	PAG	PAG
318	ABA-036	Waste Rock	TfB	5-Jul-1993		8.3	4.11	0.005	4.11	128.44	0.40	9.09	18.0	0.14	0.07	PAG	PAG
373	Black Tuff	Waste Rock	TfB	1-Aug-1993	HCT	8.6	4.24	0.02	4.22	132.50	0.60	13.64	24.0	0.18	0.10	PAG	PAG
530	MC93-147 107-109	Waste Rock	TfB	8-Apr-1994		9.3	2.70	#N/A	#N/A	84.38	#N/A	#N/A	28.0	0.33	#N/A	PAG	#N/A
532	MC93-147 191-193	Waste Rock	TfB	8-Apr-1994		9.8	1.27	#N/A	#N/A	39.69	#N/A	#N/A	10.3	0.26	#N/A	PAG	#N/A
541	MC93-154 97-100	Waste Rock	TfB	8-Apr-1994		9.3	2.98	#N/A	#N/A	93.13	#N/A	#N/A	32.5	0.35	#N/A	PAG	#N/A
168	19403	Waste Rock	xHlp	1-Jan-1991		#N/A	1.75	#N/A	#N/A	54.69	#N/A	#N/A	44.4	0.81	#N/A	PAG	#N/A
169	19404	Waste Rock	xHlp	1-Jan-1991		#N/A	1.61	#N/A	#N/A	50.31	#N/A	#N/A	33.3	0.66	#N/A	PAG	#N/A
170	19405	Waste Rock	xHlp	1-Jan-1991		#N/A	1.05	#N/A	#N/A	32.81	#N/A	#N/A	55.6	1.69	#N/A	Uncertain	#N/A
171	19406	Waste Rock	xHlp	1-Jan-1991		#N/A	1.07	#N/A	#N/A	33.44	#N/A	#N/A	72.3	2.16	#N/A	Uncertain	#N/A
282	ABA-015	Waste Rock	xHlp	5-Jul-1993		8	5.17	0.005	5.17	161.56	1.60	36.37	44.0	0.27	0.23	PAG	PAG
528	MC93-114 427-429	Waste Rock	xHlp	8-Apr-1994		9.6	3.24	#N/A	#N/A	101.25	#N/A	#N/A	39.8	0.39	#N/A	PAG	#N/A
158	13289	Waste Rock	xTF	1-Jan-1991		#N/A	3.39	#N/A	#N/A	105.94	#N/A	#N/A	38.9	0.37	#N/A	PAG	#N/A
159	13290	Waste Rock	xTF	1-Jan-1991		#N/A	4.67	#N/A	#N/A	145.94	#N/A	#N/A	44.4	0.30	#N/A	PAG	#N/A
160	13291	Waste Rock	xTF	1-Jan-1991		#N/A	6.67	#N/A	#N/A	208.44	#N/A	#N/A	50.0	0.24	#N/A	PAG	#N/A
161	13292	Waste Rock	xTF	1-Jan-1991		#N/A	4.46	#N/A	#N/A	139.38	#N/A	#N/A	72.3	0.52	#N/A	PAG	#N/A
162	13294	Waste Rock	xTF	1-Jan-1991		#N/A	2.06	#N/A	#N/A	64.38	#N/A	#N/A	144.5	2.24	#N/A	Uncertain	#N/A
163	13295	Waste Rock	xTF	1-Jan-1991		#N/A	3.04	#N/A	#N/A	95.00	#N/A	#N/A	144.5	1.52	#N/A	Uncertain	#N/A
172	19659	Waste Rock	xTF	1-Jan-1991		#N/A	1.46	#N/A	#N/A	45.67	#N/A	#N/A	72.3	1.58	#N/A	Uncertain	#N/A
173	19660	Waste Rock	xTF	1-Jan-1991		#N/A	1.14	#N/A	#N/A	35.62	#N/A	#N/A	77.8	2.18	#N/A	Uncertain	#N/A
174	19661	Waste Rock	xTF	1-Jan-1991		#N/A	1.04	#N/A	#N/A	32.50	#N/A	#N/A	77.8	2.39	#N/A	Uncertain	#N/A
175	19662	Waste Rock	xTF	1-Jan-1991		#N/A	1.27	#N/A	#N/A	39.69	#N/A	#N/A	50.0	1.26	#N/A	Uncertain	#N/A
176	19663	Waste Rock	xTF	1-Jan-1991		#N/A	1.16	#N/A	#N/A	36.25	#N/A	#N/A	72.3	1.99	#N/A	Uncertain	#N/A
177	19664	Waste Rock	xTF	1-Jan-1991		#N/A	2.10	#N/A	#N/A	65.62	#N/A	#N/A	66.7	1.02	#N/A	Uncertain	#N/A
178	19665	Waste Rock	xTF	1-Jan-1991		#N/A	1.24	#N/A	#N/A	38.75	#N/A	#N/A	44.4	1.15	#N/A	Uncertain	#N/A
179	19666	Waste Rock	xTF	1-Jan-1991		#N/A	1.31	#N/A	#N/A	40.94	#N/A	#N/A	27.8	0.68	#N/A	PAG	#N/A
180	19667	Waste Rock	xTF	1-Jan-1991		#N/A	0.58	#N/A	#N/A	18.13	#N/A	#N/A	61.2	3.37	#N/A	non-PAG	#N/A
182	20873	Waste Rock	xTF	1-Jan-1991		#N/A	2.43	#N/A	#N/A	75.94	#N/A	#N/A	83.4	1.10	#N/A	Uncertain	#N/A
183	20874	Waste Rock	xTF	1-Jan-1991		#N/A	1.48	#N/A	#N/A	46.25	#N/A	#N/A	100.0	2.16	#N/A	Uncertain	#N/A
184	20875	Waste Rock	xTF	1-Jan-1991		#N/A	1.32	#N/A	#N/A	41.25	#N/A	#N/A	72.3	1.75	#N/A	Uncertain	#N/A

No.	Sample ID	Dataset	Standardized Lithocode	Sample Lithology and Description	Location
185	20876	Waste Rock	xTF	Marc Zone waste rock; tuff with some disseminated pyrite in patches and veins	MC 90-34
186	20877	Waste Rock	xTF	Marc Zone waste rock; tuff with some disseminated pyrite in patches and veins	MC 90-34
233	ABA-005	Waste Rock	xTF	Feldspar-hornblende porphyry (Fhp); patchy pervasive carbonate; disseminated and coarse-grained pyrite (5%); disseminated pyrrhotite (2%)	Section 1075N, MC89-06
245	ABA-006	Waste Rock	xTF	Marc Zone waste rock	Section 1100N, MC90-38
257	ABA-007	Waste Rock	xTF	Feldspar-hornblende-porphyry andesitic and lapilli tuff; fine disseminated pyrite (1.5%) and pyrrhotite (1%)	Section 1100N, MC89-05
276	ABA-012	Waste Rock	xTF	Marc Zone waste rock	Section 1150N, MC90-57
284	ABA-016	Waste Rock	xTF	Feldspar-hornblende-porphyry and agglomerate tuff; fine-to-medium-grained disseminated and fracture-fill pyrite (3%); fine disseminated pyrrhotite (2%)	Section 1150N, MC89-19
288	ABA-018	Waste Rock	xTF	Feldspar-hornblende porphyry (Fhp); disseminated and vein pyrite (6.2%); disseminated and stringer pyrrhotite (1.2%)	Section 1150N, MC89-08
292	ABA-020	Waste Rock	xTF	Feldspar crystal tuff: disseminated, stringer, and vein pyrite (1%); disseminated pyrrhotite (2%)	Section 1175N, MC90-31
302	ABA-026	Waste Rock	xTF	Marc Zone waste rock	Section 1200N, MC90-37
312	ABA-031	Waste Rock	xTF	Feldspar-crystal andesitic lapilli tuff; patchy to vein pyrite (5%) disseminated pyrrhotite (1%); sphalerite (1%)	Section 1250N, MC90-40
314	ABA-033	Waste Rock	xTF	Marc Zone waste rock	Section 1275N, MC90-42
316	ABA-035	Waste Rock	xTF	Marc Zone waste rock	Section 1300N, MC90-53
320	ABA-037	Waste Rock	xTF	Marc Zone waste rock	Section 1325N, MC90-51
322	ABA-038	Waste Rock	xTF	Marc Zone waste rock	Section 1350N, MC92-71
545	MC90-37 157-160	Waste Rock	xTF	Sample substituted for 90-22, 179-182. Not originally requested by Rescan. On a separate certificate from main sample batch.	MC90-37
546	MC90-40 186-189	Waste Rock	xTF	Sample substituted for 90-26, 183.00 to 186.00, which was reported as missing by Rescan. On separate certificate from main sample batch.	MC90-40
526	MC92-76 187-190	Waste Rock	xTF	Klohn-Crippen number: KC-94-12	MC92-76
550	RMS-09003	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
552	RMS-09007	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
554	RMS-09011	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
556	RMS-09015	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
559	RMS-09023	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
561	RMS-09027	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
563	RMS-09031	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1425
565	RMS-09035	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
567	RMS-09039	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1425 stn
569	RMS-09043	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
571	RMS-09047	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
573	RMS-09051	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
575	RMS-09055	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
577	RMS-09059	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
579	RMS-09063	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
581	RMS-09067	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
583	RMS-09071	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
585	RMS-09075	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1450
587	RMS-09079	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
589	RMS-09083	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1450 stn
591	RMS-09087	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
593	RMS-09091	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1450
595	RMS-09095	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
597	RMS-09099	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
599	RMS-09103	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
601	RMS-09107	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
603	RMS-09111	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
605	RMS-09115	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1475
607	RMS-09119	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1475
609	RMS-09123	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
613	RMS-09131	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1475
670	RMS-10088	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
672	RMS-10091	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1100 x-cut
676	RMS-10097	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1150DDH st
694	RMS-10183	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1100 x-cut
747	RMS-10303	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1225DDH st
749	RMS-10307	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1225DDH st
753	RMS-10315	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
755	RMS-10319	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
757	RMS-10323	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
759	RMS-10327	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1225DDH st
783	RMS-10383	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
787	RMS-10391	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
791	RMS-10399	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
795	RMS-10407	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
801	RMS-10419	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
805	RMS-10427	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
811	RMS-10443	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
817	RMS-10455	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
823	RMS-10467	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
829	RMS-10479	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
831	RMS-10483	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
835	RMS-10491	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
839	RMS-10503	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
841	RMS-10507	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
843	RMS-10511	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
845	RMS-10515	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
847	RMS-10519	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut

No.	Sample ID	Dataset	Standardized Lithocode	Date	Other Testing?	Paste pH (s.u.)	Total Sulphur	Sulphate Sulphur	Calculated Sulphide	Calculated AP (kg $CaCO_3$/t)	CO2 (Wt.%)	Calculated TIC (kg $CaCO_3$/t)	Neutralization Potential	NP/AP	TIC/AP	ARD Classification (NP/AP)	ARD Classification (TIC/AP)
185	20876	Waste Rock	xTF	1-Jan-1991		#N/A	0.88	#N/A	#N/A	27.50	#N/A	#N/A	61.2	2.22	#N/A	Uncertain	#N/A
186	20877	Waste Rock	xTF	1-Jan-1991		#N/A	1.31	#N/A	#N/A	40.94	#N/A	#N/A	100.0	2.44	#N/A	Uncertain	#N/A
233	ABA-005	Waste Rock	xTF	5-Jul-1993		8.3	3.93	0.005	3.93	122.81	2.70	61.37	57.0	0.46	0.50	PAG	PAG
245	ABA-006	Waste Rock	xTF	5-Jul-1993		8.2	5.92	0.005	5.92	185.00	0.70	15.91	25.0	0.14	0.09	PAG	PAG
257	ABA-007	Waste Rock	xTF	5-Jul-1993		8	5.81	0.050	5.76	181.56	1.10	25.00	30.0	0.17	0.14	PAG	PAG
276	ABA-012	Waste Rock	xTF	5-Jul-1993		8.2	3.93	0.005	3.93	122.81	0.10	2.27	16.0	0.13	0.02	PAG	PAG
284	ABA-016	Waste Rock	xTF	5-Jul-1993		7.9	5.20	0.005	5.20	162.50	0.10	2.27	14.0	0.09	0.01	PAG	PAG
288	ABA-018	Waste Rock	xTF	5-Jul-1993		7.4	10.30	0.020	10.28	321.88	0.10	2.27	13.0	0.04	0.01	PAG	PAG
292	ABA-020	Waste Rock	xTF	5-Jul-1993		8	3.97	0.010	3.96	124.06	0.10	2.27	16.0	0.13	0.02	PAG	PAG
302	ABA-026	Waste Rock	xTF	5-Jul-1993		8.4	3.93	0.005	3.93	122.81	0.50	11.37	25.0	0.20	0.09	PAG	PAG
312	ABA-031	Waste Rock	xTF	5-Jul-1993	HCT	6.7	8.35	0.005	8.35	260.94	0.10	2.27	6.0	0.02	0.01	PAG	PAG
314	ABA-033	Waste Rock	xTF	5-Jul-1993		7.5	6.65	0.005	6.65	207.81	0.10	2.27	8.0	0.04	0.01	PAG	PAG
316	ABA-035	Waste Rock	xTF	5-Jul-1993		8.3	2.80	0.005	2.80	87.50	1.20	27.28	46.0	0.53	0.31	PAG	PAG
320	ABA-037	Waste Rock	xTF	5-Jul-1993		8.4	2.52	0.005	2.52	78.75	0.90	20.46	32.0	0.41	0.26	PAG	PAG
322	ABA-038	Waste Rock	xTF	5-Jul-1993		8.7	3.13	0.005	3.13	97.81	1.60	36.37	45.0	0.46	0.37	PAG	PAG
545	MC90-37 157-160	Waste Rock	xTF	5-Jul-1993		8.1	3.95	0.005	3.95	123.44	0.50	11.37	24.0	0.19	0.09	PAG	PAG
546	MC90-40 186-189	Waste Rock	xTF	5-Jul-1993		7.1	21.70	0.10	21.60	678.13	0.10	2.27	11.0	0.02	0.00	PAG	PAG
526	MC92-76 187-190	Waste Rock	xTF	8-Apr-1994		8.9	9.60	#N/A	#N/A	300.00	#N/A	#N/A	39.7	0.13	#N/A	PAG	#N/A
550	RMS-09003	Waste Rock	xTF	4-Nov-1994		8.2	3.12	#N/A	#N/A	97.42	#N/A	#N/A	57.3	0.59	#N/A	PAG	#N/A
552	RMS-09007	Waste Rock	xTF	4-Dec-1994		7.9	3.45	#N/A	#N/A	107.72	#N/A	#N/A	78.5	0.73	#N/A	PAG	#N/A
554	RMS-09011	Waste Rock	xTF	4-Dec-1994		8.05	3.07	#N/A	#N/A	95.85	#N/A	#N/A	131.5	1.37	#N/A	Uncertain	#N/A
556	RMS-09015	Waste Rock	xTF	14-Apr-1994		7.95	3.84	#N/A	#N/A	119.90	#N/A	#N/A	68.0	0.57	#N/A	PAG	#N/A
559	RMS-09023	Waste Rock	xTF	15-Apr-1994		7.8	4.24	#N/A	#N/A	132.38	#N/A	#N/A	78.5	0.59	#N/A	PAG	#N/A
561	RMS-09027	Waste Rock	xTF	16-Apr-1994		7.8	3.98	#N/A	#N/A	124.27	#N/A	#N/A	53.5	0.43	#N/A	PAG	#N/A
563	RMS-09031	Waste Rock	xTF	16-Apr-1994		7.7	5.15	#N/A	#N/A	160.80	#N/A	#N/A	38.5	0.24	#N/A	PAG	#N/A
565	RMS-09035	Waste Rock	xTF	17-Apr-1994		7.5	6.60	#N/A	#N/A	206.39	#N/A	#N/A	22.8	0.11	#N/A	PAG	#N/A
567	RMS-09039	Waste Rock	xTF	18-Apr-1994		8.4	4.35	#N/A	#N/A	135.82	#N/A	#N/A	27.0	0.20	#N/A	PAG	#N/A
569	RMS-09043	Waste Rock	xTF	18-Apr-1994		8.4	3.21	#N/A	#N/A	100.22	#N/A	#N/A	19.3	0.19	#N/A	PAG	#N/A
571	RMS-09047	Waste Rock	xTF	19-Apr-1994		8.3	3.44	#N/A	#N/A	107.41	#N/A	#N/A	22.5	0.21	#N/A	PAG	#N/A
573	RMS-09051	Waste Rock	xTF	19-Apr-1994		8.1	3.02	#N/A	#N/A	94.29	#N/A	#N/A	35.5	0.38	#N/A	PAG	#N/A
575	RMS-09055	Waste Rock	xTF	20-Apr-1994		8.25	3.46	#N/A	#N/A	108.03	#N/A	#N/A	30.0	0.28	#N/A	PAG	#N/A
577	RMS-09059	Waste Rock	xTF	20-Apr-1994		8.25	5.35	#N/A	#N/A	167.05	#N/A	#N/A	34.8	0.21	#N/A	PAG	#N/A
579	RMS-09063	Waste Rock	xTF	20-Apr-1994		8.1	2.62	#N/A	#N/A	81.81	#N/A	#N/A	36.0	0.44	#N/A	PAG	#N/A
581	RMS-09067	Waste Rock	xTF	21-Apr-1994		8	2.81	#N/A	#N/A	87.74	#N/A	#N/A	43.0	0.49	#N/A	PAG	#N/A
583	RMS-09071	Waste Rock	xTF	21-Apr-1994		8.1	3.37	#N/A	#N/A	105.22	#N/A	#N/A	39.0	0.37	#N/A	PAG	#N/A
585	RMS-09075	Waste Rock	xTF	22-Apr-1994		8.2	3.12	#N/A	#N/A	97.42	#N/A	#N/A	48.3	0.50	#N/A	PAG	#N/A
587	RMS-09079	Waste Rock	xTF	22-Apr-1994		8.25	2.32	#N/A	#N/A	72.44	#N/A	#N/A	30.5	0.42	#N/A	PAG	#N/A
589	RMS-09083	Waste Rock	xTF	23-Apr-1994		8.25	2.23	#N/A	#N/A	69.63	#N/A	#N/A	51.8	0.74	#N/A	PAG	#N/A
591	RMS-09087	Waste Rock	xTF	23-Apr-1994		8.25	4.30	#N/A	#N/A	134.26	#N/A	#N/A	64.5	0.48	#N/A	PAG	#N/A
593	RMS-09091	Waste Rock	xTF	24-Apr-1994		8.25	4.61	#N/A	#N/A	143.94	#N/A	#N/A	147.5	1.03	#N/A	Uncertain	#N/A
595	RMS-09095	Waste Rock	xTF	24-Apr-1994		8.25	2.66	#N/A	#N/A	83.05	#N/A	#N/A	45.0	0.54	#N/A	PAG	#N/A
597	RMS-09099	Waste Rock	xTF	25-Apr-1994		8.25	2.69	#N/A	#N/A	83.99	#N/A	#N/A	45.0	0.54	#N/A	PAG	#N/A
599	RMS-09103	Waste Rock	xTF	25-Apr-1994		8.25	4.02	#N/A	#N/A	125.52	#N/A	#N/A	40.0	0.32	#N/A	PAG	#N/A
601	RMS-09107	Waste Rock	xTF	26-Apr-1994		8.25	4.72	#N/A	#N/A	147.37	#N/A	#N/A	34.8	0.24	#N/A	PAG	#N/A
603	RMS-09111	Waste Rock	xTF	26-Apr-1994		8.25	3.48	#N/A	#N/A	108.65	#N/A	#N/A	34.8	0.32	#N/A	PAG	#N/A
605	RMS-09115	Waste Rock	xTF	27-Apr-1994		7.5	4.02	#N/A	#N/A	125.52	#N/A	#N/A	40.0	0.32	#N/A	PAG	#N/A
607	RMS-09119	Waste Rock	xTF	27-Apr-1994		8.4	4.57	#N/A	#N/A	142.69	#N/A	#N/A	39.8	0.28	#N/A	PAG	#N/A
609	RMS-09123	Waste Rock	xTF	28-Apr-1994		8.4	3.93	#N/A	#N/A	122.71	#N/A	#N/A	40.8	0.33	#N/A	PAG	#N/A
613	RMS-09131	Waste Rock	xTF	29-Apr-1994		8.1	3.62	#N/A	#N/A	113.03	#N/A	#N/A	39.3	0.35	#N/A	PAG	#N/A
670	RMS-10088	Waste Rock	xTF	9-Aug-1993		7.6	4.83	#N/A	#N/A	150.86	#N/A	#N/A	14.0	0.09	#N/A	PAG	#N/A
672	RMS-10091	Waste Rock	xTF	11-Aug-1993		8.2	6.49	#N/A	#N/A	202.92	#N/A	#N/A	6.5	0.03	#N/A	PAG	#N/A
676	RMS-10097	Waste Rock	xTF	12-Aug-1993		7.8	3.54	#N/A	#N/A	110.54	#N/A	#N/A	28.5	0.26	#N/A	PAG	#N/A
694	RMS-10183	Waste Rock	xTF	17-Aug-1993		8.15	5.59	#N/A	#N/A	174.54	#N/A	#N/A	6.5	0.04	#N/A	PAG	#N/A
747	RMS-10303	Waste Rock	xTF	31-Aug-1993		8.3	4.18	#N/A	#N/A	130.55	#N/A	#N/A	9.5	0.07	#N/A	PAG	#N/A
749	RMS-10307	Waste Rock	xTF	1-Sep-1993		8.45	4.68	#N/A	#N/A	146.16	#N/A	#N/A	10.5	0.07	#N/A	PAG	#N/A
753	RMS-10315	Waste Rock	xTF	1-Sep-1993		8.35	3.51	#N/A	#N/A	109.62	#N/A	#N/A	10.7	0.10	#N/A	PAG	#N/A
755	RMS-10319	Waste Rock	xTF	2-Sep-1993		8.4	3.59	#N/A	#N/A	112.07	#N/A	#N/A	13.5	0.12	#N/A	PAG	#N/A
757	RMS-10323	Waste Rock	xTF	2-Sep-1993		8	4.45	#N/A	#N/A	138.92	#N/A	#N/A	16.5	0.12	#N/A	PAG	#N/A
759	RMS-10327	Waste Rock	xTF	3-Sep-1993		8.45	4.15	#N/A	#N/A	129.63	#N/A	#N/A	14.5	0.11	#N/A	PAG	#N/A
783	RMS-10383	Waste Rock	xTF	9-Sep-1993		7.6	2.59	#N/A	#N/A	80.84	#N/A	#N/A	7.1	0.09	#N/A	PAG	#N/A
787	RMS-10391	Waste Rock	xTF	10-Sep-1993		8.25	4.15	#N/A	#N/A	129.63	#N/A	#N/A	14.3	0.11	#N/A	PAG	#N/A
791	RMS-10399	Waste Rock	xTF	11-Sep-1993		8.3	2.98	#N/A	#N/A	93.09	#N/A	#N/A	10.0	0.11	#N/A	PAG	#N/A
795	RMS-10407	Waste Rock	xTF	12-Sep-1993		8.3	2.85	#N/A	#N/A	89.01	#N/A	#N/A	11.5	0.13	#N/A	PAG	#N/A
801	RMS-10419	Waste Rock	xTF	12-Sep-1993		8.1	3.66	#N/A	#N/A	114.32	#N/A	#N/A	9.8	0.09	#N/A	PAG	#N/A
805	RMS-10427	Waste Rock	xTF	13-Sep-1993		8.25	3.76	#N/A	#N/A	117.38	#N/A	#N/A	13.3	0.11	#N/A	PAG	#N/A
811	RMS-10443	Waste Rock	xTF	16-Sep-1993		7.85	8.67	#N/A	#N/A	271.00	#N/A	#N/A	12.0	0.04	#N/A	PAG	#N/A
817	RMS-10455	Waste Rock	xTF	17-Sep-1993		8	4.71	#N/A	#N/A	147.08	#N/A	#N/A	9.5	0.06	#N/A	PAG	#N/A
823	RMS-10467	Waste Rock	xTF	19-Sep-1993		7.8	7.28	#N/A	#N/A	227.62	#N/A	#N/A	9.5	0.04	#N/A	PAG	#N/A
829	RMS-10479	Waste Rock	xTF	20-Sep-1993		7.1	11.15	#N/A	#N/A	348.47	#N/A	#N/A	5.5	0.02	#N/A	PAG	#N/A
831	RMS-10483	Waste Rock	xTF	21-Sep-1993		7.2	7.22	#N/A	#N/A	225.78	#N/A	#N/A	10.0	0.04	#N/A	PAG	#N/A
835	RMS-10491	Waste Rock	xTF	22-Sep-1993		7.95	6.33	#N/A	#N/A	197.91	#N/A	#N/A	13.5	0.07	#N/A	PAG	#N/A
839	RMS-10503	Waste Rock	xTF	24-Sep-1993		8.2	4.84	#N/A	#N/A	151.17	#N/A	#N/A	16.0	0.11	#N/A	PAG	#N/A
841	RMS-10507	Waste Rock	xTF	25-Sep-1993		8.3	5.59	#N/A	#N/A	174.54	#N/A	#N/A	20.0	0.11	#N/A	PAG	#N/A
843	RMS-10511	Waste Rock	xTF	25-Sep-1993		8.15	5.29	#N/A	#N/A	165.46	#N/A	#N/A	16.0	0.10	#N/A	PAG	#N/A
845	RMS-10515	Waste Rock	xTF	26-Sep-1993		8.3	3.83	#N/A	#N/A	119.63	#N/A	#N/A	65.3	0.55	#N/A	PAG	#N/A
847	RMS-10519	Waste Rock	xTF	26-Sep-1993		8	3.85	#N/A	#N/A	120.24	#N/A	#N/A	7.6	0.06	#N/A	PAG	#N/A

No.	Sample ID	Dataset	Standardized Lithocode	Sample Lithology and Description	Location
849	RMS-10523	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
851	RMS-10527	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
853	RMS-10531	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
855	RMS-10535	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
857	RMS-10539	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
859	RMS-10543	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
861	RMS-10547	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
863	RMS-10551	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
865	RMS-10557	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
867	RMS-10563	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
871	RMS-10571	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
875	RMS-10579	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
879	RMS-10587	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
885	RMS-10599	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
889	RMS-10607	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1200 x-cut
893	RMS-10615	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
898	RMS-10623	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
900	RMS-10627	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
902	RMS-10631	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
904	RMS-10635	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
906	RMS-10639	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
908	RMS-10643	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
910	RMS-10647	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
912	RMS-10651	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
914	RMS-10655	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
916	RMS-10659	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
918	RMS-10663	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
920	RMS-10667	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
922	RMS-10671	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
924	RMS-10675	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
926	RMS-10679	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1300 SUMP
928	RMS-10683	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
930	RMS-10687	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
932	RMS-10691	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
934	RMS-10695	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW Drift
936	RMS-10699	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
938	RMS-10703	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
940	RMS-10707	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
942	RMS-10711	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
944	RMS-10715	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
946	RMS-10719	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
948	RMS-10723	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
950	RMS-10763	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
952	RMS-10767	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
954	RMS-10771	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
956	RMS-10775	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
958	RMS-10779	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
960	RMS-10783	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	1295 x-cut
962	RMS-10787	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
964	RMS-10791	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW drift
969	RMS-10799	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
971	RMS-10803	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy horneblende phenocrysts in a close packed <1mm Feldspar matrix	MHW drift
973	RMS-10851	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1325 RHS
975	RMS-10855	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1325 RHS/LHS
977	RMS-10859	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1325 RHS/LHS
979	RMS-10863	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1325 RHS/LHS
981	RMS-10867	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1325 LHS
983	RMS-10871	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1325 LHS
985	RMS-10875	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline slash
988	RMS-10879	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
990	RMS-10886	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
992	RMS-10887	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
994	RMS-10891	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
997	RMS-10895	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
999	RMS-10899	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1000	RMS-10903	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1002	RMS-10907	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1004	RMS-10911	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1006	RMS-10915	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1008	RMS-10919	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1375
1010	RMS-10923	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1012	RMS-10927	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1375
1014	RMS-10931	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1375
1016	RMS-10935	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1375
1018	RMS-10943	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1020	RMS-10947	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline

No.	Sample ID	Dataset	Standardized Lithocode	Date	Other Testing?	Paste pH (s.u.)	Total Sulphur	Sulphate Sulphur	Calculated Sulphide	Calculated AP (kg $CaCO_3$/t)	CO2 (Wt.%)	Calculated TIC (kg $CaCO_3$/t)	Neutralization Potential	NP/AP	TIC/AP	ARD Classification (NP/AP)	ARD Classification (TIC/AP)
849	RMS-10523	Waste Rock	xTF	25-Sep-1993		7.9	5.24	#N/A	#N/A	163.62	#N/A	#N/A	22.8	0.14	#N/A	PAG	#N/A
851	RMS-10527	Waste Rock	xTF	26-Sep-1993		8.35	8.81	#N/A	#N/A	275.39	#N/A	#N/A	37.5	0.14	#N/A	PAG	#N/A
853	RMS-10531	Waste Rock	xTF	27-Sep-1993		8	2.80	#N/A	#N/A	87.47	#N/A	#N/A	19.0	0.22	#N/A	PAG	#N/A
855	RMS-10535	Waste Rock	xTF	27-Sep-1993		8.4	4.74	#N/A	#N/A	148.00	#N/A	#N/A	95.0	0.64	#N/A	PAG	#N/A
857	RMS-10539	Waste Rock	xTF	28-Sep-1993		7.6	6.29	#N/A	#N/A	196.69	#N/A	#N/A	19.5	0.10	#N/A	PAG	#N/A
859	RMS-10543	Waste Rock	xTF	29-Sep-1993		7.5	6.25	#N/A	#N/A	195.46	#N/A	#N/A	104.5	0.53	#N/A	PAG	#N/A
861	RMS-10547	Waste Rock	xTF	29-Sep-1993		8.4	3.65	#N/A	#N/A	114.01	#N/A	#N/A	111.1	0.97	#N/A	PAG	#N/A
863	RMS-10551	Waste Rock	xTF	29-Sep-1993		8.4	3.25	#N/A	#N/A	101.46	#N/A	#N/A	127.1	1.25	#N/A	Uncertain	#N/A
865	RMS-10557	Waste Rock	xTF	1-Oct-1993		8.3	1.44	#N/A	#N/A	44.91	#N/A	#N/A	17.0	0.38	#N/A	PAG	#N/A
867	RMS-10563	Waste Rock	xTF	2-Oct-1993		8.1	2.50	#N/A	#N/A	78.08	#N/A	#N/A	19.5	0.25	#N/A	PAG	#N/A
871	RMS-10571	Waste Rock	xTF	4-Oct-1993		8.25	1.80	#N/A	#N/A	56.24	#N/A	#N/A	75.0	1.33	#N/A	Uncertain	#N/A
875	RMS-10579	Waste Rock	xTF	6-Oct-1993		8	0.96	#N/A	#N/A	30.01	#N/A	#N/A	27.0	0.90	#N/A	PAG	#N/A
879	RMS-10587	Waste Rock	xTF	6-Oct-1993		8.2	1.84	#N/A	#N/A	57.47	#N/A	#N/A	35.0	0.61	#N/A	PAG	#N/A
885	RMS-10599	Waste Rock	xTF	9-Oct-1993		8.25	1.35	#N/A	#N/A	42.15	#N/A	#N/A	181.6	4.31	#N/A	non-PAG	#N/A
889	RMS-10607	Waste Rock	xTF	9-Oct-1993		8.1	0.96	#N/A	#N/A	30.01	#N/A	#N/A	30.5	1.02	#N/A	Uncertain	#N/A
893	RMS-10615	Waste Rock	xTF	10-Oct-1993		7.9	0.84	#N/A	#N/A	26.23	#N/A	#N/A	33.0	1.26	#N/A	Uncertain	#N/A
898	RMS-10623	Waste Rock	xTF	11-Oct-1993		7.7	7.28	#N/A	#N/A	227.62	#N/A	#N/A	12.7	0.06	#N/A	PAG	#N/A
900	RMS-10627	Waste Rock	xTF	10-Oct-1993		7.58	3.70	#N/A	#N/A	115.54	#N/A	#N/A	25.5	0.22	#N/A	PAG	#N/A
902	RMS-10631	Waste Rock	xTF	12-Oct-1993		8.05	6.09	#N/A	#N/A	190.16	#N/A	#N/A	25.0	0.13	#N/A	PAG	#N/A
904	RMS-10635	Waste Rock	xTF	13-Oct-1993		8.15	4.63	#N/A	#N/A	144.84	#N/A	#N/A	41.0	0.28	#N/A	PAG	#N/A
906	RMS-10639	Waste Rock	xTF	13-Oct-1993		8.1	5.31	#N/A	#N/A	166.07	#N/A	#N/A	53.8	0.32	#N/A	PAG	#N/A
908	RMS-10643	Waste Rock	xTF	14-Oct-1993		8.23	4.14	#N/A	#N/A	129.22	#N/A	#N/A	56.2	0.44	#N/A	PAG	#N/A
910	RMS-10647	Waste Rock	xTF	15-Oct-1993		8.15	5.81	#N/A	#N/A	181.68	#N/A	#N/A	15.3	0.08	#N/A	PAG	#N/A
912	RMS-10651	Waste Rock	xTF	16-Oct-1993		8.12	4.97	#N/A	#N/A	155.45	#N/A	#N/A	33.0	0.21	#N/A	PAG	#N/A
914	RMS-10655	Waste Rock	xTF	16-Oct-1993		8.18	4.86	#N/A	#N/A	151.78	#N/A	#N/A	23.1	0.15	#N/A	PAG	#N/A
916	RMS-10659	Waste Rock	xTF	16-Oct-1993		8.23	5.50	#N/A	#N/A	171.78	#N/A	#N/A	21.1	0.12	#N/A	PAG	#N/A
918	RMS-10663	Waste Rock	xTF	17-Oct-1993		8.22	5.17	#N/A	#N/A	161.47	#N/A	#N/A	18.0	0.11	#N/A	PAG	#N/A
920	RMS-10667	Waste Rock	xTF	17-Oct-1993		8.3	5.55	#N/A	#N/A	173.32	#N/A	#N/A	22.3	0.13	#N/A	PAG	#N/A
922	RMS-10671	Waste Rock	xTF	18-Oct-1993		8.3	4.53	#N/A	#N/A	141.47	#N/A	#N/A	25.3	0.18	#N/A	PAG	#N/A
924	RMS-10675	Waste Rock	xTF	18-Oct-1993		8.13	5.19	#N/A	#N/A	162.09	#N/A	#N/A	11.6	0.07	#N/A	PAG	#N/A
926	RMS-10679	Waste Rock	xTF	19-Oct-1993		8.3	3.34	#N/A	#N/A	104.32	#N/A	#N/A	31.7	0.30	#N/A	PAG	#N/A
928	RMS-10683	Waste Rock	xTF	19-Oct-1993		8.25	3.75	#N/A	#N/A	117.07	#N/A	#N/A	17.8	0.15	#N/A	PAG	#N/A
930	RMS-10687	Waste Rock	xTF	18-Oct-1993		8.33	3.62	#N/A	#N/A	112.99	#N/A	#N/A	47.3	0.42	#N/A	PAG	#N/A
932	RMS-10691	Waste Rock	xTF	20-Oct-1993		8.32	4.00	#N/A	#N/A	124.93	#N/A	#N/A	31.7	0.25	#N/A	PAG	#N/A
934	RMS-10695	Waste Rock	xTF	21-Oct-1993		8.3	3.07	#N/A	#N/A	95.84	#N/A	#N/A	37.8	0.39	#N/A	PAG	#N/A
936	RMS-10699	Waste Rock	xTF	24-Oct-1993		8.25	2.82	#N/A	#N/A	88.09	#N/A	#N/A	50.3	0.57	#N/A	PAG	#N/A
938	RMS-10703	Waste Rock	xTF	25-Oct-1993		8.23	4.07	#N/A	#N/A	127.08	#N/A	#N/A	45.4	0.36	#N/A	PAG	#N/A
940	RMS-10707	Waste Rock	xTF	25-Oct-1993		8.38	2.72	#N/A	#N/A	84.92	#N/A	#N/A	28.4	0.33	#N/A	PAG	#N/A
942	RMS-10711	Waste Rock	xTF	26-Oct-1993		8.45	2.72	#N/A	#N/A	84.92	#N/A	#N/A	38.6	0.45	#N/A	PAG	#N/A
944	RMS-10715	Waste Rock	xTF	27-Oct-1993		8.05	2.87	#N/A	#N/A	89.62	#N/A	#N/A	14.0	0.16	#N/A	PAG	#N/A
946	RMS-10719	Waste Rock	xTF	27-Oct-1993		7.98	3.58	#N/A	#N/A	111.77	#N/A	#N/A	58.8	0.53	#N/A	PAG	#N/A
948	RMS-10723	Waste Rock	xTF	28-Oct-1993		7.95	2.92	#N/A	#N/A	91.15	#N/A	#N/A	41.0	0.45	#N/A	PAG	#N/A
950	RMS-10763	Waste Rock	xTF	1-Nov-1993		8.15	2.89	#N/A	#N/A	90.23	#N/A	#N/A	43.5	0.48	#N/A	PAG	#N/A
952	RMS-10767	Waste Rock	xTF	2-Nov-1993		8	4.46	#N/A	#N/A	139.53	#N/A	#N/A	23.0	0.16	#N/A	PAG	#N/A
954	RMS-10771	Waste Rock	xTF	3-Nov-1993		8.1	2.64	#N/A	#N/A	82.47	#N/A	#N/A	76.0	0.92	#N/A	PAG	#N/A
956	RMS-10775	Waste Rock	xTF	3-Nov-1993		8.05	3.62	#N/A	#N/A	112.99	#N/A	#N/A	59.5	0.53	#N/A	PAG	#N/A
958	RMS-10779	Waste Rock	xTF	4-Nov-1993		8.1	2.26	#N/A	#N/A	70.53	#N/A	#N/A	87.6	1.24	#N/A	Uncertain	#N/A
960	RMS-10783	Waste Rock	xTF	4-Nov-1993		8	4.22	#N/A	#N/A	131.77	#N/A	#N/A	40.7	0.31	#N/A	PAG	#N/A
962	RMS-10787	Waste Rock	xTF	5-Nov-1993		8.32	2.72	#N/A	#N/A	84.92	#N/A	#N/A	77.1	0.91	#N/A	PAG	#N/A
964	RMS-10791	Waste Rock	xTF	6-Nov-1993		8.05	3.79	#N/A	#N/A	118.30	#N/A	#N/A	24.0	0.20	#N/A	PAG	#N/A
969	RMS-10799	Waste Rock	xTF	7-Nov-1993		8.08	2.36	#N/A	#N/A	73.69	#N/A	#N/A	57.8	0.78	#N/A	PAG	#N/A
971	RMS-10803	Waste Rock	xTF	7-Nov-1993		8.05	4.02	#N/A	#N/A	125.55	#N/A	#N/A	25.5	0.20	#N/A	PAG	#N/A
973	RMS-10851	Waste Rock	xTF	22-Mar-1994		8.3	2.59	#N/A	#N/A	80.87	#N/A	#N/A	44.0	0.54	#N/A	PAG	#N/A
975	RMS-10855	Waste Rock	xTF	23-Mar-1994		8.2	3.71	#N/A	#N/A	115.84	#N/A	#N/A	30.3	0.26	#N/A	PAG	#N/A
977	RMS-10859	Waste Rock	xTF	23-Mar-1994		8.1	2.48	#N/A	#N/A	77.43	#N/A	#N/A	23.0	0.30	#N/A	PAG	#N/A
979	RMS-10863	Waste Rock	xTF	24-Mar-1994		7.9	7.49	#N/A	#N/A	234.18	#N/A	#N/A	31.3	0.13	#N/A	PAG	#N/A
981	RMS-10867	Waste Rock	xTF	24-Mar-1994		8	7.79	#N/A	#N/A	243.54	#N/A	#N/A	18.3	0.07	#N/A	PAG	#N/A
983	RMS-10871	Waste Rock	xTF	24-Mar-1994		8.1	7.47	#N/A	#N/A	233.55	#N/A	#N/A	16.3	0.07	#N/A	PAG	#N/A
985	RMS-10875	Waste Rock	xTF	26-Mar-1994		8.09	7.61	#N/A	#N/A	237.93	#N/A	#N/A	7.2	0.03	#N/A	PAG	#N/A
988	RMS-10879	Waste Rock	xTF	27-Apr-1994		8.2	7.59	#N/A	#N/A	237.29	#N/A	#N/A	12.5	0.05	#N/A	PAG	#N/A
990	RMS-10886	Waste Rock	xTF	27-Mar-1994		8.3	7.81	#N/A	#N/A	244.16	#N/A	#N/A	13.9	0.06	#N/A	PAG	#N/A
992	RMS-10887	Waste Rock	xTF	28-Mar-1994		8.3	1.93	#N/A	#N/A	60.26	#N/A	#N/A	73.8	1.22	#N/A	Uncertain	#N/A
994	RMS-10891	Waste Rock	xTF	28-Mar-1994		8.3	2.03	#N/A	#N/A	63.39	#N/A	#N/A	103.5	1.63	#N/A	Uncertain	#N/A
997	RMS-10895	Waste Rock	xTF	29-Apr-1994		8.2	2.82	#N/A	#N/A	88.05	#N/A	#N/A	52.5	0.60	#N/A	PAG	#N/A
999	RMS-10899	Waste Rock	xTF	29-Apr-1994		8.4	2.31	#N/A	#N/A	72.12	#N/A	#N/A	66.0	0.92	#N/A	PAG	#N/A
1000	RMS-10903	Waste Rock	xTF	30-Mar-1994		8.3	2.93	#N/A	#N/A	91.49	#N/A	#N/A	55.5	0.61	#N/A	PAG	#N/A
1002	RMS-10907	Waste Rock	xTF	30-Mar-1994		8.1	3.24	#N/A	#N/A	101.16	#N/A	#N/A	71.0	0.70	#N/A	PAG	#N/A
1004	RMS-10911	Waste Rock	xTF	31-Mar-1994		8.1	4.07	#N/A	#N/A	127.08	#N/A	#N/A	130.5	1.03	#N/A	Uncertain	#N/A
1006	RMS-10915	Waste Rock	xTF	31-Mar-1994		8.3	2.58	#N/A	#N/A	80.55	#N/A	#N/A	29.5	0.37	#N/A	PAG	#N/A
1008	RMS-10919	Waste Rock	xTF	4-Jan-1994		8	2.62	#N/A	#N/A	81.81	#N/A	#N/A	51.0	0.62	#N/A	PAG	#N/A
1010	RMS-10923	Waste Rock	xTF	4-Jan-1994		8.4	3.18	#N/A	#N/A	99.29	#N/A	#N/A	75.5	0.76	#N/A	PAG	#N/A
1012	RMS-10927	Waste Rock	xTF	4-Feb-1994		8.1	2.70	#N/A	#N/A	84.30	#N/A	#N/A	34.0	0.40	#N/A	PAG	#N/A
1014	RMS-10931	Waste Rock	xTF	4-Feb-1994		8.3	2.36	#N/A	#N/A	73.68	#N/A	#N/A	91.5	1.24	#N/A	Uncertain	#N/A
1016	RMS-10935	Waste Rock	xTF	4-Mar-1994		8.1	3.02	#N/A	#N/A	94.29	#N/A	#N/A	72.5	0.77	#N/A	PAG	#N/A
1018	RMS-10943	Waste Rock	xTF	4-Apr-1994		7.9	3.08	#N/A	#N/A	96.17	#N/A	#N/A	67.0	0.70	#N/A	PAG	#N/A
1020	RMS-10947	Waste Rock	xTF	4-Apr-1994		8.2	1.83	#N/A	#N/A	57.14	#N/A	#N/A	43.5	0.76	#N/A	PAG	#N/A

No.	Sample ID	Dataset	Standardized Lithocode	Sample Lithology and Description	Location
1022A	RMS-10951A	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1022B	RMS-10951B	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1024	RMS-10955	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1026	RMS-10959	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1028	RMS-10963	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1030	RMS-10967	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1400
1032	RMS-10967R	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1400
1034	RMS-10971	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1400 stn
1036	RMS-10975	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1400 stn
1038	RMS-10979	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1400 stn
1040	RMS-10983	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1400 stn
1042	RMS-10987	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1400
1044	RMS-10991	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1400
1046	RMS-10995	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1400
1048	RMS-10999	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1064	RMU-9179	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1066	RMU-9183	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1068	RMU-9187	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1070	RMU-9191	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1072	RMU-9195	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1076	RMU-9203	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1525
1102	RMU-9255	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1104	RMU-9259	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1106	RMU-9263	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1575 DDH stn
1108	RMU-9267	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1575 DDH stn
1110	RMU-9271	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1112	RMU-9275	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1114	RMU-9279	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1116	RMU-9283	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1118	RMU-9287	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1120	RMU-9291	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1122	RMU-9295	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1124	RMU-9299	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1600
1126	RMU-9303	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1144	RMU-9339	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1146	RMU-9343	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1148	RMU-9347	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1150	RMU-9351	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline+1625
1152	RMU-9355	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1154	RMU-9359	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1156	RMU-9363	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1159	RMU-9367	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1625N DDH
1160	RMU-9371	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1164	RMU-9379	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1166	RMU-9383	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1168	RMU-9387	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1170	RMU-9391	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1172	RMU-9395	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1174	RMU-9399	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1650N DDH
1176	RMU-9403	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1650N DDH
1178	RMU-9407	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1180	RMU-9411	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1182	RMU-9415	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1184	RMU-9419	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	Decline
1190	RMU-9431	Waste Rock	xTF	High level intrusive, Hornblende-Feldspar crystal tuff, <3mm lathy Horneblende phenocrysts in a close packed <1mm Feldspar matrix	1625 remuck
1074	RMU-9199	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline+1500
1078	RMU-9207	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline+1525
1080	RMU-9211	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline
1082	RMU-9215	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline
1084	RMU-9219	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline
1086	RMU-9223	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline
1088	RMU-9227	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline+1550
1090	RMU-9231	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline
1092	RMU-9235	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	1550 DDH stn
1094	RMU-9239	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline
1096	RMU-9243	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline
1098	RMU-9247	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline
1100	RMU-9251	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline
1128	RMU-9307	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	1600N DDH stn
1130	RMU-9311	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline

ABA Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Date	Other Testing?	Paste pH (s.u.)	Total Sulphur	Sulphate Sulphur	Calculated Sulphide	Calculated AP (kg $CaCO_3$/t)	CO2 (Wt.%)	Calculated TIC (kg $CaCO_3$/t)	Neutralization Potential	NP/AP	TIC/AP	ARD Classification (NP/AP)	ARD Classification (TIC/AP)
1022A	RMS-10951A	Waste Rock	xTF	4-Apr-1994		8.1	1.96	#N/A	#N/A	61.20	#N/A	#N/A	19.0	0.31	#N/A	PAG	#N/A
1022B	RMS-10951B	Waste Rock	xTF	4-Apr-1994		8.2	4.186	#N/A	#N/A	130.82	#N/A	#N/A	104.530	0.80	#N/A	PAG	#N/A
1024	RMS-10955	Waste Rock	xTF	4-May-1994		8	2.48	#N/A	#N/A	77.43	#N/A	#N/A	91.0	1.18	#N/A	Uncertain	#N/A
1026	RMS-10959	Waste Rock	xTF	4-May-1994		8.2	3.42	#N/A	#N/A	106.79	#N/A	#N/A	75.0	0.70	#N/A	PAG	#N/A
1028	RMS-10963	Waste Rock	xTF	4-Jun-1994		8.2	3.33	#N/A	#N/A	103.97	#N/A	#N/A	51.0	0.49	#N/A	PAG	#N/A
1030	RMS-10967	Waste Rock	xTF	4-Jun-1994		8.2	3.23	#N/A	#N/A	100.86	#N/A	#N/A	92.5	0.92	#N/A	PAG	#N/A
1032	RMS-10967R	Waste Rock	xTF	4-Jun-1994		8.05	3.29	#N/A	#N/A	102.72	#N/A	#N/A	77.0	0.75	#N/A	PAG	#N/A
1034	RMS-10971	Waste Rock	xTF	4-Jul-1994		7.6	3.92	#N/A	#N/A	122.39	#N/A	#N/A	40.5	0.33	#N/A	PAG	#N/A
1036	RMS-10975	Waste Rock	xTF	4-Aug-1994		7.9	3.87	#N/A	#N/A	120.83	#N/A	#N/A	22.3	0.18	#N/A	PAG	#N/A
1038	RMS-10979	Waste Rock	xTF	4-Aug-1994		7.9	4.31	#N/A	#N/A	134.57	#N/A	#N/A	41.3	0.31	#N/A	PAG	#N/A
1040	RMS-10983	Waste Rock	xTF	4-Sep-1994		7.85	4.18	#N/A	#N/A	130.52	#N/A	#N/A	26.0	0.20	#N/A	PAG	#N/A
1042	RMS-10987	Waste Rock	xTF	4-Sep-1994		7.9	3.24	#N/A	#N/A	101.16	#N/A	#N/A	15.3	0.15	#N/A	PAG	#N/A
1044	RMS-10991	Waste Rock	xTF	4-Oct-1994		7.85	4.96	#N/A	#N/A	154.87	#N/A	#N/A	23.8	0.15	#N/A	PAG	#N/A
1046	RMS-10995	Waste Rock	xTF	4-Oct-1994		8.1	3.98	#N/A	#N/A	124.27	#N/A	#N/A	18.0	0.14	#N/A	PAG	#N/A
1048	RMS-10999	Waste Rock	xTF	4-Nov-1994		7.75	10.63	#N/A	#N/A	332.22	#N/A	#N/A	11.0	0.03	#N/A	PAG	#N/A
1064	RMU-9179	Waste Rock	xTF	5-Aug-1994		8	3.42	#N/A	#N/A	106.79	#N/A	#N/A	39.8	0.37	#N/A	PAG	#N/A
1066	RMU-9183	Waste Rock	xTF	5-Sep-1994		7.9	3.87	#N/A	#N/A	120.83	#N/A	#N/A	40.5	0.34	#N/A	PAG	#N/A
1068	RMU-9187	Waste Rock	xTF	5-Oct-1994		8.05	3.81	#N/A	#N/A	118.96	#N/A	#N/A	40.3	0.34	#N/A	PAG	#N/A
1070	RMU-9191	Waste Rock	xTF	5-Oct-1994		7.95	4.27	#N/A	#N/A	133.32	#N/A	#N/A	39.8	0.30	#N/A	PAG	#N/A
1072	RMU-9195	Waste Rock	xTF	5-Nov-1994		8.05	4.50	#N/A	#N/A	140.51	#N/A	#N/A	39.8	0.28	#N/A	PAG	#N/A
1076	RMU-9203	Waste Rock	xTF	13-May-1994		8.4	3.62	#N/A	#N/A	113.03	#N/A	#N/A	41.0	0.36	#N/A	PAG	#N/A
1102	RMU-9255	Waste Rock	xTF	20-May-1994		8.65	3.48	#N/A	#N/A	108.65	#N/A	#N/A	65.3	0.60	#N/A	PAG	#N/A
1104	RMU-9259	Waste Rock	xTF	21-May-1994		8.5	1.60	#N/A	#N/A	49.95	#N/A	#N/A	18.5	0.37	#N/A	PAG	#N/A
1106	RMU-9263	Waste Rock	xTF	22-May-1994		8.5	2.71	#N/A	#N/A	84.62	#N/A	#N/A	15.5	0.18	#N/A	PAG	#N/A
1108	RMU-9267	Waste Rock	xTF	23-May-1994		8.7	2.38	#N/A	#N/A	74.31	#N/A	#N/A	11.8	0.16	#N/A	PAG	#N/A
1110	RMU-9271	Waste Rock	xTF	23-May-1994		8.6	2.52	#N/A	#N/A	78.69	#N/A	#N/A	18.4	0.23	#N/A	PAG	#N/A
1112	RMU-9275	Waste Rock	xTF	24-May-1994		8.5	1.45	#N/A	#N/A	45.28	#N/A	#N/A	19.0	0.42	#N/A	PAG	#N/A
1114	RMU-9279	Waste Rock	xTF	24-May-1994		8.55	1.44	#N/A	#N/A	44.96	#N/A	#N/A	23.3	0.52	#N/A	PAG	#N/A
1116	RMU-9283	Waste Rock	xTF	25-May-1994		8.55	1.15	#N/A	#N/A	35.91	#N/A	#N/A	31.0	0.86	#N/A	PAG	#N/A
1118	RMU-9287	Waste Rock	xTF	26-May-1994		8.6	3.34	#N/A	#N/A	104.29	#N/A	#N/A	18.8	0.18	#N/A	PAG	#N/A
1120	RMU-9291	Waste Rock	xTF	26-May-1994		8.65	0.90	#N/A	#N/A	28.10	#N/A	#N/A	21.5	0.77	#N/A	PAG	#N/A
1122	RMU-9295	Waste Rock	xTF	27-May-1994		8.6	0.78	#N/A	#N/A	24.35	#N/A	#N/A	16.3	0.67	#N/A	PAG	#N/A
1124	RMU-9299	Waste Rock	xTF	27-May-1994		8.6	2.91	#N/A	#N/A	90.86	#N/A	#N/A	18.3	0.20	#N/A	PAG	#N/A
1126	RMU-9303	Waste Rock	xTF	28-May-1994		8.15	2.32	#N/A	#N/A	72.44	#N/A	#N/A	27.0	0.37	#N/A	PAG	#N/A
1144	RMU-9339	Waste Rock	xTF	31-May-1994		8.3	1.78	#N/A	#N/A	55.58	#N/A	#N/A	26.5	0.48	#N/A	PAG	#N/A
1146	RMU-9343	Waste Rock	xTF	1-Jun-1994		8.5	1.57	#N/A	#N/A	49.02	#N/A	#N/A	42.1	0.86	#N/A	PAG	#N/A
1148	RMU-9347	Waste Rock	xTF	2-Jun-1994		8.45	1.90	#N/A	#N/A	59.32	#N/A	#N/A	35.5	0.60	#N/A	PAG	#N/A
1150	RMU-9351	Waste Rock	xTF	2-Jun-1994		8.25	1.05	#N/A	#N/A	32.78	#N/A	#N/A	20.0	0.61	#N/A	PAG	#N/A
1152	RMU-9355	Waste Rock	xTF	3-Jun-1994		7.85	1.18	#N/A	#N/A	36.85	#N/A	#N/A	19.8	0.54	#N/A	PAG	#N/A
1154	RMU-9359	Waste Rock	xTF	4-Jun-1994		8.15	1.16	#N/A	#N/A	36.21	#N/A	#N/A	34.3	0.95	#N/A	PAG	#N/A
1156	RMU-9363	Waste Rock	xTF	5-Jun-1994		8	1.05	#N/A	#N/A	32.78	#N/A	#N/A	20.5	0.63	#N/A	PAG	#N/A
1159	RMU-9367	Waste Rock	xTF	5-Jun-1994		8	1.34	#N/A	#N/A	41.84	#N/A	#N/A	22.0	0.53	#N/A	PAG	#N/A
1160	RMU-9371	Waste Rock	xTF	6-Jun-1994		8	1.09	#N/A	#N/A	34.03	#N/A	#N/A	33.5	0.98	#N/A	PAG	#N/A
1164	RMU-9379	Waste Rock	xTF	7-Jun-1994		7.95	0.99	#N/A	#N/A	30.91	#N/A	#N/A	20.0	0.65	#N/A	PAG	#N/A
1166	RMU-9383	Waste Rock	xTF	7-Jun-1994		8.1	0.91	#N/A	#N/A	28.42	#N/A	#N/A	13.3	0.47	#N/A	PAG	#N/A
1168	RMU-9387	Waste Rock	xTF	8-Jun-1994		7.95	1.02	#N/A	#N/A	31.85	#N/A	#N/A	11.5	0.36	#N/A	PAG	#N/A
1170	RMU-9391	Waste Rock	xTF	9-Jun-1994		7.85	1.27	#N/A	#N/A	39.65	#N/A	#N/A	5.8	0.15	#N/A	PAG	#N/A
1172	RMU-9395	Waste Rock	xTF	10-Jun-1994		7.9	1.06	#N/A	#N/A	33.10	#N/A	#N/A	11.0	0.33	#N/A	PAG	#N/A
1174	RMU-9399	Waste Rock	xTF	10-Jun-1994		7.9	1.11	#N/A	#N/A	34.65	#N/A	#N/A	6.3	0.18	#N/A	PAG	#N/A
1176	RMU-9403	Waste Rock	xTF	11-Jun-1994		8.05	0.97	#N/A	#N/A	30.28	#N/A	#N/A	11.3	0.37	#N/A	PAG	#N/A
1178	RMU-9407	Waste Rock	xTF	13-Jun-1994		7.8	1.02	#N/A	#N/A	31.85	#N/A	#N/A	11.3	0.35	#N/A	PAG	#N/A
1180	RMU-9411	Waste Rock	xTF	15-Jun-1994		7.9	0.96	#N/A	#N/A	29.98	#N/A	#N/A	14.5	0.48	#N/A	PAG	#N/A
1182	RMU-9415	Waste Rock	xTF	15-Jun-1994		7.8	1.17	#N/A	#N/A	36.53	#N/A	#N/A	13.8	0.38	#N/A	PAG	#N/A
1184	RMU-9419	Waste Rock	xTF	16-Jun-1994		7.8	1.03	#N/A	#N/A	32.16	#N/A	#N/A	6.3	0.19	#N/A	PAG	#N/A
1190	RMU-9431	Waste Rock	xTF	19-Jun-1994		7.8	0.80	#N/A	#N/A	24.98	#N/A	#N/A	42.0	1.68	#N/A	Uncertain	#N/A
1074	RMU-9199	Waste Rock	xTF-TfB	13-May-1994		7.5	3.61	#N/A	#N/A	112.72	#N/A	#N/A	34.8	0.31	#N/A	PAG	#N/A
1078	RMU-9207	Waste Rock	xTF-TfB	14-May-1994		8.4	4.05	#N/A	#N/A	126.45	#N/A	#N/A	43.1	0.34	#N/A	PAG	#N/A
1080	RMU-9211	Waste Rock	xTF-TfB	15-May-1994		8.3	2.10	#N/A	#N/A	65.57	#N/A	#N/A	43.3	0.66	#N/A	PAG	#N/A
1082	RMU-9215	Waste Rock	xTF-TfB	15-May-1994		8.1	3.69	#N/A	#N/A	115.22	#N/A	#N/A	46.6	0.40	#N/A	PAG	#N/A
1084	RMU-9219	Waste Rock	xTF-TfB	16-May-1994		8.25	3.65	#N/A	#N/A	113.96	#N/A	#N/A	43.8	0.38	#N/A	PAG	#N/A
1086	RMU-9223	Waste Rock	xTF-TfB	16-May-1994		8.25	4.39	#N/A	#N/A	137.07	#N/A	#N/A	63.8	0.47	#N/A	PAG	#N/A
1088	RMU-9227	Waste Rock	xTF-TfB	17-May-1994		8.1	3.66	#N/A	#N/A	114.28	#N/A	#N/A	84.0	0.74	#N/A	PAG	#N/A
1090	RMU-9231	Waste Rock	xTF-TfB	17-May-1994		8	3.59	#N/A	#N/A	112.09	#N/A	#N/A	67.5	0.60	#N/A	PAG	#N/A
1092	RMU-9235	Waste Rock	xTF-TfB	17-May-1994		8.05	4.24	#N/A	#N/A	132.38	#N/A	#N/A	57.8	0.44	#N/A	PAG	#N/A
1094	RMU-9239	Waste Rock	xTF-TfB	18-May-1994		8.2	4.22	#N/A	#N/A	131.76	#N/A	#N/A	47.9	0.36	#N/A	PAG	#N/A
1096	RMU-9243	Waste Rock	xTF-TfB	19-May-1994		8.25	4.21	#N/A	#N/A	131.45	#N/A	#N/A	41.5	0.32	#N/A	PAG	#N/A
1098	RMU-9247	Waste Rock	xTF-TfB	19-May-1994		8.6	3.14	#N/A	#N/A	98.04	#N/A	#N/A	30.4	0.31	#N/A	PAG	#N/A
1100	RMU-9251	Waste Rock	xTF-TfB	20-May-1994		8.55	2.90	#N/A	#N/A	90.55	#N/A	#N/A	60.5	0.67	#N/A	PAG	#N/A
1128	RMU-9307	Waste Rock	xTF-TfB	28-May-1994		8.2	1.79	#N/A	#N/A	55.89	#N/A	#N/A	25.0	0.45	#N/A	PAG	#N/A
1130	RMU-9311	Waste Rock	xTF-TfB	28-May-1994		8.4	2.90	#N/A	#N/A	90.55	#N/A	#N/A	37.5	0.41	#N/A	PAG	#N/A

ABA Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Sample Lithology and Description	Location
1132	RMU-9315	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	1600N DDH stn
1134	RMU-9319	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline
1136	RMU-9323	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	1600N DDH stn
1138	RMU-9327	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline
1140	RMU-9331	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	1600N DDH stn
1142	RMU-9335	Waste Rock	xTF-TfB	Contact breccia, Breccia, heterogeneous, Predominantly BdT fragments, of varying proportion and size, in a FHxl matrix	Decline+1600
363	ABA-AV1	Waste Rock	Composite	AV Zone hanging wall, composite sample	AV Zone
364	ABA-AV2	Waste Rock	Composite	AV Zone foot wall, composite sample	AV Zone
897	RMS-10619R	Waste Rock	Unknown		
1194	RMU-9439	Waste Rock	Unknown		*#N/A*
1195	RMU-9443	Waste Rock	Unknown		Auxiliary Drift
1197	RMU-9447	Waste Rock	Unknown		Auxiliary Drift
1199	RMU-9451	Waste Rock	Unknown		Auxiliary Drift
1201	RMU-9455	Waste Rock	Unknown		Auxiliary Drift
1223	WR-1+10	Waste Rock	Unknown		
1224	WR-1-10+230	Waste Rock	Unknown		
1225	WR-1-230	Waste Rock	Unknown		

ABA Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Date	Other Testing?	Paste pH (s.u.)	Total Sulphur	Sulphate Sulphur	Calculated Sulphide	Calculated AP (kg $CaCO_3$/t)	CO2 (Wt.%)	Calculated TIC (kg $CaCO_3$/t)	Neutralization Potential	NP/AP	TIC/AP	ARD Classification (NP/AP)	ARD Classification (TIC/AP)
1132	RMU-9315	Waste Rock	xTF-TfB	28-May-1994		8.5	3.96	#N/A	#N/A	123.65	#N/A	#N/A	22.5	0.18	#N/A	PAG	#N/A
1134	RMU-9319	Waste Rock	xTF-TfB	29-May-1994		8.3	3.20	#N/A	#N/A	99.92	#N/A	#N/A	35.5	0.36	#N/A	PAG	#N/A
1136	RMU-9323	Waste Rock	xTF-TfB	29-May-1994		8.2	3.33	#N/A	#N/A	103.97	#N/A	#N/A	35.1	0.34	#N/A	PAG	#N/A
1138	RMU-9327	Waste Rock	xTF-TfB	29-May-1994		8.42	4.54	#N/A	#N/A	141.76	#N/A	#N/A	37.5	0.26	#N/A	PAG	#N/A
1140	RMU-9331	Waste Rock	xTF-TfB	29-May-1994		8.33	3.90	#N/A	#N/A	121.77	#N/A	#N/A	33.3	0.27	#N/A	PAG	#N/A
1142	RMU-9335	Waste Rock	xTF-TfB	31-May-1994		8.3	4.11	#N/A	#N/A	128.32	#N/A	#N/A	41.8	0.33	#N/A	PAG	#N/A
363	ABA-AV1	Waste Rock	Composite	12-Nov-1993	HCT	8.4	4.07	0.01	4.06	127.19	0.30	6.82	19.0	0.15	0.05	PAG	PAG
364	ABA-AV2	Waste Rock	Composite	12-Nov-1993	HCT	8.5	5.76	0.02	5.74	180.00	0.40	9.09	21.0	0.12	0.05	PAG	PAG
897	RMS-10619R	Waste Rock	Unknown	Unknown		7.92	8.92	#N/A	#N/A	278.83	#N/A	#N/A	15.1	0.05	#N/A	PAG	#N/A
1194	RMU-9439	Waste Rock	Unknown	Unknown		7.8	0.57	#N/A	#N/A	17.80	#N/A	#N/A	18.0	1.01	#N/A	Uncertain	#N/A
1195	RMU-9443	Waste Rock	Unknown	9-Dec-1994		7.8	1.179	#N/A	#N/A	36.10	#N/A	#N/A	14.5	0.40	#N/A	PAG	#N/A
1197	RMU-9447	Waste Rock	Unknown	13-Sep-1994		7.7	0.969	#N/A	#N/A	29.67	#N/A	#N/A	7.1	0.24	#N/A	PAG	#N/A
1199	RMU-9451	Waste Rock	Unknown	14-Sep-1994		7.5	0.36	#N/A	#N/A	11.01	#N/A	#N/A	10.1	0.91	#N/A	PAG	#N/A
1201	RMU-9455	Waste Rock	Unknown	14-Sep-1994		8	1.149	#N/A	#N/A	35.18	#N/A	#N/A	16.7	0.47	#N/A	PAG	#N/A
1223	WR-1+10	Waste Rock	Unknown	Unknown		8.9	1.55	0.02	1.53	48.44	1.10	25.00	39.0	0.81	0.52	PAG	PAG
1224	WR-1-10+230	Waste Rock	Unknown	Unknown		8	2.01	0.01	2.01	62.81	1.80	40.91	93.0	1.48	0.65	Uncertain	PAG
1225	WR-1-230	Waste Rock	Unknown	Unknown		7.9	3.80	0.04	3.76	118.75	4.20	95.47	93.0	0.78	0.80	PAG	PAG

Metals Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Ag (ppm)	Al (ppm)	As (ppm)	B (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (ppm)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (ppm)	Hg (ppm)	K (ppm)	La (ppm)	Mg (ppm)	Mn (ppm)	Mo (ppm)	Na (ppm)
164	13977	Ore	FZ	4.1	10570	130	#N/A	87	0.1	2	33530	0.5	13	5	115	51530	6	3010	#N/A	8560	934	2	140
191	27629	Ore	TfB	3.2	12730	44	#N/A	76	0.9	3	6080	1.8	11	57	130	35100	1	2580	#N/A	13420	427	1	290
192	27630	Ore	TfB	0.9	9580	150	#N/A	99	1.2	2	6630	4.3	15	78	196	51900	1	2780	#N/A	8090	313	1	390
193	27637	Ore	TfB	2.9	12110	57	#N/A	127	0.8	2	13220	1.8	13	81	381	41530	1	2660	#N/A	13400	330	1	500
194	27638	Ore	TfB	2.3	15060	1	#N/A	111	1	2	17560	0.1	16	69	453	50880	1	2400	#N/A	17920	456	1	160
370	ABA-JW5	Ore	TfB	24	85800	162	#N/A	180	1.5	#N/A	6900	5.5	19	198	314	83600	10	39600	#N/A	5900	125	0.5	3500
374	Crystal Tuff	Ore	TfB	10	90700	200	#N/A	650	0.25	1	8300	24.5	19	19	149	61300	5	44500	#N/A	14800	860	4	4600
547	Ore Av. Pyrite	Ore	TfB	184	62700	800	#N/A	130	0.25	1	4400	2.5	25	161	545	149500	5	31400	#N/A	7300	615	5	800
548	Ore Av. ZnS	Ore	TfB	21	85800	100	#N/A	340	0.25	1	6600	153	17	59	222	65700	5	45000	#N/A	19900	1805	4	6900
144	11105	Ore	xHlp	12.4	20320	156	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	6	#N/A	#N/A	1	4770	#N/A	18630	598	#N/A	170
165	13978	Ore	xHlp	3.5	5770	142	#N/A	115	0.1	1	11300	1.5	11	3	51	56510	1	3800	#N/A	710	97	1	50
166	13997	Ore	xHlp	67.2	5550	709	#N/A	75	0.1	12	9140	20.2	21	1	2447	100000	3	3560	#N/A	460	31	1	70
167	13998	Ore	xHlp	11.4	7490	262	#N/A	137	0.1	2	7310	5.7	20	1	320	66210	4	4390	#N/A	1190	61	1	90
145	11106	Ore	xTF	3.8	16790	60	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	43	#N/A	#N/A	1	7230	#N/A	8690	282	#N/A	130
146	11113	Ore	xTF	6	21630	117	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	75	#N/A	#N/A	1	#N/A	#N/A	15890	1413	#N/A	200
147	11114	Ore	xTF	7	24300	1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	49	#N/A	#N/A	1	#N/A	#N/A	27700	2267	#N/A	270
148	11257	Ore	xTF	9.6	5570	232	#N/A	98	0.5	1	7850	7.7	19	12	284	60470	1	2570	#N/A	3340	142	1	320
149	11258	Ore	xTF	1.7	6690	38	#N/A	93	0.5	1	7340	0.1	17	20	265	48070	1	2510	#N/A	4860	189	1	350
150	11265	Ore	xTF	4.2	7840	1013	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	16	#N/A	#N/A	1	3280	#N/A	9560	462	#N/A	920
151	11266	Ore	xTF	6.7	6870	1998	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	36	#N/A	#N/A	1	3060	#N/A	8660	517	#N/A	1030
187	27605	Ore	xTF	2	20540	72	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1	#N/A	#N/A	1	3680	#N/A	23310	1082	#N/A	460
188	27606	Ore	xTF	5.7	12380	152	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1	#N/A	#N/A	1	4670	#N/A	12100	917	#N/A	290
189	27622	Ore	xTF	3.3	16960	274	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2	#N/A	#N/A	1	3430	#N/A	24300	838	#N/A	250
190	27623	Ore	xTF	3.4	20380	681	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1	#N/A	#N/A	1	3480	#N/A	19190	496	#N/A	240
195	31021	Ore	xTF	33.5	10520	435	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	30	#N/A	#N/A	1	#N/A	#N/A	1830	99	#N/A	80
196	31022	Ore	xTF	22.5	11170	360	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	33	#N/A	#N/A	1	#N/A	#N/A	4170	135	#N/A	100
197	20017B	Ore	xTF	6.2	8480	348	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1	#N/A	#N/A	1	3460	#N/A	6080	733	#N/A	90
198	20018B	Ore	xTF	7.8	9550	268	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	5	#N/A	#N/A	1	3610	#N/A	5770	653	#N/A	80
199	20038B	Ore	xTF	6.7	18200	67	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1	#N/A	#N/A	1	2690	#N/A	23780	1494	#N/A	100
200	20039B	Ore	xTF	9.7	16660	16	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	19	#N/A	#N/A	1	3040	#N/A	19560	1454	#N/A	150
201	20993B	Ore	xTF	4.9	12630	9	#N/A	239	0.6	1	13070	0.1	#N/A	1	170	72990	1	3480	#N/A	9300	341	1	1480
202	20994B	Ore	xTF	14.9	9660	346	#N/A	153	0.7	1	11160	58.1	#N/A	20	164	60390	1	5080	#N/A	2960	424	1	190
270	ABA-009	Ore	xTF	18.6	83200	384	#N/A	1450	0.25	12	4400	3.5	18	100	876	80500	95	38000	#N/A	5500	370	1	1300
272	ABA-010	Ore	xTF	76	88100	240	#N/A	660	0.25	8	5000	3	19	64	682	65400	105	39900	#N/A	11100	1275	3	3200
286	ABA-017	Ore	xTF	17.8	82500	290	#N/A	900	0.25	20	5800	3.5	19	88	119	72800	150	38700	#N/A	6500	220	0.5	1600
294	ABA-021	Ore	xTF	13.6	87300	247	#N/A	1460	0.5	10	5100	36	17	48	372	57200	210	36800	#N/A	19500	685	1	10400
296	ABA-022	Ore	xTF	6.6	93600	569	#N/A	600	0.5	1	6700	1.5	24	31	239	44000	40	40300	#N/A	26000	710	13	18000
310	ABA-030	Ore	xTF	0.6	82300	181	#N/A	770	0.25	1	6500	0.5	15	204	140	48900	42	35600	#N/A	16800	450	0.5	5200
543	MC90-23 169-172	Ore	xTf	1.5	80400	1100	#N/A	1430	0.25	1	22700	0.25	24	74	186	82500	160	37100	#N/A	20800	870	3	14700
472	MC90-32 175-178	Ore	xTf	7	85400	800	#N/A	1040	0.25	1	7400	10.5	20	171	177	71300	110	38900	#N/A	14300	545	0.5	8900
674	RMS-10094	Ore	xTf	0.1	10400	475	10	40	#N/A	2.5	8700	12	27	70	254	106800	#N/A	5000	5	5600	942	4	100
682	RMS-10159	Ore	xTf	16.8	5900	190	6	20	#N/A	2.5	5500	5	16	47	317	72700	#N/A	3100	5	2500	708	3	100
690	RMS-10176	Ore	xTf	27.4	16500	180	8	30	#N/A	5	7500	19	18	98	131	62900	#N/A	3400	5	15600	890	2	100
873	RMS-10575	Ore	xTf	3.6	13600	55	8	2.5	#N/A	5	38700	1	9	22	76	45400	#N/A	300	5	15600	1185	1	100
877	RMS-10583	Ore	xTf	22	12700	620	12	105	#N/A	20	17600	8	33	75	233	50	#N/A	4800	5	7900	385	1	200
881	RMS-10591	Ore	xTf	18	7700	525	10	80	#N/A	30	10900	6	30	122	84	140300	#N/A	3400	5	3900	233	7	100
887	RMS-10603	Ore	xTf	28.8	4600	535	10	85	#N/A	25	6100	4	28	89	233	50	#N/A	3200	5	100	50	4	100
891	RMS-10611	Ore	xTf	0.1	4800	510	6	55	#N/A	2.5	7300	9	18	48	219	91900	#N/A	3200	5	50	49	1	50
895	RMS-10619	Ore	xTf	0.1	7700	510	6	60	#N/A	2.5	8500	10	24	35	311	81500	#N/A	3500	10	3300	139	3	50
966	RMS-10792	Ore	xTF	0.1	16400	355	10	55	#N/A	5	40700	6	17	34	158	56800	#N/A	1800	10	17800	1147	2	200
365	ABA-AV3	Ore	Composite	26	69000	393	#N/A	730	1.5	#N/A	5900	3.5	19	87	1930	116500	10	32100	#N/A	3100	150	0.5	7400
366	ABA-AV4	Ore	Composite	31	64900	793	#N/A	670	1.5	#N/A	9300	17	14	138	2540	155000	40	28600	#N/A	2900	200	0.5	3900
385	Marc Composite	Ore	Composite	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
37	RMS01601	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
39	RMS01602	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
41	RMS01603	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
43	RMS01604	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
45	RMS01605	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
47	RMS01607	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
49	RMS01608	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
51	RMS01609	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
53	RMS01610	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
55	RMS01612	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
57	RMS01613	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
59	RMS01615	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
61	RMS01616	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
63	RMS01617	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
65	RMS01618	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
67	RMS01619	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
69	RMS01620	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
70	TAL-01+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
71	TAL-01-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
72	TAL-01-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
73	TAL-02+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
74	TAL-02-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
75	TAL-02-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Metals Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Ni (ppm)	P (ppm)	Pb (ppm)	Sb (ppm)	Se (ppm)	Sn (ppm)	Sr (ppm)	Te (ppm)	Ti (ppm)	Tl (ppm)	U (ppm)	V (ppm)	W (ppm)	Y (ppm)	Zn (ppm)
164	13977	Ore	FZ	1	1450	42	#N/A	#N/A	#N/A	27	#N/A	#N/A	#N/A	#N/A	41.6	1	#N/A	65
191	27629	Ore	TfB	26	1330	48	#N/A	#N/A	#N/A	16	#N/A	#N/A	#N/A	#N/A	83.7	2	#N/A	75
192	27630	Ore	TfB	56	1380	18	#N/A	#N/A	#N/A	16	#N/A	#N/A	#N/A	#N/A	61.7	2	#N/A	120
193	27637	Ore	TfB	60	1220	84	#N/A	#N/A	#N/A	15	#N/A	#N/A	#N/A	#N/A	45.1	2	#N/A	237
194	27638	Ore	TfB	54	990	45	#N/A	#N/A	#N/A	22	#N/A	#N/A	#N/A	#N/A	48.7	2	#N/A	145
370	ABA-JW5	Ore	TfB	77	1240	27	#N/A	13.2	#N/A	51	#N/A	2600	#N/A	#N/A	227	#N/A	#N/A	576
374	Crystal Tuff	Ore	TfB	31	1620	71	#N/A	9.0	#N/A	118	#N/A	3300	#N/A	#N/A	247	5	#N/A	1870
547	Ore Av. Pyrite	Ore	TfB	13	1210	536	#N/A	34.0	#N/A	49	#N/A	2100	#N/A	#N/A	165	5	#N/A	396
548	Ore Av. ZnS	Ore	TfB	25	1630	165	#N/A	9.0	#N/A	166	#N/A	3100	#N/A	#N/A	230	5	#N/A	10000
144	11105	Ore	xHlp	#N/A	1660	#N/A	#N/A	#N/A	#N/A	10	#N/A	#N/A	#N/A	#N/A	110.6	1	#N/A	5676
165	13978	Ore	xHlp	1	1530	28	#N/A	#N/A	#N/A	8	#N/A	#N/A	#N/A	#N/A	17.9	1	#N/A	64
166	13997	Ore	xHlp	1	1480	259	#N/A	#N/A	#N/A	17	#N/A	#N/A	#N/A	#N/A	18.1	1	#N/A	540
167	13998	Ore	xHlp	1	2010	71	#N/A	#N/A	#N/A	26	#N/A	#N/A	#N/A	#N/A	24.9	1	#N/A	206
145	11106	Ore	xTF	#N/A	1700	#N/A	#N/A	#N/A	#N/A	9	#N/A	#N/A	#N/A	#N/A	69.6	1	#N/A	1970
146	11113	Ore	xTF	#N/A	1910	#N/A	#N/A	#N/A	#N/A	11	#N/A	#N/A	#N/A	#N/A	115.4	1	#N/A	2411
147	11114	Ore	xTF	#N/A	1840	#N/A	#N/A	#N/A	#N/A	8	#N/A	#N/A	#N/A	#N/A	170.3	1	#N/A	2597
148	11257	Ore	xTF	#N/A	1840	32	#N/A	#N/A	#N/A	12	#N/A	#N/A	#N/A	#N/A	22.4	1	#N/A	714
149	11258	Ore	xTF	#N/A	1720	29	#N/A	#N/A	#N/A	10	#N/A	#N/A	#N/A	#N/A	35.5	1	#N/A	85
150	11265	Ore	xTF	#N/A	1590	#N/A	#N/A	#N/A	#N/A	23	#N/A	#N/A	#N/A	#N/A	24.6	1	#N/A	508
151	11266	Ore	xTF	#N/A	1360	#N/A	#N/A	#N/A	#N/A	16	#N/A	#N/A	#N/A	#N/A	21.7	1	#N/A	250
187	27605	Ore	xTF	#N/A	1082	#N/A	#N/A	#N/A	#N/A	35	#N/A	#N/A	#N/A	#N/A	141.7	1	#N/A	964
188	27606	Ore	xTF	#N/A	917	#N/A	#N/A	#N/A	#N/A	39	#N/A	#N/A	#N/A	#N/A	88.3	1	#N/A	5438
189	27622	Ore	xTF	#N/A	1830	#N/A	#N/A	#N/A	#N/A	134	#N/A	#N/A	#N/A	#N/A	9.7	1	#N/A	119
190	27623	Ore	xTF	#N/A	1660	#N/A	#N/A	#N/A	#N/A	48	#N/A	#N/A	#N/A	#N/A	117.4	1	#N/A	98
195	31021	Ore	xTF	#N/A	1500	#N/A	#N/A	#N/A	#N/A	9	#N/A	#N/A	#N/A	#N/A	34	1	#N/A	450
196	31022	Ore	xTF	#N/A	1620	#N/A	#N/A	#N/A	#N/A	12	#N/A	#N/A	#N/A	#N/A	36.5	1	#N/A	77
197	20017B	Ore	xTF	#N/A	1720	#N/A	#N/A	#N/A	#N/A	15	#N/A	#N/A	#N/A	#N/A	34.3	2	#N/A	88
198	20018B	Ore	xTF	#N/A	1690	#N/A	#N/A	#N/A	#N/A	9	#N/A	#N/A	#N/A	#N/A	38.2	1	#N/A	63
199	20038B	Ore	xTF	#N/A	1600	#N/A	#N/A	#N/A	#N/A	8	#N/A	#N/A	#N/A	#N/A	96.2	1	#N/A	30
200	20039B	Ore	xTF	#N/A	1670	#N/A	#N/A	#N/A	#N/A	12	#N/A	#N/A	#N/A	#N/A	95.4	3	#N/A	31
201	20993B	Ore	xTF	1	1400	95	#N/A	#N/A	#N/A	8	#N/A	#N/A	#N/A	#N/A	78.2	1	#N/A	80
202	20994B	Ore	xTF	1	1630	93	#N/A	#N/A	#N/A	10	#N/A	#N/A	#N/A	#N/A	45.1	1	#N/A	3939
270	ABA-009	Ore	xTF	10	1490	62	#N/A	#N/A	#N/A	42	#N/A	2400	#N/A	#N/A	240	10	#N/A	226
272	ABA-010	Ore	xTF	12	1540	124	#N/A	7.0	#N/A	58	#N/A	2900	#N/A	#N/A	251	10	#N/A	214
286	ABA-017	Ore	xTF	11	1490	58	#N/A	#N/A	#N/A	33	#N/A	2700	#N/A	#N/A	234	10	#N/A	250
294	ABA-021	Ore	xTF	11	1570	196	#N/A	#N/A	#N/A	142	#N/A	3000	#N/A	#N/A	246	10	#N/A	4020
296	ABA-022	Ore	xTF	9	1590	52	#N/A	#N/A	#N/A	281	#N/A	3000	#N/A	#N/A	249	5	#N/A	140
310	ABA-030	Ore	xTF	84	1140	12	#N/A	#N/A	#N/A	89	#N/A	3000	#N/A	#N/A	164	10	#N/A	100
543	MC90-23 169-172	Ore	xTf	34	1300	45	#N/A	#N/A	#N/A	285	#N/A	2100	#N/A	#N/A	214	20	#N/A	104
472	MC90-32 175-178	Ore	xTf	84	1440	130	#N/A	#N/A	#N/A	109	#N/A	2500	#N/A	#N/A	178	10	#N/A	722
674	RMS-10094	Ore	xTf	12	1370	264	95	#N/A	10	70	25	50	2.5	5	28	5	0.5	682
682	RMS-10159	Ore	xTf	10	1210	92	180	#N/A	10	39	25	50	2.5	5	16	5	0.5	388
690	RMS-10176	Ore	xTf	63	1160	42	40	#N/A	10	36	25	50	2.5	5	44	5	0.5	1462
873	RMS-10575	Ore	xTf	8	930	46	40	#N/A	10	149	25	50	2.5	5	79	5	0.5	54
877	RMS-10583	Ore	xTf	16	1830	48	45	#N/A	10	44	25	300	2.5	5	50	5	0.5	174
881	RMS-10591	Ore	xTf	15	1750	34	40	#N/A	10	26	25	300	2.5	5	24	5	0.5	106
887	RMS-10603	Ore	xTf	11	1640	32	80	#N/A	10	20	25	400	2.5	30	6	5	0.5	85
891	RMS-10611	Ore	xTf	9	1160	108	110	#N/A	10	11	25	50	2.5	5	7	5	0.5	236
895	RMS-10619	Ore	xTf	10	1620	74	65	#N/A	10	26	25	300	2.5	5	28	5	7	232
966	RMS-10792	Ore	xTF	9	1230	44	20	#N/A	10	92	25	700	2.5	5	117	5	8	60
365	ABA-AV3	Ore	Composite	18	1430	55	#N/A	#N/A	#N/A	91	#N/A	1900	#N/A	#N/A	216	#N/A	#N/A	280
366	ABA-AV4	Ore	Composite	45	1200	75	#N/A	29.8	#N/A	119	#N/A	2100	#N/A	#N/A	220	#N/A	#N/A	1000
385	Marc Composite	Ore	Composite	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
37	RMS01601	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
39	RMS01602	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
41	RMS01603	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
43	RMS01604	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
45	RMS01605	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
47	RMS01607	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
49	RMS01608	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
51	RMS01609	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
53	RMS01610	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
55	RMS01612	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
57	RMS01613	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
59	RMS01615	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
61	RMS01616	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
63	RMS01617	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
65	RMS01618	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
67	RMS01619	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
69	RMS01620	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
70	TAL-01+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
71	TAL-01-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
72	TAL-01-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
73	TAL-02+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
74	TAL-02-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
75	TAL-02-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Metals Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Ag (ppm)	Al (ppm)	As (ppm)	B (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (ppm)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (ppm)	Hg (ppm)	K (ppm)	La (ppm)	Mg (ppm)	Mn (ppm)	Mo (ppm)	Na (ppm)
76	TAL-03+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
77	TAL-03-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
78	TAL-03-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
79	TAL-04+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
80	TAL-04-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
81	TAL-04-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
82	TAL-05+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
83	TAL-05-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
84	TAL-05-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
85	TAL-06+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
86	TAL-06-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
87	TAL-06-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
88	TAL-07+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
89	TAL-07-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
90	TAL-07-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
91	TAL-08+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
92	TAL-08-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
93	TAL-08-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
94	TAL-09A+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
95	TAL-09A-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
96	TAL-09A-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
97	TAL-09B+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
98	TAL-09B-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
99	TAL-09B-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
100	TAL-10+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
101	TAL-10-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
102	TAL-10-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
103	TAL-11+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
104	TAL-11-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
105	TAL-11-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
106	TAL-12+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
107	TAL-12-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
108	TAL-12-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
109	TAL-13+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
110	TAL-13-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
111	TAL-13-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
112	TAL-14+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
113	TAL-14-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
114	TAL-14-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
115	TAL-15+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
116	TAL-15-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
117	TAL-15-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
118	TAL-16+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
119	TAL-16-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
120	TAL-16-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
121	TAL-17+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
122	TAL-17-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
123	TAL-17-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
124	TAL-18+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
125	TAL-18-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
126	TAL-18-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
127	TAL-19+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
128	TAL-19-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
129	TAL-19-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
130	TAL-20+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
131	TAL-20-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
132	TAL-20-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
133	TAL-21+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
134	TAL-21-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
135	TAL-21-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
136	TAL-22+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
137	TAL-22-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
138	TAL-22-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
139	TAL-23+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
140	TAL-23-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
141	TAL-23-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
142&143	Talus Composite	Talus	Talus	2.5	77000	33.6	#N/A	720	0.25		14100	0.25	10	94	109	40500	90	22700	#N/A	16900	465	26	23000
529	MC93-114 615-617	Waste Rock	GOp	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
217	ABA-002	Waste Rock	Hlp	5.4	76800	122	#N/A	730	0.25	6	17800	9.5	19	44	286	69400	145	21700	#N/A	18600	635	0.5	21900
219	ABA-003	Waste Rock	Hlp	0.4	90800	35	#N/A	310	0.25	10	11000	0.5	13	29	35	44800	42	22200	#N/A	19200	1385	3	45700
290	ABA-019	Waste Rock	Hlp	0.4	87300	706	#N/A	240	0.25	6	7800	0.25	19	33	45	54800	40	31000	#N/A	16600	830	1	35000
Frostad	ABA-2	Waste Rock	Hlp	0.2	22900	170	#N/A	40	0.5	2	13000	1	17	47	169	73600	1	1800	#N/A	21300	685	1	400
Frostad	ABA-3	Waste Rock	Hlp	0.2	16600	272	#N/A	50	0.5	2	8500	1	14	146	122	49200	1	1300	#N/A	19600	600	1	400
Frostad	HC-1	Waste Rock	Hlp	2	19200	708	#N/A	10	0.5	2	8100	24	17	38	314	81500	1	3100	#N/A	17500	395	1	200
549	Porphry Fhp	Waste Rock	Hlp	0.5	92700	50	#N/A	1700	0.25	1	10900	0.25	15	40	38	49400	5	13400	#N/A	17700	2390	5	50300
611	RMS-09127	Waste Rock	Hlp	0.2	20600	175	42	60	#N/A	2.5	1520	5	28	53	405	78700	#N/A	700	5	19000	790	3	400

Metals Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Ni (ppm)	P (ppm)	Pb (ppm)	Sb (ppm)	Se (ppm)	Sn (ppm)	Sr (ppm)	Te (ppm)	Ti (ppm)	Tl (ppm)	U (ppm)	V (ppm)	W (ppm)	Y (ppm)	Zn (ppm)
76	TAL-03+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
77	TAL-03-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
78	TAL-03-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
79	TAL-04+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
80	TAL-04-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
81	TAL-04-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
82	TAL-05+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
83	TAL-05-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
84	TAL-05-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
85	TAL-06+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
86	TAL-06-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
87	TAL-06-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
88	TAL-07+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
89	TAL-07-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
90	TAL-07-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
91	TAL-08+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
92	TAL-08-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
93	TAL-08-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
94	TAL-09A+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
95	TAL-09A-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
96	TAL-09A-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
97	TAL-09B+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
98	TAL-09B-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
99	TAL-09B-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
100	TAL-10+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
101	TAL-10-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
102	TAL-10-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
103	TAL-11+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
104	TAL-11-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
105	TAL-11-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
106	TAL-12+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
107	TAL-12-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
108	TAL-12-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
109	TAL-13+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
110	TAL-13-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
111	TAL-13-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
112	TAL-14+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
113	TAL-14-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
114	TAL-14-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
115	TAL-15+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
116	TAL-15-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
117	TAL-15-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
118	TAL-16+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
119	TAL-16-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
120	TAL-16-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
121	TAL-17+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
122	TAL-17-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
123	TAL-17-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
124	TAL-18+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
125	TAL-18-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
126	TAL-18-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
127	TAL-19+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
128	TAL-19-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
129	TAL-19-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
130	TAL-20+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
131	TAL-20-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
132	TAL-20-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
133	TAL-21+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
134	TAL-21-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
135	TAL-21-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
136	TAL-22+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
137	TAL-22-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
138	TAL-22-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
139	TAL-23+10	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
140	TAL-23-10+230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
141	TAL-23-230	Talus	Talus	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
142&143	Talus Composite	Talus	Talus	12	1060	22	#N/A	5.0	#N/A	343	#N/A	3200	#N/A	#N/A	154	#N/A	#N/A	78
529	MC93-114 615-617	Waste Rock	GOp	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
217	ABA-002	Waste Rock	Hlp	7	1450	24	#N/A	#N/A	#N/A	212	#N/A	2300	#N/A	#N/A	182	10	#N/A	1010
219	ABA-003	Waste Rock	Hlp	2	1300	40	#N/A	#N/A	#N/A	311	#N/A	2500	#N/A	#N/A	167	5	#N/A	98
290	ABA-019	Waste Rock	Hlp	2	1210	36	#N/A	#N/A	#N/A	307	#N/A	2400	#N/A	#N/A	177	10	#N/A	38
Frostad	ABA-2	Waste Rock	Hlp	20	1360	26	#N/A	#N/A	#N/A	45	#N/A	700	#N/A	#N/A	148	10	#N/A	88
Frostad	ABA-3	Waste Rock	Hlp	85	1020	26	#N/A	#N/A	#N/A	35	#N/A	800	#N/A	#N/A	84	10	#N/A	60
Frostad	HC-1	Waste Rock	Hlp	18	1430	72	#N/A	#N/A	#N/A	40	#N/A	100	#N/A	#N/A	108	10	#N/A	2980
549	Porphry Fhp	Waste Rock	Hlp	6	1390	49	#N/A	4.0	#N/A	393	#N/A	2600	#N/A	#N/A	153	5	#N/A	36
611	RMS-09127	Waste Rock	Hlp	10	1460	34	2.5	#N/A	10	51	25	400	0	5	149	5	2	176

Metals Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Ag (ppm)	Al (ppm)	As (ppm)	B (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (ppm)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (ppm)	Hg (ppm)	K (ppm)	La (ppm)	Mg (ppm)	Mn (ppm)	Mo (ppm)	Na (ppm)
615	RMS-09135	Waste Rock	Hlp	0.4	15300	25	32	55	#N/A	2.5	1070	2	32	54	403	78200	#N/A	1000	5	14300	669	4	300
617	RMS-09139	Waste Rock	Hlp	0.1	25800	20	20	55	#N/A	2.5	2020	3	23	58	244	71200	#N/A	800	5	26300	1750	4	400
619	RMS-09143	Waste Rock	Hlp	0.1	21300	5	10	55	#N/A	2.5	2010	4	14	41	168	57300	#N/A	400	5	21600	1246	2	400
621	RMS-09147	Waste Rock	Hlp	0.2	19300	15	18	60	#N/A	2.5	1700	1	22	103	201	63900	#N/A	1200	5	17600	1346	7	700
623	RMS-10001	Waste Rock	Hlp	0.8	12700	160	8	35	#N/A	5	22700	4	11	36	29	43600	#N/A	1600	5	14300	1393	1	500
625	RMS-10004	Waste Rock	Hlp	0.8	10700	400	4	35	#N/A	5	25100	15	12	88	31	45300	#N/A	1300	5	13100	1632	4	500
627	RMS-10007	Waste Rock	Hlp	0.2	14900	65	4	45	#N/A	2.5	17400	0.5	12	35	28	43900	#N/A	1000	5	16300	1421	0.5	600
629	RMS-10011	Waste Rock	Hlp	0.1	15000	15	14	40	#N/A	5	11500	0.5	13	57	28	46100	#N/A	700	5	16400	1887	3	600
631	RMS-10015	Waste Rock	Hlp	0.1	14800	10	8	85	#N/A	2.5	17500	0.5	8	27	11	31300	#N/A	400	5	15600	1523	0.5	400
633	RMS-10021	Waste Rock	Hlp	0.1	12700	90	28	35	#N/A	5	12200	0.5	12	33	23	42000	#N/A	400	5	14400	1396	0.5	300
635	RMS-10025	Waste Rock	Hlp	0.1	12400	210	30	35	#N/A	10	10600	3	13	27	26	44300	#N/A	600	5	14900	1207	0.5	400
637	RMS-10029	Waste Rock	Hlp	0.1	12500	160	24	40	#N/A	5	10800	1	12	38	25	44600	#N/A	600	5	14600	1355	1	400
639	RMS-10033	Waste Rock	Hlp	0.1	12100	80	14	30	#N/A	10	10700	0.5	12	31	29	44000	#N/A	800	5	13100	1112	2	400
641	RMS-10037	Waste Rock	Hlp	0.1	14900	25	16	25	#N/A	10	11300	0.5	14	25	33	44200	#N/A	400	5	15200	1600	1	400
1242	RMU-09151	Waste Rock	Hlp	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1052	RMU-9155	Waste Rock	Hlp	0.1	20300	95	20	60	#N/A	2.5	1950	4	16	105	129	54700	#N/A	900	5	18900	1085	7	900
1054	RMU-9159	Waste Rock	Hlp	0.1	14900	140	10	50	#N/A	2.5	1460	5	13	40	97	37200	#N/A	500	5	16400	816	3	300
1056	RMU-9163	Waste Rock	Hlp	0.1	15200	160	14	50	#N/A	2.5	1200	5	16	67	133	43300	#N/A	400	5	17200	746	6	400
1058	RMU-9167	Waste Rock	Hlp	0.4	22800	1600	14	60	#N/A	2.5	1280	36	51	47	233	79600	#N/A	600	5	24000	1323	4	300
1060	RMU-9171	Waste Rock	Hlp	0.4	18100	930	26	55	#N/A	2.5	1330	23	37	115	200	68600	#N/A	900	5	17200	1221	9	500
1062	RMU-9175	Waste Rock	Hlp	0.8	17300	665	50	55	#N/A	2.5	2200	26	28	55	226	55800	#N/A	900	5	17400	1566	4	200
Frostad	ABA-1	Waste Rock	MSI	0.6	16700	764	#N/A	30	0.5	2	9700	11	15	117	226	69900	1	1800	#N/A	18500	575	1	100
Frostad	HC-2	Waste Rock	MSI	1.2	21600	574	#N/A	50	0.5	2	5500	65	14	104	224	63500	1	1600	#N/A	24300	875	1	100
643	RMS-10041	Waste Rock	MSI	1.2	16900	3	8	35	#N/A	5	21300	127	27	60	60	56700	#N/A	1100	5	20800	2003	0.5	200
645	RMS-10047	Waste Rock	MSI	0.8	18000	890	6	35	#N/A	2.5	10000	9	21	137	133	63500	#N/A	1200	5	23200	933	1	100
647	RMS-10049	Waste Rock	MSI	2.4	17100	1560	8	35	#N/A	2.5	13500	19	19	126	149	60800	#N/A	1200	5	23400	946	1	100
649	RMS-10053	Waste Rock	MSI	1	16700	915	8	35	#N/A	2.5	10900	10	19	111	119	53600	#N/A	1200	5	23100	981	1	100
651	RMS-10057	Waste Rock	MSI	2.6	14800	980	4	40	#N/A	2.5	12100	15	20	69	166	68000	#N/A	1800	5	21200	711	0.5	100
653	RMS-10061	Waste Rock	MSI	10.6	14700	1775	6	25	#N/A	2.5	16200	38	17	76	183	57300	#N/A	1500	5	21600	886	0.5	100
655	RMS-10065	Waste Rock	MSI	4.8	14900	3095	2	35	#N/A	2.5	12100	49	16	89	174	53500	#N/A	1400	5	19500	698	0.5	100
657	RMS-10067	Waste Rock	MSI	1.2	19900	1005	4	35	#N/A	2.5	10200	18	17	107	118	47500	#N/A	1400	5	27600	892	1	100
659	RMS-10069	Waste Rock	MSI	4.8	18300	1260	6	35	#N/A	2.5	15400	34	17	94	137	51300	#N/A	1700	5	26000	939	0.5	50
661	RMS-10073	Waste Rock	MSI	1.8	18400	910	4	30	#N/A	2.5	7300	50	17	96	106	51700	#N/A	1400	5	25400	942	1	100
663	RMS-10077	Waste Rock	MSI	6	13100	1470	6	35	#N/A	2.5	5000	11	21	107	217	79000	#N/A	1300	5	17500	585	0.5	100
665	RMS-10077R	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
666	RMS-10080	Waste Rock	MSI	1	18400	475	6	30	#N/A	2.5	8300	18	12	119	65	36700	#N/A	1000	5	25500	996	1	100
668	RMS-10084	Waste Rock	MSI	22.6	19300	740	10	55	#N/A	2.5	10100	98	23	165	181	62600	#N/A	1900	5	23300	2034	5	200
678	RMS-10152	Waste Rock	MSI	0.1	8100	570	6	35	#N/A	2.5	5700	38	31	30	470	119200	#N/A	2900	5	5300	1295	2	100
680	RMS-10156	Waste Rock	MSI	0.1	32100	1025	10	40	#N/A	15	26400	16	23	172	83	80300	#N/A	1700	5	39400	1677	3	200
684	RMS-10163	Waste Rock	MSI	0.2	26600	710	8	45	#N/A	10	16800	10	23	135	87	76200	#N/A	1300	5	33600	1212	1	200
686	RMS-10170	Waste Rock	MSI	0.1	4800	325	6	20	#N/A	2.5	9500	12	16	29	1448	77000	#N/A	2600	5	3000	583	3	100
688	RMS-10173	Waste Rock	MSI	0.6	17600	955	8	30	#N/A	2.5	6900	27	19	155	227	74300	#N/A	1600	5	22200	715	2	200
692	RMS-10180	Waste Rock	MSI	3.6	14900	645	8	30	#N/A	2.5	6600	69	18	140	321	70900	#N/A	3000	5	15600	634	4	200
696	RMS-10186	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
698	RMS-10188	Waste Rock	MSI	0.1	19700	715	8	30	#N/A	2.5	5100	11	19	154	257	81700	#N/A	1400	5	27100	822	2	300
700	RMS-10190	Waste Rock	MSI	1.4	19000	275	10	50	#N/A	2.5	11900	11	24	75	179	89400	#N/A	3000	5	19000	991	1	200
702	RMS-10193	Waste Rock	MSI	0.2	13500	1090	4	30	#N/A	2.5	4300	18	19	133	243	76500	#N/A	1400	5	17300	557	3	100
704	RMS-10197	Waste Rock	MSI	0.2	13900	665	6	25	#N/A	2.5	3400	19	16	186	267	62400	#N/A	1400	5	17800	517	9	100
706	RMS-10208	Waste Rock	MSI	0.6	13300	1140	6	35	#N/A	2.5	4700	11	19	112	193	66700	#N/A	1300	5	17900	526	0.5	100
708	RMS-10212	Waste Rock	MSI	0.4	15800	590	8	20	#N/A	2.5	6700	11	17	141	173	62200	#N/A	1400	5	20300	610	4	200
710	RMS-10215	Waste Rock	MSI	0.2	17100	835	6	40	#N/A	2.5	7100	75	22	157	229	78100	#N/A	2700	5	19800	642	4	200
712	RMS-10219	Waste Rock	MSI	0.2	18400	840	10	35	#N/A	5	6400	12	22	147	123	77900	#N/A	1600	5	24200	661	0.5	200
714	RMS-10226	Waste Rock	MSI	0.2	16500	670	8	35	#N/A	5	7300	27	20	123	205	71700	#N/A	1800	5	20700	638	1	200
716	RMS-10230	Waste Rock	MSI	0.2	12000	640	10	25	#N/A	5	14800	13	16	81	134	56200	#N/A	1300	5	14700	514	2	100
718	RMS-10233	Waste Rock	MSI	1.4	13100	980	6	30	#N/A	2.5	5900	46	23	109	269	80200	#N/A	1500	5	16200	540	3	100
720	RMS-10236	Waste Rock	MSI	0.1	15400	655	12	50	#N/A	5	21200	10	21	126	146	67100	#N/A	2100	5	18500	614	2	200
722	RMS-10254	Waste Rock	MSI	0.2	10500	245	28	25	#N/A	2.5	6100	3	16	126	106	54500	#N/A	1200	5	11200	243	3	200
724	RMS-10258	Waste Rock	MSI	1	12000	535	14	25	#N/A	2.5	5200	8	19	136	243	63800	#N/A	1400	5	13900	350	3	200
726	RMS-10265	Waste Rock	MSI	1.2	9900	455	12	30	#N/A	2.5	8600	7	19	96	286	68100	#N/A	2000	5	10200	322	2	200
728	RMS-10265R	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
729	RMS-10268	Waste Rock	MSI	0.6	8500	460	8	20	#N/A	2.5	6800	7	16	83	203	50300	#N/A	1600	5	8800	307	2	100
731	RMS-10272	Waste Rock	MSI	0.4	11700	430	18	35	#N/A	5	9500	8	17	128	156	57200	#N/A	1900	5	12300	409	3	200
733	RMS-10276	Waste Rock	MSI	0.1	12800	525	22	30	#N/A	5	5200	10	19	124	134	63500	#N/A	1100	5	15600	373	2	200
735	RMS-10280	Waste Rock	MSI	0.6	9500	405	12	20	#N/A	2.5	4300	7	17	102	183	55000	#N/A	1700	5	9900	307	1	100
737	RMS-10283	Waste Rock	MSI	0.4	10300	495	10	30	#N/A	2.5	7800	20	18	84	177	61400	#N/A	1400	5	11200	370	1	100
739	RMS-10287	Waste Rock	MSI	0.1	13200	655	42	60	#N/A	5	10900	10	28	155	165	87500	#N/A	1600	5	11800	324	2	200
741	RMS-10291	Waste Rock	MSI	0.4	10600	350	16	25	#N/A	5	5200	6	18	110	136	63000	#N/A	1400	5	11200	247	2	200
743	RMS-10295	Waste Rock	MSI	0.1	9900	270	22	25	#N/A	2.5	10100	4	20	118	156	63600	#N/A	1200	5	11500	396	3	100
745	RMS-10299	Waste Rock	MSI	4	12000	115	10	20	#N/A	2.5	6000	5	21	26	166	65800	#N/A	2900	5	10300	308	1	100
751	RMS-10311	Waste Rock	MSI	0.1	14100	3	8	155	#N/A	10	13500	0.5	8	178	7	23000	#N/A	4400	5	6600	598	11	800
761	RMS-10331	Waste Rock	MSI	0.1	16900	310	18	65	#N/A	10	15600	5	29	269	154	72900	#N/A	1900	5	20300	962	4	300
763	RMS-10335	Waste Rock	MSI	0.1	13400	3	8	155	#N/A	5	13100	0.5	8	115	5	21900	#N/A	4300	5	6300	578	5	800
765	RMS-10339	Waste Rock	MSI	0.2	19200	105	12	55	#N/A	5	10400	2	25	202	176	65900	#N/A	1900	5	22000	678	4	300
767	RMS-10343	Waste Rock	MSI	0.1	21700	275	64	60	#N/A	5	8400	4	26	206	147	63200	#N/A	2100	5	24600	728	3	600
769	RMS-10343R	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
770	RMS-10351	Waste Rock	MSI	0.6	9100	440	10	20	#N/A	2.5	4500	8	20	68	200	63400	#N/A	2900	5	7000	179	2	100

Metals Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Ni (ppm)	P (ppm)	Pb (ppm)	Sb (ppm)	Se (ppm)	Sn (ppm)	Sr (ppm)	Te (ppm)	Ti (ppm)	Tl (ppm)	U (ppm)	V (ppm)	W (ppm)	Y (ppm)	Zn (ppm)
615	RMS-09135	Waste Rock	Hlp	11	1440	32	2.5	#N/A	10	28	25	500	0	5	124	5	2	158
617	RMS-09139	Waste Rock	Hlp	11	1510	28	5	#N/A	10	48	25	500	0	5	172	5	4	161
619	RMS-09143	Waste Rock	Hlp	7	1320	22	10	#N/A	10	37	25	200	0	5	115	5	3	256
621	RMS-09147	Waste Rock	Hlp	9	1400	32	2.5	#N/A	10	48	25	400	0	5	135	20	4	88
623	RMS-10001	Waste Rock	Hlp	3	1260	98	10	#N/A	10	78	25	50	2.5	5	85	5	2	247
625	RMS-10004	Waste Rock	Hlp	3	1120	140	10	#N/A	10	115	25	50	2.5	5	76	40	2	777
627	RMS-10007	Waste Rock	Hlp	2	1180	48	10	#N/A	10	46	25	100	2.5	5	122	5	3	82
629	RMS-10011	Waste Rock	Hlp	2	1120	50	15	#N/A	10	30	25	500	2.5	5	125	5	5	36
631	RMS-10015	Waste Rock	Hlp	0.5	1180	22	10	#N/A	10	38	25	400	2.5	5	132	5	5	33
633	RMS-10021	Waste Rock	Hlp	1	1150	40	15	#N/A	10	31	25	700	2.5	5	115	5	6	38
635	RMS-10025	Waste Rock	Hlp	0.5	1150	76	10	#N/A	10	36	25	700	2.5	5	108	5	6	145
637	RMS-10029	Waste Rock	Hlp	3	1190	46	15	#N/A	10	33	25	600	2.5	5	113	5	6	53
639	RMS-10033	Waste Rock	Hlp	1	1180	40	15	#N/A	10	31	25	400	2.5	5	101	5	5	30
641	RMS-10037	Waste Rock	Hlp	1	1360	44	25	#N/A	10	27	25	600	2.5	5	124	5	7	28
1242	RMU-09151	Waste Rock	Hlp	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1052	RMU-9155	Waste Rock	Hlp	8	1330	26	10	#N/A	10	60	25	100	0	5	116	5	1	213
1054	RMU-9159	Waste Rock	Hlp	6	860	6	2.5	#N/A	10	43	25	100	0	5	88	5	2	130
1056	RMU-9163	Waste Rock	Hlp	8	930	1	5	#N/A	10	42	25	100	0	10	85	5	3	114
1058	RMU-9167	Waste Rock	Hlp	14	1370	148	5	#N/A	10	50	25	100	0	5	148	10	1	465
1060	RMU-9171	Waste Rock	Hlp	16	1250	160	2.5	#N/A	10	52	25	100	0	5	139	5	2	437
1062	RMU-9175	Waste Rock	Hlp	11	1170	94	5	#N/A	10	80	25	200	0	5	123	5	2	894
Frostad	ABA-1	Waste Rock	MSI	75	1130	28	#N/A	#N/A	#N/A	26	#N/A	600	#N/A	#N/A	78	10	#N/A	1220
Frostad	HC-2	Waste Rock	MSI	51	1180	54	#N/A	#N/A	#N/A	17	#N/A	800	#N/A	#N/A	138	10	#N/A	5610
643	RMS-10041	Waste Rock	MSI	29	1060	84	25	#N/A	10	69	25	100	2.5	5	84	30	2	604
645	RMS-10047	Waste Rock	MSI	82	1050	94	20	#N/A	10	39	25	100	2.5	5	79	5	1	169
647	RMS-10049	Waste Rock	MSI	76	990	156	15	#N/A	10	90	25	100	2.5	5	72	5	1	448
649	RMS-10053	Waste Rock	MSI	64	1090	134	2.5	#N/A	10	59	25	400	2.5	30	83	5	3	210
651	RMS-10057	Waste Rock	MSI	64	1020	182	20	#N/A	10	72	25	50	2.5	5	47	5	0.5	707
653	RMS-10061	Waste Rock	MSI	63	1050	520	25	#N/A	10	102	25	50	2.5	5	50	100	0.5	1232
655	RMS-10065	Waste Rock	MSI	54	960	522	30	#N/A	10	73	25	50	2.5	5	54	110	0.5	1285
657	RMS-10067	Waste Rock	MSI	51	990	48	20	#N/A	10	61	25	50	2.5	5	91	110	0.5	1188
659	RMS-10069	Waste Rock	MSI	64	860	130	30	#N/A	10	96	25	50	2.5	5	56	190	1	1902
661	RMS-10073	Waste Rock	MSI	50	1000	102	40	#N/A	10	29	25	200	2.5	5	92	450	2	3477
663	RMS-10077	Waste Rock	MSI	74	860	28	20	#N/A	10	19	25	500	0	10	63	5	5	161
665	RMS-10077R	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
666	RMS-10080	Waste Rock	MSI	63	730	52	35	#N/A	10	41	25	100	2.5	5	64	5	3	865
668	RMS-10084	Waste Rock	MSI	82	990	160	50	#N/A	20	29	25	200	2.5	5	91	5	4	7301
678	RMS-10152	Waste Rock	MSI	14	990	264	115	#N/A	10	33	25	50	2.5	10	21	5	0.5	3006
680	RMS-10156	Waste Rock	MSI	84	1280	74	45	#N/A	10	99	25	100	2.5	5	122	5	2	176
684	RMS-10163	Waste Rock	MSI	86	1150	72	35	#N/A	10	63	25	100	2.5	5	115	5	1	84
686	RMS-10170	Waste Rock	MSI	11	1350	70	885	#N/A	10	92	25	50	2.5	5	11	5	0.5	601
688	RMS-10173	Waste Rock	MSI	65	990	36	15	#N/A	10	29	25	300	2.5	10	87	5	4	2476
692	RMS-10180	Waste Rock	MSI	65	1050	58	35	#N/A	10	24	25	300	2.5	5	63	5	4	6795
696	RMS-10186	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
698	RMS-10188	Waste Rock	MSI	82	1040	12	35	#N/A	10	18	25	600	2.5	5	109	5	7	140
700	RMS-10190	Waste Rock	MSI	34	1450	38	30	#N/A	10	52	25	300	2.5	20	95	5	3	943
702	RMS-10193	Waste Rock	MSI	81	1110	32	40	#N/A	10	18	25	400	2.5	5	70	5	5	123
704	RMS-10197	Waste Rock	MSI	64	790	10	35	#N/A	20	17	25	400	2.5	5	61	5	5	1750
706	RMS-10208	Waste Rock	MSI	67	840	26	20	#N/A	10	20	25	600	2.5	5	59	40	5	676
708	RMS-10212	Waste Rock	MSI	77	990	22	40	#N/A	10	22	25	500	2.5	5	75	5	6	345
710	RMS-10215	Waste Rock	MSI	75	1100	88	70	#N/A	10	20	25	700	2.5	5	83	5	8	8489
712	RMS-10219	Waste Rock	MSI	90	1000	34	20	#N/A	10	21	25	700	2.5	10	89	5	5	194
714	RMS-10226	Waste Rock	MSI	68	1050	16	25	#N/A	10	25	25	500	2.5	10	80	5	5	1989
716	RMS-10230	Waste Rock	MSI	64	940	30	20	#N/A	10	36	25	400	2.5	5	54	5	5	425
718	RMS-10233	Waste Rock	MSI	90	980	32	30	#N/A	10	22	25	400	2.5	5	59	5	5	3252
720	RMS-10236	Waste Rock	MSI	63	1030	16	25	#N/A	10	43	25	400	2.5	5	71	5	4	166
722	RMS-10254	Waste Rock	MSI	71	830	22	15	#N/A	10	26	25	600	2.5	5	53	5	4	85
724	RMS-10258	Waste Rock	MSI	74	780	24	30	#N/A	10	24	25	500	2.5	5	59	5	5	109
726	RMS-10265	Waste Rock	MSI	71	880	20	35	#N/A	10	30	25	400	2.5	10	50	5	5	134
728	RMS-10265R	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
729	RMS-10268	Waste Rock	MSI	66	810	16	30	#N/A	10	29	25	300	2.5	5	39	5	4	57
731	RMS-10272	Waste Rock	MSI	63	950	26	25	#N/A	10	37	25	500	2.5	5	61	5	4	155
733	RMS-10276	Waste Rock	MSI	77	890	14	35	#N/A	10	21	25	500	2.5	5	71	5	2	190
735	RMS-10280	Waste Rock	MSI	89	720	16	30	#N/A	10	25	25	500	2.5	5	46	5	4	118
737	RMS-10283	Waste Rock	MSI	67	910	32	25	#N/A	10	25	25	500	2.5	5	50	5	4	1700
739	RMS-10287	Waste Rock	MSI	102	1180	30	25	#N/A	10	31	25	600	2.5	5	70	5	2	164
741	RMS-10291	Waste Rock	MSI	79	940	28	35	#N/A	10	24	25	500	2.5	5	57	5	3	127
743	RMS-10295	Waste Rock	MSI	86	770	30	40	#N/A	10	30	25	600	2.5	5	48	5	5	74
745	RMS-10299	Waste Rock	MSI	12	1310	18	25	#N/A	10	27	25	50	2.5	5	61	5	1	611
751	RMS-10311	Waste Rock	MSI	5	830	6	5	#N/A	120	124	25	1400	2.5	5	44	5	12	48
761	RMS-10331	Waste Rock	MSI	114	1120	38	30	#N/A	80	41	25	1000	2.5	5	106	5	8	115
763	RMS-10335	Waste Rock	MSI	6	830	10	10	#N/A	60	122	25	1500	2.5	5	41	5	13	48
765	RMS-10339	Waste Rock	MSI	91	1270	44	35	#N/A	20	44	25	1000	2.5	5	101	5	5	64
767	RMS-10343	Waste Rock	MSI	115	1360	44	30	#N/A	40	52	25	1100	2.5	5	99	5	7	50
769	RMS-10343R	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
770	RMS-10351	Waste Rock	MSI	69	990	24	35	#N/A	10	23	25	500	2.5	10	42	5	8	188

Metals Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Ag (ppm)	Al (ppm)	As (ppm)	B (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (ppm)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (ppm)	Hg (ppm)	K (ppm)	La (ppm)	Mg (ppm)	Mn (ppm)	Mo (ppm)	Na (ppm)
772	RMS-10359	Waste Rock	MSI	0.2	21000	225	36	70	#N/A	10	10600	3	23	184	136	70600	#N/A	1400	5	28400	816	2	200
774	RMS-10363	Waste Rock	MSI	0.1	13700	185	12	30	#N/A	2.5	7600	3	16	112	104	44400	#N/A	1000	5	17300	572	2	300
776A	RMS-10367A	Waste Rock	MSI	0.1	24500	280	16	55	#N/A	10	9100	4	22	159	107	63000	#N/A	1400	5	34000	943	2	300
776B	RMS-10367B	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
778	RMS-10375	Waste Rock	MSI	0.1	13200	370	10	30	#N/A	2.5	6400	5	20	77	106	46400	#N/A	1000	5	17200	550	0.5	200
780	RMS-10379	Waste Rock	MSI	0.1	19900	295	16	50	#N/A	2.5	10100	5	22	124	143	52300	#N/A	900	5	27600	891	2	200
782	RMS-10379R	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
785	RMS-10387	Waste Rock	MSI	0.2	22600	255	10	55	#N/A	20	9000	3	27	206	143	68900	#N/A	1300	5	28500	788	2	400
789	RMS-10395	Waste Rock	MSI	0.1	11300	145	8	35	#N/A	5	5500	2	14	109	84	37000	#N/A	800	5	14900	580	1	300
793	RMS-10403	Waste Rock	MSI	0.1	16100	180	12	45	#N/A	10	7800	2	21	191	106	50700	#N/A	1100	5	21000	913	4	400
797	RMS-10411	Waste Rock	MSI	0.4	15500	225	12	50	#N/A	15	8700	3	28	146	130	65700	#N/A	1500	5	18900	692	2	400
799	RMS-10415	Waste Rock	MSI	0.1	14900	190	22	55	#N/A	5	7700	3	22	192	102	55800	#N/A	1700	5	18400	845	3	500
803	RMS-10423	Waste Rock	MSI	0.2	17800	325	14	50	#N/A	10	7700	5	26	235	113	62800	#N/A	1100	5	24000	774	3	300
807	RMS-10431	Waste Rock	MSI	0.1	19900	270	14	60	#N/A	10	18000	5	23	225	120	59300	#N/A	1800	5	25500	904	6	400
809	RMS-10435	Waste Rock	MSI	0.1	16600	235	10	55	#N/A	5	7400	3	20	203	101	49100	#N/A	1500	5	21200	578	4	400
813	RMS-10447	Waste Rock	MSI	0.1	18500	470	8	55	#N/A	5	8100	7	25	222	187	78800	#N/A	1600	5	21500	410	5	400
815	RMS-10451	Waste Rock	MSI	0.2	16000	510	6	35	#N/A	2.5	11100	8	21	22	141	70200	#N/A	2000	5	17100	585	1	200
819	RMS-10459	Waste Rock	MSI	0.1	18500	395	8	55	#N/A	2.5	7800	5	25	176	165	71800	#N/A	2000	5	21500	488	1	200
821	RMS-10463	Waste Rock	MSI	0.4	22300	390	10	60	#N/A	5	15200	6	25	141	154	79600	#N/A	2400	5	25200	574	1	300
825	RMS-10471	Waste Rock	MSI	0.4	17400	610	6	35	#N/A	2.5	10100	11	17	90	155	55100	#N/A	1600	5	21500	410	2	200
827	RMS-10475	Waste Rock	MSI	0.6	14200	325	6	30	#N/A	2.5	11500	8	19	98	129	57400	#N/A	1700	5	15500	368	1	200
833	RMS-10487	Waste Rock	MSI	4.2	13300	220	6	25	#N/A	5	13200	5	13	83	90	45300	#N/A	1200	5	15200	490	1	100
837	RMS-10499	Waste Rock	MSI	0.6	22000	1170	8	60	#N/A	2.5	10400	25	20	68	229	76000	#N/A	3300	5	23200	514	3	200
869	RMS-10567	Waste Rock	MSI	0.4	15100	235	6	40	#N/A	2.5	14700	2	17	18	107	57600	#N/A	1300	5	17500	627	1	100
883	RMS-10595	Waste Rock	MSI	0.6	31500	335	10	105	#N/A	2.5	26000	5	45	34	179	101800	#N/A	3200	5	37200	1234	0.5	400
1162	RMU-9375	Waste Rock	MSI	0.1	24500	30	24	75	#N/A	2.5	2750	0.5	29	61	157	55800	#N/A	1100	5	20000	806	0.5	300
1186	RMU-9423	Waste Rock	MSI	0.1	25900	15	282	50	#N/A	2.5	1730	0.5	35	39	178	63200	#N/A	300	5	14400	422	0.5	400
1188	RMU-9427	Waste Rock	MSI	0.1	28000	35	326	45	#N/A	2.5	1920	1	45	52	231	71000	#N/A	300	5	15900	439	0.5	500
1192	RMU-9435	Waste Rock	MSI	0.1	30500	45	98	60	#N/A	10	2270	1	37	143	116	68800	#N/A	500	5	23900	936	0.5	200
152	11284	Waste Rock	TfB	0.2	11640	182	#N/A	174	0.9	2	8380	0.1	21	32	86	70070	#N/A	4390	#N/A	8400	178	1	70
153	11285	Waste Rock	TfB	0.2	16130	70	#N/A	253	0.8	2	5700	5.6	19	121	186	63470	#N/A	3400	#N/A	17950	292	1	160
154	11286	Waste Rock	TfB	0.4	14370	138	#N/A	198	0.7	2	6040	33	17	79	183	50540	#N/A	3920	#N/A	14430	256	1	90
155	11287	Waste Rock	TfB	0.5	14050	126	#N/A	184	0.7	2	6920	28.9	20	89	160	59250	#N/A	3470	#N/A	14550	313	1	120
156	11288	Waste Rock	TfB	1	16630	12	#N/A	161	0.8	2	13730	0.1	22	81	133	58130	#N/A	2570	#N/A	18930	586	1	140
157	11289	Waste Rock	TfB	1.2	14560	70	#N/A	179	0.7	3	8210	0.1	16	72	103	59220	#N/A	3220	#N/A	14480	380	1	120
181	20872	Waste Rock	TfB	2.7	14650	266	#N/A	135	0.8	3	18160	1.2	13	116	58	44530	#N/A	1920	#N/A	20960	806	1	340
215	ABA-001	Waste Rock	TfB	1	83200	158	#N/A	440	0.25	2	10500	0.25	17	43	183	58000	42	21700	#N/A	18100	490	1	27700
221	ABA-004	Waste Rock	TfB	2.4	82800	456	#N/A	1290	0.25	12	11600	25.5	23	153	159	82300	100	36100	#N/A	28800	1245	1	17500
268	ABA-008	Waste Rock	TfB	0.8	79100	276	#N/A	1460	0.25	8	14000	0.5	28	186	134	61900	42	30500	#N/A	23100	1500	1	21800
274	ABA-011	Waste Rock	TfB	2.4	71800	801	#N/A	4200	0.25	8	10900	0.25	28	165	169	73100	58	38900	#N/A	18900	1215	2	14800
278	ABA-013	Waste Rock	TfB	0.4	89400	376	#N/A	700	0.25	8	10700	0.25	16	147	45	54400	58	46200	#N/A	26200	1230	3	21000
280	ABA-014	Waste Rock	TfB	0.4	84100	228	#N/A	990	0.25	2	14200	0.25	20	224	45	49500	40	39000	#N/A	25600	1440	1	21600
298	ABA-023	Waste Rock	TfB	1.2	68600	337	#N/A	1500	1	2	8200	1	21	152	340	89700	35	36800	#N/A	18500	585	1	9800
300	ABA-024	Waste Rock	TfB	0.8	77500	347	#N/A	510	1	2	26400	0.25	18	151	58	49800	35	33200	#N/A	28700	1115	0.5	18200
304	ABA-027	Waste Rock	TfB	0.6	81700	249	#N/A	1180	0.5	1	12200	0.5	20	152	120	54900	42	40800	#N/A	27900	835	1	9800
306	ABA-028	Waste Rock	TfB	0.8	85200	171	#N/A	1150	1.5	1	12000	15	15	43	196	71000	420	38500	#N/A	24000	460	0.5	10800
308	ABA-029	Waste Rock	TfB	0.1	82700	248	#N/A	390	0.5	1	16300	0.5	17	230	114	53100	40	37500	#N/A	22500	1010	0.5	21500
318	ABA-036	Waste Rock	TfB	0.6	76100	352	#N/A	730	1.5	2	12700	0.5	21	117	151	59700	40	31600	#N/A	24300	595	1	13000
373	Black Tuff	Waste Rock	TfB	0.5	78600	900	#N/A	1180	0.25	1	7900	0.25	22	205	161	78500	5	40600	#N/A	30700	895	4	12800
530	MC93-147 107-109	Waste Rock	TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
532	MC93-147 191-193	Waste Rock	TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
541	MC93-154 97-100	Waste Rock	TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
168	19403	Waste Rock	xHlp	0.7	14850	205	#N/A	236	0.4	2	10750	0.1	13	8	71	39060	#N/A	2580	#N/A	15850	601	1	1120
169	19404	Waste Rock	xHlp	0.9	10890	3	#N/A	97	0.1	2	10590	0.1	14	25	103	46140	#N/A	1620	#N/A	11770	524	1	1190
170	19405	Waste Rock	xHlp	1.6	13150	26	#N/A	130	0.4	1	10290	0.1	14	14	88	43630	#N/A	1510	#N/A	15330	729	1	1540
171	19406	Waste Rock	xHlp	1	11060	1	#N/A	98	0.2	3	10550	0.1	12	20	75	38250	#N/A	1850	#N/A	10950	524	1	1620
282	ABA-015	Waste Rock	xHlp	3.2	86400	764	#N/A	1180	1	20	16100	0.5	22	36	147	79600	40	39300	#N/A	13100	495	3	14200
528	MC93-114 427-429	Waste Rock	xHlp	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
158	13289	Waste Rock	xTF	1.3	17890	363	#N/A	115	0.1	2	7940	18.4	18	18	252	59450	#N/A	2690	#N/A	22500	442	1	100
159	13290	Waste Rock	xTF	1.5	18650	196	#N/A	92	0.1	2	8130	0.4	21	11	221	70780	#N/A	2100	#N/A	24540	411	1	130
160	13291	Waste Rock	xTF	4.2	15270	210	#N/A	97	0.1	1	9680	9.9	21	9	215	84190	#N/A	3090	#N/A	16850	319	1	110
161	13292	Waste Rock	xTF	2.6	15580	400	#N/A	140	0.1	1	13480	25.9	19	15	166	59450	#N/A	3370	#N/A	20070	474	1	170
162	13294	Waste Rock	xTF	2.9	16260	306	#N/A	220	0.1	1	19210	4.5	18	1	217	56730	#N/A	2580	#N/A	28030	498	1	290
163	13295	Waste Rock	xTF	1.2	14550	223	#N/A	176	0.1	1	20100	2	15	1	198	59090	#N/A	4200	#N/A	21310	523	1	150
172	19659	Waste Rock	xTF	0.9	18530	404	#N/A	74	0.8	2	8840	0.1	25	12	191	75620	#N/A	2110	#N/A	19520	182	1	300
173	19660	Waste Rock	xTF	1.5	19960	243	#N/A	94	0.7	3	10050	0.1	20	11	160	64580	#N/A	2900	#N/A	21030	179	1	270
174	19661	Waste Rock	xTF	1.3	15300	224	#N/A	77	0.3	3	10380	0.1	16	15	140	51000	#N/A	2070	#N/A	16620	158	1	320
175	19662	Waste Rock	xTF	1	21130	31	#N/A	86	0.8	2	11660	0.1	18	23	154	59790	#N/A	2040	#N/A	21600	234	1	590
176	19663	Waste Rock	xTF	1.2	22940	1	#N/A	78	0.6	3	11820	0.1	19	18	160	58400	#N/A	1890	#N/A	25610	274	1	570
177	19664	Waste Rock	xTF	0.9	19170	19	#N/A	75	0.4	3	11670	0.1	20	15	147	597600	#N/A	1640	#N/A	20870	279	1	660
178	19665	Waste Rock	xTF	1.1	19250	19	#N/A	83	0.5	4	10450	0.1	20	17	131	54910	#N/A	1620	#N/A	20330	271	1	780
179	19666	Waste Rock	xTF	0.8	19860	117	#N/A	76	0.9	2	9440	0.1	19	12	153	53950	#N/A	2400	#N/A	20540	236	1	480
180	19667	Waste Rock	xTF	0.7	20900	1	#N/A	58	0.8	1	9420	0.1	16	25	149	50230	#N/A	1580	#N/A	26250	225	1	540
182	20873	Waste Rock	xTF	1	19150	1	#N/A	84	0.6	2	14370	0.1	17	8	105	60180	#N/A	2530	#N/A	23040	447	1	580
183	20874	Waste Rock	xTF	1	21250	1	#N/A	69	0.6	3	11730	0.1	17	6	125	58660	#N/A	2190	#N/A	24510	284	1	480
184	20875	Waste Rock	xTF	2	20060	1	#N/A	68	1.5	3	11290	0.1	#N/A	8	146	57170	#N/A	1660	#N/A	22280	301	1	780

No.	Sample ID	Dataset	Standardized Lithocode	Ni (ppm)	P (ppm)	Pb (ppm)	Sb (ppm)	Se (ppm)	Sn (ppm)	Sr (ppm)	Te (ppm)	Ti (ppm)	Tl (ppm)	U (ppm)	V (ppm)	W (ppm)	Y (ppm)	Zn (ppm)
772	RMS-10359	Waste Rock	MSI	95	1280	54	30	#N/A	10	33	25	700	2.5	5	103	5	3	85
774	RMS-10363	Waste Rock	MSI	58	920	24	25	#N/A	10	36	25	700	2.5	5	82	5	5	48
776A	RMS-10367A	Waste Rock	MSI	86	1540	44	35	#N/A	10	30	25	900	2.5	5	124	5	5	45
776B	RMS-10367B	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
778	RMS-10375	Waste Rock	MSI	47	900	38	25	#N/A	10	23	25	600	2.5	5	80	5	4	52
780	RMS-10379	Waste Rock	MSI	63	1200	44	30	#N/A	10	33	25	700	2.5	5	109	5	7	64
782	RMS-10379R	Waste Rock	MSI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
785	RMS-10387	Waste Rock	MSI	117	1320	34	30	#N/A	20	41	25	800	2.5	5	104	5	6	66
789	RMS-10395	Waste Rock	MSI	78	840	12	20	#N/A	10	31	25	800	2.5	5	64	5	7	32
793	RMS-10403	Waste Rock	MSI	112	1190	20	25	#N/A	60	39	25	800	2.5	5	83	5	7	38
797	RMS-10411	Waste Rock	MSI	101	1310	50	25	#N/A	10	33	25	1100	2.5	5	99	5	9	60
799	RMS-10415	Waste Rock	MSI	126	1220	28	40	#N/A	40	33	25	1100	2.5	5	90	5	8	21
803	RMS-10423	Waste Rock	MSI	123	1240	20	30	#N/A	60	33	25	700	2.5	10	100	5	4	31
807	RMS-10431	Waste Rock	MSI	105	1330	26	30	#N/A	40	57	25	900	2.5	5	102	5	6	61
809	RMS-10435	Waste Rock	MSI	93	1200	10	25	#N/A	60	32	25	1000	2.5	5	101	5	6	34
813	RMS-10447	Waste Rock	MSI	99	1060	22	35	#N/A	10	34	25	500	2.5	5	86	5	6	49
815	RMS-10451	Waste Rock	MSI	11	1180	24	30	#N/A	10	76	25	50	2.5	5	86	5	2	95
819	RMS-10459	Waste Rock	MSI	83	1100	20	25	#N/A	10	29	25	600	2.5	5	86	5	5	32
821	RMS-10463	Waste Rock	MSI	69	1340	46	50	#N/A	10	45	25	200	2.5	5	109	5	5	92
825	RMS-10471	Waste Rock	MSI	45	950	48	55	#N/A	10	39	25	50	2.5	10	77	5	2	218
827	RMS-10475	Waste Rock	MSI	65	830	62	45	#N/A	10	31	25	200	2.5	5	53	5	3	307
833	RMS-10487	Waste Rock	MSI	50	810	76	25	#N/A	10	39	25	100	2.5	5	55	5	2	225
837	RMS-10499	Waste Rock	MSI	17	1590	62	40	#N/A	10	45	25	50	2.5	5	134	5	3	764
869	RMS-10567	Waste Rock	MSI	4	1060	40	25	#N/A	10	105	25	100	2.5	5	116	5	0.5	53
883	RMS-10595	Waste Rock	MSI	10	1950	56	35	#N/A	10	93	25	400	2.5	5	262	5	1	114
1162	RMU-9375	Waste Rock	MSI	28	1160	12	5	#N/A	10	58	25	400	0	5	166	5	3	31
1186	RMU-9423	Waste Rock	MSI	8	1450	6	2.5	#N/A	10	19	25	1300	0	5	201	5	9	36
1188	RMU-9427	Waste Rock	MSI	13	1510	6	2.5	#N/A	10	28	25	1300	0	5	205	5	9	33
1192	RMU-9435	Waste Rock	MSI	57	1570	4	10	#N/A	10	49	25	1600	0	5	179	5	12	32
152	11284	Waste Rock	TfB	#N/A	1480	31	#N/A	#N/A	#N/A	15	#N/A	#N/A	#N/A	#N/A	39.4	1	#N/A	244
153	11285	Waste Rock	TfB	#N/A	1030	22	#N/A	#N/A	#N/A	12	#N/A	#N/A	#N/A	#N/A	76.4	4	#N/A	1669
154	11286	Waste Rock	TfB	#N/A	1210	22	#N/A	#N/A	#N/A	14	#N/A	#N/A	#N/A	#N/A	51.2	2	#N/A	6060
155	11287	Waste Rock	TfB	#N/A	1190	21	#N/A	#N/A	#N/A	14	#N/A	#N/A	#N/A	#N/A	54.9	2	#N/A	3387
156	11288	Waste Rock	TfB	#N/A	1150	17	#N/A	#N/A	#N/A	15	#N/A	#N/A	#N/A	#N/A	65	1	#N/A	228
157	11289	Waste Rock	TfB	#N/A	1140	30	#N/A	#N/A	#N/A	15	#N/A	#N/A	#N/A	#N/A	45.1	1	#N/A	89
181	20872	Waste Rock	TfB	72	920	42	#N/A	#N/A	#N/A	75	#N/A	#N/A	#N/A	#N/A	61.3	3	#N/A	49
215	ABA-001	Waste Rock	TfB	7	1480	20	#N/A	#N/A	#N/A	217	#N/A	2600	#N/A	#N/A	187	5	#N/A	68
221	ABA-004	Waste Rock	TfB	84	1220	62	#N/A	#N/A	#N/A	245	#N/A	3100	#N/A	#N/A	165	10	#N/A	2760
268	ABA-008	Waste Rock	TfB	110	1160	30	#N/A	#N/A	#N/A	312	#N/A	3300	#N/A	#N/A	147	10	#N/A	94
274	ABA-011	Waste Rock	TfB	77	1020	64	#N/A	#N/A	#N/A	231	#N/A	2600	#N/A	#N/A	140	10	#N/A	54
278	ABA-013	Waste Rock	TfB	66	1290	28	#N/A	#N/A	#N/A	351	#N/A	3300	#N/A	#N/A	163	10	#N/A	36
280	ABA-014	Waste Rock	TfB	94	1100	14	#N/A	#N/A	#N/A	339	#N/A	3400	#N/A	#N/A	171	10	#N/A	26
298	ABA-023	Waste Rock	TfB	62	980	24	#N/A	#N/A	#N/A	346	#N/A	2300	#N/A	#N/A	115	10	#N/A	132
300	ABA-024	Waste Rock	TfB	75	1210	38	#N/A	9.0	#N/A	359	#N/A	2800	#N/A	#N/A	135	5	#N/A	70
304	ABA-027	Waste Rock	TfB	73	1290	38	#N/A	#N/A	#N/A	299	#N/A	3300	#N/A	#N/A	157	10	#N/A	90
306	ABA-028	Waste Rock	TfB	8	1470	28	#N/A	#N/A	#N/A	223	#N/A	2800	#N/A	#N/A	234	10	#N/A	1710
308	ABA-029	Waste Rock	TfB	72	1090	18	#N/A	#N/A	#N/A	336	#N/A	3300	#N/A	#N/A	156	10	#N/A	42
318	ABA-036	Waste Rock	TfB	61	1150	22	#N/A	#N/A	#N/A	289	#N/A	2800	#N/A	#N/A	155	10	#N/A	56
373	Black Tuff	Waste Rock	TfB	103	1230	58	#N/A	7.0	#N/A	259	#N/A	3400	#N/A	#N/A	156	5	#N/A	74
530	MC93-147 107-109	Waste Rock	TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
532	MC93-147 191-193	Waste Rock	TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
541	MC93-154 97-100	Waste Rock	TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
168	19403	Waste Rock	xHlp	1	1140	27	#N/A	#N/A	#N/A	30	#N/A	#N/A	#N/A	#N/A	107.9	1	#N/A	21
169	19404	Waste Rock	xHlp	1	1380	35	#N/A	#N/A	#N/A	15	#N/A	#N/A	#N/A	#N/A	103.7	1	#N/A	8
170	19405	Waste Rock	xHlp	1	1330	38	#N/A	#N/A	#N/A	19	#N/A	#N/A	#N/A	#N/A	117.7	1	#N/A	46
171	19406	Waste Rock	xHlp	1	1320	34	#N/A	#N/A	#N/A	18	#N/A	#N/A	#N/A	#N/A	96.9	1	#N/A	48
282	ABA-015	Waste Rock	xHlp	11	1570	32	#N/A	#N/A	#N/A	229	#N/A	2800	#N/A	#N/A	245	10	#N/A	104
528	MC93-114 427-429	Waste Rock	xHlp	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
158	13289	Waste Rock	xTF	1	1720	24	#N/A	#N/A	#N/A	16	#N/A	#N/A	#N/A	#N/A	92.2	1	#N/A	1610
159	13290	Waste Rock	xTF	1	1620	34	#N/A	#N/A	#N/A	15	#N/A	#N/A	#N/A	#N/A	111.7	1	#N/A	191
160	13291	Waste Rock	xTF	1	1530	45	#N/A	#N/A	#N/A	19	#N/A	#N/A	#N/A	#N/A	95.5	1	#N/A	1321
161	13292	Waste Rock	xTF	1	1680	70	#N/A	#N/A	#N/A	59	#N/A	#N/A	#N/A	#N/A	88.2	1	#N/A	2845
162	13294	Waste Rock	xTF	1	1740	112	#N/A	#N/A	#N/A	114	#N/A	#N/A	#N/A	#N/A	122.3	1	#N/A	221
163	13295	Waste Rock	xTF	1	1600	53	#N/A	#N/A	#N/A	105	#N/A	#N/A	#N/A	#N/A	74.1	1	#N/A	161
172	19659	Waste Rock	xTF	1	1490	29	#N/A	#N/A	#N/A	8	#N/A	#N/A	#N/A	#N/A	124.6	1	#N/A	42
173	19660	Waste Rock	xTF	1	1710	96	#N/A	#N/A	#N/A	12	#N/A	#N/A	#N/A	#N/A	138.8	1	#N/A	63
174	19661	Waste Rock	xTF	1	1670	68	#N/A	#N/A	#N/A	10	#N/A	#N/A	#N/A	#N/A	120.8	2	#N/A	34
175	19662	Waste Rock	xTF	1	1740	28	#N/A	#N/A	#N/A	16	#N/A	#N/A	#N/A	#N/A	146.6	2	#N/A	19
176	19663	Waste Rock	xTF	1	1750	20	#N/A	#N/A	#N/A	16	#N/A	#N/A	#N/A	#N/A	160.4	1	#N/A	20
177	19664	Waste Rock	xTF	1	1790	29	#N/A	#N/A	#N/A	18	#N/A	#N/A	#N/A	#N/A	143.7	1	#N/A	12
178	19665	Waste Rock	xTF	1	1820	20	#N/A	#N/A	#N/A	19	#N/A	#N/A	#N/A	#N/A	141.2	1	#N/A	16
179	19666	Waste Rock	xTF	1	1560	15	#N/A	#N/A	#N/A	16	#N/A	#N/A	#N/A	#N/A	114.1	1	#N/A	16
180	19667	Waste Rock	xTF	1	1700	14	#N/A	#N/A	#N/A	17	#N/A	#N/A	#N/A	#N/A	142.2	1	#N/A	25
182	20873	Waste Rock	xTF	6	1660	38	#N/A	#N/A	#N/A	45	#N/A	#N/A	#N/A	#N/A	134.5	1	#N/A	23
183	20874	Waste Rock	xTF	1	1730	46	#N/A	#N/A	#N/A	19	#N/A	#N/A	#N/A	#N/A	136.6	1	#N/A	16
184	20875	Waste Rock	xTF	1	1710	59	#N/A	#N/A	#N/A	23	#N/A	#N/A	#N/A	#N/A	148.1	1	#N/A	34

No.	Sample ID	Dataset	Standardized Lithocode	Ag (ppm)	Al (ppm)	As (ppm)	B (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (ppm)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (ppm)	Hg (ppm)	K (ppm)	La (ppm)	Mg (ppm)	Mn (ppm)	Mo (ppm)	Na (ppm)
185	20876	Waste Rock	xTF	1.2	18610	1	#N/A	63	0.9	3	8900	0.1	#N/A	13	173	57310	#N/A	1540	#N/A	23550	254	1	820
186	20877	Waste Rock	xTF	0.8	20310	1	#N/A	57	1	2	9950	0.1	#N/A	1	209	67860	#N/A	1650	#N/A	23100	255	1	450
233	ABA-005	Waste Rock	xTF	3.2	84200	2090	#N/A	460	0.25	6	19000	112.5	12	47	306	47000	140	29700	#N/A	15600	725	1	18800
245	ABA-006	Waste Rock	xTF	5.4	84600	106	#N/A	1880	0.25	1	8500	51.5	18	42	133	60900	310	41400	#N/A	17900	1480	0.5	14400
257	ABA-007	Waste Rock	xTF	2.6	77000	62	#N/A	1080	0.25	10	11100	0.25	16	40	219	75900	90	34800	#N/A	19800	1015	1	19700
276	ABA-012	Waste Rock	xTF	1	89900	59	#N/A	1280	0.25	1	8700	0.5	20	35	179	65500	40	40200	#N/A	23600	1550	1	22000
284	ABA-016	Waste Rock	xTF	0.6	84800	199	#N/A	640	0.25	2	6900	0.5	23	36	274	76100	40	41200	#N/A	18100	735	2	18300
288	ABA-018	Waste Rock	xTF	100	73800	400	#N/A	840	0.25	20	4800	119.5	22	73	1825	95500	210	36700	#N/A	11500	610	1	4700
292	ABA-020	Waste Rock	xTF	0.4	87800	15	#N/A	970	0.5	1	9800	0.25	18	41	177	64400	40	46200	#N/A	24600	1160	1	16000
302	ABA-026	Waste Rock	xTF	0.4	86700	251	#N/A	830	0.25	1	13800	0.25	20	40	126	62500	35	37700	#N/A	28200	545	2	18200
312	ABA-031	Waste Rock	xTF	18.4	83900	247	#N/A	450	0.25	6	4800	11.5	15	58	94	70200	70	37800	#N/A	7100	220	2	2700
314	ABA-033	Waste Rock	xTF	9.4	86200	654	#N/A	720	0.25	6	5800	18	19	59	336	59700	110	39200	#N/A	9700	140	3	4300
316	ABA-035	Waste Rock	xTF	0.6	82100	10	#N/A	630	1.5	1	19400	0.5	17	41	99	48400	40	23000	#N/A	25500	1650	2	29500
320	ABA-037	Waste Rock	xTF	0.1	91500	16	#N/A	890	2	1	19000	0.25	16	36	77	54400	40	20600	#N/A	28300	1740	3	35500
322	ABA-038	Waste Rock	xTF	0.2	88700	138	#N/A	1010	1.5	6	20700	0.25	19	25	123	54700	58	33000	#N/A	17600	1685	1	28700
545	MC90-37 157-160	Waste Rock	xTF	1	90800	200	#N/A	2270	0.25	1	13300	0.25	14	45	156	69300	2.5	40700	#N/A	32500	525	0.5	14600
546	MC90-40 186-189	Waste Rock	xTF	26	55200	440	#N/A	420	0.25	1	5800	0.25	8	142	414	202000	135	24700	#N/A	155000	155	2	1200
526	MC92-76 187-190	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
550	RMS-09003	Waste Rock	xTF	0.1	19800	120	36	110	#N/A	10	3000	5	21	66	95	72100	#N/A	2400	5	17600	789	5	300
552	RMS-09007	Waste Rock	xTF	0.1	20900	175	24	90	#N/A	10	4340	4	23	43	98	75600	#N/A	1800	5	19900	1082	3	300
554	RMS-09011	Waste Rock	xTF	0.1	17100	330	16	105	#N/A	5	6710	5	20	45	85	66100	#N/A	1700	5	15400	1096	4	200
556	RMS-09015	Waste Rock	xTF	0.4	18100	815	20	85	#N/A	10	3550	11	28	52	99	79800	#N/A	1900	5	16700	862	3	300
559	RMS-09023	Waste Rock	xTF	0.1	21000	950	32	85	#N/A	10	3380	12	22	26	96	80100	#N/A	1400	5	19400	960	1	200
561	RMS-09027	Waste Rock	xTF	0.1	15900	900	60	85	#N/A	10	1770	13	25	53	146	94700	#N/A	1700	5	12400	586	4	300
563	RMS-09031	Waste Rock	xTF	0.1	18900	555	82	85	#N/A	10	1280	19	23	58	98	80000	#N/A	1100	5	15400	611	4	300
565	RMS-09035	Waste Rock	xTF	0.4	16400	895	18	55	#N/A	2.5	1330	14	32	46	413	99200	#N/A	500	5	14500	399	1	200
567	RMS-09039	Waste Rock	xTF	0.4	21400	470	28	50	#N/A	2.5	1630	10	26	52	138	81300	#N/A	700	5	20000	680	4	200
569	RMS-09043	Waste Rock	xTF	0.1	24100	95	14	55	#N/A	2.5	950	4	21	82	199	76100	#N/A	1100	5	23000	1009	8	500
571	RMS-09047	Waste Rock	xTF	0.4	19600	170	32	55	#N/A	2.5	1300	6	22	48	189	74700	#N/A	900	5	17900	860	3	300
573	RMS-09051	Waste Rock	xTF	0.1	21800	185	18	70	#N/A	2.5	1670	4	21	66	170	69700	#N/A	1500	5	20600	964	4	300
575	RMS-09055	Waste Rock	xTF	0.1	19400	145	28	55	#N/A	2.5	1560	4	22	44	213	71100	#N/A	900	5	18800	970	3	300
577	RMS-09059	Waste Rock	xTF	0.1	21500	460	36	40	#N/A	2.5	1710	98	24	111	149	82800	#N/A	2100	5	19700	579	9	500
579	RMS-09063	Waste Rock	xTF	0.1	15500	210	22	65	#N/A	2.5	1860	4	21	56	201	59600	#N/A	1300	5	14300	1076	4	400
581	RMS-09067	Waste Rock	xTF	0.1	19300	2	20	55	#N/A	2.5	2040	2	23	32	221	64100	#N/A	800	5	19800	1574	2	300
583	RMS-09071	Waste Rock	xTF	0.1	18600	100	24	55	#N/A	2.5	1840	5	26	65	196	73400	#N/A	1800	5	16900	1035	4	400
585	RMS-09075	Waste Rock	xTF	0.2	13900	2	14	55	#N/A	2.5	2250	3	22	62	294	64900	#N/A	800	5	14000	1266	40	300
587	RMS-09079	Waste Rock	xTF	0.1	23000	2	30	65	#N/A	2.5	1330	0.5	18	79	189	60600	#N/A	1400	5	21700	1260	5	500
589	RMS-09083	Waste Rock	xTF	0.1	21000	2	14	55	#N/A	2.5	2630	2	20	37	322	72200	#N/A	900	5	22100	1632	2	300
591	RMS-09087	Waste Rock	xTF	0.6	20400	2	14	50	#N/A	2.5	5740	2	24	31	279	75700	#N/A	600	5	21100	1771	1	200
593	RMS-09091	Waste Rock	xTF	0.1	20800	2	12	50	#N/A	2.5	7150	69	25	30	275	68400	#N/A	700	5	21800	2172	3	200
595	RMS-09095	Waste Rock	xTF	0.4	26500	2	16	65	#N/A	2.5	2330	3	22	49	237	64300	#N/A	800	5	27900	1607	3	300
597	RMS-09099	Waste Rock	xTF	0.1	28100	2	14	55	#N/A	2.5	2280	2	20	63	261	66200	#N/A	800	5	29300	1642	4	400
599	RMS-09103	Waste Rock	xTF	0.2	23000	2	18	50	#N/A	2.5	2200	2	26	43	343	78300	#N/A	600	5	23200	1389	3	300
601	RMS-09107	Waste Rock	xTF	0.4	23300	2	32	60	#N/A	2.5	1530	1	26	94	362	81500	#N/A	1100	5	22700	1172	6	600
603	RMS-09111	Waste Rock	xTF	0.4	23400	2	14	70	#N/A	2.5	1690	2	23	50	328	78700	#N/A	1000	5	23500	1303	2	400
605	RMS-09115	Waste Rock	xTF	0.1	22300	10	26	65	#N/A	2.5	1350	2	26	72	284	75400	#N/A	800	5	21200	962	6	500
607	RMS-09119	Waste Rock	xTF	0.4	25200	50	24	65	#N/A	2.5	970	3	30	71	342	90200	#N/A	1100	5	23100	899	5	400
609	RMS-09123	Waste Rock	xTF	0.2	23700	2	58	60	#N/A	2.5	820	2	26	87	325	75900	#N/A	1400	5	20800	552	6	700
613	RMS-09131	Waste Rock	xTF	0.4	18800	865	34	55	#N/A	2.5	2330	16	29	57	311	74400	#N/A	1000	5	18500	1544	4	400
670	RMS-10088	Waste Rock	xTF	9.2	16700	670	10	20	#N/A	2.5	6400	71	18	99	195	52000	#N/A	2000	5	18700	1976	5	100
672	RMS-10091	Waste Rock	xTF	0.1	20500	410	10	35	#N/A	2.5	6600	58	22	38	184	83200	#N/A	4500	5	18600	1706	2	200
676	RMS-10097	Waste Rock	xTF	0.1	23700	685	6	40	#N/A	15	15800	10	20	61	54	62100	#N/A	1800	5	27700	1159	1	300
694	RMS-10183	Waste Rock	xTF	7.6	11800	560	6	15	#N/A	5	7400	24	16	237	184	51400	#N/A	1300	5	14200	719	15	100
747	RMS-10303	Waste Rock	xTF	0.1	9700	330	18	35	#N/A	5	5200	6	18	142	112	64000	#N/A	1300	5	10100	263	3	200
749	RMS-10307	Waste Rock	xTF	0.6	12800	530	38	30	#N/A	5	5900	9	23	114	159	59400	#N/A	1400	5	14600	269	2	200
753	RMS-10315	Waste Rock	xTF	0.1	15500	315	30	35	#N/A	5	7000	5	19	101	107	52100	#N/A	1000	5	20000	334	2	200
755	RMS-10319	Waste Rock	xTF	0.1	20700	95	24	70	#N/A	2.5	7100	1	25	211	158	70200	#N/A	2000	5	26900	805	5	300
757	RMS-10323	Waste Rock	xTF	0.1	13200	500	24	55	#N/A	5	7300	8	28	175	142	71900	#N/A	2000	5	13800	451	2	300
759	RMS-10327	Waste Rock	xTF	0.2	16100	360	24	60	#N/A	5	9300	5	30	214	191	76900	#N/A	1600	5	19400	644	3	400
783	RMS-10383	Waste Rock	xTF	0.2	12500	55	6	25	#N/A	5	4900	0.5	12	116	70	34500	#N/A	700	5	15800	397	3	200
787	RMS-10391	Waste Rock	xTF	0.1	24400	245	28	60	#N/A	10	9100	3	27	87	115	78100	#N/A	1400	5	30200	1052	3	400
791	RMS-10399	Waste Rock	xTF	0.1	21700	255	44	35	#N/A	10	7700	3	22	425	89	63400	#N/A	1100	5	27300	652	27	600
795	RMS-10407	Waste Rock	xTF	0.1	24100	455	54	75	#N/A	10	9800	6	28	236	102	65600	#N/A	2000	5	28600	748	15	500
801	RMS-10419	Waste Rock	xTF	0.1	22300	85	20	65	#N/A	15	7600	1	23	84	131	68900	#N/A	1200	5	28800	888	4	500
805	RMS-10427	Waste Rock	xTF	0.2	20100	205	14	55	#N/A	10	10900	4	23	50	97	62800	#N/A	1000	5	26200	890	2	400
811	RMS-10443	Waste Rock	xTF	0.1	13800	400	12	55	#N/A	2.5	7000	23	27	28	165	95400	#N/A	4300	5	9600	489	2	100
817	RMS-10455	Waste Rock	xTF	25.2	16600	310	10	50	#N/A	2.5	7600	10	19	49	203	66200	#N/A	4600	5	12600	708	5	100
823	RMS-10467	Waste Rock	xTF	24.8	13100	290	10	55	#N/A	2.5	6800	30	21	26	175	82800	#N/A	3800	5	9600	510	3	100
829	RMS-10479	Waste Rock	xTF	22.4	7200	275	6	25	#N/A	2.5	4100	7	21	40	242	79200	#N/A	2600	5	4400	145	3	100
831	RMS-10483	Waste Rock	xTF	4.2	11700	110	10	25	#N/A	5	6000	6	21	26	166	65900	#N/A	2900	5	10100	307	2	100
835	RMS-10491	Waste Rock	xTF	8.8	15900	115	12	55	#N/A	2.5	8700	7	22	44	278	79600	#N/A	3600	5	13800	440	3	100
839	RMS-10503	Waste Rock	xTF	3	18700	750	10	65	#N/A	2.5	13400	25	21	31	216	73800	#N/A	3200	5	19400	645	2	100
841	RMS-10507	Waste Rock	xTF	0.1	19100	740	10	70	#N/A	2.5	15800	29	22	44	1166	75400	#N/A	3400	5	19500	730	5	300
843	RMS-10511	Waste Rock	xTF	1.4	17800	75	12	65	#N/A	2.5	7300	5	19	36	176	79900	#N/A	3100	5	17400	545	1	200
845	RMS-10515	Waste Rock	xTF	2.2	17700	70	10	65	#N/A	2.5	37900	20	18	40	221	64700	#N/A	2000	5	18900	1376	2	300
847	RMS-10519	Waste Rock	xTF	0.1	18900	265	10	45	#N/A	2.5	7100	4	17	37	117	60600	#N/A	3100	5	19400	490	2	200

Metals Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Ni (ppm)	P (ppm)	Pb (ppm)	Sb (ppm)	Se (ppm)	Sn (ppm)	Sr (ppm)	Te (ppm)	Ti (ppm)	Tl (ppm)	U (ppm)	V (ppm)	W (ppm)	Y (ppm)	Zn (ppm)
185	20876	Waste Rock	xTF	1	1580	35	#N/A	#N/A	#N/A	16	#N/A	#N/A	#N/A	#N/A	141.1	1	#N/A	22
186	20877	Waste Rock	xTF	1	1430	41	#N/A	#N/A	#N/A	13	#N/A	#N/A	#N/A	#N/A	126.5	1	#N/A	24
233	ABA-005	Waste Rock	xTF	4	1020	350	#N/A	#N/A	#N/A	215	#N/A	1700	#N/A	#N/A	111	20	#N/A	5
245	ABA-006	Waste Rock	xTF	9	1510	140	#N/A	#N/A	#N/A	209	#N/A	2900	#N/A	#N/A	239	10	#N/A	4430
257	ABA-007	Waste Rock	xTF	8	1350	42	#N/A	#N/A	#N/A	244	#N/A	2600	#N/A	#N/A	171	10	#N/A	94
276	ABA-012	Waste Rock	xTF	11	1580	28	#N/A	#N/A	#N/A	309	#N/A	2900	#N/A	#N/A	259	10	#N/A	130
284	ABA-016	Waste Rock	xTF	10	1550	34	#N/A	#N/A	#N/A	266	#N/A	2900	#N/A	#N/A	240	10	#N/A	78
288	ABA-018	Waste Rock	xTF	8	1270	48	#N/A	#N/A	#N/A	105	#N/A	2300	#N/A	#N/A	203	40	#N/A	5
292	ABA-020	Waste Rock	xTF	9	1570	26	#N/A	#N/A	#N/A	269	#N/A	2800	#N/A	#N/A	242	10	#N/A	52
302	ABA-026	Waste Rock	xTF	11	1620	30	#N/A	#N/A	#N/A	290	#N/A	2800	#N/A	#N/A	245	10	#N/A	40
312	ABA-031	Waste Rock	xTF	11	1490	128	#N/A	14.0	#N/A	59	#N/A	2800	#N/A	#N/A	239	10	#N/A	906
314	ABA-033	Waste Rock	xTF	11	1560	40	#N/A	#N/A	#N/A	114	#N/A	3000	#N/A	#N/A	244	10	#N/A	1550
316	ABA-035	Waste Rock	xTF	11	1380	54	#N/A	#N/A	#N/A	423	#N/A	2700	#N/A	#N/A	217	5	#N/A	68
320	ABA-037	Waste Rock	xTF	13	1530	26	#N/A	#N/A	#N/A	588	#N/A	3100	#N/A	#N/A	248	5	#N/A	58
322	ABA-038	Waste Rock	xTF	5	1330	52	#N/A	#N/A	#N/A	424	#N/A	2800	#N/A	#N/A	214	5	#N/A	54
545	MC90-37 157-160	Waste Rock	xTF	12	1750	60	#N/A	#N/A	#N/A	270	#N/A	2900	#N/A	#N/A	259	10	#N/A	48
546	MC90-40 186-189	Waste Rock	xTF	8	1150	64	#N/A	#N/A	#N/A	27	#N/A	1100	#N/A	#N/A	168	30	#N/A	162
526	MC92-76 187-190	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
550	RMS-09003	Waste Rock	xTF	9	1600	138	25	#N/A	10	61	25	1100	0	5	126	5	8	416
552	RMS-09007	Waste Rock	xTF	11	1640	172	30	#N/A	10	69	25	1100	0	5	132	5	10	211
554	RMS-09011	Waste Rock	xTF	8	1470	188	30	#N/A	10	97	25	900	0	5	114	5	10	162
556	RMS-09015	Waste Rock	xTF	11	1660	202	20	#N/A	10	65	25	1000	0	20	128	20	9	121
559	RMS-09023	Waste Rock	xTF	7	1610	160	30	#N/A	10	70	25	900	0	5	132	5	7	90
561	RMS-09027	Waste Rock	xTF	9	1570	270	25	#N/A	10	57	25	1100	0	5	138	5	8	144
563	RMS-09031	Waste Rock	xTF	9	1650	180	25	#N/A	10	54	25	1300	0	5	166	5	10	941
565	RMS-09035	Waste Rock	xTF	12	1310	88	2.5	#N/A	10	33	25	300	0	5	113	5	0.5	73
567	RMS-09039	Waste Rock	xTF	9	1300	102	2.5	#N/A	10	45	25	300	0	5	132	5	1	154
569	RMS-09043	Waste Rock	xTF	10	1260	28	2.5	#N/A	10	41	25	500	0	5	193	5	2	112
571	RMS-09047	Waste Rock	xTF	10	1250	106	2.5	#N/A	10	47	25	400	0	5	148	5	2	160
573	RMS-09051	Waste Rock	xTF	9	1280	66	2.5	#N/A	10	48	25	500	0	10	163	5	2	75
575	RMS-09055	Waste Rock	xTF	8	1280	168	2.5	#N/A	10	48	25	500	0	5	155	5	3	122
577	RMS-09059	Waste Rock	xTF	13	1200	128	2.5	#N/A	10	41	25	400	0	5	111	5	1	7067
579	RMS-09063	Waste Rock	xTF	7	1230	26	2.5	#N/A	10	54	25	500	0	10	151	5	5	65
581	RMS-09067	Waste Rock	xTF	6	1180	24	2.5	#N/A	10	54	25	500	0	5	161	5	4	114
583	RMS-09071	Waste Rock	xTF	12	1320	66	2.5	#N/A	10	51	25	400	0	5	138	5	4	152
585	RMS-09075	Waste Rock	xTF	8	1110	22	2.5	#N/A	10	61	25	300	0	5	105	5	5	247
587	RMS-09079	Waste Rock	xTF	7	1330	12	2.5	#N/A	10	50	25	500	0	10	169	5	4	71
589	RMS-09083	Waste Rock	xTF	9	1310	14	10	#N/A	10	66	25	300	0	5	156	20	3	145
591	RMS-09087	Waste Rock	xTF	5	1280	18	2.5	#N/A	10	119	25	300	0	10	120	20	2	237
593	RMS-09091	Waste Rock	xTF	8	1190	12	10	#N/A	10	150	25	200	0	5	103	5	3	5408
595	RMS-09095	Waste Rock	xTF	7	1390	20	2.5	#N/A	10	60	25	400	0	5	178	5	2	258
597	RMS-09099	Waste Rock	xTF	8	1360	16	5	#N/A	10	59	25	400	0	5	184	5	2	147
599	RMS-09103	Waste Rock	xTF	12	1450	16	2.5	#N/A	10	50	25	400	0	5	149	20	1	130
601	RMS-09107	Waste Rock	xTF	10	1360	18	2.5	#N/A	10	47	25	600	0	10	153	5	3	134
603	RMS-09111	Waste Rock	xTF	11	1380	12	2.5	#N/A	10	44	25	400	0	10	159	5	1	180
605	RMS-09115	Waste Rock	xTF	13	1480	38	10	#N/A	10	34	25	500	0	5	147	10	2	134
607	RMS-09119	Waste Rock	xTF	16	1490	32	2.5	#N/A	10	35	25	500	0	10	175	5	0.5	126
609	RMS-09123	Waste Rock	xTF	10	1450	26	2.5	#N/A	10	38	25	600	0	5	161	5	2	129
613	RMS-09131	Waste Rock	xTF	10	1340	32	5	#N/A	10	109	25	300	0	5	148	5	2	159
670	RMS-10088	Waste Rock	xTF	58	950	212	60	#N/A	10	27	25	100	2.5	5	64	5	2	5108
672	RMS-10091	Waste Rock	xTF	14	1790	154	40	#N/A	10	27	25	100	2.5	5	92	5	3	4861
676	RMS-10097	Waste Rock	xTF	25	1380	44	20	#N/A	10	49	25	100	2.5	5	145	5	1	86
694	RMS-10183	Waste Rock	xTF	63	840	38	40	#N/A	100	31	25	200	2.5	10	45	5	3	2110
747	RMS-10303	Waste Rock	xTF	73	1020	26	20	#N/A	10	25	25	600	2.5	5	63	5	4	256
749	RMS-10307	Waste Rock	xTF	81	880	30	25	#N/A	10	31	25	600	2.5	5	66	5	4	143
753	RMS-10315	Waste Rock	xTF	53	980	38	30	#N/A	10	33	25	500	2.5	5	86	5	3	97
755	RMS-10319	Waste Rock	xTF	101	1190	26	30	#N/A	20	31	25	1100	2.5	5	107	5	8	69
757	RMS-10323	Waste Rock	xTF	92	1470	42	20	#N/A	10	27	25	1000	2.5	5	93	5	11	152
759	RMS-10327	Waste Rock	xTF	116	1180	38	30	#N/A	20	36	25	1100	2.5	5	102	5	11	107
783	RMS-10383	Waste Rock	xTF	52	800	24	15	#N/A	20	33	25	500	2.5	5	63	5	4	26
787	RMS-10391	Waste Rock	xTF	28	1730	58	35	#N/A	10	30	25	1100	2.5	5	200	5	8	51
791	RMS-10399	Waste Rock	xTF	18	1350	18	20	#N/A	260	29	25	1100	2.5	5	194	5	8	41
795	RMS-10407	Waste Rock	xTF	15	1800	32	25	#N/A	60	37	25	1300	2.5	5	202	5	9	46
801	RMS-10419	Waste Rock	xTF	13	1620	28	35	#N/A	10	27	25	1200	2.5	5	189	5	10	94
805	RMS-10427	Waste Rock	xTF	10	1550	28	30	#N/A	10	31	25	900	2.5	10	184	5	7	160
811	RMS-10443	Waste Rock	xTF	15	1760	158	35	#N/A	10	15	25	200	2.5	5	46	5	5	1880
817	RMS-10455	Waste Rock	xTF	11	1750	116	25	#N/A	10	24	25	100	2.5	5	61	5	5	684
823	RMS-10467	Waste Rock	xTF	11	1750	58	30	#N/A	10	19	25	100	2.5	5	55	5	2	2962
829	RMS-10479	Waste Rock	xTF	9	1070	16	30	#N/A	10	18	25	50	2.5	10	23	5	0.5	737
831	RMS-10483	Waste Rock	xTF	13	1350	20	30	#N/A	10	22	25	50	2.5	5	59	5	1	631
835	RMS-10491	Waste Rock	xTF	11	1910	26	35	#N/A	10	36	25	50	2.5	5	81	5	2	1103
839	RMS-10503	Waste Rock	xTF	18	1850	80	55	#N/A	10	68	25	50	2.5	5	104	5	3	1995
841	RMS-10507	Waste Rock	xTF	14	1580	82	90	#N/A	10	61	25	50	2.5	5	104	5	3	1890
843	RMS-10511	Waste Rock	xTF	10	1820	18	20	#N/A	10	40	25	200	2.5	10	140	5	3	942
845	RMS-10515	Waste Rock	xTF	10	1490	40	20	#N/A	10	85	25	50	2.5	5	105	5	0.5	1831
847	RMS-10519	Waste Rock	xTF	9	1530	4	20	#N/A	10	37	25	200	2.5	5	113	5	5	107

No.	Sample ID	Dataset	Standardized Lithocode	Ag (ppm)	Al (ppm)	As (ppm)	B (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (ppm)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (ppm)	Hg (ppm)	K (ppm)	La (ppm)	Mg (ppm)	Mn (ppm)	Mo (ppm)	Na (ppm)
849	RMS-10523	Waste Rock	xTF	11.8	22400	465	10	55	#N/A	2.5	17400	42	25	92	231	70900	#N/A	3300	5	22800	810	4	200
851	RMS-10527	Waste Rock	xTF	0.1	13100	460	8	35	#N/A	2.5	18200	32	16	22	658	78400	#N/A	2200	5	12500	694	1	100
853	RMS-10531	Waste Rock	xTF	0.1	17600	30	8	45	#N/A	2.5	9700	2	9	18	97	45500	#N/A	2300	5	19000	445	2	200
855	RMS-10535	Waste Rock	xTF	7.4	21800	95	12	55	#N/A	2.5	54700	3	23	39	250	75800	#N/A	1800	5	23700	1825	1	300
857	RMS-10539	Waste Rock	xTF	2.2	13400	20	8	25	#N/A	5	6100	2	22	168	142	50800	#N/A	1000	5	17000	548	3	300
859	RMS-10543	Waste Rock	xTF	18.8	6800	220	4	120	#N/A	2.5	31100	5	14	27	140	48400	#N/A	2200	5	5500	662	0.5	100
861	RMS-10547	Waste Rock	xTF	6.2	12900	100	4	20	#N/A	2.5	37300	0.5	11	23	74	43100	#N/A	600	5	14500	1129	0.5	100
863	RMS-10551	Waste Rock	xTF	0.6	12500	305	6	35	#N/A	2.5	10100	4	15	24	106	53600	#N/A	1400	5	13500	443	0.5	100
865	RMS-10557	Waste Rock	xTF	0.2	21500	285	8	55	#N/A	2.5	5400	3	19	26	61	44400	#N/A	1600	5	24300	442	0.5	300
867	RMS-10563	Waste Rock	xTF	0.2	15900	130	8	45	#N/A	5	8800	4	18	41	104	53000	#N/A	1200	5	17700	506	4	200
871	RMS-10571	Waste Rock	xTF	0.1	14300	10	6	60	#N/A	5	32200	3	15	39	85	44000	#N/A	900	5	16300	1152	0.5	200
875	RMS-10579	Waste Rock	xTF	0.4	34000	60	10	100	#N/A	2.5	20000	1	28	75	150	91600	#N/A	2200	5	40800	1153	5	400
879	RMS-10587	Waste Rock	xTF	0.4	28800	55	6	80	#N/A	5	23000	1	31	40	126	94700	#N/A	2200	5	34600	1102	0.5	300
885	RMS-10599	Waste Rock	xTF	0.8	30400	500	12	80	#N/A	2.5	21700	6	48	56	217	102200	#N/A	2300	5	35700	1142	4	400
889	RMS-10607	Waste Rock	xTF	0.8	27400	600	8	85	#N/A	10	16300	7	37	47	131	88100	#N/A	2100	5	30400	912	2	300
893	RMS-10615	Waste Rock	xTF	3.2	26200	120	6	50	#N/A	2.5	14500	0.5	29	38	134	74000	#N/A	1300	5	31400	1018	0.5	300
898	RMS-10623	Waste Rock	xTF	11.8	10300	290	4	50	#N/A	2.5	7700	13	20	28	133	65200	#N/A	3000	10	7900	281	3	100
900	RMS-10627	Waste Rock	xTF	0.1	21700	245	6	65	#N/A	2.5	10500	4	21	24	151	58900	#N/A	1300	5	26300	699	3	200
902	RMS-10631	Waste Rock	xTF	5.6	13800	470	6	50	#N/A	5	12100	20	20	30	119	60600	#N/A	3100	10	12000	422	3	100
904	RMS-10635	Waste Rock	xTF	0.1	24000	250	6	55	#N/A	5	15300	4	30	31	127	64200	#N/A	1200	10	28100	920	3	200
906	RMS-10639	Waste Rock	xTF	6.8	17300	125	4	65	#N/A	2.5	21300	4	15	36	152	59200	#N/A	2000	10	19000	577	2	200
908	RMS-10643	Waste Rock	xTF	0.1	18400	325	8	60	#N/A	2.5	24300	5	20	21	127	60400	#N/A	2000	10	21300	791	2	200
910	RMS-10647	Waste Rock	xTF	0.8	15800	160	6	65	#N/A	2.5	8800	3	17	26	145	62000	#N/A	2100	5	16100	275	2	200
912	RMS-10651	Waste Rock	xTF	0.1	20200	175	8	75	#N/A	5	12600	3	20	21	133	74600	#N/A	1700	10	23800	687	3	100
914	RMS-10655	Waste Rock	xTF	0.8	17300	20	4	75	#N/A	2.5	11100	2	15	26	142	56100	#N/A	1300	5	20000	396	2	200
916	RMS-10659	Waste Rock	xTF	0.1	20300	185	8	75	#N/A	5	8100	3	18	22	127	65900	#N/A	1900	5	22200	592	1	200
918	RMS-10663	Waste Rock	xTF	0.6	19000	3	6	70	#N/A	2.5	10100	0.5	18	29	168	59800	#N/A	1100	5	20800	402	2	300
920	RMS-10667	Waste Rock	xTF	0.1	21500	115	8	75	#N/A	5	8700	2	20	20	135	73100	#N/A	1900	10	23200	607	1	300
922	RMS-10671	Waste Rock	xTF	0.1	18700	3	6	75	#N/A	2.5	13300	0.5	19	35	162	64400	#N/A	1500	5	18800	411	2	300
924	RMS-10675	Waste Rock	xTF	0.1	21800	3	6	75	#N/A	5	5800	0.5	16	31	117	65000	#N/A	1300	5	23800	607	2	300
926	RMS-10679	Waste Rock	xTF	1.2	18900	435	6	55	#N/A	2.5	11200	8	19	117	122	49800	#N/A	1500	5	23500	614	2	200
928	RMS-10683	Waste Rock	xTF	0.1	19100	3	4	75	#N/A	2.5	9900	0.5	18	28	165	58800	#N/A	1600	10	19800	454	2	200
930	RMS-10687	Waste Rock	xTF	0.6	21400	40	6	70	#N/A	2.5	17300	0.5	17	40	134	58400	#N/A	1200	10	24100	839	2	300
932	RMS-10691	Waste Rock	xTF	0.6	17900	3	4	70	#N/A	5	14500	0.5	19	30	147	63500	#N/A	1300	10	18300	486	2	200
934	RMS-10695	Waste Rock	xTF	2	18600	195	14	65	#N/A	5	15000	4	20	60	138	57400	#N/A	1200	10	20500	718	2	300
936	RMS-10699	Waste Rock	xTF	1	20200	165	20	65	#N/A	5	20900	4	21	41	117	54000	#N/A	600	10	24700	1009	2	200
938	RMS-10703	Waste Rock	xTF	1.2	17000	875	4	65	#N/A	2.5	17500	19	21	28	192	62100	#N/A	1600	10	18400	681	2	200
940	RMS-10707	Waste Rock	xTF	0.1	19300	130	8	70	#N/A	2.5	12600	2	21	37	132	55100	#N/A	600	10	22800	827	2	300
942	RMS-10711	Waste Rock	xTF	0.1	19000	15	14	70	#N/A	2.5	15900	0.5	19	37	130	52900	#N/A	600	10	21100	605	2	300
944	RMS-10715	Waste Rock	xTF	0.1	17000	3	38	65	#N/A	2.5	9000	0.5	19	40	134	54200	#N/A	600	10	17700	542	2	300
946	RMS-10719	Waste Rock	xTF	0.4	16400	3	4	80	#N/A	2.5	21500	0.5	19	28	180	58100	#N/A	800	10	19700	796	2	200
948	RMS-10723	Waste Rock	xTF	0.1	17600	3	12	65	#N/A	5	17400	0.5	18	34	118	53500	#N/A	500	10	20500	961	2	300
950	RMS-10763	Waste Rock	xTF	0.1	19300	3	8	70	#N/A	2.5	16700	0.5	17	34	129	51600	#N/A	1100	10	23000	1958	2	300
952	RMS-10767	Waste Rock	xTF	0.8	14500	3	6	85	#N/A	2.5	10700	0.5	18	27	187	59800	#N/A	1300	10	16300	501	2	200
954	RMS-10771	Waste Rock	xTF	0.1	17200	3	8	65	#N/A	2.5	31200	0.5	14	27	130	45900	#N/A	1200	10	20100	1890	2	300
956	RMS-10775	Waste Rock	xTF	0.1	16900	3	6	75	#N/A	2.5	23700	0.5	19	27	157	58300	#N/A	1100	10	19400	1242	2	300
958	RMS-10779	Waste Rock	xTF	0.1	14700	165	4	55	#N/A	2.5	35000	2	15	22	120	45400	#N/A	1100	10	17100	1479	1	300
960	RMS-10783	Waste Rock	xTF	0.1	16700	130	8	75	#N/A	2.5	18700	4	20	23	174	62300	#N/A	1100	10	18400	732	2	200
962	RMS-10787	Waste Rock	xTF	0.1	16700	110	6	65	#N/A	2.5	29300	2	20	24	129	47700	#N/A	1400	10	18700	1608	1	400
964	RMS-10791	Waste Rock	xTF	0.1	18500	3	6	80	#N/A	2.5	9900	0.5	17	34	140	60700	#N/A	1300	10	20900	667	2	300
969	RMS-10799	Waste Rock	xTF	0.1	17400	160	6	75	#N/A	2.5	22900	3	18	24	120	50200	#N/A	1200	10	20500	1501	1	300
971	RMS-10803	Waste Rock	xTF	0.1	18700	3	6	70	#N/A	5	10800	0.5	20	32	150	67300	#N/A	1500	10	21700	827	2	200
973	RMS-10851	Waste Rock	xTF	0.1	23800	2	34	80	#N/A	2.5	2380	0.5	24	55	152	69300	#N/A	1100	5	24400	1510	3	400
975	RMS-10855	Waste Rock	xTF	0.1	23400	15	24	65	#N/A	2.5	1880	0.5	27	42	144	81100	#N/A	600	5	24600	1740	0.5	300
977	RMS-10859	Waste Rock	xTF	0.1	21200	10	58	60	#N/A	10	1580	0.5	21	75	124	62100	#N/A	600	5	18500	762	5	400
979	RMS-10863	Waste Rock	xTF	0.1	19100	35	32	45	#N/A	10	1530	1	23	86	133	65100	#N/A	300	5	20700	1055	4	300
981	RMS-10867	Waste Rock	xTF	0.1	23000	2	40	60	#N/A	2.5	1480	0.5	21	57	133	61900	#N/A	600	5	24800	1463	0.5	300
983	RMS-10871	Waste Rock	xTF	0.1	22000	2	24	60	#N/A	2.5	1990	0.5	21	63	152	66700	#N/A	600	5	23900	1541	4	300
985	RMS-10875	Waste Rock	xTF	0.1	23600	90	18	55	#N/A	2.5	4330	0.5	19	55	143	64300	#N/A	900	5	25200	1940	5	300
988	RMS-10879	Waste Rock	xTF	0.1	23100	645	10	50	#N/A	2.5	4130	13	17	55	149	63200	#N/A	1200	5	25300	1786	4	300
990	RMS-10886	Waste Rock	xTF	0.1	27200	270	14	70	#N/A	5	2490	4	32	54	103	66200	#N/A	900	5	30200	2041	2	300
992	RMS-10887	Waste Rock	xTF	0.1	27000	55	10	100	#N/A	2.5	3900	0.5	28	48	105	67600	#N/A	800	5	29000	2480	2	300
994	RMS-10891	Waste Rock	xTF	0.1	26200	2	14	110	#N/A	15	5180	0.5	26	48	76	68900	#N/A	1600	5	24400	2354	4	300
997	RMS-10895	Waste Rock	xTF	0.1	23100	10	8	80	#N/A	5	3120	0.5	24	32	110	69300	#N/A	800	5	24100	2352	0.5	200
999	RMS-10899	Waste Rock	xTF	0.1	26500	2	10	85	#N/A	5	3470	0.5	26	59	99	70000	#N/A	1200	5	27400	2433	2	300
1000	RMS-10903	Waste Rock	xTF	0.1	20300	265	12	95	#N/A	5	2960	3	21	43	125	74200	#N/A	1400	5	21900	1277	1	300
1002	RMS-10907	Waste Rock	xTF	0.1	20800	400	16	95	#N/A	2.5	5850	5	23	40	131	74500	#N/A	1500	5	21900	1706	2	200
1004	RMS-10911	Waste Rock	xTF	0.1	27400	265	20	100	#N/A	10	5520	6	24	27	142	92400	#N/A	1400	5	28900	1764	1	100
1006	RMS-10915	Waste Rock	xTF	0.1	22400	255	16	95	#N/A	5	3690	3	25	57	108	65800	#N/A	1400	5	21700	2087	3	300
1008	RMS-10919	Waste Rock	xTF	0.1	21000	285	14	75	#N/A	5	3110	4	25	39	108	68400	#N/A	1000	5	21900	1743	2	200
1010	RMS-10923	Waste Rock	xTF	0.1	22500	260	16	105	#N/A	5	4490	3	24	56	124	79700	#N/A	2000	5	21900	1801	3	200
1012	RMS-10927	Waste Rock	xTF	0.1	24000	275	20	85	#N/A	10	2000	4	31	46	121	71400	#N/A	1100	5	24200	1870	2	300
1014	RMS-10931	Waste Rock	xTF	0.1	22100	75	14	85	#N/A	5	4670	0.5	23	42	103	63300	#N/A	1300	5	22600	1978	2	300
1016	RMS-10935	Waste Rock	xTF	0.1	24300	200	22	85	#N/A	5	4040	3	26	46	113	75300	#N/A	1100	5	24200	1789	2	300
1018	RMS-10943	Waste Rock	xTF	0.1	26400	470	22	85	#N/A	10	3580	6	30	67	118	78300	#N/A	1600	5	25500	1633	3	500
1020	RMS-10947	Waste Rock	xTF	0.1	32300	80	14	75	#N/A	10	2960	1	21	44	70	66000	#N/A	1000	5	31900	1528	2	600

No.	Sample ID	Dataset	Standardized Lithocode	Ni (ppm)	P (ppm)	Pb (ppm)	Sb (ppm)	Se (ppm)	Sn (ppm)	Sr (ppm)	Te (ppm)	Ti (ppm)	Tl (ppm)	U (ppm)	V (ppm)	W (ppm)	Y (ppm)	Zn (ppm)
849	RMS-10523	Waste Rock	xTF	45	1650	110	50	#N/A	10	54	25	50	2.5	10	108	5	4	2990
851	RMS-10527	Waste Rock	xTF	11	1110	166	370	#N/A	10	55	25	50	2.5	10	57	5	1	1897
853	RMS-10531	Waste Rock	xTF	10	1400	8	30	#N/A	10	48	25	50	2.5	5	98	5	3	113
855	RMS-10535	Waste Rock	xTF	13	1580	78	45	#N/A	10	153	25	50	2.5	5	133	5	2	188
857	RMS-10539	Waste Rock	xTF	99	900	64	25	#N/A	20	35	25	600	2.5	10	70	5	3	190
859	RMS-10543	Waste Rock	xTF	5	810	72	5	#N/A	10	108	25	50	2.5	60	26	5	0.5	299
861	RMS-10547	Waste Rock	xTF	4	890	62	15	#N/A	10	171	25	50	2.5	10	77	5	0.5	50
863	RMS-10551	Waste Rock	xTF	9	1290	34	25	#N/A	10	102	25	50	2.5	5	79	5	0.5	111
865	RMS-10557	Waste Rock	xTF	6	1390	50	35	#N/A	10	54	25	50	2.5	5	121	5	0.5	85
867	RMS-10563	Waste Rock	xTF	18	1100	58	25	#N/A	10	43	25	300	2.5	5	129	5	1	316
871	RMS-10571	Waste Rock	xTF	9	1110	70	25	#N/A	10	142	25	200	2.5	5	95	5	2	343
875	RMS-10579	Waste Rock	xTF	7	2010	30	25	#N/A	10	81	25	400	2.5	5	280	5	1	167
879	RMS-10587	Waste Rock	xTF	9	1670	50	30	#N/A	10	85	25	500	2.5	30	247	5	1	141
885	RMS-10599	Waste Rock	xTF	9	1980	46	35	#N/A	10	61	25	300	2.5	5	256	5	1	70
889	RMS-10607	Waste Rock	xTF	6	1690	34	30	#N/A	10	55	25	200	2.5	5	217	5	0.5	78
893	RMS-10615	Waste Rock	xTF	2	1250	18	10	#N/A	10	46	25	300	2.5	30	192	5	0.5	83
898	RMS-10623	Waste Rock	xTF	11	1580	46	40	#N/A	10	24	25	300	2.5	5	47	5	7	1120
900	RMS-10627	Waste Rock	xTF	5	1330	1	20	#N/A	10	41	25	300	2.5	5	188	5	3	67
902	RMS-10631	Waste Rock	xTF	10	1570	74	30	#N/A	10	36	25	400	2.5	5	76	5	8	1779
904	RMS-10635	Waste Rock	xTF	6	1230	1	25	#N/A	10	76	25	300	2.5	5	180	5	2	74
906	RMS-10639	Waste Rock	xTF	12	1320	76	25	#N/A	10	57	25	400	2.5	5	116	5	7	303
908	RMS-10643	Waste Rock	xTF	4	1190	1	20	#N/A	10	91	25	200	2.5	5	112	5	2	44
910	RMS-10647	Waste Rock	xTF	6	1470	14	20	#N/A	10	30	25	600	2.5	5	110	5	6	71
912	RMS-10651	Waste Rock	xTF	6	1250	1	20	#N/A	10	37	25	400	2.5	5	140	5	4	47
914	RMS-10655	Waste Rock	xTF	6	1500	42	20	#N/A	10	32	25	500	2.5	5	128	5	4	111
916	RMS-10659	Waste Rock	xTF	5	1230	4	20	#N/A	10	44	25	600	2.5	5	138	5	5	35
918	RMS-10663	Waste Rock	xTF	8	1480	8	20	#N/A	10	34	25	800	2.5	5	131	5	5	40
920	RMS-10667	Waste Rock	xTF	6	1280	1	20	#N/A	10	51	25	700	2.5	5	146	5	4	37
922	RMS-10671	Waste Rock	xTF	9	1480	6	15	#N/A	10	40	25	800	2.5	5	127	5	5	47
924	RMS-10675	Waste Rock	xTF	6	1220	1	15	#N/A	10	38	25	700	2.5	5	141	5	4	35
926	RMS-10679	Waste Rock	xTF	71	1110	22	20	#N/A	10	42	25	200	2.5	5	104	5	5	102
928	RMS-10683	Waste Rock	xTF	8	1550	12	20	#N/A	10	32	25	800	2.5	5	133	5	5	47
930	RMS-10687	Waste Rock	xTF	16	1290	12	20	#N/A	10	62	25	400	2.5	5	140	5	3	46
932	RMS-10691	Waste Rock	xTF	9	1450	6	15	#N/A	10	35	25	800	2.5	5	133	5	7	44
934	RMS-10695	Waste Rock	xTF	30	1320	32	20	#N/A	10	47	25	800	2.5	5	127	5	7	92
936	RMS-10699	Waste Rock	xTF	15	1340	48	20	#N/A	10	57	25	700	2.5	5	161	5	6	146
938	RMS-10703	Waste Rock	xTF	9	1510	10	20	#N/A	10	49	25	400	2.5	5	139	5	4	260
940	RMS-10707	Waste Rock	xTF	11	1390	24	15	#N/A	10	38	25	700	2.5	5	163	5	6	46
942	RMS-10711	Waste Rock	xTF	11	1430	20	20	#N/A	10	42	25	800	2.5	5	161	5	7	35
944	RMS-10715	Waste Rock	xTF	14	1470	22	20	#N/A	10	27	25	1100	2.5	5	153	5	10	51
946	RMS-10719	Waste Rock	xTF	8	1500	10	20	#N/A	10	38	25	700	2.5	5	162	5	7	59
948	RMS-10723	Waste Rock	xTF	11	1370	18	15	#N/A	10	45	25	900	2.5	5	174	5	8	45
950	RMS-10763	Waste Rock	xTF	11	1400	22	20	#N/A	10	66	25	700	2.5	5	149	5	8	52
952	RMS-10767	Waste Rock	xTF	7	1440	20	20	#N/A	10	25	25	700	2.5	5	138	5	5	49
954	RMS-10771	Waste Rock	xTF	8	1350	16	15	#N/A	10	105	25	400	2.5	5	117	5	7	60
956	RMS-10775	Waste Rock	xTF	10	1430	18	20	#N/A	10	64	25	700	2.5	5	143	5	9	57
958	RMS-10779	Waste Rock	xTF	5	1180	14	15	#N/A	10	98	25	400	2.5	5	119	5	7	43
960	RMS-10783	Waste Rock	xTF	8	1510	28	20	#N/A	10	47	25	900	2.5	5	152	5	9	155
962	RMS-10787	Waste Rock	xTF	5	1250	22	15	#N/A	10	110	25	600	2.5	5	116	5	8	57
964	RMS-10791	Waste Rock	xTF	10	1220	1	15	#N/A	10	45	25	500	2.5	5	132	5	4	36
969	RMS-10799	Waste Rock	xTF	9	1280	30	15	#N/A	10	87	25	700	2.5	5	118	5	7	61
971	RMS-10803	Waste Rock	xTF	12	1340	4	20	#N/A	10	41	25	300	2.5	5	148	5	2	64
973	RMS-10851	Waste Rock	xTF	14	1700	40	25	#N/A	10	58	25	1200	0	5	197	5	10	70
975	RMS-10855	Waste Rock	xTF	18	1690	54	35	#N/A	10	49	25	700	0	5	188	5	5	91
977	RMS-10859	Waste Rock	xTF	16	1700	58	30	#N/A	10	48	25	1200	0	5	158	20	9	76
979	RMS-10863	Waste Rock	xTF	19	1550	44	35	#N/A	10	64	25	700	0	5	157	5	5	57
981	RMS-10867	Waste Rock	xTF	13	1580	16	40	#N/A	10	59	25	700	0	5	181	5	6	23
983	RMS-10871	Waste Rock	xTF	14	1570	26	35	#N/A	10	89	25	600	0	5	177	5	5	70
985	RMS-10875	Waste Rock	xTF	12	1490	38	30	#N/A	10	117	25	200	0	5	137	5	4	44
988	RMS-10879	Waste Rock	xTF	15	1450	62	50	#N/A	10	133	25	50	0	5	121	5	3	152
990	RMS-10886	Waste Rock	xTF	11	1510	18	25	#N/A	10	114	25	300	0	5	173	5	3	60
992	RMS-10887	Waste Rock	xTF	14	1640	28	30	#N/A	10	156	25	500	0	5	168	5	6	72
994	RMS-10891	Waste Rock	xTF	12	1590	22	35	#N/A	10	174	25	900	0	5	131	10	10	44
997	RMS-10895	Waste Rock	xTF	15	1680	76	25	#N/A	10	107	25	900	0	5	171	5	7	71
999	RMS-10899	Waste Rock	xTF	14	1660	82	30	#N/A	10	110	25	1100	0	5	169	5	10	71
1000	RMS-10903	Waste Rock	xTF	12	1680	102	30	#N/A	10	79	25	800	0	5	148	5	8	81
1002	RMS-10907	Waste Rock	xTF	14	1610	68	25	#N/A	10	163	25	800	0	5	115	5	8	105
1004	RMS-10911	Waste Rock	xTF	12	1510	88	35	#N/A	10	110	25	800	0	5	109	10	8	761
1006	RMS-10915	Waste Rock	xTF	14	1750	58	30	#N/A	10	81	25	1200	0	5	164	5	10	60
1008	RMS-10919	Waste Rock	xTF	15	1750	104	25	#N/A	10	65	25	900	0	5	159	5	7	82
1010	RMS-10923	Waste Rock	xTF	14	1620	108	25	#N/A	10	90	25	1000	0	5	119	20	9	100
1012	RMS-10927	Waste Rock	xTF	16	1680	68	30	#N/A	10	47	25	1100	0	5	160	5	8	59
1014	RMS-10931	Waste Rock	xTF	14	1680	74	30	#N/A	10	102	25	800	0	5	139	5	8	92
1016	RMS-10935	Waste Rock	xTF	15	1670	104	30	#N/A	10	80	25	1100	0	5	153	10	9	132
1018	RMS-10943	Waste Rock	xTF	15	1660	106	25	#N/A	10	93	25	1100	0	5	154	5	9	109
1020	RMS-10947	Waste Rock	xTF	13	1770	94	30	#N/A	10	79	25	900	0	5	166	5	6	90

No.	Sample ID	Dataset	Standardized Lithocode	Ag (ppm)	Al (ppm)	As (ppm)	B (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (ppm)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (ppm)	Hg (ppm)	K (ppm)	La (ppm)	Mg (ppm)	Mn (ppm)	Mo (ppm)	Na (ppm)
1022A	RMS-10951A	Waste Rock	xTF	0.1	27700	2	20	110	#N/A	5	5030	0.5	20	50	63	61900	#N/A	1900	5	25600	1772	3	600
1022B	RMS-10951B	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1024	RMS-10955	Waste Rock	xTF	0.1	27500	140	14	95	#N/A	10	4130	2	22	41	80	67500	#N/A	1300	5	26600	1646	1	600
1026	RMS-10959	Waste Rock	xTF	0.1	16800	25	20	95	#N/A	5	3950	0.5	21	32	88	72200	#N/A	1400	5	16000	1499	3	300
1028	RMS-10963	Waste Rock	xTF	0.1	19300	85	34	65	#N/A	10	2870	1	21	24	93	70700	#N/A	1500	5	16600	1502	1	300
1030	RMS-10967	Waste Rock	xTF	0.6	18900	2175	22	65	#N/A	2.5	3890	37	23	36	122	76200	#N/A	2300	5	17300	1693	2	200
1032	RMS-10967R	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1034	RMS-10971	Waste Rock	xTF	0.4	18700	2405	34	75	#N/A	5	2590	41	28	61	147	84800	#N/A	1900	5	17300	1056	4	300
1036	RMS-10975	Waste Rock	xTF	0.1	18400	740	68	90	#N/A	2.5	1500	11	27	58	137	77500	#N/A	1800	5	16500	597	3	200
1038	RMS-10979	Waste Rock	xTF	0.1	19000	755	60	80	#N/A	2.5	2380	17	25	88	157	83200	#N/A	2000	5	16000	767	5	300
1040	RMS-10983	Waste Rock	xTF	0.1	20600	780	50	85	#N/A	5	1840	67	27	59	132	84900	#N/A	1600	5	18200	622	4	300
1042	RMS-10987	Waste Rock	xTF	0.1	21400	165	82	85	#N/A	5	1510	4	25	83	106	69700	#N/A	1800	5	18700	424	5	400
1044	RMS-10991	Waste Rock	xTF	0.1	19600	415	82	80	#N/A	10	1570	44	28	63	126	90500	#N/A	1700	5	18000	587	5	300
1046	RMS-10995	Waste Rock	xTF	0.1	19100	145	70	95	#N/A	5	1320	4	25	65	144	79200	#N/A	1700	5	16600	481	4	300
1048	RMS-10999	Waste Rock	xTF	4.4	16200	3550	50	85	#N/A	5	1030	253	28	41	204	135000	#N/A	1300	5	14000	386	3	200
1064	RMU-9179	Waste Rock	xTF	1.4	17900	2590	18	50	#N/A	2.5	2080	79	39	67	267	76800	#N/A	1000	5	17400	1614	5	300
1066	RMU-9183	Waste Rock	xTF	1.8	18000	995	16	55	#N/A	2.5	1500	37	32	76	214	75200	#N/A	2100	5	16700	1180	9	400
1068	RMU-9187	Waste Rock	xTF	1.4	18600	935	14	50	#N/A	2.5	1440	33	30	77	267	69800	#N/A	1600	5	17300	1174	6	300
1070	RMU-9191	Waste Rock	xTF	4.4	17600	1745	10	50	#N/A	2.5	2040	79	24	52	276	71900	#N/A	1500	5	18000	1279	4	200
1072	RMU-9195	Waste Rock	xTF	0.2	16500	660	16	50	#N/A	2.5	1790	17	35	61	282	78600	#N/A	1200	5	17100	1448	5	300
1076	RMU-9203	Waste Rock	xTF	0.2	19000	400	20	75	#N/A	5	1530	9	25	61	118	69300	#N/A	1400	5	18800	652	2	300
1102	RMU-9255	Waste Rock	xTF	0.1	16300	120	16	35	#N/A	2.5	2470	3	16	23	171	55600	#N/A	1600	5	14200	742	0.5	300
1104	RMU-9259	Waste Rock	xTF	0.1	17800	50	172	95	#N/A	10	980	2	16	20	67	47900	#N/A	600	5	12600	448	1	500
1106	RMU-9263	Waste Rock	xTF	0.1	18300	100	108	65	#N/A	10	840	2	20	19	105	56500	#N/A	600	5	13400	377	0.5	500
1108	RMU-9267	Waste Rock	xTF	0.1	18500	95	88	85	#N/A	5	710	2	20	20	110	53700	#N/A	700	5	14100	323	0.5	600
1110	RMU-9271	Waste Rock	xTF	0.1	17500	205	66	75	#N/A	2.5	900	4	24	22	163	53800	#N/A	700	5	14300	529	0.5	500
1112	RMU-9275	Waste Rock	xTF	0.1	19100	30	302	65	#N/A	10	1190	1	13	22	54	44300	#N/A	500	5	12600	542	1	500
1114	RMU-9279	Waste Rock	xTF	0.1	22600	2	54	65	#N/A	10	1050	0.5	14	17	57	52600	#N/A	600	5	16900	820	0.5	500
1116	RMU-9283	Waste Rock	xTF	0.1	24800	5	38	60	#N/A	10	1300	0.5	13	15	36	45900	#N/A	400	5	24200	1209	0.5	500
1118	RMU-9287	Waste Rock	xTF	0.1	17700	235	64	85	#N/A	10	880	4	24	15	135	60600	#N/A	1000	5	12900	394	0.5	500
1120	RMU-9291	Waste Rock	xTF	0.1	28200	10	28	90	#N/A	10	980	1	11	18	37	48400	#N/A	700	5	24600	1080	0.5	600
1122	RMU-9295	Waste Rock	xTF	0.1	25400	5	104	95	#N/A	10	1040	0.5	10	18	31	44200	#N/A	800	5	20700	853	0.5	600
1124	RMU-9299	Waste Rock	xTF	0.1	21200	135	30	80	#N/A	10	890	3	17	21	95	55500	#N/A	800	5	20500	669	0.5	400
1126	RMU-9303	Waste Rock	xTF	0.1	23900	90	20	90	#N/A	10	1110	2	14	20	89	54600	#N/A	700	5	23800	890	0.5	400
1144	RMU-9339	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1146	RMU-9343	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1148	RMU-9347	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1150	RMU-9351	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1152	RMU-9355	Waste Rock	xTF	0.1	24300	235	56	45	#N/A	2.5	1160	3	30	20	187	59100	#N/A	900	5	21100	721	0.5	300
1154	RMU-9359	Waste Rock	xTF	0.1	21900	30	40	55	#N/A	2.5	1650	0.5	30	18	209	55600	#N/A	900	5	19100	738	0.5	300
1156	RMU-9363	Waste Rock	xTF	0.1	21300	20	264	55	#N/A	2.5	1300	0.5	28	19	181	55500	#N/A	900	5	18300	492	0.5	300
1159	RMU-9367	Waste Rock	xTF	0.1	24800	40	48	55	#N/A	2.5	1220	0.5	38	24	252	60800	#N/A	900	5	23300	758	0.5	200
1160	RMU-9371	Waste Rock	xTF	0.1	23700	35	44	50	#N/A	2.5	1800	1	33	38	172	54300	#N/A	700	5	22800	737	0.5	200
1164	RMU-9379	Waste Rock	xTF	0.1	21500	2	24	50	#N/A	2.5	1370	0.5	22	20	227	54600	#N/A	700	5	15600	470	0.5	300
1166	RMU-9383	Waste Rock	xTF	0.1	21700	2	106	55	#N/A	2.5	990	0.5	21	26	220	53800	#N/A	800	5	15700	387	0.5	400
1168	RMU-9387	Waste Rock	xTF	0.1	23600	25	426	45	#N/A	2.5	1180	0.5	27	19	245	58400	#N/A	600	5	17600	371	0.5	300
1170	RMU-9391	Waste Rock	xTF	0.1	22500	15	504	45	#N/A	2.5	970	0.5	33	17	272	57900	#N/A	600	5	17700	382	0.5	300
1172	RMU-9395	Waste Rock	xTF	0.1	32800	2	242	50	#N/A	2.5	2370	1	31	53	272	69600	#N/A	200	5	15800	547	0.5	400
1174	RMU-9399	Waste Rock	xTF	0.1	32800	2	334	45	#N/A	2.5	2090	1	32	45	270	71500	#N/A	300	5	16200	556	0.5	400
1176	RMU-9403	Waste Rock	xTF	0.1	32200	65	166	60	#N/A	2.5	1390	2	28	55	205	73700	#N/A	500	5	22500	732	0.5	400
1178	RMU-9407	Waste Rock	xTF	0.1	28100	20	608	45	#N/A	2.5	2050	0.5	36	45	196	62100	#N/A	200	5	15600	467	0.5	400
1180	RMU-9411	Waste Rock	xTF	0.1	28600	15	752	80	#N/A	2.5	2050	1	30	67	159	64200	#N/A	500	10	16900	529	0.5	500
1182	RMU-9415	Waste Rock	xTF	0.1	30800	20	268	50	#N/A	2.5	2530	1	42	47	217	67300	#N/A	300	5	14200	485	0.5	400
1184	RMU-9419	Waste Rock	xTF	0.1	29500	5	422	60	#N/A	2.5	2220	1	33	54	223	64700	#N/A	400	5	15200	534	0.5	400
1190	RMU-9431	Waste Rock	xTF	0.1	25900	35	94	55	#N/A	5	2660	1	31	131	94	62500	#N/A	400	5	19700	866	0.5	300
1074	RMU-9199	Waste Rock	xTF-TfB	1.4	16600	1170	26	70	#N/A	2.5	1330	31	42	86	272	70400	#N/A	1400	5	15900	1094	6	400
1078	RMU-9207	Waste Rock	xTF-TfB	0.4	23000	335	32	75	#N/A	2.5	1070	8	38	67	243	68900	#N/A	1600	5	20500	1301	4	600
1080	RMU-9211	Waste Rock	xTF-TfB	0.1	21800	290	18	75	#N/A	10	1740	7	22	46	120	64500	#N/A	1300	5	20200	641	2	500
1082	RMU-9215	Waste Rock	xTF-TfB	0.2	20300	240	22	85	#N/A	15	1530	6	20	53	117	66100	#N/A	2000	5	19000	649	2	400
1084	RMU-9219	Waste Rock	xTF-TfB	0.1	20100	200	24	85	#N/A	5	1580	5	19	49	125	63600	#N/A	1300	5	19100	646	2	500
1086	RMU-9223	Waste Rock	xTF-TfB	0.1	18800	300	38	65	#N/A	2.5	2480	9	23	58	242	69700	#N/A	1000	5	18200	743	3	400
1088	RMU-9227	Waste Rock	xTF-TfB	0.2	16800	295	20	55	#N/A	2.5	3320	7	22	36	281	58700	#N/A	1700	5	14200	801	2	400
1090	RMU-9231	Waste Rock	xTF-TfB	0.1	16800	345	22	75	#N/A	2.5	2280	8	23	55	268	66700	#N/A	1600	5	14600	596	4	600
1092	RMU-9235	Waste Rock	xTF-TfB	0.1	19200	200	22	80	#N/A	2.5	2440	5	19	47	264	64000	#N/A	1400	5	18300	831	3	400
1094	RMU-9239	Waste Rock	xTF-TfB	0.1	18500	140	22	90	#N/A	2.5	1870	4	16	53	260	67900	#N/A	1100	5	17500	697	4	700
1096	RMU-9243	Waste Rock	xTF-TfB	0.4	18500	185	20	75	#N/A	10	1720	5	19	40	196	70200	#N/A	900	5	17400	723	3	500
1098	RMU-9247	Waste Rock	xTF-TfB	0.2	16600	155	16	65	#N/A	10	1300	3	18	23	118	59800	#N/A	1800	5	12500	536	0.5	400
1100	RMU-9251	Waste Rock	xTF-TfB	0.1	16100	175	16	80	#N/A	5	2250	4	18	26	116	57500	#N/A	1300	5	13500	707	0.5	400
1128	RMU-9307	Waste Rock	xTF-TfB	0.1	23200	55	26	60	#N/A	15	1300	4	17	27	96	58400	#N/A	1300	5	22100	781	0.5	600
1130	RMU-9311	Waste Rock	xTF-TfB	0.1	26400	50	14	80	#N/A	5	1010	1	24	34	116	54900	#N/A	600	5	23400	1058	0.5	400
1132	RMU-9315	Waste Rock	xTF-TfB	0.1	22200	190	22	75	#N/A	10	1350	4	16	24	94	55400	#N/A	800	5	22100	846	0.5	400
1134	RMU-9319	Waste Rock	xTF-TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1136	RMU-9323	Waste Rock	xTF-TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1138	RMU-9327	Waste Rock	xTF-TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1140	RMU-9331	Waste Rock	xTF-TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1142	RMU-9335	Waste Rock	xTF-TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

No.	Sample ID	Dataset	Standardized Lithocode	Ni (ppm)	P (ppm)	Pb (ppm)	Sb (ppm)	Se (ppm)	Sn (ppm)	Sr (ppm)	Te (ppm)	Ti (ppm)	Tl (ppm)	U (ppm)	V (ppm)	W (ppm)	Y (ppm)	Zn (ppm)
1022A	RMS-10951A	Waste Rock	xTF	8	1510	66	30	#N/A	10	101	25	900	0	5	155	5	9	78
1022B	RMS-10951B	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1024	RMS-10955	Waste Rock	xTF	12	1550	78	30	#N/A	10	90	25	900	0	5	148	5	8	89
1026	RMS-10959	Waste Rock	xTF	8	1510	76	35	#N/A	10	97	25	400	0	5	118	5	5	87
1028	RMS-10963	Waste Rock	xTF	8	1550	68	25	#N/A	10	103	25	800	0	5	146	10	7	101
1030	RMS-10967	Waste Rock	xTF	12	1550	284	30	#N/A	10	164	25	200	0	5	97	5	4	565
1032	RMS-10967R	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1034	RMS-10971	Waste Rock	xTF	14	1620	290	30	#N/A	10	101	25	500	0	5	116	5	5	714
1036	RMS-10975	Waste Rock	xTF	14	1750	108	25	#N/A	10	42	25	1100	0	5	153	5	8	205
1038	RMS-10979	Waste Rock	xTF	13	1660	114	25	#N/A	10	81	25	900	0	5	124	5	7	794
1040	RMS-10983	Waste Rock	xTF	15	1690	122	30	#N/A	10	66	25	1000	0	5	135	5	7	5689
1042	RMS-10987	Waste Rock	xTF	15	1730	152	30	#N/A	10	53	25	1100	0	5	121	20	8	182
1044	RMS-10991	Waste Rock	xTF	17	1680	158	25	#N/A	10	52	25	1100	0	5	125	5	8	4362
1046	RMS-10995	Waste Rock	xTF	12	1560	84	25	#N/A	10	38	25	1200	0	5	136	5	8	303
1048	RMS-10999	Waste Rock	xTF	10	1390	1762	40	#N/A	10	31	25	800	0	5	101	5	2	0.5
1064	RMU-9179	Waste Rock	xTF	18	1310	192	10	#N/A	10	96	25	50	0	5	115	5	2	1939
1066	RMU-9183	Waste Rock	xTF	22	1220	60	10	#N/A	10	79	25	100	0	5	115	5	2	1146
1068	RMU-9187	Waste Rock	xTF	17	1160	146	10	#N/A	10	62	25	50	0	5	128	5	1	1041
1070	RMU-9191	Waste Rock	xTF	25	1190	824	5	#N/A	10	102	25	50	0	5	96	5	2	2910
1072	RMU-9195	Waste Rock	xTF	15	1240	40	2.5	#N/A	10	107	25	100	0	5	128	20	2	256
1076	RMU-9203	Waste Rock	xTF	25	1300	32	10	#N/A	10	77	25	300	0	5	110	5	2	83
1102	RMU-9255	Waste Rock	xTF	10	930	30	5	#N/A	10	59	25	700	0	5	130	5	7	45
1104	RMU-9259	Waste Rock	xTF	7	1000	24	2.5	#N/A	10	24	25	1100	0	5	147	5	8	38
1106	RMU-9263	Waste Rock	xTF	6	990	22	2.5	#N/A	10	24	25	1100	0	5	167	5	7	29
1108	RMU-9267	Waste Rock	xTF	7	1010	16	5	#N/A	10	19	25	1200	0	5	176	5	8	25
1110	RMU-9271	Waste Rock	xTF	6	1030	36	2.5	#N/A	10	31	25	900	0	20	152	5	6	67
1112	RMU-9275	Waste Rock	xTF	6	990	22	2.5	#N/A	10	30	25	1000	0	5	144	5	8	38
1114	RMU-9279	Waste Rock	xTF	7	990	20	2.5	#N/A	10	33	25	1000	0	20	163	5	7	43
1116	RMU-9283	Waste Rock	xTF	5	1000	26	10	#N/A	10	37	25	1000	0	10	194	5	8	38
1118	RMU-9287	Waste Rock	xTF	6	1010	32	2.5	#N/A	10	28	25	1000	0	5	164	5	6	34
1120	RMU-9291	Waste Rock	xTF	4	1050	20	2.5	#N/A	10	44	25	1000	0	20	197	5	7	45
1122	RMU-9295	Waste Rock	xTF	4	1040	36	2.5	#N/A	10	42	25	1000	0	10	173	5	7	34
1124	RMU-9299	Waste Rock	xTF	7	990	22	2.5	#N/A	10	29	25	1000	0	10	172	5	7	86
1126	RMU-9303	Waste Rock	xTF	6	1000	20	2.5	#N/A	10	34	25	1000	0	10	187	5	7	40
1144	RMU-9339	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1146	RMU-9343	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1148	RMU-9347	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1150	RMU-9351	Waste Rock	xTF	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1152	RMU-9355	Waste Rock	xTF	7	1300	24	10	#N/A	10	33	25	200	0	5	180	5	2	35
1154	RMU-9359	Waste Rock	xTF	8	1170	16	10	#N/A	10	49	25	200	0	5	170	5	1	30
1156	RMU-9363	Waste Rock	xTF	9	1250	16	15	#N/A	10	38	25	300	0	5	162	5	2	31
1159	RMU-9367	Waste Rock	xTF	18	1290	20	10	#N/A	10	28	25	300	0	5	177	5	1	40
1160	RMU-9371	Waste Rock	xTF	23	1220	12	20	#N/A	10	30	25	200	0	5	156	5	4	29
1164	RMU-9379	Waste Rock	xTF	9	1200	14	10	#N/A	10	19	25	300	0	5	158	5	0.5	31
1166	RMU-9383	Waste Rock	xTF	9	1230	22	15	#N/A	10	12	25	300	0	5	150	5	1	34
1168	RMU-9387	Waste Rock	xTF	8	1320	16	2.5	#N/A	10	20	25	300	0	5	156	5	0.5	36
1170	RMU-9391	Waste Rock	xTF	9	1310	18	5	#N/A	10	11	25	300	0	5	139	5	0.5	34
1172	RMU-9395	Waste Rock	xTF	7	1420	8	2.5	#N/A	10	23	25	1400	0	5	194	5	9	39
1174	RMU-9399	Waste Rock	xTF	8	1450	4	5	#N/A	10	21	25	1300	0	5	199	5	8	41
1176	RMU-9403	Waste Rock	xTF	12	1390	4	5	#N/A	10	30	25	1300	0	5	213	5	9	38
1178	RMU-9407	Waste Rock	xTF	7	1400	6	2.5	#N/A	10	25	25	1300	0	5	189	5	9	36
1180	RMU-9411	Waste Rock	xTF	7	1530	6	2.5	#N/A	10	28	25	1500	0	5	217	5	11	37
1182	RMU-9415	Waste Rock	xTF	10	1480	10	2.5	#N/A	10	23	25	1300	0	5	208	5	9	39
1184	RMU-9419	Waste Rock	xTF	7	1340	8	10	#N/A	10	24	25	1400	0	5	194	5	9	37
1190	RMU-9431	Waste Rock	xTF	66	1510	1	5	#N/A	10	48	25	1600	0	5	147	5	11	29
1074	RMU-9199	Waste Rock	xTF-TfB	12	1440	356	5	#N/A	10	68	25	300	0	20	117	5	2	549
1078	RMU-9207	Waste Rock	xTF-TfB	12	1610	48	2.5	#N/A	10	41	25	500	0	20	147	5	3	101
1080	RMU-9211	Waste Rock	xTF-TfB	15	1410	48	2.5	#N/A	10	48	25	600	0	20	146	5	3	87
1082	RMU-9215	Waste Rock	xTF-TfB	20	1420	38	5	#N/A	10	40	25	600	0	20	161	5	5	99
1084	RMU-9219	Waste Rock	xTF-TfB	13	1410	62	2.5	#N/A	10	39	25	600	0	10	159	5	4	62
1086	RMU-9223	Waste Rock	xTF-TfB	12	1360	80	2.5	#N/A	10	46	25	600	0	10	137	5	5	253
1088	RMU-9227	Waste Rock	xTF-TfB	11	1450	40	2.5	#N/A	10	55	25	500	0	5	129	5	6	159
1090	RMU-9231	Waste Rock	xTF-TfB	13	1440	40	5	#N/A	10	42	25	500	0	5	149	5	5	75
1092	RMU-9235	Waste Rock	xTF-TfB	15	1530	40	2.5	#N/A	10	46	25	500	0	10	148	5	4	74
1094	RMU-9239	Waste Rock	xTF-TfB	10	1470	34	10	#N/A	10	41	25	800	0	10	169	5	6	73
1096	RMU-9243	Waste Rock	xTF-TfB	11	1490	54	5	#N/A	10	36	25	700	0	20	170	5	5	114
1098	RMU-9247	Waste Rock	xTF-TfB	9	1050	34	2.5	#N/A	10	35	25	900	0	20	153	5	7	49
1100	RMU-9251	Waste Rock	xTF-TfB	8	950	24	2.5	#N/A	10	48	25	800	0	10	150	5	8	116
1128	RMU-9307	Waste Rock	xTF-TfB	11	570	22	5	#N/A	10	38	25	1000	0	5	78	5	8	54
1130	RMU-9311	Waste Rock	xTF-TfB	15	940	12	5	#N/A	10	24	25	900	0	5	157	5	8	34
1132	RMU-9315	Waste Rock	xTF-TfB	11	970	34	10	#N/A	10	42	25	700	0	5	171	5	7	47
1134	RMU-9319	Waste Rock	xTF-TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1136	RMU-9323	Waste Rock	xTF-TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1138	RMU-9327	Waste Rock	xTF-TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1140	RMU-9331	Waste Rock	xTF-TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1142	RMU-9335	Waste Rock	xTF-TfB	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Metals Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Ag (ppm)	Al (ppm)	As (ppm)	B (ppm)	Ba (ppm)	Be (ppm)	Bi (ppm)	Ca (ppm)	Cd (ppm)	Co (ppm)	Cr (ppm)	Cu (ppm)	Fe (ppm)	Hg (ppm)	K (ppm)	La (ppm)	Mg (ppm)	Mn (ppm)	Mo (ppm)	Na (ppm)
363	ABA-AV1	Waste Rock	Composite	3.5	78400	206	#N/A	420	1.5	#N/A	15000	1	18	42	156	65100	20	33300	#N/A	21000	700	3	20500
364	ABA-AV2	Waste Rock	Composite	12.5	84600	321	#N/A	870	1.5	#N/A	12400	6	16	78	469	68800	20	33700	#N/A	21500	695	0.5	10200
897	RMS-10619R	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1194	RMU-9439	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1195	RMU-9443	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1197	RMU-9447	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1199	RMU-9451	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1201	RMU-9455	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1223	WR-1+10	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1224	WR-1-10+230	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1225	WR-1-230	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Metals Dataset

No.	Sample ID	Dataset	Standardized Lithocode	Ni (ppm)	P (ppm)	Pb (ppm)	Sb (ppm)	Se (ppm)	Sn (ppm)	Sr (ppm)	Te (ppm)	Ti (ppm)	Tl (ppm)	U (ppm)	V (ppm)	W (ppm)	Y (ppm)	Zn (ppm)
363	ABA-AV1	Waste Rock	Composite	12	1510	30	#N/A	5.2	#N/A	282	#N/A	2400	#N/A	#N/A	226	#N/A	#N/A	158
364	ABA-AV2	Waste Rock	Composite	28	1470	50	#N/A	4.9	#N/A	188	#N/A	2600	#N/A	#N/A	182	#N/A	#N/A	474
897	RMS-10619R	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1194	RMU-9439	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1195	RMU-9443	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1197	RMU-9447	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1199	RMU-9451	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1201	RMU-9455	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1223	WR-1+10	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1224	WR-1-10+230	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
1225	WR-1-230	Waste Rock	Unknown	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

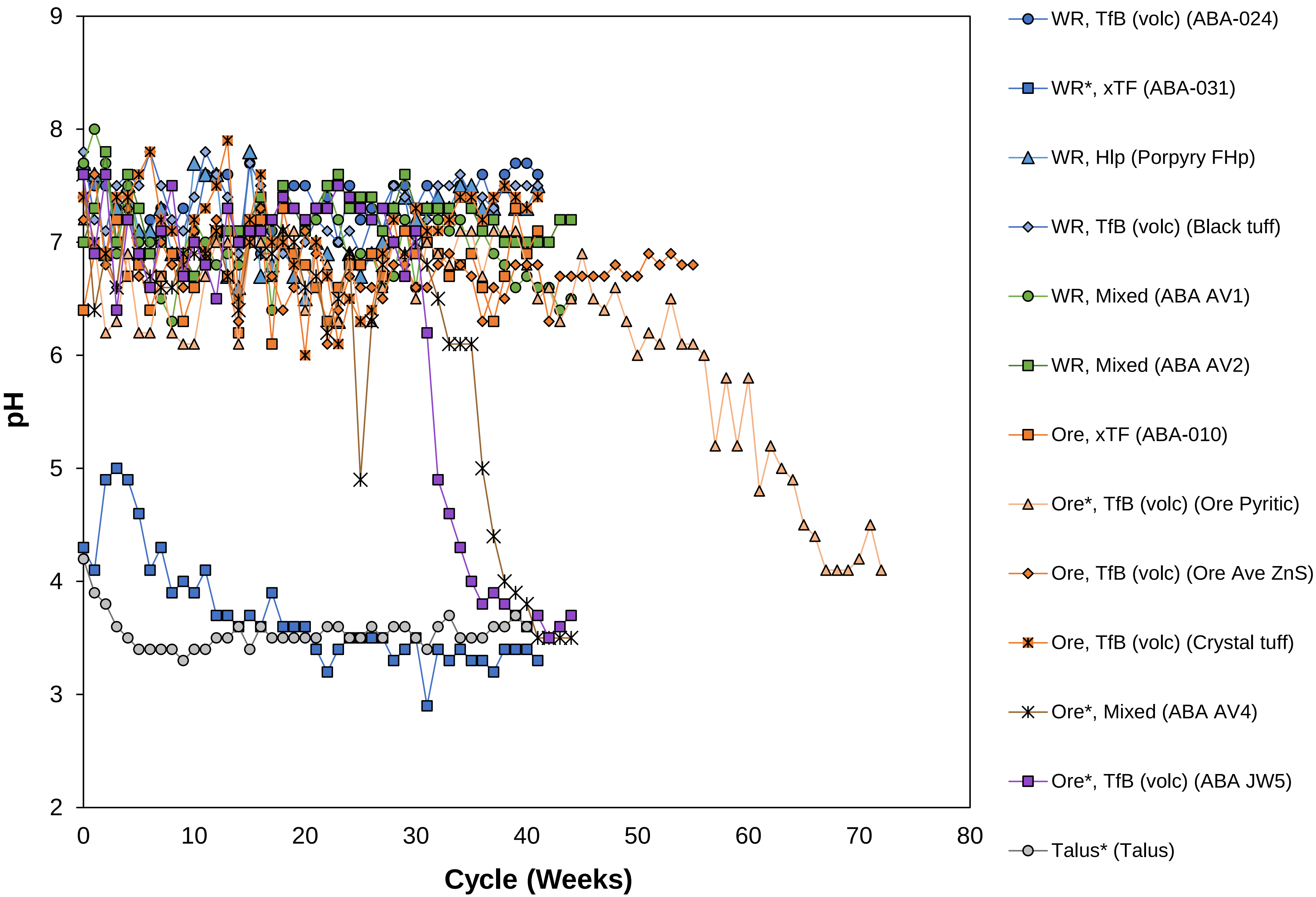
Appendix B – IDM Geology Codes

Table B-1: IDM Geological Unit Names with Historical Equivalents

IDM Unit Name	IDM Unit Codes	Historical Unit Codes	Comment
Biotite porphyry	BIp (intact)	BHp	
	xBIp (fragmented)		
Hillside porphyry	HIp (intact)	FHp	
	xHIp (fragmented)	xFHp, xFH, and FHx	
Goldslide porphyry	GOp (intact)	FHQp	
	xGOp (fragmented)	xFHQp	
Andesite dyke	AND		
Peperites	PEP		Historically logged as breccia or bedded mudstones
Mudstone, massive	MS		
Mudstone, interbedded/layered	MSI	BdT	
Greywacke	GW		
Siltstone	N/A		No code proposed
Sandstone, massive	SS		
Sandstone, wacke	WK		
Conglomerates	CG		
Limestone	LST		
Tuffs, welded (volcaniclastic)	TfW		
Tuffs, bedded	TfB	FT,MT	
Tuffs, fragmented (volcaniclastic)	xTF	xVT, xFT, and xMT	
Contact breccia	xTF-TfB	HFxl-BdT	
Pyroclastics/lapilli	PYC		
Exhalative chert	CHT		
Fault zone	FZ		
Sulphide veins	N/A		No code proposed

Source: compiled in text based on personal correspondence with Andrew Hamilton on October 17, 2016.

Appendix C – MDAG Kinetic Tests: Selected Data and Concentration Graphs



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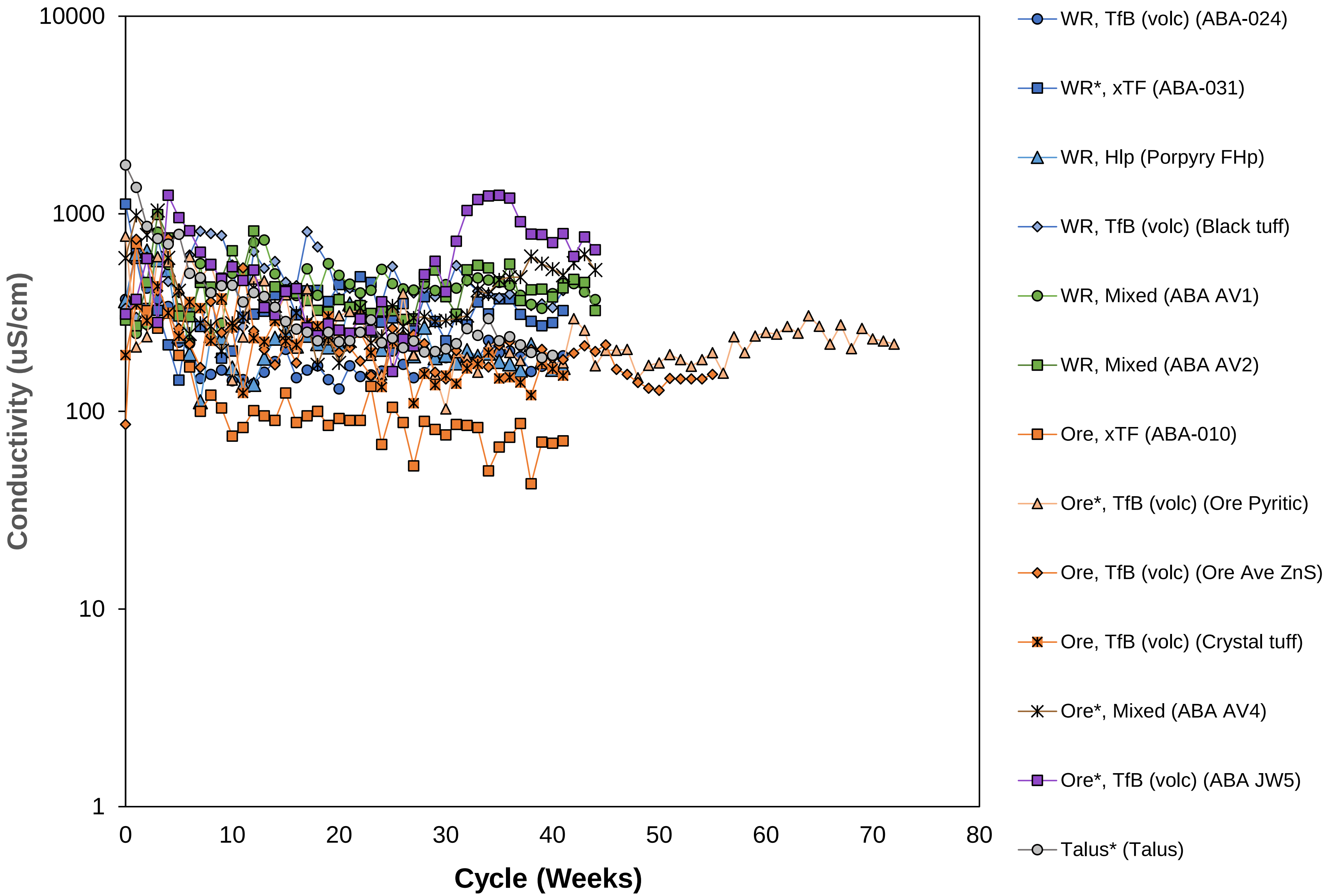

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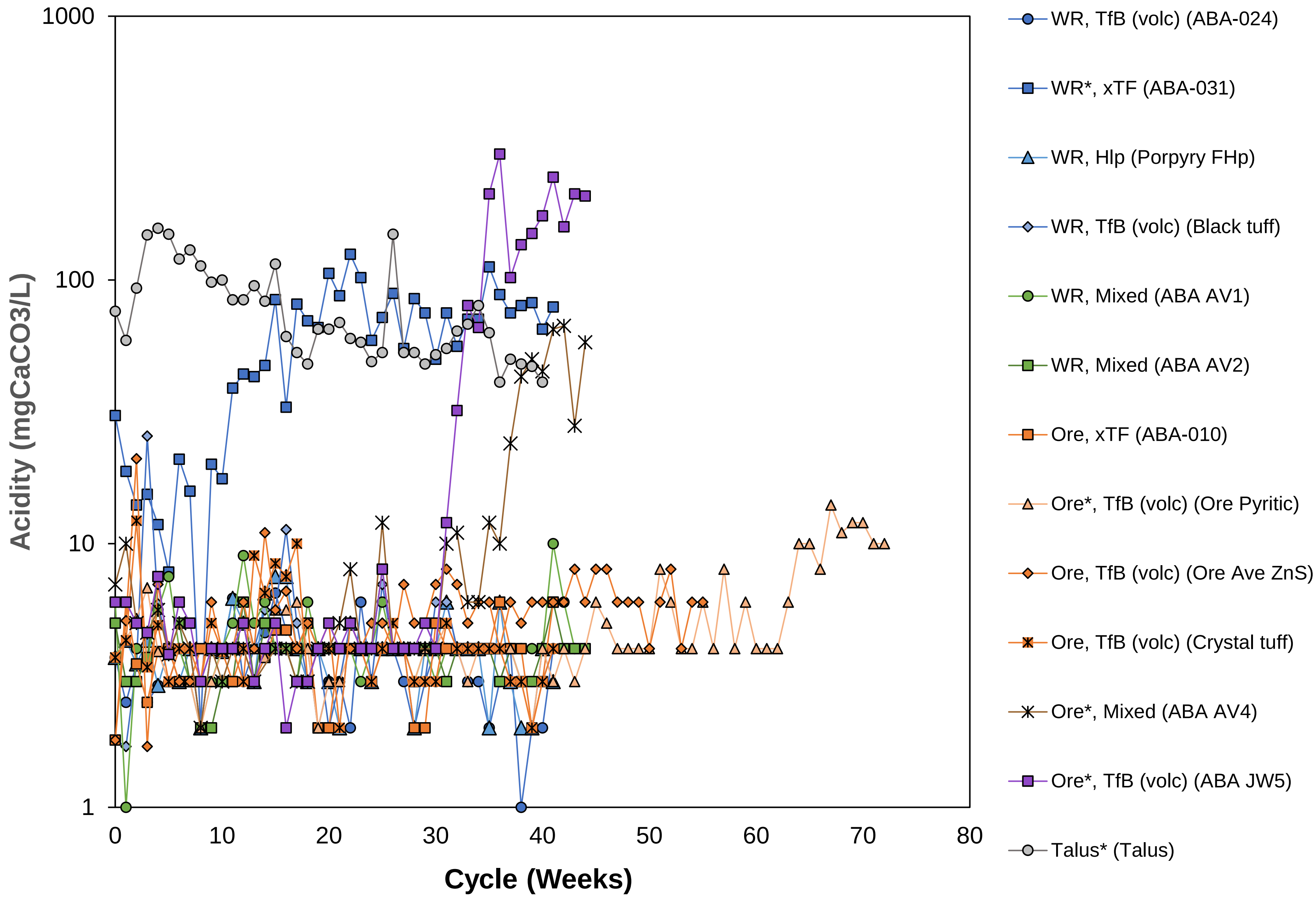

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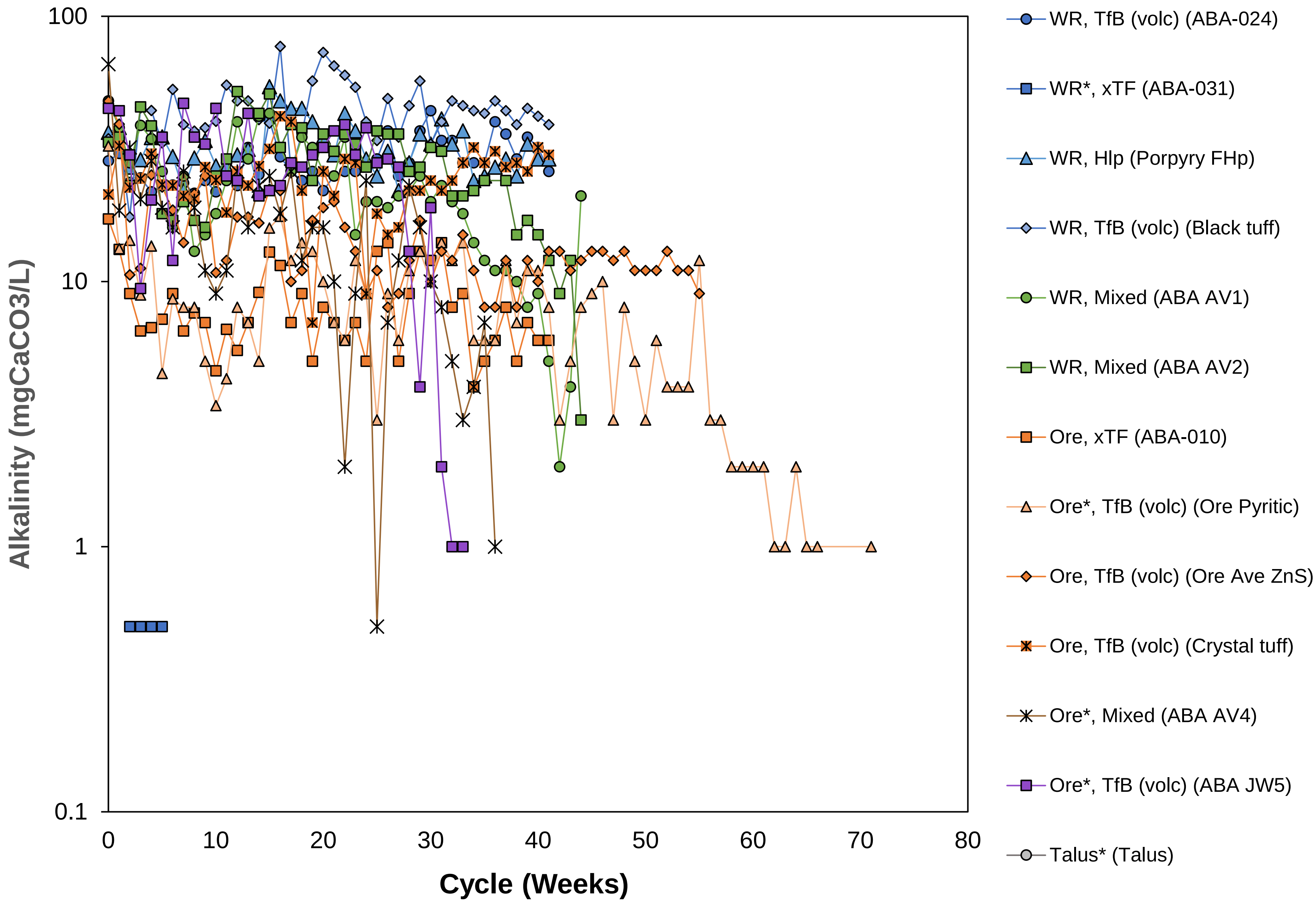

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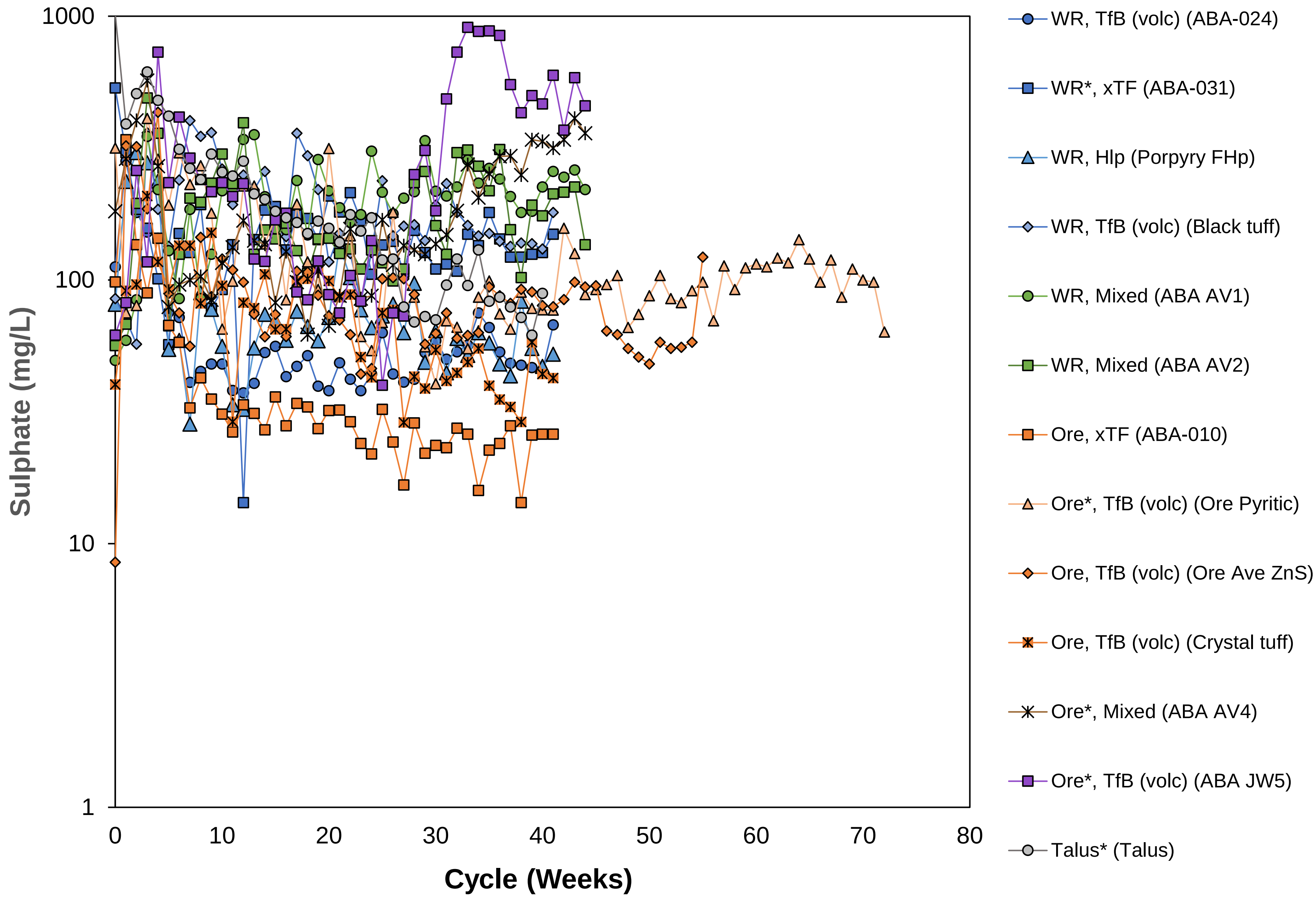

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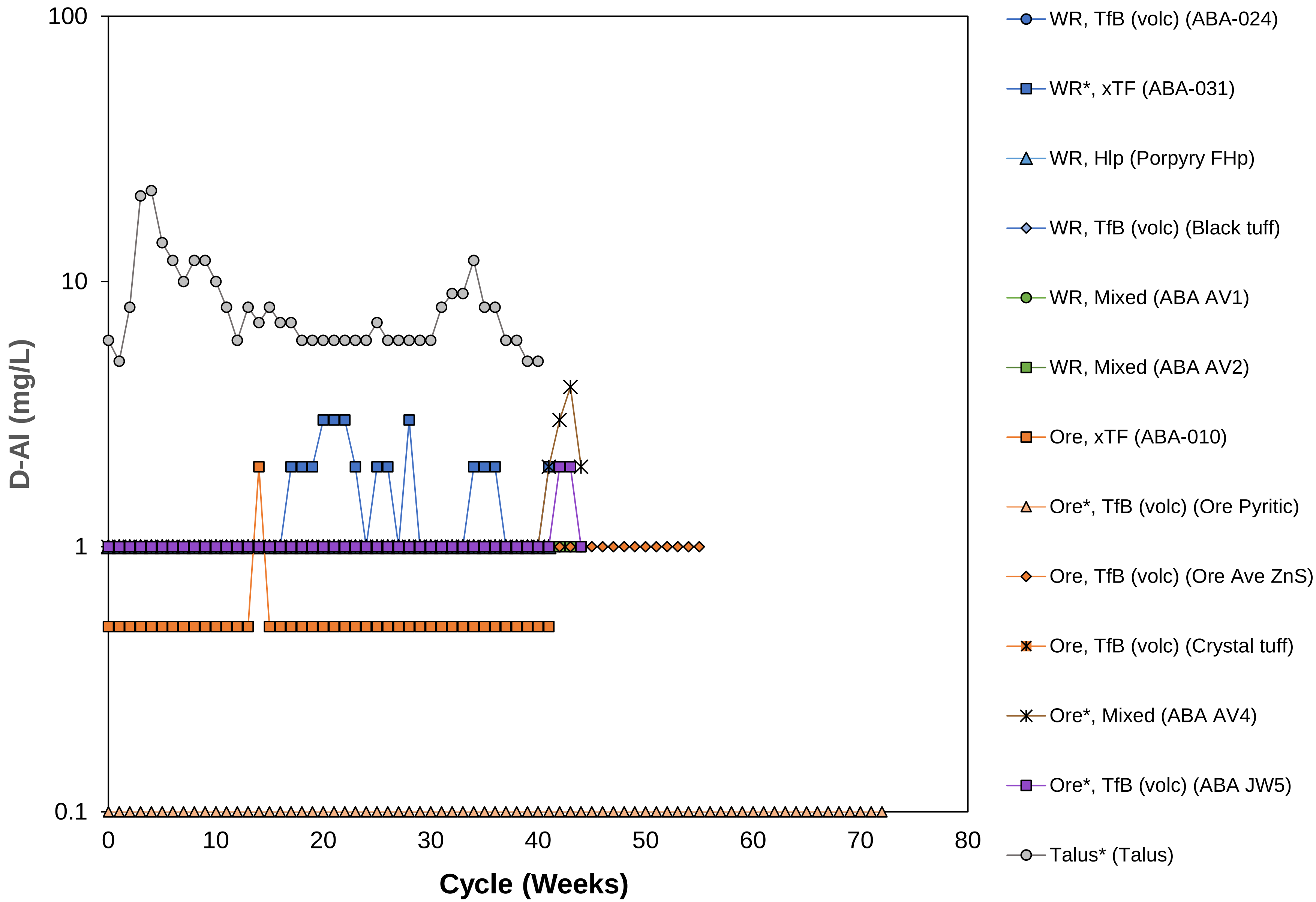

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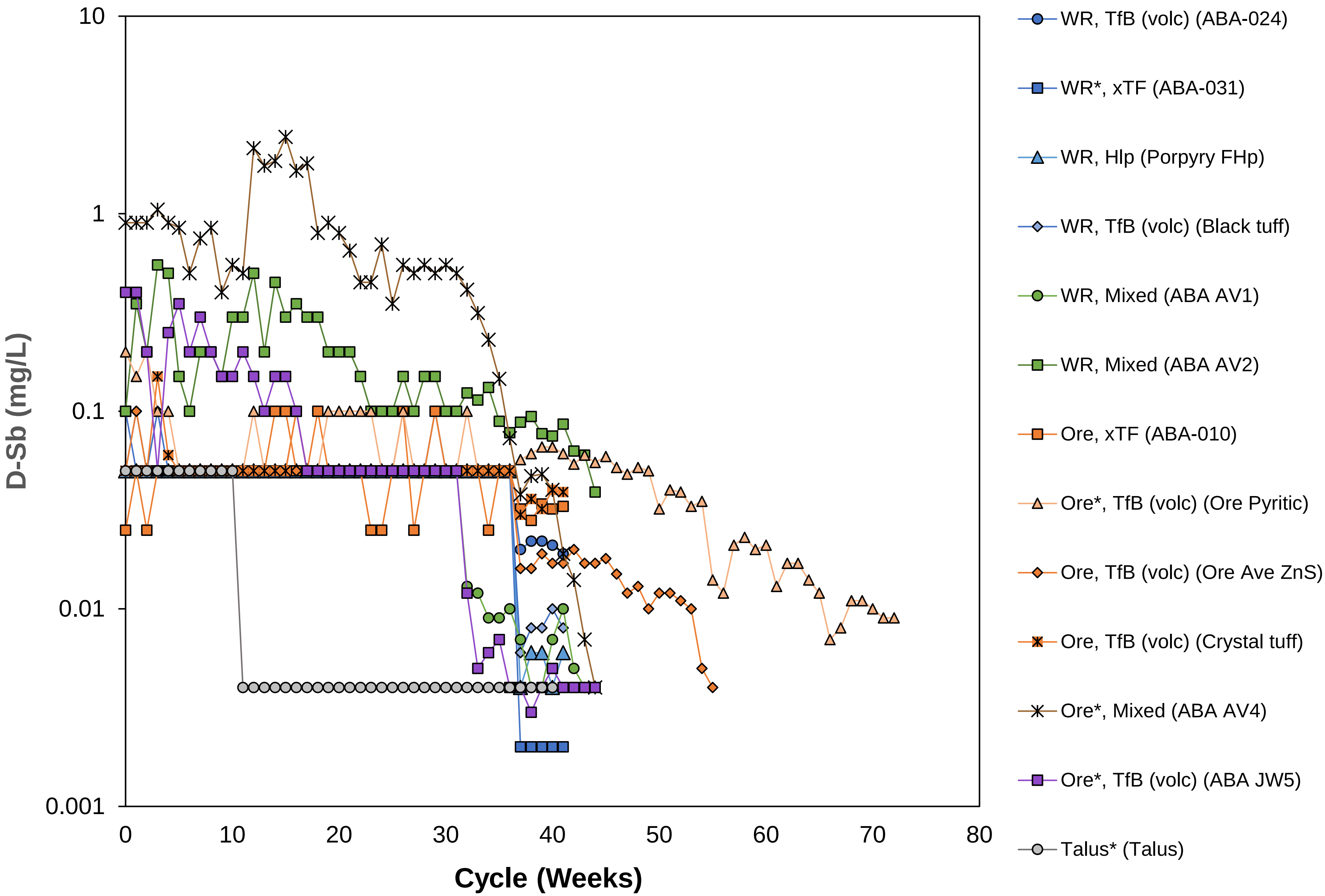

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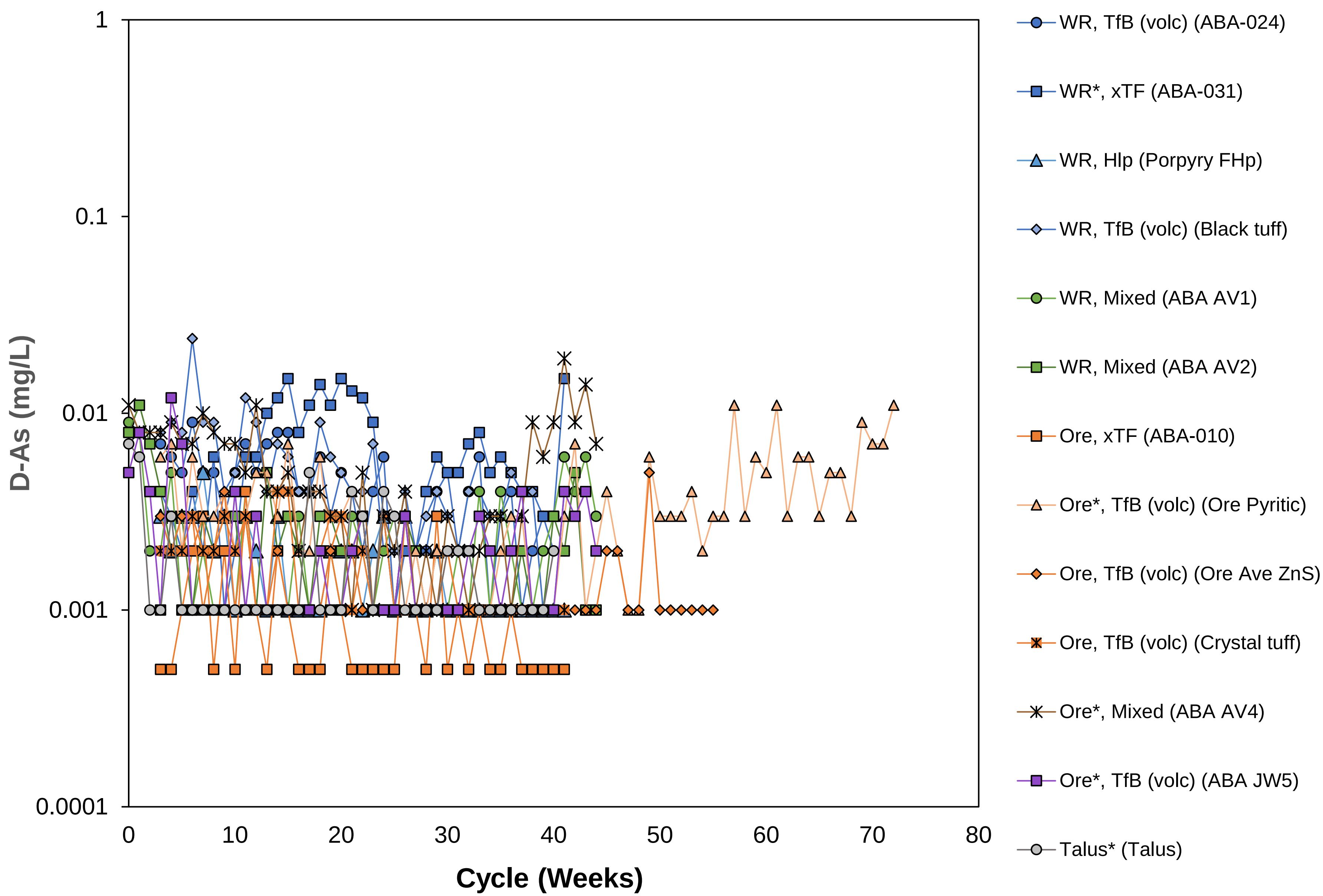

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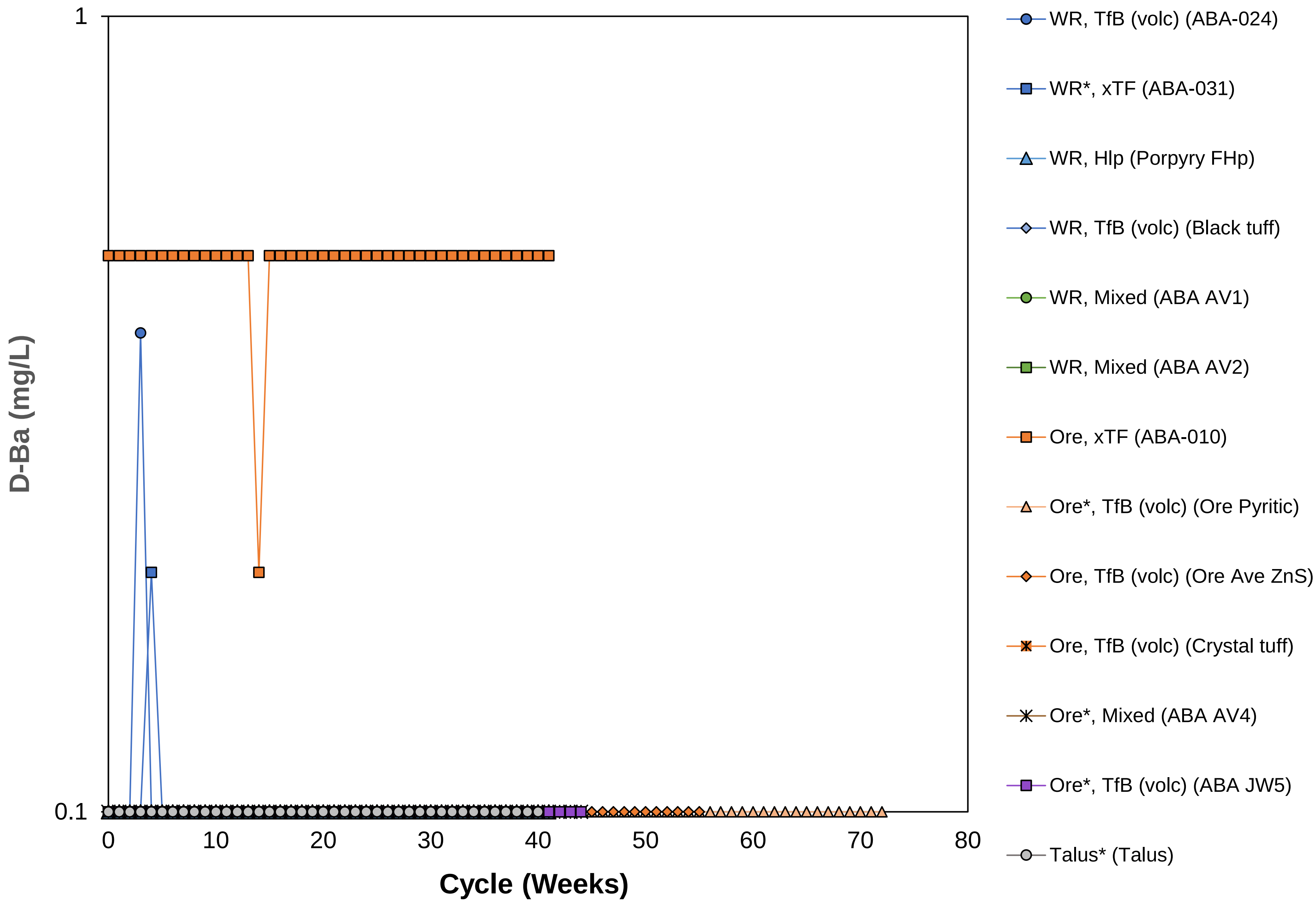

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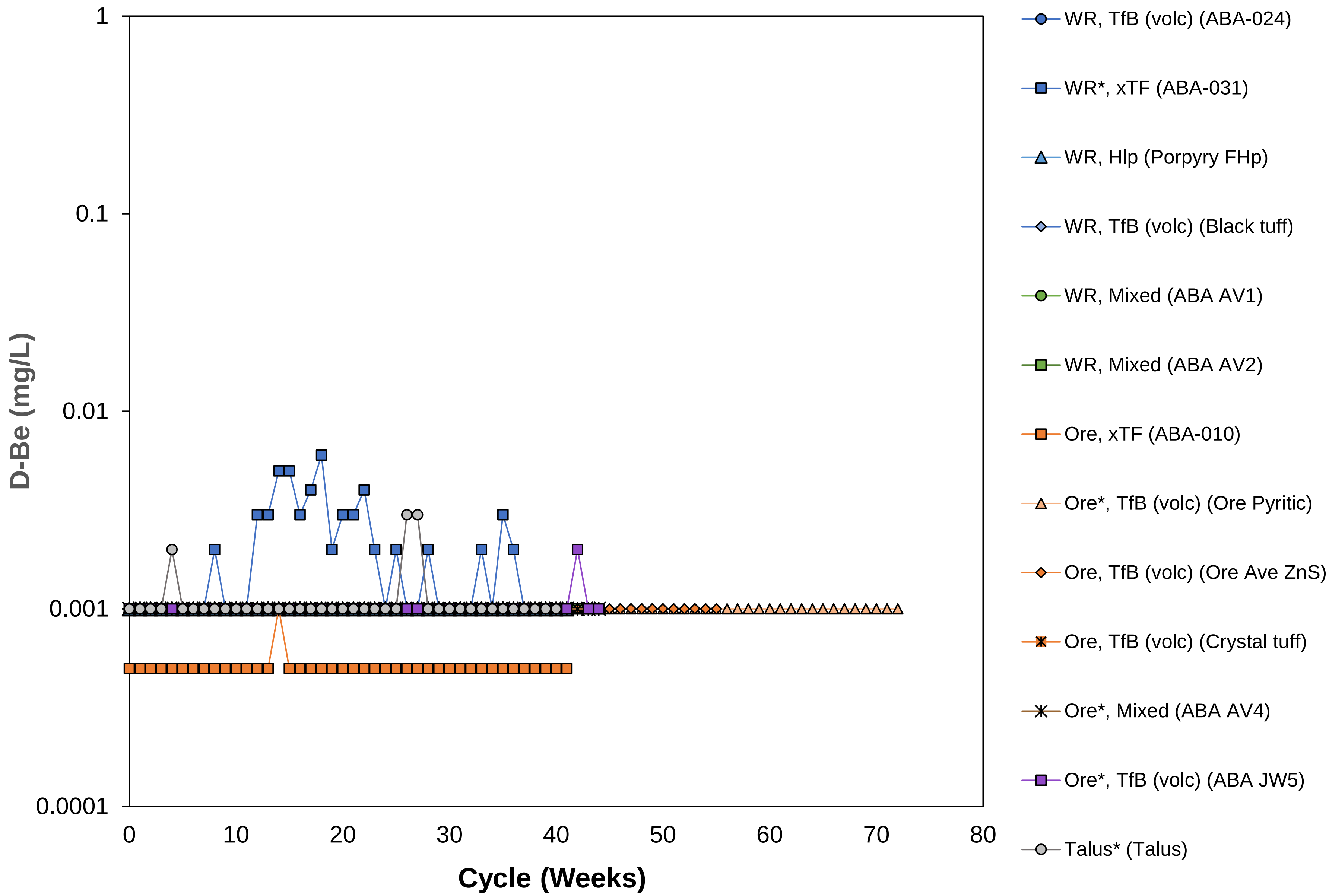

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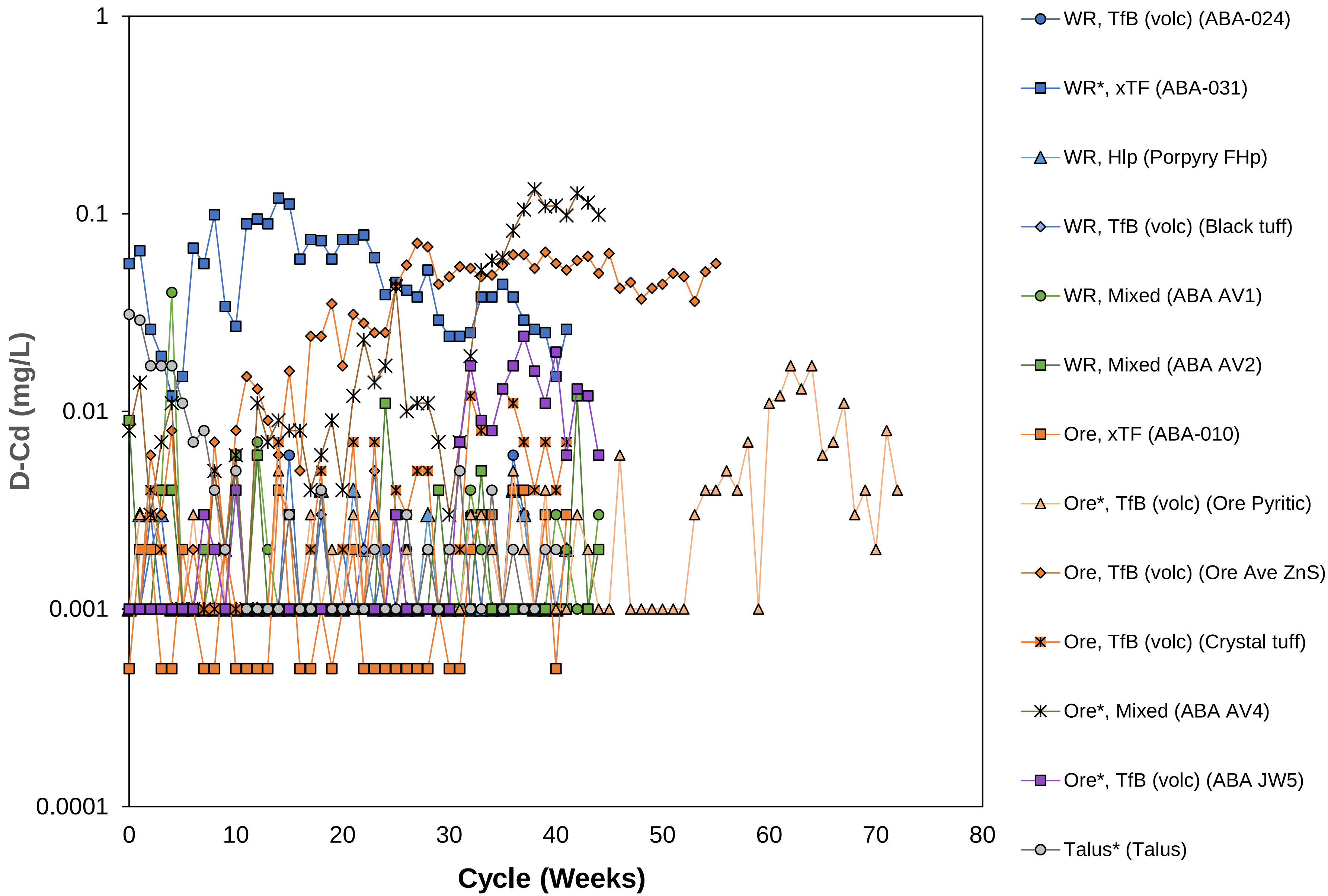

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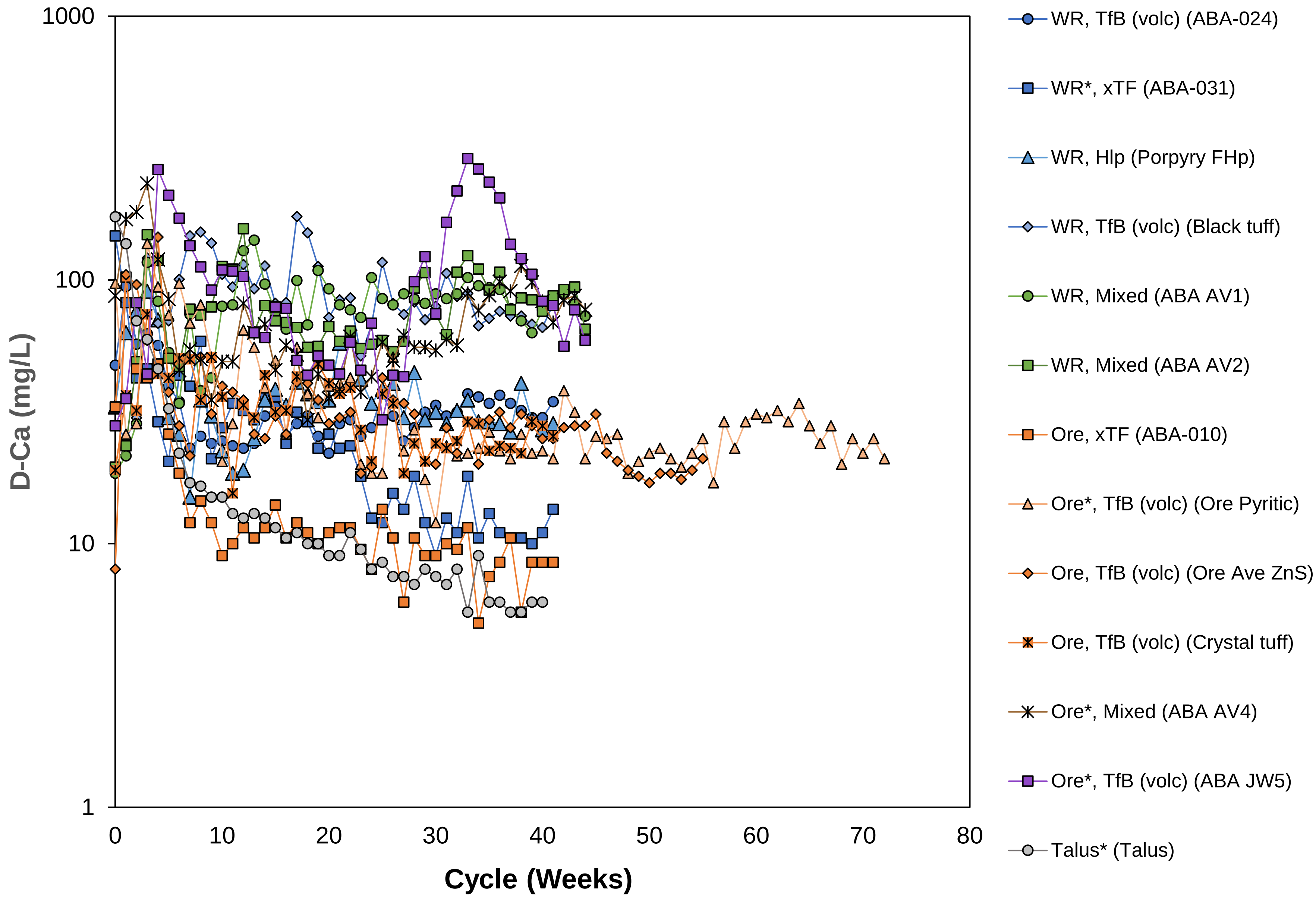

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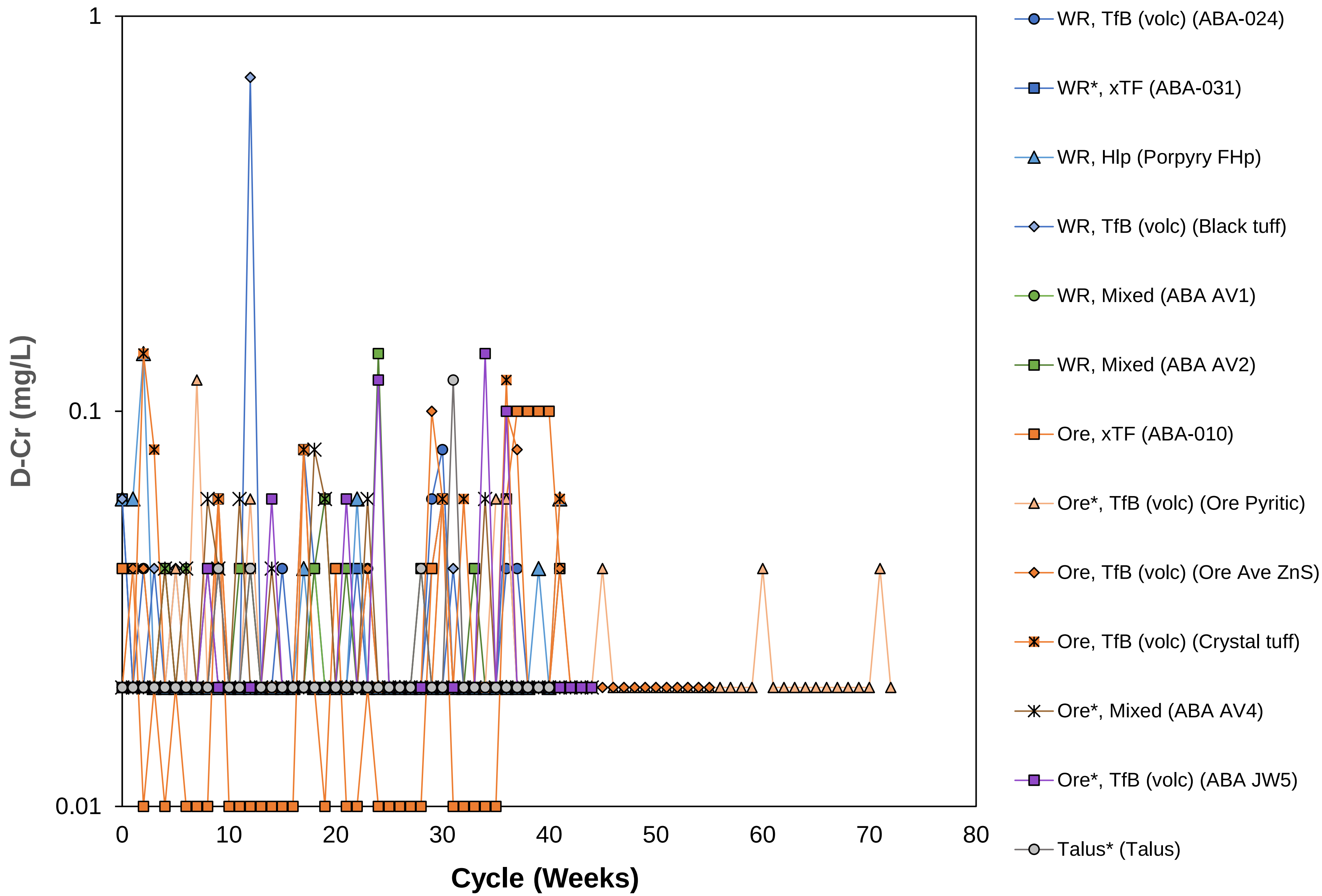

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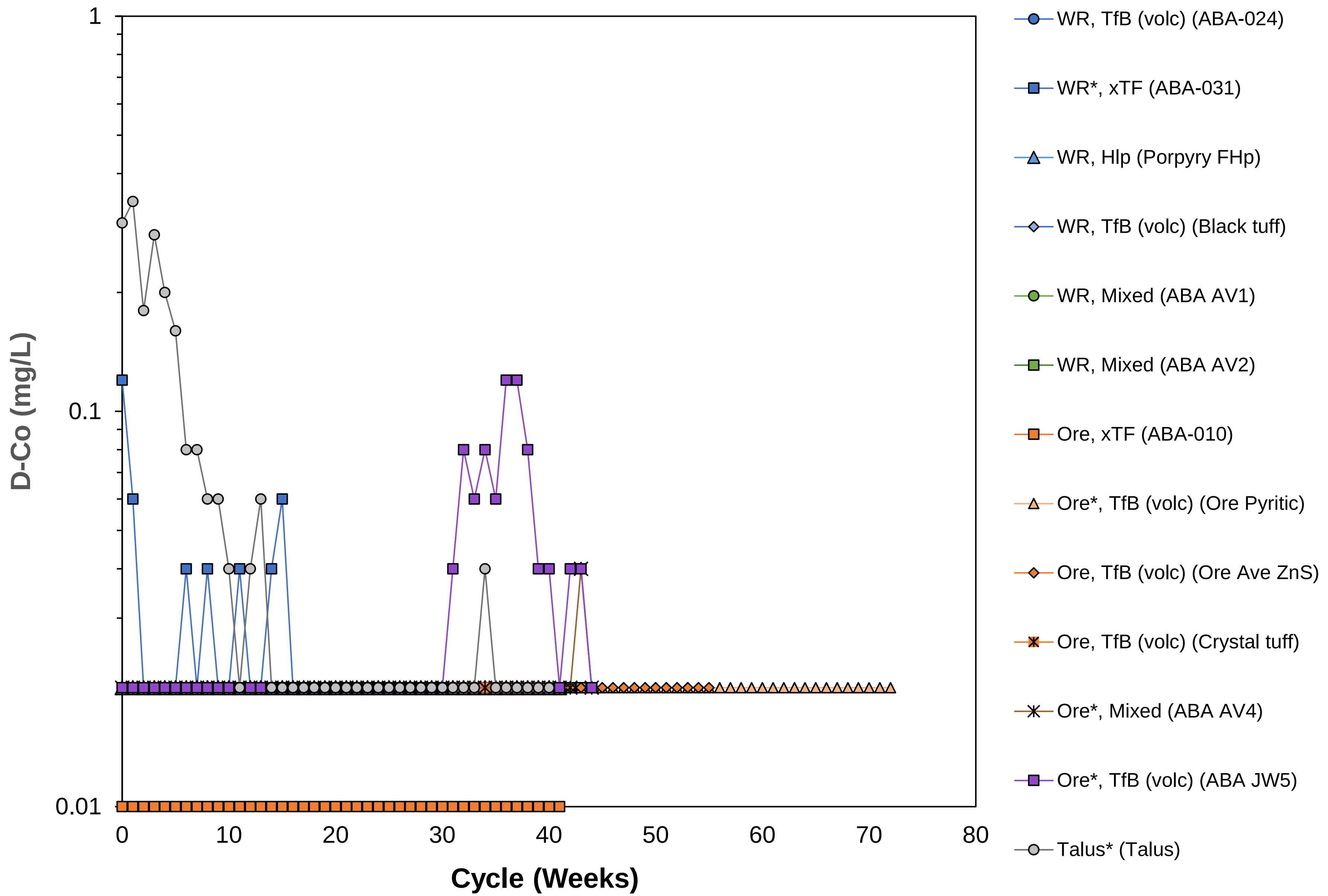

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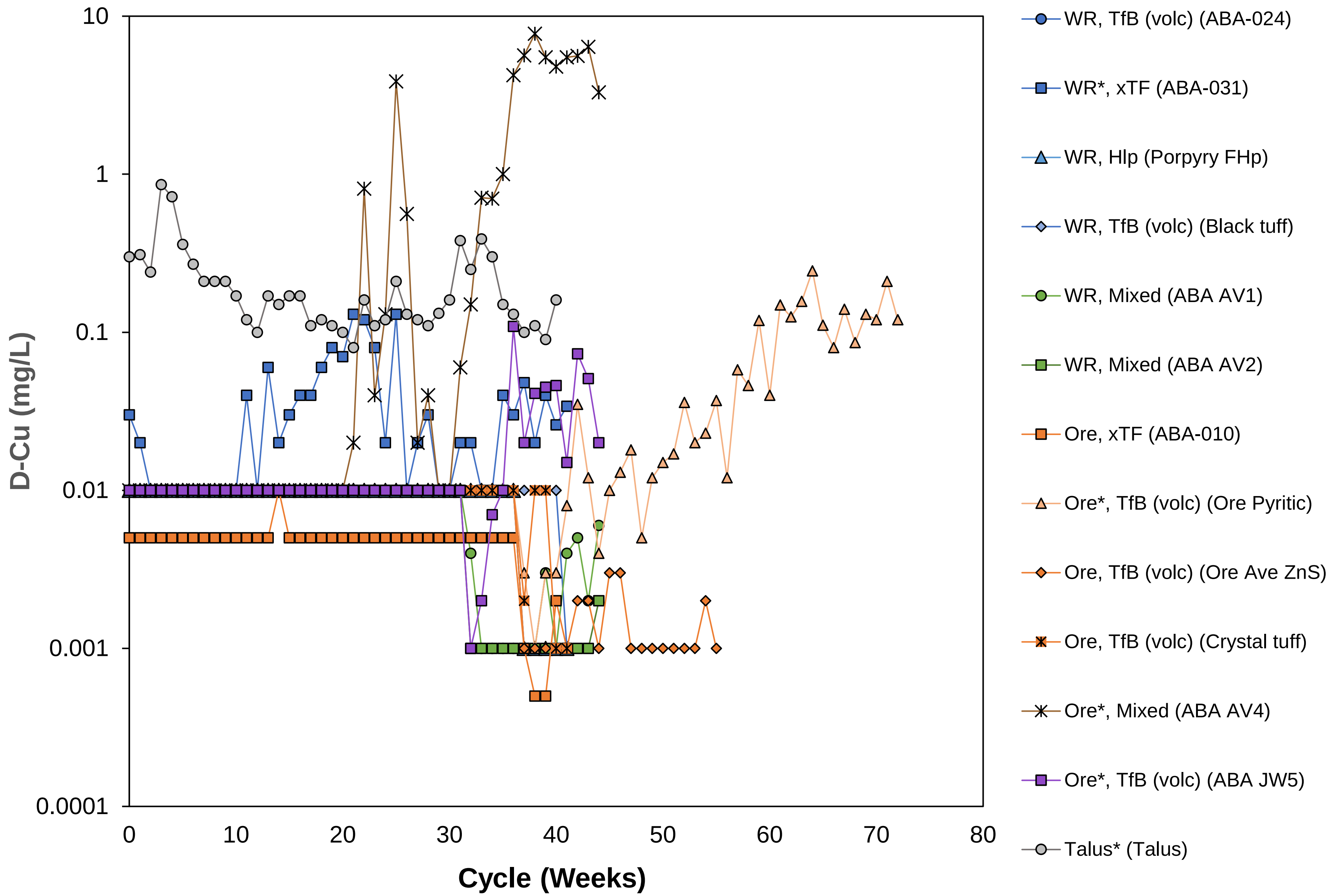

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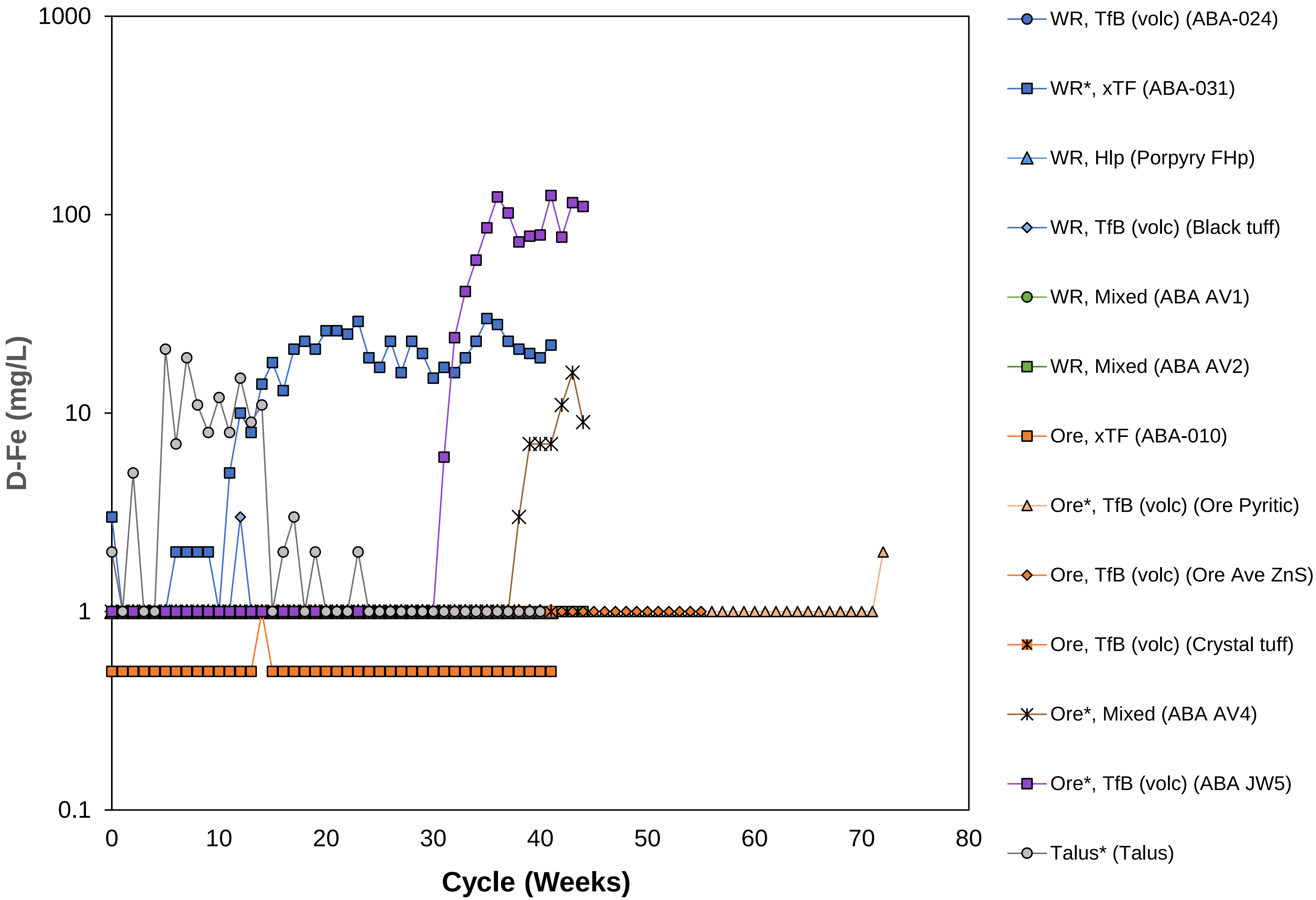

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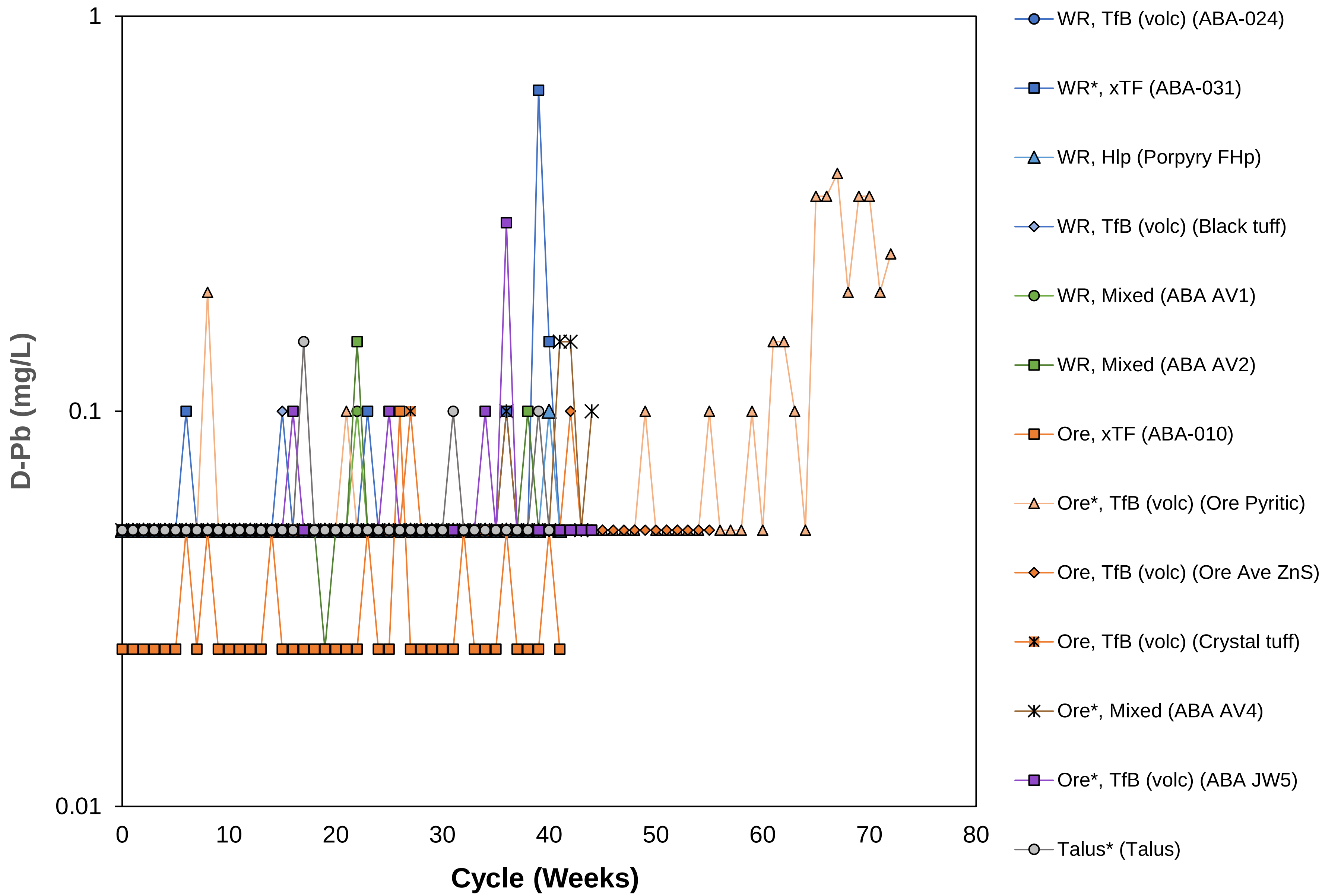

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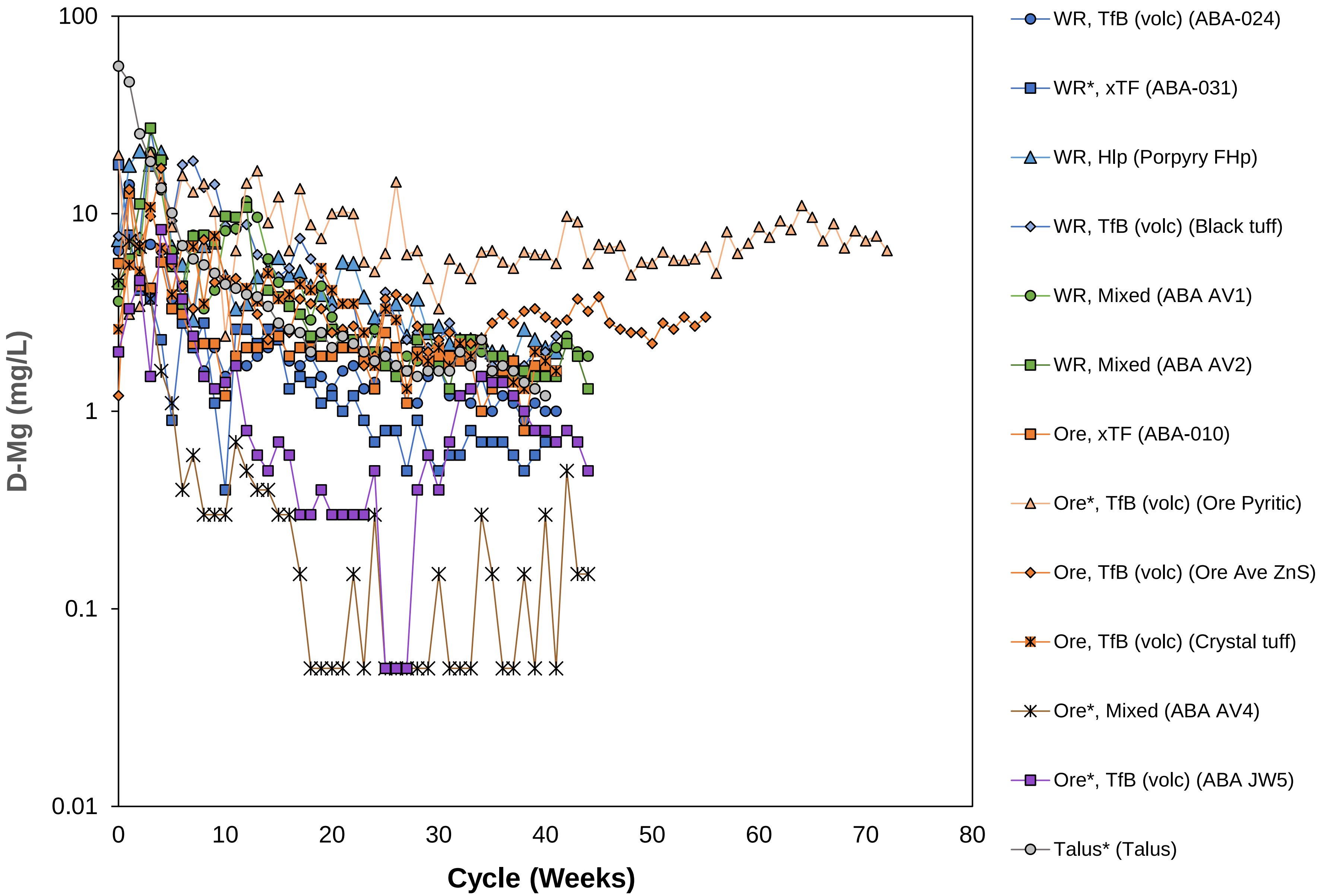

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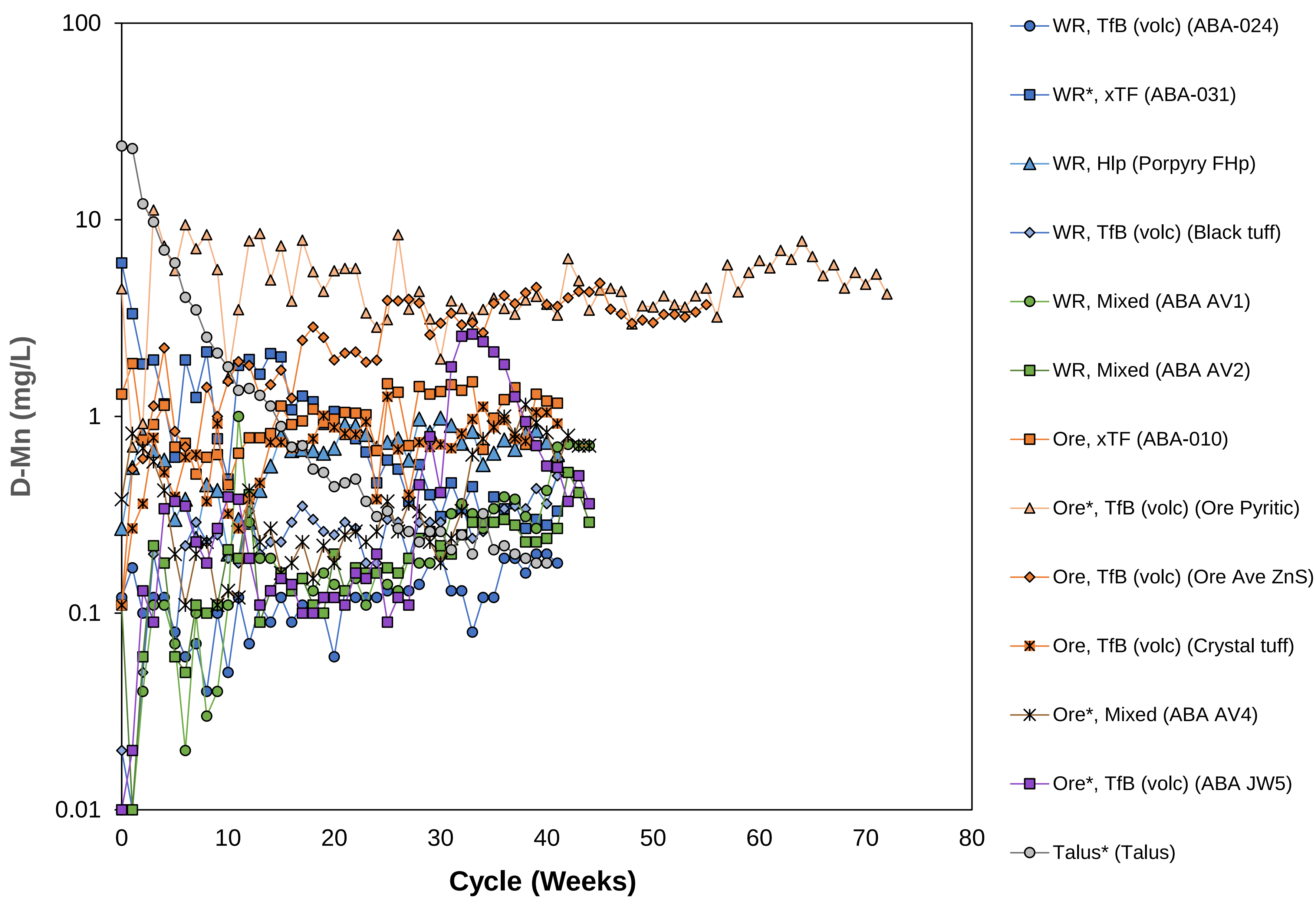

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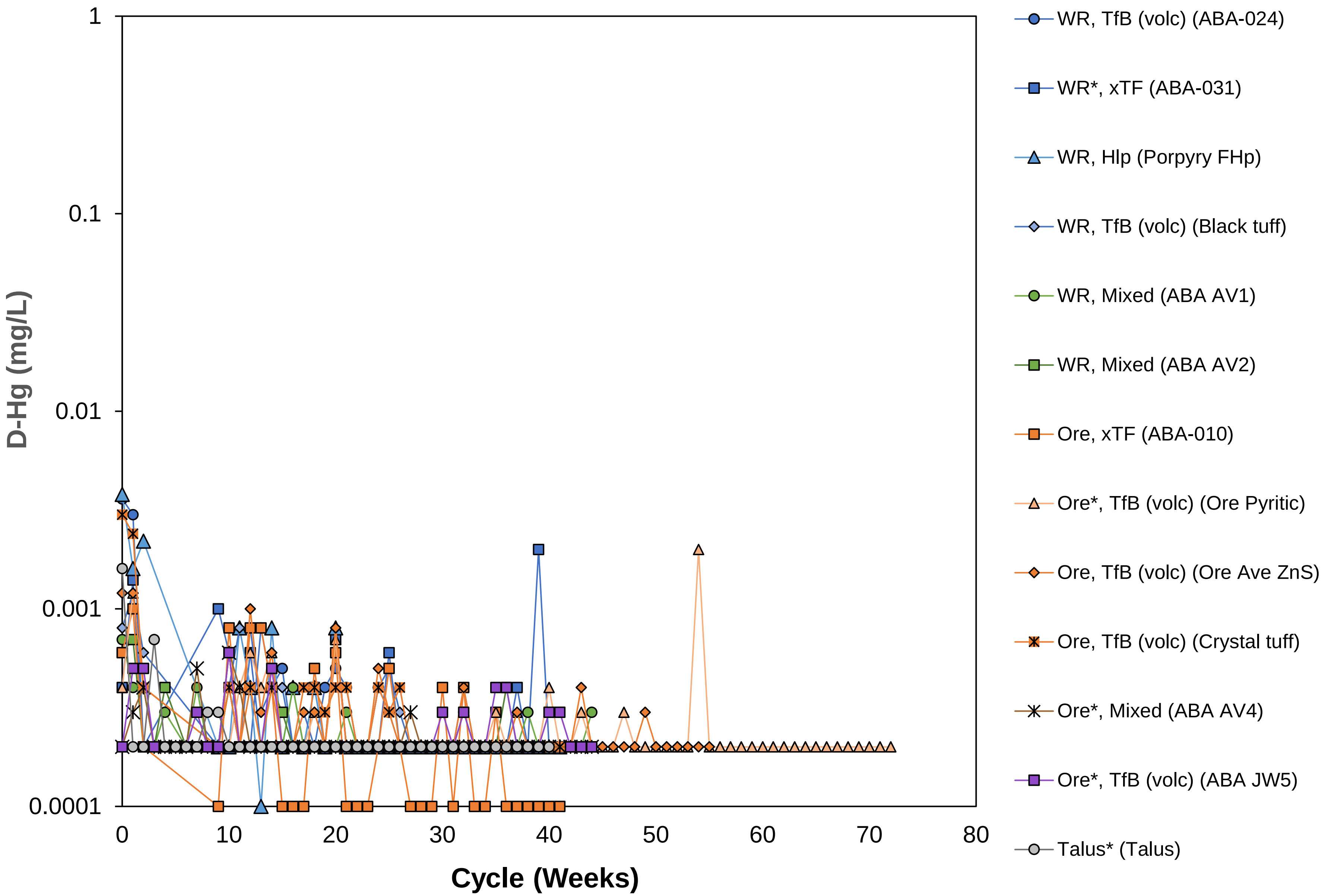

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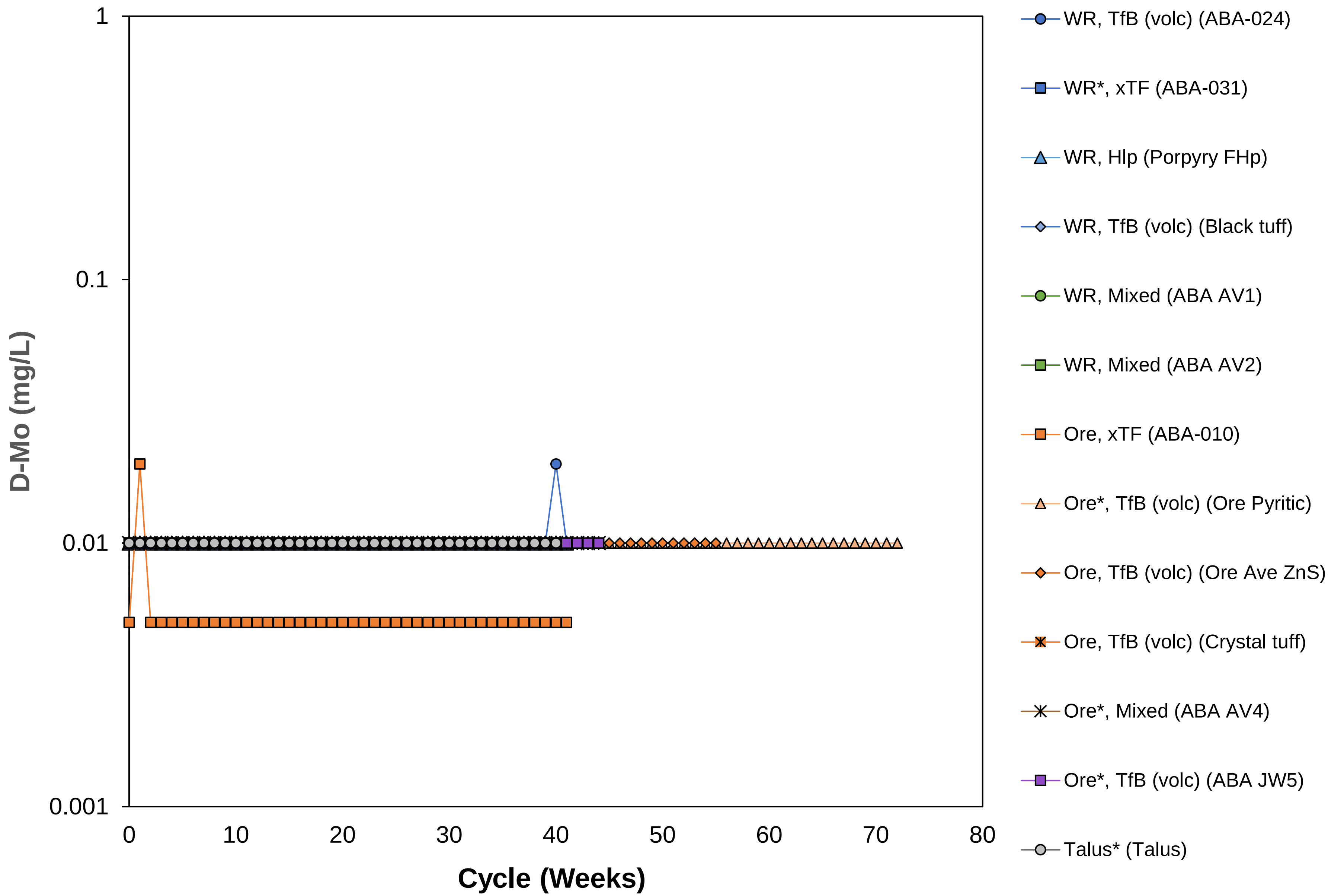

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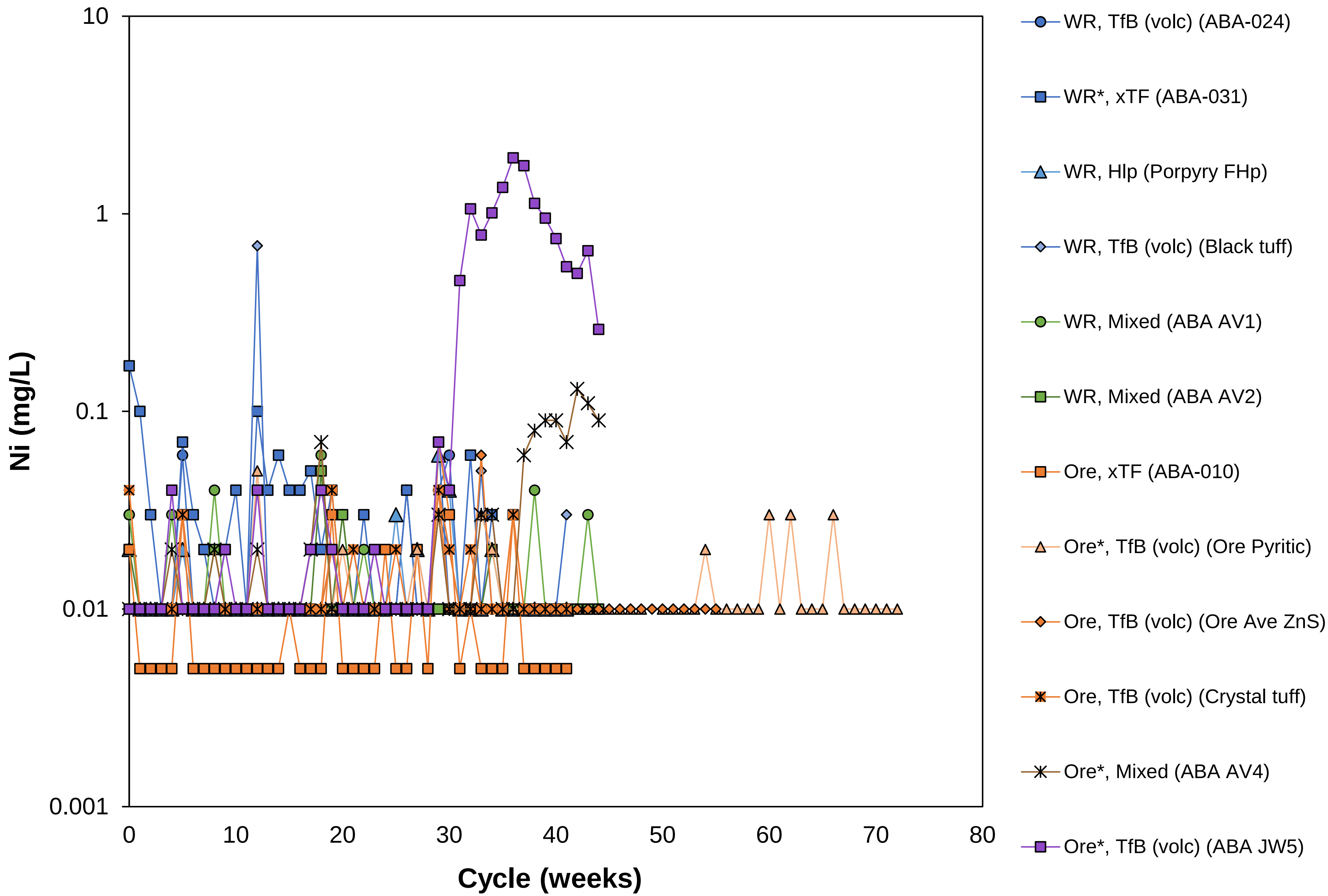

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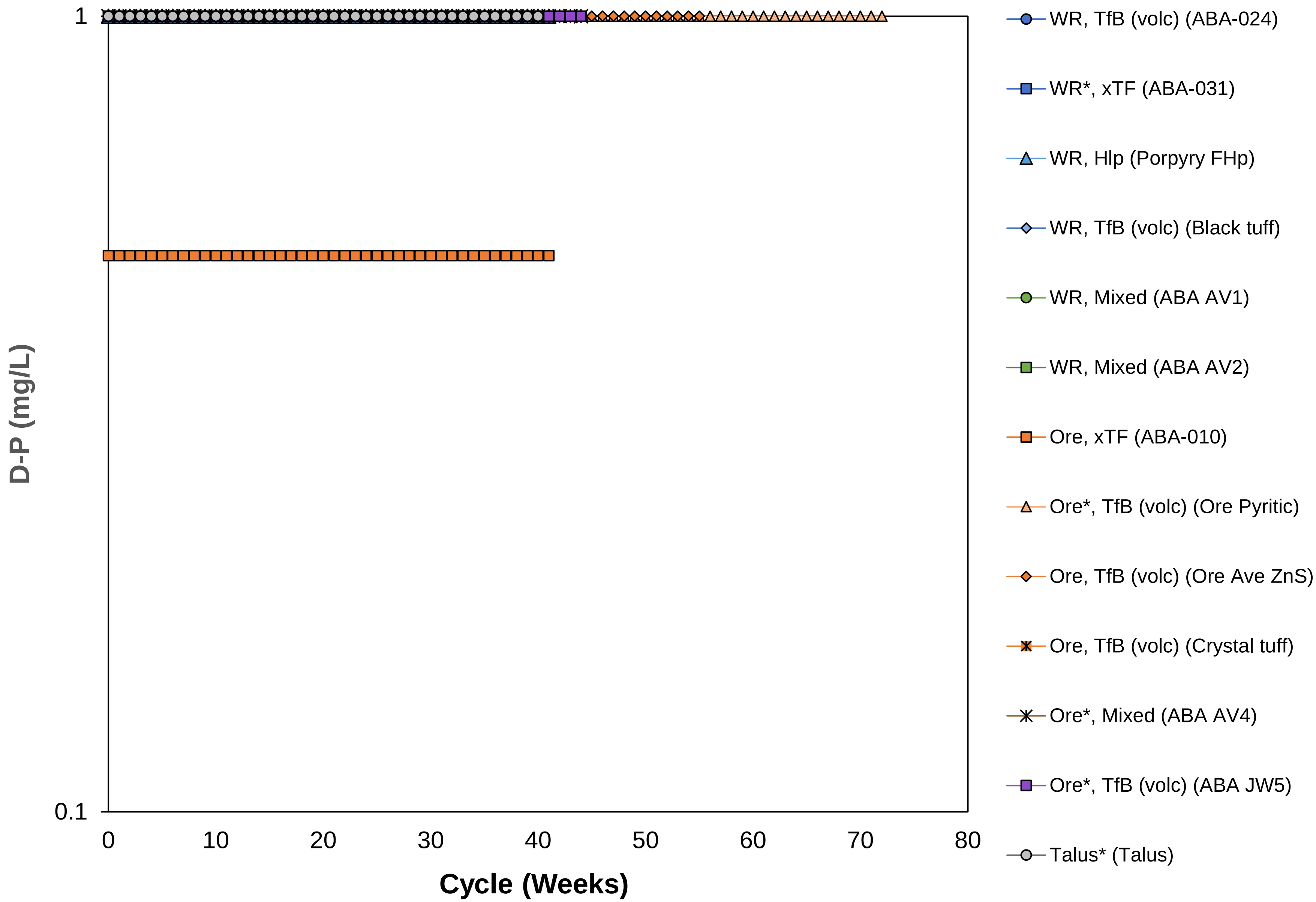

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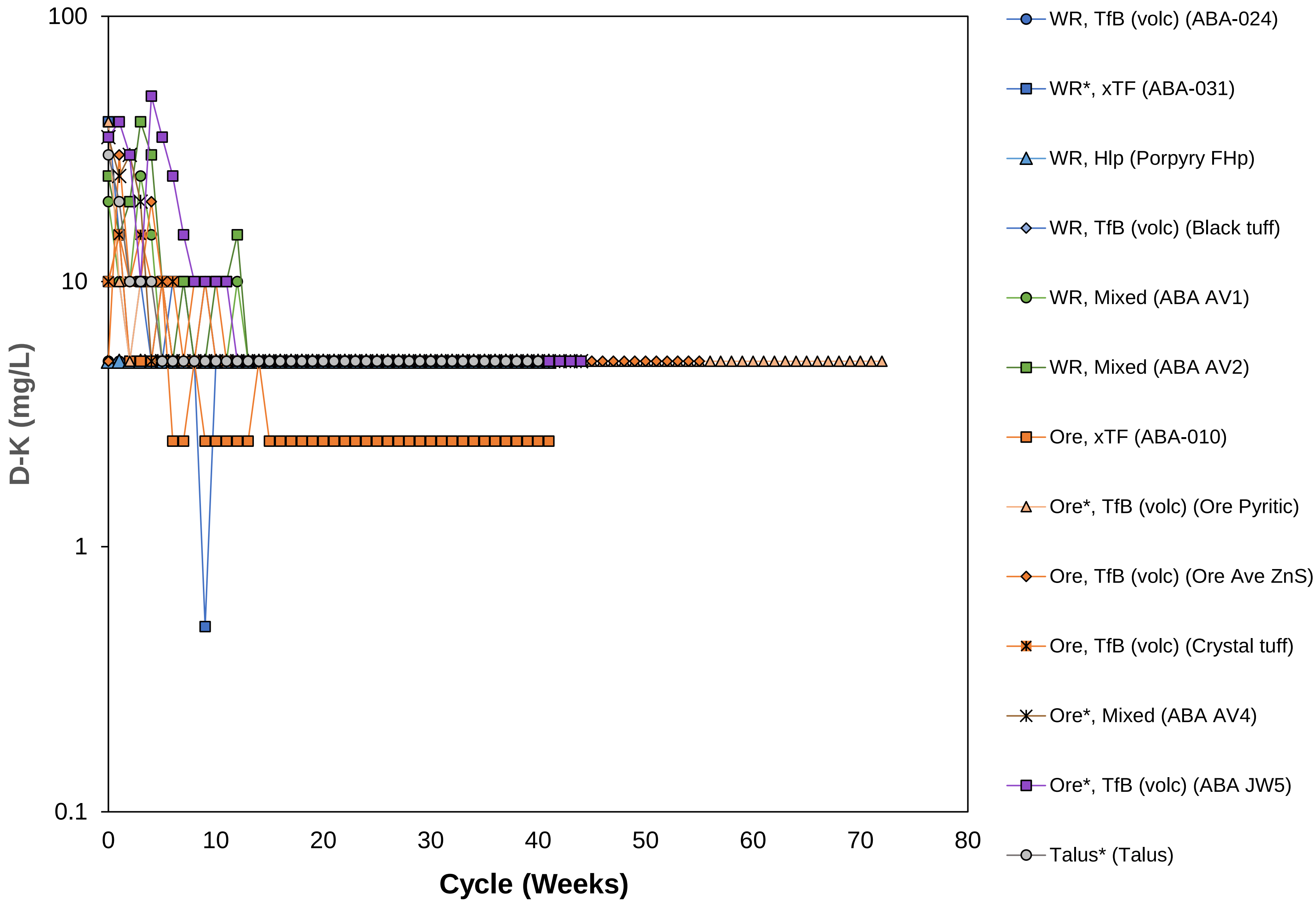

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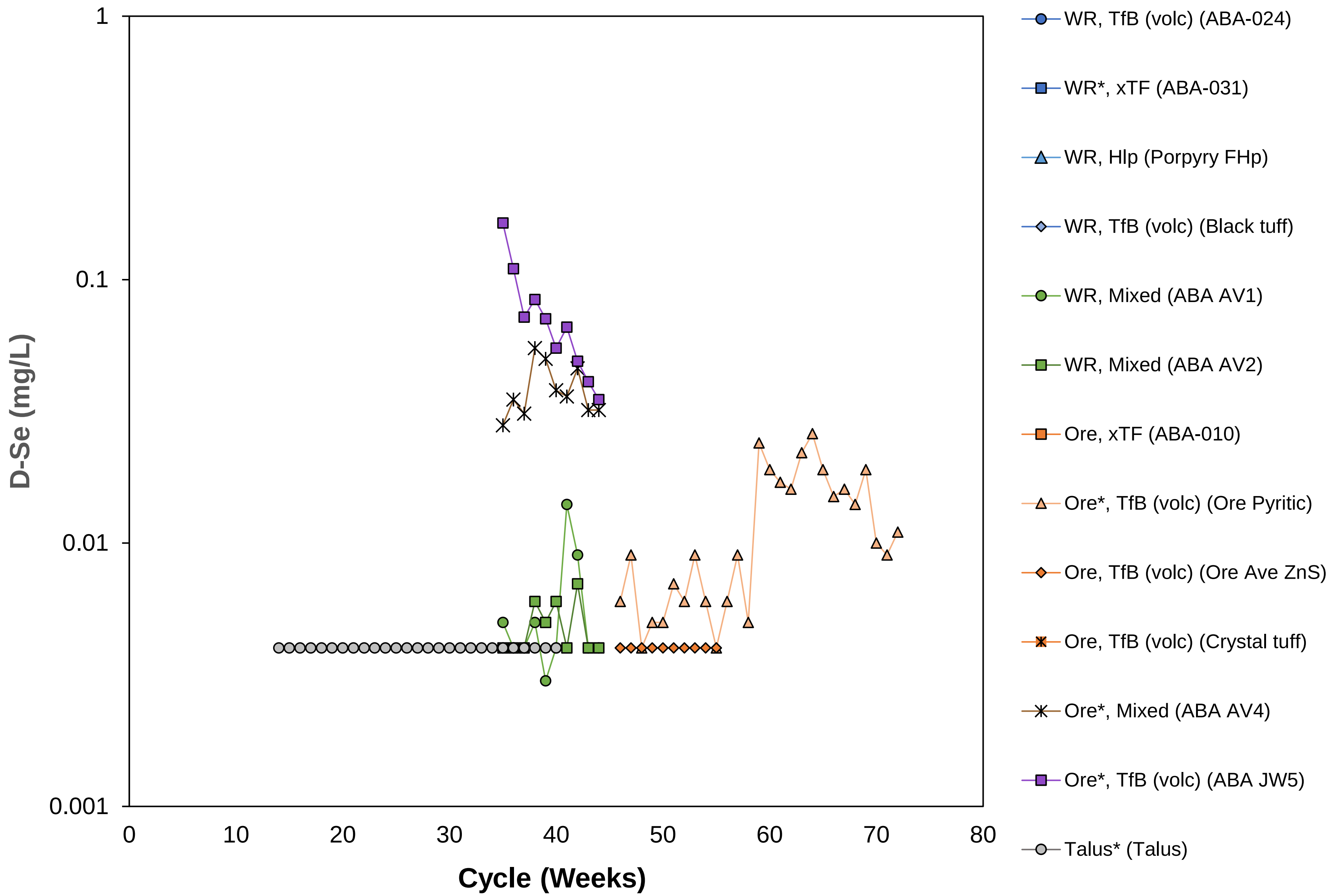

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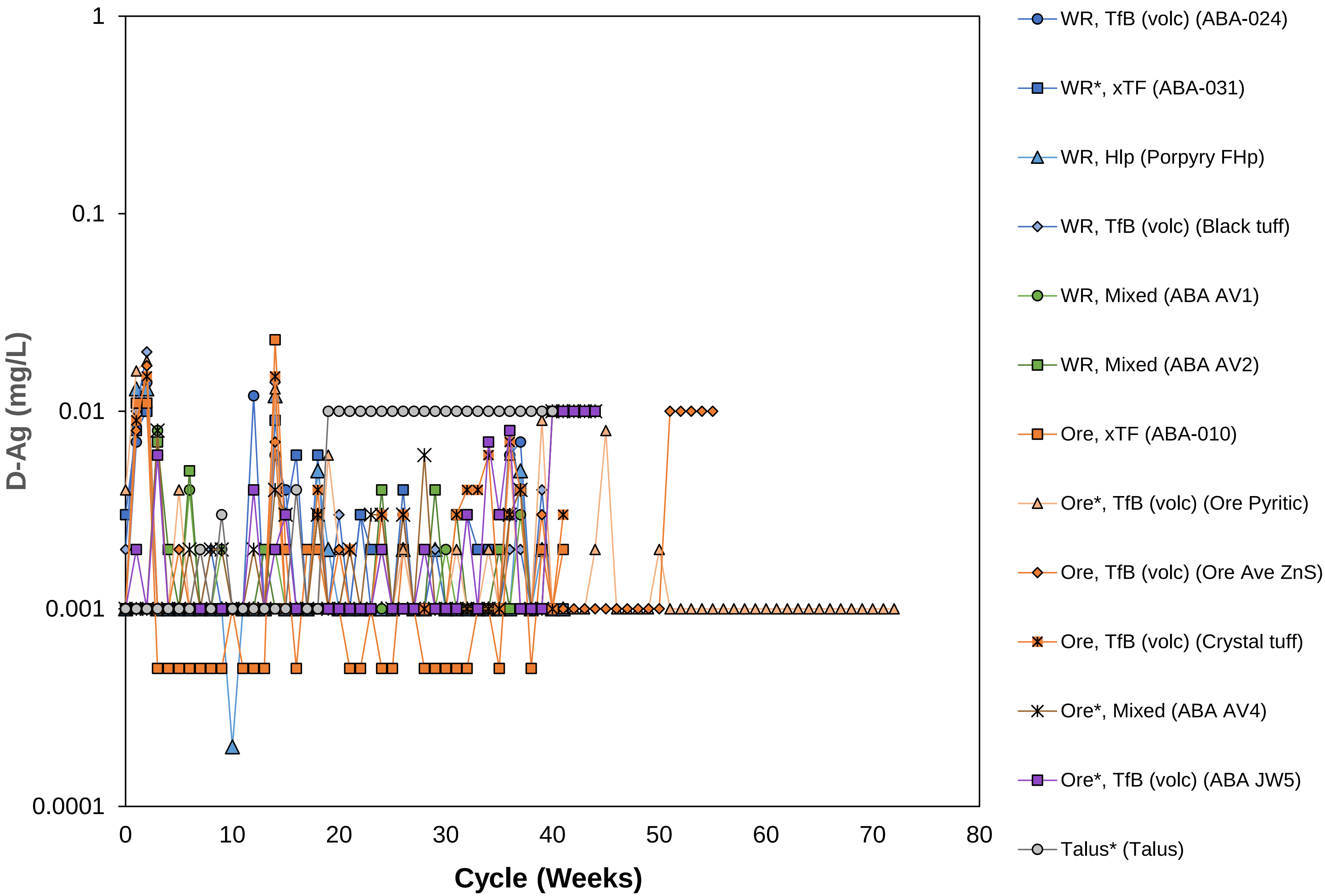

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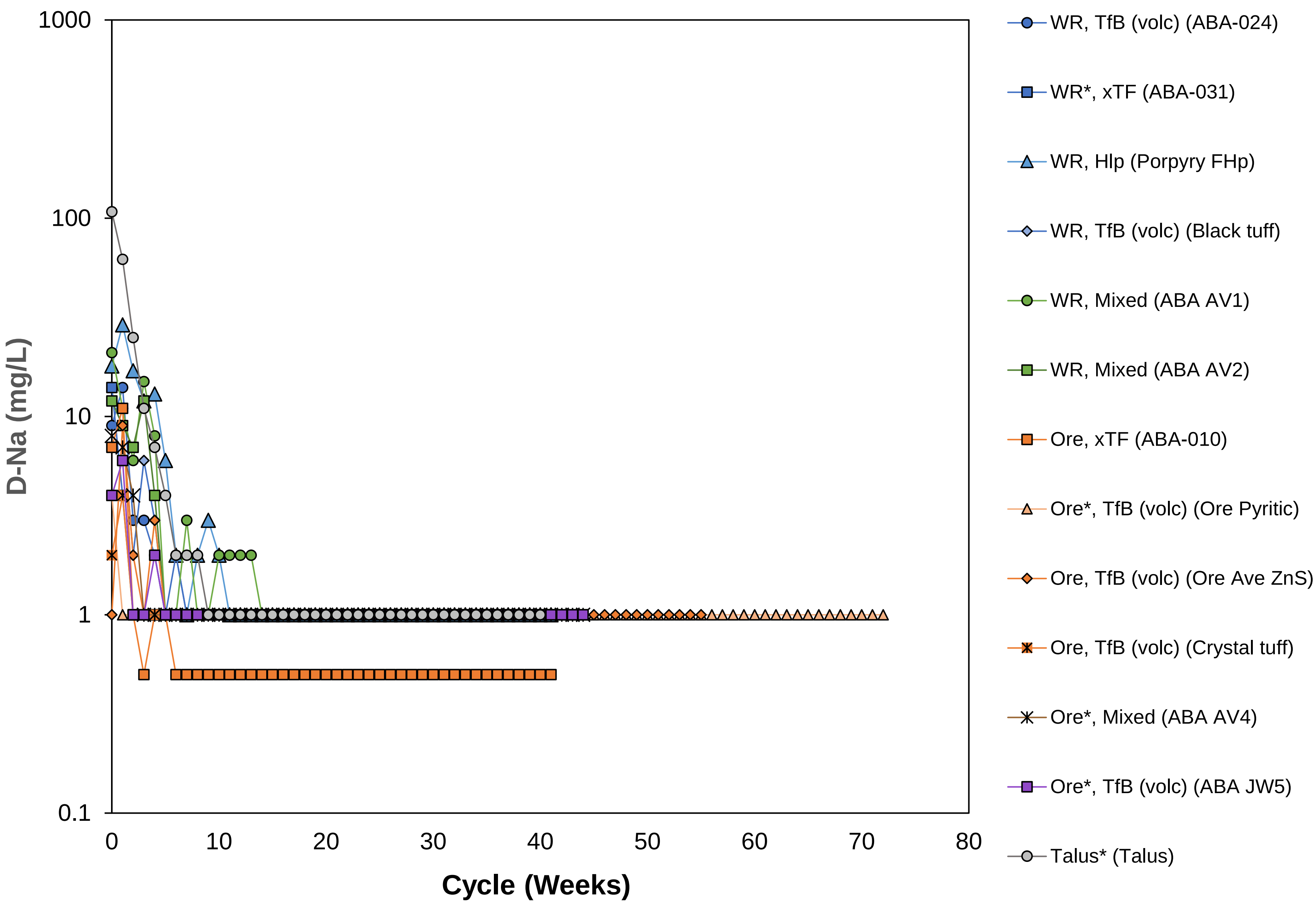

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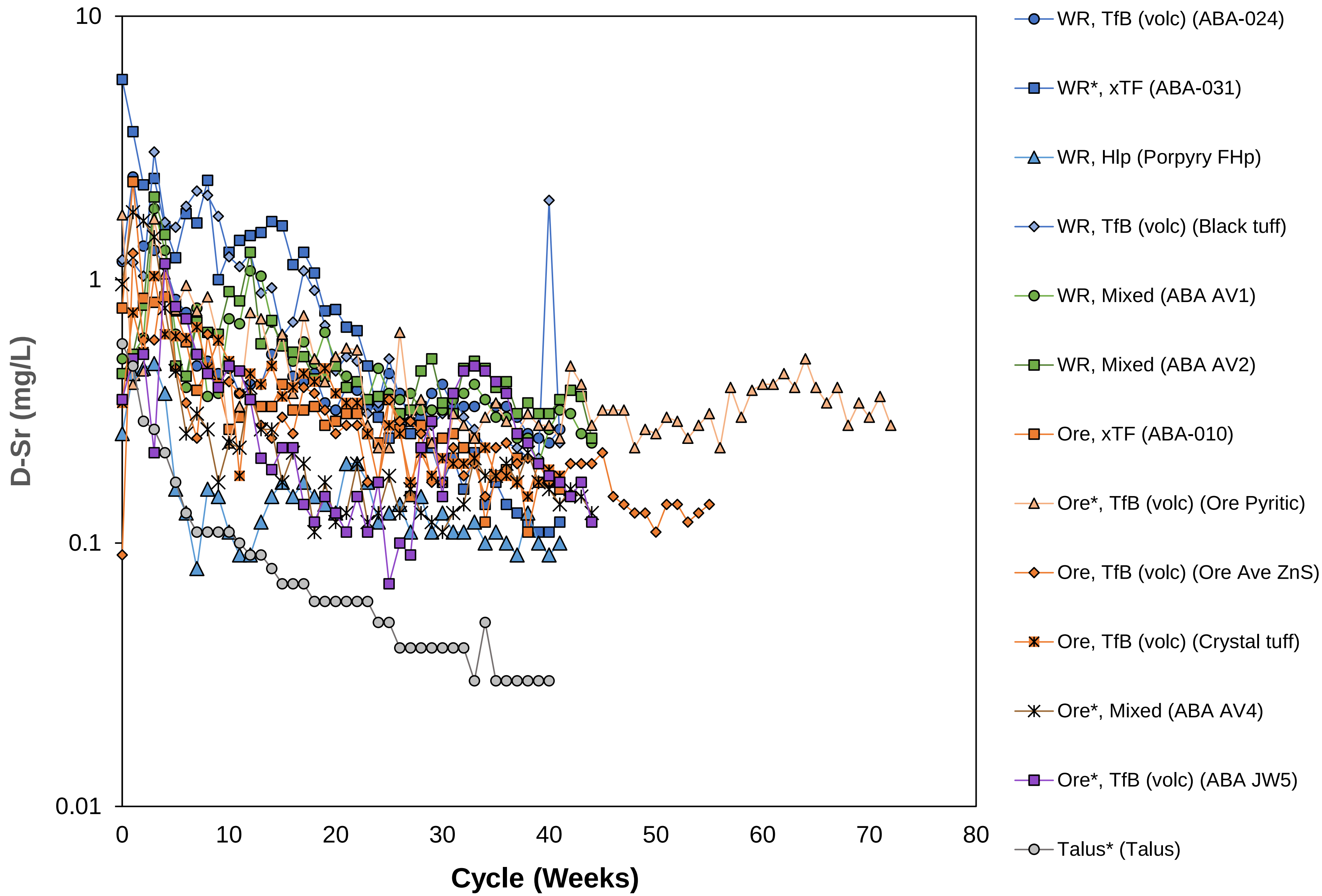

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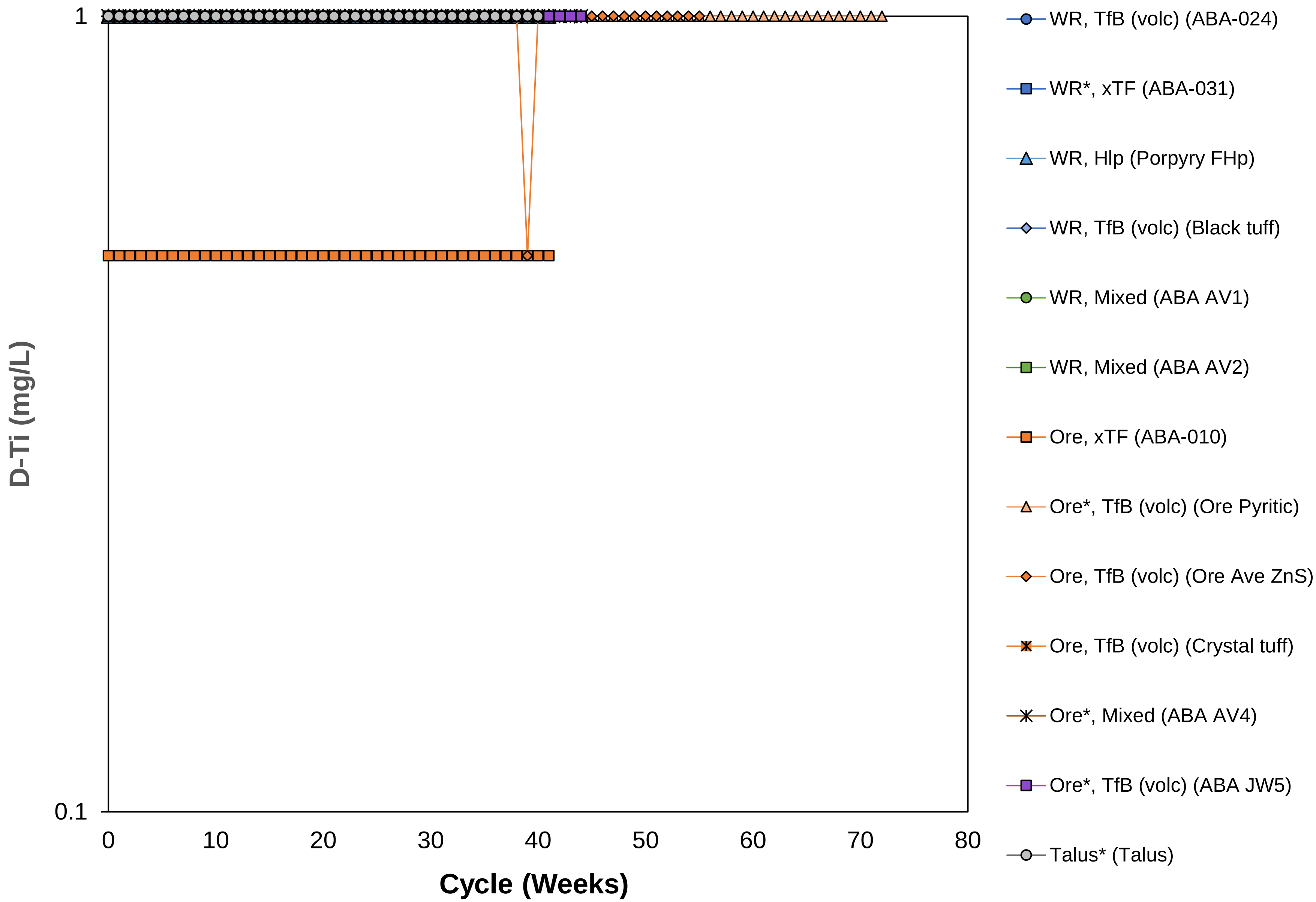

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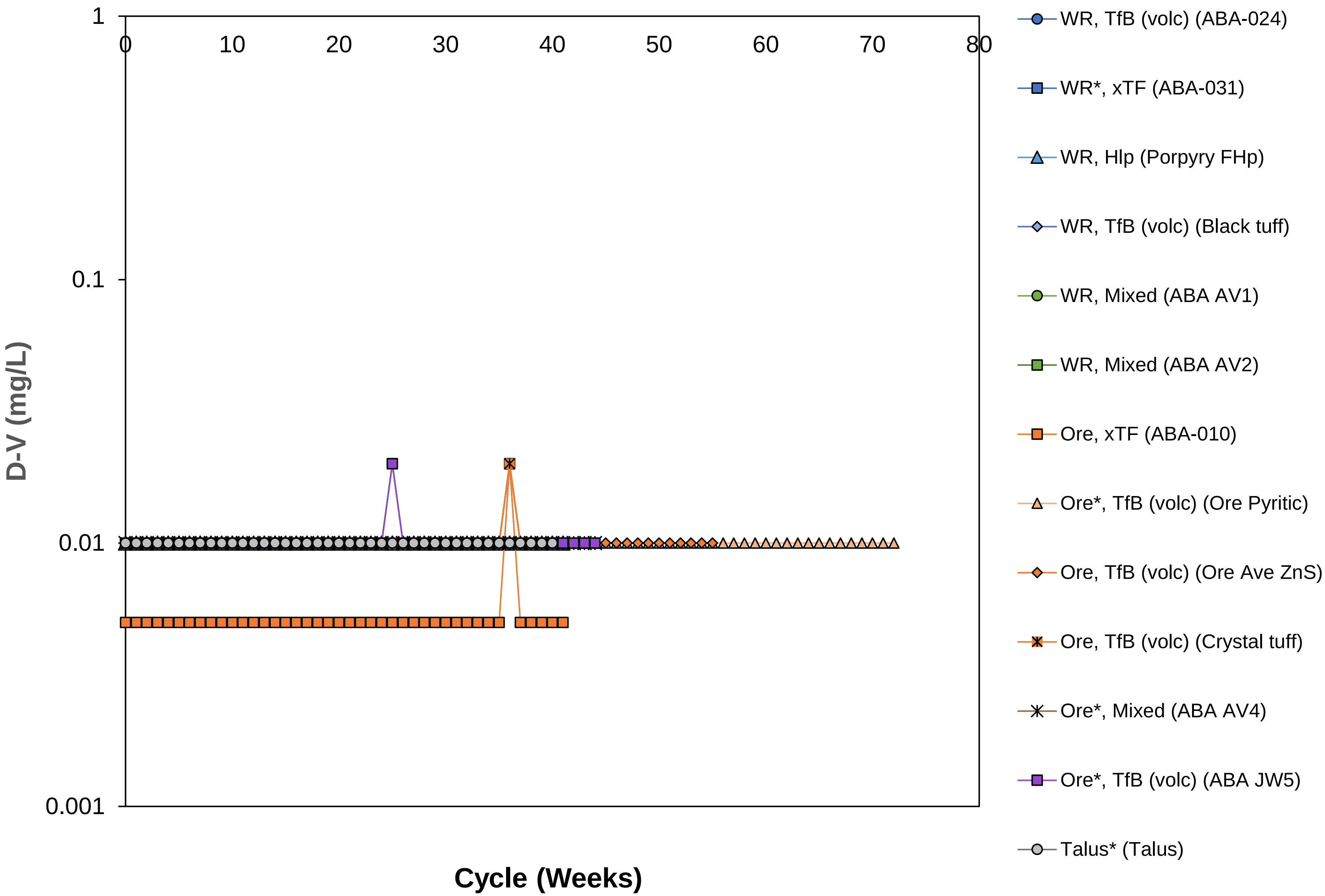

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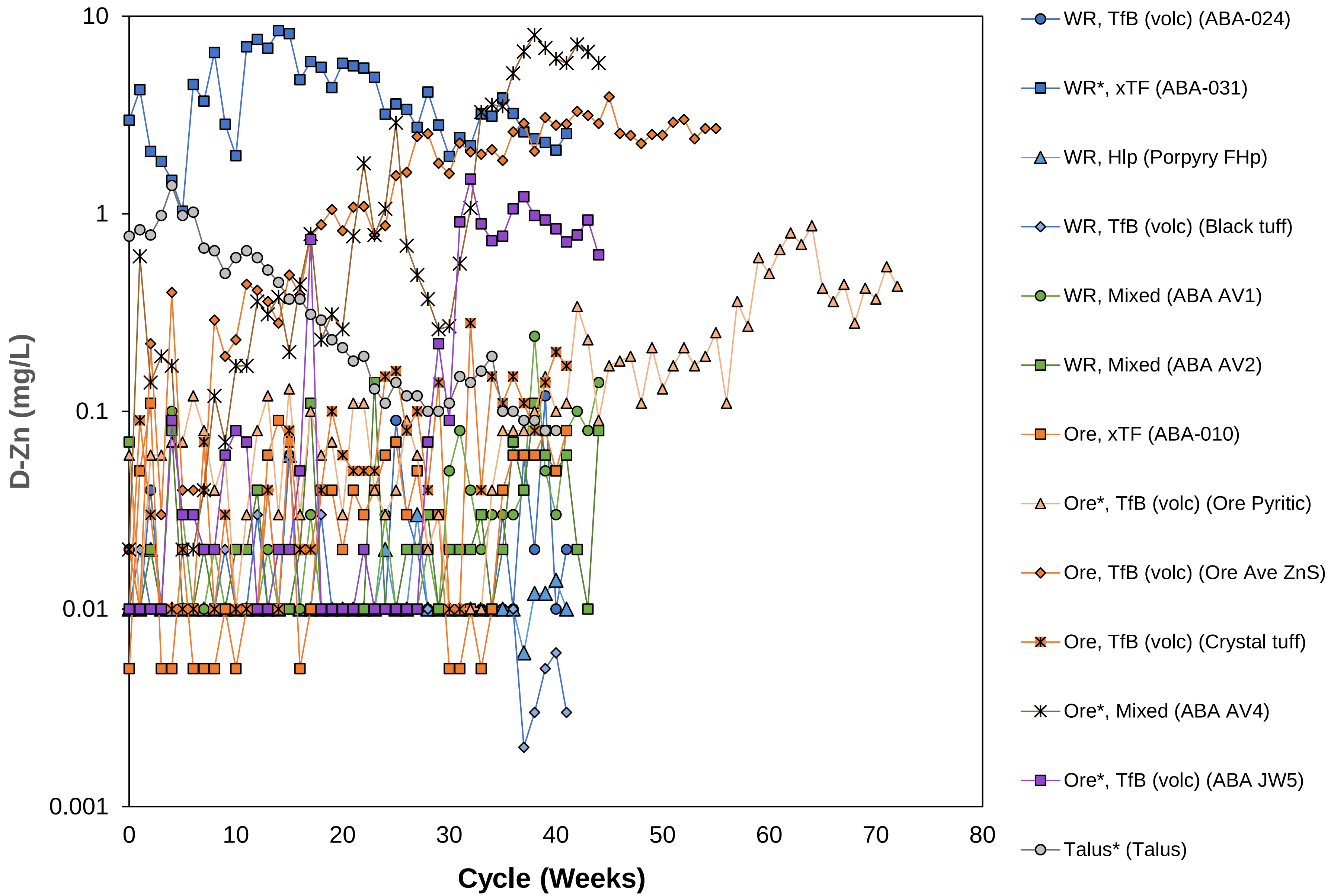

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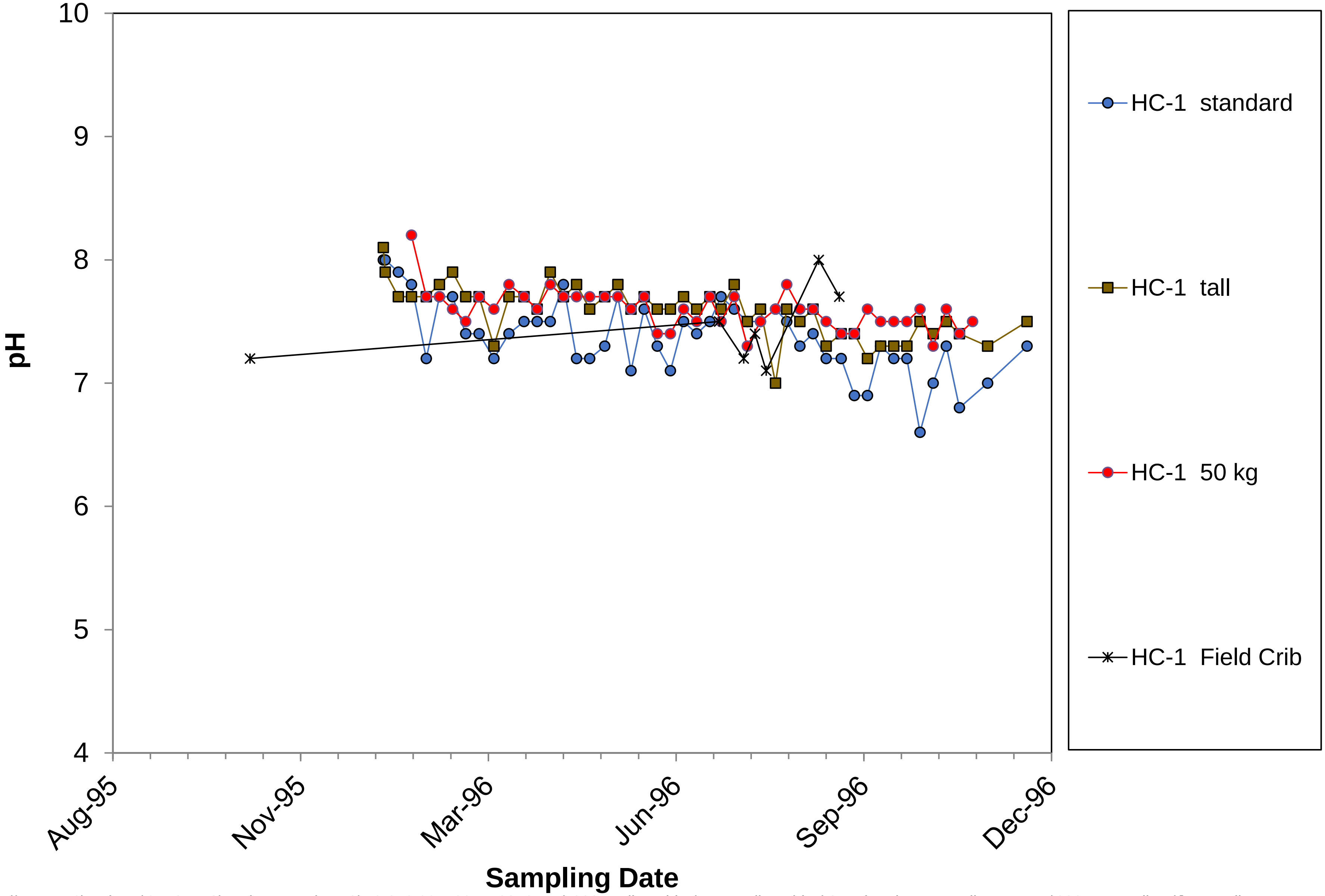
Appendix D – Frostad Laboratory Kinetic Tests: Selected Data and Concentration Graphs



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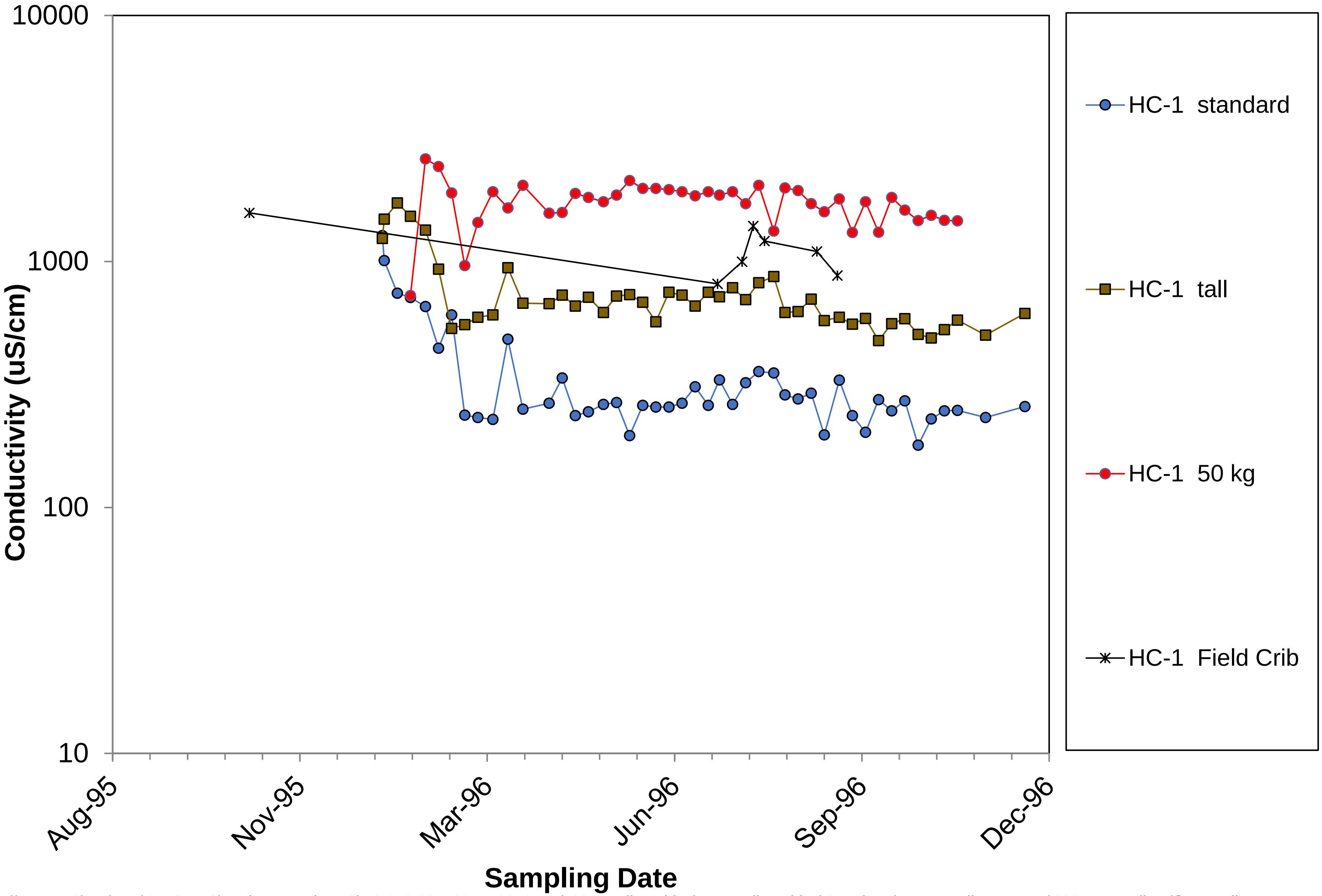

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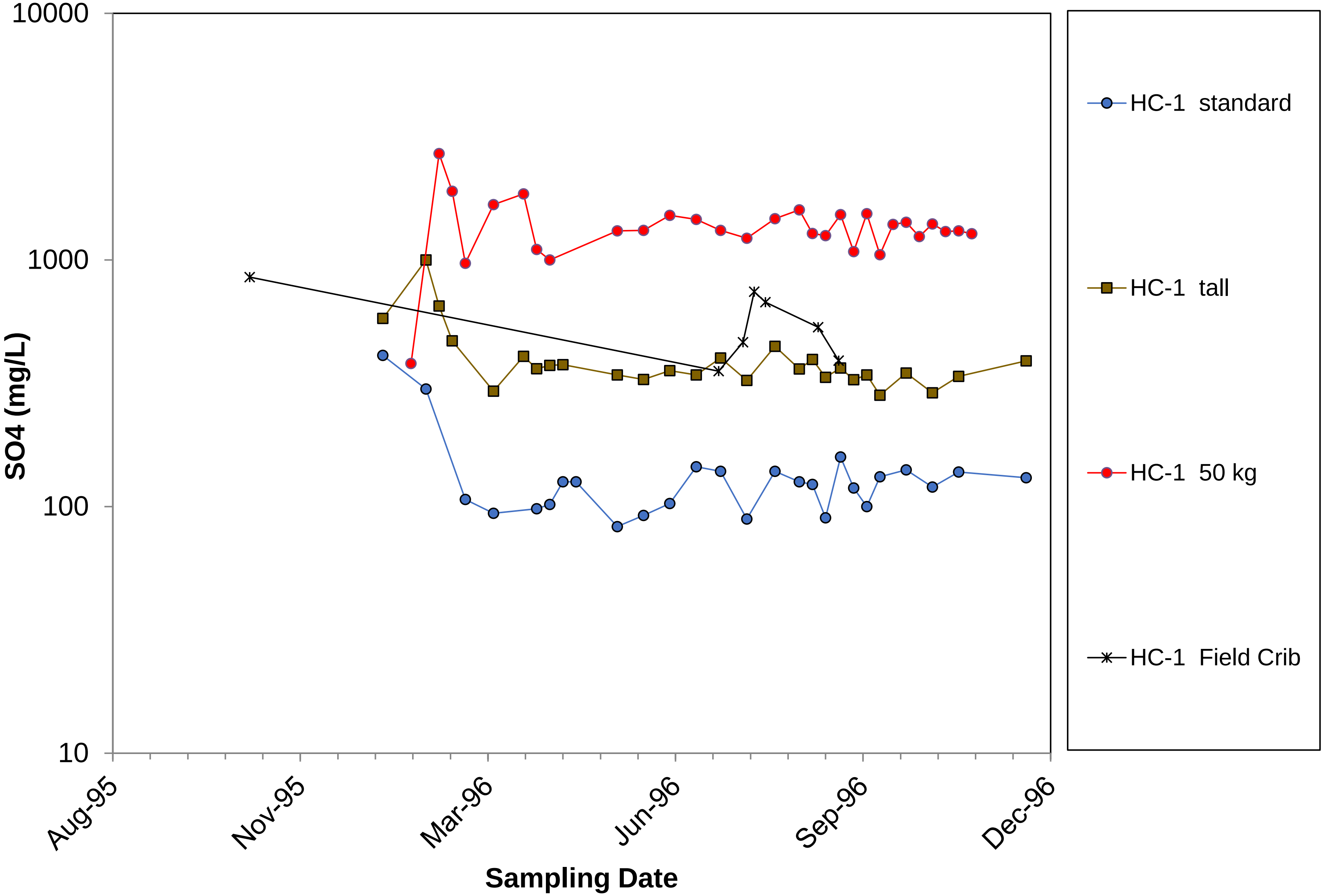

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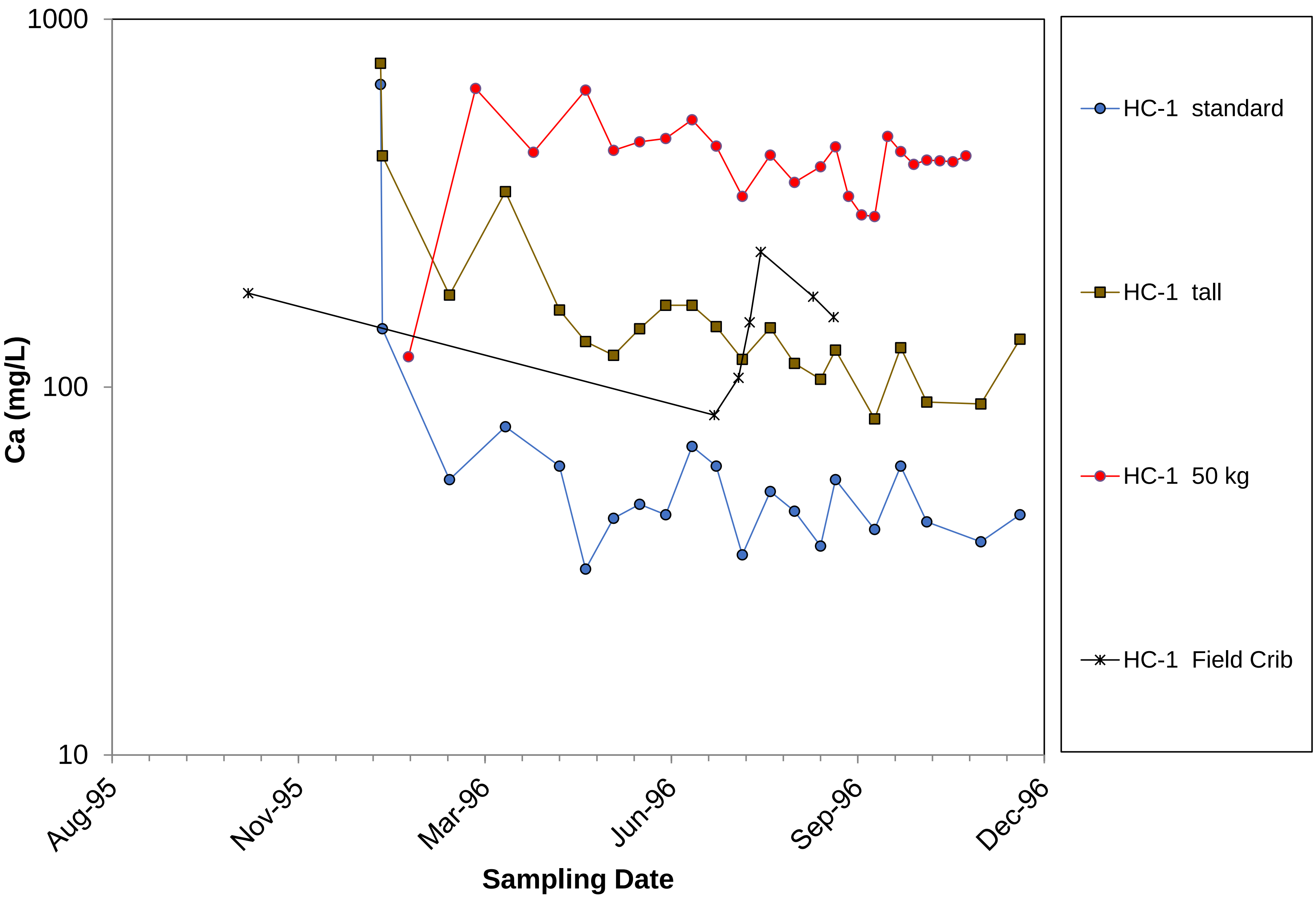

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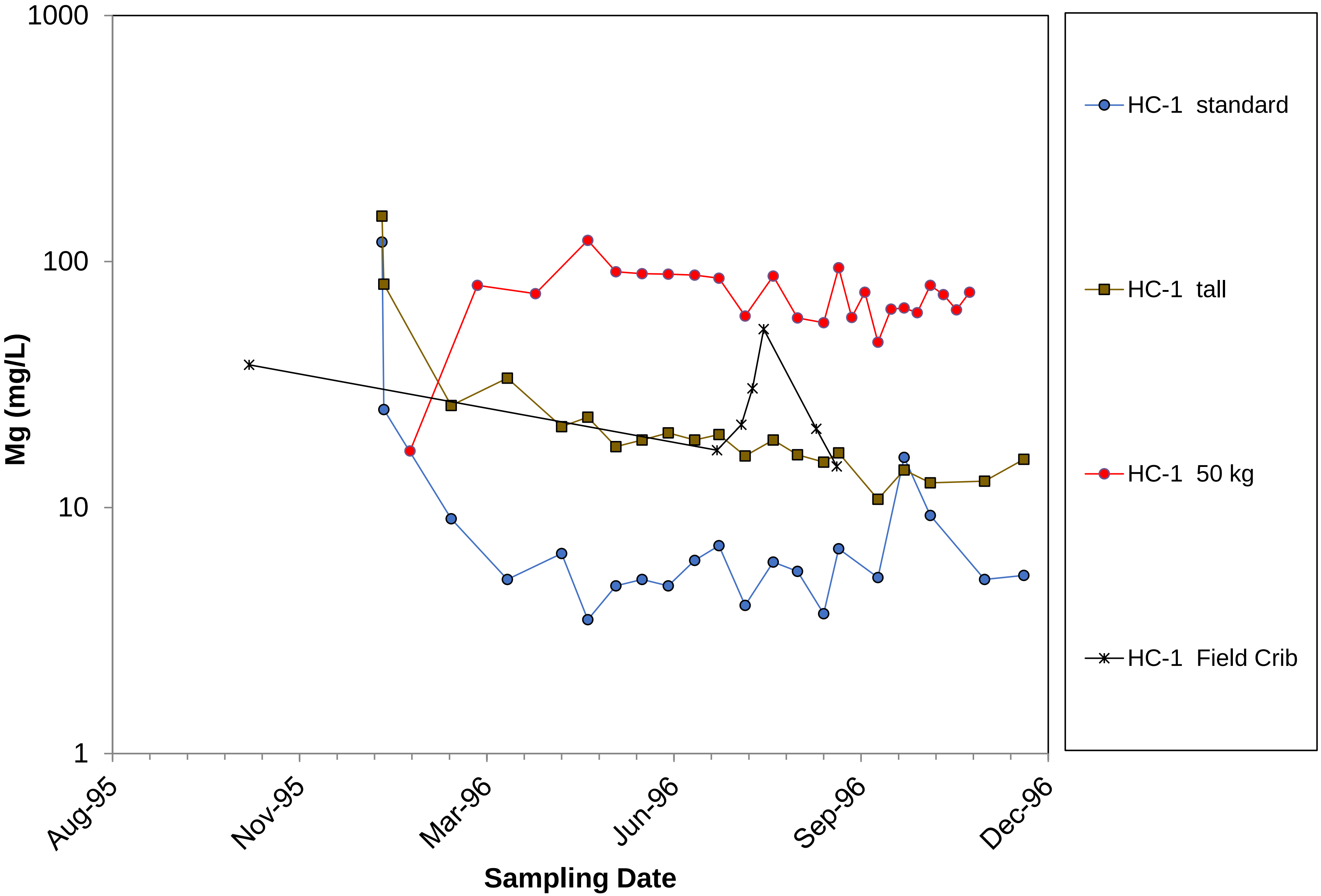

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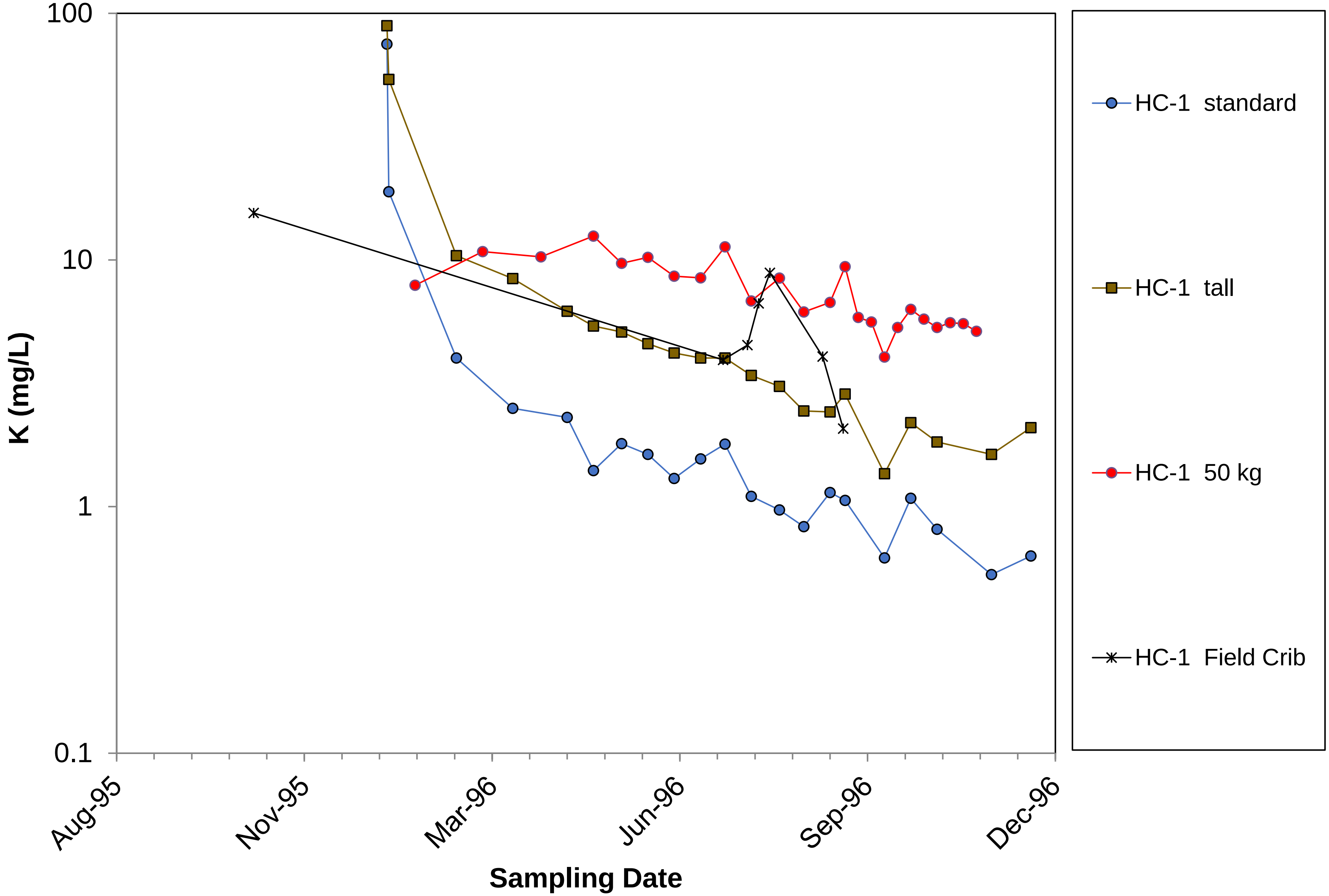

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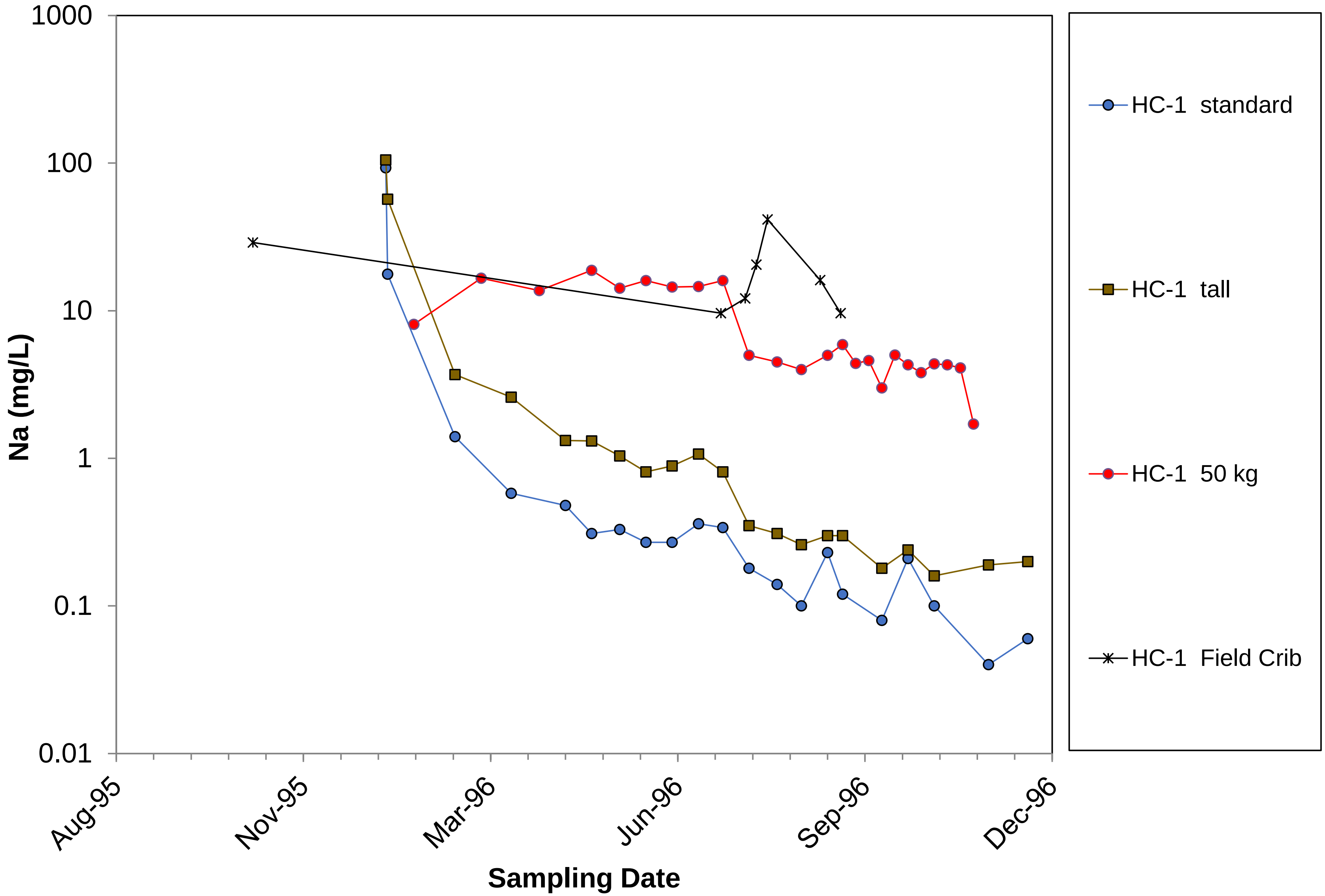

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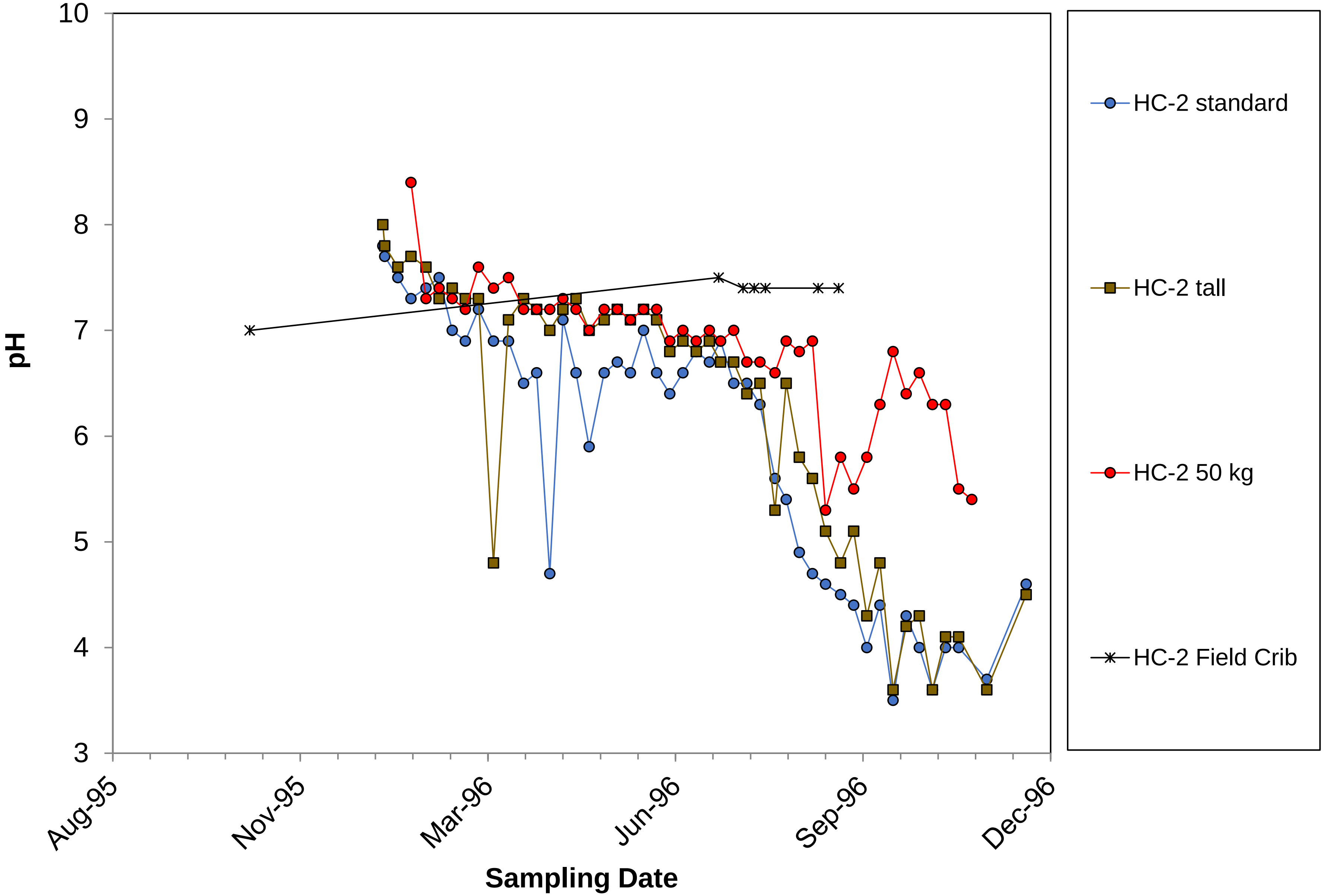

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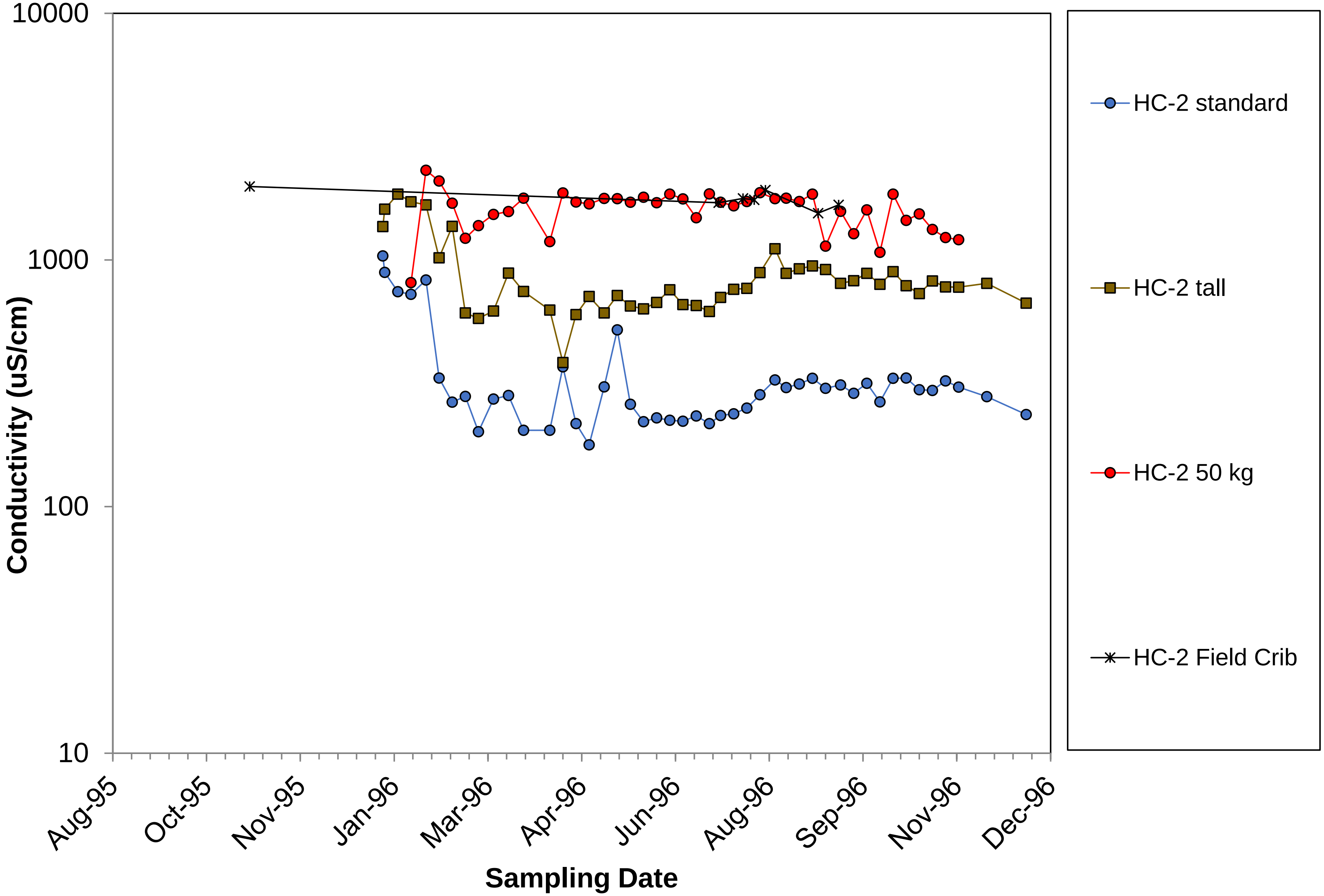

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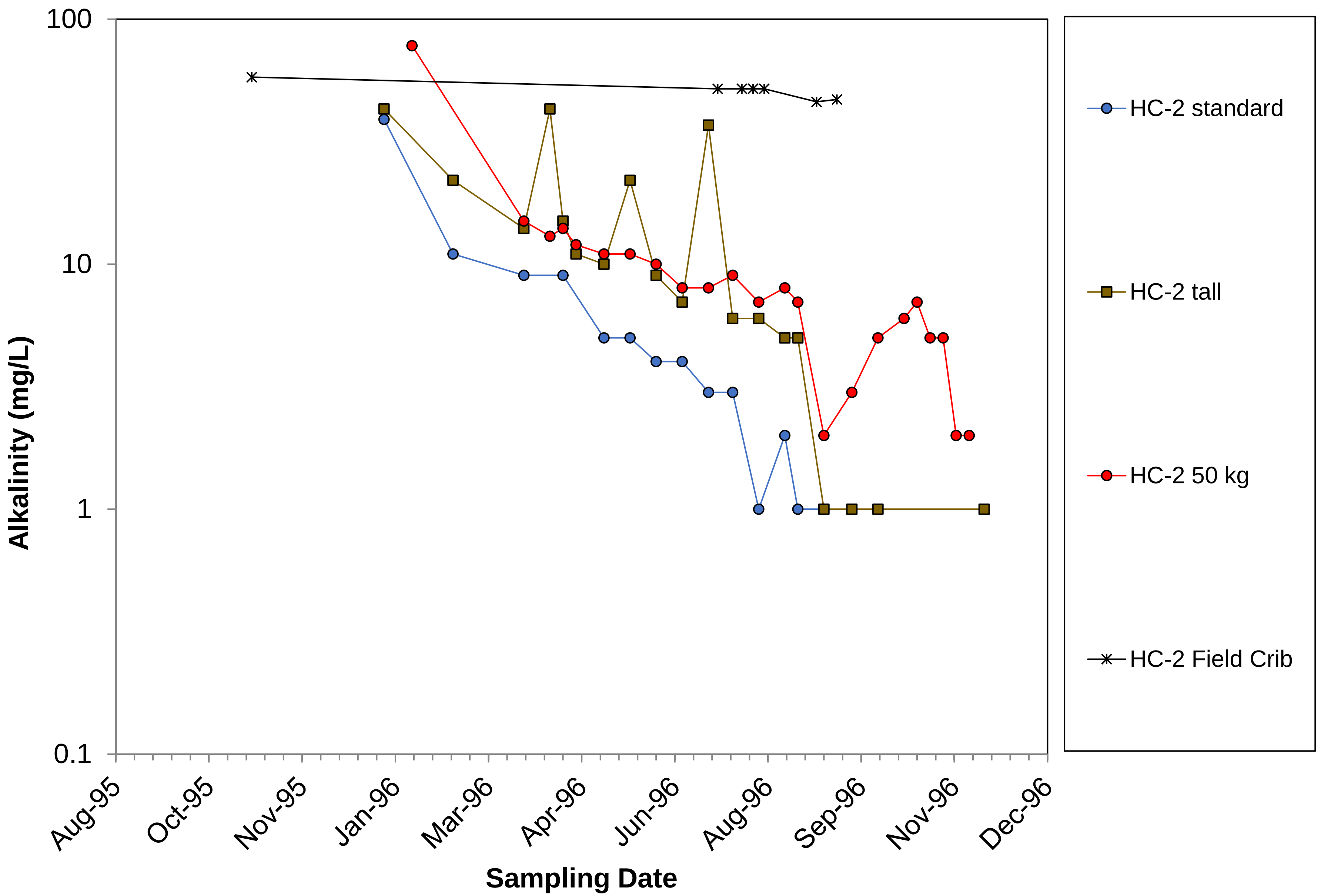

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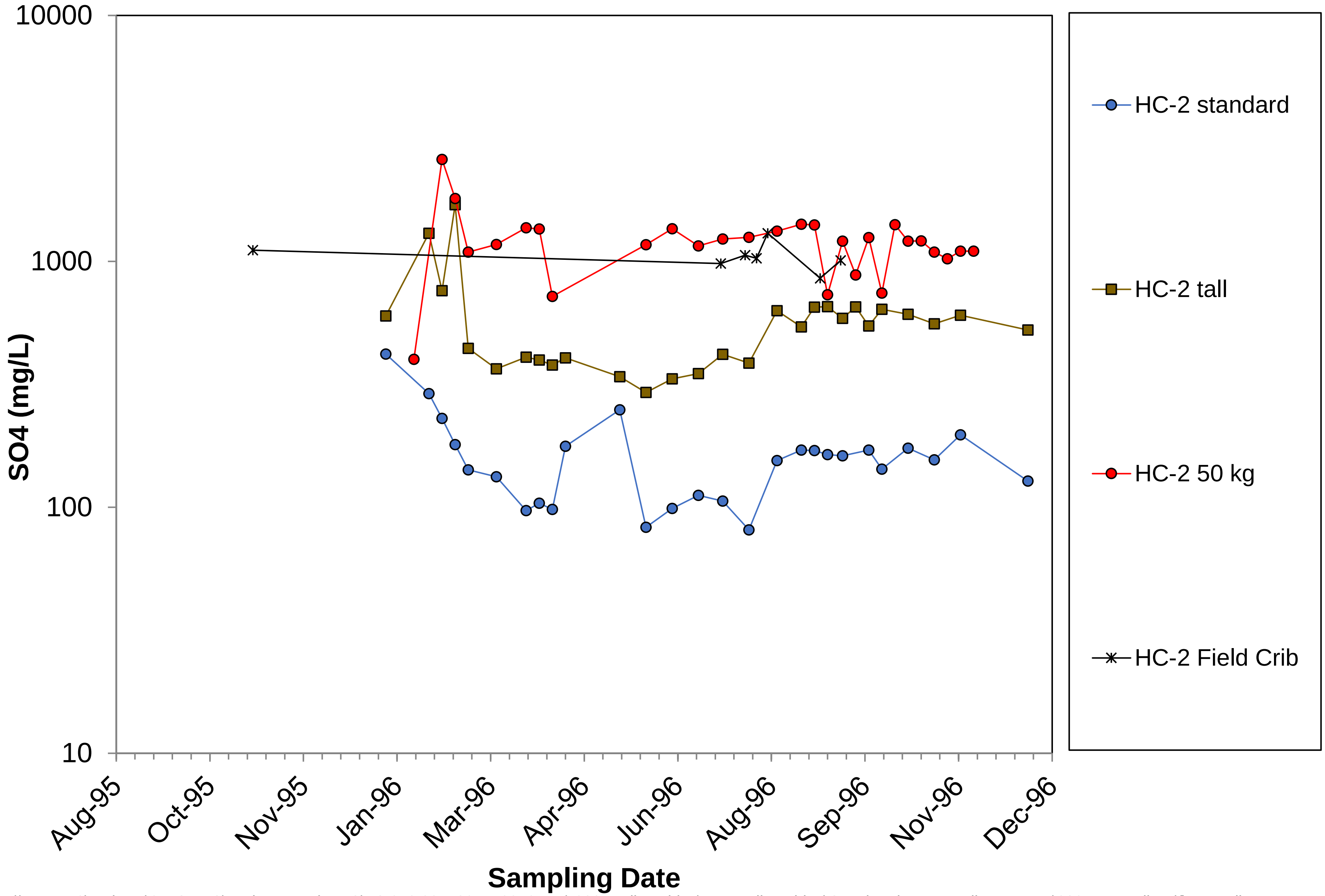

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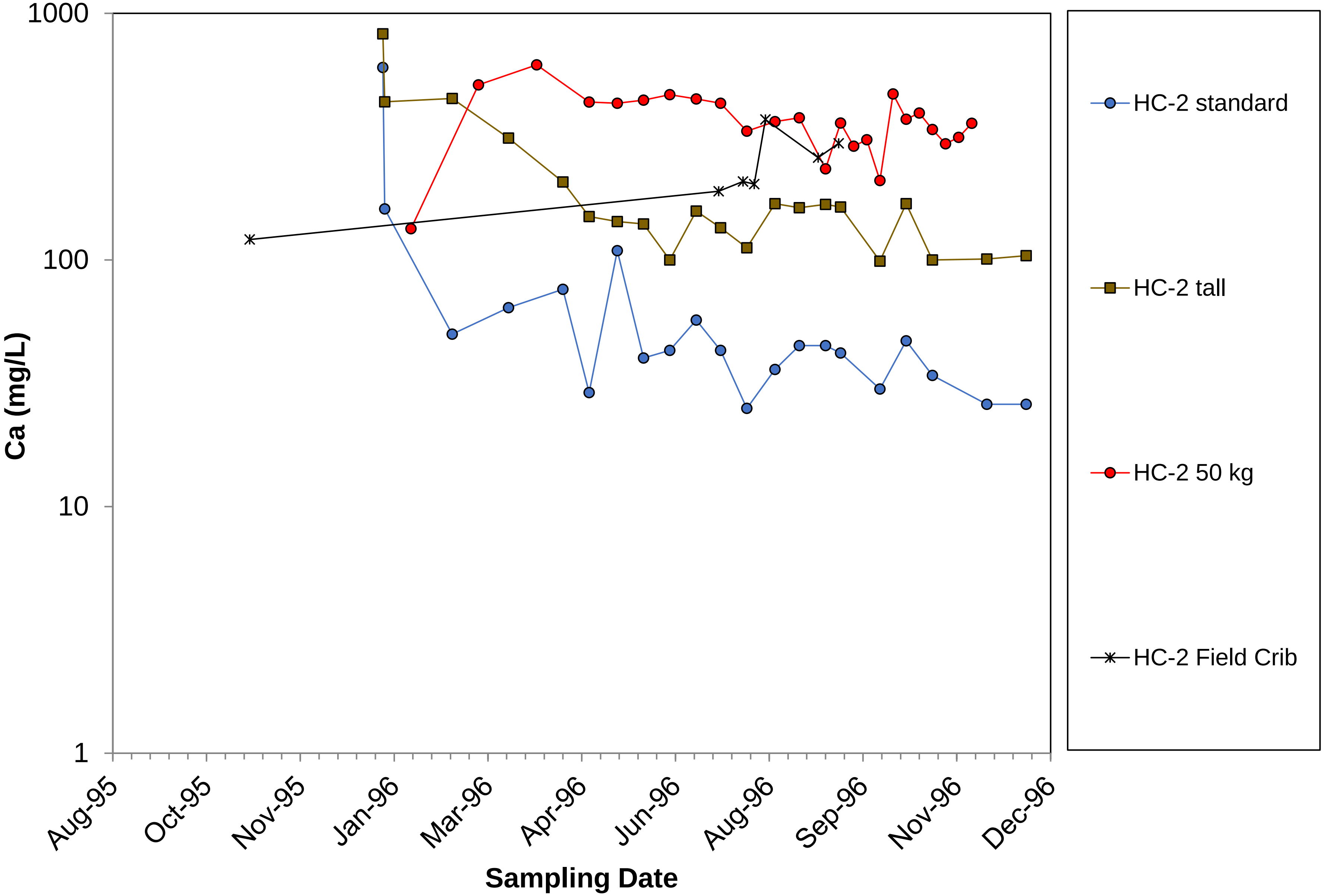

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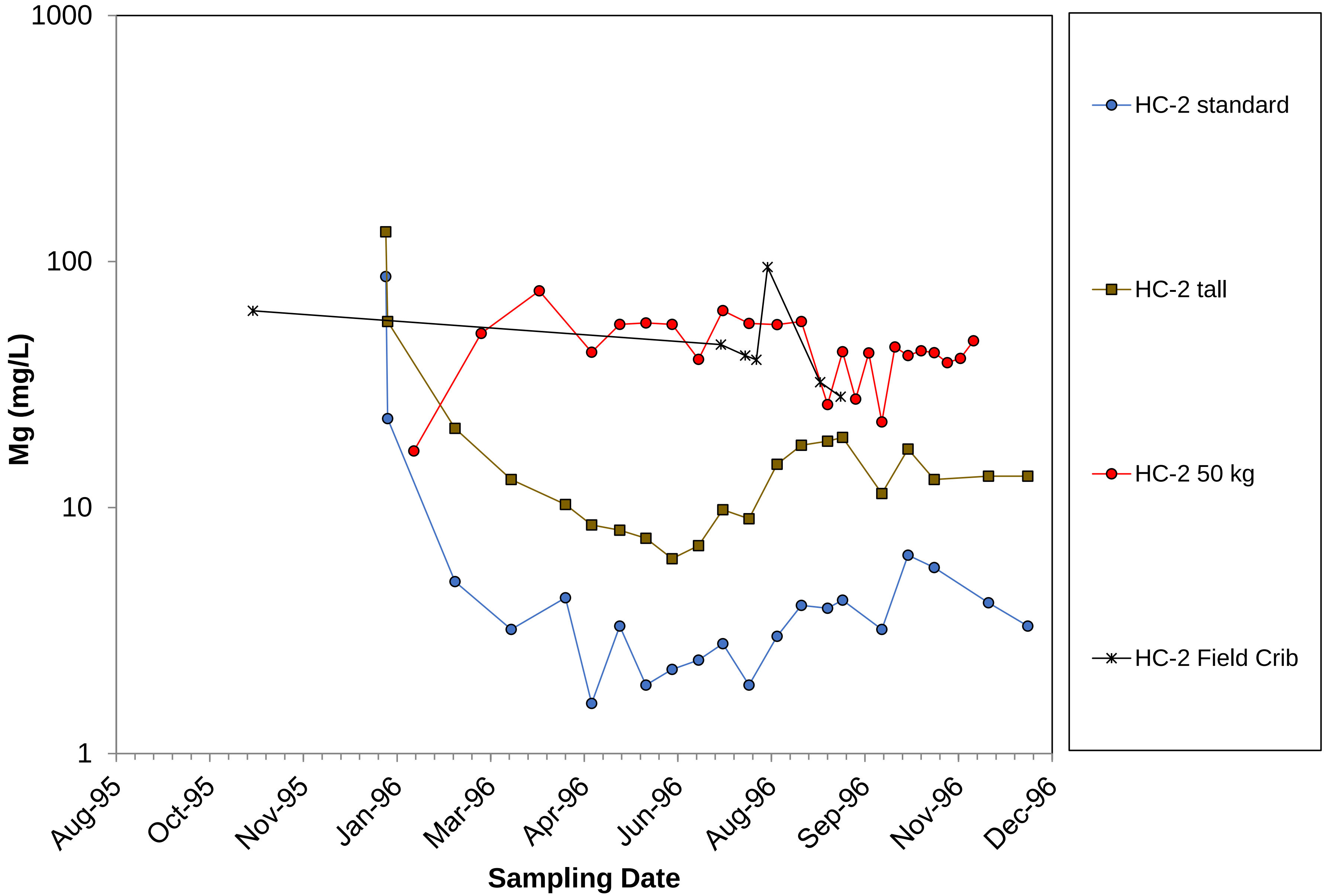

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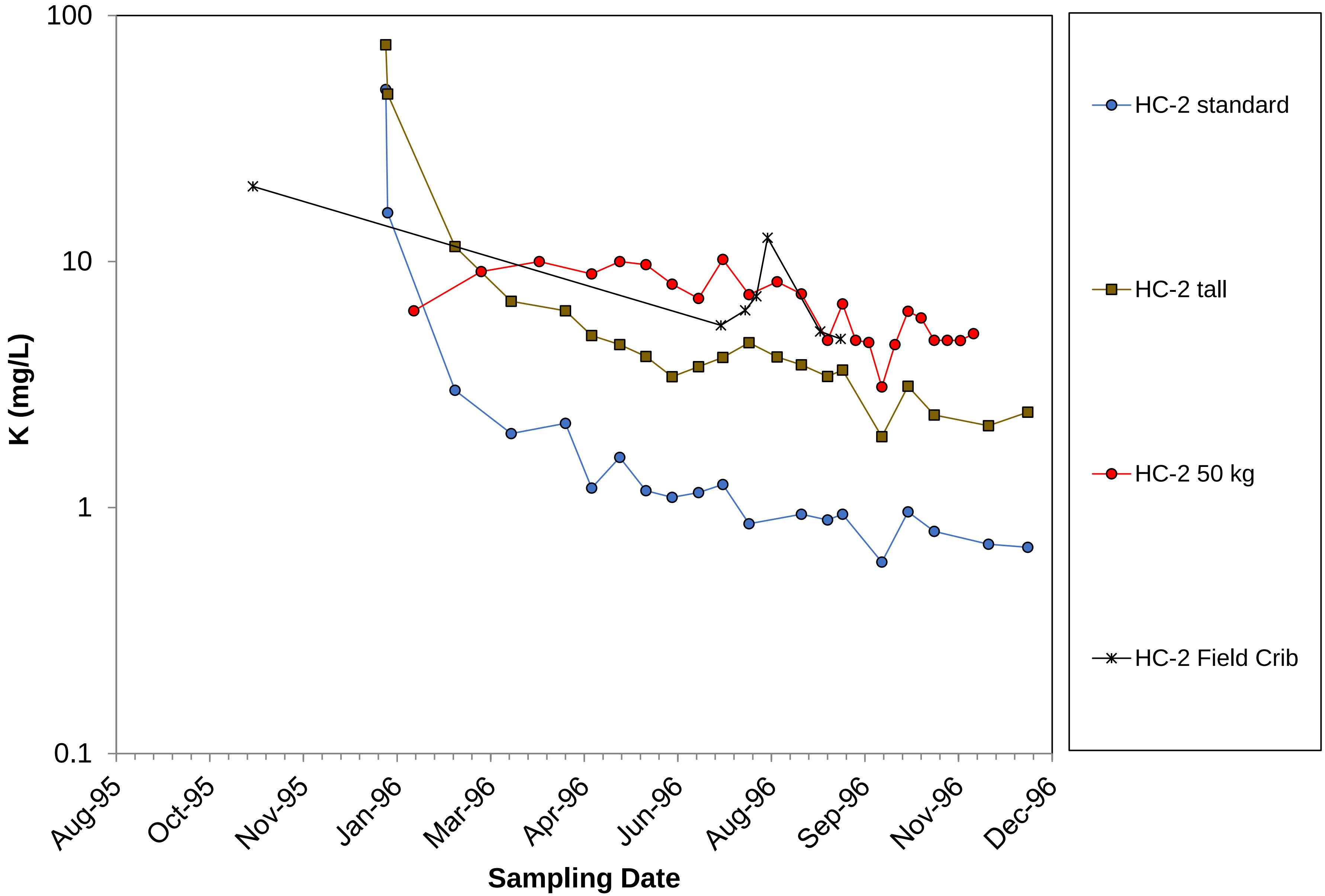

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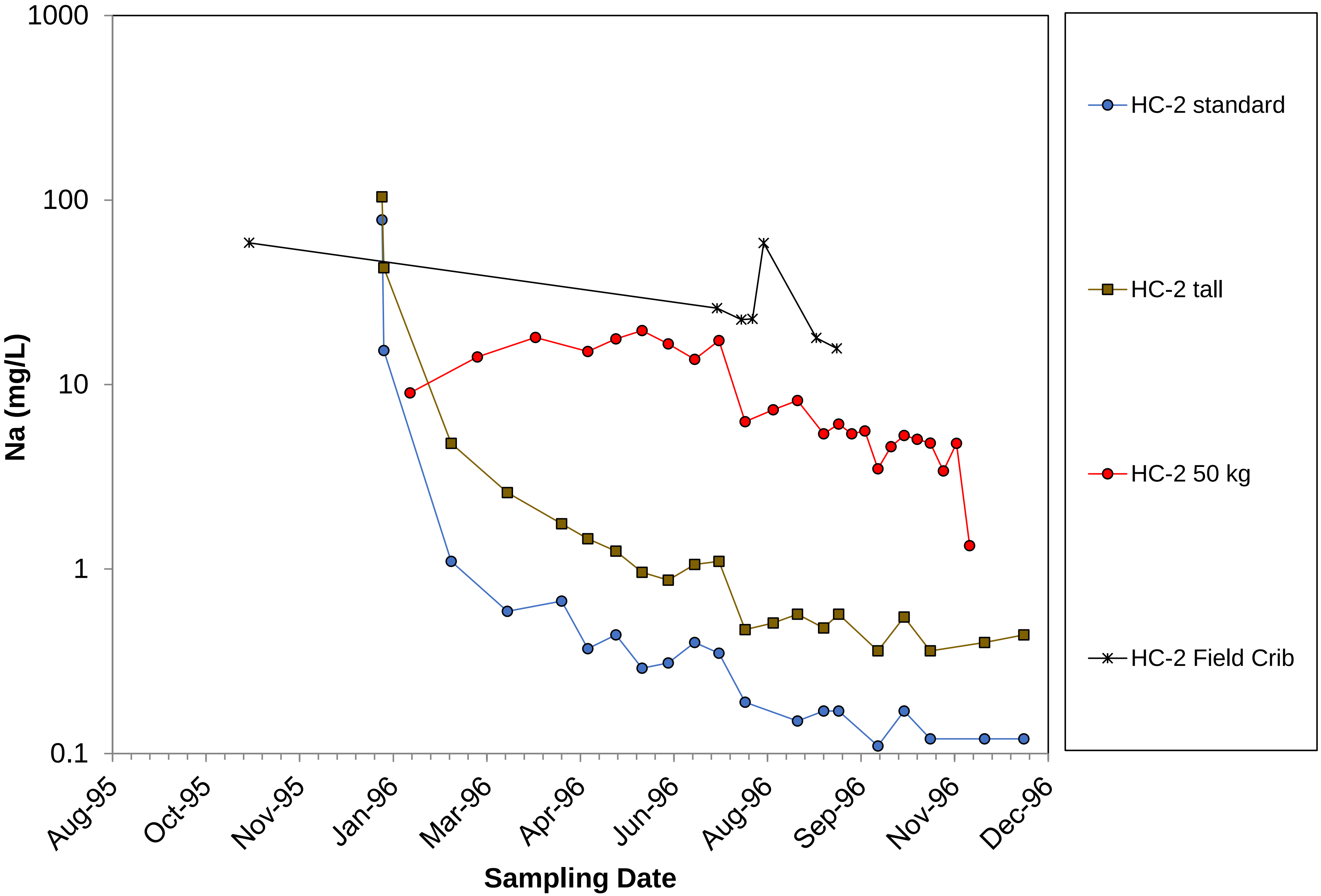

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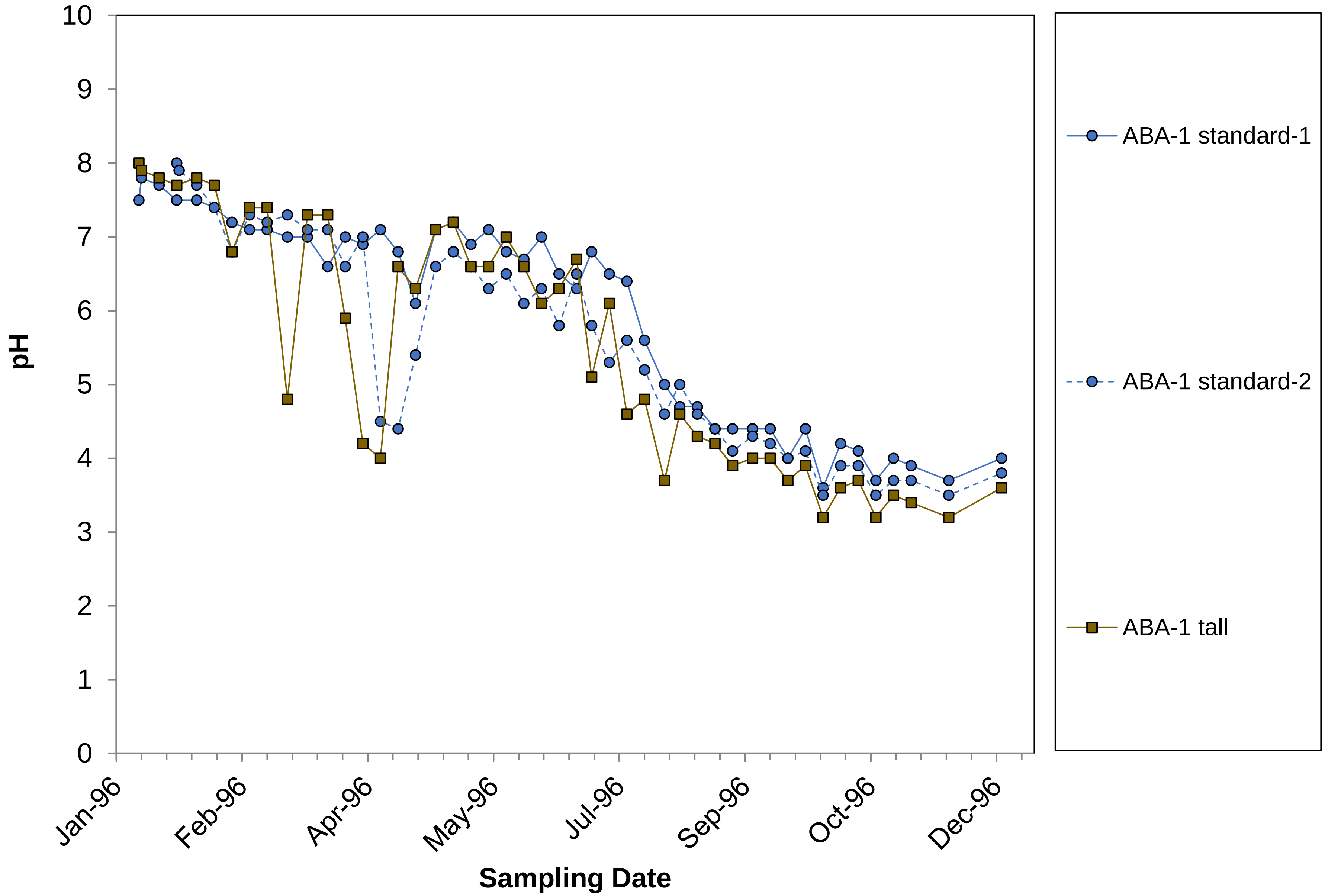

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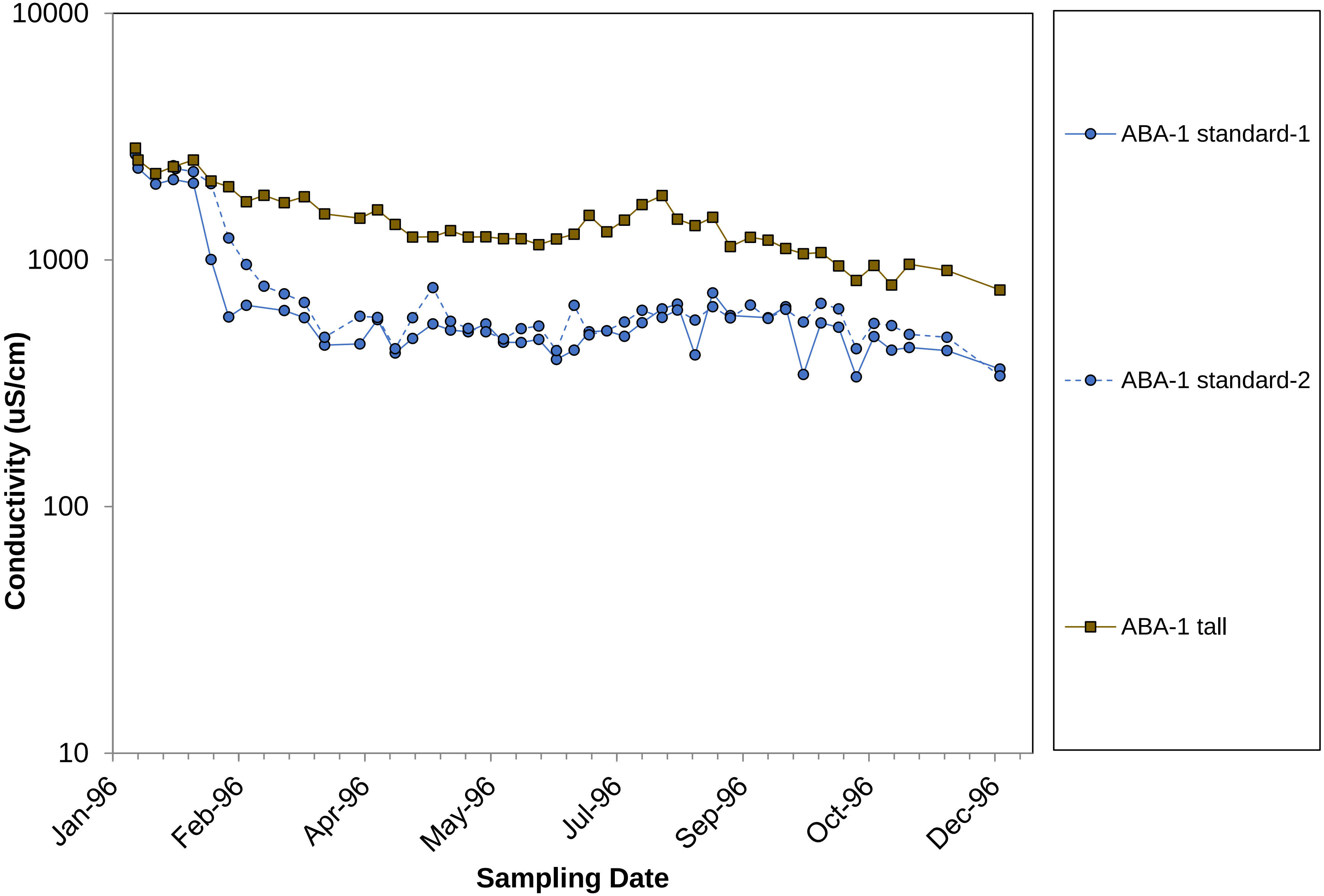

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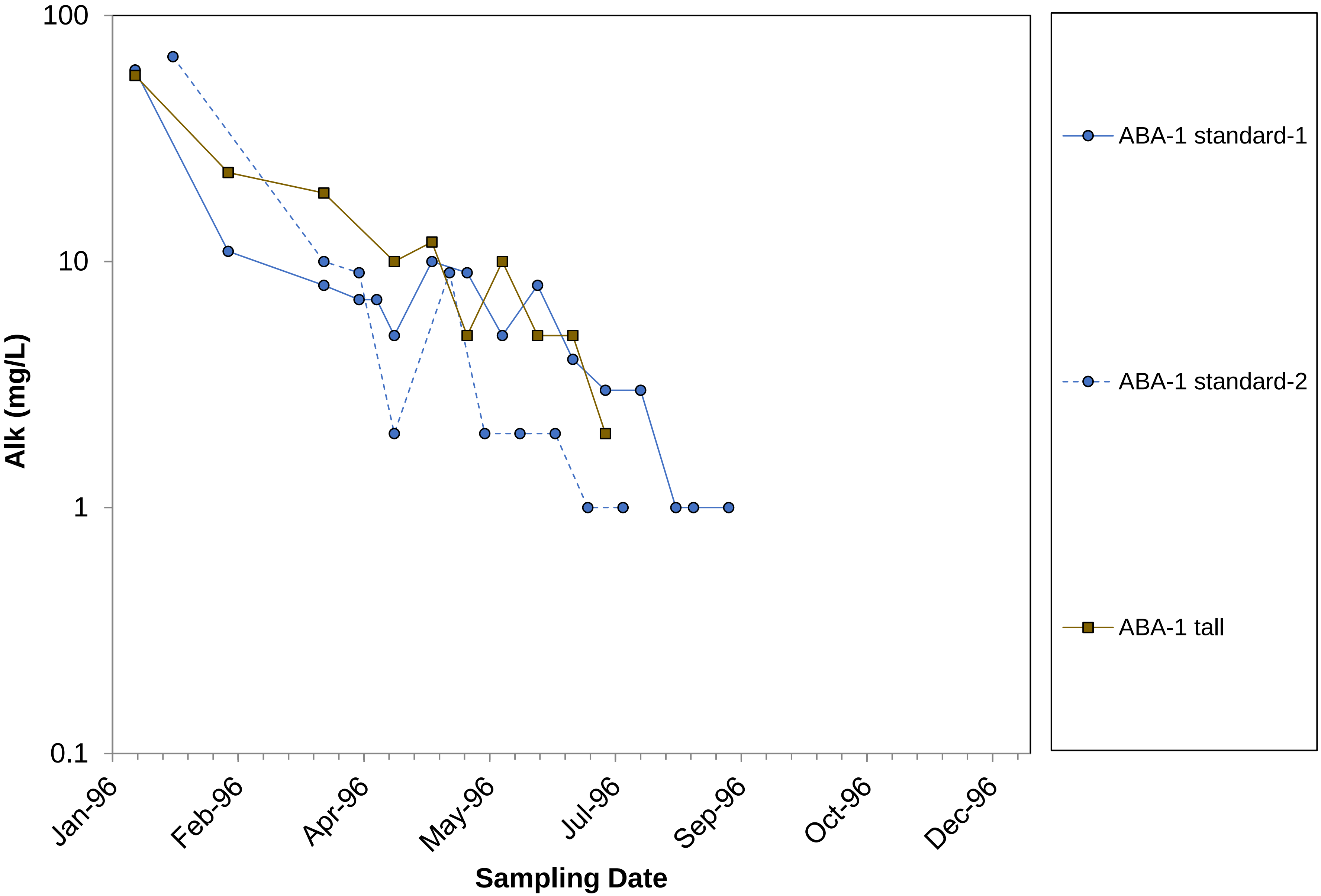

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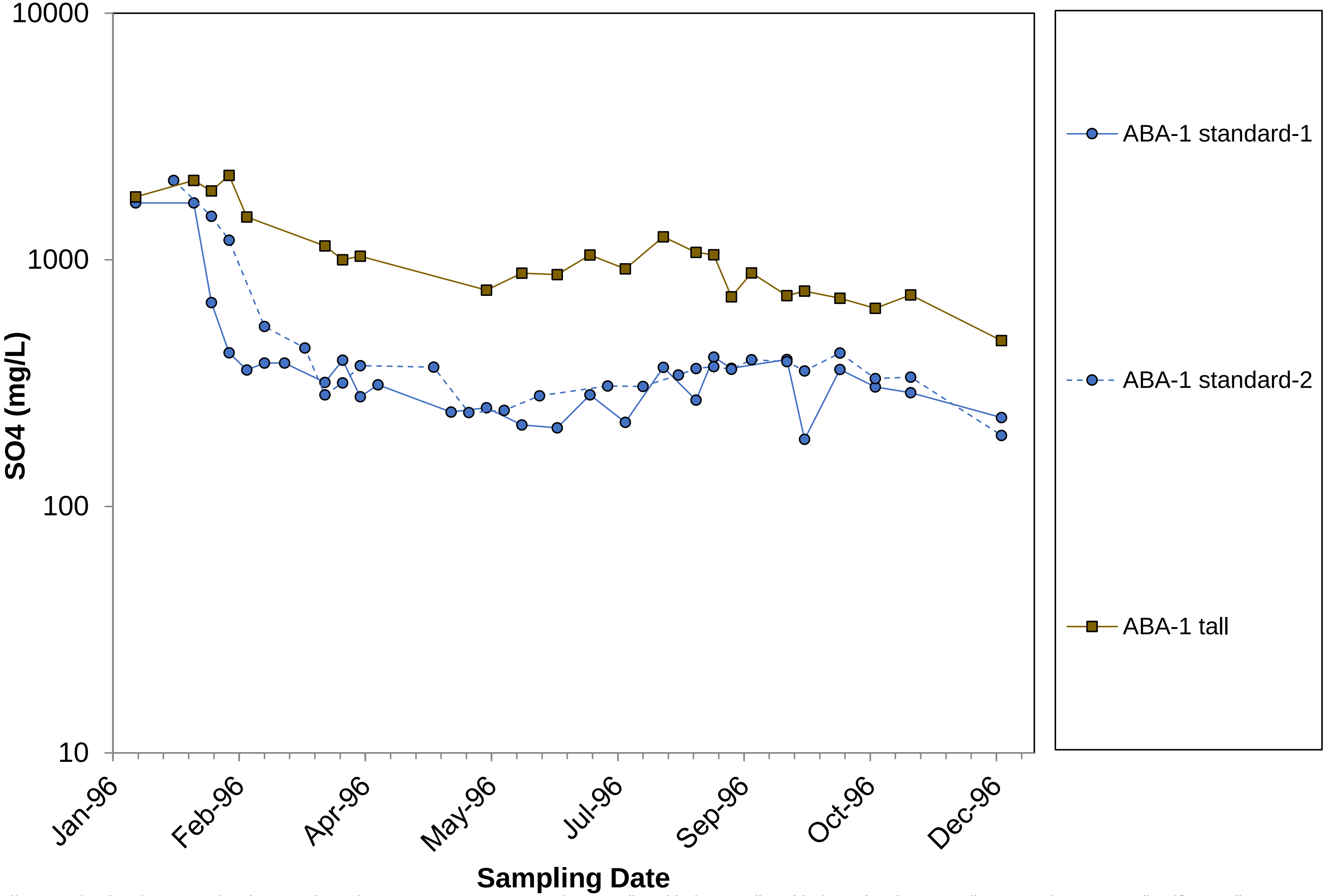

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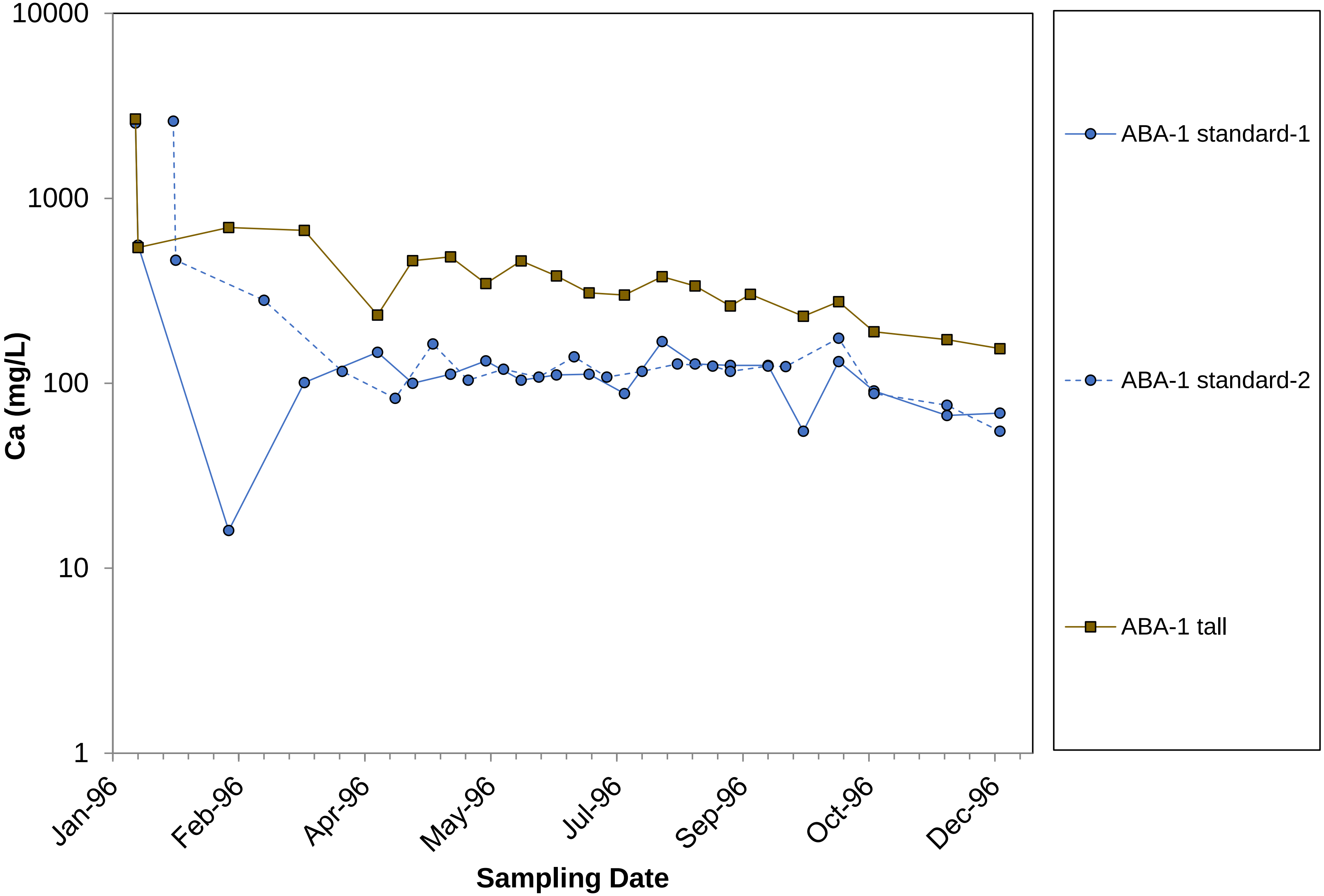

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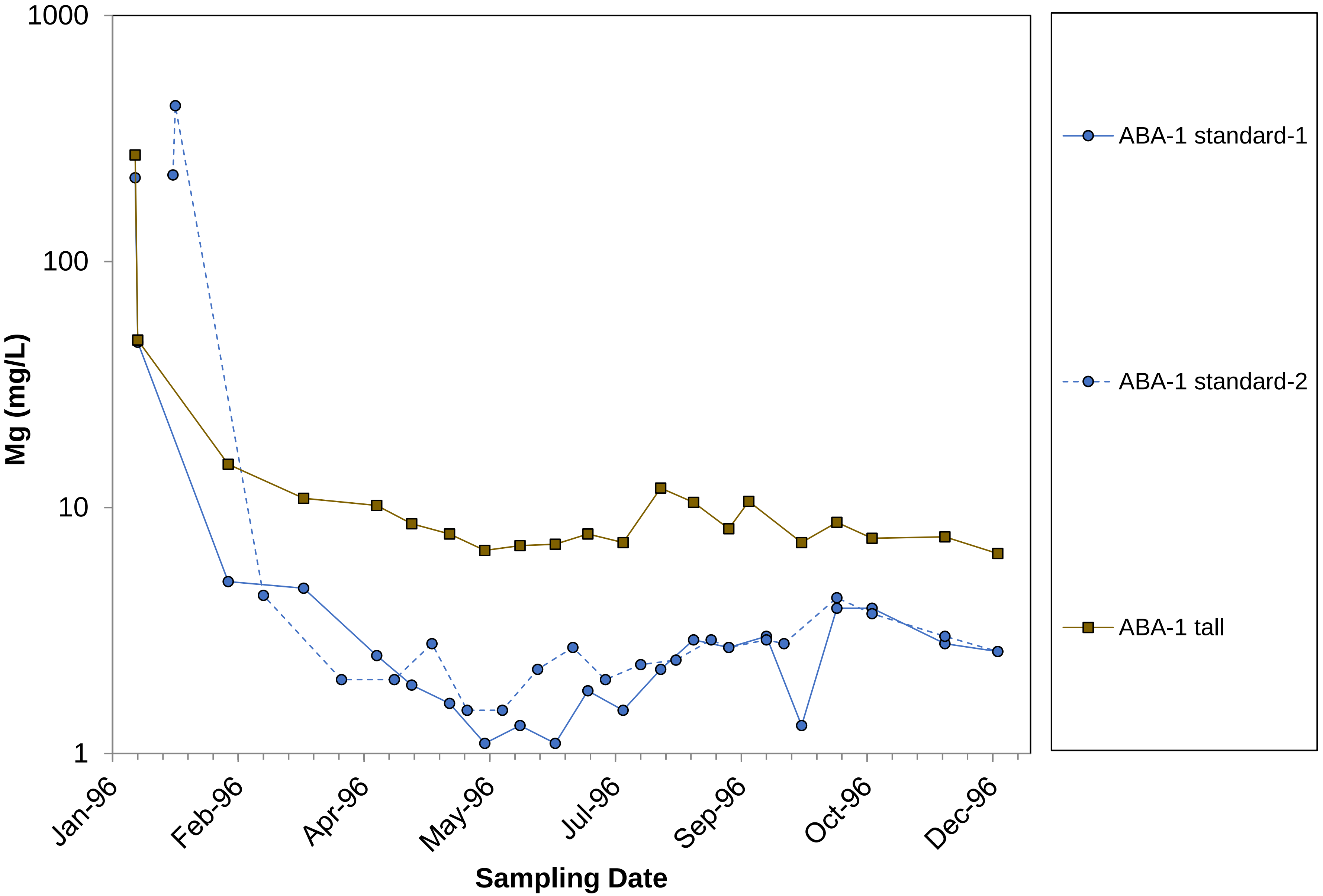

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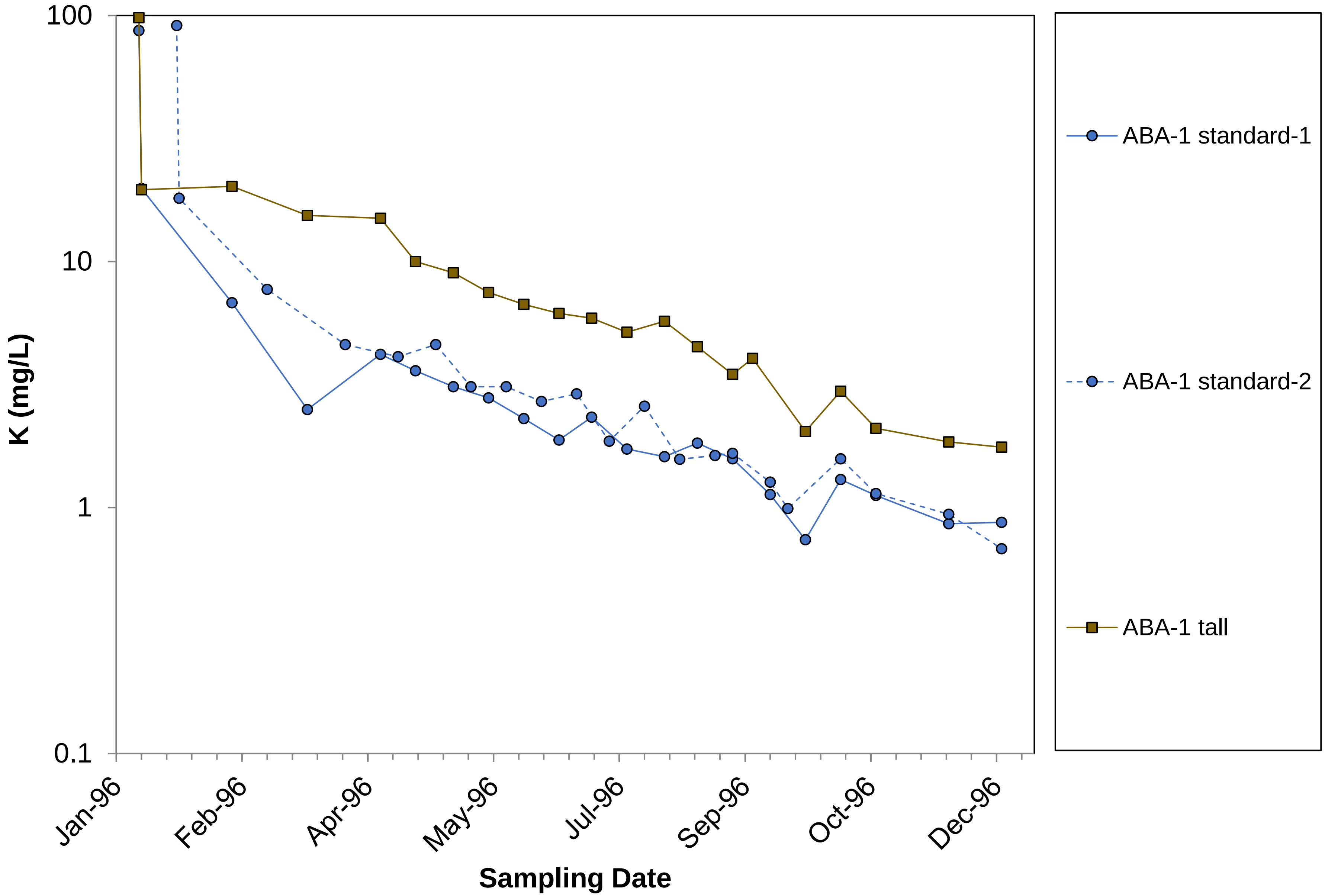

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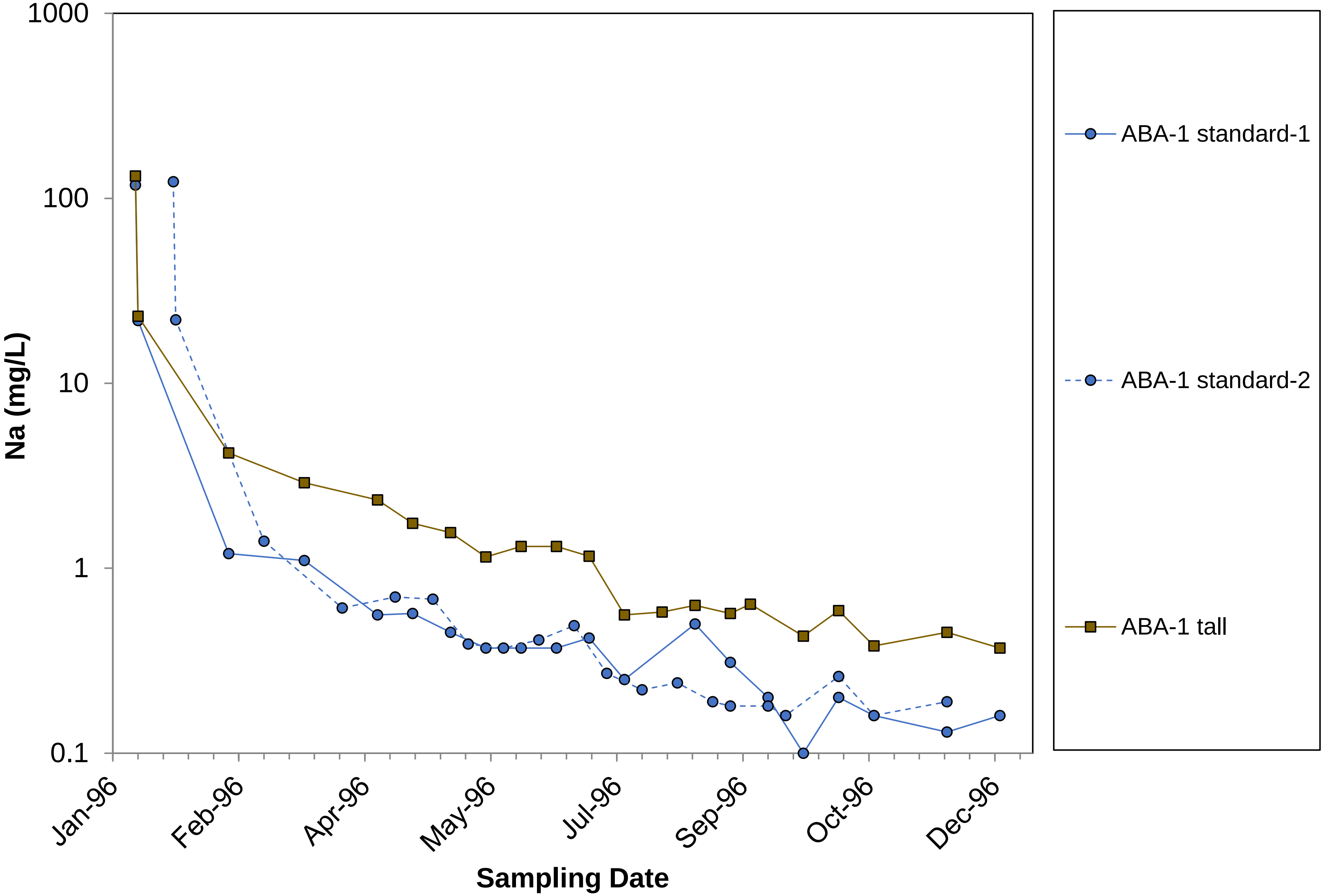

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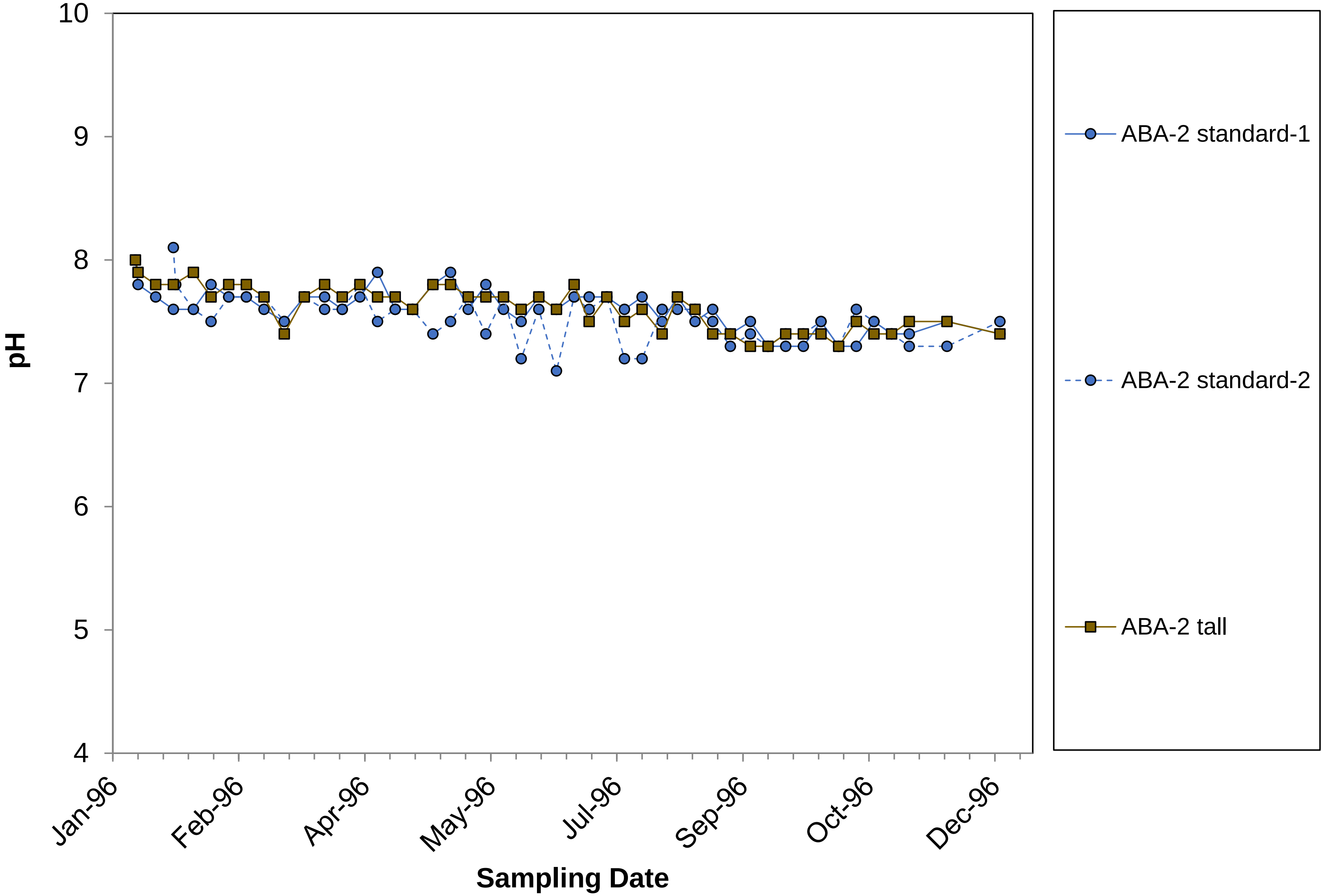

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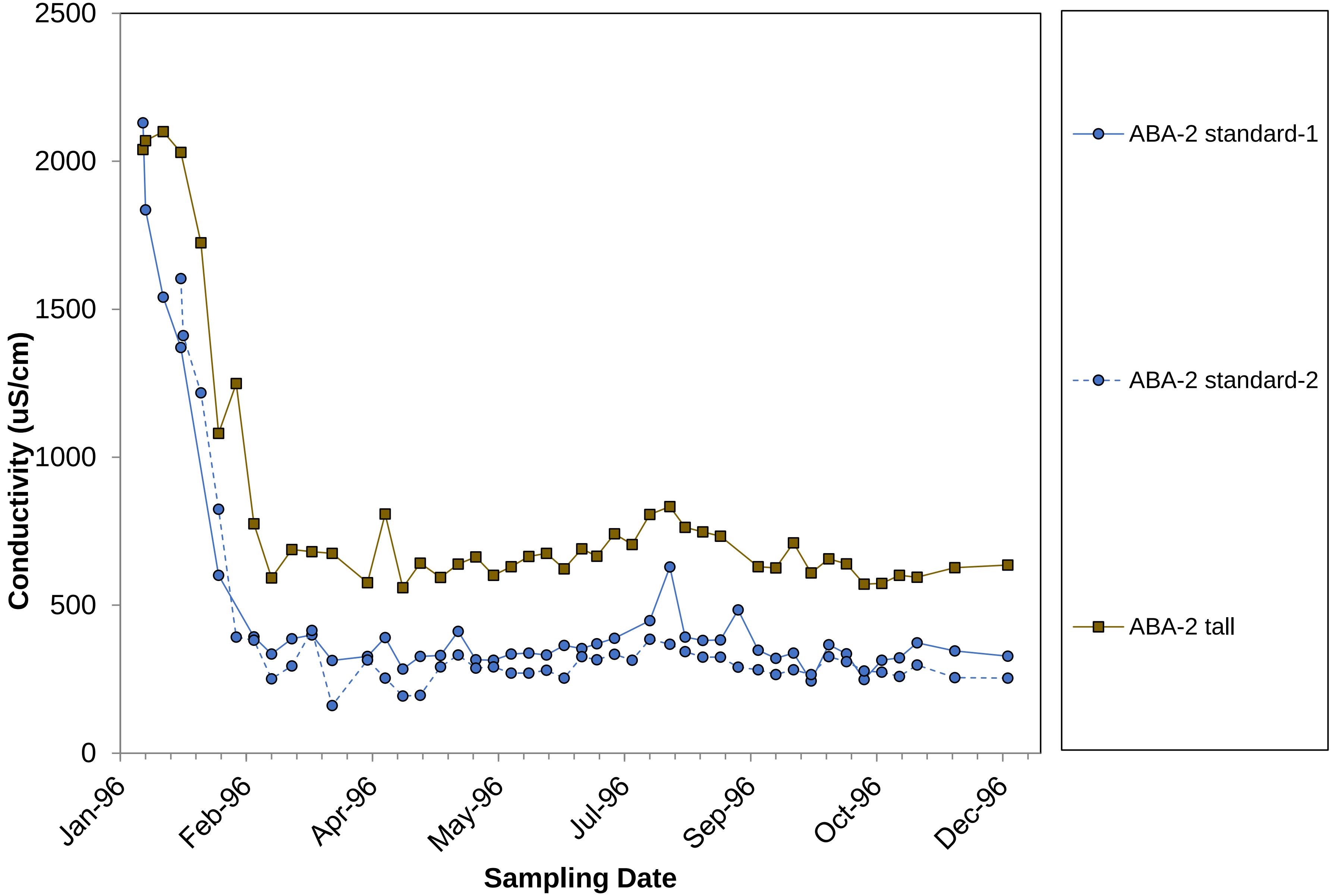

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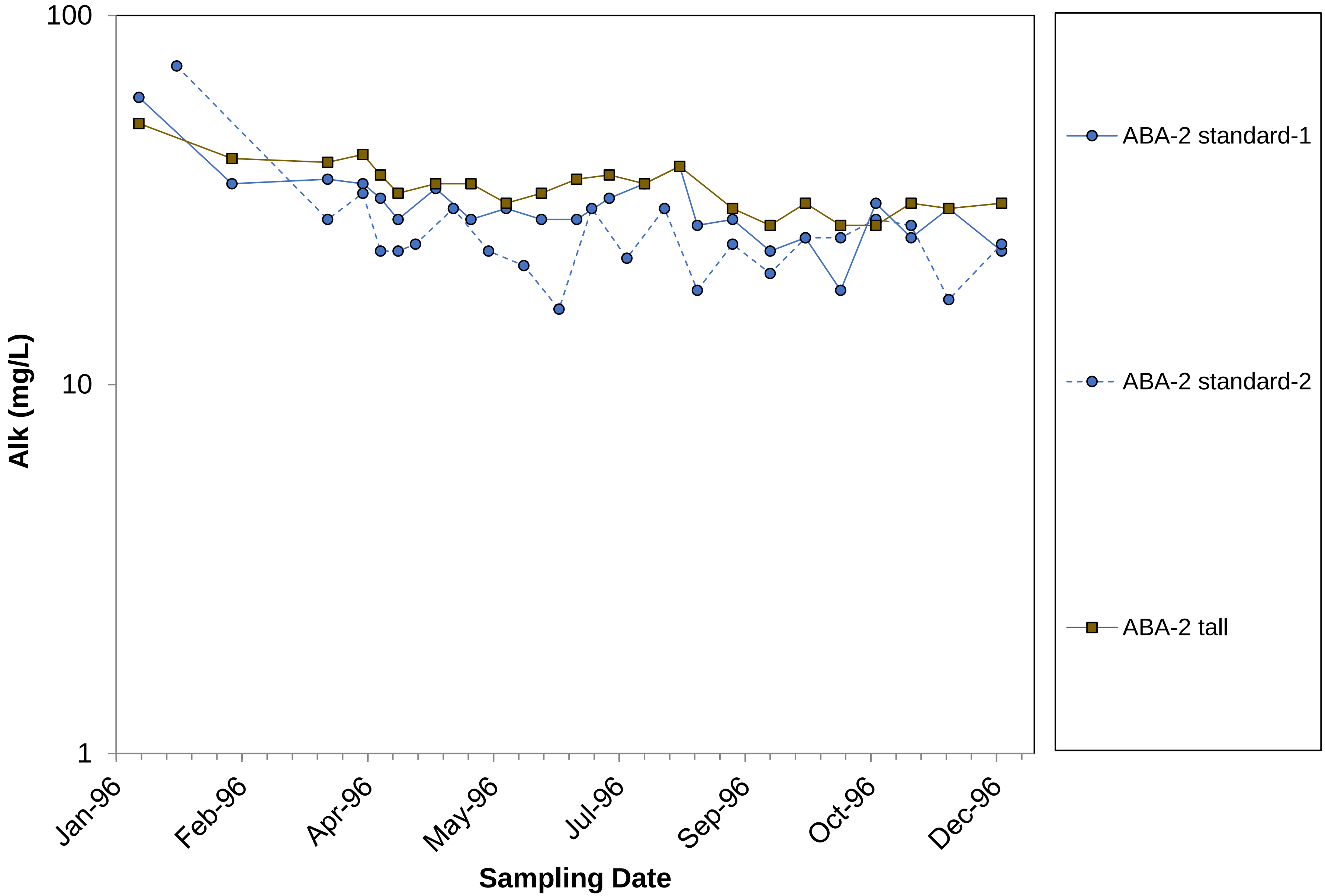

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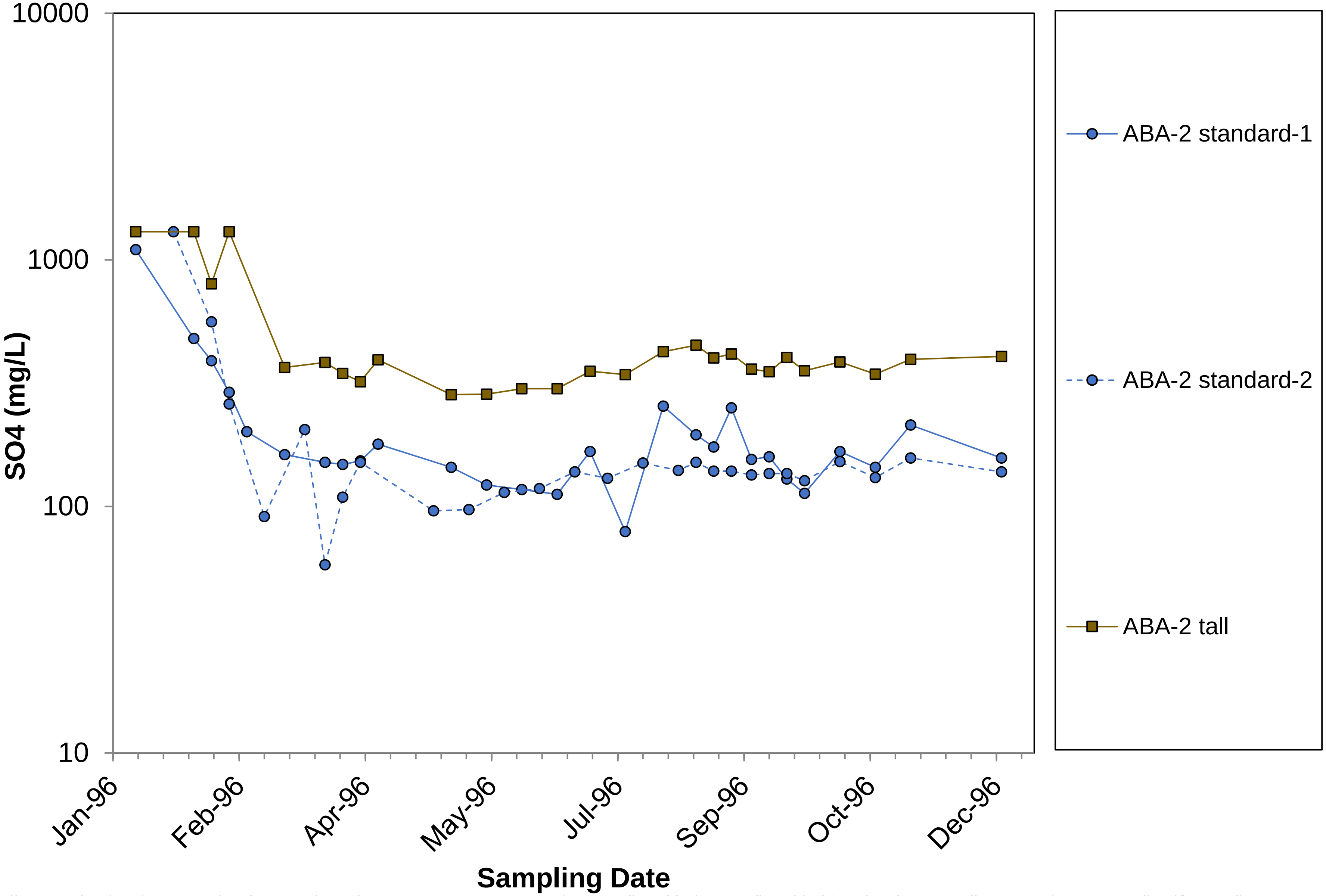

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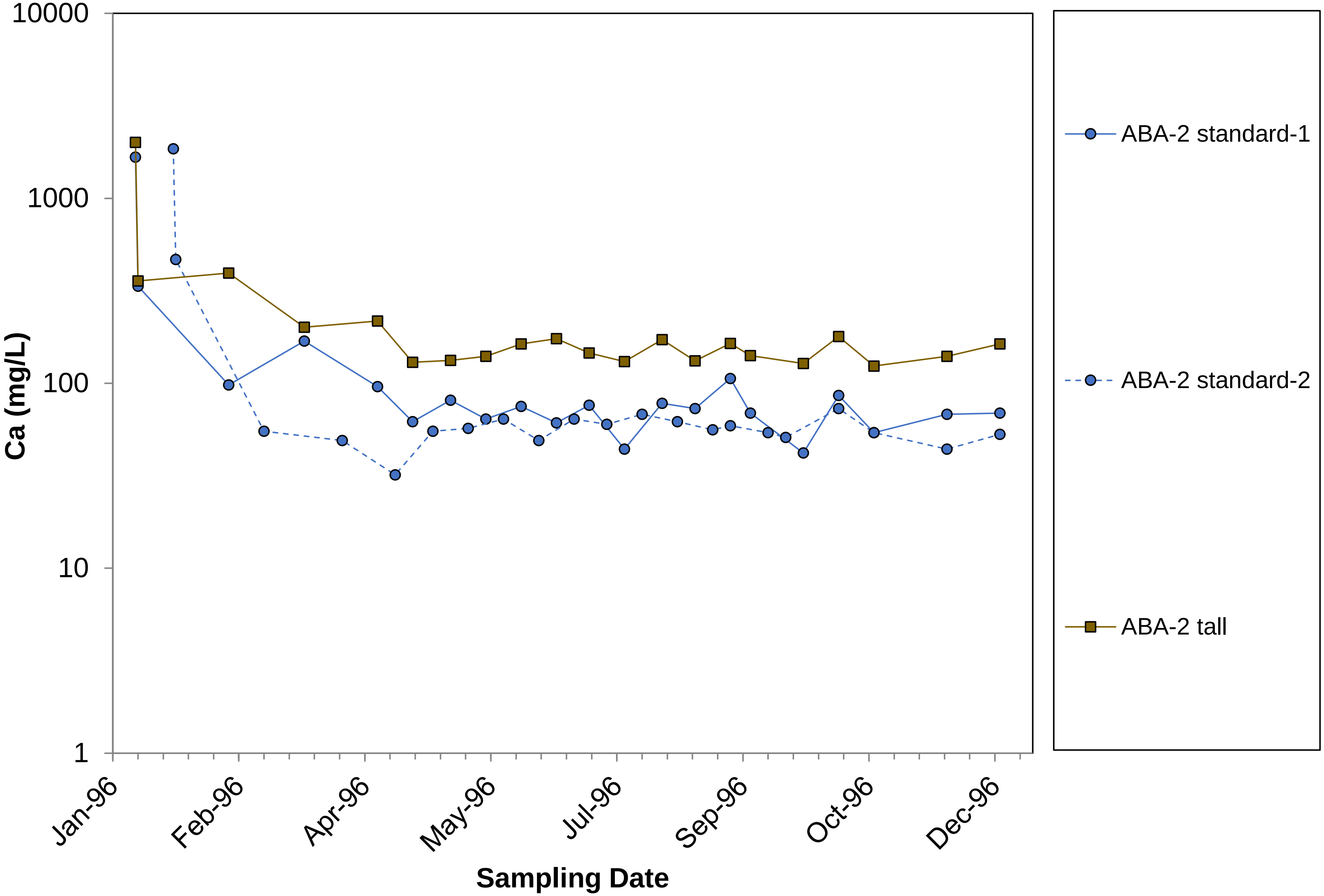

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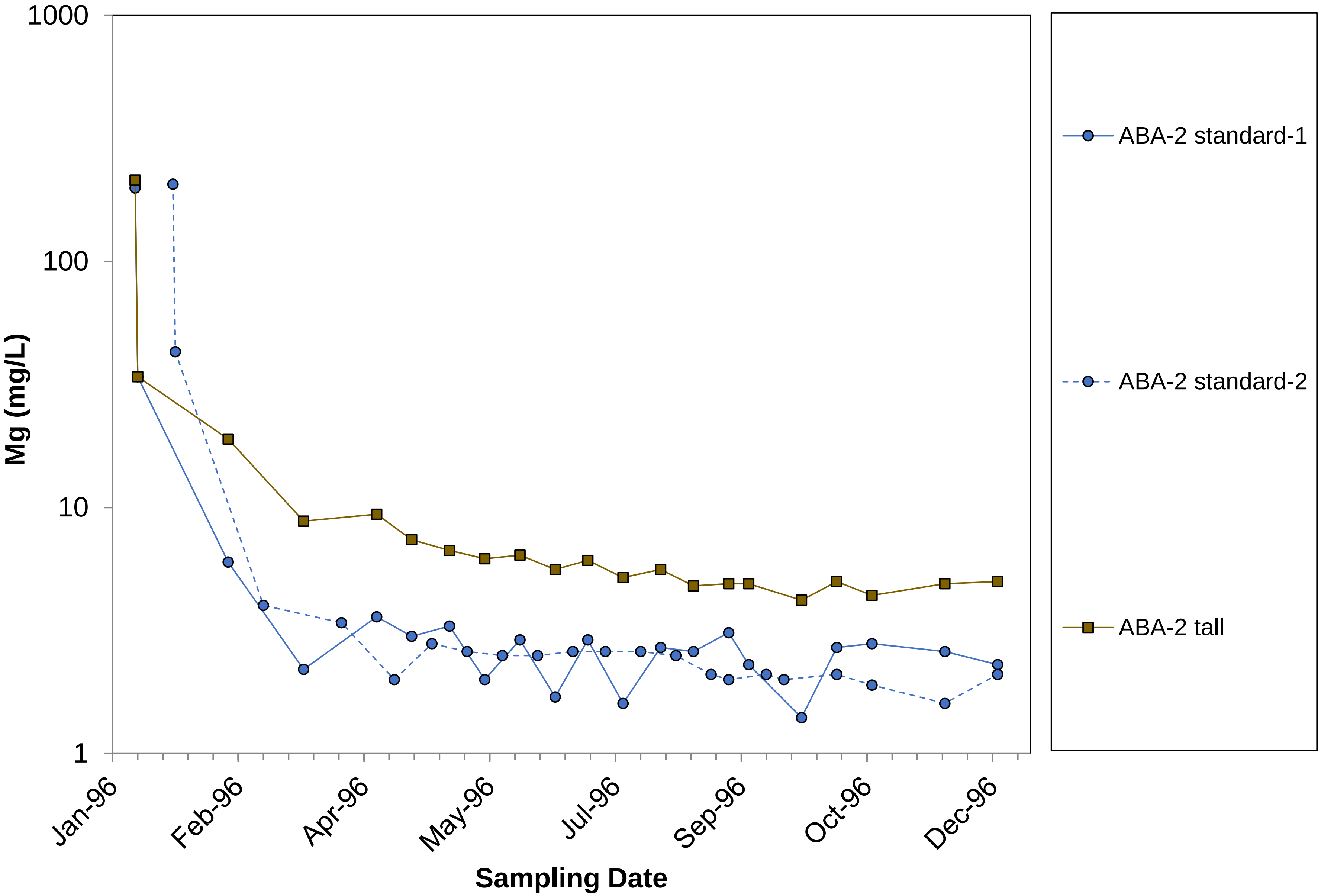

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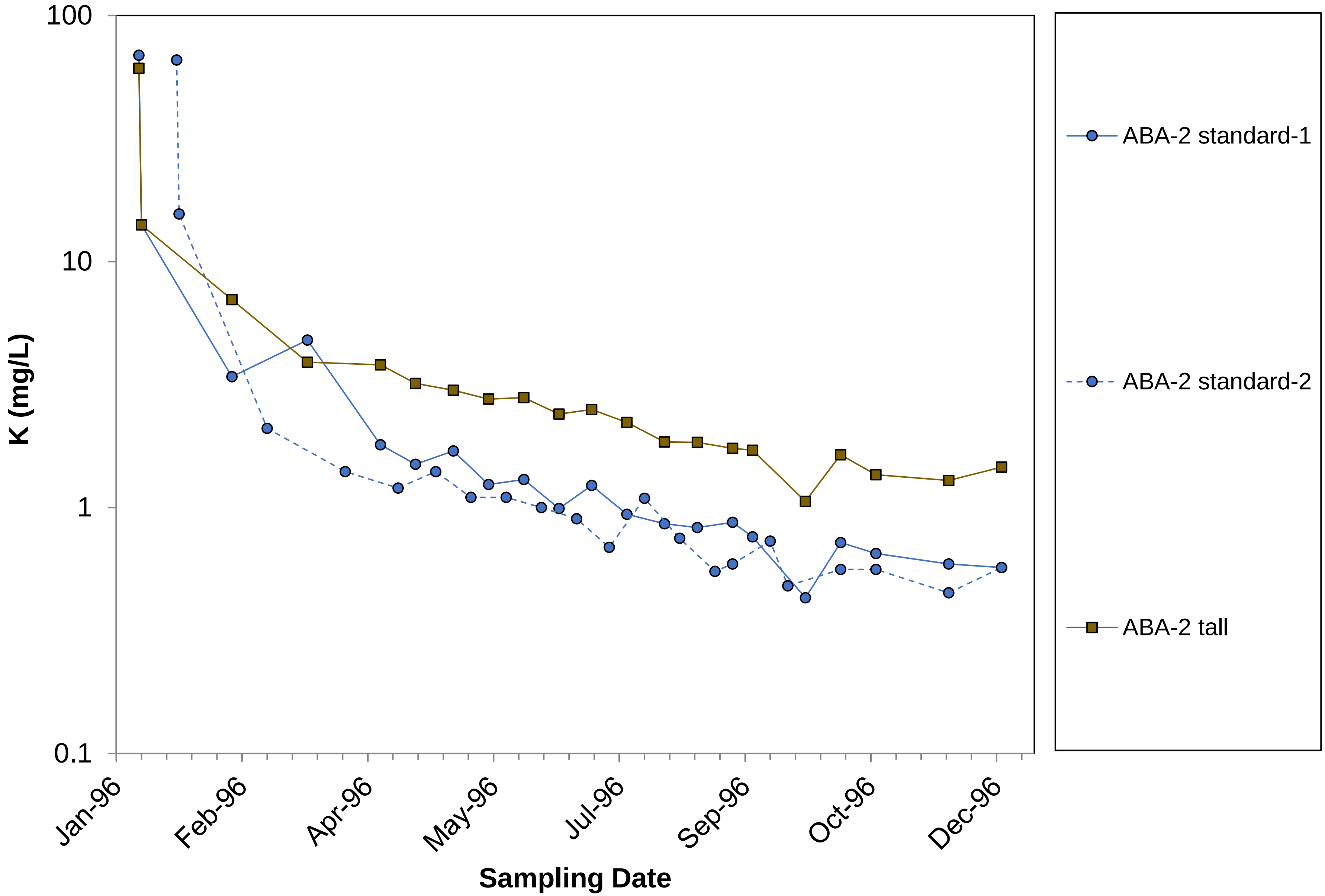

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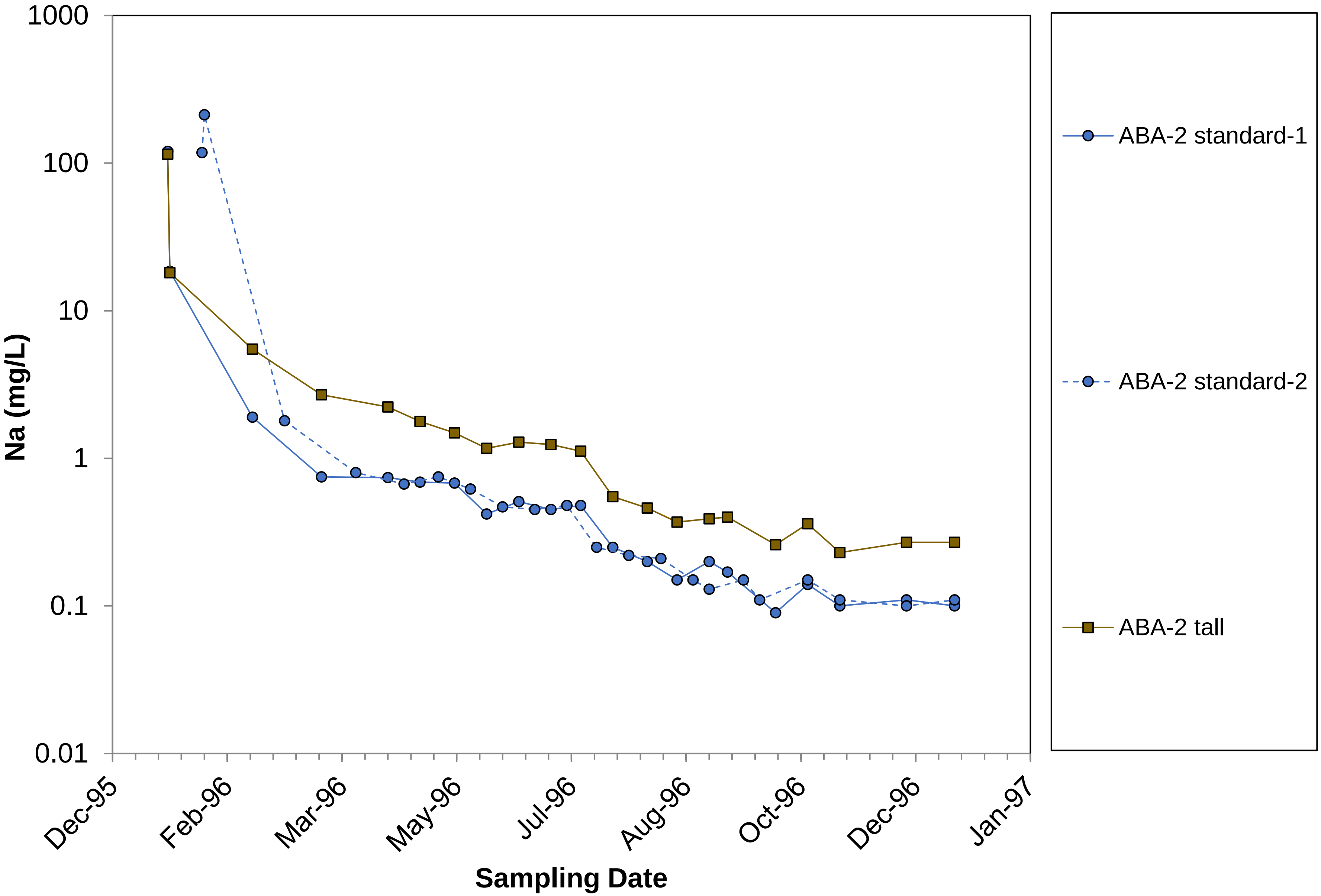

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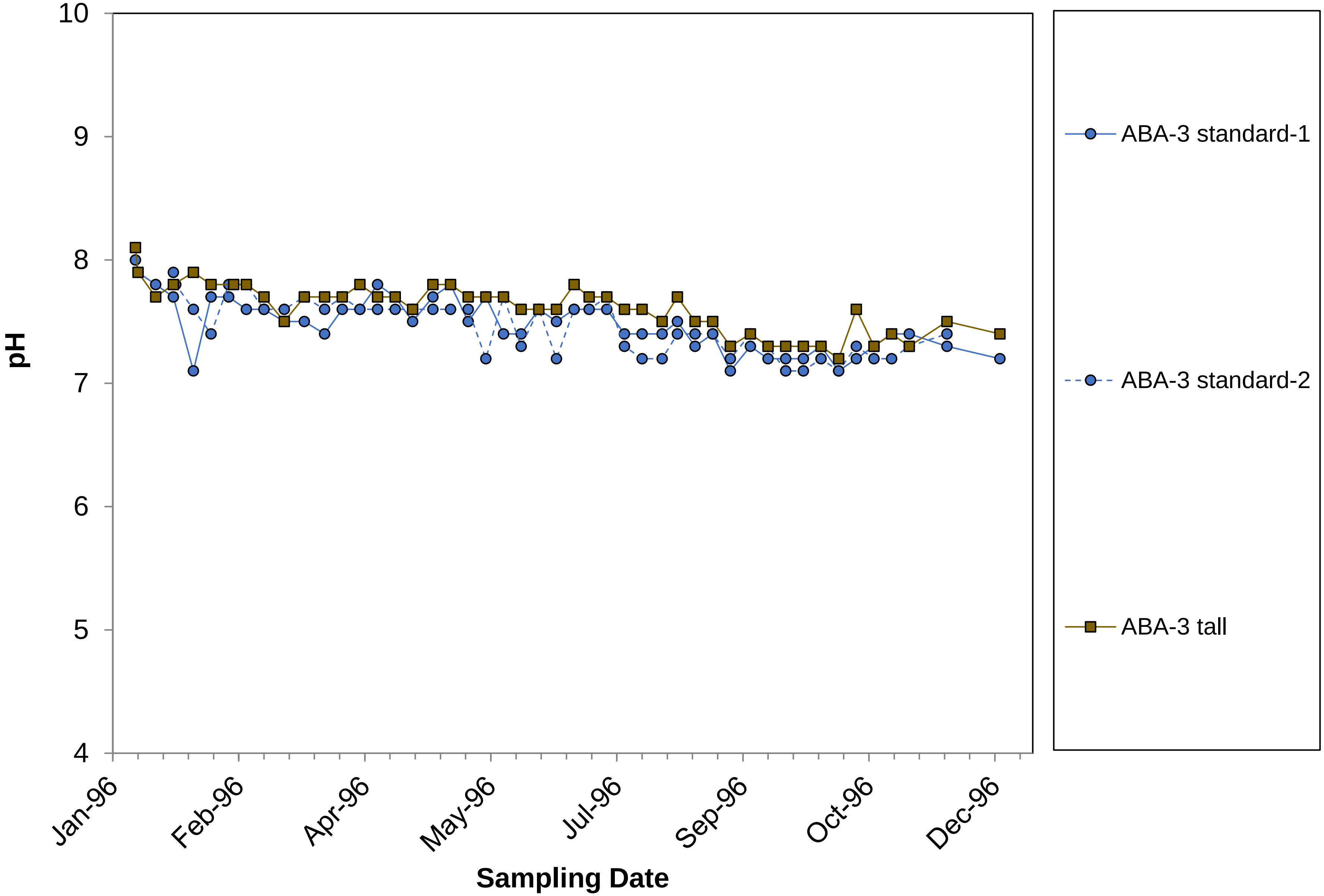

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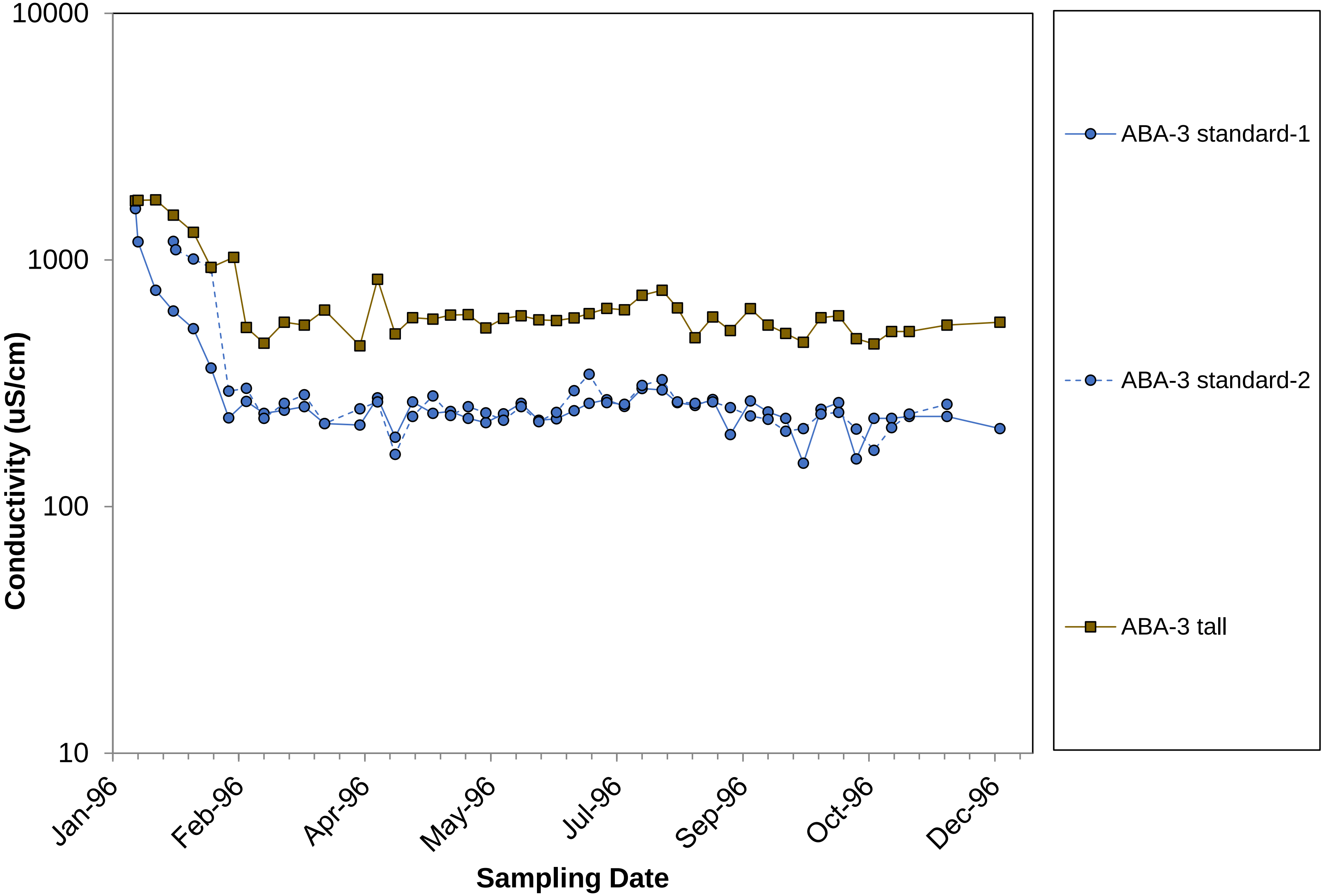

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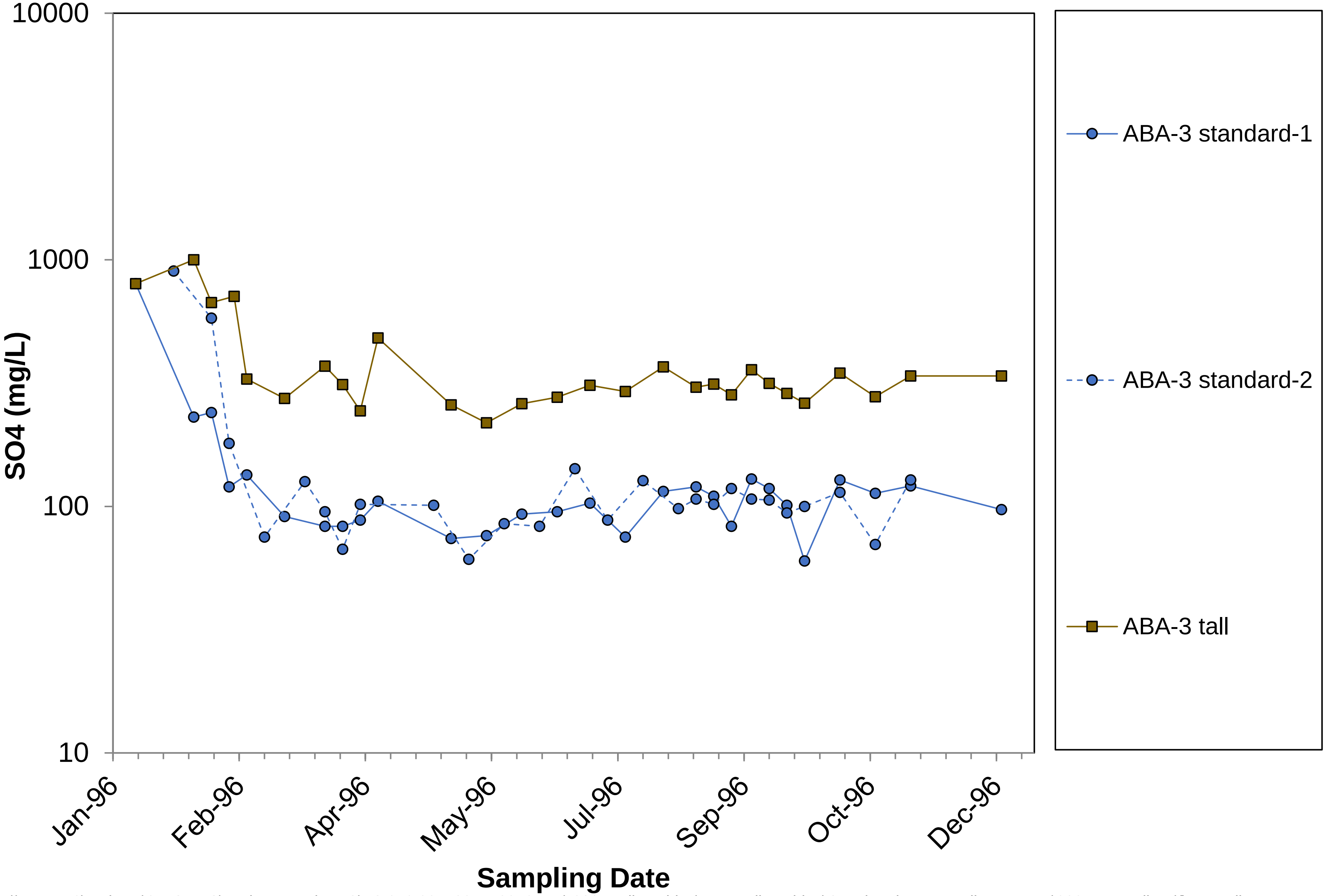

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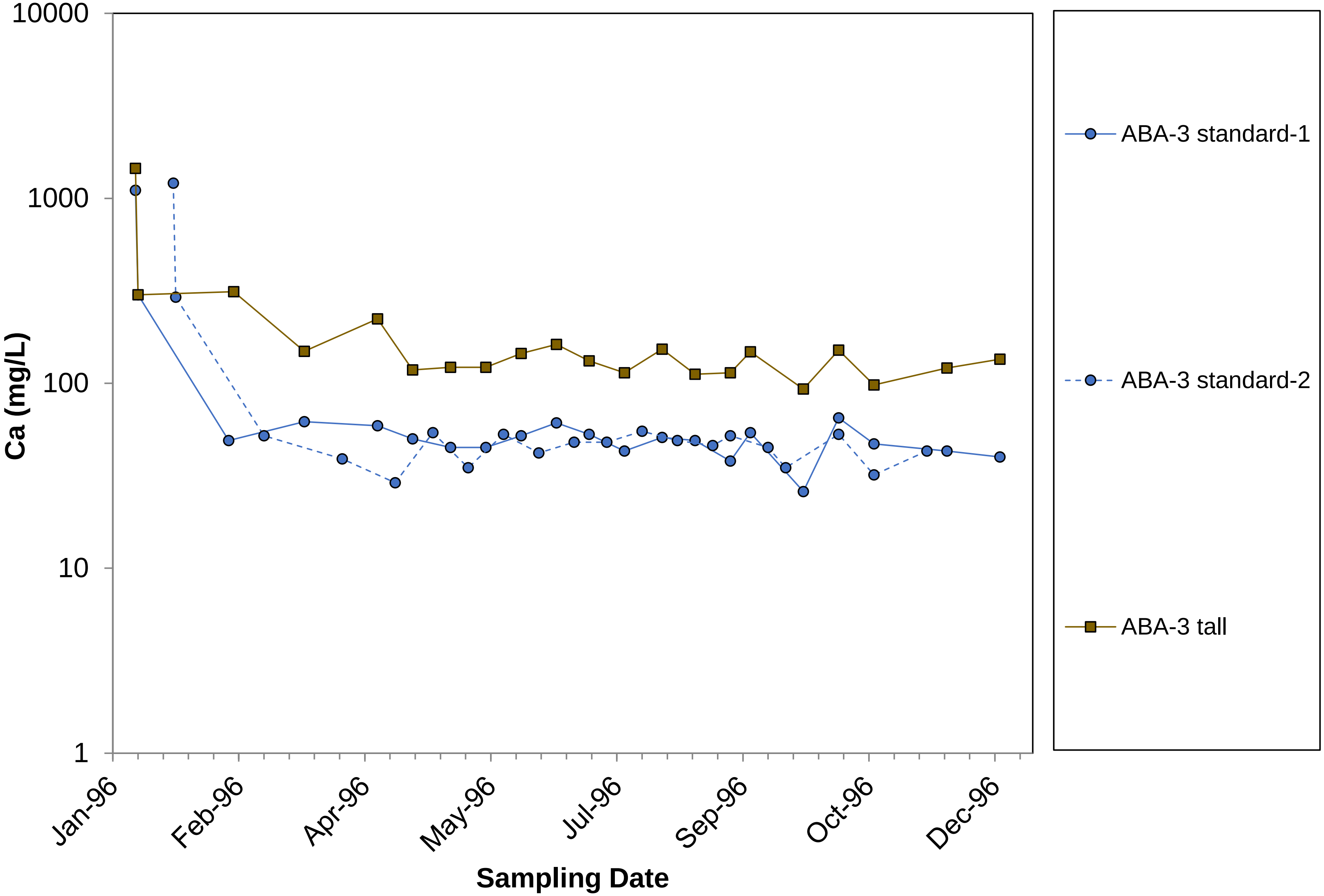

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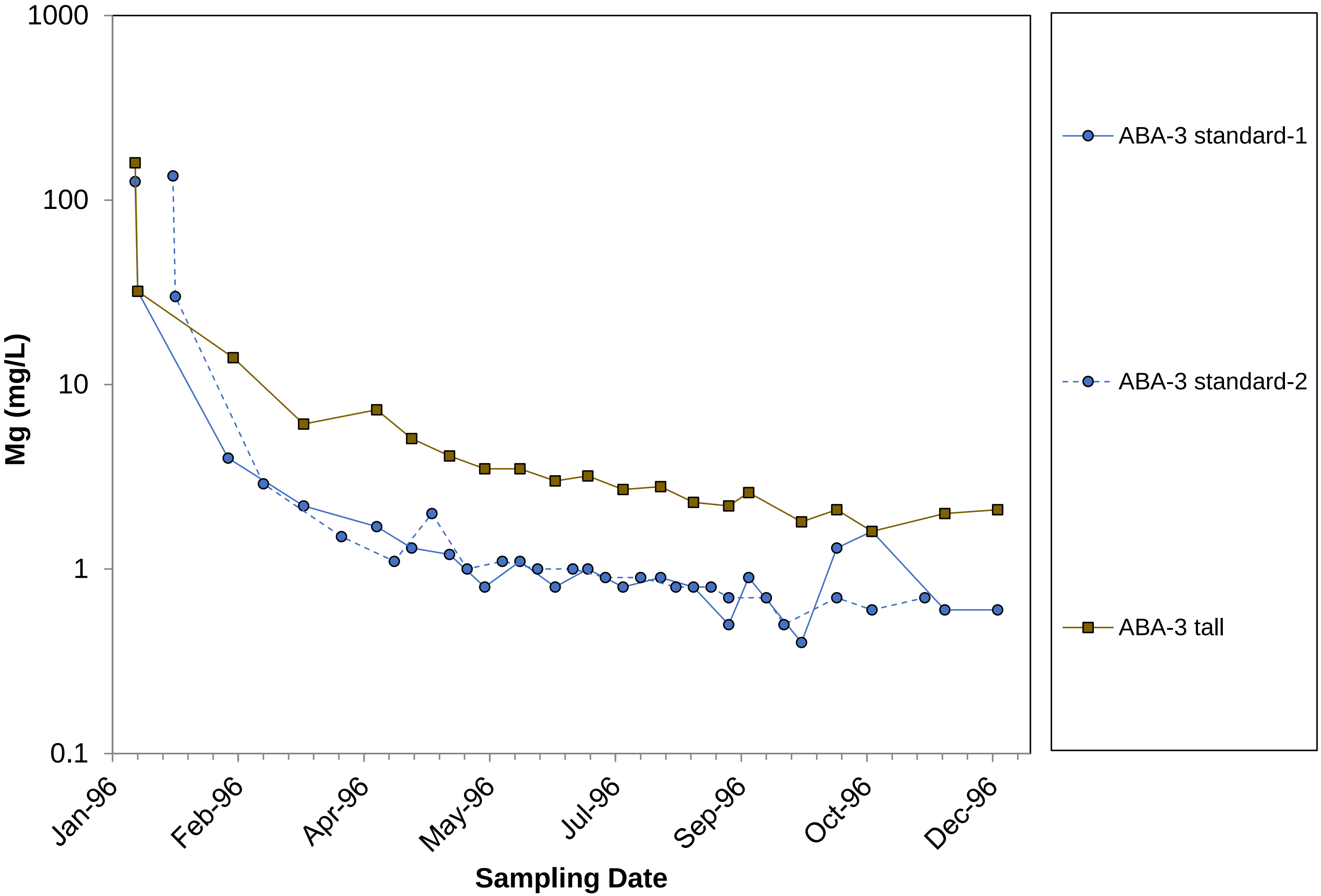

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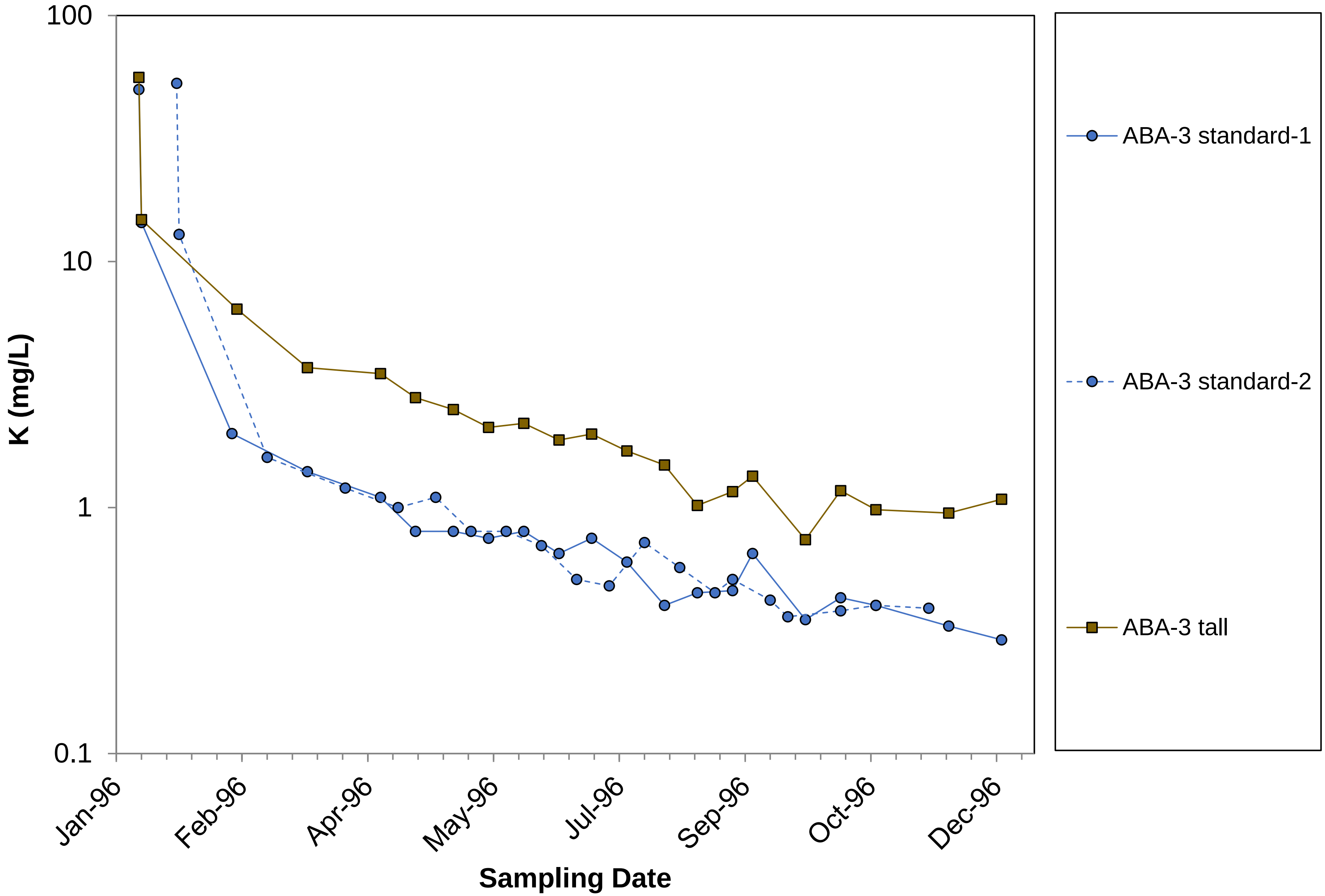

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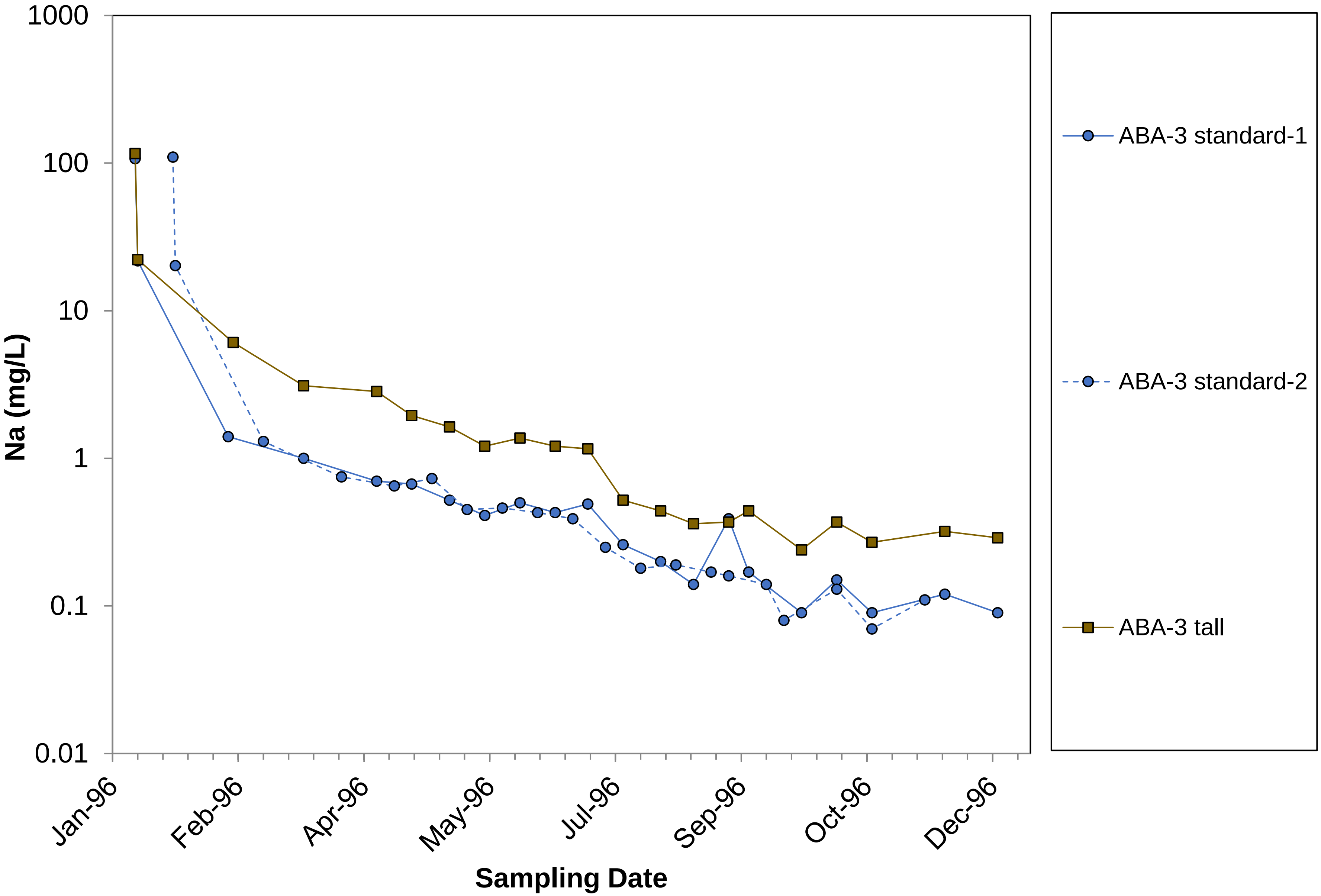

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Appendix E - Field Crib Leachate Data

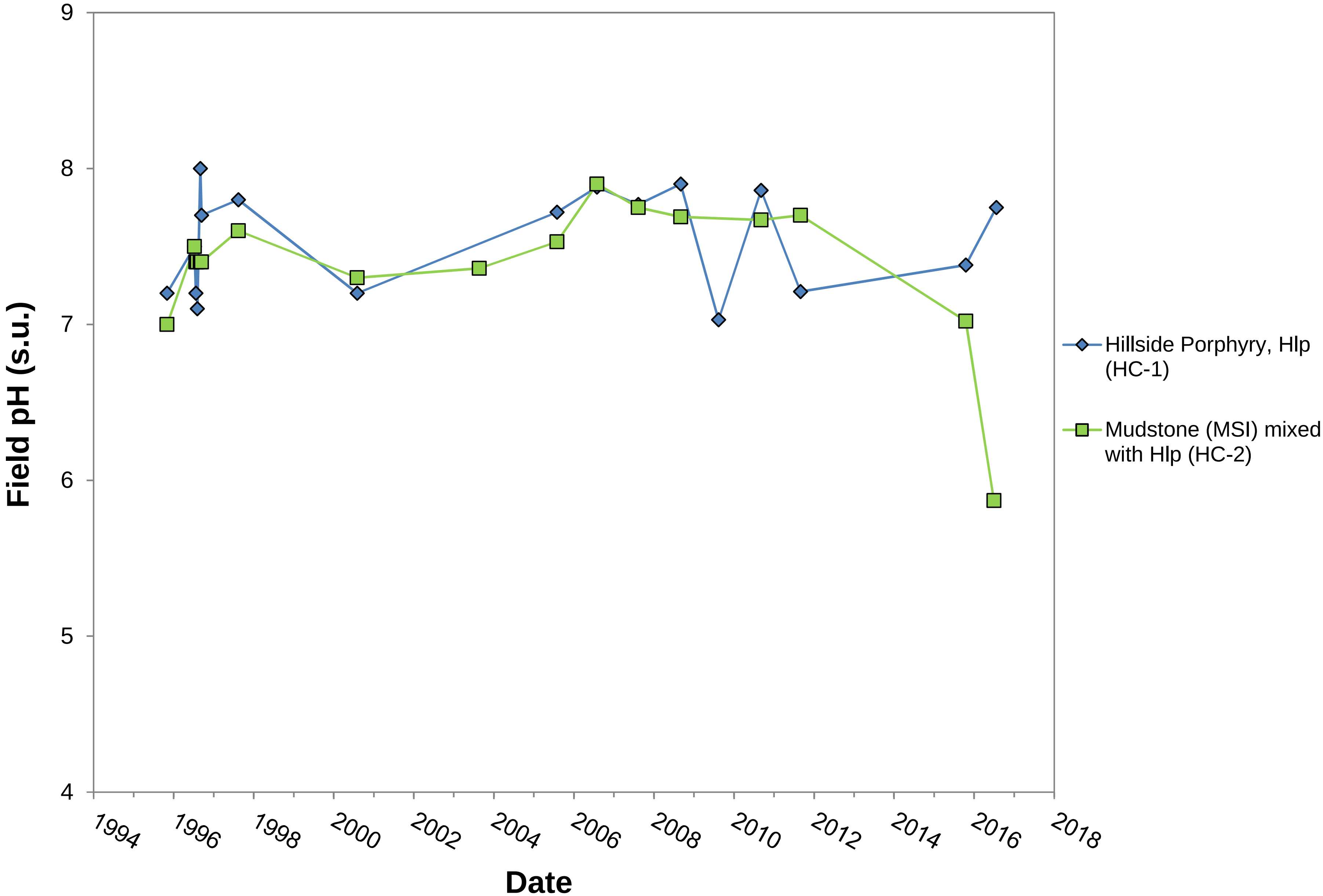
HC-1 South Crib
Feldspar Porphyry Intrusive

Date	10/31/1995	7/7/1996	7/20/1996	7/26/1996	8/1/1996	8/29/1996	9/9/1996	8/12/1997	8/1/2000	7/28/2005	7/27/2006	8/8/2007	8/31/2008	8/11/2009	9/3/2010	8/29/2011	10/16/2015	7/20/2016
Julian Date	1995.84	1996.52	1996.56	1996.57	1996.59	1996.67	1996.70	1997.62	2000.59	2005.58	2006.57	2007.61	2008.67	2009.62	2010.68	2011.66	2015.79	2016.56
Parameter	(Frostad)	(Frostad)	(Frostad)	(Frostad)	(Frostad)	(Frostad)	(Frostad)	(Royal Oak)	(SRK)	(SRK)	(SRK)	(SRK)	(SRK)	(SRK)	(SRK)	(SRK)	(Avison)	(Avison)
Field pH (s.u.)	7.2	7.5	7.2	7.4	7.1	8	7.7	7.8	7.2	7.72	7.88	7.77	7.9	7.03	7.86	7.21	7.38	7.75
Lab pH	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	7.61	7.72	7.72	#N/A	7.8	7.79	8.11	7.8	7.53
Conductivity (uS/cm)	1576	811	997	1393	1210	1098	877	880	#N/A	716	597	1160	485	539	466	431	482	509
Alkalinity (mg/L as CaCO3)	66	48	60	56	56	62	61	56	#N/A	52.1	40	39.9	4.9	34	40.8	44.5	49.9	34.4
Acidity (mg/L as CaCO3)	7.7	4.2	5.6	5.2	6	2.6	3	4	#N/A	4.6	2.4	23.6	45.7	2.4	4.6	3	2.3	2.8
Hardness (mg/L as CaCO3)	627	280	354	500	800	526	448	460	286	#N/A	319	752	268	283	244	215	259	250
Sulphate SO4 (mg/L)	852	354	464	743	674	534	391	503	294	357	276	595	195	241	186	156	208	218
Aluminum (mg/L)	0.019	0.04	0.041	0.032	0.0391	0.0005	0.0005	#N/A	0.01	0.0084	0.0112	0.025	0.005	0.005	0.0061	0.0047	0.0061	0.0152
Antimony (mg/L)	0.121	0.0696	0.0907	0.1	0.0717	0.0904	0.0988	#N/A	0.0454	0.0263	0.0191	0.0204	0.0139	0.0121	0.012	0.0135	0.0134	0.0107
Arsenic (mg/L)	0.002	0.002	0.002	0.002	0.001	0.004	0.003	#N/A	0.0038	0.00161	0.00134	0.0025	0.00113	0.00111	0.00088	0.00081	0.00098	0.00086
Barium (mg/L)	0.04	0.0445	0.043	0.0464	0.038	0.049	0.0522	#N/A	0.05	0.043	0.043	0.032	0.029	0.021	0.0207	0.0253	0.0265	0.035
Beryllium (mg/L)	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	#N/A	0.002	0.001	0.001	0.005	0.001	0.001	0.0005	0.0005	0.0001	0.001
Boron (mg/L)	0.07	0.039	0.049	0.065	0.046	0.065	0.015	#N/A	0.1	0.1	0.1	0.1	0.1	0.1	0.01	0.013	0.01	0.1
Cadmium (mg/L)	0.0004	0.0003	0.0004	0.0007	0.0006	0.0004	0.0005	#N/A	0.0006	0.000547	0.00051	0.000634	0.000265	0.00021	0.000279	0.000213	0.000237	0.000202
Calcium (mg/L)	180	83.9	106	150	233	176	155	#N/A	96.4	152	111	265	94.8	99.3	86.4	76.3	91.9	89.9
Chromium (mg/L)	0.0019	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	#N/A	0.001	0.001	0.001	0.005	0.001	0.001	0.0005	0.0005	0.0001	0.001
Cobalt (mg/L)	0.00157	0.00073	0.00115	0.00147	0.007	0.0053	0.0034	#N/A	0.0008	0.0003	0.0003	0.0015	0.0003	0.0003	0.0001	0.0001	0.0001	0.0003
Copper (mg/L)	0.0037	0.0028	0.0024	0.005	0.0036	0.0021	0.0013	#N/A	0.0027	0.0018	0.0037	0.005	0.001	0.002	0.00153	0.00103	0.0002	0.0011
Iron (mg/L)	0.09	0.1	0.13	0.05	0.06	0.06	0.01	#N/A	0.03	0.03	0.031	0.03	0.03	0.03	0.03	0.03	0.01	0.041
Lead (mg/L)	0.0002	0.0002	0.0009	0.0005	0.00038	0.00005	0.00005	#N/A	0.0002	0.0005	0.0005	0.0025	0.0005	0.0005	0.000055	0.00005	0.00005	0.0005
Magnesium (mg/L)	38	17.1	21.7	30.5	53.1	20.9	14.7	#N/A	11	13.6	9.87	21.9	7.69	8.49	7	6.01	7.14	6.31
Manganese (mg/L)	0.529	0.394	0.455	0.487	0.463	0.343	0.366	#N/A	0.296	0.118	0.0745	0.0164	0.0135	0.0153	0.0341	0.022	0.00869	0.00464
Mercury (mg/L)	0.0002	0.0002	0.0002	0.0002	0.00005	0.00005	0.00005	#N/A	0.00002	0.00002	0.00002	0.00002	0.00002	0.00002	#N/A	#N/A	0.000005	0.000005
Molybdenum (mg/L)	0.00564	0.00322	0.00552	0.00751	0.00522	0.00489	0.00321	#N/A	0.03	0.0024	0.0013	0.005	0.0013	0.001	0.000965	0.00117	0.000969	0.001
Nickel (mg/L)	0.0102	0.0059	0.0063	0.0075	0.00117	0.00092	0.0007	#N/A	0.003	0.0021	0.0022	0.005	0.001	0.0013	0.00124	0.00086	0.00081	0.001
Potassium (mg/L)	15.5	3.93	4.52	6.67	8.86	4.06	2.07	#N/A	3	2	2	2	2	2	2	2	1.22	2
Selenium (mg/L)	0.014	0.006	0.006	0.016	0.015	0.015	0.001	#N/A	0.005	0.0066	0.0061	0.0073	0.0031	0.004	0.0032	0.0023	0.00359	0.00332
Silver (mg/L)	0.00001	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	#N/A	0.00002	0.00002	0.00002	0.0001	0.00002	0.00002	0.00001	0.00001	0.00001	0.00002
Sodium (mg/L)	29	9.63	12.1	20.5	41.5	16.1	9.64	#N/A	4	2	2	3.1	2	2	2	2	0.795	2
Thallium (mg/L)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0001	0.0002	0.0002	0.001	0.0002	0.0002	0.0001	0.0001	0.00001	0.0002
Titanium (mg/L)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.0003	0.01
Uranium (mg/L)	0.00207	0.00101	0.00133	0.0027	0.00153	0.00117	0.00072	#N/A	0.0006	0.00051	0.00038	0.001	0.00025	0.0002	0.000164	0.000186	0.000184	0.0002
Vanadium (mg/L)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	#N/A	0.03	0.03	0.03	0.03	0.001	0.001	0.001	0.001	0.0005	0.0005
Zinc (mg/L)	0.116	0.032	0.038	0.044	0.033	0.058	0.04	#N/A	0.034	0.0334	0.0384	0.057	0.0285	0.0186	0.0214	0.022	0.055	0.0284

HC-2

North Crib
Sediments w. minor Feldspar Porphyry

Date	10/31/1995	7/7/1996	7/20/1996	7/26/1996	8/1/1996	8/29/1996	9/9/1996	8/12/1997	8/1/2000	8/20/2003	7/28/2005	7/27/2006	8/8/2007	8/31/2008	9/3/2010	8/29/2011	10/15/2015	6/28/2016
Julian Date	1995.84	1996.52	1996.56	1996.57	1996.59	1996.67	1996.70	1997.62	2000.59	2003.64	2005.58	2006.57	2007.61	2008.67	2010.68	2011.66	2015.79	2016.50
Parameter	(Frostad)	(Frostad)	(Frostad)	(Frostad)	(Frostad)	(Frostad)	(Frostad)	(Royal Oak)	(SRK)	(SRK)	(SRK)	(SRK)	(SRK)	(SRK)	(SRK)	(SRK)	(Avison)	(Avison)
Field pH	7	7.5	7.4	7.4	7.4	7.4	7.4	7.6	7.3	7.36	7.53	7.9	7.75	7.69	7.67	7.7	7.02	5.87
Lab pH	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	7.96	7.38	7.74	7.74	#N/A	7.65	7.67	7.43	6.98
Conductivity (uS/cm)	1985	1708	1777	1753	1920	1548	1671	1931	#N/A	1405	1171	1112	1210	961	965	991	1070	1140
Alkalinity (mg/L as CaCO3)	58	52	52	52	52	46	47	47	#N/A	40	51.9	39.5	40.8	5.8	31.2	34.2	35	22.3
Acidity (mg/L as CaCO3)	10	5.4	4.6	5.2	6	5.6	4	5	#N/A	2	6.2	2.7	3.2	41.6	5.2	4.5	5	6.5
Hardness (mg/L as CaCO3)	562	664	690	670	1317	782	858	1134	699	853	623	632	797	530	559	567	610	669
Sulphate SO4 (mg/L)	1110	981	1060	1030	1302	854	1010	1289	738	879	537	573	639	461	507	536	633	658
Aluminum (mg/L)	0.02	0.03	0.03	0.028	0.011	0.0005	0.009	#N/A	0.02	0.03	0.005	0.01	0.025	0.01	0.0089	0.006	0.0215	0.0067
Antimony (mg/L)	0.0144	0.0115	0.0096	0.0111	0.0106	0.0102	0.009	#N/A	0.0071	0.005	0.00714	0.0073	0.0063	0.0039	0.00934	0.00401	0.00457	0.00183
Arsenic (mg/L)	0.002	0.002	0.002	0.002	0.001	0.003	0.001	#N/A	0.0025	0.003	0.00169	0.0017	0.0025	0.0013	0.0025	0.00123	0.001	0.0005
Barium (mg/L)	0.018	0.0188	0.0175	0.0206	0.0183	0.0213	0.0217	#N/A	0.03	0.03	0.02	0.024	0.02	0.02	0.0274	0.0128	0.0194	0.02
Beryllium (mg/L)	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	#N/A	0.004	0.005	0.001	0.002	0.005	0.002	0.0025	0.001	0.0001	0.001
Boron (mg/L)	0.074	0.06	0.05	0.066	0.055	0.052	0.025	#N/A	0.1	0.1	0.1	0.1	0.1	0.1	0.053	0.026	0.028	0.1
Cadmium (mg/L)	0.0008	0.0013	0.0011	0.0017	0.0009	0.0009	0.0015	#N/A	0.0005	0.001	0.00172	0.0017	0.000903	0.00161	0.00868	0.00272	0.0313	0.0319
Calcium (mg/L)	121	190	208	203	371	260	297	#N/A	251	312	228	231	292	195	204	207	218	241
Chromium (mg/L)	0.0008	0.001	0.0005	0.0005	0.0005	0.0005	0.0005	#N/A	0.002	0.005	0.001	0.002	0.005	0.002	0.0025	0.001	0.0001	0.001
Cobalt (mg/L)	0.00203	0.00228	0.00431	0.00286	0.008	0.0032	0.004	#N/A	0.0005	0.002	0.0003	0.0006	0.0015	0.0006	0.0005	0.0002	0.0048	0.0102
Copper (mg/L)	0.0036	0.0016	0.0022	0.0031	0.0009	0.0001	0.0015	#N/A	0.0016	0.005	0.0013	0.002	0.005	0.002	0.00318	0.0012	0.00494	0.0027
Iron (mg/L)	0.08	0.16	0.17	0.15	0.11	0.06	0.05	#N/A	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.043	0.066
Lead (mg/L)	0.0002	0.0002	0.0004	0.0004	0.00009	0.00018	0.00005	#N/A	0.0004	0.003	0.0005	0.001	0.0025	0.001	0.00025	0.0001	0.000257	0.0005
Magnesium (mg/L)	63.1	46	41.5	39.9	94.9	32.3	28.2	#N/A	17.5	18.2	13.4	13.3	16.7	10.4	12.4	12.3	15.9	16.2
Manganese (mg/L)	2.18	1.8	1.78	2.01	1.86	1.17	1.14	#N/A	0.181	0.005	0.00229	0.00162	0.0015	0.0021	0.0246	0.00504	0.446	1.66
Mercury (mg/L)	0.0002	0.0002	0.0002	0.0002	0.00005	0.00009	0.00005	#N/A	0.00002	0.00005	0.00002	0.00002	0.00002	0.00002	#N/A	#N/A	0.000005	0.000005
Molybdenum (mg/L)	0.00228	0.00141	0.00146	0.00144	0.00139	0.00151	0.00109	#N/A	0.03	0.005	0.001	0.002	0.005	0.002	0.0014	0.00054	0.000567	0.001
Nickel (mg/L)	0.0074	0.0084	0.0069	0.0078	0.00211	0.00073	0.00167	#N/A	0.005	0.005	0.0029	0.004	0.005	0.0025	0.0114	0.0047	0.0415	0.0392
Potassium (mg/L)	20.2	5.51	6.33	7.23	12.5	5.2	4.85	#N/A	5	3	2.2	3.6	2.6	2.3	2.5	2.4	3.12	2.6
Selenium (mg/L)	0.005	0.005	0.005	0.005	0.004	0.006	0.001	#N/A	0.004	0.005	0.0027	0.0028	0.005	0.002	0.0054	0.0022	0.0025	0.00158
Silver (mg/L)	0.00001	0.00002	0.00001	0.00001	0.00001	0.00001	0.00001	#N/A	0.00004	0.0001	0.00002	0.00004	0.00027	0.00004	0.00005	0.00002	0.00001	0.00002
Sodium (mg/L)	58.6	25.9	22.5	22.7	58.5	17.9	15.7	#N/A	6	5	3	3.7	4.4	2.4	2.4	2.4	2.34	2.4
Thallium (mg/L)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.0002	0.001	0.0002	0.0004	0.001	0.0004	0.0005	0.0002	0.00001	0.0002
Titanium (mg/L)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.01	0.01	0.01	0.01	0.01	0.01	0.013	0.01	0.0003	0.012
Uranium (mg/L)	0.00032	0.00027	0.00019	0.00049	0.00038	0.00025	0.0001	#N/A	0.0004	0.001	0.0002	0.0004	0.001	0.0004	0.000158	0.000066	0.000094	0.0002
Vanadium (mg/L)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	#N/A	0.03	0.03	0.03	0.03	0.03	0.002	0.005	0.002	0.0005	0.0005
Zinc (mg/L)	0.092	0.047	0.042	0.07	0.047	0.115	0.042	#N/A	0.031	0.06	0.189	0.183	0.059	0.181	0.77	0.306	3.12	2.26



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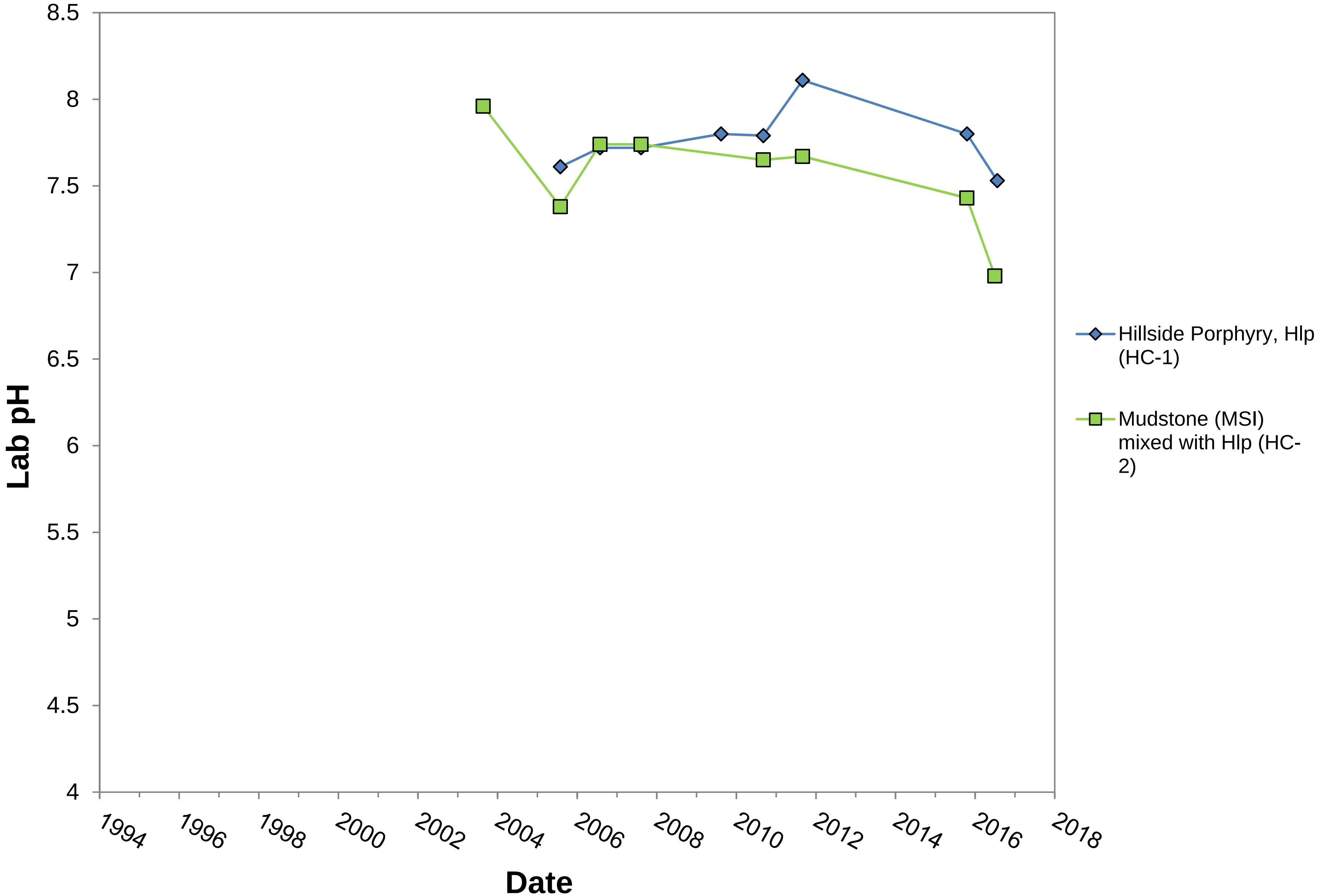

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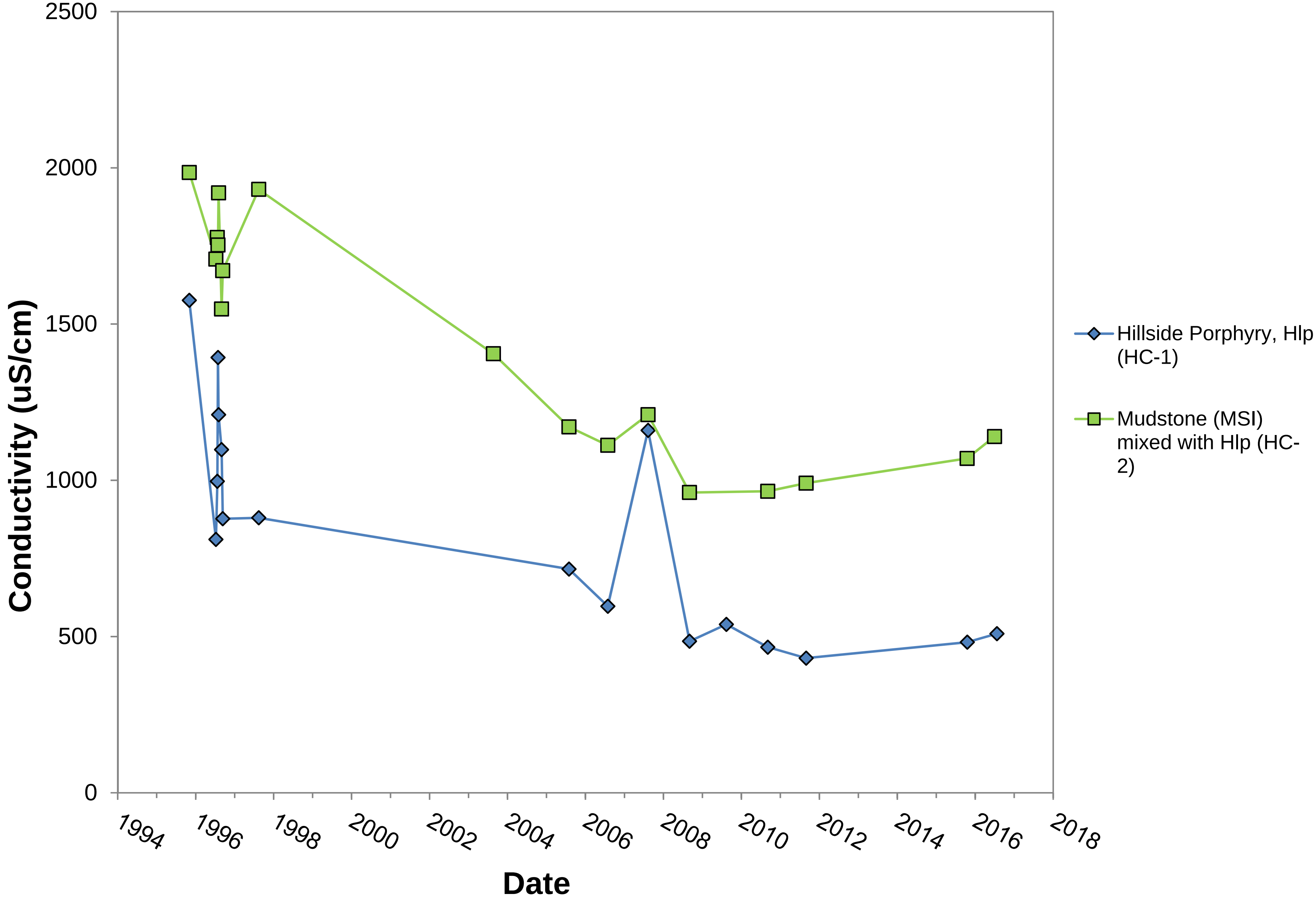

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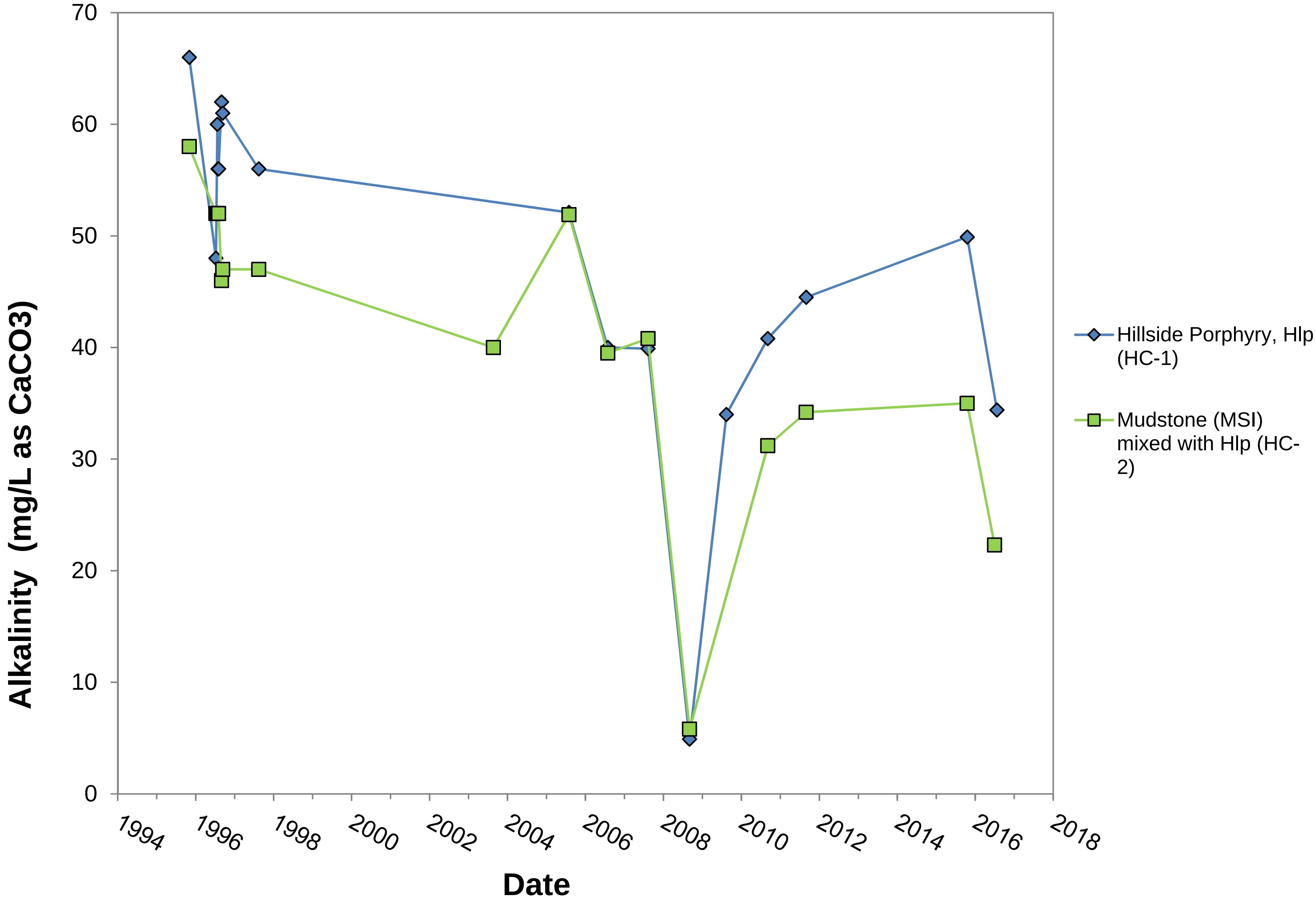

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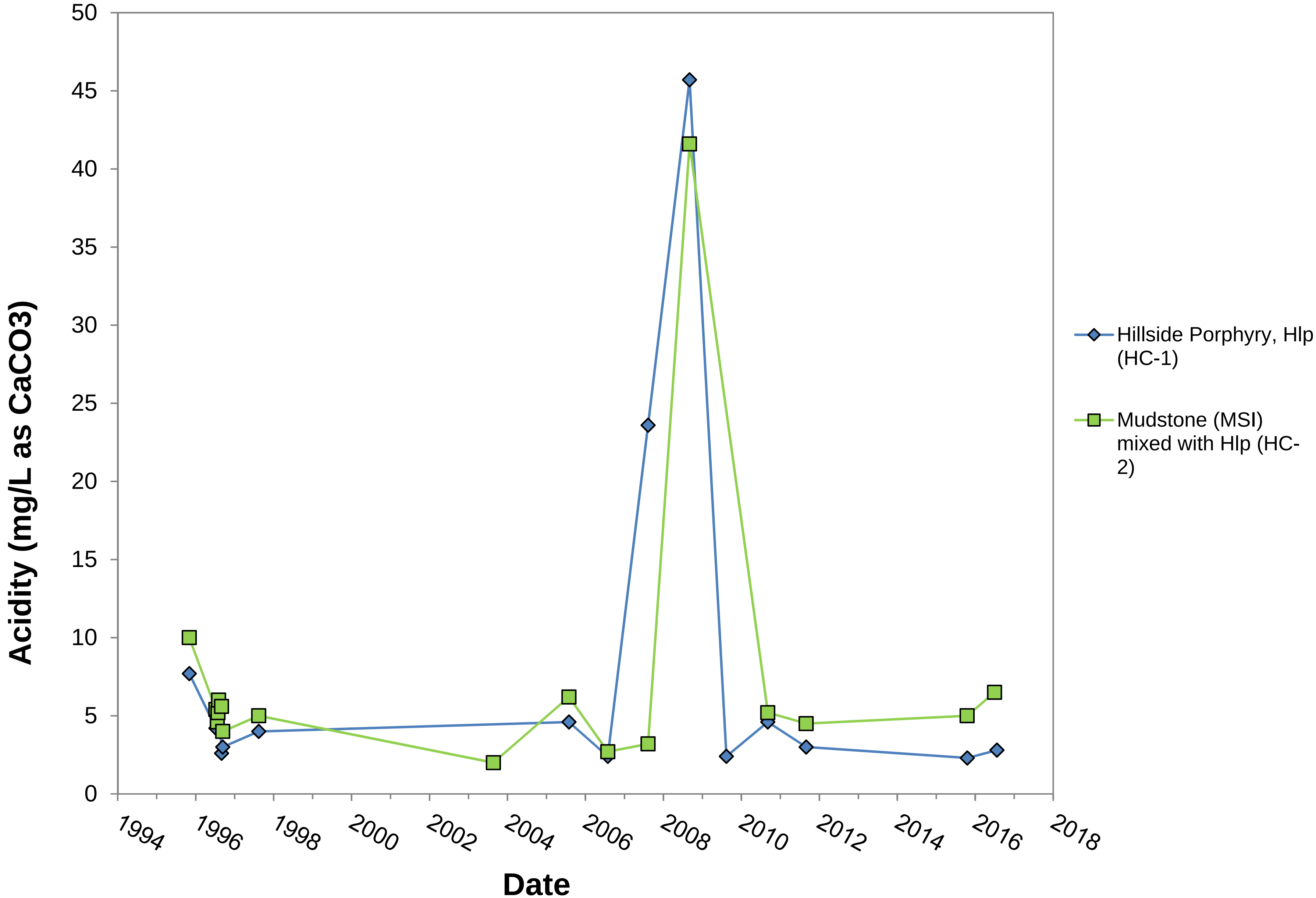

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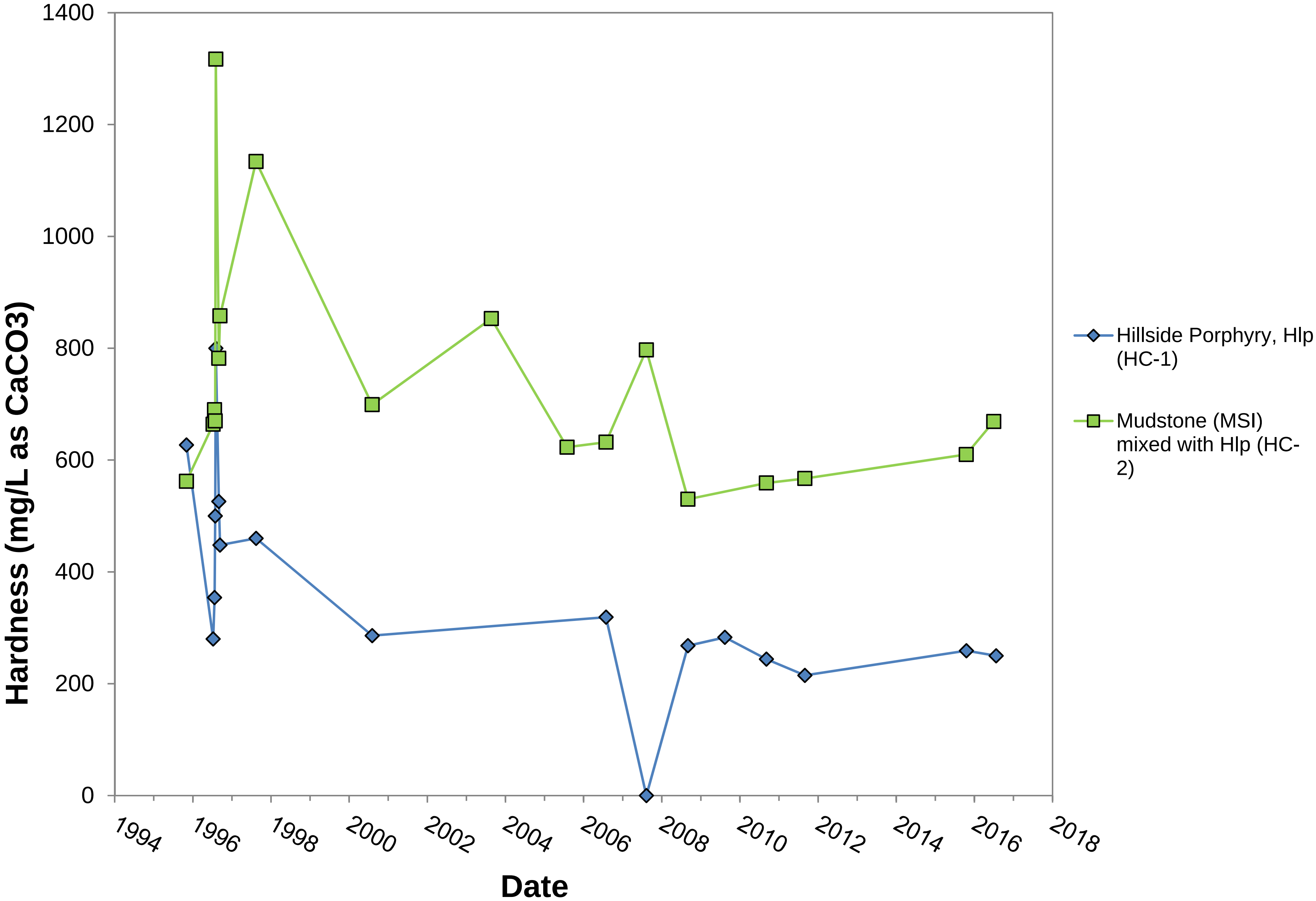

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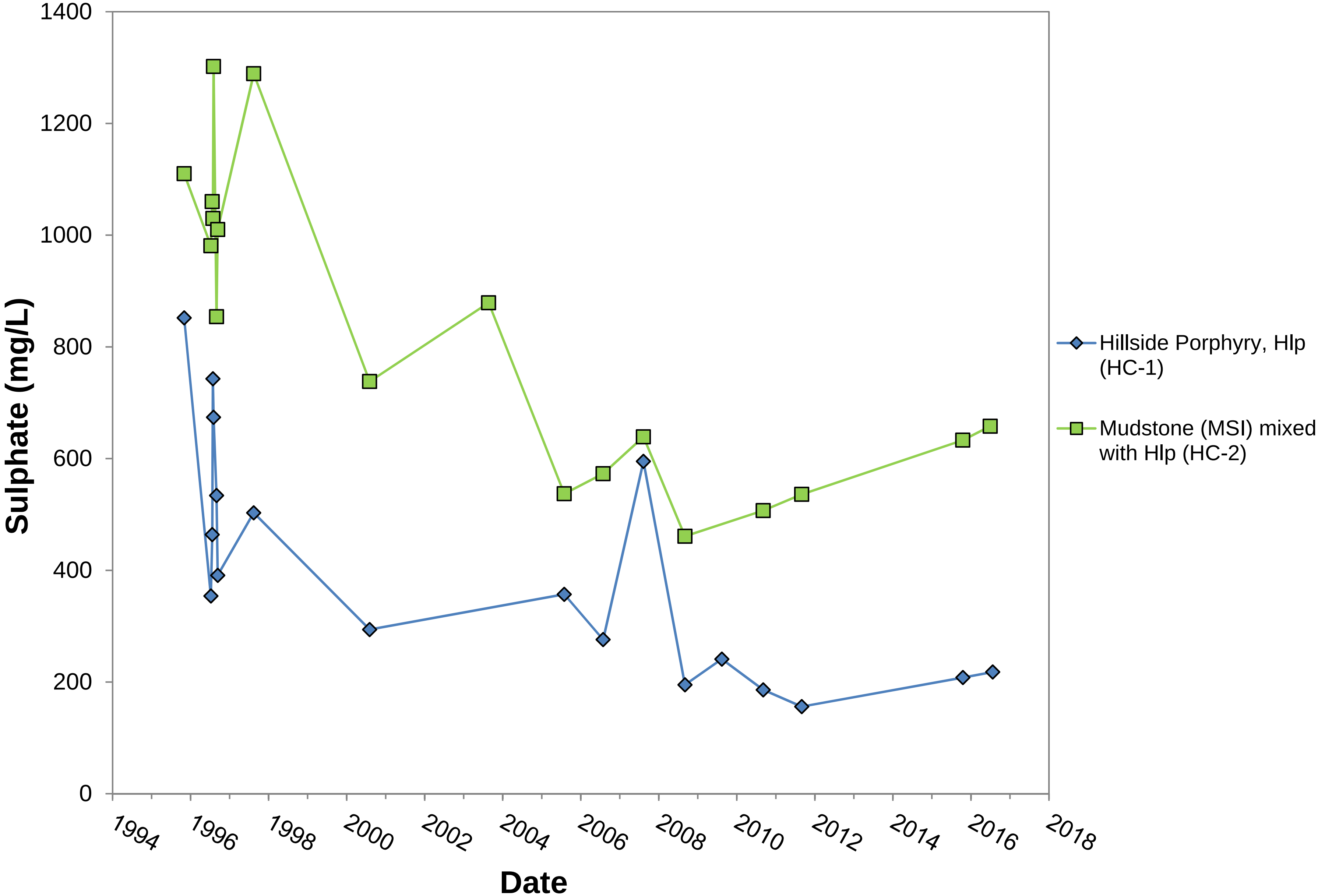

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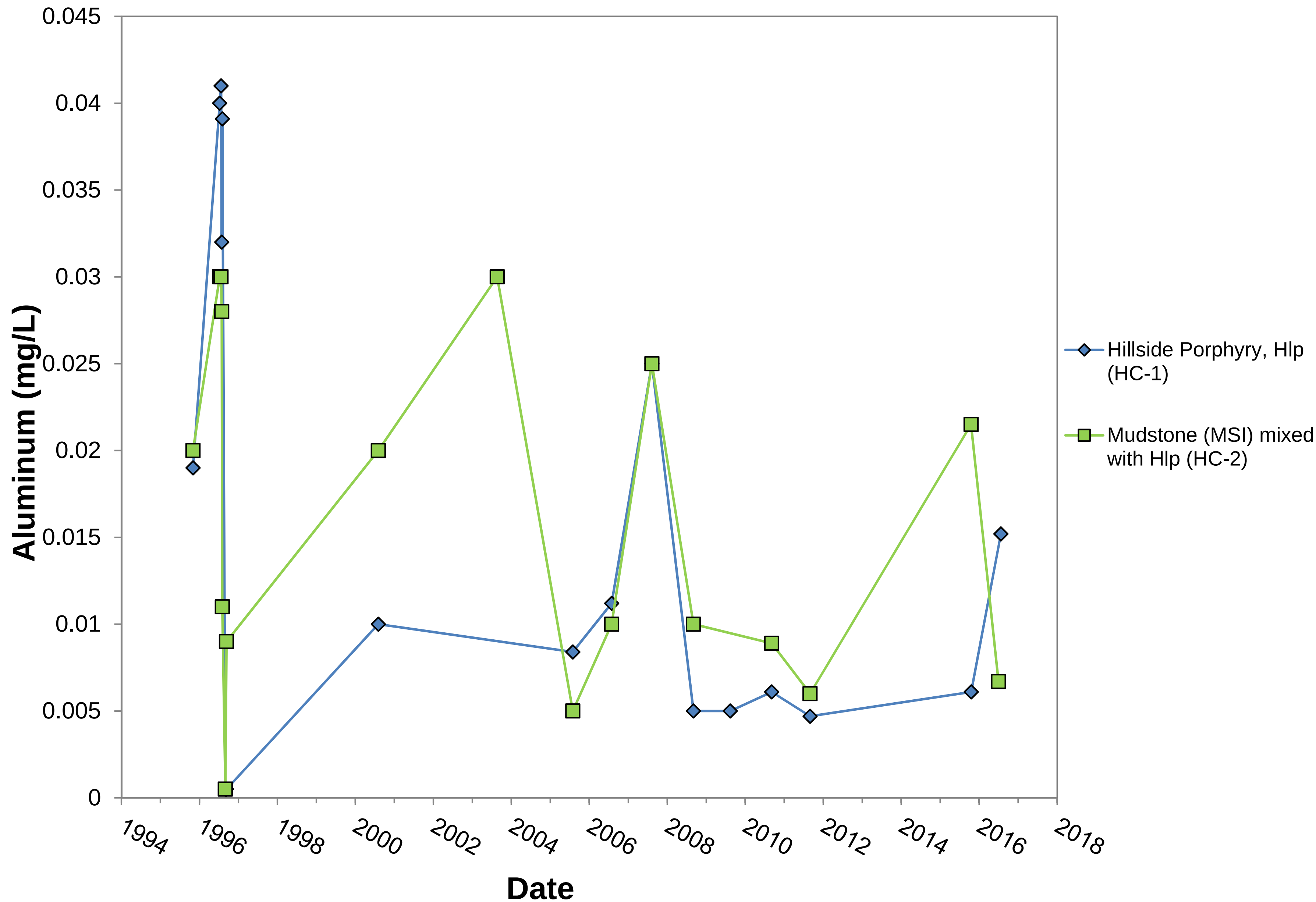

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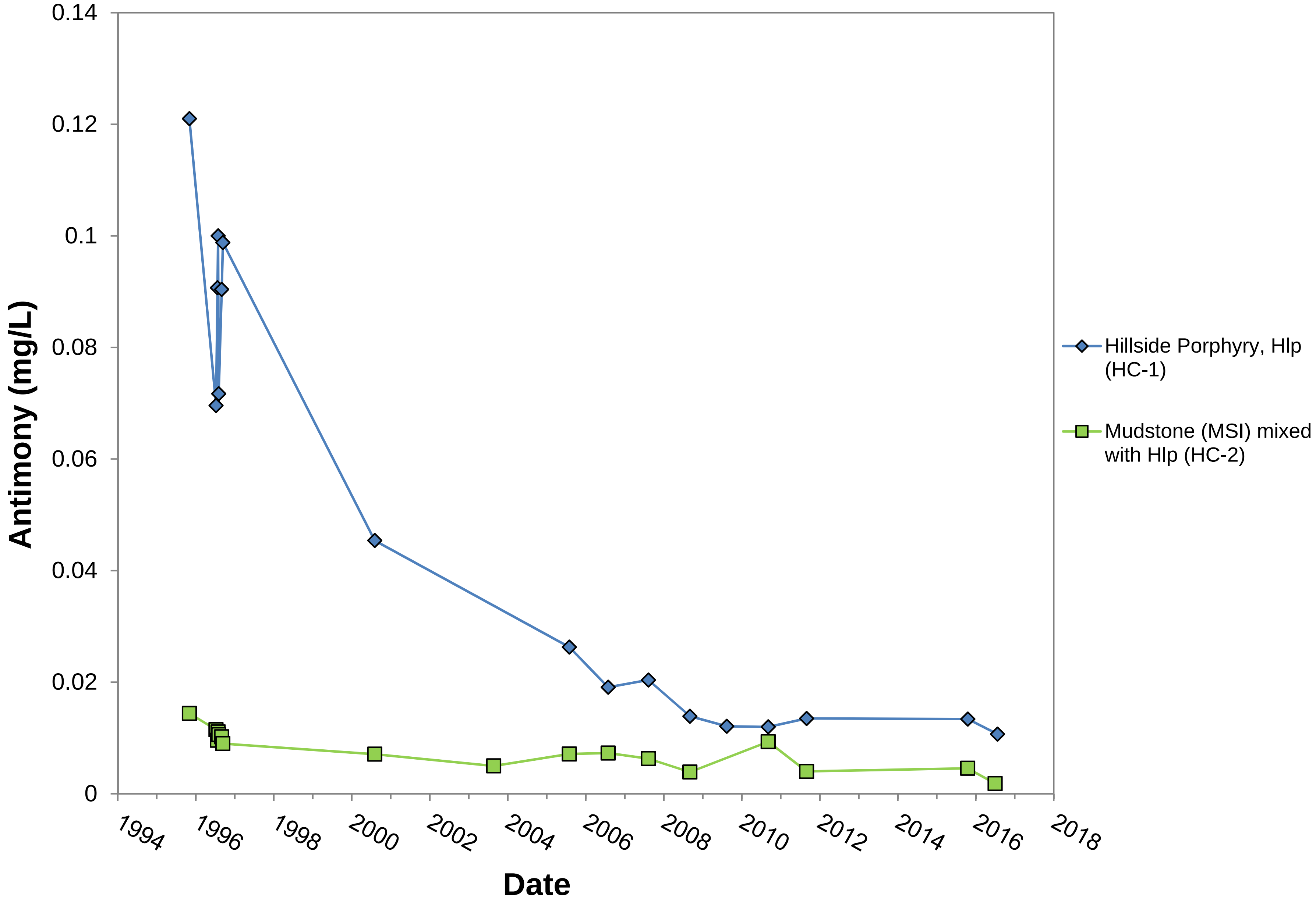

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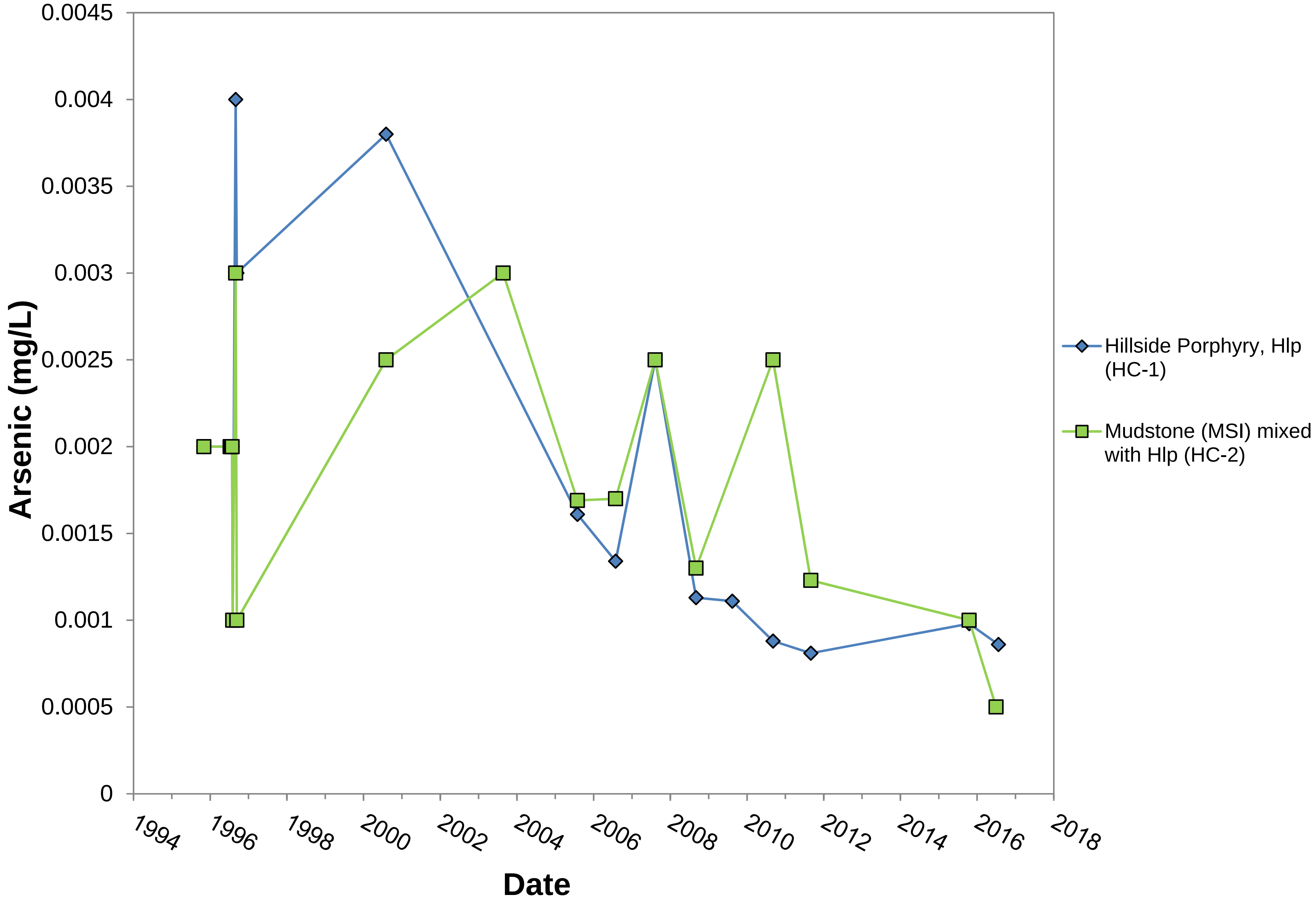

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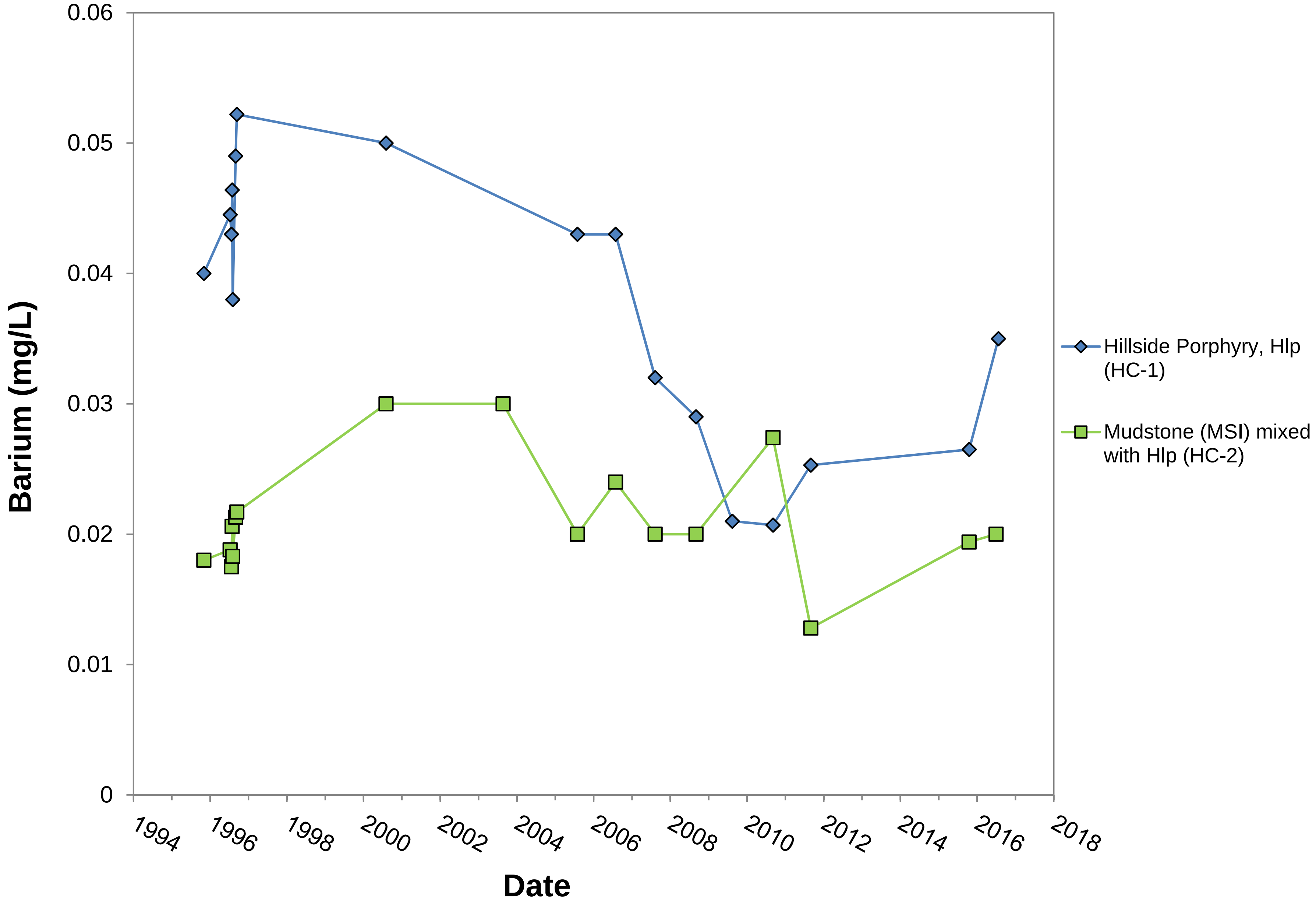

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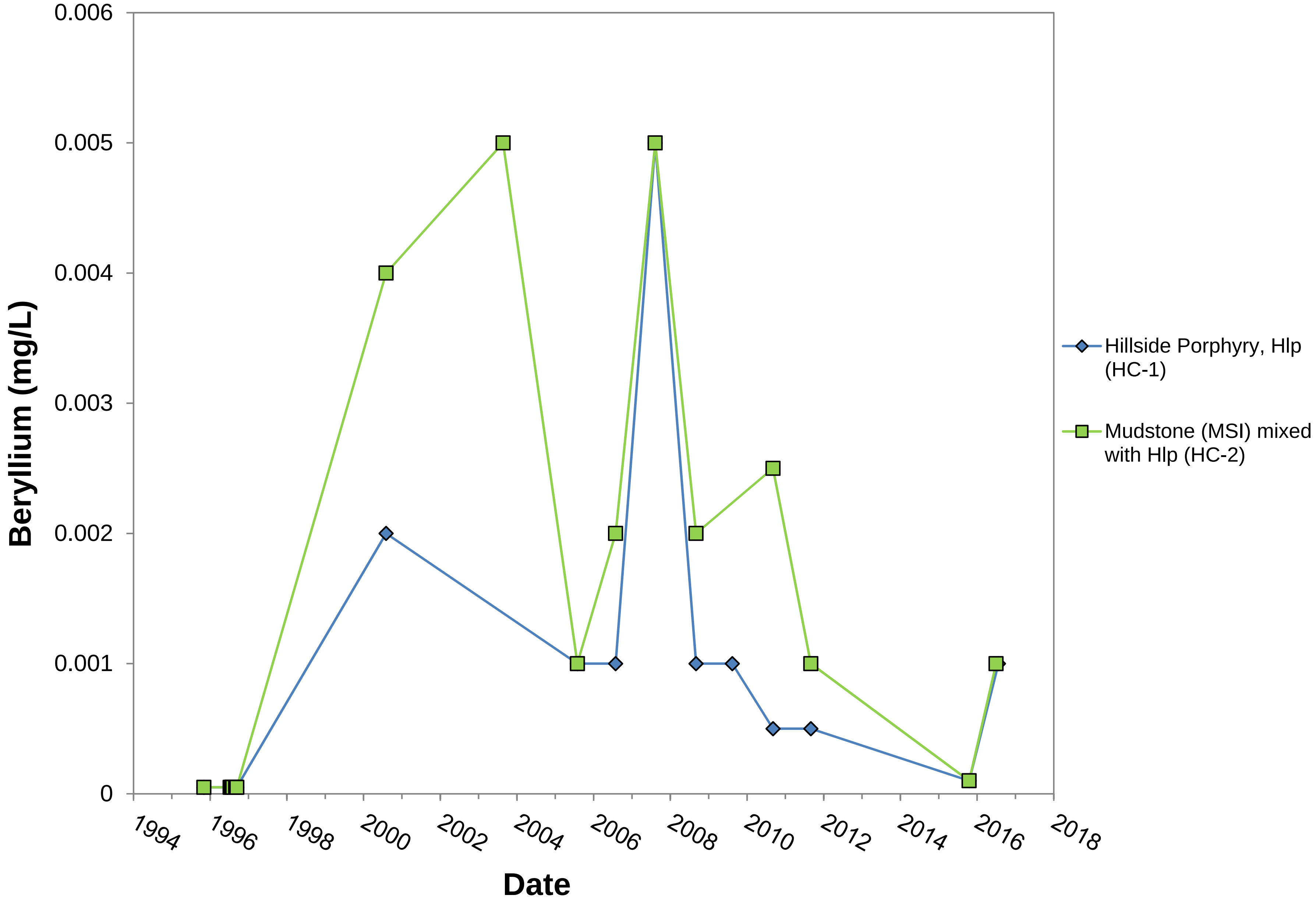

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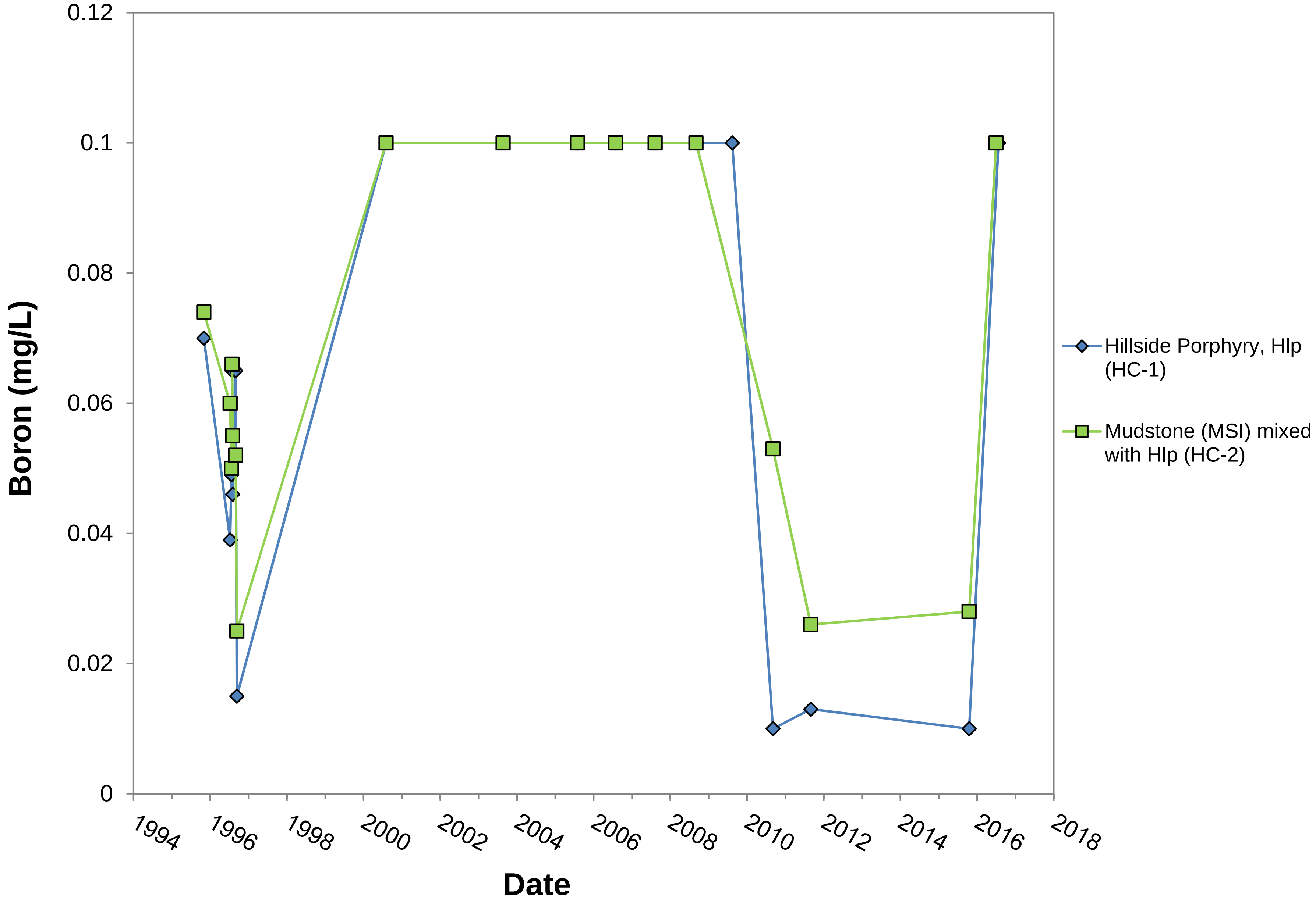

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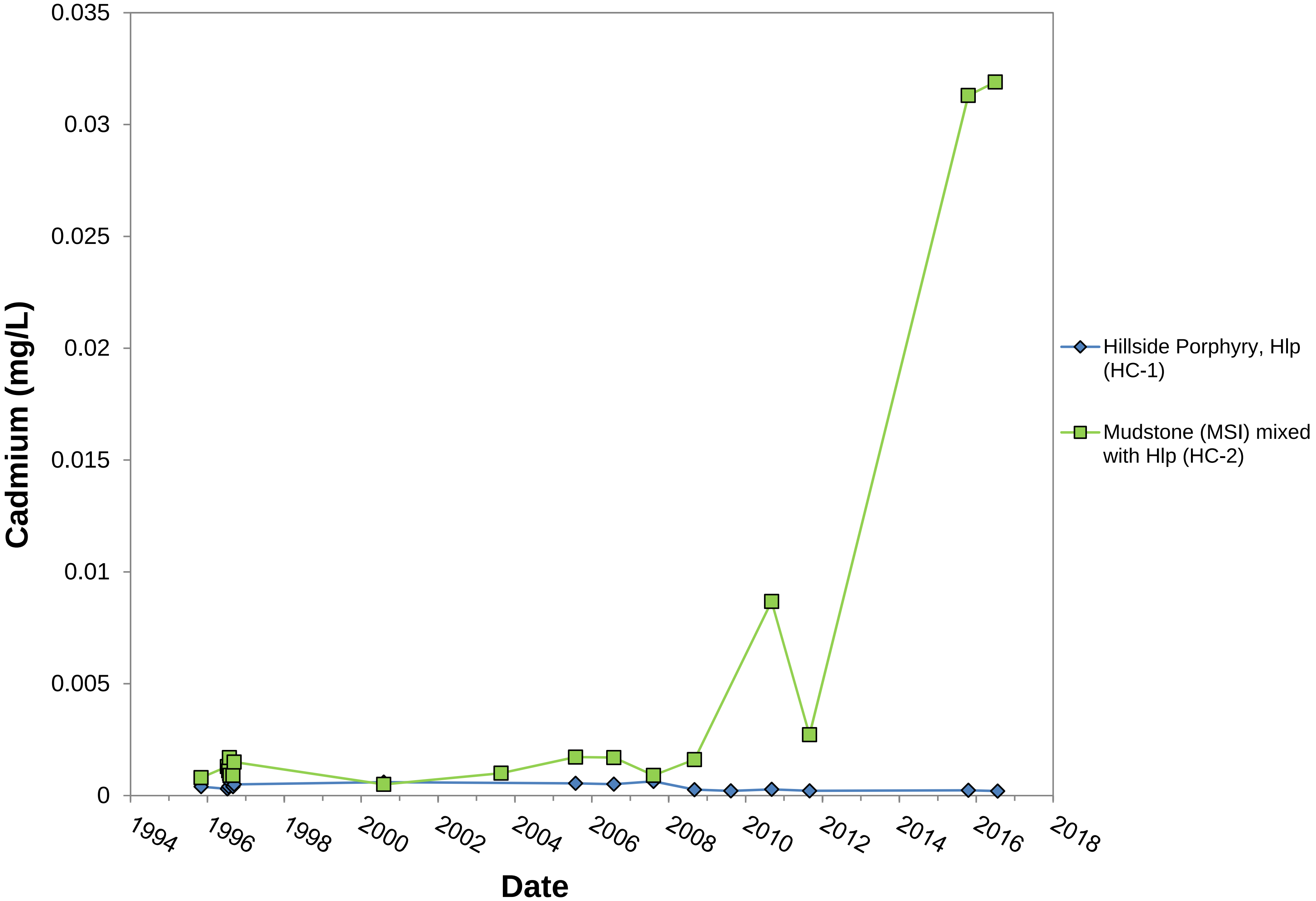

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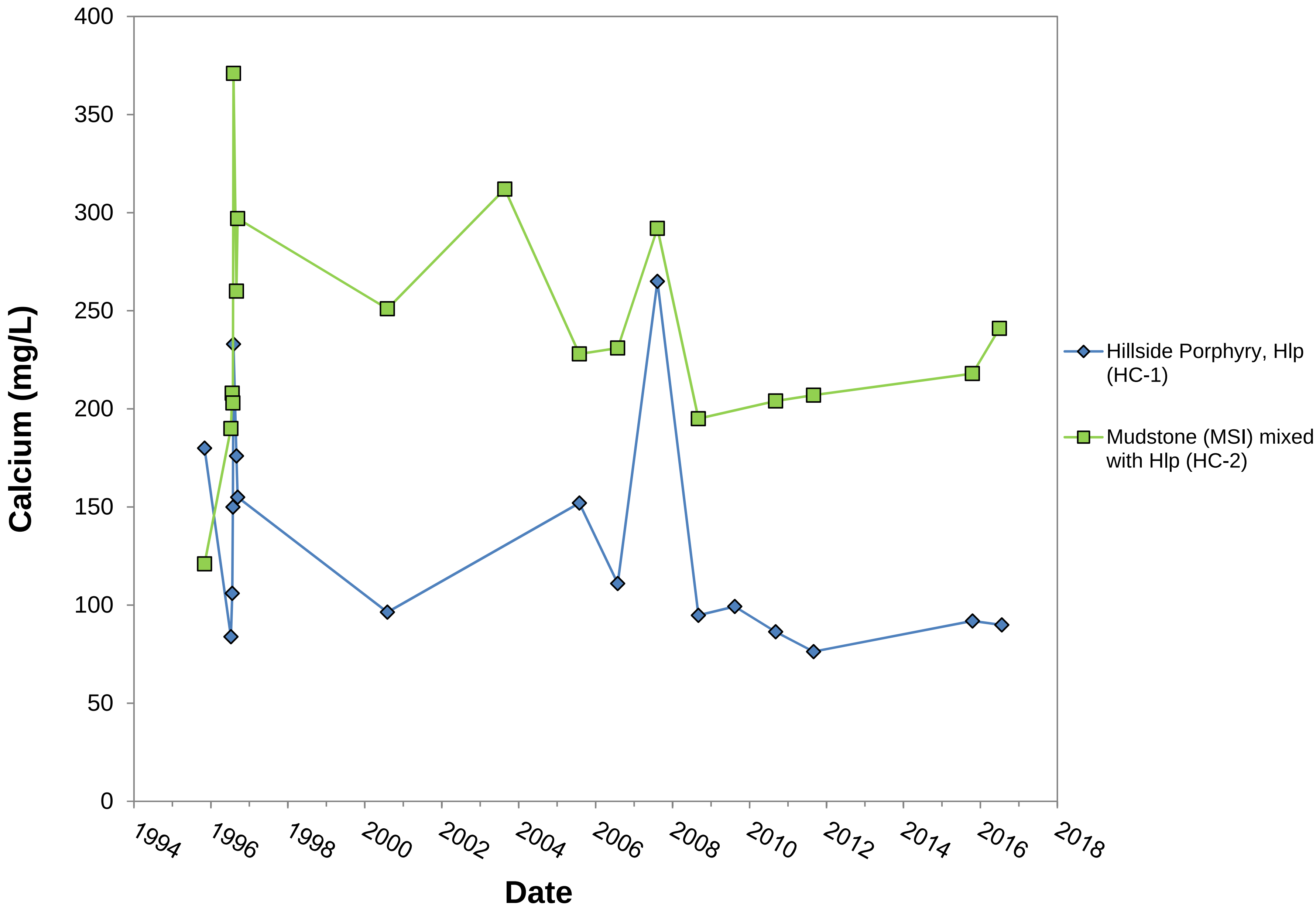

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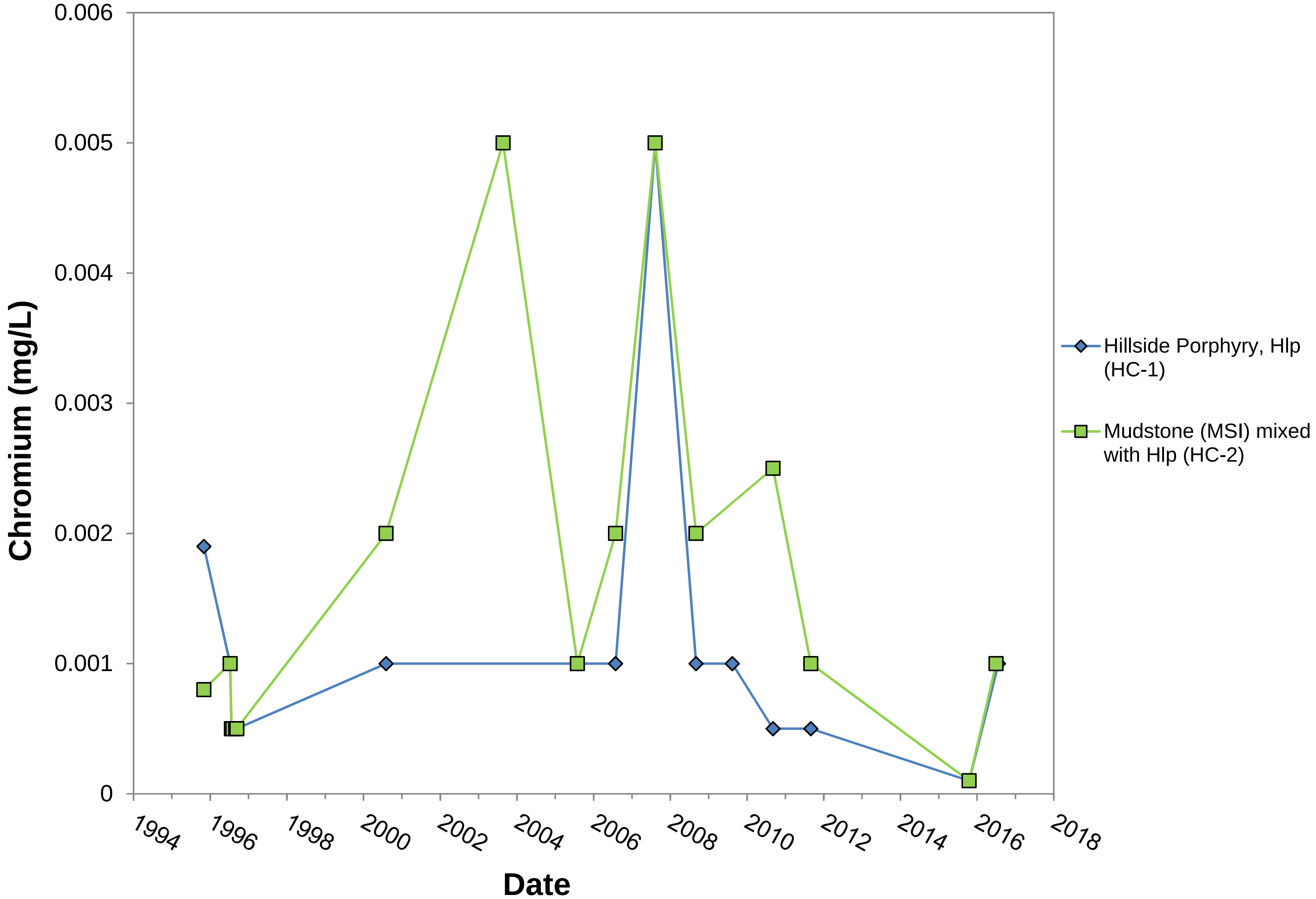

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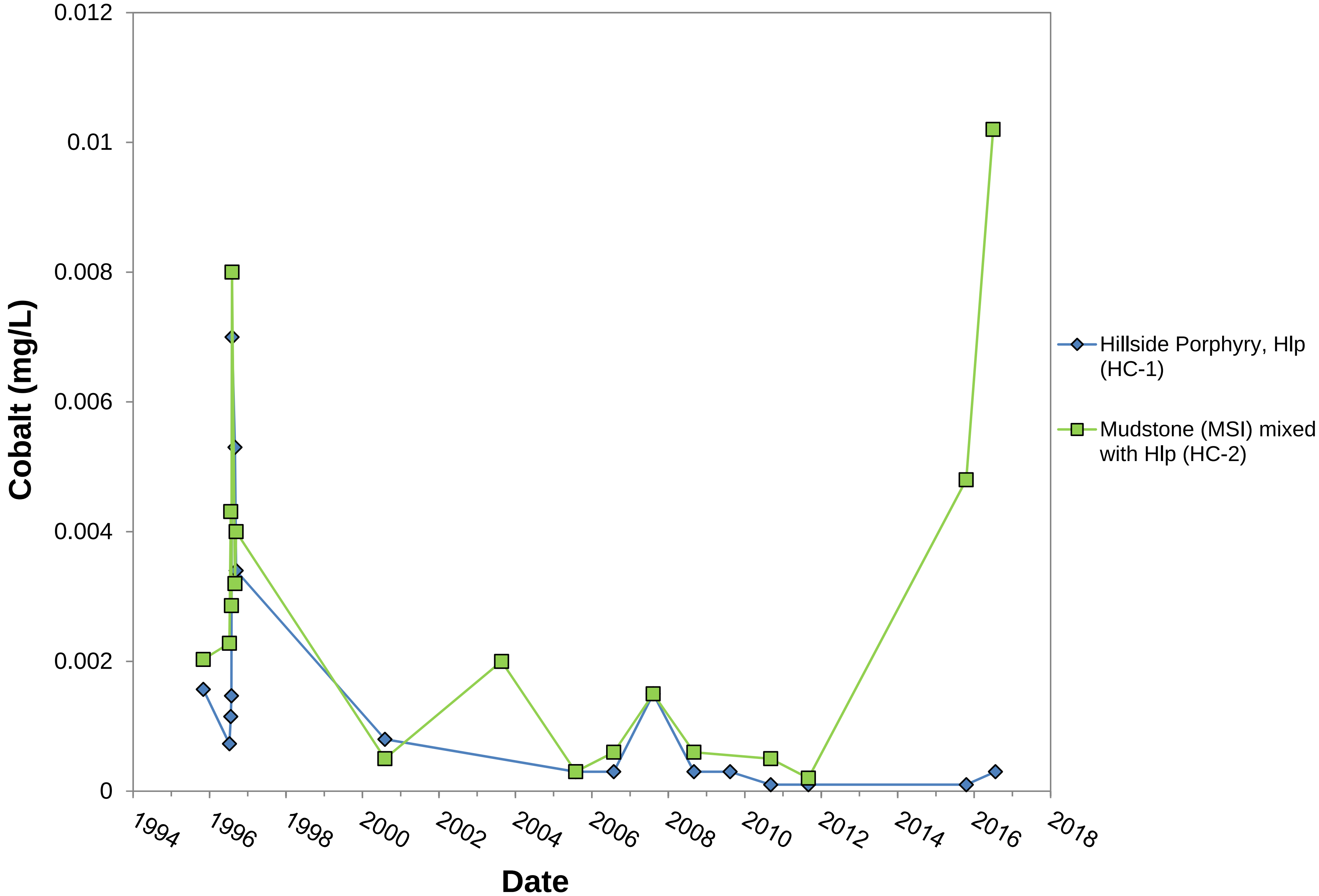

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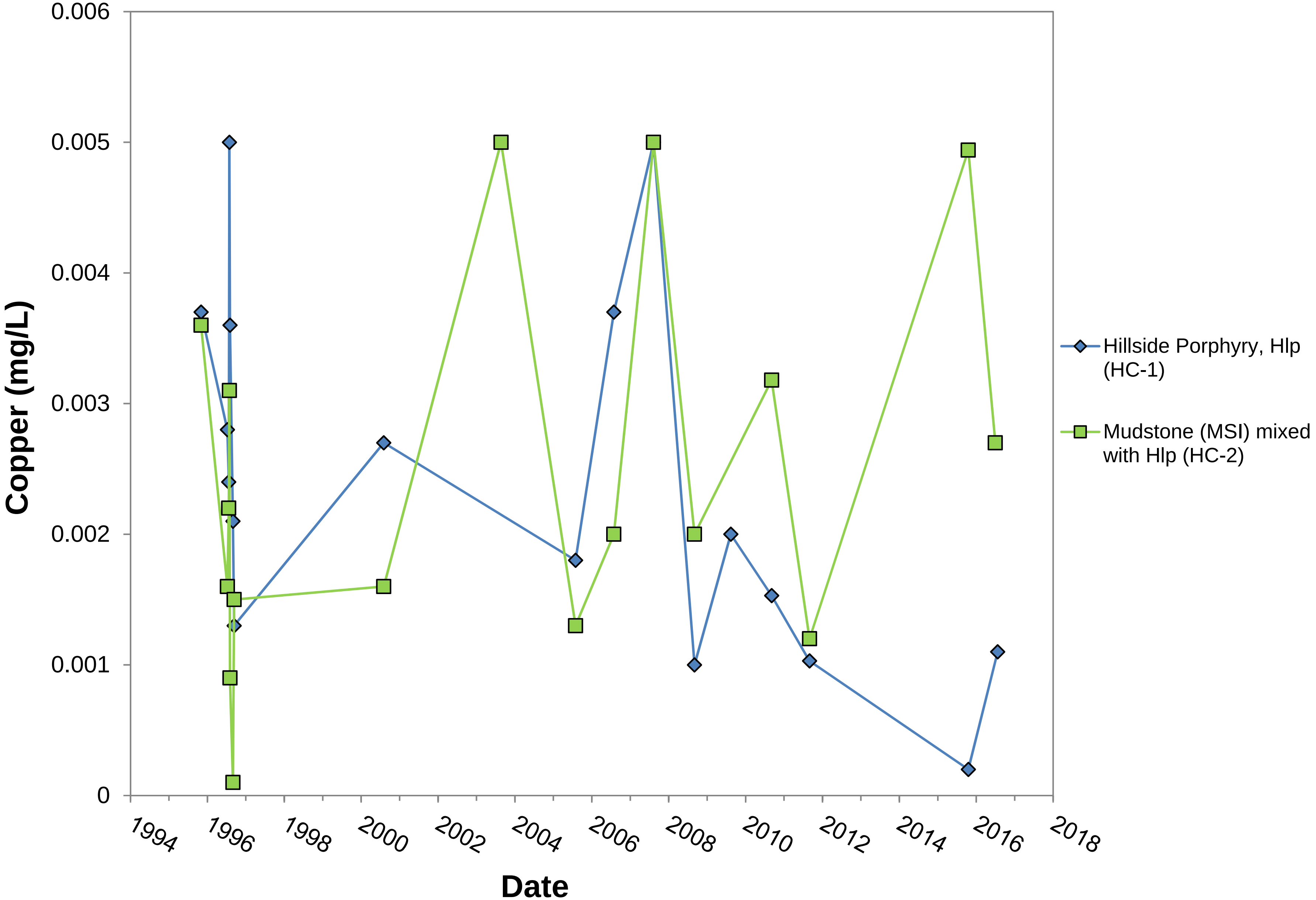

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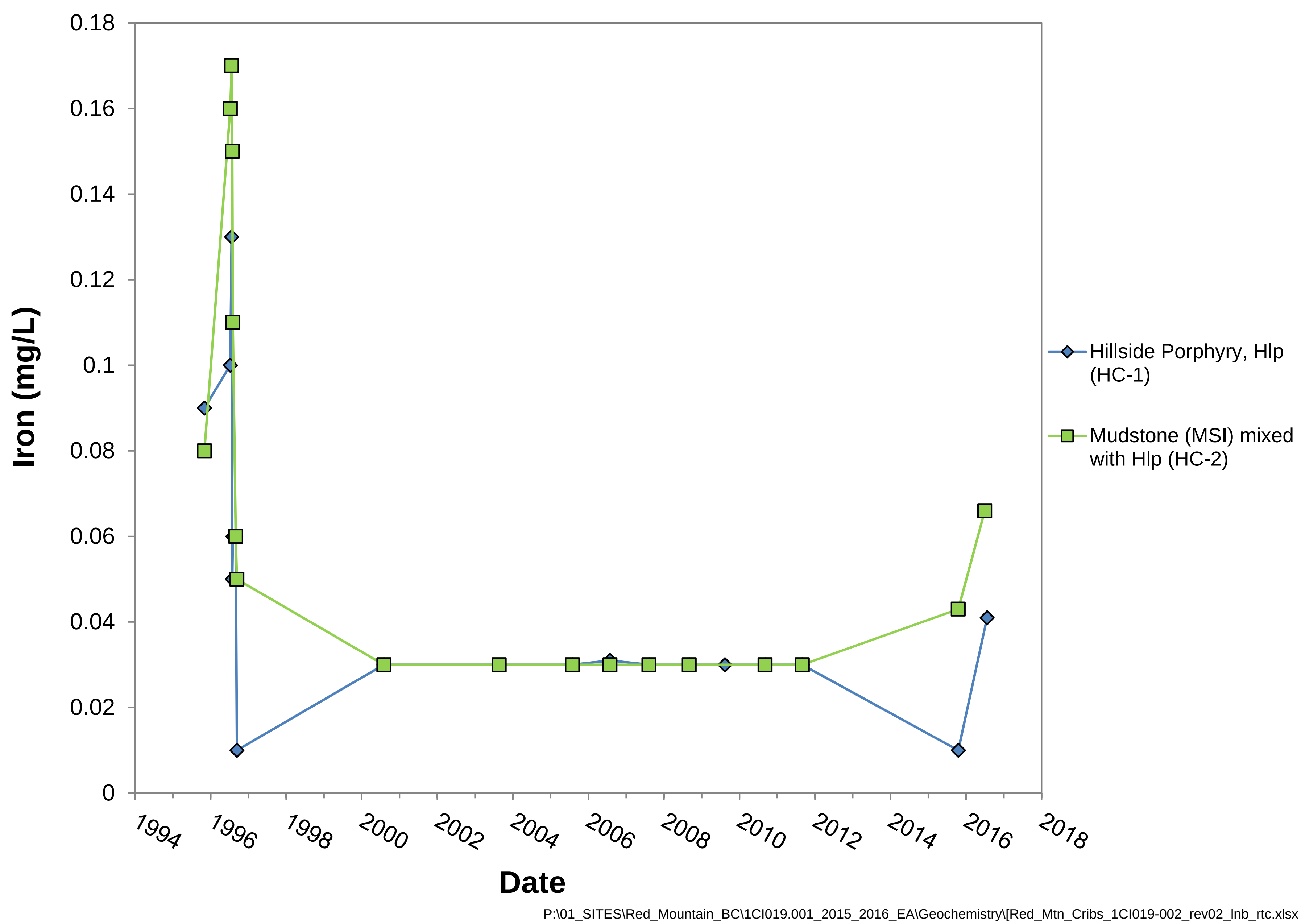
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0.12
0.1
0.08
0.06
0.04
0.02
0
Iron (mg/L)
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date
Hillside Porphyry, Hlp (HC-1)
Mudstone (MSI) mixed with Hlp (HC-2)
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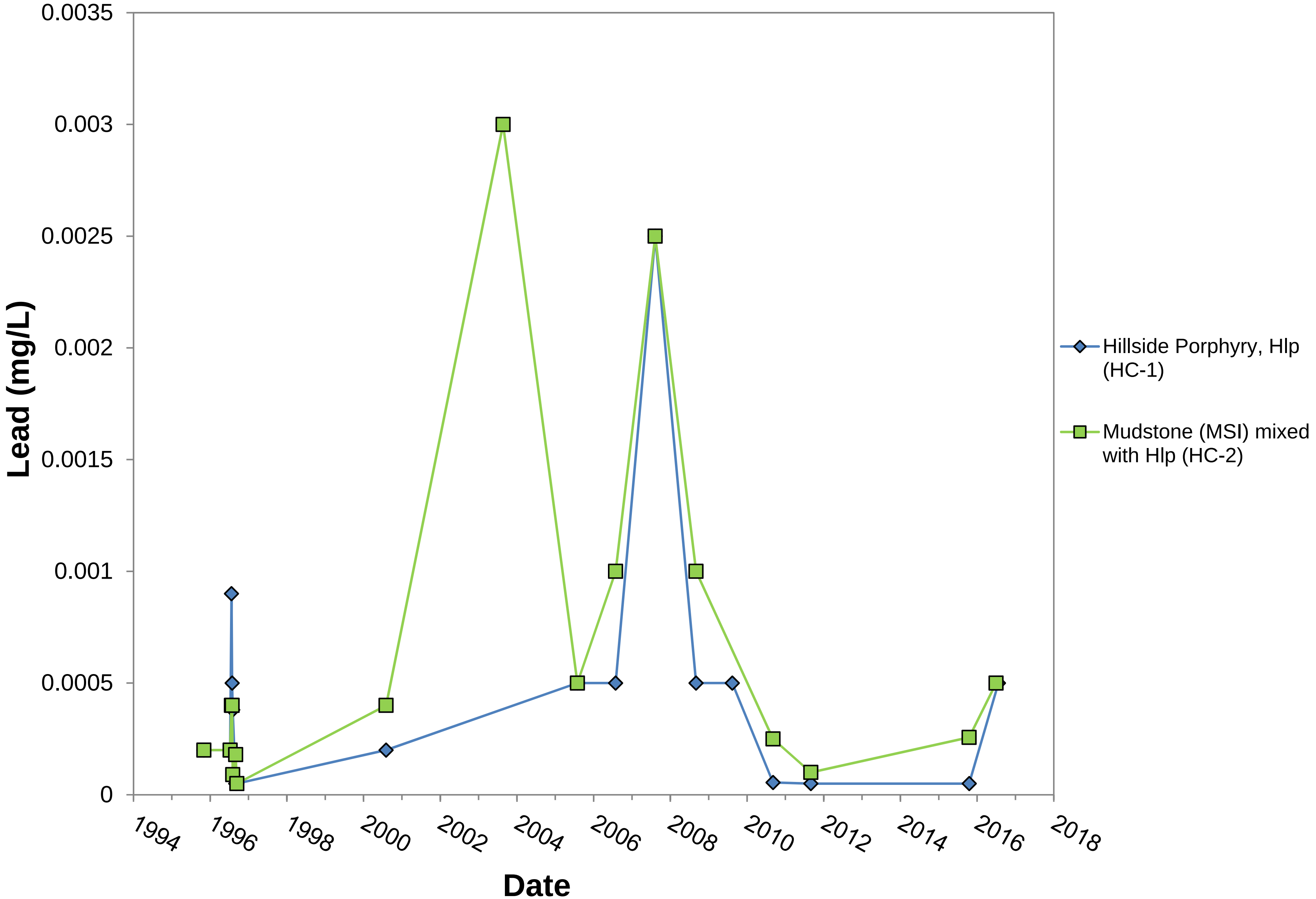

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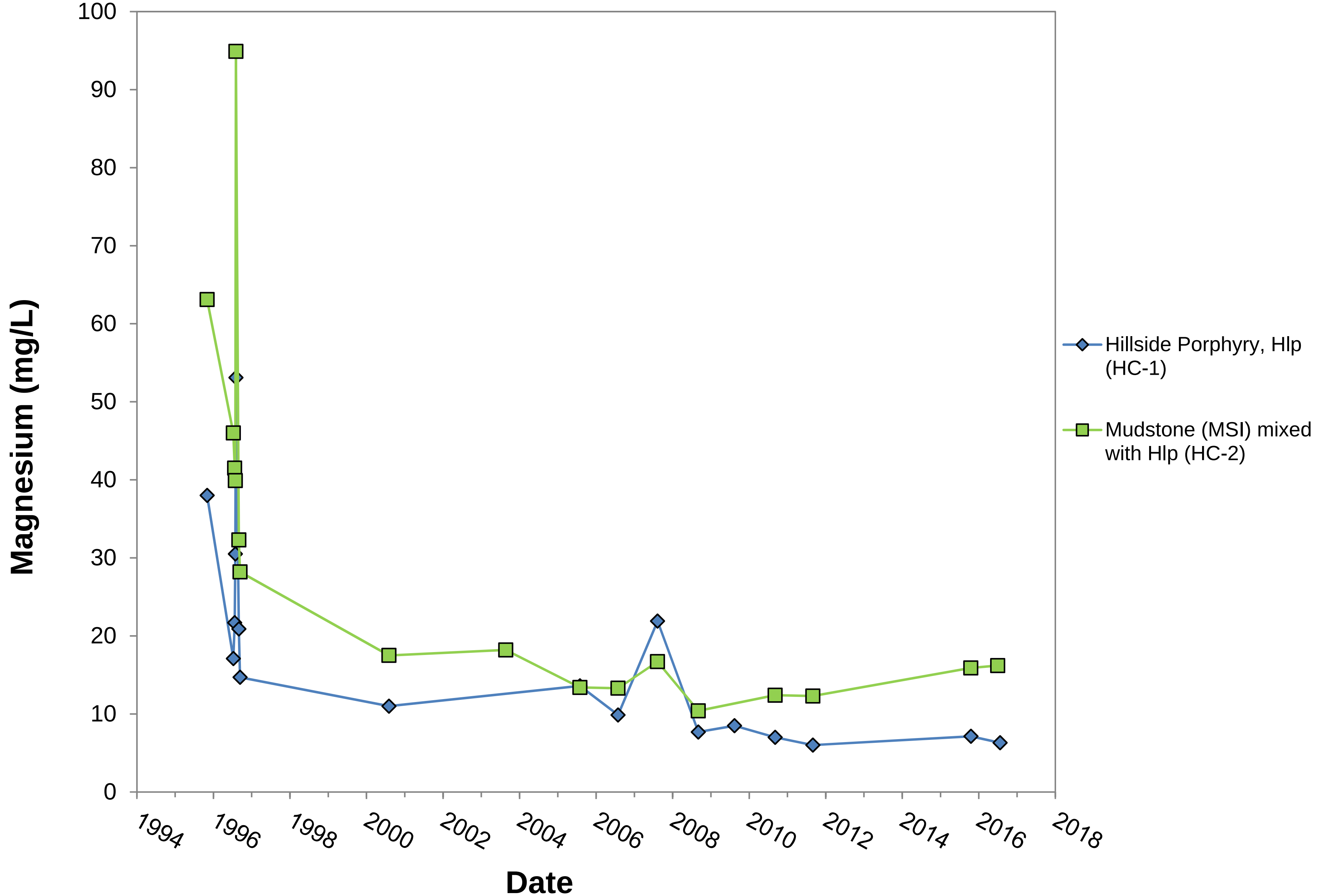

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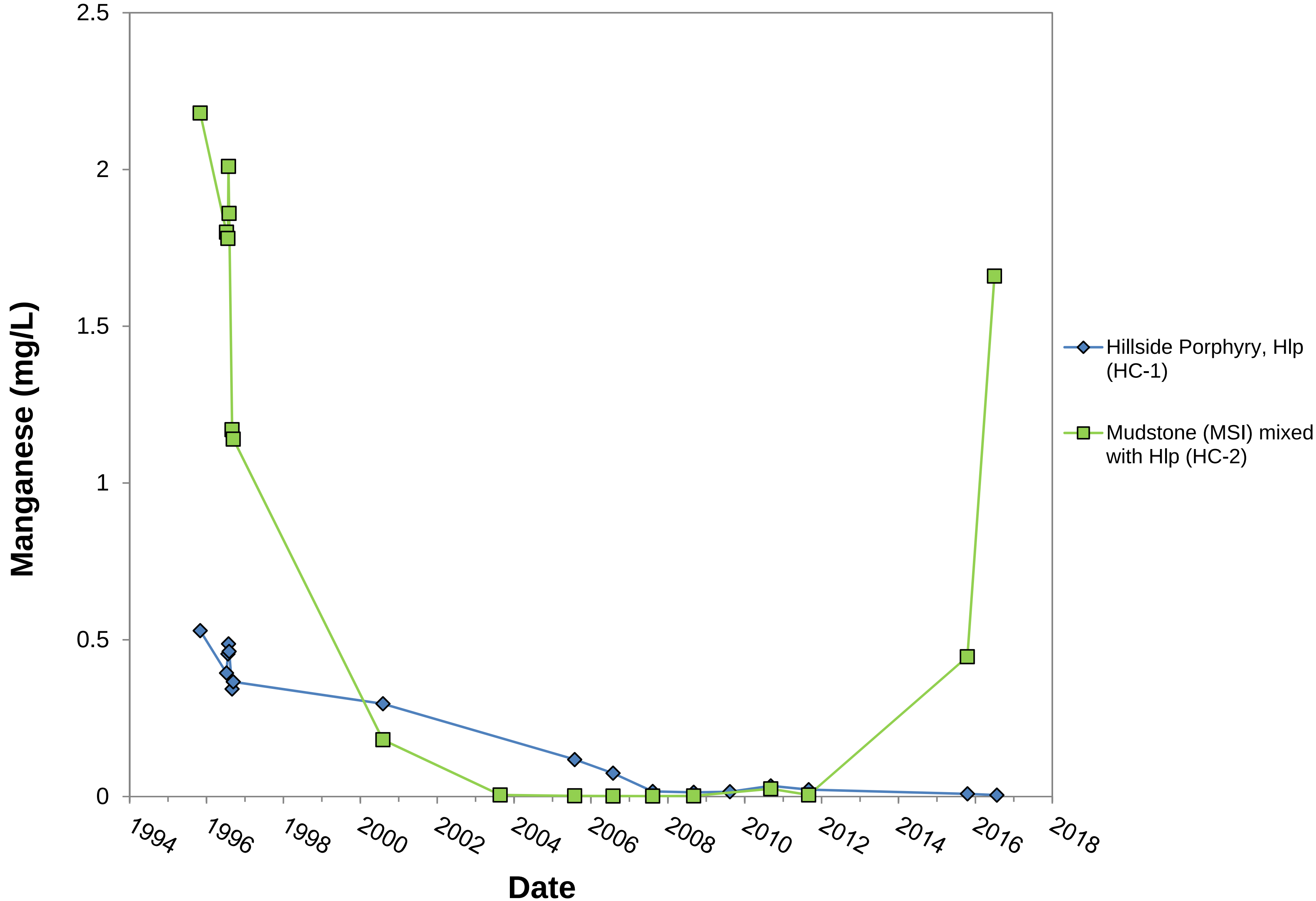

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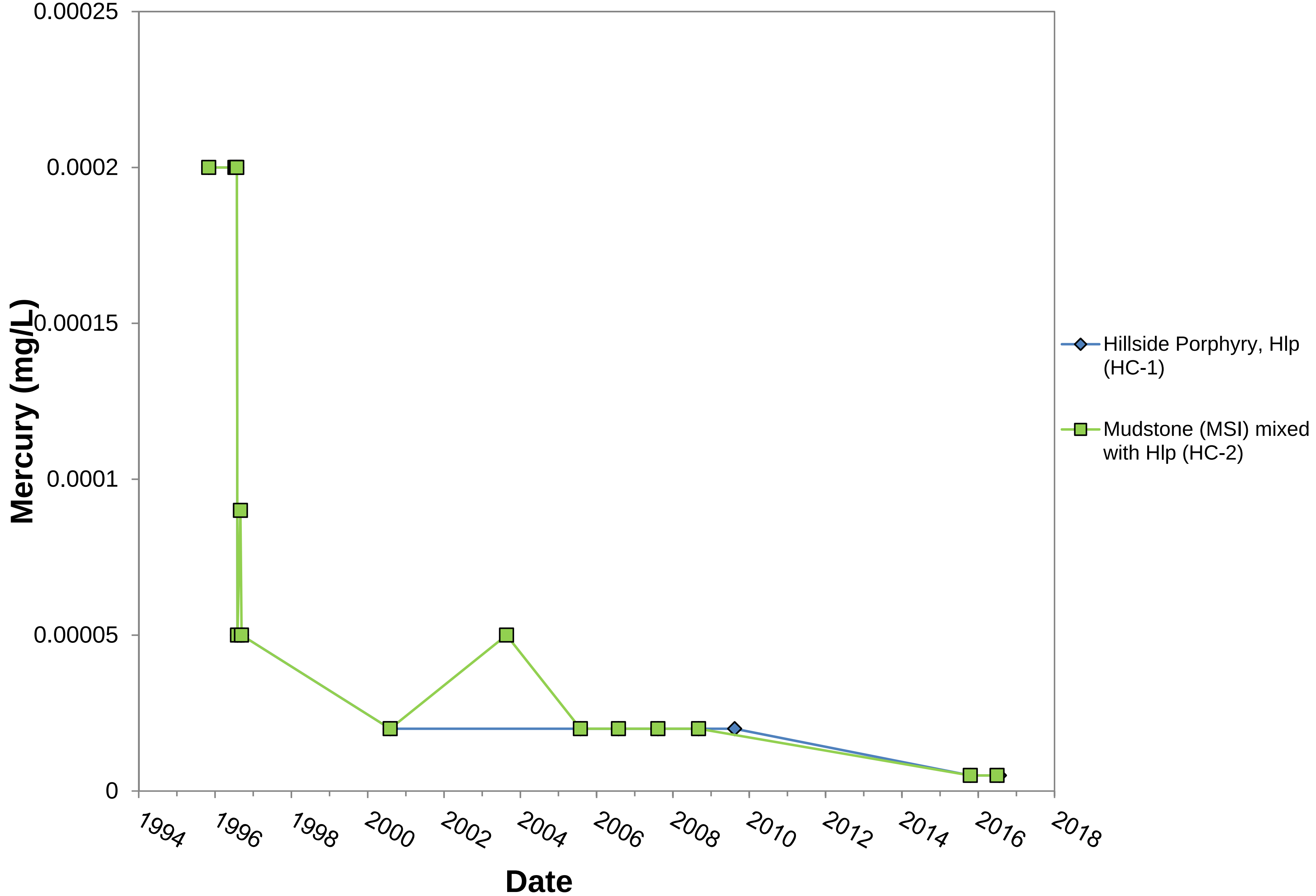

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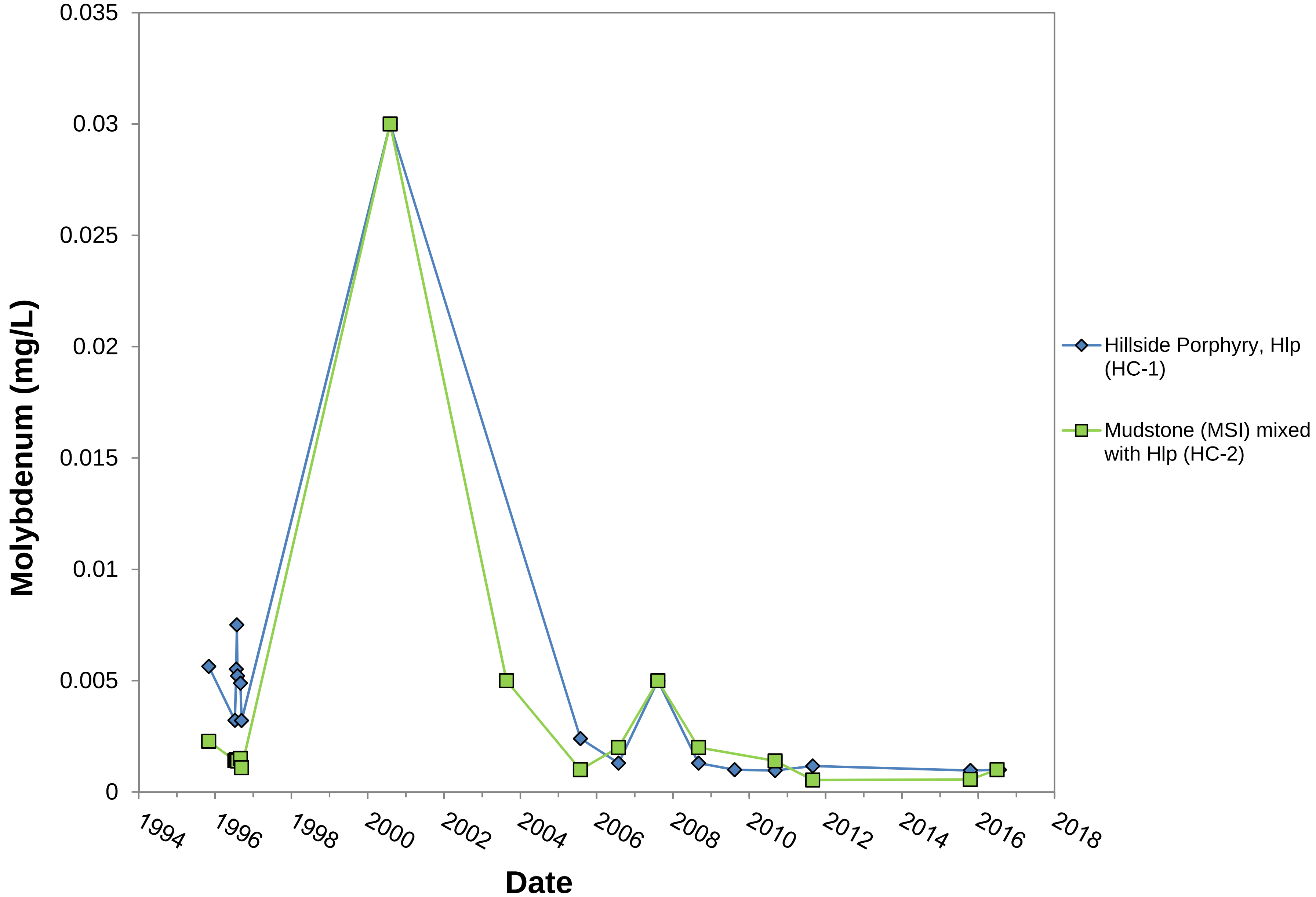

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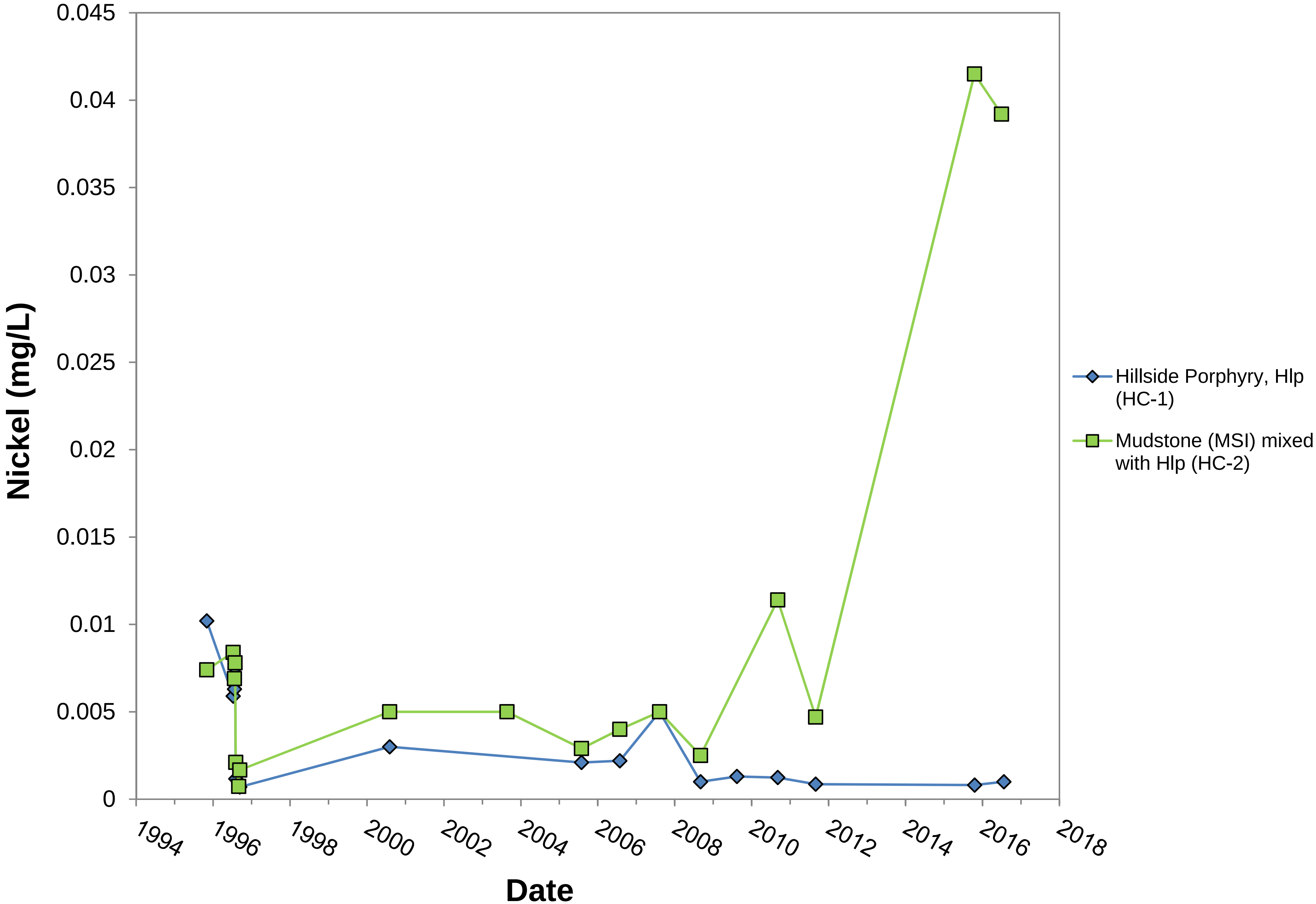

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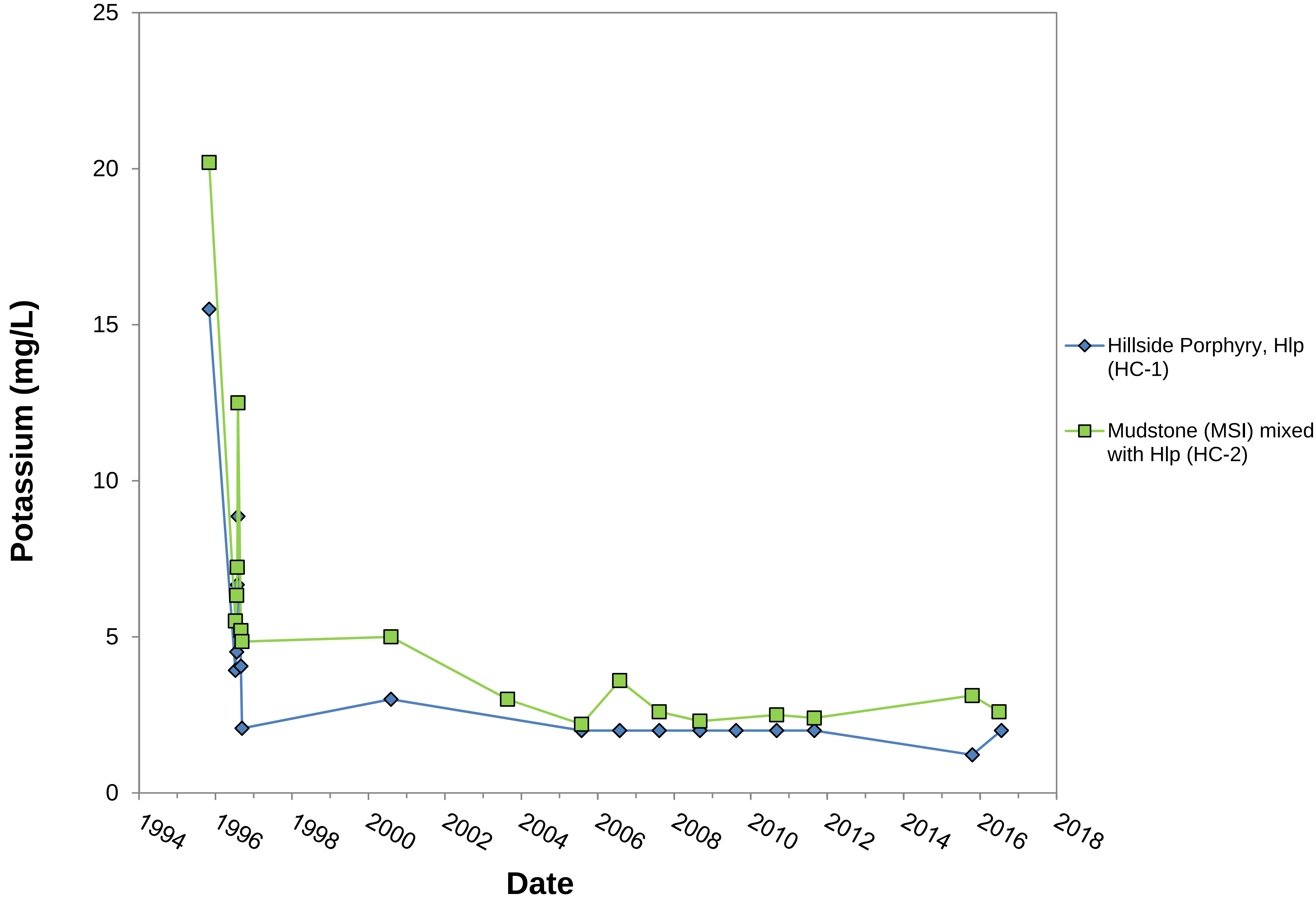

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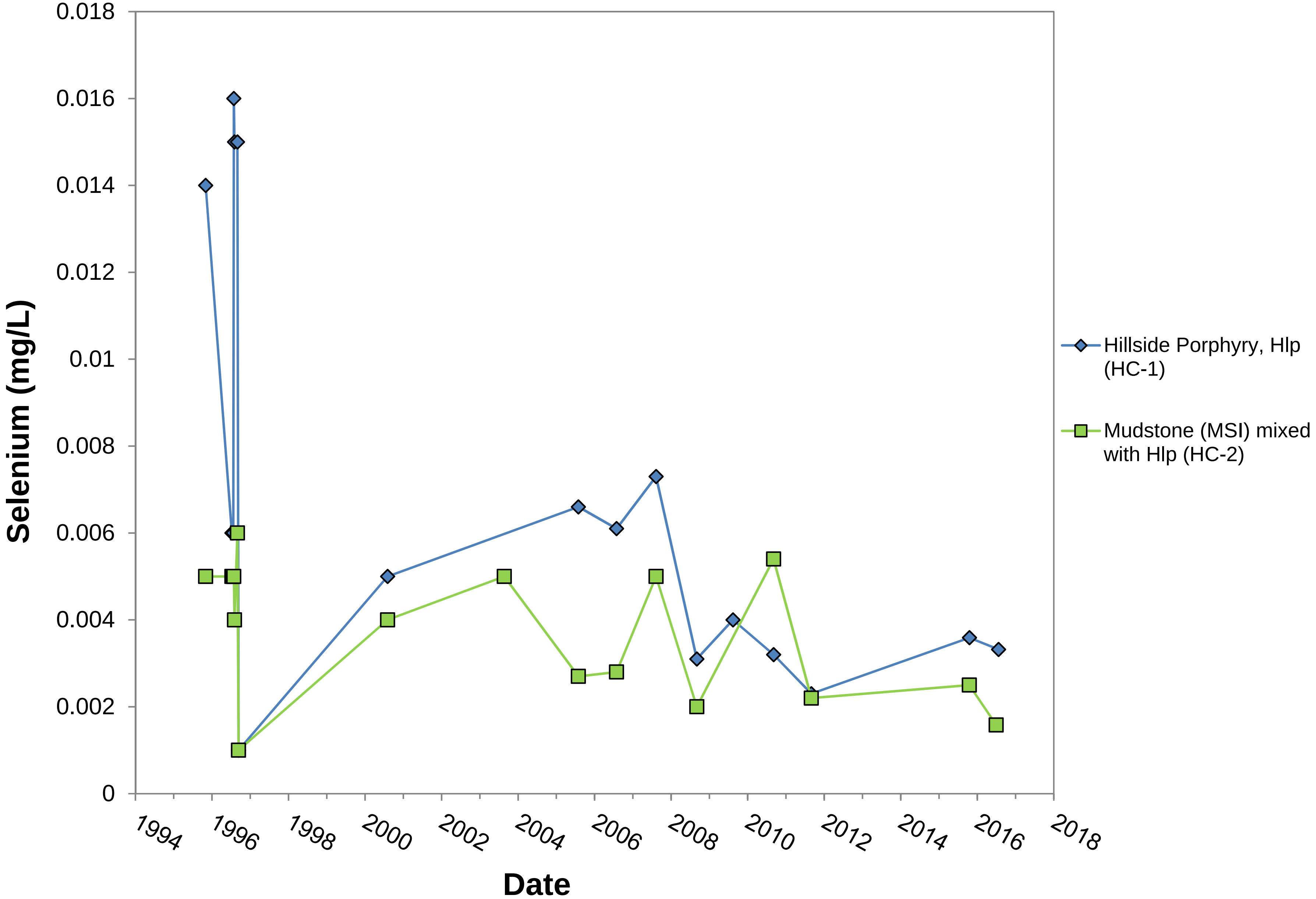

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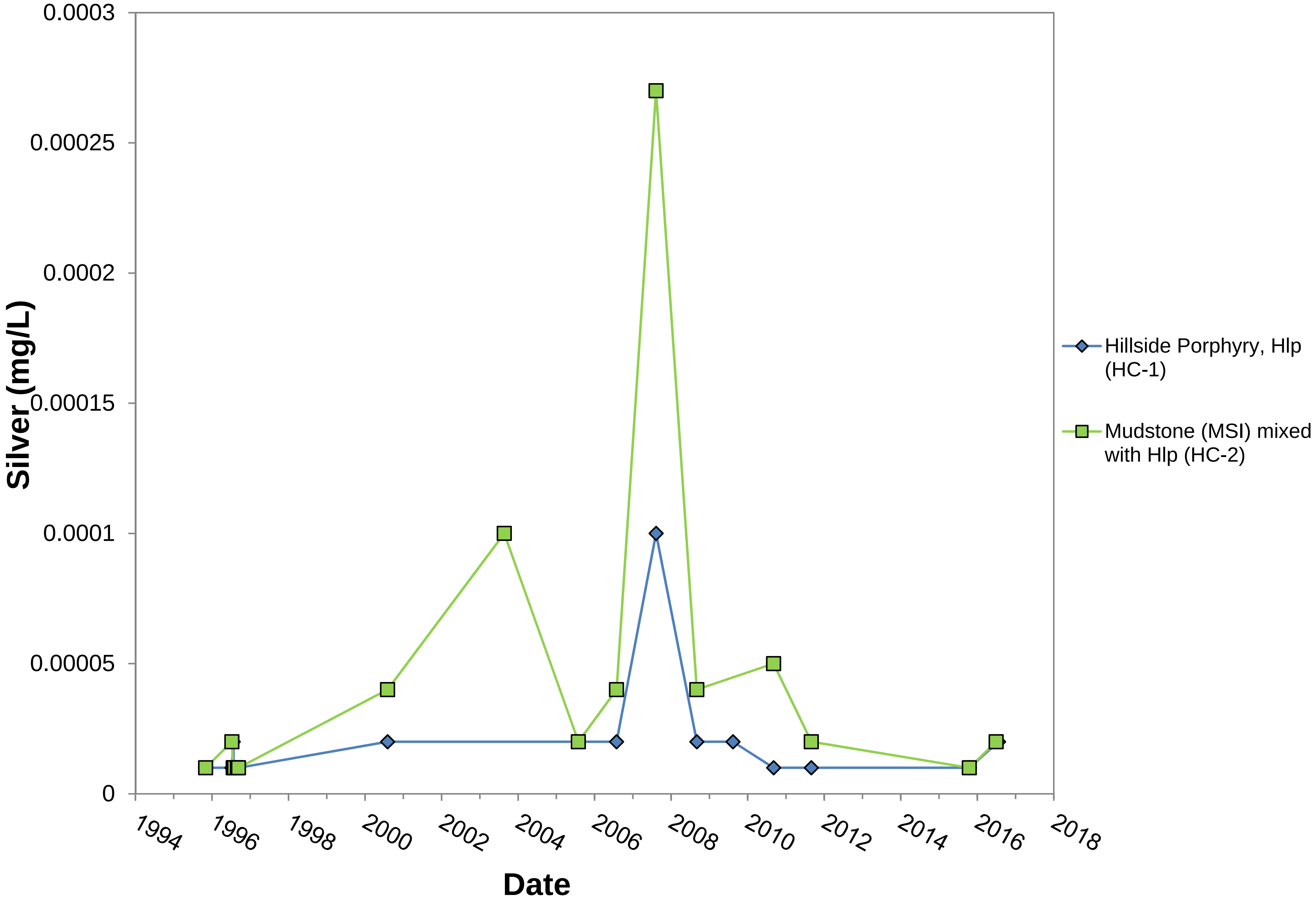

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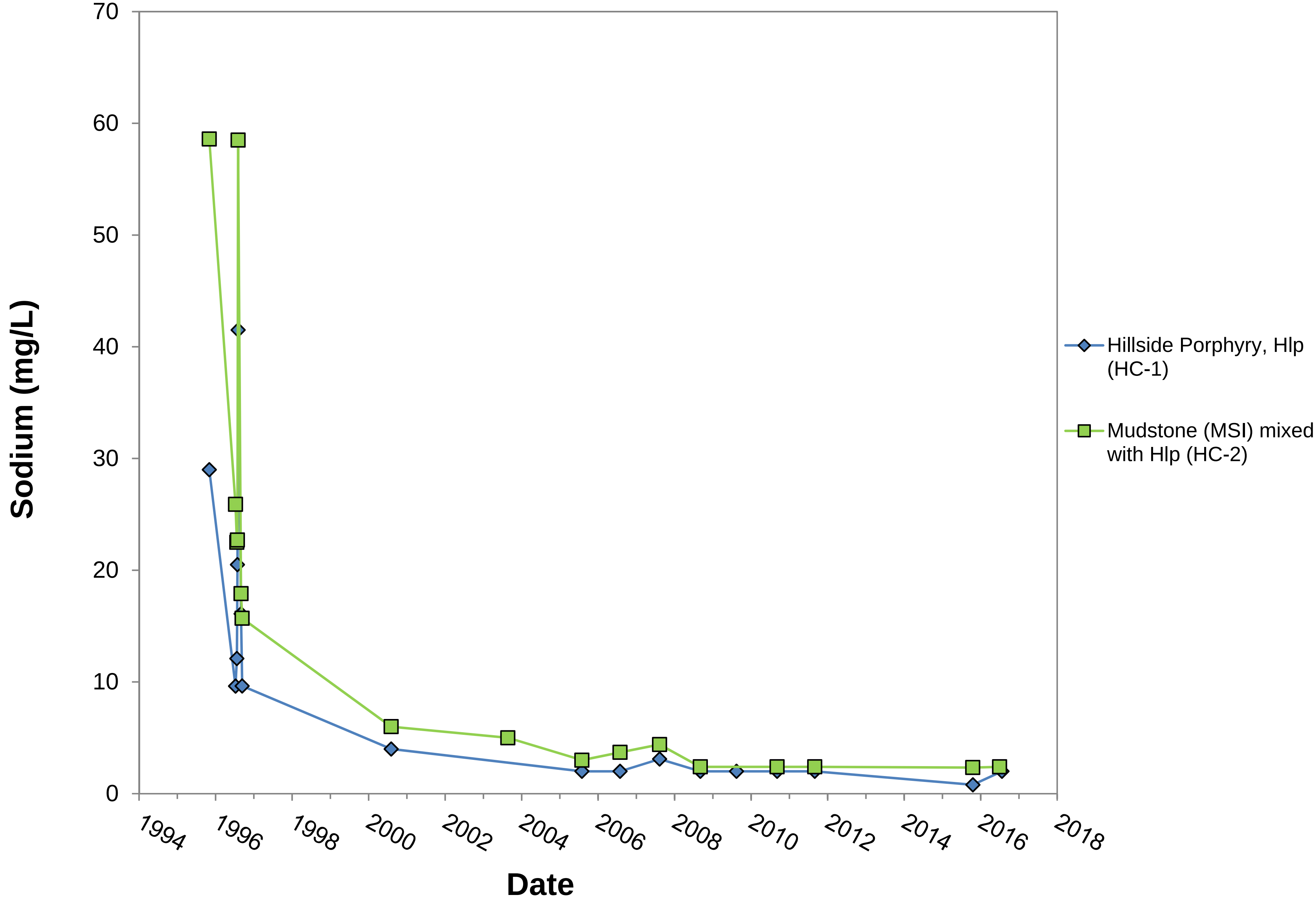

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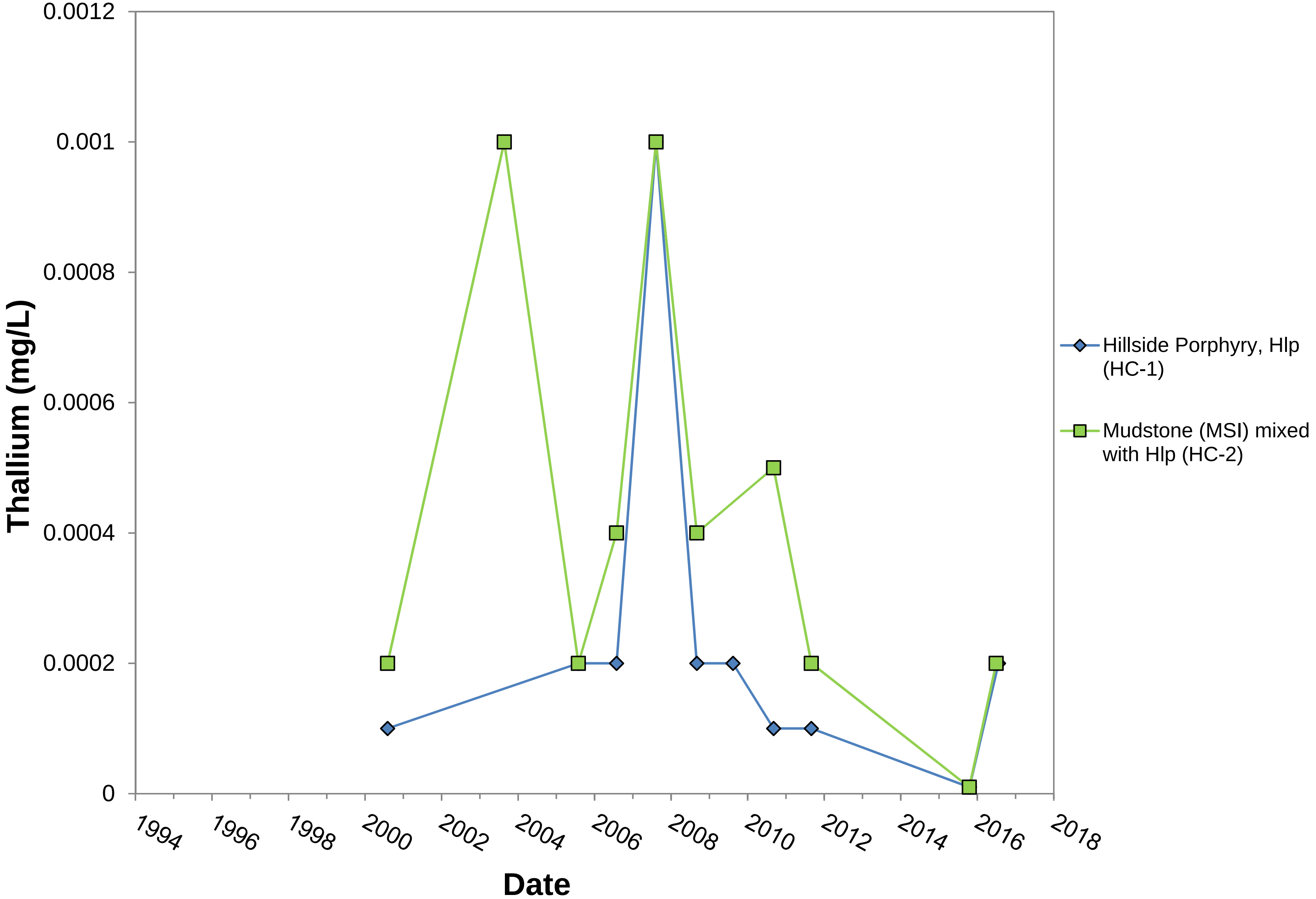

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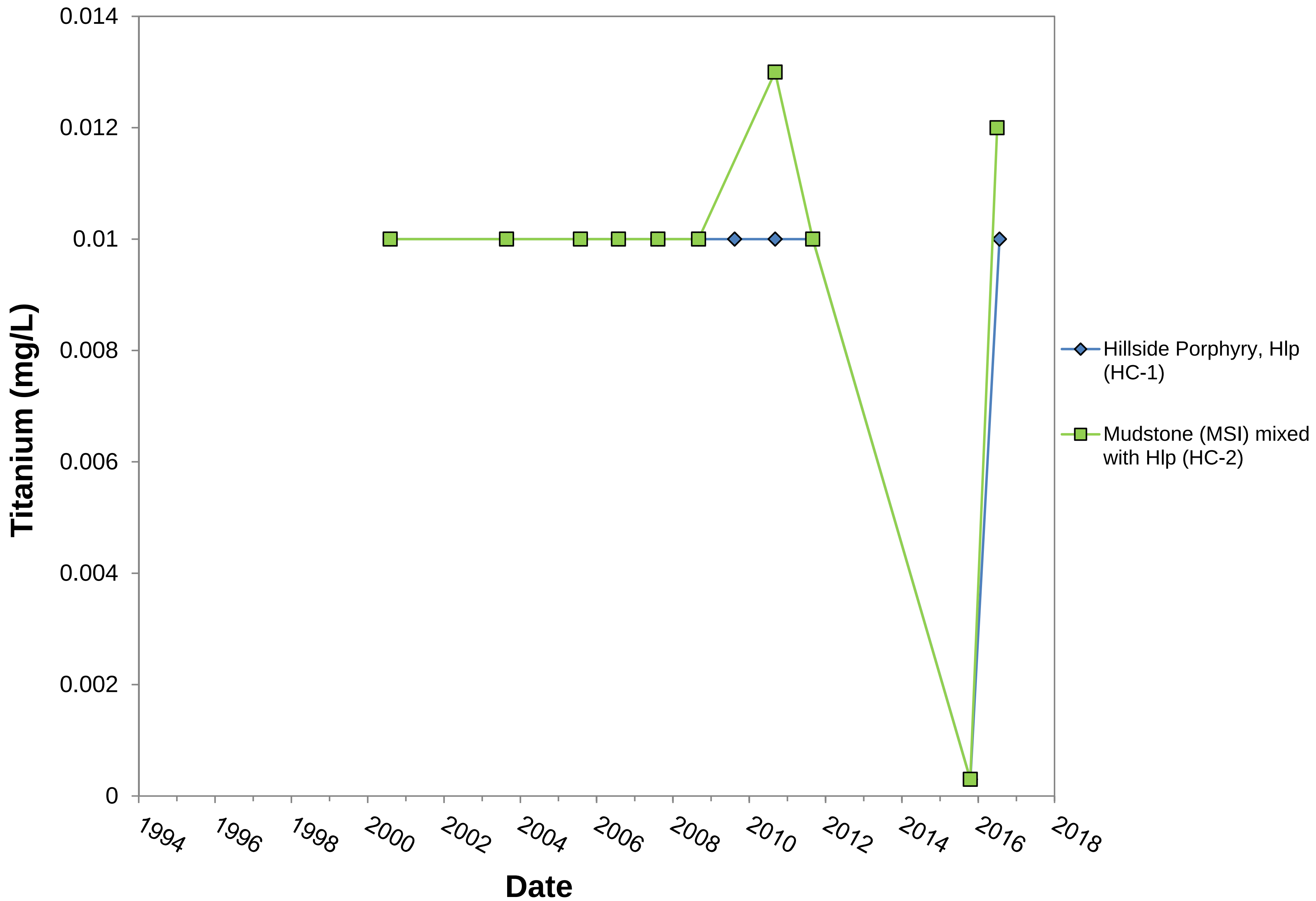

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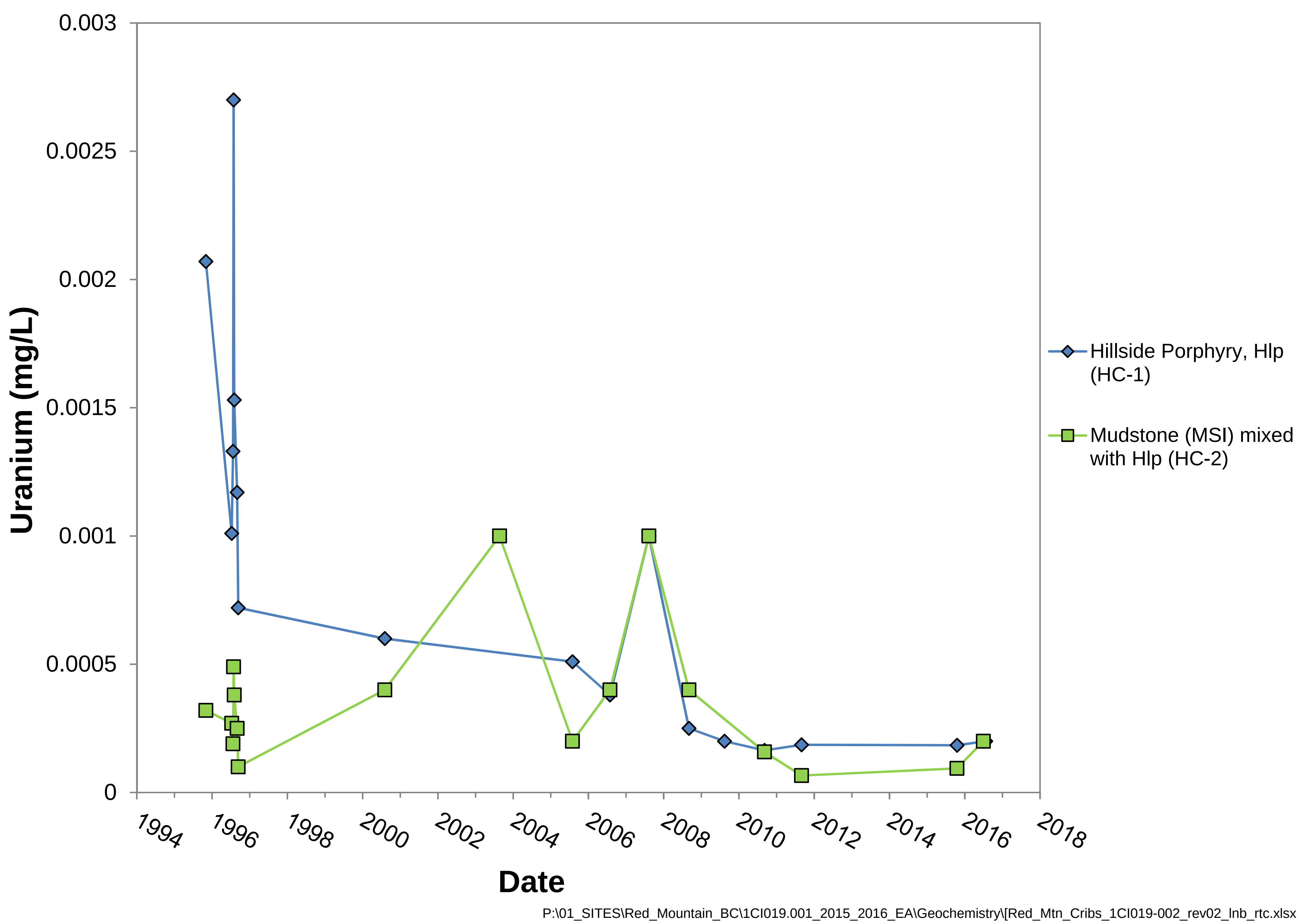
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0.002
0.0015
0.001
0.0005
0
Uranium (mg/L)
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date
Hillside Porphyry, Hlp (HC-1)
Mudstone (MSl) mixed with Hlp (HC-2)
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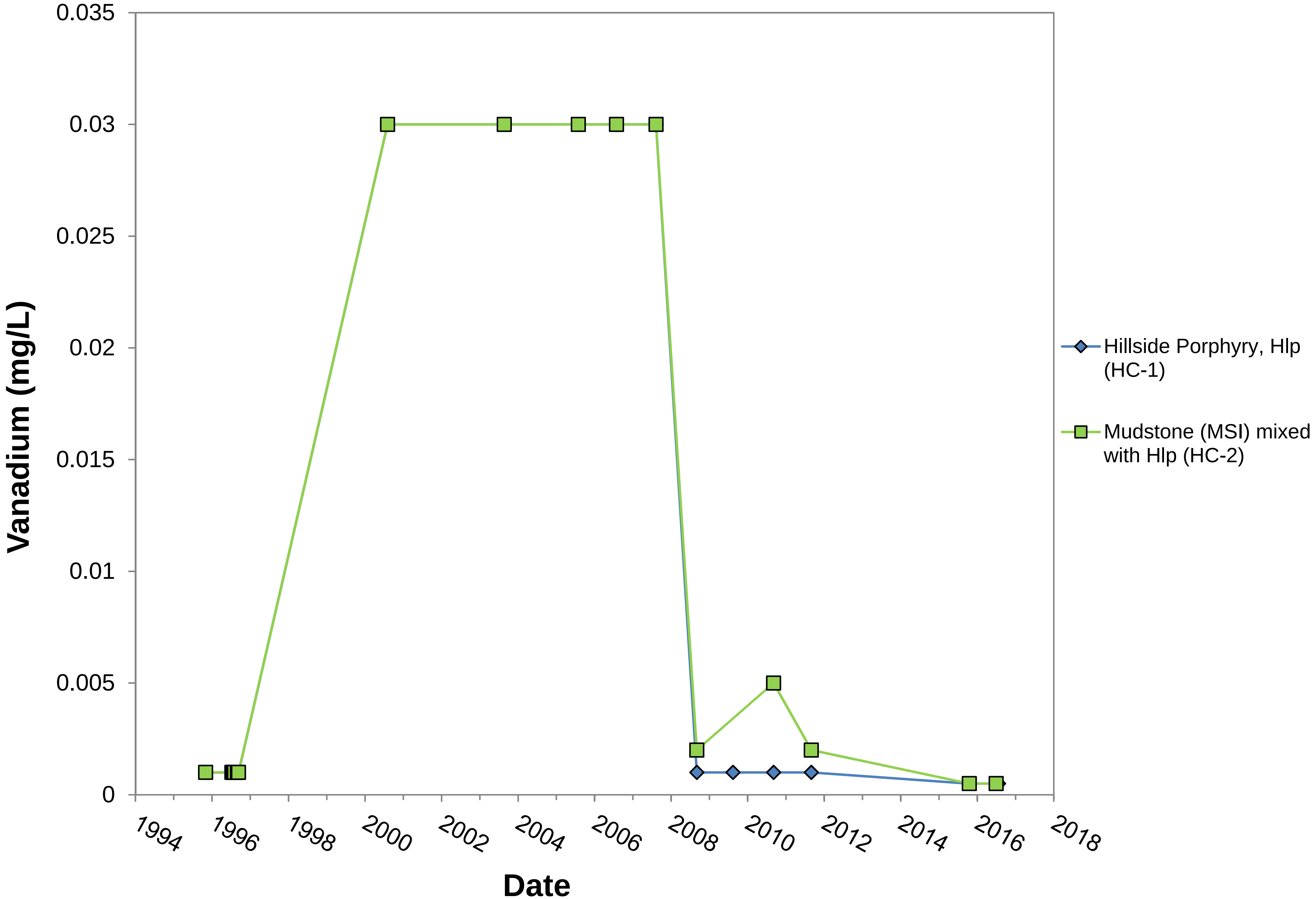

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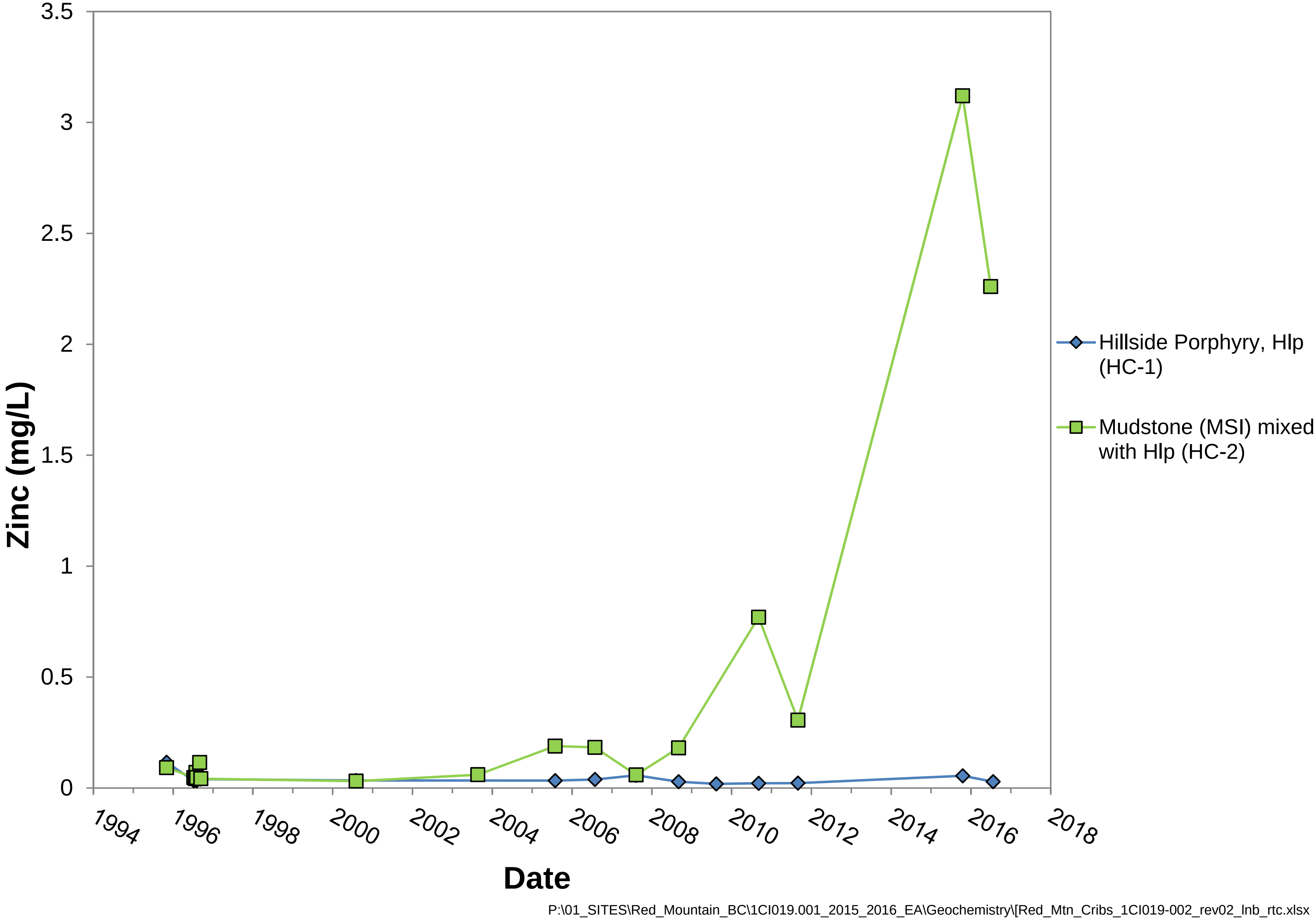


Zinc (mg/L)
3.5
3
2.5
2
1.5
1
0.5
0
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
Date
Hillside Porphyry, Hlp (HC-1)
Mudstone (MSI) mixed with Hlp (HC-2)
P:\01_SITES\Red_Mountain_BC\1CI019.001_2015_2016_EA\Geochemistry\[Red_Mtn_Cribs_1CI019-002_rev02_lnb_rtc.xlsx

Appendix F – Legacy Stockpile Sample Descriptions and Monitoring Data

Appendix F: 2003 Waste Rock Sample Descriptions

Test Pit ID	Meta sediment (%)	Porphyry (%)	Sulphides	Staining	Chips- Rxn to 10% HCl	Fines- Rxn to 10% HCl	Notes
03TP-01	90	10	Diss, ~0.5%	Minor brownish orange staining	Mod to none	Very Strong	V. Trace Calcite
03TP-02	50	50	Stringers and blebs of sulphide common (<5%)	Rare orange staining on particles	Weak to mod	Very Strong	~1% calcite- strong rxn to HCl
03TP-03	20	80	Rare diss. f.g. sulphides (<<1%)	V. light orange stain on 5-10% of particles	Mod to strong	Very Strong	~1% Calcite stringers
03TP-04	60	40	Rare (<1%) f.g. pyrite in diss. blebs	Trace (<1%) orange stained particles	Mod to none	Very Strong	Rare calcite veinlets- violent rxn w/ HCl
03TP-05	60	40	Rare diss. f.g. sulphides (<<1%)	10% of porphyry particles have orange staining	Mod to none	Very Strong	Rare (<1%) calcite stringers
03TP-06	30	70	Rare diss. sulphides (<5%)	10% of particles have orange stain	Mod to strong	Very Strong	
03TP-07	10	90	Rare sulphides in diss blebs	None visible	Mod to V. Strong	Very Strong	<1% Calcite as veinlets, v. strong rxn to HCl
03TP-08	40	60	Rare diss. f.g. sulphides (<<1%)	25% of porphyry particles stained orange	Mod to none	Very Strong	<1% Calcite as stringers, v. strong rxn to HCl
03TP-09	70	30	Rare diss. f.g. sulphides (<<1%)	25% of porphyry particles stained orange	Strong to none	Very Strong	Minor (<5%) calcite as stringers, veinlets
03TP-10	80	20	Rare diss. f.g. sulphides	V. rare orange stained particles (<1%)	Weak to none	Very Strong	Rare calcite stringers
03TP-11	10	90	Rare (<5%) f.g. sulphides, diss. and in stringers	Minor orange staining on 25% of particles	Weak to strong	Very Strong	Rare (<1%) calcite veinlets
03TP-12	90	10	Rare (<1%) diss. f.g. blebs of sulphide in porphyry	None	Strong to none	Very Strong	Calcite veinlets to 2 mm
03TP-13	40	60	Rare diss. f.g. sulphides (<1%)	1-2% orange stained particles	Strong to none	Very Strong	Minor calcite veinlets
03TP-14	10	90	Up to 50% of individual particles, <5% overall	Minor orange staining	Strong to none	Very Strong	No visible calcite
03TP-15	40	60	Rare diss. f.g. sulphides (<<1%)	Rare (<1%) orange stained clasts	Strong to none	Very Strong	Rare (<2%) calcite veinlets, strong rxn to HCl
03TP-16	90	10	Rare diss. f.g. sulphides (<<1%)	Rare (<5% of particles) orange staining	None to mod	Very Strong	Little visible calcite
03TP-17	70	30	Rare diss. f.g. sulphides (<<1%)	~1% orange stained particles	Weak to none	Very Strong	Minor calcite as veinlets
03TP-18	90	10	V. rare v.f.g. diss sulphides in blebs	None	V.strong to Mod	Very Strong	<1% calcite veinlets
03TP-19	50	50	Trace (<<1%) sulphides on some particles	Rare (<5%) orange staining on particles	Strong to Mod	Very Strong	Minor white calcite particles
03TP-20	99	1	Trace sulphides on porphyry particles	Trace orange staining on trace particles	V. Strong	Very Strong	Trace 1 mm white calcite veinlets

Visual observations made on +10 mesh fraction

Appendix F: Rinse pH and Conductivity, Waste Rock and Ore Stockpile Monitoring Progr

Sample Type	Year	Test pit ID	Sample ID	Rinse pH	Rinse EC (µS/cm)
Marc Waste Rock	2000	TP01	51602	8.0	265
	2000	TP02	51603	7.9	452
	2000	TP03	51604	8.0	504
	2000	TP04	51605	7.9	718
	2000	TP05	51606	8.3	311
	2000	TP06	51607	8.5	220
	2000	TP07	51608	8.6	134
	2000	TP08	51612	8.1	581
	2000	TP09	51613	8.2	311
	2000	TP10	51614	8.0	418
	2000	TP11	51615	8.1	399
	2000	TP12	51616	8.3	429
	2000	TP13	51617	8.2	345
	2000	TP14	51618	7.9	588
	2000	TP15	51619	7.8	875
	2000	TP16	51620	7.8	691
	2003	TP01	03TP01	7.3	104
	2003	TP02	03TP02	7.8	101
	2003	TP03	03TP03	7.7	156
	2003	TP04	03TP04	7.2	116
	2003	TP05	03TP05	7.2	129
	2003	TP06	03TP06	7.1	114
	2003	TP07	03TP07	7.0	132
	2003	TP08	03TP08	7.8	136
	2003	TP09	03TP09	7.9	156
	2003	TP10	03TP10	7.2	168
	2003	TP11	03TP11	7.9	190
	2003	TP12	03TP12	8.1	78
	2003	TP13	03TP13	7.5	181
	2003	TP14	03TP14	7.6	196
	2003	TP15	03TP15	7.7	180
	2003	TP16	03TP16	8.1	176
	2003	TP17	03TP17	8.0	256
	2003	TP18	03TP18	8.3	111
	2003	TP19	03TP19	8.3	232
	2003	TP20	03TP20	7.7	127
	2004	TP01	04TP01	8.0	154
	2004	TP02	04TP02	7.9	198
	2004	TP03	04TP03	7.6	161
	2004	TP04	04TP04	7.9	217
	2004	TP05	04TP05	7.6	153
	2004	TP06	04TP06	7.9	209
	2004	TP07	04TP07	7.3	206
	2004	TP08	04TP08	8.2	168
	2004	TP09	04TP09	7.9	128
	2004	TP10	04TP10	7.3	167
	2004	TP11	04TP11	7.8	234
	2004	TP12	04TP12	7.5	253
	2004	TP13	04TP13	7.7	251
	2004	TP14	04TP14	7.4	172
	2004	TP15	04TP15	8.1	155
	2004	TP16	04TP16	8.4	120
	2004	TP17	04TP17	8.2	134
	2004	TP19	04TP19	8.3	201
	2004	TP20	04TP20	8.4	148

Appendix F: Rinse pH and Conductivity, Waste Rock and Ore Stockpile Monitoring Progr

Sample Type	Year	Test pit ID	Sample ID	Rinse pH	Rinse EC (µS/cm)
Marc Waste Rock	2005	TP01	05TP01	8.1	241
	2005	TP02	05TP02	8.0	342
	2005	TP03	05TP03	8.1	147
	2005	TP04	05TP04	8.2	252
	2005	TP05	05TP05	8.0	413
	2005	TP06	05TP06	8.0	368
	2005	TP07	05TP07	8.0	352
	2005	TP08	05TP08	8.1	396
	2005	TP09	05TP09	8.1	285
	2005	TP10	05TP10	8.1	268
	2005	TP11	05TP11	8.4	183
	2005	TP12	05TP12	7.9	228
	2005	TP13	05TP13	7.9	377
	2005	TP14	05TP14	7.4	589
	2005	TP15	05TP15	7.9	552
	2005	TP16	05TP16	8.0	490
	2005	TP17	05TP17	8.4	144
	2005	TP18	05TP18	8.1	181
	2005	TP19	05TP19	8.2	306
	2005	TP20	05TP20	8.4	169
	2006	TP01	06TP01	7.5	352
	2006	TP02	06TP02	7.3	446
	2006	TP03	06TP03	7.3	384
	2006	TP04	06TP04	7.3	421
	2006	TP05	06TP05	7.2	440
	2006	TP06	06TP06	7.4	331
	2006	TP07	06TP07	7.0	565
	2006	TP08	06TP08	7.4	305
	2006	TP09	06TP09	7.5	338
	2006	TP10	06TP10	7.6	254
	2006	TP11	06TP11	7.4	170
	2006	TP12	06TP12	7.2	835
	2006	TP13	06TP13	7.5	545
	2006	TP14	06TP14	7.5	590
	2006	TP15	06TP15	7.6	517
	2006	TP16	06TP16	7.6	346
	2006	TP17	06TP17	8.1	100
	2006	TP18	06TP18	8.0	109
	2006	TP19	06TP19	8.2	198
	2006	TP20	06TP20	8.5	116

Appendix F: Rinse pH and Conductivity, Waste Rock and Ore Stockpile Monitoring Progr

Sample Type	Year	Test pit ID	Sample ID	Rinse pH	Rinse EC (µS/cm)
Marc Waste Rock	2007	TP01	07TP01	8.2	80
	2007	TP02	07TP02	8.1	90
	2007	TP03	07TP03	8.2	90
	2007	TP04	07TP04	8.2	80
	2007	TP05	07TP05	8.2	70
	2007	TP07	07TP07	8.3	110
	2007	TP07	07TP07	8.2	70
	2007	TP08	07TP08	8.1	90
	2007	TP09	07TP09	8.2	120
	2007	TP10	07TP10	8.2	80
	2007	TP11	07TP11	8.7	60
	2007	TP12	07TP12	8.3	220
	2007	TP13	07TP13	7.9	130
	2007	TP14	07TP14	8.1	140
	2007	TP15	07TP15	8.2	150
	2007	TP16	07TP16	8.2	90
	2007	TP17	07TP17	8.6	40
	2007	TP18	07TP18	8.6	50
	2007	TP19	07TP19	8.6	80
	2007	TP20	07TP20	8.6	100
	2008	TP01	08TP01	8.2	263
	2008	TP02	08TP02	8.0	376
	2008	TP03	08TP03	8.0	407
	2008	TP04	08TP04	8.0	384
	2008	TP05	08TP05	8.1	306
	2008	TP07	08TP07	8.2	277
	2008	TP07	08TP07	8.0	412
	2008	TP08	08TP08	7.7	302
	2008	TP09	08TP09	8.0	320
	2008	TP10	08TP10	8.0	296
	2008	TP11	08TP11	8.8	104
	2008	TP12	08TP12	7.4	527
	2008	TP13	08TP13	7.3	503
	2008	TP14	08TP14	7.2	486
	2008	TP15	08TP15	7.4	516
	2008	TP16	08TP16	8.1	297
	2008	TP17	08TP17	8.6	123
	2008	TP18	08TP18	8.6	108
	2008	TP19	08TP19	8.3	194
	2008	TP20	08TP20	8.5	146
	2009	TP01	09TP01	6.9	420
	2009	TP02	09TP02	6.9	343
	2009	TP03	09TP03	7.2	515
	2009	TP04	09TP04	7.7	437
	2009	TP05	09TP05	7.7	498
	2009	TP07	09TP07	7.8	394
	2009	TP07	09TP07	7.5	523
	2009	TP08	09TP08	7.4	391
	2009	TP09	09TP09	7.3	321
	2009	TP10	09TP10	7.2	573
	2009	TP11	09TP11	7.5	140
	2009	TP12	09TP12	7.3	483
	2009	TP13	09TP13	7.3	577
	2009	TP14	09TP14	7.4	363
	2009	TP15	09TP15	7.2	240
	2009	TP16	09TP16	7.5	195
	2009	TP17	09TP17	7.5	239
	2009	TP18	09TP18	7.4	299
	2009	TP19	09TP19	7.7	244
	2009	TP20	09TP20	7.7	241

Appendix F: Rinse pH and Conductivity, Waste Rock and Ore Stockpile Monitoring Progr

Sample Type	Year	Test pit ID	Sample ID	Rinse pH	Rinse EC (µS/cm)
Marc Waste Rock	2010	TP01	10TP01	7.9	174
	2010	TP02	10TP02	7.6	306
	2010	TP03	10TP03	7.5	258
	2010	TP04	10TP04	7.6	216
	2010	TP05	10TP05	7.8	253
	2010	TP06	10TP06	7.7	222
	2010	TP07	10TP07	7.8	274
	2010	TP08	10TP08	7.9	205
	2010	TP09	10TP09	7.7	255
	2010	TP10	10TP10	7.8	170
	2010	TP11	10TP11	8.2	103
	2010	TP12	10TP12	7.7	272
	2010	TP13	10TP13	7.8	290
	2010	TP14	10TP14	7.7	360
	2010	TP15	10TP15	7.7	268
	2010	TP16	10TP16	7.4	265
	2010	TP17	10TP17	8.1	127
	2010	TP18	10TP18	8.0	145
	2010	TP19	10TP19	7.6	368
	2010	TP20	10TP20	8.2	178
	2011	TP01	11TP01	7.7	211
	2011	TP02	11TP02	7.9	252
	2011	TP03	11TP03	8.0	231
	2011	TP04	11TP04	8.0	189
	2011	TP05	11TP05	8.0	228
	2011	TP06	11TP06	8.0	275
	2011	TP07	11TP07	7.9	303
	2011	TP08	11TP08	7.5	333
	2011	TP09	11TP09	7.6	249
	2011	TP10	11TP10	7.6	223
	2011	TP11	11TP11	8.0	186
	2011	TP12	11TP12	7.8	338
	2011	TP13	11TP13	7.7	336
	2011	TP14	11TP14	7.8	310
	2011	TP15	11TP15	7.8	389
	2011	TP16	11TP16	8.1	196
	2011	TP17	11TP17	8.1	164
	2011	TP18	11TP18	8.0	249
	2011	TP19	11TP19	8.2	198
	2011	TP20	11TP20	8.2	203
	2013	TP01	13TP01	8.0	401
	2013	TP02	13TP02	8.0	354
	2013	TP03	13TP03	8.0	302
	2013	TP04	13TP04	8.2	293
	2013	TP05	13TP05	8.1	294
	2013	TP06	13TP06	8.1	316
	2013	TP07	13TP07	8.2	276
	2013	TP08	13TP08	8.2	240
	2013	TP09	13TP09	8.2	272
	2013	TP10	13TP10	8.2	232
	2013	TP11	13TP11	8.3	159
	2013	TP12	13TP12	7.8	491
	2013	TP13	13TP13	7.9	436
	2013	TP14	13TP14	7.8	551
	2013	TP15	13TP15	8.0	345
	2013	TP16	13TP16	8.3	163
	2013	TP17	13TP17	8.5	133
	2013	TP18	13TP18	8.3	164
	2013	TP19	13TP19	8.5	184
	2013	TP20	13TP20	8.4	192

Appendix F: Rinse pH and Conductivity, Waste Rock and Ore Stockpile Monitoring Progr

Sample Type	Year	Test pit ID	Sample ID	Rinse pH	Rinse EC (µS/cm)
Portal Waste Rock	2006	PP01	06PP01	6.9	897
	2006	PP02	06PP02	6.9	876
	2006	PP03	06PP03	7.4	186
	2007	PP01	07PP01	7.9	180
	2007	PP02	07PP02	8.1	160
	2007	PP03	07PP03	8.3	90
	2008	PP01	08PP01	7.7	585
	2008	PP02	08PP02	7.4	513
	2008	PP03	08PP03	8.7	125
	2009	PP01	09PP01	7.5	1576
	2009	PP02	09PP02	6.7	949
	2009	PP03	09PP03	7.1	429
	2010	PP01	10PP01	7.6	494
	2010	PP02	10PP02	7.6	381
	2010	PP03	10PP03	7.6	332
	2011	PP01	11PP01	7.7	523
	2011	PP02	11PP02	7.5	532
	2011	PP03	11PP03	7.8	212
	2013	PP01	13PP01	7.8	610
	2013	PP02	13PP02	7.7	668
	2013	PP03	13PP03	8.3	237
Crushed Ore	2006	OP01	06OP01	6.7	434
	2006	OP02	06OP02	6.7	575
	2007	OP01	07OP01	7.8	110
	2007	OP02	07OP02	7.7	120
	2008	OP01	08OP01	7.9	374
	2008	OP02	08OP02	7.6	663
	2009	OP01	09OP01	6.8	736
	2009	OP02	09OP02	6.5	632
	2010	OP01	10OP01	7.2	335
	2010	OP02	10OP02	7.3	361
	2011	OP01	11OP01	7.8	264
	2011	OP02	11OP02	7.3	331
	2013	OP01	13OP01	7.6	419
	2013	OP02	13OP02	6.0	801

Appendix F: ABA Data, Waste Rock and Ore Stockpile Monitoring Program

Sample Type	Year	Sample ID	Test Pit ID	Paste pH (s.u.)	Total Sulphur (Wt.%)	Sulphate Sulphur (Wt.%)	Calculated Sulphide	AP (kg $CaCO_3$/t)	TIC (%C)	TIC (%CO2)	TIC (kg $CaCO_3$/t)	Modified NP (kg CaCO3/t)	Fizz Rating	NP/AP	TIC/AP
Marc waste dump	2003	TP03 01	TP01	8.8	1.91	0.03	1.88	59.69	0.44	#N/A	36.67	48.625	N/A	0.81	0.61
	2003	TP03 02	TP02	8.4	3.06	0.02	3.04	95.63	0.48	#N/A	40.00	48.125	N/A	0.50	0.42
	2003	TP03 06	TP06	8.3	2.23	0.03	2.20	69.69	0.76	#N/A	63.33	72.625	N/A	1.04	0.91
	2003	TP03 07	TP07	8.4	2.38	0.03	2.35	74.38	0.53	#N/A	44.17	54.875	N/A	0.74	0.59
	2003	TP03 09	TP09	8.4	2.00	0.02	1.98	62.50	0.61	#N/A	50.83	58.875	N/A	0.94	0.81
	2003	TP03 13	TP13	8.2	3.60	0.03	3.57	112.50	0.52	#N/A	43.33	51.125	N/A	0.45	0.39
	2003	TP03 14	TP14	8.2	4.12	0.03	4.09	128.75	0.52	#N/A	43.33	51.625	N/A	0.40	0.34
	2003	TP03 17	TP17	8.5	2.44	0.02	2.42	76.25	0.75	#N/A	62.50	72.625	N/A	0.95	0.82
	2003	TP03 19	TP19	8.4	3.16	0.05	3.11	98.75	0.75	#N/A	62.50	71.5	N/A	0.72	0.63
	2003	TP03 20	TP20	8.8	0.67	0.01	0.66	20.94	1.51	#N/A	125.83	126.875	N/A	6.06	6.01
	2006	TP 03	TP03	8.84	1.39	0.02	1.37	43.44	#N/A	1.31	29.77	33.5	Slight	0.77	0.69
	2006	TP 07	TP07	8.42	2.46	0.02	2.44	76.88	#N/A	1.97	44.77	46.4	Slight	0.60	0.58
	2006	TP 10	TP10	8.48	2.00	0.01	1.99	62.50	#N/A	1.95	44.32	46.2	Slight	0.74	0.71
	2006	TP 12	TP12	8.42	2.76	0.02	2.74	86.25	#N/A	1.06	24.09	25.7	Slight	0.30	0.28
	2006	TP 16	TP16	8.2	2.11	0.01	2.10	65.94	#N/A	1.42	32.27	35.4	Slight	0.54	0.49
	2006	TP 17	TP17	9.16	0.21	0.005	0.21	6.56	#N/A	1.49	33.86	38.4	Slight	5.85	5.16
	2009	TP03	TP03	8.07	2.52	0.005	2.52	78.75	#N/A	1.20	27.27	31.5	Slight	0.40	0.35
	2009	TP07	TP07	8.02	1.98	0.02	1.96	61.88	#N/A	1.40	31.82	38.1	Moderate	0.62	0.51
	2009	TP10	TP10	8.04	2.87	0.03	2.84	89.69	#N/A	2.48	56.36	59.3	Moderate	0.66	0.63
	2009	TP12	TP12	7.99	3.40	0.03	3.37	106.25	#N/A	1.44	32.73	36.8	Moderate	0.35	0.31
	2009	TP16	TP16	8.51	0.34	0.02	0.32	10.63	#N/A	1.73	39.32	47.5	Moderate	4.47	3.70
	2009	TP17	TP17	8.19	2.69	0.02	2.67	84.06	#N/A	1.41	32.05	39.6	Moderate	0.47	0.38
	2013	TP 01	TP01	8.09	2.05	0.01	2.04	64.06	#N/A	1.29	29.32	38.5	Slight	0.60	0.46
	2013	TP 06	TP06	8.21	1.62	0.005	1.62	50.63	#N/A	1.31	29.77	38.3	Slight	0.76	0.59
	2013	TP 09	TP09	8.14	2.09	0.005	2.09	65.31	#N/A	1.37	31.14	40.3	Slight	0.62	0.48
	2013	TP 12	TP12	7.87	3.37	0.04	3.33	105.31	#N/A	1.19	27.05	36.1	Slight	0.34	0.26
	2013	TP 14	TP14	7.75	3.24	0.04	3.20	101.25	#N/A	1.10	25.00	33.3	Slight	0.33	0.25
	2013	TP 20	TP20	8.66	1.05	0.005	1.05	32.81	#N/A	4.87	110.68	107.8	Slight	3.29	3.37
Crushed Ore	2006	OP 02	OP02	7.81	5.65	0.03	5.62	176.56	#N/A	0.77	17.50	19.1	Slight	0.11	0.10
	2009	OP02	OP02	7.47	6.15	0.03	6.12	192.19	#N/A	0.50	11.36	16.5	Slight	0.09	0.06
	2013	OP 01	OP01	7.56	7.42	0.04	7.38	231.88	#N/A	0.60	13.64	19.3	Slight	0.08	0.06
	2013	OP 02	OP02	6.53	6.97	0.12	6.85	217.81	#N/A	0.34	7.73	9.5	Slight	0.04	0.04
Portal waste dump	2006	PP 01	PP01	8.13	5.03	0.03	5.00	157.19	#N/A	2.08	47.27	47.6	Slight	0.30	0.30
	2009	PP01	PP01	7.46	6.02	0.05	5.97	188.13	#N/A	0.99	22.50	27.4	Moderate	0.15	0.12
	2013	PP 02	PP02	7.95	2.77	0.04	2.73	86.56	#N/A	2.44	55.45	66.4	Moderate	0.77	0.64

Appendix G – Site Water Quality Monitoring Data

		Portal	Portal	Portal	Portal	Portal	Portal	Portal	Portal
Monitoring Location		UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge	WS-93-6C	WS-93-7C
Sampling Date		21-Aug-93	28-Aug-93	4-Sep-93	18-Sep-93	25-Sep-93	3-Oct-93	21-Oct-93	21-Oct-93
Physical Parameters									
pH	pH units	7.4	7.5	7.5	7.6	7.6		7.4	7.5
Specific Conductance	uS/cm	600	600	610	600	590		370	360
Total Hardness	mg/L	270	290	310	320	320			
Total dissolved solids	mg/L	400	420	420	430	400		0.32	0.29
Total suspended solids	mg/L	1200	2500	1200	1400	1000		<0.002	<0.002
Turbidity	NTU	410	320	210	260	240		0.17	0.28
Major Ions									
Total alkalinity	mg/L	82	84	80	80	82			
Acidity	mg/L	9.1	8.2	6.4	5.8	6.1			
Chloride	mg/L	1	1	1	1.5	1.5		0.003	0.0025
Fluoride	mg/L	0.15	0.15	0.15	0.1	0.1		0.0001	0.0001
Bromide	mg/L								
Sulfate	mg/L	160	160	190	160	160		0.13	0.13
Nutrients									
Nitrate Nitrogen	mg/L	14	13	12	17	12		<0.5	<0.5
Nitrite Nitrogen	mg/L	2.4	2.4	2.3	2.5	2.4		88	94
Nitrogen, total	mg/L								
Ammonia Nitrogen	mg/L								
Ortho phosphorus, dissolved	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	<0.05
Phosphorus, total	mg/L	0.4	0.2	0.4	0.4	0.25			
Organics									
Total Organic Carbon	mg/L								
Dissolved Organic Carbon	mg/L								
Other									
Cyanide, total	mg/L								
Metals									
Aluminum, total	mg/L	27	26	24	29	25	90	0.028	0.053
Aluminum, dissolved	mg/L	0.032	0.03	0.033	0.039	0.035	0.017	0.0037	<0.001
Antimony, total	mg/L	0.11	0.11	0.12	0.13	0.11	0.082	0.0047	0.1
Antimony, dissolved	mg/L	0.11	0.11	0.12	0.13	0.11	0.031	0.0036	0.1
Arsenic, total	mg/L	0.67	0.57	0.47	0.69	0.58	4	0.059	0.021
Arsenic, dissolved	mg/L	0.008	0.008	0.009	0.008	0.011	0.004	0.058	0.014
Barium, total	mg/L	2.9	2.4	2.5	2.8	2.3	5.7	0.024	0.02
Barium, dissolved	mg/L	0.037	0.038	0.042	0.041	0.042	0.04	0.022	0.019
Beryllium, total	mg/L	0.0017	0.0013	0.0013	0.0022	0.0017	0.0034	0.00022	0.00024
Beryllium, dissolved	mg/L	0.00004	0.00005	0.00003	0.00005	<0.00003	0.00011	0.00011	0.00006
Bismuth, total	mg/L								
Bismuth, dissolved	mg/L								
Boron, total	mg/L	0.22	0.24	0.2	0.22	0.17	0.19	0.054	0.081
Boron, dissolved	mg/L	0.11	0.11	0.12	0.13	0.12	0.027	0.011	0.015
Cadmium, total	mg/L	0.062	0.051	0.059	0.06	0.05	0.027	<0.0002	0.00034
Cadmium, dissolved	mg/L	0.00029	0.00026	0.0001	0.00014	<0.0001	<0.0001	<0.0001	0.00022
Calcium, total	mg/L	150	140	140	160	140	230	96	86
Calcium, dissolved	mg/L	85	89	97	100	99	110	71	75
Chromium, total	mg/L	0.043	0.035	0.026	0.046	0.03	0.44	0.0021	0.0021
Chromium, dissolved	mg/L	0.003	0.0033	0.0034	0.0035	0.003	0.005	0.002	0.002
Cobalt, total	mg/L	0.02	0.017	0.017	0.021	0.017	0.1	0.00035	0.0013
Cobalt, dissolved	mg/L	0.00049	0.00066	0.00052	0.00069	0.00055	0.00076	0.0003	0.00072
Copper, total	mg/L	0.54	0.45	0.41	0.52	0.44	1.2	0.01	0.01
Copper, dissolved	mg/L	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.00021	0.00031	0.00044
Iron, total	mg/L	56	49	49	54	55	400	0.055	0.092
Iron, dissolved	mg/L	0.054	0.058	0.066	0.076	0.066	0.093	0.049	0.06
Lead, total	mg/L	0.27	0.22	0.23	0.25	0.23	3.2	0.00094	0.00095
Lead, dissolved	mg/L	<0.00008	<0.00008	<0.00008	<0.00008	<0.00008	<0.00009	<0.00009	<0.00009
Magnesium, total	mg/L	66	61	56	70	61	200	17	11
Magnesium, dissolved	mg/L	15	16	17	18	18	15	14	11
Manganese, total	mg/L	2.8	2.4	2.4	2.9	2.4	12	0.15	0.17
Manganese, dissolved	mg/L	0.23	0.25	0.26	0.28	0.26	0.48	0.12	0.17
Mercury, total	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Mercury, dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Molybdenum, total	mg/L	0.0056999	0.005	0.0033	0.0048	0.005	0.038	0.0028	0.0048
Molybdenum, dissolved	mg/L	0.0025	0.0022	0.0025	0.0027	0.0025	0.0024	0.002	0.0044
Nickel, total	mg/L	0.04	0.035	0.035	0.04	0.035	0.15	0.0022	0.0035
Nickel, dissolved	mg/L	0.0051	0.0051	0.0052	0.0055	0.006	0.0019	0.0007	0.0015
Selenium, total	mg/L	0.013	0.019	0.009	0.013	0.012	0.063	0.002	0.016
Selenium, dissolved	mg/L	0.004	0.003	0.006	0.006	0.005	<0.001	<0.001	<0.001
Silicon, total	mg/L								
Silicon, dissolved	mg/L								
Silver, total	mg/L	0.013	0.012	0.012	0.013	0.011	0.056	0.00022	0.00015
Silver, dissolved	mg/L	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00001	<0.00001
Sodium, total	mg/L	12	13	12	14	12	9.3	7.9	4.8
Sodium, dissolved	mg/L	7.1	7.3	8.1	8.5	8.5	5.8	5.5	3.6
Strontium, total	mg/L	1.6	1.6	1.6	1.7	1.6	1.8	2.6	1.1
Strontium, dissolved	mg/L	1.4	1.4	1.6	1.6	1.6	1.3	2.3	1.1
Thallium, total	mg/L								
Thallium, dissolved	mg/L								
Tin, total	mg/L								
Tin, dissolved	mg/L								
Titanium, total	mg/L								
Titanium, dissolved	mg/L								
Uranium, total	mg/L	0.001	0.00087	0.0009	0.0012	0.00085	0.0017	0.0001	0.00034
Uranium, dissolved	mg/L	0.00059	0.00061	0.00063	0.00066	0.0006	0.00007	0.00008	0.00032
Vanadium, total	mg/L	0.19	0.16	0.13	0.16	0.12	1.1	<0.001	<0.001
Vanadium, dissolved	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc, total	mg/L	7.7	6.5	7.1	7.8	6.4	4.1	0.0022	0.0036
Zinc, dissolved	mg/L	0.014	0.017	0.017	0.019	0.017	<0.0007	<0.0007	<0.0007

Notes:

		Portal	Portal	Portal	Portal	Portal	Portal	Portal
Monitoring Location		UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge DDH-1225
Sampling Date		24-Oct-93	31-Oct-93	9-Nov-93	11-Nov-93	29-Nov-93	10-Dec-93	27-Feb-94
Physical Parameters								
pH	pH units			7.5				7.2
Specific Conductance	uS/cm			620				340
Total Hardness	mg/L			310				140
Total dissolved solids	mg/L			430				240
Total suspended solids	mg/L			1300				10
Turbidity	NTU			300				17
Major Ions								
Total alkalinity	mg/L			84				46
Acidity	mg/L			6.3				5.2
Chloride	mg/L			1				0.5
Fluoride	mg/L			0.1				0.2
Bromide	mg/L							
Sulfate	mg/L			160				110
Nutrients								
Nitrate Nitrogen	mg/L			13				1.3
Nitrite Nitrogen	mg/L			2.4				0.055
Nitrogen, total	mg/L							
Ammonia Nitrogen	mg/L							
Ortho phosphorus, dissolved	mg/L			<0.05				0.004
Phosphorus, total	mg/L			0.4				0.031
Organics								
Total Organic Carbon	mg/L							
Dissolved Organic Carbon	mg/L							
Other								
Cyanide, total	mg/L							
Metals								
Aluminum, total	mg/L	22	55	33	2.1	0.81	180	0.261
Aluminum, dissolved	mg/L	0.019	0.038	0.035	0.021	0.0057	0.013	0.00699
Antimony, total	mg/L	0.035	0.024	0.12	0.017	0.012	0.11	0.0204
Antimony, dissolved	mg/L	0.032	0.023	0.12	0.015	0.011	0.11	0.0191
Arsenic, total	mg/L	0.14	0.058	0.91	<0.001	0.005	4.9	0.009
Arsenic, dissolved	mg/L	0.006	0.005	0.008	<0.001	0.005	0.006	0.009
Barium, total	mg/L	0.65	1	3.9	0.077	0.037	0.49	0.0273
Barium, dissolved	mg/L	0.032	0.021	0.039	0.027	0.024	0.032	0.0221
Beryllium, total	mg/L	0.0011	0.0013	0.0029	0.00011	0.00022	0.0056999	0.00006
Beryllium, dissolved	mg/L	<0.00006	0.00006	<0.00003	<0.00006	<0.00006	<0.00006	<0.00012
Bismuth, total	mg/L							
Bismuth, dissolved	mg/L							
Boron, total	mg/L	0.11	0.13	0.23	0.084	0.078	0.18	0.0534
Boron, dissolved	mg/L	0.068	0.059	0.12	0.063	0.058	0.091	0.0462
Cadmium, total	mg/L	0.0009	0.0027	0.084	<0.0001	<0.0001	0.13	<0.00011
Cadmium, dissolved	mg/L	<0.0001	<0.0001	0.00021	<0.0001	<0.0001	<0.0001	<0.00011
Calcium, total	mg/L	100	87	190	72	85	340	60.7
Calcium, dissolved	mg/L	63	58	97	62	71	82	45.5
Chromium, total	mg/L	0.1	0.2	0.069	0.0071	0.004	0.38	0.0115
Chromium, dissolved	mg/L	0.0024	0.0028	0.0036	0.002	0.0033	0.0036	0.00063
Cobalt, total	mg/L	0.012	0.019	0.029	<0.0007	0.00089	0.14	0.00033
Cobalt, dissolved	mg/L	0.00033	0.00025	0.00061	<0.0007	0.00036	0.00043	0.00026
Copper, total	mg/L	0.15	0.27	0.76	0.015	0.023	2.5	0.00316
Copper, dissolved	mg/L	0.003	<0.0004	<0.0004	0.0029	<0.0004	0.0035	0.00316
Iron, total	mg/L	49	85	59	4.2	1.4	590	0.35
Iron, dissolved	mg/L	<0.01	0.025	0.07	<0.01	<0.01	0.025	<0.01
Lead, total	mg/L	0.085	0.037	0.37	0.012	0.0032	2.6	0.00079
Lead, dissolved	mg/L	<0.00008	<0.00008	<0.00008	<0.00007	<0.0002	<0.00008	<0.00012
Magnesium, total	mg/L	41	63	90	11	11	170	10.4
Magnesium, dissolved	mg/L	10	8.5	17	7.6	11	11	7.4
Manganese, total	mg/L	1.4	1.7	4	0.28	0.15	11	0.122
Manganese, dissolved	mg/L	0.23	0.082	0.26	0.19	0.13	0.36	0.0868
Mercury, total	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Mercury, dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Molybdenum, total	mg/L	0.0096999	0.018	0.006	0.0041	0.0037	0.04	0.00249
Molybdenum, dissolved	mg/L	0.0045	0.0076	0.0028	0.0032	0.0027	0.0043	0.00201
Nickel, total	mg/L	0.034	0.07	0.053	<0.003	0.0086	0.18	0.00284
Nickel, dissolved	mg/L	0.0024	0.0017	0.0054	<0.003	0.0032	0.0022	0.00064
Selenium, total	mg/L	<0.001	0.017	0.011	0.006	<0.001	0.092	<0.001
Selenium, dissolved	mg/L	<0.001	<0.001	0.006	<0.001	<0.001	<0.001	<0.001
Silicon, total	mg/L							
Silicon, dissolved	mg/L							
Silver, total	mg/L	0.0033	0.0012	0.017	0.0013	0.00018	0.2	0.00011
Silver, dissolved	mg/L	<0.00001	<0.00001	<0.00001	0.00001	<0.0001	<0.00001	0.00005
Sodium, total	mg/L	21	38	15	4.1	7.5	26	6.14
Sodium, dissolved	mg/L	15	38	8	3.7	6.5	16	4.45
Strontium, total	mg/L	1.7	1.4	2	1.5	3	2.4	2.11
Strontium, dissolved	mg/L	1.2	1.2	1.5	1.4	2.7	1.1	1.85
Thallium, total	mg/L							
Thallium, dissolved	mg/L							
Tin, total	mg/L							
Tin, dissolved	mg/L							
Titanium, total	mg/L							
Titanium, dissolved	mg/L							
Uranium, total	mg/L	0.00054	0.00052	0.0014	0.00017	0.00015	0.0036	0.00016
Uranium, dissolved	mg/L	0.00013	0.00014	0.00061	0.00015	0.00015	0.00026	0.00016
Vanadium, total	mg/L	0.13	0.22	0.23	0.009	<0.001	1.1	<0.001
Vanadium, dissolved	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc, total	mg/L	0.32	0.46	12	0.038	0.017	17	0.014
Zinc, dissolved	mg/L	0.0033	0.0014	0.017	0.006	0.0081999	0.0064	0.00577

Notes:

		Portal	Portal	Portal	Portal	Portal	Portal
Monitoring Location		UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge DDH-1106
Sampling Date		11-Mar-94	27-Mar-94	24-Apr-94	29-May-94	14-Jun-94	15-Jun-94
Physical Parameters							
pH	pH units	7.2	7.5	7.4	7.4	7.2	7.5
Specific Conductance	uS/cm	290	390	550	440	460	230
Total Hardness	mg/L	96	160	210	160	98	69
Total dissolved solids	mg/L	200	270	470	360	320	130
Total suspended solids	mg/L	2	2000	6400	670	700	5
Turbidity	NTU	0.4	1600	4700	450	880	4.3
Major Ions							
Total alkalinity	mg/L	51	170	880	86	76	60
Acidity	mg/L	4.6	6	22	5.9	7.6	4.4
Chloride	mg/L	1.5	0.5	2	0.5	0.5	0.5
Fluoride	mg/L	0.15	0.15	0.25	0.05	0.05	0.1
Bromide	mg/L						
Sulfate	mg/L	86	110	180	180	150	62
Nutrients							
Nitrate Nitrogen	mg/L	0.05	4.5	3.6	1	1.14	<0.05
Nitrite Nitrogen	mg/L	0.005	0.64	2	0.82	0.077	<0.001
Nitrogen, total	mg/L						
Ammonia Nitrogen	mg/L						
Ortho phosphorus, dissolved	mg/L	<0.002	0.004	<0.002	0.019	0.014	0.013
Phosphorus, total	mg/L	0.014	2.7	0.86	1.4	1.1	0.026
Organics							
Total Organic Carbon	mg/L						
Dissolved Organic Carbon	mg/L						
Other							
Cyanide, total	mg/L						
Metals							
Aluminum, total	mg/L	<0.001	54.1	12.2	7.26	4.97	0.027
Aluminum, dissolved	mg/L	<0.001	0.0175	0.0327	0.04	0.00438	<0.001
Antimony, total	mg/L	0.0092399	0.025	0.0581	0.0538	0.102	0.0111
Antimony, dissolved	mg/L	0.00794	0.0243	0.0572	0.0483	0.101	0.0054099
Arsenic, total	mg/L	0.01	0.373	0.0387	0.055	0.12	0.038
Arsenic, dissolved	mg/L	0.01	0.008	0.008	0.008	0.002	0.031
Barium, total	mg/L	0.0147	0.832	0.211	0.309	0.263	0.0245
Barium, dissolved	mg/L	0.0123	0.0328	0.0318	0.0386	0.0187	0.0214
Beryllium, total	mg/L	0.0002	0.00199	<0.00021	0.0002	<0.00012	<0.0001
Beryllium, dissolved	mg/L	<0.0001	<0.00012	<0.00021	<0.00008	<0.00012	<0.0001
Bismuth, total	mg/L						
Bismuth, dissolved	mg/L						
Boron, total	mg/L	0.0239	0.159	0.17	0.11	0.0976	0.0409
Boron, dissolved	mg/L	<0.001	0.049	0.0732	0.0537	0.0301	0.0226
Cadmium, total	mg/L	0.00012	0.0057199	0.00156	0.00097	0.00191	<0.0001
Cadmium, dissolved	mg/L	<0.0001	<0.00011	<0.00008	<0.00009	<0.00005	<0.0001
Calcium, total	mg/L	39.4	143	127	80.5	39.3	28
Calcium, dissolved	mg/L	30.3	49.1	68.2	51.5	33.2	22
Chromium, total	mg/L	0.00088	0.0849	0.00959	0.00707	0.013	0.00056
Chromium, dissolved	mg/L	0.00075	0.00084	0.00097	0.00111	0.00056	0.00042
Cobalt, total	mg/L	<0.00004	0.027	0.00594	0.00455	0.00635	<0.00004
Cobalt, dissolved	mg/L	<0.00004	0.00011	<0.00021	0.00014	0.00013	<0.00004
Copper, total	mg/L	0.0306	0.302	0.0442	0.039	0.0334	0.00073
Copper, dissolved	mg/L	0.00225	<0.0004	0.00046	0.00125	0.00334	<0.0004
Iron, total	mg/L	0.0542	126	18.7	13.1	18.2	0.06
Iron, dissolved	mg/L	<0.01	<0.01	0.04	<0.01	<0.01	<0.01
Lead, total	mg/L	0.0012	0.301	0.0307	0.0311	0.186	0.00125
Lead, dissolved	mg/L	<0.00007	<0.00012	0.0004	0.00089	0.00047	0.00027
Magnesium, total	mg/L	7.03	78.1	32.1	17.5	7.82	4.56
Magnesium, dissolved	mg/L	4.96	8.19	10.4	6.68	3.75	3.43
Manganese, total	mg/L	0.0159	5.34	1.57	0.557	0.501	0.0196
Manganese, dissolved	mg/L	0.0105	0.219	0.332	0.102	0.0821	0.0143
Mercury, total	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Mercury, dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Molybdenum, total	mg/L	0.00185	0.0068	0.00663	0.00475	0.00279	0.00095
Molybdenum, dissolved	mg/L	0.00096	0.0025	0.0049899	0.00372	0.00276	0.0008
Nickel, total	mg/L	0.0009	0.0334	0.0149	0.00633	0.00248	0.0118
Nickel, dissolved	mg/L	0.00082	0.00099	0.00323	0.00255	<0.001	0.00627
Selenium, total	mg/L	<0.001	0.003	0.0132	<0.001	<0.001	<0.001
Selenium, dissolved	mg/L	<0.001	<0.001	0.004	<0.001	<0.001	<0.001
Silicon, total	mg/L						
Silicon, dissolved	mg/L						
Silver, total	mg/L	0.00016	0.00496	0.00058	0.00178	0.0034	0.00002
Silver, dissolved	mg/L	<0.0001	<0.0001	0.00003	0.00001	<0.0001	0.00005
Sodium, total	mg/L	4.52	13.2	13.4	6.67	2.9	2.45
Sodium, dissolved	mg/L	2.68	7.69	7.65	4.11	2.52	1.74
Strontium, total	mg/L	1.2	2.32	2.79	1.6	1.12	0.971
Strontium, dissolved	mg/L	0.995	1.74	2.18	1.24	1.01	0.844
Thallium, total	mg/L						
Thallium, dissolved	mg/L						
Tin, total	mg/L						
Tin, dissolved	mg/L						
Titanium, total	mg/L						
Titanium, dissolved	mg/L						
Uranium, total	mg/L	0.00018	0.00083	0.00044	0.0005	0.00058	0.00016
Uranium, dissolved	mg/L	0.00017	0.00015	0.00034	0.00028	0.00028	0.00013
Vanadium, total	mg/L	<0.001	0.352	0.0921	0.0536	0.0432	<0.001
Vanadium, dissolved	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc, total	mg/L	0.0446	0.748	0.194	0.102	0.173	0.00671
Zinc, dissolved	mg/L	0.0174	<0.001	0.0137	0.0256	0.00346	0.00324

Notes:

		Portal	Portal	Portal	Portal	Portal	Portal	Portal
Monitoring Location		UG Discharge DDH-1113	UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge
Sampling Date		15-Jun-94	23-Jun-94	30-Jun-94	8-Jul-94	13-Jul-94	21-Jul-94	27-Jul-94
Physical Parameters								
pH	pH units	7.3	7.3	7.5	7.6	7.1	7.3	
Specific Conductance	uS/cm	340	360	350	290	290	330	
Total Hardness	mg/L	120	140	140	150	170	140	
Total dissolved solids	mg/L	230	270	250	230	210	230	
Total suspended solids	mg/L	11	300	110	190	160	85	
Turbidity	NTU	7.8	260	120	170	65	86	
Major Ions								
Total alkalinity	mg/L	66	68	64	68	68	64	
Acidity	mg/L	4.8	5.2	4.6	4.2	2.5	4.1	
Chloride	mg/L	0.5	<0.1	0.5	<0.1	<0.1	0.5	
Fluoride	mg/L	0.1	<0.05	<0.05	0.1	0.05	0.1	
Bromide	mg/L							
Sulfate	mg/L	130	110	110	100	88	110	
Nutrients								
Nitrate Nitrogen	mg/L	0.05	0.27	0.05	<0.05	0.05	<0.05	
Nitrite Nitrogen	mg/L	0.022	0.083	0.092	0.008	0.004	0.005	
Nitrogen, total	mg/L							
Ammonia Nitrogen	mg/L							
Ortho phosphorus, dissolved	mg/L	0.008	<0.002	0.011	0.033	<0.002	<0.002	
Phosphorus, total	mg/L	0.051	0.22	0.225	0.28	0.27	0.14	
Organics								
Total Organic Carbon	mg/L							
Dissolved Organic Carbon	mg/L							
Other								
Cyanide, total	mg/L							
Metals								
Aluminum, total	mg/L	0.0113	3.89	2.24	3.08	3.18	0.341	
Aluminum, dissolved	mg/L	0.00225	0.0275	0.0246	0.0141	0.0206	0.0108	
Antimony, total	mg/L	0.0321	0.06	0.03	0.00956	0.0394	0.0084799	
Antimony, dissolved	mg/L	0.0237	0.0539	0.0292	0.0087399	0.025	0.00755	
Arsenic, total	mg/L	0.007	0.043	0.013	0.0354	0.038	0.013	
Arsenic, dissolved	mg/L	0.005	0.006	0.007	0.0138	0.012	0.008	
Barium, total	mg/L	0.0237	0.113	0.15	0.146	0.129	0.0334	
Barium, dissolved	mg/L	0.0219	0.0291	0.0377	0.0307	0.0346	0.025	
Beryllium, total	mg/L	<0.0001	<0.00006	0.00011	0.00008	0.00011	<0.0001	
Beryllium, dissolved	mg/L	<0.0001	<0.00006	0.00011	0.00008	<0.0001	<0.0001	
Bismuth, total	mg/L							
Bismuth, dissolved	mg/L							
Boron, total	mg/L	0.052	0.0867	0.0641	0.0529	0.0684	0.0768	
Boron, dissolved	mg/L	0.0484	0.0501	0.0373	0.0455	0.046	0.0441	
Cadmium, total	mg/L	<0.0001	0.00038	0.00028	0.00055	0.00098	<0.0001	
Cadmium, dissolved	mg/L	<0.0001	<0.0001	<0.0001	0.00012	<0.0002	<0.0001	
Calcium, total	mg/L	41.4	51.1	49.2	49.5	61.3	57.5	
Calcium, dissolved	mg/L	41.4	47.1	47.9	49.1	58.7	45.7	
Chromium, total	mg/L	0.00138	0.0071599	0.00521	0.00417	0.0051	0.00246	
Chromium, dissolved	mg/L	0.00069	0.00103	0.0008	0.00099	0.00086	<0.0005	
Cobalt, total	mg/L	0.00016	0.0047399	0.00137	0.00197	0.00221	<0.00015	
Cobalt, dissolved	mg/L	0.00015	0.00022	0.00008	0.00016	0.00014	<0.00015	
Copper, total	mg/L	0.0014	0.0203	0.0096599	0.0233	0.0184	0.00404	
Copper, dissolved	mg/L	0.0011	<0.0005	<0.0004	0.00198	0.0013	0.00264	
Iron, total	mg/L	0.05	7.61	5.11	6.86	5.72	0.62	
Iron, dissolved	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
Lead, total	mg/L	0.00158	0.0175	0.0127	0.0221	0.019	0.00217	
Lead, dissolved	mg/L	0.00041	<0.00009	<0.00004	0.00014	<0.00008	0.00009	
Magnesium, total	mg/L	4.09	8.77	7.43	7.42	9.52	7.83	
Magnesium, dissolved	mg/L	4.01	5.68	5.73	5.78	6.29	5.76	
Manganese, total	mg/L	0.135	0.228	0.183	0.233	0.267	0.0618	
Manganese, dissolved	mg/L	0.125	0.0518	0.0878	0.0714	0.0794	0.0441	
Mercury, total	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.00019	<0.00005	
Mercury, dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Molybdenum, total	mg/L	0.00278	0.00192	0.002	0.00174	0.00326	0.00166	
Molybdenum, dissolved	mg/L	0.00246	0.0018	0.00169	0.00163	0.00048	0.00123	
Nickel, total	mg/L	0.00344	0.02	0.00337	0.00321	0.00396	0.00164	
Nickel, dissolved	mg/L	0.00339	0.00032	0.00201	0.00193	0.00115	0.00077	
Selenium, total	mg/L	<0.001	0.0035	0.0015	0.007	0.003	0.003	
Selenium, dissolved	mg/L	<0.001	0.002	0.001	0.004	0.002	0.002	
Silicon, total	mg/L							
Silicon, dissolved	mg/L							
Silver, total	mg/L	0.00002	0.00025	0.00118	0.00068	0.00069	0.00006	
Silver, dissolved	mg/L	0.00005	0.00001	<0.0001	0.00005	0.00005	0.00001	
Sodium, total	mg/L	1.58	2.74	3.09	2.68	3.35	3.32	
Sodium, dissolved	mg/L	1.56	2.42	2.81	2.66	3.05	2.4	
Strontium, total	mg/L	0.316	0.761	0.9	0.794	0.833	0.828	
Strontium, dissolved	mg/L	0.307	0.759	0.899	0.789	0.735	0.708	
Thallium, total	mg/L							
Thallium, dissolved	mg/L							
Tin, total	mg/L							
Tin, dissolved	mg/L							
Titanium, total	mg/L							
Titanium, dissolved	mg/L							
Uranium, total	mg/L	0.00099	0.00041	0.00033	0.00025	0.00028	0.00013	
Uranium, dissolved	mg/L	0.00094	0.0003	0.00021	0.00018	0.00021	0.00013	
Vanadium, total	mg/L	<0.001	0.0275	0.0138	0.0251	0.0213	<0.001	
Vanadium, dissolved	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
Zinc, total	mg/L	0.0125	0.0497	0.0594	0.0632	0.0944	0.0113	
Zinc, dissolved	mg/L	0.00501	<0.001	0.00254	0.00653	0.00519	0.00201	

Notes:

		Portal	Portal	Portal	Portal	Portal	Portal	Portal
Monitoring Location		UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge
Sampling Date		28-Jul-94	8-Aug-94	16-Aug-94	25-Aug-94	7-Sep-94	18-Sep-94	24-Sep-94
Physical Parameters								
pH	pH units	7.5	7.5	7.4	7.4	7.6	7.2	7.5
Specific Conductance	uS/cm	340	250	340	360	340	340	330
Total Hardness	mg/L	110	93	180	131	133	200	180
Total dissolved solids	mg/L	260	190	250	240	260	250	290
Total suspended solids	mg/L	73	3	30	23	180	83	310
Turbidity	NTU	73	1.6	24	1.4	92	100	340
Major Ions								
Total alkalinity	mg/L	56	38	58	53	57	54	51
Acidity	mg/L	4	3.2	2.4	8.9	4	5.2	3.9
Chloride	mg/L	<0.1	0.5	1	0.5	0.5	0.5	0.5
Fluoride	mg/L	0.05	0.1	0.05	0.05	0.2	0.1	0.05
Bromide	mg/L							
Sulfate	mg/L	110	88	120	120	120	120	120
Nutrients								
Nitrate Nitrogen	mg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrite Nitrogen	mg/L	0.003	0.009	0.004	0.002	0.002	0.001	0.001
Nitrogen, total	mg/L							
Ammonia Nitrogen	mg/L							
Ortho phosphorus, dissolved	mg/L	0.006	0.004	0.008	0.008	0.002	<0.002	0.002
Phosphorus, total	mg/L	0.07	0.019	0.092	0.01	0.37	0.26	0.11
Organics								
Total Organic Carbon	mg/L							
Dissolved Organic Carbon	mg/L							
Other								
Cyanide, total	mg/L							
Metals								
Aluminum, total	mg/L	1.53	0.0493	0.0292	0.0412999	4.81	1.38	5.69
Aluminum, dissolved	mg/L	0.03	<0.001	0.00682	0.00228	0.00761	0.0197999	0.0360999
Antimony, total	mg/L	0.019	0.0556	0.0143	0.0113	0.0121	0.0166	0.0128999
Antimony, dissolved	mg/L	0.0187	0.0556	0.0141999	0.0111	0.00997	0.0156999	0.012
Arsenic, total	mg/L	0.0191	0.0215	0.005	0.006	0.0262	0.0223999	0.0151999
Arsenic, dissolved	mg/L	0.006	0.0211	0.005	0.006	0.0051	0.00708	0.00627
Barium, total	mg/L	0.0642	0.0185	0.0211	0.0176	0.136	0.0838	0.116
Barium, dissolved	mg/L	0.0202	0.0183	0.0207	0.0171	0.0293999	0.028	0.0233999
Beryllium, total	mg/L	0.0002	0.0001	0.00035	<0.0001	0.0001	<0.0001	<0.0001
Beryllium, dissolved	mg/L	0.0002	0.0001	0.00031	<0.0001	0.0001	<0.0001	<0.0001
Bismuth, total	mg/L							
Bismuth, dissolved	mg/L							
Boron, total	mg/L	0.0546	0.0264	0.00085	0.034	0.0906999	0.0399	0.0412
Boron, dissolved	mg/L	0.00914	<0.0016	0.00085	0.0302	0.0297	0.0385999	0.0412
Cadmium, total	mg/L	0.00082	0.000085	<0.00007	0.00012	0.00064	0.00023	0.00021
Cadmium, dissolved	mg/L	<0.0001	<0.00017	<0.00007	<0.0001	<0.0002	<0.0001	<0.0001
Calcium, total	mg/L	50.2	34.8	69.4	43.6	71.6	72.5	67.3
Calcium, dissolved	mg/L	38.2	30.8	59.5	43.6	45.1	67.5	61.1
Chromium, total	mg/L	0.00155	<0.0005	0.00053	0.00167	0.0121999	0.00271	0.0347
Chromium, dissolved	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0005
Cobalt, total	mg/L	0.00094	0.00032	0.00026	0.00025	0.00442	0.00073	0.00277
Cobalt, dissolved	mg/L	0.00018	<0.00011	0.00024	0.00017	0.00031	<0.00008	<0.00008
Copper, total	mg/L	0.00979	0.0363	0.00208	0.0044499	0.028	0.00767	0.0186
Copper, dissolved	mg/L	<0.0004	0.00041	0.00102	<0.0004	0.00074	<0.0005	<0.0005
Iron, total	mg/L	3.05	0.07	0.01	0.106	9.22	3.8	11.4
Iron, dissolved	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead, total	mg/L	0.0061999	0.00037	<0.00009	0.0034	0.0113999	0.0103999	0.0091599
Lead, dissolved	mg/L	0.0002	<0.00008	<0.00009	0.0001	<0.00007	<0.00005	<0.00005
Magnesium, total	mg/L	6.86	4.75	8.38	5.57	11.6	8.29	13.3
Magnesium, dissolved	mg/L	4.06	3.98	6.42	5.37	4.91	7.44	6.03
Manganese, total	mg/L	0.0961	0.0429	0.0329	0.0198999	0.307	0.101	0.201
Manganese, dissolved	mg/L	0.0306	0.0376	0.029	0.0172999	0.03	0.0412999	0.0251
Mercury, total	mg/L	<0.00005	<0.00005	0.0001	<0.00005	0.00005	<0.00005	<0.00005
Mercury, dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.00005	<0.00005	<0.00005
Molybdenum, total	mg/L	0.00174	0.00259	0.00236	0.00089	0.00284	0.00208	0.00228
Molybdenum, dissolved	mg/L	0.00126	0.00216	0.00137	0.00071	0.0021199	0.00205	0.00195
Nickel, total	mg/L	0.00181	0.00106	0.00122	0.00458	0.00552	0.00153	0.0158
Nickel, dissolved	mg/L	<0.0005	<0.0004	0.00091	0.00233	<0.0005	<0.0005	0.00061
Selenium, total	mg/L	0.002	0.003	0.004	<0.001	<0.001	0.002	0.004
Selenium, dissolved	mg/L	0.002	<0.001	0.002	<0.001	<0.001	0.002	0.001
Silicon, total	mg/L							
Silicon, dissolved	mg/L							
Silver, total	mg/L	0.00088	0.00002	0.00001	0.00005	0.00315	0.00147	0.00017
Silver, dissolved	mg/L	0.00005	0.00005	0.00005	0.00005	0.00005	0.00002	0.00002
Sodium, total	mg/L	2.04	2.45	3.61	1.96	3.87	2.8	3.41
Sodium, dissolved	mg/L	1.4	1.96	2.71	1.95	2.18	2.71	2.24
Strontium, total	mg/L	0.855	0.699	0.00746	0.792	1.03	1.12	1
Strontium, dissolved	mg/L	0.781	0.683	0.742	0.788	0.82	1.1	0.972
Thallium, total	mg/L							
Thallium, dissolved	mg/L							
Tin, total	mg/L							
Tin, dissolved	mg/L							
Titanium, total	mg/L							
Titanium, dissolved	mg/L							
Uranium, total	mg/L	0.00019	0.00028	0.0001	0.00008	0.00012	0.00016	0.00017
Uranium, dissolved	mg/L	0.00017	0.00027	0.0001	0.00008	0.00012	0.00015	0.00014
Vanadium, total	mg/L	0.00796	<0.001	<0.001	<0.001	0.029	0.00325	0.0084399
Vanadium, dissolved	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc, total	mg/L	0.147	0.0259	0.00646	0.0317999	0.0859	0.0379	0.0243999
Zinc, dissolved	mg/L	0.00434	0.0116	0.00644	0.0118	<0.001	0.00271	0.0012

Notes:

		Portal	Portal	Portal	Portal	Portal	Portal
Monitoring Location		UG Discharge	UG Discharge 1480A	UG Discharge 1480B	UG Discharge	UG Discharge	UG Discharge
Sampling Date		4-Oct-94	8-May-96	8-May-96	25-Jun-96	3-Jul-96	18-Jul-96
Physical Parameters							
pH	pH units	7.2	7.7	7.8	7.7	7.8	7.9
Specific Conductance	uS/cm	340	467	461	559	555	545
Total Hardness	mg/L	154	181	184	198	203	225
Total dissolved solids	mg/L	250	293	266	411	386	359
Total suspended solids	mg/L	40	<1	<1	11	37	447
Turbidity	NTU	37	0.35	0.5	10	31	450
Major Ions							
Total alkalinity	mg/L	53	50	50	47	56	83
Acidity	mg/L	3.7	1.7	1.6	2.4	2	2
Chloride	mg/L	0.5	0.21	0.22	0.21	0.28	0.26
Fluoride	mg/L	0.05	<0.05	<0.05	0.07	0.07	0.07
Bromide	mg/L						
Sulfate	mg/L	110	185	179	246	249	220
Nutrients							
Nitrate Nitrogen	mg/L	<0.05	0.02	0.018	0.015	0.79	2.26
Nitrite Nitrogen	mg/L	<0.001	<0.001	<0.001	<0.001	0.137	0.424
Nitrogen, total	mg/L						
Ammonia Nitrogen	mg/L						
Ortho phosphorus, dissolved	mg/L	0.006	0.004	0.002	0.006	<0.002	<0.002
Phosphorus, total	mg/L	0.054	0.006	0.002	0.026	<0.002	0.172
Organics							
Total Organic Carbon	mg/L						
Dissolved Organic Carbon	mg/L						
Other							
Cyanide, total	mg/L						
Metals							
Aluminum, total	mg/L	0.62	<0.0005	<0.0005	0.153	1.08	12.1
Aluminum, dissolved	mg/L	0.0036199	<0.0005	<0.0005	<0.0005	0.0026	0.0059
Antimony, total	mg/L	0.00984	0.0017	0.00168	0.00442	0.0079	0.0115
Antimony, dissolved	mg/L	0.00955	0.00166	0.00161	0.00434	0.00538	0.0113999
Arsenic, total	mg/L	0.0163999	0.003	0.003	0.009	0.009	0.042
Arsenic, dissolved	mg/L	0.00585	0.003	0.003	0.004	0.003	0.005
Barium, total	mg/L	0.0484	0.0169	0.0168	0.0253	0.0471	0.151
Barium, dissolved	mg/L	0.0212999	0.0168	0.0169	0.0216	0.0226	0.0256
Beryllium, total	mg/L	0.0001	<0.00005	<0.00005	<0.00005	<0.00005	0.00031
Beryllium, dissolved	mg/L	0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Bismuth, total	mg/L						
Bismuth, dissolved	mg/L						
Boron, total	mg/L	0.0005	0.006	0.008	0.038	0.029	0.14
Boron, dissolved	mg/L	<0.001	0.005	0.005	0.034	0.028	0.044
Cadmium, total	mg/L	0.00023	0.0003	0.0002	0.0003	0.0005	0.0018
Cadmium, dissolved	mg/L	<0.0001	0.0001	<0.0001	0.0003	0.0002	0.0002
Calcium, total	mg/L	53.4	64.7	66	73.8	71.2	109
Calcium, dissolved	mg/L	53	62.7	63.9	66.7	70.2	72.8
Chromium, total	mg/L	0.00108	0.0011	0.0012	0.0017	0.0015	0.0635999
Chromium, dissolved	mg/L	0.00064	0.0008	0.0006	0.0011	0.001	0.0018
Cobalt, total	mg/L	0.00043	0.00042	0.00051	0.00052	0.00096	0.0138
Cobalt, dissolved	mg/L	<0.00006	0.00035	0.00038	0.00027	0.00045	0.00114
Copper, total	mg/L	0.0044099	0.0014	0.0019	0.0003	0.0055	0.129
Copper, dissolved	mg/L	<0.0004	<0.0001	<0.0001	0.0003	0.0003	0.0003
Iron, total	mg/L	2.05	0.04	0.06	0.38	2.13	27.2
Iron, dissolved	mg/L	<0.01	0.03	0.03	0.02	<0.01	0.03
Lead, total	mg/L	0.0106999	0.00012	0.00021	0.00151	0.00435	0.0357999
Lead, dissolved	mg/L	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Magnesium, total	mg/L	5.57	6.18	6.36	7.87	7.52	26.6
Magnesium, dissolved	mg/L	5.31	5.82	5.88	7.69	6.68	10.4
Manganese, total	mg/L	0.0854	0.0046	0.0046	0.0577	0.12	0.842
Manganese, dissolved	mg/L	0.0345999	0.0031	0.0037	0.0477	0.0768	0.169
Mercury, total	mg/L	0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Mercury, dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Molybdenum, total	mg/L	0.00176	0.00144	0.00157	0.00158	0.00169	0.00225
Molybdenum, dissolved	mg/L	0.0017	0.00132	0.00137	0.00152	0.00139	0.00223
Nickel, total	mg/L	0.00196	0.0025	0.003	0.0011	0.0016	0.0497999
Nickel, dissolved	mg/L	<0.0004	0.0009	0.0011	0.0004	0.0006	0.0153
Selenium, total	mg/L	<0.001	<0.001	<0.001	0.003	<0.001	<0.001
Selenium, dissolved	mg/L	<0.001	<0.001	<0.001	0.002	<0.001	<0.001
Silicon, total	mg/L						
Silicon, dissolved	mg/L						
Silver, total	mg/L	0.00037	0.00005	0.00006	0.00002	0.00015	0.00062
Silver, dissolved	mg/L	0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Sodium, total	mg/L	2.23	2.26	2.26	2.87	3.21	6.79
Sodium, dissolved	mg/L	2.14	2.07	2.11	2.58	3.16	5.37
Strontium, total	mg/L	0.93	3.14	2.98	1.86	1.2	1.86
Strontium, dissolved	mg/L	0.927	2.94	2.9	1.7	1.16	1.57
Thallium, total	mg/L						
Thallium, dissolved	mg/L						
Tin, total	mg/L						
Tin, dissolved	mg/L						
Titanium, total	mg/L						
Titanium, dissolved	mg/L						
Uranium, total	mg/L	0.00014	0.0001	0.00011	0.00015	0.00013	0.00034
Uranium, dissolved	mg/L	0.00012	0.00006	0.00013	0.00014	0.00009	0.00025
Vanadium, total	mg/L	<0.001	<0.001	<0.001	0.001	0.005	0.07
Vanadium, dissolved	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc, total	mg/L	0.0153999	0.025	0.024	0.019	0.024	0.292
Zinc, dissolved	mg/L	<0.001	0.01	0.01	0.008	0.006	0.009

Notes:

Monitoring Location		Portal UG Discharge	Portal UG Discharge	Portal UG Discharge	Portal UG Discharge	Portal UG Discharge	Portal UG Discharge	Portal UG Discharge
Sampling Date		27-Jul-96	1-Aug-96	8-Aug-96	14-Aug-96	26-Aug-96	1-Sep-96	14-Sep-96
Physical Parameters								
pH	pH units	7.8	7.9	7.9	7.9	7.9	7.9	7.6
Specific Conductance	uS/cm	481	493	489	550	512	512	420
Total Hardness	mg/L	265	179	220	151	237	193	171
Total dissolved solids	mg/L	356	315	330	313	302	346	288
Total suspended solids	mg/L	210	94	123	14	8	472	11
Turbidity	NTU	190	104	80	18	1.6	520	13
Major Ions								
Total alkalinity	mg/L	60	58	56	54	46	68	54
Acidity	mg/L	2	2	3	3	2	2	2
Chloride	mg/L	0.24	0.27	0.2	0.19	0.15	0.18	0.16
Fluoride	mg/L	0.05	0.05	<0.05	<0.05	<0.05	0.06	<0.05
Bromide	mg/L							
Sulfate	mg/L	210	178	171	160	100	194	176
Nutrients								
Nitrate Nitrogen	mg/L	0.97	0.92	0.326	0.579	0.0633	0.662	0.082
Nitrite Nitrogen	mg/L	0.226	0.215	0.139	0.174	0.021	0.026	0.025
Nitrogen, total	mg/L							
Ammonia Nitrogen	mg/L							
Ortho phosphorus, dissolved	mg/L	<0.002	<0.002	0.002	0.002	0.002	<0.002	0.006
Phosphorus, total	mg/L	0.146	0.02	0.034	0.037	0.016	0.155	0.018
Organics								
Total Organic Carbon	mg/L							
Dissolved Organic Carbon	mg/L							
Other								
Cyanide, total	mg/L							
Metals								
Aluminum, total	mg/L	6.95	13.7	4.24	0.265	0.199	8.33	0.0335
Aluminum, dissolved	mg/L	0.0101	0.0038	0.0093999	0.0076999	0.0034	0.0066999	0.0019
Antimony, total	mg/L	0.0182999	0.0111999	0.0143999	0.00659	0.00652	0.0237999	0.006
Antimony, dissolved	mg/L	0.0115	0.00967	0.00943	0.00653	0.0059899	0.0145	0.0059899
Arsenic, total	mg/L	0.103	0.098	0.043	0.004	0.011	0.076	0.006
Arsenic, dissolved	mg/L	0.006	0.009	0.009	0.003	0.008	0.005	0.004
Barium, total	mg/L	0.172	0.313	0.107	0.0217	0.0192	0.289	0.0205
Barium, dissolved	mg/L	0.0275	0.0176	0.0233999	0.0155	0.0172999	0.017	0.0193999
Beryllium, total	mg/L	0.00032	0.00062	0.00017	<0.00005	<0.00005	0.00009	<0.00005
Beryllium, dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Bismuth, total	mg/L							
Bismuth, dissolved	mg/L							
Boron, total	mg/L	0.074	0.045	0.032	0.029	0.037	0.086	0.016
Boron, dissolved	mg/L	0.041	0.02	0.026	0.024	0.03	0.048	0.016
Cadmium, total	mg/L	0.0021	0.0031	0.001	0.0004	0.0017	0.0035	0.0009
Cadmium, dissolved	mg/L	0.0004	0.0001	0.0002	0.0001	0.0007	0.0005	<0.0001
Calcium, total	mg/L	103	110	81.8	53.8	82.2	77.6	58.4
Calcium, dissolved	mg/L	90.5	59.9	74.5	49.4	81.6	61	58.2
Chromium, total	mg/L	0.0192	0.0515	0.0115	0.0016	0.0016	0.0192999	0.0013
Chromium, dissolved	mg/L	<0.0005	0.0016	<0.0005	0.0009	0.0016	0.0011	0.0012
Cobalt, total	mg/L	0.0062199	0.00788	0.00283	0.00069	0.00032	0.00372	0.002
Cobalt, dissolved	mg/L	0.00084	0.0008	0.00095	0.00056	0.00018	0.00049	0.0011
Copper, total	mg/L	0.063	0.125	0.0258999	0.003	0.0019	0.0695999	0.0009
Copper, dissolved	mg/L	0.0015	0.0002	0.0008	0.0001	<0.0001	<0.0001	0.0003
Iron, total	mg/L	16.4	31.8	6.14	0.4	0.42	15.5	0.15
Iron, dissolved	mg/L	0.05	0.01	0.02	<0.01	<0.01	<0.01	0.02
Lead, total	mg/L	0.0316	0.0547999	0.0197	0.00132	0.00061	0.0654	0.00047
Lead, dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.00009	<0.00005	0.00011
Magnesium, total	mg/L	13.8	29.8	11.9	6.67	9.28	17.9	6.39
Magnesium, dissolved	mg/L	9.37	7.07	8.15	6.66	8.08	9.76	6.19
Manganese, total	mg/L	0.443	0.936	0.23	0.0843	0.0369	0.46	0.054
Manganese, dissolved	mg/L	0.128	0.0993	0.0823	0.0728	0.0308999	0.0854	0.0505999
Mercury, total	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Mercury, dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Molybdenum, total	mg/L	0.00319	0.00242	0.00222	0.0023	0.00126	0.0029	0.00109
Molybdenum, dissolved	mg/L	0.0019	0.00169	0.00198	0.00127	0.0012	0.00183	0.00106
Nickel, total	mg/L	0.0265	0.0780999	0.0121	0.0023	0.0022	0.007	0.00038
Nickel, dissolved	mg/L	0.0068	0.0055	0.0038	0.0022	0.0014	0.0026	0.00035
Selenium, total	mg/L	<0.001	0.003	0.001	<0.001	0.002	0.001	<0.001
Selenium, dissolved	mg/L	<0.001	0.002	<0.001	<0.001	0.002	<0.001	<0.001
Silicon, total	mg/L							
Silicon, dissolved	mg/L							
Silver, total	mg/L	0.00399	0.00165	0.00087	0.00005	0.00004	0.00253	0.00009
Silver, dissolved	mg/L	0.00002	<0.00001	<0.00001	<0.00001	0.00002	<0.00001	<0.00001
Sodium, total	mg/L	4.77	5.18	3.54	2.83	3.63	5.11	2.64
Sodium, dissolved	mg/L	4.3	3.07	3.09	2.96	3.16	3.06	2.6
Strontium, total	mg/L	1.36	1.14	1.28	0.82	1.54	1.3	0.733
Strontium, dissolved	mg/L	1.28	0.96	1.28	0.805	1.42	1.21	0.725
Thallium, total	mg/L							
Thallium, dissolved	mg/L							
Tin, total	mg/L							
Tin, dissolved	mg/L							
Titanium, total	mg/L							
Titanium, dissolved	mg/L							
Uranium, total	mg/L	0.00018	0.0003	0.00028	0.00011	0.00029	0.00072	0.00018
Uranium, dissolved	mg/L	0.00012	0.00019	0.00021	0.0001	0.00014	0.00025	0.00017
Vanadium, total	mg/L	0.035	0.087	0.024	0.001	<0.001	0.064	<0.001
Vanadium, dissolved	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc, total	mg/L	0.209	0.272	0.096	0.01	0.005	0.304	0.019
Zinc, dissolved	mg/L	0.076	0.003	0.006	0.005	0.002	0.012	0.016

Notes:

		Portal	Portal	Portal	Portal	Portal	Portal	Portal
Monitoring Location		UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge	UG Discharge
Sampling Date		16-Sep-96	20-Sep-96	1-Oct-96	8-Oct-96	15-Oct-96	9-Jul-97	12-Aug-97
Physical Parameters								
pH	pH units	7.8	7.6	7.5	7.9	7.6	7.6	7.8
Specific Conductance	uS/cm	427	424	486	435	485	509	437
Total Hardness	mg/L	210	162	252	218	214	233	191
Total dissolved solids	mg/L	295	288	339	295	362	364	312
Total suspended solids	mg/L	<1	51	12	121	<1	31	6
Turbidity	NTU	0.6	19	2.2	30	1.4	27	2.5
Major Ions								
Total alkalinity	mg/L	48	50	50	53	56	54	47
Acidity	mg/L	3	2	3	3	2	2	2
Chloride	mg/L	0.12	0.16	0.15	0.18	0.15	0.17	0.15
Fluoride	mg/L	0.03	0.06	0.05	0.05	0.06	0.03	0.04
Bromide	mg/L							
Sulfate	mg/L	172.9	160	196	184	213	198	189
Nutrients								
Nitrate Nitrogen	mg/L	0.015	0.037	0.044	0.03	0.029	0.028	0.027
Nitrite Nitrogen	mg/L	<0.001	0.018	0.0197	0.017	0.009	<0.001	<0.001
Nitrogen, total	mg/L							
Ammonia Nitrogen	mg/L	0.01					0.01	0.01
Ortho phosphorus, dissolved	mg/L	0.007	<0.002	0.004	0.004	0.004	<0.002	0.004
Phosphorus, total	mg/L	0.01	<0.002	0.028	0.074	0.016	0.104	0.017
Organics								
Total Organic Carbon	mg/L							
Dissolved Organic Carbon	mg/L							
Other								
Cyanide, total	mg/L							
Metals								
Aluminum, total	mg/L	0.0165	0.249	0.127	3.9	0.0745999	0.321	0.02
Aluminum, dissolved	mg/L	<0.0005	0.0016	0.0028	0.0063	<0.0005	0.0344	0.016
Antimony, total	mg/L	0.00661	0.00655	0.0111	0.00875	0.0197	0.0171	0.0136
Antimony, dissolved	mg/L	0.00573	0.0063	0.0101999	0.0058	0.0182	0.0163999	0.0128999
Arsenic, total	mg/L	0.012	0.01	0.016	0.036	0.014	0.028	0.007
Arsenic, dissolved	mg/L	0.011	0.006	0.01	0.009	0.014	0.018	0.006
Barium, total	mg/L	0.0141	0.0405999	0.0273999	0.133	0.0175	0.0447	0.0205
Barium, dissolved	mg/L	0.0153	0.0261	0.024	0.0262	0.016	0.0218999	0.0202
Beryllium, total	mg/L	<0.00005	<0.00005	0.00006	0.00009	<0.00005	0.00006	<0.00005
Beryllium, dissolved	mg/L	<0.00005	<0.00005	<0.00005	0.00006	<0.00005	<0.00005	<0.00005
Bismuth, total	mg/L							
Bismuth, dissolved	mg/L							
Boron, total	mg/L	0.037	0.022	0.036	0.034	0.033	0.043	0.026
Boron, dissolved	mg/L	0.036	0.02	0.036	0.031	0.033	0.041	0.024
Cadmium, total	mg/L	0.0006	0.0004	0.0003	0.0008	<0.0001	0.0007	0.0012
Cadmium, dissolved	mg/L	0.0005	0.0003	0.0002	<0.0001	<0.0001	0.0003	0.0012
Calcium, total	mg/L	67.3	56.9	87.7	78.8	75.9	77.9	65.3
Calcium, dissolved	mg/L	69.6	56.7	86.9	75.6	74.8	74	61.4
Chromium, total	mg/L	0.0021	0.0007	<0.0005	0.0091	<0.0005	0.0039	<0.0005
Chromium, dissolved	mg/L	0.0009	0.0007	<0.0005	0.0017	<0.0005	0.0015	0.00025
Cobalt, total	mg/L	<0.00006	0.00041	0.00045	0.00219	0.00056	0.00076	0.00038
Cobalt, dissolved	mg/L	0.0004	0.00019	0.00037	0.00029	0.00056	0.00061	0.00003
Copper, total	mg/L	0.0009	0.0029	0.0016	0.019	0.0007	0.0073	0.0015
Copper, dissolved	mg/L	0.0001	0.0009	<0.0001	<0.0001	0.0002	0.00005	0.0007
Iron, total	mg/L	0.23	0.7	0.32	7.01	0.2	0.69	0.07
Iron, dissolved	mg/L	0.14	0.01	<0.01	<0.01	0.01	0.07	0.03
Lead, total	mg/L	0.00016	0.00325	0.00046	0.0106999	0.00087	0.00285	0.00053
Lead, dissolved	mg/L	<0.00005	<0.00005	0.00013	<0.00005	<0.00005	0.000025	0.000025
Magnesium, total	mg/L	9.04	5.32	9.13	9.15	12.1	12.7	9.25
Magnesium, dissolved	mg/L	8.79	4.98	8.41	7.03	6.53	11.7	9.25
Manganese, total	mg/L	0.0634	0.0552	0.0442999	0.194	0.117	0.091	0.112
Manganese, dissolved	mg/L	0.0735	0.0379	0.0380999	0.0472	0.112	0.31	0.1
Mercury, total	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00025	<0.00005
Mercury, dissolved	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00023	0.000025
Molybdenum, total	mg/L	0.00095	0.00154	0.00275	0.0023699	0.00152	0.00165	0.00222
Molybdenum, dissolved	mg/L	0.00098	0.00151	0.00263	0.0021099	0.00135	0.00158	0.0022
Nickel, total	mg/L	0.0028	0.004	0.0019	0.0073	0.0023	0.0083999	0.0046999
Nickel, dissolved	mg/L	0.0024	0.0026	0.0012	0.0014	0.002	0.0043	0.0032
Selenium, total	mg/L	0.005	<0.001	<0.001	<0.001	<0.001		<0.001
Selenium, dissolved	mg/L	0.002	<0.001	<0.001	<0.001	<0.001		<0.001
Silicon, total	mg/L							
Silicon, dissolved	mg/L							
Silver, total	mg/L	0.00005	0.00024	0.00005	0.00349	<0.00001	0.00012	<0.00001
Silver, dissolved	mg/L	<0.00001	0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Sodium, total	mg/L	3	1.89	3.3	3.09	3.05	3.3	2.55
Sodium, dissolved	mg/L	2.84	1.79	3.16	2.7	1.72	3.3	2.52
Strontium, total	mg/L	0.838	1.16	1.63	1.29	1.22	1.51	0.993
Strontium, dissolved	mg/L	0.883	1.11	1.59	1.18	1.2	1.47	0.993
Thallium, total	mg/L							
Thallium, dissolved	mg/L							
Tin, total	mg/L							
Tin, dissolved	mg/L							
Titanium, total	mg/L							
Titanium, dissolved	mg/L							
Uranium, total	mg/L	0.00114	0.00008	0.00034	0.0002	0.00044	<0.00001	0.00055
Uranium, dissolved	mg/L	0.00095	0.00006	0.00014	0.00014	0.00042	<0.00001	0.00055
Vanadium, total	mg/L	<0.001	0.002	0.002	0.019	<0.001	0.02	<0.001
Vanadium, dissolved	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc, total	mg/L	0.012	0.019	0.016	0.084	0.004	0.044	0.046
Zinc, dissolved	mg/L	0.012	0.013	0.01	0.004	0.004	0.027	0.038

Notes:

		Portal	Portal	Portal	Portal	Portal	Portal	Portal
Monitoring Location		RM-SEEP-04	04RM01	RMVG	06 RM VG	RMS4	RMS4	RMS4
Sampling Date		19-Aug-03	12-Sep-04	26-Jul-05	27-Jul-06	24-Jun-14	5-Aug-15	11-May-16
Physical Parameters								
pH	pH units	7.96	7.96	7.75	7.9	7.99	7.83	7.78
Specific Conductance	uS/cm				386	431	454	436
Total Hardness	mg/L	176		197	194	237	225	236
Total dissolved solids	mg/L	230	254	264	278	318	316	321
Total suspended solids	mg/L					5.4	5.3	<3
Turbidity	NTU					4.6	0.62	1.83
Major Ions								
Total alkalinity	mg/L	50	49.9	63.5	2	73	68.9	68.1
Acidity	mg/L						3.2	2.5
Chloride	mg/L					<0.5	<0.5	<0.5
Fluoride	mg/L					0.038	0.035	0.03
Bromide	mg/L					<0.05	<0.05	<0.05
Sulfate	mg/L	130	135	133		153	161	160
Nutrients								
Nitrate Nitrogen	mg/L	<0.005	<0.005	<0.005	<0.005	0.0064	0.0058	<0.005
Nitrite Nitrogen	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nitrogen, total	mg/L					<0.05		
Ammonia Nitrogen	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Ortho phosphorus, dissolved	mg/L					0.001	<0.001	<0.001
Phosphorus, total	mg/L					0.0054	<0.002	<0.002
Organics								
Total Organic Carbon	mg/L					<0.5	<0.5	<0.5
Dissolved Organic Carbon	mg/L					<0.5	<0.5	<0.5
Other								
Cyanide, total	mg/L							
Metals								
Aluminum, total	mg/L					0.0898	0.0134	0.0295
Aluminum, dissolved	mg/L	<0.005	0.0016	0.0065	0.0061	<0.005	0.0058	<0.005
Antimony, total	mg/L					0.00795	0.00764	0.0063
Antimony, dissolved	mg/L	0.0064	0.00809	0.00837	0.00971	0.00718	0.00756	0.00543
Arsenic, total	mg/L					0.0478	0.0162	0.0446
Arsenic, dissolved	mg/L	0.0013	0.00074	0.0063	0.00561	0.0108	0.0124	0.0289
Barium, total	mg/L					<0.02	0.0126	<0.02
Barium, dissolved	mg/L	<0.02	0.0115	<0.02	<0.02	<0.02	0.0125	<0.02
Beryllium, total	mg/L					<0.001	<0.0001	<0.001
Beryllium, dissolved	mg/L	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.0001	<0.001
Bismuth, total	mg/L					<0.05	<0.00005	<0.05
Bismuth, dissolved	mg/L					<0.05	<0.00005	<0.05
Boron, total	mg/L					<0.1	0.082	<0.1
Boron, dissolved	mg/L	<0.1	0.04	<0.1	<0.1	<0.1	0.078	<0.1
Cadmium, total	mg/L					0.000443	0.000163	0.000341
Cadmium, dissolved	mg/L	0.00046	0.000808	0.000632	0.00044	0.000111	0.000169	0.000097
Calcium, total	mg/L					71.4	73.6	77.3
Calcium, dissolved	mg/L	57.2	60.2	65.4	63	73.7	72.6	74.8
Chromium, total	mg/L					<0.001	<0.0001	<0.001
Chromium, dissolved	mg/L	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.0001	<0.001
Cobalt, total	mg/L					0.00044	<0.0001	0.00032
Cobalt, dissolved	mg/L	0.0003	0.00034	0.00036	0.00032	<0.0003	<0.0001	<0.0003
Copper, total	mg/L					0.0037	<0.0005	0.0022
Copper, dissolved	mg/L	<0.001	<0.0003	<0.001	<0.001	<0.001	0.00029	<0.001
Iron, total	mg/L					1.49	0.111	0.413
Iron, dissolved	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	<0.03
Lead, total	mg/L					0.00129	0.000134	0.00057
Lead, dissolved	mg/L	<0.0005	<0.00005	<0.0005	<0.0005	<0.0005	<0.00005	<0.0005
Magnesium, total	mg/L					12.4	10.7	12.4
Magnesium, dissolved	mg/L	8.1	8.4	8.25	8.85	12.9	10.7	11.9
Manganese, total	mg/L					0.174	0.0174	0.179
Manganese, dissolved	mg/L	0.0531	0.0647	0.0621	0.0454	0.0489	0.0169	0.00929
Mercury, total	mg/L					<0.00001	<0.000005	<0.000005
Mercury, dissolved	mg/L	<0.00005	<0.00005	<0.00002	<0.00002	<0.00001	<0.000005	<0.000005
Molybdenum, total	mg/L					0.0016	0.00164	<0.001
Molybdenum, dissolved	mg/L	0.004	0.00343	0.0047	0.0058	0.0015	0.00161	<0.001
Nickel, total	mg/L					0.0013	0.00058	0.0014
Nickel, dissolved	mg/L	0.002	0.00264	0.0019	0.002	<0.001	0.00056	<0.001
Selenium, total	mg/L					<0.001	0.000892	0.000266
Selenium, dissolved	mg/L	<0.001	0.0013	<0.001	<0.001	<0.001	0.000856	0.000233
Silicon, total	mg/L					3.59	3.28	3.72
Silicon, dissolved	mg/L					3.51	3.24	3.47
Silver, total	mg/L					0.000031	<0.00001	<0.00002
Silver, dissolved	mg/L	<0.00002	<0.00001	<0.00002	<0.00002	<0.00002	<0.00001	<0.00002
Sodium, total	mg/L					2.8	2.61	3.2
Sodium, dissolved	mg/L	2	2.4	2.1	2.7	2.9	2.63	3
Strontium, total	mg/L					0.859	0.819	0.908
Strontium, dissolved	mg/L					0.88	0.806	0.863
Thallium, total	mg/L					<0.0002	<0.00001	<0.0002
Thallium, dissolved	mg/L	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002	<0.00001	<0.0002
Tin, total	mg/L					<0.0005	<0.0001	<0.0005
Tin, dissolved	mg/L	<0.0005	<0.0001	<0.0005	<0.0005	<0.0005	0.00015	<0.0005
Titanium, total	mg/L					<0.01	<0.0003	0.014
Titanium, dissolved	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0003	0.013
Uranium, total	mg/L					0.00022	0.000212	0.0002
Uranium, dissolved	mg/L	0.0002	0.000199	0.00027	0.00029	<0.0002	0.000211	<0.0002
Vanadium, total	mg/L					<0.001	<0.0005	<0.0005
Vanadium, dissolved	mg/L	<0.03	<0.001	<0.03	<0.03	<0.001	<0.0005	<0.0005
Zinc, total	mg/L					0.0405	0.0235	0.0272
Zinc, dissolved	mg/L	0.063	0.0984	0.0808	0.0487	0.0117	0.0233	0.0112

Notes:

Sample ID	E Seep 2003	E Seep 2010	E Seep 2014	S Seep 2005	S Seep 2007	S Seep 2010	S Seep 2011	SW Area Seeps 2003	SW Area Seeps 2005	SW Area Seeps 2006	SW Area Seeps 2007	SW Area Seeps 2009	SW Area Seeps 2010	SW Area Seeps 2011	SW Area Seeps 2014	NW Seep 2003	NW Seep 2005	NW Seep 2006	NW Seep 2007	NW Seep 2007	NW Seep 2009
	RM-Seep-01	10RM04	RMS1	05RM04	RM07-SEEP05	10RM05	11RM05	RM-SEEP-02	05RM01	RM 06 Seep 2	RM07-SEEP04	09RM02	10RM02	11RM02	RMS2	RM-SEEP-03	05RM02	RM Seep 3	RM03	RM07-SEEP01	09RM03
Description	E WR pile		Avison	S WR pile				SW WR pile	SW WR pile	SW WR pile					Avison	NW WR Pile	NW WR Pile	NW WR Pile			
Year	2003	2010	2014	2005	2007	2010	2011	2003	2005	2006	2007	2009	2010	2011	2014	2003	2005	2006	2007	2007	2009
Date Sampled	37852	40424	41877	38561	39302	40424	40784	37852	38559	38924	39302	40036	40424	40784	41877	37852	38561	38924	39302	39302	40036
Time Sampled		00:00			00:00	00:00	00:00				00:00	00:00	00:00	00:00					00:00	00:00	00:00
ALS Sample ID	T3054-1	L928477-9	L1509623-1	W2370-5	L540282-5	L928477-8	L1053731-8	T3054-2	W2370-2	X9452-3	L540282-4	L805520-4	L928477-7	L1053731-7	L1509623-2	T3054-3	W2370-3	X9452-1	L540282-3	L540282-1	L805520-5
Nature	Water	Water		Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water		Water	Water	Water	Water	Water	Water
Field Parameters																					
pH	4.9	6.5	5.7	6.9	7.6	7.3	7.6	7.3	7.3	7.5	7.2	6.7	6.8	7.1	6.8	6.5	7.1	6.6	6.9	7.9	7.1
Conductivity (µS/cm) - lab	500	470		550	470	310	320	960	510	630	930	1300	350	710		1200	730	440	790	150	1300
ORP (mV-raw)	470	420		250		410	270	440	290	320		680	430	280		450	300	410			670
ORP (mV- corrected)	680			460				650	500	530						660	510	610			
T (°C)	7.6	2.1		6.5		3.7	4.3	2.9	10	0.1		4.1	3.9	2.7		1.7	3.9	5.8			4.3
Lab Data																					
Conductivity (uS/cm) - field		540	220		470	460	280			610	930	1300	390	720	1200			440	790	150	1300
Total Dissolved Solids	540	290	160	450	340	330		770	360	470	790	750	270		1000	1000	570	330	650	89	800
Hardness CaCO3	350	290	98	320	260	240	150	530	270	320	560	1100	200	370	680	700	390	210	470	82	1200
Laboratory pH	5.1	6.8	5.7	7	7.6	7.8	7.4	7.9	7.9	7.5	7.2	7.2	7.8	7.4	6.8	7.1	7.2	5.4	6.9	7.9	7.9
Dissolved Anions																					
Acidity (to pH 8.3) CaCO3	11	5.9	5	4.6	2.2	4.3	4.4	2	6.3	3	7.3	7.1	3.8	5	7.7	2	5.2	2.3	3	1.7	2.5
Alkalinity-Total CaCO3	2	5	2.4	21	19	40	39	56	73	36	28	22	24	32	13	12	10	4.4	7.9	39	16
Sulphate SO4	370	260	100	270	210	190	96	470	190	280	480	740	160	330	71	700	360	200	410	34	790
Flow volume (L/min)	1	5		0.3	0.5	5	1	1	Trace	5	Trace	Trace	Trace	trace		Trace	0.25	Trace	Trace	Trace	Trace
Nutrients																					
Ammonia Nitrogen N	0.075	0.032	0.005	0.0067	0.005	0.005	0.005	0.095	0.005	0.025	0.024	0.019	0.005	0.005	0.0096	0.07	0.015	0.005	0.005	0.0076	0.0068
Nitrate Nitrogen N	0.13	0.061	0.043	1.7	0.85	0.066	0.099	1.7	0.3	0.054	0.12	0.06	0.067	0.019	0.005	0.15	0.16	0.23	0.089	0.005	0.19
Nitrite Nitrogen N	0.001	0.001	0.001	0.0034	0.001	0.001	0.001	0.003	0.001	0.039	0.0013	0.01	0.001	0.001	0.001	0.001	0.001	0.0012	0.001	0.001	0.01
Dissolved Metals																					
Aluminum D-Al	2	0.15	0.11	0.005	0.005	0.0041	0.0056	0.01	0.0066	0.012	0.01	0.01	0.0019	0.02	0.0091	0.03	0.023	0.023	0.012	0.0055	0.01
Antimony D-Sb	0.001	0.00043	0.00014	0.0029	0.0029	0.01	0.0061	0.008	0.016	0.0044	0.0048	0.0023	0.0021	0.0023	0.0007	0.001	0.00053	0.0005	0.001	0.003	0.001
Arsenic D-As	0.003	0.00026	0.0001	0.0007	0.0005	0.0004	0.0004	0.001	0.00061	0.0005	0.001	0.001	0.0003	0.0001	0.00015	0.001	0.0005	0.0005	0.001	0.0005	0.001
Barium D-Ba	0.03	0.014	0.017	0.02	0.02	0.0071	0.0065	0.02	0.02	0.03	0.022	0.02	0.005	0.012	0.013	0.02	0.02	0.02	0.02	0.02	0.02
Beryllium D-Be	0.002	0.0005	0.0001	0.001	0.001	0.0005	0.0005	0.002	0.001	0.001	0.002	0.002	0.0005	0.0005	0.0001	0.002	0.001	0.001	0.002	0.001	0.002
Boron D-B	0.1	0.068	0.033	0.1	0.1	0.012	0.01	0.1	0.1	0.1	0.1	0.1	0.013	0.019	0.027	0.1	0.1	0.1	0.1	0.1	0.1
Cadmium D-Cd	0.0037	0.0011	0.0011	0.000083	0.000024	0.00005	0.00022	0.0002	0.000071	0.011	0.017	0.016	0.00005	0.0039	0.016	0.0005	0.00023	0.00049	0.00016	0.00006	0.00017
Calcium D-Ca	130	110	37	100	83	76	46	180	89	120	200	270	68	140	250	270	150	77	180	31	300
Chromium D-Cr	0.002	0.0005	0.0001	0.001	0.001	0.0005	0.0005	0.002	0.001	0.001	0.002	0.002	0.0005	0.0005	0.00011	0.002	0.001	0.001	0.002	0.001	0.002
Cobalt D-Co	0.047	0.011	0.0037	0.00033	0.0003	0.0001	0.0001	0.0006	0.0003	0.019	0.038	0.045	0.0001	0.0068	0.041	0.012	0.0037	0.0048	0.0006	0.0003	0.0006
Copper D-Cu	0.32	0.035	0.043	0.0016	0.0015	0.00081	0.0012	0.002	0.001	0.001	0.002	0.002	0.00049	0.0005	0.0014	0.032	0.014	0.016	0.0034	0.001	0.0034
Iron D-Fe	0.04	0.059	0.01	0.03	0.03	0.03	0.03	0.03	0.03	0.42	0.28	0.03	0.03	0.03	0.33	0.03	0.03	0.03	0.03	0.03	0.03
Lead D-Pb	0.001	0.000077	0.00005	0.0005	0.0005	0.00005	0.00005	0.001	0.0005	0.0005	0.001	0.001	0.0027	0.00005	0.00005	0.001	0.0005	0.0005	0.001	0.00053	0.001
Lithium D-Li	0.01	0.005	0.0005	0.005	0.005	0.005	0.005	0.01	0.005	0.01	0.021	0.023	0.005	0.012	0.021	0.01	0.005	0.005	0.01	0.005	0.01
Magnesium D-Mg	5.6	3.6	1.5	16	12	13	7.3	21	12	7.1	17	21	6.7	8.1	16	9.8	5.3	3.8	6.9	1.3	9.1
Manganese D-Mn	2.3	2	0.24	0.025	0.0025	0.00089	0.00096	0.046	0.0003	1.3	2.4	3.5	0.00036	0.46	3.1	0.42	0.072	0.077	0.0059	0.0014	0.043
Mercury D-Hg	0.00005		0.00001	0.00002	0.00002			0.00005	0.00002	0.00002	0.00002	0.00002			0.00001	0.00005	0.00002	0.00002	0.00002	0.00002	0.00002
Molybdenum D-Mo	0.002	0.00069	0.00017	0.0085	0.016	0.012	0.017	0.006	0.0077	0.001	0.002	0.002	0.0045	0.00083	0.00024	0.003	0.0018	0.001	0.0031	0.001	0.0053
Nickel D-Ni	0.024	0.014	0.0097	0.0024	0.0015	0.0009	0.00059	0.012	0.0016	0.21	0.37	0.42	0.0016	0.1	0.33	0.012	0.0031	0.004	0.002	0.001	0.0034
Potassium D-K	2	2	0.24	2	2	2	2	2	2	2	2	2	2	2	0.83	2	2	2.1	2	2	2
Selenium D-Se	0.002	0.0022	0.00078	0.0021	0.0014	0.0011	0.001	0.002	0.0012	0.0032	0.004	0.0047	0.001	0.0022	0.0045	0.003	0.0019	0.0019	0.002	0.001	0.0027
Silver D-Ag	0.00004	0.00001	0.00001	0.00002	0.00002	0.00001	0.00001	0.00004	0.00002	0.00002	0.00004	0.00004	0.00001	0.00001	0.00001	0.00004	0.00002	0.0003	0.00004	0.00003	0.00004
Sodium D-Na	2	2	0.38	2	2.5	2	2	2	2	2	2	2	2	2	1.5	2	2	2	2	2	2
Thallium D-Tl	0.0004	0.0001	0.00001	0.0002	0.0002	0.0001	0.0001	0.0004	0.0002	0.0002	0.0004	0.0004	0.0001	0.0001	0.00001	0.0004	0.0002	0.0002	0.0004	0.0002	0.0004
Tin D-Sn	0.001	0.0001	0.0001	0.0005	0.0005	0.0001	0.0001	0.001	0.0005	0.0005	0.001	0.001	0.0011	0.00016	0.0001	0.001	0.0005	0.0005	0.001	0.0005	0.001
Titanium D-Ti	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.016	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.017
Uranium D-U	0.0004	0.00001	0.00001	0.0002	0.0002	0.000021	0.000011	0.0004	0.0002	0.0002	0.0004	0.0004	0.00001	0.0001	0.000071	0.0004	0.0002	0.0002	0.0004	0.0002	0.0004
Vanadium D-V	0.03	0.001	0.001	0.03	0.03	0.001	0.001	0.03	0.03	0.03	0.03	0.002	0.001	0.001	0.001	0.03	0.03	0.03	0.03	0.03	0.002
Zinc D-Zn	0.25	0.048	0.079	0.23	0.084	0.038	0.036	0.01	0.005	1.8	2.8	2.7	0.001	0.49	2.2	0.02	0.0091	0.027	0.01	0.0054	0.005

Red_Mountain_BC\1CI019.001_2015_2016_EA\Geochemistry\[Red_Mtn_SiteWQ_1CI019-002_rev01_lnb.xlsx

Sample ID	NW Seep 2010	NW Seep 2011	NW Seep 2013	NW Seep 2014	W Seep 2005	W Seep 2006	W Seep 2007	W Seep 2008	W Seep 2009	W Seep 2010	W Seep 2011	W Seep 2013
	10RM03	11RM03	13RM03	RMS3	05RM03	RM 06 Seep 1	RM07-SEEP02	08RM01	09RM01	10RM01	11RM01	13RM01
Description	Same location since 2003	Same location since 2003		Avison	W WR Pile	W WR Pile						
Year	2010	2011	2013	2014	2005	2006	2007	2008	2009	2010	2011	2013
Date Sampled	40424	40784	41488	41877	38561	38924	39302	39691	40036	40424	40784	41488
Time Sampled	00:00	00:00	00:00				00:00	00:00	00:00	00:00	00:00	00:00
ALS Sample ID	L928477-5	L1053731-4	L1343162-2	L1509623-3	W2370-4	X9452-2	L540282-2	L676912-3	L805520-3	L928477-6	L1053731-6	L1343162-1
Nature	Water	Water	Water		Water	Water	Water	Water	Water	Water	Water	Water
Field Parameters												
pH	7.9	7.3	6.7	7.6	5.9	5.3	5.1	5.6	5.9	6.1	3.9	4.6
Conductivity (µS/cm) - lab	740	280	770		520	710	1100	620	590	780	300	450
ORP (mV-raw)	430	280	320		330	450		350	670	450	290	330
ORP (mV- corrected)					540	650		560				
T (°C)	2.3	5.8	21		6	1.4			6.1	1	5.9	24
Lab Data												
Conductivity (uS/cm) - field	810	290	760	1100		700	1100	610	580	850	310	450
Total Dissolved Solids	650			1000	380	560	910	630	310	660		
Hardness CaCO3	460	120	420	650	260	370	670	330	420	500	96	230
Laboratory pH	7.7	7.8	6.8	7.6	6	5	5.1	7	5.1	6.4	4	4.8
Dissolved Anions												
Acidity (to pH 8.3) CaCO3	5	3.4	2.4	3.1	6.5	6.3	13	5.1	6.9	6	20	5.7
Alkalinity-Total CaCO3	29	7.1	7.7	19	3.5	4.4	3.6	4.2	3.3	5.1	2	2.2
Sulphate SO4	410	120	420	67	240	360	580	290	290	460	110	220
Flow volume (L/min)	2	trace	trace		0.15	1	Trace	Trace	Trace	Trace	trace	trace
Nutrients												
Ammonia Nitrogen N	0.005	0.005	0.005	0.023	0.045	0.026	0.036	0.017	0.014	0.014	0.0064	0.005
Nitrate Nitrogen N	0.05	0.22	0.17	0.016	0.18	0.14	0.12	0.11	0.35	0.05	0.027	0.3
Nitrite Nitrogen N	0.01	0.001	0.01	0.001	0.001	0.0028	0.001	0.001	0.001	0.027	0.001	0.001
Dissolved Metals												
Aluminum D-Al	0.015	0.011	0.01	0.0078	0.45	0.83	1.2	0.29	0.29	0.38	0.64	0.15
Antimony D-Sb	0.00045	0.00045	0.00022	0.00026	0.0005	0.0005	0.0025	0.001	0.0005	0.0002	0.0001	0.0001
Arsenic D-As	0.0002	0.0001	0.0001	0.00018	0.0005	0.0005	0.0025	0.001	0.0005	0.0002	0.0001	0.00013
Barium D-Ba	0.0067	0.006	0.011	0.0083	0.02	0.02	0.02	0.02	0.02	0.0084	0.0076	0.012
Beryllium D-Be	0.001	0.0005	0.0001	0.0001	0.001	0.001	0.005	0.002	0.001	0.001	0.0005	0.0001
Boron D-B	0.02	0.01	0.015	0.018	0.1	0.1	0.1	0.1	0.1	0.02	0.013	0.025
Cadmium D-Cd	0.00016	0.00015	0.000075	0.0003	0.00063	0.00032	0.0018	0.0005	0.00049	0.0013	0.00054	0.0004
Calcium D-Ca	180	46	160	250	97	140	260	130	120	190	36	86
Chromium D-Cr	0.001	0.0005	0.0001	0.0001	0.001	0.001	0.005	0.002	0.001	0.001	0.0005	0.0001
Cobalt D-Co	0.0014	0.00011	0.00078	0.0038	0.0091	0.0055	0.015	0.006	0.0063	0.008	0.0047	0.0033
Copper D-Cu	0.008	0.0024	0.0071	0.0041	0.12	0.11	0.14	0.083	0.053	0.057	0.11	0.043
Iron D-Fe	0.03	0.03	0.012	0.01	0.03	0.045	0.03	0.03	0.03	0.03	1.1	0.46
Lead D-Pb	0.0001	0.00005	0.00005	0.00005	0.0005	0.0005	0.0025	0.001	0.0005	0.0001	0.00011	0.00005
Lithium D-Li	0.01	0.005	0.0005	0.0005	0.005	0.005	0.025	0.01	0.005	0.01	0.005	0.0024
Magnesium D-Mg	5.2	1.8	4.7	8.9	3.6	4.4	8	3.7	4.2	4.9	1.6	3.2
Manganese D-Mn	0.053	0.0035	0.024	0.23	0.19	0.095	0.8	0.18	0.22	0.62	0.11	0.11
Mercury D-Hg			0.00001	0.00001	0.00002	0.00002	0.00002	0.00002	0.00002			0.00001
Molybdenum D-Mo	0.0037	0.0018	0.0031	0.0028	0.001	0.001	0.005	0.002	0.001	0.00019	0.00005	0.00015
Nickel D-Ni	0.0046	0.0007	0.0014	0.0059	0.019	0.01	0.11	0.023	0.028	0.076	0.014	0.015
Potassium D-K	2	2	0.57	0.8	2	2	2	2	2	2	2	0.57
Selenium D-Se	0.0023	0.001	0.0028	0.004	0.0022	0.0034	0.0053	0.0023	0.0023	0.0043	0.001	0.0019
Silver D-Ag	0.00002	0.00001	0.00001	0.00001	0.00002	0.00002	0.0001	0.00004	0.00002	0.00002	0.00001	0.00001
Sodium D-Na	2	2	0.69	1	2	2	2	2	2	2	2	1
Thallium D-Tl	0.0002	0.0001	0.00001	0.00001	0.0002	0.0002	0.001	0.0004	0.0002	0.0002	0.0001	0.00001
Tin D-Sn	0.0002	0.0001	0.0001	0.0001	0.0005	0.0005	0.0025	0.001	0.0005	0.0002	0.0001	0.0001
Titanium D-Ti	0.013	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.011	0.013	0.01	0.01
Uranium D-U	0.000027	0.00001	0.00001	0.000016	0.0002	0.0002	0.001	0.0004	0.0002	0.00002	0.00003	0.00001
Vanadium D-V	0.002	0.001	0.001	0.001	0.03	0.03	0.03	0.002	0.001	0.002	0.001	0.001
Zinc D-Zn	0.0028	0.012	0.004	0.0084	0.04	0.018	0.18	0.036	0.034	0.097	0.054	0.03

Red_Mountain_BC\1CI019.001_

Appendix H – Geochemistry Data for 2016 Talus Samples

CLIENT : **SRK Consulting**
PROJECT : **Red Mountain (SRK Project # 1CI019.002)**
SGS Project # : **1640**
Test : **Weights of Composite Samples in +1 cm and -1 cm Size Fractions**
Date : **March 13, 2017**

Sample ID	+1 cm (+3/8")	-1 cm (-3/8")
SRK-16-Talus-A	13.72 kg	6.83 kg
SRK-16-Talus-B	19.89 kg	0.51 kg
SRK-16-Talus-C	14.71 kg	15.39 kg
SRK-16-Talus-D	38.37 kg	2.73 kg
SRK-16-Moraine-F	35.74 kg	24.23 kg

CLIENT : **SRK Consulting**
PROJECT : **Red Mountain (SRK Project # 1CI019.002)**
SGS Project # : **1640**
Test : **Modified Acid-Base Accounting (-1 cm Size Fraction)**
Date : **March 13, 2017**

									HCl	*Na2CO3*					
Sample ID	**Rinse pH Std. Units**	**Rinse EC µS/cm**	**Paste pH Std. Units**	**Paste EC µS/cm**	**TIC % C**	**Equiv. CaCO3 kg CaCO3/t**	**C(T) %C**	**S(T) %S**	**S(SO4) %S**	**S(SO4) %S**	**S(S-2) %S**	**AP kg CaCO3/t**	**Modified NP kg CaCO3/t**	**Net NP kg CaCO3/t**	**Fizz Test**
Method Code	Sobek	Sobek	Sobek	Sobek	CSB02V	Calc.	CSA06V	CSA06V	CSA07V-AL	GE-CSA07V	Calc.	Calc.	Modified NP	Calc.	Sobek
LOD	0.20	0.1	0.20	0.1	0.01	#N/A	0.005	0.005	0.01	0.01	#N/A	#N/A	0.5	#N/A	#N/A
SRK-16-Talus-A	4.88	52.5	6.94	233	<0.01	<0.8	0.155	0.086	0.04	0.05	0.05	1.4	3.7	2.3	None
SRK-16-Talus-B	5.69	145.2	6.92	246	<0.01	<0.8	0.219	0.073	0.02	0.03	0.05	1.7	4.3	2.6	None
SRK-16-Talus-C	4.97	61.4	7.15	186.8	<0.01	<0.8	0.129	0.038	0.02	0.03	0.02	0.6	2.3	1.7	None
SRK-16-Talus-D	4.69	146.7	5.47	201	<0.01	<0.8	0.18	0.252	0.13	0.13	0.12	3.8	-0.9	-4.7	None
SRK-16-Talus-E	-	-	8.51	343	0.36	30.0	0.382	2.59	0.01	-	2.58	80.6	36.8	-43.8	Slight
SRK-16-Moraine-F	4.87	76.0	6.39	271	<0.01	<0.8	0.348	0.122	0.06	0.07	0.06	1.9	0.6	-1.3	None
Duplicates															
SRK-16-Talus-A			6.93	229	<0.01								3.1		None
SRK-16-Talus-B							0.221	0.074							
SRK-16-Talus-C	4.96	58.1							0.02	0.03					
QC															
GTS-2A							2.05	0.324							
RTS-3A									1.04	1.33					
SY-4					0.9										
NBM-1													39.9		Slight
Blank					<0.01		<0.005	<0.005	<0.01	<0.01					
Certified Values					0.95		2.01	0.341	0.98	1.34			42.0		Slight
Tolerance +/-					0.06		0.11	0.01	0.12	0.17			3.0		

Note:

AP = Acid potential in tonnes CaCO3 equivalent per 1000 tonnes of material. AP is determined from the calculated sulphide-sulphur content: S(T) - S(SO4-HCl)

NP = Neutralization potential in tonnes CaCO3 equivalent per 1000 tonnes of material.

NET NP = Modified NP - AP

Carbonate NP is calculated from TIC originating from carbonate minerals and is expressed in kg CaCO3/tonne.

CLIENT : **SRK Consulting**
PROJECT : **Red Mountain (SRK Project # 1CI019.002)**
SGS Project # : **1640**
Test : **Low-Level Metals by Aqua Regia Digestion with ICP-MS Finish (-1 cm Size Fraction)**
Date : **March 23, 2017**

Sample ID	**Mo ppm**	**Cu ppm**	**Pb ppm**	**Zn ppm**	**Ag ppb**	**Ni ppm**	**Co ppm**	**Mn ppm**	**Fe %**	**As ppm**	**U ppm**	**Au ppb**	**Th ppm**	**Sr ppm**	**Cd ppm**	**Sb ppm**	**Bi ppm**	**V ppm**	**Ca %**	**P %**
Method Code	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
LOD	0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	2	0.01	0.001
SRK-16-Talus-A	25.17	100.34	32.07	155.6	1025	31	5.8	327	3.39	52.4	2.3	10.5	1.7	33	0.46	8.08	0.46	96	0.23	0.145
SRK-16-Talus-B	14.6	90.05	35.36	173.8	819	42	10.9	980	4.28	60.2	1.3	3.3	2.1	9.6	1.33	8.21	0.27	167	0.21	0.108
SRK-16-Talus-C	11.22	83.1	21.65	67.7	620	12.5	3.1	321	3.15	39.1	1	7.1	1.5	12	0.16	3.71	0.49	86	0.12	0.087
SRK-16-Talus-D	24.43	171.25	7.11	27.9	339	15	2.2	164	7.89	11.1	1	29.4	0.7	7.3	0.07	3.82	0.6	195	0.09	0.121
SRK-16-Talus-E	2.45	196.49	34.46	171.6	354	17	20.1	899	5.77	147.5	0.3	111.2	1.3	32.2	1.96	2.04	1.09	157	1.62	0.143
SRK-16-Moraine-F	7.06	105.97	41.09	132.7	576	12.8	5	505	5.38	158	0.5	61.2	1.4	8.3	0.36	3.04	0.78	102	0.09	0.087
Duplicate																				
SRK-16-Talus-B	14.43	90.73	35.18	169.2	838	42.2	10.6	993	4.41	63.2	1.3	2.8	2.1	9.7	1.41	7.98	0.28	172	0.22	0.111
QC																				
DS10	14.99	155.24	155.65	386	2182	80.2	13.3	939	2.8	45.1	2.5	106.6	7.8	66.3	2.75	8.5	12.32	45	1.12	0.075
DS10	15.61	161.91	155.18	360.3	1740	78	13.2	870	2.71	44.9	2.9	51.9	7.9	68.1	2.59	7.64	13.17	42	1.07	0.073
Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	0.2	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<2	<0.01	<0.001
Certified Values	13.6	154.61	150.55	370	2020	74.6	12.9	875	2.72	46.2	2.59	91.9	7.5	67.1	2.62	9.0	11.65	43	1.06	0.0765
Tolerance (%)	25	15	20	15	25	15	18	15	11	20	30	300	26	30	20	30	30	20	15	20

CLIENT
PROJECT
SGS Project #
Test
Date

Sample ID	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Sc ppm	Tl ppm	S %	Hg ppb	Se ppm	Te ppm	Ga ppm
Method Code	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
LOD	0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
SRK-16-Talus-A	10.5	73.9	1.03	756.5	0.014	<20	1.54	0.01	0.16	0.2	3.4	0.06	0.09	10	4.1	0.32	5
SRK-16-Talus-B	11.4	89.3	1.41	150.7	0.029	<20	1.85	0.025	0.11	0.1	7.2	0.05	0.08	27	5.6	0.14	7.5
SRK-16-Talus-C	6.5	78.9	1.06	112.1	0.057	<20	1.46	0.025	0.14	0.2	4.2	0.05	0.04	8	2.9	0.47	5.6
SRK-16-Talus-D	3.2	65.2	0.94	174.8	0.235	<20	1.16	0.018	0.15	7.6	4	0.04	0.26	<5	13.2	0.16	9.7
SRK-16-Talus-E	2.8	51.8	1.87	63.9	0.071	<20	1.87	0.056	0.12	0.3	8.6	0.05	2.6	21	3	2.55	7.3
SRK-16-Moraine-F	7.7	58.7	1.05	108.4	0.063	<20	1.49	0.027	0.15	0.2	5.5	0.05	0.13	13	5	1.81	6.4
Duplicate																	
SRK-16-Talus-B	11.6	89.9	1.45	158.7	0.029	<20	1.89	0.026	0.11	0.2	7.3	0.05	0.08	17	5.5	0.17	7.5
QC																	
DS10	18.4	56.6	0.79	430.6	0.082	<20	1.09	0.073	0.35	3	2.6	5.13	0.3	345	1.5	5.71	4.3
DS10	18.5	55.4	0.77	423.3	0.085	<20	1.04	0.07	0.33	3.4	2.9	5.17	0.29	267	1.6	4.8	4.4
Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	0.2	<0.02	<0.02	13	<0.1	<0.02	<0.1
Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1
Certified Values	17.5	54.6	0.78	412	0.082	#N/A	1.03	0.067	0.34	3.32	2.8	5.1	0.29	300	2.3	5.01	4.3
Tolerance (%)	30	20	12	20	28	#N/A	15	20	15	35	24	20	15	30	40	25	20

CLIENT : **SRK Consulting**
PROJECT : **Red Mountain (SRK Project # 1CI019.002)**
SGS Project # : **1640**
Test : **24 Hour Nanopure Water Leach Extraction Test at 3:1 Liquid to Solid Ratio (-1 cm Size Fraction)**
Date : **April 12, 2017**

Leachate Analysis

Sample ID				**SRK-16 Talus-A**	**SRK-16 Talus-B**	**SRK-16 Talus-C**	**SRK-16 Talus-D**	**SRK-16 Moraine-F**	**Blank**
Parameter	**Method**	**Units**	**RDL**						
Volume Nanopure Water		mL	1	750	450	750	750	750	750
Sample Volume		g	1	250	150	250	250	250	-
pH	meter		0.1	5.46	6.34	5.58	5.01	5.35	5.57
Redox	meter	mV	5	567	520	556	566	554	574
Conductivity	meter	uS/cm	1	12	27	5	24	14	<1
Acidity (to pH 4.5)	titration	mg CaCO3/L	1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Acidity (to pH 8.3)	titration	mg CaCO3/L	1	4.0	3.8	3.8	4.5	4.1	3.8
Alkalinity	titration	mg CaCO3/L	1	1.4	2.5	1.3	0.9	1.1	1.2
Fluoride		mg/L	0.01	0.021	0.044	0.014	0.023	0.016	0.012
Sulphate	Turbidity	mg/L	2	4	7	3	5	4	2
Ion Balance									
Major Anions	Calc	meq/L	-	0.11	0.20	0.09	0.12	0.11	#N/A
Major Cations	Calc	meq/L	-	0.08	0.21	0.04	0.15	0.10	#N/A
Difference	Calc	meq/L	-	0.03	-0.01	0.05	-0.02	0.01	#N/A
Balance (%)	Calc	%	-	15.2%	-3.4%	43.0%	-8.0%	2.5%	#N/A
Dissolved Metals									
Hardness CaCO3		mg/L	0.5	2.82	8.61	0.74	3.56	3.24	<0.50
Aluminum Al	ICP-MS	mg/L	0.0005	0.0146	0.00744	0.0132	0.0516	0.0239	<0.0005
Antimony Sb	ICP-MS	mg/L	0.00002	0.00033	0.000456	0.000072	0.000062	0.000048	<0.00002
Arsenic As	ICP-MS	mg/L	0.00002	0.000277	0.000255	0.000142	0.000156	0.000162	<0.00002
Barium Ba	ICP-MS	mg/L	0.00002	0.126	0.0487	0.0104	0.0786	0.0228	0.00151
Beryllium Be	ICP-MS	mg/L	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Bismuth Bi	ICP-MS	mg/L	0.000005	0.000009	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005
Boron B	ICP-MS	mg/L	0.01	<0.01	0.021	0.014	<0.01	0.012	<0.01
Cadmium Cd	ICP-MS	mg/L	0.000005	0.000084	0.000474	0.00002	0.00008	0.000227	<0.000005
Calcium Ca	ICP-MS	mg/L	0.05	0.907	2.71	0.171	0.935	0.989	<0.050
Chromium Cr	ICP-MS	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cobalt Co	ICP-MS	mg/L	0.000005	0.000488	0.000425	0.000123	0.000486	0.000373	<0.000005
Copper Cu	ICP-MS	mg/L	0.00005	0.00325	0.00113	0.00164	0.00884	0.0036	0.000658
Iron Fe	ICP-MS	mg/L	0.001	0.0034	0.0042	0.0025	0.0113	0.003	<0.001
Lead Pb	ICP-MS	mg/L	0.000005	0.000118	0.000122	0.000058	0.000202	0.000231	0.000005
Lithium Li	ICP-MS	mg/L	0.0005	<0.0005	<0.0005	<0.0005	0.00093	<0.0005	<0.0005
Magnesium Mg	ICP-MS	mg/L	0.05	0.136	0.449	0.075	0.298	0.187	<0.050
Manganese Mn	ICP-MS	mg/L	0.00005	0.0375	0.0912	0.0143	0.0335	0.0216	<0.00005
Mercury Hg	ICP-MS	ug/L	0.01	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Molybdenum Mo	ICP-MS	mg/L	0.00005	0.000065	0.000163	<0.00005	<0.00005	<0.00005	<0.00005
Nickel Ni	ICP-MS	mg/L	0.00002	0.00126	0.00221	0.000623	0.00155	0.00102	0.000023
Phosphorus P	ICP-MS	mg/L	0.002	0.0059	0.0047	0.0029	0.0024	0.0035	0.0021
Potassium K	ICP-MS	mg/L	0.05	0.226	0.295	0.15	0.535	0.373	<0.050
Selenium Se	ICP-MS	mg/L	0.00004	0.000658	0.00112	0.000304	0.000674	0.000502	<0.00004
Silicon Si	ICP-MS	mg/L	0.05	0.666	1.21	0.617	2.61	1.35	<0.05
Silver Ag	ICP-MS	mg/L	0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005	<0.000005
Sodium Na	ICP-MS	mg/L	0.05	0.365	0.536	0.256	1.18	0.444	<0.050
Strontium Sr	ICP-MS	mg/L	0.00005	0.00726	0.0111	0.00159	0.00526	0.00847	<0.00005
Sulphur (S)	ICP-MS	mg/L	3	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Thallium Tl	ICP-MS	mg/L	0.000002	0.000013	0.000016	0.000008	0.000012	0.000011	<0.000002
Tin Sn	ICP-MS	mg/L	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Titanium Ti	ICP-MS	mg/L	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Uranium U	ICP-MS	mg/L	0.000002	0.000007	0.000003	0.000003	0.000006	0.000003	<0.000002
Vanadium V	ICP-MS	mg/L	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Zinc Zn	ICP-MS	mg/L	0.0001	0.00511	0.00327	0.00234	0.0131	0.0104	0.00069
Zirconium Zr	ICP-MS	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

CLIENT : **SRK Consulting**
PROJECT : **Red Mountain (SRK Project # 1CI019.002)**
SGS Project # : **1640**
Test : **Low-Level Metals by Multi-Acid Digestion with ICP-MS Finish (-1 cm Size Fraction)**
Date : **March 23, 2017**

Sample ID	**Mo ppm**	**Cu ppm**	**Pb ppm**	**Zn ppm**	**Ag ppb**	**Ni ppm**	**Co ppm**	**Mn ppm**	**Fe %**	**As ppm**	**U ppm**	**Th ppm**	**Sr ppm**	**Cd ppm**	**Sb ppm**	**Bi ppm**	**V ppm**	**Ca %**	**P %**	**La ppm**
Method Code	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250
LOD	0.05	0.1	0.02	0.2	20	0.1	0.2	1	0.01	0.2	0.1	0.1	1	0.02	0.02	0.04	1	0.01	0.001	0.1
SRK-16-Talus-A	26.23	97.8	32.02	167.8	1140	32.4	5.5	416	3.84	54.5	4.5	2.6	105	0.49	15.11	0.49	397	0.3	0.158	11.4
SRK-16-Talus-B	17.47	99.2	36.71	194.9	999	44.2	10.5	1114	5.08	69.6	3.4	3.3	224	1.56	16.77	0.3	401	0.34	0.124	14.7
SRK-16-Talus-C	11.91	81	21.41	74.4	688	13.3	2.8	496	3.7	44.4	2.5	2.4	175	0.21	7.52	0.49	215	0.28	0.093	8.7
SRK-16-Talus-D	26.4	173.3	7.68	33.5	407	13.6	1.7	217	8.6	15.5	2.7	1.1	189	0.05	8.52	0.63	313	0.24	0.136	7.3
SRK-16-Moraine-F	7.29	101	40.79	149	569	13.2	4.2	718	6.27	172.7	1.5	2.2	228	0.33	7.28	0.81	225	0.31	0.1	9.3
OREAS 151b	52.82	1860.7	45.43	255.4	584	15.4	11.8	397	3.54	29.2	0.6	2.4	193	0.61	1.21	0.47	206	1.91	0.062	7.4
Duplicate																				
OREAS 151b	51.69	1823	44.81	247.1	562	15.2	11.2	390	3.44	27.2	0.6	2.3	188	0.67	1.16	0.46	203	1.82	0.062	7
QC																				
OREAS 25A-4A	2.33	35.1	26.2	47.9	<20	44.9	7.9	510	7.05	11.1	3.1	15.7	53	0.14	0.72	0.43	165	0.27	0.054	21
Blank	<0.05	<0.1	0.02	0.4	<20	0.1	<0.2	<1	<0.01	0.7	<0.1	<0.1	<1	<0.02	0.04	<0.04	<1	<0.01	<0.001	<0.1
Certified Values	2.55	33.9	26.6	44.4	BDL	45.8	8.2	500	6.70	10.7	2.94	15.8	48.5	0.1	0.67	0.35	163	0.283	0.049	21.8
Tolerance (%)	20	20	20	25	BDL	15	20	15	10	70	20	25	25	<5 x DL	30	45	15	25	20	30

CLIENT
PROJECT
SGS Project #
Test
Date

Sample ID	Cr ppm	Mg %	Ba ppm	Ti %	Al %	Na %	K %	W ppm	Zr ppm	Sn ppm	Be ppm	Sc ppm	S %	Y ppm	Ce ppm	Pr ppm	Nd ppm	Sm ppm	Eu ppm	Gd ppm
Method Code	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250
LOD	1	0.01	1	0.001	0.01	0.001	0.01	0.1	0.2	0.1	1	0.1	0.04	0.1	0.02	0.1	0.1	0.1	0.1	0.1
SRK-16-Talus-A	127	1.41	3260	0.33	5.33	0.964	2.24	2	52.2	1.8	2	14	0.09	9	24.26	3.9	13.5	3.2	0.4	2.9
SRK-16-Talus-B	139	1.67	1815	0.293	6.27	2.326	2.28	1.6	52.4	1.6	1	14.7	0.07	11.4	27.91	3.9	14.7	3.7	0.6	2.8
SRK-16-Talus-C	103	1.33	2872	0.255	5.79	1.814	2.6	2.1	41.6	1.6	<1	12.2	<0.04	6.5	17.62	2.2	8.8	1.6	0.1	1.8
SRK-16-Talus-D	78	1.2	1855	0.482	6.11	1.079	4.35	42.7	47.3	2.8	1	12.7	0.21	7.5	12.8	1.7	7.2	1.4	0.3	1.3
SRK-16-Moraine-F	85	1.36	2395	0.305	7.03	2.238	3.56	1.9	36.2	1.9	<1	16.6	0.11	7.1	19.91	2.6	11.7	2.5	0.4	1.5
OREAS 151b	28	1.64	233	0.281	7.3	2.476	1.33	2	14.2	2.2	<1	16.7	0.7	11.9	17.85	2.2	9.4	2.5	0.6	2.3
Duplicate																				
OREAS 151b	26	1.58	220	0.277	6.93	2.389	1.3	2.4	14.5	2.1	1	15.3	0.68	11.4	17.07	2.3	8	1.8	0.6	2.3
QC																				
OREAS 25A-4A	118	0.36	169	1.026	9.25	0.137	0.53	2.1	161.8	4.5	1	13	<0.04	10.1	49.03	4.7	19.2	4	0.7	2.8
Blank	<1	<0.01	<1	<0.001	<0.01	0.003	<0.01	<0.1	0.6	<0.1	<1	<0.1	<0.04	<0.1	<0.02	<0.1	<0.1	<0.1	<0.1	<0.1
Certified Values	120	0.327	151	0.977	8.87	0.134	0.50	2.0	155	4.2	0.93	13.7	0.047	10.5	48.9	5.11	18.2	3.55	0.69	2.68
Tolerance (%)	20	20	20	15	15	20	15	25	15	25	BDL	20	70	30	20	30	25	30	35	35

CLIENT
PROJECT
SGS Project #
Test
Date

Sample ID	**Tb** ppm	**Dy** ppm	**Ho** ppm	**Er** ppm	**Tm** ppm	**Yb** ppm	**Lu** ppm	**Hf** ppm	**Li** ppm	**Rb** ppm	**Ta** ppm	**Nb** ppm	**Cs** ppm	**Ga** ppm	**In** ppm	**Re** ppm	**Se** ppm	**Te** ppm	**Tl** ppm
Method Code	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250	MA250
LOD	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.02	0.1	0.1	0.1	0.04	0.1	0.02	0.01	0.002	0.3	0.05	0.05
SRK-16-Talus-A	0.4	2.3	0.4	1.2	0.2	1.5	0.3	1.51	26.2	65.8	0.3	4.62	1.3	15.32	0.09	0.006	5.2	0.33	0.73
SRK-16-Talus-B	0.3	2.5	0.4	1.4	0.2	1.5	0.3	1.42	27	55.2	0.3	4.95	0.9	16.49	0.04	0.006	8	0.19	0.58
SRK-16-Talus-C	0.2	1.1	0.3	0.8	0.1	1	0.2	1.18	20.8	70.2	0.3	4.51	1.1	15.48	0.04	0.006	3.6	0.59	0.61
SRK-16-Talus-D	0.2	1.2	0.3	0.8	0.1	0.9	0.2	1.4	15.3	87.7	0.4	5.25	1.4	24.06	0.06	0.011	16.4	0.25	0.57
SRK-16-Moraine-F	0.2	1.3	0.3	0.7	0.2	0.9	0.1	1.17	25.1	87.5	0.3	5.03	1.6	18.77	0.13	0.004	6.2	1.86	0.73
OREAS 151b	0.3	2.3	0.5	1.3	0.2	1.1	0.2	0.35	8.4	36.2	0.2	3.55	1.8	19.03	0.11	0.148	4	0.15	0.26
Duplicate																			
OREAS 151b	0.3	2	0.5	1.3	0.2	1.1	0.2	0.47	9.3	35	0.2	3.35	1.7	18.92	0.08	0.169	2.9	0.15	0.3
QC																			
OREAS 25A-4A	0.4	2	0.6	1.2	0.2	1.2	0.2	4.89	42.3	61.9	1.7	22.56	5.9	27.42	0.1	<0.002	2.9	<0.05	0.42
Blank	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.02	<0.1	0.1	<0.1	<0.04	<0.1	<0.02	<0.01	0.002	1.3	<0.05	<0.05
Certified Values	0.34	2.25	0.43	1.23	0.19	1.3	0.2	4.28	36.7	61	1.5	20.9	6.0	25.9	0.09	BDL	2.5	BDL	0.35
Tolerance (%)	95	30	35	30	40	30	40	20	20	20	20	20	30	15	60	BDL	40	BDL	20

Appendix I – Mineralogy Data for 2016 Talus Samples

Quantitative X-Ray Diffraction by Rietveld Refinement

Report Prepared for: *SGS Canada Inc*

Project Number/ LIMS No. *14936-101/MI4504-MAR17*

Sample Receipt: *March 8, 2017*

Sample Analysis: *March 9, 2017*

Reporting Date: *March 14, 2017*

Instrument: BRUKER AXS D8 Advance Diffractometer

Test Conditions: Co radiation, 40 kV, 35 mA
Regular Scanning: Step: 0.02°, Step time: 1s, 2θ range: 3-80°

Interpretations : PDF2/PDF4 powder diffraction databases issued by the International Center for Diffraction Data (ICDD). DiffracPlus Eva and Topas software.

Detection Limit : 0.5-2%. Strongly dependent on crystallinity.

Contents:

<Original signed by>

Kim Gibbs, H.B.Sc., P.Geo.
Senior Mineralogist

<Original signed by>

Huyun Zhou, Ph.D., P.Geo.
Senior Mineralogist

Method Summary

The Rietveld Method of Mineral Identification by XRD (ME-LR-MIN-MET-MN-D05) method used by SGS Minerals Services is accredited to the requirements of ISO/IEC 17025.

Mineral Identification and Interpretation:

Mineral identification and interpretation involves matching the diffraction pattern of an unknown material to patterns of single-phase reference materials. The reference patterns are compiled by the Joint Committee on Powder Diffraction Standards - International Center for Diffraction Data (JCPDS-ICDD) database and released on software as Powder Diffraction Files (PDF).

Interpretations do not reflect the presence of non-crystalline and/or amorphous compounds, except when internal standards have been added by request. Mineral proportions may be strongly influenced by crystallinity, crystal structure and preferred orientations. Mineral or compound identification and quantitative analysis results should be accompanied by supporting chemical assay data or other additional tests.

Quantitative Rietveld Analysis:

Quantitative Rietveld Analysis is performed by using Topas 4.2 (Bruker AXS), a graphics based profile analysis program built around a non-linear least squares fitting system, to determine the amount of different phases present in a multicomponent sample. Whole pattern analyses are predicated by the fact that the X-ray diffraction pattern is a total sum of both instrumental and specimen factors. Unlike other peak intensity-based methods, the Rietveld method uses a least squares approach to refine a theoretical line profile until it matches the obtained experimental patterns.

Rietveld refinement is completed with a set of minerals specifically identified for the sample. Zero values indicate that the mineral was included in the refinement calculations, but the calculated concentration was less than 0.05wt%. Minerals not identified by the analyst are not included in refinement calculations for specific samples and are indicated with a dash.

Summary of Rietveld Quantitative Analysis X-ray Diffraction Results

Quantitative X-ray Diffraction Results

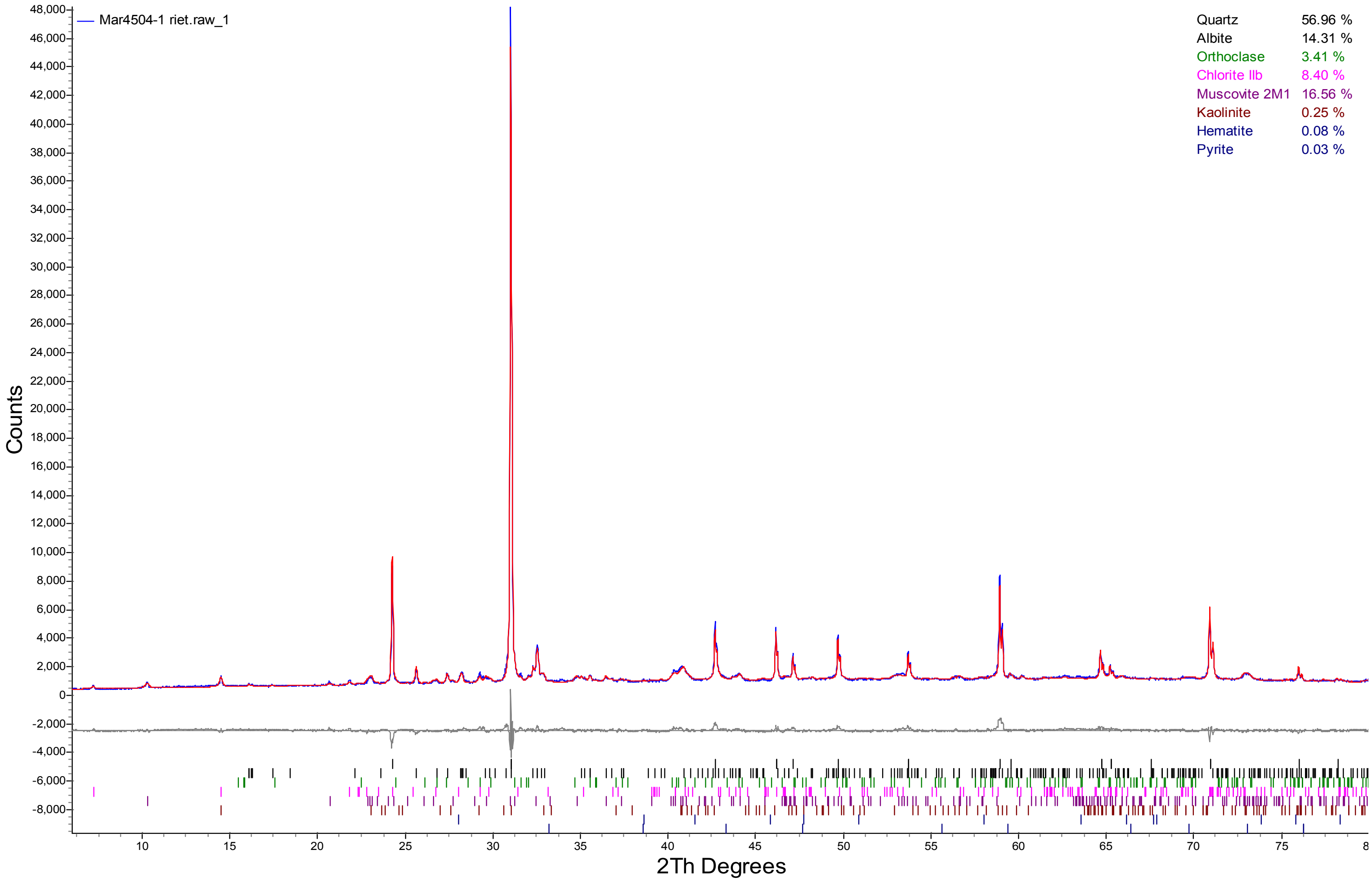
Mineral/Compound	SRK-16-TALUS-A MAR4504-1 (wt %)	SRK-16-TALUS-B MAR4504-2 (wt %)	SRK-16-TALUS-C MAR4504-3 (wt %)	SRK-16-TALUS-D MAR4504-4 (wt %)	SRK-16-TALUS-F MAR4504-5 (wt %)	OREAS 15b MAR4504-6 (wt %)
Quartz	57.0	39.6	48.1	34.3	29.5	35.2
Plagioclase	14.3	31.5	22.7	14.5	30.4	35.8
Orthoclase	3.4	7.8	10.3	26.8	14.3	0.6
Chlorite	8.4	12.7	8.5	8.4	11.1	8.3
Muscovite	16.6	8.1	10.1	10.1	13.6	13.1
Kaolinite	0.3	0.3	0.2	0.0	0.7	1.4
Hematite	0.1	0.1	0.0	0.3	0.3	0.3
Pyrite	0.0	0.0	0.0	0.1	0.1	0.6
Goethite	-	-	-	5.4	-	-
Calcite	-	-	-	-	-	2.4
Rhodonite	-	-	-	-	-	1.6
Magnetite	-	-	-	-	-	0.7
TOTAL	100	100	100	100	100	100

Zero values indicate that the mineral was included in the refinement, but the calculated concentration is below a measurable value.

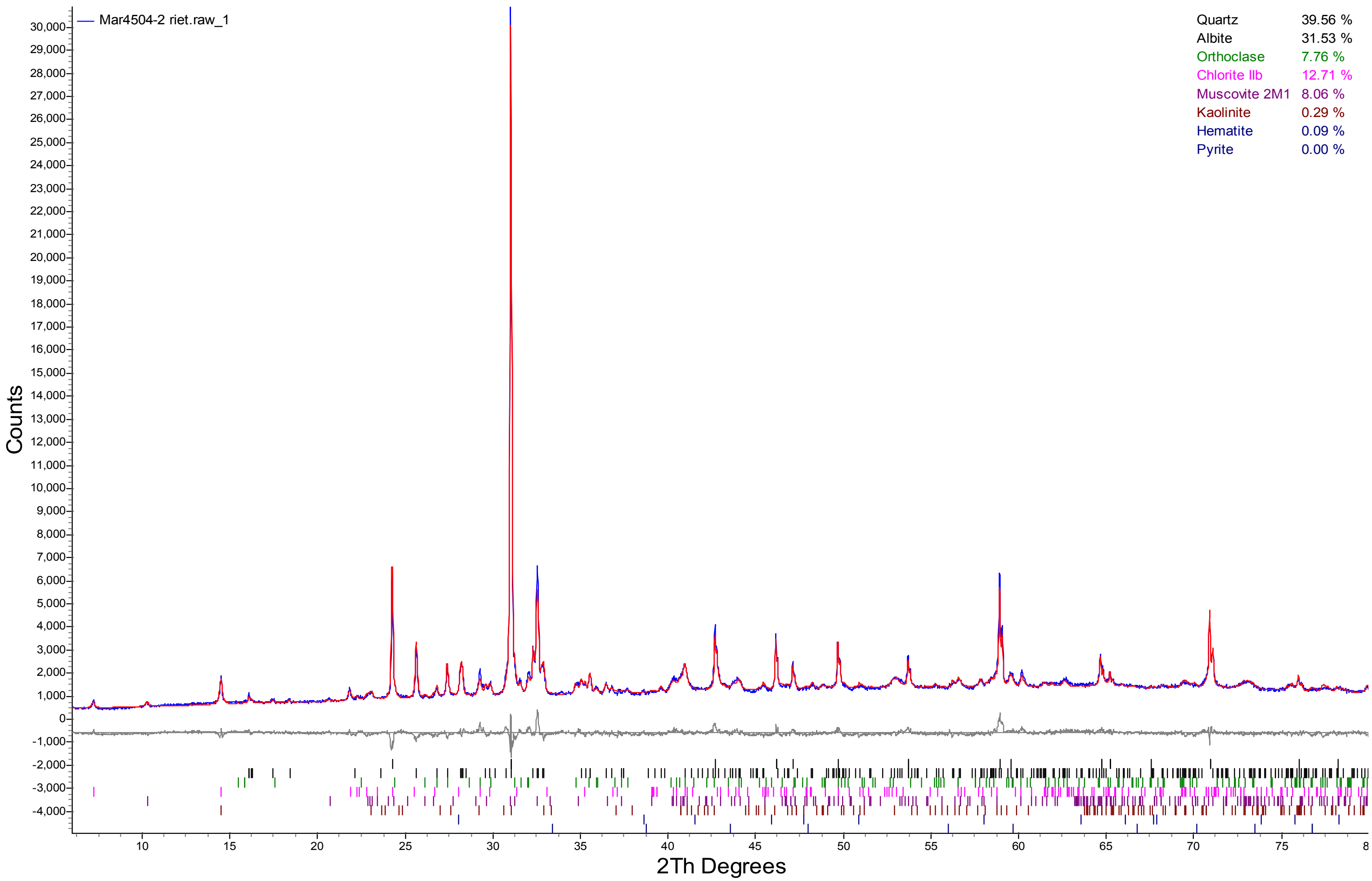
Dashes indicate that the mineral was not identifed by the analyst and not included in the refinement calculation for the sample.

Mineral/Compound	Formula
Quartz	SiO_2
Plagioclase	$(NaSi,CaAl)AlSi_2O_8$
Orthoclase	$KAlSi_3O_8$
Chlorite	$(Fe,(Mg,Mn)_5,Al)(Si_3Al)O_{10}(OH)_8$
Muscovite	$KAl_2(AlSi_3O_{10})(OH)_2$
Kaolinite	$Al_2Si_2O_5(OH)_4$
Hematite	Fe_2O_3
Pyrite	FeS_2
Goethite	$\alpha FeO\cdot OH$
Calcite	$CaCO_3$
Rhodonite	$MnSiO_3$
Magnetite	Fe_3O_4

SRK-16-TALUS-A



SRK-16-TALUS-B



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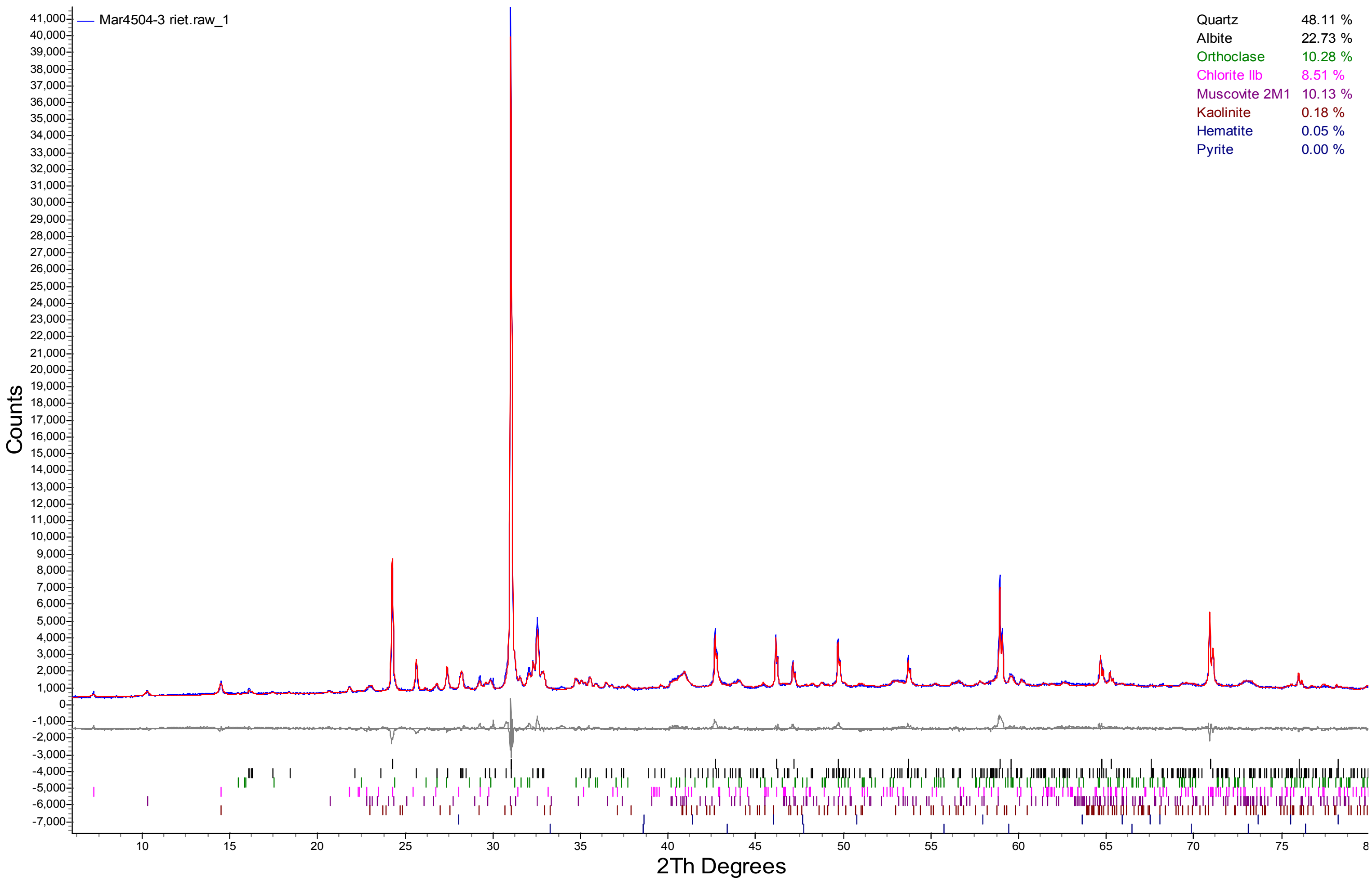
SRK-16-TALUS-C



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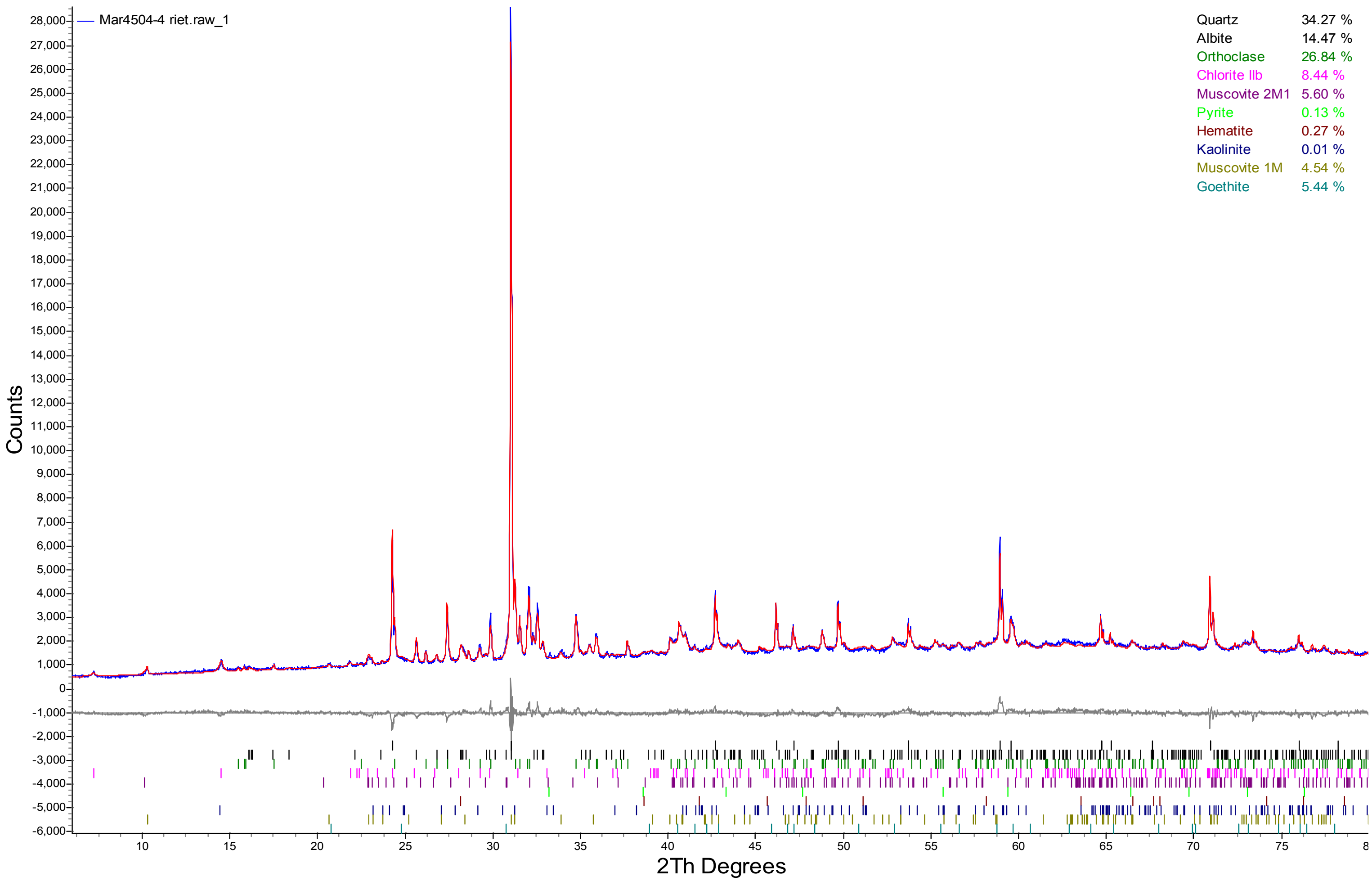

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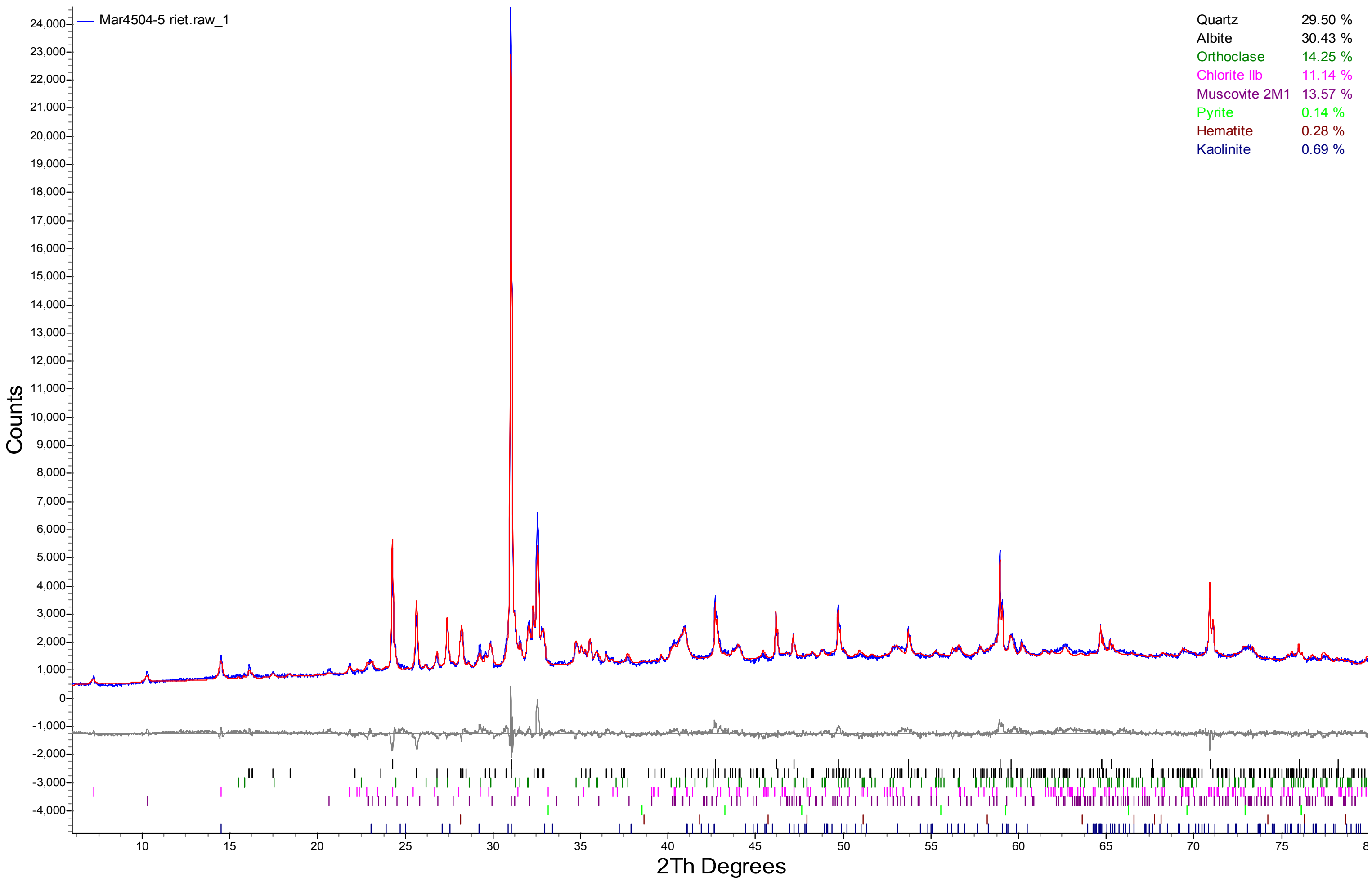

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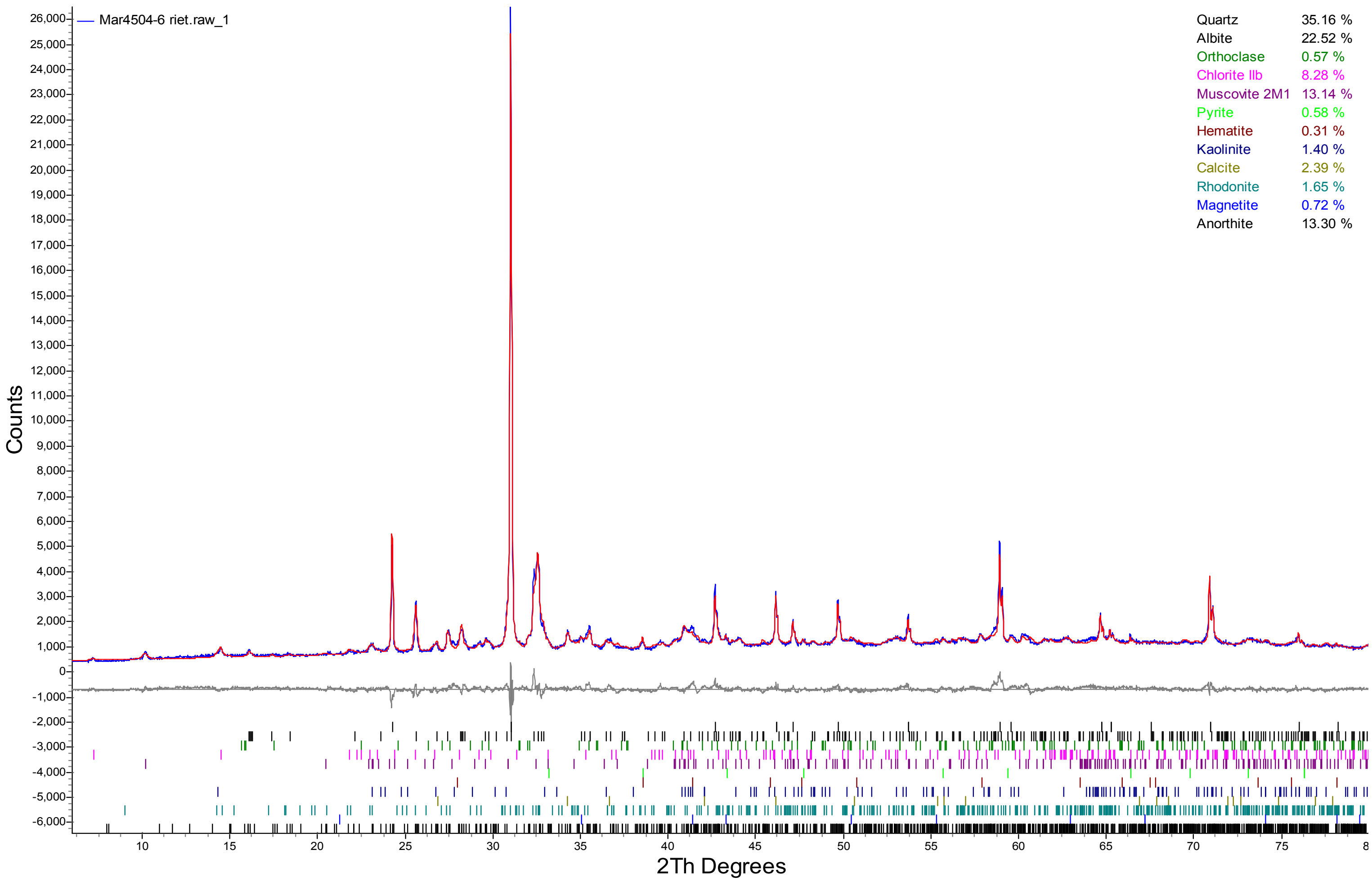
14-Mar-17

OREAS 15b



IDM Mining
14936-101
MI7002-MAR17

High Definition Mineralogical Analysis using QEMSCAN (Quantitative Evaluation of Materials by Scanning Electron Microscopy)

Modals

Survey		15939-101 / MI7002-MAR17				
Project		IDM Mining				
Sample		SRK-16-TALUS-A	SRK-16-TALUS-B	SRK-16-TALUS-C	SRK-16-TALUS-D	SRK-16-MORAINE-F
Fraction		As Rec 'd	As Rec 'd	As Rec 'd	As Rec 'd	As Rec 'd
Mass Size Distribution (%)		100.0	100.0	100.0	100.0	100.0
Calculated ESD Particle Size		16	18	15	14	15
Mineral Mass (%)	Pyrite	0.09	0.09	0.03	0.38	0.14
	Pyrrhotite	0.02	0.01	0.00	0.02	0.00
	Chalcopyrite	0.00	0.00	0.00	0.00	0.00
	Bornite	0.00	0.00	0.00	0.00	0.00
	Covellite	0.00	0.01	0.00	0.00	0.00
	Sphalerite	0.00	0.00	0.00	0.00	0.00
	Molybdenite	0.00	0.00	0.00	0.00	0.00
	Other Sulphides	0.00	0.00	0.00	0.00	0.00
	Quartz	47.1	32.8	40.1	26.8	22.4
	Plagioclase	10.5	24.3	16.3	7.21	21.2
	K-Feldspar	12.0	14.7	19.1	33.1	24.1
	Sericite/Muscovite	10.7	5.18	6.89	8.84	9.43
	Biotite	2.62	1.75	1.95	2.51	2.01
	Amphibole/Pyroxene	0.50	0.27	0.31	0.33	0.71
	Chlorite/Clays	11.1	15.9	10.4	8.64	10.7
	Titanite/sphene	0.03	0.07	0.06	0.29	0.15
	Other Silicates	0.31	0.64	0.68	0.54	0.70
	Fe-Oxides	3.45	2.94	3.31	10.0	7.56
	Rutile	1.24	0.99	0.74	0.99	0.72
	Ilmenite	0.03	0.00	0.03	0.11	0.07
	Other Oxides	0.00	0.00	0.00	0.00	0.00
	Calcite	0.01	0.02	0.02	0.03	0.01
	Ankerite	0.00	0.00	0.00	0.00	0.00
	Dolomite	0.00	0.00	0.00	0.00	0.00
	Apatite	0.13	0.29	0.07	0.03	0.12
	Gypsum	0.01	0.00	0.00	0.00	0.00
	Other	0.16	0.05	0.02	0.11	0.06
	Total	100.0	100.0	100.0	100.0	100.0
Mean Grain Size by Frequency (μm)	Pyrite	7	7	8	24	10
	Pyrrhotite	10	10	0	12	12
	Chalcopyrite	0	8	0	6	6
	Bornite	0	0	0	0	0
	Covellite	0	20	0	0	0
	Sphalerite	0	9	0	0	0
	Molybdenite	0	0	0	0	0
	Other Sulphides	0	0	0	0	0
	Quartz	14	17	13	13	13
	Plagioclase	13	16	13	12	14
	K-Feldspar	11	12	12	12	13
	Sericite/Muscovite	13	12	11	11	12
	Biotite	9	10	10	9	9
	Amphibole/Pyroxene	11	9	10	10	10
	Chlorite/Clays	11	11	10	9	10
	Titanite/sphene	11	12	10	12	12
	Other Silicates	10	16	15	15	16
	Fe-Oxides	13	13	14	13	13
	Rutile	14	14	12	11	11
	Ilmenite	12	0	12	11	14
	Other Oxides	0	6	6	0	6
	Calcite	10	11	12	14	12
	Ankerite	0	0	6	0	0
	Dolomite	0	12	15	6	9
	Apatite	17	18	18	13	20
	Gypsum	12	6	6	0	6
	Other	12	8	9	7	7

Summary Table

Project: 14936-101 IDM
SEM-EDS

Sample: SRK-16-TALUS-A

Spectrum	O	Mg	Al	Si	P	Ti	Mn	Fe	S	V	K	Na	Ca	Zn	Cl	Cr
AVG	45.3	0.5	3.5	3.4	0.9	0.3	0.0	45.4	0.3	0.0	0.4	0.0	0.0	0.1	0.0	0.0
STDEV	4.2	1.5	2.3	3.1	0.7	1.1	0.1	9.1	0.5	0.1	0.8	0.2	0.0	0.2	0.1	0.1
MIN	36.5	0.0	0.0	0.7	0.0	0.0	0.0	23.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	54.1	7.1	9.0	11.4	2.9	5.8	0.4	61.9	2.5	0.3	2.9	1.1	0.2	1.1	0.3	0.4

Sample: SRK-16-TALUS-B

Spectrum	O	Al	Si	P	Fe	S	Cl	Zn	As	K	Mg	Ti	Pb	Mn	Cu	Ni
AVG	46.3	1.9	1.8	0.6	48.4	0.3	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0
STDEV	1.8	1.5	1.1	0.7	3.9	0.8	0.1	0.3	0.4	0.3	0.1	0.5	0.8	0.3	0.2	0.1
MIN	41.8	0.0	0.0	0.0	39.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	50.1	5.3	4.6	2.4	56.9	4.4	0.4	1.0	2.5	1.5	0.5	2.4	4.7	1.1	0.8	0.3

Sample: SRK-16-TALUS-C

Spectrum	O	Al	Si	P	Fe	Mo	S	Zn	Mg	Cl	Mn	K	Na	As	Ti
AVG	46.0	2.5	1.7	0.8	48.3	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1
STDEV	2.2	1.8	1.3	0.8	4.9	0.7	0.2	0.1	0.2	0.1	0.2	0.3	0.0	0.2	0.7
MIN	40.6	0.0	0.0	0.0	36.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	50.5	6.9	5.8	4.6	56.6	4.3	0.8	0.7	0.9	0.3	0.7	1.3	0.3	1.4	4.0

Sample: SRK-16-TALUS-D

Spectrum	O	S	Al	Si	Ti	Fe	P	Mg	Cl	K	Cu	V
AVG	45.2	0.8	1.0	1.4	0.2	50.6	0.7	0.0	0.0	0.0	0.0	0.0
STDEV	2.8	0.5	0.6	0.9	0.3	3.3	0.7	0.2	0.1	0.1	0.1	0.1
MIN	40.0	0.0	0.0	0.3	0.0	42.6	0.0	0.0	0.0	0.0	0.0	0.0
MAX	51.2	2.7	2.2	6.0	1.5	58.1	2.5	1.4	0.5	0.8	0.8	0.5

Sample: SRK-16-MORAINE-F

Spectrum	O	Al	Si	P	S	Fe	Na	K	Ba	Ti	Mg	Cl	Mn	As	V	Zn	Ca
AVG	46.2	2.4	1.9	0.6	0.6	47.8	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0
STDEV	2.4	1.5	1.3	0.6	1.0	4.7	0.4	0.2	0.1	0.1	0.5	0.1	0.1	0.4	0.1	0.0	0.1
MIN	37.1	0.0	0.5	0.0	0.0	30.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MAX	50.5	6.3	7.1	2.1	7.2	58.4	2.6	1.1	0.8	0.5	2.2	0.3	0.3	2.5	0.6	0.3	0.5

Project: 14936-101 IDM
SEM-EDS

Sample: SRK-16-TALUS-A

Spectrum	O	Mg	Al	Si	P	Ti	Mn	Fe	S	V	K	Na	Ca	Zn	Cl	Cr	Mineral Identification
1	36.7	0.0	0.0	1.1	0.0	0.0	0.0	61.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	Fe-oxy/hydroxide
2	37.0	0.0	1.1	0.8	0.5	0.0	0.0	60.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
3	42.9	0.0	0.0	0.7	0.0	0.0	0.4	55.4	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.4	Fe-oxy/hydroxide
4	40.9	0.0	3.4	1.6	0.7	0.0	0.0	53.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
5	38.5	0.0	4.1	2.4	1.3	0.0	0.0	53.0	0.3	0.0	0.2	0.0	0.0	0.0	0.3	0.0	Fe-oxy/hydroxide
6	42.9	0.0	1.6	1.7	0.5	0.0	0.0	52.8	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	Fe-oxy/hydroxide
7	45.7	0.0	0.6	1.1	0.4	0.0	0.0	52.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
8	39.1	0.0	2.5	5.1	0.9	0.0	0.0	51.5	0.3	0.0	0.0	0.6	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
9	44.8	0.0	1.4	1.8	0.6	0.0	0.0	51.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
10	43.5	0.0	2.3	2.0	1.0	0.0	0.0	51.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
11	41.3	0.0	4.1	2.1	1.2	0.0	0.0	51.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
12	43.4	0.0	2.4	1.5	1.3	0.0	0.0	50.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
13	46.2	0.0	1.3	0.9	1.0	0.0	0.0	50.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
14	44.9	0.0	1.8	2.3	0.4	0.0	0.0	50.1	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
15	46.6	0.0	1.3	1.8	0.5	0.0	0.0	49.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
16	46.5	0.0	2.6	2.0	0.0	0.0	0.0	48.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
17	46.1	0.0	2.5	1.1	1.2	0.0	0.0	48.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
18	45.7	0.0	2.9	2.6	0.0	0.0	0.0	48.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
19	47.6	0.0	1.1	0.8	1.6	0.0	0.0	48.4	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
20	44.1	0.0	3.8	1.6	2.3	0.0	0.0	47.9	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
21	44.4	0.0	3.7	2.2	1.0	0.0	0.0	47.8	0.3	0.0	0.0	0.0	0.0	0.5	0.2	0.0	Fe-oxy/hydroxide
22	47.6	0.0	2.6	1.4	0.6	0.0	0.0	47.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
23	45.7	0.5	3.8	3.6	1.3	0.0	0.0	44.2	0.5	0.0	0.6	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
24	44.9	0.0	4.1	1.1	2.9	0.0	0.0	44.1	2.5	0.0	0.3	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
25	47.0	0.0	4.1	3.0	0.9	0.0	0.0	43.9	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	Fe-oxy/hydroxide
26	48.0	0.0	4.0	1.6	1.8	1.5	0.0	42.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
27	36.5	0.0	7.2	10.6	0.5	0.0	0.0	42.9	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
28	54.1	0.0	2.0	2.2	0.5	0.0	0.0	40.8	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	Fe-oxy/hydroxide
29	52.0	0.0	2.9	0.9	2.8	0.0	0.0	39.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
30	47.9	0.3	3.9	3.3	1.3	2.8	0.0	39.0	0.8	0.0	0.8	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
32	45.1	0.0	6.1	7.7	0.6	0.0	0.0	37.6	0.0	0.0	1.7	1.1	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
33	49.2	1.7	6.4	8.0	0.8	0.0	0.0	32.1	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
34	47.9	0.8	7.2	9.7	0.5	0.0	0.0	31.3	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
35	47.0	0.7	7.3	11.4	0.0	0.0	0.0	30.8	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
36	52.5	1.4	9.0	8.2	1.4	0.0	0.0	27.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
37	51.0	7.1	7.0	7.9	0.0	0.0	0.0	26.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
38	50.2	5.7	6.5	8.2	0.0	5.8	0.0	23.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
AVG	45.3	0.5	3.5	3.4	0.9	0.3	0.0	45.4	0.3	0.0	0.4	0.0	0.0	0.1	0.0	0.0	
STDEV	4.2	1.5	2.3	3.1	0.7	1.1	0.1	9.1	0.5	0.1	0.8	0.2	0.0	0.2	0.1	0.1	
MIN	36.5	0.0	0.0	0.7	0.0	0.0	0.0	23.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MAX	54.1	7.1	9.0	11.4	2.9	5.8	0.4	61.9	2.5	0.3	2.9	1.1	0.2	1.1	0.3	0.4	

Project: 14936-101 IDM
SEM-EDS

Sample: SRK-16-TALUS-B

Spectrum	O	Al	Si	Fe	Cl	K	Mn	Cr	Mineral ID
1	13.6	2.0	4.3	36.8	0.4	0.3	0.9	41.7	chromite
2	5.9	2.3	2.4	49.4	0.0	0.0	0.0	40.1	chromite

Spectrum	O	Al	P	Fe	S	K	Pb	Mineral ID
1	44.8	0.5	2.8	32.4	6.0	1.8	11.8	Pb-Oxide/Sulph?
2	45.5	0.5	3.2	29.1	6.2	1.7	13.8	Pb-Oxide/Sulph?
3	46.4	0.5	3.2	26.1	6.4	1.7	15.8	Pb-Oxide/Sulph?

Spectrum	O	Al	Si	P	Fe	S	Cl	Zn	As	K	Mg	Ti	Pb	Mn	Cu	Ni	Mineral Identification
1	41.8	0.0	1.3	0.0	56.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
2	44.6	0.0	0.9	0.0	54.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
3	44.5	0.0	1.1	0.4	53.2	0.3	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
4	45.1	0.5	1.6	0.0	52.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
5	45.2	0.3	0.8	1.1	52.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
6	43.4	1.9	1.3	1.3	52.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
7	44.3	0.6	2.4	0.0	51.8	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
8	46.5	0.6	0.9	0.0	51.1	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
9	45.0	0.8	2.4	0.0	51.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
10	44.8	3.0	1.4	0.0	50.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
11	44.9	2.1	1.9	0.0	50.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	Fe-oxy/hydroxide
12	46.1	0.7	1.2	1.2	50.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
13	46.7	0.4	0.5	1.5	50.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	Fe-oxy/hydroxide
14	45.5	2.0	1.7	0.0	50.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3	Fe-oxy/hydroxide
15	46.9	1.2	0.9	0.4	49.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
16	47.2	1.4	1.7	0.4	49.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
17	46.7	0.8	1.0	1.6	49.3	0.3	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
18	47.1	1.4	2.5	0.3	48.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
19	46.0	0.5	0.8	0.4	48.7	0.2	0.0	1.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
20	45.0	2.3	2.8	0.0	47.6	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
21	46.4	2.6	3.8	0.0	47.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
22	44.4	4.1	1.5	1.4	47.1	0.0	0.4	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
23	46.6	2.3	3.7	0.0	47.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
24	46.5	3.2	1.3	0.8	46.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.8	0.0	Fe-oxy/hydroxide
25	47.1	3.8	1.0	0.5	46.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	Fe-oxy/hydroxide
26	47.2	3.0	1.2	0.7	46.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.6	0.0	Fe-oxy/hydroxide
27	45.8	2.7	4.4	0.6	46.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
28	48.9	1.8	2.0	0.7	46.1	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
29	48.9	2.3	1.3	1.2	45.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
30	49.7	3.6	0.6	2.4	43.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
31	49.1	2.2	3.2	0.0	43.4	0.0	0.0	0.0	0.0	0.7	0.0	1.5	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
32	49.1	4.6	1.6	0.8	43.4	0.4	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
33	46.5	4.2	4.6	1.2	42.6	0.5	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
34	46.8	0.5	0.0	2.0	40.0	4.4	0.0	0.0	0.0	1.5	0.0	0.0	4.7	0.0	0.0	0.0	Fe-oxy/hydroxide
35	50.1	5.3	2.7	1.5	39.8	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
AVG	46.3	1.9	1.8	0.6	48.4	0.3	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0	
STDEV	1.8	1.5	1.1	0.7	3.9	0.8	0.1	0.3	0.4	0.3	0.1	0.5	0.8	0.3	0.2	0.1	
MIN	41.8	0.0	0.0	0.0	39.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MAX	50.1	5.3	4.6	2.4	56.9	4.4	0.4	1.0	2.5	1.5	0.5	2.4	4.7	1.1	0.8	0.3	

Project: 14936-101 IDM
SEM-EDS

Sample: SRK-16-TALUS-C

Spectrum	O	Al	Si	P	Fe	Mo	S	Zn	Mg	Cl	Cr	Mn	K	Na	As	Ti	Mineral ID
1	4.9	0.6	2.9	0.0	79.1	0.0	0.0	0.0	0.0	0.0	11.6	1.0	0.0	0.0	0.0	0.0	chromferide/chromite?
2	4.8	0.5	2.2	0.0	76.7	0.0	0.0	0.0	0.5	0.0	14.3	1.0	0.0	0.0	0.0	0.0	chromferide/chromite?

Spectrum	O	Al	Si	P	Fe	Mo	S	Zn	Mg	Cl	Mn	K	Na	As	Ti	Mineral Identification
1	42.8	0.0	0.6	0.0	56.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
2	40.6	1.9	1.2	0.0	56.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
3	43.4	0.0	1.1	0.0	55.1	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
4	44.9	0.0	0.4	0.0	54.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
5	44.4	0.0	1.1	0.0	53.8	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
6	43.2	1.0	1.7	0.0	53.6	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
7	44.4	0.6	0.9	0.7	53.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
8	44.6	0.4	1.3	0.5	53.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
9	45.1	1.0	0.9	0.6	51.9	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
10	44.4	2.4	0.9	0.0	51.6	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
11	41.8	2.0	2.5	1.0	51.1	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	1.4	0.0	Fe-oxy/hydroxide
12	45.8	1.6	1.5	0.6	50.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
13	46.1	1.6	1.4	0.4	50.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
14	46.1	1.0	1.4	0.8	50.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
15	46.2	1.2	1.8	0.0	50.2	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
16	43.6	3.6	1.6	1.0	50.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
17	46.4	1.4	2.0	0.0	49.8	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
18	43.8	3.1	1.7	1.2	49.7	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
19	47.1	2.4	0.0	1.5	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
20	45.9	3.2	0.6	1.5	48.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
21	48.2	0.9	1.4	0.6	48.5	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
22	46.4	2.3	2.0	0.4	48.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.3	0.0	0.0	Fe-oxy/hydroxide
23	46.4	2.7	2.5	1.0	47.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
24	47.4	3.2	1.0	1.1	47.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
25	47.3	3.7	1.9	0.4	46.2	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
26	47.5	4.4	0.8	1.6	45.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
27	48.5	2.5	1.3	2.0	45.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
28	47.4	3.9	1.6	1.1	45.5	0.0	0.3	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	Fe-oxy/hydroxide
29	45.9	4.9	1.8	1.6	45.3	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
30	47.2	4.8	2.1	1.2	44.2	0.0	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	Fe-oxy/hydroxide
31	49.2	3.1	3.0	0.6	44.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
32	49.7	1.2	1.1	0.0	43.4	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	4.0	Fe-oxy/hydroxide
33	47.7	4.7	3.0	0.7	43.3	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
34	47.4	4.6	0.6	4.6	42.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
35	44.5	6.9	5.2	1.4	40.5	0.0	0.0	0.0	0.3	0.0	0.0	0.7	0.0	0.0	0.5	Fe-oxy/hydroxide
36	48.2	4.6	1.1	1.5	40.2	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
37	47.7	4.9	5.2	0.6	39.0	0.0	0.5	0.0	0.9	0.0	0.0	1.3	0.0	0.0	0.0	Fe-oxy/hydroxide
38	50.5	4.8	5.8	0.5	36.9	0.0	0.5	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	Fe-oxy/hydroxide
AVG	46.0	2.5	1.7	0.8	48.3	0.1	0.2	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	
STDEV	2.2	1.8	1.3	0.8	4.9	0.7	0.2	0.1	0.2	0.1	0.2	0.3	0.0	0.2	0.7	
MIN	40.6	0.0	0.0	0.0	36.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MAX	50.5	6.9	5.8	4.6	56.6	4.3	0.8	0.7	0.9	0.3	0.7	1.3	0.3	1.4	4.0	

Project: 14936-101 IDM
SEM-EDS

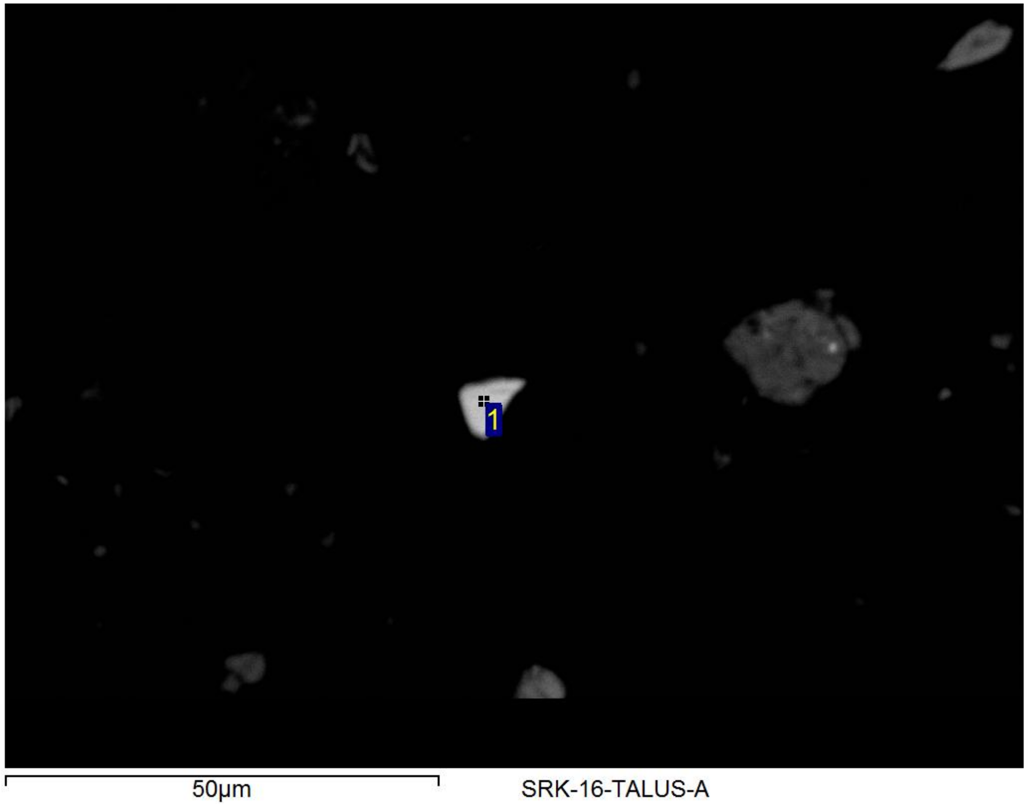
Sample: SRK-16-TALUS-D

Spectrum	O	S	Co	Al	Si	Ti	Fe	P	Mg	Cl	K	Cu	V	Mineral Identification
1	40.9	0.0	0.0	0.0	1.0	0.0	58.1	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
2	40.0	0.3	0.0	0.7	0.3	0.4	56.8	1.4	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
3	40.9	0.6	0.0	0.7	0.8	0.0	56.6	0.5	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
4	41.5	0.8	0.0	0.8	1.5	0.0	55.4	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
5	42.5	1.0	0.0	0.8	1.4	0.0	54.2	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
6	42.2	0.6	0.0	0.8	1.0	0.0	54.2	1.2	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
7	41.9	0.4	0.0	1.2	0.6	0.7	53.8	1.5	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
8	44.1	0.6	0.0	0.3	1.5	0.0	53.5	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
9	44.5	0.3	0.0	0.0	1.6	0.0	53.3	0.3	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
10	40.2	0.6	0.0	1.9	2.0	0.0	52.9	0.9	1.4	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
11	40.1	0.7	0.0	1.7	2.0	1.5	52.6	0.5	0.6	0.0	0.0	0.0	0.5	Fe-oxy/hydroxide
12	44.7	0.7	0.0	0.6	1.5	0.0	52.5	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
13	42.7	0.6	0.0	2.1	1.9	0.0	52.3	0.4	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
14	44.2	0.8	0.0	1.3	1.2	0.6	51.9	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
15	45.5	1.2	0.0	0.0	1.4	0.0	51.8	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
16	45.4	0.3	0.0	0.3	1.7	0.0	51.8	0.6	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
17	44.2	0.8	0.0	1.0	1.2	0.5	51.4	0.7	0.0	0.0	0.0	0.0	0.2	Fe-oxy/hydroxide
18	44.6	0.7	0.0	2.0	1.5	0.0	51.2	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
19	44.9	0.9	0.0	0.9	1.5	0.0	51.1	0.6	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
20	46.8	0.8	0.0	0.5	0.9	0.0	51.1	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
21	45.6	0.7	0.0	0.4	2.4	0.0	50.9	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
22	45.0	0.8	0.0	1.1	1.3	0.3	50.9	0.6	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
23	46.2	0.5	0.0	0.8	1.0	0.4	50.8	0.4	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
24	45.7	2.2	0.0	0.2	1.2	0.0	50.7	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
25	43.5	0.4	0.0	1.8	0.7	0.0	50.7	2.2	0.0	0.0	0.0	0.8	0.0	Fe-oxy/hydroxide
26	46.8	0.8	0.0	0.7	0.9	0.3	50.6	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
27	44.5	0.8	0.0	1.8	1.2	0.0	50.6	1.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
28	46.5	0.8	0.0	0.5	1.1	0.0	50.6	0.4	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
29	44.9	0.7	0.0	1.3	0.9	0.0	50.0	2.1	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
30	45.7	0.6	0.0	1.9	1.2	0.0	49.9	0.8	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
31	48.1	0.9	0.0	0.0	1.6	0.0	49.5	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
32	47.0	0.8	0.0	1.6	1.2	0.0	49.4	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
33	44.2	2.7	0.0	0.7	1.0	0.0	49.1	1.6	0.0	0.0	0.8	0.0	0.0	Fe-oxy/hydroxide
34	46.5	0.9	0.0	0.7	2.2	0.9	48.9	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
35	46.5	0.6	0.0	2.2	1.4	0.0	48.6	0.5	0.0	0.0	0.0	0.0	0.3	Fe-oxy/hydroxide
36	46.0	0.6	0.0	1.7	1.3	0.5	48.4	1.5	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
37	46.0	0.4	0.0	1.6	0.6	0.5	48.4	2.5	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
38	45.4	1.8	0.0	1.3	1.6	1.0	47.9	0.9	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
39	48.8	0.6	0.0	1.9	0.8	0.0	47.0	0.9	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
40	45.3	0.9	0.0	0.5	6.0	0.5	46.8	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
41	47.1	1.5	0.0	1.2	0.7	0.8	46.8	1.6	0.0	0.0	0.3	0.0	0.0	Fe-oxy/hydroxide
42	50.7	0.9	0.0	0.6	1.6	0.0	45.9	0.3	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
43	50.0	0.6	0.0	0.5	2.9	0.5	45.3	0.3	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
44	51.2	0.3	0.0	1.2	0.8	0.0	44.8	1.7	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
45	50.1	0.6	0.0	1.3	2.2	0.0	43.9	1.1	0.0	0.4	0.4	0.0	0.0	Fe-oxy/hydroxide
49	50.3	0.6	0.0	1.7	2.3	0.0	42.6	1.7	0.0	0.5	0.4	0.0	0.0	Fe-oxy/hydroxide
AVG	45.2	0.8	0.0	1.0	1.4	0.2	50.6	0.7	0.0	0.0	0.0	0.0	0.0	
STDEV	2.8	0.5	0.0	0.6	0.9	0.3	3.3	0.7	0.2	0.1	0.1	0.1	0.1	
MIN	40.0	0.0	0.0	0.0	0.3	0.0	42.6	0.0	0.0	0.0	0.0	0.0	0.0	
MAX	51.2	2.7	0.0	2.2	6.0	1.5	58.1	2.5	1.4	0.5	0.8	0.8	0.5	

Project: 14936-101 IDM
SEM-EDS

Sample: SRK-16-MORAINE-F

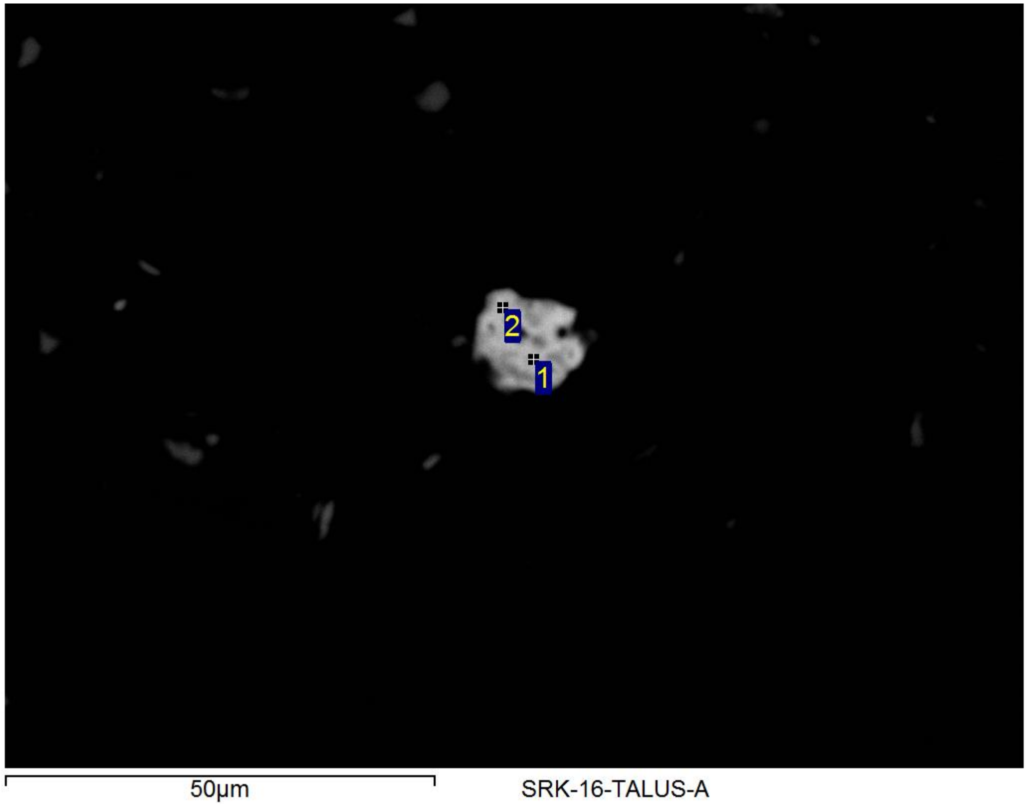
Spectrum	O	Al	Si	P	S	Fe	Na	K	Ba	Ti	Mg	Cl	Mn	As	V	Zn	Ca	Mineral Identification
1	37.1	0.4	3.2	0.0	0.0	58.4	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.6	0.0	0.0	Fe-oxy/hydroxide
2	42.7	1.1	0.6	0.0	0.3	55.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
3	44.7	0.0	0.7	0.0	0.0	54.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
4	44.2	0.5	1.4	0.0	0.2	53.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
5	45.1	0.0	1.3	0.0	0.3	53.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
6	45.1	0.6	1.2	0.0	0.0	52.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
7	44.6	0.8	1.0	0.0	0.3	52.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	Fe-oxy/hydroxide
8	44.9	0.4	1.1	0.5	0.0	52.7	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
9	43.4	1.9	1.6	0.5	0.7	51.6	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
10	45.7	0.6	1.0	0.7	0.4	51.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
11	45.1	1.4	0.5	1.5	0.3	51.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
12	45.0	1.0	1.8	0.4	0.2	51.2	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
13	45.0	1.8	1.4	0.4	0.5	50.7	0.0	0.2	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
14	45.7	1.5	1.3	1.0	0.4	50.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
15	40.6	3.3	3.8	0.5	0.3	50.0	0.0	0.5	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.5	Fe-oxy/hydroxide
16	45.9	2.3	1.3	0.4	0.5	49.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
17	47.6	1.3	1.3	0.4	0.0	49.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
18	46.5	0.7	0.8	2.0	0.6	49.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
19	46.3	2.3	2.2	0.0	0.0	49.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
20	45.2	3.6	0.8	0.0	0.6	49.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	Fe-oxy/hydroxide
21	46.4	2.7	1.0	1.3	0.0	48.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
22	40.3	4.4	3.6	0.5	0.6	48.4	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
23	47.9	1.2	2.0	0.0	0.4	48.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
24	47.7	0.4	0.5	1.2	0.7	48.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	Fe-oxy/hydroxide
25	47.5	2.0	0.9	0.7	0.8	48.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
26	46.9	2.4	0.7	1.3	0.4	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	Fe-oxy/hydroxide
27	45.8	3.9	1.1	0.9	0.5	47.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
28	47.8	1.9	1.8	0.0	0.6	47.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
29	45.8	4.4	1.3	0.0	0.8	47.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
30	45.5	3.2	2.0	0.9	0.5	47.7	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
31	45.0	3.6	1.8	0.8	0.7	47.7	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
32	47.6	2.2	1.1	1.0	0.5	47.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
33	47.0	3.2	1.3	0.4	0.2	47.7	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
34	47.6	2.8	1.6	0.6	0.2	47.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
35	47.6	2.7	2.4	0.3	0.3	46.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
36	48.3	3.9	1.7	0.4	0.4	45.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
37	48.4	2.4	3.0	0.5	0.3	45.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
38	45.9	4.9	2.2	0.7	0.7	45.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
39	48.7	2.4	2.0	1.3	0.6	44.6	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
40	46.3	4.0	3.4	0.5	0.4	44.6	0.0	0.5	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
41	46.1	5.5	1.8	1.0	0.3	44.4	0.0	0.0	0.0	0.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
42	47.0	3.3	3.6	0.5	0.6	44.4	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
43	48.4	3.7	3.6	0.5	0.3	43.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
44	48.2	3.1	4.1	0.0	0.4	43.2	0.0	0.5	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
45	49.1	4.4	1.8	0.7	0.3	43.1	0.0	0.2	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
46	50.3	2.3	0.6	2.1	2.0	42.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
47	50.5	0.9	0.5	1.8	2.1	41.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	Fe-oxy/hydroxide
48	49.5	6.3	3.3	0.5	0.5	39.4	0.0	0.0	0.0	0.0	0.5	0.2	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
49	47.0	4.6	7.1	0.0	0.5	37.4	0.0	0.8	0.0	0.5	2.2	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
50	47.9	2.5	5.6	1.6	7.2	30.7	2.6	1.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Fe-oxy/hydroxide
AVG	46.2	2.4	1.9	0.6	0.6	47.8	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	
STDEV	2.4	1.5	1.3	0.6	1.0	4.7	0.4	0.2	0.1	0.1	0.5	0.1	0.1	0.4	0.1	0.0	0.1	
MIN	37.1	0.0	0.5	0.0	0.0	30.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MAX	50.5	6.3	7.1	2.1	7.2	58.4	2.6	1.1	0.8	0.5	2.2	0.3	0.3	2.5	0.6	0.3	0.5	



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	V	Fe	Total	Mineral Identification
1	47.6	1.1	0.8	1.6	0.3	0.3	48.4	100.0	Fe-oxy/hydroxide

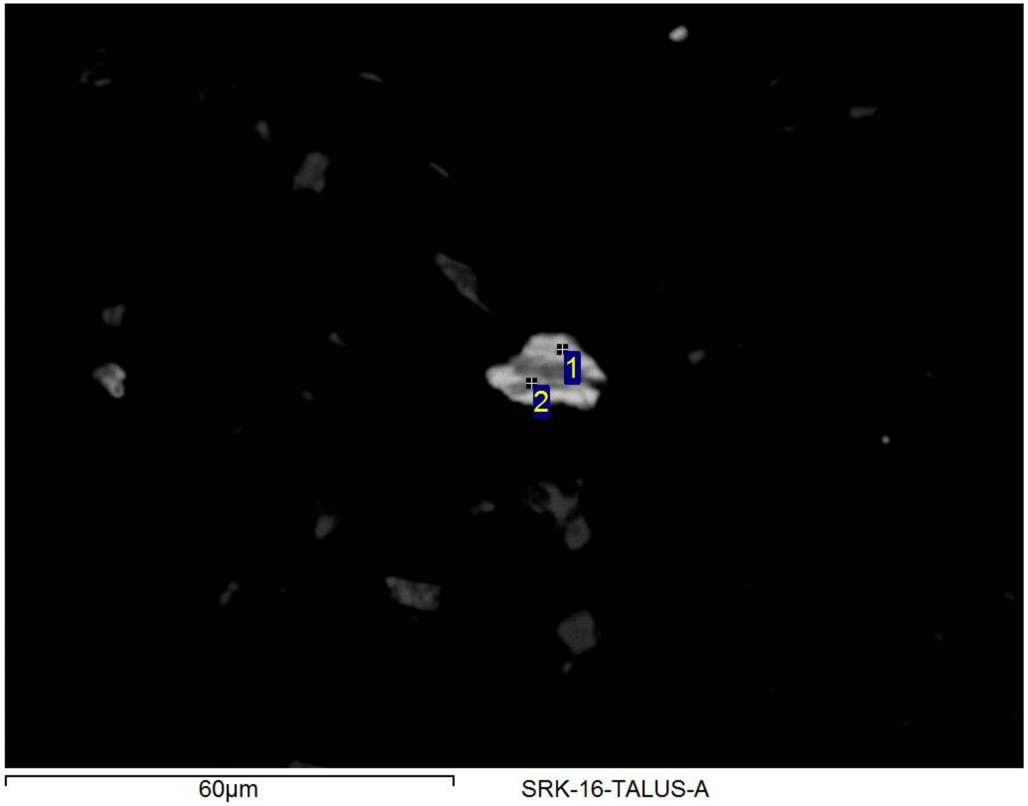
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Fe	Total	Mineral Identification
1	46.5	2.6	2.0		48.9	100.0	Fe-oxy/hydroxide
2	45.7	2.9	2.6	0.4	48.5	100.0	Fe-oxy/hydroxide

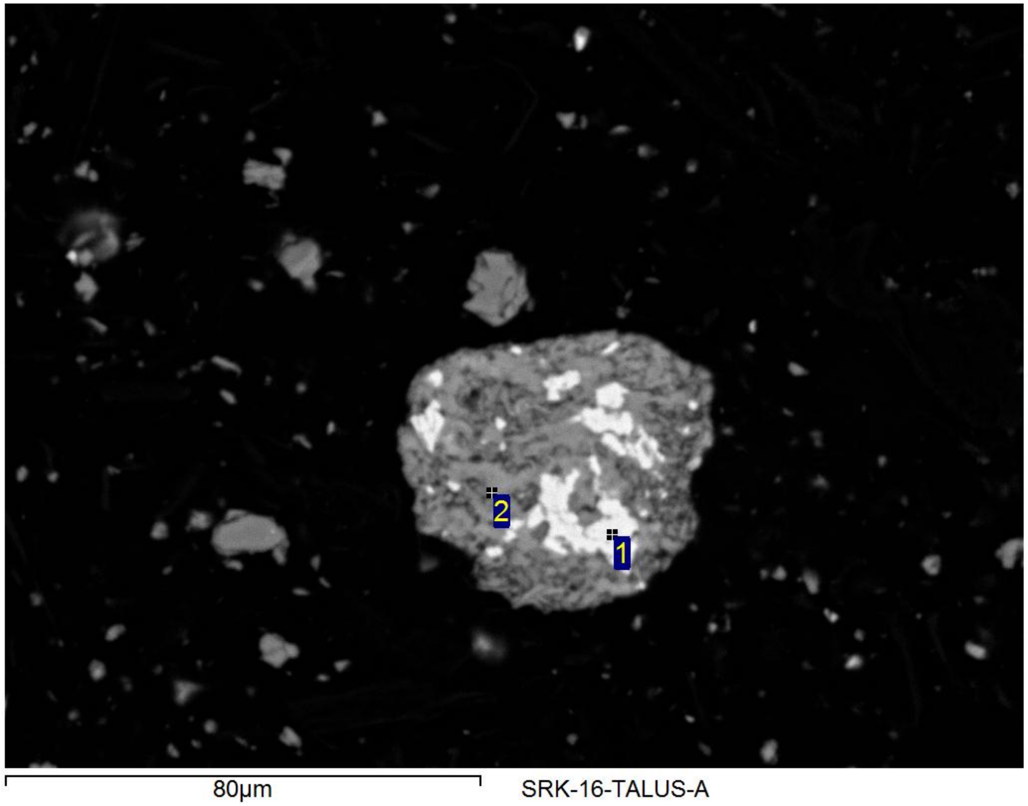
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	K	Fe	Total	Mineral Identification
1	43.4		2.3	1.5	1.3	0.8		50.7	100.0	Fe-oxy/hydroxide
2	49.2	1.7	6.4	8.0	0.7		1.9	32.1	100.0	Fe-oxy/hydroxide

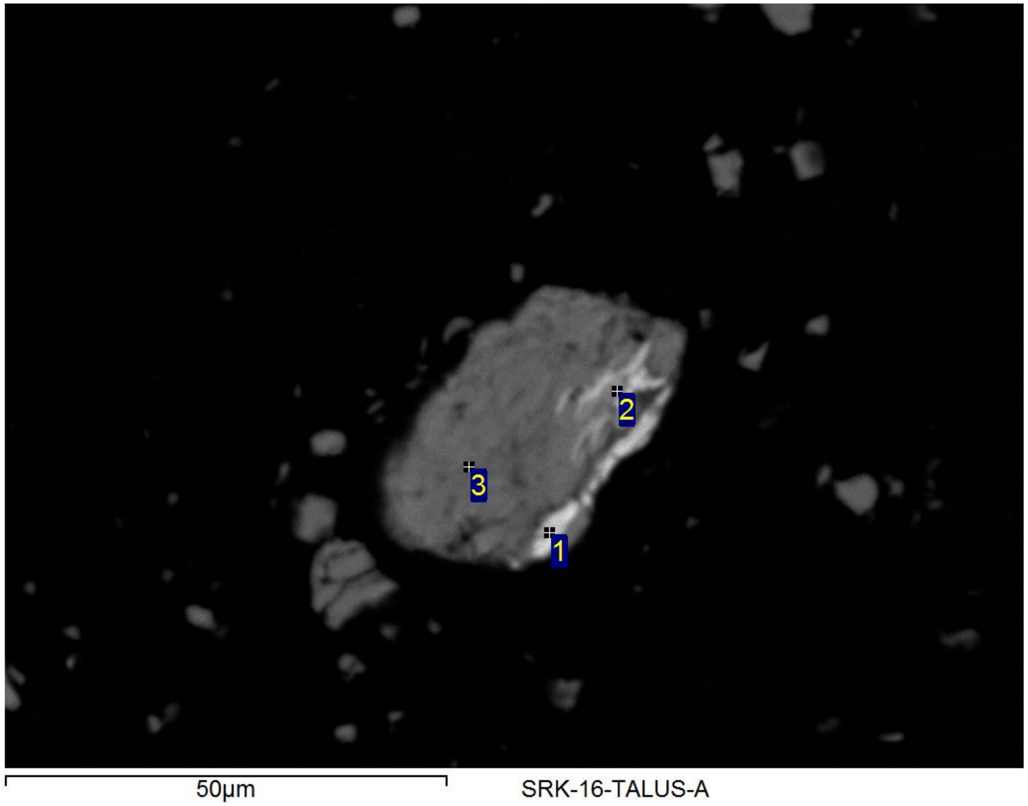
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Na	Mg	Al	Si	K	Ti	Fe	Total	Mineral Identification
1	45.9			0.6	1.0	0.5	52.0		100.0	rutile
2	50.1	3.1	0.9	13.2	26.0	4.6		2.1	100.0	Fe-oxy/hydroxide

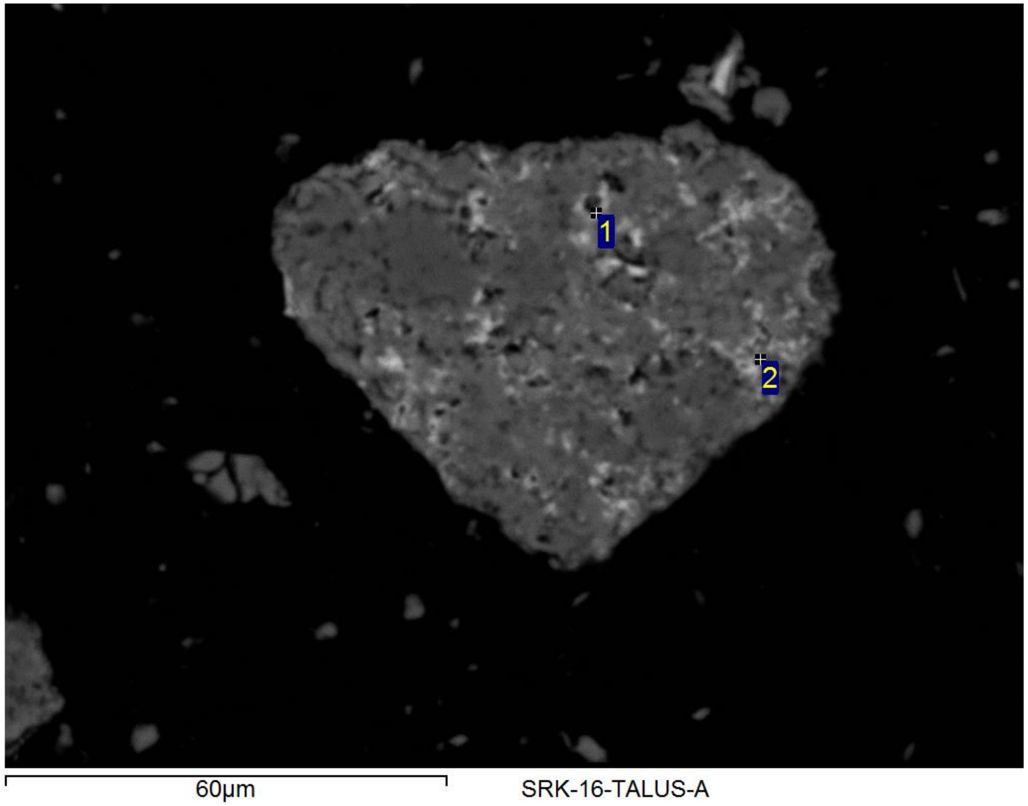
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	K	Ti	Fe	Total	Mineral Identification
1	47.0	0.7	7.3	11.4	2.9		30.7	100.0	Fe-oxy/hydroxide
2	53.5	0.7	6.2	13.4	3.0	9.8	13.3	100.0	Fe-oxy/hydroxide
3	50.3	1.3	15.6	23.2	8.2		1.3	100.0	mica

All results in weight%

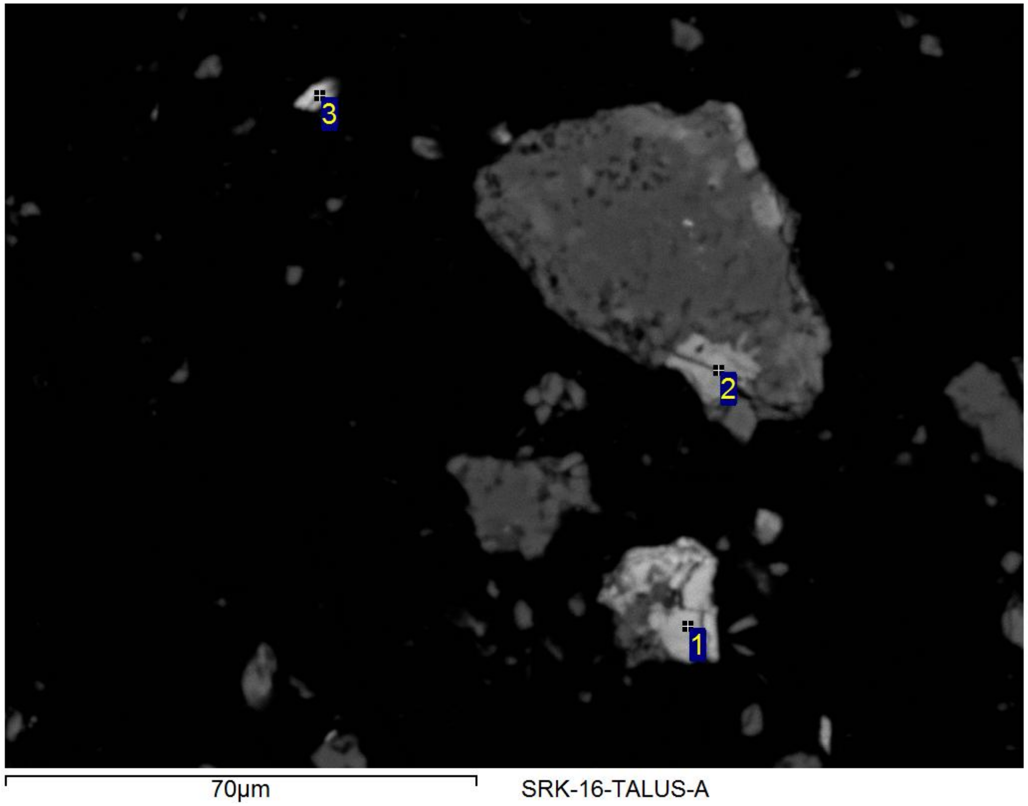


SRK-16-TALUS-A

Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	K	Fe	Total	Mineral Identification
1	36.5	7.2	10.6	0.5	2.4	42.9	100.0	Fe-oxy/hydroxide
2	41.8	5.1	20.5		2.1	30.5	100.0	Fe-oxy/hydroxide

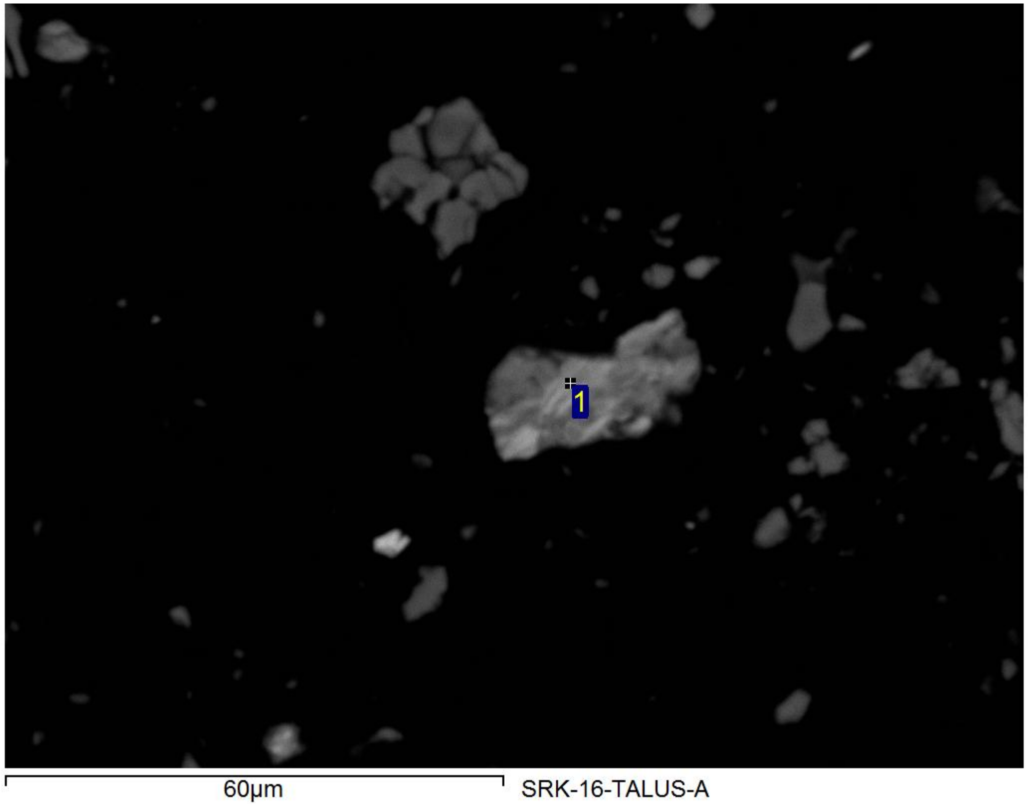
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	Ca	Ti	Fe	Total	Mineral Identification
1	48.0		4.0	1.6	1.8	0.2		1.5	42.9	100.0	Fe-oxy/hydroxide
2	45.6	0.5	1.5	15.1			18.1	18.5	0.7	100.0	titanite
3	37.0		1.1	0.8	0.5	0.4			60.3	100.0	Fe-oxy/hydroxide

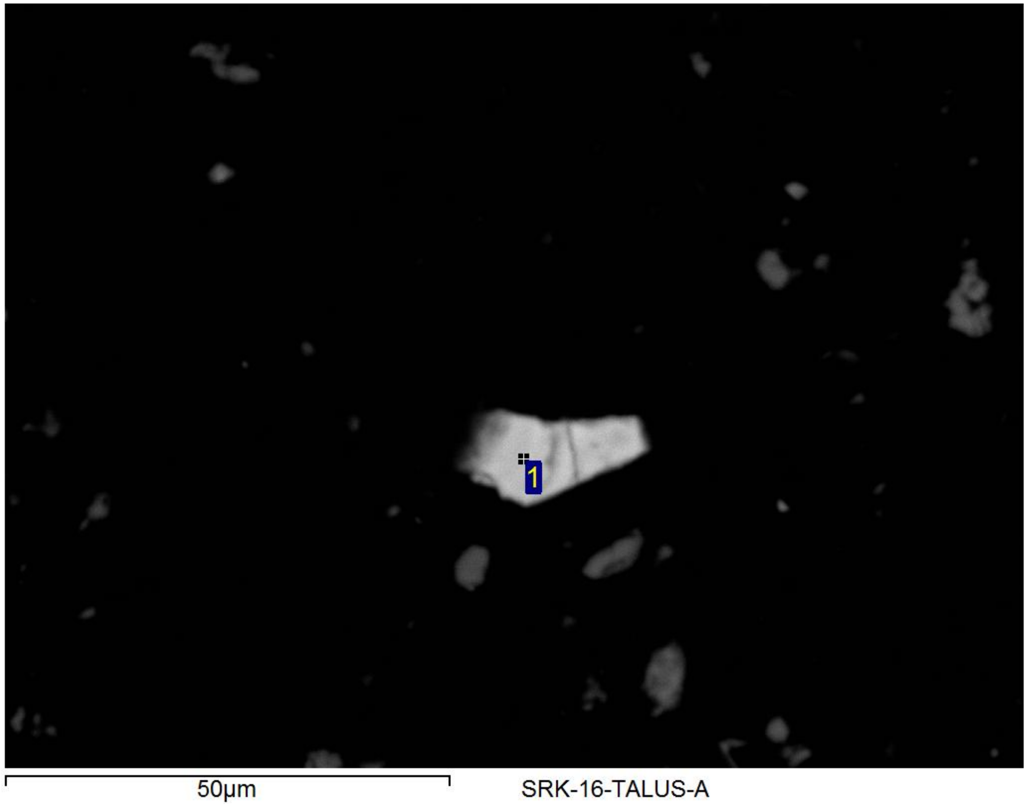
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	K	Fe	Total	Mineral Identification
1	47.9	1.1	9.3	14.2	4.1	23.4	100.0	Fe-oxy/hydroxide

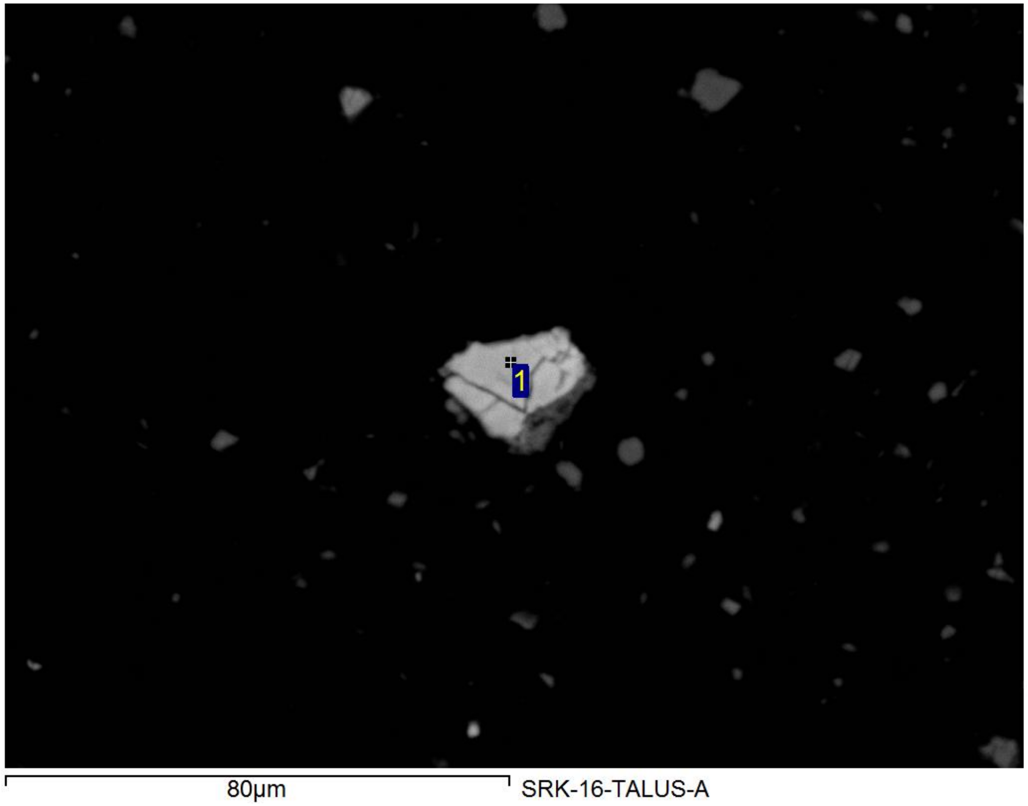
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	46.2	1.3	0.9	1.0	0.2	50.2	100.0	Fe-oxy/hydroxide

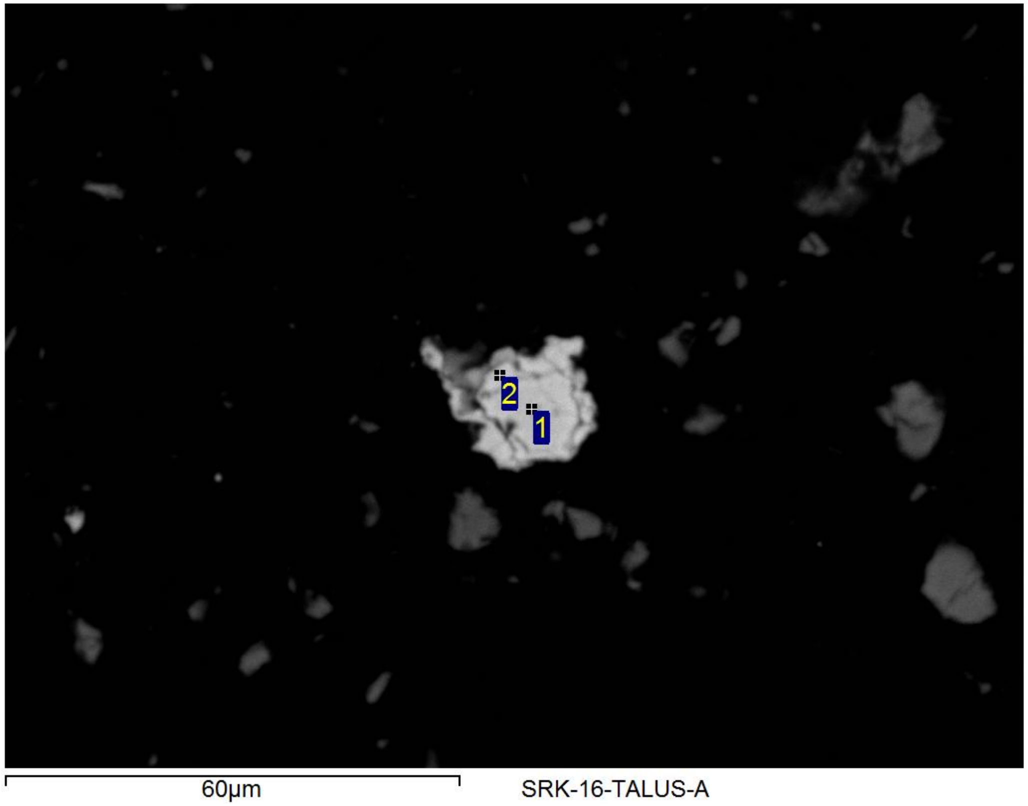
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Fe	Zn	Total	Mineral Identification
1	47.0	4.1	3.0	0.9	43.9	1.1	100.0	Fe-oxy/hydroxide

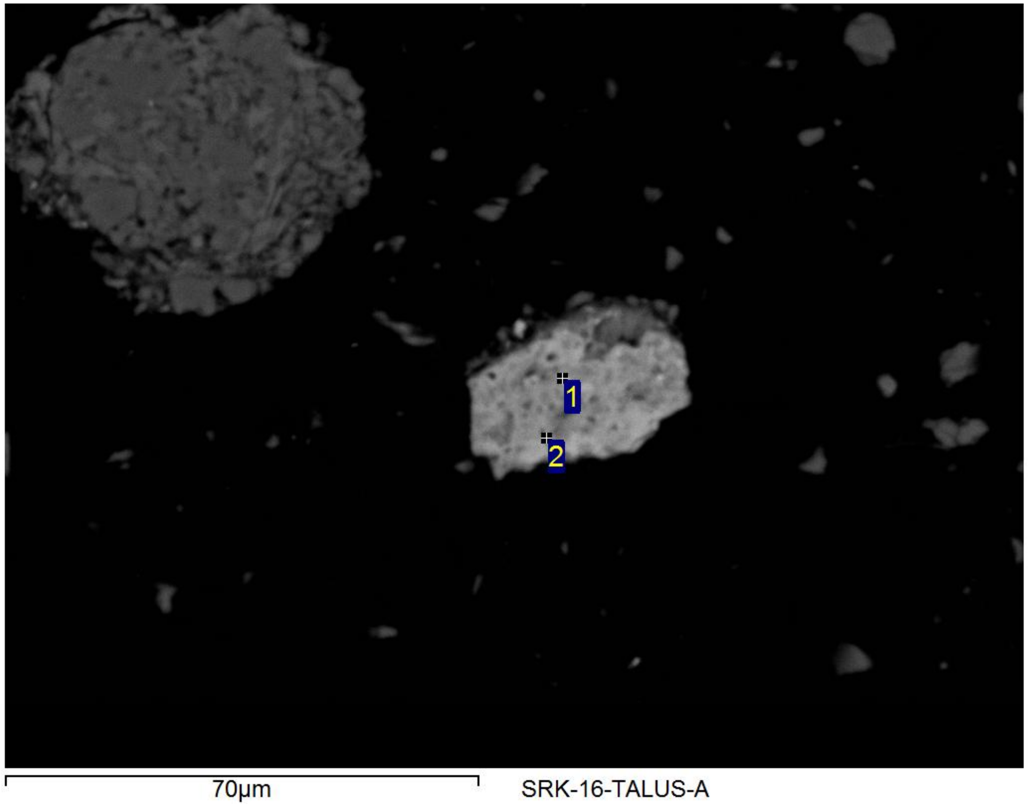
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Fe	Zn	Total	Mineral Identification
1	46.5	1.3	1.8	0.5	49.8		100.0	Fe-oxy/hydroxide
2	54.1	2.0	2.2	0.5	40.8	0.4	100.0	Fe-oxy/hydroxide

All results in weight%

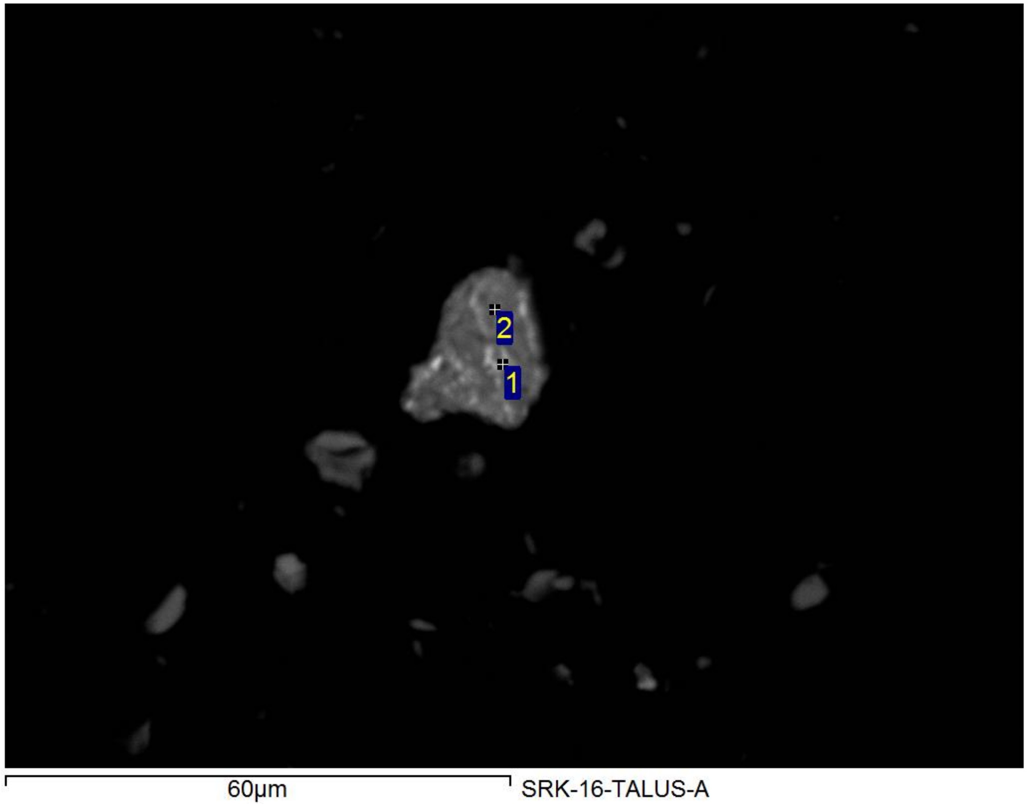


SRK-16-TALUS-A

Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	K	Ti	Fe	Total	Mineral Identification
1	47.9	0.3	3.9	3.3	1.3	0.7	0.8	2.8	39.0	100.0	Fe-oxy/hydroxide
2	45.7	0.5	3.8	3.5	1.3	0.5	0.5		44.2	100.0	Fe-oxy/hydroxide

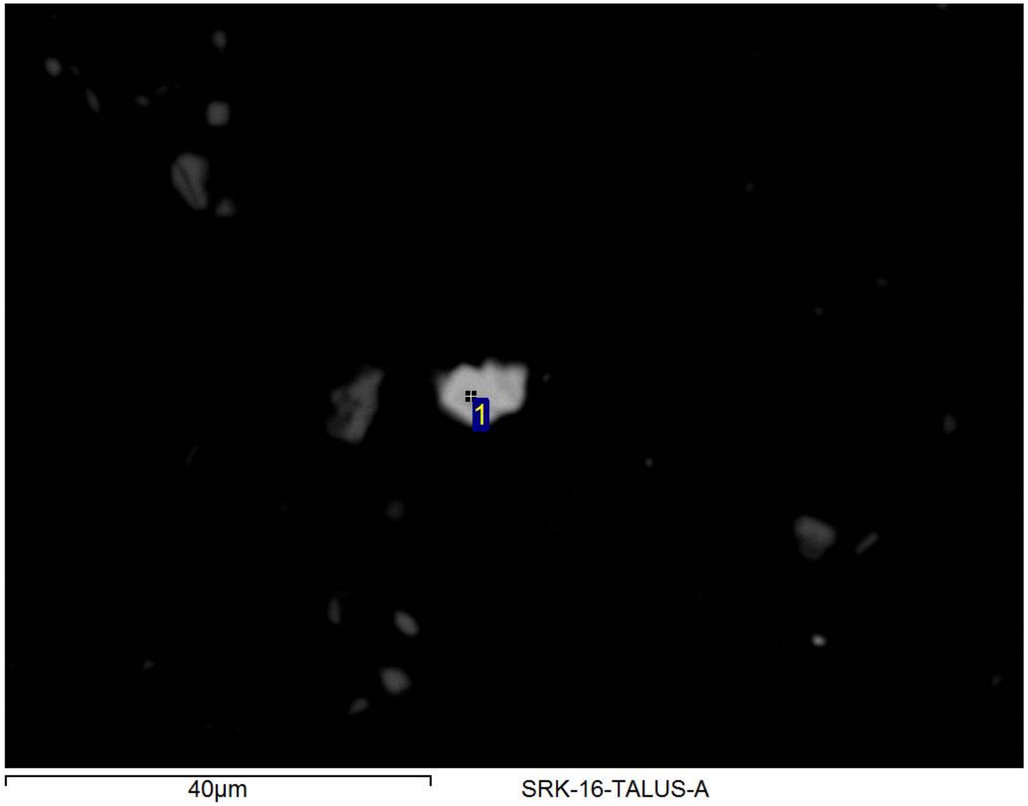
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	Ti	Fe	Total	Mineral Identification
1	50.2	5.7	6.5	8.2	5.8	23.7	100.0	Fe-oxy/hydroxide/mixed silicate
2	53.2	6.9	7.4	9.7	5.3	17.5	100.0	Fe-oxy/hydroxide/mixed silicate

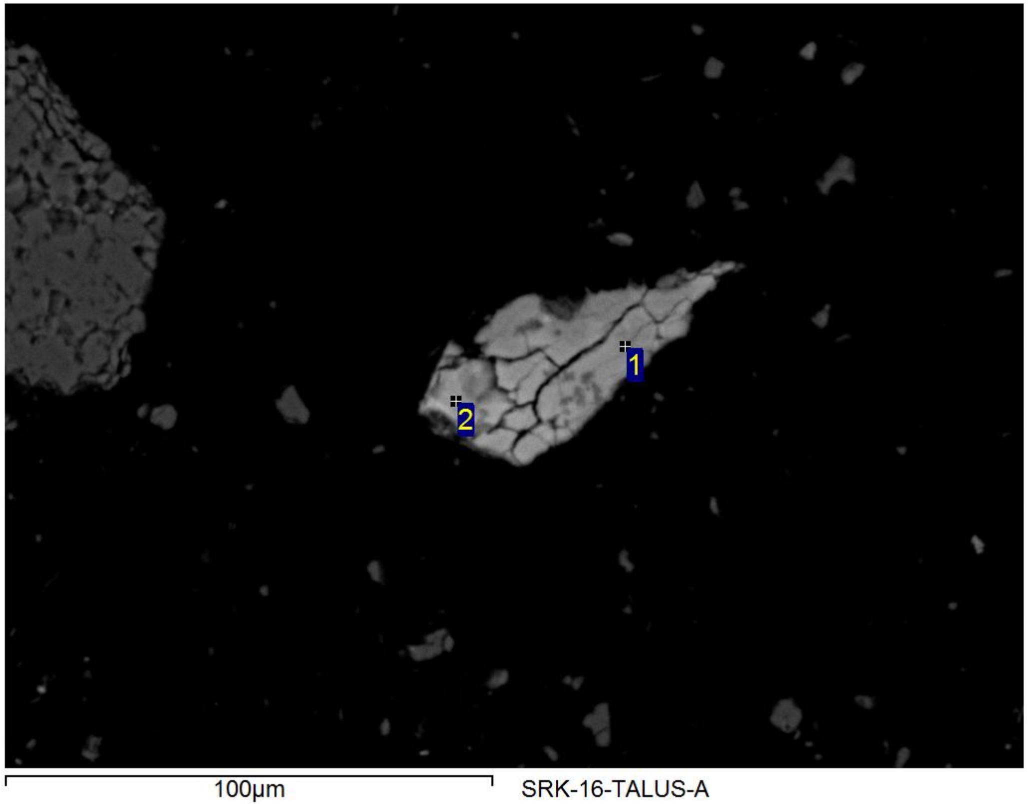
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	46.1	2.5	1.1	1.2	0.3	48.8	100.0	Fe-oxy/hydroxide

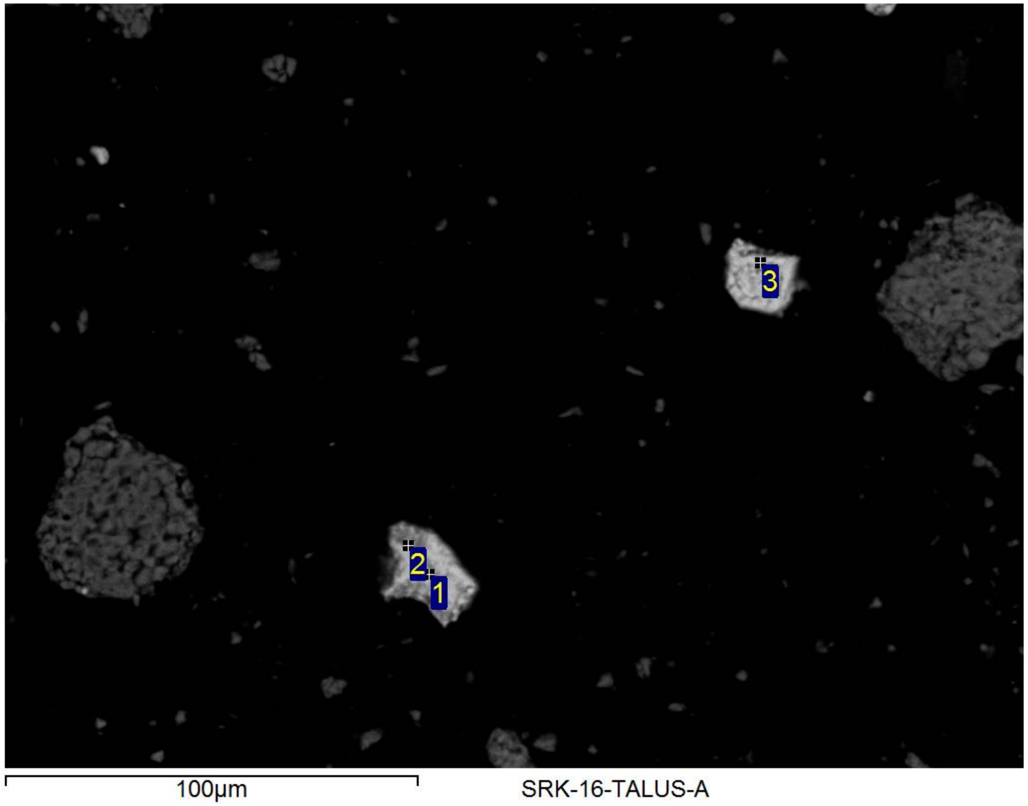
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	K	Fe	Total	Mineral Identification
1	44.9	4.1	1.1	2.9	2.5	0.3	44.1	100.0	Fe-oxy/hydroxide
2	52.0	2.9	0.9	2.7	1.8		39.6	100.0	Fe-oxy/hydroxide

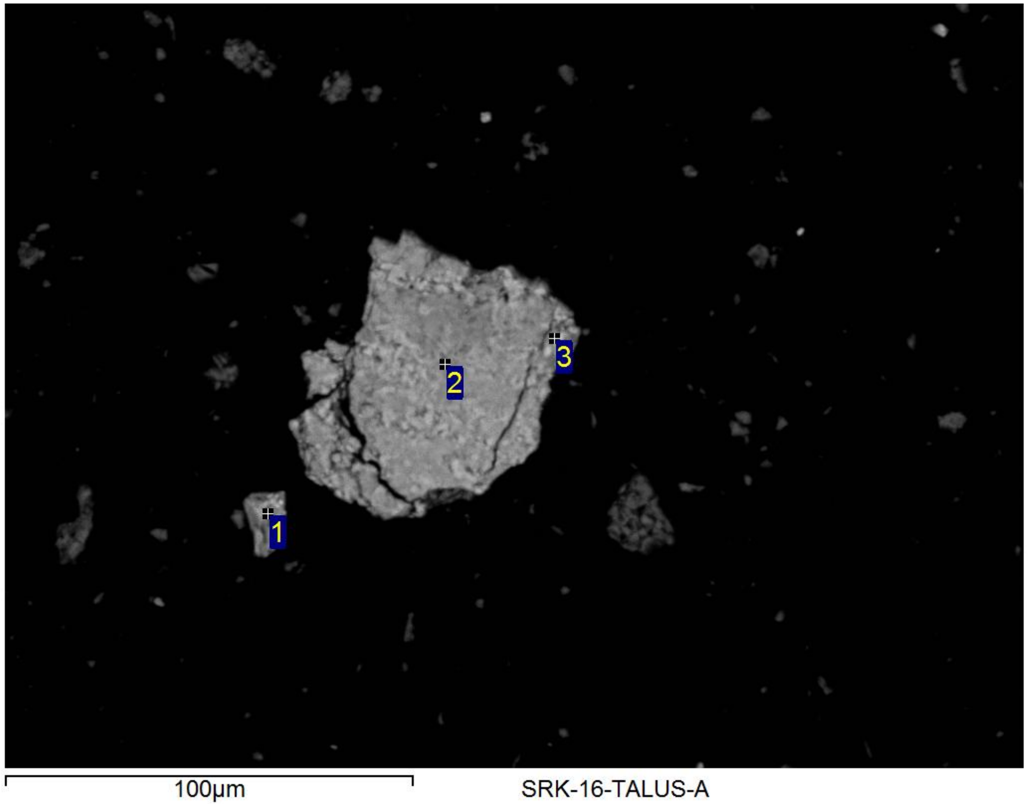
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Cl	Fe	Zn	Total	Mineral Identification
1	42.9	1.6	1.7	0.5			52.8	0.4	100.0	Fe-oxy/hydroxide
2	44.4	3.7	2.2	1.0	0.3	0.2	47.8	0.5	100.0	Fe-oxy/hydroxide
3	45.7	0.6	1.1	0.4			52.3		100.0	Fe-oxy/hydroxide

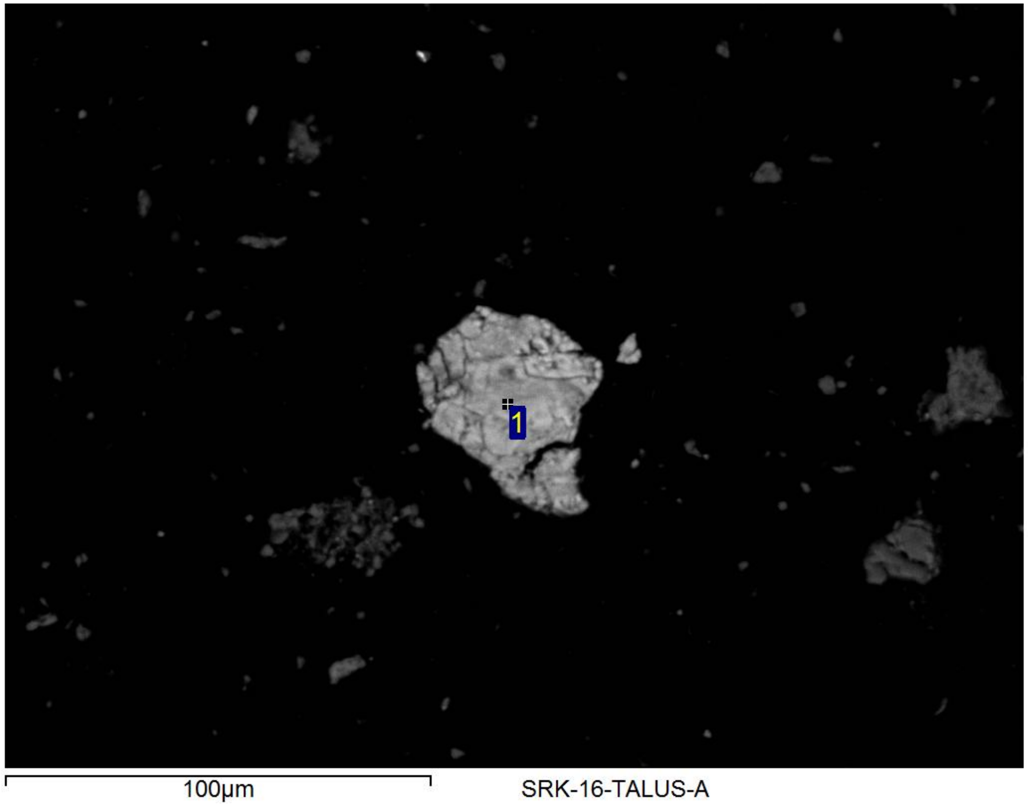
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	Cl	K	Fe	Total	Mineral Identification
1	51.0	7.1	7.0	7.9					26.9	100.0	Fe-oxy/hydroxide
2	41.3		4.1	2.1	1.2	0.3			51.2	100.0	Fe-oxy/hydroxide
3	38.5		4.1	2.4	1.3	0.3	0.3	0.2	52.9	100.0	Fe-oxy/hydroxide

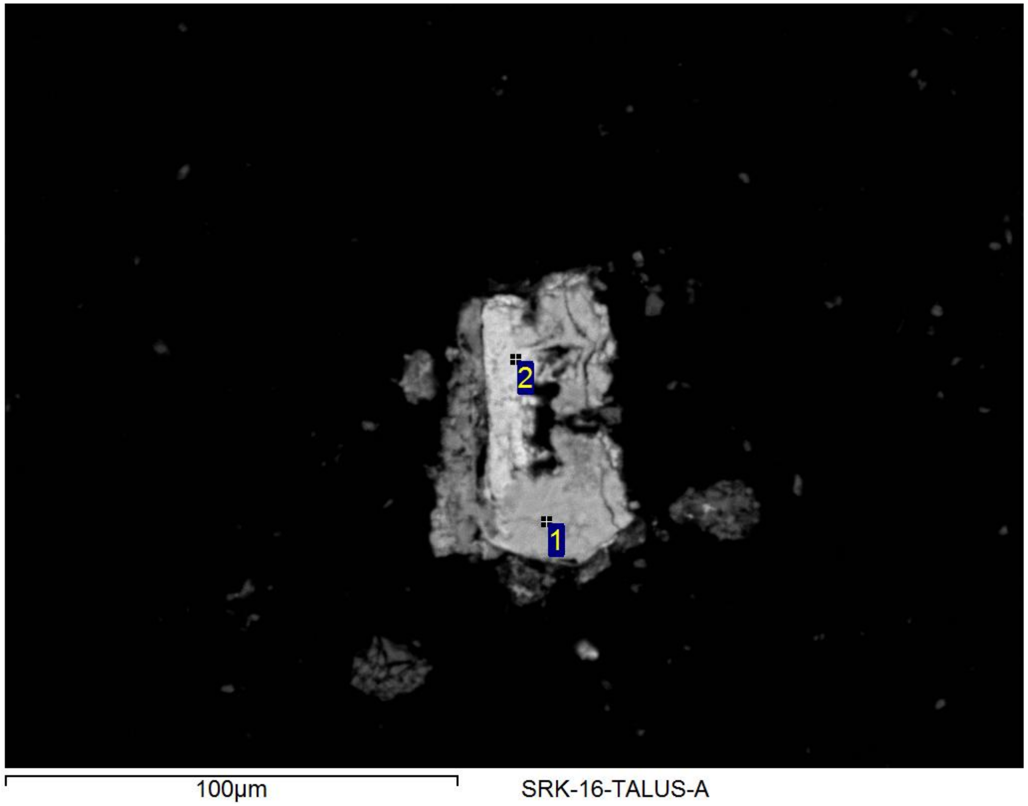
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Fe	Total	Mineral Identification
1	47.6	2.6	1.4	0.6	47.7	100.0	Fe-oxy/hydroxide

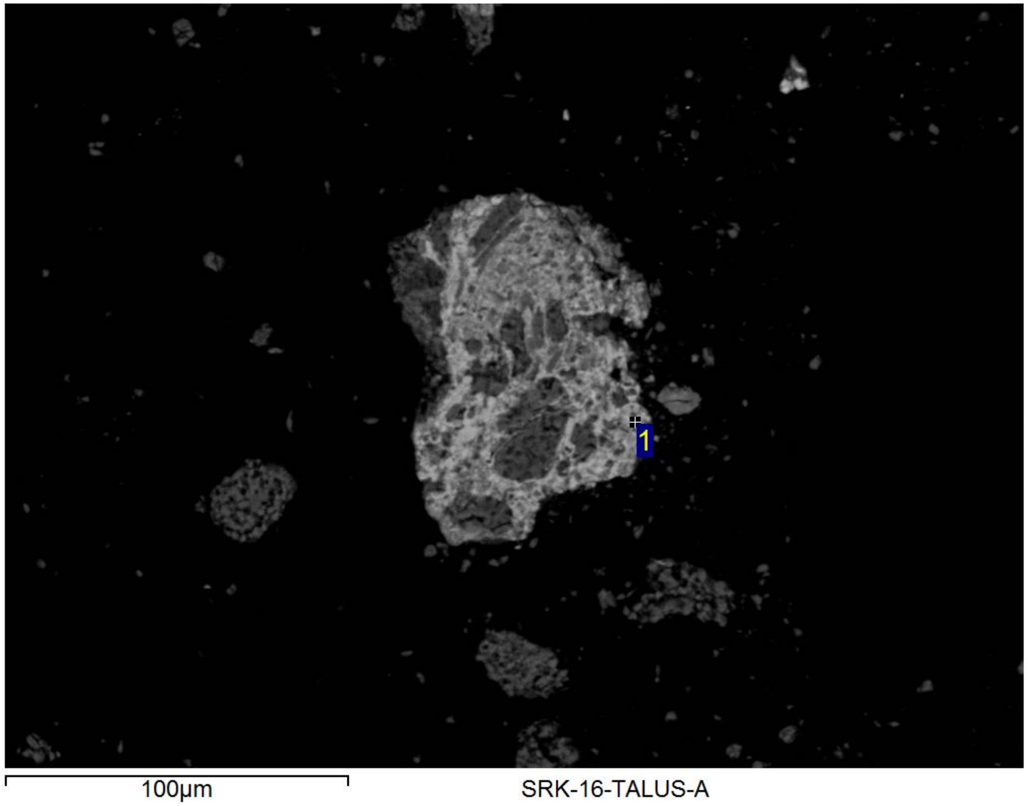
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Si	Ca	Cr	Mn	Fe	Total	Mineral Identification
1	42.9	0.7	0.2	0.4	0.4	55.4	100.0	Fe-oxy/hydroxide
2	36.7	1.1		0.3		61.9	100.0	Fe-oxy/hydroxide

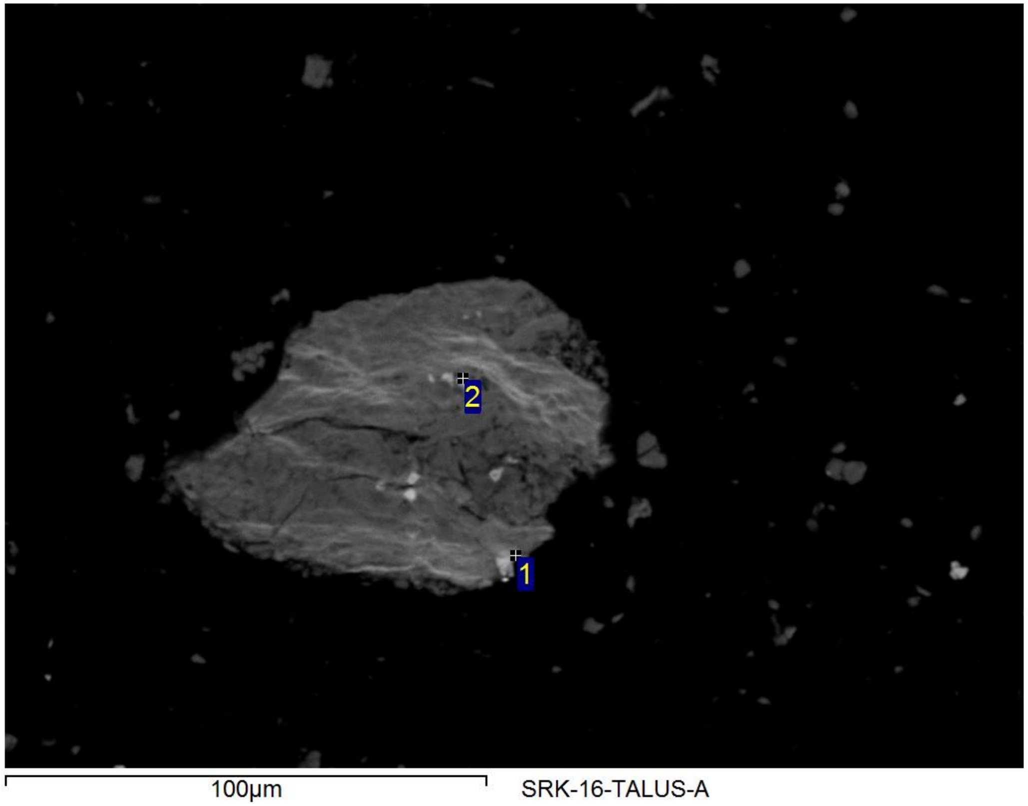
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Na	Al	Si	P	S	Fe	Total	Mineral Identification
1	39.1	0.6	2.5	5.1	0.8	0.3	51.5	100.0	Fe-oxy/hydroxide

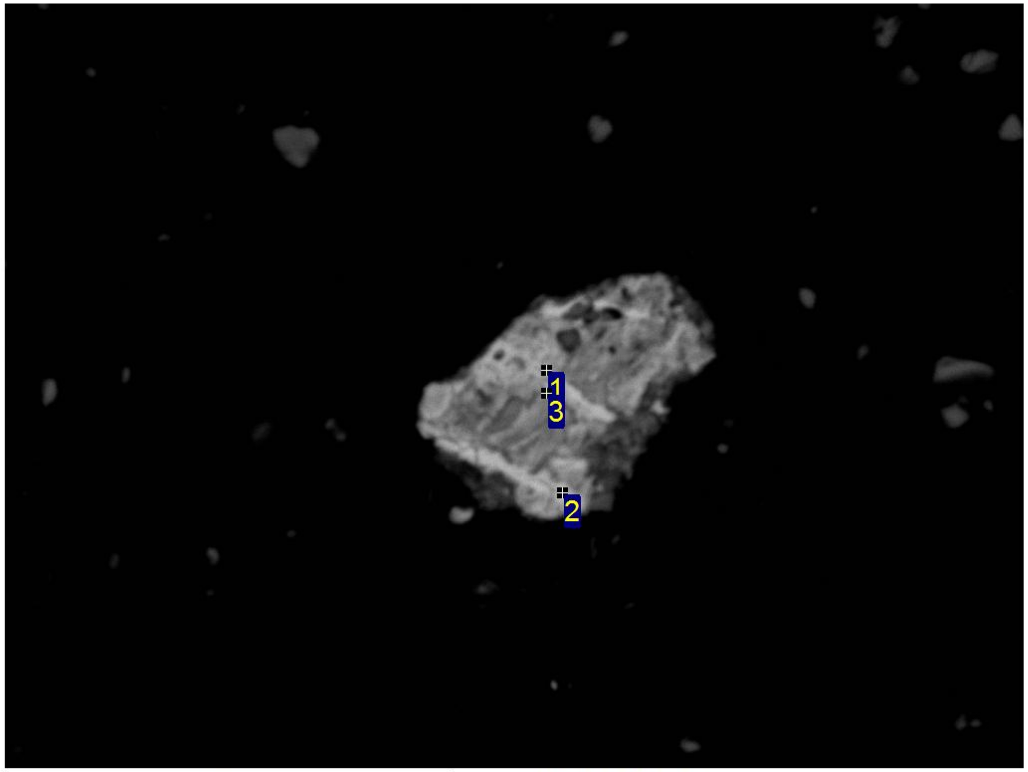
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Na	Mg	Al	Si	P	K	Fe	Total	Mineral Identification
1	47.9		0.7	7.2	9.7	0.5	2.7	31.3	100.0	Fe-oxy/hydroxide/mixed silicate
2	45.1	1.1		6.1	7.7	0.6	1.7	37.6	100.0	Fe-oxy/hydroxide/mixed silicate

All results in weight%

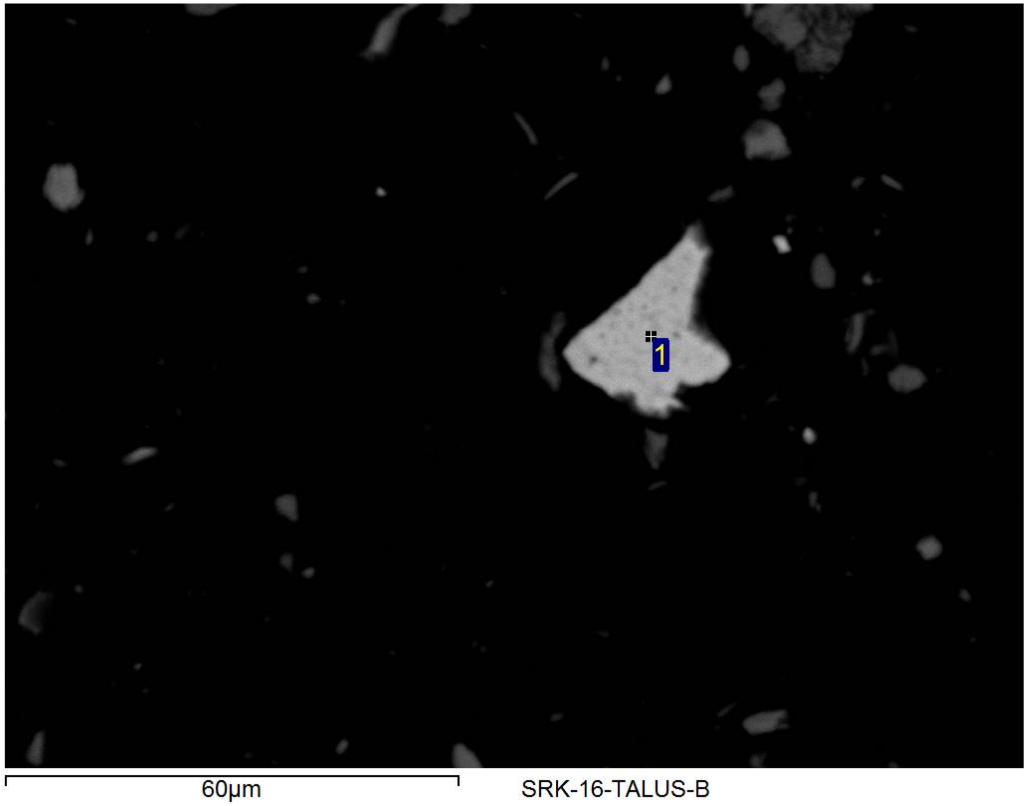


60µm SRK-16-TALUS-A

Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	K	Fe	Total	Mineral Identification
1	44.9	1.8	2.3	0.4	0.2	0.2	50.1	100.0	Fe-oxy/hydroxide
2	44.8	1.4	1.8	0.6			51.4	100.0	Fe-oxy/hydroxide
3	40.9	3.4	1.6	0.7			53.4	100.0	Fe-oxy/hydroxide

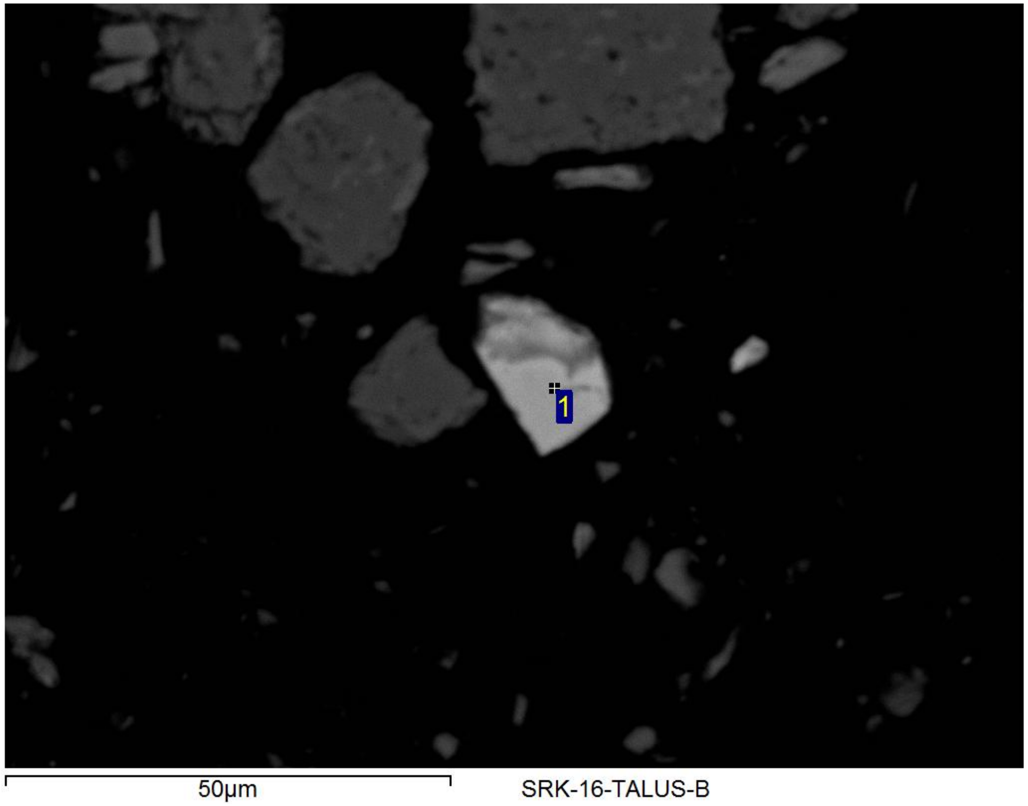
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	Fe	Total	Mineral Identification
1	46.5	1.3	1.8	50.3	100.0	Fe-oxy/hydroxide

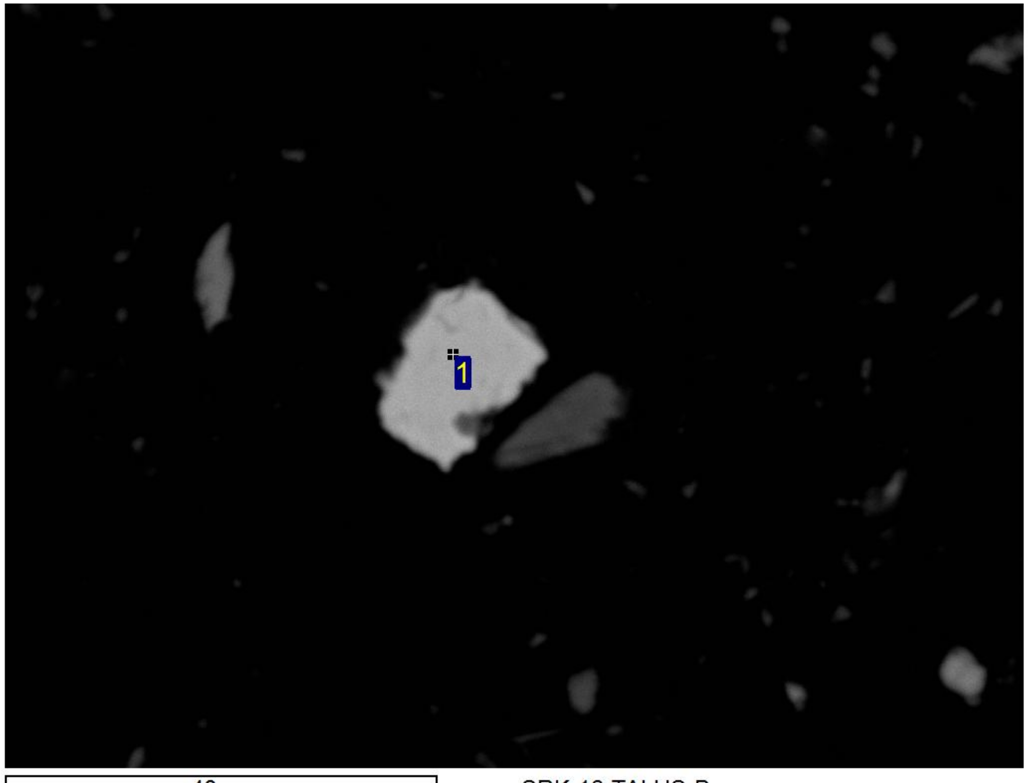
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Fe	Total	Mineral Identification
1	49.7	3.6	0.6	2.4	43.7	100.0	Fe-oxy/hydroxide

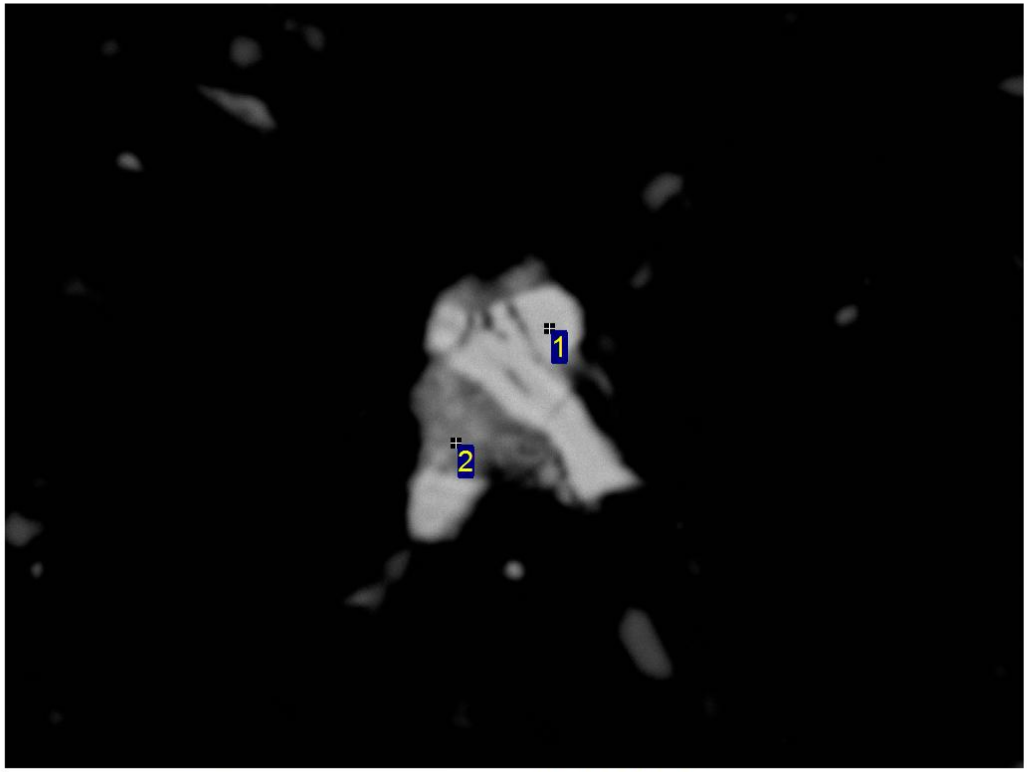
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Fe	Total	Mineral Identification
1	47.1	1.3	2.5	0.3	48.8	100.0	Fe-oxy/hydroxide

All results in weight%

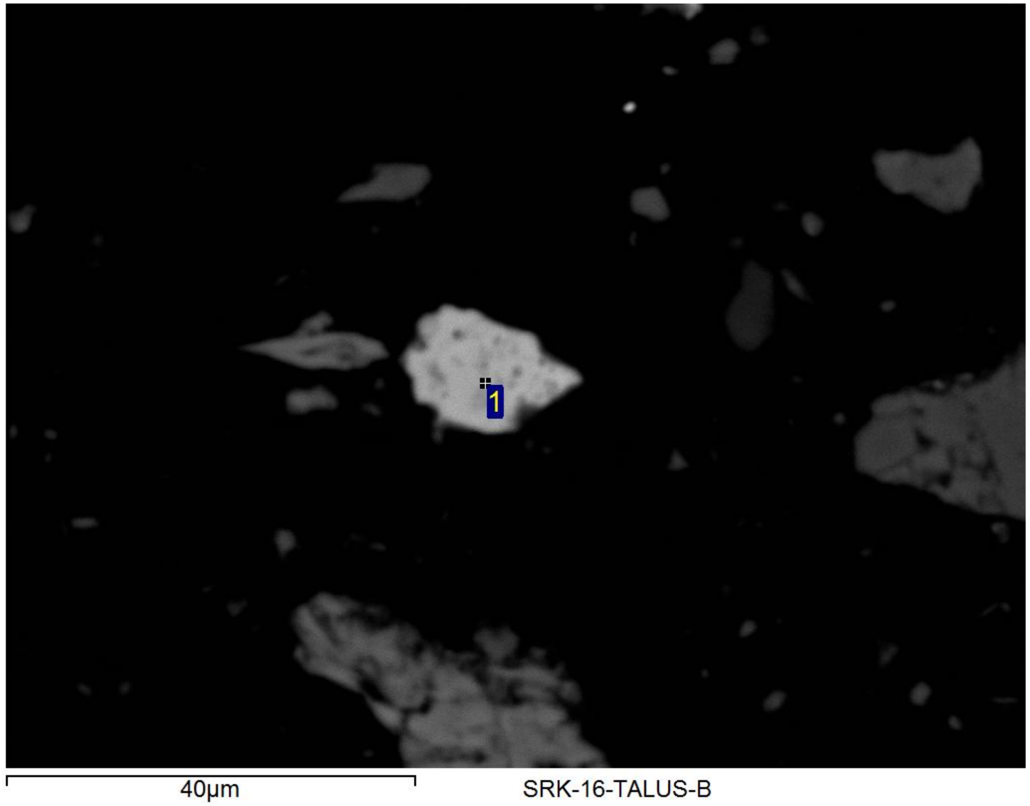


30µm SRK-16-TALUS-B

Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Cl	Fe	Zn	As	Total	Mineral Identification
1	46.0	0.5	0.8	0.4	0.2		48.7	1.0	2.5	100.0	Fe-oxy/hydroxide
2	44.4	4.1	1.5	1.4		0.4	47.1		1.0	100.0	Fe-oxy/hydroxide

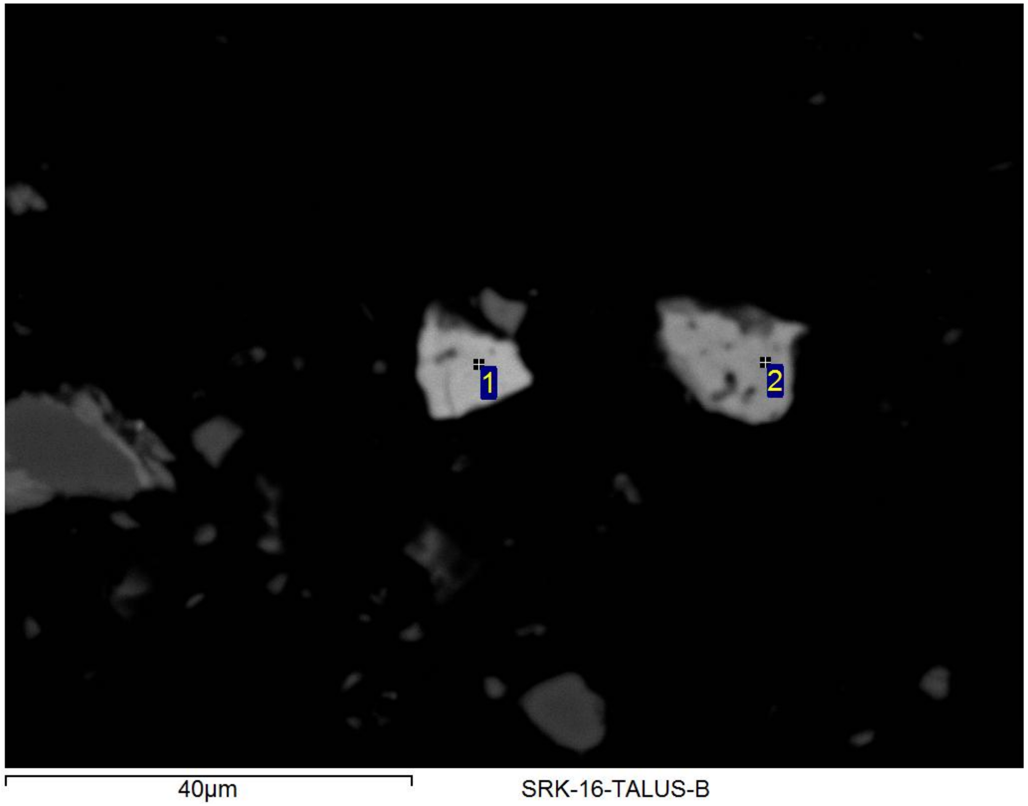
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	46.1	0.7	1.2	1.2	0.5	50.3	100.0	Fe-oxy/hydroxide

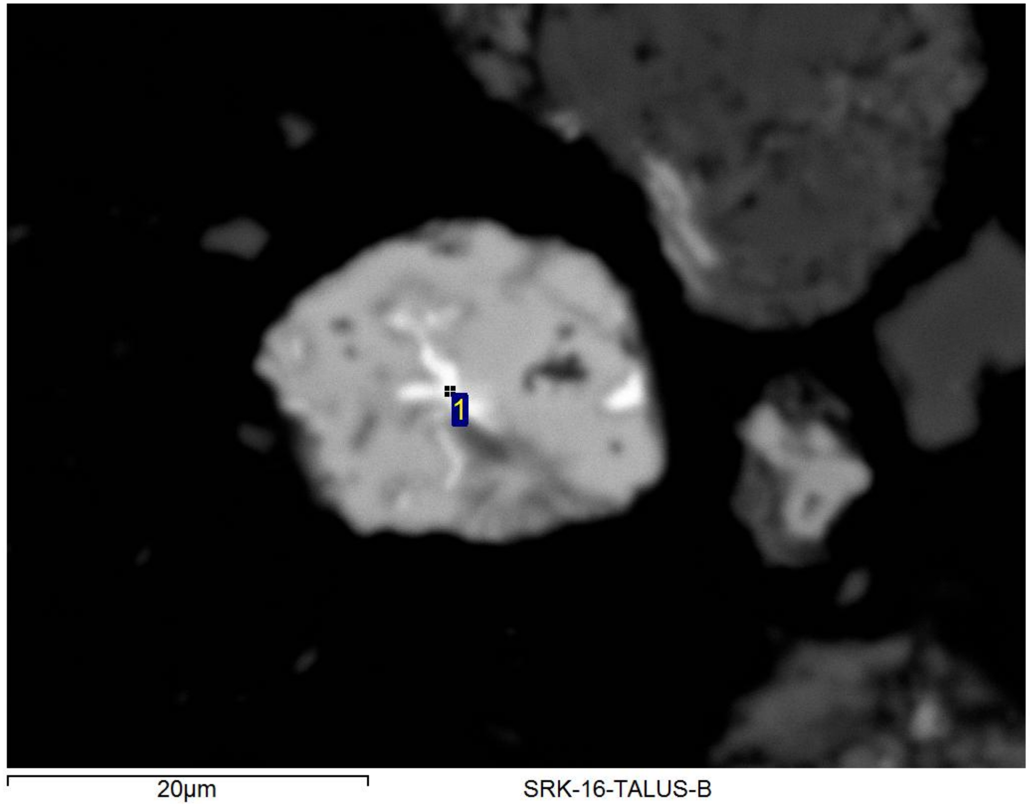
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	K	Fe	Total	Mineral Identification
1	46.5	0.6	0.9		0.9		51.1	100.0	Fe-oxy/hydroxide
2	50.1	5.3	2.7	1.5		0.5	39.8	100.0	Fe-oxy/hydroxide

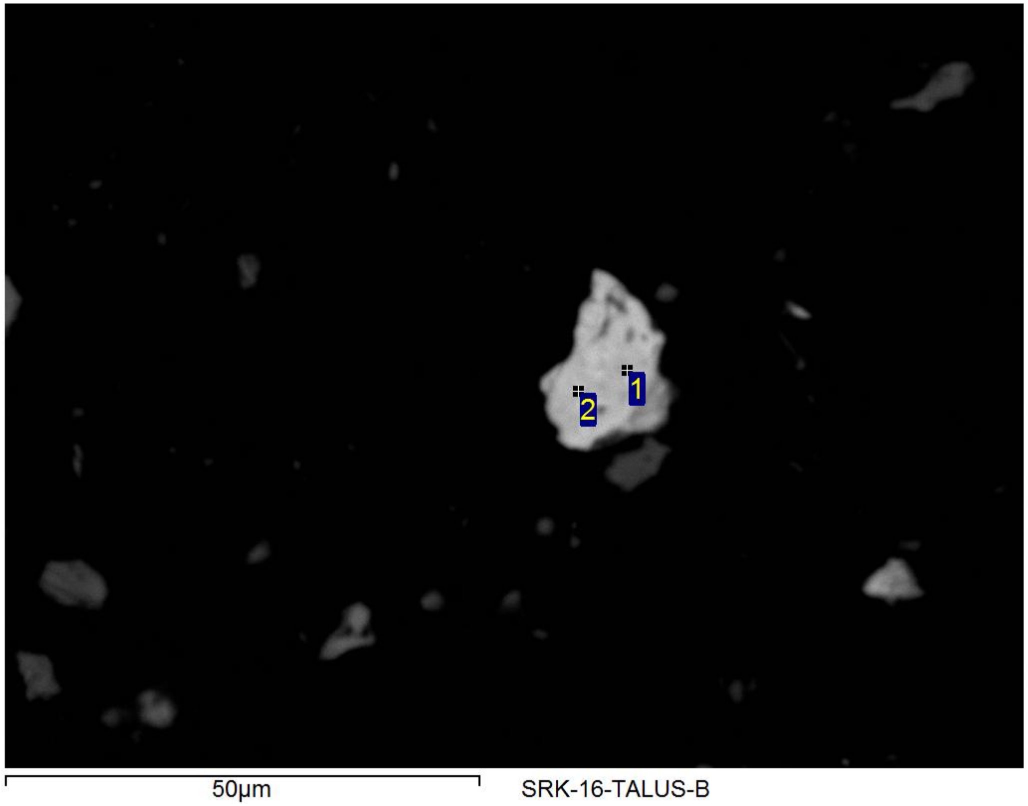
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	P	S	K	Fe	Pb	Total	Mineral Identification
1	45.5	0.5	3.2	6.2	1.7	29.1	13.8	100.0	Pb-Oxide/Sulph? / Fe-oxy/hydroxide

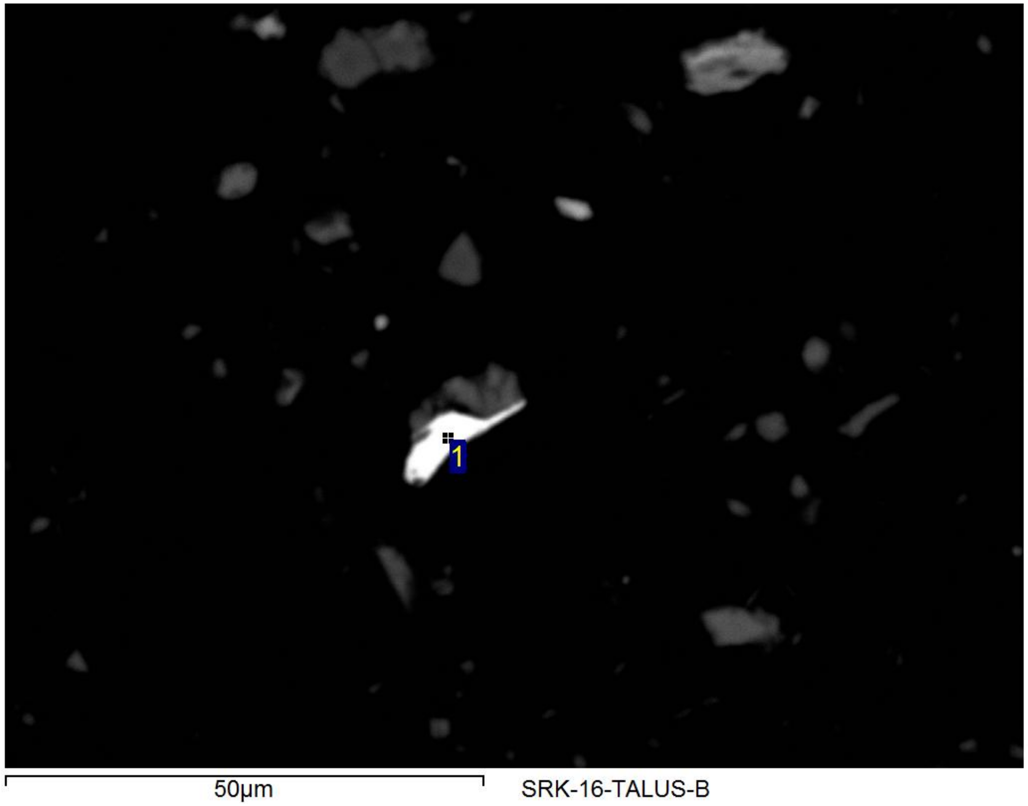
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Si	Fe	Total	Mineral Identification
1	44.6	0.9	54.5	100.0	Fe-oxy/hydroxide
2	41.8	1.3	56.9	100.0	Fe-oxy/hydroxide

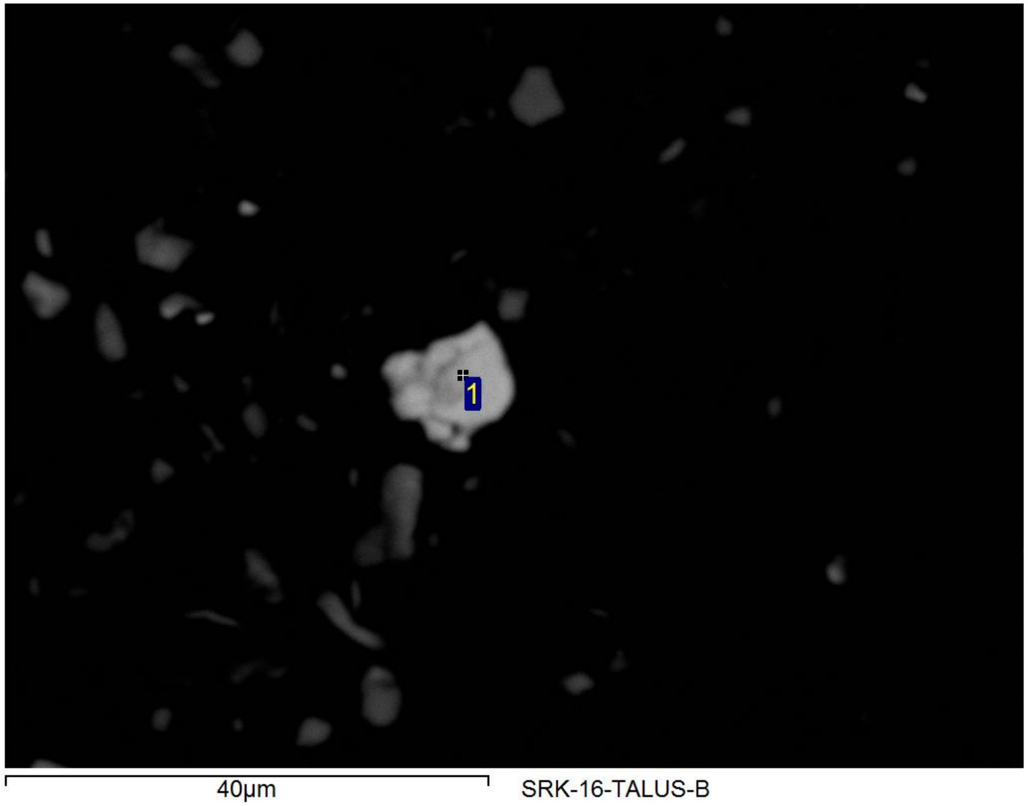
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	Si	Cr	Mn	Fe	Total	Mineral Identification
1	1.2	16.1	0.9	81.9	100.0	Fe-oxy/hydroxide

All results in weight%

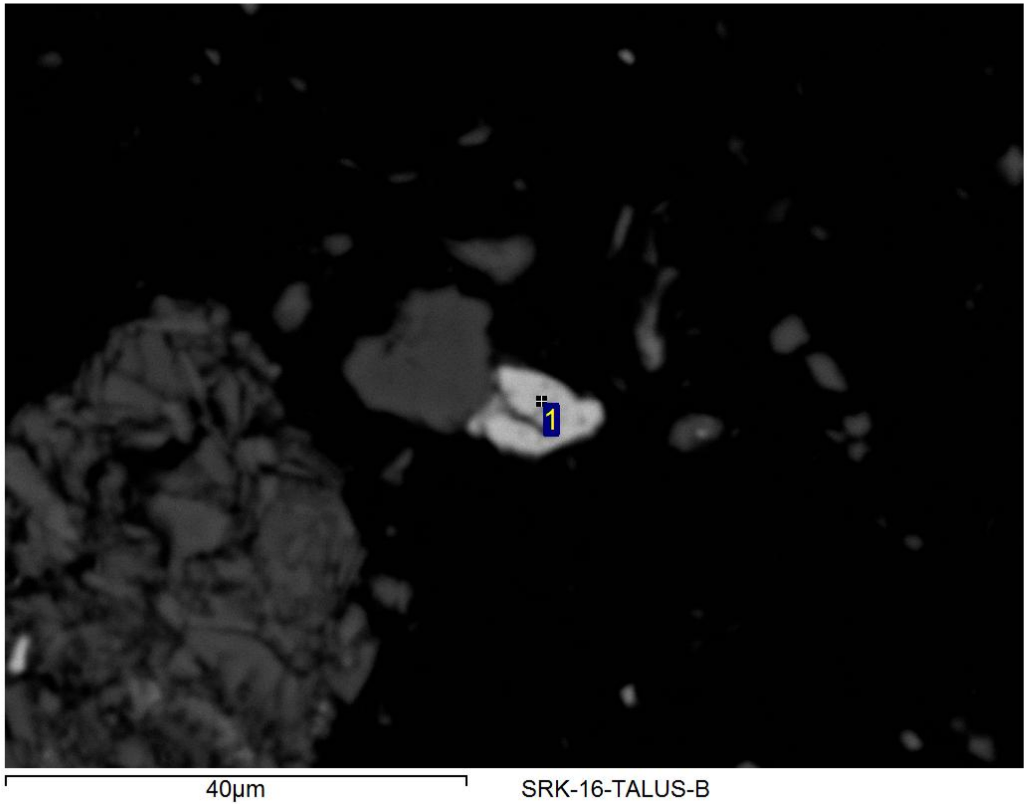


SRK-16-TALUS-B

Processing option : All elements analysed (Normalised)

Spectrum	In stats.	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	Yes	45.2	0.3	0.8	1.1	0.5	52.1	100.0	Fe-oxy/hydroxide

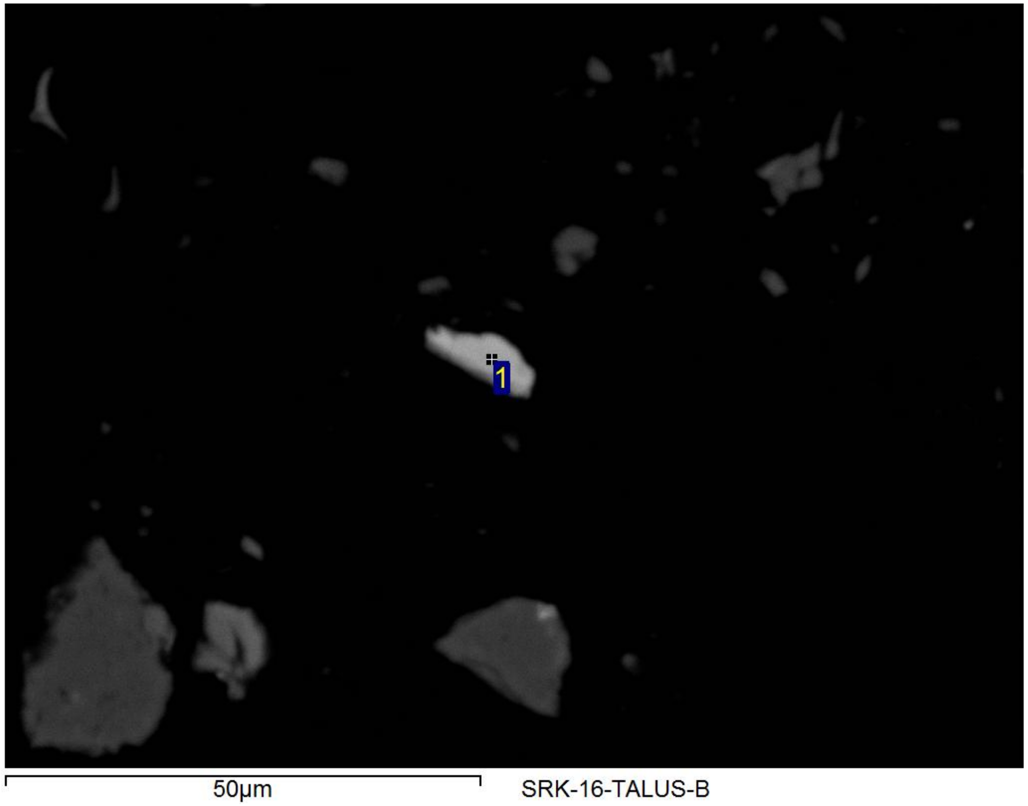
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	In stats.	O	Al	Si	Fe	Total	Mineral Identification
1	Yes	45.1	0.5	1.6	52.9	100.0	Fe-oxy/hydroxide

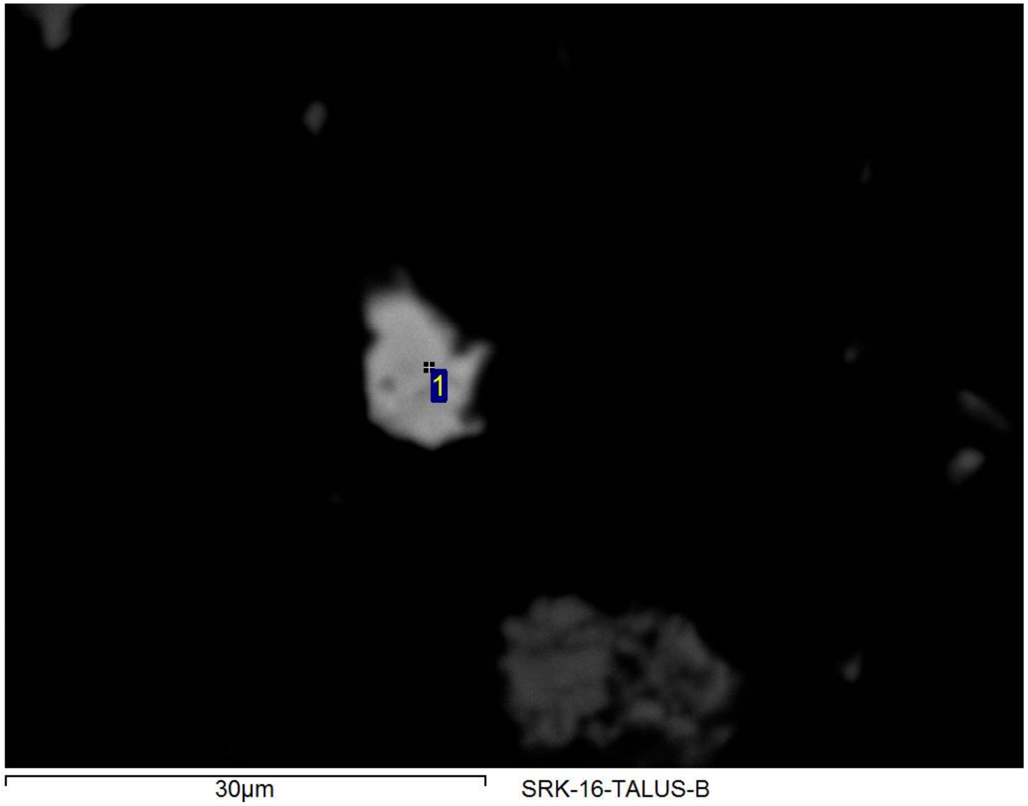
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	48.9	2.3	1.3	1.2	0.5	45.9	100.0	Fe-oxy/hydroxide

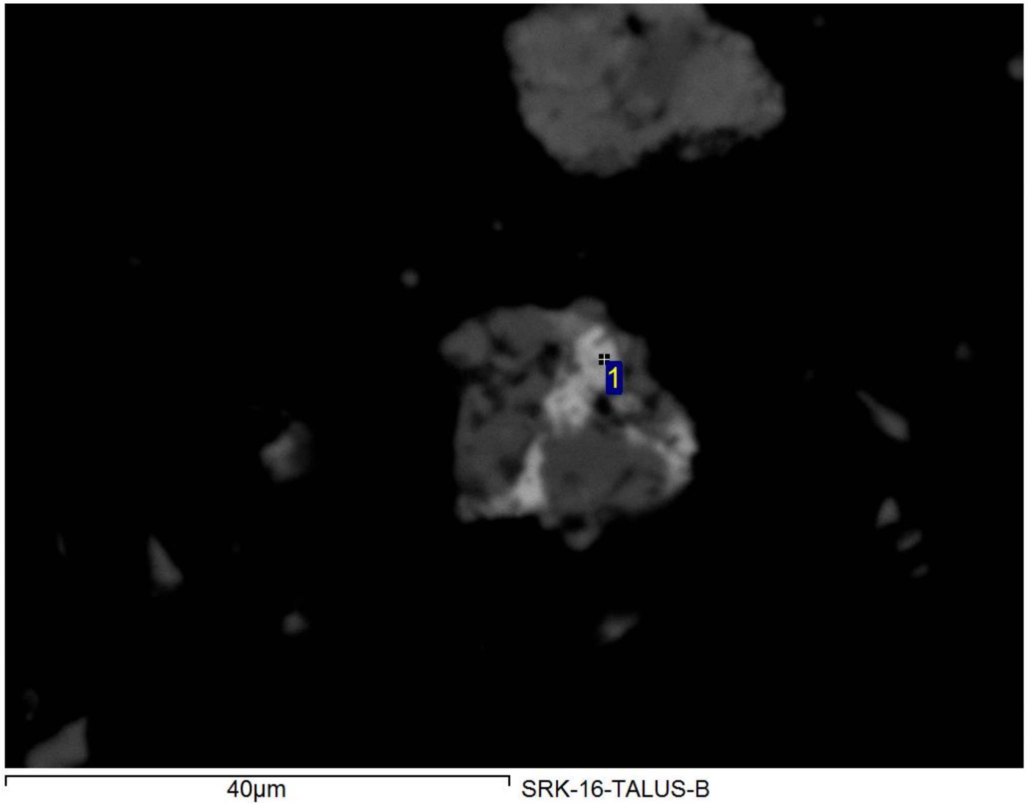
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	K	Fe	Total	Mineral Identification
1	49.1	4.6	1.6	0.8	0.4	0.2	43.4	100.0	Fe-oxy/hydroxide

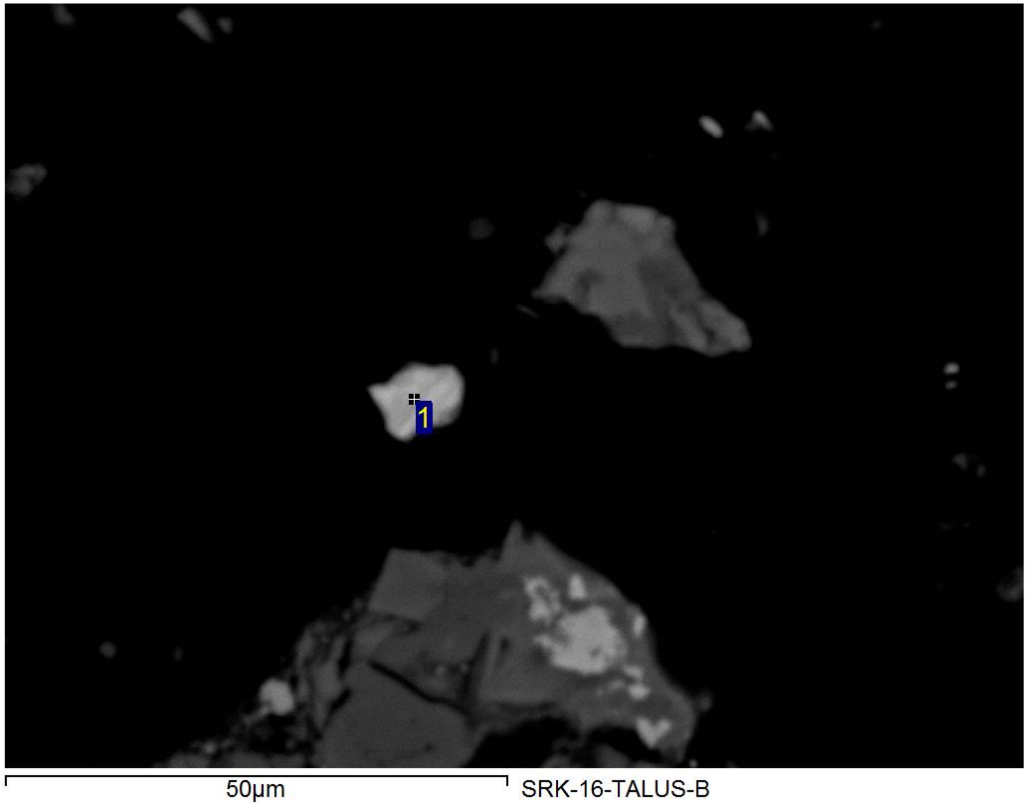
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Ti	Fe	Total	Mineral Identification
1	45.8	2.7	4.4	0.6	0.4	46.2	100.0	Fe-oxy/hydroxide

All results in weight%



Processing option : All elements analysed (Normalised)

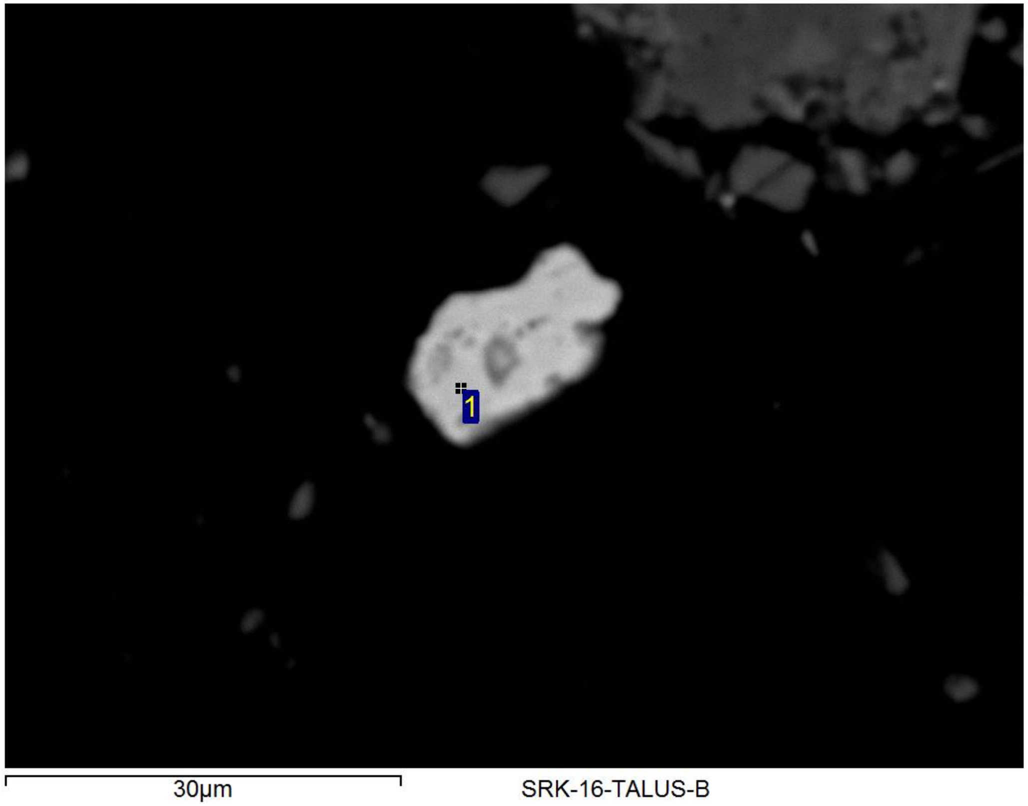
Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	46.9	1.2	0.9	0.4	0.9	49.7	100.0	Fe-oxy/hydroxide

All results in weight%

Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Fe	Total	Mineral Identification
1	47.2	1.4	1.7	0.4	49.4	100.0	Fe-oxy/hydroxide

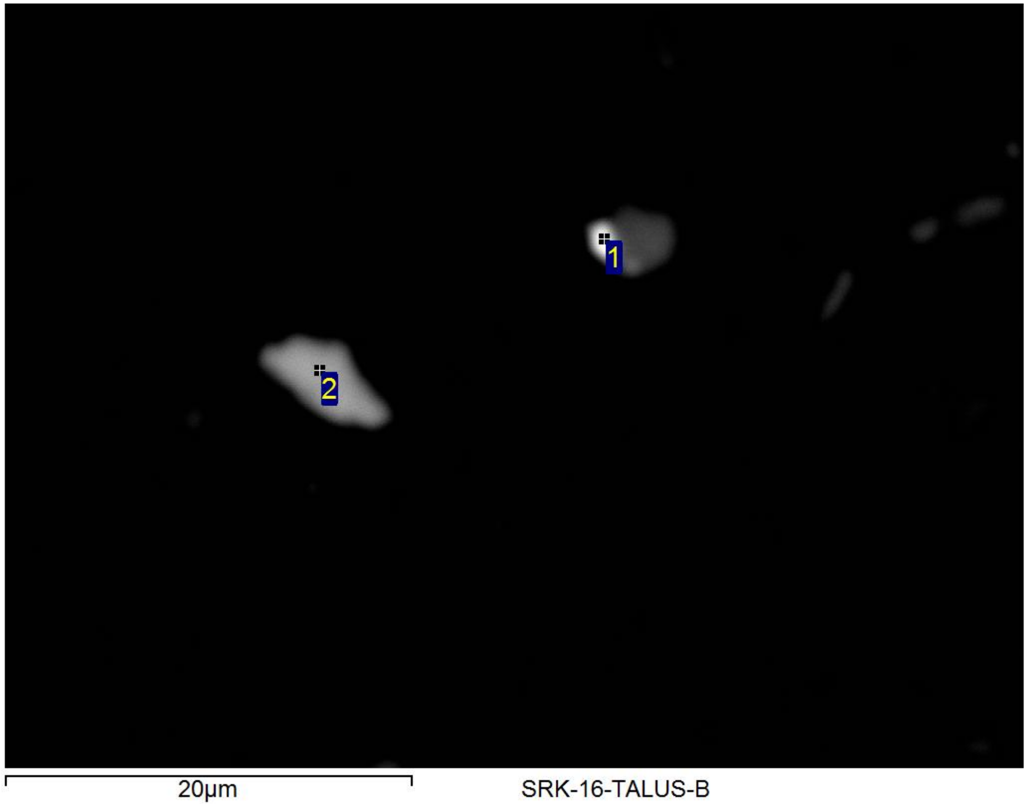
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Si	P	S	Fe	Total	Mineral Identification
1	44.5	0.5	1.1	0.4	0.3	53.2	100.0	Fe-oxy/hydroxide

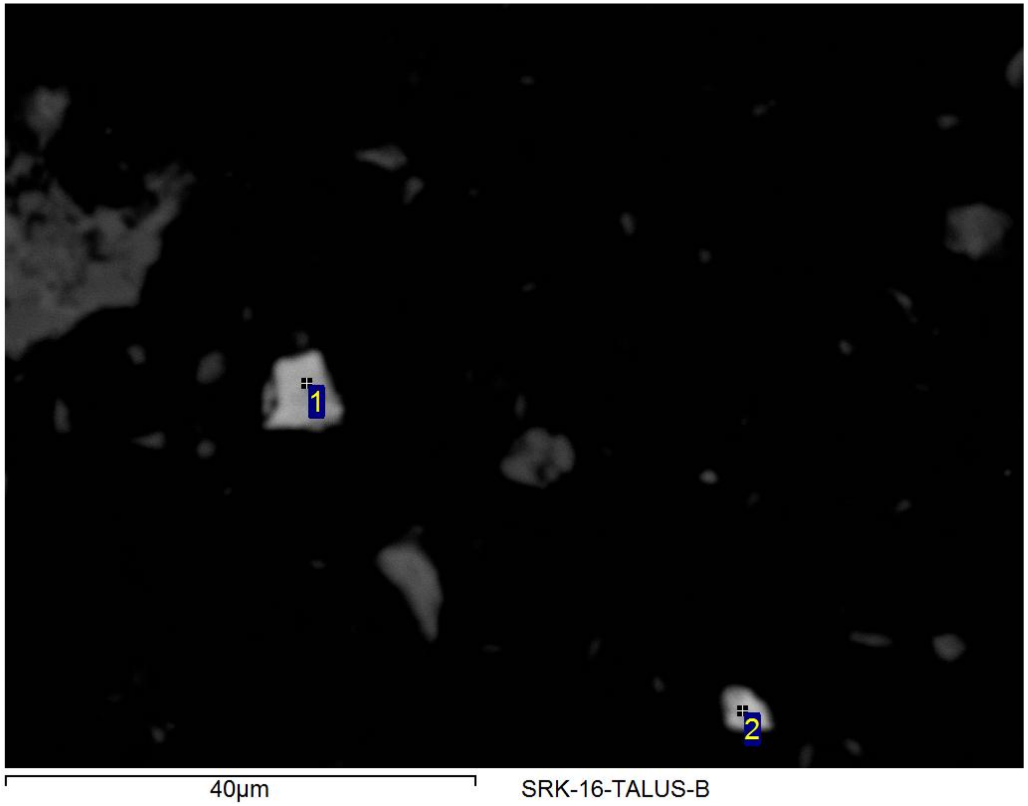
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Cl	K	Cr	Mn	Fe	Total	Mineral Identification
1	13.6	2.0	4.3			0.4	0.3	41.7	0.9	36.8	100.0	chromite
2	48.9	1.7	2.0	0.6	0.4	0.3				46.1	100.0	Fe-oxy/hydroxide

All results in weight%

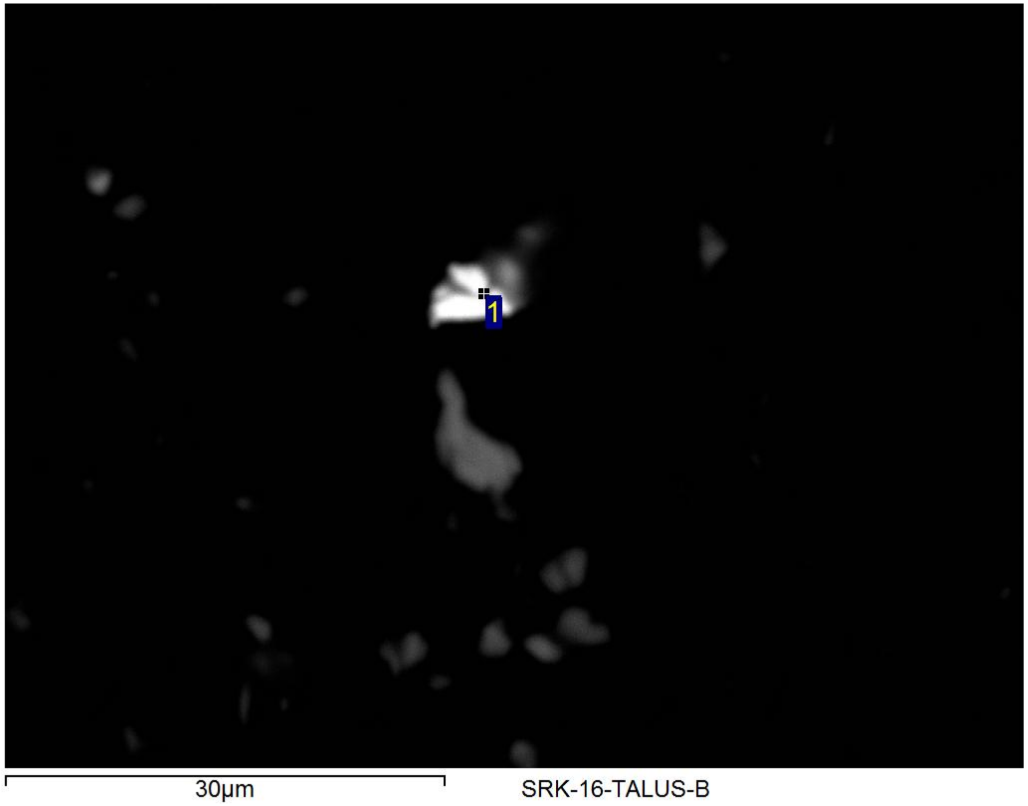


SRK-16-TALUS-B

Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Fe	Total	Mineral Identification
1	46.4	2.6	3.8		47.2	100.0	Fe-oxy/hydroxide
2	43.4	1.9	1.3	1.3	52.1	100.0	Fe-oxy/hydroxide

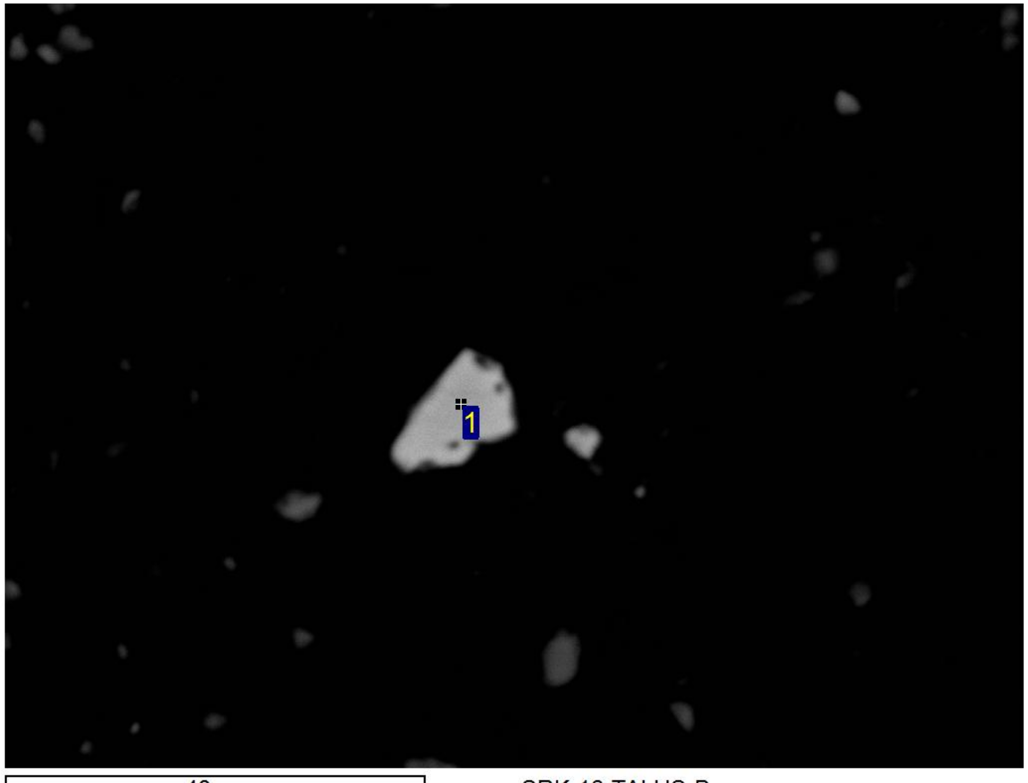
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	Cr	Fe	Total	Mineral Identification
1	5.9	2.3	2.4	40.1	49.4	100.0	chromite

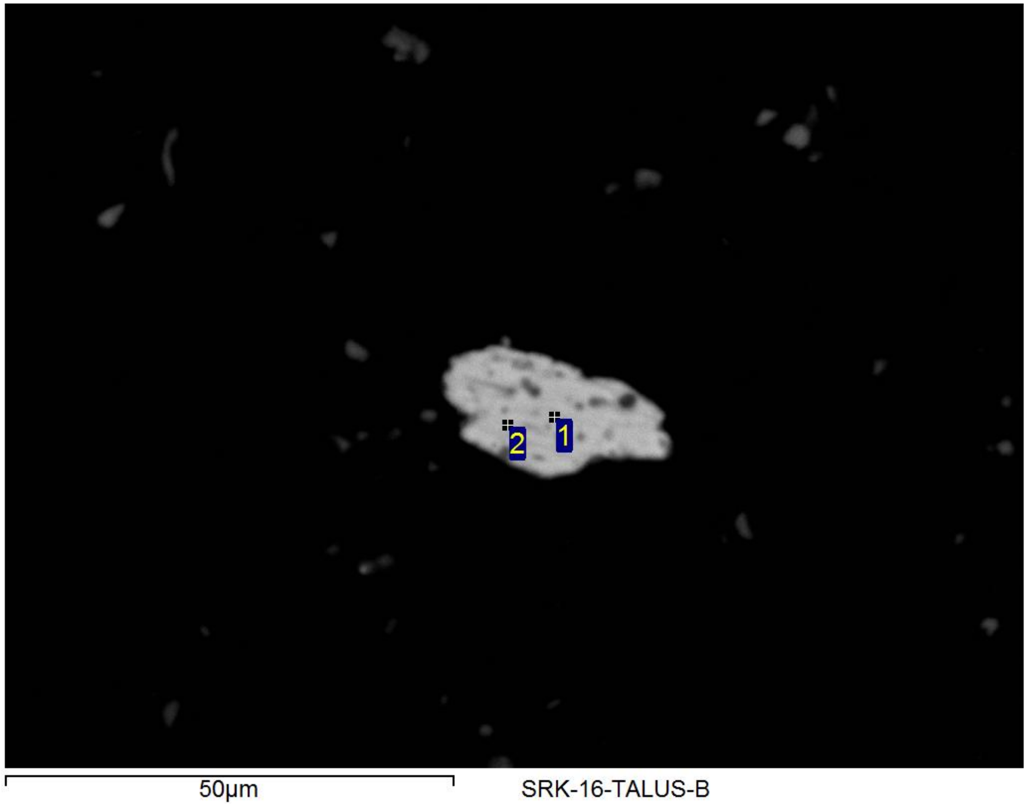
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Mn	Fe	Cu	Total	Mineral Identification
1	46.5	3.2	1.3	0.8	1.1	46.3	0.8	100.0	Fe-oxy/hydroxide

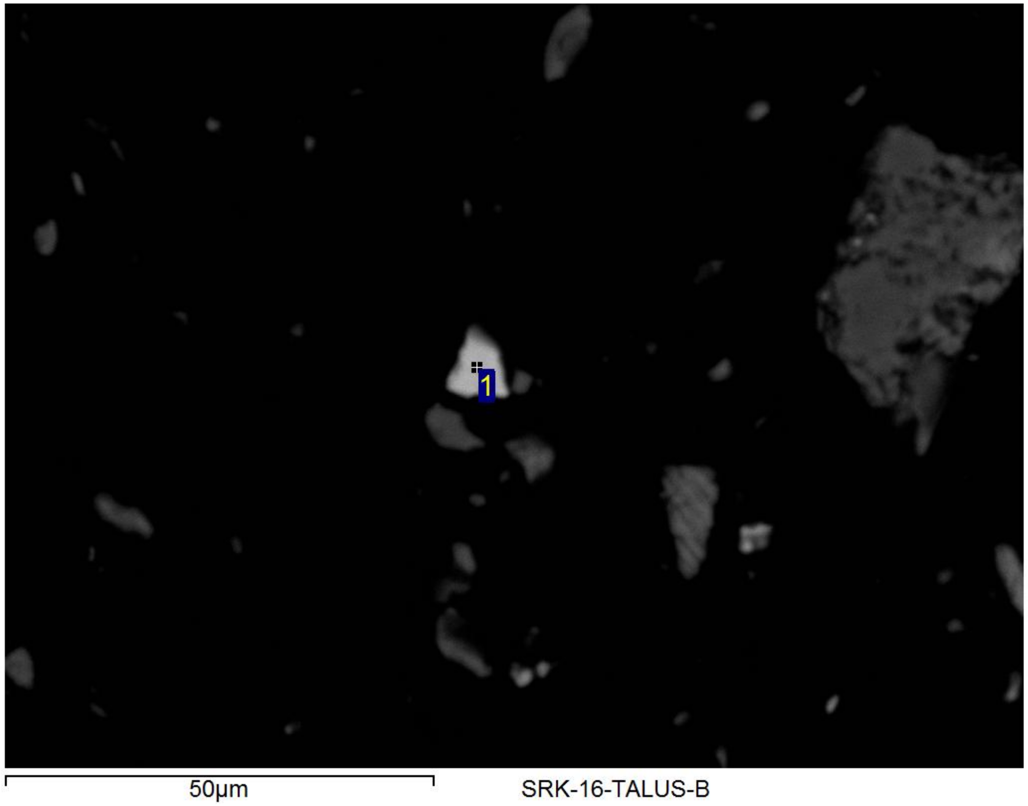
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	Mn	Fe	Ni	Total	Mineral Identification
1	44.9	2.1	1.8	0.4	50.7		100.0	Fe-oxy/hydroxide
2	45.5	2.0	1.7	0.4	50.2	0.3	100.0	Fe-oxy/hydroxide

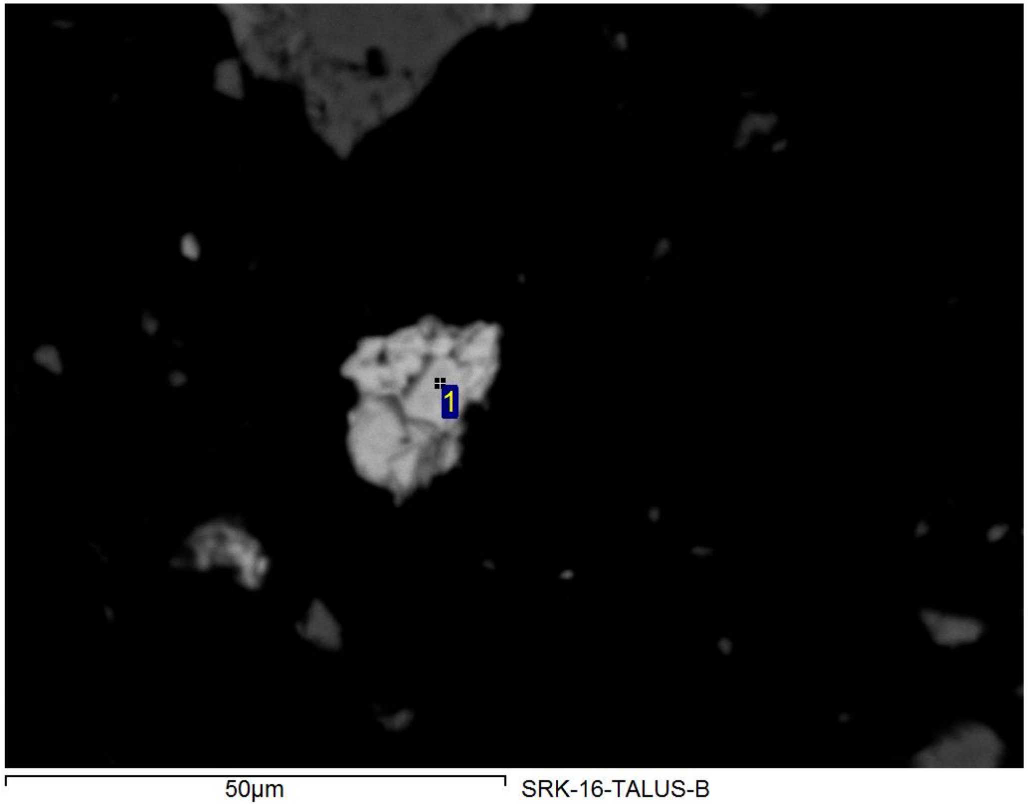
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	Fe	Total	Mineral Identification
1	44.8	3.0	1.4	50.8	100.0	Fe-oxy/hydroxide

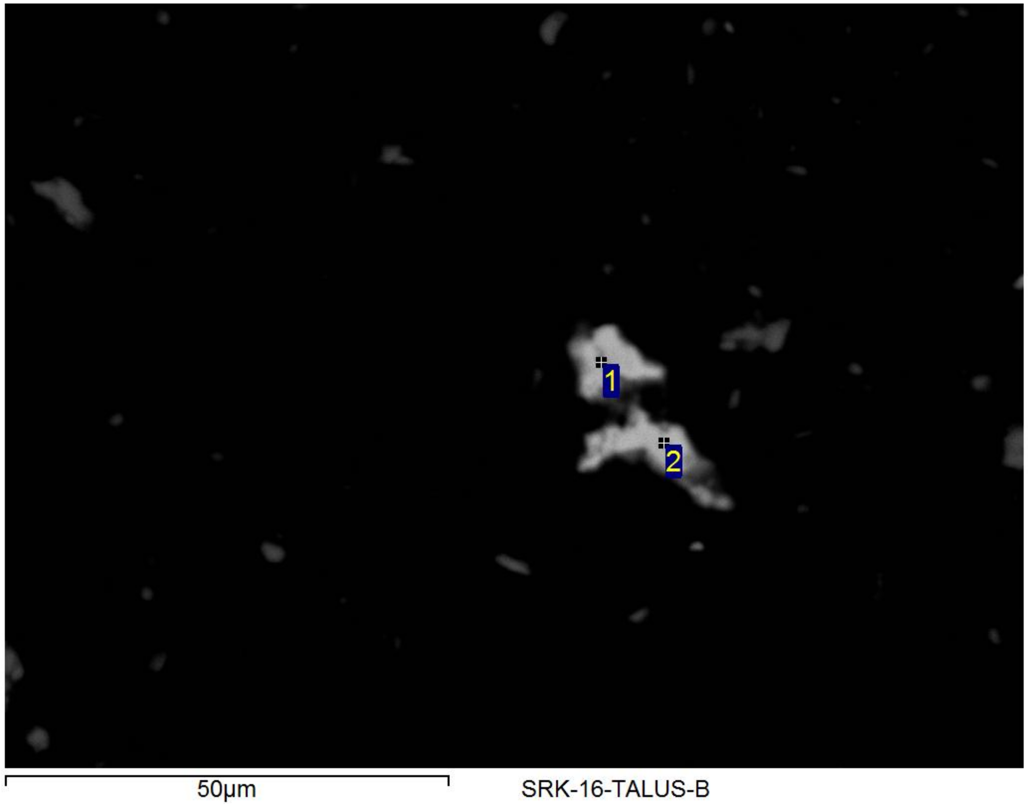
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Mn	Fe	Total	Mineral Identification
1	47.1	3.8	1.0	0.5	0.7	0.6	46.2	100.0	Fe-oxy/hydroxide

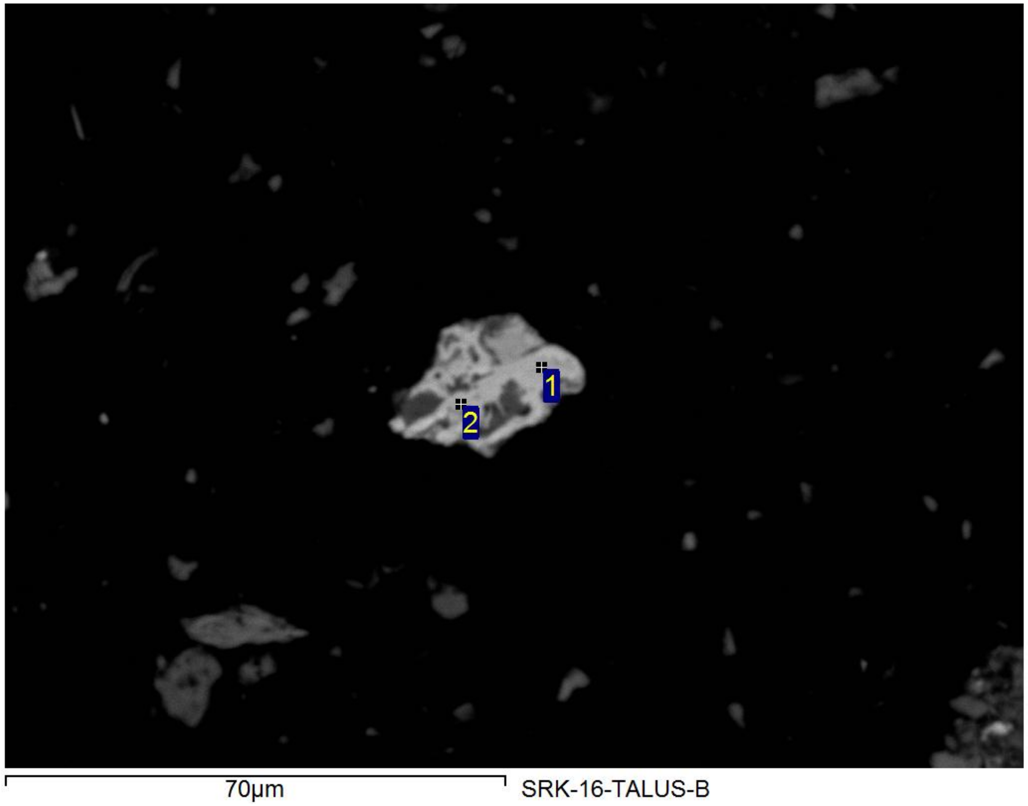
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	Fe	Zn	Total	Mineral Identification
1	44.3	0.6	2.4	51.8	0.9	100.0	Fe-oxy/hydroxide
2	45.0	0.7	2.4	51.0	0.9	100.0	Fe-oxy/hydroxide

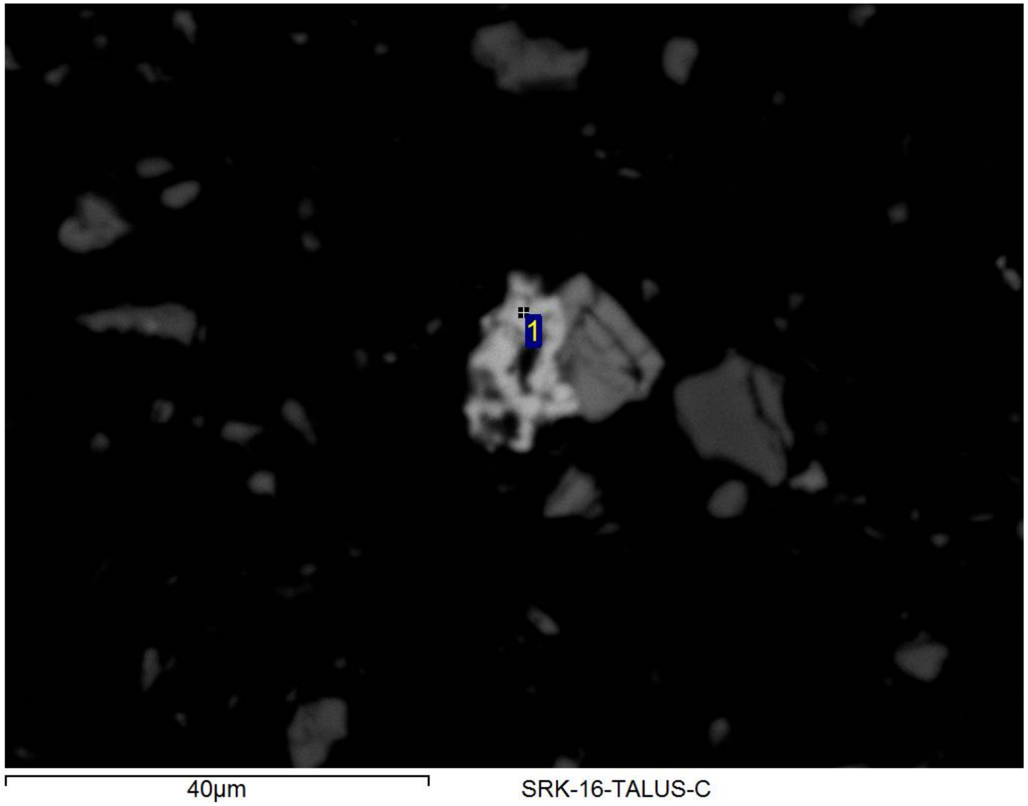
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	K	Ti	Fe	Total	Mineral Identification
1	49.1	2.2	3.2	0.6	1.5	43.4	100.0	Fe-oxy/hydroxide
2	45.0	2.3	2.8		2.4	47.6	100.0	Fe-oxy/hydroxide

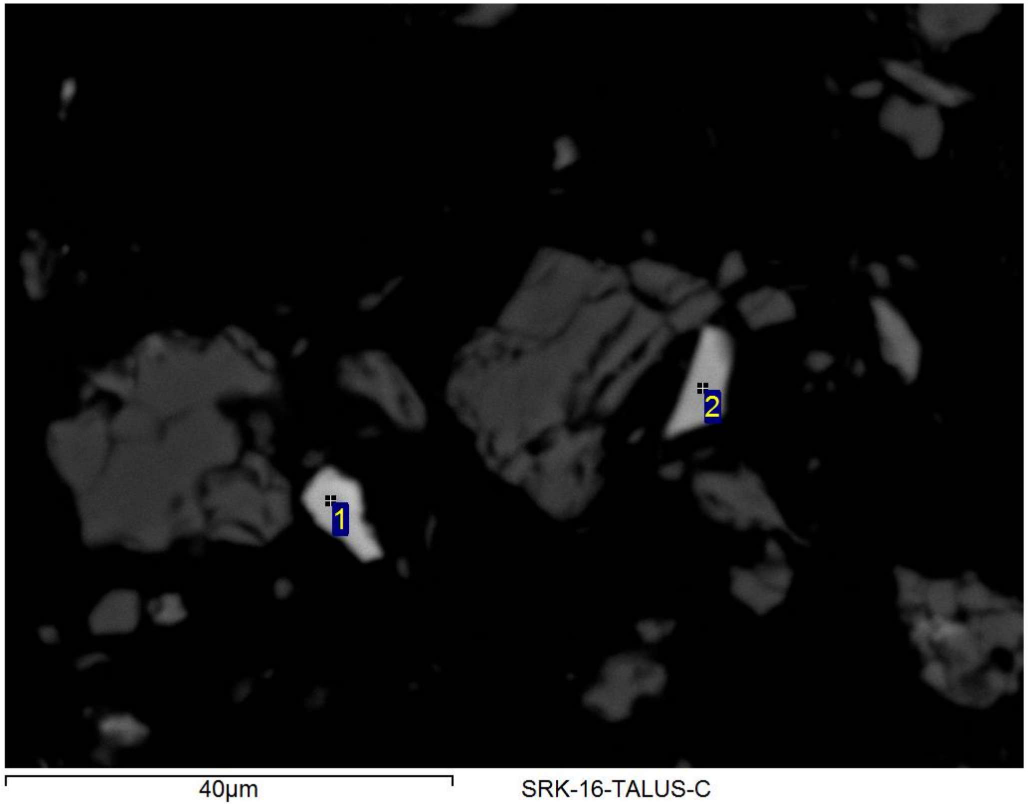
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Fe	Mo	Total	Mineral Identification
1	48.2	4.6	1.1	1.5	40.2	4.3	100.0	Fe-oxy/hydroxide

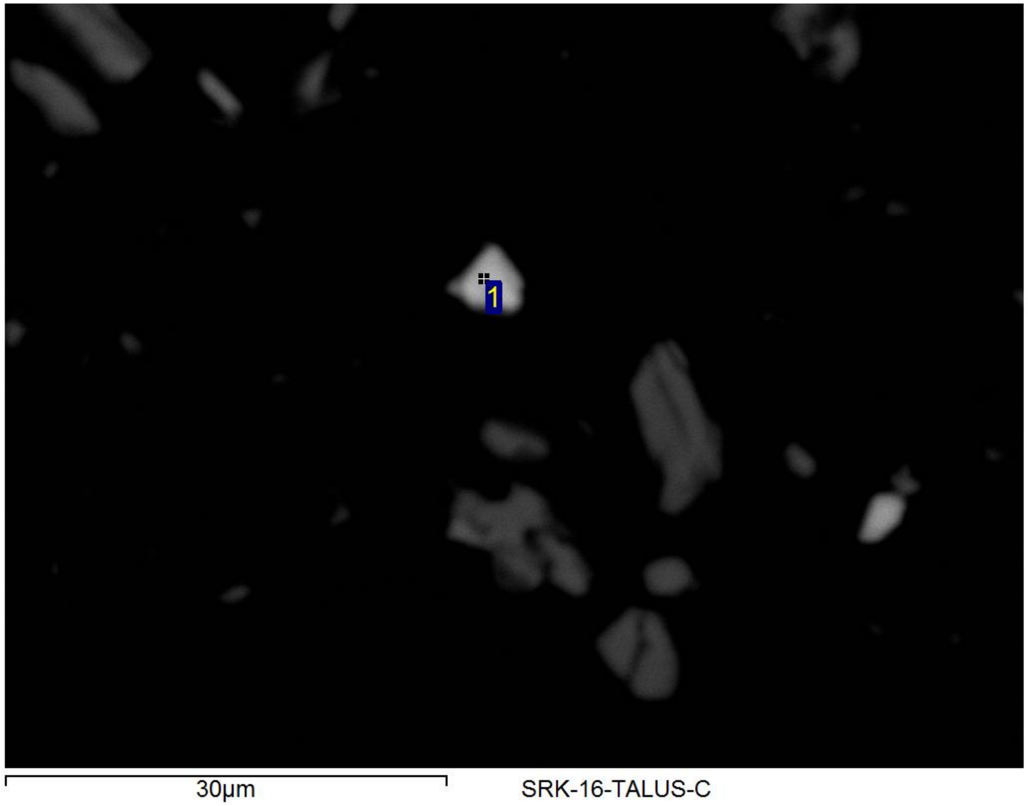
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Zn	Total	Mineral Identification
1	46.2	1.2	1.8			50.2	0.6	100.0	Fe-oxy/hydroxide
2	47.4	3.2	1.0	1.1	0.4	47.0		100.0	Fe-oxy/hydroxide

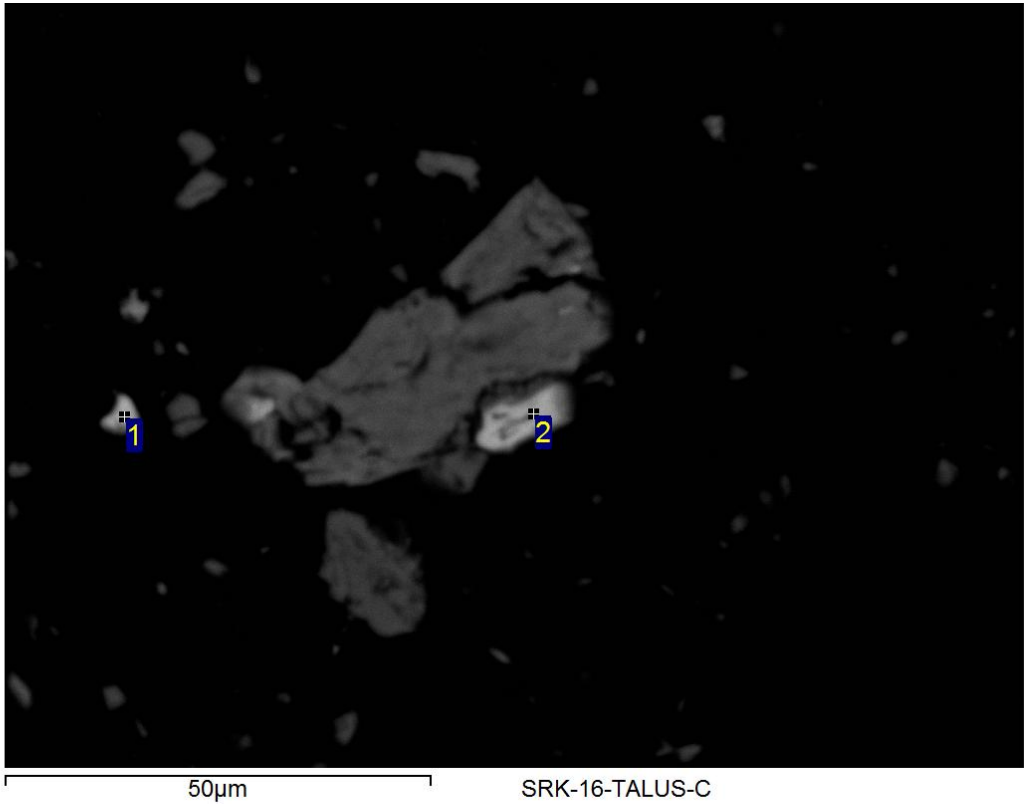
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	46.1	1.0	1.4	0.8	0.4	50.4	100.0	Fe-oxy/hydroxide

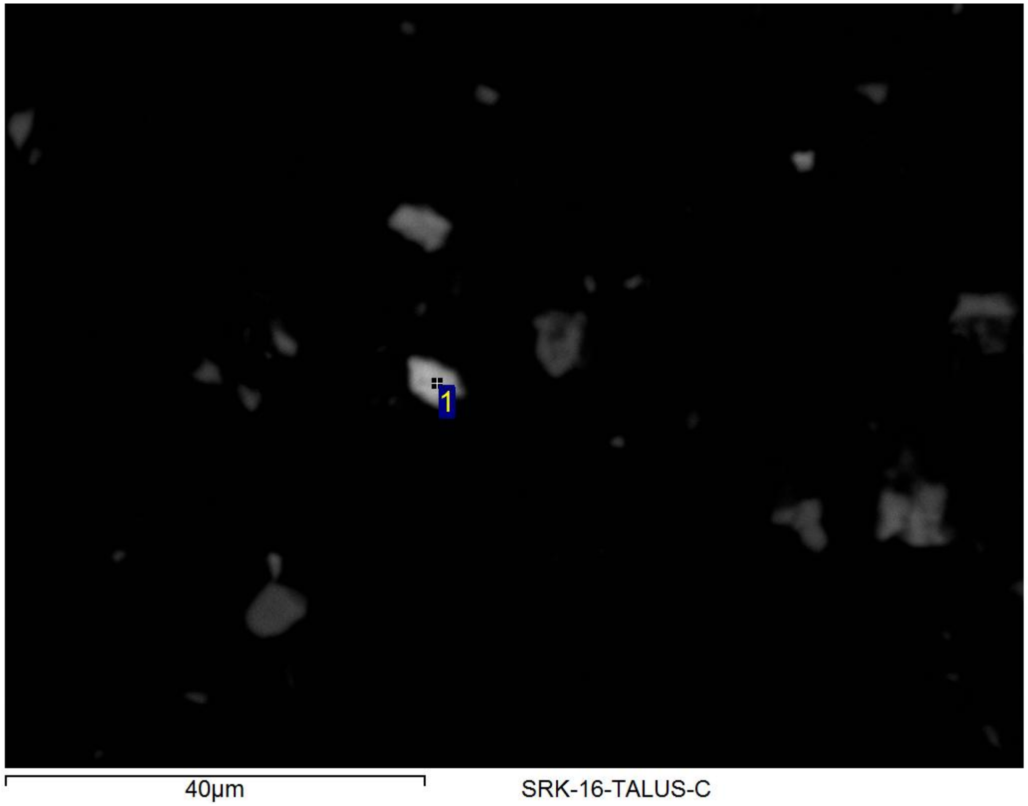
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	Cl	Fe	Total	Mineral Identification
1	43.2		1.0	1.7		0.3	0.3	53.6	100.0	Fe-oxy/hydroxide
2	47.7	0.6	4.7	3.0	0.7			43.3	100.0	Fe-oxy/hydroxide

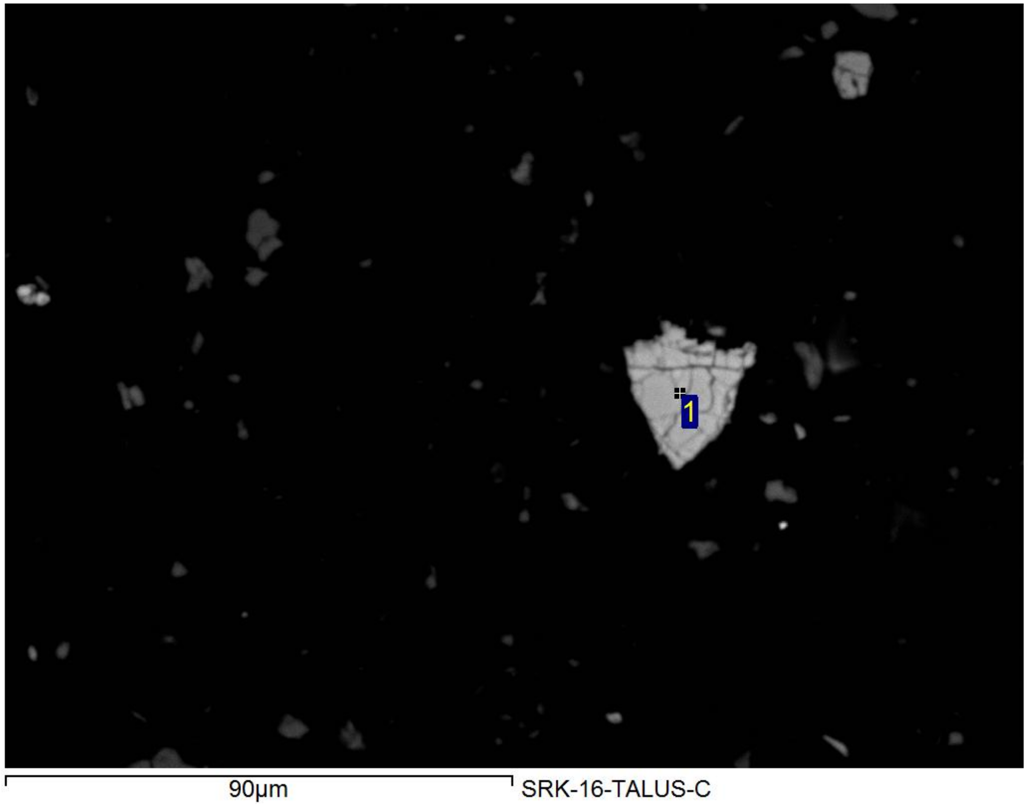
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Si	S	Fe	Total	Mineral Identification
1	43.4	1.1	0.4	55.1	100.0	Fe-oxy/hydroxide

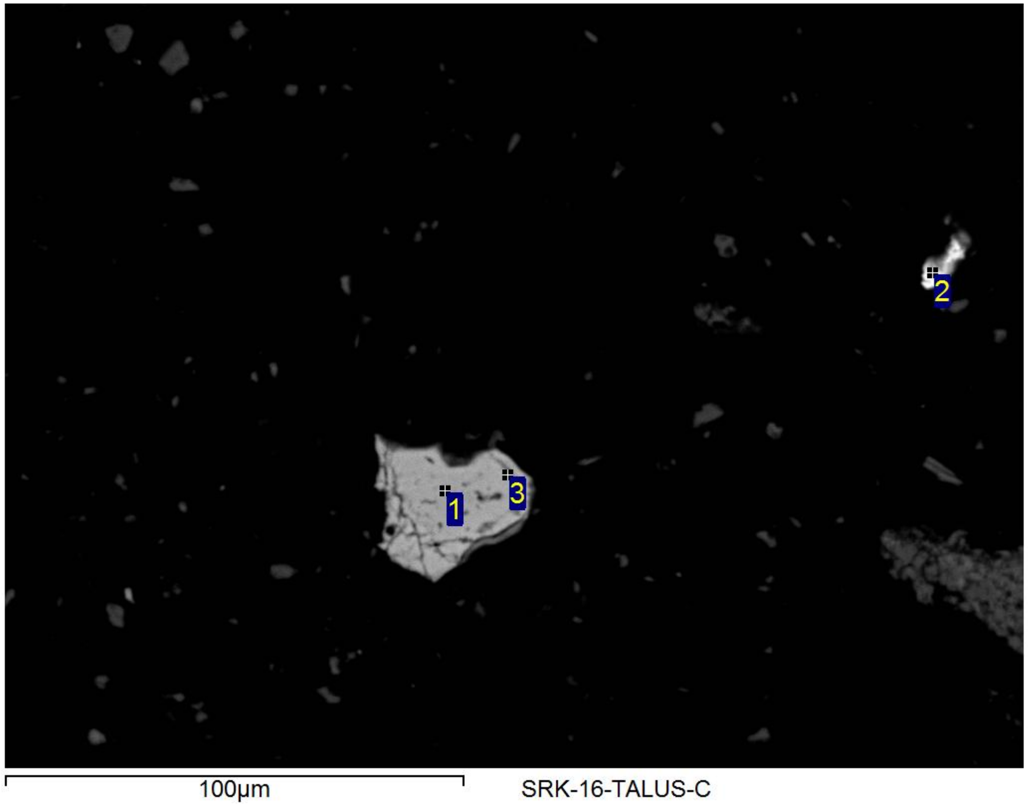
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Fe	Total	Mineral Identification
1	44.4	0.6	0.9	0.7	53.4	100.0	Fe-oxy/hydroxide

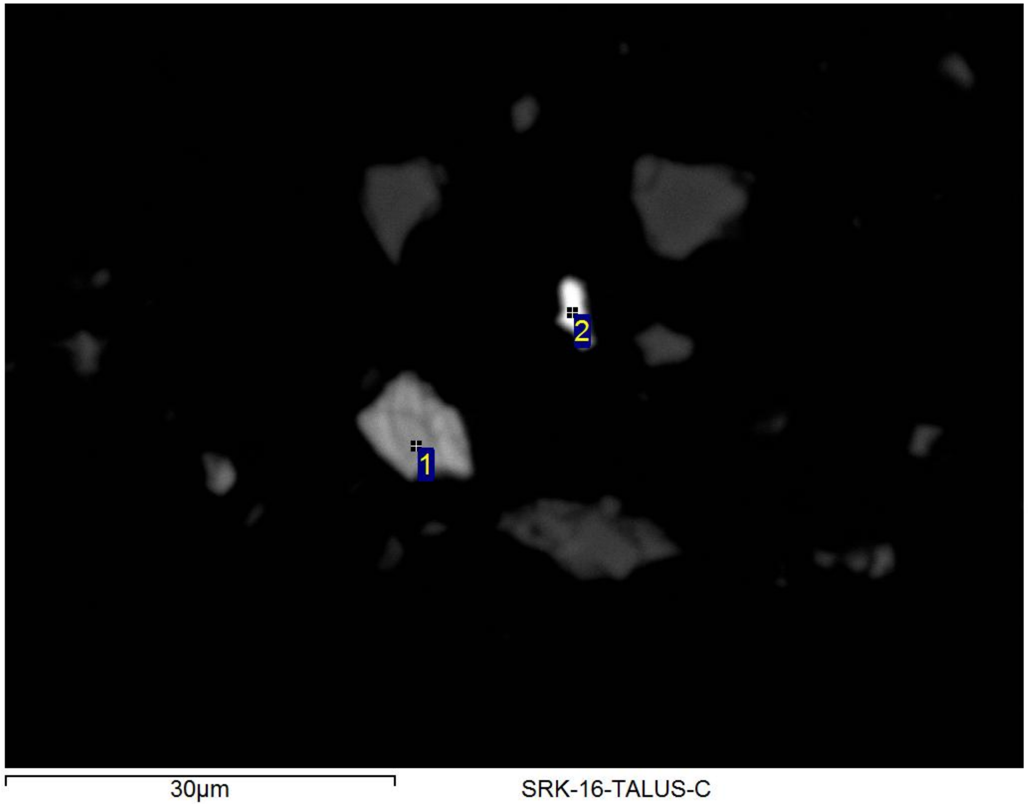
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	Cr	Mn	Fe	Total	Mineral Identification
1	46.1		1.6	1.4	0.4			50.5	100.0	Fe-oxy/hydroxide
2	4.8	0.5	0.5	2.2		14.3	1.0	76.7	100.0	chromferide/chromite?
3	45.8		1.6	1.5	0.6			50.5	100.0	Fe-oxy/hydroxide

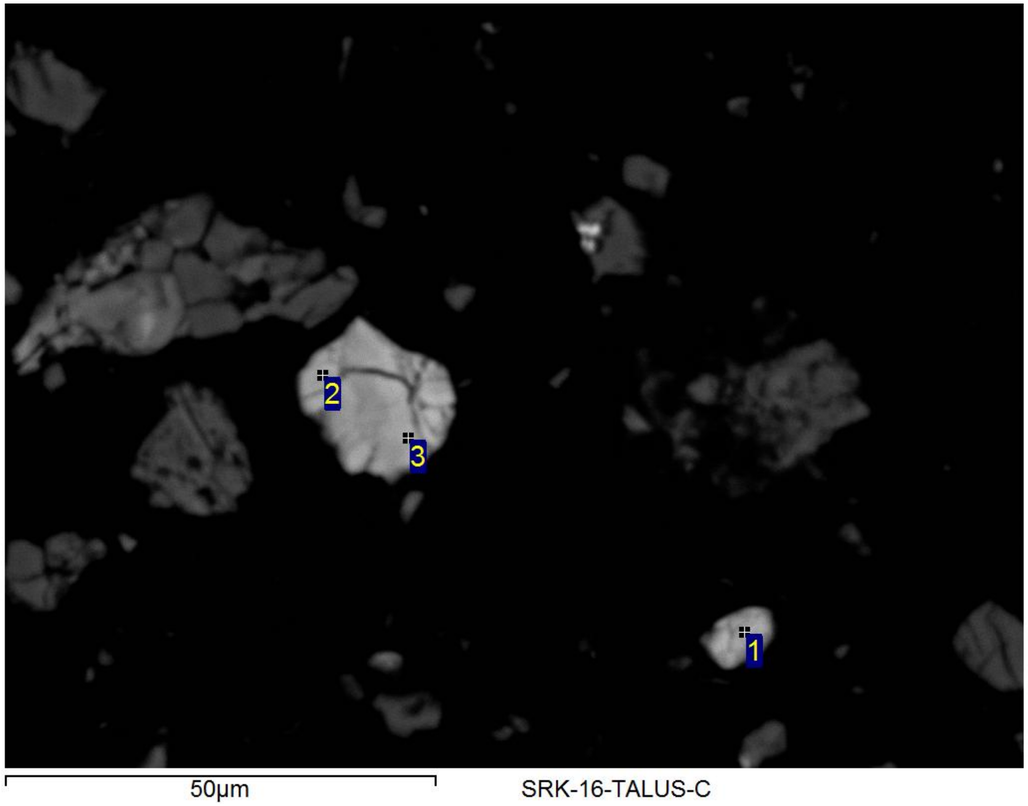
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Cl	Cr	Mn	Fe	Total	Mineral Identification
1	43.6	3.6	1.6	1.0	0.2			50.0	100.0	Fe-oxy/hydroxide
2	4.9	0.6	2.9			11.6	1.0	79.1	100.0	chromferide/chromite?

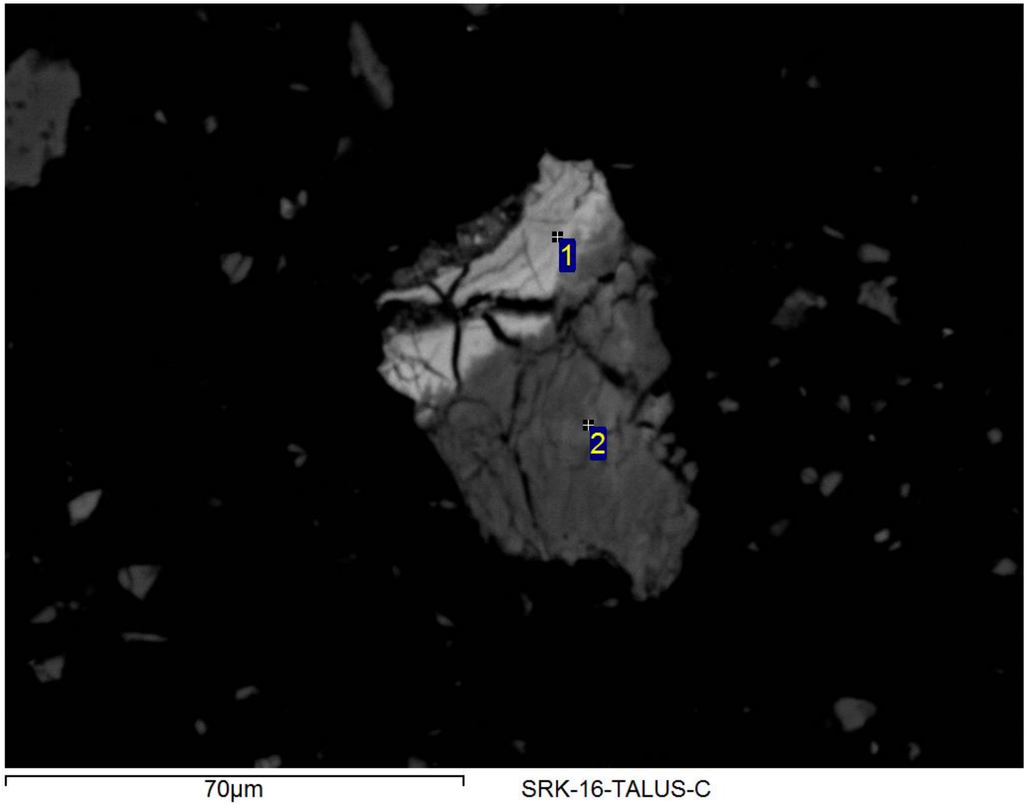
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Fe	Total	Mineral Identification
1	48.5	2.5	1.3	2.0	45.8	100.0	Fe-oxy/hydroxide
2	45.9	3.1	0.6	1.5	48.9	100.0	Fe-oxy/hydroxide
3	47.1	2.4		1.5	49.0	100.0	Fe-oxy/hydroxide

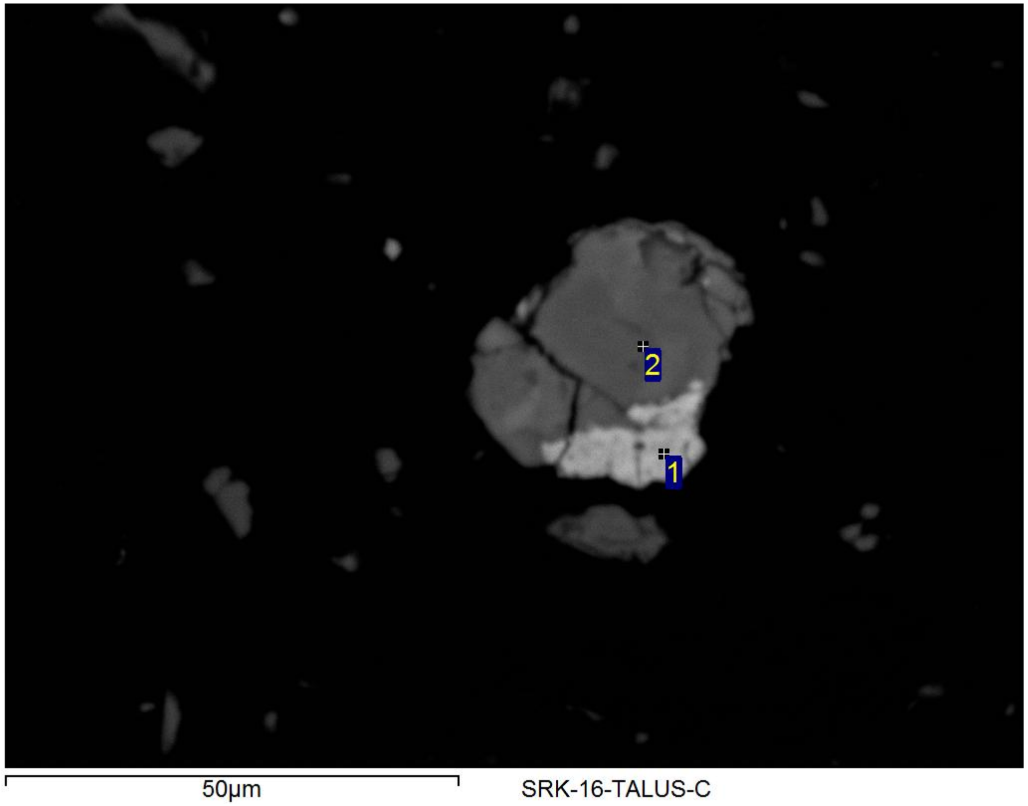
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	K	Fe	Total	Mineral Identification
1	47.2		4.8	2.1	1.2	0.3	0.2	44.2	100.0	Fe-oxy/hydroxide
2	54.9	8.0	10.1	14.3			1.9	10.8	100.0	silicate

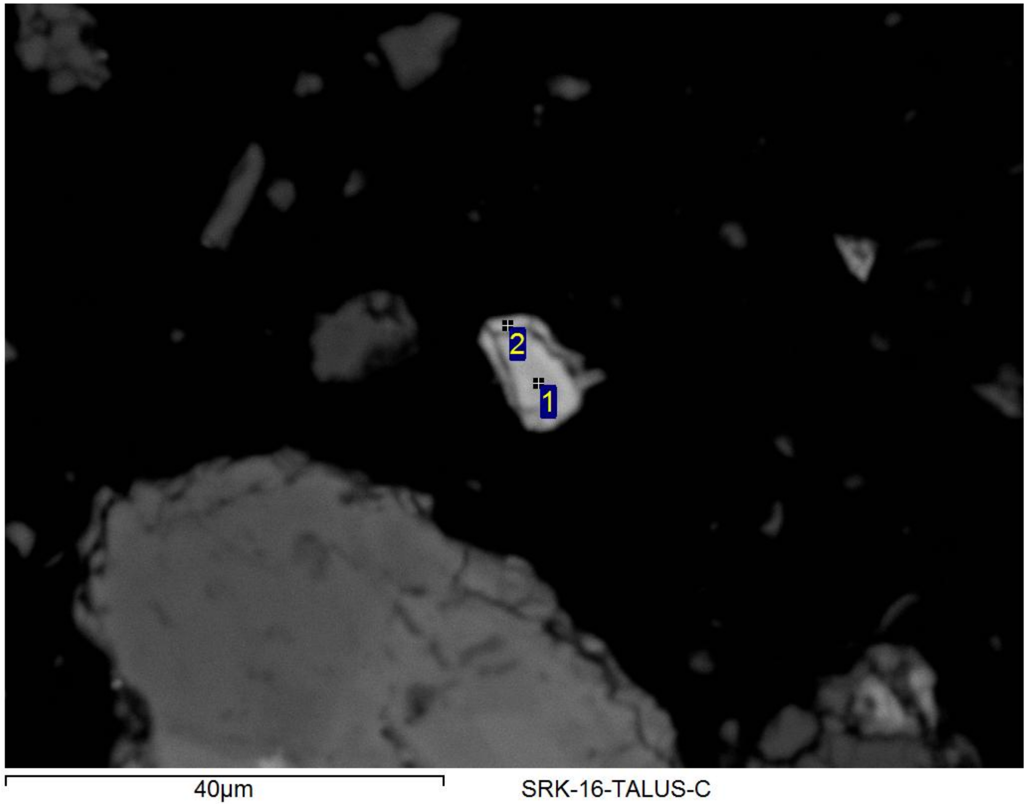
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Na	Al	Si	P	K	Fe	Zn	Ba	Total	Mineral Identification
1	46.4	0.3	2.3	2.0	0.4		48.0	0.7		100.0	Fe-oxy/hydroxide
2	49.7		8.8	28.3		11.7			1.5	100.0	silicate

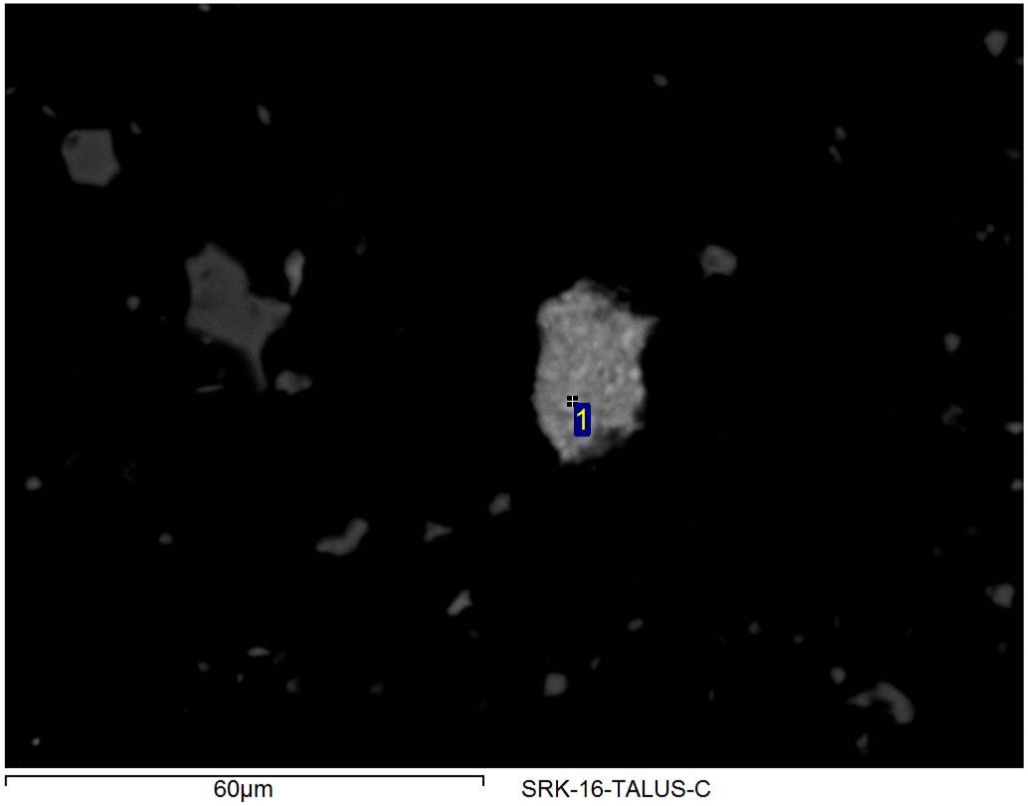
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	44.6	0.4	1.3	0.5		53.2	100.0	Fe-oxy/hydroxide
2	48.2	0.8	1.4	0.6	0.4	48.5	100.0	Fe-oxy/hydroxide

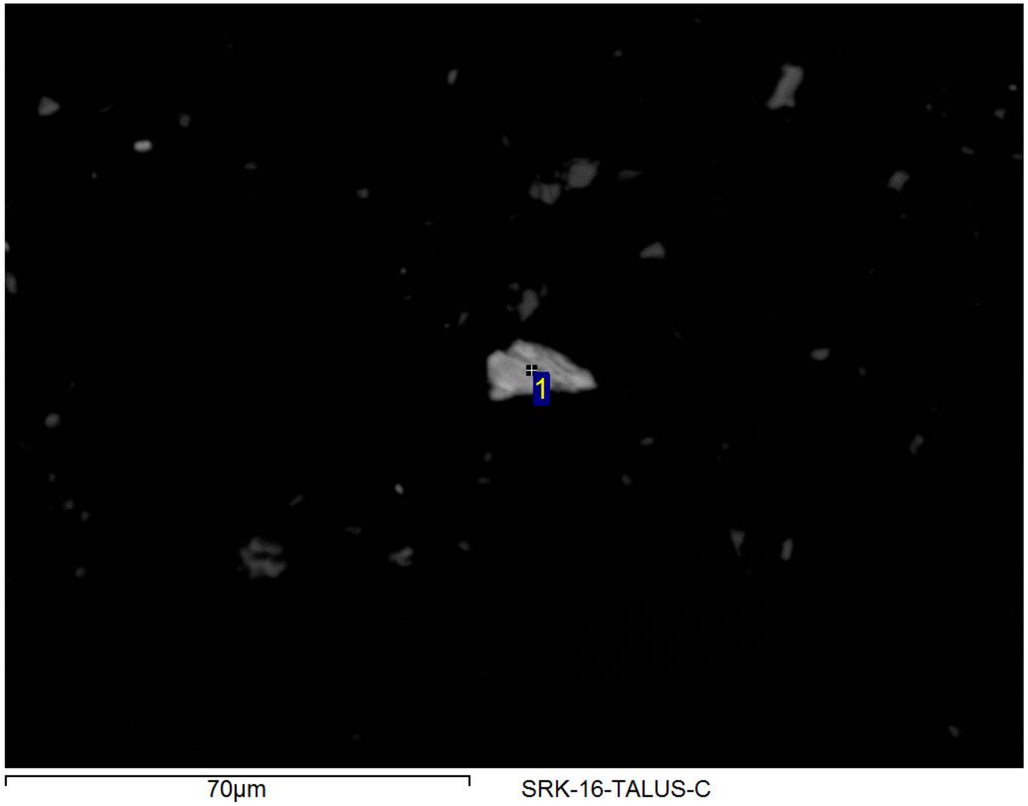
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Fe	Total	Mineral Identification
1	46.4	2.7	2.5	1.0	47.4	100.0	Fe-oxy/hydroxide

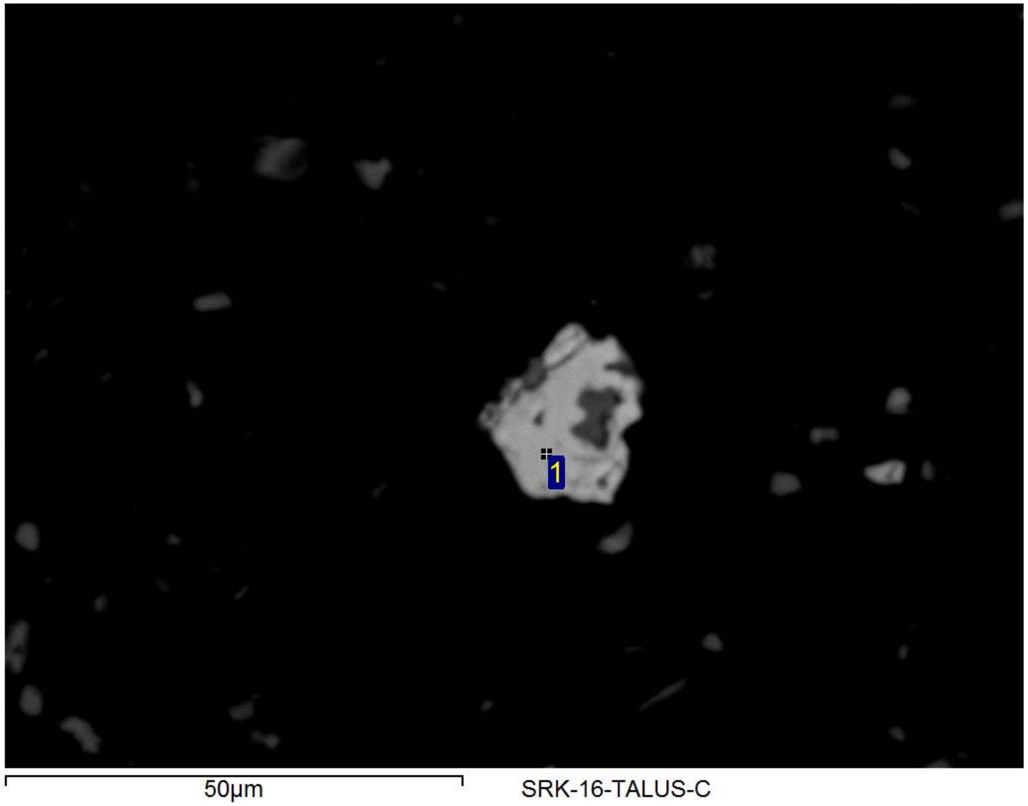
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Cl	Fe	As	Total	Mineral Identification
1	41.8	2.0	2.5	1.0	0.3	51.1	1.4	100.0	Fe-oxy/hydroxide

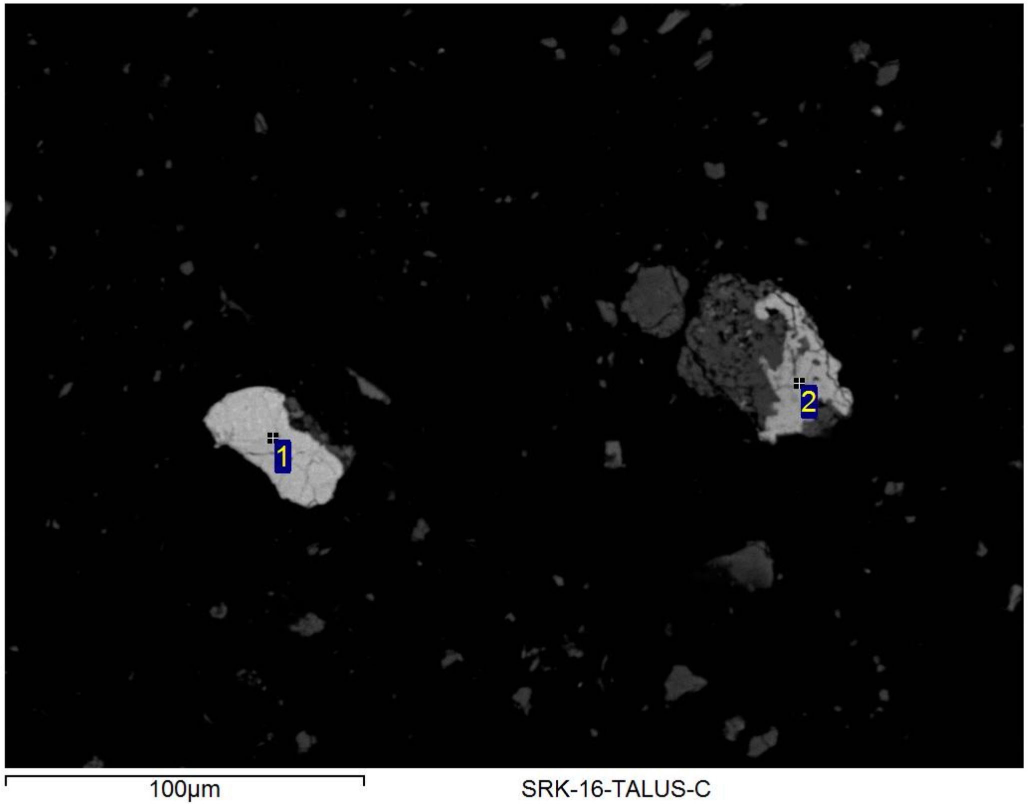
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Fe	Total	Mineral Identification
1	46.4	1.4	2.0	0.4	49.8	100.0	Fe-oxy/hydroxide

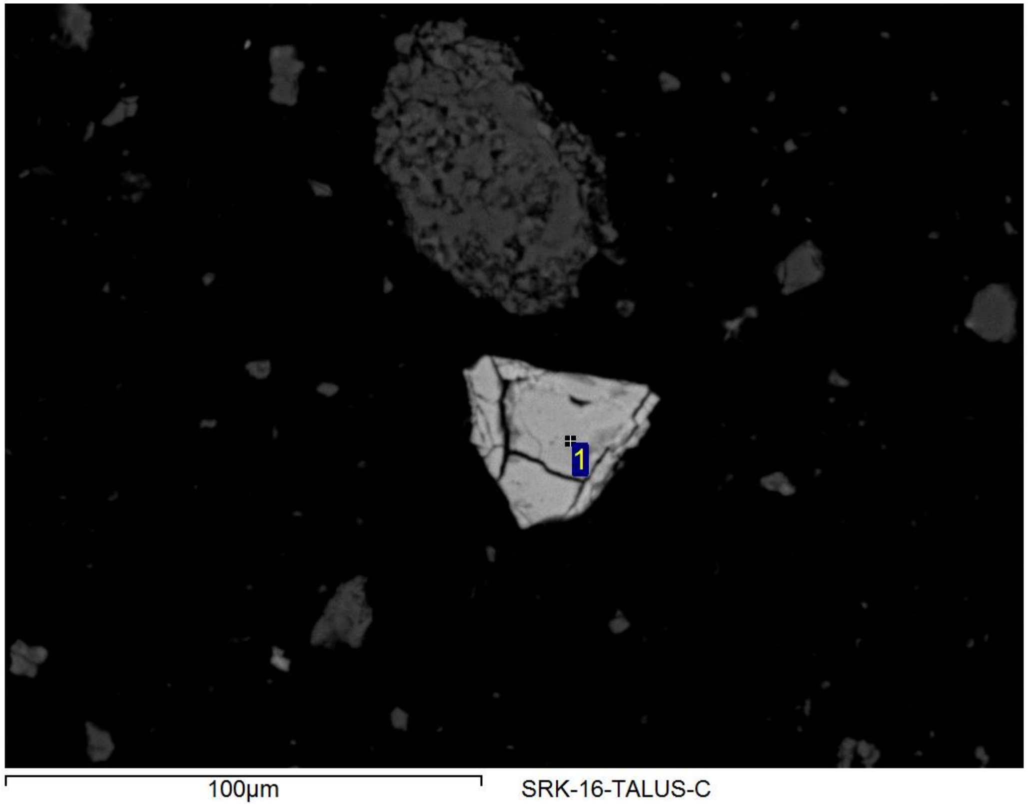
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	44.9		0.4		0.4	54.3	100.0	Fe-oxy/hydroxide
2	47.3	3.7	1.9	0.4	0.5	46.2	100.0	Fe-oxy/hydroxide

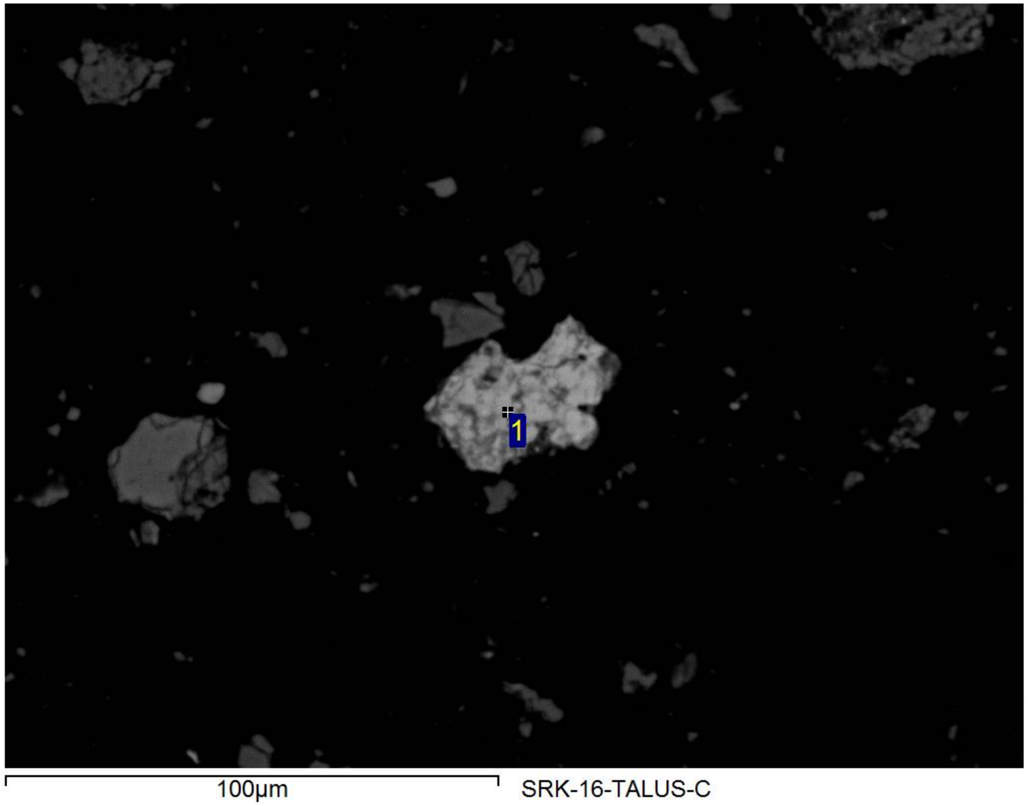
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	45.1	1.0	0.9	0.6	0.6	51.8	100.0	Fe-oxy/hydroxide

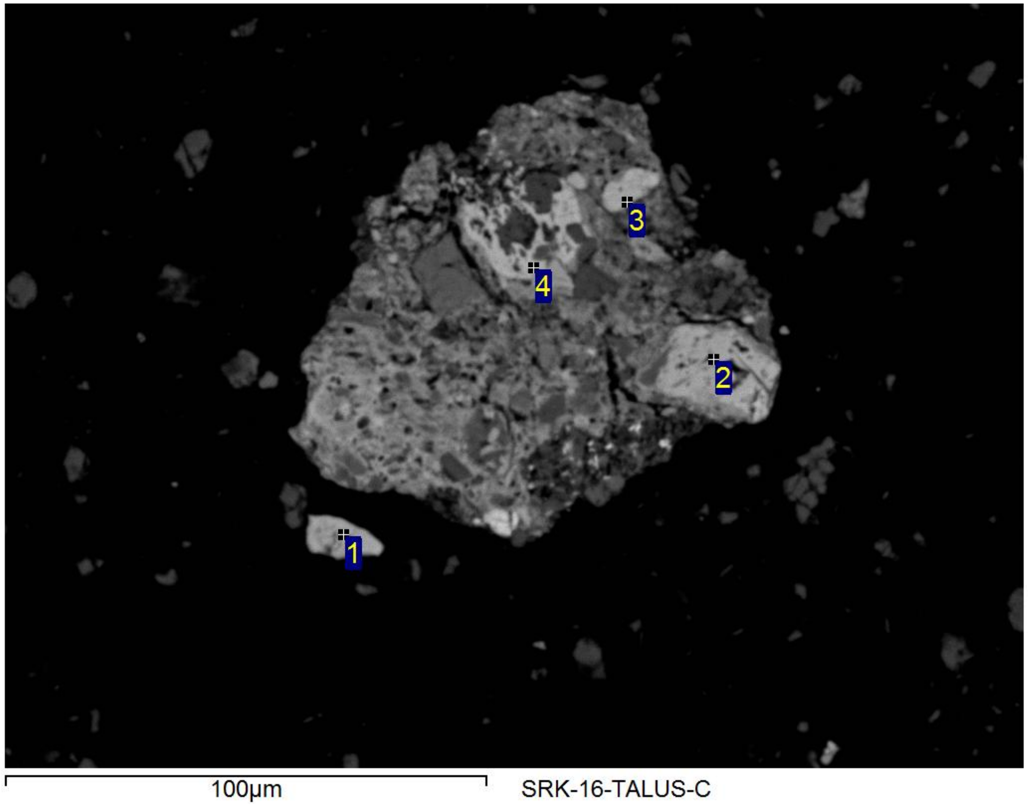
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Mn	Fe	Total	Mineral Identification
1	45.9	4.8	1.8	1.6	0.5	45.3	100.0	Fe-oxy/hydroxide

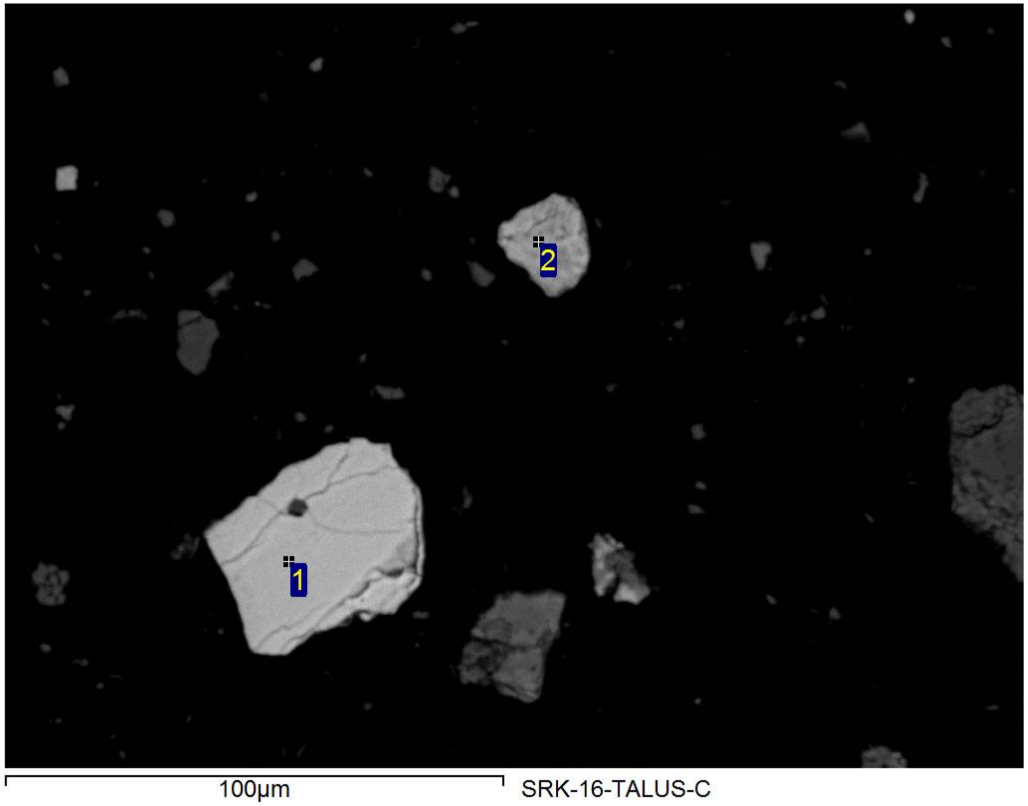
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	K	Ti	Mn	Fe	Total	Mineral Identification
1	44.4	2.4	0.9		0.8				51.6	100.0	Fe-oxy/hydroxide
2	43.8	3.1	1.7	1.2				0.6	49.7	100.0	Fe-oxy/hydroxide
3	47.4	3.9	1.6	1.1	0.3	0.3			45.5	100.0	Fe-oxy/hydroxide
4	49.7	1.2	1.0				4.0	0.6	43.4	100.0	Fe-oxy/hydroxide

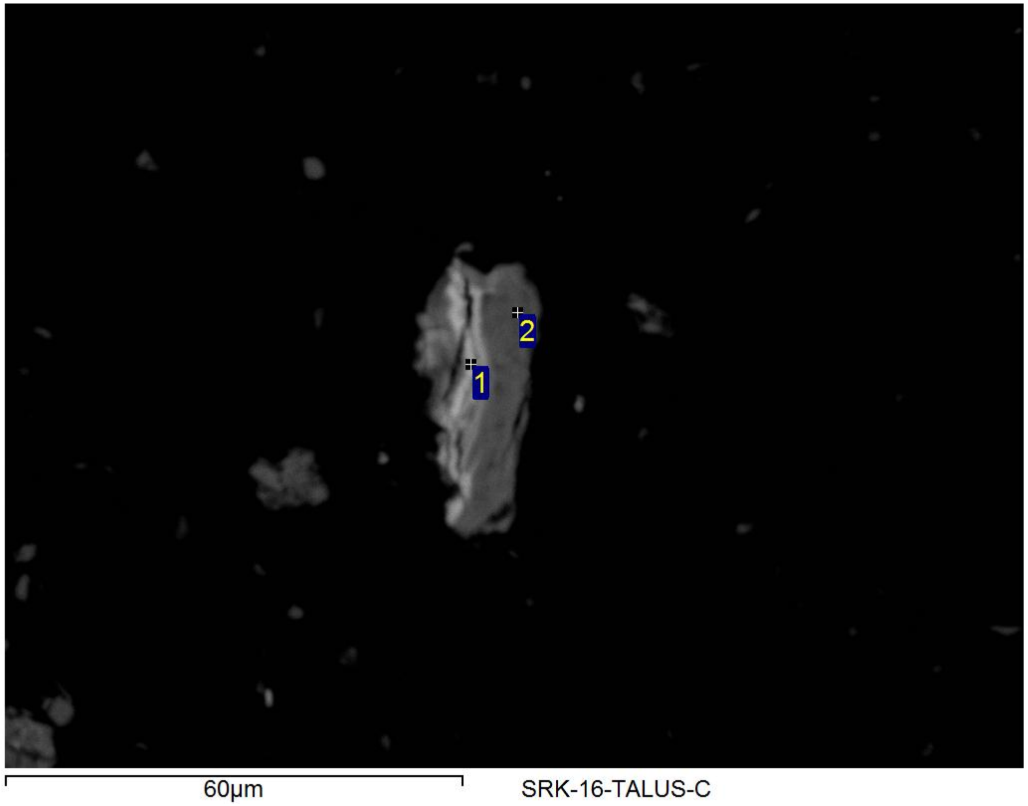
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	Mn	Fe	Total	Mineral Identification
1	44.4		1.1		0.7	53.8	100.0	Fe-oxy/hydroxide
2	49.2	3.1	3.0	0.6		44.2	100.0	Fe-oxy/hydroxide

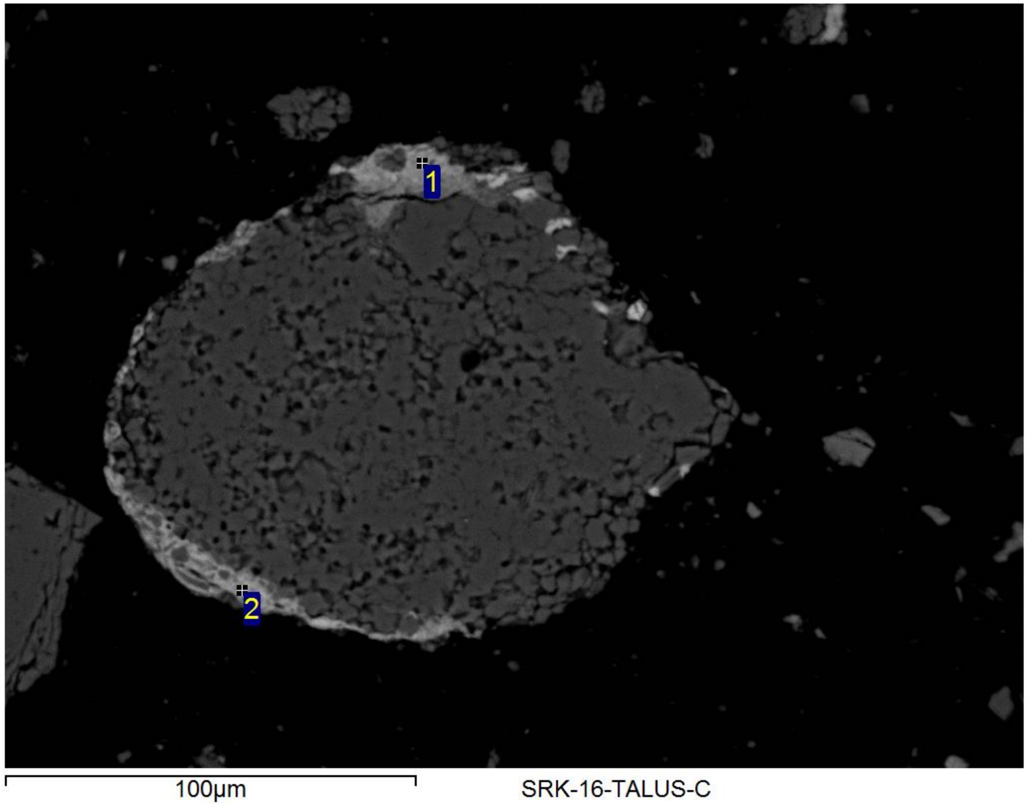
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	Fe	Total	Mineral Identification
1	47.4		4.6	0.6	4.6	42.9	100.0	Fe-oxy/hydroxide
2	52.6	11.0	9.5	13.6		13.3	100.0	silicate

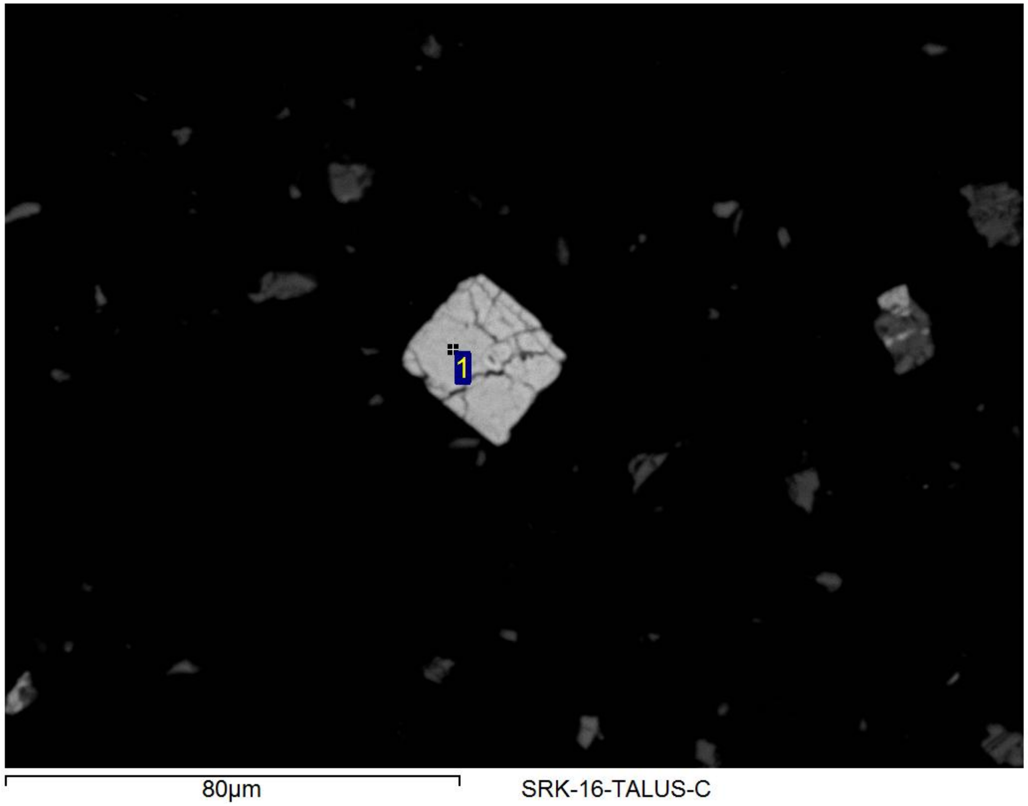
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	K	Fe	Total	Mineral Identification
1	47.7	0.9	4.9	5.2	0.5	0.5	1.3	39.0	100.0	Fe-oxy/hydroxide
2	50.5		4.8	5.8	0.5	0.5	1.0	36.9	100.0	Fe-oxy/hydroxide

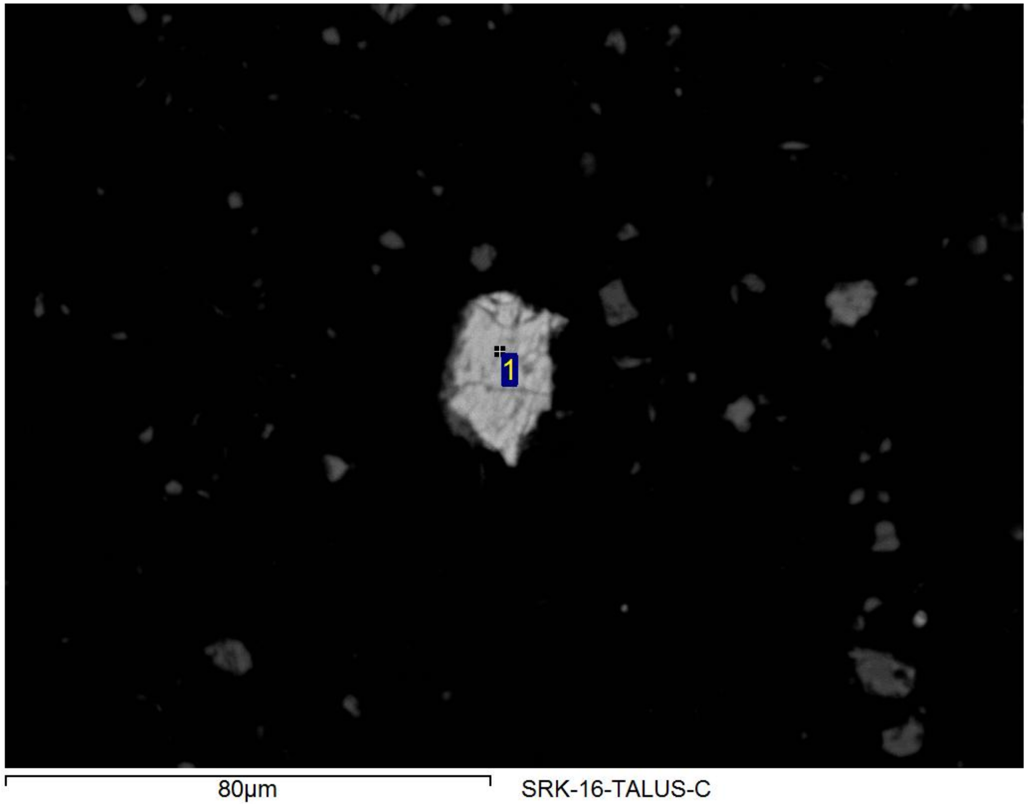
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Si	Fe	Total	Mineral Identification
1	42.5	1.0	56.6	100.0	Fe-oxy/hydroxide

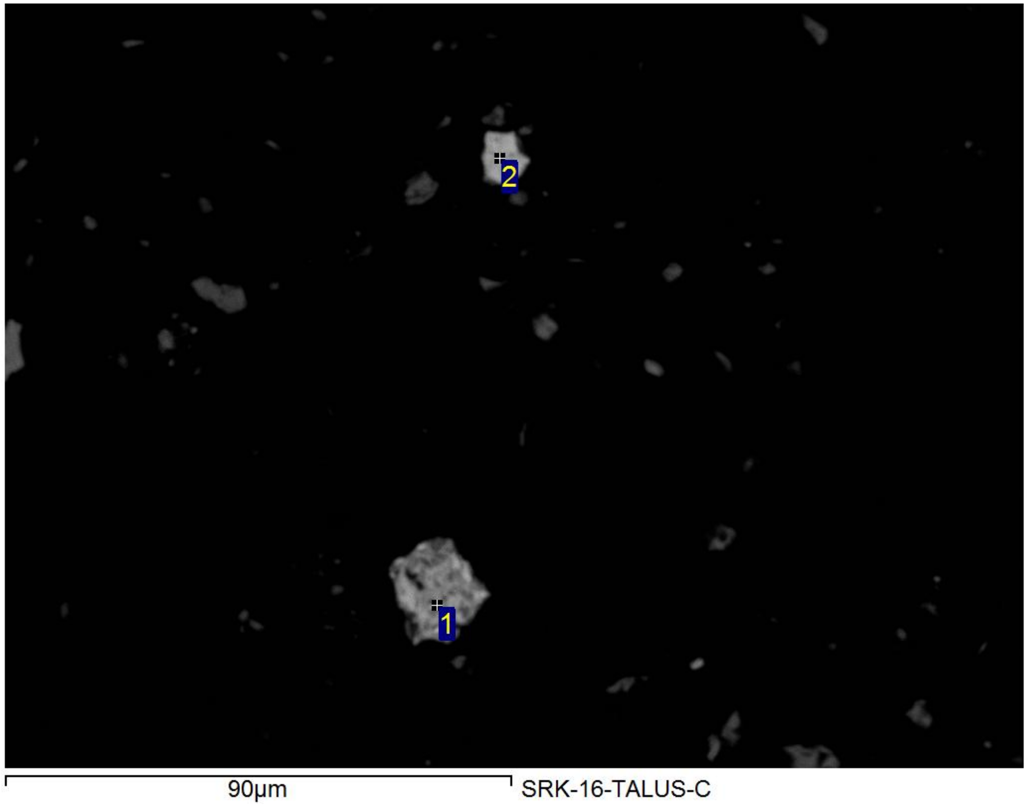
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	Fe	Total	Mineral Identification
1	40.6	1.9	1.2	56.2	100.0	Fe-oxy/hydroxide

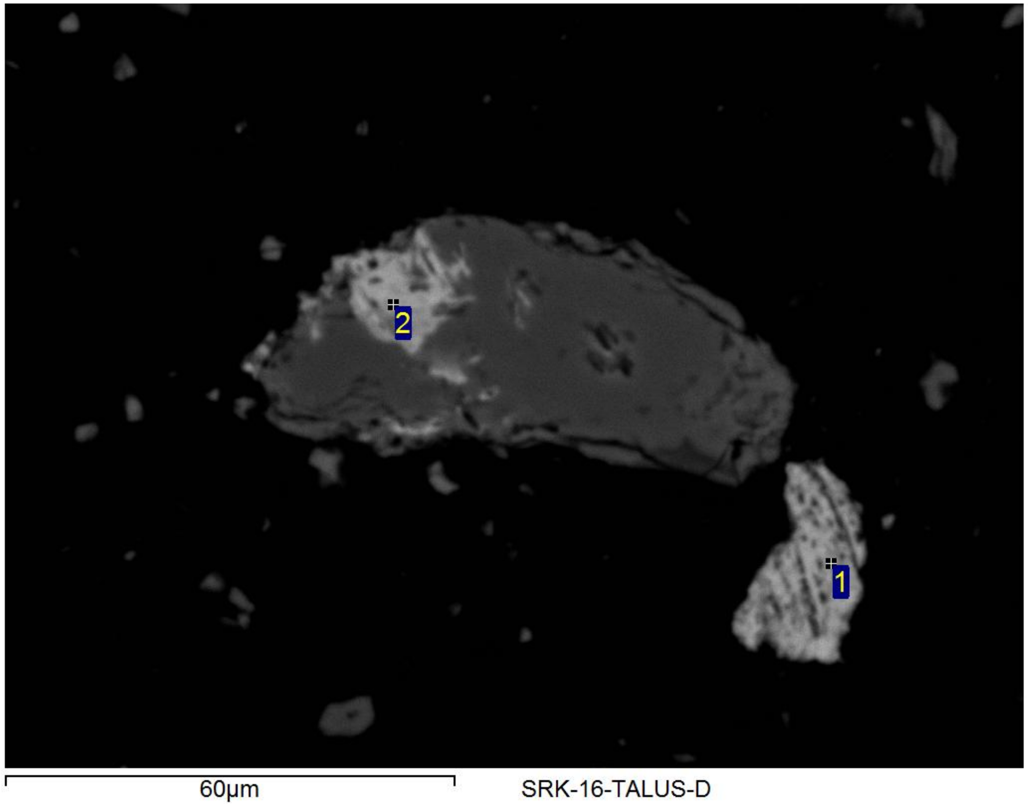
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	K	Ti	Fe	Total	Mineral Identification
1	44.5	0.3	6.9	5.2	1.4	0.7	0.5	40.5	100.0	Fe-oxy/hydroxide
2	47.5		4.3	0.8	1.6			45.8	100.0	Fe-oxy/hydroxide

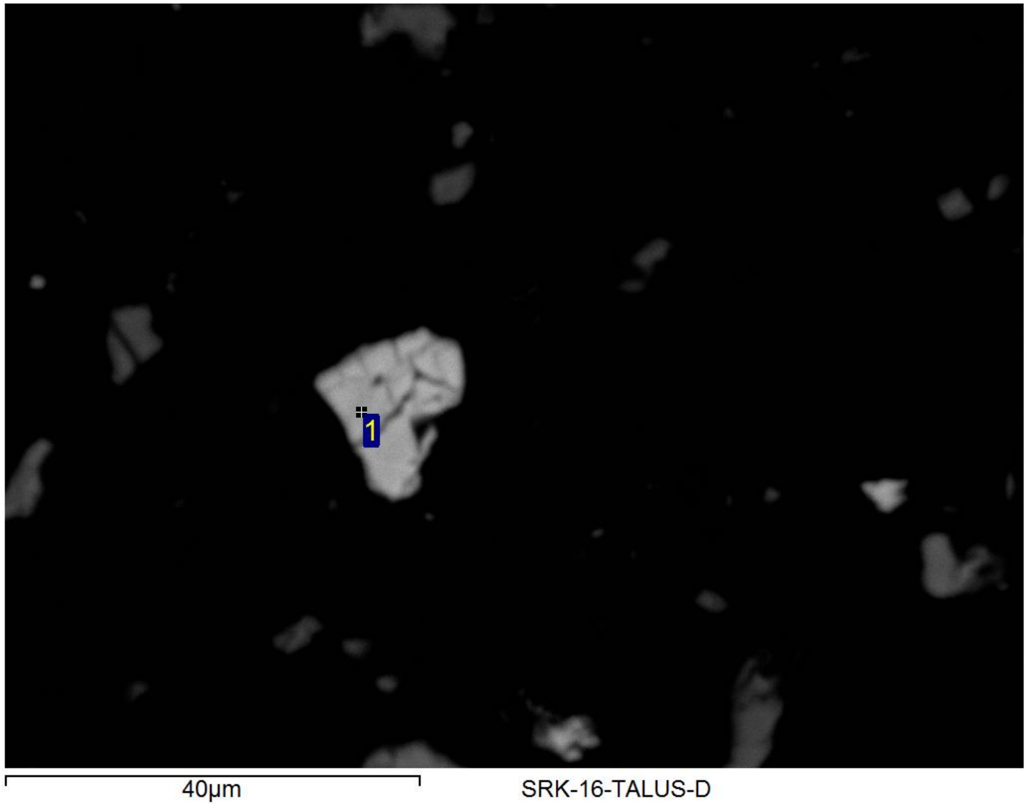
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Ti	Fe	Total	Mineral Identification
1	44.2	1.3	1.2	0.8	0.6	51.9	100.0	Fe-oxy/hydroxide
2	45.3	0.5	6.0	0.9	0.5	46.8	100.0	Fe-oxy/hydroxide

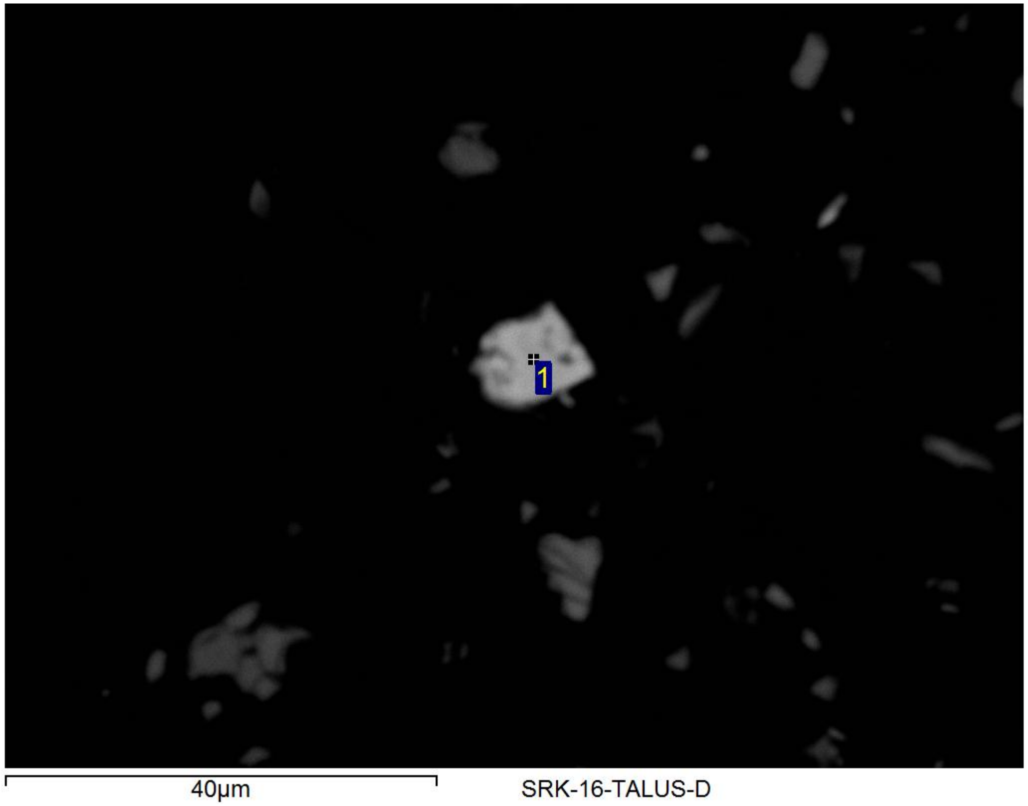
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	45.7	1.8	1.2	0.8	0.6	49.9	100.0	Fe-oxy/hydroxide

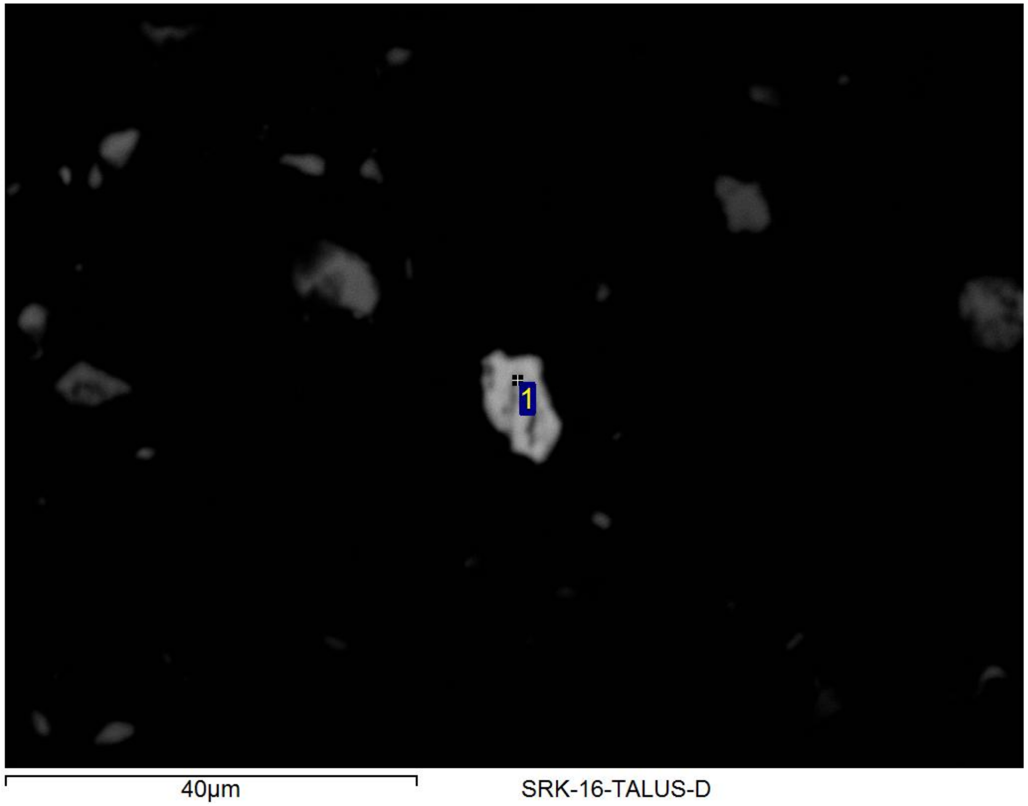
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Fe	Total	Mineral Identification
1	47.0	1.6	1.2	0.8	49.4	100.0	Fe-oxy/hydroxide

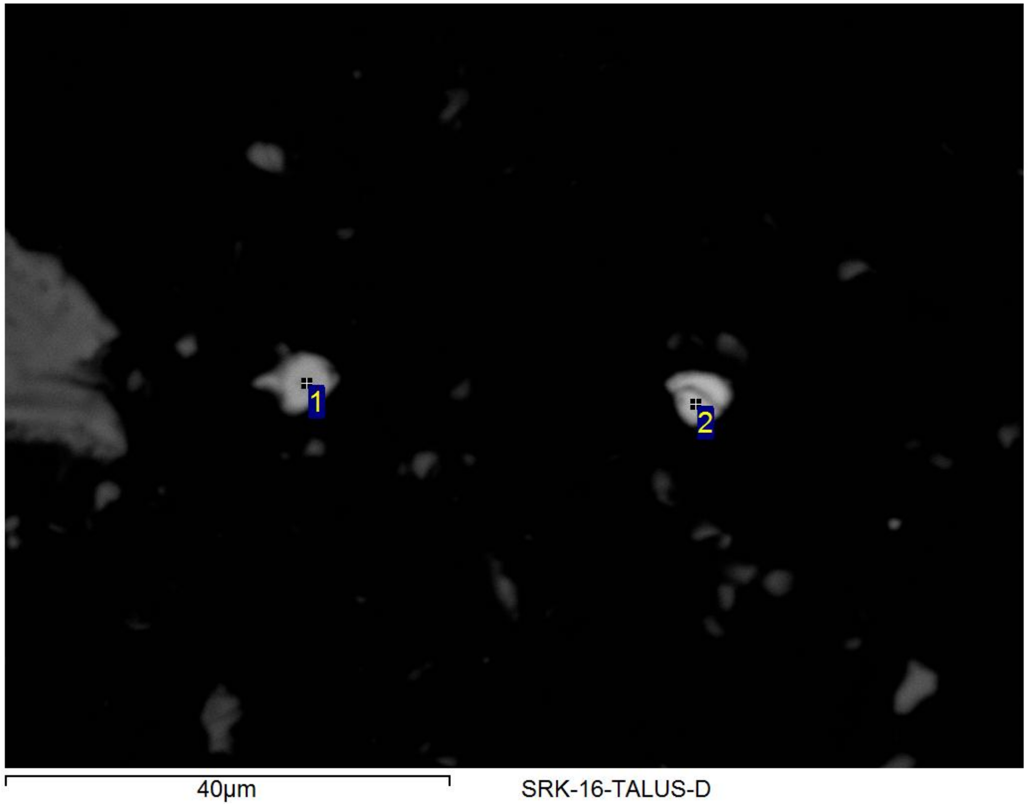
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Fe	Total	Mineral Identification
1	42.5	0.8	1.4	1.0	54.2	100.0	Fe-oxy/hydroxide

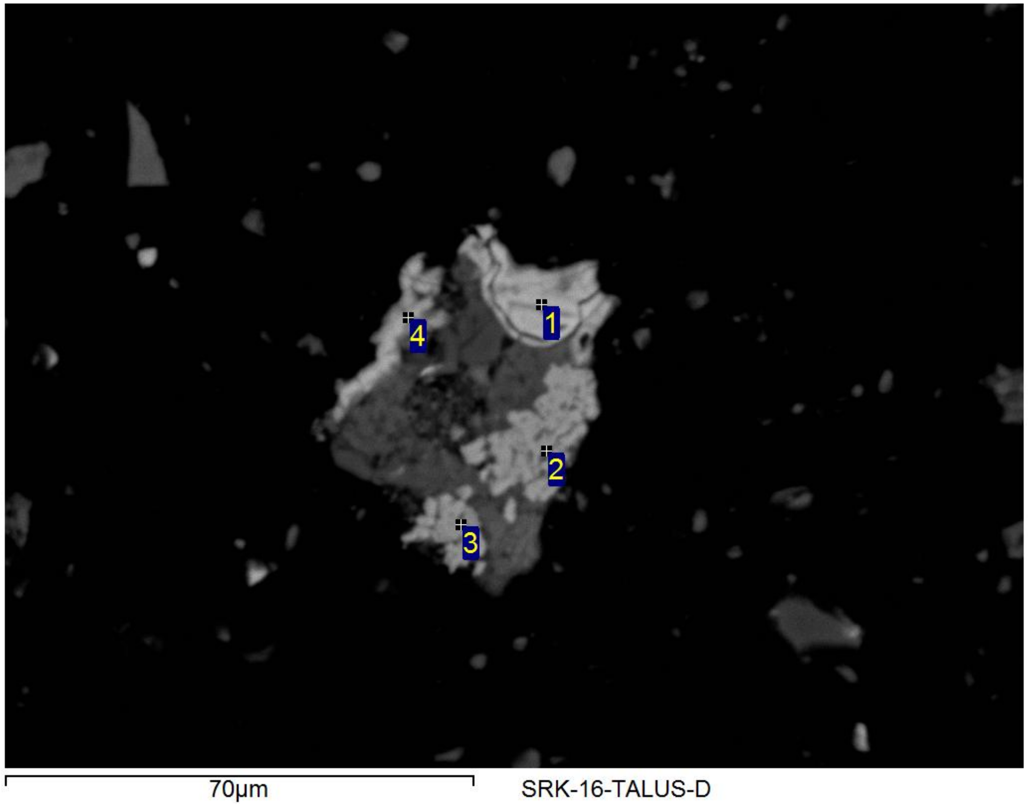
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Ti	Fe	Total	Mineral Identification
1	47.0	0.5	0.6		49.5	2.3	100.0	rutile
2	46.8	0.5	0.9	0.8		51.1	100.0	Fe-oxy/hydroxide

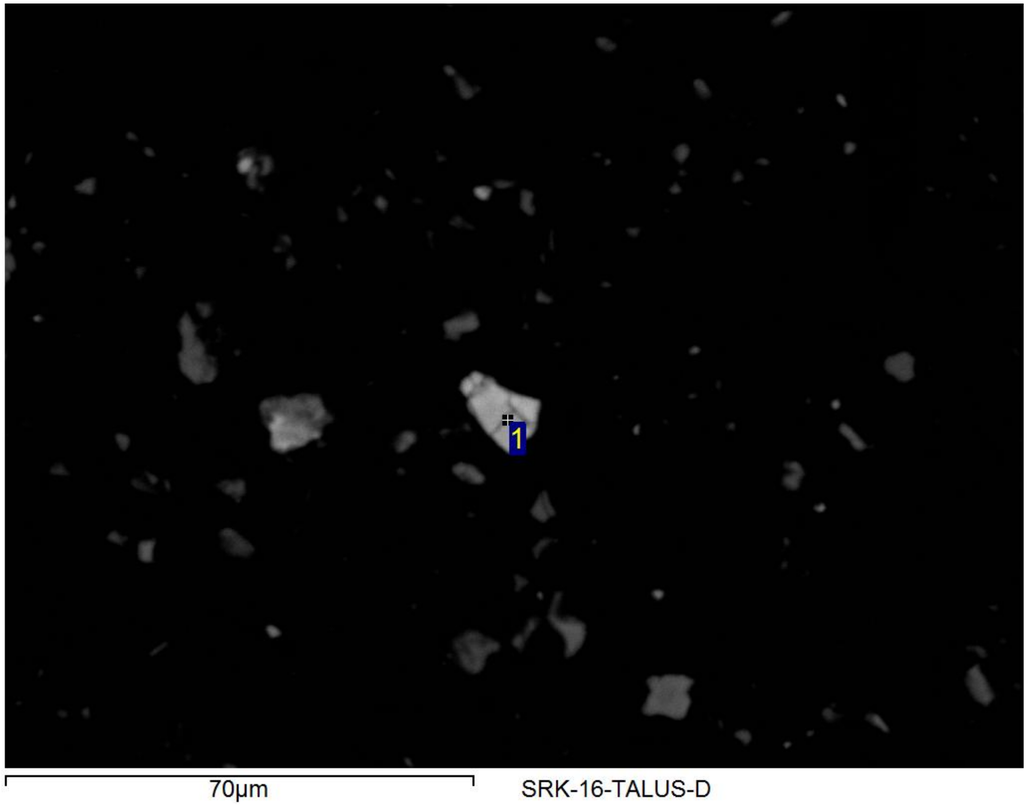
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	Cl	K	Ca	Ti	Fe	Total	Mineral Identification
1	44.9		1.3	0.9	2.1	0.7					50.0	100.0	Fe-oxy/hydroxide
2	47.2	0.8	2.7	4.2				1.1		43.0	0.8	100.0	rutile
3	49.2		0.6	1.3				0.3	0.2	48.1	0.4	100.0	rutile
4	50.3		1.7	2.3	1.7	0.6	0.5	0.4			42.5	100.0	Fe-oxy/hydroxide

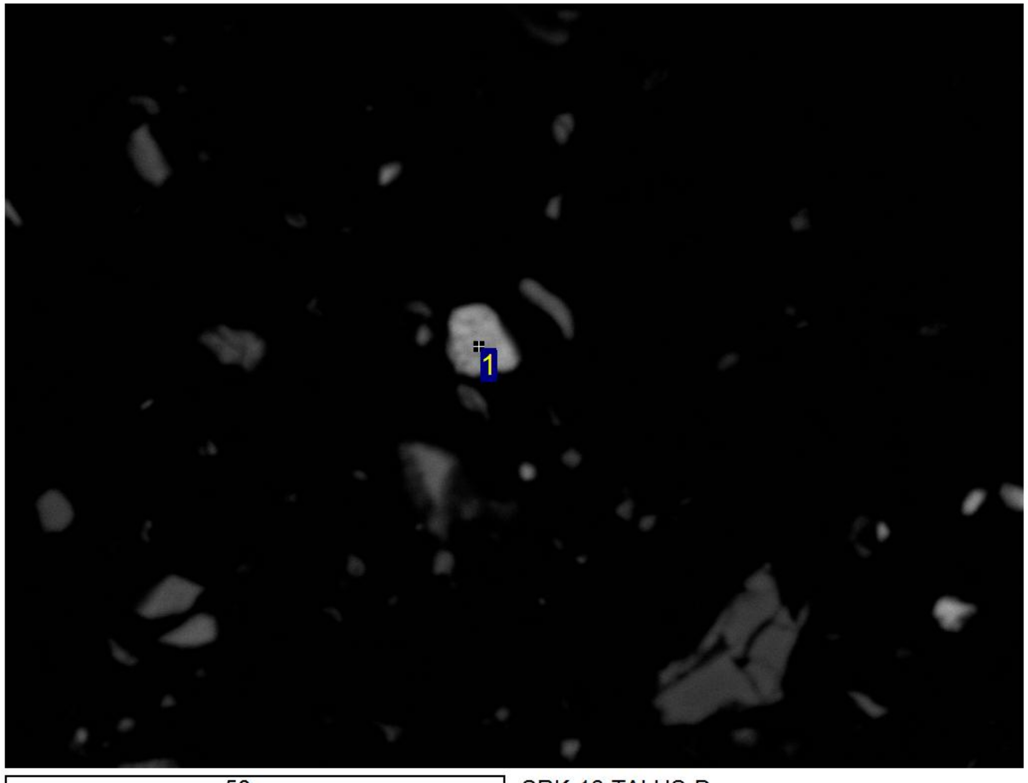
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Cu	Total	Mineral Identification
1	43.5	1.8	0.7	2.2	0.4	50.7	0.8	100.0	Fe-oxy/hydroxide

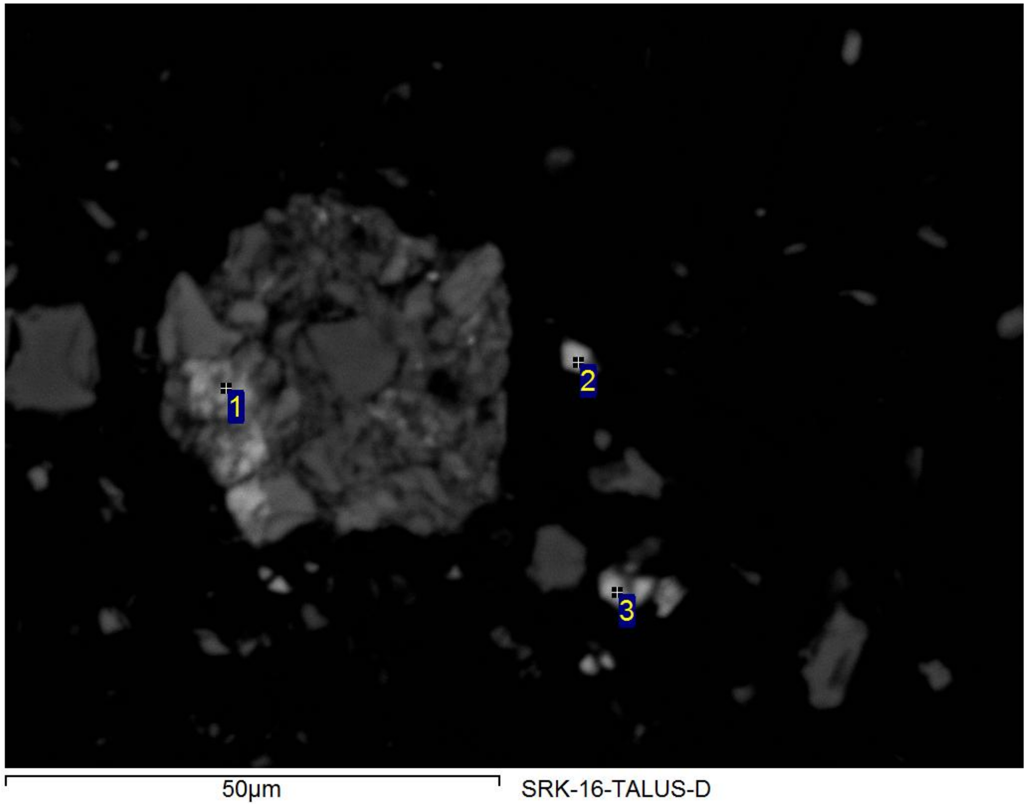
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	44.5	1.8	1.2	1.0	0.8	50.6	100.0	Fe-oxy/hydroxide

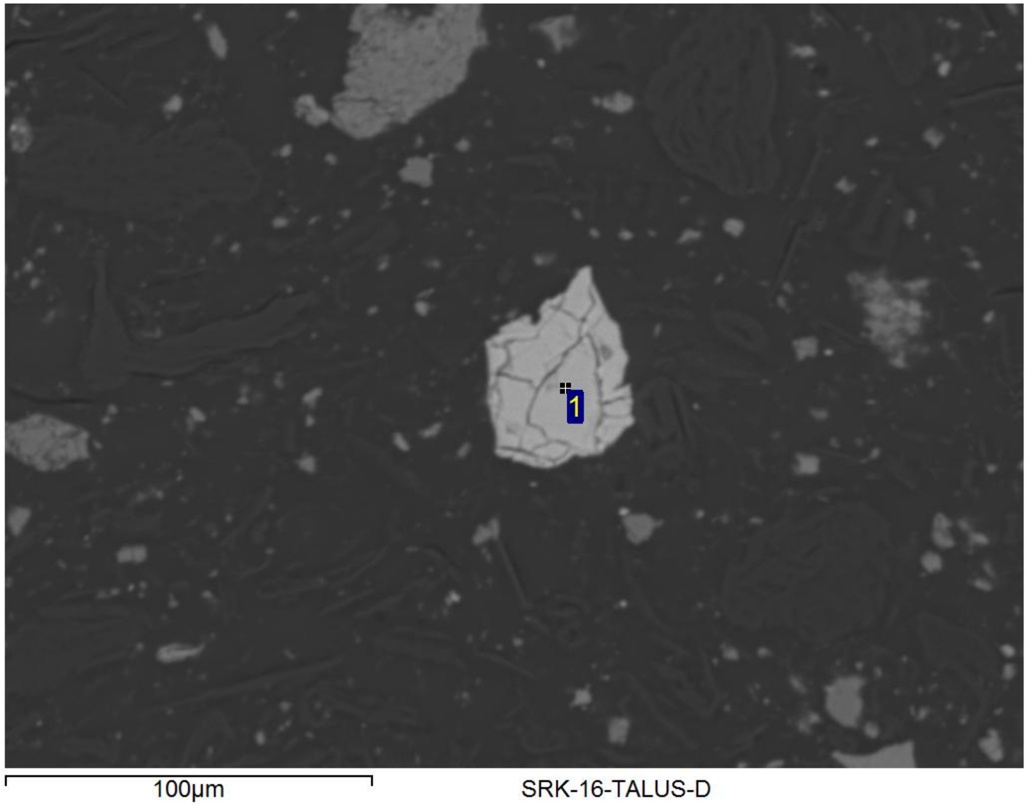
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	K	Ti	Fe	Total	Mineral Identification
1	45.4	1.3	1.6	0.9	1.8		1.0	47.9	100.0	Fe-oxy/hydroxide
2	46.0	1.7	1.3	1.5	0.6		0.5	48.4	100.0	Fe-oxy/hydroxide
3	44.2	0.7	1.0	1.6	2.7	0.8		49.1	100.0	Fe-oxy/hydroxide

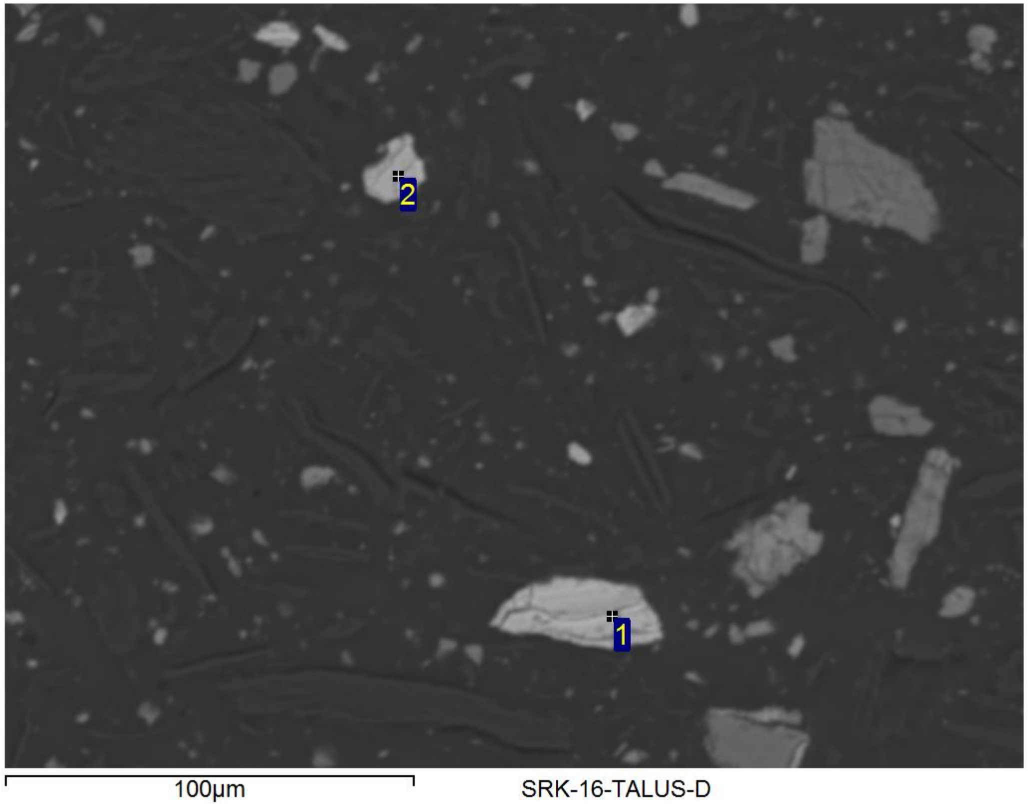
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	48.8	1.9	0.8	0.9	0.6	47.0	100.0	Fe-oxy/hydroxide

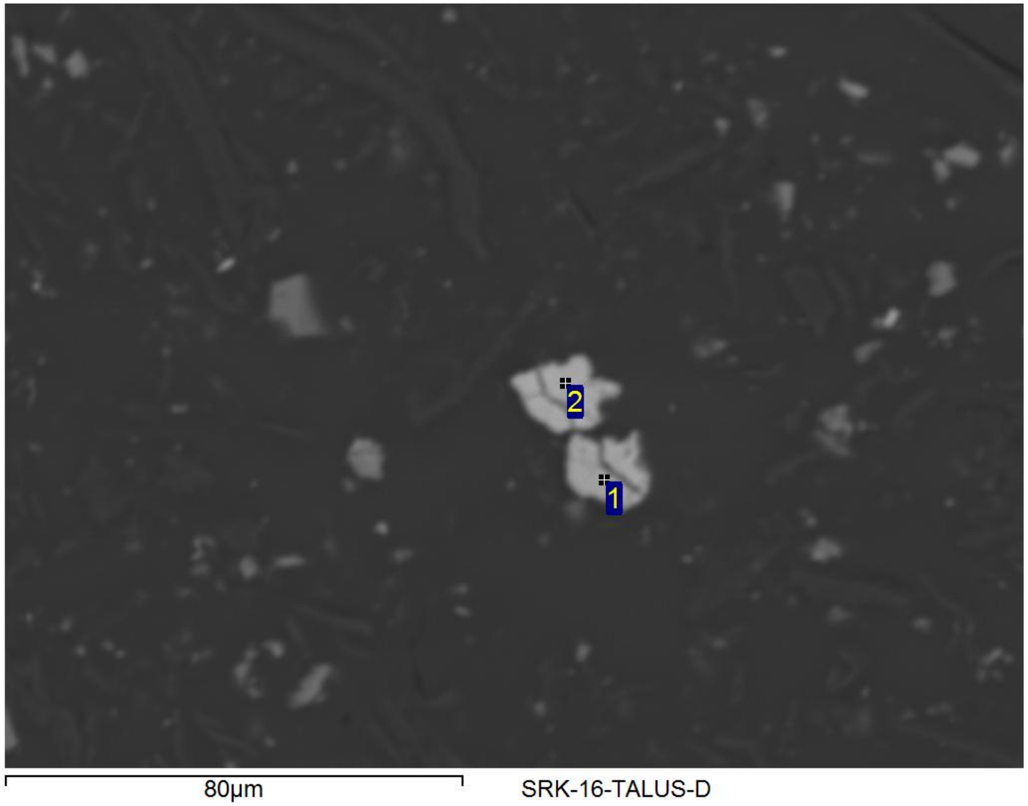
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	44.1	0.3	1.5		0.6	53.5	100.0	Fe-oxy/hydroxide
2	42.2	0.8	1.0	1.2	0.5	54.2	100.0	Fe-oxy/hydroxide

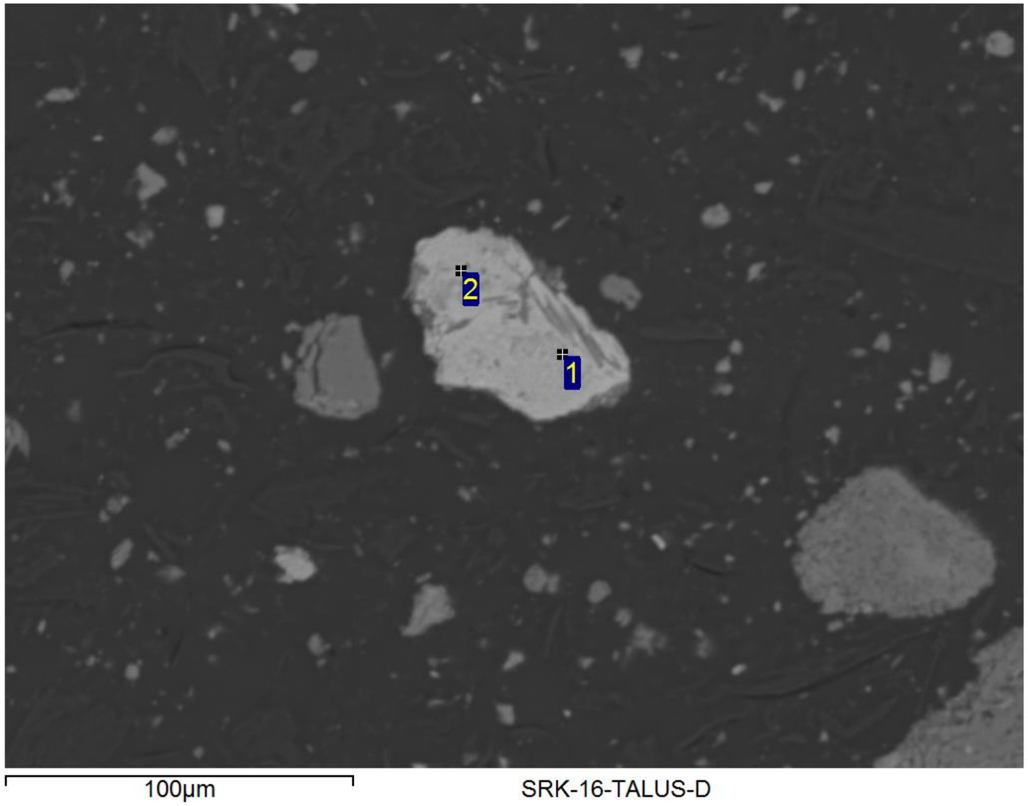
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	45.6	0.4	2.4		0.7	50.9	100.0	Fe-oxy/hydroxide
2	44.5		1.6	0.3	0.3	53.3	100.0	Fe-oxy/hydroxide

All results in weight%

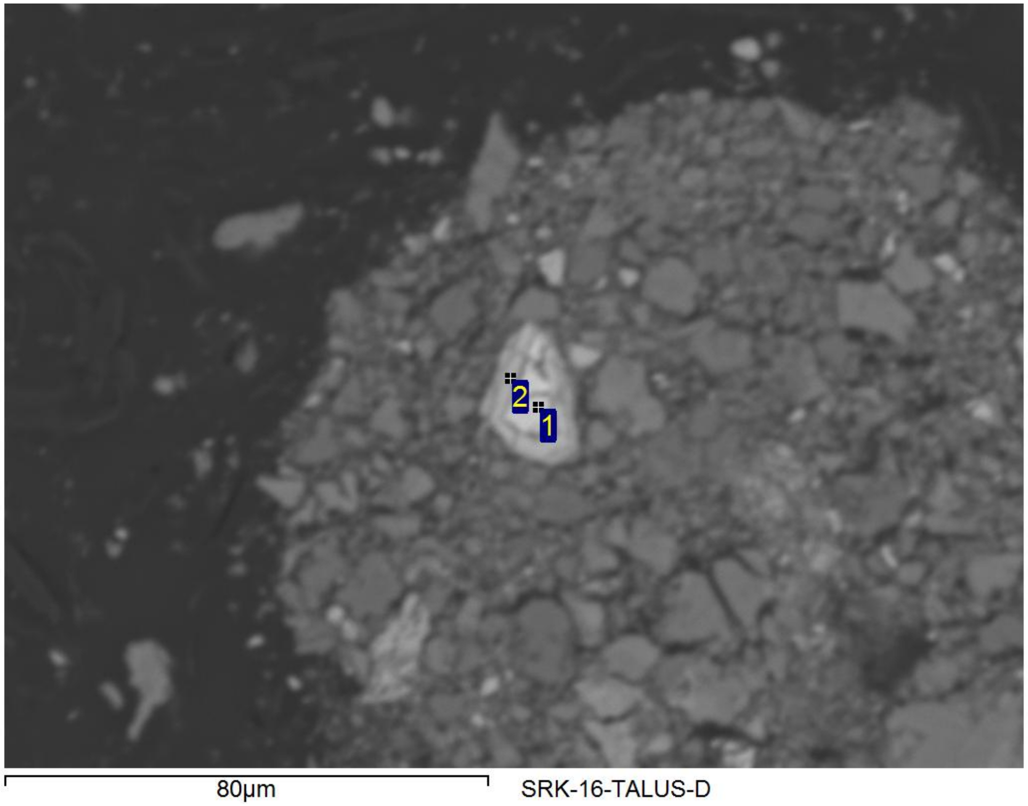


SRK-16-TALUS-D

Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Ti	Fe	Total	Mineral Identification
1	40.0	0.7	0.3	1.4	0.3	0.4	56.8	100.0	Fe-oxy/hydroxide
2	41.9	1.2	0.5	1.5	0.4	0.7	53.8	100.0	Fe-oxy/hydroxide

All results in weight%

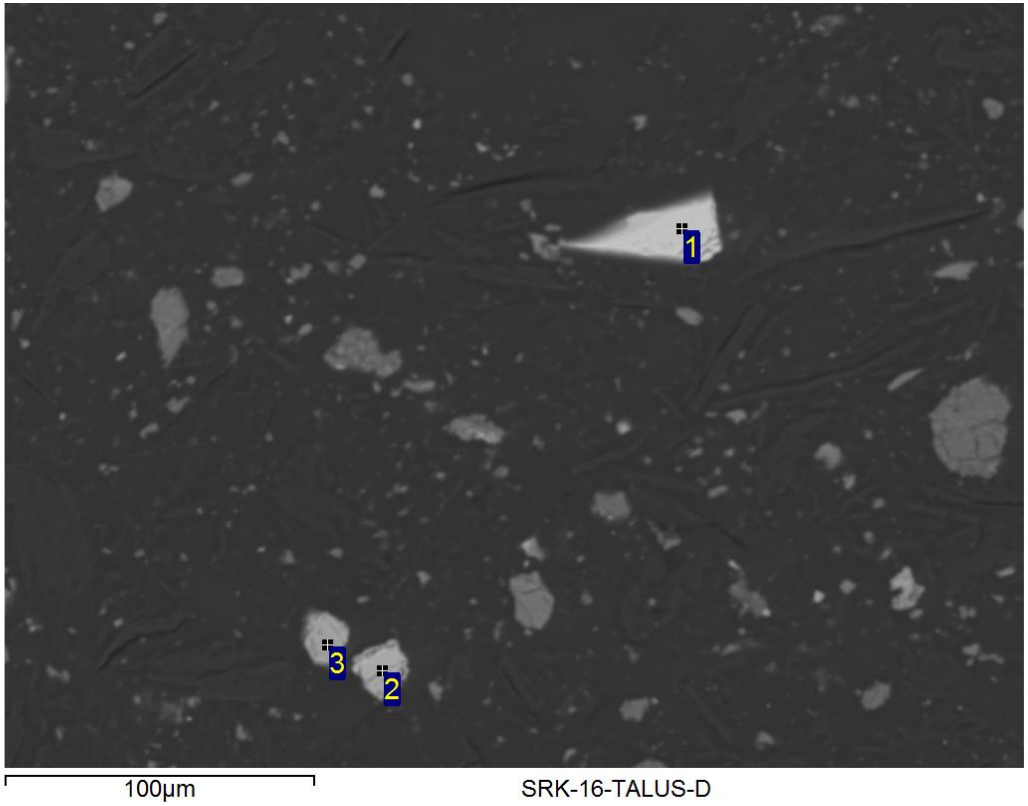


SRK-16-TALUS-D

Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Fe	Total	Mineral Identification
1				57.3	42.7	100.0	Fe-oxy/hydroxide
2	45.7	0.2	1.2	2.2	50.7	100.0	Fe-oxy/hydroxide

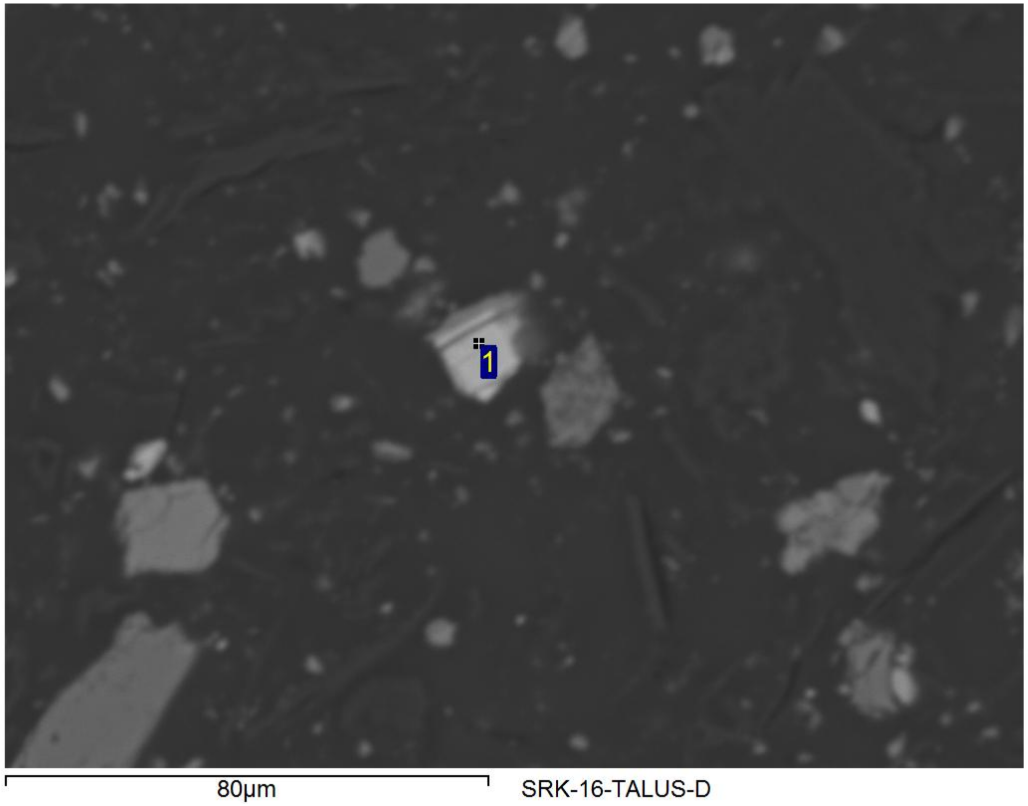
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Ti	Fe	Total	Mineral Identification
1				56.8		43.2	100.0	pyrite
2	40.9		1.0			58.1	100.0	Fe-oxy/hydroxide
3	46.8	0.7	0.9	0.8	0.3	50.6	100.0	Fe-oxy/hydroxide

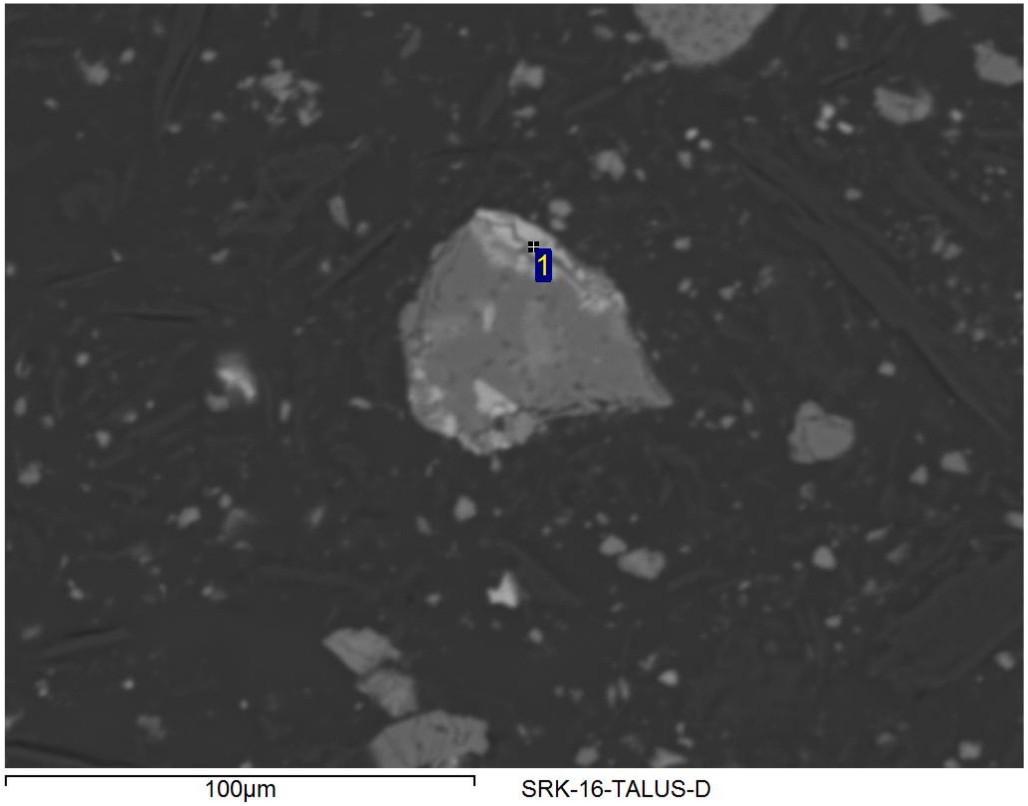
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	45.4	0.3	1.6	0.6	0.3	51.8	100.0	Fe-oxy/hydroxide

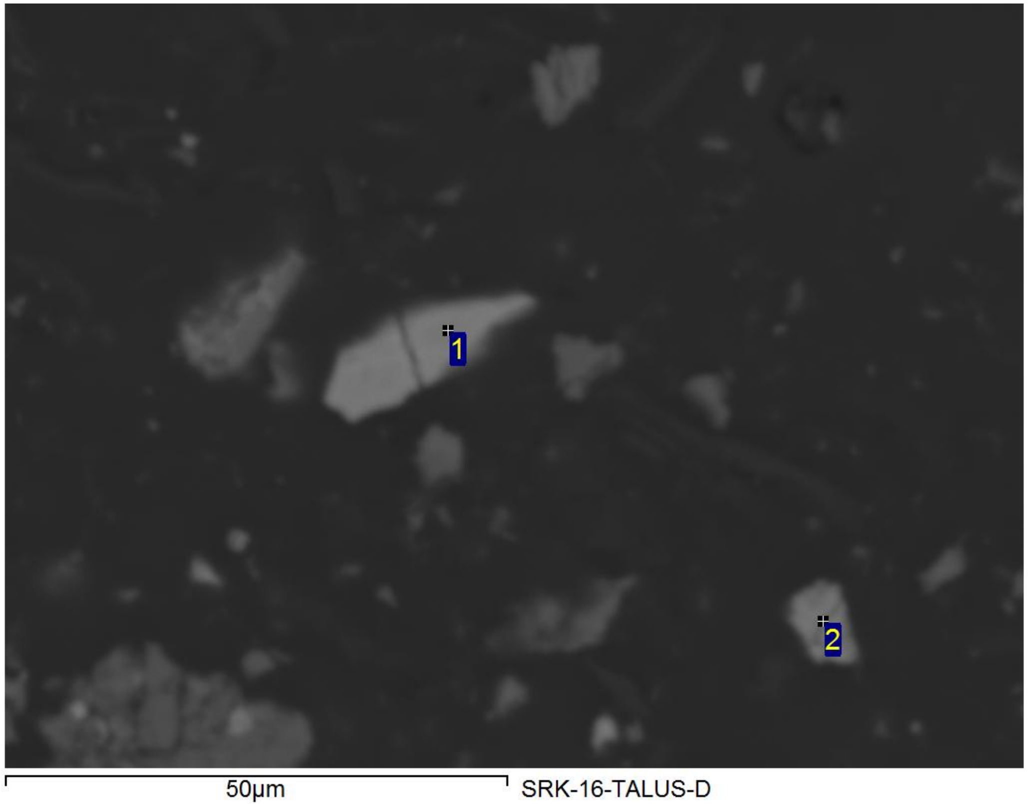
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Ti	Fe	Total	Mineral Identification
1	50.0	0.5	2.9	0.3	0.6	0.5	45.3	100.0	Fe-oxy/hydroxide

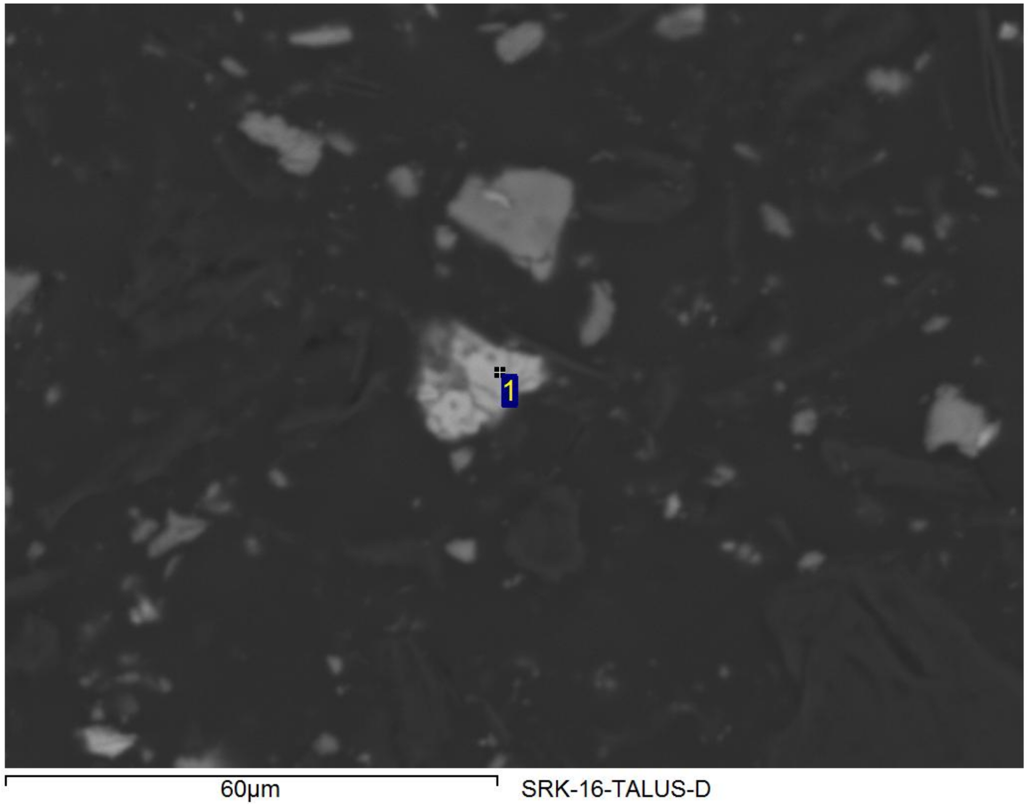
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Fe	Total	Mineral Identification
1	45.5		1.4	1.2	51.8	100.0	Fe-oxy/hydroxide
2	41.5	0.8	1.5	0.8	55.4	100.0	Fe-oxy/hydroxide

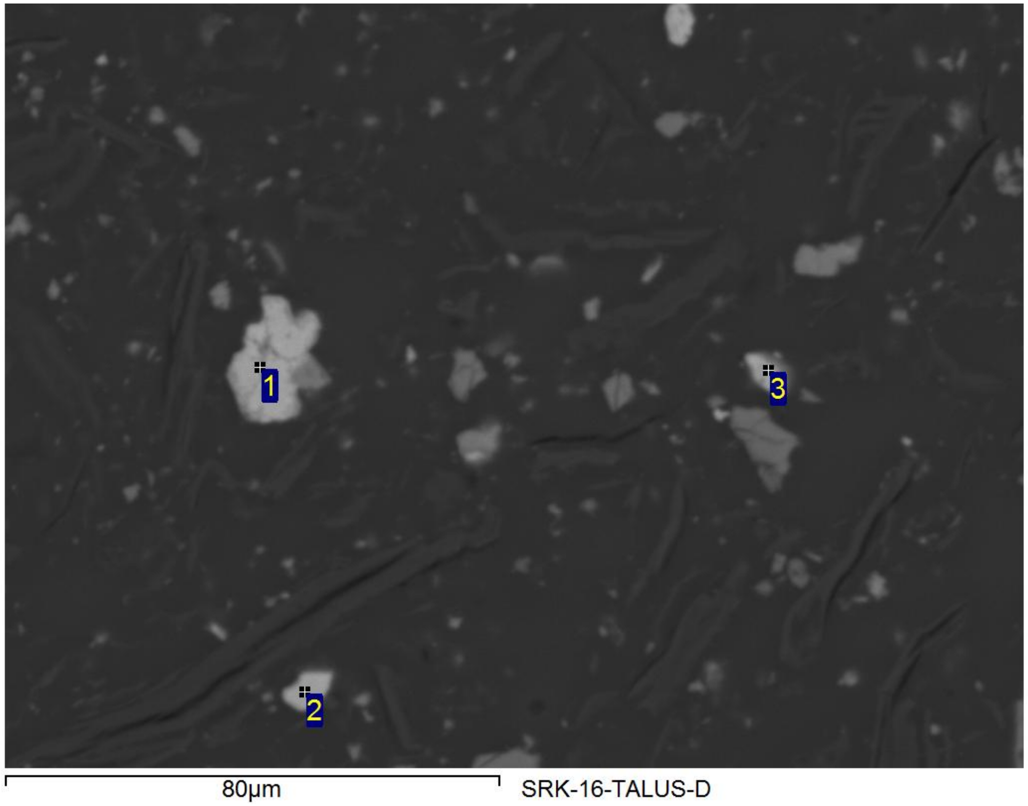
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Ti	Fe	Total	Mineral Identification
1	46.2	0.8	1.0	0.4	0.5	0.4	50.7	100.0	Fe-oxy/hydroxide

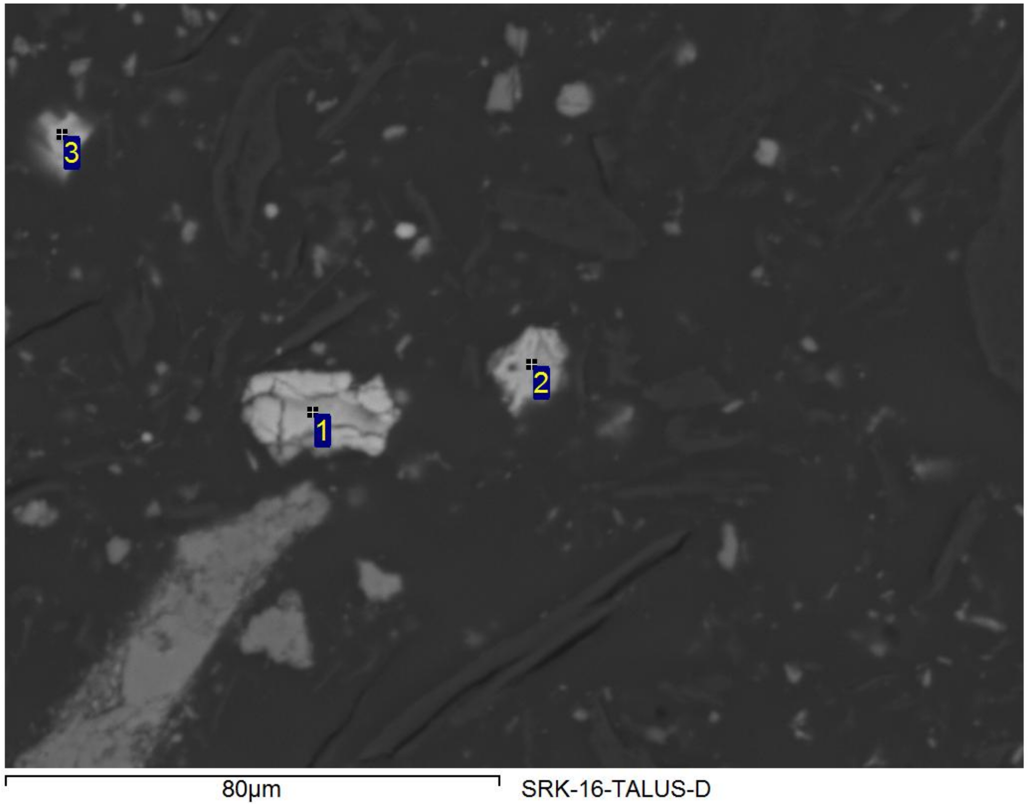
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Ti	Fe	Total	Mineral Identification
1	44.9	0.9	1.5	0.6	0.9		51.1	100.0	Fe-oxy/hydroxide
2	46.5	0.7	2.2		0.9	0.9	48.9	100.0	Fe-oxy/hydroxide
3	46.5	0.5	1.1	0.4	0.8		50.6	100.0	Fe-oxy/hydroxide

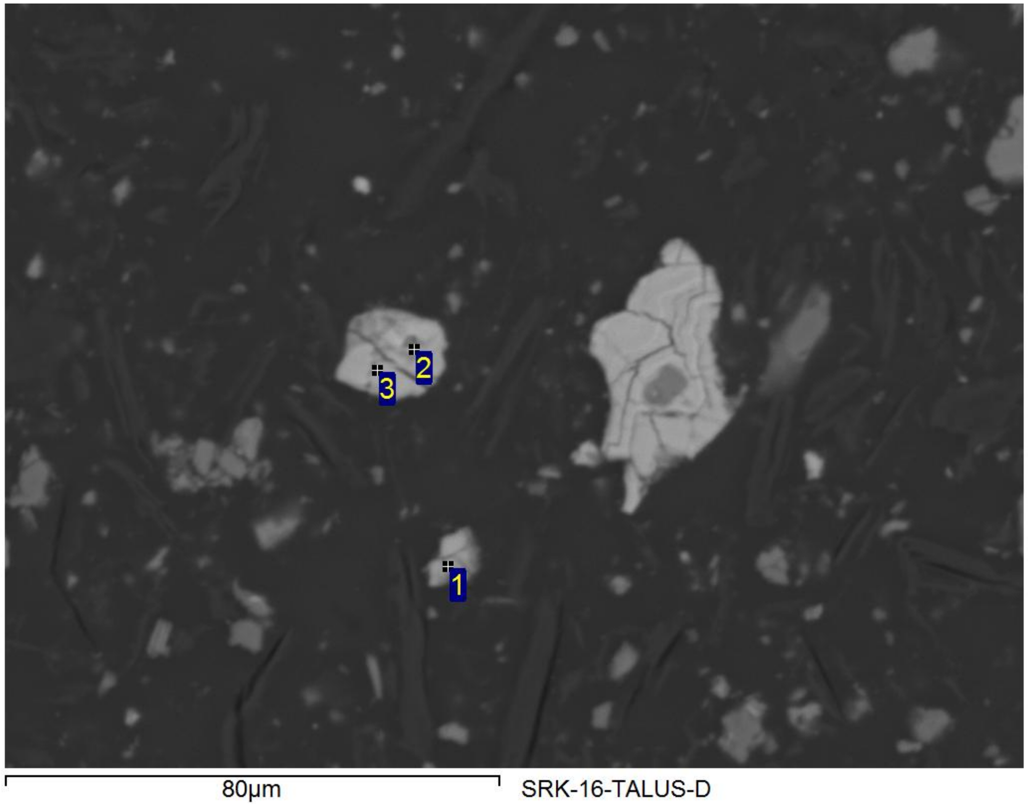
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	K	Ti	Fe	Total	Mineral Identification
1	46.0		1.6	0.6	2.5	0.4		0.5	48.4	100.0	Fe-oxy/hydroxide
2	47.1		1.2	0.7	1.6	1.5	0.3	0.8	46.8	100.0	Fe-oxy/hydroxide
3	40.2	1.4	1.9	2.0	0.9	0.6			52.9	100.0	Fe-oxy/hydroxide

All results in weight%

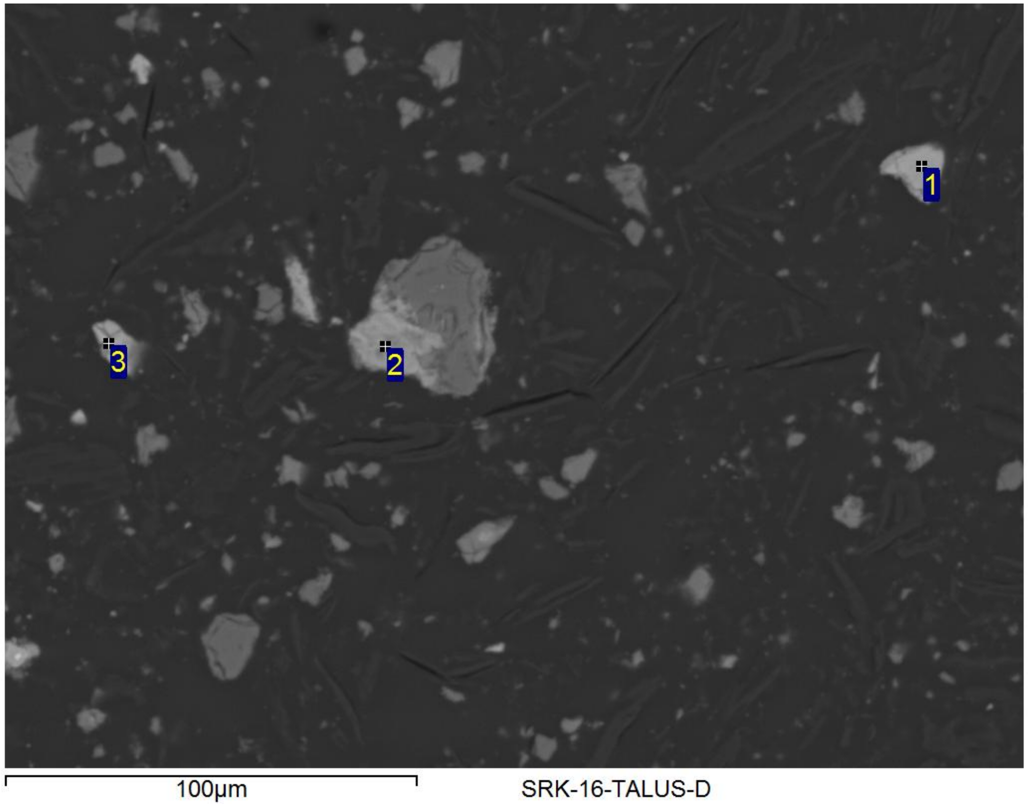


SRK-16-TALUS-D

Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Cl	K	Fe	Total	Mineral Identification
1	50.1	1.2	2.2	1.1	0.6	0.4	0.4	43.9	100.0	Fe-oxy/hydroxide
2	50.7	0.6	1.6	0.3	0.8			45.9	100.0	Fe-oxy/hydroxide
3	48.1		1.6		0.9			49.5	100.0	Fe-oxy/hydroxide

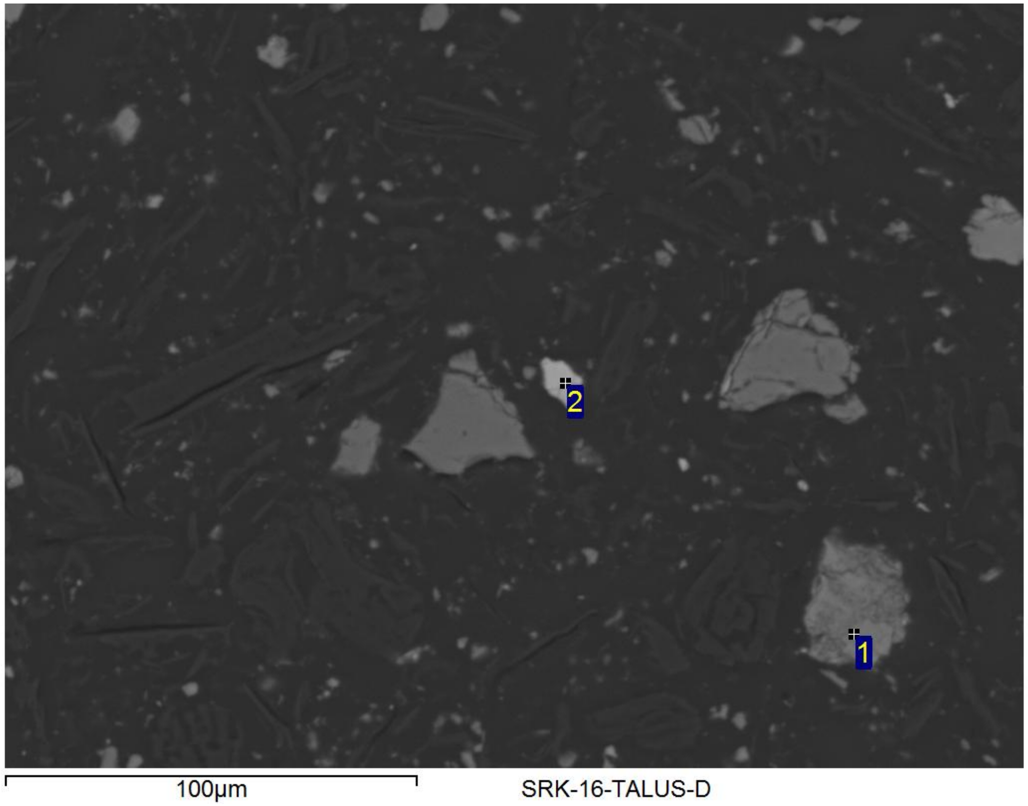
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	Ti	V	Fe	Total	Mineral Identification
1	45.0		1.1	1.3	0.6	0.8	0.3		50.9	100.0	Fe-oxy/hydroxide
2	40.1	0.5	1.7	2.0	0.5	0.7	1.5	0.5	52.6	100.0	Fe-oxy/hydroxide
3	51.2		1.2	0.8	1.7	0.3			44.8	100.0	Fe-oxy/hydroxide

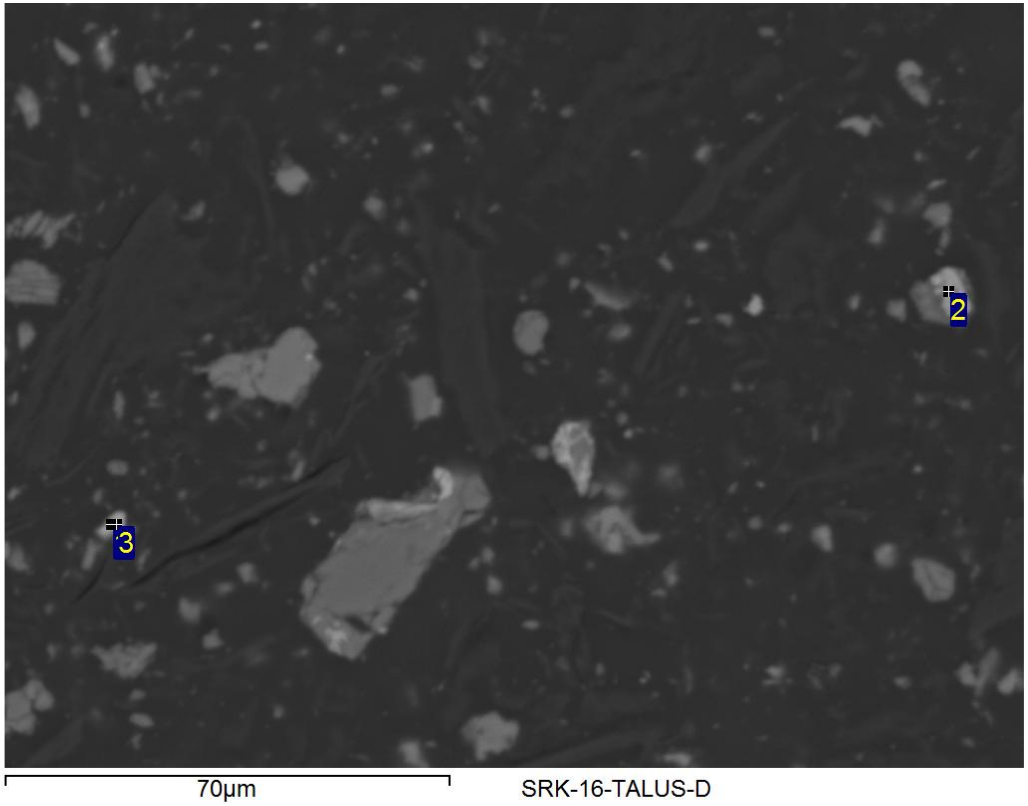
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Na	Al	Si	P	S	K	Fe	Ba	Total	Mineral Identification
1	52.8	0.6	8.7	26.1			10.2	0.3	1.3	100.0	silicate
2	40.9		0.7	0.8	0.5	0.6		56.6		100.0	Fe-oxy/hydroxide

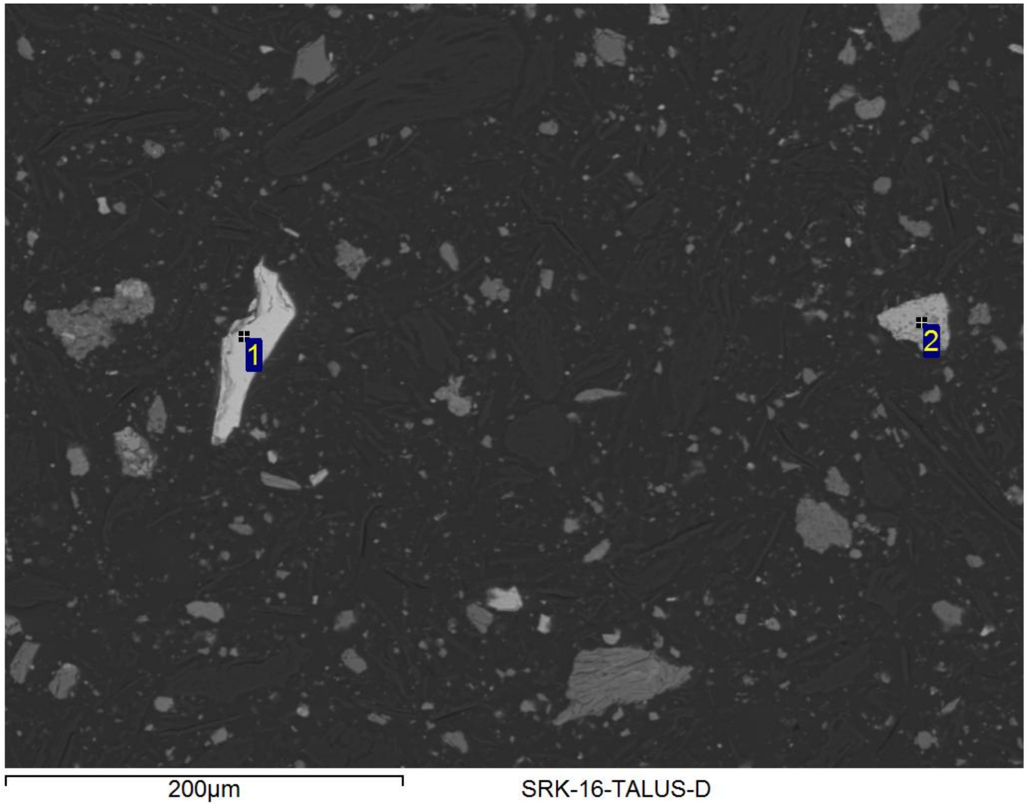
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	K	Ti	V	Fe	Total	Mineral Identification
1	46.5	2.1	1.4	0.5	0.5			0.3	48.6	100.0	Fe-oxy/hydroxide
2	49.9	1.4	4.0			1.3	42.5		0.9	100.0	rutile
3	44.6	2.0	1.5		0.7				51.2	100.0	Fe-oxy/hydroxide

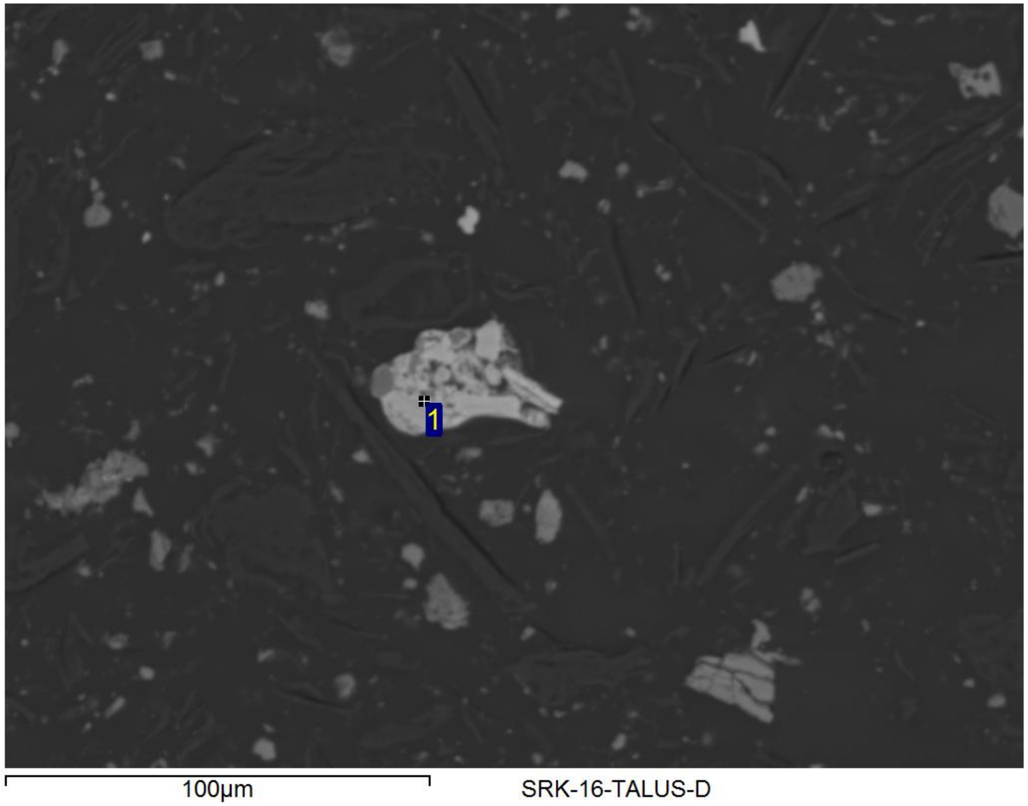
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Fe	Total	Mineral Identification
1				57.0	43.0	100.0	pyrite
2	44.6	0.6	1.5	0.7	52.5	100.0	Fe-oxy/hydroxide

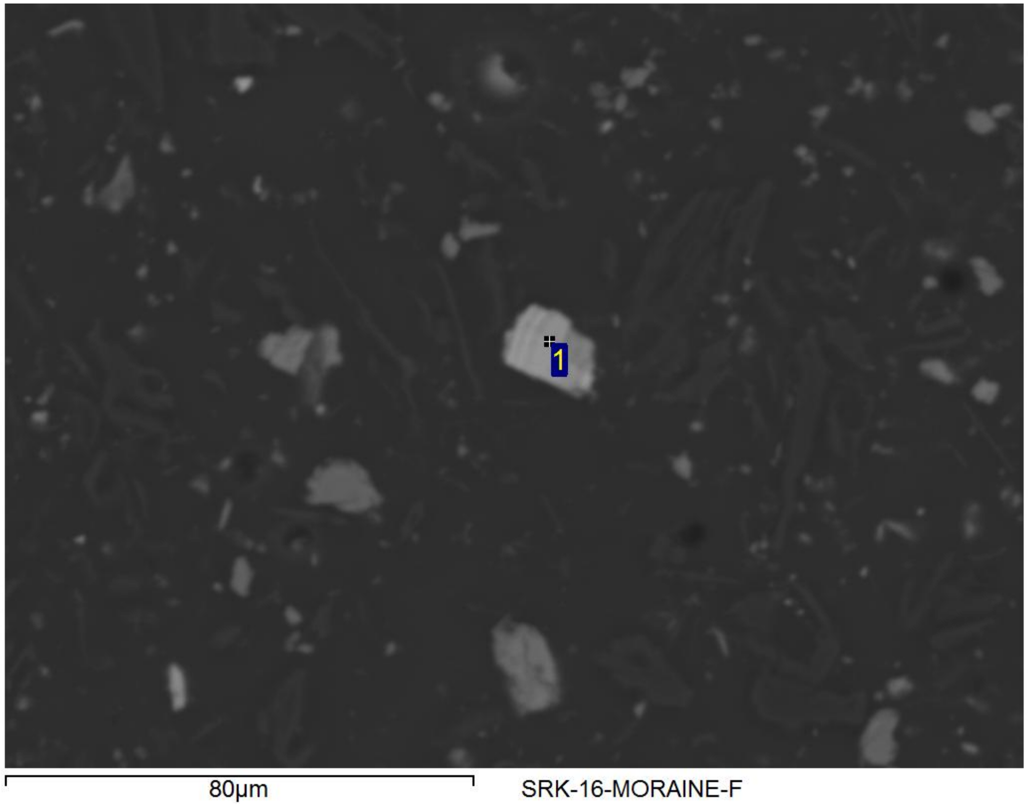
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	42.7	2.1	1.9	0.4	0.6	52.3	100.0	Fe-oxy/hydroxide

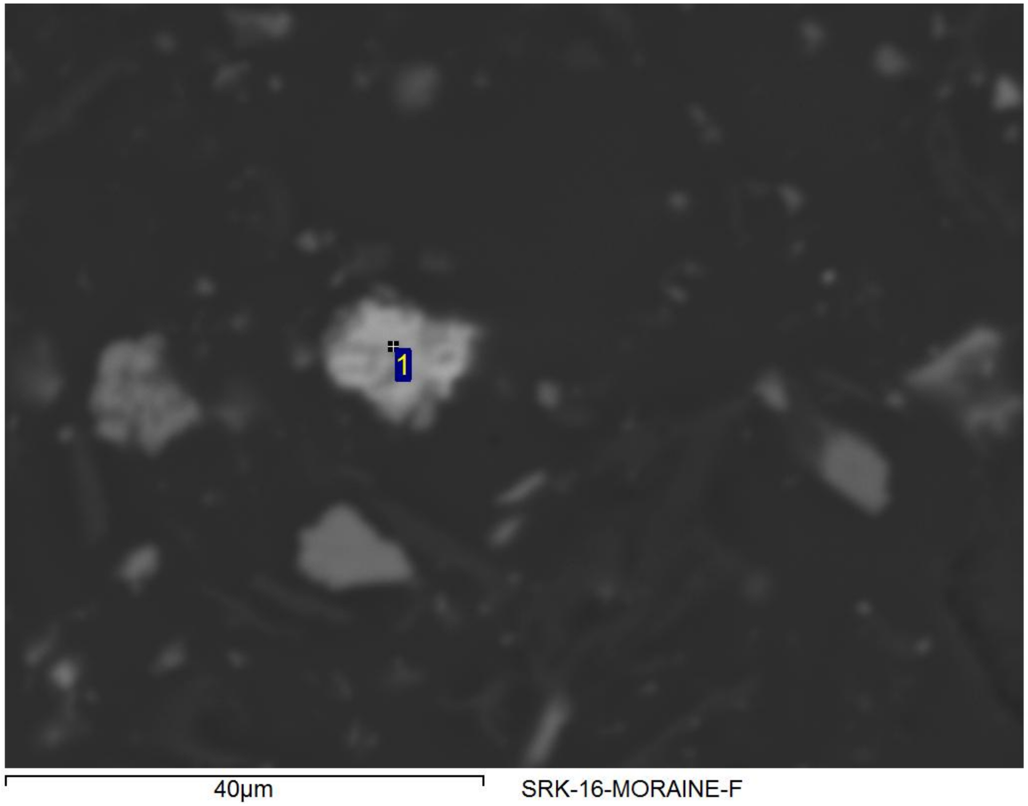
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	46.5	0.7	0.8	2.0	0.5	49.4	100.0	Fe-oxy/hydroxide

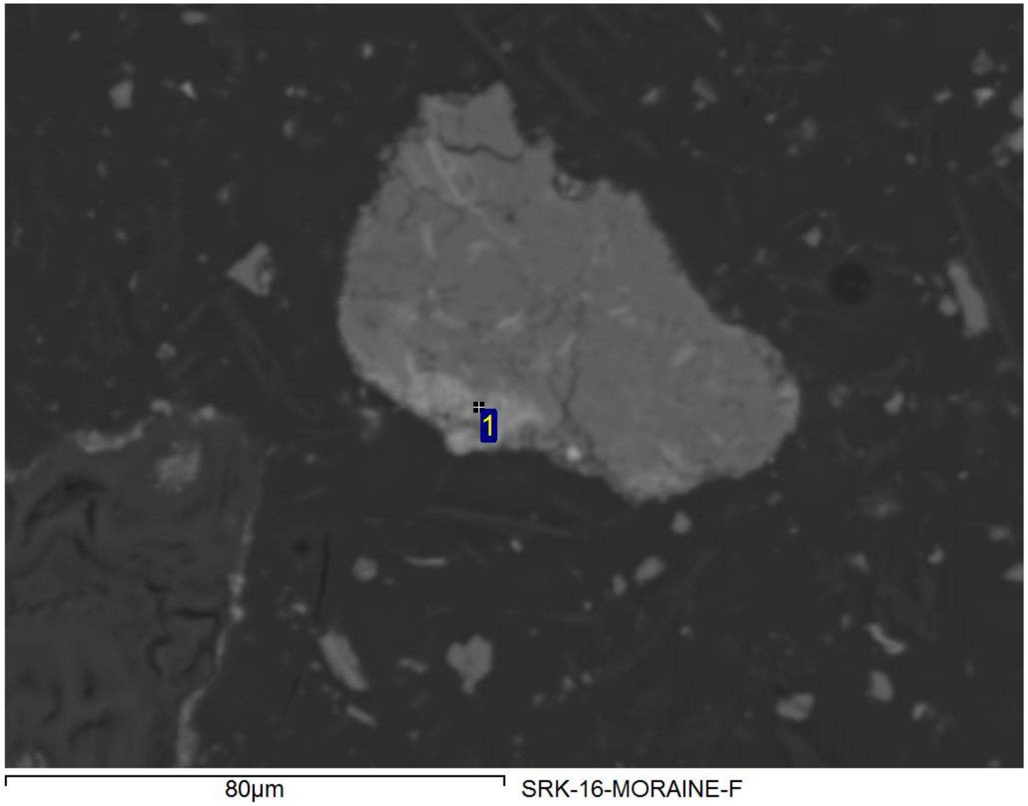
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	K	Ti	Fe	Total	Mineral Identification
1	45.0	1.8	1.4	0.4	0.5	0.2	0.3	50.7	100.0	Fe-oxy/hydroxide

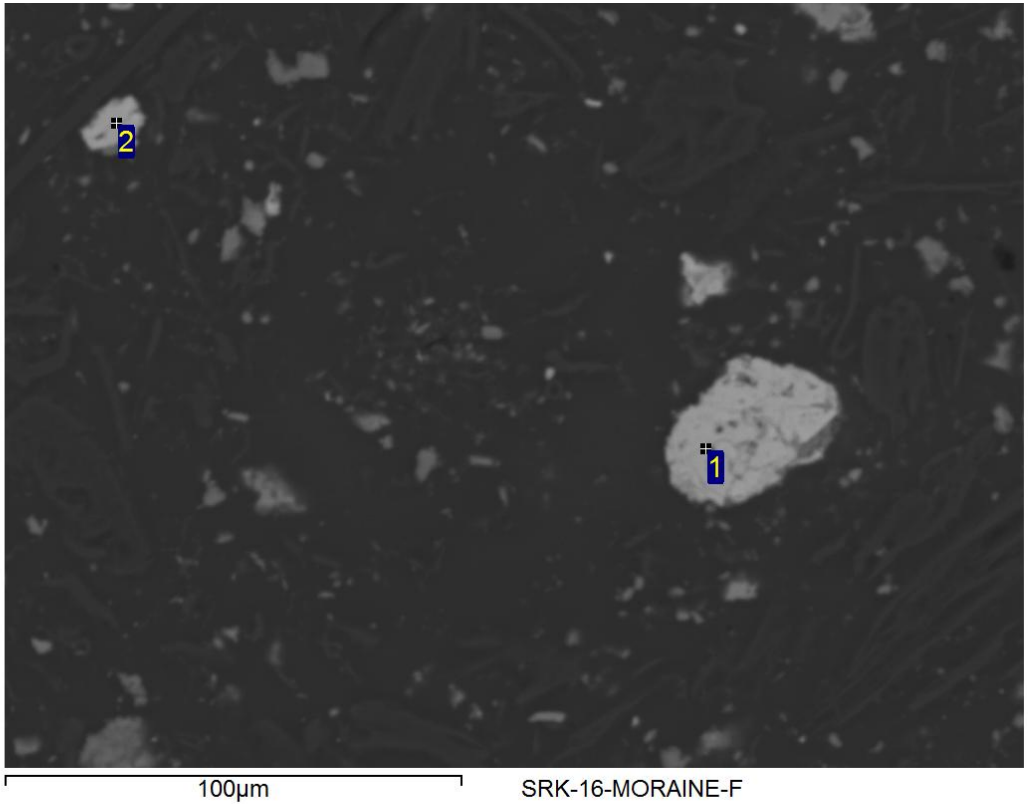
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	S	K	Ti	Fe	Total	Mineral Identification
1	47.0	2.2	4.6	7.1	0.5	0.7	0.5	37.3	100.0	Fe-oxy/hydroxide

All results in weight%

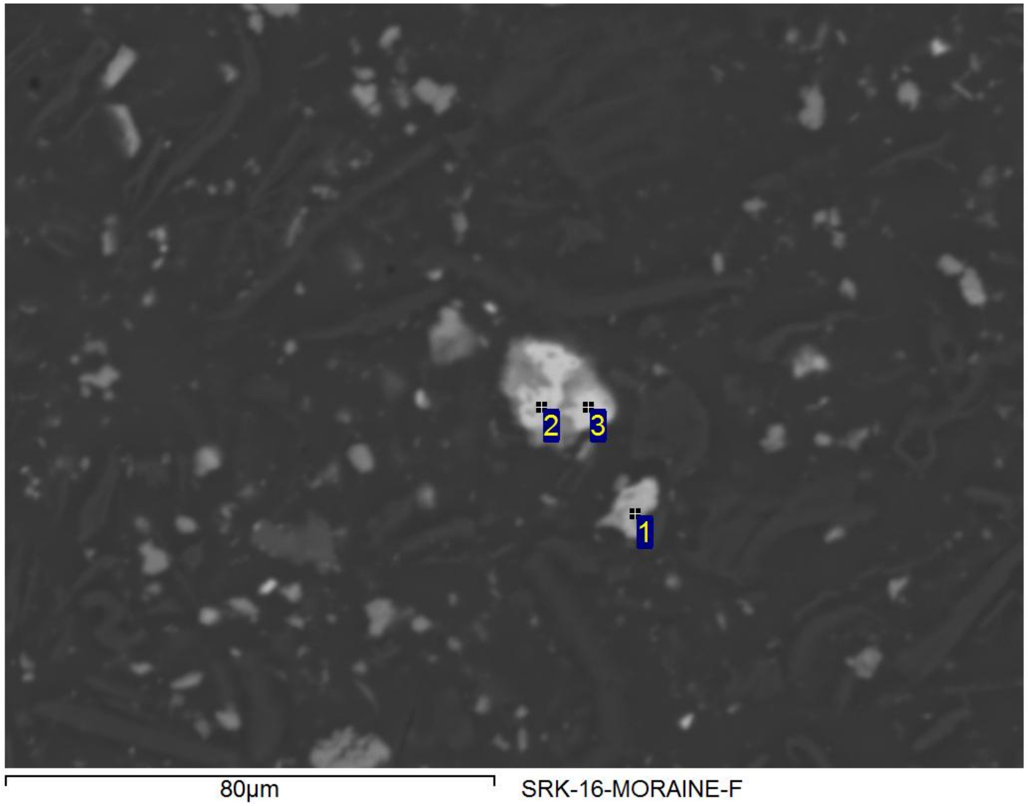


SRK-16-MORAINE-F

Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	45.7	1.5	1.3	1.0	0.4	50.1	100.0	Fe-oxy/hydroxide
2	45.0	1.4	0.4	1.5	0.3	51.2	100.0	Fe-oxy/hydroxide

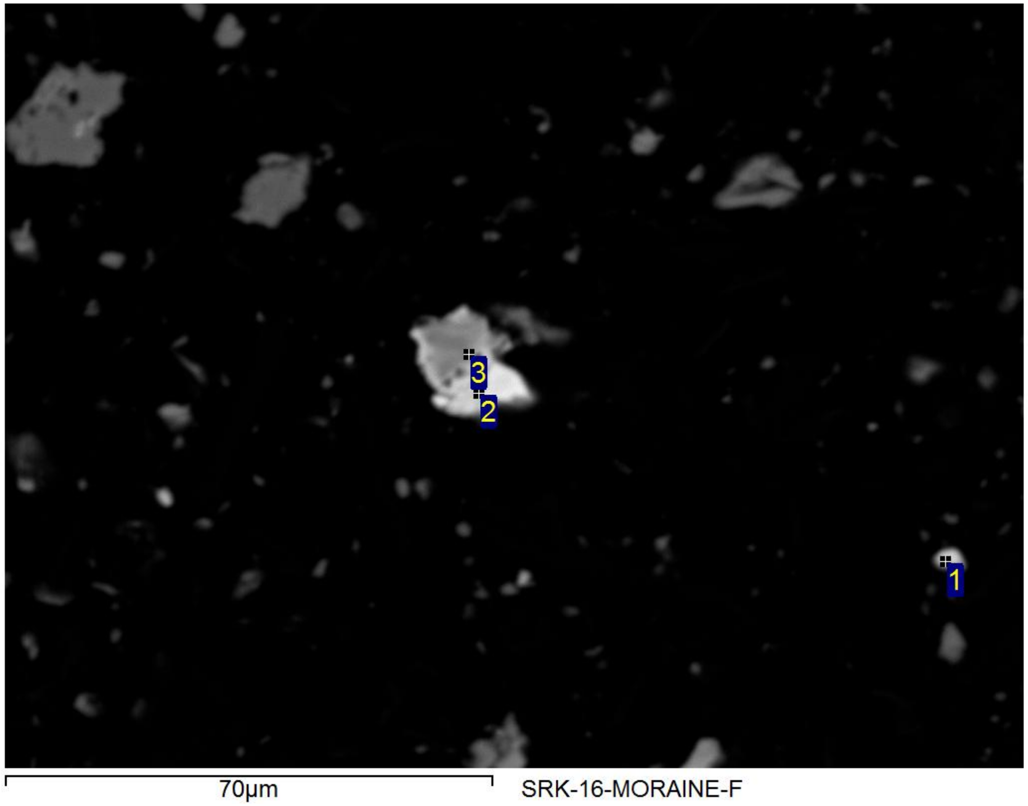
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	Cl	K	Mn	Fe	Total	Mineral Identification
1	49.5	0.4	6.3	3.3	0.5	0.5	0.2			39.4	100.0	Fe-oxy/hydroxide
2	48.2	0.6	3.1	4.1		0.4		0.5		43.2	100.0	Fe-oxy/hydroxide
3	47.9		1.2	2.0		0.4			0.2	48.3	100.0	Fe-oxy/hydroxide

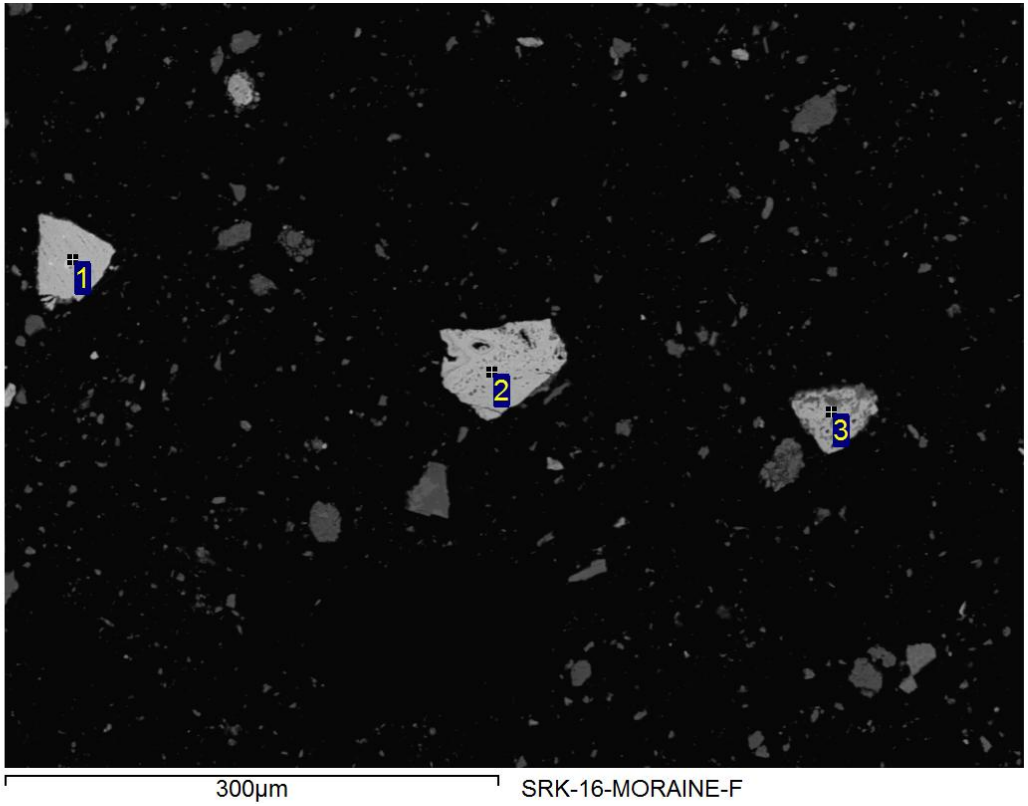
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	Cl	K	Fe	As	Total	Mineral Identification
1	43.4		1.9	1.6	0.4	0.7	0.3		51.6		100.0	Fe-oxy/hydroxide
2	44.6		0.8	1.0		0.3			52.8	0.6	100.0	Fe-oxy/hydroxide
3	48.7	3.0	9.6	12.0				1.8	24.8		100.0	silicate

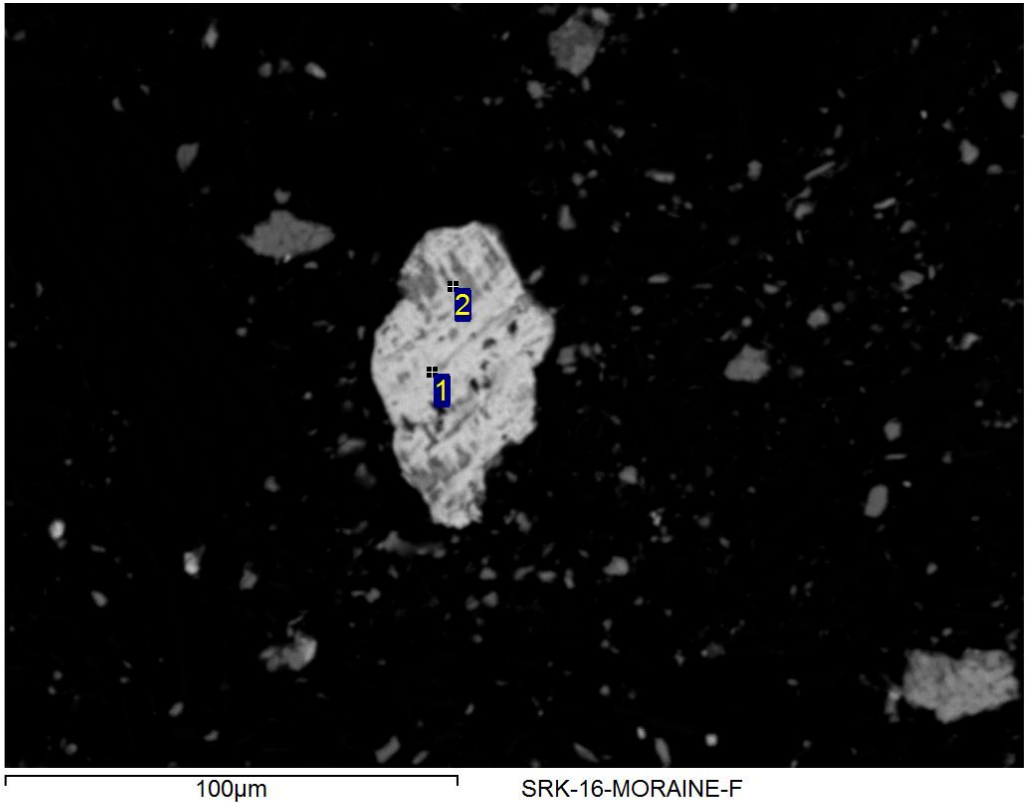
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Fe	Total	Mineral Identification
1	45.1		1.3	0.3	53.4	100.0	Fe-oxy/hydroxide
2	42.7	1.1	0.6	0.3	55.4	100.0	Fe-oxy/hydroxide
3	47.8	1.9	1.8	0.6	47.8	100.0	Fe-oxy/hydroxide

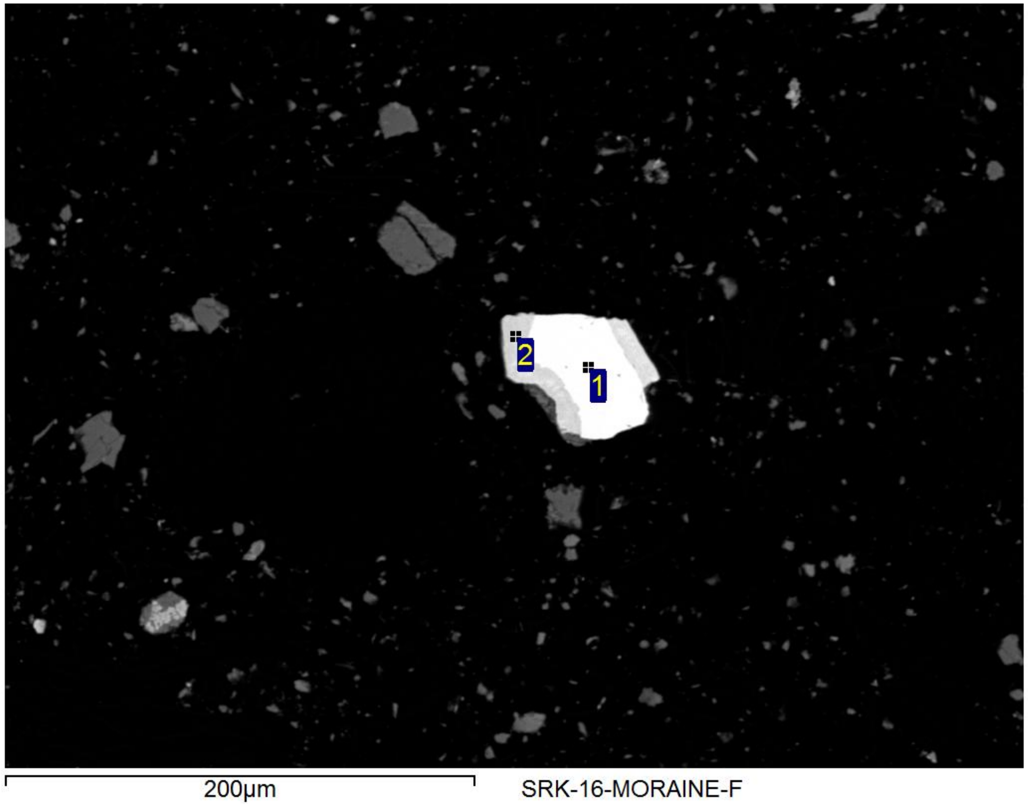
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	Fe	Total	Mineral Identification
1	45.9		2.3	1.3	0.4	0.5	49.6	100.0	Fe-oxy/hydroxide
2	40.3	2.2	4.4	3.6	0.5	0.5	48.4	100.0	Fe-oxy/hydroxide

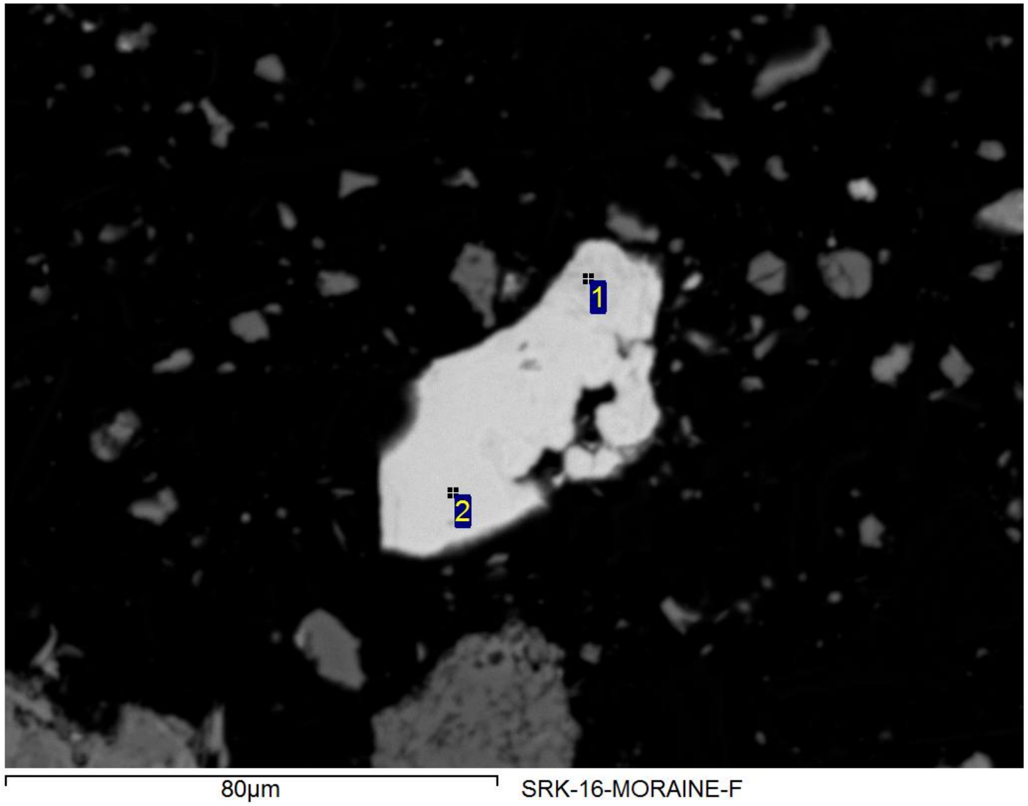
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Si	S	Fe	Total	Mineral Identification
1			56.9	43.1	100.0	pyrite
2	44.7	0.7		54.6	100.0	Fe-oxy/hydroxide

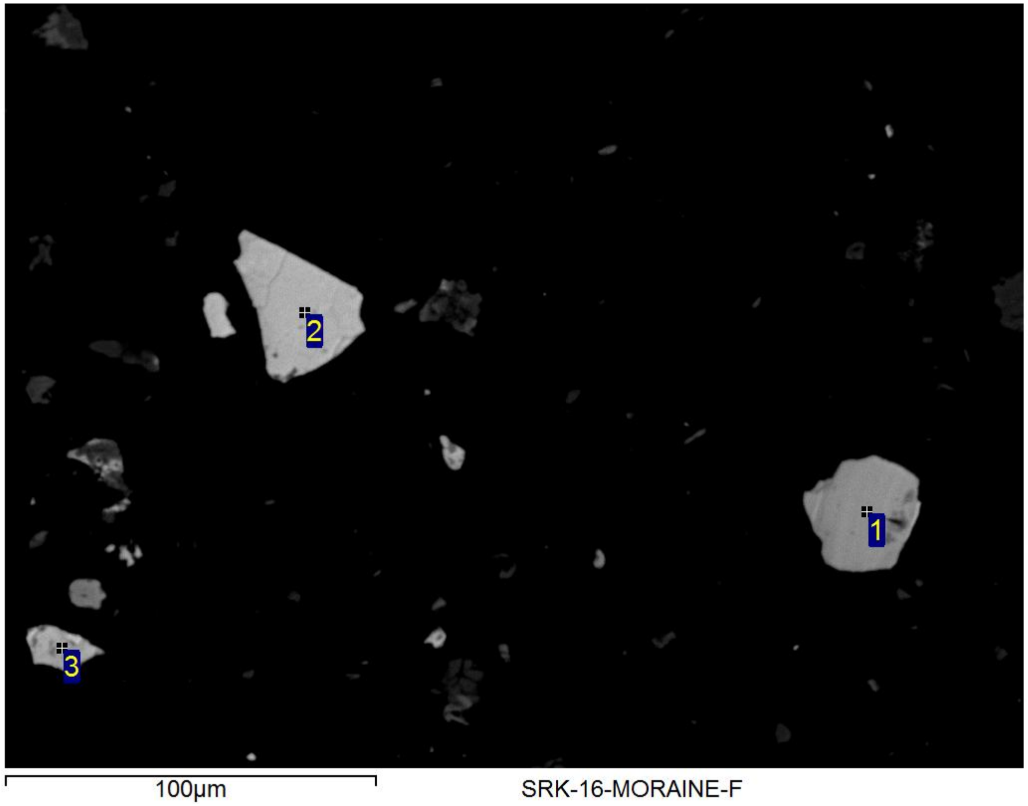
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Total	Mineral Identification
1	48.4	2.4	3.0	0.5	0.3	45.3	100.0	Fe-oxy/hydroxide
2	47.6	1.3	1.2	0.4		49.5	100.0	Fe-oxy/hydroxide

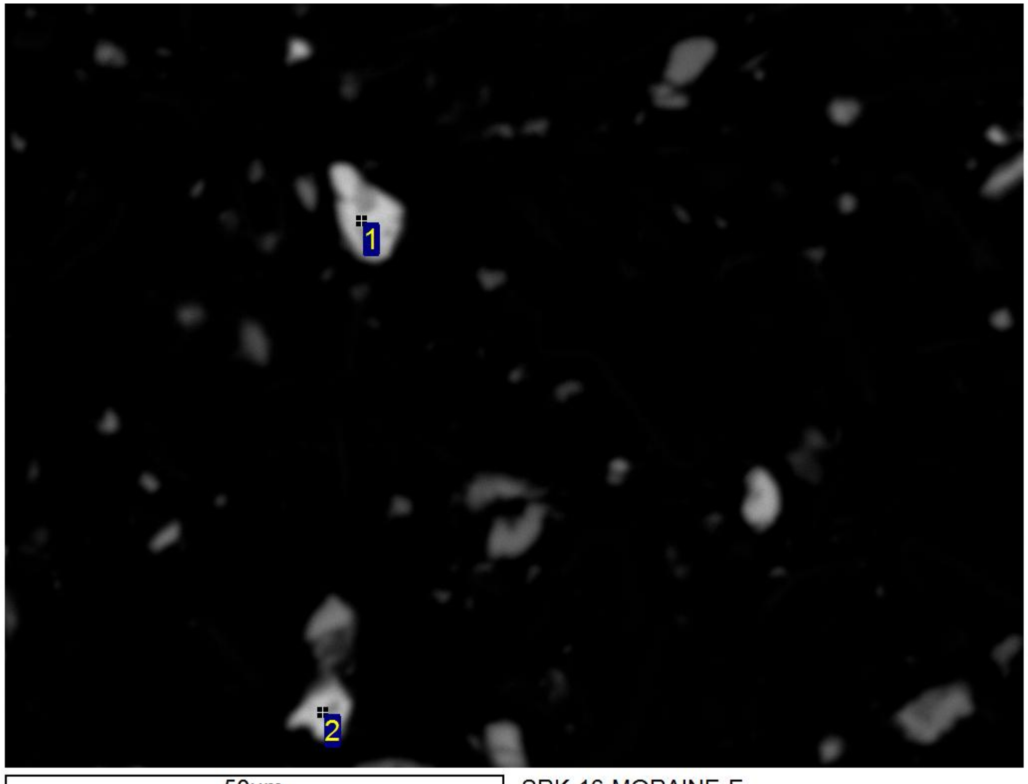
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Ti	Fe	Total	Mineral Identification
1	50.3	2.3	0.6	2.1	2.0		42.7	100.0	Fe-oxy/hydroxide
2	47.5	2.0	0.9	0.7	0.8	0.2	48.0	100.0	Fe-oxy/hydroxide
3	47.6	2.2	1.1	1.0	0.5		47.7	100.0	Fe-oxy/hydroxide

All results in weight%

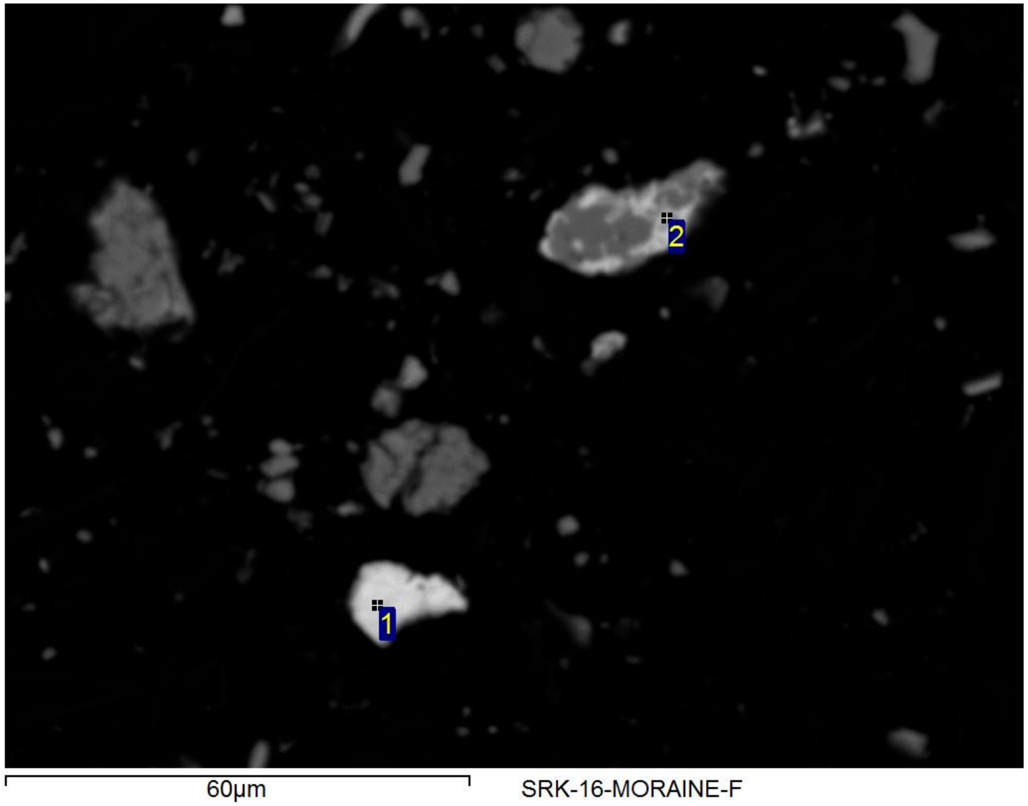


SRK-16-MORAINE-F

Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	K	Ti	Fe	Total	Mineral Identification
1	48.7	2.4	2.0	1.3	0.6	0.3	0.2	44.6	100.0	Fe-oxy/hydroxide
2	47.0	3.3	3.6	0.5	0.6	0.7		44.4	100.0	Fe-oxy/hydroxide

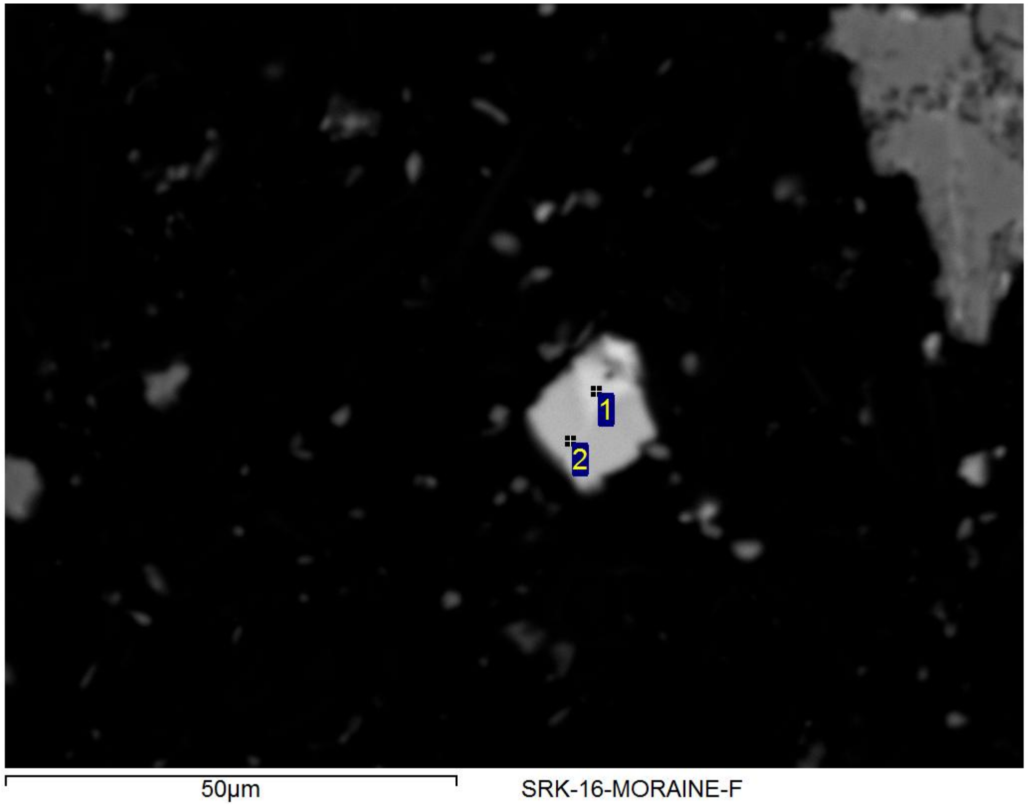
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Na	Mg	Al	Si	P	S	Fe	Total	Mineral Identification
1	45.7			0.6	1.0	0.7	0.4	51.6	100.0	Fe-oxy/hydroxide
2	49.7	2.5	2.4	5.4	15.5			24.5	100.0	Fe-oxy/hydroxide

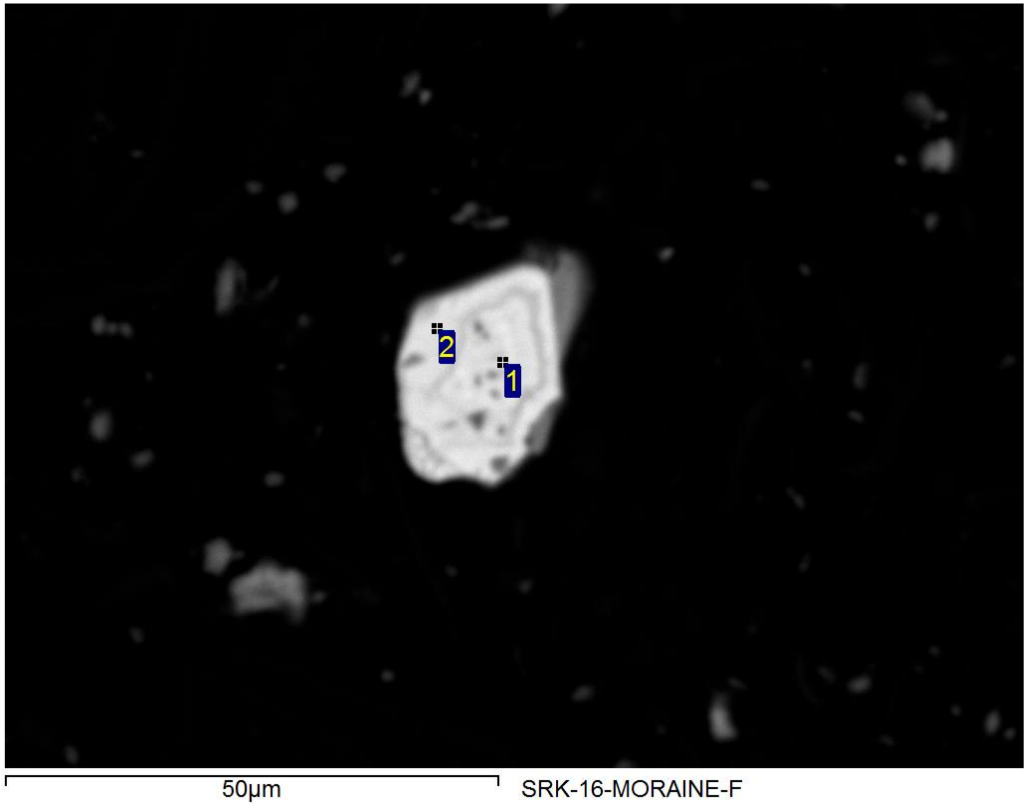
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	As	Total	Mineral Identification
1	47.6	0.4	0.5	1.2	0.7	48.1	1.5	100.0	Fe-oxy/hydroxide
2	50.5	0.9	0.5	1.8	2.1	41.7	2.5	100.0	Fe-oxy/hydroxide

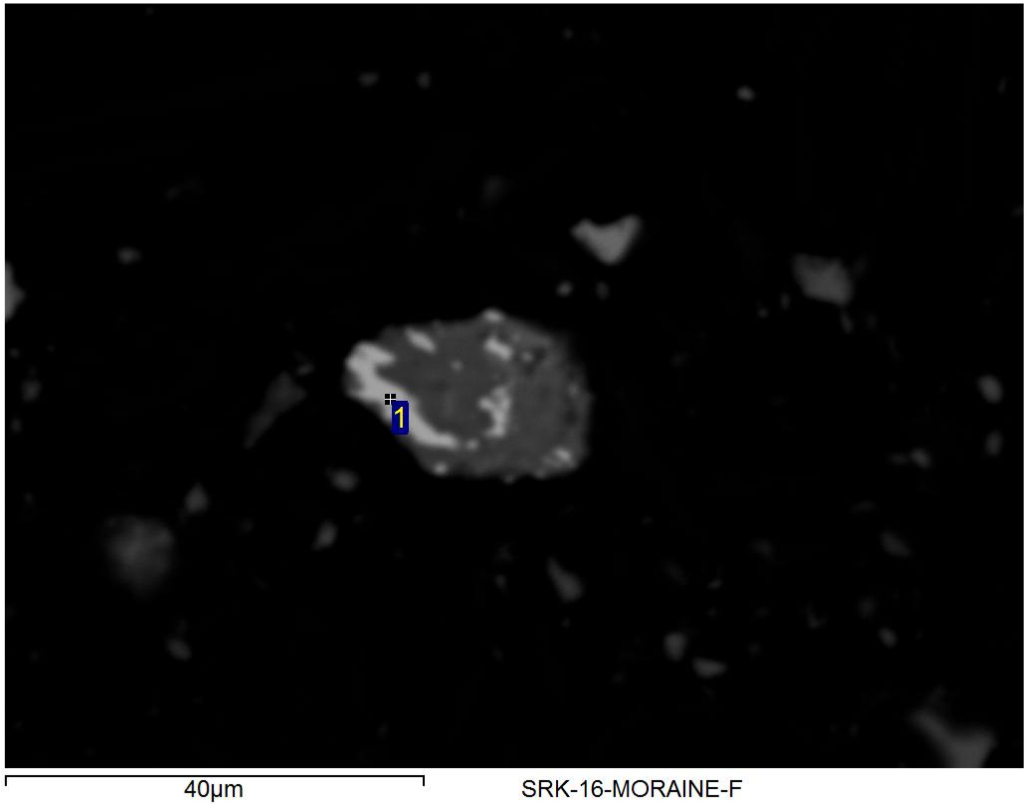
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	Fe	Total	Mineral Identification
1	44.2		0.5	1.4		0.2	53.6	100.0	Fe-oxy/hydroxide
2	44.9	0.4	0.4	1.1	0.5		52.7	100.0	Fe-oxy/hydroxide

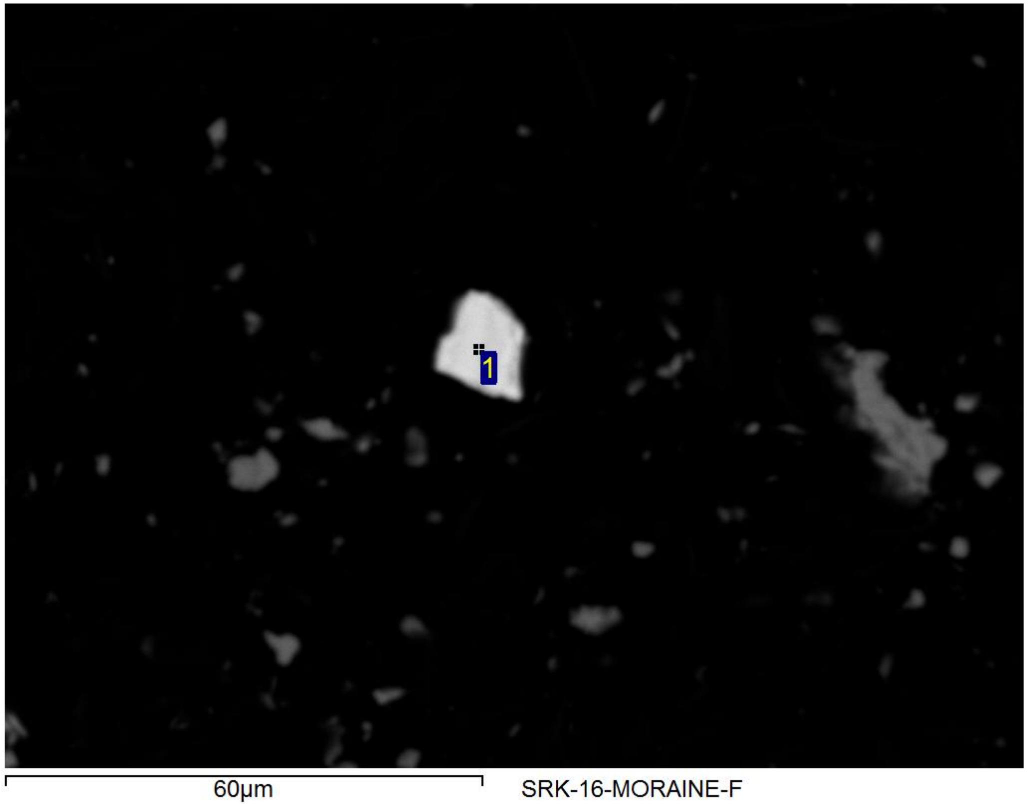
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	Ti	V	Fe	Total	Mineral Identification
1	37.1	0.4	3.2	0.3	0.6	58.4	100.0	Fe-oxy/hydroxide

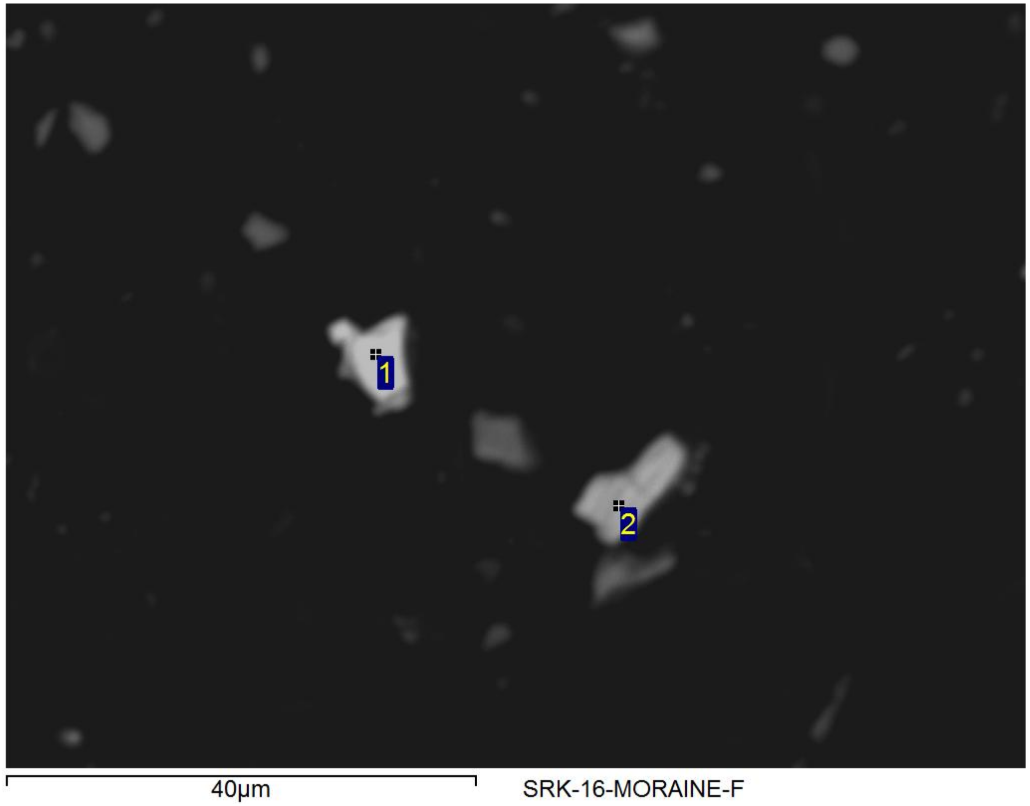
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	Mn	Fe	Total	Mineral Identification
1	45.1	0.6	1.2	0.3	52.8	100.0	Fe-oxy/hydroxide

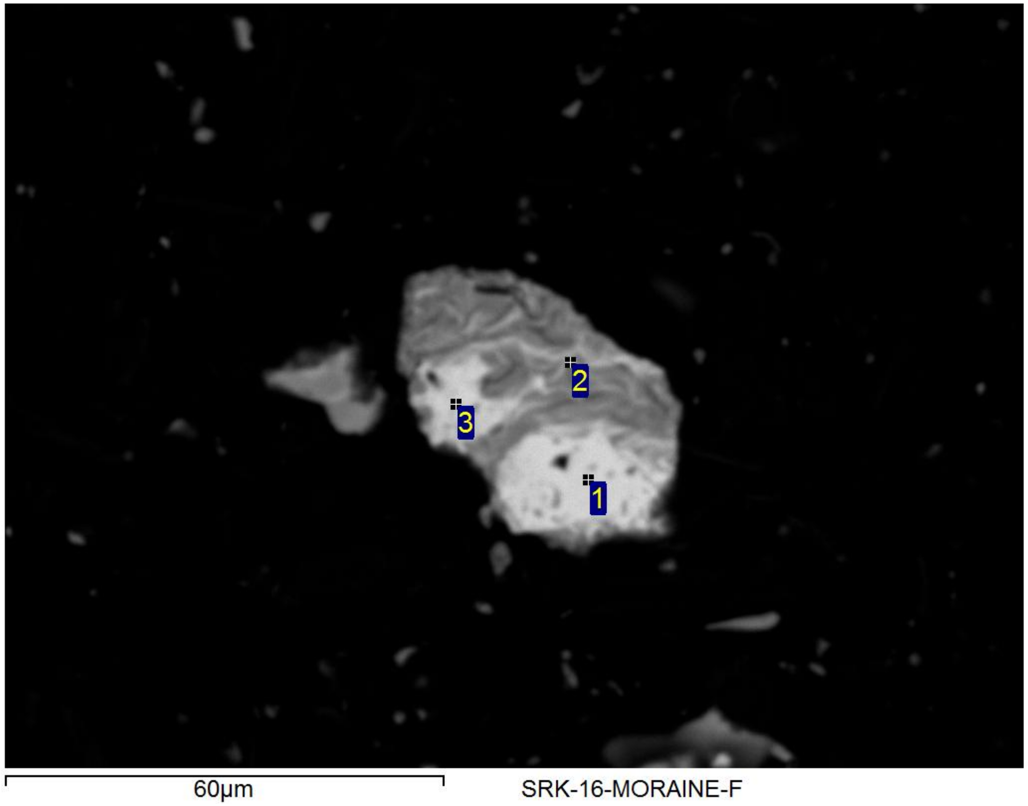
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Mn	Fe	Total	Mineral Identification
1					56.9		43.1	100.0	Fe-oxy/hydroxide
2	45.0	1.0	1.8	0.4	0.2	0.3	51.2	100.0	Fe-oxy/hydroxide

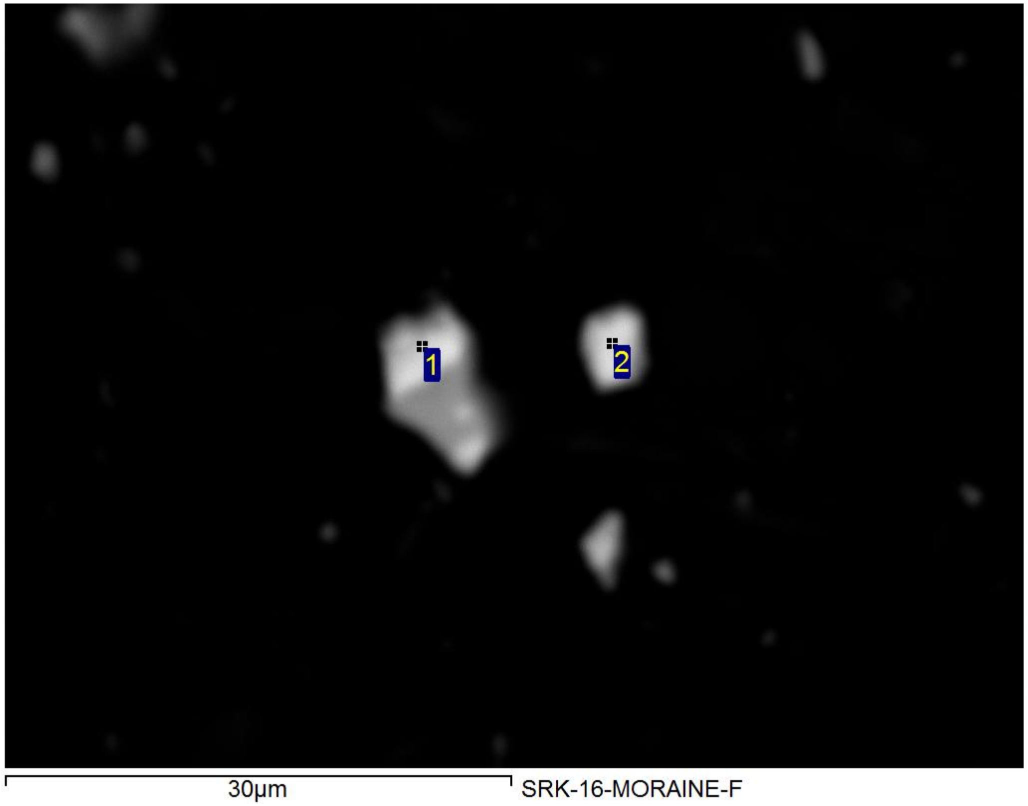
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	Ti	Fe	Total	Mineral Identification
1	47.6		2.7	2.4	0.3	0.3		46.7	100.0	Fe-oxy/hydroxide
2	48.5	2.7	9.1	10.5			0.3	28.8	100.0	silicate
3	48.4		3.7	3.6	0.5	0.3		43.5	100.0	Fe-oxy/hydroxide

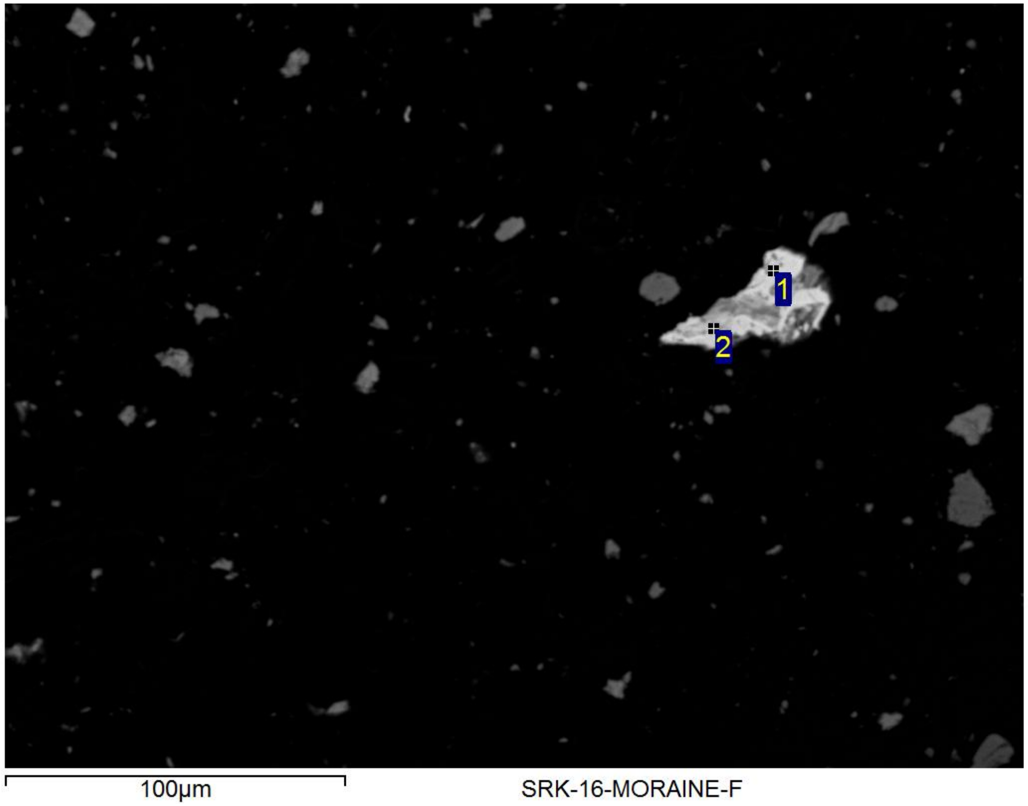
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Cl	K	Fe	Total	Mineral Identification
1	49.1	4.4	1.8	0.7	0.3	0.3	0.2	43.1	100.0	Fe-oxy/hydroxide
2	45.8	3.9	1.1	0.9	0.5			47.9	100.0	Fe-oxy/hydroxide

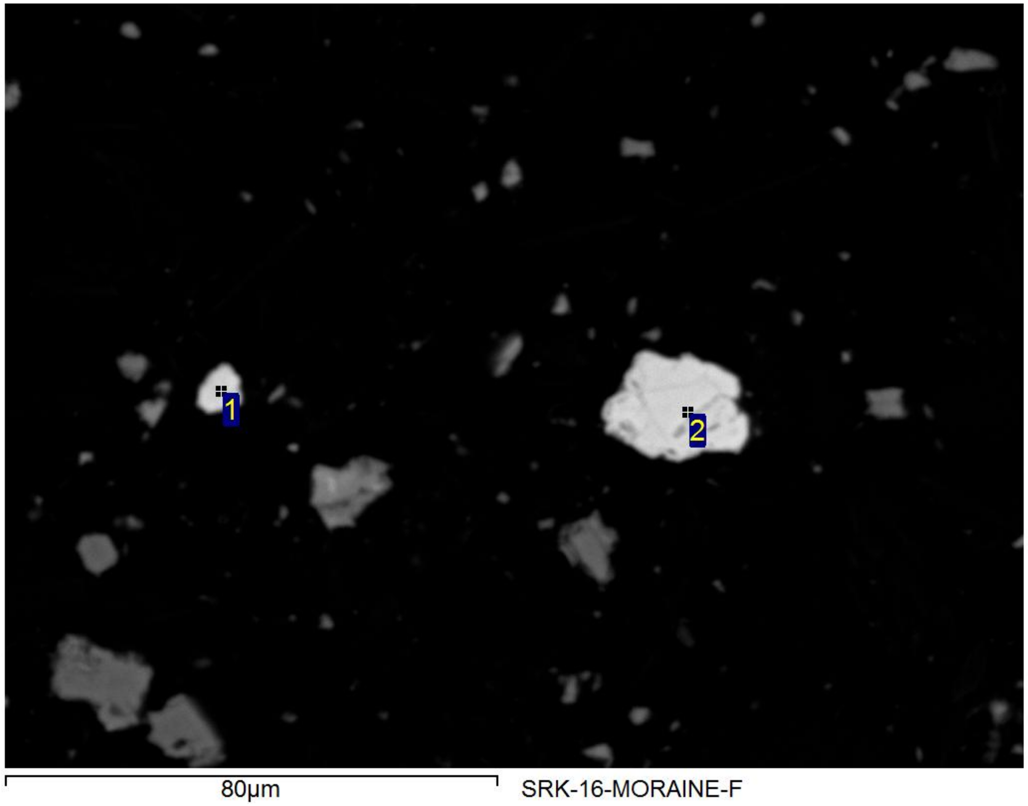
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Mg	Al	Si	P	S	Ti	Mn	Fe	Total	Mineral Identification
1	47.0		3.2	1.3	0.4	0.2		0.2	47.6	100.0	Fe-oxy/hydroxide
2	46.1	0.6	5.5	1.8	1.0	0.3	0.3		44.4	100.0	Fe-oxy/hydroxide

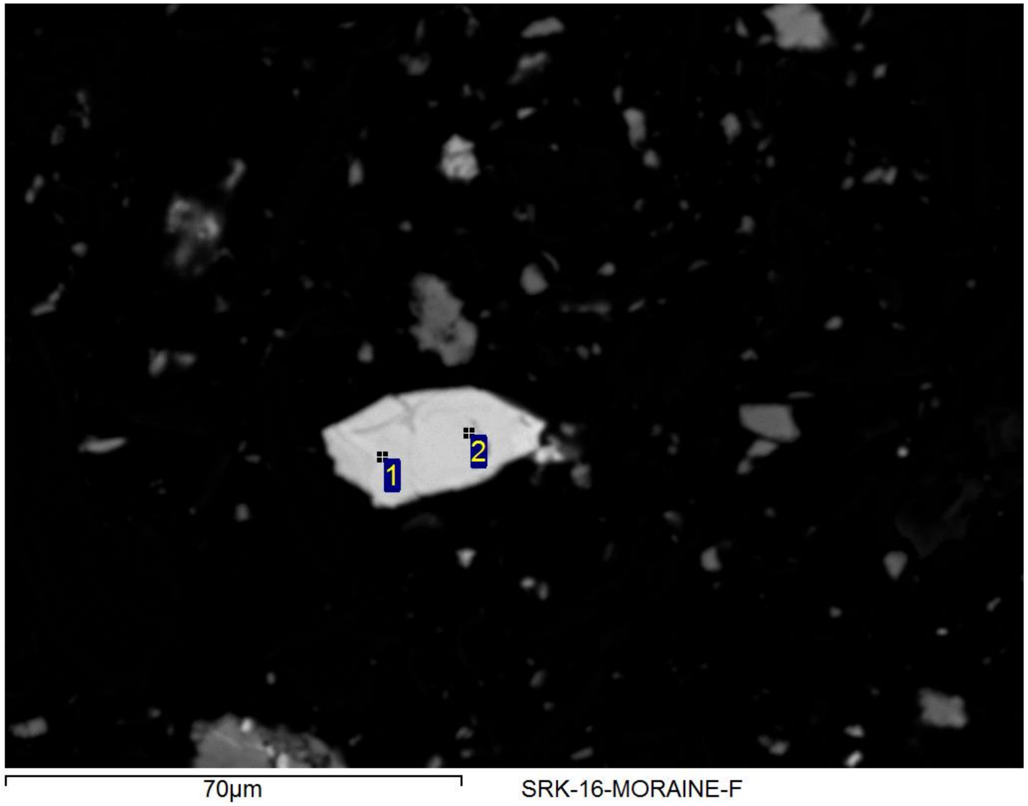
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	S	Fe	As	Total	Mineral Identification
1	45.2	3.6	0.8	0.6	49.1	0.7	100.0	Fe-oxy/hydroxide
2	45.8	4.4	1.3	0.8	47.7		100.0	Fe-oxy/hydroxide

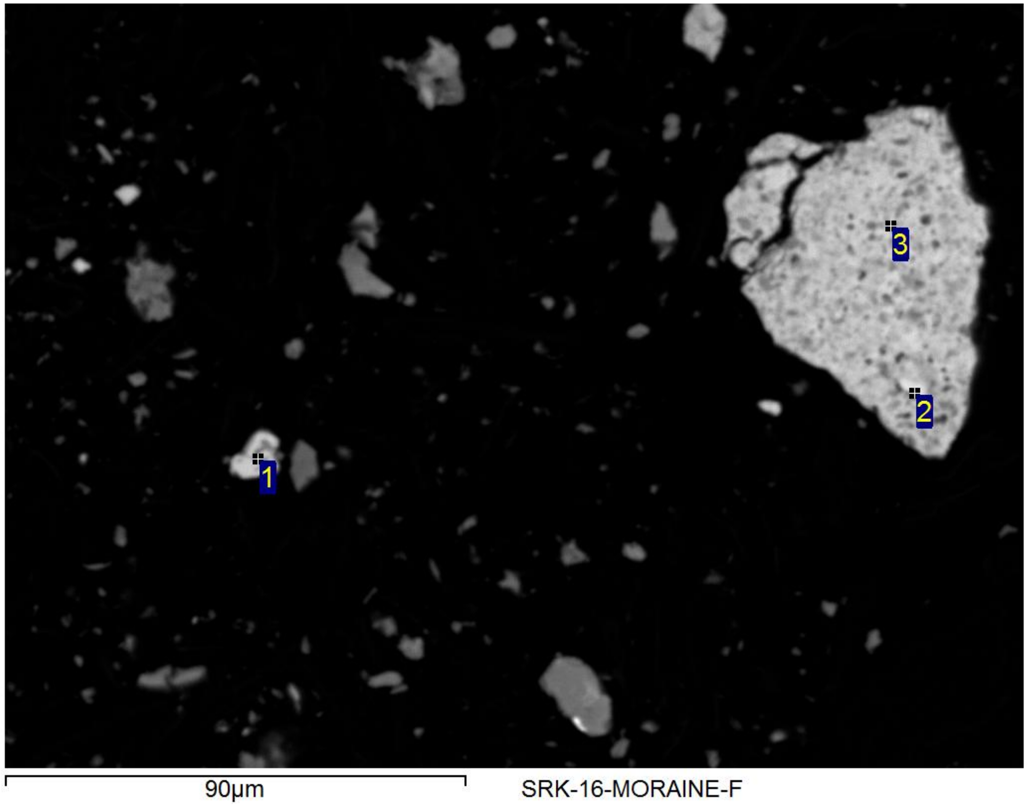
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	P	S	Fe	Zn	Total	Mineral Identification
1	46.9	2.4	0.7	1.3	0.4	48.0	0.3	100.0	Fe-oxy/hydroxide
2	46.4	2.7	1.0	1.2		48.6		100.0	Fe-oxy/hydroxide

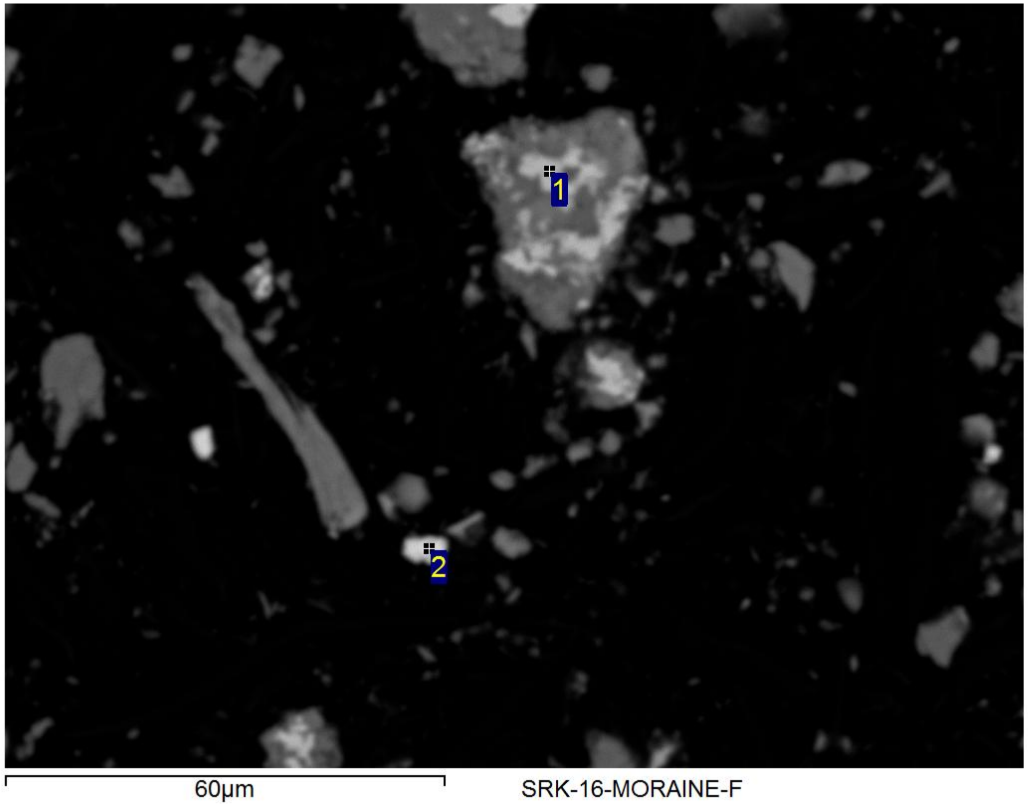
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	Mg	Al	Si	P	S	K	Ca	Fe	Total	Mineral Identification
1		3.2	2.0	0.9	0.5	0.2		47.7	100.0	Fe-oxy/hydroxide
2	0.5	3.3	3.8	0.5	0.3	0.5	0.5	50.0	100.0	Fe-oxy/hydroxide
3	0.3	4.0	3.4	0.5	0.4	0.5		44.6	100.0	Fe-oxy/hydroxide

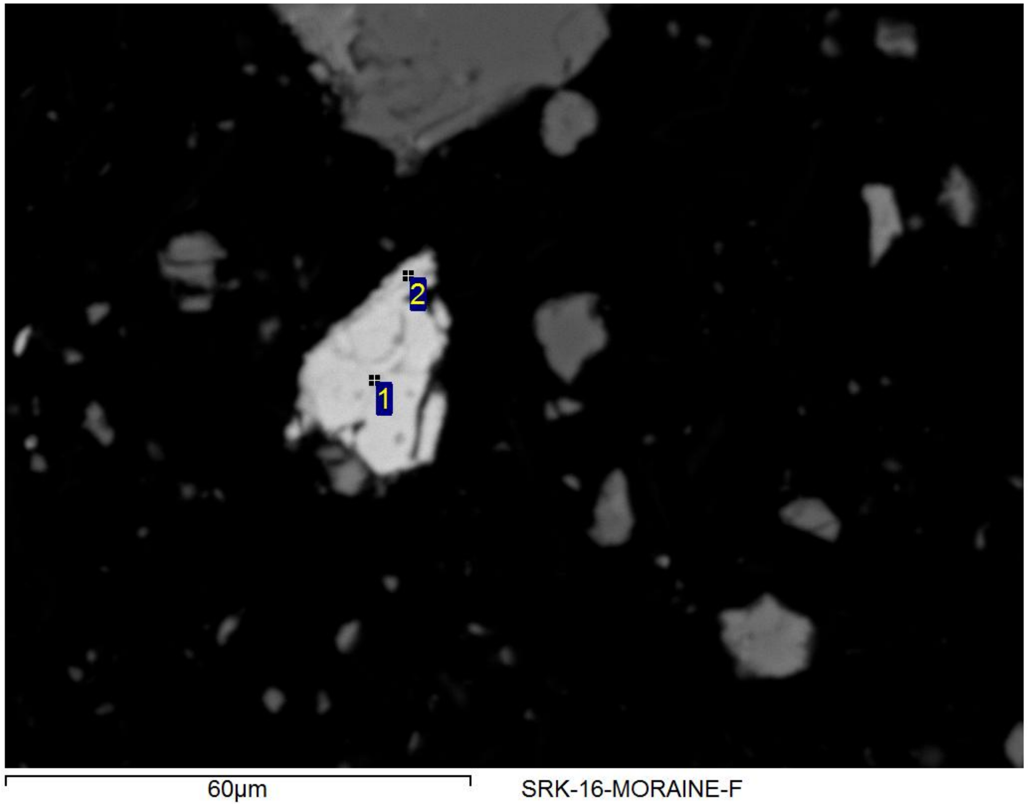
All results in weight%



Processing option : All elements analysed (Normalised)

Spectrum	O	Al	Si	K	Ca	Ti	Fe	Total	Mineral Identification
1	47.7	1.5	3.2	0.3	0.9	46.2	0.3	100.0	rutile
2	46.3	2.3	2.2				49.2	100.0	Fe-oxy/hydroxide

All results in weight%



Processing option : All elements analysed (Normalised)

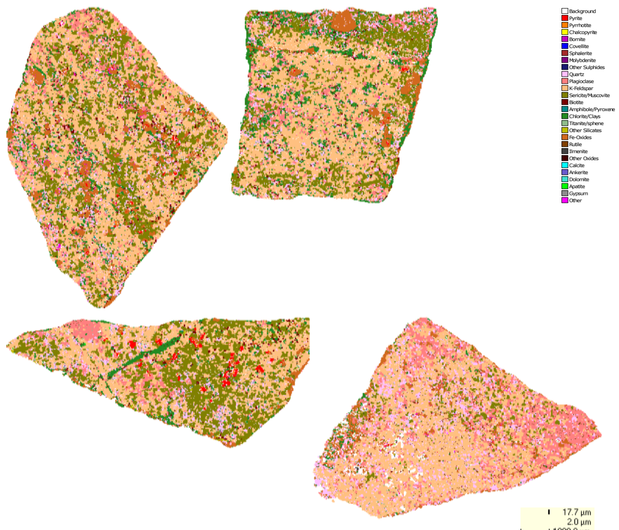
Spectrum	O	Al	Si	P	S	K	Fe	Total	Mineral Identification
1	45.0	3.6	1.8	0.8	0.7	0.5	47.7	100.0	Fe-oxy/hydroxide
2	45.9	4.9	2.2	0.7	0.7	0.4	45.3	100.0	Fe-oxy/hydroxide

All results in weight%

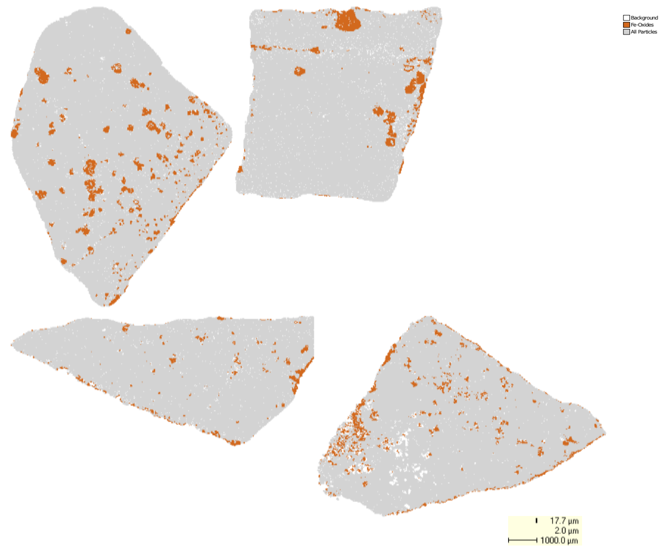
IDM Mining
14936-101
MI7003-MAR17

High Definition Mineralogical Analysis using QEMSCAN (Quantitative Evaluation of Materials by Scanning Electron Microscopy)

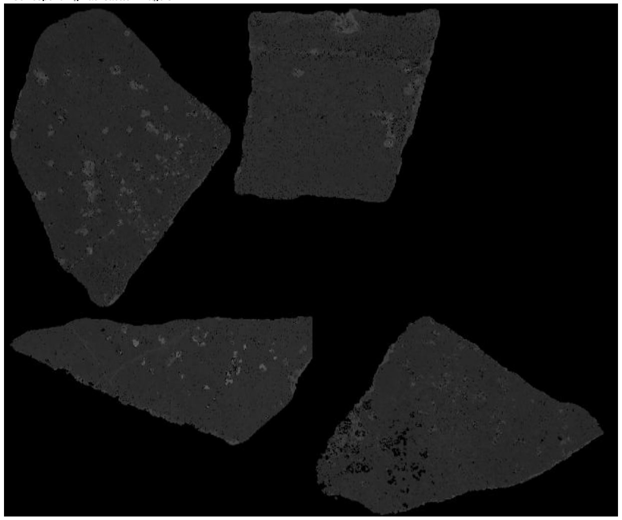
Fiiled Stish QEMSCAN Pseudo-Image



Fiiled Stish QEMSCAN Pseudo-Image Rimming



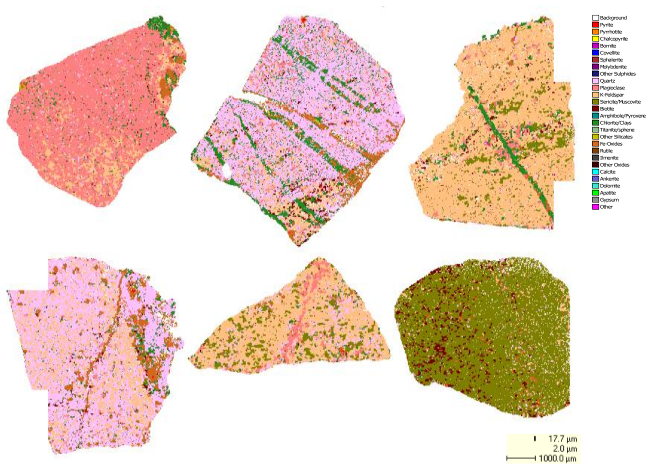
Corresponding Backsactter-Image SEM



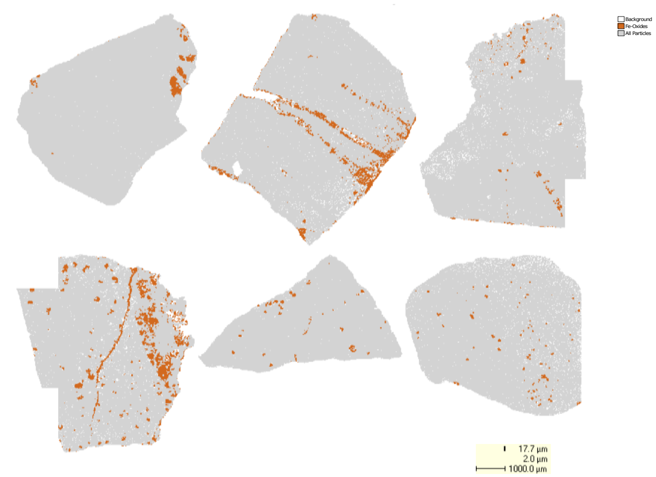
IDM Mining
14936-101
MI7003-MAR17

High Definition Mineralogical Analysis using QEMSCAN (Quantitative Evaluation of Materials by Scanning Electron Microscopy)

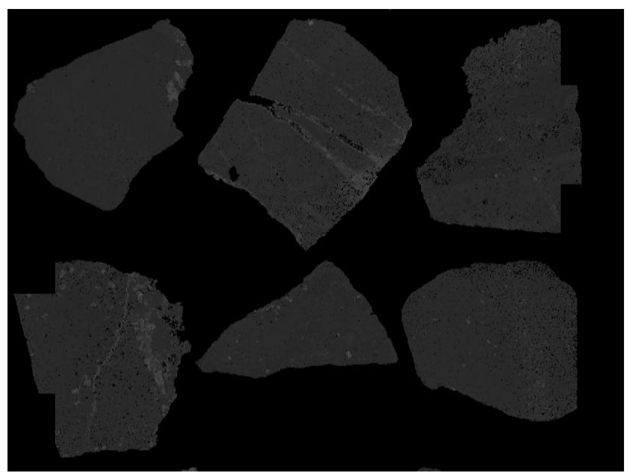
Filled Stish QEMSCAN Pseudo-Image



Filled Stish QEMSCAN Pseudo-Image Rimming



Corresponding Backsactter-Image SEM



IDM Mining
14936-101
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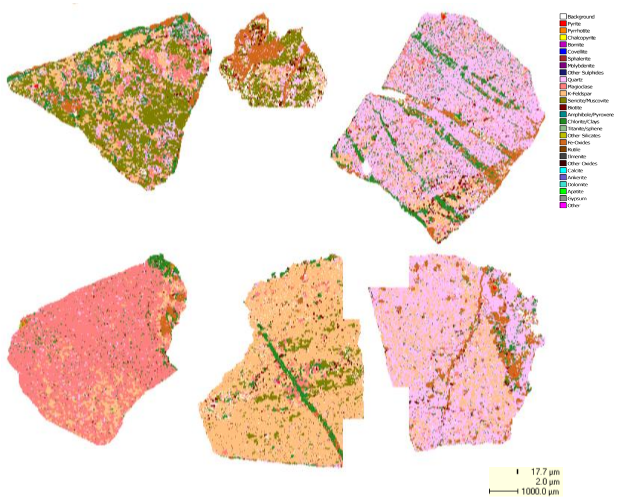
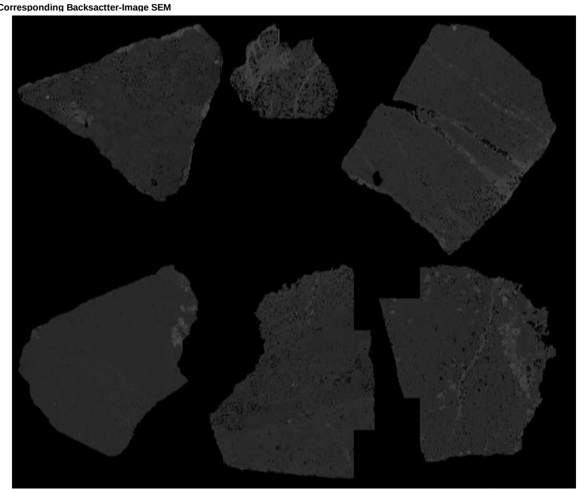
High Definition Mineralogical Analysis using QEMSCAN (Quantitative Evaluation of Materials by Scanning Electron Microscopy)

Filled Stish QEMSCAN Pseudo-Image



Filled Stish QEMSCAN Pseudo-Image Rimming

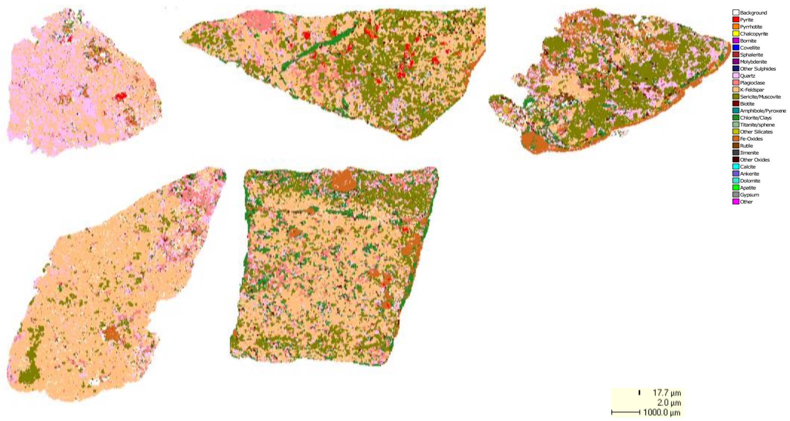
Corresponding Backsactter-Image SEM



IDM Mining
14936-101
MI7003-MAR17

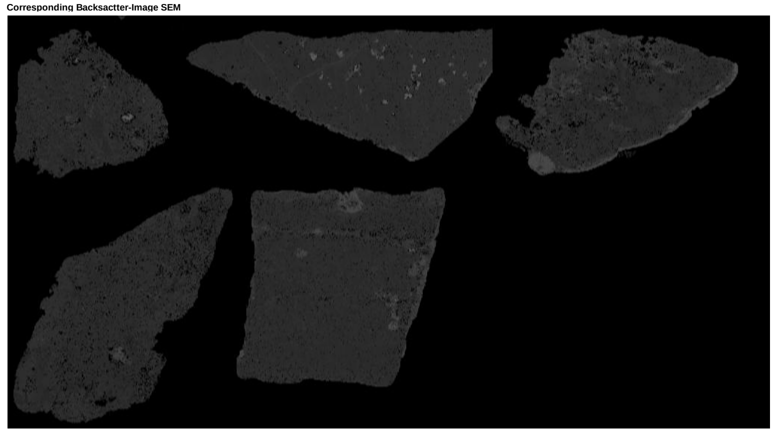
High Definition Mineralogical Analysis using QEMSCAN (Quantitative Evaluation of Materials by Scanning Electron Microscopy)

Fiiled Stish QEMSCAN Pseudo-Image



Fiiled Stish QEMSCAN Pseudo-Image Rimming

Corresponding Backsactter-Image SEM



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14936-101
MI7003-MAR17

Rimming Measurement	µm
1	297.77
2	64.88
3	273.63
4	205.22
5	70.27
6	38.95
7	31.16
8	101.26
9	32.45
10	24.70
11	86.60
12	86.39
13	60.79
14	76.86
15	90.50
16	151.52
17	140.47
18	117.75
19	233.90
20	96.14
21	92.17
22	73.44
23	86.41
24	81.47
25	28.74
26	16.39
27	16.17
28	17.06
29	20.66
30	42.28
31	29.33
32	42.90
33	31.58
34	57.89
35	61.05
36	50.52
37	1499.49
38	111.93
39	1227.44
40	108.84
41	106.91
42	66.19
43	66.86
44	55.60
45	54.71
46	26.88
47	165.89
48	66.14
49	43.68
50	59.17
51	94.17
52	138.25
53	140.96
54	191.60
55	63.00
56	379.39
57	143.56
58	129.80
59	212.13
60	106.07
61	1321.74
62	189.14
63	147.94
64	23.65
65	24.78
66	21.81
67	17.71
68	11.94
69	12.85
70	7.060
71	65.45
72	47.89
73	59.06
74	31.28
75	125.51
76	68.45
77	42.40
78	47.25
79	26.86
80	8.060
81	8.060
82	11.48
83	68.23
84	40.90
85	65.64
86	38.18
87	40.05
88	41.87
89	24.35
90	84.04
91	56.55
92	40.05
93	41.87
94	24.35
95	84.04
96	97.57
97	65.03
98	38.14
99	37.12
Avg	116.12
Max	1499.49
Min	7.060
STDEV	229.46

Representative SEM Bacscatter Images of Rimmings