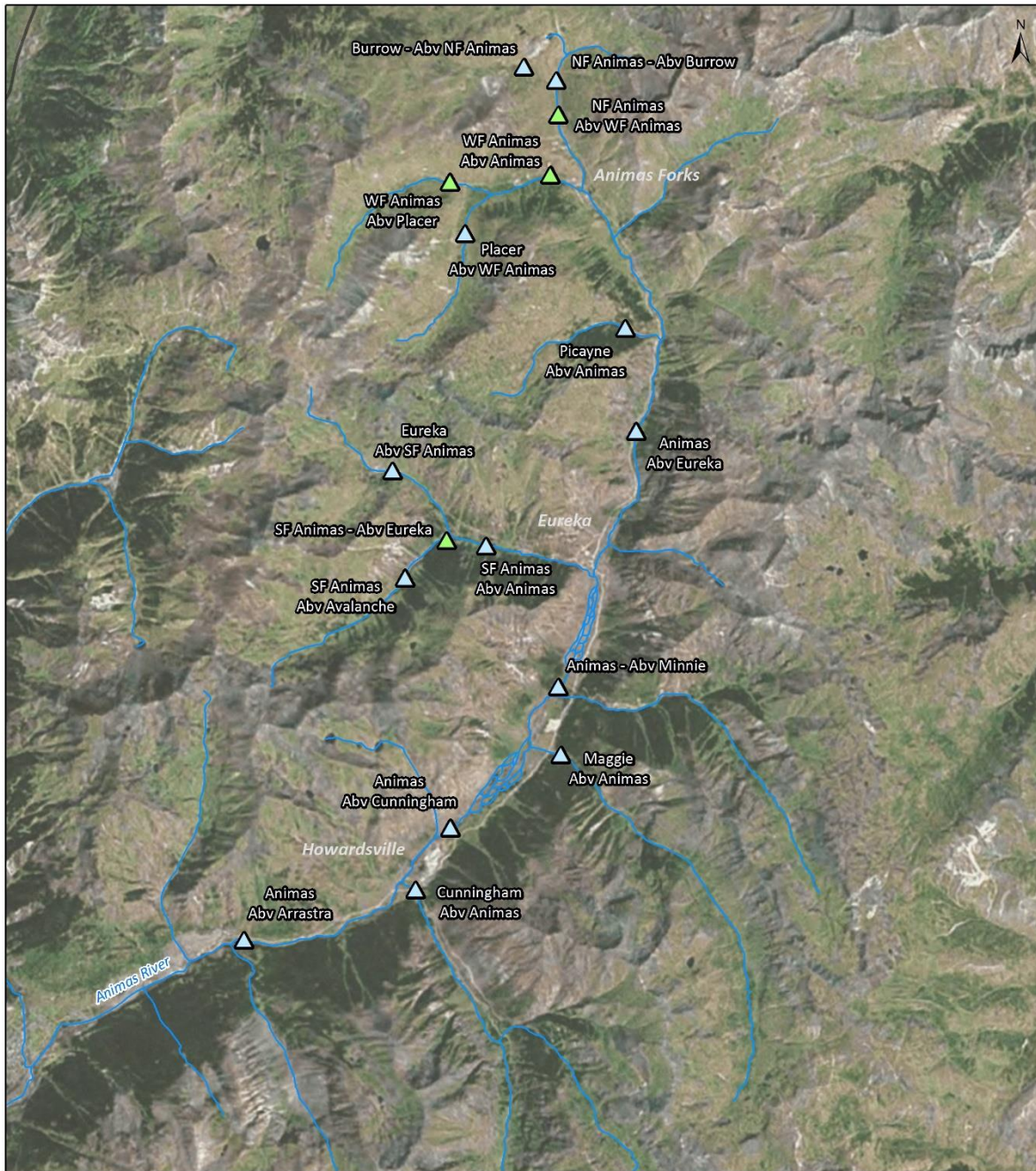



Appendix A – Maps

Note: Stream segment classifications are based on the downstream sampling location and thus may not accurately depict spatial heterogeneity within segments.

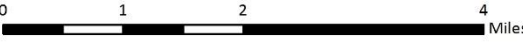


**Bonita Peak Mining District
-
Upper Animas
BMI Sites**




Mountain Studies Institute
SAN JUAN MOUNTAINS COLORADO

- ▲ BMI Community Sample
- ▲ BMI Community and Tissue Sample





0 1 2 4 Miles



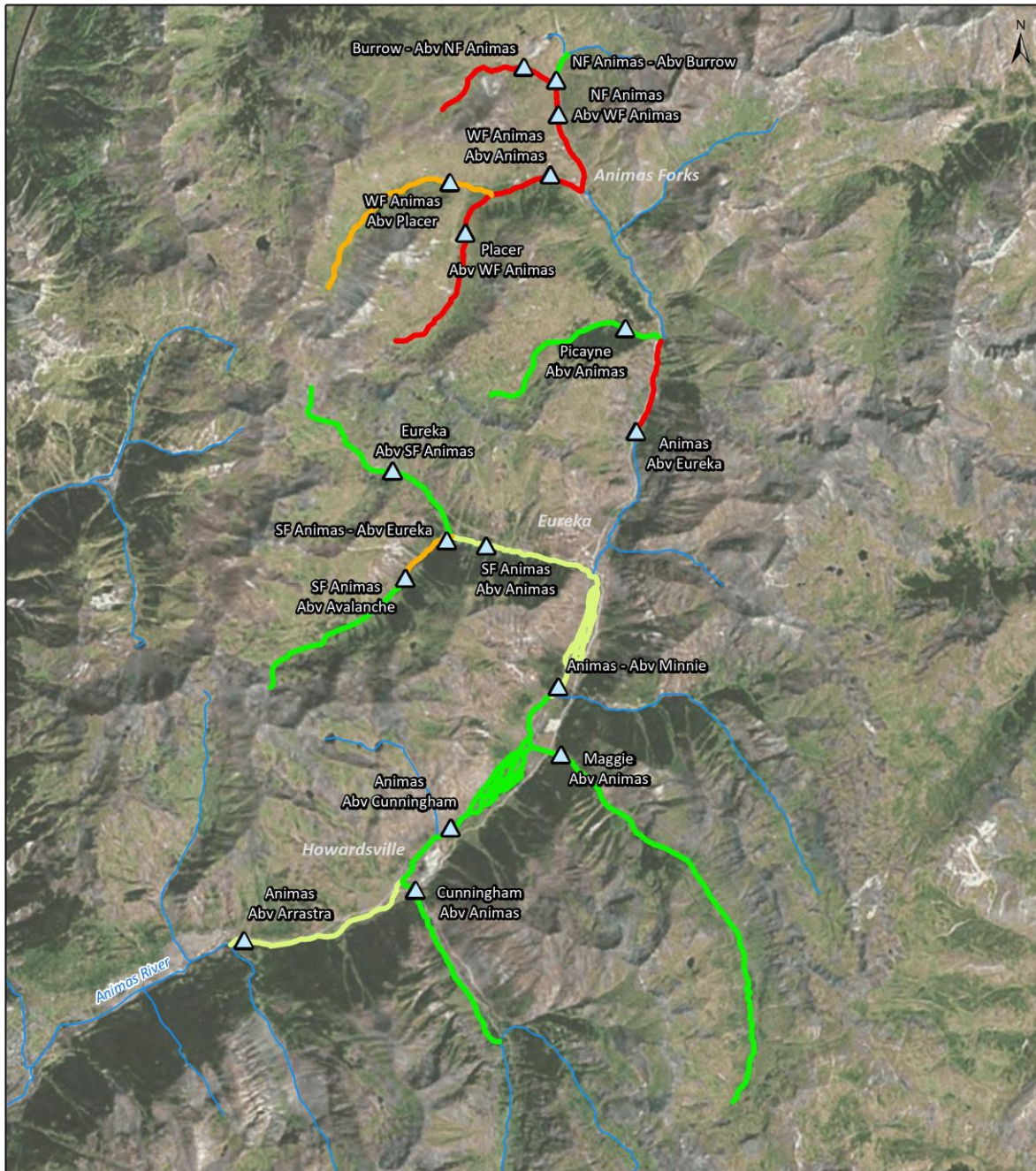
Colorado
New Mexico


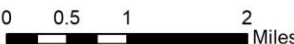
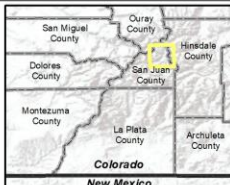
Map 1: BMI monitoring locations – Upper Animas River



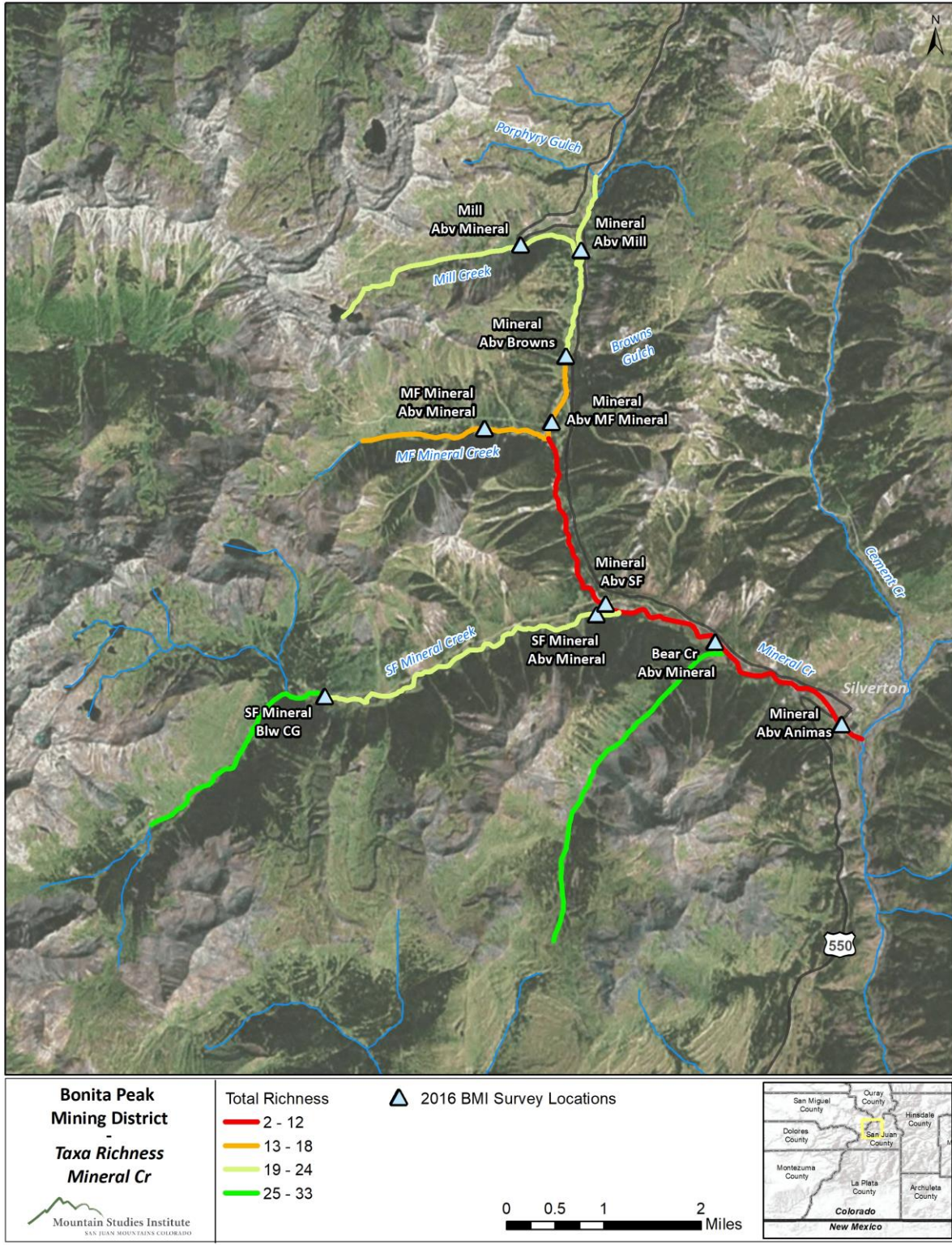
<p>Bonita Peak Mining District - Mineral Cr BMI Sites</p>  <p><small>RESEARCH & EDUCATION IN THE SAN JUAN PROVINCE, COLORADO WWW.MOUNTAINSTUDIES.ORG</small></p>	<ul style="list-style-type: none"> ▲ BMI Community Sample ▲ BMI Community and Tissue Sample <p>0 1 2 4 Miles</p>	 <p>Colorado New Mexico</p>
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Map 2: BMI monitoring locations - Mineral Creek

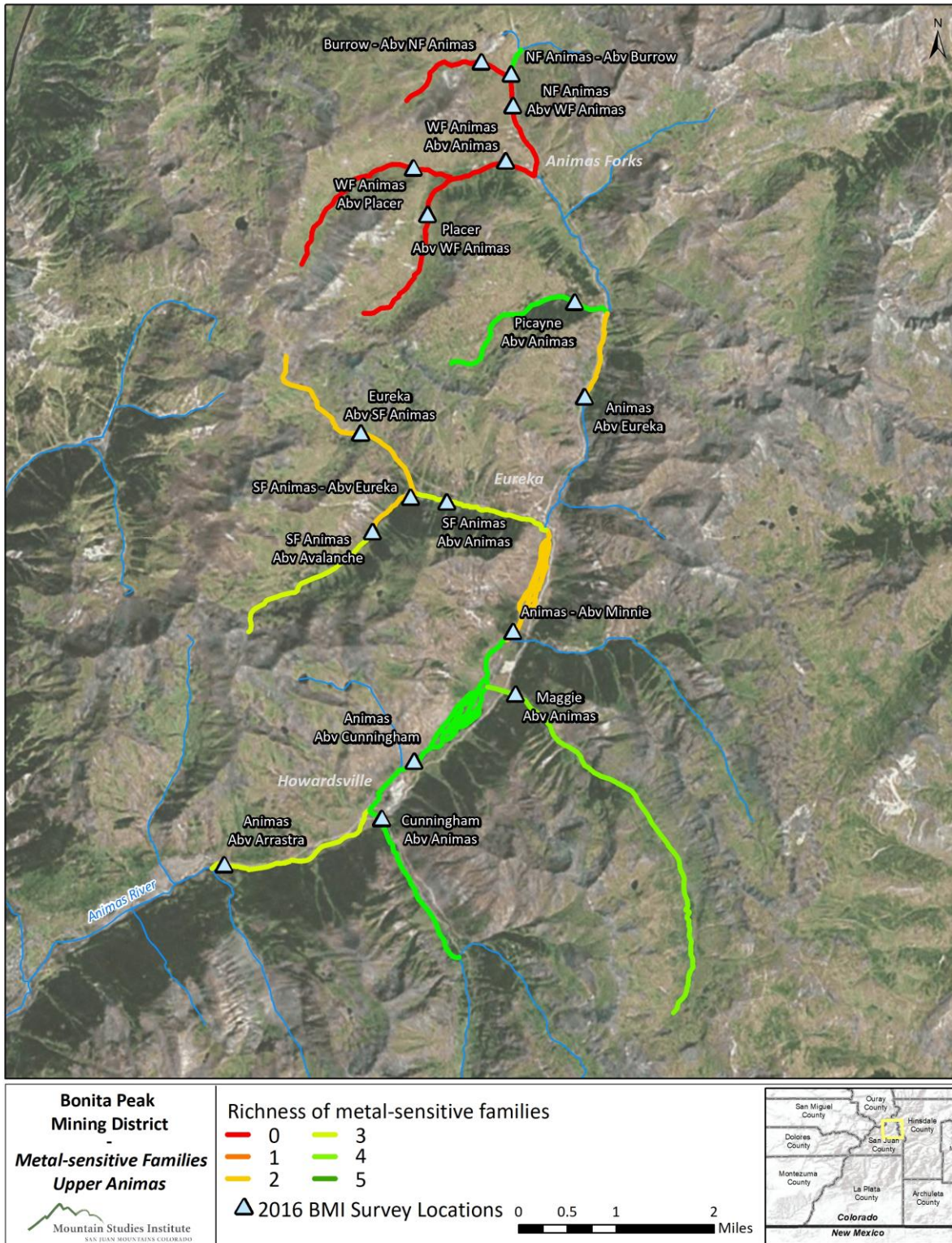


<p>Bonita Peak Mining District - Taxa Richness Upper Animas</p>  <p>Mountain Studies Institute SAN JUAN MOUNTAINS COLORADO</p>	<p>Total Richness</p> <p>█ 2 - 12</p> <p>█ 13 - 18</p> <p>█ 19 - 24</p> <p>█ 25 - 33</p>	<p>△ 2016 BMI Survey Locations</p>	 <p>0 0.5 1 2 Miles</p>  <p>San Miguel County, Ouray County, Hinsdale County, Dolores County, San Juan County, Montezuma County, La Plata County, Archuleta County, Colorado, New Mexico</p>
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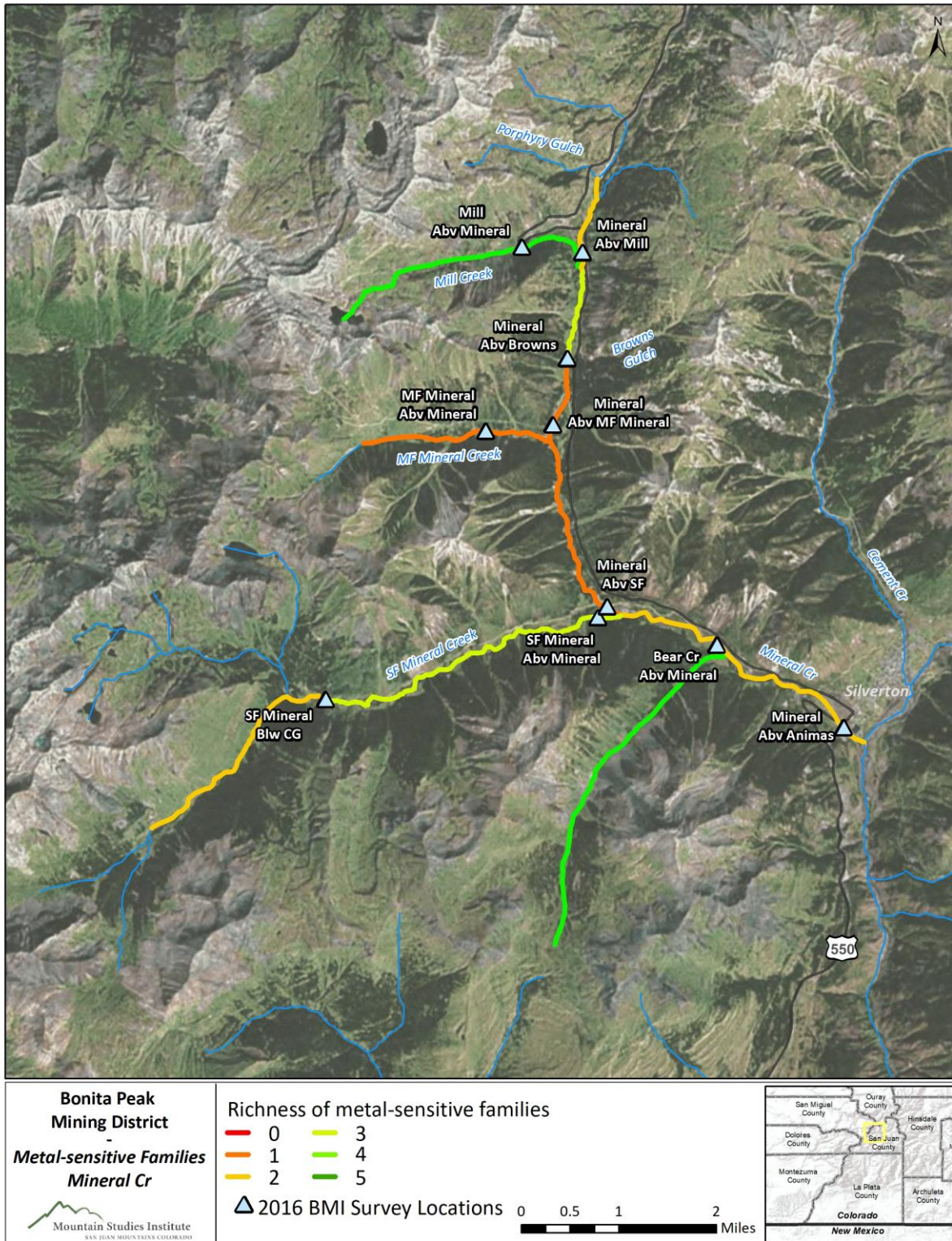
Map 3: Taxa Richness - Upper Animas River



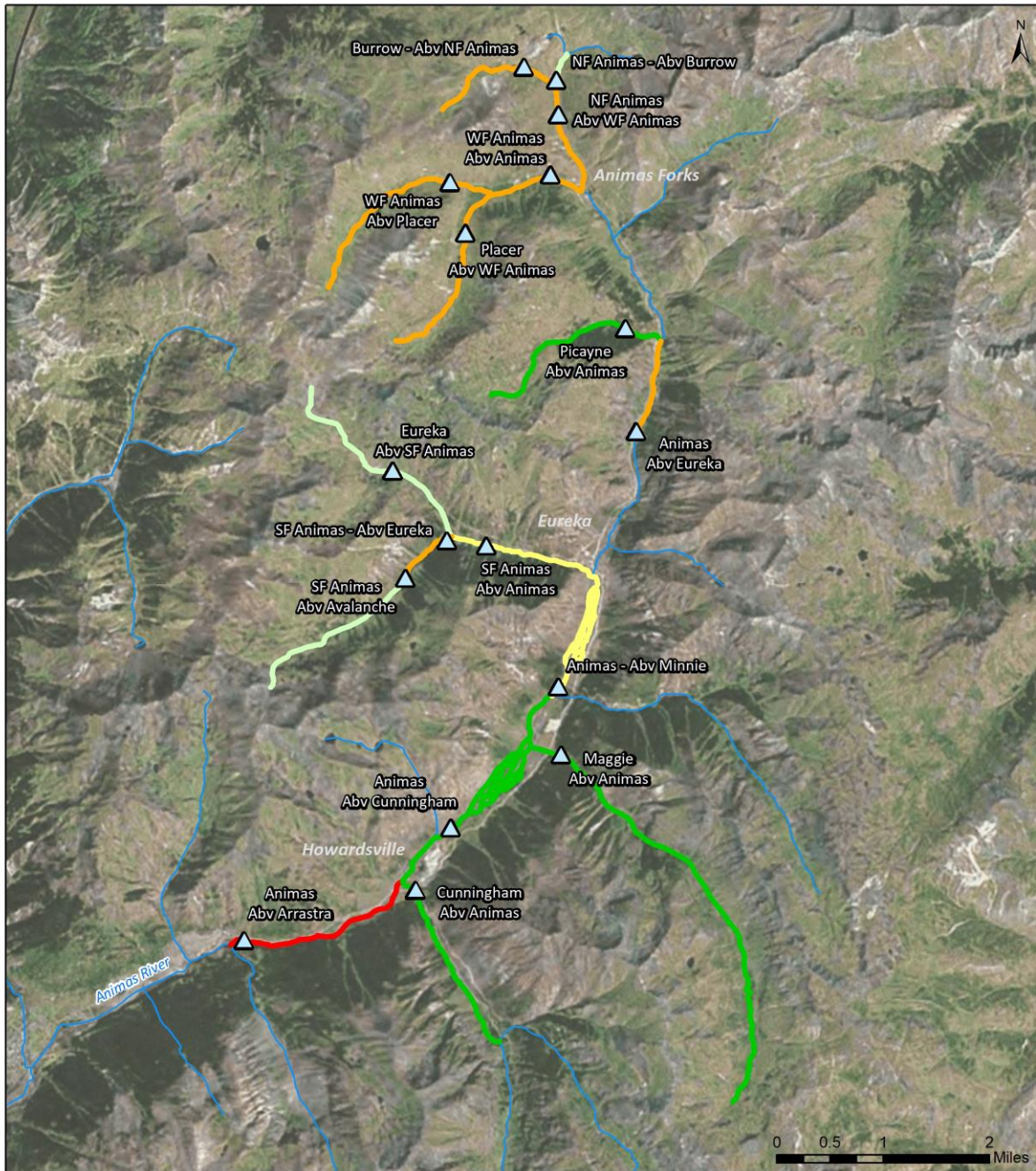
Map 4: Taxa Richness - Mineral Creek










Map 5: Richness of metal-sensitive families (Ephemerellidae; Heptageniidae; Taeniopterygidae) – Upper Animas River

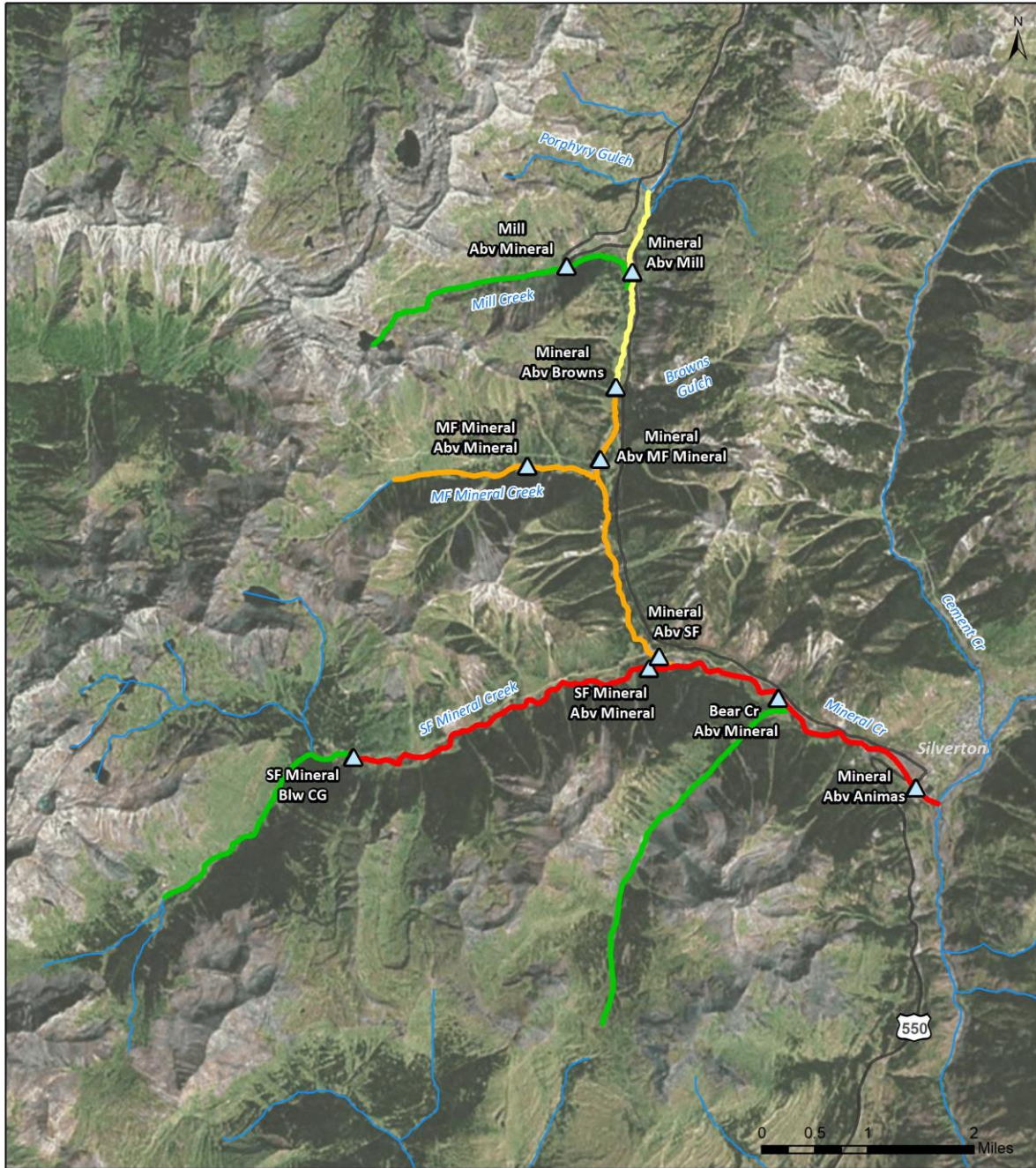





Map 6: Richness of metal-sensitive families (Ephemerellidae; Heptageniidae; Taeniopterygidae) - Mineral Creek



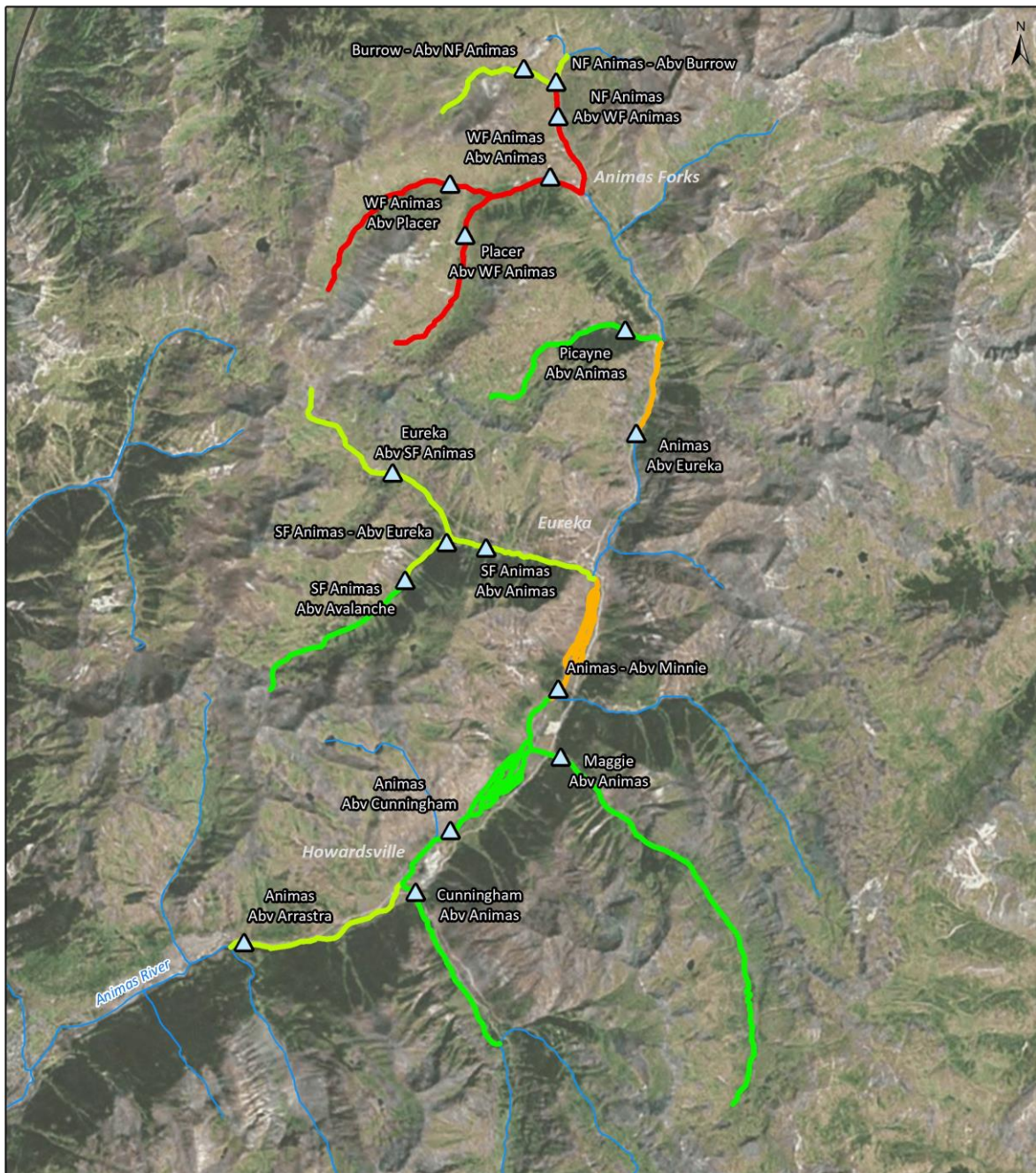
<p>Bonita Peak Mining District - Multi-metric Index Upper Animas</p>  <p>Mountain Studies Institute SAN JUAN MOUNTAINS COLORADO</p>	<p>Attainment / Impairment based on Multi-metric Index scores</p>		
		Attainment	
		Impairment	
		No Aquatic Life Use. Theoretically would be in attainment of class 1 and 2	
		No Aquatic Life Use. Theoretically would be in impairment of class 1 and 2	
	2016 BMI Survey Locations		




Map 7: Multi-metric Index - Upper Animas River



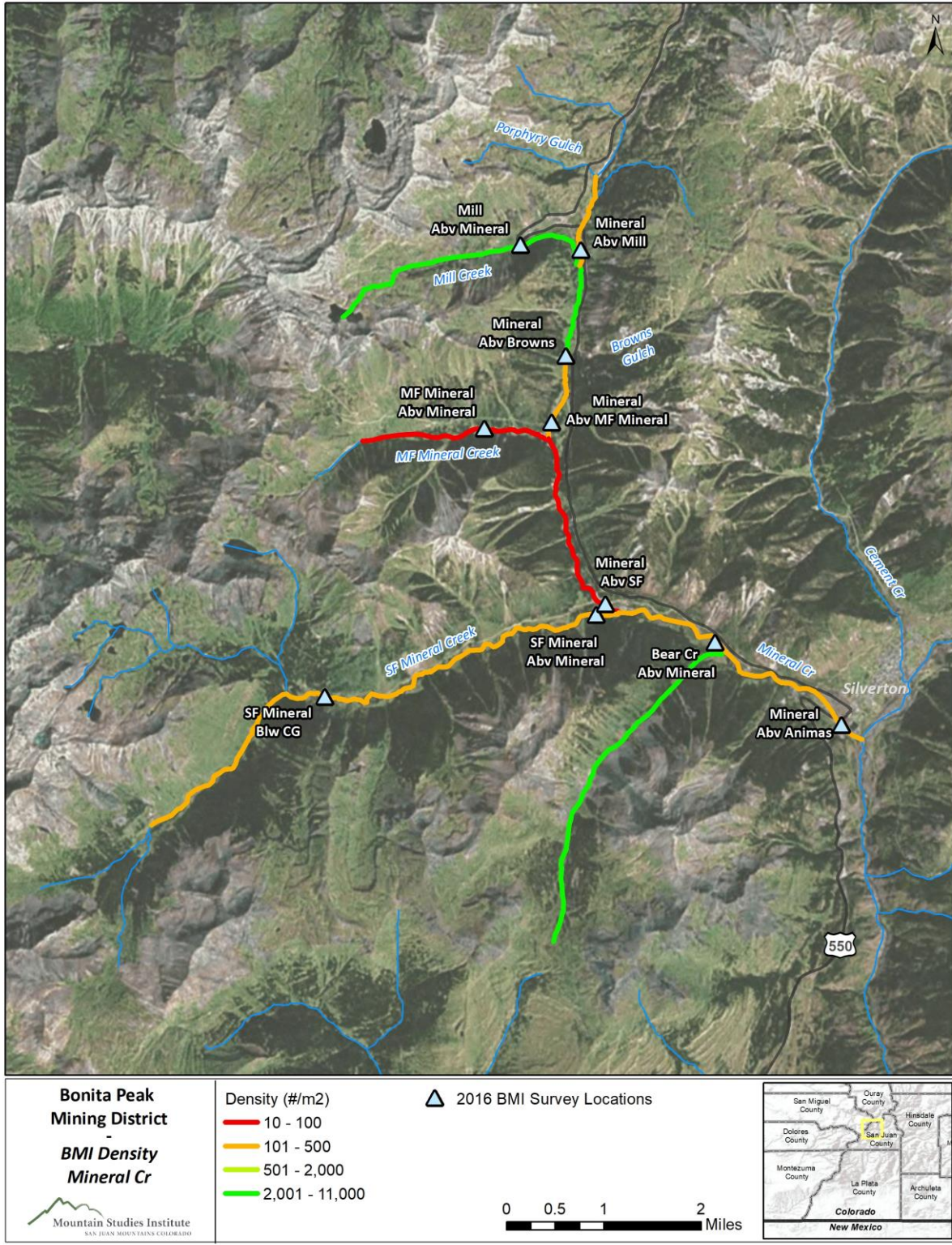
<p>Bonita Peak Mining District - Multi-metric Index Mineral Cr</p>  <p>Mountain Studies Institute SAN JUAN MOUNTAINS COLORADO</p>	<p>Attainment / Impairment based on Multi-metric Index scores</p> <p>█ Attainment</p> <p>█ Impairment</p> <p>█ No Aquatic Life Use. Theoretically would be in attainment of class 1 and 2</p> <p>█ No Aquatic Life Use. Theoretically would be in attainment of class 2, but not class 1</p> <p>█ No Aquatic Life Use. Theoretically would be in impairment of class 1 and 2</p> <p> 2016 BMI Survey Locations</p>	 <p>San Miguel County Ouray County Hinsdale County Dolores County San Juan County Montezuma County La Plata County Archuleta County</p> <p>Colorado New Mexico</p>
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Map 8: Multi-metric Index - Mineral Creek

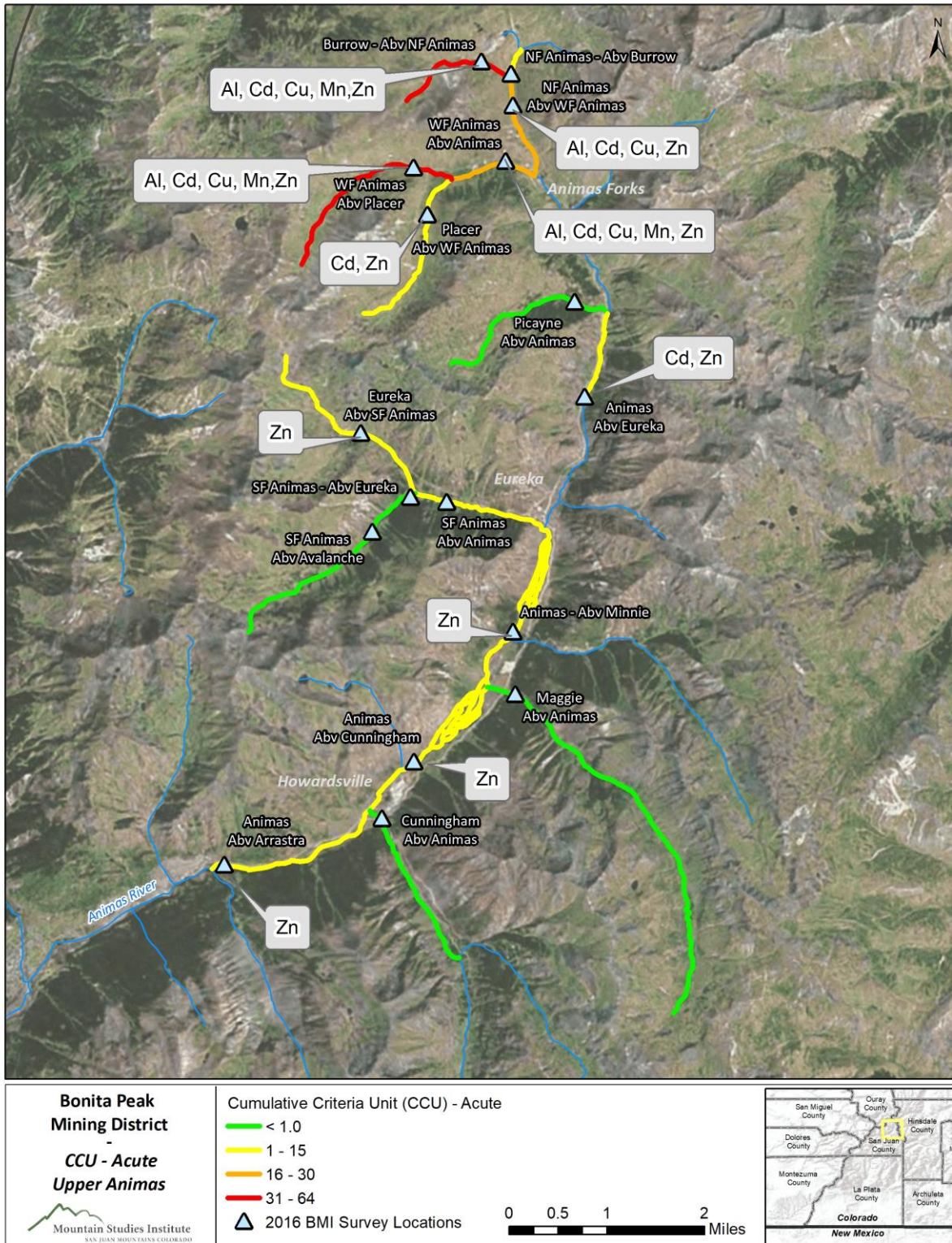


<p>Bonita Peak Mining District - BMI Density Upper Animas</p>  <p>Mountain Studies Institute SAN JUAN MOUNTAINS DISTRICT COLORADO</p>	<p>Density (#/m²)</p> <p>█ 10 - 100</p> <p>█ 101 - 500</p> <p>█ 501 - 2,000</p> <p>█ 2,001 - 11,000</p>	<p>▲ 2016 BMI Survey Locations</p>	 <p>0 0.5 1 2 Miles</p>  <p>San Miguel County Ouray County Hinsdale County Dolores County San Juan County Montezuma County La Plata County Archuleta County Colorado New Mexico</p>
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Map 9: BMI Density - Upper Animas River

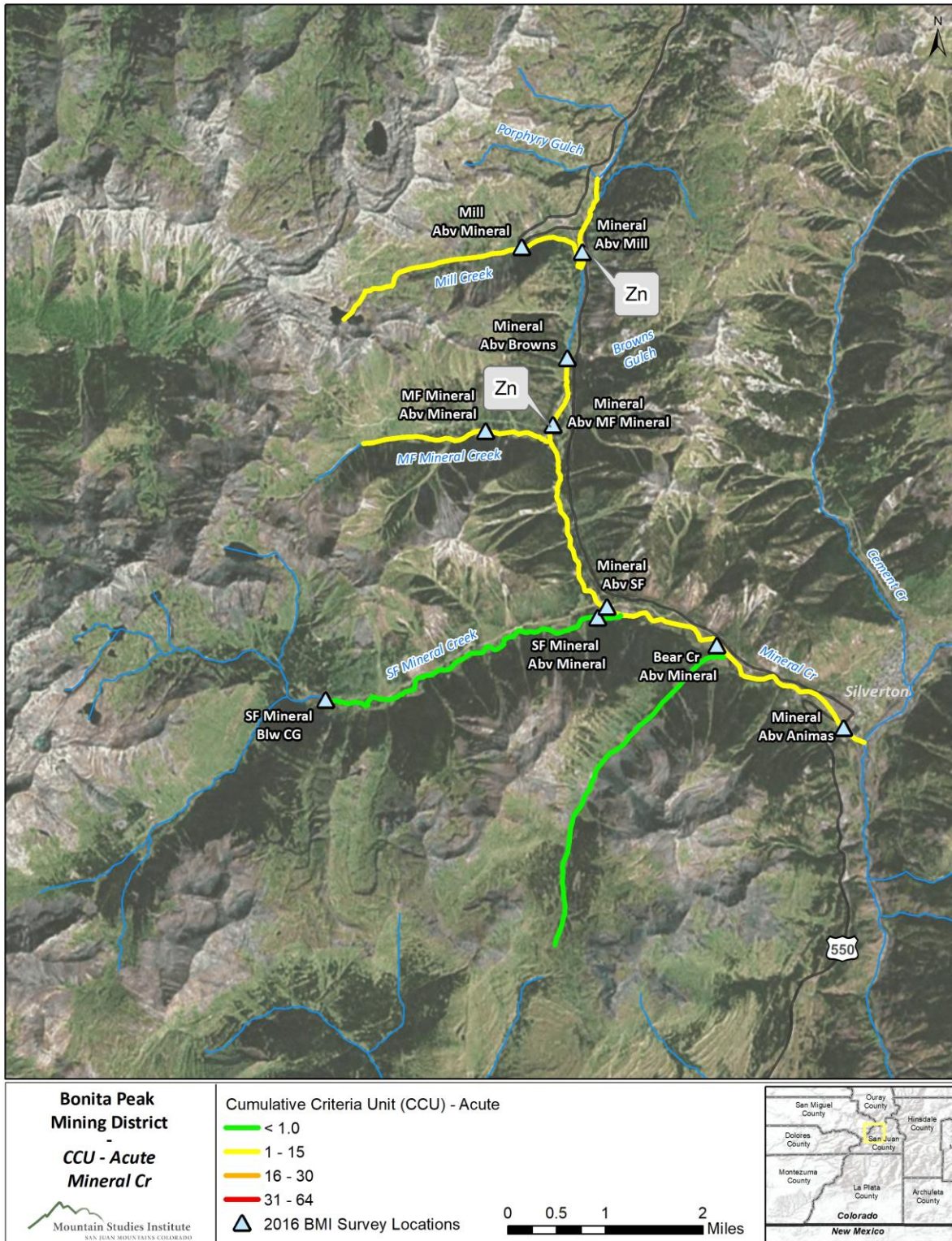


Map 10: BMI Density - Mineral Creek



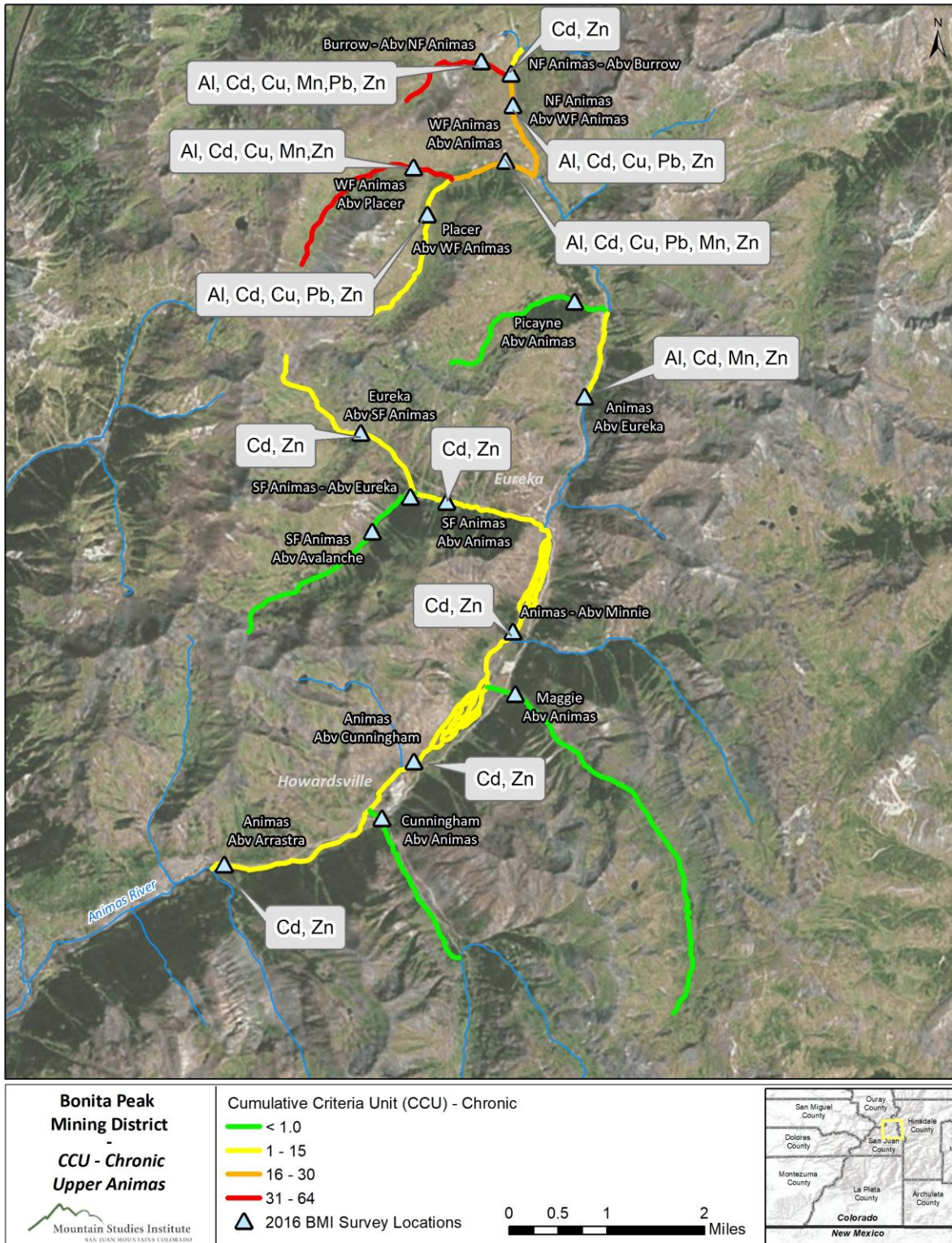
Map 11: Cumulative Criteria Unit (CCU), Acute - Upper Animas River

Note: Cumulative Criteria Unit (CCU) is the sum of Hazard Quotients (HQ) for each site (Table 26). Metals are labeled on the map if a single metal had a hazard quotient above 1.0 for that site.



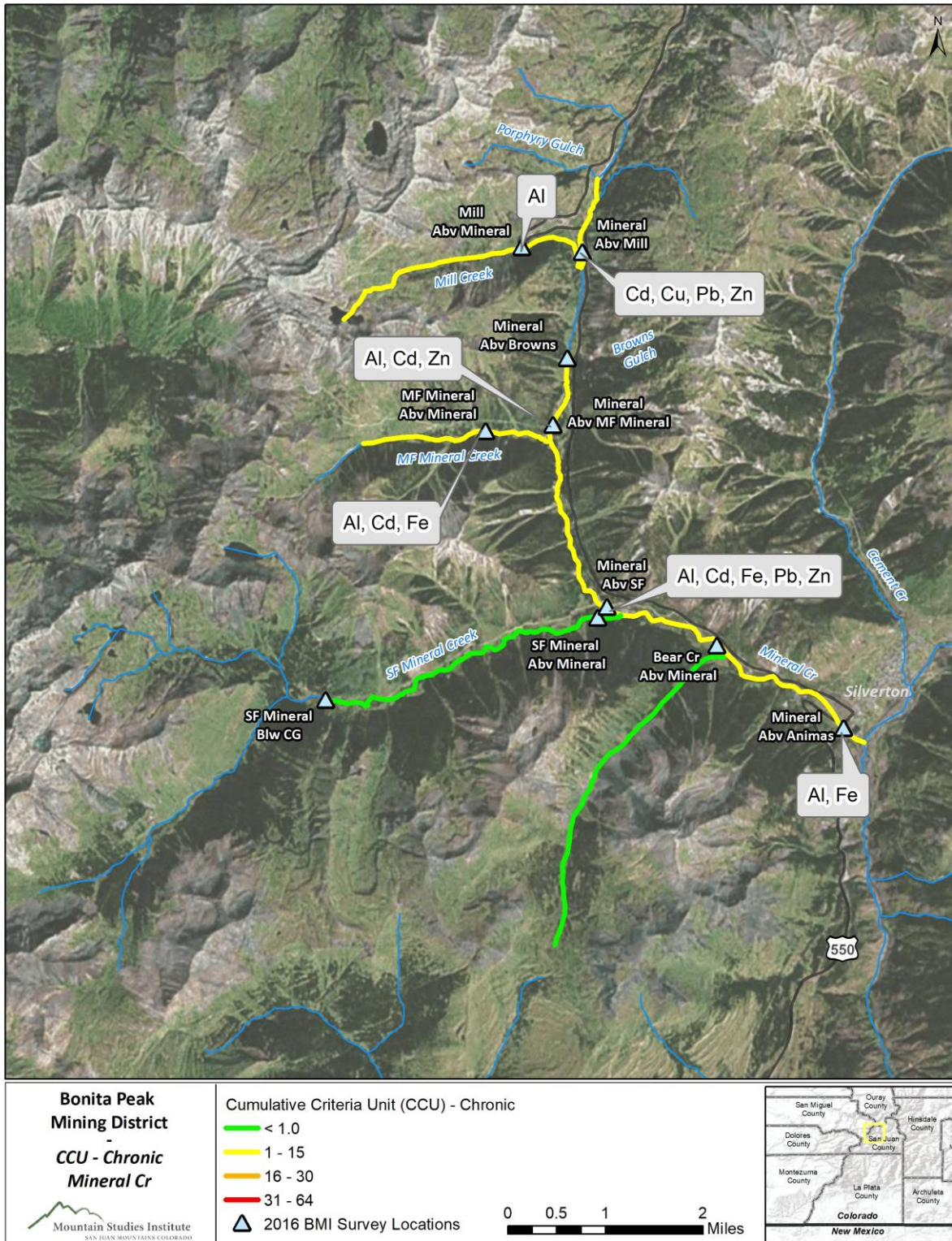
Map 12: Cumulative Criteria Unit (CCU), Acute - Mineral Creek

Note: Cumulative Criteria Unit (CCU) is the sum of Hazard Quotients (HQ) for each site (Table 26). Metals are labeled on the map if a single metal had a hazard quotient above 1.0 for that site.



Map 13: Cumulative Criteria Unit (CCU), Chronic - Upper Animas River

Note: Cumulative Criteria Unit (CCU) is the sum of Hazard Quotients (HQ) for each site (Table 26). Metals are labeled on the map if a single metal had a hazard quotient above 1.0 for that site.



Map 14: Cumulative Criteria Unit (CCU), Chronic – Mineral Creek

Note: Cumulative Criteria Unit (CCU) is the sum of Hazard Quotients (HQ) for each site (Table 26). Metals are labeled on the map if a single metal had a hazard quotient above 1.0 for that site.

Appendix C – Physical Habitat Field Data Sheet

Site:																Date:			
Habitat:																			
	1			2			3			4			5						
	S1	Mod	Em	S2	Mod	Em	S3	Mod	Em	S4	Mod	Em	S5	Mod	Em				
0																			
5																			
10																			
15																			
20																			
25																			
30																			
35																			
40																			
45																			
50																			
55																			
60																			
65																			
70																			
75																			
80																			
85																			
90																			
95																			
100																			

Mod: A=Algae; M=Moss; V=Veg

Rows are transects; Columns are Positions along transects

Appendix D – Benthic macroinvertebrate taxa observed in 2016

The following are the unadjusted lab bench counts. As described in Section 3.4, we later subsampled these unadjusted counts to eliminate potential bias from differing sample sizes and to meet MMI parameters.

Mineral Cr		Abv Mill Cr		10/17/2016
Class	Order	Family	Taxon	Count
Insecta	Ephemeroptera	Baetidae	Baetis	1
		Heptageniidae	Rhithrogena	5
	Plecoptera	Chloroperlidae	Suwallia	47
		Chloroperlidae	Sweltsa	3
		Perlodidae	Megarcys	9
		Taeniopterygidae	Taenionema	69
	Trichoptera	Brachycentridae	Brachycentrus	1
		Hydropsychidae	Arctopsyche	5
		Limnephilidae	Limnephilidae	5
		Rhyacophilidae	Rhyacophila_hyalinata	92
		Rhyacophilidae	Rhyacophila_vofixa	7
	Diptera	Ceratopogonidae	Bezzia_Palpomyia	24
		Chironomidae	Brillia	3
		Chironomidae	Chaetocladius	7
		Chironomidae	Cricotopus_Orthocladius	4
		Chironomidae	Diamesa	3
		Chironomidae	Eukiefferiella_claripennis	7
		Chironomidae	Tvetenia_bavarica	1
		Empididae	Neoplasta	3
Empididae		Oreogeton	11	
Arachnida	Trombidiformes	Lebertiidae	Lebertia	8
		Sperchonidae	Sperchon	16
Turbellaria			Turbellaria	65
Oligochaeta			Oligochaeta	1

Total Count 397
 Fraction Processed 100%
 Area Sampled 1.15 m²

Mill Cr		Abv Mineral Cr		10/17/2016
Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Lebertiidae	Lebertia	5
		Sperchonidae	Sperchon	8
Insecta	Diptera	Chironomidae	Brillia	1
		Chironomidae	Chaetocladius	2
		Chironomidae	Cricotopus_Orthocladius	13
		Chironomidae	Eukiefferiella_claripennis	1
		Chironomidae	Tvetenia_bavarica	3
		Empididae	Oreogeton	1
	Ephemeroptera	Ameletidae	Ameletus	1
		Baetidae	Baetis	8
		Ephemerellidae	Drunella_doddsii	267
		Ephemerellidae	Ephemerellidae	31
		Heptageniidae	Cinygmula	120
		Heptageniidae	Rhithrogena	7
	Plecoptera	Capniidae	Capnia	10
		Chloroperlidae	Suwallia	4
		Nemouridae	Zapada	21
		Perlodidae	Megarcys	19
		Taeniopterygidae	Taenionema	162
	Trichoptera	Limnephilidae	Dicosmoecus	17
		Limnephilidae	Psychoglypha	35
		Rhyacophilidae	Rhyacophila_hyalinata	20
Oligochaeta			Oligochaeta	1
Ostracoda			Ostracoda	5
Turbellaria			Turbellaria	28

Total Count 790
 Fraction Processed 6.25%
 Area Sampled 1.15 m²

Mineral Cr		Abv Browns Gluch		10/17/2016
Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Aturidae	Aturus	1
		Lebertiidae	Lebertia	6
		Sperchonidae	Sperchon	3
Insecta	Diptera	Ceratopogonidae	Bezzia_Palpomyia	2
		Chironomidae	Cricotopus_Orthocladus	4
		Chironomidae	Diamesa	8
		Chironomidae	Eukiefferiella_brehmi	2
		Dixidae	Dixa	1
	Ephemeroptera	Baetidae	Baetis	3
		Ephemerellidae	Drunella_doddsii	15
		Heptageniidae	Rhithrogena	23
	Plecoptera	Capniidae	Capnia	2
		Chloroperlidae	Suwallia	1
		Chloroperlidae	Sweltsa	4
		Nemouridae	Zapada	76
		Perlodidae	Megarcys	1
		Taeniopterygidae	Taenionema	370
	Trichoptera	Brachycentridae	Brachycentrus	1
Hydropsychidae		Arctopsyche	11	
Rhyacophilidae		Rhyacophila_hyalinata	25	
Ostracoda			Ostracoda	2
Turbellaria			Turbellaria	15

Total Count 576
 Fraction Processed 18.75%
 Area Sampled 1.15 m²

Mineral Cr		Abv MF Mineral		10/14/2016
Class	Order	Family	Taxon	Count
Insecta	Ephemeroptera	Baetidae	Baetis	1
	Plecoptera	Capniidae	Capnia	1
		Nemouridae	Zapada	67
		Taeniopterygidae	Taenionema	9
	Trichoptera	Hydropsychidae	Arctopsyche	20
		Limnephilidae	Psychoglypha	1
		Rhyacophilidae	Rhyacophila_hyalinata	6
	Diptera	Ceratopogonidae	Bezzia_Palpomyia	2
		Chironomidae	Chaetocladius	1
		Chironomidae	Cricotopus_Orthocladius	2
Empididae		Clinocera	1	
Arachnida	Trombidiformes	Lebertiidae	Lebertia	3
		Sperchonidae	Sperchon	3
Turbellaria			Turbellaria	2
Arachnoidea	Hydracarina	Hydracarina	Hydracarina	1

Total Count 120
 Fraction Processed 100%
 Area Sampled 1.15 m²

MF of Mineral Cr

Abv Mineral Cr

10/14/2016

Class	Order	Family	Taxon	Count
Insecta	Diptera	Ceratopogonidae	Bezzia_Palpomyia	1
		Chironomidae	Brillia	3
		Chironomidae	Chaetocladius	22
		Chironomidae	Cricotopus_Orthocladius	1
		Chironomidae	Eukiefferiella_claripennis	1
		Chironomidae	Pseudodiamesa	2
		Empididae	Neoplasta	2
		Tipulidae	Ormosia	1
	Plecoptera	Capniidae	Capnia	1
		Nemouridae	Zapada	2
		Taeniopterygidae	Taenionema	2
	Trichoptera	Limnephilidae	Psychoglypha	3
		Rhyacophilidae	Rhyacophila_sibirica	4
		Rhyacophilidae	Rhyacophila_vofixa	2

Total Count 47
 Fraction Processed 100%
 Area Sampled 1.15 m²

Mineral Cr		Abv SF Mineral		10/13/2016
Class	Order	Family	Taxon	Count
Insecta	Coleoptera	Hydrophilidae	Hydrophilidae	2
	Plecoptera	Nemouridae	Zapada	20
		Taeniopterygidae	Taenionema	3
	Trichoptera	Limnephilidae	Psychoglypha	1
	Diptera	Ceratopogonidae	Bezzia_Palpomyia	2
		Chironomidae	Brillia	6
		Chironomidae	Chaetocladius	51
		Chironomidae	Cricotopus_Orthocladius	1
		Chironomidae	Tvetenia_bavarica	1
		Tipulidae	Dicranota	1
Tipulidae		Ormosia	1	
Arachnida	Sarcoptiformes	Trhypochthoniidae	Mucronothrus	1

Total Count 90
 Fraction Processed 100%
 Area Sampled 1.15 m²

SF of Mineral Cr		Below CG Below Clear Lake Cr		10/13/2016
Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Lebertiidae	Lebertia	1
Insecta	Diptera	Ceratopogonidae	Bezzia_Palpomyia	4
		Chironomidae	Brillia	2
		Chironomidae	Chaetocladius	5
		Chironomidae	Cricotopus_Orthocladius	3
		Chironomidae	Diamesa	4
		Chironomidae	Eukiefferiella_brehmi	2
		Empididae	Oreogeton	2
	Ephemeroptera	Baetidae	Baetis	4
		Heptageniidae	Rhithrogena	8
	Plecoptera	Capniidae	Capnia	4
		Chloroperlidae	Suwallia	16
		Chloroperlidae	Sweltsa	8
		Leuctridae	Paraleuctra	2
		Nemouridae	Amphinemura	3
		Nemouridae	Zapada	93
		Perlodidae	Isoperla	12
		Perlodidae	Megarcys	3
	Taeniopterygidae	Taenionema	82	
	Trichoptera	Hydropsychidae	Arctopsyche	10
		Limnephilidae	Hesperophylax	5
		Rhyacophilidae	Rhyacophila_hyalinata	1
		Rhyacophilidae	Rhyacophila_sibirica	1
		Rhyacophilidae	Rhyacophila_sibirica_atrata	1
Rhyacophilidae		Rhyacophila_vofixa	1	
Uenoidae		Neothremma	1	
Ostracoda			Ostracoda	6
Turbellaria			Turbellaria	1

Total Count 285
 Fraction Processed 100%
 Area Sampled 1.15 m²

SF of Mineral Cr

Abv Mineral Cr

10/13/2016

Class	Order	Family	Taxon	Count
Insecta	Diptera	Ceratopogonidae	Bezzia_Palpomyia	13
		Chironomidae	Chaetocladius	6
		Chironomidae	Cricotopus_Orthocladius	121
		Chironomidae	Diamesa	10
		Chironomidae	Eukiefferiella_claripennis	8
		Empididae	Chelifera	4
	Ephemeroptera	Baetidae	Baetis	4
		Ephemerellidae	Drunella_doddsii	4
		Heptageniidae	Epeorus	2
	Plecoptera	Capniidae	Capnia	1
		Capniidae	Capnia	1
		Chloroperlidae	Suwallia	1
		Nemouridae	Podmosta	24
		Nemouridae	Zapada	159
		Perlodidae	Isoperla	2
		Perlodidae	Megarcys	1
		Taeniopterygidae	Taenionema	120
	Trichoptera	Rhyacophilidae	Rhyacophila_brunnea	5
		Rhyacophilidae	Rhyacophila_nevadensis	5
Rhyacophilidae		Rhyacophila_sibirica_atrata	4	
Ostracoda			Ostracoda	16

Total Count

511

Fraction Processed

100%

Area Sampled

1.15 m²

Bear Cr	Abv Mineral Cr	10/12/2016
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Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Sperchonidae	Sperchon	17
Insecta	Diptera	Chironomidae	Brillia	3
		Chironomidae	Eukiefferiella_brehmi	2
		Chironomidae	Eukiefferiella_gracei	4
		Chironomidae	Micropsectra	88
		Chironomidae	Tvetenia_bavarica	12
		Empididae	Clinocera	4
		Psychodidae	Pericoma	1
		Simuliidae	Simulium	2
		Tipulidae	Dicranota	3
	Ephemeroptera	Ameletidae	Ameletus	1
		Baetidae	Baetis	1
		Ephemerellidae	Drunella_doddsii	28
		Ephemerellidae	Ephemerellidae	2
		Heptageniidae	Cinygmula	16
		Heptageniidae	Rhithrogena	54
	Plecoptera	Chloroperlidae	Suwallia	16
		Nemouridae	Zapada	95
		Perlodidae	Isoperla	4
		Perlodidae	Megarcys	9
		Taeniopterygidae	Taenionema	94
	Trichoptera	Hydropsychidae	Arctopsyche	1
		Limnephilidae	Limnephilidae	1
		Rhyacophilidae	Rhyacophila_hyalinata	19
		Rhyacophilidae	Rhyacophila_sibirica	14
Rhyacophilidae		Rhyacophila_vofixa	1	
Uenoidae		Neophylax	12	
Oligochaeta			Oligochaeta	2
Ostracoda			Ostracoda	15
Turbellaria			Turbellaria	10

Total Count	531
Fraction Processed	18.75%
Area Sampled	1.15 m ²

Mineral Cr	Abv Animas River	10/12/2016
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Class	Order	Family	Taxon	Count
Insecta	Diptera	Ceratopogonidae	Bezzia_Palpomyia	7
		Chironomidae	Brillia	1
		Chironomidae	Chaetocladius	5
		Chironomidae	Cricotopus_Orthocladius	1
		Chironomidae	Eukiefferiella_claripennis	4
	Ephemeroptera	Heptageniidae	Rhithrogena	1
	Plecoptera	Nemouridae	Zapada	120
		Taeniopterygidae	Taenionema	21
	Trichoptera	Hydropsychidae	Arctopsyche	16
		Limnephilidae	Psychoglypha	1
Rhyacophilidae		Rhyacophila_sibirica	3	

Total Count	180
Fraction Processed	100%
Area Sampled	1.15 m ²

NF Animas River

Abv Burrow Cr

10/7/2016

Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Feltriidae	Feltria	1
		Lebertiidae	Lebertia	2
		Sperchonidae	Sperchon	9
Insecta	Coleoptera	Elmidae	Heterlimnius	8
	Diptera	Chironomidae	Brillia	2
		Chironomidae	Chaetocladius	2
		Chironomidae	Cricotopus_Orthocladius	15
		Chironomidae	Diamesa	9
		Chironomidae	Eukiefferiella_gracei	6
		Chironomidae	Krenosmittia	1
		Chironomidae	Tanytarsus	2
		Empididae	Clinocera	1
		Psychodidae	Pericoma	4
		Tipulidae	Tipula	1
	Ephemeroptera	Ephemerellidae	Drunella_doddsii	4
		Ephemerellidae	Ephemerellidae	1
		Heptageniidae	Cinygmula	46
		Heptageniidae	Rhithrogena	46
	Plecoptera	Chloroperlidae	Suwallia	4
		Chloroperlidae	Sweltsa	8
		Nemouridae	Zapada	193
		Perlodidae	Isoperla	5
		Perlodidae	Megarcys	10
		Taeniopterygidae	Taenionema	85
	Trichoptera	Hydropsychidae	Arctopsyche	18
		Limnephilidae	Ecclisomyia	5
		Rhyacophilidae	Rhyacophila_hyalinata	7
		Rhyacophilidae	Rhyacophila_sibirica	1
		Rhyacophilidae	Rhyacophila_vofixa	15
		Uenoidae	Neophylax	8
Oligochaeta		Oligochaeta	3	
Ostracoda		Ostracoda	1	
Turbellaria		Turbellaria	9	

Total Count

532

Fraction Processed

37.5%

Area Sampled

1.15 m²

Burrow Creek

Abv NF Animas River

10/7/2016

Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Sperchonidae	Sperchon	1
Insecta	Diptera	Chironomidae	Chaetocladius	8
		Chironomidae	Eukiefferiella_brehmi	365
		Chironomidae	Eukiefferiella_claripennis	19
		Chironomidae	Parochlus	2
		Chironomidae	Rheotanytarsus	23
		Chironomidae	Thienemanniella_xena	27
		Empididae	Clinocera	37
	Plecoptera	Capniidae	Capniidae	2
	Trichoptera	Limnephilidae	Hesperophylax	12
		Limnephilidae	Psychoronia	12
Oligochaeta			Oligochaeta	1

Total Count

509

Fraction Processed

43.75%

Area Sampled

1.15 m²

NF Animas River

Abv WF Animas Forks

10/7/2016

Class	Order	Family	Taxon	Count
Insecta	Coleoptera	Elmidae	Heterlimnius	1
	Diptera	Chironomidae	Chaetocladius	1
		Chironomidae	Tanypodinae	1
	Plecoptera	Capniidae	Capnia	1
		Nemouridae	Zapada	5
		Perlodidae	Megarcys	1
	Trichoptera	Rhyacophilidae	Rhyacophila_hyalinata	1
Oligochaeta		Oligochaeta	1	

Total Count 12
 Fraction Processed 100%
 Area Sampled 1.15 m²

WF Animas River		Abv Placer Gulch		10/10/2016
Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Arrenuridae	Arrenurus	1
Insecta	Coleoptera	Dytiscidae	Dytiscidae	1
	Diptera	Chironomidae	Chaetocladius	2
		Chironomidae	Micropsectra	1
		Empididae	Clinocera	2
		Tipulidae	Tipula	1
	Plecoptera	Capniidae	Capnia	11
		Nemouridae	Amphinemura	2
		Nemouridae	Zapada	3
	Trichoptera	Limnephilidae	Ecclisomyia	2
Rhyacophilidae		Rhyacophila_vofixa	2	
Oligochaeta			Oligochaeta	2
Ostracoda			Ostracoda	9
Turbellaria			Turbellaria	1

Total Count 40
 Fraction Processed 100%
 Area Sampled 1.15 m²

Placer Gulch		Abv WF Animas River		10/10/2016
Class	Order	Family	Taxon	Count
Insecta	Plecoptera	Chloroperlidae	Suwallia	1
		Nemouridae	Zapada	34

Total Count 35
 Fraction Processed 100%
 Area Sampled 1.15 m²

WF Animas Rvr		Abv Animas Rvr		10/7/2016
Class	Order	Family	Taxon	Count
Insecta	Diptera	Chironomidae	Chaetocladius	2
		Empididae	Clinocera	2
	Plecoptera	Capniidae	Capnia	3
		Nemouridae	Zapada	4
Turbellaria			Turbellaria	1

Total Count 12
 Fraction Processed 100%
 Area Sampled 1.15 m²

Picayne Gulch		Abv Animas River		10/5/2016
Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Sperchonidae	Sperchon	8
Insecta	Diptera	Chironomidae	Cricotopus_Orthocladius	2
		Chironomidae	Diamesa	1
		Chironomidae	Eukiefferiella_brehmi	7
		Chironomidae	Eukiefferiella_devonica	3
		Chironomidae	Pagastia	1
		Chironomidae	Tanytarsus	5
	Ephemeroptera	Baetidae	Baetis	8
		Ephemerellidae	Drunella_doddsii	1
		Ephemerellidae	Ephemerellidae	27
		Heptageniidae	Cinygmula	24
		Heptageniidae	Rhithrogena	21
	Plecoptera	Chloroperlidae	Suwallia	6
		Chloroperlidae	Sweltsa	2
		Leuctridae	Paraleuctra	7
		Nemouridae	Zapada	77
		Perlodidae	Isoperla	7
		Perlodidae	Megarcys	10
		Taeniopterygidae	Taenionema	307
	Trichoptera	Hydropsychidae	Arctopsyche	3
		Rhyacophilidae	Rhyacophila_hyalinata	12
		Rhyacophilidae	Rhyacophila_sibirica	5
		Rhyacophilidae	Rhyacophila_vofixa	5
		Uenoidae	Neophylax	1
Oligochaeta			Oligochaeta	1
Ostracoda			Ostracoda	5
Turbellaria			Turbellaria	1

Total Count 557
 Fraction Processed 7.815%
 Area Sampled 1.15 m²

Animas River

Above Eureka

10/11/2016

Class	Order	Family	Taxon	Count
Insecta	Diptera	Chironomidae	Cricotopus_Orthocladus	3
	Ephemeroptera	Heptageniidae	Rhithrogena	1
	Plecoptera	Chloroperlidae	Sweltsa	1
		Nemouridae	Zapada	87
		Perlodidae	Megarcys	1
		Taeniopterygidae	Taenionema	46
	Trichoptera	Hydropsychidae	Arctopsyche	110
		Rhyacophilidae	Rhyacophila_hyalinata	6
		Rhyacophilidae	Rhyacophila_nevadensis	5

Total Count 260
 Fraction Processed 100%
 Area Sampled 1.15 m²

SF Animas River		Abv Avalanche		10/8/2016
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Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Feltriidae	Feltria	1
		Hydryphantoidea	Protzia	1
		Lebertiidae	Lebertia	1
		Sperchonidae	Sperchon	9
Insecta	Diptera	Chironomidae	Brillia	1
		Chironomidae	Cricotopus_Orthocladus	3
		Chironomidae	Diamesa	34
		Chironomidae	Eukiefferiella_brehmi	14
		Chironomidae	Parametriocnemus	2
		Chironomidae	Tvetenia_bavarica	2
	Ephemeroptera	Ameletidae	Ameletus	2
		Baetidae	Baetis	2
		Ephemerellidae	Drunella_doddsii	63
		Heptageniidae	Rhithrogena	175
	Plecoptera	Capniidae	Capnia	27
		Chloroperlidae	Suwallia	7
		Chloroperlidae	Sweltsa	3
		Leuctridae	Paraleuctra	2
		Nemouridae	Zapada	93
		Perlodidae	Megarcys	15
		Perlodidae	Perlinodes_aurea	2
		Taeniopterygidae	Taenionema	166
	Trichoptera	Limnephilidae	Ecclisomyia	3
		Rhyacophilidae	Rhyacophila_hyalinata	8
		Rhyacophilidae	Rhyacophila_sibirica	2
		Rhyacophilidae	Rhyacophila_vofixa	2
		Uenoidae	Neophylax	13
Oligochaeta			Oligochaeta	1
Ostracoda			Ostracoda	18
Turbellaria			Turbellaria	1

Total Count 673
 Fraction Processed 12.5%
 Area Sampled 1.15 m²

SF Animas River	Abv Eureka Gulch	10/8/2016
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Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Hydryphantoidea	Protzia	1
		Sperchonidae	Sperchon	2
Insecta	Diptera	Chironomidae	Brillia	6
		Chironomidae	Chaetocladius	3
		Chironomidae	Cricotopus_Orthocladius	9
		Chironomidae	Eukiefferiella_claripennis	34
		Empididae	Chelifera	1
		Tipulidae	Hexatoma	1
		Ephemeroptera	Ameletidae	Ameletus
		Heptageniidae	Rhithrogena	2
	Plecoptera	Chloroperlidae	Suwallia	11
		Nemouridae	Zapada	393
		Taeniopterygidae	Taenionema	3
	Trichoptera	Rhyacophilidae	Rhyacophila_hyalinata	6
		Rhyacophilidae	Rhyacophila_sibirica	19
		Rhyacophilidae	Rhyacophila_vofixa	6
Turbellaria			Turbellaria	2

Total Count	501
Fraction Processed	75%
Area Sampled	1.15 m ²

Eureka Gulch	Abv SF Animas River	10/6/2016
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Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Lebertiidae	Lebertia	6
		Sperchonidae	Sperchon	6
Insecta	Coleoptera	Hydrophilidae	Hydrophilidae	1
	Diptera	Ceratopogonidae	Bezzia_Palpomyia	1
		Chironomidae	Chaetocladius	5
		Chironomidae	Cricotopus_Orthocladius	101
		Chironomidae	Diamesa	19
		Chironomidae	Eukiefferiella_brehmi	1
		Chironomidae	Pagastia	1
		Simuliidae	Prosimulium	3
		Tipulidae	Tipula	3
	Ephemeroptera	Ameletidae	Ameletus	1
		Baetidae	Baetis	1
		Heptageniidae	Rhithrogena	36
	Plecoptera	Chloroperlidae	Suwallia	31
		Chloroperlidae	Sweltsa	13
		Nemouridae	Zapada	112
		Perlodidae	Isoperla	1
		Perlodidae	Megarcys	15
		Taeniopterygidae	Taenionema	67
	Trichoptera	Hydropsychidae	Arctopsyche	4
		Limnephilidae	Ecclisomyia	2
		Rhyacophilidae	Rhyacophila_sibirica	44
		Rhyacophilidae	Rhyacophila_vofixa	36
	Oligochaeta			Oligochaeta
Ostracoda			Ostracoda	2
Turbellaria			Turbellaria	34

Total Count	547
Fraction Processed	88%
Area Sampled	1.15 m ²

SF Animas River		Above Animas River		10/6/2016
Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Lebertiidae	Lebertia	3
		Sperchonidae	Sperchon	2
Insecta	Diptera	Ceratopogonidae	Bezzia_Palpomyia	2
		Chironomidae	Brillia	2
		Chironomidae	Chaetocladius	2
		Chironomidae	Cricotopus_Orthocladius	24
		Chironomidae	Diamesa	2
		Chironomidae	Eukiefferiella_claripennis	3
	Ephemeroptera	Ameletidae	Ameletus	2
		Baetidae	Baetis	4
		Ephemerellidae	Drunella_doddsii	1
		Heptageniidae	Rhithrogena	37
	Plecoptera	Chloroperlidae	Suwallia	10
		Nemouridae	Zapada	229
		Perlodidae	Megarcys	1
		Taeniopterygidae	Taenionema	168
	Trichoptera	Hydropsychidae	Arctopsyche	3
		Rhyacophilidae	Rhyacophila_hyalinata	5
		Rhyacophilidae	Rhyacophila_vofixa	31
Turbellaria			Turbellaria	8

Total Count 539
 Fraction Processed 37.5%
 Area Sampled 1.15 m²

Animas River

Abv Minnie

10/11/2016

Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Feltriidae	Feltria	2
		Lebertiidae	Lebertia	8
		Sperchonidae	Sperchon	12
Insecta	Diptera	Ceratopogonidae	Bezzia_Palpomyia	19
		Chironomidae	Chaetocladius	3
		Chironomidae	Cricotopus_Orthocladius	110
		Chironomidae	Nanocladius_parvulus	2
		Chironomidae	Pagastia	4
		Empididae	Chelifera	1
	Ephemeroptera	Heptageniidae	Rhithrogena	10
	Plecoptera	Chloroperlidae	Suwallia	2
		Chloroperlidae	Sweltsa	1
		Nemouridae	Zapada	145
		Perlodidae	Isoperla	4
		Perlodidae	Megarcys	14
		Taeniopterygidae	Taenionema	78
	Trichoptera	Hydropsychidae	Arctopsyche	79
		Limnephilidae	Limnephilidae	1
		Rhyacophilidae	Rhyacophila_hyalinata	3
Rhyacophilidae		Rhyacophila_nevadensis	3	
Turbellaria			Turbellaria	2

Total Count 503
 Fraction Processed 87.5%
 Area Sampled 1.15 m²

Maggie Gulch	Abv Animas River	10/4/2016
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Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Sperchonidae	Sperchon	6
Insecta	Diptera	Ceratopogonidae	Bezzia_Palpomyia	2
		Chironomidae	Brillia	2
		Chironomidae	Eukiefferiella_gracei	2
		Chironomidae	Micropsectra	5
		Chironomidae	Parametriocnemus	1
		Chironomidae	Tanytarsus	5
		Chironomidae	Tvetenia_bavarica	1
		Empididae	Oreogeton	4
		Psychodidae	Pericoma	81
	Ephemeroptera	Baetidae	Baetis	6
		Ephemerellidae	Drunella_doddsii	42
		Ephemerellidae	Ephemerellidae	7
		Heptageniidae	Rhithrogena	22
	Plecoptera	Chloroperlidae	Suwallia	13
		Chloroperlidae	Sweltsa	2
		Nemouridae	Zapada	49
		Perlodidae	Isoperla	2
		Perlodidae	Megarcys	2
		Taeniopterygidae	Taenionema	380
	Trichoptera	Hydropsychidae	Arctopsyche	2
		Rhyacophilidae	Rhyacophila_hyalinata	22
		Rhyacophilidae	Rhyacophila_sibirica	69
		Rhyacophilidae	Rhyacophila_sibirica_atrata	2
		Uenoidae	Neophylax	7
	Oligochaeta			Oligochaeta
Ostracoda			Ostracoda	3
Turbellaria			Turbellaria	7

Total Count	747
Fraction Processed	6.25%
Area Sampled	1.15 m ²

Animas River		Abv Cunningham		10/4/2016	
Class	Order	Family	Taxon	Count	
Arachnida	Trombidiformes	Lebertiidae	Lebertia	6	
		Sperchonidae	Sperchon	5	
Insecta	Diptera	Ceratopogonidae	Bezzia_Palpomyia	23	
		Chironomidae	Cricotopus_Orthocladius	78	
		Chironomidae	Eukiefferiella	1	
		Chironomidae	Heterotrissocladius_marcidus	1	
		Chironomidae	Hydrobaenus	1	
		Chironomidae	Micropsectra	1	
		Chironomidae	Pagastia	2	
		Simuliidae	Simulium	1	
	Ephemeroptera	Baetidae	Baetis	10	
		Ephemerellidae	Drunella_doddsii	77	
		Ephemerellidae	Ephemerellidae	6	
		Heptageniidae	Epeorus	2	
		Heptageniidae	Rhithrogena	51	
	Plecoptera	Capniidae	Capniidae	6	
		Chloroperlidae	Suwallia	2	
		Chloroperlidae	Sweltsa	3	
		Nemouridae	Zapada	14	
		Perlodidae	Isoperla	2	
		Perlodidae	Megarcys	2	
		Taeniopterygidae	Taenionema	202	
	Trichoptera	Hydropsychidae	Arctopsyche	6	
		Rhyacophilidae	Rhyacophila_hyalinata	1	
		Uenoidae	Neophylax	3	
	Ostracoda			Ostracoda	3

Total Count 509
 Fraction Processed 18.75%
 Area Sampled 1.15 m²

Picayne Gulch

Abv Animas River

10/4/2016

Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Lebertiidae	Lebertia	7
		Sperchonidae	Sperchon	3
Insecta	Diptera	Ceratopogonidae	Bezzia_Palpomyia	1
		Chironomidae	Micropsectra	1
		Empididae	Neoplasta	2
		Psychodidae	Pericoma	18
		Simuliidae	Simulium	10
		Tipulidae	Tipulidae	1
	Ephemeroptera	Baetidae	Baetis	4
		Ephemerellidae	Drunella_doddsii	109
		Ephemerellidae	Ephemerellidae	3
		Heptageniidae	Cinygmula	6
	Plecoptera	Heptageniidae	Rhithrogena	19
		Capniidae	Capnia	1
		Chloroperlidae	Suwallia	3
		Chloroperlidae	Sweltsa	2
		Nemouridae	Zapada	55
		Perlodidae	Isoperla	12
		Perlodidae	Megarcys	3
	Taeniopterygidae	Taenionema	237	
	Trichoptera	Hydropsychidae	Arctopsyche	12
		Rhyacophilidae	Rhyacophila_brunnea	2
		Rhyacophilidae	Rhyacophila_hyalinata	1
		Rhyacophilidae	Rhyacophila_sibirica	68
		Rhyacophilidae	Rhyacophila_sibirica_atrata	4
Uenoidae		Neophylax	2	
Uenoidae		Oligophlebodes	2	
Ostracoda			Ostracoda	2
Turbellaria			Turbellaria	12

Total Count

602

Fraction Processed

12.5%

Area Sampled

1.15 m²

Animas River

Abv Arrastra Cr

10/2/2016

Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Lebertiidae	Lebertia	11
		Sperchonidae	Sperchon	5
Insecta	Diptera	Ceratopogonidae	Bezzia_Palpomyia	4
		Chironomidae	Cricotopus_Orthocladus	79
		Chironomidae	Eukiefferiella_gracei	2
		Chironomidae	Micropsectra	1
		Chironomidae	Parametriocnemus	1
		Psychodidae	Pericoma	1
		Simuliidae	Simulium	155
		Ephemeroptera	Baetidae	Baetis
	Ephemerellidae		Drunella_doddsii	52
	Heptageniidae		Rhithrogena	28
	Plecoptera	Capniidae	Capniidae	13
		Chloroperlidae	Suwallia	1
		Chloroperlidae	Sweltsa	1
		Nemouridae	Zapada	50
		Perlodidae	Isoperla	1
		Taeniopterygidae	Taenionema	24
	Trichoptera	Hydropsychidae	Arctopsyche	43
		Rhyacophilidae	Rhyacophila_hyalinata	2
		Rhyacophilidae	Rhyacophila_nevadensis	12
		Rhyacophilidae	Rhyacophila_sibirica_atrata	1
Turbellaria			Turbellaria	4

Total Count 507
 Fraction Processed 25%
 Area Sampled 1.15 m²

Hermosa Cr		Above Ditch		9/30/2016
Class	Order	Family	Taxon	Count
Arachnida	Trombidiformes	Lebertiidae	Lebertia	2
		Sperchonidae	Sperchon	3
		Torrenticolidae	Torrenticola	2
Insecta	Coleoptera	Elmidae	Optioservus	7
		Elmidae	Zaitzevia	31
	Diptera	Chironomidae	Cricotopus_Orthocladius	2
		Chironomidae	Eukiefferiella_gracei	11
		Chironomidae	Pagastia	1
		Chironomidae	Parametriocnemus	2
		Chironomidae	Rheotanytarsus	2
		Chironomidae	Thiennemannimyia	2
		Chironomidae	Virgatanytarsus	1
		Empididae	Chelifera	5
		Psychodidae	Pericoma	2
		Simuliidae	Prosimulium	11
		Tipulidae	Antocha	11
	Ephemeroptera	Ameletidae	Ameletus	2
		Baetidae	Baetis	230
		Ephemerellidae	Drunella_grandis	8
		Heptageniidae	Rhithrogena	2
		Leptophlebiidae	Paraleptophlebia	15
	Plecoptera	Chloroperlidae	Sweltsa	5
		Nemouridae	Zapada	1
		Perlidae	Hesperoperla	7
		Perlodidae	Isoperla	6
		Pteronarcyidae	Pteronarcella	7
		Taeniopterygidae	Taenionema	2
	Trichoptera	Hydropsychidae	Arctopsyche	10
		Hydropsychidae	Hydropsyche	133
		Lepidostomatidae	Lepidostoma	1
Leptoceridae		Oecetis	1	
Rhyacophilidae		Rhyacophila_nevadensis	17	
Oligochaeta			Oligochaeta	15

Total Count 557
 Fraction Processed 31.5%
 Area Sampled 1.15 m²

Appendix E - EPA BPMD data collected in fall 2016

The following tables present data collected by EPA during the fall of 2016 and used in correlation and NMS analysis in this report.

Source of EPA data used in BMI report

Site		EPA Location ID	Sediment		Pore Water		Surface Water			
ID	EU		Stream Name	Site Name	Date	SampleID	Date	SampleID	Date	SampleID
Mineral Cr										
MaA	EU1	Mineral Cr	Above Animas River	M34	9/27/2016	MH1G69	9/27/2016	A8M5-2112	9/27/2016	A8M5-2109
MaSFM	EU2	Mineral Cr	Above SF Mineral	M27	9/27/2016	MH1G56	9/27/2016	A8M5-2078	9/27/2016	A8M5-2075
MaMFM	EU3	Mineral Cr	Above MF Mineral	M14B	9/28/2016	MH1G19	9/28/2016	A8M5-2008	9/28/2016	A8M5-2005
MaMIL	EU4	Mineral Cr	Above Mill Creek	M10A	9/30/2016	MH1F92	10/7/2016	A8M5-1967	9/30/2016	A8M5-1964
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	M28	9/27/2016	MH1G54	9/27/2016	A8M5-2074	9/27/2016	A8M5-2071
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	M20	9/29/2016	MH1G41	9/29/2016	A8M5-2049	9/29/2016	A8M5-2046
Upper Animas										
AaARR	EU7	Animas River	Above Arrastra Creek	A56	9/27/2016	MH1K28	9/27/2016	A8M5-1553	9/27/2016	A8M5-1550
CUaA	EU8	Cunningham Creek	Above Animas River	A48	9/27/2016	MH1K17	9/27/2016	A8M5-1531	9/27/2016	A8M5-1528
AaCU	EU9	Animas River	Above Cunningham	A45	9/28/2016	MH1K09	9/28/2016	A8M5-1516	9/28/2016	A8M5-1513
AaMINN	EU10	Animas River	Above Minnie Gulch	A40	9/29/2016	MH1J98	9/29/2016	A8M5-1498	9/29/2016	A8M5-1495
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	A36	9/27/2016	MH1J84	9/28/2016	A8M5-1467	9/27/2016	A8M5-1464
SFAaAV	EU11	SF Animas River	Above Avalanche Zone	SW81-SW-00-EPA					10/18/2016	A8M5-2551
EUaSFA	EU12	Eureka Gulch	Above SF Animas	A37	9/27/2016	MH1J86	9/28/2016	A8M5-1471	9/27/2016	A8M5-1468
SFAaA	EU13	SF Animas River	Above Animas River	A34	9/27/2016	MH1J92	9/29/2016	A8M5-1483	9/27/2016	A8M5-1480
AaEU	EU14	Animas River	Above Eureka Gulch	A33	9/27/2016	MH1J90	9/29/2016	A8M5-1479	9/27/2016	A8M5-1476
WFAaA	EU15	WF Animas River	Above Animas River	A10	9/29/2016	MH1J60	9/29/2016	A8M5-1409	9/29/2016	A8M5-1406
PLaWFA	EU16	Placer Gulch	Above WF Animas River	A20	9/30/2017	MH1J42	9/30/2016	A8M5-1349	9/30/2016	A8M5-1346
WFAaPL	EU17	WF Animas River	Above Placer Gulch	A15	9/30/2017	MH1J44	9/30/2016	A8M5-1353	9/30/2016	A8M5-1350
NFAaWFA	EU18	NF Animas River	Above WF Animas River	A09	9/29/2016	MH1J58	9/29/2016	A8M5-1405	9/29/2016	A8M5-1402
BUaNFA	EU19	Burrows Creek	Above NF Animas River	A07	9/30/2017	MH1J28	9/30/2016	A8M5-1295	9/30/2016	A8M5-1292
Reference Sites										
MLaM	-	Mill Creek	Above Mineral Creek	M08	9/30/2017	MH1F88	10/7/2016	A8M5-1960	9/30/2016	A8M5-1957
BEaM	-	Bear Creek	Above Mineral Creek	M30	9/27/2016	MH1G63	9/27/2016	A8M5-2099	9/27/2016	A8M5-2096
MAGaA	-	Maggie Gulch	Above Animas River	A43	9/28/2016	MH1K03	9/28/2016	A8M5-1505	9/28/2016	A8M5-1502
PICaA	-	Picayne Gulch	Above Animas River	A26	9/29/2016	MH1K38	9/29/2016	A8M5-1602	9/29/2016	A8M5-1599
NFAaBU	-	NF Animas River	Above Burrows Creek	A05	9/30/2017	MH1J34	9/30/2016	A8M5-1334	9/30/2016	A8M5-1331
HERaD	-	Hermosa Creek	Above Animas River	HC01	10/4/2016	MH1K98	10/8/2016	A8M5-1606	10/4/2016	A8M5-1603

EPA - Sediment - collected Fall 2016

Site				Al	Sb	As	Ba	Be	Cd	Ca	Ch	Co	Cu
ID	EU	Stream Name	Site Name	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Mineral Cr													
MaA	EU1	Mineral Cr	Above Animas River	33600	1.90	53.10	109.00	4.70	2.80	2830	7.80	28.00	161.00
MaSFM	EU2	Mineral Cr	Above SF Mineral	10600	0.97	62.90	47.10	0.36	1.10	1370	2.00	6.60	68.90
MaMFM	EU3	Mineral Cr	Above MF Mineral	8580	0.88	48.00	45.40	0.33	2.00	1150	2.20	13.50	60.60
MaMIL	EU4	Mineral Cr	Above Mill Creek	6860	0.61	92.70	25.70	0.37	3.30	2040	1.30	6.10	168.00
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	12000	0.31	14.50	57.40	0.61	1.00	4640	3.20	13.90	18.90
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	12600	0.43	16.90	30.30	0.19	0.18	1640	1.60	4.90	12.80
Upper Animas													
AaARR	EU7	Animas River	Above Arrastra Creek	8750	1.20	6.00	45.70	0.66	2.80	2650	2.60	5.80	79.60
CUaA	EU8	Cunningham Creek	Above Animas River	10300	1.20	6.40	59.60	0.61	1.40	3300	2.70	6.80	37.50
AaCU	EU9	Animas River	Above Cunningham	9890	2.10	20.40	83.20	0.89	7.30	2680	2.80	8.70	250.00
AaMINN	EU10	Animas River	Above Minnie Gulch	9330	21.40	30.60	131.00	0.73	8.00	1940	3.70	3.90	372.00
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	11200	1.10	19.30	67.60	0.53	1.40	2590	4.90	10.20	80.60
EUaSFA	EU12	Eureka Gulch	Above SF Animas	18700	1.30	13.60	83.90	0.67	8.90	4260	3.90	10.50	194.00
SFAaA	EU13	SF Animas River	Above Animas River	12300	1.70	16.60	75.90	0.67	6.20	2660	6.50	15.80	193.00
AaEU	EU14	Animas River	Above Eureka Gulch	10000	6.30	51.90	58.80	2.20	7.40	2710	3.80	10.60	228.00
WFAaA	EU15	WF Animas River	Above Animas River	8170	1.10	18.30	31.70	0.62	1.20	1910	2.70	5.70	57.20
PLaWFA	EU16	Placer Gulch	Above WF Animas River	13200	13.10	66.40	167.00	3.50	23.90	800	3.50	35.40	595.00
WFAaPL	EU17	WF Animas River	Above Placer Gulch	17400	1.20	17.50	14.10	2.40	0.50	1440	3.70	6.20	110.00
NFAaWFA	EU18	NF Animas River	Above WF Animas River	11800	1.20	31.80	22.40	1.10	7.20	1680	1.80	19.90	87.90
BUaWFA	EU19	Burrows Creek	Above NF Animas River	18000	1.90	54.40	33.00	2.10	7.60	1180	2.00	26.80	171.00
Reference Sites													
MILaM	-	Mill Creek	Above Mineral Creek	7370	0.49	10.00	62.10	0.57	2.30	2880	0.87	9.90	15.70
BEaM	-	Bear Creek	Above Mineral Creek	9150	0.26	10.40	68.00	0.61	0.69	4250	3.80	11.50	21.20
MAGaA	-	Maggie Gulch	Above Animas River	9420	1.40	8.10	84.10	0.76	0.69	3940	3.20	10.50	21.70
PICaA	-	Picayne Gulch	Above Animas River	13200	2.70	48.80	117.00	1.30	1.60	3740	5.10	13.40	36.80
NFAaBU	-	NF Animas River	Above Burrows Creek	13100	1.30	74.60	85.40	1.10	9.10	3810	2.40	8.20	44.30
HERaD	-	Hermosa Creek	Above Animas River	17300	1.60	1.10	107.00	0.73	0.82	36900	23.00	7.00	11.50

EPA - Sediment - collected Fall 2016													
Site				Fe	Pb	Mg	Mn	Hg	Mo	Ni	Se	Ag	Tl
ID	EU	Stream Name	Site Name	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Mineral Cr													
MaA	EU1	Mineral Cr	Above Animas River	62000	365	2900	845	0.086	4.20	9.80	9.40	1.30	0.47
MaSFM	EU2	Mineral Cr	Above SF Mineral	62700	283	4050	818	0.058	3.90	2.30	1.90	0.68	0.68
MaMFM	EU3	Mineral Cr	Above MF Mineral	32600	173	3890	1190	0.026	2.50	3.30	1.40	0.80	0.63
MaMIL	EU4	Mineral Cr	Above Mill Creek	34100	761	2410	1020	0.025	2.30	2.20	0.70	0.57	0.15
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	28000	106	5670	1380	0.085	2.70	11.60	1.90	0.67	0.67
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	87300	67.2	5100	678	0.0084	4.90	1.10	1.50	0.65	0.65
Upper Animas													
AaARR	EU7	Animas River	Above Arrastra Creek	19600	512	4790	2770	0.12	2.00	3.30	0.90	0.59	0.59
CUaA	EU8	Cunningham Creek	Above Animas River	21900	386	5340	896	0.12	1.30	3.10	1.20	0.61	0.61
AaCU	EU9	Animas River	Above Cunningham	24700	1370	5160	8990	0.062	5.00	4.80	1.50	2.80	0.61
AaMINN	EU10	Animas River	Above Minnie Gulch	21800	2150	4640	14700	0.049	14.60	1.50	1.60	38.10	0.54
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	40600	146	5990	1360	0.0081	10.60	6.20	2.60	1.40	0.70
EUaSFA	EU12	Eureka Gulch	Above SF Animas	40200	452	12700	8710	0.035	2.10	7.80	1.50	1.50	0.63
SFAaA	EU13	SF Animas River	Above Animas River	38400	752	6810	5120	0.55	4.40	9.80	2.00	1.90	0.62
AaEU	EU14	Animas River	Above Eureka Gulch	22900	710	5140	9250	0.02	9.80	7.00	1.60	2.50	0.63
WFAaA	EU15	WF Animas River	Above Animas River	18700	455	4530	1660	0.11	5.20	2.40	0.84	1.30	0.57
PLaWFA	EU16	Placer Gulch	Above WF Animas River	29600	5500	3010	31100	0.73	9.40	8.80	4.60	8.50	2.10
WFAaPL	EU17	WF Animas River	Above Placer Gulch	28300	112	6330	2970	0.02	2.50	2.90	1.80	0.16	0.62
NFAaWFA	EU18	NF Animas River	Above WF Animas River	18200	400	4530	3910	0.12	7.70	3.30	1.40	0.68	1.00
BUaNFA	EU19	Burrows Creek	Above NF Animas River	25400	385	2700	7500	0.0051	12.70	5.50	1.40	1.10	1.10
Reference Sites													
MILaM	-	Mill Creek	Above Mineral Creek	16200	329	3930	1720	0.11	2.30	2.70	1.20	0.57	0.05
BEaM	-	Bear Creek	Above Mineral Creek	20500	41.8	5490	1270	0.0055	2.70	7.20	1.50	0.67	0.67
MAGaA	-	Maggie Gulch	Above Animas River	30500	34.8	4600	1290	0.037	2.70	5.70	1.90	0.70	0.69
PICaA	-	Picayne Gulch	Above Animas River	33200	134	6740	4850	0.13	5.40	8.60	1.70	0.80	0.67
NFAaBU	-	NF Animas River	Above Burrows Creek	24900	290	4560	2920	0.046	6.50	4.90	1.70	1.80	0.71
HERaD	-	Hermosa Creek	Above Animas River	22000	11.7	10200	323	0.16	3.30	15.00	2.40	0.82	0.82

EPA - Sediment - collected Fall 2016					
Site				Va	Zn
ID	EU	Stream Name	Site Name	<i>mg/kg</i>	<i>mg/kg</i>
Mineral Cr					
MaA	EU1	Mineral Cr	Above Animas River	45.30	1250
MaSFM	EU2	Mineral Cr	Above SF Mineral	17.10	1440
MaMFM	EU3	Mineral Cr	Above MF Mineral	15.30	296
MaMIL	EU4	Mineral Cr	Above Mill Creek	7.30	5900
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	11.40	386
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	23.50	121
Upper Animas					
AaARR	EU7	Animas River	Above Arrastra Creek	8.50	858
CUaA	EU8	Cunningham Creek	Above Animas River	16.10	338
AaCU	EU9	Animas River	Above Cunningham	14.90	1640
AaMINN	EU10	Animas River	Above Minnie Gulch	10.10	2520
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	20.40	307
EUaSFA	EU12	Eureka Gulch	Above SF Animas	20.40	2540
SFAaA	EU13	SF Animas River	Above Animas River	23.30	1710
AaEU	EU14	Animas River	Above Eureka Gulch	17.30	1870
WFAaA	EU15	WF Animas River	Above Animas River	14.20	359
PLaWFA	EU16	Placer Gulch	Above WF Animas River	14.60	4120
WFAaPL	EU17	WF Animas River	Above Placer Gulch	25.80	399
NFAaWFA	EU18	NF Animas River	Above WF Animas River	9.90	2600
BUaNFA	EU19	Burrows Creek	Above NF Animas River	7.60	730
Reference Sites					
MILaM	-	Mill Creek	Above Mineral Creek	7.20	431
BEaM	-	Bear Creek	Above Mineral Creek	17.20	251
MAGaA	-	Maggie Gulch	Above Animas River	19.80	124
PICaA	-	Picayne Gulch	Above Animas River	26.00	419
NFAaBU	-	NF Animas River	Above Burrows Creek	11.10	1180
HERaD	-	Hermosa Creek	Above Animas River	29.90	65.9

EPA - Pore Water - collected Fall 2016

Site				Al		Sb		As		Be		Cd		Ca	
ID	EU	Stream Name	Site Name	D	T	D	T	D	T	D	T	D	T	D	T
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Mineral Cr															
MaA	EU1	Mineral Cr	Above Animas River	23.7	1460	0.5	2.5	0.5	3.91	2.0	2.0	0.1	0.5	40100	43900
MaSFM	EU2	Mineral Cr	Above SF Mineral	13200	15100	0.5	2.5	0.5	6.06	2.0	2.0	0.716	0.795	61300	67600
MaMFM	EU3	Mineral Cr	Above MF Mineral	47.1	10600	0.5	2.5	0.5	32.1	2.0	2.0	0.812	1.98	45500	47300
MaMIL	EU4	Mineral Cr	Above Mill Creek	20	47.6	0.5	2.5	0.5	2.5	2.0	2.0	1.65	1.54	35500	37400
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	7080	7950	0.5	2.5	0.5	2.5	2.0	2.0	1.35	1.16	88000	94700
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	7470	11700	2.5	2.5	2.5	2.5	2.0	2.0	1.2	1.09	105000	113000
Upper Animas															
AaARR	EU7	Animas River	Above Arrastra Creek	22.1	965	0.5	2.5	0.5	2.5	2.0	2.0	1.28	2.02	48800	50500
CUaA	EU8	Cunningham Creek	Above Animas River	20	3850	0.5	2.5	0.5	3.69	2.0	2.0	0.101	0.943	35500	39200
AaCU	EU9	Animas River	Above Cunningham	20	2260	0.5	2.5	0.5	4.84	2.0	2.0	0.607	3.13	45400	47500
AaMINN	EU10	Animas River	Above Minnie Gulch	50.1	467	0.5	2.5	0.5	2.5	2.0	2.0	2.1	2.15	47100	49400
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	24.6	585	0.5	2.5	0.5	2.5	2.0	2.0	0.1	0.5	61000	63400
EUaSFA	EU12	Eureka Gulch	Above SF Animas	24.8	223	0.5	2.5	0.5	2.5	2.0	2.0	0.429	0.553	41700	43700
SFAaA	EU13	SF Animas River	Above Animas River	27.9	169	0.5	2.5	0.5	2.5	2.0	2.0	0.527	0.5	56000	60100
AaEU	EU14	Animas River	Above Eureka Gulch	66.5	1310	0.5	2.5	0.5	2.5	2.0	2.0	3.64	3.75	43200	45900
WFAaA	EU15	WF Animas River	Above Animas River	274	4830	0.5	2.5	0.5	10	2.0	2.01	2.28	3.12	11800	11800
PLaWFA	EU16	Placer Gulch	Above WF Animas River	165	1320	0.5	2.5	0.5	2.5	2.0	2.0	2.54	3.49	30200	32300
WFAaPL	EU17	WF Animas River	Above Placer Gulch	8780	11900	0.5	2.5	0.5	3.44	14.1	16.3	10.8	11.3	46000	48600
NFAaWFA	EU18	NF Animas River	Above WF Animas River	1340	3190	0.5	2.5	0.5	2.5	2.0	2.0	7.35	7.39	26700	27700
BUaWFA	EU19	Burrows Creek	Above NF Animas River	11700	14200	0.5	2.5	0.5	2.5	3.45	3.7	16.9	18.8	21300	22300
Reference Sites															
MILaM	-	Mill Creek	Above Mineral Creek	20	211	0.5	2.5	0.5	2.5	2.0	2.0	0.162	0.5	22400	23300
BEaM	-	Bear Creek	Above Mineral Creek	37.8	641	0.5	2.5	0.5	2.5	2.0	2.0	0.1	0.5	25300	27700
MAGaA	-	Maggie Gulch	Above Animas River	20	235	0.5	2.5	0.5	2.5	2.0	2.0	0.1	0.5	34700	36700
PICaA	-	Picayne Gulch	Above Animas River	40.3	282	0.5	2.5	0.606	2.65	2.0	2.0	0.1	0.5	63400	68000
NFAaBU	-	NF Animas River	Above Burrows Creek	20	1570	0.5	2.5	0.5	6.21	2.0	2.0	0.664	1.91	32200	34200
HERaD	-	Hermosa Creek	Above Animas River	24.6	34.2	0.5	2.5	0.5	2.5	2.0	2.0	0.1	0.5	89400	94400

EPA - Pore Water - collected Fall 2016

Site		Cl-	Ch		Cu		F-	Hardness		Fe		Pb		
ID	EU		Stream Name	Site Name	T	D	T	D	T	D	T	D	T	
					mg/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L	ug/L
Mineral Cr														
MaA	EU1	Mineral Cr	Above Animas River	0.7	1.0	5.0	0.739	24.5	0.1	116	100	3950	0.1	66.3
MaSFM	EU2	Mineral Cr	Above SF Mineral	1.7	1.0	5.0	15.7	29.5	1.4	187	63400	72000	85.6	114
MaMFM	EU3	Mineral Cr	Above MF Mineral	1	1.0	5.0	3.99	155	0.2	126	100	16000	0.978	369
MaMIL	EU4	Mineral Cr	Above Mill Creek	2	1.0	5.0	9.99	11.6	0.1	100	100	100	2.24	7.61
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	0.8	1.0	5.0	5.42	7.18	0.3	248	24100	27700	6.19	9.67
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	1.6	5.0	5.0	5.52	7.57	1.1	304	12600	35700	1.62	14.4
Upper Animas														
AaARR	EU7	Animas River	Above Arrastra Creek	4	1.0	5.0	1.39	16.2	0.6	135	100	1300	0.1	44.9
CUaA	EU8	Cunningham Creek	Above Animas River	0.6	1.1	5.0	1.4	22.4	0.2	98	100	4960	0.315	176
AaCU	EU9	Animas River	Above Cunningham	0.5	1.0	5.0	1.42	63.7	0.6	127	100	4120	0.1	254
AaMINN	EU10	Animas River	Above Minnie Gulch	0.4	1.0	5.0	4.04	10.7	0.8	133	100	130	0.205	5.38
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	0.4	1.0	5.0	1.3	5.94	0.4	167	100	1630	0.1	13.9
EUaSFA	EU12	Eureka Gulch	Above SF Animas	0.4	1.0	5.0	5.42	10.6	0.2	115	100	307	0.1	6.52
SFAaA	EU13	SF Animas River	Above Animas River	0.4	1.0	5.0	3.63	6.52	0.5	154	100	187	0.1	1.48
AaEU	EU14	Animas River	Above Eureka Gulch	0.4	1.0	5.0	6.06	25.7	1.2	125	100	100	0.299	3.04
WFAaA	EU15	WF Animas River	Above Animas River	0.5	1.0	5.0	8.11	74.6	0.6	34	100	5670	7.46	422
PLaWFA	EU16	Placer Gulch	Above WF Animas River	0.4	1.0	5.0	8.72	37.4	0.4	88	100	675	3.56	132
WFAaPL	EU17	WF Animas River	Above Placer Gulch	0.4	1.0	5.0	30.2	43.7	8.4	151	100	1790	0.413	20.1
NFAaWFA	EU18	NF Animas River	Above WF Animas River	0.4	1.0	5.0	16.8	19	0.4	84	100	100	14	15
BUaNFA	EU19	Burrows Creek	Above NF Animas River	0.4	1.0	5.0	52.1	67.8	1.3	68	109	1480	5.52	21.5
Reference Sites														
MILaM	-	Mill Creek	Above Mineral Creek	0.4	1.0	5.0	0.718	2.5	0.1	65	100	100	0.1	2.51
BEaM	-	Bear Creek	Above Mineral Creek	0.4	1.0	5.0	0.5	2.65	0.2	72	100	593	0.1	1.43
MAGaA	-	Maggie Gulch	Above Animas River	0.4	1.0	5.0	0.984	2.5	0.2	100	100	299	0.1	0.951
PICaA	-	Picayne Gulch	Above Animas River	0.7	1.42	5.0	0.836	3.19	0.2	181	100	505	0.1	2.73
NFAaBU	-	NF Animas River	Above Burrows Creek	0.4	1.0	5.0	0.933	6.09	0.1	100	100	1780	0.1	21.2
HERaD	-	Hermosa Creek	Above Animas River	0.8	2.94	5.0	0.5	2.5	0.2	275	292	282	0.1	0.5

EPA - Pore Water - collected Fall 2016														
Site				Mg		Mn		Ni		Nitrate/ Nitrite	Se		SiO2	
ID	EU	Stream Name	Site Name	D	T	D	T	D	T	T	D	T	D	T
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L
Mineral Cr														
MaA	EU1	Mineral Cr	Above Animas River	3790	4070	7.21	846	0.5	2.5	0.1	1.0	5.0	8430	10500
MaSFM	EU2	Mineral Cr	Above SF Mineral	8300	8930	1960	2060	13.3	16.5	0.4	1.0	5.0	66200	68800
MaMFM	EU3	Mineral Cr	Above MF Mineral	2940	4030	51.3	1010	0.5	3.33	0.1	1.0	5.0	8880	24100
MaMIL	EU4	Mineral Cr	Above Mill Creek	2840	2960	12.5	18.2	0.5	2.5	0.1	1.0	5.0	5400	5530
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	6770	7170	1820	1900	8.59	9.74	0.2	1.0	5.0	59600	60000
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	10400	11000	1030	1270	2.95	3.99	0.4	5.0	5.0	20500	24600
Upper Animas														
AaARR	EU7	Animas River	Above Arrastra Creek	3220	3570	4.16	382	0.5	2.5	0.1	1.0	5.0	8140	10800
CUaA	EU8	Cunningham Creek	Above Animas River	2190	3460	2.0	387	0.5	2.5	0.1	1.0	5.0	5020	16800
AaCU	EU9	Animas River	Above Cunningham	3190	3990	2.0	1210	0.5	2.5	0.1	1.0	5.0	6370	12800
AaMINN	EU10	Animas River	Above Minnie Gulch	3710	3860	1640	1320	0.5	2.5	0.1	1.0	5.0	5610	5890
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	3690	3950	3.62	109	0.5	2.5	0.1	1.0	5.0	6250	7510
EUaSFA	EU12	Eureka Gulch	Above SF Animas	2720	2870	8.45	112	0.5	2.5	0.1	1.0	5.0	5010	5460
SFAaA	EU13	SF Animas River	Above Animas River	3400	3500	49.5	73.4	0.5	2.5	0.1	1.0	5.0	6200	6340
AaEU	EU14	Animas River	Above Eureka Gulch	4220	4310	3180	3270	1.35	2.5	0.2	1.0	5.0	5060	5350
WFAaA	EU15	WF Animas River	Above Animas River	1200	2000	863	1630	0.658	2.5	0.5	1.0	5.0	6500	16400
PLaWFA	EU16	Placer Gulch	Above WF Animas River	3080	3250	856	1300	2.34	3.05	0.1	1.0	5.0	6350	7290
WFAaPL	EU17	WF Animas River	Above Placer Gulch	8830	9330	23000	24200	12	14.4	0.1	1.0	5.0	10300	14400
NFAaWFA	EU18	NF Animas River	Above WF Animas River	4200	4290	1320	1340	3.07	3.35	0.1	1.0	5.0	4690	4840
BUaNFA	EU19	Burrows Creek	Above NF Animas River	3560	3730	4720	5070	9.95	14.2	0.1	1.0	5.0	8930	11800
Reference Sites														
MILaM	-	Mill Creek	Above Mineral Creek	2220	2390	44.8	67	0.5	2.5	0.1	1.0	5.0	3530	3680
BEaM	-	Bear Creek	Above Mineral Creek	2260	2560	3.53	125	0.5	2.5	0.1	1.0	5.0	6910	8630
MAGaA	-	Maggie Gulch	Above Animas River	3170	3410	2	21.7	0.5	2.5	0.1	1.0	5.0	4690	5380
PICaA	-	Picayne Gulch	Above Animas River	5500	5750	50	290	0.5	2.5	0.1	1.0	5.0	4710	5330
NFAaBU	-	NF Animas River	Above Burrows Creek	4680	5120	2.73	240	0.5	2.5	0.2	1.0	5.0	2500	7190
HERaD	-	Hermosa Creek	Above Animas River	12600	13500	195	205	0.5	2.5	0.2	1.0	5.0	7460	7690

EPA - Pore Water - collected Fall 2016													
Site				Ag		Sr		SO4	Tl		Alkalinity	Zn	
ID	EU	Stream Name	Site Name	D	T	D	T	T	D	T	T	D	T
				ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	mgCaCO3/L	ug/L	ug/L
Mineral Cr													
MaA	EU1	Mineral Cr	Above Animas River	0.5	2.5	361	407	124	1.0	5.0	8.54	23.6	64.3
MaSFM	EU2	Mineral Cr	Above SF Mineral	0.5	2.5	751	836	409	1.0	5.0	5.0	285	315
MaMFM	EU3	Mineral Cr	Above MF Mineral	0.5	2.5	648	664	134	1.0	5.0	6.35	317	664
MaMIL	EU4	Mineral Cr	Above Mill Creek	0.5	2.5	696	721	99.1	1.0	7.76	15.2	589	586
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	0.5	2.5	533	587	184	2.02	10.4	5.0	153	157
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	2.5	2.5	936	990	402	5.0	8.82	5.0	140	144
Upper Animas													
AaARR	EU7	Animas River	Above Arrastra Creek	0.5	2.5	481	514	107	1.0	5.0	32.1	597	716
CUaA	EU8	Cunningham Creek	Above Animas River	0.5	2.5	361	407	52.1	1.0	5.0	49.8	13.2	163
AaCU	EU9	Animas River	Above Cunningham	0.5	2.5	425	459	106	1.0	5.0	26.2	234	623
AaMINN	EU10	Animas River	Above Minnie Gulch	0.5	2.5	391	409	124	1.0	5.0	19.5	589	607
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	0.5	2.5	586	597	156	1.0	5.0	19.7	25.1	72.3
EUaSFA	EU12	Eureka Gulch	Above SF Animas	0.5	2.5	548	562	91.9	1.0	11.9	29.7	200	247
SFAaA	EU13	SF Animas River	Above Animas River	0.5	2.5	598	612	138	1.0	5.0	25.2	150	170
AaEU	EU14	Animas River	Above Eureka Gulch	0.5	2.5	266	270	119	1.0	5.0	18.1	968	1060
WFAaA	EU15	WF Animas River	Above Animas River	0.5	2.5	70.3	72	34.2	1.0	5.0	14.9	779	1010
PLaWFA	EU16	Placer Gulch	Above WF Animas River	0.5	2.5	199	209	92.3	1.0	5.0	5.0	1120	1330
WFAaPL	EU17	WF Animas River	Above Placer Gulch	0.5	2.5	247	255	236	1.0	5.0	5.0	3380	3460
NFAaWFA	EU18	NF Animas River	Above WF Animas River	0.5	2.5	74.3	75.1	96.4	1.0	5.0	5.0	1180	1190
BUaNFA	EU19	Burrows Creek	Above NF Animas River	0.5	2.5	57.7	59.3	145	1.0	5.0	5.0	2940	3000
Reference Sites													
MILaM	-	Mill Creek	Above Mineral Creek	0.5	2.5	484	505	55.9	1.0	5.0	14.3	34.5	38.8
BEaM	-	Bear Creek	Above Mineral Creek	0.5	2.5	115	131	38.9	1.0	5.0	39.2	10.0	27.9
MAGaA	-	Maggie Gulch	Above Animas River	0.5	2.5	408	439	49.3	1.0	5.0	54.8	10.0	10.0
PICaA	-	Picayne Gulch	Above Animas River	0.5	2.5	704	749	132	1.0	8.32	62	10.0	21.6
NFAaBU	-	NF Animas River	Above Burrows Creek	0.5	2.5	93.4	97.3	87.9	1.0	8.08	15.3	120	271
HERaD	-	Hermosa Creek	Above Animas River	0.5	2.5	1490	1610	148	1.0	8.24	148	10.0	10.0

EPA - Surface Water - collected Fall 2016

Site				Al		Sb		As		Be		Cd		Ca	
ID	EU	Stream Name	Site Name	D	T	D	T	D	T	D	T	D	T	D	T
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Mineral Cr															
MaA	EU1	Mineral Cr	Above Animas River	38	1630	0.5	2.5	0.5	2.5	2.0	2.0	0.46	0.5	41600	44700
MaSFM	EU2	Mineral Cr	Above SF Mineral	1980	3880	0.5	2.5	0.5	2.5	2.0	2.0	1.01	0.823	63000	66400
MaMFM	EU3	Mineral Cr	Above MF Mineral	47	1020	0.5	2.5	0.5	2.5	2.0	2.0	0.891	0.85	44200	45400
MaMIL	EU4	Mineral Cr	Above Mill Creek	67	172	0.5	2.5	0.5	2.5	2.0	2.0	1.41	1.41	27600	28800
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	97	598	0.5	2.5	0.5	2.5	2.0	2.0	0.139	0.5	31700	33500
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	7330	10600	2.5	2.5	2.5	2.5	2.0	2.0	1.04	0.955	103000	112000
Upper Animas															
AaARR	EU7	Animas River	Above Arrastra Creek	46.6	114	0.5	2.5	0.5	2.5	2.0	2.0	0.61	0.635	42700	44200
CUaA	EU8	Cunningham Creek	Above Animas River	20	31.1	0.5	2.5	0.5	2.5	2.0	2.0	0.16	0.5	35600	37100
AaCU	EU9	Animas River	Above Cunningham	33.5	213	0.5	2.5	0.5	2.5	2.0	2.0	0.85	0.901	44900	46800
AaMINN	EU10	Animas River	Above Minnie Gulch	43.5	694	0.5	2.5	0.5	2.5	2.0	2.0	1.93	2.29	46800	49600
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	71.8	427	0.5	2.5	0.5	2.5	2.0	2.0	0.228	0.5	58600	61700
SFAaAV	EU11	SF Animas River	Above Avalanche Zone	20	28	0.5	2.5	0.5	2.5	2.0	2.0	0.1	0.5	49400	50200
EUaSFA	EU12	Eureka Gulch	Above SF Animas	51.3	83.6	0.5	2.5	0.5	2.5	2.0	2.0	0.582	0.615	42000	43700
SFAaA	EU13	SF Animas River	Above Animas River	69.7	179	0.5	2.5	0.5	2.5	2.0	2.0	0.671	0.74	55900	59500
AaEU	EU14	Animas River	Above Eureka Gulch	71.6	1240	0.5	2.5	0.5	2.5	2.0	2.0	3.55	3.71	42200	43000
WFAaA	EU15	WF Animas River	Above Animas River	3790	5480	0.5	2.5	0.5	2.5	7.01	8.57	7.48	7.69	41100	43200
PLaWFA	EU16	Placer Gulch	Above WF Animas River	156	966	0.5	2.5	0.5	2.5	2.0	2.0	2.72	2.95	30700	32900
WFAaPL	EU17	WF Animas River	Above Placer Gulch	9170	11000	0.5	2.5	0.5	2.5	15.3	17.3	10.4	11.5	46600	48600
NFAaWFA	EU18	NF Animas River	Above WF Animas River	1560	2900	0.5	2.5	0.5	2.5	2.0	2.0	7.12	7.3	26700	28100
BUaWFA	EU19	Burrows Creek	Above NF Animas River	11500	11900	0.5	2.5	0.5	2.5	3.4	3.51	17.7	18.6	21200	22300
Reference Sites															
MILaM	-	Mill Creek	Above Mineral Creek	53.9	265	0.5	2.5	0.5	2.5	2.0	2.0	0.218	0.5	19100	19800
BEaM	-	Bear Creek	Above Mineral Creek	36.6	68.3	0.5	2.5	0.5	2.5	2.0	2.0	0.1	0.5	25600	27300
MAGaA	-	Maggie Gulch	Above Animas River	38.8	73.5	0.5	2.5	0.5	2.5	2.0	2.0	0.1	0.5	34500	36100
PICaA	-	Picayne Gulch	Above Animas River	52	81.9	0.5	2.5	0.579	2.5	2.0	2.0	0.1	0.5	64100	67400
NFAaBU	-	NF Animas River	Above Burrows Creek	20	76.7	0.5	2.5	0.5	2.5	2.0	2.0	0.762	0.989	31900	34000
HERaD	-	Hermosa Creek	Above Animas River	32.9	31	0.5	2.5	0.5	2.5	2.0	2.0	0.1	0.5	83700	88600

EPA - Surface Water - collected Fall 2016														
Site				Cl-	Ch		Cu		F-	Hardness	Fe		Pb	
ID	EU	Stream Name	Site Name	T	D	T	D	T	T	D	D	T	D	T
				mg/L	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L
Mineral Cr														
MaA	EU1	Mineral Cr	Above Animas River	0.6	1.0	5.0	1.51	6.34	0.3	119	1340	2040	0.1	2.17
MaSFM	EU2	Mineral Cr	Above SF Mineral	0.9	1.0	5.0	12.5	15.3	0.5	179	3630	4700	5.17	7.18
MaMFM	EU3	Mineral Cr	Above MF Mineral	1.1	1.0	5.0	7.03	18.1	0.2	122	126	581	0.414	10.1
MaMIL	EU4	Mineral Cr	Above Mill Creek	1.6	1.0	5.0	11	20.7	0.1	81	100	201	10.9	34.3
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	0.4	1.0	5.0	0.534	2.5	0.2	91	294	448	0.1	0.5
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	1.6	5.0	5.0	4.63	5.25	1.1	300	13900	17200	0.5	0.713
Upper Animas														
AaARR	EU7	Animas River	Above Arrastra Creek	0.6	1.0	5.0	2.05	4.67	0.5	119	100	100	0.17	1.45
CUaA	EU8	Cunningham Creek	Above Animas River	0.5	1.09	5.0	1.34	2.5	0.2	98	100	100	0.462	0.989
AaCU	EU9	Animas River	Above Cunningham	0.4	1.0	5.0	2.17	4.8	0.5	126	100	100	0.103	1.39
AaMINN	EU10	Animas River	Above Minnie Gulch	0.4	1.0	5.0	3.18	14.9	0.8	132	100	100	0.609	2.71
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	0.4	1.0	5.0	2.71	9.53	0.4	161	135	449	0.1	0.5
SFAaAV	EU11	SF Animas River	Above Avalanche Zone	0.4	1.0	5.0	0.893	2.5	0.3	135	100	100	0.1	0.5
EUaSFA	EU12	Eureka Gulch	Above SF Animas	0.4	1.0	5.0	5.14	7.13	0.3	116	100	100	0.268	1.06
SFAaA	EU13	SF Animas River	Above Animas River	0.4	1.0	5.0	4.83	8.58	0.4	154	100	134	0.1	0.5
AaEU	EU14	Animas River	Above Eureka Gulch	0.4	1.0	5.0	5.9	31.4	1.1	122	100	100	0.301	2.95
WFAaA	EU15	WF Animas River	Above Animas River	0.4	1.0	5.0	25.1	30.9	4.2	127	136	204	4.31	5.66
PLaWFA	EU16	Placer Gulch	Above WF Animas River	0.4	1.0	5.0	9.55	14.1	0.5	90	141	185	5.14	7.81
WFAaPL	EU17	WF Animas River	Above Placer Gulch	0.5	1.0	5.0	23.7	30.3	8	153	122	172	0.414	0.894
NFAaWFA	EU18	NF Animas River	Above WF Animas River	0.4	1.0	5.0	17	23.4	0.4	84	100	100	10.7	12.5
BUaNFA	EU19	Burrows Creek	Above NF Animas River	0.4	1.0	5.0	54.2	54.9	1.3	68	100	114	5.56	5.9
Reference Sites														
MILaM	-	Mill Creek	Above Mineral Creek	0.4	1.0	5.0	0.978	2.5	0.1	56	100	100	0.247	0.777
BEaM	-	Bear Creek	Above Mineral Creek	0.4	1.0	5.0	0.54	2.5	0.2	73	100	100	0.1	0.5
MAGaA	-	Maggie Gulch	Above Animas River	0.4	1.18	5.0	0.893	2.5	0.2	99	100	100	0.1	0.5
PICaA	-	Picayne Gulch	Above Animas River	0.6	1.98	5.0	0.783	2.5	0.2	183	100	100	0.1	0.5
NFAaBU	-	NF Animas River	Above Burrows Creek	0.4	1.0	5.0	0.927	2.5	0.1	99	100	100	0.1	1.1
HERaD	-	Hermosa Creek	Above Animas River	0.8	2.58	5.0	0.661	2.5	0.2	257	100	100	0.1	0.5

EPA - Surface Water - collected Fall 2016

Site				Mg		Mn		Ni		Nitrate/ Nitrite	Se		SiO2	
ID	EU	Stream Name	Site Name	D	T	D	T	D	T	T	D	T	D	T
				ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	ug/L	ug/L
Mineral Cr														
MaA	EU1	Mineral Cr	Above Animas River	3720	3900	228	235	0.842	2.5	0.1	1.0	5.0	9390	10100
MaSFM	EU2	Mineral Cr	Above SF Mineral	5180	5430	480	488	1.05	2.5	0.2	1.0	5.0	13500	14000
MaMFM	EU3	Mineral Cr	Above MF Mineral	2770	2860	209	211	0.5	2.5	0.1	1.0	5.0	8060	8360
MaMIL	EU4	Mineral Cr	Above Mill Creek	3020	3110	243	246	0.641	2.5	0.1	1.0	5.0	4340	4350
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	2920	3000	81.2	84.2	0.5	2.5	0.1	1.0	5.0	7170	7430
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	10400	10900	949	990	2.5	3.27	0.4	5.0	5.0	20400	21400
Upper Animas														
AaARR	EU7	Animas River	Above Arrastra Creek	2940	3100	383	391	0.5	2.5	0.1	1.0	5.0	6240	6310
CUaA	EU8	Cunningham Creek	Above Animas River	2260	2340	2.85	3.72	0.5	2.5	0.1	1.0	5.0	4950	5030
AaCU	EU9	Animas River	Above Cunningham	3320	3420	481	510	0.5	2.5	0.1	1.0	5.0	6310	6370
AaMINN	EU10	Animas River	Above Minnie Gulch	3750	3860	1160	1680	0.5	2.5	0.1	1.0	5.0	5590	5810
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	3670	3800	135	140	0.5	2.5	0.1	1.0	5.0	6250	6400
SFAaAV	EU11	SF Animas River	Above Avalanche Zone	2700	2740	2.15	3.25	0.5	2.5	0.1	1.0	5.0	5210	4930
EUaSFA	EU12	Eureka Gulch	Above SF Animas	2700	2820	100	103	0.5	2.5	0.1	1.0	5.0	5230	5210
SFAaA	EU13	SF Animas River	Above Animas River	3380	3420	132	137	0.5	2.5	0.1	1.0	5.0	6280	6330
AaEU	EU14	Animas River	Above Eureka Gulch	4080	4040	2890	2970	0.972	2.5	0.2	1.0	5.0	5010	5290
WFAaA	EU15	WF Animas River	Above Animas River	5980	6130	12700	13000	6.68	7.42	0.1	1.0	5.0	8530	8620
PLaWFA	EU16	Placer Gulch	Above WF Animas River	3190	3260	991	1030	2.42	2.53	0.1	1.0	5.0	6400	6560
WFAaPL	EU17	WF Animas River	Above Placer Gulch	8920	9160	23800	24100	11.6	13.4	0.1	1.0	5.0	10600	10700
NFAaWFA	EU18	NF Animas River	Above WF Animas River	4140	4300	1330	1340	3.14	3.26	0.1	1.0	5.0	4740	4810
BUaNFA	EU19	Burrows Creek	Above NF Animas River	3560	3660	4670	4810	11.8	10.6	0.1	1.0	5.0	8870	8960
Reference Sites														
MILaM	-	Mill Creek	Above Mineral Creek	2040	2120	85.3	87.1	0.5	2.5	0.1	1.0	5.0	3470	3490
BEaM	-	Bear Creek	Above Mineral Creek	2280	2400	6.31	9.64	0.5	2.5	0.1	1.0	5.0	6880	6910
MAGaA	-	Maggie Gulch	Above Animas River	3250	3330	2.09	4.3	0.5	2.5	0.1	1.0	5.0	4720	4770
PICaA	-	Picayne Gulch	Above Animas River	5510	5720	124	151	0.5	2.5	0.1	1.0	5.0	4730	4750
NFAaBU	-	NF Animas River	Above Burrows Creek	4670	4850	2.28	14.7	0.5	2.5	0.2	1.0	5.0	2480	2660
HERaD	-	Hermosa Creek	Above Animas River	11700	12600	2.0	2.0	0.5	2.5	0.2	1.0	5.0	6340	6630

EPA - Surface Water - collected Fall 2016													
Site				Ag		Sr		SO4	Tl		Alkalinity	Zn	
ID	EU	Stream Name	Site Name	D	T	D	T	T	D	T	T	D	T
				ug/L	ug/L	ug/L	ug/L	mg/L	ug/L	ug/L	mgCaCO3/L	ug/L	ug/L
Mineral Cr													
MaA	EU1	Mineral Cr	Above Animas River	0.5	2.5	368	413	122	1.0	5.0	12.7	98	109
MaSFM	EU2	Mineral Cr	Above SF Mineral	0.5	2.5	705	781	214	1.0	5.0	5.0	220	210
MaMFM	EU3	Mineral Cr	Above MF Mineral	0.5	2.5	678	674	132	1.0	5.0	8.56	220	224
MaMIL	EU4	Mineral Cr	Above Mill Creek	0.5	2.5	571	594	77.2	1.0	5.0	14.3	475	466
SFMaM	EU5	SF Mineral Cr	Above Mineral Creek	0.5	2.5	228	255	75	1.0	5.0	25.3	16.9	23.4
MFMaM	EU6	MF Mineral Cr	Above Mineral Creek	2.5	2.5	931	998	397	5	8.16	5.0	129	129
Upper Animas													
AaARR	EU7	Animas River	Above Arrastra Creek	0.5	2.5	439	470	90.5	1.0	5.0	37	204	205
CUaA	EU8	Cunningham Creek	Above Animas River	0.5	2.5	373	399	51.9	1.0	5.0	50.2	26.3	22.6
AaCU	EU9	Animas River	Above Cunningham	0.5	2.5	439	463	103	1.0	5.0	30.3	310	309
AaMINN	EU10	Animas River	Above Minnie Gulch	0.5	2.5	391	408	124	1.0	5.0	20.5	566	609
SFAaEU	EU11	SF Animas River	Above Eureka Gulch	0.5	2.5	545	557	148	1.0	5.0	22	45.6	55.2
SFAaAV	EU11	SF Animas River	Above Avalanche Zone	0.5	2.5	513	511	116	1.0	5.0		36.9	36.3
EUaSFA	EU12	Eureka Gulch	Above SF Animas	0.5	2.5	560	573	93.7	1.0	13.1	29.4	247	241
SFAaA	EU13	SF Animas River	Above Animas River	0.5	2.5	590	607	136	1.0	5.0	25.6	224	238
AaEU	EU14	Animas River	Above Eureka Gulch	0.5	2.5	262	258	114	1.0	5.0	18	929	1050
WFAaA	EU15	WF Animas River	Above Animas River	0.5	2.5	232	237	170	1.0	5.0	5.0	2630	2670
PLaWFA	EU16	Placer Gulch	Above WF Animas River	0.5	2.5	205	211	95.3	1.0	5.0	5.0	1220	1260
WFAaPL	EU17	WF Animas River	Above Placer Gulch	0.5	2.5	244	252	235	1.0	5.0	5.0	3450	3420
NFAaWFA	EU18	NF Animas River	Above WF Animas River	0.5	2.5	73.2	75.4	96.5	1.0	5.0	5.0	1180	1190
BUaNFA	EU19	Burrows Creek	Above NF Animas River	0.5	2.5	57.3	58.9	145	1.0	8.85	5.0	2920	2960
Reference Sites													
MILaM	-	Mill Creek	Above Mineral Creek	0.5	2.5	399	406	43.3	1.0	5.0	17.8	37.1	42.1
BEaM	-	Bear Creek	Above Mineral Creek	0.5	2.5	114	128	38.8	1.0	5.0	40.9	10.0	10.0
MAGaA	-	Maggie Gulch	Above Animas River	0.5	2.5	411	434	49.1	1.0	5.0	55.4	10.0	10.0
PICaA	-	Picayne Gulch	Above Animas River	0.5	2.5	702	745	132	1.0	5.0	61.6	10.0	12.3
NFAaBU	-	NF Animas River	Above Burrows Creek	0.5	2.5	91.9	94	87.7	1.0	5.0	15.2	134	148
HERaD	-	Hermosa Creek	Above Animas River	0.5	2.5	1430	1540	135	1.0	5.0	142	10.0	10.0