Photo Courtesy of Teresa Hanson

Report of Findings- Kuskokwim River Water and Sediment Sampling- 2013

Native Village of Telida
Telida, Alaska

December 2013

The following information is provided in compliance with *Quality Assessment Project Plan for the Telida Native Village Water Quality Assessment* that was prepared in April 2012.

Introduction

The following report of findings has been prepared to provide a summary of water quality, surface water, and sediment sampling along the Kuskokwim River in the area of Telida, Alaska in June and July 2013. The Telida Village Environmental Department staff performed the work for the field season. The main objective of this project is to characterize water quality parameters and metals concentrations in ten different areas of the Kuskokwim River. A summary of the field activities and results are presented below. All fieldwork was done in accordance with the *Quality Assessment Project Plan for the Telida Native Village Water Quality Assessment* that was prepared in April 2012.

The fieldwork for this project took place on June 8 - 11, and July 27 – 30, 2013. The sampling effort included water quality readings, sampling of surface water and sampling of sediment at ten locations along the Kuskokwim River (see Figure 1). Charlene Dubay, Environmental Director for Telida Village and an ADEC Qualified Sampler in accordance with the State of Alaska regulations 18 AAC 78.090, headed the sampling team during the June 8 and July 27 field efforts. During the fieldwork, several members of the local communities were involved with the sampling. As part of the fieldwork they were mentored in the various field sampling methods; note taking; and other associated field activities.

The summary of the water quality readings, surface water sampling, sediment sampling, and comparison to crustal abundance are summarized in the attached tables. Note that the tables do not have the complete analytical data results. The complete analytical reports are in Appendix A and B. All data from sampling events are slated for eventual inclusion in a river wide monitoring database under the direction of the Kuskokwim River Watershed Council. This database will be utilized as part of a long term monitoring program in light of potential future development in the watershed area.

Results

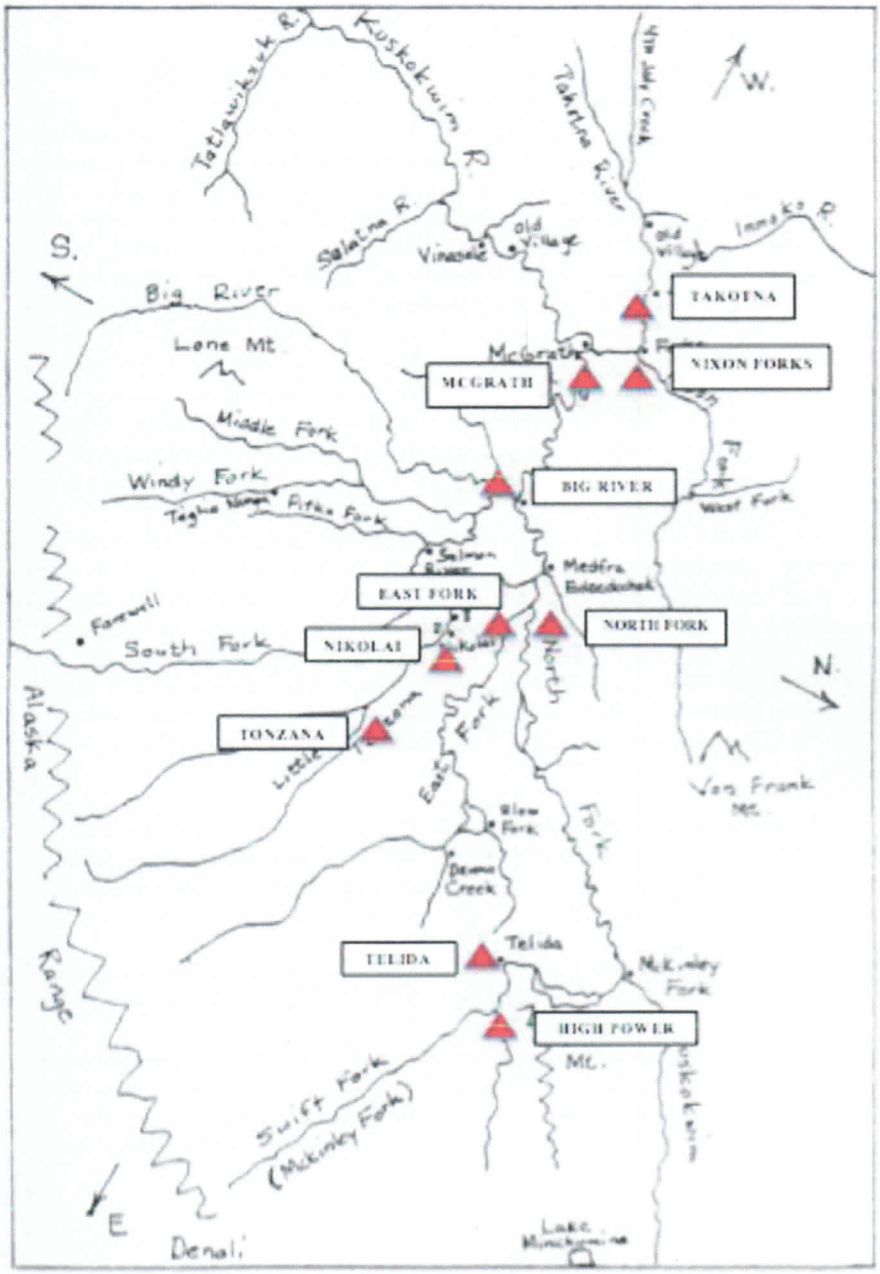
The project results are in the tables that are attached in the report. The 2012-2013 results have been combined in the tables so they can be compared for the two-year sampling period.

Recommendations/Conclusions

By collecting data annually the Telida Village Environmental Department will establish a well-documented baseline of water quality conditions along the Kuskokwim River near Telida. This information may be instrumental in protecting the river from environmental degradation if there is future development in the area.

Several standards were considered when reviewing the 2013 results, but they were compared most directly to the Alaska Department of Conservation groundwater and soil cleanup levels. This comparison showed elevated results for mercury, methyl mercury or arsenic at numerous sampling locations. Ms. Dubay also compared results to global crustal abundance levels for several of the chemicals analyzed. This comparison showed results from Telida had levels greater than the global crustal average for antimony, arsenic, cadmium, mercury, selenium, silver, and zinc.

It is suggested that further work include identifying potential environmental or human sources for the elevated levels of mercury and arsenic. Additionally, as data continues to be gathered it will be beneficial to identify long-term trends, particularly in basic water quality data. Once these trends are identified it will be easier to spot any changes or unusual results in the future.



Telida Native Village Water Quality Assessment Sampling Sites
Map Ray Collins

HighPower Creek						
Water Quality Parameters and Analytic Results (Water) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/23/2012	7/21/2012		6/8/13	7/27/13
Time (military)		14:00	14:44		11.02	11:47
Temperature (°C)		9.49	10.38		9.5	0.51
Conductivity (ms/cm)		208	298		0.27	0.296
Conductivity (us/cm)		na	na		190	223
Dissolved Oxygen (DO %)		na	na		96.9	95.2
Dissolved Oxygen (mg/L)		10.65	10.32		11.05	9.59
pH		6.42	6.04		2.99	7.6
pH (mV)		na	na		213.8	-51.5
ORP		221.1	243.3		457.5	85.6
Flow (ft/sec)		5.50	0.44		0.06	0.69
Turbidity (ntus)		9.4	65.5		26.63	0.53
Nitrite (mg/L)		6.0	5		4	5
Nitrate (mg/L)		1.8	0.0		29.7	6.8
Analytic Results (Water)*	Method			Method		
Methyl mercury (ng/L)	1630	nd	na	1630	0.085	0.11
Mercury (ng/L)	1631E	3.5	na	1631E	7.5	5.1
Mercury (ng/L)	7470A	nd	nd	none	na	na
Calcium (mg/L)	6010B	42	46	200.7	42	49
Iron (mg/L)	6010B	1.1	0.96	200.7	1.5	1.1
Magnesium (mg/L)	6010B	9	10	200.7	8.8	9.9
Sodium (mg/L)	6010B	2.4	2.8	200.7	2.5	2.7
Aluminum (mg/L)	6010B	nd	nd	200.8	0.12	0.1
Arsenic (mg/L)	6010B	nd	nd	200.8	0.0025	0.0021
Arsenic (mg/L)	6020	nd	nd	none	na	na
Barium	6010B	0.1	0.11	200.8	0.12	0.13
Cadmium	6020	nd	nd	none	na	na
Chromium (mg/L)	6010B	nd	nd	200.8	0.00068	0.00056
Copper (mg/L)	6010B	nd	nd	200.8	0.002	0.0018
Manganese (mg/L)	6010B	0.093	0.18	200.8	0.1	0.096
Selenium (mg/L)	6010B	nd	nd	200.8	0.0025	0.0025
Thallium	6010B	nd	nd	none	na	na
Titanium (mg/L)	6010B	nd	nd	200.8	0.0041	0.0035
Zinc (mg/L)	6010B	nd	nd	200.8	0.0071	0.0051

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1: None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska clean up levels for groundwater.

HighPower Creek						
Water Quality Parameters and Analytic Results (Soil) 2012-2013						
		May-13	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/23/2012	7/21/2012		6/8/2013	7/27/2013
Time (military)		14:00	14:44		11.02	11:47
Temperature (°C)		9.49	10.38		9.5	0.5055556
Conductivity (ms/cm)		208	298		0.27	0.296
Conductivity (us/cm)		na	na		190	223
Dissolved Oxygen (DO %)		na	na		96.9	95.2
Dissolved Oxygen (mg/L)		10.65	10.32		11.05	9.59
pH		6.42	6.04		2.99	7.6
pH (mV)		na	na		213.8	-51.5
ORP		221.1	243.3		457.5	85.6
Flow (ft/sec)		5.50	0.44		0.06	0.69
Turbidity (ntus)		9.4	65.5		26.63	0.5270833
Nitrite (mg/L)		6.0	5		4	5
Nitrate (mg/L)		1.8	0.0		29.7	6.8
Analytic Results (Soil)[a]	**Method**			**Method**		
Methyl mercury (ug/Kg)	1630	1.2	0.46	1630	0.28	0.47
Mercury (ug/Kg)	1631E	130	130	1631E	130	130
Mercury (ug/Kg)	7471A	0.17	0.21	none	na	na
Calcium (mg/Kg)	6010B	8100	7100	6010B	9000	8300
Iron (mg/Kg)	6010B	24000	23000	6010B	27000	22000
Magnesium (mg/Kg)	6010B	4900	4800	6010B	5600	4700
Potassium (mg/Kg)	6010B	570	540	6010B	730	700
Vanadium	6010B	31	30		38	n.d.
Aluminum (mg/Kg)	6010B	7700	6900	6020	8800	8200
Antimony (mg/Kg)	6010B	nd	nd	6020	2.1	1.0
Arsenic (mg/Kg)	6010B	10	9.0	none	na	na
Arsenic (mg/Kg)	6020	12	9	6020	16	9.3
Barium (mg/Kg)	6010B	320.00	180	6020	420	400
Beryllium	6010B	nd	0.33	6020	nd	nd
Cadmium (mg/Kg)	6010B	2.3	1.0	none	na	na
Cadmium (mg/Kg)	6020	1.8	2.1	6020	2.7	2.7
Chromium (mg/Kg)	6010B	22.00	20.00	6020	27	24
Cobalt (mg/Kg)	6010B	8.3	8.6	6020	11	9.2
Copper (mg/Kg)	6010B	35	38	6020	46	40
Lead (mg/Kg)	6010B	6.7	7.4	6020	9.2	8.2
Manganese (mg/Kg)	6010B	500	440	6020	440	380
Nickel (mg/Kg)	6010B	30	31	6020	42	35
Selenium (mg/Kg)	6010B	nd	nd	6020	nd	5.6
Silver (mg/Kg)	6010B	nd	nd	6020	nd	0.53
Titanium (mg/Kg)	none	na	na	6020	0.005	360
Vanadium (mg/Kg)	6010B	31	30	6020	43	36
Zinc (mg/Kg)	6010B	130	130	6020	190	170

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes: 1 None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska groundwater cleanup levels and numbers in blue are higher than State of Alaska soil clean up levels.

Telida Village						
Water Quality Parameters and Analytic Results (Water) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/23/2012	7/21/2012		6/8/13	7/27/13
Time (military)		12:42	17:29		15:25	14:29
Temperature (°C)		10.30	12.18		11.99	14.61
Conductivity (ms/cm)		220	247		0.281	0.343
Conductivity (us/cm)		na	na		211	275
Dissolved Oxygen (DO %)		na	na		95.3	98
Dissolved Oxygen (mg/L)		10.76	10.5		10.27	9.95
pH		6.67	6.92		6.5	7.62
pH (mV)		na	na		15	-46.6
ORP		216	240.8		241	63.2
Flow (ft/sec)		1.75	1.8		2.48	2.08
Turbidity (ntus)		15.57	180.5		394.57	563.3
Nitrite (mg/L)		0.0	18.18		31	165 limit
Nitrate (mg/L)		0.0	35		39.5	35 limit
Analytic Results (Water)*	Method			Method		
Methyl mercury (ng/L)	1630	na	na	1630	0.11	0.093
Mercury (ng/L)	1631E	5.8	na	1631E	9.5	100
Mercury (ng/L)	7470A	nd	nd	none	na	na
Calcium (mg/L)	6010B	43	47	200.7	44	58
Iron (mg/L)	6010B	1	5.1	200.7	1.9	23
Magnesium (mg/L)	6010B	9.6	14	200.7	9.4	20
Potassium (mg/L)	6010B	nd	nd	200.7	nd	4.8
Sodium (mg/L)	6010B	2.3	2.9	200.8	2.4	3.3
Vanadium	6010B	nd	nd	200.8	na	nd
Aluminum (mg/L)	6010B	nd	3.3	200.8	0.42	14
Antimony	6010B	nd	nd	200.8	nd	0.00074
Arsenic (mg/L)	6010B	nd	nd	200.8	0.0026	0.011
Arsenic (mg/L)	6020	nd	nd	nu	na	na
Barium (mg/L)	6010B	0.095	0.16	200.8	0.11	0.39
Beryllium (mg/L)	6010B	nd	nd	200.8	nd	0.00062
Cadmium (mg/L)	6010B	nd	nd	200.8	nd	0.0015
Cadmium (mg/L)	6020	nd	nd	none	nd	na
Chromium (mg/L)	6010B	nd	nd	200.8	0.0013	0.029
Cobalt (mg/L)	6010B	nd	nd	200.8	0.00085	0.014
Copper (mg/L)	6010B	nd	nd	200.8	0.0046	0.057
Lead (mg/L)	6010B	nd	nd	200.8	0.0011	0.014
Manganese (mg/L)	6010B	0.057	0.072	200.8	0.10	0.9
Nickel (mg/L)	6010B	nd	nd	200.8	0.0037	0.051
Selenium (mg/L)	6010B	nd	nd	200.8	0.0023	0.0034
Silver	6010B	nd	nd	200.8	nd	nd
Thallium	6010B	nd	nd	200.8	0.022	na
Titanium (mg/L)	6010B	na	na	200.8	0.002	0.7
Vanadium	6010B	nd	0.013	200.8	0.0020	nd
Zinc (mg/L)	6010B	nd	nd	200.8	0.015	0.18

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1: None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska clean up levels for groundwater.

Telida Village						
Water Quality Parameters and Analytic Results (Soil) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/23/2012	7/21/2012		6/8/13	7/27/13
Time (military)		12:42	17:29		15:25	14:29
Temperature (°C)		10.30	12.18		11.99	14.61
Conductivity (ms/cm)		220	247		0.281	0.343
Conductivity (us/cm)		na	na		211	275
Dissolved Oxygen (DO %)		na	na		95.3	98
Dissolved Oxygen (mg/L)		10.76	10.5		10.27	9.95
pH		6.67	6.92		6.5	7.62
pH (mV)		na	na		15	-46.6
ORP		216	240.8		241	63.2
Flow (ft/sec)		1.75	1.8		2.48	2.08
Turbidity (ntus)		15.57	180.5		394.57	563.3
Nitrite (mg/L)		0.0	18.18		31	165 limit
Nitrate (mg/L)		0.0	35		39.5	35 limit
Analytic Results (Soil)[a]	Method			Method		
Methyl mercury (ug/Kg)	1630	0.31	0.17	1630	0.14	0.14
Mercury (ug/Kg)	1631E	46	43	1631E	30	30
Mercury (ug/Kg)	7471A	0.033	0.058	none	na	na
Calcium (mg/Kg)	6010B	5000	5600	6010B	5400	6800
Iron (mg/Kg)	6010B	17000	21000	6010B	17000	20000
Magnesium (mg/Kg)	6010B	4600	4800	6010B	4400	5100
Potassium (mg/Kg)	6010B	760	1400	6010B	800	1200
Sodium (mg/Kg)	6010B	220	250	6010B	200	270
Vanadium	6010B	28	39	6010B	28	nd
Aluminum (mg/Kg)	6010B	8300	8800	6020	8000	9700
Antimony (mg/Kg)	6010B	nd	nd	6020	0.71	0.41
Arsenic (mg/Kg)	6010B	5.1	7.4	none	na	na
Arsenic (mg/Kg)	6020	7.2	10	6020	8.1	11
Barium (mg/Kg)	6010B	320.00	240	6020	170	230
Beryllium (mg/Kg)	6010B	0.38	0.49	6020	0.24	0.31
Cadmium (mg/Kg)	6010B	0.72	nd	none	na	na
Cadmium (mg/Kg)	6020	0.45	0.74	6020	0.48	0.60
Chromium (mg/Kg)	6010B	20	26	6020	21	25
Cobalt (mg/Kg)	6010B	6.6	9.5	6020	7.5	9.2
Copper (mg/Kg)	6010B	23	38	6020	26	35
Lead (mg/Kg)	6010B	4.7	7.0	6020	5.4	7.1
Manganese (mg/Kg)	6010B	310	430	6020	320	450
Nickel (mg/Kg)	6010B	25	35	6020	29	36
Selenium (mg/Kg)	6010B	nd	nd	6020	1.1	1.8
Titanium (mg/Kg)	none	na	na	6020	450	600
Vanadium (mg/Kg)	6010B	28	39	6020	31	37
Zinc (mg/Kg)	6010B	65	90	6020	76	92

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1: None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska clean up levels for groundwater and numbers in blue are higher than State of Alaska soil clean up levels.

Tonzana River						
Water Quality Parameters and Analytic Results (Water) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/24/2012	7/22/2012		6/9/13	7/28/13
Time (military)		8:47	16:00		10:33	11:12
Temperature (°C)		7.11	9.86		9.34	12.46
Conductivity (ms/cm)		215	243		0.297	0.361
Conductivity (us/cm)		na	na		231	275
Dissolved Oxygen (DO %)		na	na		89.7	95.6
Dissolved Oxygen (mg/L)		11.96	11.15		10.3	10.16
pH		6.94	6.75		7.03	7.67
pH (mV)		na	na		-8.4	-58.4
ORP		240	291.9		272.5	87.1
Flow (ft/sec)		2.10	1.52		17:02	3.54
Turbidity (ntus)		7.36	33.75		191.9	416
Nitrite (mg/L)		0.0	138.3		77	144
Nitrate (mg/L)		0.0	35		121.7	35 limit
Analytic Results (Water)*	Method			Method		
Mercury (ng/L)	1631E	1.2	na	1631E	12	29
Mercury (ng/L)	7470A	nd	nd	none	na	na
Calcium (mg/L)	6010B	46	57	200.7	51	65
Iron (mg/L)	6010B	0.040	5.4	200.7	2.5	8.6
Magnesium (mg/L)	6010B	12	17	200.7	15	19
Sodium (mg/L)	6010B	2.2	3.1	200.7	2.5	3.3
Aluminum (mg/L)	6010B	nd	4.3	200.8	1.8	5.8
Antimony (mg/L)	6010B	nd	nd	200.8	nd	0.00062
Arsenic (mg/L)	6010B	nd	nd	200.8	0.0060	0.011
Arsenic (mg/L)	6020	nd	0.011	none	na	na
Barium (mg/L)	6010B	0.087	0.13	200.8	0.099	0.16
Cadmium	6020	nd	nd	none	nd	na
Chromium (mg/L)	6010B	nd	nd	200.8	0.0037	0.010
Cobalt (mg/L)	6010B	nd	nd	200.8	0.0019	0.0046
Copper (mg/L)	6010B	nd	nd	200.8	0.0063	0.016
Lead (mg/L)	6010B	nd	nd	200.8	0.0038	0.0073
Manganese (mg/L)	6010B	0.061	0.24	200.8	0.17	0.31
Nickel (mg/L)	6010B	nd	nd	200.8	0.0044	0.012
Selenium (mg/L)	6010B	nd	nd	200.8	0.0017	0.0019
Thallium	6010B	nd	nd	none	na	na
Titanium (mg/L)	6010B	na	na	200.8	0.061	0.23
Vanadium (mg/L)	6010B	nd	0.011	200.8	0.0044	0.014
Zinc (mg/L)	6010B	nd	nd	200.8	0.019	0.038

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1: None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska clean up levels for groundwater.

Nikolai Village						
Water Quality Parameters and Analytic Results (Water) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/24/2012	7/22/2012		6/9/13	7/27/13
Time Military		morning	pm		12:19	12:29
Temperature (°C)		8.73	11.50		10.76	15.16
Conductivity (ms/cm)		231	353		0.327	0.351
Conductivity (us/cm)		na	na		236	285
Dissolved Oxygen (DO %)		na	na		92	95.1
Dissolved Oxygen (mg/L)		11.50	11.06		10.19	9.53
pH		7.35	6.86		7.72	7.75
pH (mV)		na	na		46.03	-63
ORP		178.1	233.7		249.7	82.7
Flow (ft/sec)		0.90	0.05		1.26	0.07
Turbidity (ntus)		97.0	472.80		363.3	445.3
Nitrite (mg/L)		0.0	157.3		147	165 limit
Nitrate (mg/L)		0.0	35		154.9	35 limit
Analytic Results (Water)[a]	Method			Method		
Methyl mercury (ng/L)	1630	nd	na	1630	0.091	0.072
Mercury (ng/L)	1631E	9.7	na	1631E	12	19
Mercury (ng/L)	7470A	nd	nd	none	na	na
Calcium	6010B	57	68	200.7	56	60
Iron (mg/L)	6010B	2.4	6.7	200.7	5.1	9.7
Magnesium (mg/L)	6010B	22	21	200.7	17	20
Sodium (mg/L)	6010B	3.2	3.4	200.7	2.7	3.5
Aluminum (mg/L)	6010B	1.5	4.9	200.8	4.0	6.9
Antimony (mg/L)	6010B	nd	nd	200.8	nd	0.00063
Arsenic (mg/L)	6010B	nd	nd	200.8	0.011	0.018
Arsenic (mg/L)	6020	0.0059	0.015	none	na	na
Barium (mg/L)	6010B	1.5	0.13	200.8	0.12	0.15
Cadmium	6020	nd	nd	none	na	na
Chromium (mg/L)	6010B	nd	nd	200.8	0.0076	0.013
Cobalt (mg/L)	6010B	nd	nd	200.8	0.0039	0.0050
Copper (mg/L)	6010B	nd	nd	200.8	0.013	0.017
Lead (mg/L)	6010B	nd	nd	200.8	0.0072	0.012
Manganese (mg/L)	6010B	0.130	0.37	200.8	0.30	0.35
Nickel (mg/L)	6010B	nd	nd	200.8	0.0093	0.012
Selenium (mg/L)	6010B	nd	nd	200.8	0.0016	0.0018
Thallium	6010B	nd	nd	none	na	na
Titanium (mg/L)	6010B	na	na	200.8	0.13	0.33
Vanadium (mg/L)	6010B	nd	0.011	200.8	0.010	0.017
Zinc (mg/L)	6010B	nd	0.041	200.8	0.034	0.048

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1: None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska clean up levels for groundwater.

North Fork						
Water Quality Parameters and Analytic Results (Water) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/24/2012	7/23/2012		6/10/2013	7/29/13
Time (military)		pm	13:05		12:41	13:25
Temperature (°C)		12.27	13.76		12.74	19.63
Conductivity (ms/cm)		158	219		0.169	0.287
Conductivity (us/cm)		na	na		130	257
Dissolved Oxygen (DO %)		na	na		84.9	91.1
Dissolved Oxygen (mg/L)		9.89	9.78		9	8.34
pH		7	7.1		4.6	7.47
pH (mV)		na	na		127.3	-41.8
ORP		224.5	213.8		320.1	50.3
Flow (ft/sec)		1.11	0.95		0.67	1.14
Turbidity (ntus)		394.7	39.67		41.13	381.9
Nitrite (mg/L)		8.0	17		26	159.7
Nitrate (mg/L)		4.5	10.8		25.8	35 limit
Analytic Results (Water)[a]	Method			Method		
Mercury (ng/L)	1631E	11	na	1631E	7.2	24
Mercury (ng/L)	7470A	nd	nd	none	na	na
Calcium (mg/L)	6010B	28	39	200.7	24	43
Iron (mg/L)	6010B	2.2	3.2	200.7	3.4	21
Magnesium (mg/L)	6010B	7.8	11	200.7	6.5	16
Potassium (mg/L)	6010B	nd	nd	200.7	nd	4.1
Sodium (mg/L)	6010B	nd	2.4	200.7	nd	3.4
Aluminum (mg/L)	6010B	nd	1.1	200.8	0.99	12
Antimony (mg/L)	6010B	nd	nd	200.8	nd	0.00090
Arsenic (mg/L)	6010B	nd	nd	200.8	0.0031	0.010
Arsenic (mg/L)	6020	nd	nd	none	na	na
Barium (mg/L)	6010B	0.087	0.10	200.8	0.1	0.37
Beryllium (mg/L)	6010B	nd	nd	200.8	nd	0.00047
Cadmium (mg/L)	6010B	nd	nd	200.8	nd	0.00052
Cadmium (mg/L)	6020	nd	nd	nu	na	na
Chromium (mg/L)	6010B	nd	nd	200.8	0.0022	0.027
Cobalt (mg/L)	6010B	nd	nd	200.8	0.0011	0.0076
Copper (mg/L)	6010B	nd	nd	200.8	0.0072	0.032
Lead (mg/L)	6010B	nd	nd	200.8	0.0014	0.0082
Manganese (mg/L)	6010B	0.070	0.073	200.8	0.12	0.47
Nickel (mg/L)	6010B	nd	nd	200.8	0.0060	0.030
Selenium (mg/L)	6010B	nd	nd	200.8	nd	0.0024
Thallium	6010B	nd	nd	none	na	na
Titanium (mg/L)	6010B	na	na	200.8	0.044	0.74
Vanadium (mg/L)	6010B	nd	nd	200.8	0.0044	0.043
Zinc (mg/L)	6010B			200.8	0.014	0.10

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1: None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska clean up levels for groundwater.

North Fork						
Water Quality Parameters and Analytic Results (Soil) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/24/2012	7/23/2012		6/10/2013	7/29/2013
Time (military)		pm	13:05		12:41	13:25
Temperature (°C)		12.27	13.76		12.74	19.63
Conductivity (ms/cm)		158	219		0.169	0.287
Conductivity (us/cm)		na	na		130	257
Dissolved Oxygen (DO %)		na	na		84.9	91.1
Dissolved Oxygen (mg/L)		9.89	9.78		9	8.34
pH		7	7.1		4.6	7.47
pH (mV)		na	na		127.3	-41.8
ORP		224.5	213.8		320.1	50.3
Flow (ft/sec)		1.11	0.95		0.67	1.14
Turbidity (ntus)		394.7	39.67		41.13	381.9
Nitrite (mg/L)		8.0	17		26	159.7
Nitrate (mg/L)		4.5	10.8		25.8	35 limit
Analytic Results (Soil)[a]	Method			Method		
Methyl mercury (ug/Kg)	1630	nd	0.29	1630	0.14	0.15
Mercury (ug/K)	1631E	24	76	1631E	23	39
Mercury (ug/K)	7471A	0.030	0.09	none	na	na
Calcium (mg/Kg)	6010B	3900	5700	6010B	3800	6900
Iron (mg/Kg)	6010B	17000	30000	6010B	17000	25000
Magnesium (mg/Kg)	6010B	4500	7300	6010B	4200	6100
Potassium (mg/Kg)	6010B	620	15000	6010B	560	1600
Sodium (mg/Kg)	6010B	160	240	6010B	140	310
Vanadium	none	na	na	6010B	28	nd
Aluminum (mg/Kg)	6010B	8800	13000	6020	8400	12000
Antimony (mg/Kg)	6010B	nd	nd	6020	0.66	0.51
Arsenic (mg/Kg)	6010B	4.2	10	none	na	na
Arsenic (mg/kg)	6020	6.1	14	6020	5.7	13
Barium (mg/Kg)	6010B	140	240	6020	140	240
Beryllium (mg/Kg)	6010B	0.38	0.68	6020	0.26	0.46
Cadmium (mg/Kg)	6010B	nd	nd	none	na	na
Cadmium (mg/Kg)	6020	0.35	0.92	none	0.34	0.76
Calcium (mg/Kg)	6010B	3900	5700	6020	3800	6900
Chromium (mg/Kg)	6010B	20.00	34	6020	21	31
Cobalt (mg/Kg)	6010B	7.3	13	6020	7.6	12
Copper (mg/Kg)	6010B	19	49	6020	19	44
Iron (mg/Kg)	6010B	17000	30000	6020	17000	25000
Lead (mg/Kg)	6010B	4.6	10	6020	4.7	9.7
Manganese (mg/Kg)	6010B	260	620	6020	250	620
Nickel (mg/Kg)	6010B	23	43	6020	26	41
Potassium (mg/Kg)	6010B	620	15000	6020	560	1600
Selenium (mg/Kg)	6010B	nd	nd	6020	0.82	2.1
Silver (mg/Kg)	6010B	nd	nd	6020	nd	0.25
Sodium (mg/Kg)	6010B	160	240	6020	140	310
Thallium (mg/Kg)	6010B	nd	nd	none	na	na
Titanium (mg/Kg)	none	na	na	6020	470	790
Vanadium (mg/Kg)	6010B	50	30	6020	31	47
Zinc (mg/Kg)	6010B	57	120	6020	63	120

North Fork						
Water Quality Parameters and Analytic Results (Soil) Duplicate 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/24/2012	7/23/2012		6/10/2013	7/29/2013
Time (military)		pm	13:05		12:41	13:25
Temperature (°C)		12.27	13.76		12.74	19.63
Conductivity (ms/cm)		158	219		0.169	0.287
Conductivity (us/cm)		na	na		130	257
Dissolved Oxygen (DO %)		na	na		84.9	91.1
Dissolved Oxygen (mg/L)		9.89	9.78		9	8.34
pH		7	7.1		4.6	7.47
pH (mV)		na	na		127.3	-41.8
ORP		224.5	213.8		320.1	50.3
Flow (ft/sec)		1.11	0.95		0.67	1.14
Turbidity (ntus)		394.7	39.67		41.13	381.9
Nitrite (mg/L)		8.0	17		26	159.7
Nitrate (mg/L)		4.5	10.8		25.8	35 limit
Analytic Results (Soil)	Method			Method		
Methyl mercury (ug/Kg)	1630	nd	0.36	1630	0.22	0.18
Mercury (ug/Kg)	1631E	32	120	1631E	55	34
Mercury (ug/Kg)	7471A	0.031	0.13	none	na	na
Calcium (mg/Kg)	6010B	3900	5800	6010B	4400	7100
Iron (mg/Kg)	6010B	17000	30000	6010B	19000	25000
Magnesium (mg/Kg)	6010B	4600	7000	6010B	4600	6000
Potassium (mg/Kg)	6010B	570	1400	6010B	800	1600
Sodium (mg/Kg)	6010B	160	230	6010B	200	320
Vanadium	none	na	na	6010B	34	nd
Aluminum (mg/Kg)	6010B	8800	12000	6020	9100	13000
Antimony (mg/Kg)	6010B	nd	nd	6020	0.66	0.48
Arsenic (mg/Kg)	6010B	3.7	10	none	na	na
Arsenic (mg/Kg)	6020	5.3	14	6020	7.3	14
Barium (mg/Kg)	6010B	140	240	6020	170	260
Beryllium (mg/Kg)	6010B	0.36	0.67	6020	0.29	0.43
Cadmium (mg/Kg)	6010B	0.63	nd	6020	0.44	0.73
Cadmium (mg/Kg)	6020	0.33	0.93	none	na	na
Chromium (mg/Kg)	6010B	20	33	6020	24	32
Cobalt (mg/Kg)	6010B	7.3	13	6020	8.4	12
Copper (mg/Kg)	6010B	17	48	6020	23	45
Lead (mg/Kg)	6010B	4.4	11	6020	5.7	9.9
Manganese (mg/Kg)	6010B	250	600	6020	300	620
Nickel (mg/Kg)	6010B	23	42	6020	28	42
Selenium (mg/Kg)	6010B	nd	nd	6020	1.0	2.1
Titanium (mg/Kg)	none	na	na	6020	610	860
Vanadium (mg/Kg)	6010B	30	48	6020	36	49
Zinc (mg/Kg)	6010B	55	120	6020	75	120

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1 : None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska groundwater cleanup levels and numbers in blue are higher than State of Alaska soil clean up levels.

North Fork								
MS, MSD, and Duplicate Quality Control Results (Soil) 2013								
		Jun-13	Jun-13	Jun-13		Jul-13	Jul-13	Jul-13
WQ Parameters								
Date		6/10/13	6/10/13	6/10/13		6/10/13	6/10/13	6/10/13
Time (military)		12:41	12:41	12:41		12:41	12:41	12:41
Temperature (°C)		12.74	12.74	12.74		12.74	12.74	12.74
Conductivity (ms/cm)		0.169	0.169	0.169		0.169	0.169	0.169
Conductivity (us/cm)		130	130	130		130	130	130
Dissolved Oxygen (DO %)		84.9	84.9	84.9		84.9	84.9	84.9
Dissolved Oxygen (mg/L)		9	9	9		9	9	9
pH		4.6	4.6	4.6		4.6	4.6	4.6
pH (mV)		127.3	127.3	127.3		127.3	127.3	127.3
ORP		320.1	320.1	320.1		320.1	320.1	320.1
Flow (ft/sec)		0.67	0.67	0.67		0.67	0.67	0.67
Turbidity (ntus)		41.13	41.13	41.13		41.13	41.13	41.13
Nitrite (mg/L)		26	26	26		26	26	26
Nitrate (mg/L)		25.8	25.8	25.8		25.8	25.8	25.8
Analytic Results (Soil)	method	ms	msd	duplicate	method	ms	msd	duplicate
Methyl mercury (ug/Kg)		0.28	0.28	na		na	na	na
Mercury (ug/Kg)		na	na	na		130	130	na
Calcium (mg/Kg)	6010B	9000	9000	9000	6010B	8300	8300	8300
Iron (mg/Kg)	6010B	28000	28000	28000	6010B	22000	22,000	22,200
Magnesium (mg/Kg)	6010B	5600	5600	5600	6010B	4700	4700	4700
Potassium (mg/Kg)	6010B	730	730	730	6010B	700	700	700
Sodium (mg/Kg)	6010B	nd	nd	nd	6010B	nd	nd	nd
Vanadium	6010B	38	38	38	6010B	na	na	
Aluminum (mg/Kg)	6020	8800	8800	8000	6020	8200	8200	8200
Antimony (mg/Kg)	6020	2.1	2.1	2.1	6020	1.0	1.0	1.0
Arsenic (mg/Kg)	6020	16	16	16	6020	9.3	9.3	9.3
Barium (mg/Kg)	6020	420	420	420	6020	400	400	400
Beryllium (mg/Kg)	6020	nd	nd	nd	6020	nd	nd	nd
Cadmium (mg/Kg)	6020	2.7	2.7	2.7	6020	2.7	2.7	2.7
Chromium (mg/Kg)	6020	27	27	27	6020	24	24	24
Cobalt (mg/Kg)	6020	11	11	11	6020	9.2	9.2	9.2
Copper (mg/Kg)	6020	46	46	46	6020	40	40	40
Lead (mg/Kg)	6020	9.2	9.2	9.2	6020	8.2	8.2	8.2
Manganese (mg/Kg)	6020	440	440	440	6020	380	380	380
Nickel (mg/Kg)	6020	42	42	42	6020	35	35	35
Selenium (mg/Kg)	6020	5.7	5.7	5.7	6020	5.6	5.6	5.6
Titanium (mg/Kg)	6020	420	420	420	6020	360	360	360
Vanadium (mg/Kg)	6020	43	43	43	6020	36	36	36
Zinc (mg/Kg)	6020B	190	190	190	6020B	170	170	170

* Taken from TVC Test America Lab Reports: Quality Control Sample Results 2012-2013

Notes 1: In the analytic results column the first number is the ms, the second number is the msd, and the third number is the duplicate.

Notes 2: Numbers in red are higher than State of Alaska groundwater cleanup levels and numbers in blue are higher than State of Alaska soil clean up levels.

East Fork						
Water Quality Parameters and Analytic Results (Water) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/24/12	7/23/12		6/10/13	7/29/13
Time (military)		pm	12:15		13:06	14:25
Temperature (°C)		12.75	13.76		13.55	18.40
Conductivity (ms/cm)		237	299		0.290	0.383
Conductivity (us/cm)		na	na		234	335
Dissolved Oxygen (DO %)		na	na		92.3	97.8
Dissolved Oxygen (mg/L)		10.14	10.7		9.59	9.16
pH		7.11	7.28		7.43	7.64
pH (mV)		na	na		-24.4	-58.8
ORP		185.5	209.4		219.6	60.4
Flow (ft/sec)		0.64	2.00		0.92	1.20
Turbidity (ntus)		11.85	146.20		156.8	371.8
Nitrite (mg/L)		6.0	76		18	160
Nitrate (mg/L)		0.8	29.1		44.8	35 limit
Analytic Results (Water)*						
Mercury (ng/L)	1631E	2.1	na	1631E	5.6	30
Mercury (ng/L)	7470A	nd	nd	none	na	na
Calcium (mg/L)	6010B	43	56	200.7	43	61
Iron (mg/L)	6010B	1.6	9.1	200.7	2.3	13
Magnesium (mg/L)	6010B	?	19	200.7	12	19
Sodium (mg/L)	6010B	2.8	4.3	200.7	3.0	4.1
Aluminum (mg/L)	6010B	nd	5.1	200.8	0.48	7.2
Antimony (mg/L)	6010B	nd	nd	200.8	nd	0.00090
Arsenic (mg/L)	6010B	nd	nd	200.8	0.0027	0.0085
Arsenic (mg/L)	6020	nd	0.0071	none	na	na
Barium (mg/L)	6010B	0.12	0.28	200.8	0.14	0.36
Cadmium (mg/L)	6010B	nd	nd	200.8	nd	0.00045
Cadmium (mg/L)	6020	nd	nd	none	na	na
Chromium (mg/L)	6010B	nd	nd	200.8	0.0012	0.014
Cobalt (mg/L)	6010B	nd	nd	200.8	0.00058	0.0065
Copper (mg/L)	6010B	nd	nd	200.8	0.0037	0.025
Lead (mg/L)	6010B	nd	nd	200.8	0.00061	0.0050
Manganese (mg/L)	6010B	0.067	0.36	200.8	0.10	0.55
Nickel (mg/L)	6010B	nd	nd	200.8	nd	0.021
Selenium (mg/L)	6010B	nd	nd	200.8	0.0011	0.0020
Thallium	6010B	nd	nd	none	na	na
Titanium (mg/L)	6010B	na	na	200.8	0.019	0.25
Vanadium (mg/L)	6010B	na	0.019	200.8	nd	0.025
Zinc (mg/L)	6010B	nd	nd	200.8	0.0060	0.062

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1: None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska clean up levels for groundwater.

Big River						
Water Quality Parameters and Analytic Results (Water) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/24/2012	7/23/2012		6/10/13	7/29/13
Time (military)		16:23	15:59		15:32	16:47
Temperature (°C)		12.7	13.2		12.89	18.7
Conductivity (ms/cm)		235	0.34		0.288	0.35
Conductivity (us/cm)		na	na		222	309
Dissolved Oxygen (DO %)		na	na		96.6	97.5
Dissolved Oxygen (mg/L)		10.3	11		10.16	9.07
pH		6.7	7.2		7	7.59
pH (mV)		na	na		-1.1	-56.4
ORP		194.3	212.5		257.3	66.5
Flow (ft/sec)		1.86	0.95		171	0.3
Turbidity (ntus)		95.52	287.7		241.7	424.6
Nitrite (mg/L)		18	124		103	158
Nitrate (mg/L)		4.4	35		132.5	35 limit
Analytic Results (Water)*						
Mercury (ng/L)	1631E	12	na	1631E	30	23
Mercury (ng/L)	7470A	nd	nd	none	na	na
Calcium (mg/L)	6010B	41	56	200.7	43	58
Iron (mg/L)	6010B	3.5	10	200.7	6.6	11
Magnesium (mg/L)	6010B	13	19	200.7	14	19
Sodium (mg/L)	6010B	2.4	3.7	200.7	2.6	3.6
Aluminum (mg/L)	6010B	1.5	7	200.8	4.3	7.4
Antimony (mg/L)	6010B	nd	nd	200.8	0.00047	0.00075
Arsenic (mg/L)	6010B	nd	nd	200.8	0.0095	0.013
Arsenic (mg/L)	6020	nd	0.016	none	na	na
Barium (mg/L)	6010B	0.10	0.18	200.8	0.15	0.25
Cadmium (mg/L)	6010B	nd	nd	200.8	nd	0.00043
Cadmium (mg/L)	6020	nd	nd	none	na	na
Chromium (mg/L)	6010B	nd	nd	200.8	0.0082	0.014
Cobalt (mg/L)	6010B	nd	nd	200.8	0.0031	0.0057
Copper (mg/L)	6010B	nd	nd	200.8	0.012	0.022
Lead (mg/L)	6010B	nd	nd	200.8	0.0052	0.0095
Manganese (mg/L)	6010B	0.1	0.32	200.8	0.24	0.45
Nickel (mg/L)	6010B	nd	nd	200.8	0.0097	0.017
Potassium	6010B	3.3	3.3	200.8	na	na
Selenium (mg/L)	6010B	nd	nd	200.8	0.0014	0.0020
Thallium	6010B	nd	nd	none	na	na
Titanium (mg/L)	6010B	na	na	200.8	0.16	0.33
Vanadium (mg/L)	6010B	nd	0.016	200.8	0.011	0.022
Zinc (mg/L)	6010B	nd	nd	200.8	0.031	0.062

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1: None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska clean up levels for groundwater.

McGrath Village						
Water Quality Parameters and Analytic Results (Water) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/25/12	7/24/2012		6/11/13	7/30/13
Time (military)		9:38	10.59		1:12	9:55
Temperature (°C)		12.45	13.2		13.23	18.4
Conductivity (ms/cm)		205	267		0.269	0.38
Conductivity (us/cm)		na	na		208	335
Dissolved Oxygen (DO %)		na	na		103.1	97.8
Dissolved Oxygen (mg/L)		10.19	10.23		10.77	9.16
pH		6.67	7.12		6.94	7.5
pH (mV)		na	na		10.97	55.4
ORP		184.4	227		249	67.8
Flow (ft/sec)		0.17	0.05		0.61	0.13
Turbidity (ntus)		25.1	294.8		177.63	372.5
Nitrite (mg/L)		16	84		96	165 limit
Nitrate (mg/L)		4.9	32.1		129.1	35 limit
Analytic Results (Water)*						
Methyl mercury (ng/L)	1630	na	na	1630	0.12	0.091
Mercury (ng/L)	1631E	4.1	na	1631E	14	26
Mercury (ng/L)	7470A	nd	nd	none	na	na
Calcium (mg/L)	6010B	41	58	200.7	49	58
Iron (mg/L)	6010B	2.1	6.9	200.7	8.2	16
Magnesium (mg/L)	6010B	12	18	200.7	16	20
Potassium (mg/L)	6010B	nd	nd	200.7	nd	3.6
Sodium (mg/L)	6010B	2.1	3.1	200.7	2.5	3.5
Aluminum (mg/L)	6010B	nd	4.6	200.8	4.3	11
Antimony (mg/L)	6010B	nd	nd	200.8	0.00051	0.0011
Arsenic (mg/L)	6010B	nd	nd	200.8	0.011	0.019
Arsenic (mg/L)	6020	nd	0.011	none	na	na
Barium (mg/L)	6010B	0.072	0.16	200.8	0.15	0.27
Beryllium (mg/L)	6010B	nd	nd	200.8	nd	0.00043
Cadmium (mg/L)	6010B	nd	nd	200.8	nd	0.00040
Cadmium (mg/L)	6020	nd	nd	none	na	na
Chromium (mg/L)	6010B	nd	nd	200.8	0.0098	0.020
Cobalt (mg/L)	6010B	nd	nd	200.8	0.0038	0.0062
Copper (mg/L)	6010B	nd	nd	200.8	0.014	0.024
Lead (mg/L)	6010B	nd	nd	200.8	0.0058	0.011
Manganese (mg/L)	6010B	0.063	0.25	200.8	0.27	0.45
Nickel (mg/L)	6010B	nd	nd	200.8	0.012	0.022
Selenium (mg/L)	6010B	nd	nd	200.8	0.0014	0.0020
Thallium	6010B	nd	nd	200.8	na	na
Titanium (mg/L)	6010B	nd	nd	200.8	0.16	0.54
Vanadium (mg/L)	6010B	nd	0.014	200.8	0.012	0.028
Zinc (mg/L)	6010B	nd	nd	200.8	0.037	0.075

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1: None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska Cleanup Levels for Groundwater.

McGrath Village								
MS, MSD, and Duplicate Quality Control Results (Water) 2013								
		Jun-13				Jul-13		
WQ Parameters								
Date		6/11/13				7/30/13		
Time (military)		1:12				9:55		
Temperature (°C)		13.23				18.4		
Conductivity (ms/cm)		0.269				0.38		
Conductivity (us/cm)		208				335		
Dissolved Oxygen (DO %)		103.1				97.8		
Dissolved Oxygen (mg/L)		10.77				9.16		
pH		6.94				7.5		
pH (mV)		10.97				55.4		
ORP		249				67.8		
Flow (ft/sec)		0.61				0.13		
Turbidity (ntus)		177.63				372.5		
Nitrite (mg/L)		96				165 limit		
Nitrate (mg/L)		129.1				35 limit		
Analytic Results (Water)	method	ms	msd	duplicate	method	ms	msd	duplicate
Methyl mercury (ng/L)	1630	0.12	0.12	na	1630	na	na	na
Mercury (ng/L)	1631E	17	17	17	1631E	26	26	na
Calcium (mg/L)	200.7	49	49	49	200.7	58	58	58
Iron (mg/L)	200.7	8.2	8.2	8.2	200.7	16	16	16
Magnesium (mg/L)	200.7	16	16	16	200.7	20	20	20
Potassium (mg/L)	200.7	nd	nd	nd	200.7	3.6	3.6	3.6
Sodium (mg/L)	200.7	2.5	2.5	2.5	200.7	3.5	3.5	3.5
Aluminum (mg/L)	200.8	4.3	4.3	4.3	200.8	11	11	11
Antimony (mg/L)	200.8	0.00051	0.00051	0.00051	200.8	0.0011	0.0011	0.0011
Arsenic (mg/L)	200.8	0.011	0.011	0.011	200.8	0.019	0.019	0.019
Barium (mg/L)	200.8	0.15	0.15	0.15	200.8	0.27	0.27	0.27
Beryllium (mg/L)	200.8	nd	nd	nd	200.8	0.00043	0.00043	0.00043
Cadmium	200.8	nd	nd	nd	200.8	0.000400	0.000400	0.000400
Chromium (mg/L)	200.8	0.0098	0.0098	0.0098	200.8	0.020	0.020	0.020
Cobalt (mg/L)	200.8	0.0037	0.0037	0.0037	200.8	0.0062	0.0062	0.0062
Copper (mg/L)	200.8	0.014	0.014	0.014	200.8	0.024	0.024	0.024
Lead (mg/L)	200.8	0.0058	0.0058	0.0058	200.8	0.011	0.011	0.011
Manganese (mg/L)	200.8	0.27	0.27	0.27	200.8	0.45	0.45	0.45
Nickel (mg/L)	200.8	0.012	0.012	0.012	200.8	0.022	0.022	0.022
Selenium (mg/L)	200.8	0.0014	0.0014	0.0014	200.8	0.002	0.0020	0.0020
Titanium (mg/L)	200.8	0.16	0.16	0.16	200.8	0.54	0.54	0.54
Vanadium (mg/L)	200.8	0.012	0.012	0.012	200.8	0.028	0.028	0.028
Zinc (mg/L)	200.8	0.037	0.037	0.037	200.8	0.075	0.075	0.075

* Taken from TVC Test America Lab Reports: Quality Control Sample Results 2012-2013

Note 1: In the analytic results column the first number is the ms, the second number is the msd, and the third number is the duplicate.

Notes 2: Numbers in red are higher than State of Alaska clean up levels for groundwater.

Nixon Forks						
Water Quality Parameters and Analytic Results (Water) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/25/2012	7/24/2012		6/11/13	7/30/13
Time (military)		10:27	12:42		11:50	0:57
Temperature (°C)		7.1	11.8		10.1	15.79
Conductivity (ms/cm)		78	148		0.124	0.175
Conductivity (us/cm)		na	na		89	144
Dissolved Oxygen (DO %)		na	na		94.5	73.2
Dissolved Oxygen (mg/L)		11.4	10.1		10.61	7.25
pH		4.4	5.8		5.91	6.8
pH (mV)		na	na		72	-4.9
ORP		279	216.1		217.2	90.4
Flow (ft/sec)		0.6	0.58		0.82	0.31
Turbidity (ntus)		83.51	11.84		7.3	8.67
Nitrite (mg/L)		223	9.6		12	12
Nitrate (mg/L)		6.7	2.6		17.9	9
Analytic Results (Water)*	Method			Method		
Methyl mercury (ng/L)	1630	nd	na	1630	0.11	0.12
Mercury (ng/L)	1631E	6.7	na	1631E	3.4	0.50
Mercury (ng/L)	7470A	nd	nd	none	na	na
Calcium (mg/L)	6010B	13	19	200.7	16	23
Iron (mg/L)	6010B	2.1	2.6	200.7	3.1	3.5
Magnesium (mg/L)	6010B	5.6	7.3	200.7	5.9	8.3
Aluminum (mg/L)	6010B	nd	nd	200.7	0.20	0.10
Arsenic (mg/L)	6010B	nd	nd	200.8	0.0057	0.0069
Arsenic (mg/L)	6020	nd	0.0060	none	na	na
Barium (mg/L)	6010B	0.043	0.048	200.8	0.053	0.063
Beryllium (mg/L)	6010B	nd	nd	200.8	nd	0.00062
Cadmium (mg/L)	6020	nd	nd	none	na	na
Chromium (mg/L)	6010B	nd	nd	200.8	0.00066	0.00052
Cobalt (mg/L)	6010B	nd	nd	200.8	0.00042	nd
Copper (mg/L)	6010B	nd	nd	200.8	0.0020	0.0011
Lead (mg/L)	6010B	nd	nd	200.8	0.00046	nd
Manganese (mg/L)	6010B	0.068	0.061	200.8	0.084	0.083
Sodium (mg/)	6010B	nd	2.3	200.8	nd	2.7
Thallium	6010B	nd	nd	none	na	na
Titanium (mg/L)	6010B	na	na	200.8	0.0071	0.0047
Vanadium (mg/L)	6010B	nd	nd	200.8	0.0022	nd
Zinc (mg/L)	6010B	nd	nd	200.8	0.0023	nd

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1: None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska clean up levels for groundwater.

Takotna River						
Water Quality Parameters and Analytic Results (Soil) 2012-2013						
		May-12	Jul-12		Jun-13	Jul-13
WQ Parameters						
Date		5/25/2012	7/24/2012		6/11/2013	7/30/2013
Time (military)		11:29	13:52		12:36	12:42
Temperature (°C)		6.82	11.98		11.62	19.33
Conductivity (ms/cm)		39	0.11		0.099	0.129
Conductivity (us/cm)		na	na		74	115
Dissolved Oxygen (DO %)		na	na		99	85.5
Dissolved Oxygen (mg/L)		11.3	10.3		10.74	7.86
pH		4.7	6		6.57	6.89
pH (mV)		na	na		32.5	-9.6
ORP		229.2	211.5		179.7	83
Flow (ft/sec)		0.93	0.4		0.18	0.05
Turbidity (ntus)		83.40	7.75		13.4	3.51
Nitrite (mg/L)		26	4.5		16	8
Nitrate (mg/L)		6.6	2.8		9.2	7.6
Analytic Results (Water)*	Method			Method		
Mercury (ng/L)	1631E	36	na	1631E	9.3	0.69
Mercury (ng/L)	7470A	nd	nd	none	na	na
Calcium (mg/L)	6010B	6.3	13	200.7	11	15
Iron (mg/L)	6010B	3.3	1.8	200.7	2.2	1.8
Magnesium (mg/L)	6010B	3.4	6.4	200.7	5.2	6.2
Sodium (mg/L)	6010B	nd	3	200.7	2.3	2.9
Aluminum (mg/L)	6010B	1.9	nd	200.8	0.17	nd
Arsenic (mg/L)	6010B	nd	nd	200.8	0.0016	0.0014
Arsenic (mg/L)	6020	nd	nd	none	na	na
Barium (mg/L)	6010B	0.068	0.047	200.8	0.05	0.056
Cadmium	6020	nd	nd	none	na	na
Chromium (mg/L)	6010B	nd	nd	200.8	0.00065	nd
Copper (mg/L)	6010B	nd	nd	200.8	0.0017	0.001
Manganese (mg/L)	6010B	0.15	0.053	200.8	0.075	0.082
Thallium	6010B	nd	nd	none	na	na
Titanium (mg/L)	6010B	na	na	200.8	0.005	0.0017
Vanadium	6010B	nd	nd	none	na	na
Zinc (mg/L)	6010B	nd	nd	200.8	0.0043	nd

* Taken from Telida Village Council Test America Lab Reports: Detection Summary/Client Sample Results 2012-13.

Notes 1: None-No analysis done with this method; nd-non detect; na-not analyzed

Notes 2: Numbers in red are higher than State of Alaska clean up levels for groundwater.

Analytic Soil Results Higher than Crustal Abundance Levels

Highpower Creek and Telida Village

High Power Creek		
Analyte/Method	**Analytic Result**	**Crustal Abundance Level**
6010B		
Antimony	2.1	0.5
Arsenic	16	1.8
Cadmium	2.7	0.15
Selenium	5.6	0.05
Silver	0.53	0.075
Zinc	170	70
6020		
Arsenic	12	1.8
Cadmium	2.1	0.15
1631E		
Mercury	130	0.085

Telida Village		
Analyte/Method	**Analytic Result**	**Crustal Abundance Level**
6010B		
Antimony	0.71	0.5
Arsenic	11	1.8
Cadmium	0.72	0.15
Selenium	1.8	0.05
Zinc	92	70
6020		
Arsenic	11	1.8
Cadmium	0.74	0.15

Analytic Soil Results Higher than Crustal Abundance Levels

North Fork and North Fork Duplicate

North Fork		
Analyte/Method	**Analytic Result**	**Crustal Abundance Level**
6010B		
Antimony	0.66	0.5
Arsenic	13	1.8
Cadmium	0.76	0.15
Selenium	2.1	0.05
Zinc	120	70
6020		
Arsenic	12	1.8
Cadmium	0.92	0.15

North Fork Duplicate		
Analyte/Method	**Analytic Result**	**Crustal Abundance Level**
6010B		
Arsenic	14	1.8
Cadmium	0.73	0.15
Selenium	2.1	0.05
Zinc	120	70
6020		
Arsenic	1.4	1.8
Mercury	0.93	0.085
1631E		
Mercury	120	0.085