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POST-EA INFORMATION PACKAGE INCLUDING AN UPDATED PROJECT DESCRIPTION ALL SEASON ROAD TO PRAIRIE CREEK MINE

APPENDIX 1-9

SUBMITTED IN SUPPORT OF:

Water Licences MV/PC2014L8-0006, and
Land Use Permits MV/PC2014F0013

SUBMITTED TO:

Mackenzie Valley Land and Water Board
Yellowknife, NT X1A 2N7

Parks Canada,
Nahanni National Park Reserve
Fort Simpson, NT X0E 0N0

SUBMITTED BY:

Canadian Zinc Corporation
Vancouver, BC, V6B 4N9

February 2019

APPENDIX 1-9: SUMMARY OF MINOR STREAM CROSSINGS

No.	Location KP	Design Alignment STA	Culvert Size	Install Season Summer / Winter	Watershed	Probability of fish presence at crossing	Install Comments
1	2.88	2.875	1000	S or W	Prairie Creek	Low	Replace existing culvert with 1000 CMP
2	4.35	4.29	900	S or W	Prairie Creek	Low	Install
3	5.72	5.71	600	S or W	Prairie Creek	Low	Install
4	6.2	6.2	1400	S or W	Prairie Creek	Moderate	Existing 1400 Extension required
5	6.62	6.6	600	S or W	Prairie Creek	Low	Existing 600 mm CMP adequate
6	9.32	9.315	800	S or W	Funeral Creek	Low	Install
7	9.40	9.37	800	S or W	Funeral Creek	Low	Install
8	9.75	9.72	800	S or W	Funeral Creek	Low	Install
9	9.85	9.81	1000	S or W	Funeral Creek	Low	Install
10	10.2	10.19	800	S or W	Funeral Creek	Low	Existing 800 mm CMP adequate
11	10.70	10.69	1000	S or W	Funeral Creek	Low	Install
12	10.85	10.84	600	S or W	Funeral Creek	Low	Install
13	11.05	10.98	1400	S or W	Funeral Creek	Low	Install sump and ditch block
14	11.15	11.005	500	S or W	Funeral Creek	Low	Install
15	11.70	11.06	1600	S or W	Funeral Creek	Low	Replace existing culvert with 1600 CMP
16	13.30	13.250	1200	S or W	Funeral Creek	Low	As per General Arrangement
17	14.87	14.88	1200	S or W	Funeral Creek	Low	Install
18	15.20	15.25	1000	S or W	Funeral Creek	Low	As per General Arrangement
19	15.60	15.76	1400	S or W	Funeral Creek	Low	As per General Arrangement
20	17.70	17.72	800	S or W	Sundog Creek	Low	Install
21	18.06	18.02	800	S or W	Sundog Creek	Low	Install
22	18.45	18.43	800	S or W	Sundog Creek	Low	Install
23	19.85	19.78	800	S or W	Sundog Creek	Low	Install
24	21.70	21.70	1000	S or W	Sundog Creek	Low	Install

No.	Location KP	Design Alignment STA	Culvert Size	Install Season Summer / Winter	Watershed	Probability of fish presence at crossing	Install Comments
25	26.62	26.6	1400	S or W	Sundog Creek	Low	As per General Arrangement
26	27.20	27.19	1000	S or W	Sundog Creek	Low	Install. Armour each end
27	27.28	27.25	800	S or W	Sundog Creek	Low	Water flow sub-surface. Install 800 mm CMP.
28	29.20	28.92	1000 1200	S or W	Sundog Creek	Low	As per General Arrangement
29	29.68	29.65	2200	S or W	Sundog Creek	Low	As per General Arrangement
30	29.97	29.96	1400	S or W	Sundog Creek	Low	Install
31	30.70	30.66	1000	S or W	Sundog Creek	Low	Install
32	30.88	30.84	1000, 600	S or W	Sundog Creek	Low	As per General Arrangement
33	31.18	31.14	1200	S or W	Sundog Creek	Low	As per General Arrangement
34	31.52	31.53	1200	S or W	Sundog Creek	Low	As per General Arrangement
35	37.23	37.24	1400	S or W	Sundog Creek	High	Overflow backchannel of Sundog. Heavy Skew. Armour inlet/outlet
36	37.25	37.25	1200 x 2	S or W	Sundog Creek	High	Overflow backchannel of Sundog. Mild Skew. Embed and armour inlet/outlet
37	37.3	37.3	800	S or W	Sundog Creek	High	Overflow backchannel of Sundog. Heavy Skew. Embed and armour inlet/outlet
38	37.36	37.35	1400	S or W	Sundog Creek	Present	Overflow backchannel of Sundog. Heavy Skew. Embed and armour inlet/outlet

No.	Location KP	Design Alignment STA	Culvert Size	Install Season Summer / Winter	Watershed	Probability of fish presence at crossing	Install Comments
39	37.42	37.4	1600	S or W	Sundog Creek	Present	Overflow backchannel of Sundog. Heavy Skew. Embed and armour inlet/outlet
40	39.2	39.2	1600 X 2	S or W	Sundog Creek	Low	As per General Arrangement. Overflow backchannel of Sundog. Heavy Skew. Embed and armour inlet/outlet
41	40.15	40.15	1800	W	Sundog Creek	Low	Install. Oversized. Potential Permafrost
42	40.30	40.35	1200	W	Sundog Creek	Low	As per General Arrangement
43	40.65	40.67	1400	W	Sundog Creek	Low	Install. Oversized. Potential Permafrost
44	40.75	40.745	800	W	Sundog Creek	Low	Install. Potential Permafrost
45	43.50	43.520	1400	S or W	Sundog Trib.	Low	Install
46	45.10	45.09	1000	S or W	Poljie Creek	Low	Install
47	45.80	45.77	1200	W	Poljie Creek	Moderate	Embed and armour. Potential Permafrost.
48	46.10	46.06	1000	W	Poljie Creek	Moderate	Embed and armour. Potential Permafrost.
49	46.80	46.72	600	S or W	Poljie Creek	Low	Install
50	49.20	49.14	1600	W	Poljie Creek	Moderate	Embed and armour. Potential Permafrost.
51	50.28	50.21	600	S or W	Poljie Creek	Low	Install
52	50.30	50.34	1600 + 600	S or W	Poljie Creek	Moderate	Embed and armour. Potential Permafrost.
53	53.06	52.93	1400	S or W	Poljie Creek	Low	Embed and armour. .
54	53.15	53.06	2200	S or W	Poljie Creek	Present	As per General Arrangement
55	55.98	55.98	600	S or W	Poljie Creek	Low	Install
56	56.08	56.185	2600	S or W	Poljie Creek	Low	As per General Arrangement
57	60.09	60.07	500	S or W	Poljie Creek	Low	Install

No.	Location KP	Design Alignment STA	Culvert Size	Install Season Summer / Winter	Watershed	Probability of fish presence at crossing	Install Comments
58	60.38	60.33	600	S or W	Poljie Creek	Low	Install
59	61.20	61.23	800	S or W	Poljie Creek	Low	Install
60	63.27	63.3	600	S or W	Poljie Creek	Low	Install
61	85.18	85.03	1400	W	Tetcela River	Low	Potential permafrost. Place 800 as overflow
62	86.69	86.56	2000	S or W	Tetcela River	High	Embed and armour
63	86.9	86.82	2000	S or W	Tetcela River	High	As per General Arrangement
64	87.06	86.95	900	S or W	Tetcela River	High	Embed and armour
65	88.72	88.58	1500	W	Tetcela River	Low	As per General Arrangement
66	90.90	90.79	1800 + 600	W	Fishtrap Creek	Low	Install. Potential Permafrost. 600 overflow
67	91.80	91.76	1000 + 600	W	Fishtrap Creek	Low	Install. Potential Permafrost. 600 overflow
68	92.75	92.72	1000	W	Fishtrap Creek	Low	Install. Potential Permafrost
69	93.40	93.30	1800	W	Fishtrap Creek	Low	As per General Arrangement
70	93.67	93.62	900	W	Fishtrap Creek	Low	Install. Potential Permafrost
71	93.95	93.895	1400	W	Fishtrap Creek	Low	As per General Arrangement
72	96.62	96.54	1400 x 2	W	Fishtrap Creek	Low	As per General Arrangement. Permafrost. 2 main channels

No.	Location KP	Design Alignment STA	Culvert Size	Install Season Summer / Winter	Watershed	Probability of fish presence at crossing	Install Comments
73	98.11	98	1400	W	Fishtrap Creek	Low	Install. Potential Permafrost
74	98.40	98.25	1400	S or W	Fishtrap Creek	Low	Install
75	99.40	99.25	600	S or W	Fishtrap Creek	Low	Install
76	103.35	103.15	600	W	Unnamed	Low	Install. Potential Permafrost
77	103.95	103.76	1000	W	Unnamed	Low	Install. Potential Permafrost
78	105.08	104.95	1800	W	Unnamed	Low	Install. Potential Permafrost
79	105.18	105.08	1000	W	Unnamed	Low	Install. Potential Permafrost
80	106.60	106.51	1800	W	Unnamed	Low	Install. Potential Permafrost. Confirm prior to construction.
81	109.32	109.24	900	W	Unnamed	Low	Install. Potential Permafrost
82	109.65	109.53	1600	W	Unnamed	Moderate	Install. Embed. Oversized. Potential Permafrost
83	112.35	112.255	2000	S or W	Unnamed	Low	As per General Arrangement
84	119.05	119.1	1200	S or W	Grainger	Low	Overflow backchannel of Grainger
85	119.06	119.13	600	S or W	Grainger	Low	Overflow backchannel of Grainger
86	120.80	120.76	800	S or W	Grainger	Low	Overflow backchannel of Grainger
87	122.75	122.79	1200	W	Grainger	Low	Embed and armour. Confirm prior to construction.
88	122.92	122.98	1800	W	Grainger	Moderate	Embed and armour.
89	123.50	123.50	1400	S or W	Grainger	Low	Install
90	125.85	125.9	1200	S or W	Grainger	Low	Install. Stabilize stream banks upstream and downstream
91	126.23	126.38	800	W	Grainger	Low	Install. Potential Permafrost
92	126.80	126.88	1000	W	Grainger	Low	Install. Potential Permafrost

No.	Location KP	Design Alignment STA	Culvert Size	Install Season Summer / Winter	Watershed	Probability of fish presence at crossing	Install Comments
93	127.48	127.56	1400	W	Grainger	Low	Install. Potential Permafrost
94	129.45	129.55	1600	W	Grainger	Low	Install. Potential Permafrost
95	131.22	131.37	1600	S or W	Grainger	Low	Install
96	132.07	132.26	1200	W	Grainger	Low	Install. Potential Permafrost
97	132.60	132.78	800	S or W	Grainger	Low	Install
98	133.20	133.38	800	S or W	Grainger	Low	Install
99	133.80	133.98	800	S or W	Grainger	Low	Install
100	135.40	135.55	600	W	Grainger	Low	Install. Potential Permafrost
101	136.20	136.82	800	W	Grainger	Low	Install. Potential Permafrost
102	137.00	137.15	600	W	Grainger	Low	Install. Potential Permafrost
103	137.50	137.60	600	W	Liard/Grainger	Low	Install. Potential Permafrost
104	138.30	138.45	600	W	Liard/Grainger	Moderate	Install. Potential Permafrost
105	140.52	140.8	1200	S or W	Liard	Moderate	Install
106	142.2	142.9	1000	S or W	Liard	Low	Install
107	142.70	143.14	1200	S or W	Liard	Low	Install
108	144.10	144.78	600	S or W	Liard	Low	Install
109	144.15	144.83	600	S or W	Liard	Low	Install
110	145.5	146.16	800	S or W	Liard	Low	Install. Confirm prior to construction.
111	146.2	146.85	800	S or W	Liard	Low	Install. Confirm prior to construction.
112	148.17	148.89	1000	S or W	Liard	Low	Install
113	148.28	148.95	1000	S or W	Liard	Low	Install
114	149.10	149.75	1200	S or W	Liard	Low	Install
115	149.40	150.11	1200	S or W	Liard	Low	Install
116	150.35	151.04	1000	S or W	Liard	Low	Install
117	150.55	151.22	1000	S or W	Liard	Low	Install
118	153.95	154.68	600	S or W	Liard	Low	Install

No.	Location KP	Design Alignment STA	Culvert Size	Install Season Summer / Winter	Watershed	Probability of fish presence at crossing	Install Comments
119	154.10	154.80	800	S or W	Liard	Low	Install
120	155.20	155.86	1000	W	Liard	Low	Install. Potential Permafrost
Note: Determination of fish presence was provided by Hatfield, it is listed as a reference only.							