Km from Mine		Grade	Alignment	Landslides/	Avalanches	Likelihood		
From				Ground Movements				
Prairie/		مملح		wovements				
1 Tanle/ 0	1 ast C1 3.5	CCK						
3.5	4.2	Flat	Broad	Moderate	Low	Low		
4.2	5.3		curves					
5.3	5.5							
5.5	6.2		Straight					
6.2	7.4				Moderate			
Funeral	Creek			I				
7.4	12.0	Gentle	Broad curves	Moderate	Moderate	Moderate		
12.0	17.2	Steep	Straight	High	High	High		
Sundog	Creek							
17.2	23.3	Gentle	Straight	High	High	Low		
23.3	23.5	Steep	Strangin	Moderate	Moderate	Moderate		
23.5	28.1	Gentle				moderate		
28.1	40.2	Flat		High	High			
Sundog	Creek t	tributario	es					
40.2	53.6	Flat	Straight	High	Low	Low		
53.6	59.9	Gentle	2 thanging	Ingn	2011	Moderate		
59.9	64.5	Flat		Moderate		Low		
Tetcela	& Fisht	trap						
64.5	86.8	Gentle	Straight	Straight Moderate	Moderate Low		Low	Low
86.8	95.8	Flat	Straight	High		LOW		
95.8	102.0	Steep	Curves	Ingn		High		
Wolver	ine Pass	to Grain	iger Gap					
102.0	119.5	Flat	Straight	Moderate	Low	Low		
119.5	124.5	Flat	Straight	Moderate	Low	Low		
Graing	er Gap t	o Liard						
124.5	133.0	Flat	Straight	Moderate	Low	Low		
133.0	159.8	Tat	Straight	High	LOW	LUW		
Liard C	Crossing							
159.8	160.4	Flat	Straight	-	-	Low		
Old Log	00 0			Γ				
160.4	174.5	Flat	Straight	-	-	Low		

TABLE 7-1: LIKELIHOOD OF ACCIDENTS LEADING TO SPILLS

Km from Mine		Proximity	Ground Type	Containment	Consequence	
From	То	to Water				
Prairie/I	Fast Cre	ek				
0	3.5	30-80	Silty sand	Readily contained	Low	
3.5	4.2	1	0 1 1	No containment	High	
4.2	5.3	10-50	Sandy gravel	Can be contained	Moderate	
5.3	5.5	1		No containment	High	
5.5	6.2	20-100	Silty sand	Can be contained	Moderate	
6.2	7.4	10-50	Sandy gravel	No containment	High	
Funeral	Creek					
7.4	12.0	2.0 1-50 Silty sand		II. 1		
12.0	17.2	1-30	Sandy gravel	No containment	High	
Sundog	Creek					
17.2	23.3	1-30		Can be contained		
23.3	23.5	1-50	Sandy gravel		Moderate	
23.5	28.1	20-100		No containment	TT. 1	
28.1	40.2	1-5	Gravel		High	
Sundog	Creek tr	ibutaries				
40.2	53.6	1-1000	Silt/organic	Readily contained	Low	
53.6	59.9	200 1000	Sindorganie	Reading contained	Madamata	
59.9	64.5	300-1000			Moderate	
Tetcela &	& Fishtr	ар				
64.5	86.8	100-1000		Readily contained	Moderate	
86.8	95.8	1-1000	Silt/organic	Can be contained	High	
95.8	102.0	300-2000		Containment toe of slope	Moderate	
Wolveri	ne Pass t	o Grainger (Gap			
102.0	119.5	1000-	Silt/organic	Readily contained	Low	
119.5	124.5	2000	Organic/gravel	Limited containment	High	
Grainge	r Gap to	Liard				
124.5	127.0	1-200	Ciltar and	Can be contained	Moderate	
127.0	159.8	200-2000	Silty sand	Readily contained	Low	
Liard C	ossing	•				
159.8	160.4	0	Ice/Water	No containment	High	
Old Log	ging Roa	ad				
160.4	174.5	200-1000	Silt	Can be contained	Low	

TABLE 7-2: CONSEQUENCE OF ACCIDENTS LEADING TO SPILLS

Km from Mine		Likelihood	Consequence	Risk		
From	То					
Prairie/F	'ast Cree	k				
0	3.5	×	Low	Very Low		
3.5	4.2	Low	High	Moderate		
4.2	5.3		Moderate	Low		
5.3	5.5		High	Moderate		
5.5	6.2		Moderate	Low		
6.2	7.4		High	Moderate		
Funeral	Creek					
7.4	12.0	Moderate	Uiah	High		
12.0	17.2	High	High	Very High		
Sundog (Creek					
17.2	23.3	Low	Moderate	Low		
23.3	23.5		Moderate	Moderate		
23.5	28.1	Moderate	II 1.	Llich		
28.1	40.2		High	High		
Sundog (C reek tri	ibutaries				
40.2	53.6	Low	Low	Very Low		
53.6	59.9	Moderate	Moderate	Moderate		
59.9	64.5	Low	Moderate	Low		
Tetcela &	k Fishtra	ар				
64.5	86.8	Low	Moderate	Low		
86.8	95.8	LOW	High	Moderate		
95.8	102.0	High	Moderate	High		
Wolverin	ne Pass to	o Grainger G	ар			
102.0	119.5	Low	Low	Very Low		
119.5	124.5	LUW	High	Moderate		
Grainger	· Gap to	Liard				
124.5	127.0	Low	Moderate	Low		
127.0	159.8	LUW	Low	Very Low		
Liard Cr	0					
159.8	160.4	Low	High	Moderate		
Old Logg						
160.4	174.5	Low	Low	Very Low		

TABLE 7-3: RISK OF ACCIDENTS LEADING TO SPILLS

Km	from	Proximity	Containment	Risk	Substance	Severity	Duration	Access	Injury	
From	То	to Water	Containent	H ubh	Bubblunce	Sevenity	Durution	Treebs	Potential	
_	e/Fast (I				
					Diesel/oil	High	Moderate		Moderate	
3.5	4.2	1-100	Some areas no	Moderate	Sulphuric	Low	Short	Easy		
5.3	5.5		containment		Concentrate	Low	Long			
6.2	7.4				AN/Sulphide	High	Short			
Funera	al Cree	k	•		L *					
					Diesel/oil	High	Moderate			
7.4	12.0	1-50	No	High	Sulphuric	Moderate	Short	Easy	Low	
			containment		Concentrate	Low	Long			
					AN/Sulphide	High	Short	1		
					Diesel/oil	High	Moderate			
12.0	17.2	1-30	No	Very High	Sulphuric	Moderate	Short	Difficult	High	
		containment		Concentrate	Low	Long				
					AN/Sulphide	High	Short	1		
Sundo	g Cree	k								
					Diesel/oil	Moderate	Moderate			
23.3	40.2	1-100	1-100	100 Some areas no	Moderate-	Sulphuric	Low	Short	Easy-	Low-High
			containment	High	Concentrate	Low	Long	Moderate		
				-	AN/Sulphide	Moderate	Short			
Sundo	g Cree	k tributari	es		<u> </u>			•		
					Diesel/oil	Moderate	Long			
53.6	53.6 59.9	300-1000	Readily contained	Moderate	Sulphuric	Low	Short	Easy- Moderate	Low- Moderate	
					Concentrate	Low	Long			
					AN/Sulphide	Moderate	Short	1		
Tetcela	a & Fis	shtrap	•		• • • •					
					Diesel/oil	High	Moderate			
86.8	95.8	1-1000	Can be	Moderate	Sulphuric	Low	Short	Moderate	Low	
			contained		Concentrate	Low	Long	1		
					AN/Sulphide	High	Short			
					Diesel/oil	Moderate	Moderate			
95.8	102.0	300-2000	Containment	High	Sulphuric	Low	Short	Moderate	High	
			toe of slope		Concentrate	Low	Long			
					AN/Sulphide	Low	Short			
Wolve	rine Pa	ass to Grair	nger Gap							
			_		Diesel/oil	High	Moderate			
119.5	124.5	1000-2000	Limited	Moderate	Sulphuric	Low	Short	Easy	Low	
			containment		Concentrate	Low	Long	-		
					AN/Sulphide		Short			
Liard	Crossi	ng								
1.80.5	1.60	6			Diesel/oil	High	Moderate	Easy I	· ····	
159.8	160.4	0	No		Sulphuric	Low	Short		Low-High	
			containment		Concentrate	Low	Long			
					AN/Sulphide	Moderate	Short			

TABLE 7-4: ASSESSMENT OF SPILL SEVERITY AND DURATION

TABLE 7-5: EFFECTS MATRIX, ACCIDENTS BY KM LEADING TO SPILLS - WATER AND FISH

Spill	Valued Component	Significance	Uncertainty	Geographic Range	Timing	Magnitude	Reversibility	Likelihood
Fuel	Water	High	Moderate		Madauata	II: -1-	High	_
ruei	Fish	High	Moderate	3.5-7.4	Moderate	High	Moderate	Low
Comportant	Water	Low	Low		Long	Low	Low	
Concentrate	Fish	Moderate	Moderate		Long	Low	Low	
Fuel	Water	High	Moderate	7 4 10	Moderate	High	High	
Fuel	Fish	High	Moderate	7.4-12			Moderate	Moderate
Companyation	Water	Low	Low		Lana	I	Low	
Concentrate	Fish	Moderate	Moderate		Long	Low	Low	
F 1	Water	High	Moderate	10,17,0		TT' 1	High	
Fuel	Fish	Moderate	Moderate	12-17.2	Moderate	High	Moderate	High
G	Water	Low	Low		T	T	Low	
Concentrate	Fish	Low	Moderate		Long	Low	Low	
F 1	Water	High	Moderate				High	
Fuel	Fish	High	Moderate	23.3-40.2	Moderate	Moderate	Moderate	Moderate
<i>a</i>	Water	Low	Low				Low	
Concentrate	Fish	Moderate	Moderate		Long	Low	Low	
F 1	Water	Moderate	Moderate	53.6-59.9	Long	Moderate	High	
Fuel	Fish	Low	Moderate				Moderate	Moderate
<i>a</i>	Water	Low	Low				Low	
Concentrate	Fish	Low	Moderate		Long	Low	Low	
F 1	Water	Moderate	Moderate	86.8-95.8	Moderate	High	High	
Fuel	Fish	Moderate	Moderate				Moderate	Low
Companyation	Water	Low	Low		Lana	Low	Low	
Concentrate	Fish	Low	Moderate		Long	LOW	Low	
Fuel	Water	Moderate	Moderate	05.0.100	Moderate	Moderate	High	TT: 1
Tuer	Fish	Low	Moderate	95.8-102	Moderate		Moderate	High
Concentrate	Water	Low	Low		Long	Low	Low	
Concentrate	Fish	Low	Moderate		Long	LOW	Low	
Fuel	Water	High	Moderate	110 5 124 5	Moderate	High	High	Low
i uci	Fish	High	Moderate	119.5-124.5			Moderate	LOW
Concentrate	Water	Low	Low		Long	Low	Low	
	Fish	Moderate	Moderate		Long	Low	Low	
Fuel	Water	High	Moderate	159.8-160.4	Moderate	High	High	Low
	Fish	High	Moderate	139.8-160.4			Moderate	LUW
Concentrate	Water	Low	Low	-	Long	Low	Low	
	Fish	Moderate	Moderate		20115		Low	

Impact	Valued	Significance	Uncertainty	Timing	Magnitude	Reversibility	Likelihood
	Component						
Fuel spill	Soil/veg/wildlife	Low	Moderate	Short	Low	High	High
Concentrate spill	Soil/veg/wildlife	Low	Moderate	Short	Low	High	High
Acid spill	Water/fish	Low	High	Short	Moderate	High	Low
Acid spin	Soil/veg/wildlife	Low	Moderate	Short	Low	High	Low
AN/sulphide spill	Water/fish	Moderate	Moderate	Short	High	High	Low
Anysulpinde spin	Soil/veg/wildlife	Low	Moderate	Short	Low	High	Low
Smill at the TTE	Water/fish	Low	Low	Short	Low	High	High
Spill at the TTF	Soil/veg/wildlife	Low	Low	Short	Low	High	High
Concentrate aerial	Water/fish	Low	Moderate	Long	Low	Low	Low
dispersal	Soil/veg/wildlife	Moderate	Moderate	Long	Low	Moderate	Low
Concentrate	Water/fish	Low	Moderate	Long	Low	Low	Low
tracking	Soil/veg/wildlife	Moderate	Moderate	Long	Low	High	Low
Leaks from trucks	Water/fish	Low	Moderate	Short	Low	High	High
Leaks from trucks	Soil/veg/wildlife	Low	Low	Short	Low	High	High
Leaks from	Water/fish	Low	Low	High	Low	Moderate	Low
storage	Soil/veg/wildlife	Low	Low	High	Low	Moderate	Low
Sewage	Water/fish	Low	Low	Moderate	Low	High	Low
leaks/disposal	Soil/veg/wildlife	Low	Low	Moderate	Low	High	Moderate

TABLE 7-6: EFFECTS MATRIX, ACCIDENTS LEADING TO SPILLS, ALL TYPES