

2015 Mine Reclamation Awards

Presented by

The British Columbia Technical and
Research Committee on Reclamation



40th Annual Awards Presentation
September 21, 2016 – Penticton, BC



Highlights of Last Year's Awards

Vancouver 3, 2015

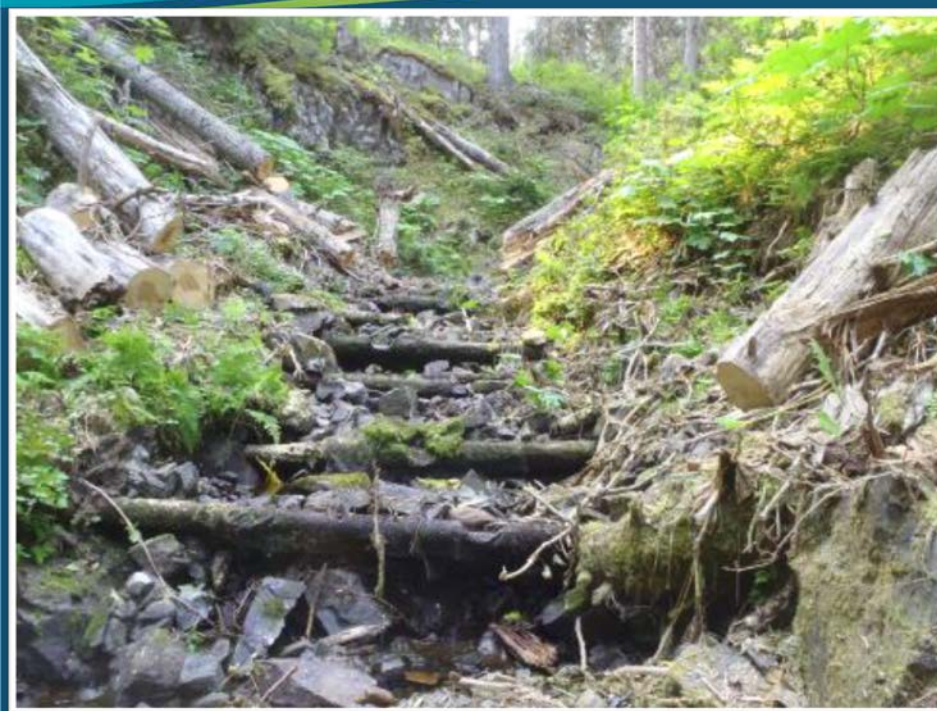


2014 METAL MINING AWARD

Huckleberry Mines Ltd.
for Huckleberry Mine



Huckleberry Mine



Creek M downstream view of lower fishway prior to remedial works and during construction.



Huckleberry Mine

Creek M downstream view of lower fishway in operation



2012



2014



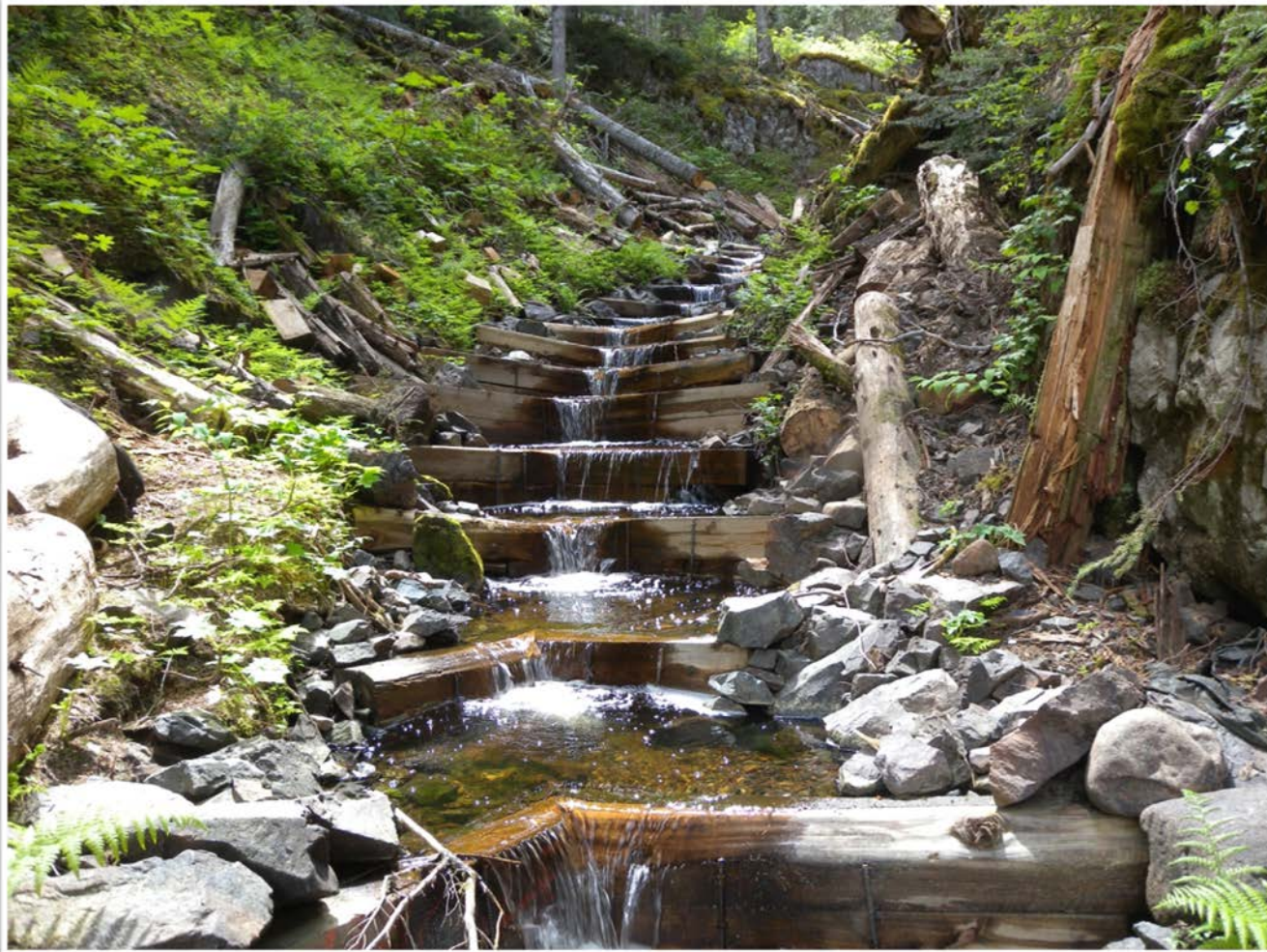
Huckleberry Mine



Remote access and equipment.



Huckleberry Mine



Weir replacement to achieve grade control in Creek M



Huckleberry Mine



Environmental Monitoring Assistant with the Yinka Dene Economic Limited Partnership, working with Hatfield Consultants on the monitoring of Creek M fish ladders in Tahtsa Reach.



Huckleberry Mine



Marke Wong (Environmental Superintendent) , Hiroyuki Tarumi (President), and Randall Thompson (Chief Operating Officer) accepted the Metal Mining Award for Huckleberry Mine. Also pictured, Karina Briño (MABC – far left) and Elaine McKnight (Deputy Minister, BC MEM).



2014 B.C. JAKE MCDONALD MINE RECLAMATION AWARD

Keeper Trophy Presentation

**Valley Gravel Sales Ltd.
for Valley Gravel (Huntingdon Road)**

Valley Gravel



2010 air photo of disturbance area.

Valley Gravel



Cut and fill completed to level disturbed area.



Valley Gravel



Sand filter layer added across subgrade.

Valley Gravel



Extensive soil screening completed to create suitable topsoil

Valley Gravel



Local manure added and tilled into topsoil, followed by a final tilling and planting.

Addition of topsoil and re-grading of the site resulting in higher capability than prior to mining.

Valley Gravel



Reclamation in progress, 2012

Valley Gravel



2014, first cut of hay bales produced

Valley Gravel



Successful home garden plot within reclamation project area, 2013-2014



Valley Gravel



Barry McLean (Chief Financial Officer; second from left) accepted the Jake McDonald Mine Reclamation Award for the Valley Gravel Mine. Also pictured, Angela Waterman (MABC – far left), Jonathon Buchanan (AMEBC) and Kim Bellefontaine (BC MEM).

2015 JAKE MCDONALD ANNUAL RECLAMATION AWARD



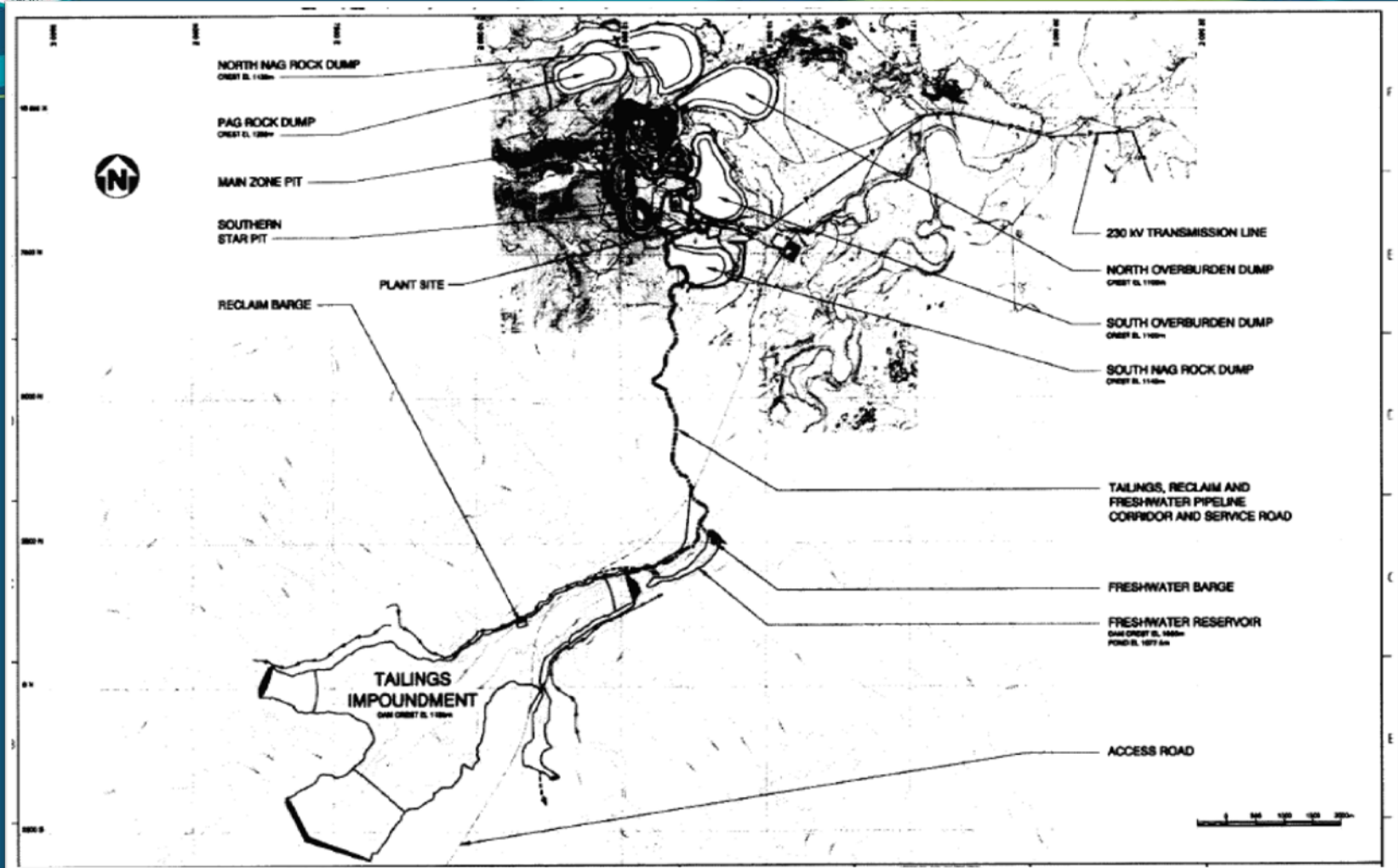
2015 JAKE MCDONALD ANNUAL RECLAMATION AWARD

Thompson Creek Metals Company Inc.
for Mount Milligan Mine





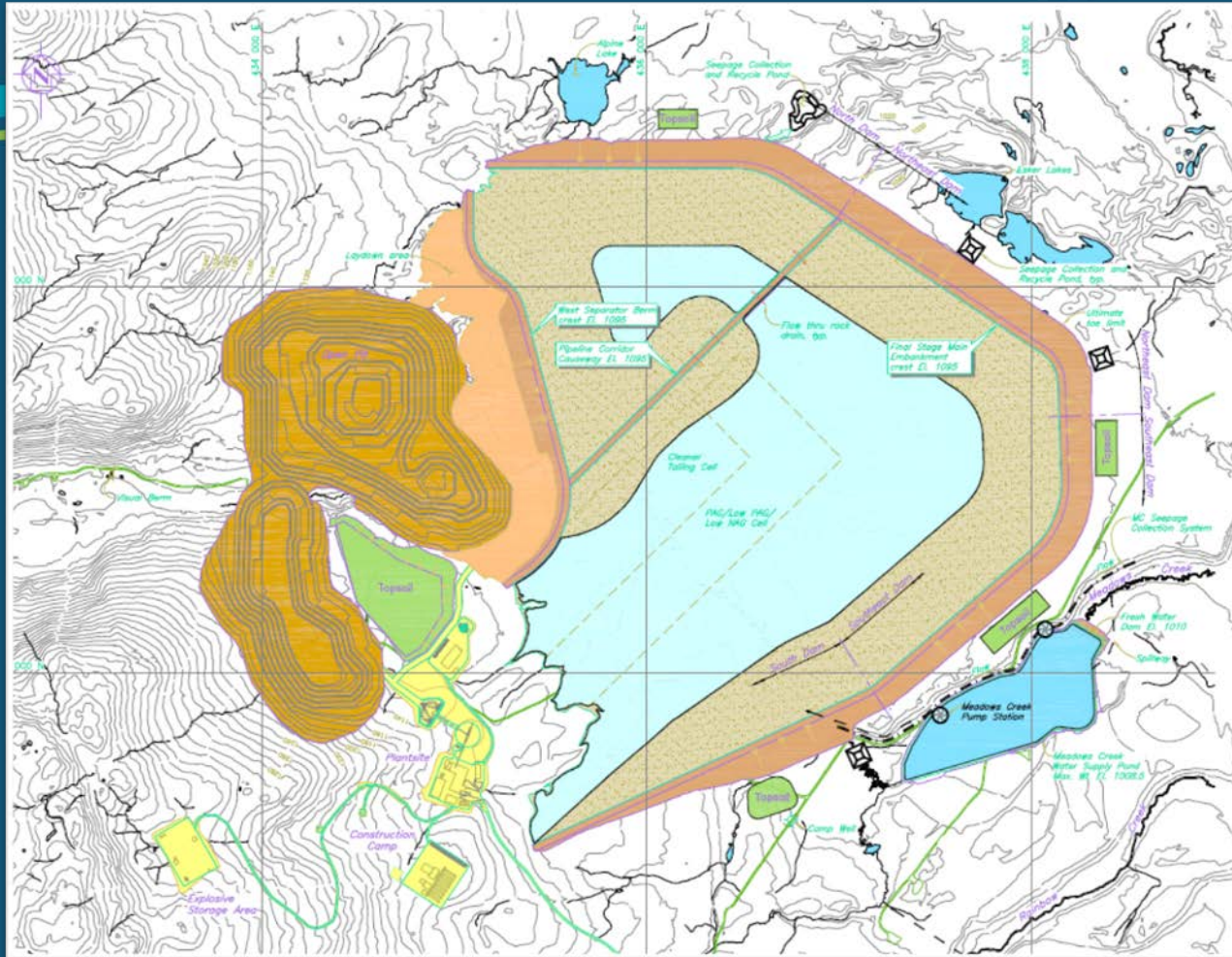
Mt. Milligan



Circa 2006 mine plan - Source Mt. Milligan Environmental Assessment



Mt. Milligan



2009 Mine Plan – Source: Mt. Milligan Environmental Assessment



Mt. Milligan



**Lower Rainbow Pond constructed in 2013.
Note inverted snags and overhanging logs.**



Mt. Milligan

Overwintering Pond - Powerline Pond
constructed 2015.



2015 - Habitat structures placed.



Photo 2016.



Mt. Milligan

Overwintering Ponds

Upper Rainbow Pond constructed in 2012.



Photo 2015



Photo 2016

28/07/2016



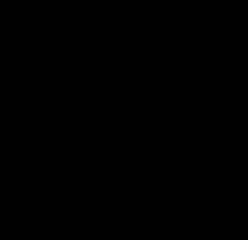
Mt. Milligan



Lower Rainbow Pond – Fish Use and Great Blue Heron



Mt. Milligan Powerline Creek Project





Mt. Milligan

	Upper Rainbow Pond	Lower Rainbow Pond	Powerline Pond	Total	Comments
Pond Perimeter Plantings					
Area treated m2	5,000	6,000	2,000	13,000	
# Conifer (clumps)	700	700	200	1600	
Sedge Clumps	100	45	-	145	
Willow staking's	200+100	200	100	600	
% cover to Summer 2016	95	85	20		
Soil Dump Reclamation					
Area treated m2	34,000	77,000	33,000	144,000	Natural vegetation infill
# Conifer (spaced)	4,820 <u>Sx</u> /PI	10,182 PI	3,818 PI		
20 g 15-4-4 at planting	2,000	2,210	1,120	5330	
Habitat Created m2					
Deep Water	6,995	7,725	6,524	21,000	
Shallow Water	4,105	2,465	1,018	7,588	
Dissolved Oxygen in March 2015 at 50 cm depth (mg/L)	6	6.1	<u>n.a.</u>		
Large Woody Debris trees	60	58	50	168	
Boulder Groups	8	26	11	45	
Vertical Bird Perches	7	1	1	9	

Monitoring effectiveness of compensation projects.

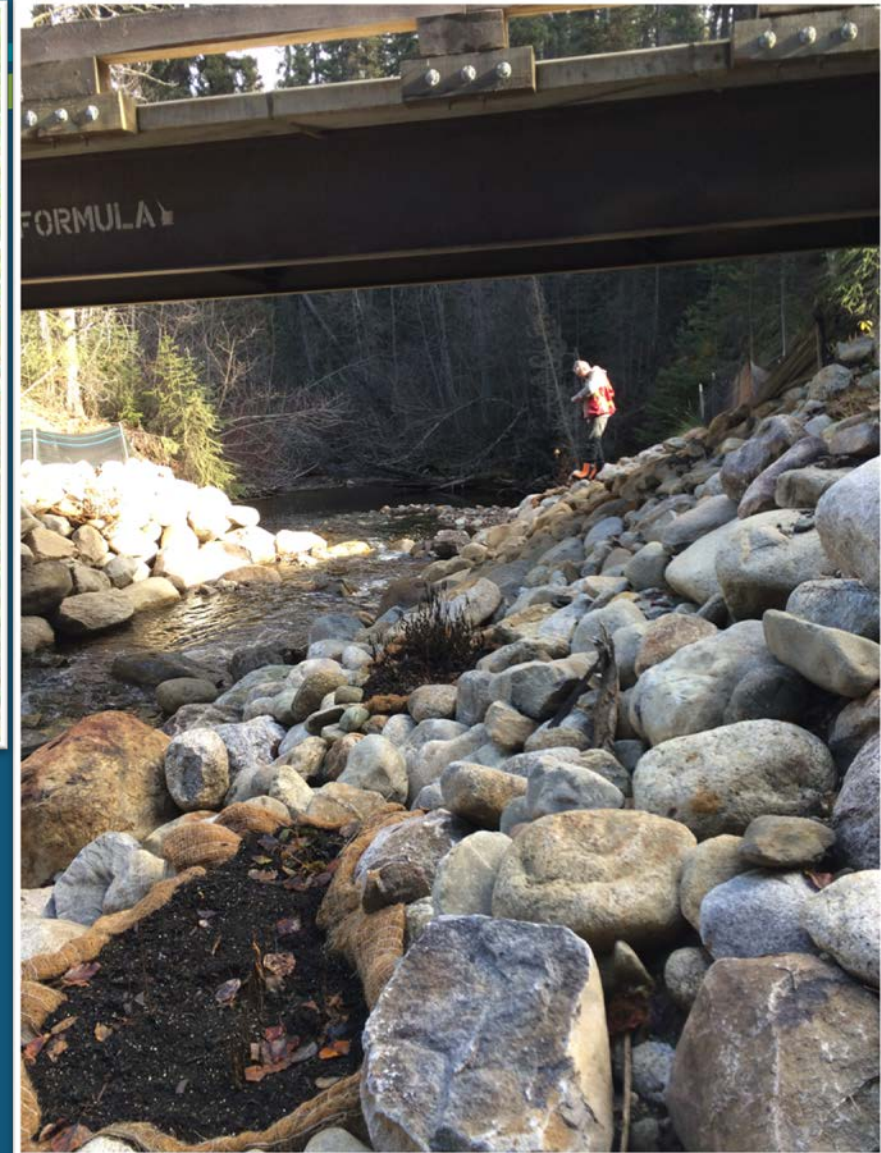
*Mount Milligan: 2015 Effectiveness Monitoring of Compensation Projects, EDI Environmental Dynamics Inc. April 2016



Mt. Milligan



Before: Culvert erosion and habitat impacts from historic forestry activities.



After: Bridge replacement of culverts and eco-pockets with plantings.



Mt. Milligan

Mine Planning



Operational Phase mine layout. Reduced disturbance and tight mine footprint.



Post Closure Design. Flow through wetlands.

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