



Forests for Tomorrow

Aerial Forest Fertilization Prescription

ADMINISTRATION/AREA DESCRIPTION			
Resource District	TSA/TFL/Licensee	Location	Field Work Completed by and date
Cascades	Merritt TSA	Red Creek/McNulty Creek	Jeff McWilliams, RPF / Matthew Thompson, FIT December 2019 (Heli)
Mapsheet	RESULTS Opening ID	Treatment Unit/Block	Project Number/Plan name
92H.070	1710394	RedCrk22	IM18DCS003 (003)
Gross Opening(s) Area (ha)		No Treatment Area (ha)	*Net Treatment Area (ha)
80.7		0.6	80.1
Stand Tending History		Aspect	Topography
N/A		S/W	Even to gently rolling
Latitude:	49°37'33.4"N	Longitude:	120°5'51.5"W
Elevation (min):	1680m	Elevation (max):	1840m

*The net treatment area accounts for areas removed for NP (natural), permanent access structures, riparian reserve zones, and areas identified as not suitable for treatment. Area estimates are based on digitized (non-traversed) treatment boundaries.

STAND DESCRIPTION ¹				
Dom/Co-Dom trees of target species expected to respond to fertilization (sph)	Live Crown % (of crop trees)	Crown Closure %		Age (yrs)
Pl1400	70	50		35
Estimate Species Composition/Inventory Component (based on volume or basal area)	Estimated Height (top height of leading species)	Total Estimated (sph)	Estimated SI ² (Pl)	Ht. to Diam (DBH) Ratio
Pl90(SxBI)	A, B, F, G: 11 C, D, E: 10	1600	A, B, F, G: 17 C, D, E: 16	0.6

ECOSYSTEM INFORMATION ¹						
Polygon	Net Area(ha)	Zone Subzone Variant	Site Series	Edatope Moisture/Nutrients	Slope Position	Slope Avg. % & Range
A	6.6	MSxk/ESSFxc1	01(05)	3-4/B-D	Mid-Slope	25
B	3.6	MSxk/ESSFxc1	01(05)	3-4/B-D	Mid-Slope	25
C	13.0	ESSFxc1(MSxk)	01(05,07)	3-4(5)/B-D	Mid-Slope	30
D	15.1	ESSFxc1(MSxk)	01(05,07)	3-4(5)/B-D	Mid-Slope	20
E	17.6	ESSFxc1(MSxk)	01(05,07)	3-4(5)/B-D	Mid-Slope	25
F	11.9	MSxk/ESSFxc1	01(05)	3-4/B-D	Mid-Slope	25
G	12.3	MSxk/ESSFxc1	01(05)	3-4/B-D	Mid-Slope	25

¹ Stand and ecological descriptions and stand tending history estimates are based on VRI, RESULTS information, aerial photo review and helicopter and/or field recce assessments.

² Based on "Site Index Estimates Derived from RESULTS or field measurements and Site Index Curves or Growth Intercept data.

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TREATMENT DETAILS					
Foliar Analysis: (reference any foliar analysis work) N/A Re-Treatment: (indicate if area has been previously treated; number of times; years since last treatment and fertilizer used) Not previously fertilized.					
Polygon	Net Treatment Area(ha)	Type of Fertilizer	Prescribed Application Rate	Season/ Timing	Fertilizer Amount (kg)
A	6.6	NS Blend (35.5-0-0-10.1)	545 kg/ha	Fall or spring repeated every 7-10 years, up to 10 years prior to harvest	3,597
B	3.6	NS Blend (35.5-0-0-10.1)	545 kg/ha	Fall or spring repeated every 7-10 years, up to 10 years prior to harvest	1,962
C	13.0	NS Blend (35.5-0-0-10.1)	545 kg/ha	Fall or spring repeated every 7-10 years, up to 10 years prior to harvest	7,085
D	15.1	NS Blend (35.5-0-0-10.1)	545 kg/ha	Fall or spring repeated every 7-10 years, up to 10 years prior to harvest	8,230
E	17.6	NS Blend (35.5-0-0-10.1)	545 kg/ha	Fall or spring repeated every 7-10 years, up to 10 years prior to harvest	9,592
F	11.9	NS Blend (35.5-0-0-10.1)	545 kg/ha	Fall or spring repeated every 7-10 years, up to 10 years prior to harvest	6,486
G	12.3	NS Blend (35.5-0-0-10.1)	545 kg/ha	Fall or spring repeated every 7-10 years, up to 10 years prior to harvest	6,704
Total Area:	80.1	NS Blend (35.5-0-0-10.1)	545 kg/ha	Total kg:	43,656

RISK ASSESSMENT: FOREST HEALTH, WILDFIRE
Forest Health Minor rusts
Wildfire (e.g. risk ranking) Low
Private Property There are no private properties directly adjacent to the treatment area.

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MANAGEMENT OBJECTIVES/IRM VALUES	
Treatment Objective(s) and Future Regime:	
The treatment objective is to increase the diameter and height growth of dominant and co-dominant Lodgepole pine crop trees resulting in an increased merchantable volume per hectare. The benefit of treatment is that either the same volume (as with no treatment) can be harvested at an earlier age, or more volume will be available at the originally planned harvest age.	
Research Installations or Permanent Sample Plots:	
The treatment area does not conflict with any known research installations or permanent sample plots.	
Visuals:	
The treatment area is not within a visually sensitive polygon.	
Cultural Heritage:	
A First Nations referral will be completed prior to each treatment.	
Recreation:	
The treatment area is not directly adjacent to identified recreation sites, reserves, parks or other ecological reserves.	
Wildlife/Biodiversity /Species at Risk:	
The treatment area does not conflict with managed areas for wildlife, biodiversity or species at risk	
Range:	
The treatment area is within an active range tenure. RAN077476 belongs to Rock Hill Investments Ltd.	
Other Resources or Tenure/Issues: (e.g. Karst; Trappers; hydro rights-of-way; weather stations)	
The treatment area is within trapline TR0807T064. Fertilization is not expected to have significant detrimental effects on wildlife in the area.	
Water Bodies/Fish/Water Quality:	
Management Objectives: 1. To maintain the water quality of streams flowing in and adjacent to this unit	
Riparian Classes	Location/Measures Prescribed/ Buffers/ Comments
Streams (NCD, S4, S6)	Major streams and gullied reaches have been removed from the treatment unit. Streams found to be visible from the air during the pre-treatment aerial recce will be protected by establishing 10-20 m no treatment zones. Streams not visible from the air will be treated over. Fertilizer loading zones will not be located within Riparian Management Zones.
Wetlands W1-W5	N/A
Lakes L1-L5	N/A
Non-classifiable wetland (NCW; NCL; NCD)	N/A
Residential Water Intakes	N/A
Watersheds &Water Quality Sampling (if in community watershed)	
The treatment area is not within a community watershed.	

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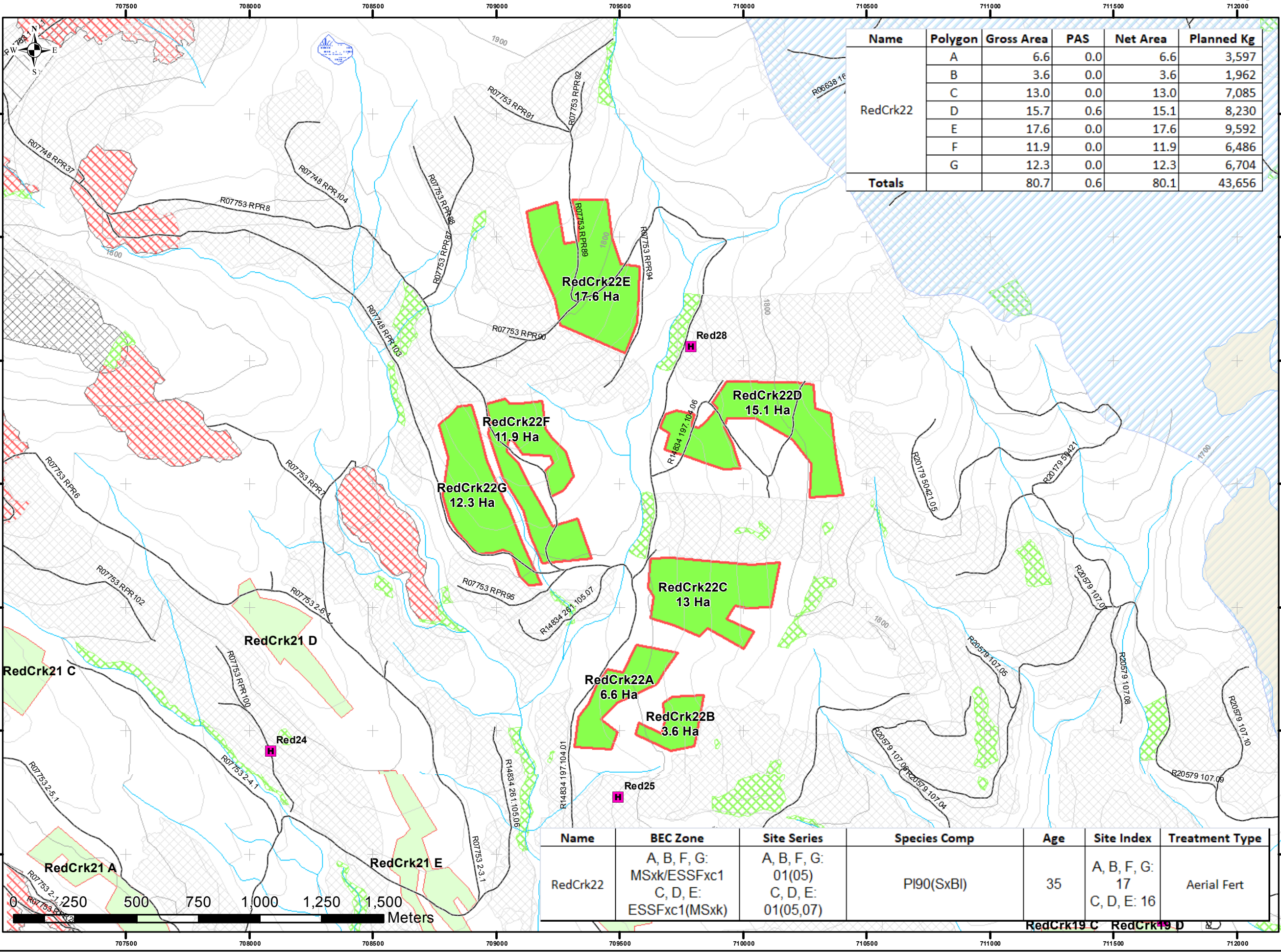
LOGISTICS AND SAFETY	
General Access:	
Distance from Nearest Town (Princeton)	<p>Approximately 52km from Princeton.</p> <p>From Princeton proceed N on Highway 5A for 1km, turning right at Old Hedley Rd. In 0.3km keep left to follow Princeton-Summerland Rd. Continue 15.5km, turning right on to Red Creek FSR. Stay on the Red Creek FSR mainline for 37.4km. At the junction, stay left continuing on to spur rd 188.101.20 and travel 1.25km. At the junction stay right to get on 188.101.22 rd, after 1km turn left onto 197.104.01 rd and proceed to the treatment area.</p>
Access Condition	4x4
Access Improvements Required	None required at this time. Access and stagings should be re-confirmed prior to treatment.
Potential Staging Areas	<p>Red25 - 120°5'59.4"W 49°36'49.1"N</p> <p>Red28 - 120°5'41.3"W 49°37'48.6"N</p>
Staging Improvements Required	None required at this time. Access and stagings should be re-confirmed prior to treatment.
Comments:	
Safety: (Distance to hospital and contact information; radio frequencies for access; any safety specific protocols; snags)	
<p>Approximately 52 km to Princeton General Hospital.</p> <p>(250) 295-3233</p> <p>98 Ridgewood Drive Princeton, BC V0X 1W0</p>	
STORAGE/HANDLING OF FERTILIZER	
Storage/Transport: (e.g. type of fertilizer; any regulations as far as transport; conditions of storage)	
Forest-grade fertilizers are not regulated for rail or road transportation. Because of water solubility, fertilizer must be stored in dry containers and protected from moisture. Storage areas must be secure to prevent wildlife from eating fertilizer – small doses of urea are lethal to ungulates.	
Accidental Spills: (e.g. ground, water)	
To be handled consistent with the applicator's spill and safety protocols.	

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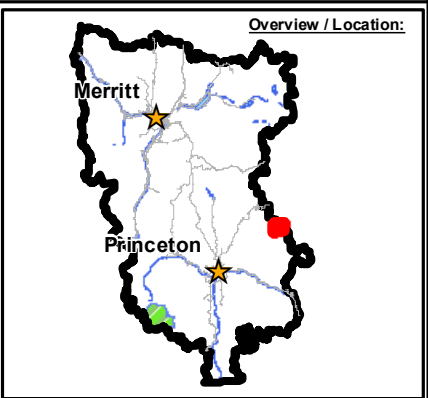
FOREST FERTILIZATION PRESCRIPTION CERTIFICATION	
<p>Attachments: 1:15,000 Aerial Fertilization Prescription Map</p> <p>Plan Prepared By: Alex Ainsworth, FIT</p> <p>Date Prepared: March 16, 2020</p>	<p>RPF's Signature and Seal</p> <div style="text-align: center;">  </div> <p>RPF Name: Jeff McWilliams, RPF</p> <p>Date Signed: March 20, 2020</p> <div style="text-align: right; margin-top: 20px;">  <p>B.A. Blackwell & Associates Ltd.</p> </div>

Cascades NRD - Aerial Fertilization Prescription Map - FFT

Prescription Name: RedCrk22



Name	Polygon	Gross Area	PAS	Net Area	Planned Kg
RedCrk22	A	6.6	0.0	6.6	3,597
	B	3.6	0.0	3.6	1,962
	C	13.0	0.0	13.0	7,085
	D	15.7	0.6	15.1	8,230
	E	17.6	0.0	17.6	9,592
	F	11.9	0.0	11.9	6,486
	G	12.3	0.0	12.3	6,704
Totals		80.7	0.6	80.1	43,656



Forest Region: Thompson-Okanagan
Nat. Res. District: Cascades
Location: Red/McNultyCrk
Mapsheet(s): 92H.070

- Legend**
- Prescription Unit
 - Fertilization Prescriptions
 - Access Limit
 - Heli Staging
 - Reload / Refuel
 - Turnaround
 - Local Rd
 - Highway
 - Forest Service Road
 - Road Permit
 - Special Use Permit Road
 - Cutblock: Active
 - Cutblock: Pending
 - Cutblock: Retired
 - Lake
 - Wetland
 - River
 - Stream
 - Forest Cover Reserves
 - Crown RW
 - OGMA (nonlegal)
 - OGMA (legal)
 - Community Watersheds
 - Indian Reserve
 - Dominion Government Block
 - Treaty Land
 - Private - Crown Grant
 - Crown and Private A and B
 - Community Forest / Woodlot
 - Crown Park Equivalent / Reserve
 - Military Reserve
 - Federal Reserve
 - Crown UREP Reserves
 - Crown Miscellaneous Reserves
 - Crown Christmas Tree Permit
 - Parks and Ecological Reserves
 - Research Installations
 - Growth and Yield
 - UWR: Conditional Harvest Zone
 - UWR: No Harvest Zone
 - WHA: Conditional Harvest Zone
 - WHA: No Harvest Zone
 - WHA: Proposed
 - Interpretative Forest
 - Recreation Reserve
 - Recreation Site

Scale: 1:15,000
Coordinate System: NAD 1983 UTM Zone 10
Date: March 2, 2020
Map created by: MT