

Detection of a Pulp Mill Plume at 35 km

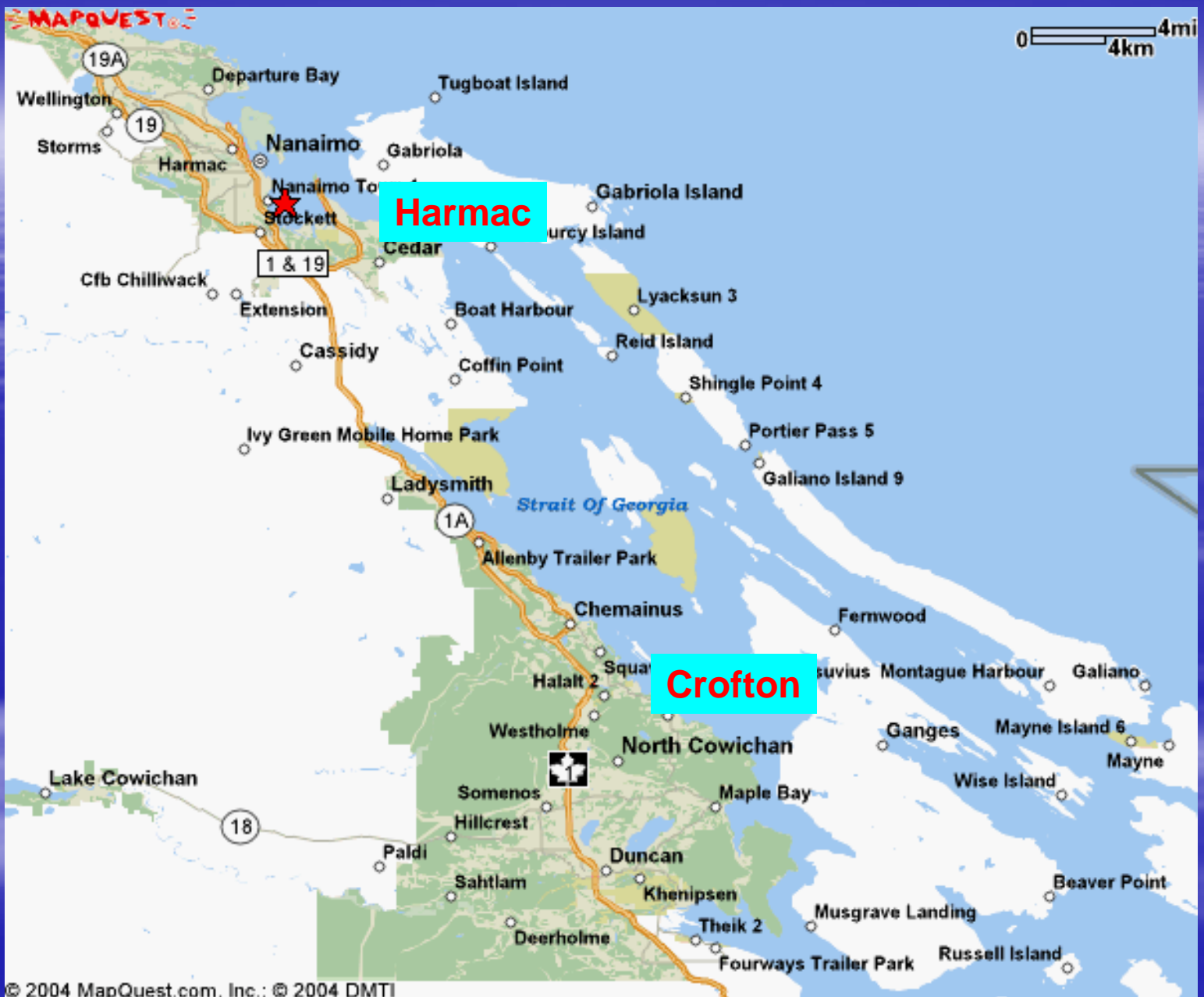
Warren McCormick

Air Quality Meteorologist

Ministry of Water, Land and Air Protection

Nanaimo, BC




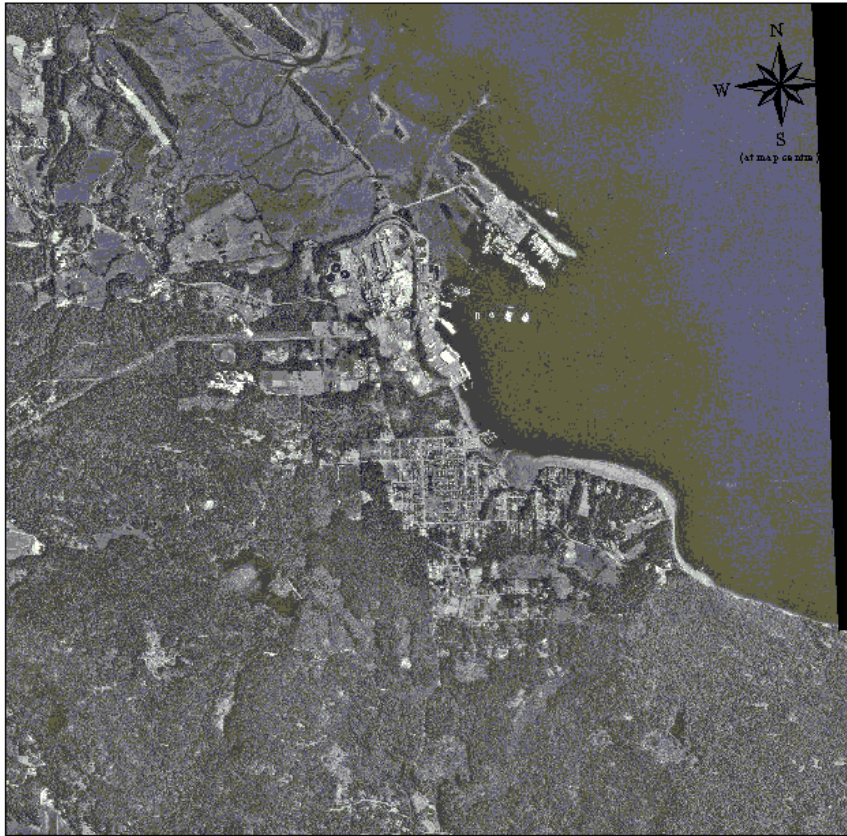




500 0 500 Meters

1:43,000

NTS, Transportation - Lines, 1:250 K	Ekuated - 2 Lanes	Tunnel	Ministry of Land, Waters and Air Protection "Four Eagles" September 27, 2002 
--- Ferry Route	Road (Paused Undivided) - Not	Bridge	
--- Road (Gravel Undivided) - 1 Lane	Ekuated - 3 Lanes	++++ Rail Line (Multiple Track)	
--- Road (Gravel Undivided) - 3 Lanes	Road (Unimproved)	++++ Rail Line (Single Track)	
--- Road (Paused Undivided)	Road - Paused, Divided, access, No.	++++ Rail Line - Abandoned Track	
--- Road (Paused Undivided) - Not	Standard	--- Cable - Underwater	
Ekuated - 1 Lane	Track - Car/Tractor	--- Line (Transmissions) - Electrical -	
--- Road (Paused Undivided) - Not	Causeway (Railway)	--- Primary	
	Trail	--- Pipeline - Underground	

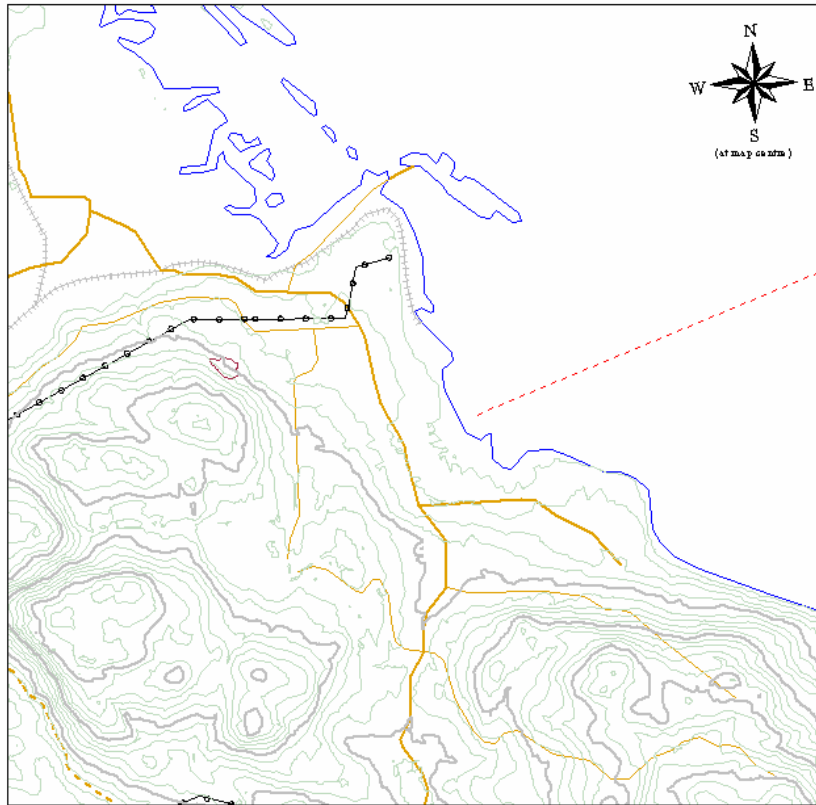


500 0 500 Meters

1:43,000

NTS, Transportation - Lines, 1:250 K	====	Elevated - 2 Lanes	—	Tunnel	Ministry of Land, Water and Air Protection "Four Eagles" September 27, 2002
--- Ferry Route	====	Road (Paused Undivided) - Not	—	Bridge	
--- Road (Gravel Undivided) - 1 Lane	====	Elevated - 3 Lanes	++++	Rail Line (Multiple Track)	
--- Road (Gravel Undivided) - 3 Lanes	====	Road (Unimproved)	++++	Rail Line (Single Track)	
==== Road (Paused Undivided)	====	Road - Paused, Divided, access, No.	++++	Rail Line - Abandoned Track	
==== Road (Paused Undivided) - Not	====	Standard	—○—	Cable - Underwater	
==== Elevated - 1 Lane	---	Track - Cart/Tractor	—○—	Line (Transmission) - Electrical -	
==== Road (Paused Undivided) - Not	—	Causeway (Railway)	—	Primary	
==== Road (Paused Undivided) - Not	—	Trail	—	Pipeline - Underground	





1:43,000

500 0 500 Meters

New TRIM Contours 1:20K

- Contour - Index
- Contour - Index, Depression
- Contour - Intermediate
- Contour - Intermediate, Depression
- Area of Exclosure

NTS, Transportation - Lines, 1:250K

- - - Ferry Route

- - - Road (Gravel Undivided) - 1 Lane
- Road (Gravel Undivided) - 3 Lanes
- Road (Paved Divided)
- Road (Paved Undivided) - Not
- Ekuated - 1 Lane
- Road (Paved Undivided) - Not
- Ekuated - 2 Lanes
- Road (Paved Undivided) - Not
- Ekuated - 3 Lanes

- Road (Unimproved)
- Road - Paved, Divided, Access, No
- Standard
- - - Track - Car/Traction
- Casseway (Railway)
- Trail
- Tunnel
- Bridge
- +++ Rail Line (Multiple Track)

Ministry of Land,
Water and Air Protection
"Coast Region"
September 27, 2002



TRS Monitoring sites

- Harmac

- Cedar site about 3km from mill, elevation about 30m

- Crofton

- Substation site about 32km from mill, elevation about 20m
- South site about 35km from mill, elevation about 140m



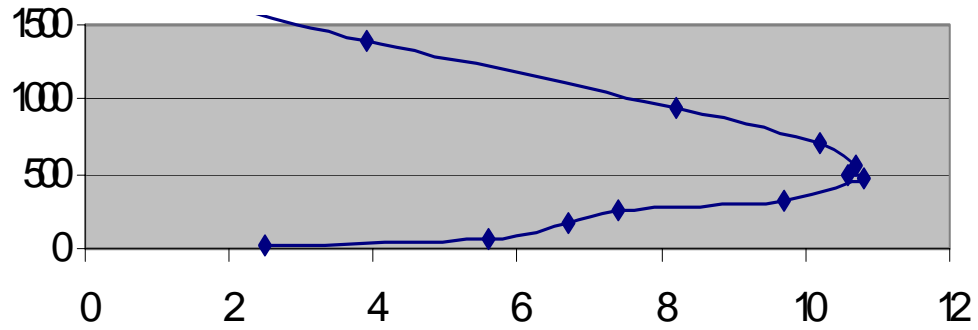
2002. 8. 31



2002. 8. 31

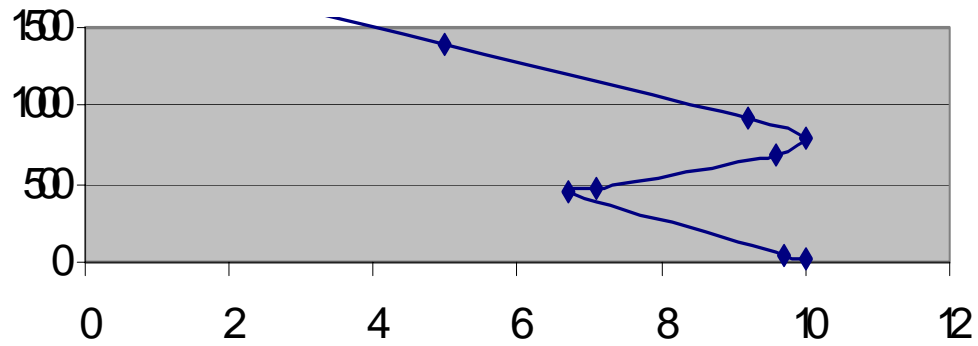
Typical 12Z Sounding

YZT11Nb0400(ld)



Typical 00Z Sounding

YZT12Nb1600(ld)



TRS Observations

- Close Site (Harmac)
 - Measured TRS during the day when some vertical mixing occurred
 - No TRS at night when atmosphere very stable
- Far Sites (Crofton)
 - Low elevation (Substation) measured no TRS day or night (at least not identifiable)
 - High elevation (South) measured TRS at night when atmosphere was very stable