Ministry of Forests and Range

Seedling Delivery Inspections

August 2009

BC Timber Sales

Nursery Services

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1 INTRODUCTION

Seedling delivery inspections are used by Nursery Services and commercial nurseries to assess the quality of seedlings delivered under contract to the Ministry of Forests and Range and BC Timber Sales (BCTS). These inspections provide a record of seedling morphology, apparent physiology, and packaging, and are performed during or after the lift with results recorded on the *Seedling Delivery Inspection Report* form (FS 732). Lift quality will determine whether a financial penalty is applied to the payment for seedlings delivered and provide data for the Nursery Performance Rating system that is used when evaluating future nursery contract tenders.

For administrative purposes, stock is ordered and tracked by individual request keys[1], which refer to a particular number of seedlings. . Seedlings are grouped and inspected by stock ID[2], which refers to a nursery/seedlot[3]/stock type[4]/age/planting season combination, and may include more than one request key. Request keys are used to identify a specific number of seedlings within any one stock ID. Stratification of request keys often occurs when large crops are grown in multiple greenhouses resulting in distinct morphological differences due to the growing environment within a given greenhouse. Inspections may be conducted to accommodate these strata.

Seedling delivery inspections are part of the Ministry seedling quality assurance program and are usually preceded by pre-lift inspections of nursery crops.

2 PRE-LIFT INSPECTIONS

Pre-lift inspections are usually carried out just prior to lifting. In conjunction with discussions with the nursery, this inspection confirms morphological and physiological specifications applicable to the crops. The inspection also allows Nursery Services to identify problem crops that may require additional attention during lifting. The need for pesticide applications, special packaging, freezing/thawing and individually wrapped stock can also be determined at this time.

Requests for deviation from contract specifications, such as "spec" reductions, are to be considered at the time of a pre-lift inspection. It is the responsibility of the nursery to gather the necessary information in order for Nursery Services to consider the request.

Note: A request for a "spec" reduction is always referred to the seedling owner for approval.

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[1] A request key is a registration number for tracking a specific volume of a stock ID

[2] A stock ID is a unique combination of nursery/seedlot/stock type/age/planting season. A stock ID may encompass more than one request key.

[3] A seedlot is a registration number given to seeds by the Surrey Seed Centre, which have been collected and registered as per section 5 of the "Chief Forester's Standards for Seed Use". A seedlot is a unique assemblage of seeds destined for a specific area of use.

[4] Stocktype includes container type and size. For example, PCT410 and PSB412A are stocktypes.

2.1 Approval to Lift

Approval to lift Ministry stock is given by Nursery Services after the stock achieves a certain level of hardiness. The hardiness of stock to be stored in freezers for spring planting is determined by storability testing following the onset of dormancy. This testing typically commences during the first week of October, but varies with nursery location. Nursery Services will provide the nursery with the details for shipping their samples prior to the onset of storability testing. Nursery Services will request specific request keys to be sent from the nursery for the testing. Unless otherwise determined, each request key must pass two consecutive tests before approval to lift can be granted.

Hardiness of hot-lift[5] stock for summer or fall planting is determined by visible characteristics. Ninety percent of the crop must exhibit a hardened condition before lifting can commence. A hardened condition is determined by species according to the characteristics in Table 1.

Table 1: Hot-lift planting stock hardiness classification for select species

Species/ Hardiness	**Foliage**	**Stems**	**Buds**	**Lift?**
Pli				
Soft	Top 5-10 cm light green, soft; flexible	Top 2-5 cm lime green, soft; breaking easily	Terminal buds not visible	**No**
Marginal	Top 2-5 cm light green, soft; flexible	Top 2 cm green; soft	Terminal buds barely visible and green	**Maybe**
Hardened	Top 2 cm dark green and stiff	Top 2 cm mottled green-brown; firm	Terminal buds straw-coloured; firm	**Yes**
Reflush			Stem stretching under bud (candling)	**Maybe**
Elongation of the stem units under the terminal bud is acceptable in most cases. The elongated stem must be reasonably strong to avoid packaging and handling damage. The Nursery Services Manager or designate will advise if unacceptable.				
Ss/Sx				
Soft	Top 5-10 cm light green soft, and flexible	Top >2.5 cm green; soft	Terminal buds not visible	**No**
Marginal	Top 2-5 cm light green, soft, and flexible	Top 2 cm green; soft	Terminal buds barely visible; green. Lateral buds small; straw-coloured	**Maybe**
Hardened	Top 2 cm blue-green and stiff	Top 2 cm straw-coloured; firm	Terminal buds straw-coloured; firm.	**Yes**
Reflush			Terminal bud scales separating	**No**

[5] Hot-lift stock refers to stock that is not destined for cold storage. Summer/fall stock is greenhouse sown in January or February, where it usually remains until the last month prior to lifting, at which time the greenhouse covers may be removed, exposing the crop to full sunlight. Hot-lift stock does not break bud the year of planting, instead it concentrates it resources on stem diameter and root growth.

Species/ Hardiness	Foliage	Stems	Buds	Lift?
Fdc/Fdi				
Soft	Top 5-10 cm light green, soft; flexible	Top 2-5 cm light green, soft; flexible	Terminal buds not visible	**No**
Marginal	Top 2-5 cm light green, soft; flexible	Top 2 cm reddish green; soft	Terminal buds barely visible; reddish green. Lateral buds small; straw-coloured	**Maybe**
Hardened	Less than 2 cm not dark green; stiff	Top 2 cm brown; firm	Terminal buds obvious, red-brown; firm	**Yes**
Reflush			Terminal bud scales straw-coloured, papery; separating	**No**
Lw				
Note: Crops must have hardened foliage, stems and buds. That is, foliage generally dark green and stiff, must be brown or straw coloured to within 2 cm of the terminal bud firm, terminal buds straw colour to brown and firm.				
Bl				
Note: Lighter green tops are acceptable provided that top foliage has lost its succulence and terminal bud is well developed.				
Hw				
Note: Up to 3 cm of a marginally soft top may be accepted provided that buds below the soft top are healthy.				
Note:				
Stock will not be accepted if more than 5% of the trees are flushing.				

3 LIFT OR POST-LIFT INSPECTIONS

Seedling delivery inspections are performed by both Nursery Services (random inspections (RIs)) and nursery staff (nursery inspections (NIs)). These inspections may be done on the lift line or on packaged stock.

When crops are problematic, it is beneficial to do nursery and random inspections throughout the lift to ensure pre-lift examination decisions were realistic and understood. Inspection results (RI & NI) are combined as described in Section 4, Inspection Results. All inspections must include information regarding packaging quality.

3.1 Sampling Frequency

Random inspections are intended to verify the quality of seedlings packaged over the lift period as reflected by the NI. The seedlots inspected are usually selected at random but may be identified during pre-lift inspections or from nursery scattergrams. Nurseries are required to perform inspections on 100% of their stock IDs. For stock lifted to cold storage, NIs must be done for request amounts over 3000. **One nursery inspection is required for every 100,000 seedlings of a stock ID**. If a request key is lifted over multiple days during the lifting season, a minimum of one NI is required for each day of the lift. These inspections should target any

apparent differences within a request key due to growing environment or stock quality differences.

3.2 Sample Size

Seedling bundles are selected randomly during the lift or from cartons in storage. The number of seedlings and bundles per inspection depends on stock type but **the sample must comprise a minimum of either 120 seedlings or 10 bundles, whichever comprises the greater number of seedlings .** All seedlings in a sampled bundle must be individually inspected.

When samples are drawn from cartons in storage the following sample selection is to be used:

- Select only two bundles per box, and
- One box per pallet

If the seedlot is small, still select two bundles per box but draw from more boxes per pallet.

3.3 Inspection Details

Inspections include a physical examination of seedlings, packaging, and type of packaging. Inspections may also include a check of stock handling and packaging during the lift. Inspection data is entered on an FS732 or similar form. Detailed instructions for completing an FS732 form are provided in Appendix 1.

3.3.1 Packaging Inspection

Incorrect packaging procedures must be immediately brought to the attention of the nursery supervisor and Nursery Services then followed up on the inspection report. Carton size and type must be confirmed by Nursery Services prior to lifting.

- The following information must be printed on the carton label: **nursery name**, **species, stocktype, age class, seedlot, request key, number of seedlings in the carton, date lifted (yy/mm/dd), requesting agency name, and pesticide use notification** as specified in Schedule B. Labelling must also include stock orientation **- horizontal or vertical -**[6], and if stock has been **individually wrapped**. Request key and seedlings per carton font must be at least 13 mm tall, and on the last line of the label. All other required elements must be at least 9 mm tall. Any variation must be approved by Nursery Services.
- All cartons for frozen storage must have a liner and be closed correctly to prevent moisture from escaping. Carton liners are not required for hot lift stock. All frozen-stored stock destined for planting in the Coast Forest Region (RCO) must have a paper/poly (kraft) carton liner, while poly liners or paper/poly liners are appropriate for stock planted in the Interior.

[6] A series (3-4) of horizontal or vertical bars on the label may be used to differentiate between seedlings packaged horizontally and those packaged vertically. This is requested in order to assist with thawing in the spring.

- **All spring plant frozen-stored stock must be packaged in a manner most suitable to the stock's morphological condition.** Horizontal packing is preferred whenever possible but must not collapse or tip into the centre of the box. Short stock must be packaged vertically or appropriate supporting material provided to prevent collapse. Any variation to packaging must be approved in advance by Nursery Services.
- When packaged vertically, all bundles must be placed on the bottom of the carton and not on top of other bundles, which can occur when attempting to "squeeze" the last of the bundles into the box.
- Summer plant, hot-lift seedlings should be packaged standing upright, unless permission is granted by Nursery Services to package tall stock horizontally that would otherwise be damaged if packaged upright. No more stock than could be stood upright with the boxes open should be packaged lying down.
- Wrapped bundles of seedlings should have root collars evenly aligned. The wrap should cover the root mass only, not the foliage, and should not be folded under the bottom of the root mass. Root plugs should be sufficiently moist, or dipping bundles in water after lifting will be required. Excessive moisture is not acceptable.
- Bareroot and or plug-bareroot stock may be tied with twine (at the root collar) or plastic wrap (on the top half of the root mass). Seedlings should be fully hydrated at time of lift. **Immersing bareroot seedlings in water at time of packaging is not acceptable.**

3.3.2 Seedling Inspection

Each seedling in a sample is assessed for several characteristics. Seedlings not meeting the contract standards for any given characteristic are culled.

a) Root collar diameter measurement (RCD[7])

Root collar diameter is measured within 1 cm below the cotyledon node[8], but immediately below any obvious swelling. To ensure accuracy, the seedling should be measured, rotated 90 degrees and re-measured; the average of the two measurements will become the RCD.

Ensure that the callipers are properly "zeroed" and that the seedling is positioned in the centre of the calliper jaw.

b) Height measurement

Height is measured from the tip of the terminal bud to the top of the root plug or to the change in stem colour if the top of the plug is not cohesive (for example Douglas-fir).

c) Shoot form

[7] RCD is an initialism for **root collar diameter**, however it is the stem diameter measured within 1cm below the cotyledon node.

[8] The cotyledon node is the point on the stem where the first leaves developed by the embryo were attached.

i. Double trees: Two or more seedlings per plug are not acceptable. The second seedling can be pruned to the soil line leaving a single acceptable seedling.

ii. Basal forks: Defined as a branch that occurs within 20% of the target height at an angle <45° to the main stem. Basal forks are not acceptable nor can they be clipped to result in a single stem.

iii. Multiple tops: Single tops are preferred but multiple tops are acceptable for Ba, Bl, Bg, Bn, Cw, Yc, Hw For other species the following procedures apply:

- Where 2 or 3 tops are present, one must be 3 cm taller and substantially greater in diameter than the others. If agreed to by the client, the unwanted tops may be clipped.
- Clipping of the excess tops must be done at a distance approximately 1 cm from the main stem to reduce the likelihood of disease entry.
- Where there are 4 or more tops, the tree is a cull. No clipping is permitted

iv. Pine with long laterals: Pine seedlings shall have no competing lower lateral branches.

- If the terminal stem and lateral branches are similar in diameter, such that the diameter of any lateral is greater than 75% of the diameter of the terminal stem:
    i. the height of the terminal shoot including the bud must extend at least 1 cm above the height of any lateral shoot bud, OR
    ii. the terminal stem bud must be at least two times (2x) the size of the lateral stem bud.
- The height of competing lateral branches can be reduced by clipping at a height on a horizontal plane at least 1cm below the terminal bud, and not closer than 2.5cm to the main stem.
- If there are three or more lateral branches competing for dominance with the main stem, the seedling cannot be clipped and must be culled.

v. Foliage: Conifer seedlings (except Lw) must have at least 2/3 of the stem length exhibiting live, healthy foliage free of disease. Extremely chlorotic foliage is not acceptable.

vi. Bud form/hardiness must be considered with respect to the two lifting seasons:

- Lift to cold storage: Buds should be straw-coloured to red brown and firm. Abnormal, damaged, deformed or diseased buds are not accepted. Very small diameter buds (< 2 mm.) may be considered culls depending on pre-harvest inspection determinations. Rosette buds are not accepted (> 5 buds at the terminal). If a visibly larger, healthy and central bud is present, the seedling is acceptable.
- Hot lift: see Section 2.1 Approval to Lift.

d) Root Assessment

i. Container Seedlings: There must be adequate root mass to form a cohesive plug. Plugs where the soil easily falls away from the root are unacceptable. Plugs from copper

treated blocks (PCT) can be softer and pliable, but must retain the soil mass intact to be acceptable. PCT plugs may have a few fractures along the plug mass provided minimal soil loss occurs. Plug moisture must be adequate but not excessive.

- Species such as Bl, Fdi, Py and Lw, sometimes do not have roots near the top of the plug. Nursery Services may accept seedlings with up to 1/3 of the top of the plug missing due to handling.
- Dead or diseased roots are sometimes identified by colour and root stripping. The occurrence of dead roots should be immediately communicated to Nursery Services staff. Further consultation with Nursery Services may be required together with an independent disease assay.

ii. Transplant/bareroot seedlings:

- J-root stock is culled if the roots are bent in excess of 30 degrees from the vertical axis of the stem.
- Stock with deformed root mass caused by plug collapse when transplanting is culled.
- Root mass should be adequate, fibrous and generally radiate in all directions.
- Severe damage such as a large scar or a break in the tap root is unacceptable.
- Roots in a bundle shall be pruned to a target length of 23 cm, however, a tolerance of 2 cm shorter or longer is acceptable. Root lengths are measured before the bundle is unwrapped for inspection. Where the root lengths in a bundle fall below the lower tolerance (> 21cm), the root lengths shall be individually measured and a decision on acceptability made on root to shoot ratios.

iii. Rooted cuttings: Rooted cuttings exhibiting plagiotropism[9] and branch like form are culled. Stecklings may exhibit a form known as "hinging" where the stem is not properly supported by the root mass and consequently falls over, rather than standing upright. To evaluate acceptability, hold the plug reasonably firmly at the approximate planting depth. If the seedling leans more than 45 degrees from the vertical, the seedling is culled.

e) <u>Damage – Not an exclusive list</u>

i. Handling: The goal is to avoid mechanical damage such as broken tops, or terminal buds, stripped foliage, or severely bent plugs due to poor wrapping etc.

ii. Disease: Any disease infecting the main stem is unacceptable.

- Moulds such as *Botrytis* and Septonema are acceptable when restricted to the foliage but 2/3 of the foliage must be disease free.
- Keithia can be acceptable if restricted to minor portions of the foliage.

[9] Plagiotropism is the tendency of rooted cuttings to grow at an oblique or horizontal angle, without an upright leader or main stem.

- Larch Meria Needle Cast and Sirrococcus are acceptable if restricted to minor portions of the foliage.

iii. Insect damage:

- Lygus damage permanently deforming the terminal bud is unacceptable.
- Insect damage can be present, but stock with significant damage to the cambium is culled.

iv. Environmental damage: Generally, frost or drought damage that kills buds, foliage or roots is unacceptable. Minor amounts of damage may be permitted in consultation with Nursery Services.

3.3.3 Comments

- The comment section of the inspection report should highlight any aspect of performance and stock quality that deserves attention or can be improved. All NI's and RI's must have appropriate comments. Significant amounts of dead foliage often require monitoring inspections during transportation, cold storage, thawing and planting to monitor stock for moulds such as *Botrytis*.
- Wrapping and packaging observations or instructions such as "avoid bending roots", "plugs evenly aligned", "number of seedlings in carton", "improper liners or improper closure".
- Poor stock handling such as rough handling of cartons, throwing seedling bundles or styroblocks with seedlings.
- Presence of any root disease, which is to be followed up with a diagnostic analysis by an independent lab and also root growth capacity (RGC) tests.
- List any modifications to stock specifications with an additional note at top of the inspection report.

3.4 Sample Retention

The nursery must retain their inspection samples on site with the rest of the request key. Samples should be re-bundled and labelled. Bundles are numbered to coincide with the NI, and placed in boxes clearly marked to identify them as inspection samples. These may be needed for subsequent inspections and should be easily accessible. Once the samples are released by Nursery Services (usually within one week), these boxes can be shipped with the request key. If a Check Inspection (CI) is required and the NI is not retained on site, the RI will be applied.[10]

If an RI results in a cull % >6, the culled seedlings should be made available to nursery staff for inspection and comment.

[10] See section 4 for explanation

4 INSPECTION DESCRIPTION

4.1 Inspection Comparisons

If the number of culls in the RI and NI differ by ≤ 3% the NI is combined with the RI and their weighted average becomes the applied rate If the difference is >3%, a check inspection (CI), or re-inspection of the original NI bundles is done. If the CI culls differ by >3% from the NI, the NI is rejected and the RI becomes the applied rate. The NI methodology will be reviewed with nursery staff and differences resolved. If the CI culls are ≤ 3% of the NI, the NI is accepted and averaged with the RI to calculate the applied rate. The CI data are never used to calculate the accepted rate.

4.2 Combination Protocol

All acceptable NI's are combined with the RI's and their average is the applied cull rate. If the rate is ≤6%, the population is accepted without deduction. If the rate is >6% and ≤10%, it is acceptable with deduction. However, if the cull rate >10%, the sample size is increased by doing another RI. If the resulting average is now ≤10%, the above rule applies. If it is still >10%, Nursery Services may require a re-sort of the population or a financial deduction equal to the applied cull rate is made from the contracted price for the seedlings. Table 2 provides a summary of how the various inspections are accepted or rejected.

Table 2: Summary of how Nursery Inspections (NI) are accepted and combined with Random Inspection (RI) and Check Inspection (CI) data

Scenario	Outcome
If there is no RI	NI is accepted
If there is no NI	RI is accepted
If there is more than one NI or RI	average NI compared to average RI
If cull difference between all NI and RI is ≤3%	average of all NI and RI is accepted
If cull difference between all NI and RI is >3%	auditor may do a CI on the NI
If cull difference >3% and if there is no CI	NI rejected and the RI is accepted
If cull difference between CI and NI ≤3%	average of all NI and RI is accepted
If cull difference between CI and NI >3%	NI is rejected and the RI is accepted

4.3 Penalties

If the final assessed cull percentage is ≤6%, nursery payment is not affected. If the final assessed cull percentage is >6% and ≤10%, the crop is acceptable, however, a financial deduction is applied at a rate of cull percentage minus 6.0%. If the cull rate is >10.0%, a re-sort may be required, at the Ministry's discretion. If there is a re-sort, new inspections are required; if there is no re-sort, payment is reduced by the full cull percentage.

5 SUMMARY OF NURSERY RESPONSIBILITIES

- Nurseries will perform NIs on all request amounts 3000 seedlings or greater. One NI is required per every 100,000 seedlings of all Stock IDs.
- Inspection data will be submitted on "Seedling Delivery Inspection Report" forms (FS 732) or similar forms documenting equivalent data.
- For each inspection, the sample bundles will be numbered from 1 to 10/12/20 or 40, depending on the stocktype and placed in one or more boxes that are clearly identified as inspection samples. With this identification, Nursery Services can locate the nursery samples and carry out CIs as required.
- Nurseries must provide Nursery Services staff with NIs so comparisons can be immediately made with RIs.

6 CONTACT INFORMATION

Nursery Services is responsible for managing and monitoring the production of seedlings used to reforest crown land. Nursery Services is part of BC Timber Sales, BC Ministry of Forests and Range.

Contact information for Provincial Nursery Services staff is provided in

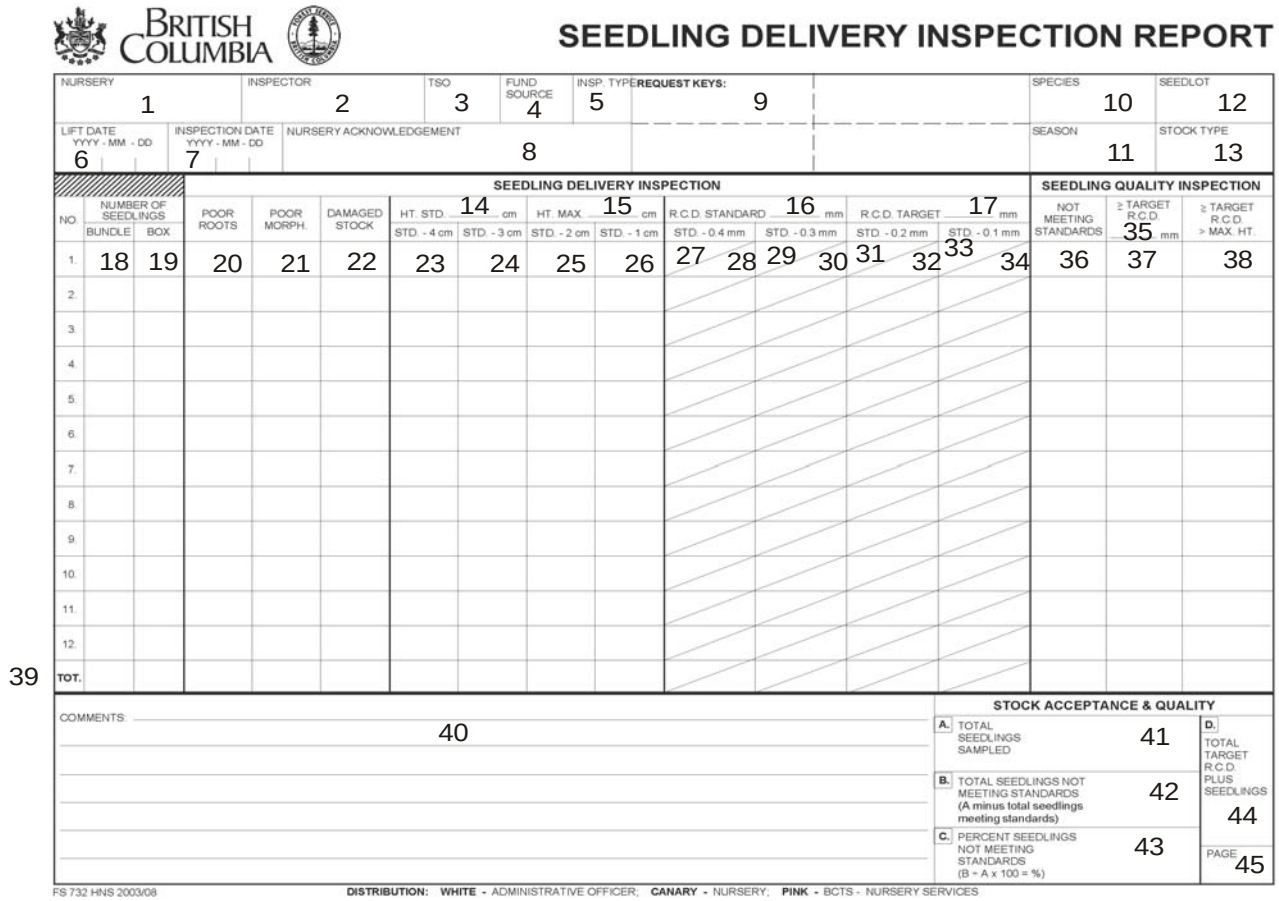
Table 3.

Table 3: Contact Information for Nursery Services staff

Nursery Services Interior	Contact/Title	Phone/Fax	Email
Ministry of Forests Nursery Services Interior 2501 14th Ave Vernon, BC V1T 8Z1	Stephen Joyce Manager	250-260-4617/ 250-260-4219 Cellular: 250-503-8430	Stephen.Joyce@gov.bc.ca
	Alan Rasmussen Seedling and Reforestation Specialist - South	250-558-1740	Alan.Rasmussen@gov.bc.ca
	Leanne Hildebrand Nursery Services Interior Coordinator	250 558-1712/ 250-260-4619	Leanne.Hildebrand@gov.bc.ca
	Art Moeller Technician - South	250-260-4618 Cellular: 604-250-5956	Art.Moeller@gov.bc.ca
Ministry of Forests Nursery Services Interior 1st Floor, 1011 4th Avenue Prince George, BC V2L 3H9	Patience Rakochy Technician - North	250 565-6093 / 250-565-6671 Cellular: 250-614-9690	Patience.Rakochy@gov.bc.ca
	Steve Kiiskila Seedling and Reforestation Specialist - North	250-565-4344/ 250-565-6671 Cellular: 250-614-7716	Steven.Kiiskila@gov.bc.ca
Ministry of Forests Nursery Services Coast 14275 96th Street Surrey, B.C. V3V 7Z2	Bob Merrell Manager	604-586-4347/ 604-586-4353	Bob.Merrell@gov.bc.ca
	Lauchlan Glen Seedling and Reforestation Specialist - Coast	604-586-4342/ 604-586-4353	Lauchlan.Glen@gov.bc.ca
	Leanne DeSousa Nursery Services Coast Coordinator	604-586-4346/ 604-586-4353	Leanne.DeSousa@gov.bc.ca

APPENDICES

Appendix 1 Completion of Seedling Delivery Inspection Report (FS732)



BRITISH COLUMBIA

SEEDLING DELIVERY INSPECTION REPORT

NURSERY 1	INSPECTOR 2	TSO 3	FUND SOURCE 4	INSP. TYPE 5	REQUEST KEYS: 9	SPECIES 10	SEEDLOT 12
LIFT DATE YYYY - MM - DD 6	INSPECTION DATE YYYY - MM - DD 7	NURSERY ACKNOWLEDGEMENT 8				SEASON 11	STOCK TYPE 13

	SEEDLING DELIVERY INSPECTION														SEEDLING QUALITY INSPECTION		
NO.	NUMBER OF SEEDLINGS BUNDLE	NUMBER OF SEEDLINGS BOX	POOR ROOTS	POOR MORPH.	DAMAGED STOCK	HT. STD. 14 cm STD. - 4 cm	HT. STD. 14 cm STD. - 3 cm	HT. MAX. 15 cm STD. - 2 cm	HT. MAX. 15 cm STD. - 1 cm	R.C.D. STANDARD 16 mm STD. - 0.4 mm	R.C.D. STANDARD 16 mm STD. - 0.3 mm	R.C.D. TARGET 17 mm STD. - 0.2 mm	R.C.D. TARGET 17 mm STD. - 0.1 mm	NOT MEETING STANDARDS	≥ TARGET R.C.D. 35 mm	≥ TARGET R.C.D. > MAX. HT.
1.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	36	37	38
2.																				
3.																				
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				
11.																				
12.																				
39 TOT.																				

COMMENTS: 40

STOCK ACCEPTANCE & QUALITY

A. TOTAL SEEDLINGS SAMPLED	41	D. TOTAL TARGET R.C.D. PLUS SEEDLINGS 44
B. TOTAL SEEDLINGS NOT MEETING STANDARDS (A minus total seedlings meeting standards)	42	
C. PERCENT SEEDLINGS NOT MEETING STANDARDS (B ÷ A x 100 = %)	43	PAGE 45

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DISTRIBUTION: **WHITE** - ADMINISTRATIVE OFFICER; **CANARY** - NURSERY; **PINK** - BCTS - NURSERY SERVICES

1. Nursery – name of the nursery being inspected.
2. Inspector – name of inspector
3. TSO (Timber Sales Office) – name of TSO client
4. Fund Source – funding source of seedlings being inspected.
5. Insp. Type – Type of Inspection; one of three: Nursery, Random or Check
6. Lift Date – the date the stock was lifted
7. Inspection Date – the date of inspection
8. Nursery Acknowledgement – signature of authorized nursery representative. This is the acknowledgement of the inspection being carried out and not necessarily agreement with the result.

9. Request Keys – request keys being inspected
10. Species – species being inspected
11. Season – season of planting (spring, summer or fall)
12. Seedlot – seedlot being inspected
13. Stocktype – stocktype and age being inspected, PSB313B 1+0 for example
14. HT STD – found on the stock specification sheet and contract Schedule A under Height (cm) in the cull or minimum column. In the case of difference between the stock specification sheet and Schedule A, the contract Schedule A will apply.
15. HT MAX – found on the stock specification sheet under Height (cm) in the Maximum column
16. RCD Standard – found on the stock specification sheet under RCD (mm) in the cull column
17. RCD TARGET – found on the stock specification sheet under RCD (mm) in the Target column
18. Number of Seedlings/Bundle – the physical count of seedlings in each bundle
19. Number of Seedlings/Box – calculated as Bundles x Trees per Bundle
20. Poor Roots – seedlings not meeting standard form, such as container stock with insufficient roots to form a cohesive plug
21. Poor Morph –seedlings with abnormality, such as basal forks, multiple tops, etc.
22. Damaged stock –seedlings with disease, insect, chlorosis or mechanical damage
23. STD - 4 cm – any seedling which is shorter than the HT STD by 4 cm or more
24. STD - 3 cm – any seedling which is shorter than the HT STD by 3 cm
25. STD - 2 cm – any seedling which is shorter than the HT STD by 2 cm
26. STD - 1 cm – any seedling which is shorter than the HT STD by 1 cm
27. STD - 0.4 mm – any seedling which is smaller than the RCD TAR by 0.4 mm and is taller than the HT MAX
28. STD - 0.4 mm – any seedling which is smaller than the RCD STD by 0.4 mm or more
29. STD - 0.3 mm – any seedling which is smaller than the RCD TAR by 0.3 mm and is taller than the HT MAX
30. STD - 0.3 mm – any seedling which is smaller than the RCD STD by 0.3 mm
31. STD - 0.2 mm – any seedling which is smaller than the RCD TAR by 0.2 mm and is taller than the HT MAX
32. STD - 0.2 mm – any seedling which is smaller than the RCD STD by 0.2 mm

33. STD - 0.1 mm – any seedling which is smaller than the RCD TAR by 0.1 mm and is taller than the HT MAX
34. STD - 0.1 mm – any seedling which is smaller than the RCD STD by 0.1 mm
35. RCD TARGET – same as item 17 above, found on the stock specification sheets under RCD (mm) in the Target column. Acceptability of trees >max height is to be determined by Nursery Services and the requesting agency
36. Not Meeting Standards – by row, tally items 20 through 34 to get total seedlings not meeting standards for this bundle. Follow the same procedure for every bundle sampled.
37. ≥TARGET RCD – number of acceptable seedlings in a bundle greater than or equal to the RCD Target and less than or equal to HT MAX.
38. ≥ TARGET RCD > HT MAX – number of seedlings in a bundle greater than or equal to the RCD TARGET and greater than HT MAX. These seedlings may not be accepted by Nursery Services.
39. TOT. – Tally the number of seedlings at the bottom of each column.
40. Comments – Provide general descriptions of the crop being inspected. Comments such as good, fair, or poor provide documentation of the stocks condition at the time of inspection. Also indicate any area where performance (how stock is being handled during lift, wrapping and packaging observations) and stock quality (poor morphology, damaged stock, etc.) can be improved, and alert others to stock condition (significant amounts of dead foliage, presence of root disease in any amount). List any modifications in stock specifications where applicable and also make a note at top of the Inspection Report.
41. Total Seedlings Sampled – total of column 18 above
42. Total Seedlings Not Meeting Standards – total of column 36 above.
43. Percent Seedlings Not Meeting Standards = Total seedlings not meeting standards (item 42 above) divided by total seedlings sampled (item 41 above) × 100.
44. TOTAL TARGET RCD PLUS SEEDLINGS – total of column 37 above. Over height seedlings are not included.
45. PAGE –number pages, e.g. “1” or “1 of 2” or “2 of 2”.

Upon completion, copies of all Seedling Delivery Inspection Reports are to be immediately distributed to the producing nursery and Nursery Services office.