

ASPECT

Definition: ˈas – pekt / 1. a position facing a particular direction
2. appearance to the eye & mind.

THE DEGIFS NEWSLETTER

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The "Editorial"

It's the "editorial". Time to put pen to paper, or I should say time to digitally manipulate small plastic cubes and observe a flutter of electrons on the face of a vertical cathode tube (you will have to excuse my knowledge of electronics; I am not licensed as an electrical engineer). An enunciatory event initiated by the "stimulating" of what few brain cells worthy of use, with the resulting effectuation of an editorial wonder - yeah, right.

What to do, what to write, what topic? Have you ever thought of what would be of interest to a diverse group of P. Geo.'s, P.Eng.'s, GIT's, EIT's and students with some interest in the forest sector and a greater interest in life? No, well that, I suppose, is one of the functions of an entity called "the Ed." or just "Ed." - whomever that is. I have never met this entity but I keep seeing phrases like "letters to Ed." and "signed Ed." and "dear Ed." and, my favourite - "the Ed." - a hint of regality and omnipotence with this one. I guess Ed. has a lot of friends, is really prolific, is well liked, skilled with the written word, and of course omnipotent. Jeez, I wish I was like that - reality sucks. Anyway, here we go, it is my turn to write something - ooh no, not Thomson again.

The solstice has past, summer is finally here. A time for field work and relaxation (what idiot put those two together). I prefer the relaxation - "Copa Del Mondo" - the only true global sport - football, soccer, or as they call it in the land of the Gael - "fitbaa". The enjoyment and appreciation of the rhythmical ambulatory art of kicking the hell out of a spherical entity on a grass covered field. "GGOOOOOAAAAALLL" - that's for our Latin friends. There is that other pleasurable sport where an oval entity is conveyed by both by hand and foot - rugby (in the land of OZ, the antipodes have a bizarre variant). Then there is the thing they do both here and south of the border with another oval shaped entity and dare call it football, - it's not a real sport, the sissies wear armour. For the cultured and gentry types, there is Wimbledon - "center court, quiet please". There is also another "dynamic" sport where spectators sit around all day drinking tea laced with gin, mumble "oohhh, rather good bowl old bean, sticky bloody wicket", count "overs" and "unders", and "silly mitts on" and "silly mitts off" - silly bloody waste of time (but not good gin - is there such a thing?). Well, so far I have covered one aspect of relaxation. You are probably wondering, "Where is he going with this?". So am I. Therefore, the next topic is work - naa. For most people, work is a necessary evil - so scrap the work topic.

Life is like a bowl full of succulent ripe cherries, so dive in and enjoy. Have a relaxing, enjoyable and awesome summer.

"The Ed."

DIVISION OF ENGINEERS AND GEOSCIENTISTS IN THE FOREST SECTOR



Hot Topic: RESULTS-BASED CODE

APEGBC and DEGIFS have prepared a joint submission in response to the recently released Results-Based Code. A Discussion Paper was presented to a panel of 5 MLAs in Kamloops, B.C. on June 20, 2002. A copy of the paper, plus a discussion forum regarding the RBC can be found on the DEGIFS website (degifs.com).

In addition to the Kamloops MLA committee, on June 27, DEGIFS and APEGBC also presented to Prof. G. Hoberg, Head of the department of Forest Resources Management at UBC, as director of the BC government's consultation process. The presentation included in greater detail and involved input from DEGIFS members and is also available on the DEGIFS web site.

Following is one such response from our members:

Code II: Results-Based ?; Political Downloading ?; or More of the Same ?

A Review of the White Paper "Results-Based Forest and Range Practices Regime for British Columbia" and Companion Document 5 "Role of Resource Management Professionals"

Calvin VanBuskirk, P.Eng., P.Geo. and Ron Neden, P.Eng., Terratech Consulting Ltd., Salmon Arm, B.C.

The proposed legislation and this white paper appear to have been a rushed job that will only result in more uncertainty and line the pockets of lawyers. To understand this commentary it is necessary to refer to the above-noted documents. Our comments on these documents are as follows:

Sect. 5.3 Resource Development Permit Tests

Test 1: In the situation of "adjacent rights" does this test put the licensee in the position of resolving the wide spread issue of upslope development within basins where the fans are developed? This issue has not yet been adequately addressed and has the potential to impact on large areas of the forested land-base.

Test 4: The last sentence of the first paragraph states that "... the District Manager must be satisfied that the licensee...has proposed forest development units that will not result in further impacts nor increase risk to channel integrity, (etc.)" This cannot be done with the certainty stated. It is suggested that the word "likely" be inserted before "will not".

Sect. 6.2.6 Roads, Stream Crossings and Access Management

Result 2: It states that road deactivation will include "removal of all stream culverts". This is an example of continuing prescriptive code (telling the licensee how to do their job). Many culverts are located on slopes well beyond any fish access. When deactivating a road, the removal of culverts is not necessarily the best method to control the risk of sediment transport or landslide initiation.

The best method of long-term water control to be implemented during road deactivation should be decided on a site-specific basis for each culvert location.

It also requires the removal of bridge superstructures. Removal of bridges may not be necessary or desired for semi-permanent deactivation if some level of access is required.

The statement about removing the bridge substructure is written with a total disregard for the "likelihood of failure". It presumes failure by stating that "if failure.... would affect downstream values". As any failure would most likely have some downstream effect, the statement defaults to the removal of all bridge substructures even though some may have a design life that could provide support for future use.

Rule 4: Restricts widening of the right-of-way clearing for spoil purposes, even though this may be the environmentally responsible thing to do (say as an alternative to a long end-haul).

Rule 5: Should this restriction on road clearing width at stream crossings only be applied to the riparian zone? If not what is the length of road section that this condition applies to?

Rule 8: Past legislation refers to "known sources of acid rock drainage". The way this rule is written, all rock would have to be tested prior to use. In addition, many rock types have the potential to generate acid under the right conditions. Most of these conditions would not be encountered in typical forest road construction situations.

Rule 10: Results in the over-sizing of most culverts that would likely fail as a result of debris blockages, rather than water flow. Designers should focus on debris management and designing to pass flood flows in the event of a debris blockage. Debris management would go further to limiting environmental impacts than just dealing with culvert diameter issues.

Rule 10 (a): It is not clear if this refers to a single season crossing or not. It should be more specific and state removal "prior to freshet or typical season of annual high water flows".



Rule 10 (b): It is not clear what is meant by "pieces at risk"? Would "components" be a better term?

Rule 12: To whom does "their" refer? Is it the licensee or the user? Under the goal statement, the road is supposed to be "safe for users". If the road is "safe", what potential risks are the users to be notified of? These are conflicting statements. In reality, very few roads are "safe for users" and risks are everywhere.

Statutory Powers 1: "Catastrophic" is a subjective term. The person impacted may consider some things catastrophic that the DM does not. Also, the term "certain things" gives the DM license to require anything he wants and thus leaves the licensee with a great deal of uncertainty.

Statutory Powers 2: The way this item is written, it could be interpreted to mean that SDMs would have the authority to conduct technical reviews of structures. This is contrary to the Engineers and Geoscientists Act, which states that design of structures can only be undertaken by a registered member of APEGBC.

Section 6.2.9 Soil Conservation

Rule 5: In discussion of rehabilitation of soil disturbance that may concentrate water onto sensitive terrain (a), it states that these areas "must have natural drainage patterns re-established, within one year after completion of harvesting operations". This is inappropriate for the interior of B.C. as the peak in surface flows and shallow subsurface water levels usually occurs during the spring freshet, regardless of the time of harvesting. It is suggested that natural drainage patterns be re-established prior to the next spring freshet. Furthermore, in most cases, natural surface water drainage patterns should not be altered in the first place.

Item (c) does not require drainage control on trails if multiple harvesting entries are planned. It is suggested that the principle of maintaining natural drainage patterns also be applied to item (c), regardless of the number of harvesting entries required.

The terms "natural drainage" and "natural surface drainage" are used throughout the white paper. Are these considered to be the same? Or are they considered to be different? If different, then a definition is required. Also, once roads and trails are constructed, the natural drainage (surface and subsurface) is altered forever and in most cases cannot be reinstated to a pre-development condition. Why legislate things that cannot be done? The objective of water management is to maintain natural surface water drainage paths and manage subsurface seepage flows to limit the potential to adversely impact on slope stability and surface soil erosion.

6.2.9 Terrain Hazard Management

Result a) to e) does not include the "timber" value as a consequence. Also, the many lists of values are all slightly

different. They should be the same to be consistent. Is the list supposed to be all-inclusive? If so, habitat, visuals and utilities are a few items that have been missed.

Result e) states that forest and range practices will not result in landslides, etc. that will "result, either directly or indirectly, in harmful introduction of sediment to fish habitat." Almost any landslide that hits a stream will have an indirect impact on fish habitat. Whether the amount of sediment that will reach the fish habitat will be harmful or not is virtually impossible to predetermine.

Rule 2: The use of the term "risk" is not consistent with the use of the term "risk" in other areas. The term "high risk" could be replaced with "high likelihood that landslide activity would directly impact the stream".

Rule 3: It still has not been resolved if the "likelihood of landslide" rating is based on 1) the specific development; or 2) some "standard" development (as has been the case for roads, where the assessment and rating is supposed to be based on side-cast fill construction). This issue needs to be resolved in order for the legislation to be effective.

8.0 The Non-Legislated Realm of the Results-based Regime

This section states that the "things outside the framework (guidebooks, etc.) can also have significant legal implications." Most of the supporting information is very prescriptive; limiting on innovation; and in some cases not necessarily the best or even suitable for forest development purposes. Tying in this information as a yardstick to measure success or failure could lead licensees to follow the same procedures currently in use, to avoid potential fines. By saying "in the event of a problem we will measure your performance against the current prescriptive approach" there will be a reluctance to move forward or be innovative with approaches to forest development. The way this is written, the document "unduly constrains professionals in pursuit of innovation within the boundaries of law." The determination of negligence should be based not on guidebooks or whether certain approaches or techniques were used; it should be based on "professional opinion". In other words, "would a professional in a similar position, using the information available at the time the work was planned, act in the same or a similar manner to what was done?"

Appendix 3 - Draft of Legislation for the Terrain Management Regime

Terrain Stability Result: This section is poorly worded, in that it does not reflect the degree of uncertainty that exists in the natural environment and man's attempts to manage his alterations to this environment. The wording used can mean absolutely no tolerance for risk of any magnitude. To comply with this requirement would mean that most roads could not be built, as most roads have some likelihood of causing a landslide, adverse gully process, etc. In addition, the magnitude of acceptable consequence is not stated. For



example, even natural runoff has some adverse affect on drinking water and fish habitat; and most roads, including public highways owned by the Crown, expose human life and safety to some level of risk.

Summary

The White Paper looks like it was written by a group of lawyers that have only a vague understanding of the technical issues involved in forest development. Technical issues should be left to those with the technical capability to deal with these issues.

Companion Document 5 - Role of Resource Management Professionals

We believe that the significance of the difference in accountability of professionals with right-to-title and those with right-to-practice should be emphasized more. Those with right-to-title can still practice even if they lose their license due to disciplinary action by their association.

The Relationship between Licensees and Resource Management Professionals

In this section, there is no mention of the relationship between the various government Ministries and Resource Management Professionals. All of the comments directed to the relationship between Licensees and Resource Management Professionals are equally applicable to the Ministry of Forests and the Ministry of Water, Land and Air Protection. This section should be modified to include the relationship between Professionals and all applicable Ministries.

DEGIFS EXECUTIVE ELECTION

from the DEGIFS Nominating Committee

In accordance with the DEGIFS Terms of Reference, a Nominating Committee has been struck to propose candidates for the 2002 election of the DEGIFS Executive. This committee consisted of Don Dobson, P.Eng., Past Chair, Tim Smith, P.Geo. and Tim Giles, P.Geo. The Terms of Reference specify the Executive must consist of the Past Chair and 7 members elected by the DEGIFS members, for a total of 8 members.

The term of the elected Executive members is two years. Members whose terms are completing this year include:

- Tim Stokes, P.Geo.
- Kevin Turner, P.Eng.
- Peter Weir, P.Geo. (current chair)

Members who were elected last year and are continuing include:

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- Brian Chow, P.Eng.
- Doug Dewar, P.Eng.
- Mike Greig, RPF, P.Eng.
- Eric McQuarrie, P.Eng.

Therefore, the 2002 election will be for 3 members. In selecting potential candidates, the following attributes were considered.

- to balance representation by geographical region;
- to balance representation by professional designation, taking into consideration the professional designation of the Members stepping down; and
- to represent the proportion of members who are terrain specialists and road or bridge design specialists.

The following members have agreed to stand for election for the 3 available positions.

- Tim Dunne, Senior Engineer, Forsite Management Consultants Ltd.
- Bill Grainger, P.Geo., Principal, Grainger and Associates Consulting Limited
- Dave McDougall, P.Eng., Principal, GeoNorth Engineering Ltd.
- Doug Nicol, P.Eng., Regional Geotechnical Engineer, Nelson Forest Region
- Doug Underhill, P.Eng., Engineer, Helifor Industries Ltd.
- Calvin VanBuskirk, P.Eng. P.Geo., Principal, Terratech Consultants Ltd.

Since there are more candidates than positions, a letter ballot will be required to fill the positions. In accordance with the DEGIFS Terms of Reference, we are submitting this list of nominees to Aspect to be published at least 90 days prior to the DEGIFS Annual General Meeting, which will be held on October 24, 2002, in Victoria, BC.

Under the Terms of Reference, additional nominees can be made, in writing, by a minimum of two DEGIFS Members. These nominations, signed by the Members making the nomination and accompanied by written consent of the nominees, shall be given to the DEGIFS Secretary c/o Peter Mitchell, P.Eng. at APEGBC, no later than 30 days after publication of the list of candidates nominated by the Nominating Committee.

Affiliate members are not eligible to vote or hold office.

AUGUST/SEPTEMBER 2002



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Critical dates for the election of the Executive members include:

- Deadline for receipt of write-in nominations: August 18, 2002.
- Letter ballots to be sent to membership: August 30, 2002.
- Deadline for receipt of ballots: October 9, 2002.
- Ballots to be counted: October 11, 2002.
- Membership to be notified of election results at DEGIFS Annual General Meeting, Victoria, BC on October 24, 2002.

Additional details on the election of Members to the Executive can be found in the Terms of Reference, published on the DEGIFS web site at www.degifs.com.

STANDARDS OF PROFESSIONAL PRACTICE

DEGIFS have formed a subcommittee to develop standards of professional practice for terrain stability assessments in the forest sector. The objective of the document will be to set out the scope of professional practice that Members should meet and follow when conducting terrain stability assessments in the forest sector. The document will also outline the roles and responsibilities of both APEGBC members and other parties involved in the forest sector so that it is clear what they are not responsible for. APEGBC already has standards of professional practice for the various engineering disciplines working in the building industry, and these guidelines will be used as a model for the new document. Any DEGIFS members with comments or questions can contact Eric McQuarrie, Guidelines Subcommittee Chair at:

emcquarrie@vic.thurbergroup.com.

Also, on June 27, 2002, DEGIFS and APEGBC attended a meeting hosted by MoF to explore setting up standards or professional practice under the RBC. The meeting was also attended by the Chief Forester, Larry Pedersen, representatives of MWALAP, MSRM, ABCPF, BCIA and APBBC. APEG and DEGIFS, having already formed a committee to develop standards of professional practice for terrain stability assessments, clearly established itself to be well ahead of all other participants. DEGIFS and APEGBC are currently waiting for a response from MoF regarding the model we have established for the Standards of Professional Practice, and for funding.



Assessment of Relative Environmental Risk from Logyard Run-Off in British Columbia

Julie Orban, G.I.T.

Slocan Forest Products, Slocan, B.C.

(This is a condensed version of a recent publication. For the entire article, please refer to Orban, et al. 2002. Assessment of relative environmental risk from logyard run-off in British Columbia. Forestry Chronicle 78:146-152.)

Run-off is generated at logyards when mobile water interacts with woody debris. Logyard run-off can contain a range of constituents with the potential to have an adverse impact on the receiving environment. Potential sources of water pollutants at logyards include: woody debris (especially bark); stored logs; log and liquid loading areas; rollout, sorting, scaling and cutting areas; truck, rail, ship, stacker and loader access areas; debarker, hog bin, and conveyer areas; ash piles and other solid wastes; log trucks, stackers, loaders, forklifts and other equipment; maintenance shop and parking areas; cleaning areas for vehicles, parts and equipment; metal salvage areas; pesticides used for log preservation or surface protection; contaminated soil; storage and handling areas for hydraulic oils, lubricants, fuel, paints, liquid wastes and other liquid materials and herbicides (NCASI 1992, WDOE 1995). NCASI (1992) and AEP (1996) identified three general categories of water quality concerns related to storm-water run-off at logyards: (1) wood and bark-derived organics, particulates and foam, (2) sediment from logyard erosion, and (3) greases and oils from logyard vehicles and associated mill machinery. Of the organics extracted from wood, tannins, lignins, phenolics, tropolones and resin acids are of highest concern when dealing with softwood species (Samis et al. 1999). Many geoclimatic, operational and physical site factors contribute to the volume and characteristics of run-off including: species and volume of wood processed, climatic considerations (e.g., precipitation amount, frequency and duration), site characteristics (e.g., surface cover, proximity to water), and practices (e.g., sprinkling of wood, equipment cleaning practices, run-off and control and treatment measures).

A management tool to predict relative environmental risk from different sites would be of value. In this study

we attempted to develop such a tool. A 37-question survey was devised and distributed by the Council of Forest Industries to member companies that operated logyards in British Columbia during July 2000. The survey gathered information on site characteristics, volumes and types of wood processed, operational practices, the incidence of run-off, run-off treatment practices, as well as the ultimate receiving environment. Our objectives were to assess the scope of the run-off issue associated with logyards at sawmills and dryland sorts in B.C., and to develop a preliminary mechanism for predicting relative risk levels.

We received 74 completed surveys. Ten surveys could not be used because they either contained errors or visible run-off was not detected. Therefore 64 surveys were used in final analyses. Qualitative and quantitative data from the survey were subjected to statistical analyses to: (1) determine the factors that contributed to risk, (2) assign relative risk ratings to each site, and (3) rank facilities according to their potential to impact the receiving environment. Multidiscriminant analysis was used to determine which factors were correlated to environmental risk posed by run-off.

Survey results indicated that run-off is a common occurrence. Eighty-nine percent (64/72) of the facilities had visible run-off. The majority of sites reported a visible run-off occurring 20 to 50 days per year. Run-off usually appeared in winter and spring and coincided with rain and snowmelt. Applying water to control dust and prevent fires also activated run-off. In most cases, run-off terminated in the ocean (31.6%) or into the ground (30.5%). The average colour of run-off, determined subjectively by respondents, was dark yellow. Run-off colour was used as a non-technical indicator of run-off concentration. Chemical analyses were not commonly performed on run-off. Approximately half of the sites (35/64) collected run-off and most of these sites (29/35) treated the run-off (e.g. sediment traps). There was no correlation between run-off treatment and predicted relative risk. The average facility age was 21 years and most operated throughout the entire year. Fir, hemlock and pine were the most common species handled at logyards. Chipping and hogging were not ordinarily practiced on site. The average and median volumes of wood handled at these sites were 412 750 m³/yr and 329 500 m³/yr, respectively. The average and median sizes of the facilities were 17.4 ha and 5.4 ha,



respectively. Gravel surfaces were most common (23/64), although dirt (14/64), and asphalt (12/64) sites were also prevalent. Surfaces were generally cleaned on a continuous basis. Sixty-six percent (42/64) of the facilities fell into the high-risk category with the remaining thirty-four percent (22/64) classified as low-risk.

In order of importance, volume of wood stored onsite (largest contribution), frequency of run-off events and colour intensity of run-off (smallest contribution) were factors that significantly contributed to risk and were correlated positively. Sites fell into the high-risk category if the volume of wood stored processed on site was greater than 329 000 m³/year, the run-off occurred more than 20 days/year and the colour of run-off was dark yellow (Table 1). Methodology developed for this study may provide a useful preliminary determination of relative risk to the receiving environment from logyard run-off. Based on our analyses, options such as run-off analyses, run-off management or treatment may be evaluated. Further, the results of this study provide information for subsequent field-based studies. Future work should be conducted to gather onsite water quality data in order to validate the effectiveness of this method as a tool for predicting risk at logyards and to improve the

predictive power of the tool by including additional quantitative information.

Literature cited

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WDOE. 1995. Best management practices to prevent stormwater pollution at logyard and dryland sorts. Washington State Department of Ecology Olympia, WA, USA. Publication # 95-53.

Table 1. Characteristics of the five highest and five lowest ranked logyards in a relative environmental risk study in B.C., 2000.

Site Ranking ^a	Wood Volume Processed (1 000 m ³ /yr)	Frequency of Run-off (days/year)	Run-off Colour Ranking ^b
1	1 300	100–365	7
2	1 200	100–365	7
3	636	100–365	10
4	670	100–365	7
5	350	100–365	9
58	150	10–20	4
60	300	10–20	2
61	165	10–20	3
62	40	0–5	4
63	8	5–10	4

^a1–5 = the five highest relative risk sites; 58–63 = the five lowest relative risk sites

^bcolour darkness from 1 = clear to 10 = black



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CHOOSING AMONG PLANETS – WHERE TO NEXT???

Shocking news from the environmentalist group WWF International: The human race may have to colonize two new planets by 2050 if we are to sustain current consumption levels.

While we applaud WWF's new-found imperialist instincts, the question presents itself: Which planets? Below, we set forth the benefits and drawbacks of three attractive candidates:

PLUTO – Benefit: Low surface temperature (-233 C) allows room for global warming; provisions of Kyoto protocol may be openly flouted. Drawback: Due to small size, some astronomers classify Pluto as an asteroid, a designation that may lead to planetcentric stigmatization of colonial inhabitants.

JUPITER – Benefit: Large size will permit low population density. Drawback: Hypertoxic ammonia/methane atmosphere will impede activities such as organic farming, Pilates, breathing.

Janus VI – Benefit: Planet's crust is rich in valuable metals such as uranium, cesium, and platinum. Drawback: Attacks by silicon-based Horta creatures may impede mining efforts.

Source: National Post



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Do Not Forget!!!

LAST DATE FOR SUBMISSIONS TO ASPECT	NEWSLETTER RELEASE DATE
NOV. 22, 2002	DEC. 13, 2002

Electronic submissions in **Word format (only)** should be made to Bruce Thomson by the date listed above (no exceptions) (bruce.thomson@gems3.gov.bc.ca)

Refer to *Guidelines for Submission* on the website for submission requirements.

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