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Desktop Remediation™

A “Principle-Based” Approach to Avoid Falsely Identified Contamination

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BIOGRAPHY

Daniel Gorsic is a professional chemist and a contaminated sites practitioner with 25 years of experience. He is the CEO of SynergyAspen Environmental Inc. SynergyAspen provides contaminated sites, reclamation and natural sciences consulting services in northeast BC and northwest Alberta. SynergyAspen’s purpose is to protect and improve the environment. He is passionate about avoiding falsely identified contamination resulting in unnecessary delineation or remediation work that is bad for the environment.

ABSTRACT

Between 2015 and 2017, SynergyAspen obtained approximately 1/3 of all Certificate of Restoration (CoR) Part 1’s in BC, saved our clients over \$20M and averted greater than 85,000 m³ of soil from landfill disposal. We did this using SynergyAspen approach called Desktop Remediation™.

Desktop Remediation™ is a site-specific risk evaluation using a science-based approach to contaminated sites consulting, specific to the conditions and risks of the O&G industry in BC. We use existing science, and new scientifically supported methods developed by SynergyAspen, to accurately identify and evaluate environmental risk. Desktop Remediation™ takes a “principle-based” approach, requiring the use of professional judgement by both practitioner and regulator. Desktop Remediation™ questions following a “rules-based” regulatory system, especially when doing so causes more harm to the environmental than good.

The BC Regulations are: 1) generic, meaning the conditions of environmental risk are assumed to be inclusive of the entire province, and 2) prescriptive, meaning the same set of rules or methods are applied to the entire province. The conditions in northeast BC are different than the conditions in southwest BC. It is impossible to come up with a “one size fits all approach”, but that’s exactly what’s happened.

Desktop Remediation™ examines the risk triangle; contaminant, pathway and receptor. We conduct a detailed evaluation of each corner of the risk triangle and determine if contamination is real, exaggerated, falsely identified, or due to background conditions. Desktop Remediation™ is done before risk assessment, often negating the need for risk assessment.

Examples of new scientifically supported methods will be discussed:

Contaminant.

The Oil and Gas Commission (OGC) accepts an Alternative Salinity Evaluation as an additional line of evidence to determine salt concentrations in organic soils such as muskeg. An accepted alternative lab method (modified saturated paste) was recommended by SynergyAspen as a result of our research project funded by BC ORGIS. The alternative lab method measures the salt concentration in muskeg pore water. This is a departure from the standard saturated paste method that measures salt concentrations in muskeg "soil". The alternative lab method eliminates two major biases that falsely identifies contamination.

Receptor

Although environmental receptors haven't changed, technological advances have changed how we initially identify receptors. Our proprietary GIS system imports 1000's of data layers into one viewing port. Other organizations developed a similar system, allowing easier and quicker desktop review of receptor information.

Pathway

The drinking water standards are incorrectly applied at many sites. This causes contamination to be identified by the application of overly conservative standards. Installation of monitoring wells can rule out the drinking water pathway; however, this can be expensive and is not practical at remote sites.

SynergyAspen developed a proprietary method to estimate hydraulic conductivity by analysis of soil samples for grain size. OGC accepts this line of evidence in conjunction with other supporting lines of evidence to rule out the drinking water pathway.

A case study will be reviewed; the cost savings were \$8M with >50,000 m³ of soil averted from landfill disposal.