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How Advances in Remote Sensing Applications Assist in Mining Development

ABSTRACT

Recent advances in satellite quality, image processing and software applications have led to improved and more frequent and reliable data. Because of these advances in technology, Stantec was able to develop a series of remote sensing tools in order to transform satellite data into reliable end-user information to facilitate mine development plans and environmental studies. Some of the investigations and applications used by Stantec in the mining sector include: SSUM (Surface Subsidence & Uplift Measurement) which provides vertical millimeter accuracy of ground deformation for vast expanses of the landscape. PipeWATCH uses daily satellite imagery to monitor hundreds or thousands of kilometers of pipeline rights-of-way for surface and sub-surface contamination leaks. ExtractX uses a form of artificial intelligence to generate highly specialized classifications of surface features, vegetation species and vegetation rehabilitation/reclamation.

BIOGRAPHY

Grant Wiseman is a Remote Sensing Scientist with 19 years of environmental research experience. Mr. Wiseman obtained a Bachelor of Science degree in Geography from the University of Winnipeg in 2001 and a Master of Science degree from the University of Manitoba in 2007. Grant's earth observation work is focused on developing new geomatic techniques for sustainable resource management in collaborative projects with the Canadian Space Agency, the United States Department of Agriculture and NASA. He possesses an extensive background in geomatics, having worked on a variety of regional, national and international projects. Mr. Wiseman has been with Stantec since December 2013 working on a wide range of Earth observation projects in the Oil & Gas, Mining, Power, Transportation and Infrastructure sectors globally. He also holds a research associate position with the Centre for Earth Observation Science of the University of Manitoba.

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