

Reid is a senior air quality engineer, project manager and is the technical leader for Air Quality in Canada at Stantec with 24 years of consulting experience. His primary area of technical focus has been on emissions quantification and inventories, greenhouse gas emissions, air quality modelling and assessment. He has extensive experience with assessing the effects of air emissions from a wide range of industries including infrastructure, oil and gas, petrochemical, mining, power generation, manufacturing, pipelines, and forest products.

Reid's technical, project management and discipline leadership experience includes developing and advising on assessment methodology, leading multi-disciplinary teams, client liaison, internal and external training, technical analysis, report writing, regulatory advice and providing expert witness testimony at regulatory hearings. Reid is responsible for leading projects, senior review of project work, development of standard operating procedures, training staff, technical quality, and project delivery.

EDUCATION

Master of Engineering, Environmental Engineering,
University of Calgary, Calgary, Alberta, 2007

Bachelor of Applied Science, Environmental
Systems Engineering, University of Regina, Regina,
Saskatchewan, 2000

REGISTRATIONS

Professional Engineer, Association of Professional
Engineers and Geoscientists of Alberta

Professional Engineer, Association of Professional
Engineers and Geoscientists of Saskatchewan

Professional Engineer, Engineers and Geoscientists
British Columbia

Expert Testimony / Witness

Alberta Transportation Springbank Off-stream
Reservoir Project Hearing (Expert Witness), 2021

Teck Frontier Mine Project Joint Review Panel
Hearing (Expert Witness), 2018

Shell Waterton 68 Hearing (Expert Witness), 2013

PROJECT EXPERIENCE

Chemical Facilities

Inter Pipeline Ltd. Polypropylene Manufacturing
Project, Ft. Saskatchewan, Alberta (Discipline Lead,
Senior Reviewer), 2018-2020

Stantec was retained to complete an air quality assessment in support of regulatory applications to amend the Propane Dehydrogenation Plant EPEA approval to add a polypropylene manufacturing plant. Work included an emission inventory, meteorological and dispersion modelling, and a report.

Inter Pipeline Ltd. Propane Dehydrogenation
Project, Ft. Saskatchewan, Alberta (Discipline Lead
and Project Manager), 2016-2017

Stantec was retained to complete an air quality assessment in support of regulatory applications to amend an EPEA approval. Work included an emission inventory, meteorological and dispersion modelling, and a report.

Air Products Scotford Hydrogen Facility, Ft.
Saskatchewan, Alberta (Discipline Lead), 2014

Stantec was retained to complete regulatory application and a supporting air quality assessment for the Scotford Hydrogen Manufacturing Facility. Stantec completed an air quality assessment to evaluate effects on air quality associated with the steam methane reformer. A detailed emission inventory was developed for the region, the CALPUFF dispersion model was run to predict pollutant concentration and deposition rates and an air quality assessment report was prepared.

* denotes projects completed with other firms

Reid A. Person M.Eng., B.A.Sc., P.Eng.

Technical Leader for Atmospheric Sciences – Canada, Principal

Oil & Gas Midstream - Terminals

LNG Canada Project, Environmental Assessment, Kitimat, British Columbia (Technical Advisor, Quality Reviewer), 2014-current

Technical reviewer and quality reviewer associated with emission inventory development, CALPUFF dispersion modelling, EA reporting, post-application dispersion modelling to support design, and health risk assessment associated with the worker accommodation camp (WAC). These tasks included a detailed estimate of project emissions, meteorological modelling and dispersion modelling associated with multiple phases of the proposed LNG Terminal.

Woodfibre LNG Project, Dispersion Modelling and Design Support, Squamish, British Columbia (Quality Review, BAT Lead), 2021-current

Quality review for construction dispersion modelling and health risk assessment. Completion of a best available technology assessment in support of permit applications for the Woodfibre LNG Project. Stantec has designed and implemented an air quality monitoring program operating during construction.

Rockies LNG Project, Quality Review, British Columbia (Quality Review), 2021-current

Quality review and technical advisor for the air quality assessment of the proposed Rockies LNG Project in northern BC in support of the Environmental Assessment application. The scope of work includes emission calculations, dispersion modeling, effects assessment, and reporting.

Nexen Aurora LNG Project, Environmental Assessment, Prince Rupert, British Columbia (Discipline Lead), 2016-2017

Lead air quality assessment of the Aurora LNG export facility including emission calculations, dispersion modeling, effects assessment, reporting, information responses and public presentations. This included a detailed examination of the existing environment (emissions and air quality) plus an analysis of environmental effects of the LNG Terminal.

Oil & Gas Downstream – Refineries and Upgraders

Federated Co-operators Limited Regina Refinery (Discipline Lead, Quality Review), 2019.

Stantec was retained to complete dispersion modelling for in support of development of an Environmental Protection Plan for the Co-operators Regina Refinery Complex. Stantec developed a comprehensive emission inventory of CAC, VOC, PAH and RS emissions and completed dispersion modelling using the CALPUFF model, and prepared an air quality assessment report.

Husky Energy Lloydminster Asphalt Refinery (Senior Review, Quality Reviewer), 2015 to 2017.

Stantec was retained to complete dispersion modelling for in support of an EPEA renewal application as well as in support of an application to amend the facility EPEA approval. Stantec completed dispersion modelling using the AERMOD and AERFlare models and prepared air quality assessment reports in support of both regulatory applications.

Value Creations Heartland Upgrader, Air Quality Assessment, Fort Saskatchewan (Discipline Lead, Quality Review), 2015

Stantec was retained to complete an air quality assessment associated with a proposed amendment to the VCI Heartland Upgrader. The project included updating the facility emission inventory, meteorological and dispersion modelling with CALPUFF, and preparing a detailed air quality assessment report.

Total E&P Upgrader, Air Quality Assessment, Fort Saskatchewan, Alberta (EIA) (Dispersion Modeling Supervisor, Emission Inventory), 2010

Work included an emission inventory, meteorological and dispersion modelling with CALPUFF, modelling to predict changes to acid and nitrogen deposition, GHG emissions, air quality modelling in support of a human health risk assessment and attending and providing support at the ERCB hearing.

* denotes projects completed with other firms

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Oil Sands Mining

Air Quality and Greenhouse Gas Assessments for Mining Projects: Synenco Energy Northern Lights Mine, Petro-Canada Fort Hills Mine Expansion, Teck Resources Frontier Project Mine, Regulatory/Hearing Support for the Total Joslyn Mine, Alberta (Discipline Lead, Quality Reviewer)

Air quality impact assessments of multiple oil sands mine and extraction Projects in Alberta. Work included an emission inventory including combustion and fugitive emissions, meteorological and CALPUFF dispersion modelling, human and ecosystem risk assessment, preparing reports, and QAQC of work. Greenhouse gas emissions were estimated and assessed by comparing to provincial and federal inventories and by comparing GHG emission intensity to similar projects.

Frontier Oil Sands Mine Project Energy Mapping Study (GHG Emissions, Report Reviewer), 2018

Stantec Consulting Ltd. (Stantec) was retained by Teck Resources Limited (Teck) to examine energy consumption at the Project located 110 km north of Fort McMurray, Alberta. The energy mapping study focuses on energy use in the context of GHG emissions and contrasts the 2011 Integrated Application with the 2015 Project Update. Possible opportunities to reduce energy consumption during future stages engineering are also identified.

CEMA - Emission Inventory and CALPUFF Model Protocol Project for the Lower Athabasca Region (Stantec Project Manager), 2011-2012

Partnering with ENVIRON, Stantec developed an emission inventory protocol and a model protocol for CEMA that outlines the steps to create an appropriate emission inventory and complete concentration, photochemical and deposition modeling to address the needs of the Acid Deposition Management Framework, Nitrogen Eutrophication Plan and Ozone Management Frameworks for the Lower Athabasca Region. Stantec and ENVIRON recently completed the next phase of this project: development of the actual emission inventory.

Oil Sands In-Situ

Air Quality and Greenhouse Gas Assessments for SAGD Projects (EIAs): Suncor Meadow Creek East and West Projects, Cenovus Foster Creek and Christina Lake Expansions, Suncor MacKay River Expansion, Devon Jackfish Expansion, JACOS Expansion, OSUM Taiga, Alberta (Discipline Lead)

Air quality impact assessments of new or expansions of in-situ SAGD oil sands facilities in Alberta. Work included an emission inventory focused on the combustion and VOC emissions, meteorological and dispersion modelling, and providing air quality data to be used in the human and ecosystem risk assessments, preparing reports, and QAQC of work. Greenhouse gas emissions were estimated and assessed by comparing to provincial and federal inventories and by comparing GHG emission intensity to other oil sands projects.

Midstream Facilities

Pembina Pipeline Redwater Fractionation and Storage Facility Projects, Ft. Saskatchewan, Alberta, 2012 to current

Stantec provided air quality support for multiple regulatory applications associated with adding tanks, rail and truck loading facilities, debottlenecking changes, the RFS 2 expansion, RFS 3 expansion, a cogen expansion and an assessment in support of an application to renew facility EPEA approval. Stantec prepared emission inventories for each expansion as well as for other facilities in the Fort Saskatchewan region, completed dispersion modelling using the AERMOD and CALPUFF models and prepared air quality assessment reports.

Combined Heat and Power

City of Calgary Bonnybrook WWTP Cogeneration Project, Air Quality Assessment, Alberta (Discipline Lead), 2016-2017, 2024

Completed an air quality assessment of the proposed installation of a new gas fired turbine and waste heat recovery system at the City of Calgary Bonnybrook WWTP to burn digester gas. Work included an emission inventory, meteorological and dispersion modelling, and preparing a report for submission to Alberta Environment and Parks and the Alberta Utility Commission.

* denotes projects completed with other firms

Reid A. Person M.Eng., B.A.Sc., P.Eng.

Technical Leader for Atmospheric Sciences – Canada, Principal

PUBLICATIONS

Davies M, Cho S, Spink D, Pauls R, Desilets M, Shen Y, Bajwa K, Person R., An enhanced approach for the use of satellite-derived leaf area index values in dry deposition modeling in the Athabasca oil sands region. *Journal of Environmental Management*. December 2016.

Davies, M., K. Bajwa, R. Person. 2015. Predicted spatial variations of sulphur and nitrogen compound concentrations and deposition in the AOSR. Chapter 4 in *Assessing Forest Health in the Athabasca Oil Sands Region*. WBEA Report 2015-05-25, pp 51 to 63.

Vijayaraghavan, K., J. Jung, R. Morris, M.J.E. Davies, R. Person. Impact of Emissions from Oil Sands and Other Sources on Ozone and Acid Deposition in Northeast Alberta. Presented at North American Oil and Gas Conference (October 2014), Calgary, Alberta.

Davies, M.J.E. and R. Person. Air Quality Model Data Needs – A Modeller's Perspective. Presented at the WBEA/TEEM workshop (November 2013), Calgary, Alberta.

Presentation. Davies, M.J.E, and R. Person. Modelling PAH and Metal Deposition in the Oil Sands Region. *COSIA meeting: Aerial Deposition and Snowpack Runoff to Streams and Lakes in the Oil Sands Area, Calgary, Alberta, October, 2013*.

Davies, M., Person, R., Bajwa, K., Vijayaraghavan, K. A comparison of two independent applications of the CALMET/CALPUFF model system to the Athabasca Oil Sands Area. (April 2012). *2012 CPANS AWMA Spring Conference. Calgary, Alberta, 2012*.

Person, R., Davies, M., Shen, Y. A comparison of CALMET and MMIF Meteorological Pre-processors. (April 2012). *2012 CPANS AWMA Spring Conference. Calgary, Alberta, 2012*.

Davies, M., Person, R., Bajwa, K., Berryman, S., Straker, J. A comparison of regional dispersion model predictions to lichen sampling in the Athabasca Oil Sands Region (May 2011). *43rd Annual Air Pollution Workshop. Alberta Oil Sands: Energy, Industry and the Environment. Fort McMurray, Alberta, 2011*.

Springer, A., Person, R., Bajwa, K., AWMA Paper 930. Calgary, Alberta (June 2010). *Application of Quantitative Risk Assessment Techniques to Evaluate Odours, 2010*.

Presentation. Person, R., Davies, M.J.E., CPANS Nuisance Conference. Calgary, Alberta (November 2009). *Calculation of background PAI for the Lower Athabasca Land Use Planning Area. CPANS Nuisance Conference, 2009*.

Presentation. Davies, M.J.E. and R. Person. Relative Contributions of different source types to PAI and N deposition as determined from the CALPUFF Model. *TEEM/NSMWG Technical Meeting. April 30, 2009. Banff, Alberta, 2009*.

Presentation. Davies, M.J.E., A. Schutte, P. Staniaszek and R. Person. Presented at the Air & Waste Management Association Emerging Issues in Air Quality Modeling for Canada. Calgary, Alberta (2006). *Dispersion Model Performance: Western Canada Case Studies., 2006*.

Fudge, S., A. Fisher, R. Person and M. Schroeder. Canadian Approaches to Emissions Management for Sour Gas Production. *11th Annual Abu Dhabi International Petroleum Exhibition and Conference. Abu Dhabi, United Arab Emirates. October 10–13, 2004*.

Jonathan Chui P.Eng., INCE

Senior Noise Specialist
22 years of experience · Calgary, Alberta

Jonathan has over 20 years of consulting experience in the acoustic industry. Jonathan specializes in noise impact assessment, expert witness, noise management plans, regulatory policy, engineering noise control, source measurement, complaint investigation, baseline noise monitoring, vibration measurements, and other industrial operations for Canadian and international projects. In the regulatory policy area, Jonathan provided technical support in the development and update of the Alberta Utilities Commission Rule 012: Noise Control.

EDUCATION

Bachelor of Science in Mechanical Engineering,
University of Calgary, Calgary, Alberta, Canada, 1992

MEMBERSHIPS

Member, Association of Professional Engineers and Geoscientists of Alberta

Member, Institute of Noise Control Engineers of the USA

PROJECT EXPERIENCE

OIL SANDS MINING

Teck – Frontier Oil Sand Mine Noise Impact Assessment (Discipline Lead, Expert Witness)

Frontier is a proposed truck-and-shovel oil sands mine located between Fort McMurray and Fort Chipewyan in northeast Alberta. Frontier will consist of surface mining operations, a processing plant, tailings management facilities, water management facilities, and associated infrastructure and support facilities. Responsibilities included noise impact assessment, noise control design recommendations, public hearing participation as an expert witness.

WIND POWER

ABO Wind Canada Ltd. Buffalo Plains Wind Farm Noise Assessment, Alberta, 2018 - present (Discipline Lead, Expert Witness)

Project involved noise assessment of the proposed wind farm. Responsibilities included constraint mapping, noise emission analysis, noise modelling, report writing, open house presentation, response to information requests from the AUC, and public hearing participant as expert witness.

INFRASTRUCTURE

Alberta Transportation, Springbank Off-Stream Reservoir, Alberta (Discipline Lead)

Project involved baseline noise measurement and noise assessment of project, a dry reservoir that will store water temporarily during a flood. It will work in tandem with the Glenmore Reservoir in Calgary. The assessment quantifies the noise effect during the construction phase of the project. Responsibilities included field planning, noise emission analysis, noise modelling, quality review of report, and public hearing participant as expert witness.

OIL & GAS

Westcoast Energy Inc., Transmission South RAM project, BC (Discipline Lead)

The Project is comprised of proposed compressor station expansion at CS 6B, CS 8A, and CS 9 for the Transmission South Ram project. The noise impact assessment provided a complete evaluation of the project construction and operation phase. Responsibilities included senior review, discipline management, and report preparation.

Westcoast Energy Inc., Spruce Ridge project, BC (Discipline Lead)

The Project is comprised of proposed Chetwynd Loop and Altken Creek Loop, and compressor station expansion at CS 2 and CS N5. The noise impact assessment provided a complete evaluation of the project construction and operation phase. Responsibilities included senior review, discipline management, and report preparation.

Westcoast Energy Inc., Westcoast Connector Gas Transmission Project - Noise Impact Assessment, BC (Discipline Lead)

The proposed Westcoast Connector Gas Transmission Project is a new natural gas system that will begin in the Cypress area of northeast B.C. and end at BG Group's proposed Prince Rupert LNG export facility, on Ridley Island. The noise impact assessment provided a complete evaluation of the construction and operation of the pipeline and associated compressor stations. Responsibilities included QA/QC, noise emission calculations, noise modeling, noise control assessment and report preparation.

**Westcoast Energy Inc., North Montney project, BC
(Discipline Lead)**

The project provides incremental raw gas gathering and processing services in northeastern British Columbia. The Project is comprised of 10.3 km of pipeline, 3 segments of tie-in pipeline, new compressor station, power generation, and new gas meter station facilities. The noise impact assessment provided a complete evaluation of the project operation phase. Responsibilities included senior review, discipline management, and report preparation.

OIL AND GAS PIPELINES

**Enbridge Waupisoo Pipeline—Noise Impact Assessment
| Alberta, Canada | Component Lead**

**Spectra Energy Transmission, North Montney Project |
British Columbia, Canada | Discipline Lead**

**Spectra Energy Transmission, Westcoast Connector Gas
Transmission Project—Noise Impact Assessment |
British Columbia, Canada | Discipline Lead**

SOLAR POWER

**EDF EN Canada Vulcan Solar Farm Noise Assessment,
Vulcan, Alberta (Discipline Lead)**

Project involved noise assessment of the proposed 77.5 MW solar farm. Responsibilities included noise emission analysis, noise modelling, report writing, and response to information requests from the AUC.

TRANSPORTATION

**South of Fraser Rapid Transit Newton Guildford Line –
Preliminary Noise Assessment (Discipline Lead)**

Project involved preliminary evaluation of operational noise attributed to the LRT to provide an indication of the magnitude of noise associated with this project at identified key receptors. The assessment also evaluate the potential requirement of noise barriers.

**Millenium Broadway Subway Project (Discipline Lead) –
Traffic Noise Assessment, Vancouver, British Columbia
(Discipline Lead)**

The Millennium Line Broadway Extension (MLBE) Rapid Transit Project by TransLink is a direct extension of the existing Millennium Line continuing from the existing VCC-Clark Station to Arbutus Street. Stantec provided transportation and construction noise assessment model and noise mitigation recommendations for the Project design such that the noise effect is in compliance with the applicable noise regulations.

**Serafina Energy Ltd. Hamlin Site Transload Facility Noise
and Vibration Assessment (Discipline Lead)**

Serafina Energy produces an undiluted 12°API heavy oil which is transported to market by road tanker truck transloaded to rail. Serafina desires to construct and operate a new rail terminal closer to their production facilities, designed specifically to handle their heavy oil product. This rail terminal will be situated near the community of Prince in the region of North Battleford, SK. The empty rail cars will be delivered by CN, and once loaded by Serafina, will be hauled to market by CN. The assessment was completed to quantify the noise and vibration effects at the closest existing sensitive receptors near the Project.

Atmospheric Environment Engineer

16 years of experience · Fredericton, New Brunswick

Christina obtained a Bachelor of Science in Engineering (Chemical) from the University of New Brunswick. She has practiced environmental engineering, specializing in atmospheric sciences, for 16 years. Her primary area of work is with greenhouse gas (GHG) quantification and verification. Christina has participated in over 150 GHG validation and verification projects for clients in oil and gas, chemical manufacture, electricity generation, commercial operations, and municipal governments. Christina has completed desktop reviews, reporting, and site visits for facility and project GHG inventories under regulatory programs in Alberta, British Columbia, Ontario, Quebec, Nova Scotia, and Newfoundland as well as voluntary programs including The Climate Registry and the Verified Carbon Standard.

Christina has also been involved in air quality studies such as dispersion modelling, noise monitoring, source emissions testing, and ambient air quality monitoring. She has created emissions inventories to address regulatory requirements, environmental assessments, and permitting, including those for National Pollutant Release Inventory (NPRI) and Environment and Climate Change Canada Greenhouse Gas Program reporting (GHGRP).

Christina has acted as the author for several climate change assessments for large and small environmental assessments, under various jurisdictions including the Impact Assessment Act (IAA), the Canada Energy Regulator (CER), and the province of British Columbia.

EDUCATION

Bachelor of Science in Engineering (Chemical),
University of New Brunswick, Fredericton, New
Brunswick, Canada, 2008

Canadian Standards Association, Greenhouse Gas
Verification Using ISO 14064-3, Fredericton, New
Brunswick, Canada, 2008

MEMBERSHIPS

Member, Engineers & Geoscientists New Brunswick |
Association des ingénieurs et des géoscientifiques du
Nouveau-Brunswick, 2008-present

PROJECT EXPERIENCE

FACILITY GREENHOUSE GAS (GHG) VERIFICATION

British Columbia Reporting Regulation Verification |
Multiple Clients | British Columbia, Canada | 2010-
present | Verifier and Lead Verifier

Completed the desktop review of many oil and gas emissions reports in British Columbia. The desktop review included evaluating the GHG data supporting the report as well as the data quality assurance/quality control practices employed at the facilities. Developed the verification plan and verification report. For several projects, led the site visit. Such services were provided to: Penn West Linear Facility (2010-2016), Enerplus Linear Facility (2010-2011), Devon Canada Linear Facility (2010-2011), Nexen Linear Facility (2012-2013), Imperial Oil Horn River (2016), ConocoPhillips (2016), Nexen Linear Facility (2016).

ENVIRONMENTAL ASSESSMENTS

Project Eider Rock: Proposed Petroleum Refinery and Marine Terminal | Irving Oil Limited | Saint John, New Brunswick, Canada | 2006-2009 | Team Member

In support of the environmental assessment, worked with the Atmospheric Environment Team on the Air Quality Technical Study. Gathered ambient air concentration data for air contaminants from the National Air Pollutants Surveillance (NAPS) network and the New Brunswick Department of Environment, and completed the preliminary statistical analysis. Also assisted with developing the Air Quality Technical Study and the Atmospheric Environment chapter in the Environment Assessment report.

BC Hydro Site C Project: Proposed Hydroelectric Dam | BC Hydro | Fort St. John, British Columbia, Canada | 2012 | Team Member

In support of the environmental assessment, worked with a team of greenhouse gas analysts to quantify emissions of GHGs associated with the Site C Project. Focused on developing the construction emissions inventory, which included estimating life cycle emissions of the proposed construction materials and fuels. Assisted with the writing of the Greenhouse Gases Technical Report and the environmental impact statement chapter on greenhouse gases.

Cedar LNG Project: Proposed LNG Facility in British Columbia | Cedar LNG Partners LP | British Columbia | 2021 to 2023 | GHG Discipline Lead

Lead the development of the GHG Technical Data Report, the Strategic Assessment of Climate Change Technical Data Report, and the Climate Change chapter in the Impact Assessment Act (IAA) Application.

Ksi Lisims LNG: Proposed LNG Facility in Northern British Columbia | Nisga'a Nation, Rockies LNG Limited Partnership, and Western LNG | Wil Mili, British Columbia | 2022-2023 | GHG Discipline Lead

Lead the development of the GHG Technical Data Report, the Strategic Assessment of Climate Change Technical Data Report, and the Climate Change chapter in the Impact Assessment Act (IAA) Application.

LIFE CYCLE ASSESSMENT

1000218331 - Assessment of Greenhouse Gas Emissions of Oil and Gas Development in the Arctic | Northwest Territories, Canada

Designed and implemented the GHG emissions lifecycle assessment for potential offshore oil and gas production facilities in the Beaufort Sea. The assessment looked at production, processing, refining, transportation to market, and combustion emissions of the hydrocarbon products.