

CURRICULUM VITAE

FOR

LINDSAY, Matthew Bruce James

Department of Geological Sciences
University of Saskatchewan

1. PERSONAL

Birth Date: June 7, 1978

Citizenship: Canadian

2. DEGREES

Ph.D., University of Waterloo, 2010, Department of Earth and Environmental Sciences, Earth Sciences

B.Sc. (Hon.), University of Guelph, 2001, Faculty of Environmental Sciences, Environmental Sciences

3. CREDENTIALS

Professional Geoscientist (P.Ge.), Association of Professional Engineers and Geoscientists of Saskatchewan (APEGGS), 2022 to present

Geoscientist in Training (G.I.T.), Association of Professional Engineers and Geoscientists of Saskatchewan (APEGGS), 2021 to 2022

4. APPOINTMENT (INCLUDING JOINT) AND PROMOTIONS AT THE U OF S

Assistant Professor, Without Tenure, September 2012 to 2018, Department of Geological Sciences

NSERC Industrial Research Chair, 2014 to present, Department of Geological Sciences

Associate Professor, Tenured, starting 2018, Department of Geological Sciences

5. MEMBERSHIPS AND AFFILIATIONS

5.1 Associate Memberships at the U of S

College of Graduate Studies and Research, 2013 to present

Global Institute for Water Security, 2013 to present

6. PREVIOUS POSITIONS RELEVANT TO U OF S EMPLOYMENT

Research Assistant, Department of Plant Agriculture, University of Guelph, Guelph, Ontario, September 2001 to August 2002

Research Assistant, Department of Earth and Environmental Sciences, University of Waterloo, Waterloo, Ontario, September 2002 to December 2009

Postdoctoral Fellow, Department of Earth and Environmental Sciences, University of Waterloo, Waterloo, Ontario, January 2010 to August 2011

Postdoctoral Fellow, Department of Earth and Ocean Sciences, University of British Columbia, Vancouver, British Columbia, September 2011 to August 2012

7. LEAVES

Sabbatical leave, July 2018 to June 2019

8. RECOGNITIONS

Water Security Research Excellence Award, Global Institute for Water Security, University of Saskatchewan, 2022

Mitacs Elevate Strategic Postdoctoral Fellowship, Department of Earth and Ocean Sciences, University of British Columbia, 2012

NSERC Industrial Postgraduate Scholarship, Department of Earth and Environmental Sciences, University of Waterloo, 2005 to 2007

9. TEACHING ACTIVITIES

9.1 Scheduled Instructional Activity

<u>YEAR</u>	<u>COURSE, TITLE</u>	<u>INST. TYPE</u>	<u>ENRL</u>	<u>YIH</u>	<u>YCSH</u>
2022–23	GEOL 413.3, Aqueous Geochemistry	Lec	10	36.0	360
	GEOL 813.3, Adv. Aqueous Geochemistry	Lec	2	60.0	120
	GEOL 898.53, Adv. Field Methods in Environmental Geoscience	Res	1	60.0	60
	GEOL 492.6, Geological Sciences Research	Res	1	40.0	40
2021–22	GEOL 413.3, Aqueous Geochemistry	Lec	12	36.0	432
	GEOL 813.3, Adv. Aqueous Geochemistry	Lec	5	60.0	300
	GEOL 898.53, Adv. Field Methods in Environmental Geoscience	Res	1	60.0	60
	GEOL 490.3, Geological Sciences Research	Res	1	30.0	30
2020–21	GEOL 413.3, Aqueous Geochemistry	Lec	12	36.0	432
	GEOL 813.3, Adv. Aqueous Geochemistry	Lec	10	60.0	600
	GEOL 492.6, Geological Sciences Research	Res	1	40.0	40
2019–20	GEOL 413.3, Aqueous Geochemistry	Lec	14	36.0	504
	GEOL 813.3, Adv. Aqueous Geochemistry	Lec	7	60.0	420
2018–19	GEOL 490.3, Geological Sciences Research	Res	1	30.0	30
	GEOL 492.6, Geological Sciences Research	Res	3	30.0	90
2017–18	GEOL 413.3, Aqueous Geochemistry	Lec	18	38.5	693
	GEOL 898.06, Adv. Aqueous Geochemistry	Lec	11	41.5	456.5
2016–17	GEOL 413.3, Aqueous Geochemistry	Lec	13	38.5	409.5
	GEOL 898.06, Adv. Aqueous Geochemistry	Lec	9	41.5	373.5
2015–16	GEOL 108.3, The Earth and How It Works	Lec	103	40.0	4120

	GEOL 121.3, Earth Processes	Lec	225	40.0	9000
	GEOL 490.3, Geological Sciences Research	Res	1	30.0	30
	GEOL 492.6, Geological Sciences Research	Res	2	30.0	60
	GEOL 898.26, Groundwater Geochemistry	Lec	7	36.0	252
2014–15	GEOL 108.3, The Earth and How It Works	Lec	108	40.0	4320
	GEOL 121.3, Earth Processes	Lec	225	40.0	9000
2013–14	GEOL 108.3, The Earth and How It Works	Lec	104	39.0	4056
	GEOL 121.3, Earth Processes	Lec	219	39.0	8541
	GEOL 898.26, Groundwater Geochemistry	Lec	11	36.0	396

9.2 Unscheduled Instructional Activity

<u>YEAR</u>	<u>COURSE, TITLE</u>	<u>INST. TYPE</u>	<u>ENRL</u>	<u>YIH</u>	<u>YCSH</u>
2018–19	GEOE 375.3, Engineering Hydrogeology	Lec	50	2.0	100
2013–14	GEOE 218.3, Engineering Geology	Lec	130	1.5	195

9.3 Course and Program Development

B.Sc. in Environmental Geoscience, University of Saskatchewan (January to October 2019)

GEOL 813.3, Advanced Aqueous Geochemistry, University of Saskatchewan (January to May, 2019)

9.4 Teaching Materials

2016-17 GEOL 413/GEOL 898.3, Aqueous Geochemistry/Advanced Aqueous Geochemistry, developed 590 slides.

2013–14 GEOL 108.3/GEOL 121.3, The Earth and How It Works/Earth Processes, developed 1283 slides.

2013–14 GEOL 898.26, Groundwater Geochemistry, developed 232 slides.

9.5 Other Teaching-Related Activities

Co-organizer, NSERC-TERRE-CREATE Course, “Synchrotron Applications”, May 11–15, 2015.

10. SUPERVISION AND ADVISORY ACTIVITIES

10.1 Undergraduate Student Supervision

Undergraduate Research Projects

Friesen, Simon, Undergraduate Research Assistant, Co-Supervisor, Department of Geological Sciences, Environmental Geochemistry, April 2022.

Connan, Andrew, B.Sc., Supervisor, “Laboratory assessment of acid generation and metal leaching during oxidative weathering of oil sands froth treatment tailings”, April 2022.

Fellwock, Matthew, B.Sc., Supervisor, “Laboratory assessment of acid generation and metal leaching during oxidative weathering of oil sands froth treatment tailings”, April 2021.

Hauber, Lyndsay, B.Sc., Supervisor, “Treatment of dissolved metals in coke leachate using zero valent iron”, April 2019.

Maier, Keegan, B.Sc., Supervisor, “Controls on arsenic mobility within an oil sands froth treatment tailings deposit”, April 2019.

Meili, Drake, B.Sc., Supervisor, “Impacts of redox transition on metal(loid) mobility in weathered oil sands froth treatment tailings”, April, 2019.

Paulsen, Josh, B.Sc., Supervisor, “Selenate and nitrate removal from coal spoil leachate using zero valent iron and magnetite”, April, 2019.

Cowell, Mattea, B.Sc., Supervisor, “Biogeochemical implications of flocculent and coagulant additions to oil sands fluid fine tailings”, April 2016.

Mowat, Aidan, B.Sc., “Impacts of contaminated groundwater discharge on urban stream water quality: Statistical analysis of eight stream catchments in eastern Canada”, April 2016.

Vessey, Colton, B.Sc., “Assessing the sodium buffering capacity of reclamation material in Sandhill Fen”, April 2016.

Undergraduate Research Assistants

Cabrera Ponzo, Ariel, Undergraduate Research Assistant, Co-Supervisor, Department of Geological Sciences, Environmental Geochemistry, May 2023 to present

Churchill, Scott, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, May 2023 to present

Churchill, Scott, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, May to August 2022 (completed)

Friesen, Simon, Undergraduate Research Assistant, Co-Supervisor, Department of Geological Sciences, Environmental Geochemistry, May to August 2022 (completed)

Fellwock, Matthew, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, May to August 2021 (completed)

Paulsen, Josh, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, July to August 2019 (completed)

Wang, Yuanyi, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, June to August 2019 (completed)

Champion, Emily, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, May to August 2019 (completed)

Meili, Drake, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, May to August 2019 (completed)

Meili, Drake, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, May to August 2018 (completed)

Francis, Daniel, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, May to August 2017 (completed)

Schulte, James, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, May to December 2017 (completed)

Vessey, Colton, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, May to August 2015 (completed), May 2017 to present (in progress)

Mowat, Aidan, Undergraduate Research Assistant, Co-supervisor, Department of Geological Sciences, Environmental Geochemistry, January to April 2017 (completed)

Rudderham, Sarah, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, June to August 2016 (completed)

Cowell, Mattea, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, May to August 2015 (completed), May to August 2016 (completed)

Swerhone, Lawrence, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, September to December 2015 (completed)

Cilia, Carlo, Undergraduate Research Assistant, Supervisor, Department of Geological Sciences, Environmental Geochemistry, June to August 2015 (completed)

10.2 Graduate Student Supervision

Fellwock, Matthew, M.Sc., Co-supervisor, Department of Geological Sciences, Environmental Geochemistry, 2022 to present (in progress)

MacGillivray, Julia, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2021 to present (in progress)

Hasani, Sanaz, Ph.D., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2020 to present (in progress)

Marquez, Eduardo, Ph.D., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2020 to present (in progress)

Wang, Yuanyi, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2019 to present (in progress)

Paulsen, Josh, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2019 to present (in progress)

Champion, Emily, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2019 to present (in progress)

Meili, Drake, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2019 to present (in progress)

Adene, Philip, Ph.D., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2017 to present (in progress)

Francis, Daniel, M.Sc., Co-supervisor, Department of Geological Sciences, Environmental Geochemistry, 2017 to 2020 (completed)

Schulte, James, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2017 to 2022 (withdrew)

- Vessey, Colton, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2017 to 2019 (completed)
- Mowat, Aidan, M.Sc., Co-supervisor, Department of Geological Sciences, Hydrogeochemistry, 2017 to present (completed)
- Abdolahnezhad, Mojtaba, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2016 to 2020 (completed)
- Cowell, Mattea, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2016 to 2021 (completed)
- Rudderham, Sarah, M.Sc., Co-supervisor, Department of Geological Sciences, Geomicrobiology, 2016 to 2019 (completed)
- Swerhone, Lawrence, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2016 to 2018 (completed)
- Cilia, Carlo, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2015 to 2017 (completed)
- Liu, Qingyang, Ph.D., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2014 to 2019 (withdrew)
- Nesbitt, Jake, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2014 to 2016 (completed)
- Veikle, Danielle, M.Sc., Co-supervisor, Department of Geological Sciences, Environmental Geochemistry, 2014 to 2018 (completed)
- Heaton, Kaitlyn, M.Sc., Co-supervisor, Department of Geological Sciences, Environmental Geochemistry, 2013 to 2015 (completed)
- Qin, Kaixuan, M.Sc., Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2013 – 2016 (completed)
- Dompierre, Kathryn, Ph.D. Co-supervisor, Department of Civil, Geological and Environmental Engineering, Hydrogeology, 2012 to 2016 (completed)

10.3 Graduate Theses Supervised

- Mowat, Aidan, M.Sc., Co-supervisor, “Hydrogeochemical evolution of groundwaters in the Williston Basin, Canada”, April, 2023.
- Cowell, Mattea, M.Sc., Supervisor, “Geochemical implications of gypsum addition to oil sands fluid fine tailings: Laboratory batch and column experiments”, September, 2021.
- Abdolahnezhad, Mojtaba, M.Sc., Supervisor, “Metal leaching from oil sands fluid petroleum coke under different geochemical conditions”, December, 2020.
- Francis, Daniel, M.Sc., Co-supervisor, “Examining controls on chemical mass transport across the tailings-water interface of an oil sands end pit lake”, February, 2020.
- Vessey, Colton, M.Sc., Supervisor, “Impacts of mineral surface reactions on aqueous vanadate attenuation”, December, 2019.

Rudderham, Sarah, M.Sc., Co-supervisor, “Geomicrobiology and geochemistry of fluid fine tailings in an oil sands end pit lake”, January, 2019.

Swerhone, Lawrence, M.Sc., Supervisor, “Trace element mobility in layered oil sands mine wastes”, July, 2018.

Veikle, Danielle, M.Sc., Co-supervisor, “Geochemical controls on arsenic, uranium and molybdenum mobility in a low-level radioactive waste management area in Ontario, Canada”, May, 2018.

Cilia, Carlo, M.Sc., Supervisor, “Characterizing the physical and chemical transport of dissolved salts in layered oil sands mine wastes undergoing reclamation”, January 2018.

Dompierre, Kathryn, Ph.D., Co-supervisor, “Controls on mass and thermal loading to an oil sands end pit lake from underlying fluid fine tailings”, December 2016.

Cruz-Hernández, Pablo, Ph.D., Co-supervisor, “Trace elements mobility during the early diagenesis of iron precipitates in acid drainage systems”, December 2016.

Qin, Kaixuan, M.Sc., Supervisor, “Impact of iron(II) induced transformation of iron(III) (hydr)oxides on molybdenum mobility in groundwater”, October 2016.

Nesbitt, Jake, M.Sc., Supervisor, “Geochemical investigation of fluid petroleum coke deposits at an oil sands mine in northern Alberta, Canada”, May 2016.

Heaton, Kaitlyn, M.Sc., Co-supervisor, “Biogeochemical investigation of centrifuged fine tailings deposits and an oil sands mine in northern Alberta, Canada”, September 2015.

10.4 Post-Doctoral Supervision

Hayatifar, Ardalan, Post-Doctoral Fellow, Department of Geological Sciences, Environmental Geochemistry, 2021 to present (in progress)

Skierszkan, Elliott, Banting Post-Doctoral Fellow, Department of Geological Sciences, Environmental Geochemistry, 2021 to present (in progress)

Lum, Jullietta, Post-Doctoral Fellow, Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2019 to 2021 (completed)

Schoepfer, Valerie, Post-Doctoral Fellow, Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2019 to present (in progress)

Edahbi, Mohamed, Post-Doctoral Fellow, Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2019 to 2020 (completed)

Robertson, Jared, Post-Doctoral Fellow, Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2017 to 2018 (completed)

Ali, Melkamu, Post-Doctoral Fellow, Co-supervisor, Global Institute for Water Security, Groundwater Modeling, 2014 to 2016 (completed)

Keim, Dawn, Post-Doctoral Fellow, Co-supervisor, Global Institute for Water Security, Hydrogeology, 2014 to 2015 (completed)

10.5 Staff Supervision

Abdolahnezhad, Mojtaba, Research Technician, Supervisor, Department of Geological Sciences, Analytical Geochemistry Laboratory, 2021 to present (in progress)

Cowell, Mattea, Research Technician, Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2020 to present (in progress)

Chen, Jing, Laboratory Manager, Supervisor, Department of Geological Sciences, Analytical Geochemistry Laboratory, 2017 to present (in progress)

Zettl, Julie, Research Engineer, Co-supervisor, Department of Civil, Geological and Environmental Engineering, Hydrogeochemistry, 2016 to 2018 (completed)

Das, Soumya, Professional Research Associate, Co-supervisor, Department of Geological Sciences, Environmental Geochemistry, 2015 to 2018 (completed)

North, Rebecca, Professional Research Associate, Co-supervisor, Global Institute for Water Security, Hydrogeochemistry, 2015 to 2016 (completed)

Galuschik, Noel, Research Technician, Supervisor, Department of Geological Sciences, Environmental Geochemistry, 2015 to 2020 (completed)

Bews, Brenda, Research Engineer, Co-supervisor, Department of Civil, Geological and Environmental Engineering, Financial Management, 2014 to present (in progress)

Pratt, Dyan, Research Engineer, Co-supervisor, Department of Civil, Geological and Environmental Engineering, Hydrogeology, 2013 to 2014 (completed)

10.6 Other Advisory Activities

Brown, Caitlin, M.Sc. Thesis, Advisory Committee Member, Department of Civil, Geological and Environmental Engineering, Hydrogeochemistry, 2022 to present (in progress)

Sigda, Rhonda, M.Sc. Thesis, Advisory Committee Member, Department of Civil, Geological and Environmental Engineering, Hydrogeochemistry, 2022 to present (in progress)

Arthur, Ebenezer, Ph.D. Thesis, Advisory Committee Member, Department of Chemistry, Solid State Chemistry, 2021 to present (in progress)

Nicklin, Michael, Ph.D. Thesis, Advisory Committee Member, Department of Chemistry, Atmospheric Chemistry, 2021 to present (in progress)

Le Roux, Mignon, M.Sc. Thesis, Advisory Committee Member, Department of Geological Sciences, Geomicrobiology, 2021 to present (in progress)

Burelle, Collin, M.Sc. Thesis, Advisory Committee Member, Department of Geological Sciences, Geomicrobiology, 2019 to present (in progress)

Jellicoe, Keegan, M.Sc. Thesis, Advisory Committee Member, Department of Civil, Geological and Environmental Engineering, Hydrogeology, 2019 to 2020 (completed)

Perra, Christopher, M.Sc. Thesis, Advisory Committee Member, Department of Civil, Geological and Environmental Engineering, Hydrogeology, 2019 to 2020 (completed)

Van Hoy, Diane, Ph.D. Thesis, Advisory Committee Member, Department of Civil, Geological and Environmental Engineering, Hydrogeology, 2019 to 2020 (withdrew)

Rafi, Saif, M.Sc. Thesis, Advisory Committee Member, Department of Civil, Geological and Environmental Engineering, Mine Water Treatment, 2019 to 2020 (completed)

Elikem, Essouassi, Ph.D. Thesis, Advisory Committee Member, Department of Soil Science, Soil Chemistry, 2019 to present (in progress)

Zoroufchi Benis, Khaled, Ph.D. Thesis, Advisory Committee Member, Department of Chemical Engineering, Mine Water Treatment, 2019 to present (in progress)

Leik, Adam, Thesis, Advisory Committee Member, Department of Civil, Geological and Environmental Engineering, Hydrogeology, 2018 to 2020 (completed)

Situm, Arthur, Ph.D. Thesis, Advisory Committee Member, Department of Chemistry, Solid State Chemistry, 2018 to 2020 (completed)

de Toledo, Mauro, Ph.D. Thesis, Advisory Committee Member, School of Environment and Sustainability, Biogeochemistry, 2018 to present (in progress)

Phillips, David, M.Sc. Thesis, Advisory Committee Member, Department of Civil, Geological and Environmental Engineering, Hydrogeology, 2017 to 2018 (completed)

Ferris, David, M.Sc. Thesis, Advisory Committee Member, Department of Civil, Geological and Environmental Engineering, Hydrogeology, 2017 to 2019 (completed)

Hyde, Kathlyne, Ph.D. Thesis, Advisory Committee Member, Department of Soil Science, Soil Chemistry, 2017 to present (in progress)

Colville, Scott, M.Sc. Thesis, Advisory Committee Member, Department of Geological Sciences, Geomicrobiology, 2015 to 2018 (completed)

Hamilton, Jordan, Ph.D. Thesis, Advisory Committee Member, Department of Soil Science, Soil Chemistry, 2015 to 2018 (completed)

Hayes, John, Ph.D. Thesis, Advisory Committee Member, Department of Chemistry, Solid State Chemistry, 2014 to 2016 (completed)

Hilger, David, M.Sc. Thesis, Advisory Committee Member, Department of Soil Science, Soil Chemistry, 2014 to 2017 (completed)

Salimi, Hiwa, Ph.D. Thesis, Advisory Committee Member, Department of Chemistry, Organic Chemistry/Metallurgy, 2014 to 2017 (completed)

Mahmood, Neesa, M.Sc. Thesis, Advisory Committee Member, Department of Geological Sciences, Hydrogeology, 2014 to 2016 (completed)

Scale, Kyle, Ph.D. Thesis, Advisory Committee Member, Department of Civil and Geological Engineering, Geotechnical Engineering, 2014 to 2017 (completed)

Steele, Colleen, M.Sc. Thesis, Advisory Committee Member, Department of Civil and Geological Engineering, Hydrogeology, 2014 to 2020 (completed)

Sumaila, Samira, M.Sc. Thesis, Advisory Committee Member, Department of Geological Sciences, Geomicrobiology, 2014 to 2017 (completed)

Vyskocil, Jonathan, M.Sc. Thesis, Advisory Committee Member, Department of Geological Sciences, Geomicrobiology, 2014 to 2017 (completed)

Deen, Sean, M.Sc. Thesis, Advisory Committee Member, Department of Civil and Geological Engineering, Environmental Geochemistry, 2013 to 2017 (completed)

Doxey, Jennifer, M.Sc. Thesis, Advisory Committee Member, Department of Geological Sciences, Mineralogy, 2013 to 2017 (withdrew)

Hermann, Kristian, M.Sc. Thesis, Advisory Committee Member, Department of Geological Sciences, Hydrogeology, 2013 to 2015 (completed)

Nelson, Fina, M.Sc. Thesis, Advisory Committee Member, Department of Geological Sciences, Analytical Geochemistry, 2013 to 2014 (completed)

Robertson, Jared, Ph.D. Thesis, Advisory Committee Member, Department of Geological Sciences, Environmental Geochemistry, 2013 to 2017 (completed)

Schabert, Marcie, M.Sc. Thesis, Advisory Committee Member, Department of Geological Sciences, Hydrogeology, 2013 to 2016 (completed)

11. BOOKS AND CHAPTERS IN BOOKS

12. PAPERS IN REFEREED JOURNALS

*Corresponding Author(s); **Faculty Member** and their Trainees.

Published

***Schoepfer, V.A.** & **Lindsay, M.B.J.** (2022) X-ray absorption spectroscopy and X-ray diffraction data for molybdenum minerals and compounds. *Data in Brief*, 45: 108576. <https://doi.org/10.1016/j.dib.2022.108576>

***Schoepfer, V.A.** & **Lindsay, M.B.J.** (2022) Repartitioning of co-precipitated Mo(VI) during Fe(II) and S(-II) driven ferrihydrite transformation. *Chemical Geology*, 610: 121075. <https://doi.org/10.1016/j.chemgeo.2022.121075>

Jessen, G.L., Chen, L.-X., Mori, J.F., Colenbrander Nelson, T.E., Slater, G.F., **Lindsay, M.B.J.**, Banfield, J.F., & *Warren, L.A. (2022) Alum addition triggers hypoxia in an engineered pit lake. *Microorganisms*, 10: 510. <https://doi.org/10.3390/microorganisms10030510>

Abdolahnezhad, M., & ***Lindsay, M.B.J.** (2022) Geochemical conditions influence vanadium, nickel, and molybdenum release from oil sands fluid petroleum coke. *Journal of Contaminant Hydrology*, 245: 103955. <https://doi.org/10.1016/j.jconhyd.2022.103955>

Francis, D.J., Barbour, S.L., & ***Lindsay, M.B.J.** (2022) Ebullition enhances chemical mass transport across the tailings-water interface of oil sands pit lakes. *Journal of Contaminant Hydrology*, 245: 103938. <https://doi.org/10.1016/j.jconhyd.2021.103938>

Albakistani, E.A., Nwosu, F.C., Furgason, C., Haupt, E.S., Smirnova, A.V., Verbeke, T.J., Lee, E.-S., Kim, J.-J., Chan, A., Ruhl, I.A., Sheremet, A., **Rudderham, S.B.**, **Lindsay, M.B.J.**, & *Dunfield, P.F. (2022) Seasonal dynamics of methanotrophic bacteria in a boreal oil sands end-pit lake. *Applied and Environmental Microbiology*, 88: e01455-21. <https://doi.org/10.1128/AEM.01455-21>

*Slater, G.F., Goad, C.A., **Lindsay, M.B.J.**, Mumford, K.G., Colenbrander Nelson, T.E., Brady, A.L., Jessen, G.L., & Warren, L.A. (2021) Isotopic and chemical assessment of the dynamics of methane sources and microbial cycling during early development of an oil sands pit lake. *Microorganisms*, 9: 2509. <https://doi.org/10.3390/microorganisms9122509>

- Mowat, A.C., Francis, D.J.,** McIntosh, J.C., **Lindsay, M.B.J.,** & *Ferguson, G.A.G. (2021) Variability in timing and transport of Pleistocene meltwater recharge to regional aquifers. *Geophysical Research Letters*, 41: e2021GL094285. <https://doi.org/10.1029/2021GL094285>
- ***Schoepfer, V.A., Lum, J.E.,** & ***Lindsay, M.B.J.** (2021). Molybdenum(VI) sequestration mechanisms during iron(II)-induced ferrihydrite transformation. *ACS Earth and Space Chemistry*, 5: 2094–2104. <https://doi.org/10.1021/acsearthspacechem.1c00152>
- *Craig, A.T., Shkarupin, A., Amos, R.T., **Lindsay, M.B.J.,** Blowes, D.W., & Ptacek, C.J. (2021). Reactive transport modelling of porewater geochemistry and sulfur isotope fractionation in organic carbon amended mine tailings. *Applied Geochemistry*, 127: 104904. <https://doi.org/10.1016/j.apgeochem.2021.104904>
- Schoepfer, V.A., Qin, K., Robertson, J.M., Das, S.,** & ***Lindsay, M.B.J.** (2020). Structural incorporation of sorbed molybdate during iron(II)-induced transformation of ferrihydrite and goethite under advective flow conditions. *ACS Earth and Space Chemistry*, 4: 1114–1126. <https://doi.org/10.1021/acsearthspacechem.0c00099>
- Vessey, C.J.,** Schmidt, M.P., **Abdolahnezhad, M.,** Peak, D., & ***Lindsay, M.B.J.** (2020). Adsorption of (poly)vanadate onto ferrihydrite and hematite: An in situ ATR–FTIR study. *ACS Earth and Space Chemistry*, 4: 641–649. <https://doi.org/10.1021/acsearthspacechem.0c00027>
- Vessey, C.J.** & ***Lindsay, M.B.J.** (2020). Aqueous vanadate removal by iron(II)-bearing phases under anoxic conditions. *Environmental Science and Technology*, 54: 4007–4015. <https://doi.org/10.1021/acs.est.9b06250>
- Mori, J.F., Chen, L.-X., Jessen, G.L., **Rudderham, S.B.,** McBeth, J.M., **Lindsay, M.B.J.,** Slater, G.F., Banfield, J.F., & *Warren, L.A. (2019). Putative mixotrophic nitrifying-denitrifying Gammaproteobacteria implicated in nitrogen cycling within the ammonia/oxygen transition zone of an oil sands pit lake. *Frontiers in Microbiology*, 10: 2435. <https://doi.org/10.3389/fmicb.2019.02435>
- ***Das, S., Lindsay, M.B.J.,** Hendry, M.J. (2019). Selenate removal by zero-valent iron under anoxic conditions: Effects of nitrate and sulfate. *Environmental Earth Sciences*, 78: 528. <https://doi.org/10.1007/s12665-019-8538-z>
- *Skierszkan, E.K., **Robertson, J.M., Lindsay, M.B.J.,** Stockwell, J.S., Dockrey, J.W., **Das, S.,** Weis, D., Beckie, R.D., & Mayer, K.U. (2019). Tracing molybdenum attenuation in mining environments using molybdenum stable isotopes. *Environmental Science and Technology*, 53: 5678–5686. <https://doi.org/10.1021/acs.est.9b00766>
- ***Cruz-Hernández, P.,** Carrero, S., Pérez-López, R., Fernandez-Martinez, A., **Lindsay, M.B.J.,** Dejoie, C., & Nieto, J.M. (2019). Impact of As(V) on precipitation and transformation of schwertmannite in acid mine drainage-impacted waters. *European Journal of Mineralogy*, 31: 237–245. <https://doi.org/10.1127/ejm/2019/0031-2821>
- ***Lindsay, M.B.J., Vessey, C.J.,** & **Robertson, J.M.** (2019). Mineralogy and geochemistry of oil sands froth treatment tailings: Implications for acid generation and metal(loid) release. *Applied Geochemistry*, 102: 186–196. <https://doi.org/10.1016/j.apgeochem.2019.02.001>
- Robertson, J.M., Nesbitt, J.A.,** & ***Lindsay, M.B.J.** (2019). Aqueous- and solid-phase molybdenum geochemistry of oil sands fluid petroleum coke deposits, Alberta, Canada. *Chemosphere*, 217: 715–723. <https://doi.org/10.1016/j.chemosphere.2018.11.064>

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13. ARTISITIC WORKS

14. REFEREED CONFERENCE PULBICATIONS

*Presenting Author; **Faculty Member** and **Trainees**

***Paulsen, J.J., Meili, D.E., Marchi, J.A., Marquez, J.E., Schoepfer, V.A., & Lindsay, M.B.J.** (2022) Geochemical evolution of froth treatment tailings at an oil sands mine in northern Alberta, Canada. *In: Proceedings of the 12th International Conference on Acid Rock Drainage*, September 18–24, Brisbane, Australia, Paper No. 136.

***Lindsay, M.B.J.** & Moncur, M.C. (2019). Geochemical considerations for improved management of sulfide mine tailings. *In: Proceedings of 15th Biennial Meeting of the Society for Geology Applied to Mineral Deposits (SGA)*, August 27–30, Glasgow, Scotland, 4: 1597–1600.

***Cruz-Hernández, P.,** Pérez-López, R., Parviainen, A., **Lindsay, M.B.J.** & Nieto, J.M. (2015). Behavior of trace metals during aging Fe beaker acid drainage. *In: Proceedings of the XXXV Reunión Científica de la Sociedad Española de Mineralogía*, June 30–July 3, Huelva, Spain, *Macla* 20, 039–040.

***Cruz-Hernández, P., Lindsay, M.B.J.,** Parviainen, A., Pérez-López, R. & Nieto, J.M. (2014). Arsenic mobilization in iron precipitates from Acid Mine Drainages at different time-scales. *In: Proceedings of the XXXIV Reunión Científica de la Sociedad Española de Mineralogía*, July 2–7, Granada, Spain, *Macla* 19, 062–063.

***Lindsay, M.B.J.,** Blowes, D.W., Condon, P.D. & Ptacek, C.J. (2012). Long-term biogeochemistry of mine tailings amended with organic carbon for water-quality management. *In: Proceedings of the 9th International Conference on Acid Rock Drainage*, May 20–26, Ottawa, Canada, 1: 594–606.

*Hannam, S., **Lindsay, M.B.J.,** Gibson, B.D., Blowes, D.W., Smith, L. & Segó, D.C. (2012). Diavik waste rock project: mineralogical investigation of sulfide weathering products in low-sulfide waste rock from an operation stockpile in the Arctic. *In: Proceedings of the 9th International Conference on Acid Rock Drainage*, May 20–26, Ottawa, Canada, 2: 1288–1295.

*Moncur, M.C., Ptacek, C.J., Blowes, D.W., **Lindsay, M.B.J.** & Jambor, J.L. (2012). Long-term storage of sulfide-rich tailings under a shallow water cover. *In: Proceedings of the 9th International Conference on Acid Rock Drainage*, May 20–26, Ottawa, Canada, 2: 1853–1864.

*Lindsay, M.B.J., Blowes, D.W., Condon, P.D., Lear, K.G. & Ptacek, C.J. (2009) Organic carbon amendment of tailings for passive in situ management of pore-water quality. *In: Proceedings of the 8th International Conference on Acid Rock Drainage*, June 22–26, Skellefteå, Sweden, 10 pp.

15. PRESENTATIONS

*Presenting Author; **Faculty Member** and **Trainees**

15.1 Invited Presentations

***Lindsay, M.B.J.** (2023) Critical mineral production and mine waste generation: Challenges and opportunities for avoiding another environmental crisis. Canadian Institute for Advanced Research 2nd Japanese-Canadian Frontiers of Science (JCFoS) Symposium, March 6–9, Banff, Canada.

***Lindsay, M.B.J.** (2023) Environmental geochemistry of mine wastes and mine water. Mining Innovation Commercial Accelerator, Technical Workshop, February 15, Calgary, Canada (virtual).

- ***Lindsay, M.B.J.** (2023) Critical Minerals, Mine Wastes, and the Environment. Canadian Institute for Mining–Saskatoon Branch, Technical Seminar, January 26, Saskatoon, Canada.
- ***Lindsay, M.B.J.** (2022) Water Security, Mining, and Mine Reclamation. Global Institute for Water Security Annual Meeting 2022, June 16, Saskatoon, Canada (virtual).
- ***Lindsay, M.B.J.** (2022) Metal-mineral interactions in dynamic redox environments. Ottawa-Carleton Geoscience Centre–Geoscience Seminars, February 17, Ottawa, Canada (virtual).
- ***Lindsay, M.B.J.** (2019). Acid generation and metal release in oil sands froth treatment tailings. 26th Annual BC/MEND Metal Leaching/Acid Rock Drainage Workshop, December 4–5, Vancouver, Canada.
- ***Lindsay, M.B.J.** (2018). Geochemical considerations for minimizing impacts of sulfide mine tailings on water resources. Resources for Future Generations, June 16–21, Vancouver, Canada.
- ***Lindsay, M.B.J.** (2017). Biogeochemistry of oil sands cake deposits: Considerations for mine closure. Oil Sands Innovation Summit 2017, March 21–22, Calgary, Canada.
- Blowes, D.W., ***Lindsay, M.B.J.**, Matthies, R., Veeramani, H., Kong, L., Eagling, J. & Ptacek, C.J. (2015). Interpretation of Zn isotope ratio measurements in a complex geochemical system. 25th V.M. Goldschmidt Conference, August 16–21, Prague, Czech Republic.
- Nesbitt, J.A.** & ***Lindsay, M.B.J.** (2015). Geochemical characteristics of petroleum coke deposits at an oil sands mine, Alberta, Canada. 25th V.M. Goldschmidt Conference, August 16–21, Prague, Czech Republic.
- ***Lindsay, M.B.J.** (2014). Groundwater contamination, remediation, and management in mining environments. Synchrotron Environmental Science VI, September 11–12, Argonne National Laboratory, IL, USA.
- ***Lindsay, M.B.J.** (2014). Biogeochemistry of groundwater contamination, remediation, and management in mining environments. Department of Geology–Colloquium Series, University of Kansas, February 20, Lawrence, KS, USA.
- ***Lindsay, M.B.J.** (2013). Biogeochemical processes related to water quality degradation and management in mining environments. 2013 Joint Annual Meeting of the Geological Association of Canada and the Mineralogical Association of Canada, May 22–24, Winnipeg, MB, Canada.
- ***Lindsay, M.B.J.** (2013). Application of synchrotron techniques to research on mine waste geochemistry and reclamation, Canadian Light Source – Annual User’s Meeting, May 2–3, Saskatoon, SK, Canada.
- *Blowes, D.W., **Lindsay, M.B.J.**, Hulshof, A.H.M., Ptacek, C.J. & Gould, W.D. (2011). Amendment of mill tailings for in situ treatment of mine drainage. 21st V.M. Goldschmidt Conference, August 14–19, Prague, Czech Republic.
- ***Lindsay, M.B.J.** (2010). Passive in situ treatment of dissolved metal(loid)s in groundwater systems impacted by mine drainage. Advanced Photon Source–User Science Seminar, December 10, Argonne National Laboratory, IL, USA.

15.2 Contributed Oral Presentations

***Marquez, E.J.**, Hamilton, J., & **Lindsay, M.B.J.** (2023) Influence of tailings weathering history on the hydrogeochemical evolution of oil sands froth treatment tailings under a reclamation soil cover. Geological Association of Canada–Mineralogical Association of Canada–Society for Geology Applied to Mineral Deposits (GAC-MAC-SGA) Joint Meeting, May 24–29, Sudbury, Canada.

*Grunsky, A.C., **Skierszkan, E.K.**, Ferguson, G.A.G., **Lindsay, M.B.J.** & Carey, S.K. (2023). Spatial patterns and controls of geogenic arsenic and uranium in groundwater in the Yukon Territory: Implications of climate change. Annual Meeting of the Canadian Geophysical Union, May 7–10, Banff, Canada.

***Skierszkan, E.K.**, **Fellwock, M.D.**, **Lindsay, M.B.J.**, Ferguson, G.A.G., Grunsky, A., Carey, S.K. & Mulligan, B.M. (2022). Geological Association of Canada–Mineralogical Association of Canada–Canadian National Chapter of the International Association of Hydrogeologists–Canadian Society of Petroleum Geologists (GAC–MAC–IAH–CSPG) Joint Meeting, May 15–18, Halifax, Canada.

*Jessen, G.L., Chen, L.-X., Mori, J.F., Nelson, T.C., Slater, G.F., **Rudderham, S.B.**, **Lindsay, M.B.J.**, Banfield, J.F. & Warren, L.A. (2020). Insights into biogeochemical cycling and unanticipated geobiological trajectory after alum addition to an engineered lake. Goldschmidt Conference, June 21–26, Virtual Conference.

***Lum, J.**, McBeth, J.M., Jamieson, H.E. & **Lindsay, M.B.J.** (2020). Geochemistry and mineralogy of arsenic trioxide dust from the Giant Mine, Yellowknife, Canada. Goldschmidt Conference, June 21–26, Virtual Conference.

***Vessey, C.J.**, Schmidt, M.P., **Abdolahnezhad, M.**, Peak, D. & **Lindsay, M.B.J.** (2020). Formation of vanadium polymers at ferrihydrite and hematite surfaces. Goldschmidt Conference, June 21–26, Virtual Conference.

***Francis, D.J.**, **Lindsay, M.B.J.** & Barbour, S.L. (2019) Methane ebullition can influence internal mas loading in oil sands end pit lakes. Geological Society of America Annual Meeting, September 22–25, Phoenix, USA.

***Mowat, A.C.**, **Francis, D.J.**, McIntosh, J.C., Eglington, B.M., **Lindsay, M.B.J.** & Ferguson, G.A.G. (2019) Developing a conservative transport model to examine evolutionary history of Devonian brines in the Williston Basin, Canada. Geological Society of America Annual Meeting, September 22–25, Phoenix, USA.

***Vessey, C.J.** & **Lindsay, M.B.J.** (2019). Vanadate attenuation by iron(II)-bearing phases. Goldschmidt Conference, August 18–23, Barcelona, Spain.

***Lindsay, M.B.J.** (2019). Acid general and metal(loid) release in froth treatment tailings. 2019 Canada's Oil Sands Innovation Alliance – Oil Sands Innovation Summit, June 2–4, Calgary, Canada.

***Francis, D.J.**, Barbour, S.L. & **Lindsay, M.B.J.** (2019). Methane dynamics in fluid fine tailings in an oil sands end pit lake. Geological Association of Canada–Mineralogical Association of Canada–Canadian National Chapter of the International Association of Hydrogeologists (GAC–MAC–IAH) Joint Meeting, May 12–15, Quebec City, Canada.

***Mowat, A.C.**, **Francis, D.J.**, Ferguson, G.A.G., McIntosh, J.C., Eglington, B.M. & **Lindsay, M.B.J.** (2019). Characterizing Devonian brines of the Williston Basin with multiple isotope systems. Geological Association of Canada–Mineralogical Association of Canada–Canadian National Chapter

of the International Association of Hydrogeologists (GAC–MAC–IAH) Joint Meeting, May 12–15, Quebec City, Canada.

***Mowat, A.C., Lindsay, M.B.J.,** Roy, J.W., Eglington, B.M. & Bickerton, G.S. (2019). Groundwater contributions to trace elements in urban streams. Geological Association of Canada–Mineralogical Association of Canada–Canadian National Chapter of the International Association of Hydrogeologists (GAC–MAC–IAH) Joint Meeting, May 12–15, Quebec City, Canada.

***Liu, Q., Rudderham, S.B., Francis, D.J.,** Slater, G.F., Carey, S.K., Warren, L.A., & **Lindsay, M.B.J.** (2018). Controls on methane concentrations and fluxes within an oil sands end pit lake. Resources for Future Generations, June 16–21, Vancouver, Canada.

***Robertson, J., Nesbitt, J.A., Swerhone, L.A., Abdolhnezhad, M., & Lindsay, M.B.J.** (2018). Geochemical controls on trace-metal mobility in oil sands fluid petroleum coke deposits. Resources for Future Generations, June 16–21, Vancouver, Canada.

***Rudderham, S.B., Liu, Q.,** McBeth, J.M. & **Lindsay, M.B.J.** (2018). Geochemistry and geomicrobiology of fluid fine tailings in an oil sands end pit lake. Resources for Future Generations, June 16–21, Vancouver, Canada.

*Tipton, K. Ferguson, G.A.G., Eglington, B.M. & **Lindsay, M.B.J.** (2018). Hydrogeological source determination through data manipulation in Saskatchewan: a regional analysis of the Duperow, Souris River, and Dawson Bay Formations in Saskatchewan. Resources for Future Generations, June 16–21, Vancouver, Canada.

*Moncur, M.C., Ptacek, C.J., Blowes, D.W., **Lindsay, M.B.J.,** Birks, S.J. & Gibson, J.J. (2018). Isotopic fractionation and geochemical evolution of subaqueous deposited sulfide-rich mine tailings: Implications for mine closure. 14th Australasian Environmental Isotope Conference, March 26–28, Wellington, New Zealand.

*Goad, C., Slater, G.F., Arriaga, D., Risacher, F., Morris, P., Warren, L.A. & **Lindsay, M.B.J.** (2017). Methane biogeochemical cycling over seasonal and annual scales in an Oil Sands Tailings End Pit Lake. Canadian Geophysical Union and Canadian Society for Agricultural and Forest Meteorology Joint Annual Scientific Meeting, May 28–31, Vancouver, Canada.

***Liu, Q., Rudderham, S.B., Lindsay, M.B.J.** & Barbour, S.L. (2017). Influences of biogeochemical processes on mass transport across the tailings-water interface of an oil sands end pit lake. Canadian Geophysical Union and Canadian Society for Agricultural and Forest Meteorology Joint Annual Scientific Meeting, May 28–31, Vancouver, Canada.

*Zettl, J.D., Barbour, S.L., **Lindsay, M.B.J.** & Carey, S.K. (2017). Base Mine Lake chemical mass balance 2013–2016, Canadian Geophysical Union and Canadian Society for Agricultural and Forest Meteorology Joint Annual Scientific Meeting, May 28–31, Vancouver, Canada.

***Nesbitt, J.A. & Lindsay, M.B.J.** (2017). Geochemical controls on vanadium mobility in oil sands fluid petroleum coke deposits. Geological Association of Canada–Mineralogical Association of Canada (GAC–MAC) Joint Meeting, May 14–17, Kingston, Canada.

Qin, K., Das, S. & *Lindsay, M.B.J. (2017). Fate of adsorbed molybdate during reductive transformation of iron(III) (hydr)oxides under advective flow conditions. Geological Association of Canada–Mineralogical Association of Canada (GAC–MAC) Joint Meeting, May 14–17, Kingston, Canada.

- ***Lindsay, M.B.J., Nesbitt, J.A. & Swerhone, L.A.** (2016). Vanadium and nickel geochemistry of fluid petroleum coke deposits at an oil sands mine, Alberta, Canada. Geological Society of America Annual Meeting, September 25–28, Denver, USA.
- ***Nesbitt, J.A. & Lindsay, M.B.J.** (2016). Geochemical behaviour of vanadium and nickel in petroleum coke deposits at an oil sands mine in northern Alberta, Canada. Geological Association of Canada–Mineralogical Association of Canada (GAC–MAC) Joint Meeting, June 1–3, Whitehorse, Canada.
- ***Cruz-Hernández, P.,** Parviainen, A., Pérez-López, P., **Lindsay, M.B.J.** & Nieto, J.M. (2015). Behavior of trace elements during aging of acid drainage precipitates. Goldschmidt Conference, August 16–21, Prague, Czech Republic.
- ***Das, S.,** Hendry, M.J. & **Lindsay, M.B.J.** (2014). Laboratory evaluation of selenium treatment using zero-valent iron (ZVI) under oxic conditions. Geological Society of America Annual Meeting, October 19–22, Vancouver, Canada.
- Matthies, R., *Blowes, D.W., Sinclair, S.A., **Lindsay, M.B.J.** & Ptacek, C.J. (2014). Application of zinc isotope ratio measurements to two mine-waste systems. Geological Society of America Annual Meeting, October 19–22, Vancouver, Canada.
- Moncur, M.C., Ptacek, C.J., Blowes, D.W., ***Lindsay, M.B.J.** & Jambor, J.L. (2014). Long-term mineralogical and biogeochemical evolution of sulfide-rich tailings under a shallow water cover. Geological Association of Canada–Mineralogical Association of Canada (GAC–MAC) Joint Meeting, May 21–23, Fredericton, Canada.
- *Blowes, D.W., Ptacek, C.J., Moncur, M.C., **Lindsay, M.B.J.**, Amos, R.T., Mayer, K.U., Smith, L. and Segó, D.C. (2013). Predicting the duration and extent of acid drainage release from sulfide bearing mine tailings. Geological Society of America 2013 Annual Meeting, October 27–30, Denver, USA.
- ***Lindsay, M.B.J.,** Blowes, D.W. & Ptacek, C.J., (2012). Biogeochemistry of permeable reactive barriers for arsenic and selenium remediation. Goldschmidt Conference, June 24–29, Montréal, Canada.
- *Gibson, B.D., **Lindsay, M.B.J.,** Ptacek, C.J. & Blowes, D.W. (2012). Application of X-ray absorption spectroscopy to characterize metal(loid) removal in passive treatment systems. Goldschmidt Conference, June 24–29, Montréal, Canada.
- *Jamieson-Hanes, J.H., Gibson, B.D., **Lindsay, M.B.J.,** Kim, Y., Ptacek, C.J. & Blowes, D.W. (2012). Chromium isotope fractionation during reduction of Cr(VI) under saturated flow conditions. 22nd V.M. Goldschmidt Conference, June 24–29, Montréal, Canada.
- *Moncur, M.C., Ptacek, C.J., Blowes, D.W., **Lindsay, M.B.J.** & Jambor, J.L. (2012). Mineralogical and geochemical processes occurring in sulfide-rich tailings after 60 years of subaqueous storage. 22nd V.M. Goldschmidt Conference, June 24–29, Montréal, Canada.
- *Ptacek, C.J., Desrochers, K.A.N., Gibson, B.D., Liu, P., Wang, O., Tordiff, J.A., Daugherty, S.D., Blowes, K.E., Van de Valk, J.D., **Lindsay, M.B.J.** & Blowes, D.W. (2011). Mechanisms controlling the release, transport and attenuation of mercury in riverine sediments. 21st V.M. Goldschmidt Conference, August 14–19, Prague, Czech Republic.

- *Ptacek, C.J., Blowes, D.W., Daugherty, S.D., Desrochers, K.A.N., Gibson, B.D., Wang, O., Liu, P., **Lindsay, M.B.J.**, Randis, R.C., Dyer, J.A., Grosso, N.R. & Berti, W.R. (2011). Solid-phase reactive materials for the stabilization of mercury in fluvial environments. 10th International Conference on Mercury as a Global Pollutant, July 24–29, Halifax, Canada.
- *Hannam, S., **Lindsay, M.B.J.**, Gibson, B.D., Blowes, D.W., Smith, L. & Segeo, D.C. (2011). Diavik waste rock project: Investigation of sulfide mineral weathering processes in a continuous permafrost environment. 5th Mining and the Environment International Conference, June 25–30, Sudbury, Canada.
- ***Lindsay, M.B.J.**, Blowes, D.W., Johnson, D.B., Condon, P.D., Wakeman, K.D., Rowe, O.F. & Ptacek, C.J. (2011). Biogeochemistry of mine tailings amended with organic carbon for managing drainage quality. 5th Mining and the Environment International Conference, June 25–30, Sudbury, Canada.
- *Gibson, B.D., Blowes, D.W., **Lindsay, M.B.J.** & Ptacek, C.J. (2011). Treatment of Se(VI) in anoxic groundwater using granular iron and organic carbon: An XAFS study. Geological Association of Canada–Mineralogical Association of Canada–Society for Economic Geologists–Society for Geology Applied to Mineral Deposits (GAC–MAC–SEG–SGA) Joint Meeting, May 25–27, Ottawa, Canada.
- ***Lindsay, M.B.J.**, Blowes, D.W., Condon, P.D. & Ptacek, C.J. (2011). Organic carbon amendment of tailings for passive treatment of mine drainage. Geological Association of Canada–Mineralogical Association of Canada–Canadian National Chapter of the International Association of Hydrogeologists–Society for Economic Geologists–Society for Geology Applied to Mineral Deposits (GAC–MAC–SEG–SGA) Joint Meeting, May 25–27, Ottawa, Canada.
- *Ptacek, C.J., Blowes, D.W., Daugherty, S.D., Gibson, B.D., Desrochers, K.A.N. **Lindsay, M.B.J.**, Blowes, K.E. & Van de Valk, J.D. (2011). Addition of reactive media for the geochemical stabilization of mercury in contaminated sediments. Society of Environmental Toxicology and Chemistry (SETAC) Europe 21st Annual Meeting, May 15–19, Milan, Italy.
- *Condon, P.D., **Lindsay, M.B.J.**, Blowes, D.W. & Ptacek, C.J. (2010). Geochemistry and mineralogy of sulfide-rich tailings characterized by circumneutral pore water and drainage. Geological Society of America 2010 Annual Meeting, October 30–November 2, Denver, USA.
- ***Lindsay, M.B.J.**, Blowes, D.W., Condon, P.D. & Ptacek, C.J. (2010). Treatment of mine tailings pore water using organic carbon amendments. Geological Society of America Annual Meeting, October 30–November 2, Denver, USA.
- *Ptacek, C.J., Blowes, D.W., Jurjovec, J., Moncur, M.C., Gunsinger, M.R, Amos, R.T. & **Lindsay, M.B.J.** (2010). Integration of experimental measurements and modelling to assess the fate and remediation of contaminants at mine sites. 93rd Canadian Chemistry Conference and Exhibition, May 29–June 2, Toronto, Canada.
- ***Lindsay, M.B.J.**, Blowes, D.W., Condon, P.D. & Ptacek, C.J. (2009). Organic carbon amendment of mine tailings for attenuation of sulfide-mineral oxidation products. Geological Society of America Annual Meeting, October 18–21, Portland, USA.
- ***Lindsay, M.B.J.**, Blowes, D.W., Condon, P.D., Lear, K.G. & Ptacek, C.J. (2008). Vadose zone geochemistry and mineralogy of sulfide-rich tailings at the Greens Creek Mine, Alaska, USA. 18th V.M. Goldschmidt Conference, July 13–18, Vancouver, Canada.

***Lindsay, M.B.J.**, Ptacek, C.J. & Blowes, D.W. (2004). Laboratory evaluation of zero-valent iron mixtures for use in permeable reactive barriers for treatment of acid mine drainage. 39th Central Canadian Symposium on Water Quality Research, February 9–10, Burlington, Canada.

15.3 Contributed Poster Presentations

***Champion, E.R., Lindsay, M.B.J.**, Batycky, A.E. & Ulrich, A.C. (2023) Biogeochemical characteristics of polyacrylamide-treated thickened tailings at an oil sands mine. Geological Association of Canada–Mineralogical Association of Canada–Society for Geology Applied to Mineral Deposits (GAC-MAC-SGA) Joint Meeting, May 24 – 29, Sudbury, Canada.

***Ferry, S. & Lindsay, M.B.J.** (2023) Acid neutralization and metal(loid) release in oil sands froth treatment tailings. Geological Association of Canada–Mineralogical Association of Canada–Society for Geology Applied to Mineral Deposits (GAC-MAC-SGA) Joint Meeting, May 24 – 29, Sudbury, Canada.

***Hasani, S. & Lindsay, M.B.J.** (2023) Evaluating reactive materials for passive water treatment in oil sand mine reclamation landscapes. Geological Association of Canada–Mineralogical Association of Canada–Society for Geology Applied to Mineral Deposits (GAC-MAC-SGA) Joint Meeting, May 24 – 29, Sudbury, Canada.

***Paulsen, J.J., Schoepfer, V.A. & Lindsay, M.B.J.** (2022). Geochemical controls on acid generation and metal(loid) mobility in froth treatment tailings at an oil sands mine. Geological Association of Canada–Mineralogical Association of Canada–Canadian National Chapter of the International Association of Hydrogeologists–Canadian Society of Petroleum Geologists (GAC–MAC–IAH–CGPS) Joint Meeting, May 15 – 18, Halifax, Canada.

***Skierszkan, E.K., Lindsay, M.B.J.**, Fraser, C., Jackson, S. & Carey, S.K. (2022). A decade of year-round hydrogeochemical monitoring in small tributaries of the Yukon River Basin underlain by discontinuous permafrost. Geological Association of Canada–Mineralogical Association of Canada–International Association of Hydrogeologists–Canadian Society of Petroleum Geologists Joint Meeting, May 15 – 18, Halifax, Canada.

***Wang, Y., Galuschik, N.E., Cowell, M.L., Schulte, J.P., Hayatifar, A., Omotoso, O. & Lindsay, M.B.J.** (2022). Early biogeochemical development of coagulated-flocculated mature fine tailings for oil sands mine reclamation. Geological Association of Canada–Mineralogical Association of Canada–International Association of Hydrogeologists–Canadian Society of Petroleum Geologists Joint Meeting, May 15 – 18, Halifax, Canada.

***Schoepfer, V.A., Lum J.E. & Lindsay, M.B.J.** (2021). Bamfordite precipitation contributes to Mo(VI) coordination changes during Fe(II)-induced ferrihydrite transformation. Goldschmidt Conference, July 4 – 9, Virtual Conference.

***Lum, J.E.**, McBeth, J.M., Radková, A., Jamieson, H.E. & **Lindsay, M.B.J.** (2020). Geochemistry and mineralogy of arsenic trioxide dust from the Giant Mine, Yellowknife, Canada. Canadian Light Source –Annual Users Meeting, October 7 – 8, Virtual Conference.

***Schoepfer, V.A. & Lindsay, M.B.J.** (2020). Mo(VI) incorporation into products of Fe(II)-induced Fe(III) (oxyhydr)oxide transformation. Goldschmidt Conference, June 21 – 26, Virtual Conference.

- ***Schoepfer, V.A. & Lindsay, M.B.J.** (2020). Structural incorporation of adsorbed Mo(VI) during Fe(II)-induced ferrihydrite transformation. American Chemical Society Spring 2020 National Meeting, March 22 – 26, Virtual Conference.
- ***Francis, D.J.,** Barbour, S.L. & **Lindsay, M.B.J.** (2019). Modelling methane dynamics in fluid fine tailings in an oil sands end pit lake. 2019 Canada's Oil Sands Innovation Alliance – Oil Sands Innovation Summit, June 2 – 4, Calgary, Canada.
- ***Francis, D.J., Liu, Q.,** Carey, S.K., Barbour, S.L. & **Lindsay, M.B.J.** (2018). Modelling methane dynamics in fluid fine tailings in an oil sands end pit lake. Resources for Future Generations, June 16 – 21, Vancouver, Canada.
- ***Mowat, A.C., Lindsay, M.B.J.,** Eglington, B.M. & Ferguson, G.A.G. (2018) Application of geochemical and isotopic signatures to examine fluid flow in the Williston Basin, Canada. Resources for Future Generations, June 16 – 21, Vancouver, Canada.
- *Skierszkan, E.K., Mayer, K.U., Beckie, R., Weis, D., Stockwell, J., Dockrey, J., **Robertson, J., Das, S. & Lindsay, M.B.J.** (2018) Examining molybdenum (Mo) attenuation mechanisms in tailings drainage using Mo stable isotopes. Resources for Future Generations, June 16 – 21, Vancouver, Canada.
- ***Vessey, C.J., Cilia, C.R.C. & Lindsay, M.B.J.** (2018). Dissolved salt transport in soil cover materials for oil sands mine reclamation. Resources for Future Generations, June 16 – 21, Vancouver, Canada.
- *Slater, G.F., Goad, C., Arriaga, D., Risacher, F., Morris, P., **Lindsay, M.B.J.** & Mumford, K.G. (2017). Methane fluxes and consumption in an oil sands tailings end pit lake. American Geophysical Union Fall Meeting, December 11 – 15, New Orleans, USA.
- ***Cilia, C.R.C. & Lindsay, M.B.J.** (2017). Assessing salt transport within layered oil sands mine wastes: Field and laboratory experiments. Canadian Geophysical Union and Canadian Society for Agricultural and Forest Meteorology Joint Annual Scientific Meeting, May 28 – 31, Vancouver, Canada.
- ***Swerhone, L.A., Nesbitt, J.A., & Lindsay, M.B.J.** (2017). Geochemical considerations for including petroleum coke in oil sands mine closure landscapes. Canadian Geophysical Union and Canadian Society for Agricultural and Forest Meteorology Joint Annual Scientific Meeting, May 28 – 31, Vancouver, Canada.
- ***Vessey, C.J. & Lindsay, M.B.J.** (2017). Influence of ion exchange reactions on salt migration in oil sands reclamation soil cover materials: Laboratory column experiments. Canadian Geophysical Union and Canadian Society for Agricultural and Forest Meteorology Joint Annual Scientific Meeting, May 28 – 31, Vancouver, Canada.
- ***North, R.L.,** Barbour, S.L., Carey, S.K., **Lindsay, M.B.J.** & **Dompierre, K.A.** (2016). Lakes from Waste: Are freshwater-capped tailings ponds sources or sinks for Major Ions? ASLO 2016 Summer Meeting, June 5 – 10, Santa Fe, USA.
- ***Mowat, A.C.,** Eglington, B.M., **Lindsay, M.B.J.,** Roy, J.W. & Bickerton, G. (2016). Contaminated groundwater discharge on urban stream water quality: Spatial analysis of eight stream catchments in eastern Canada. 2016 Joint Annual Meeting of the Geological Association of Canada and the Mineralogical Association of Canada, June 1 – 3, Whitehorse, Canada.

- ***Vessey, C.J. & Lindsay, M.B.J.** (2016). Ion exchange reactions in reclamation cover materials for oil sands mine closure. 2016 Joint Annual Meeting of the Geological Association of Canada and the Mineralogical Association of Canada, June 1 – 3, Whitehorse, Canada.
- ***Heaton, K.K.**, Vyskocil, J., McBeth, J.M. & **Lindsay, M.B.J.** (2015). Biogeochemical characteristics of centrifuged fine tailings at an oil sands mine in northern Alberta, Canada. Saskatchewan Geological Open House, November 30 – December 2, Saskatoon, Canada.
- ***Nesbitt, J.A., Lindsay, M.B.J.** (2015). Vanadium geochemistry of petroleum coke at an oil sands mine in northern Alberta, Canada. Canadian Light Source Annual Users' Meeting, May 4 – 6, Saskatoon, Canada.
- *Gibson, B.D., Daugherty, S.D., **Lindsay, M.B.J.**, Ptacek, C.J., Blowes, D.W., Landis, R.C. & Dyer, J.A. (2011). Management options at a mercury-contaminated site and assessment of treatment performance for the stabilization of mercury under variable geochemical conditions. 10th International Conference on Mercury as a Global Pollutant, July 24 – 29, Halifax, Canada.
- *Jones, K.L., **Lindsay, M.B.J.**, Kipfer, R., Mayer, K.U. (2012). Noble gases as tracers of biogenic gas dynamics at a hydrocarbon-contaminated site. Geological Society of America Annual Meeting, November 4 – 7, Charlotte, USA.
- ***Lindsay, M.B.J.**, Ptacek, C.J., Blowes, D.W. & Gould, W.D. (2007). Laboratory evaluation of zero-valent iron and organic carbon mixtures for optimizing acid mine drainage remediation. Groundwater Quality 2007: 5th International Conference, December 2 – 7, Fremantle, Australia.
- ***Lindsay, M.B.J.**, Blowes, D.W. & Ptacek, C.J. (2004). Permeable reactive barriers for acid mine drainage remediation: Optimizing performance using organic carbon and zero-valent iron. Canadian Water Network National Meeting, June 20 – 22, Ottawa, Canada.
- ***Lindsay, M.B.J.**, Ptacek, C.J. & Blowes, D.W. (2004). Zero-valent iron and organic carbon for use in permeable reactive barriers: acid mine drainage remediation. Joint Annual Meeting of the Geological Association of Canada and the Mineralogical Association of Canada, May 12 – 14, St. Catharines, Canada.

16. REPORTS AND OTHER OUTPUTS

*Presenting Author; **Faculty Member** and **Trainees**

Data sets

Skierszkan, E.K., Carey, S.K., **Fellwock, M.D.**, Jackson, S., Fraser, C. & **Lindsay, M.B.J.** (2023) Geochemical composition of groundwater, surface water, permafrost porewater, and active layer porewater in samples from the Coffee gold deposit, Dawson Range, Yukon, Canada. *Federated Research Data Repository*. <https://doi.org/10.20383/103.0630>

Lum, J.E., ***Schoepfer, V.A.**, McBeth, J.M., Borčinová Radková, A., Jamieson, H.E., Walls, M.P. & **Lindsay, M.B.J.** (2023) Arsenic and antimony geochemistry of historical roaster waste from the Giant Mine, Yellowknife, Canada: Datasets. *Federated Research Data Repository*. <https://doi.org/10.20383/102.0679>

***Schoepfer, V.A.** & **Lindsay, M.B.J.** (2022) X-ray absorption spectroscopy and X-ray diffraction data for molybdenum minerals and compounds: Datasets and Supplementary Materials. *Federated Research Data Repository*. <https://doi.org/10.20383/103.0600>

***Schoepfer, V.A. & Lindsay, M.B.J.** (2022) Repartitioning of co-precipitated Mo(VI) during Fe(II) and S(-II) driven ferrihydrite transformation: Datasets and Supplementary Materials. *Federated Research Data Repository*. <https://doi.org/10.20383/103.0579>

***Mowat, A.C., Francis, D.J., McIntosh, J.C., Lindsay, M.B.J. & Ferguson, G.A.G.** (2021). Variability in timing and transport of Pleistocene meltwater recharge to regional aquifers [Data Set]. *Zenodo*. <https://doi.org/10.5281/zenodo.5363453>

Technical Reports (not peer reviewed)

Lindsay, M.B.J. (2020) Long-Term Biogeochemical Evolution of cfMFT: 5-m Column Experiments – Research Report #1. Prepared for Suncor Energy, 35 pp.

Lindsay, M.B.J. (2019) Examination of initial cfMFT biogeochemistry – Research Report #2. Prepared for Suncor Energy, 38 pp.

Lindsay, M.B.J. (2019) Base Mine Lake Annual Progress Report. Prepared for Syncrude Canada Ltd., 7 pp.

Lindsay, M.B.J. (2019) Examination of initial cfMFT biogeochemistry – Research Report #1. Prepared for Suncor Energy, 23 pp.

Lindsay, M.B.J. (2018) Industrial Research Chair in Mine Closure Geochemistry – Research Report #5. Prepared for Syncrude Canada Ltd. and Canada's Oil Sands Innovation Alliance, 6 pp.

Lindsay, M.B.J. (2018) Base Mine Lake Annual Progress Report. Prepared for Syncrude Canada Ltd., 9 pp.

Lindsay, M.B.J. and Vessey, C.J. (2017) Assessing the sodium buffering capacity of reclamation materials in Sandhill Fen – Final Report. Prepared for Syncrude Canada Ltd., 43 pp.

Lindsay, M.B.J. (2017) Assessing the sodium buffering capacity of reclamation materials in Sandhill Fen – Progress Report #2. Prepared for Syncrude Canada Ltd., 6 pp.

Lindsay, M.B.J. (2017) Industrial Research Chair in Mine Closure Geochemistry – Research Report #4. Prepared for Syncrude Canada Ltd. and Canada's Oil Sands Innovation Alliance, 6 pp.

Lindsay, M.B.J. (2017). Base Mine Lake Research Program: Summary of 2015 FFT Geochemistry Data. Prepared for Syncrude Canada Ltd., 26 pp.

Lindsay, M.B.J. (2016) Assessing the sodium buffering capacity of reclamation materials in Sandhill Fen – Progress Report #1. Prepared for Syncrude Canada Ltd., 6 pp.

Lindsay, M.B.J. (2016) Industrial Research Chair in Mine Closure Geochemistry – Research Report #3. Prepared for Syncrude Canada Ltd. and Canada's Oil Sands Innovation Alliance, 6 pp.

Lindsay, M.B.J. (2015) Industrial Research Chair in Mine Closure Geochemistry – Research Report #2. Prepared for Syncrude Canada Ltd. and Canada's Oil Sands Innovation Alliance, 6 pp.

Lindsay, M.B.J. (2015). Interpretation of Geochemical Data from the 2014 Base Mine Lake Monitoring Program. Prepared for Syncrude Canada Ltd., 37 pp.

Lindsay, M.B.J. (2014) Industrial Research Chair in Mine Closure Geochemistry – Research Report #1. Prepared for Syncrude Canada Ltd. and Canada's Oil Sands Innovation Alliance, 4 pp.

- Lindsay, M.B.J.** (2014). Interpretation of Geochemical Data from the 2013 Base Mine Lake Monitoring Program. Prepared for Syncrude Canada Ltd., 36 pp.
- Lindsay, M.B.J.** (2013). Preliminary assessment of the acid-generating potential of Plant 6 tailings. Prepared for Syncrude Canada Ltd., 46 pp.
- Lindsay, M.B.J.** & Blowes, D.W. (2011). Investigations into tailings pore-water treatment at the Greens Creek Mine, Alaska: Final Report. Prepared for Greens Creek Mining Co., 270 pp.
- Lindsay, M.B.J.** & Blowes, D.W. (2007). Investigations into tailings pore-water treatment at the Greens Creek Mine, Alaska: Progress Report. Prepared for Greens Creek Mining Co., 213 pp.
- Lindsay, M.B.J.** & Blowes, D.W. (2006). Investigations into tailings pore-water treatment at the Greens Creek Mine, Alaska: Progress Report. Prepared for Greens Creek Mining Co., 73 pp.
- Ptacek, C.J., Blowes, D.W., Stimson, J., Moncur, M.C., **Lindsay, M.B.J.**, & Gunsinger, M.R. (2004). Groundwater-surface water interactions at Cootes Paradise wetland, Hamilton, Ontario, Canada. Prepared for Environment Canada, pp. 128.

17. BOOK REVIEWS

18. INTELLECTUAL PROPERTY

19. RESEARCH FUNDING HISTORY

19.1 Research Grants and Contracts

Mulligan, B., **Lindsay, M.B.J.**, Irvine, D., Rodriguez-Prado, A., Cubley, J. & Lipovsky, P. (2023 – 2026) *Groundwater vulnerability to metal(loid) contamination in Whitehorse, Yukon*, \$450,000 (CAD). National Research Council of Canada–Arctic and Northern Challenge Program (NRC–ANCP). \$425,400 CAD to M.B.J. Lindsay.

Lindsay, M.B.J. (2021 – 2023) *Fox and Pat Lake Sediment Analysis*, \$135,658 (CAD). Research Agreement, Orano Canada Inc.

Blowes, D.W. (PI), Al, T.A., Beier, N.A., Demers, I., Jamieson, H.E., **Lindsay, M.B.J.**, McBeth, J.M. & Ptacek, C.J. (2021 – 2025). *Remediation Strategies for the Long-term Management of Arsenic-trioxide Roaster Waste at the Giant Mine, Northwest Territories*, \$1,313,475 (CAD). Alliance Grants Program, Natural Sciences and Engineering Research Council of Canada (NSERC). \$118,280 to M.B.J. Lindsay.

Lindsay, M.B.J. (PI), Carey, S.K. & Ferguson, G.A.G. (2020 – 2023). *Geogenic Contamination of Groundwater Resources in Subarctic Regions*, \$235,000 (CAD). Global Water Futures Program - Canada First Research Excellence Fund (CFREF). \$175,000 to M.B.J. Lindsay.

Lindsay, M.B.J. (2020 – 2026). *Metal-mineral Interactions in Dynamic Redox Environments*, \$258,000 (CAD). Discovery Grants Program, Natural Sciences and Engineering Research Council of Canada (NSERC).

Lindsay, M.B.J. (2020 – 2021). *Geochemical Response to Oxidative Weathering of Sulfide-Bearing Mine Materials*, \$145,885 (CAD). Research Agreement, Suncor Energy Inc.

McBeth, J.M. (PI) & **Lindsay, M.B.J.** (2019 – 2024). *Examination of Arsenic Trioxide Dust Composition and Solubility*, \$224,045 (CAD). Research Agreement, Giant Mine Oversight Board. \$114,000 to M.B.J. Lindsay.

Lindsay, M.B.J. (2019 – 2024). *NSERC/Syncrude Associate Industrial Research Chair in Mine Closure Geochemistry*, \$1,143,696 (CAD). Industrial Research Chairs (IRC), Natural Sciences and Engineering Council of Canada (NSERC).

Lindsay, M.B.J. (2019 – 2024). *NSERC/Syncrude Associate Industrial Research Chair in Mine Closure Geochemistry*, \$1,193,696 (CAD). Research Agreement, Syncrude Canada Limited.

Lindsay, M.B.J. (2019 – 2024). *NSERC/Syncrude Associate Industrial Research Chair in Mine Closure Geochemistry*, \$150,000 (CAD). Student Support, University of Saskatchewan.

Lindsay, M.B.J. (2019 – 2024). *Mine Waste Sample Preparation and Analysis Suite*, \$125,000 (CAD). John R. Evans Leaders Fund - Partnerships, Canada Foundation for Innovation (CFI).

Lindsay, M.B.J. (2019 – 2026). *Long-Term Biogeochemical Evolution of Coagulated-Flocculated Mature Fine Tailings (cfMFT)*, \$1,085,894 (CAD). Research Agreement, Suncor Energy Inc.

Lindsay, M.B.J. (2017 – 2018). *Examination of Initial Biogeochemistry of Coagulated-Flocculated Mature Fine Tailings (cfMFT)*, \$239,850 (CAD). Research Agreement, Suncor Energy Inc.

Lindsay, M.B.J. (PI) & Barbour, S.L. (2017 – 2019). *Characterization of Controls on Mass Loading to an Oil Sands End Pit Lake*, \$121,097 (CAD). Research Agreement, Syncrude Canada Ltd. \$121,097 (CAD) to M.B.J. Lindsay.

Blowes, D.W. (PI), Al, T.A., Busierre, B., Beier, N.A., Demers, I., Gu, F.X., Keeling, A., **Lindsay, M.B.J.**, Mayer, K.U., McBeth, J.M., Parlee, B., Ptacek, C.J., Ulrich, A.C. & Wilson, G.W. (2016 – 2021). *NSERC Toward Environmentally Responsible Resource Extraction Network (NSERC-TERRE-NET)*, \$5,500,000 (CAD). Strategic Partnership Grants for Networks, Natural Sciences and Engineering Research Council of Canada (NSERC). \$150,000 to M.B.J. Lindsay.

Ferguson, G.A.G. (PI), **Lindsay, M.B.J.**, & Eglinton, B.M. (2016 – 2018). *Deep Hydrogeological Research to Support Brine Management for Saskatchewan's Potash Industry*, \$323,322 (CAD). Collaborative Research and Development (CRD) Grants, Natural Sciences and Engineering Research Council of Canada (NSERC). \$80,830 to M.B.J. Lindsay.

Lindsay, M.B.J. (2016 – 2018). *Geochemical Potential of Site Materials*, \$442,938 (CAD). Research Agreement, Syncrude Canada Limited.

Lindsay, M.B.J. (2015 – 2016). *Assessing the Sodium Buffering Capacity of Reclamation Materials in Sandhill Fen*, \$43,750 (CAD). Research Agreement, Syncrude Canada Limited.

Lindsay, M.B.J. (2015 – 2020). *Portable Gas Chromatography to Support Biogeochemical Investigations of Closure Technologies for Oil Sands Mines*, \$8,335 (CAD). Infrastructure Operating Fund, Canada Foundation for Innovation (CFI).

Lindsay, M.B.J. (PI) & Barbour, S.L. (2015 – 2019). *Examining controls on mass loading to an oil sands end pit lake*, \$449,408 (CAD). Collaborative Research and Development (CRD) Grants Program, Natural Sciences and Engineering Research Council of Canada (NSERC). \$224,704 (CAD) to M.B.J. Lindsay.

Barbour, S.L. (PI), **Lindsay, M.B.J.** & Wheeler, H.S. (2014 – 2019). *Characterization of Controls on Mass Loading to an Oil Sands End Pit Lake*. \$345,513 (CAD). CRD Funding Agreement, Syncrude Canada Ltd. \$172,756 to M.B.J. Lindsay.

Lindsay, M.B.J. (2014 – 2019). *Portable Gas Chromatography to Support Biogeochemical Investigations of Closure Technologies for Oil Sands Mines*, \$37,043 (CAD). John R. Evans Leaders Fund, Canada Foundation for Innovation (CFI).

Lindsay, M.B.J. (2014 – 2019). *Portable Gas Chromatography to Support Biogeochemical Investigations of Closure Technologies for Oil Sands Mines*, \$37,043 (CAD). Innovation and Science Fund, Saskatchewan Ministry of Advanced Education and Employment.

Lindsay, M.B.J. (2014 – 2020). *Biogeochemical and Mineralogical Processes in Redox Dynamic Groundwater Systems*, \$174,000 (CAD). Discovery Grants Program, Natural Sciences and Engineering Research Council of Canada (NSERC).

Lindsay, M.B.J. (2014 – 2019). *NSERC/Syncrude Associate Industrial Research Chair in Mine Closure Geochemistry*, \$694,136 (CAD). Industrial Research Chairs (IRC) Program, Natural Sciences and Engineering Research Council of Canada (NSERC).

Lindsay, M.B.J. (2014 – 2019). *NSERC/Syncrude Associate Industrial Research Chair in Mine Closure Geochemistry*, \$694,136 (CAD). Research Agreement, Syncrude Canada Limited.

Lindsay, M.B.J. (2014 – 2019). *NSERC/Syncrude Associate Industrial Research Chair in Mine Closure Geochemistry*, \$37,390 (CAD). Student Support, University of Saskatchewan.

Blowes, D.W. (PI), Al, T.A., Bussiere, B., Dey Nuttall, A., Dixon, D.G., Gu, F.X., **Lindsay, M.B.J.**, Mayer, K.U., Ptacek, C.J., van Cappellen, P.S.J., & Wilson, G.W. (2014 – 2020). *Towards Environmentally Responsible Resource Extraction (TERRE)*, \$1,650,000 (CAD). Collaborative Research and Training Experience (CREATE) Program, Natural Sciences and Engineering Research Council of Canada (NSERC). \$150,000 to M.B.J. Lindsay.

Ferguson, G.A. (PI), Ireson, A.M. & **Lindsay, M.B.J.** (2014 – 2017). *Probabilistic Risk Assessment of Groundwater Flow and Contaminant Transport*, \$459,944 (CAD). Sylvia Fedoruk Canadian Centre for Nuclear Innovation. \$153,331 (CAD) to M.B.J. Lindsay.

Lindsay, M.B.J. (2013 – 2016) *New Faculty Graduate Student Support Program Fund (NFGSSPF) for Kaixuan Qin*, \$15,000 (CAD). New Faculty Graduate Student Support Program, College of Graduate and Postdoctoral Studies, University of Saskatchewan.

Lindsay, M.B.J. (2013 – 2015). *Geochemical Controls on Molybdenum Mobility*, \$10,000 (CAD). President's NSERC Fund, Office of the Vice-President Research, University of Saskatchewan.

Lindsay, M.B.J. (2013 – 2015). *Synthesis of Geochemical Data on Fluid Fine Tailings for West In-Pit*, \$21,280 (CAD). Research Agreement, Syncrude Canada Ltd.

Lindsay, M.B.J. (2012 – 2015). *New Faculty Startup Equipment Grant*, \$30,000 (CAD). New Faculty Startup Program, College of Arts and Sciences, University of Saskatchewan.

Lindsay, M.B.J. (2012 – 2015). *New Faculty Startup Operating Grant*, \$5,000 (CAD). New Faculty Startup Program, College of Arts and Sciences, University of Saskatchewan.

20. PRACTICE OF PROFESSIONAL SKILLS

Manuscripts Reviewed

Peer Reviewer, Manuscripts ($n = 9$), *Chemical Geology*, *Environmental Science and Technology* (2), *Geochimica et Cosmochimica Acta* (3), *Journal of Hazardous Materials*, *Nature Communications Earth and Environment*, *Scientific Reports*, July 2022 to June 2023.

Peer Reviewer, Manuscripts ($n = 9$), *ACS Earth and Space Chemistry*, *ACS ES&T Engineering*, *Carnets de Geologie*, *Environmental Science and Technology* (2), *Geochimica et Cosmochimica Acta*, *Journal of Contaminant Hydrology* (2), *Journal of Hydrology: Regional Studies*, July 2021 to June 2022.

Peer Reviewer, Manuscripts ($n = 10$), *Applied Geochemistry* (2), *Chemical Geology*, *Environmental Pollution*, *Environmental Science and Technology* (4), *Geoderma*, *Water, Air and Soil Pollution*, July 2020 to June 2021.

Peer Reviewer, Manuscripts ($n = 5$), *Canadian Journal of Civil Engineering*, *Environmental Science and Technology*, *Journal of Geophysical Research: Biogeosciences*, *Hydrologic Processes*, *Mine Water and the Environment*, July 2019 to June 2020.

Peer Reviewer, Manuscripts ($n = 6$), *Economic Geology*, *Environmental Science and Technology* (2), *Environmental Sciences: Processes & Impacts*, *Journal of Geophysical Research: Biogeosciences*, *Science of the Total Environment*, July 2018 to June 2019.

Peer Reviewer, Manuscripts ($n = 5$), *Applied Geochemistry*, *Canadian Water Resources Journal*, *Environmental Science and Technology*, *Fuel*, *Science of the Total Environment*, July 2017 to June 2018.

Peer Reviewer, Manuscripts ($n = 3$), *Applied Geochemistry*, *Environmental Science and Technology* (2), July 2016 to June 2017.

Peer Reviewer, Manuscripts ($n = 8$), *Applied Geochemistry* (2), *Environmental Science and Technology*, *Journal of Environmental Management*, *Science of the Total Environment* (2), *Water Research* (2), July 2015 to June 2016.

Peer Reviewer, Manuscripts ($n = 7$), *Applied Geochemistry* (3), *Environmental Science and Technology* (2), *Journal of Geochemical Exploration*, *Water Research*, July 2014 to June 2015.

Peer Reviewer, Manuscripts ($n = 4$), *Canadian Geotechnical Journal*, *Chemosphere*, *Journal of Contaminant Hydrology*, *Water, Soil, & Air Pollution*, July 2013 to June 2014.

Peer Reviewer, Manuscripts ($n = 3$), *Applied Geochemistry*, *Environmental Science and Technology*, *Environmental Pollution*, September 2012 to June 2013.

Proposals Reviewed

Peer Reviewer, General User Proposal, Stanford Synchrotron Radiation Lightsource, completed June 9, 2023.

Peer Reviewer, General User Proposals ($n = 1$), Canadian Light Source, completed April 9 2023.

Peer Reviewer, Proposal, Canada Foundation for Innovation–John R. Evans Leaders Fund (CFI-JELF), completed January 23, 2023.

Peer Reviewer, Nomination (Tier 2 Renewal), Canada Research Chairs Program, completed January 13, 2023.

Peer Reviewer, General User Proposal, Stanford Synchrotron Radiation Lightsource, completed December 22, 2022.

Peer Reviewer, Proposal, Alliance Grants Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed July 22, 2022.

Peer Reviewer, General User Proposals ($n = 1$), Canadian Light Source, completed April 11, 2022.

Peer Reviewer, General User Proposals ($n = 3$), Canadian Light Source, completed April 9, 2021.

Peer Reviewer, Proposal, Canada Foundation for Innovation–John R. Evans Leaders Fund (CFI-JELF), completed March 28, 2021.

Ad Hoc Committee Member, Proposal, Alliance Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed March 16, 2021.

Peer Reviewer, Proposal, Petroleum Research Fund, American Chemical Society (ACS), completed March 3, 2021.

Peer Reviewer, Proposal, Accelerate Fellowships Program, Mitacs, completed March 3, 2021.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed January 13, 2021.

Peer Reviewer, General User Proposals ($n = 1$), Canadian Light Source, completed October 2020.

Peer Reviewer, Proposal, Alliance Grants Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed May 18, 2020.

Peer Reviewer, Award Nomination Package, Universities Canada, L'Oréal-UNESCO For Women in Science Awards, completed May 6, 2020.

Peer Reviewer, General User Proposals ($n = 4$), Canadian Light Source, completed October 2019.

Peer Reviewer, General User Proposals ($n = 1$), Canadian Light Source, completed April 2019.

Peer Reviewer, Proposal, Collaborative Research and Development (CRD) Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed January 15, 2019.

Peer Reviewer, Proposal, Canada Foundation for Innovation–John R. Evans Leaders Fund (CFI-JELF), Completed August 13, 2018.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed January 15, 2018.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed January 9, 2018.

Peer Reviewer, General User Proposals ($n = 1$), Canadian Light Source, completed April 2018.

Peer Reviewer, Proposal, Collaborative Research and Development (CRD) Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed February 26, 2018.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed January 15, 2017.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed January 9, 2017.

Peer Reviewer, General User Proposals ($n = 4$), Canadian Light Source, completed April 2017.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed January 8, 2017.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed January 5, 2017.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed January 5, 2017.

Peer Reviewer, Proposal, Mitacs Globalink Partnership Award, Completed November 16, 2016.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), Completed January 8, 2016.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), Completed January 10, 2016.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), Completed January 11, 2016.

Peer Reviewer, Proposal, Accelerate Internship Program, Mitacs, Completed January 22, 2015.

Peer Reviewer, Proposal, Collaborative Research and Development (CRD) Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed August 10, 2015.

Peer Reviewer, Proposal, Discovery Grant Program, Natural Sciences and Engineering Research Council of Canada (NSERC), Completed January 9, 2015.

Peer Reviewer, Proposal, Collaborative Research and Development (CRD) Program, Natural Sciences and Engineering Research Council of Canada (NSERC), completed June 15, 2014.

Peer Reviewer, General User Proposals ($n = 2$), Canadian Light Source, completed April 2014.

Associate Editorships

Associate Editor, *Canadian Journal of Mineralogy and Petrology*, Mineralogical Association of Canada, 2023 – present.

Academic Programs Reviewed

Reviewer, Environmental Geoscience Program Proposal, MacEwan University, completed August 26, 2016.

Conference Sessions Organized

Co-Convenor, “*Environmental Aspects of Mine Wastes*”, Geological Association of Canada–Mineralogical Association of Canada–Society for Geology Applied to Mineral Deposits (GAC-MAC-SGA) Joint Meeting, May 23–26, 2023, Sudbury, Canada.

Co-Convenor, “*Toward Environmentally Responsible Resource Extraction*”, Geological Association of Canada–Mineralogical Association of Canada–International Association of Hydrogeologists–Canadian Society of Petroleum Geologists (GAC-MAC-IAH-CSPG) Joint Annual Meeting, May 15 – 18, 2022, Halifax, Canada.

Co-Convener, “*Mining Environments: Dynamic Biogeochemical Hotspots Understanding Geochemical Processes Related to Mined, Milled, or Natural Metal Deposits in a Changing Climate*”, Goldschmidt Conference, June 21-26, 2020, Virtual Conference.

Co-Convener, “*Mine Wastes and the Environment: Contamination, Management and Reclamation*”, Resources for Future Generations, June 16–21, 2018, Vancouver, Canada.

Co-Convener, “*Mine reclamation: Multidisciplinary studies from across mining sectors*”, Canadian Geophysical Union and Canadian Society for Agricultural and Forest Meteorology Joint Annual Scientific Meeting, May 28–31, 2017, Vancouver, Canada.

Co-Convener, “*New Bio-Geochemical and Mineralogical Perspectives on Traditional and Emerging Contaminants in Mine Wastes*”, Goldschmidt Conference, August 16–21, 2015, Prague, Czech Republic.

Co-Convener, “*Mining and the Environment: Addressing Common Challenges Faced Across the Mining Industry*”, Geological Society of America Annual Meeting, October 19–22, 2014, Vancouver, Canada.

Co-Convener, “*Innovative Approaches for Improving Water Quality in Mining Environments*”, Goldschmidt Conference, June 24–29, 2012, Montréal, Canada.

Co-Convener, “*Neutral Mine Drainage: Release, Transport and Attenuation of Metals and Trace Elements in Circumneutral Mining Environments*”, Geological Society of America Annual Meeting, October 30–November 2, 2010, Denver, USA.

21. ADMINISTRATIVE SERVICE

21.1 University Committees

General Academic Assembly Member, Research, Scholarly and Artistic Work Committee, University Council, 2020 to 2023.

Member, Joint Committee on Chairs and Professorships, University Council, 2020 to 2021.

Internal Reviewer, NSERC College of Reviewers, 2020 (Fall)

Internal Reviewer, NSERC College of Reviewers, 2019 (Fall)

Internal Reviewer, NSERC College of Reviewers, 2015 (Fall)

Internal Reviewer, NSERC College of Reviewers, 2014 (Fall)

21.2 College and Departmental Committees

Department of Geological Sciences

Faculty Lead, Search and Recruitment Committee, Canada Research Chair in Sustainable Critical Mineral Resources, 2023 to present.

Member, Complement Planning Committee, Department of Geological Sciences, 2022 to present.

Faculty Advisor, B.Sc. in Environmental Geoscience program, Department of Geological Sciences, 2020 to present.

Member, Undergraduate Affairs Committee, Department of Geological Sciences, 2020 to present.

Member, Salary Review Committee, Department of Geological Sciences, 2019.

Member, Complement Planning Committee, Department of Geological Sciences, 2016 to 2018.

Chair, Graduate Affairs Committee (i.e., Graduate Chair), Department of Geological Sciences, 2015 to 2018.

Member, Salary Review Committee, Department of Geological Sciences, 2013.

School of Environment and Sustainability

Member, Program Committee, Master of Water Security, School of Environment and Sustainability, Member, 2015 to 2018.

College of Arts and Science

Member, College Planning Advisory Committee, College of Arts and Science, 2021 to 2023.

Chair, Academic Programs Committee – B.A. & Sc. Programs, College of Arts and Science, 2019 to 2020.

Member, Academic Programs Committee – B.Sc. Programs, College of Arts and Science, 2019 to 2020.

Chair, Academic Programs Committee – B.Sc. Programs, College of Arts and Science, 2017 to 2018.

Member, Academic Programs Committee – B.Sc. Programs, College of Arts and Science, 2016 to 2017.

College of Graduate and Postdoctoral Studies

External Examiner of a M.Sc. Defence (W. Barrett, Department of Chemistry), College of Graduate and Postdoctoral Studies, February 12, 2020.

External Examiner of a M.Sc. Defence (K. Newman, Department of Geography and Planning), College of Graduate and Postdoctoral Studies, August 22, 2019.

External Examiner of a M.Sc. Defence (E. Neil, Department of Soil Science), College of Graduate and Postdoctoral Studies, February 14, 2018.

Faculty Chair, Academic Appeal Board (Ph.D. Student, School of Public Health), College of Graduate and Postdoctoral Studies, October 19, 2017.

External Examiner of a M.Sc. Defence (K. White, Toxicology Centre), College of Graduate and Postdoctoral Studies, June 19, 2017.

External Examiner of a M.Sc. Defence (N. Gibb, Department of Civil and Geological Engineering), College of Graduate Studies and Research, December 21, 2016.

Dean's Designate Chair of a Ph.D. Defence (R. Wang, Department of Vaccinology and Immunology), College of Graduate Studies and Research, November 3, 2015.

External Examiner of a M.Sc. Defence (T. Repas, Department of Biology), College of Graduate Studies and Research, February 18, 2014.

Dean's Designate Chair of a Ph.D. Defence (S. Thapa, Department of Electrical and Computer Engineering), College of Graduate Studies and Research, January 28, 2014.

External Examiner of a M.Sc. Defence (J. Hamilton, Department of Soil Science), College of Graduate Studies and Research, December 16, 2013.

External Examiner of a M.Sc. Defence (H. Brickner, Department of Civil and Geological Engineering), College of Graduate Studies and Research, September 12, 2013.

22. PROFESSIONAL AND ASSOCIATION OFFICES AND COMMITTEE ACTIVITY OUTSIDE UNIVERSITY

External Committees

Member, Travel and Research Grants Committee, Mineralogical Association of Canada, 2023.

Member (elected), User's Executive Committee, Canadian Light Source, 2020 to present.

Member, Research Advisory Board, "*Improved Strategies for Management of Metal-Bearings Residues*", Research Excellence Program, Ontario Research Fund (University of Waterloo) 2013 to 2016.

Graduate Student Supervision

Cruz-Hernández, Pablo, Ph.D. (International Ph.D. Program), Co-supervisor, Departamento de Geología, Universidad de Huelva, Spain, Environmental Geochemistry, 2013 – 2017 (completed)

External Examiner

External Examiner of Ph.D. Thesis, Konstantin von Gunten, Department of Earth and Atmospheric Sciences, University of Alberta (Canada), June 26, 2019.

External Examiner of Ph.D. Thesis, Md. Samrat Alam, Department of Earth and Atmospheric Sciences, University of Alberta (Canada), May 14, 2018.

External Reader of a M.Sc. Thesis, E. Principe, School of the Environment, Laurentian University (Canada), March 27, 2018.

External Examiner of a Ph.D. Thesis, E. Markelova, Institut des Sciences de la Terre, Université Grenoble Alpes, France (cotutelle with Department of Earth and Environmental Sciences, University of Waterloo, Canada), December 14, 2016.

Association Offices and Memberships

Member, International Association of Hydrogeologists–Canadian National Chapter, 2023 to present.

Member, Geological Association of Canada, 2013 to present.

Member, International Association of GeoChemistry, 2007 to present.

Member, Mineralogical Association of Canada, 2003 to present.

Member, Geochemical Society, 2007 to 2021.

Member, Mineralogical Society of America, 2007 to 2016.

23. PUBLIC AND COMMUNITY CONTRIBUTIONS

23.1 University Related

Judge, Student Talk and Poster Competition, Western Inter-University Geosciences Conference, January 6 – 9, 2016, Saskatoon, Canada.

Judge, Student Poster Competition, Canadian Light Source Annual User's Meeting, May 4 – 6, 2016, Saskatoon, Canada.

Mentor, Research Project (K. Fourie, Dalmeny High School), Saskatoon Regional Science Fair, January – April 2014.

Judge, Student Poster Competition, Saskatchewan Geological Open House, December 3 – 5, 2012, Saskatoon, Canada.

24. OTHER ACTIVITIES