APPENDIX G: PROJECT TEAM MEMBERS

The team who carried out the research has an impressive level of experience in the community engagement and Direct-use geothermal field. With their knowledge of green-field geothermal exploration, depth of experience, intimate knowledge of the geology of British Columbia, and highly advanced skills in community engagement, they were able to execute the project efficiently. Each member brought a specific expertise to this highly qualified team of geothermal practitioners. Below are brief summaries of each of the members and the role they played in the project.

Dr. Catherine Hickson P.Geo. – Project Manager and Science co-leader

Dr. Catherine Hickson provided overall project management and team leadership. Dr. Hickson is the President of Tuya Terra Geo Corp. and has more than 35 years' experience in geology, geothermal energy and managing high performance, multidisciplinary teams. For twenty-five years she worked for the Geological Survey of Canada (GSC) in various capacities including executive roles. She began her career with the GSC working on the Mount Meager geothermal project and other heat flow projects. In 1992, she was the scientific authority for the Geothermal Map of British Columbia (Fairbank and Faulkner 1992). In 2008, she joined a private sector energy company, Alterra Power Corp. which focused on geothermal energy exploration and development. She built a global portfolio of green-field concessions for the company, several of which are now partnered to other companies for advanced exploration, including the global geothermal giant, Energy Development Corp. (Philippines). In 2013, she left the company when they ceased green-field exploration. In the last two years she has built a strong client base of Canadian and international companies and continues to work in geothermal energy. She has published numerous scientific papers including a recent publication on "The Geothermal Exploration and Development Process: Graphical Representation Path to Optimal Decision Making" presented at the Geothermal Resources Council meeting, October 2014, in Portland Oregon.

Mr. Gerald W. Huttrer – Direct-use expert and Science co-leader

Mr. Gerald W. Huttrer is President of Geothermal Management Company, Inc. (GMC). GMC is a consultancy, founded in 1985, specializing in provision of services to the geothermal industry. These are focused on the geoscientific aspects of low, medium, and high temperature projects that have been conducted in 47 geothermally prospective countries.

Mr. Huttrer collaborated with Dr. Lund, and Ms. Boyd on several Direct-use projects in the past and brought them to the team to complete the *Roadmap* for the project. Generally, Mr. Huttrer studies the geologic and sub-surface situations. Over his more than 40 years in the geothermal industry, Mr. Huttrer has gained a wide range of Direct-use experience including, but not limited to: space heating and cooling, greenhouse and aquaculture pond heating, industrial applications, geothermal (ground-source) heat pumps, snow-melting, and combined heat and power facilities.

Mr. Huttrer is a geothermal geologist with a B.A. from Dartmouth College and an MS from the University of Washington. He has worked in the geothermal industry since 1969 and has conducted geothermal studies for heat-pump-related, Direct-use, and electric power generation internationally for entities including the U.S. and foreign governmental agencies, private and corporate entrepreneurs, investment banks, petroleum and mining companies, tribal organizations, and Multi-Lateral Development Banks. He is a past president and multi-term director of the Geothermal Resource Council (GRC), a founding member of the International Geothermal Association and is a recipient of the prestigious Aidlin Award from the GRC.

Mr. Huttrer's Direct-use projects include evaluation of the potential for economic development of low to medium temperature resources in: the entire state of Alaska (for the National Renewable Energy Laboratory), the city of Steamboat Springs, Colorado, the City of Glenwood Springs, Colorado, the City of Ouray, Colorado, the City of Pagosa Springs, Colorado, Fallon Naval Base, Nevada, the City of Banya Luka, Bosnia-Hertzegovina, and the whole of the Western United States (for Geoterma, Paris-Nord, France).

Dr. Titi Kunkel – Science co-leader

Dr. Titi Kunkel has over 25 years of international training and education project experience. Her work in the last ten years has primarily been in the Cariboo and Chilcotin regions of BC, working with Aboriginal communities. She received her Ph.D. from University of Northern BC in 2015 and continues to work with the university developing and delivering programs for rural and remote communities. Dr. Kunkel's dissertation assessed the compatibility of geothermal resource development and Aboriginal values within the Nazko and Xeni Gwet'in First Nations communities. Her work sheds new light on Aboriginal values in the region and the significance of these in economic development. She sits on the Board of Directors for Community Futures Development Corporation for the North Cariboo and the Nazko Economic Development Corporation. She has led numerous community-based research projects for Aboriginal communities in the region. Of note is her work with the Tsilhqot'in Nation communities to identify Aboriginal values in an area of cultural interests and significance to the people. She presented her findings at the two Federal Environmental Assessment panels (2010 and 2013) and at the World Mining Congress of 2013 in Montreal.

APEX Geoscience Ltd. – Geology and geomatics

Tuya Terra Geo Corp subcontracted APEX Geoscience Ltd. as an integral part of the team to provide geomatics support for the project. APEX has been providing geological consulting services to small and large exploration companies around the world for more than 20 years. APEX brings to the project their experience in British Columbia exploration through their highly experienced team of geoscientists and sophisticated software and database management expertise. They also have considerable experience in technical reporting, geological modelling and resource estimation services.

Through APEX, Ms. Yuliana Proenza, P.Geo and Mr. Bahram Bahrami, P.Geo were engaged.

Ms. Proenza is a geologist with APEX Geoscience Ltd. She has a BSc in Earth & Planetary Sciences from McGill University (2007) followed by a Master of Engineering in Clean Energy Engineering from University of British Columbia in 2012. Her thesis built a conceptual model for the Mount Meager geothermal system (Proenza 2012). She has been working for the mineral exploration industry since 2006 and is proficient in Geographical Information Systems (ArcGIS and MapInfo), 3D modelling and exploration targeting (Micromine, Leapfrog 3D, Maptek Vulcan, Gemcom Surpac) and data management solutions (Microsoft Access). She helped in final report writing, review and analysis of the GDDM data.

Mr. Bahrami is a geologist and geomatics specialist with APEX Geoscience Ltd. He has a BSc In Earth Sciences from Simon Fraser University (2008), followed by an Advanced Diploma in Geographic Information Systems (GIS) from British Columbia Institute of Technology in 2009. He has over six years' experience in the mineral exploration industry, and is an expert in GIS (ArcGIS, Quantum GIS, MapInfo) and 3D modelling software (Micromine, Geosoft). Mr. Bahrami compiled the GIS information for the project.

Ms. Toni Boyd – Geomatics specialist and direct use expert

Ms. Toni Boyd holds BS degrees in Civil Engineering Technology and Civil Engineering from the Oregon Institute of Technology (OIT). She has been involved in all aspects of geothermal Direct-use projects for more than 21 years and rose from her initial Lab Testing Technician position at OIT to Senior Engineer and Acting Director. Ms. Boyd has extensive computer experience and has edited and been responsible for graphics on numerous OIT and international publications. She is also an expert in creation of geothermal databases for both resources and surface applications. She is a multi-term director of the Geothermal Resources Council (GRC) and was the Direct-use Chair of the GRC Annual Meetings from 2001-2015 as well as for the World Geothermal Congresses in 2005, 2010, and 2015. Ms. Boyd has also authored and co-authored a great many articles and publications regarding geothermal Direct-use.

Ms. Leah Hjorth - Research Associate

Ms. Leah Hjorth has a BA in Education from the University of British Columbia and she is a member of the Nazko First Nation. Ms. Hjorth completed most of the community contacts, focusing on First Nations. She had previous experience working with Aboriginal communities in the Cariboo region. Ms. Hjorth also worked with Dr. Kunkel on community-based research projects using questionnaire surveys and semi-structured interviews. In addition, she worked with Drs. Kunkel and Hickson on a project to investigate geothermal resource potentials in the Nazko area.

Dr. John Lund PE – Direct-use expert

Dr. John Lund is one of the world's leading geothermal Direct-use experts with more than 45 years' experience in the geothermal industry. He holds BS and PhD Civil Engineering degrees from the University of Colorado and an MS Civil Engineering degree from the University of California, Berkeley. Dr. Lund was associated with the Oregon Institute of Technology Geo-Heat Center from 1980 through 2010 and held Professorial, Dean, and Director Positions throughout these 30 years. He has lectured to governmental, academic, industrial, and private audiences all over the world and has innumerable geothermal publications regarding all surface-related aspects of Direct-use. Dr. Lund is a past president of the Geothermal Resources Council and of the International Geothermal Association.

Dr. Lund's most recent presentations include: a four-lecture series on Direct-use applications to the 2014 ASHRAE Conference in Salt Lake City, Utah, six lectures on Direct-use applications to the Canadian Geothermal Energy Association (CanGEA) in Calgary in March 2014, and a Keynote speech/overview of geothermal Direct-uses to the Asian Pacific Energy Conference in Taipei, Republic of China in June 2013. Dr. Lund also has done extensive field work in Klamath Falls and Lakeview, Oregon as well as in Steamboat Springs, Glenwood Springs, and Pagosa Springs, Colorado.

Dr. Jacek Majorowicz – Heat flow

Dr. Jacek Majorowicz is a global expert in heat flow. He brought a deep understanding of the subsurface thermal regime as determined through boreholes and other data (Majorowicz and Grasby, 2010a & b) to the team. He has studied thermal problems on a variety of scales applied to geothermal systems including the state of the lithosphere, geothermal energy of the sedimentary basins, engineered geothermal systems (EGS), and thermal maturation-basin studies. Previous works have included heat flow and magnetotelluric work done for the Cordillera and sedimentary basins in BC which included the BC part of Western Canadian Sedimentary Basin, and Bowser and Nechako basins in the Intermontane Belt. The majority of these studies and resulting study reports have been published as scientific papers in top geophysical and geological journals in America and Europe. Of note is his work on enhanced geothermal systems in Canada and the identification of high potential regions.

Dr. Michal Moore – Energy Economist

Dr. Moore is one of the leading thinkers on energy economics in North America. Major research areas and interests include the operation and oversight of energy markets, including the interaction of oil and gas and electric systems. Recent research has focused on the integration of geothermal and solar energy facilities with the national grid in Australia and in Canada. He holds academic appointments in energy economics and systems engineering at both Cornell University and the University of Calgary. He is the current Area Director of Research for Energy and Environment at the School of Public Policy in Calgary and works with researcher faculty at Carleton University on a broad range of public education and literacy projects oriented to improving public perception and understanding of energy systems. He recently co-authored a major report on geothermal resource potential in Australia, and was a co-author of the first report to comprehensively identify geothermal resources throughout Canada. Dr. Moore is currently teaching classes in renewable energy technologies, and developing low temperature geothermal systems to assist in neutralizing pathogens in human waste for developing nations.

Dr. Glenn Woodsworth P.Geo – Structure, hot springs of British Columbia

Dr. Glenn Woodsworth has over 45 years' geological experience in British Columbia and brought a thorough understanding of the geology of British Columbia. After receiving his Ph.D. from Princeton University, he joined the Geological Survey of Canada (GSC) as a Research Scientist. His work focused on bedrock geological mapping and structural and metamorphic studies at various scales, and on regional geological syntheses of Cordilleran geology. He has a long interest in hot springs and was a contributor and editor of the Fairbank and Faulkner (1992) Geothermal Map of British Columbia. Since leaving the GSC, he has consulted on various geothermal and regional geology projects within BC. He was the first scientist to call attention to the geothermal potential of the Knight Inlet/Hoodoo Creek area. Dr. Woodsworth has published over 120 papers, reports, and maps on the many aspects of Cordilleran geology, and his *Hot Springs of Western Canada* (3rd edition, 2014) is the standard work on the topic.

Mr. Ron Yehia – Geochemistry and geomatics

Mr. Ron Yehia is an experienced geothermal and grassroots exploration geologist. Mr. Yehia was the Canada Exploration Lead at Vancouver-based Alterra Power, where he was responsible for planning and managing exploration in Western Canada as well as managing the geoscience hardware and software. At Alterra, he also participated in overseas exploration including assessment of various exploration tools and techniques. Prior to Alterra, Mr. Yehia was an exploration geologist at Ormat Technologies based in Reno, Nevada, where additional duties included responsibility for British Columbia exploration and as Manager of the Resource Group geodata. Currently, Mr. Yehia is consulting as an exploration geologist offering expertise and services in real-time hydrogeology results acquisition, and geoscientific solutions specializing in open source tools. He compiled a GIS database of geochemistry results for British Columbia incorporated into this report and available online at:
http://www.arcgis.com/home/item.html?id=cebc4e70ad4c48fd8314a681ae65f09c