

This geological map illustrates the stratigraphic units and structural features of the Creighton Mine area. The map is bounded by coordinates 81°13'W to 81°10'W and 46°28'N to 46°31'N. The stratigraphic units are color-coded and labeled as follows:

- Upper Unit:** Light pink/purple color.
- Middle Unit:** Medium purple color.
- Lower Unit:** Dark purple color.

Structural features include the **North Star** fault (a prominent diagonal line) and the **Creighton Mine** fault (a horizontal line near the bottom). The **Gertrude Mine** is located in the bottom left corner.

Sample locations are marked with yellow circles and labeled with codes such as 01-AV-494, 01-AV-496, 01-AV-497A, 01-AV-497B, 01-AV-498, 01-AV-475, 01-AV-476, 01-AV-473, 01-AV-472, 01-AV-469, 01-AV-466B, 01-AV-467, 01-AV-466A, 99-AV-11, 99-AV-12, 01-AV-463, 99-AV-13, 99-AV-13a, 01-AV-326, 01-AV-327B, 01-AV-327C, 01-AV-327A, 01-AV-329, 01-AV-331+A331, 01-AV-332, 01-AV-334, 01-AV-335, 01-AV-336, 01-AV-316, 01-AV-318, 01-AV-317, 01-AV-320, 99-AV-58 to 74, 01-AV-337, 01-AV-315, 99-AV-14 to 35, 01-AV-459, 99-AV-36 to 46, 01-AV-34, 01-AV-343, 01-AV-342, 01-AV-340, 01-AV-344A, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-378, 01-AV-374, 01-AV-372, 01-AV-371, 01-AV-370, 01-AV-369, 01-AV-368, 01-AV-367, 01-AV-365, 01-AV-364, 01-AV-363, 01-AV-362, 01-AV-361, 01-AV-360, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-AV-376, 01-AV-375, 01-AV-373, 01-AV-381, 01-AV-382B, 01-AV-382A, 01-AV-379, 01-AV-380, 01-AV-362, 01-AV-363, 01-AV-364, 01-AV-365, 01-AV-360, 01-AV-366, 01-AV-359, 01-AV-358, 01-AV-357, 01-AV-345, 01-AV-346, 01-AV-348, 01-AV-350, 01-AV-352, 01-AV-353, 01-AV-354, 01-AV-355, 01-AV-377, 01-A

Figure A2: Locations of 'barren' samples west of Creighton embayment (taken from surface exposure) analyzed for whole rock from the South Range of Sudbury. Data presented in Table A4.2 of Electronic Appendix. Pink dashed line - Modification to lower boundary of Middle Unit based on sampling. Base map and rock lithologies from Ames et al. (2005).

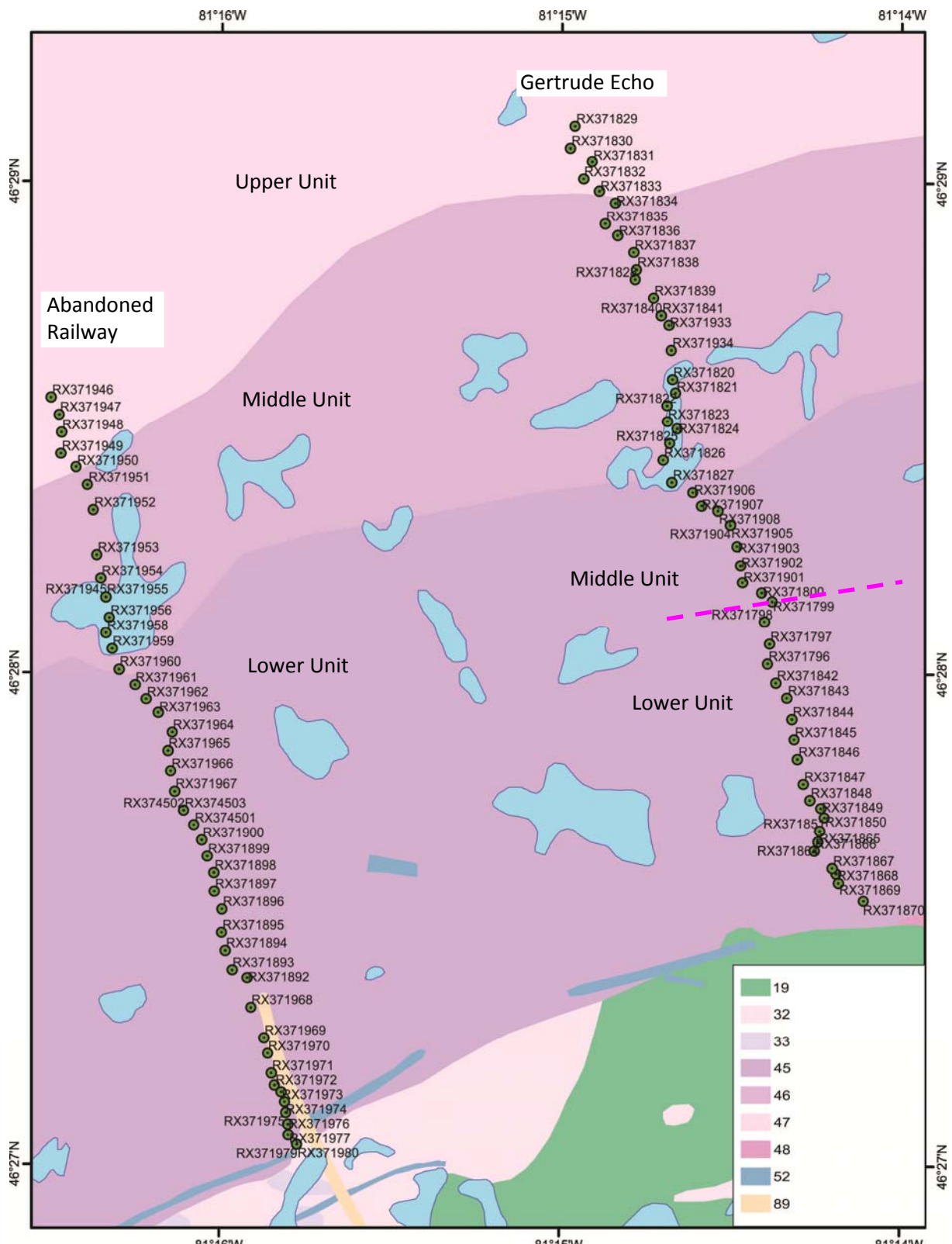


Figure A3: Locations of fertile and 'barren' samples analyzed for whole rock from the Worthington offset dyke on the South Range of Sudbury. Samples from Vermillion (11AV300B, 01AV279, 01AV264) are located in a small offset dyke pod not visible on the map. Data presented in Table A4.1 of Electronic Appendix. Base map and rock lithologies from Ames et al. (2005).

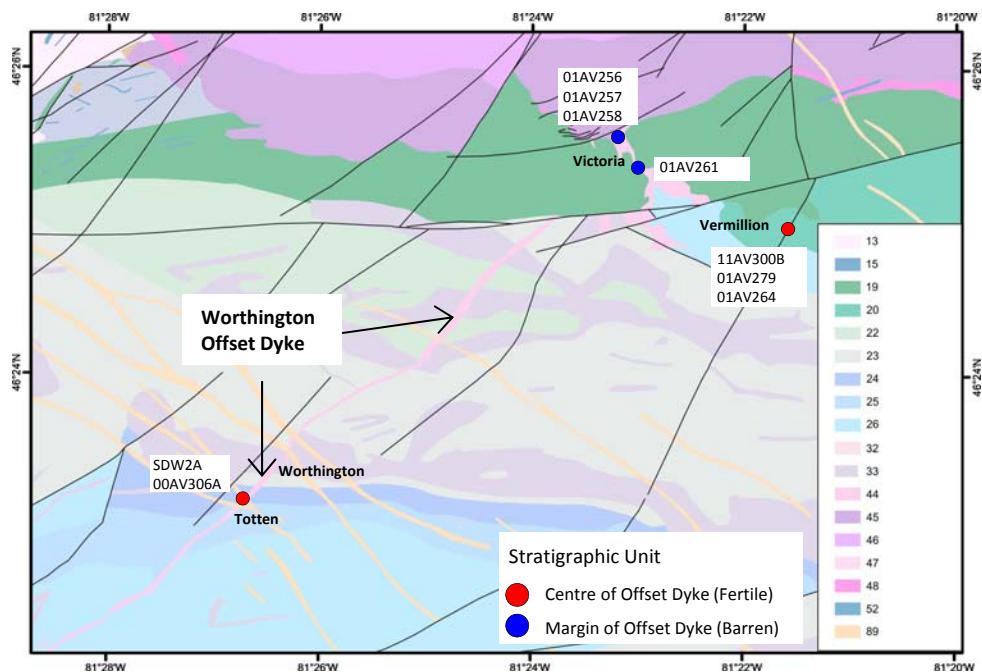


Figure A4: Location of North Range samples (taken from mainly from drill core or underground and projected to surface) analyzed for whole rock. A) Fertile samples are from the Levack embayment (near Levack and McCreedy East mines. Data presented in Table A4.1 of Electronic Appendix. B) 'Barren' samples are from Cascaden township and Windy Lake. Data presented in Table A4.3 of Electronic Appendix. Map and rock lithologies from Ames et al. (2005).

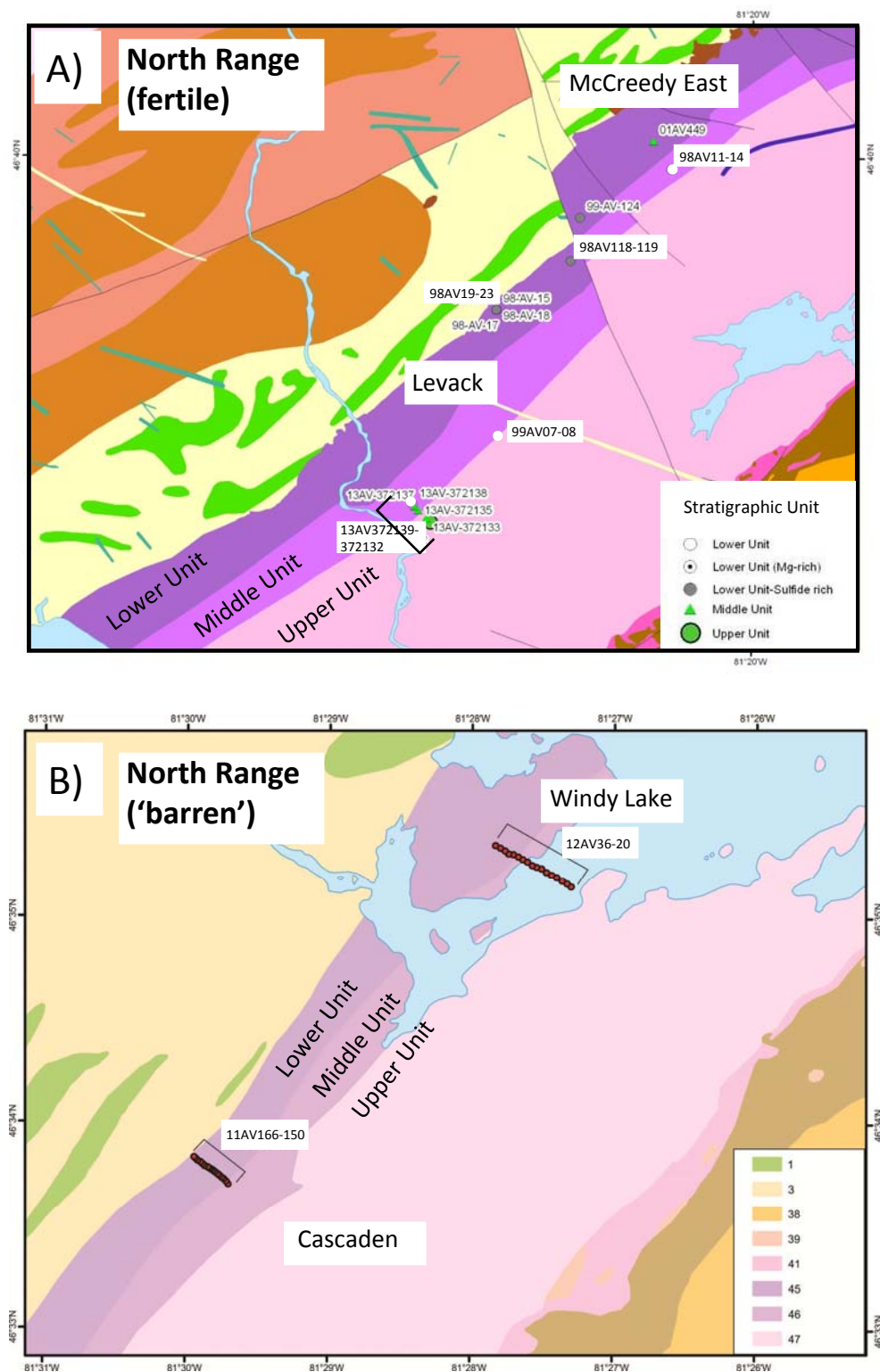


Figure A5: All sample locations (Field numbers) from Newark Island layered intrusion in Nain province, Labrador (Data source P. Lightfoot, Vale). Whole rock data available for all samples (Table A4.5 in Electronic Appendix).

