Nova Scotia Department of Energy and Mines TRIASSIC - JURASSIC **FUNDY GROUP** NORTH MOUNTAIN FORMATION BRIER ISLAND MEMBER (UPPER FLOW UNIT) (EJFnm-b): dark grey to grey-green, medium-grained, ophitic basalt with plagioclase and pyroxene microcrysts MARGARETSVILLE MEMBER (MIDDLE FLOW UNIT (EJFnm-m): dark grey to grey-green and red-brown, massive to vesiculated, fine-grained basalt; abundant zeolite phases EAST FERRY MEMBER (LOWER FLOW UNIT) (LTEJFnm-e): grey-green, fine- to medium-grained, massive basalt with microcrysts of plagioclase and pyroxene; gabbroic pegmatite common Bay of Fundy BLOMIDON FORMATION (MITth): red-brown to locally grey-green siltstone, and minor sandstone and shale; caliche nodules common; rare evaporite beds WOLFVILLE FORMATION (MITw): pink to red, coarse-grained sandstone and conglomerate with minor red to red-brown siltstone and shale WHITE QUARRY FORMATION (MMwwq): thick, stratified nodular to massive anydrite and gypsum with thin interbeds of limestone, dolostone, and rare interbeds and inclusions of halite, gypsum; locally highly petroliferous MACUMBER FORMATION (MMwm): thin-bedded to finely laminated limestone, locally dolomitized and sideritized, light grey to grey-brown, pelletal to peolidal fine-grained limestone, variably argillaceous and arenaceous LATE DEVONIAN-EARLY CARBONIFEROUS HORTON GROUP HORTON GROUP (LDECHu): undivided (Tournaisian-locally late Devonian to Early Visean) CHEVERIE FORMATION (LDMHc): grey-green to minor maroon sandstone, locally granule to pebble conglomerate, variably calcareous, immature, arkosic, massive to trough cross-stratified, fine- to coarse-grained, interbedded with similar maroon to minor grey-green siltstone HORTON BLUFF FORMATION LOWER MEMBER (LDMHhb-I): grey granule conglomerate, poorly sorted, kaolinitic, immature, in fining-up sequences, massive to trough cross-stratified, pebbly grey sublitharenite Margaretsville MIDDLE MEMBER (LDMHhb-m): cyclically repeated thick sequences of grey to dark grey clay shale, alternating thin-bedded grey shale and siltstone, fine sandstone and green mudstone and/or siltstone, commonly with associated stratified bedding UPPER MEMBER (LDMHhb-u): coarse siliciclastic-dominated section at the top of the formation and includes light to medium grey, thick sandstone (quartz arenite), medium- to coarse-grained and medium- to thin-bedded with planar to trough cross-stratification MURPHY LAKE MUSCOVITE LEUCOGRANITE (LDml): buff, orange, pink, red, white; predominantly fine- to medium-grained, minor coarse-grained; porphyritic, equigranular or pegmatitic muscovite leucogranite GOLD RIVER (LDgr); INGLISVILLE (LDi);JOE SIMON (LDjs); PANUKE LAKE LEUCOMONZOGRANITE (LDpl): buff, orange, white, pink, red; predominantly fine- to medium-grained, minor coarse-grained; variably porphyritic and equigranular, minor pegmatitic leucomonzogranite; metasedimentary xenoliths rare INGLISVILLE (LDilm); PANUKE LAKE (MEGACRYSTIC) LEUCOMONZOGRANITE (LDpllm): buff, orange, pink, red, white; fine-grained, equigranular or slightly megacrystic AKE GEORGE (LDIg); NEW ROSS LEUCOMONZOGRANITE (LDnr): buff, orange, white, pink; predominantly medium- to KERR LAKE MUSCOVITE-BIOTITE MONZOGRANITE (LDkl): light to medium grey, minor buff or orange; predominantly medium- to arse-grained, minor fine-grained; megacrystic or seriate; metasedimentary xenoliths common CLOUD LAKE (LDcI); GASPEREAU LAKE (LDgImg); SCRAG LAKE (LDsImg); SALMONTAIL LAKE BIOTITE ONZOGRANITE (LDs): light to medium grey; predominantly medium- to coarse-grained; megacrystic or seriate; metasedimentary xenoliths common to abundant FIVE MILE LAKE (LDfm); KEITH BROOK (LDkb); BOOT LAKE (LDbl); GASPEREAU LAKE (LDgl); SCRAG LAKE BIOTITE GRANODIORITE (LDsl): light to medium grey; predominantly medium- to coarse-grained, minor fine-grained; megacrystic or seriate; metasedimentary xenoliths abundant BIOTITE PORPHYRY (LDbp): light, medium or dark grey or brownish grey; predominantly fine- to medium-grained, minor coarse-grained; porphyritic; metasedimentary xenoliths abundant SILURIAN TO DEVONIAN ROCKVILLE NOTCH GROUP TORBROOK FORMATION (SDRt); NEW CANAAN FORMATION (SDRnc); slate, siltstone, and sandstone; minor mafic volcanic rocks and limestone; Late Silurian to Early Devonian fossils KENTVILLE FORMATION (SRk): green-grey to red-brown slate and siltstone with minor limestone; grades upwards to black slate and siltstone; WHITE ROCK FORMATION (SRwr): quartzite interbedded with conglomerate and siltstone (in the northeast); quartzite, siltstone, rhyolite, basalt, chert, and minor dolostone and mafic tuff (in the southwest); trace fossils common CAMBRIAN TO ORDOVICIAN HELLGATE FALLS FORMATION (EOHhf): dark grey slate and metasiltstone interbedded with metasandstone; grades to black slate at top of formation; trace fossils common; commonly bioturbated ELDERKIN BROOK FORMATION (ЕОнев): grey to red-brown slate and metasiltstone; local trace fossils; locally bioturbated LUMSDEN DAM FORMATION (EOHId): grey metasiltstone and metasandstone interbedded with slate; upper parts of metasandstone beds locally contain graptolite fossils NORTH ALTON FORMATION (LCHna): black slate to metasiltstone interbedded with cross-laminated metasandstone; locally abundant **GOLDENVILLE GROUP** MOSHERS ISLAND FORMATION (€Gmi); TUPPER LAKE BROOK FORMATION (€Gtl): green to greenish-grey to grey, well-laminated metasiltstone to slate; minor, very thin- to thin-bedded, fine-grained metasandstone; abundant manganiferous nodules, laminations and coticules or green- to grey-green to purple metasiltstone and slate; minor metasandstone; locally Mn-rich GOVERNMENT POINT FORMATION (Cogp): grey, thin- to thick-bedded metasandstone with minor calc-silicate nodules and rare manganese nodules; laminated, green to greyish-green to purple metasiltstone and rare black slate; trace fossils common CHURCH POINT FORMATION (CGcp): mainly thickly bedded metasandstone with minor metasiltstone and slate 67°W 66°W 65°W 64°W 63°W 62°W 61°W 60°W 55 Nova Scotia Department of Energy and Mines Geoscience and Mines Branch Bedrock mapping was initiated in the Annapolis Valley and surrounding North and South Mountain in southern Nova GIS databases, cartography and reproduction by Angie Barras and Jeff McKinnon of the Nova Scotia Department of Geological Survey Ferguson, S. A. 1983. Geological maps of the Hantsport area; Nova Scotia Department of Mines and Energy, Open Kings counties, Nova Scotia, scale 1:50 000, by R.G. Moore, S.A. Ferguson, R.C. Boehner and C.M. Kennedy, White, C.E. and Barr, S.M. 2012b. Meguma terrane revisited: stratigraphy, metamorphism, paleontology, and Scotia as a follow-up from the South Shore Bedrock Mapping Project (White, 2012). The main goals of this project Energy and Mines, Geoscience Information Services Section, 2019. The GIS databases and map were developed File Report ME 557, 4 maps, scale 1:10 000. 2009; Nova Scotia Department of Natural Resources, Digital Product ME 389. provenance; GAC-MAC 2012, St. John's, NL post-meeting field guide summary; Geoscience Canada, v. 39, p. 8-12. Drillhole (after O'Neill et al., 2016). . . . are to produce a geological bedrock map of the area to aid in our understanding of the stratigraphy, structure, using ArcGIS Desktop® 10.5.1 and ArcGIS Pro 2.3.1 *Ham, L.J. 1991. Geological map of Windsor (NTS 21A/16, west half, and part of 21H/01); Nova Scotia Department White, C.E. and Barr, S.M. 2017. Stratigraphy and depositional setting of the Silurian-Devonian Rockville Notch Open File Map ME 2019-006 metamorphism, tectonic setting, and mineral deposits of southwestern Nova Scotia. This map represents two O'Neill, M.J. and Poole, J.C., 2016. DP ME 003, version 5, 2016, Nova Scotia drillhole database; Nova Scotia of Mines and Energy, Map ME 1990-010, scale 1:50 000. Group, Meguma terrane, Nova Scotia, Canada, Atlantic Geology, v. 53, p. 337-363. Universal Transverse Mercator Projection (UTM), Zone 20, Central Meridian 63°00" West. North American Datum summers of field work (2008 and 2009); and follow-up stratigraphic, geochronological, paleontological, and isotopic (Au - gold, CLY - clay, Co - cobolt, Cu - copper, DIA - diatomite, Fe - iron, LS - limestone, Department of Natural Resources, Digital Product ME 003, (version 5). White, C.E., Palacios, T., Jensen, S., and Barr, S.M., 2012. Pre-Carboniferous stratigraphy of the Meguma terrane, (NAD) 1983 Canadian Spatial Reference System (CSRS) 98. studies (White, 2010a, b; White and Barr, 2012a, b, 2017; White et al., 2012, 2014, 2017a, b, 2018; Pothier et al., Nova Scotia, Canada: new constraints from micro and trace fossils; Geological Society of America Bulletin, v. 124, *Ham, L.J. and Horne, R.J. 1987. Geological map of Windsor (NTS 21A/16, east half), Nova Scotia; Nova Scotia Mn – Manganese, Mo - Molybdenum, Pb – lead, U - uranium, Zeo - zeolite) 2015). Geological map data were collected at a scale of 1:10 000 and compiled to produce a 1:50 000-scale O'Reilly, G.A., DeMont, G.J., Fisher, B.E., and Poole, J.C., 2016. DP ME 002, version 11, 2016, Nova Scotia mineral p. 1773-1792. Department of Mines and Energy, Map ME 1987-007, scale 1:50 000. Base and digital data derived from the Nova Scotia Topographic Database (NSTDB). Copyright Her Majesty the Bedding; tops known (inclined, vertical, horizontal, overturned) . . bedrock map showing the distribution of units and mineral occurrences. Carboniferous and younger units are after occurrence database; Nova Scotia Department of Natural Resources, Digital Product ME 002, (version 11). Kontak, D.J., Webster, T.L., Fisher, B.E., MacNeil, J.D., McKinnon, J.S., and Ehler, A.L., 2010. DP ME 438, version and modified after Kontak et al., 2010; Moore et al., 2009; SMB Project maps (see references). Queen in Right of the Province of Nova Scotia. The NSTDB is available from the Department of Service Nova White, C.E., Doucette, V.J., and Barr, S.M., 2014. Geology of the Hemlock Hill gneiss south of Windsor, Hants Bedding; tops unknown (inclined, vertical, horizontal) . . . Scotia & Internal Services, Nova Scotia Geomatics Centre (NSGC), Amherst, Nova Scotia. 1, 2010. Digital geological data generated as part of the North Mountain Basalt Mapping Project (2000-2004), from Pothier, H.D., Waldron, J.W.F., White, C.E., Dufrane, S.A., and Jamieson, R.A., 2015. Stratigraphy, provenance and County, Nova Scotia; in Mineral Resources Branch, Report of Activities 2012, eds. D.R. MacDonald and E.W. $\uparrow \uparrow$ Trail, track . . Brier Island to Cape Split, Digby, Annapolis and Kings counties, Nova Scotia, by D.J. Kontak and T.L. Webster; tectonic setting of the Early Ordovician upper Halifax Group, Nova Scotia, Canada; Atlantic Geology, v. 51 p. 51-83. MacDonald; Nova Scotia Department of Natural Resources, Report ME 2013-001, p. 87-101. Fold axis (generation unknown, first generation) . . . Shaded relief image derived from a 25 m Digital Elevation Model of the Province of Nova Scotia, DP ME 56, version Nova Scotia Department of Natural Resources, Digital Product ME 438. I especially acknowledge the pioneering contributions of the late Paul Schenk, who introduced the geology of the Fold axis - m fold (first generation, second generation) White, C.E. 2010a. Pre-Carboniferous bedrock geology of the Annapolis Valley area (NTS 21A/14, 15, and 16; White, C.E., Swanton, D.A., and Scallion, K-L., 2017a. Pre-Carboniferous stratigraphy and structure in the 2, 2006. Azimuth of 0°, sun angle of 45° and a vertical exaggeration of 5. There are a number of anomalous dark Meguma terrane to the international geological community. S. Barr, U. Linnemann, D. Long, M. MacDonald, G. 21H/01 and 02), southern Nova Scotia; in Mineral Resources Branch, Report of Activities 2009, ed. D.R. Lawrencetown – Wolfville area, southern Nova Scotia; Nova Scotia Department of Natural Resources, Open File areas in the shaded relief image that are a result of bad elevation data in the original DEM (examples are in South O'Reilly, and J. Waldron are thanked for numerous discussions regarding the geology of the Annapolis Valley area. *MacDonald, M.A. and Ham, L.J. 1992. Geological map of Gaspereau Lake (NTS 21A/15 and part of 21H/02); Nova MacDonald; Nova Scotia Department of Natural Resources, Report ME 2010-001, p. 137-155. Illustration ME 2017-002. River Lake, Barteaux Lake and Randal Lake areas). Special thanks to J. Drummond, K-L. Scallion, J. Shute, L. Slaman, D. Swanton, and M. Vaccaro for providing Boundary (county, inter-provincial) Scotia Department of Natural Resources, Map ME 1992-001, scale 1:50 000. Flow foliation (inclined, vertical) . . enthusiastic field assistance. T. Lenfesty and J. Breton are thanked for their navigational skills in the departmental Bedrock Geological Unit Sources: White, C.E. 2010b. Stratigraphy of the lower Paleozoic Goldenville and Halifax groups in the western part of White, C.E., Barr, S.M., and Linnemann, U., 2017b. The Silurian-Devonian Rockville Notch Group, Nova Scotia, Dec 19, 2019

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*MacDonald, M.A. and Ham, L.J. 1994. Geological map of Bridgetown, Nova Scotia (NTS 21A/14); Nova Scotia

Moore, R.G., Ferguson, S.A., Boehner, R.C., Kennedy, C.M., Ehler, A.L., McKinnon, J.S., and Fisher, B.E., 2009.

DP ME 389, version 1, 2009, digital version of Nova Scotia Department of Natural Resources Map ME 2000-3,

Department of Natural Resources, Map ME 1994-008, scale 1:50 000.

* Designated as South Mountain Batholith (SMB) Project maps in the inset map of bedrock unit sources.

southern Nova Scotia; Atlantic Geology, v. 46, p. 136-154.

version 2, Bedrock Geology Map of the Wolfville-Windsor Area, NTS Sheet 21H/01 and Part of 21A/16, Hants and GAC-MAC 2012, St. John's, NL, post-meeting field trip; Field Trip Guidebook B5, 68 p.

White, C.E. and Barr, S.M. 2012a. The new Meguma: stratigraphy, metamorphism, paleontology, and provenance; African origin; Canadian Journal of Earth Sciences, v. 55, p. 589-603.

GAC-MAC 2012, St. John's, NL, post-meeting field trip; Field Trip Guidebook B5, 68 p.

White, C.E. 2012. Overview map showing locations of bedrock geology maps for the southwestern area of Nova

Scotia; Nova Scotia Department of Natural Resources, Open File Map ME 2012-076, scale 1:250 000.

Canada – unique to Meguma; presentation at the GAC-MAC Joint Annual Meeting, Kingston, Ontario, May 14-17,

White, C.E., Barr, S.M., and Linnemann, U., 2018. U-Pb (zircon) ages and provenance of the White Rock Formation

of the Rockville Notch Group, Meguma terrane, Nova Scotia, Canada: evidence for the "Sardian gap" and West

2017; In GAC-MAC Program with Abstracts, v. 40, p. 413.

New Mapping - C. E. White

DP ME 438 - Kontak et al.

DP ME 389 - Moore et al.

library. Comments and revisions on the draft version of the map by S. Barr were helpful.

intended for use at the published scale of 1:50 000.

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Scotia Department of Energy and Mines does not assume any liability for errors that may occur. This map is

Anticline, Syncline . . .

Geological contact (general) . .

White, C.E. 2019. Bedrock geology map of the central Annapolis Valley area, Nova Scotia; Nova Scotia Department

of Energy and Mines, Geoscience and Mines Branch, Open File Map ME 2019-006, scale 1:50 000.