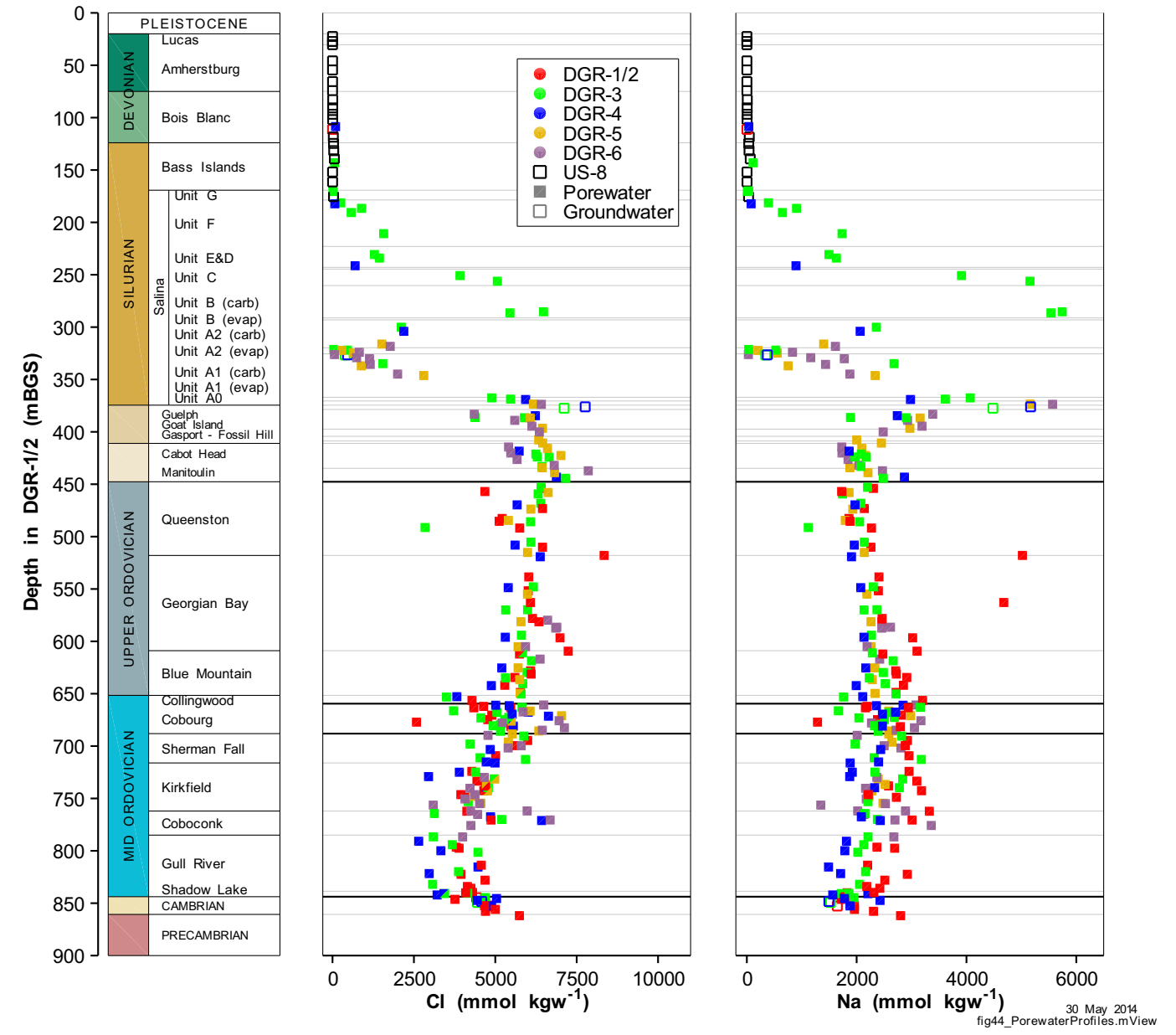


a. Total Dissolved Solids and Water Activity
(after Intera Engineering Ltd., 2011)



b. Chloride and Sodium
(after Intera Engineering Ltd., 2011)

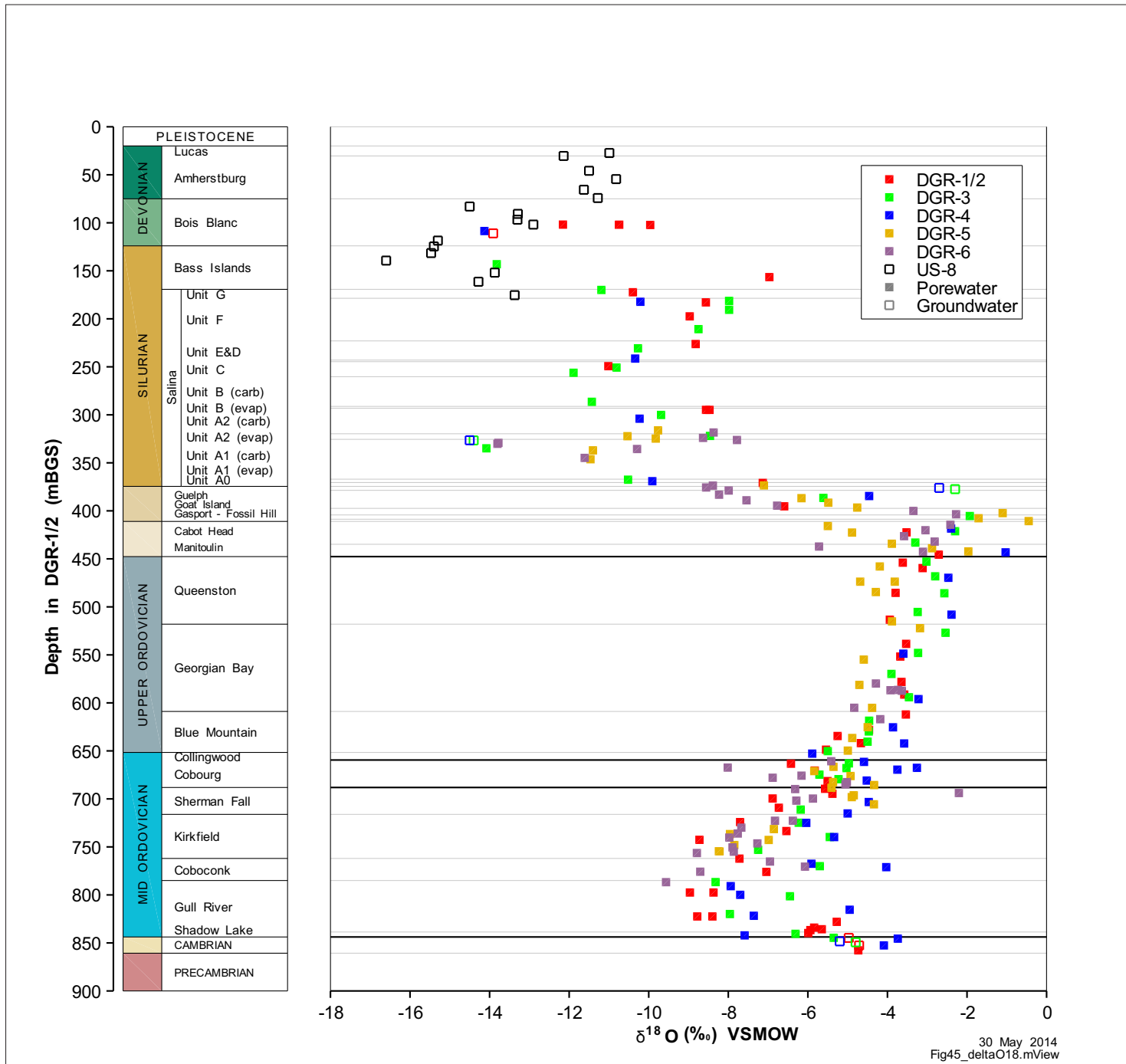
FIGURE 4.4 - Profiles of Major Ion Chemistry of Porewater and Groundwater at the Bruce Nuclear Site

NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Sedimentary Sites

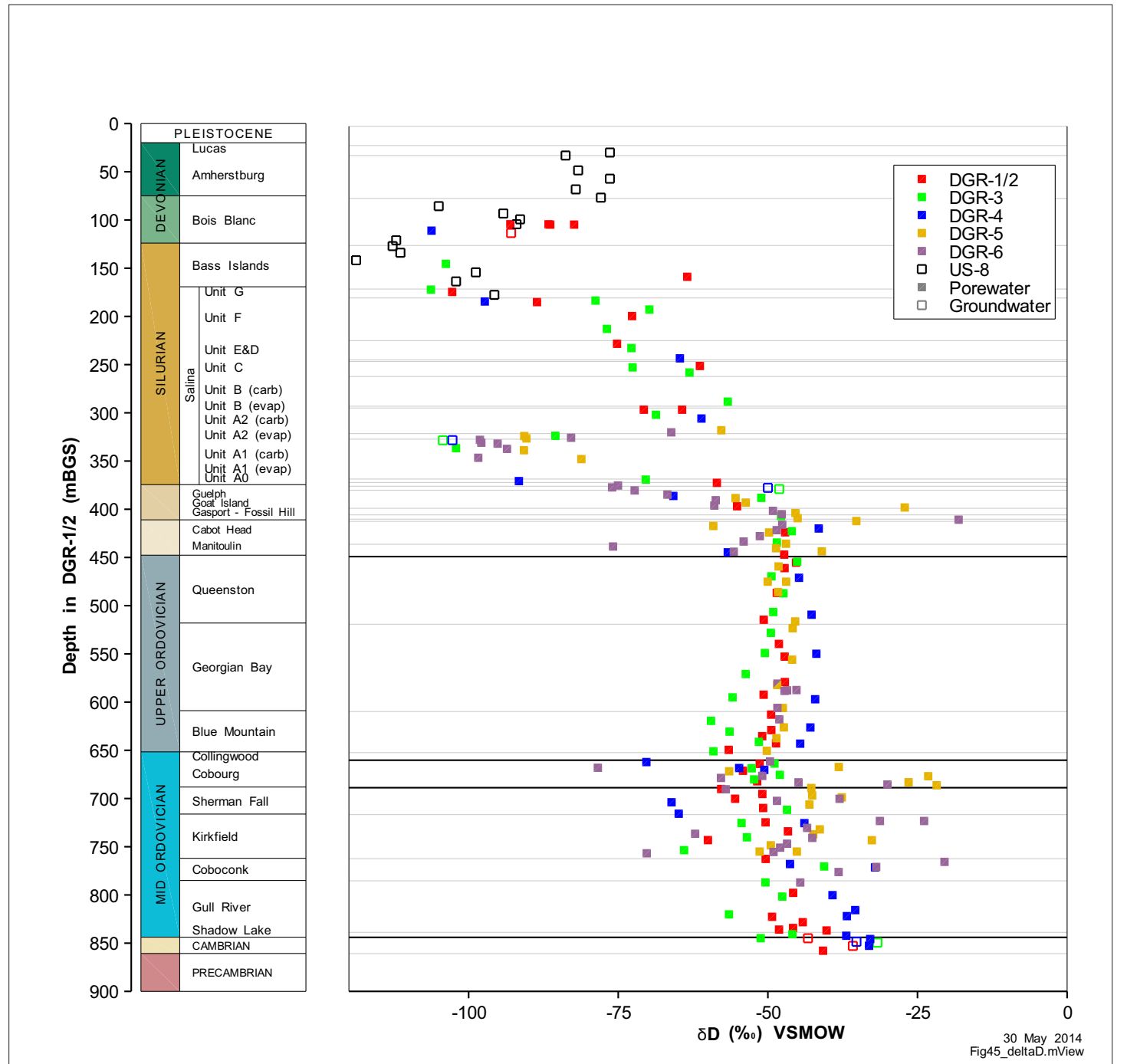
Prepared by: ADG
Reviewed by: KGR/SNS
Date: 13/02/2014



"P:\Projects\2010\10-214 NWMO APM Site Screening\10-214-7 Sedimentary Sites FS\110 Reporting\110.10 Suitability Report\Figures\WorkingFiles\10-214-7-110_SedSites_Fig_4_ProfilesMajorChem_R0B.cdr"



a. Oxygen-18
(after Intera Engineering Ltd., 2011)



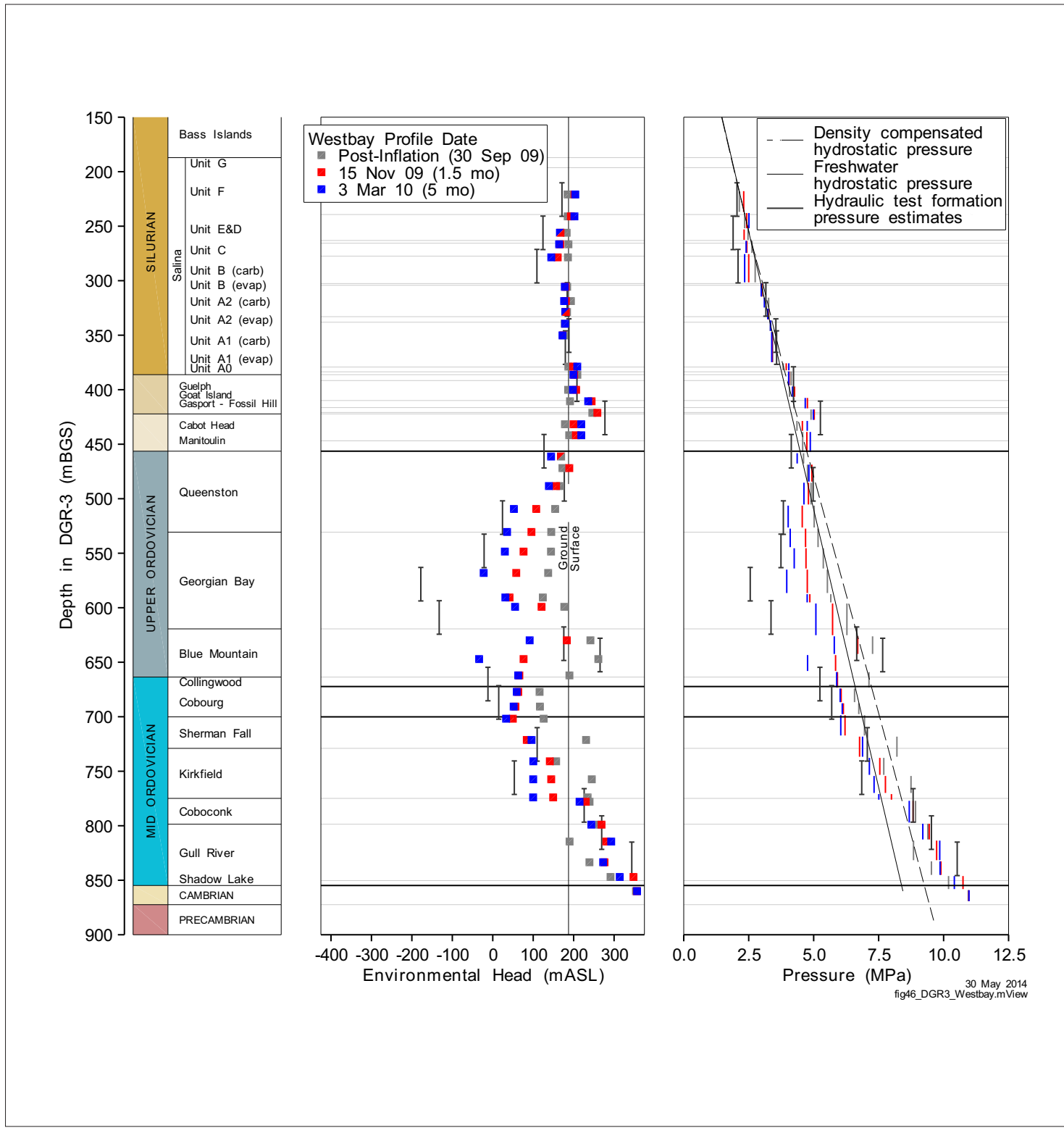
b. Deuterium
(after Intera Engineering Ltd., 2011)

FIGURE 4.5 - Profiles of Environmental Isotopes in Porewater and Groundwater at the Bruce Nuclear Site

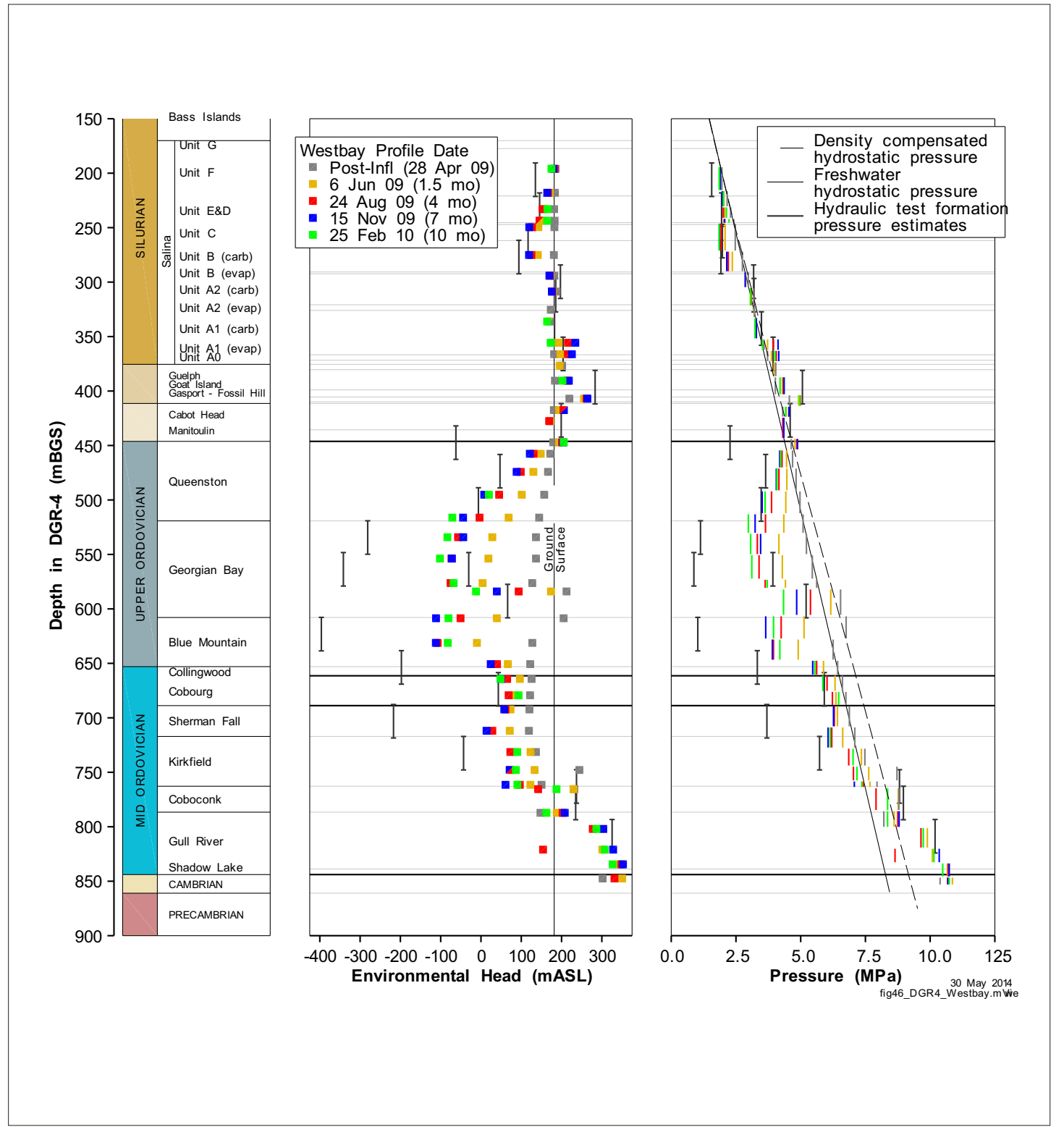
NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Sedimentary Sites

Prepared by: ADG
Reviewed by: KGR/SNS
Date: 14/02/2014





a. DGR-3
(after Intera Engineering Ltd., 2011)



b. DGR-4
(after Intera Engineering Ltd., 2011)

FIGURE 4.6 - Profiles of Formation Pressures and Environmental Heads in Deep Boreholes at the Bruce Nuclear Site

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Prepared by: ADG
Reviewed by: KGR/SNS
Date: 14/02/2014



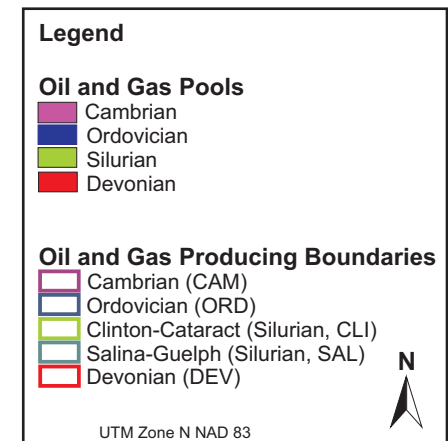
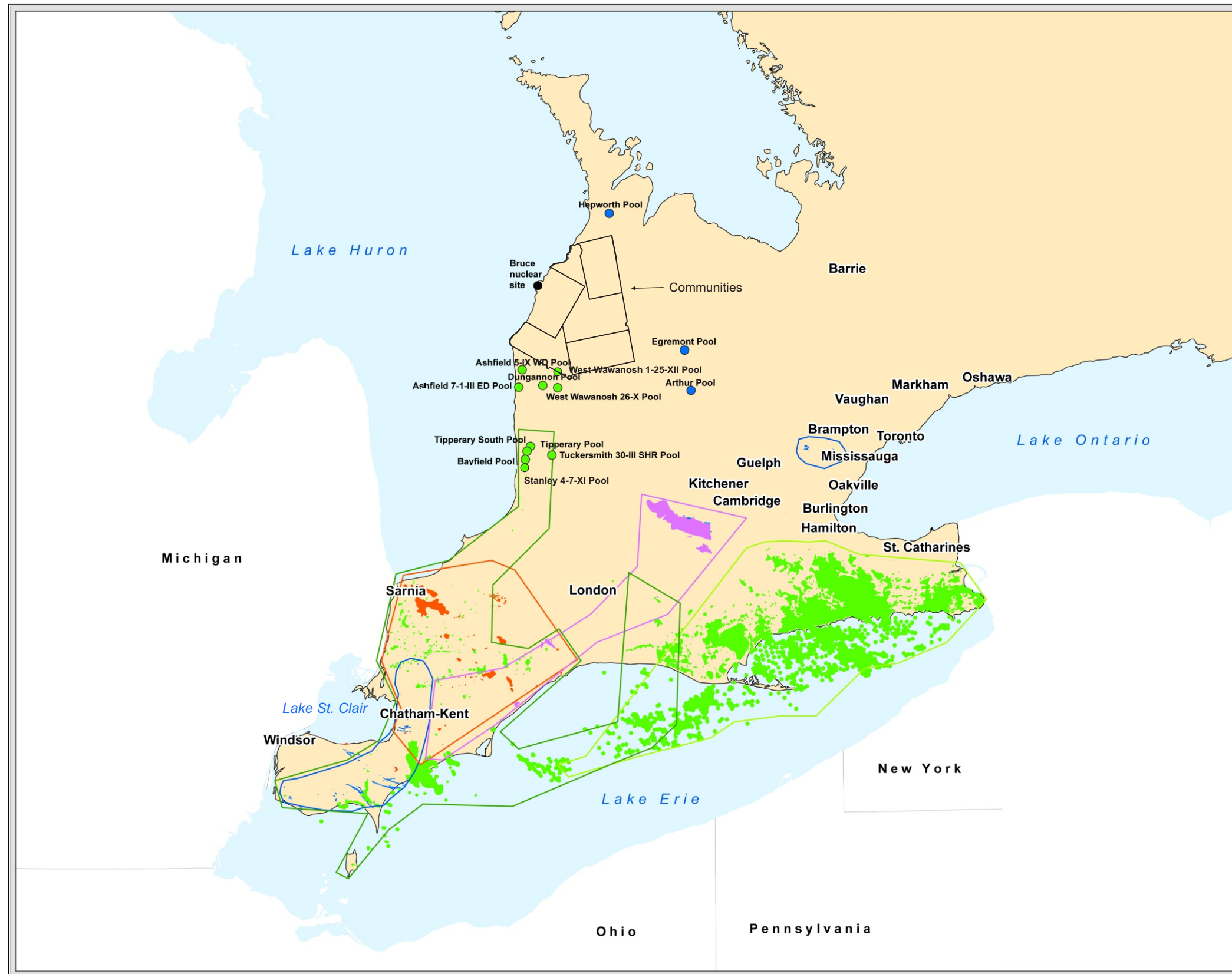


FIGURE 5.1 - Principal Oil and Natural Gas Producing Regions and Storage Pools in Southern Ontario

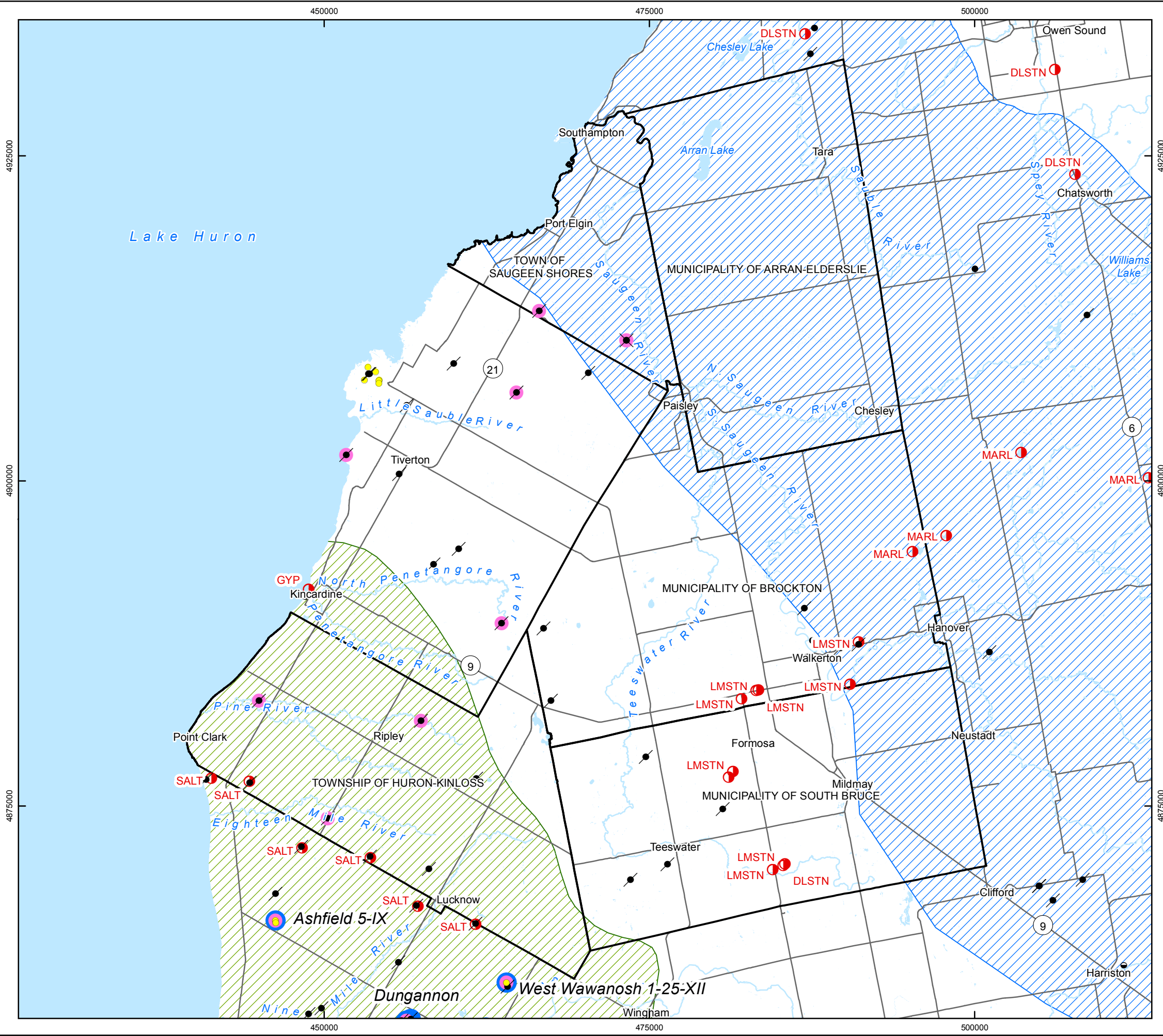
NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Sedimentary Sites

Prepared by: ECK
 Reviewed by: KGR/SNS
 Date: 13/02/2014

Notes: Base map is from Ontario Ministry of Natural Resources Pool data supplied by the Oil, Gas and Salt Resources Library and the Ontario Ministry of Natural Resources. All pool boundaries are accurate as of October 2012. Pool boundaries are interpretive and approximate. Dots represent pools which have boundaries too small to see on figure. Production boundaries are modified from Carter (1990).



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LEGEND

- The Communities
- Highway/Major Road
- Waterbody
- Watercourse
- Discretionary Mineral Occurrence
 - DLSTN = Dolostone
 - GYP = Gypsum
 - LMSTN = Limestone
 - MARL = Marl
 - SALT = Salt
- Pinnacle Reef
- Oil and Gas Pool

Oil, Gas and Salt Resources Library Database Wells

- Abandoned Well
- Abandoned and Junked (Lost)
- Active Well
- Suspended Well
- Unknown
- Area of Freshwater Occurrence in the Guelph Formation
- Area of Salt Occurrence

INDEX MAP

SCALE 1:300,000

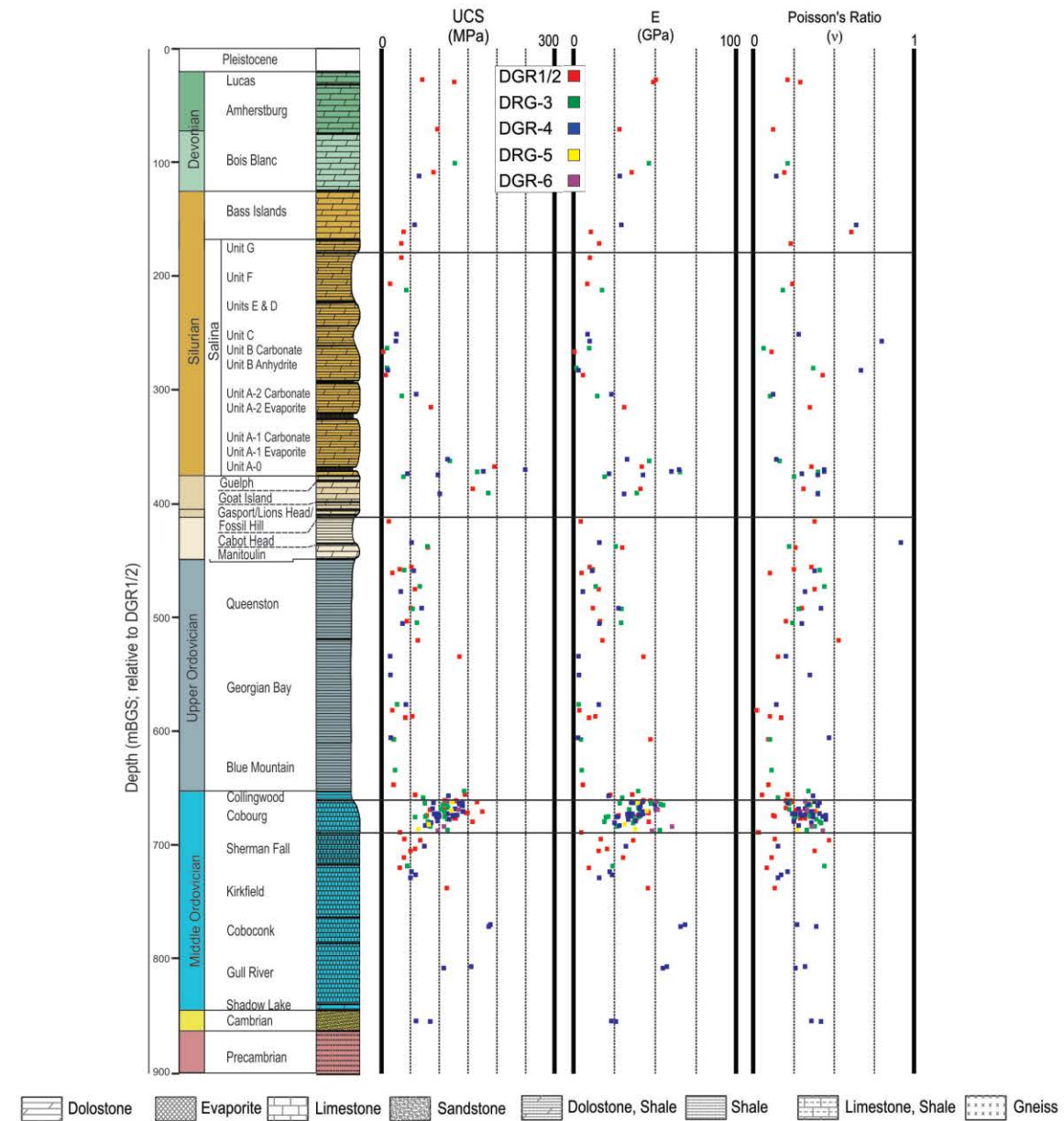
0 2.5 5 10 15 20
Kilometres

COORDINATE SYSTEM: UTM NAD83 Zone 17N
SOURCE:
Basemap Layers: LIO, MNR, ESRI
Freshwater Occurrence: Carter and Fortner, 2011
Mineral: Mineral Deposit Inventory (MDI), OGS, 2013
Oil and Gas Wells: OGSRL, 2013
Pinnacle Reefs: MRD276 Regional structure and isopach maps of potential hydrocarbon-bearing strata for southern Ontario, OGS, 2011
Salt Occurrence: Sanford, 1976
Produced by Geofirma Engineering Ltd under license from Ontario Ministry of Natural Resources, ©Queens Printer 2011

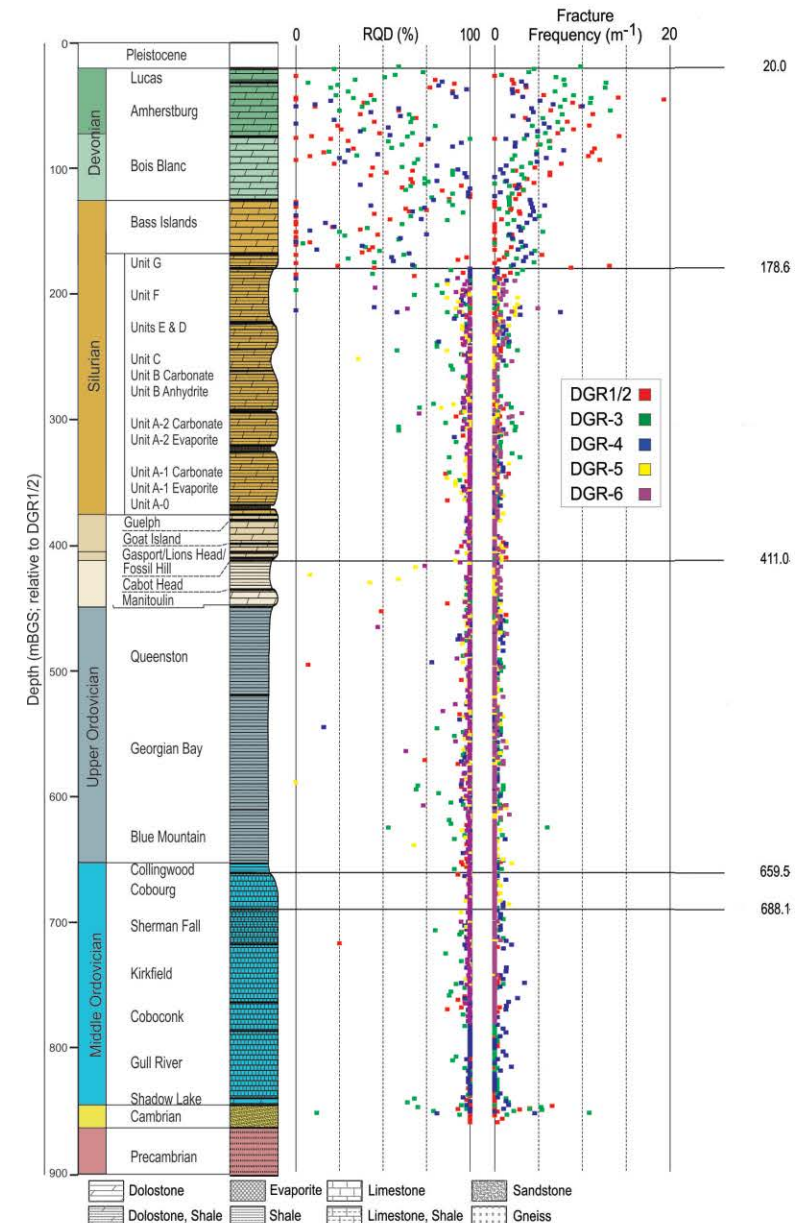
PROJECT No. 10-214-7
NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Sedimentary Sites

TITLE **Petroleum, Mineral, and Deep Groundwater Resources in the Area of the Five Communities**

FIGURE 5.2	DESIGN: NMP CAD/GIS: NMP/ADG CHECK: KGR REV: 0	
	DATE: 11/6/2014	



a. Uniaxial Compression Test Results
(after NWMO, 2011)



b. Reference Stratigraphic Column, MS Units, RQD and Fracture Frequency
(after NWMO, 2011)

FIGURE 6.1 - Geomechanical Properties of Paleozoic Rocks at the Bruce Nuclear Site

NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Sedimentary Sites

Prepared by: ECK

Reviewed by: KGR/SNS

Date: 12/02/2014





a. Manitoulin Formation Dolostone
480.75 - 483.79 mBGS
in DGR-5



b. Queenston Formation Shale
475.73 - 478.78 mBGS
in DGR-3



c. Blue Mountain Formation Shale
619.08 - 622.13 mBGS
in DGR-4



d. Cobourg Formation Limestone
677.03 - 680.08 mBGS
in DGR-3

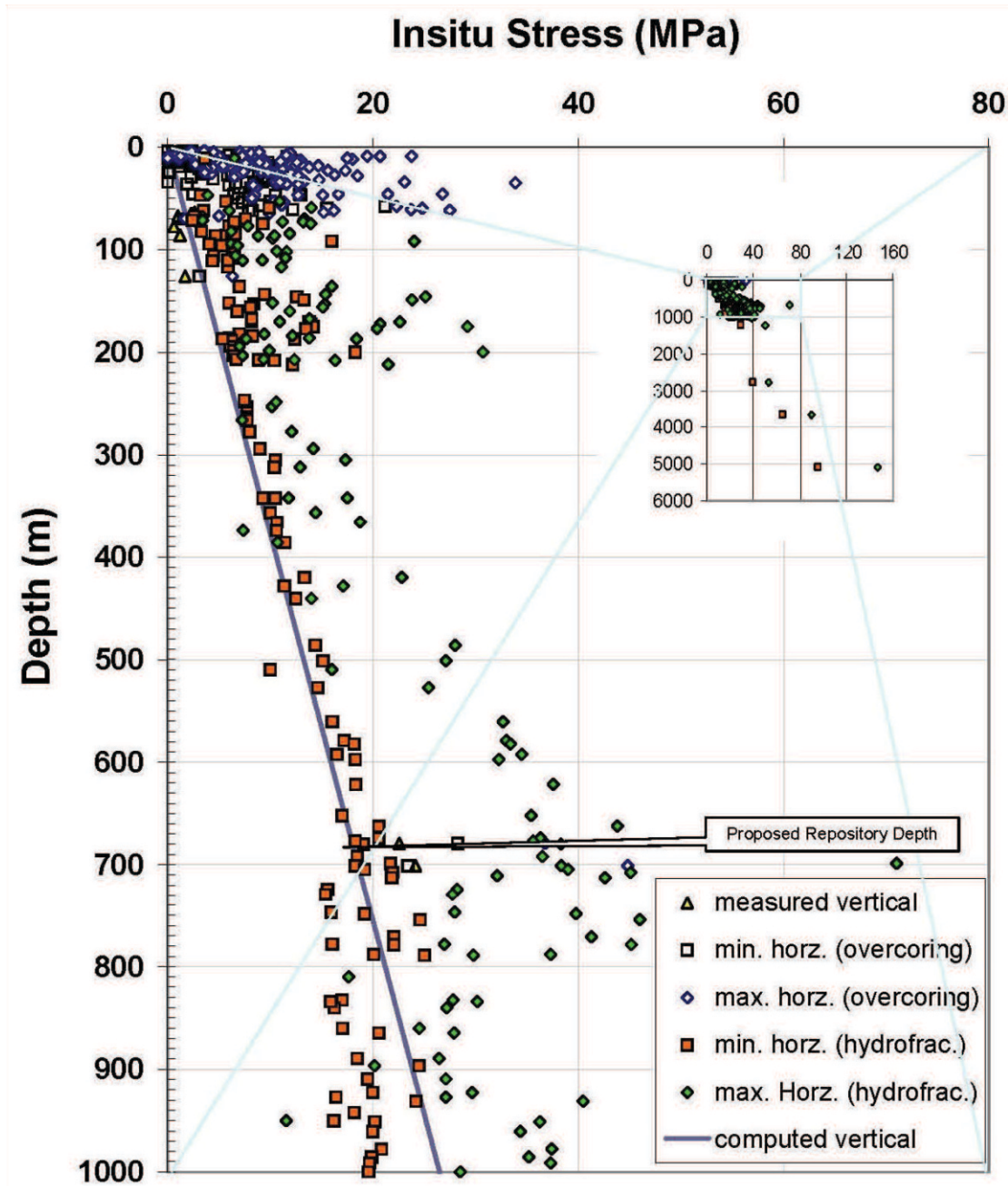
FIGURE 6.2 - Intact Core Runs of Paleozoic Formations at the Bruce Nuclear Site

NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Sedimentary Sites

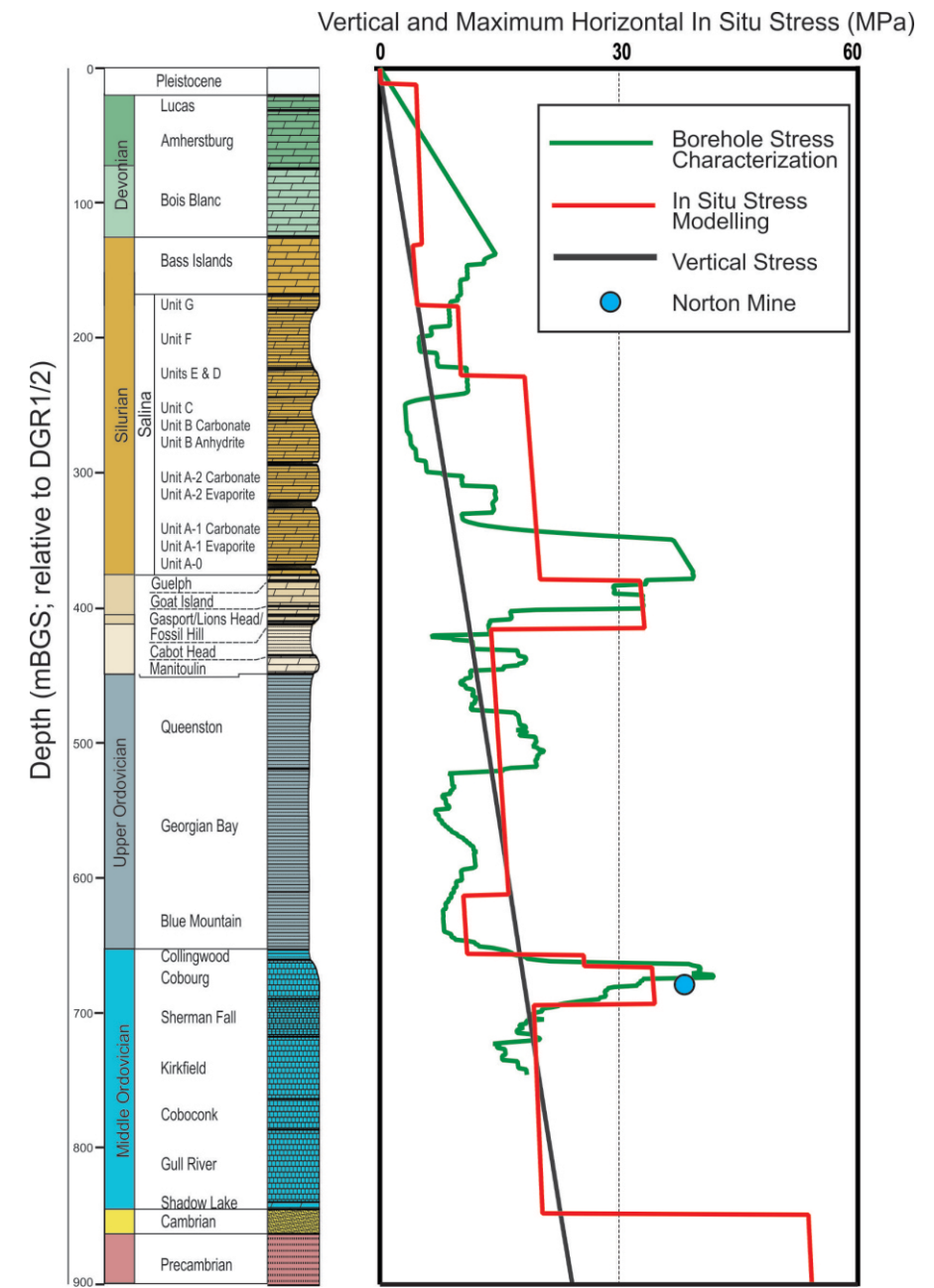
Prepared by: ECK

Reviewed by: KGR/SNS

Date: 12/02/2014

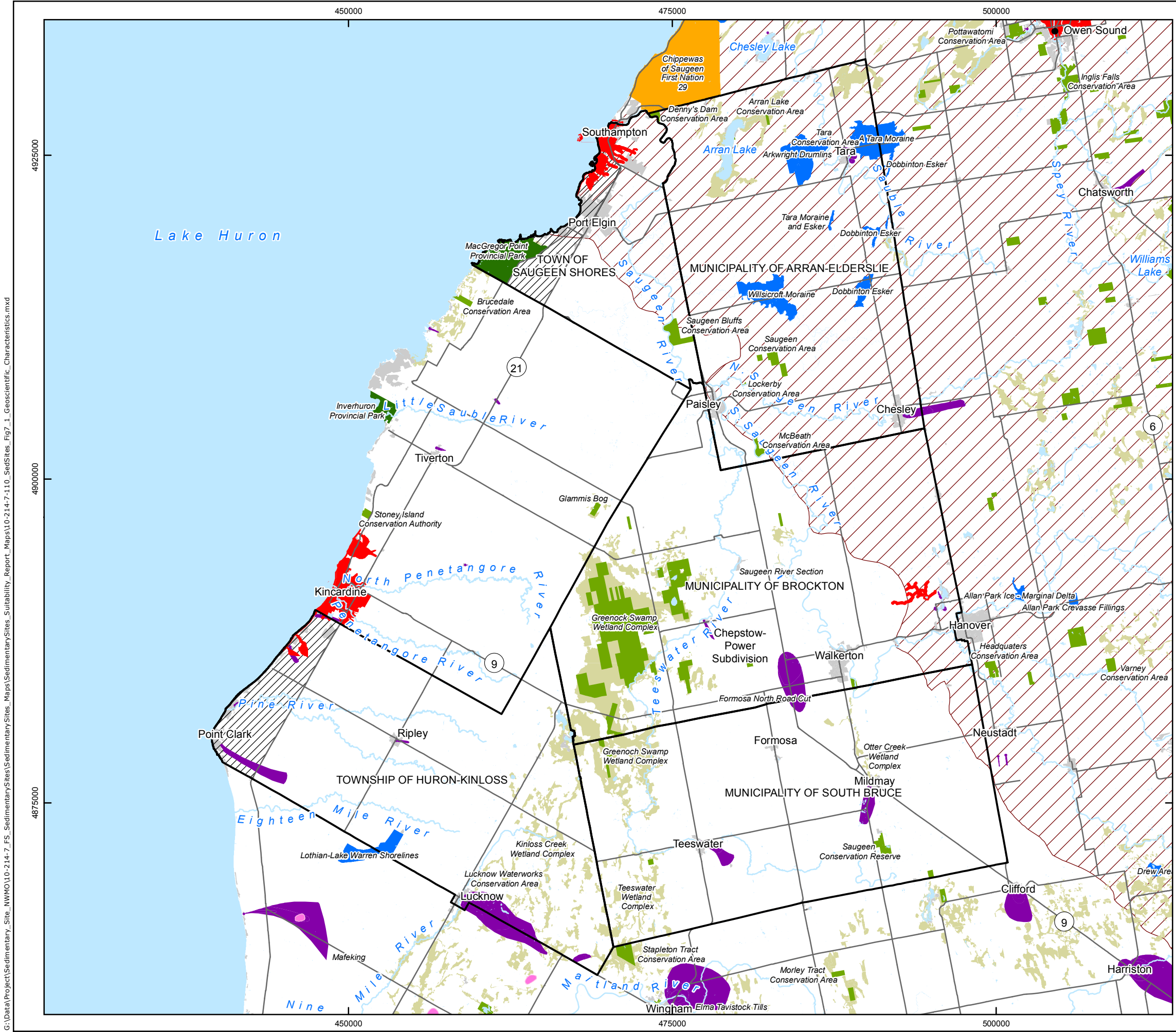


a. Distribution of Principal Stress with Depth in the Appalachian and Michigan Basins
(after: NWMO and AECOM Canada Ltd., 2011)



b. Calculated Maximum Horizontal Stress Profiles at the Bruce Nuclear Site
(after: NWMO, 2011)

FIGURE 6.3 - Distribution of Principal Stress with Depth in the Appalachian and Michigan Basins and Calculated Maximum Horizontal Stress Profiles at the Bruce Nuclear Site



LEGEND

- The Communities
- Highway/Major Road
- Watercourse
- Waterbody
- Oil and Gas Pool
- ANSI (Earth Science)
- Area reserved by Municipality (or Town/Township) for future expansion
- Built-Up Area
- Conservation Area/Reserve
- First Nation Reserve
- Provincial Park
- Provincially Significant Wetland
- Depth to Cobourg Formation <500m
- Surface Water Intake Protection Zone (IPZ) 1 and 2
- Wellhead Protection Area (WHPA) A, B, and C

Approximate Size of Repository Footprint

2 Km
3 Km

INDEX MAP

SCALE 1:300,000

0 2.5 5 10 15 20
Kilometres

COORDINATE SYSTEM: UTM NAD83 Zone 17N
 SOURCE:
 Basemap Layers: LIO, MNR, ESRI
 Oil and Gas Pools: MRD276 Regional structure and isopach maps of potential hydrocarbon-bearing strata for southern Ontario, OGS, 2011
 Protected Areas: LIO, MNR, 2013
 Source Water Protection, 2013
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PROJECT No. 10-214-7
 NWMO Phase 1 Geoscientific Desktop Preliminary Assessment Study - Sedimentary Sites

TITLE
Characteristics and Constraints in the Area of the Five Communities

FIGURE 7.1	DESIGN: NMP CAD/GIS: NMP CHECK: KGR/SNS REV: 0	
	DATE: 7/3/2014	

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