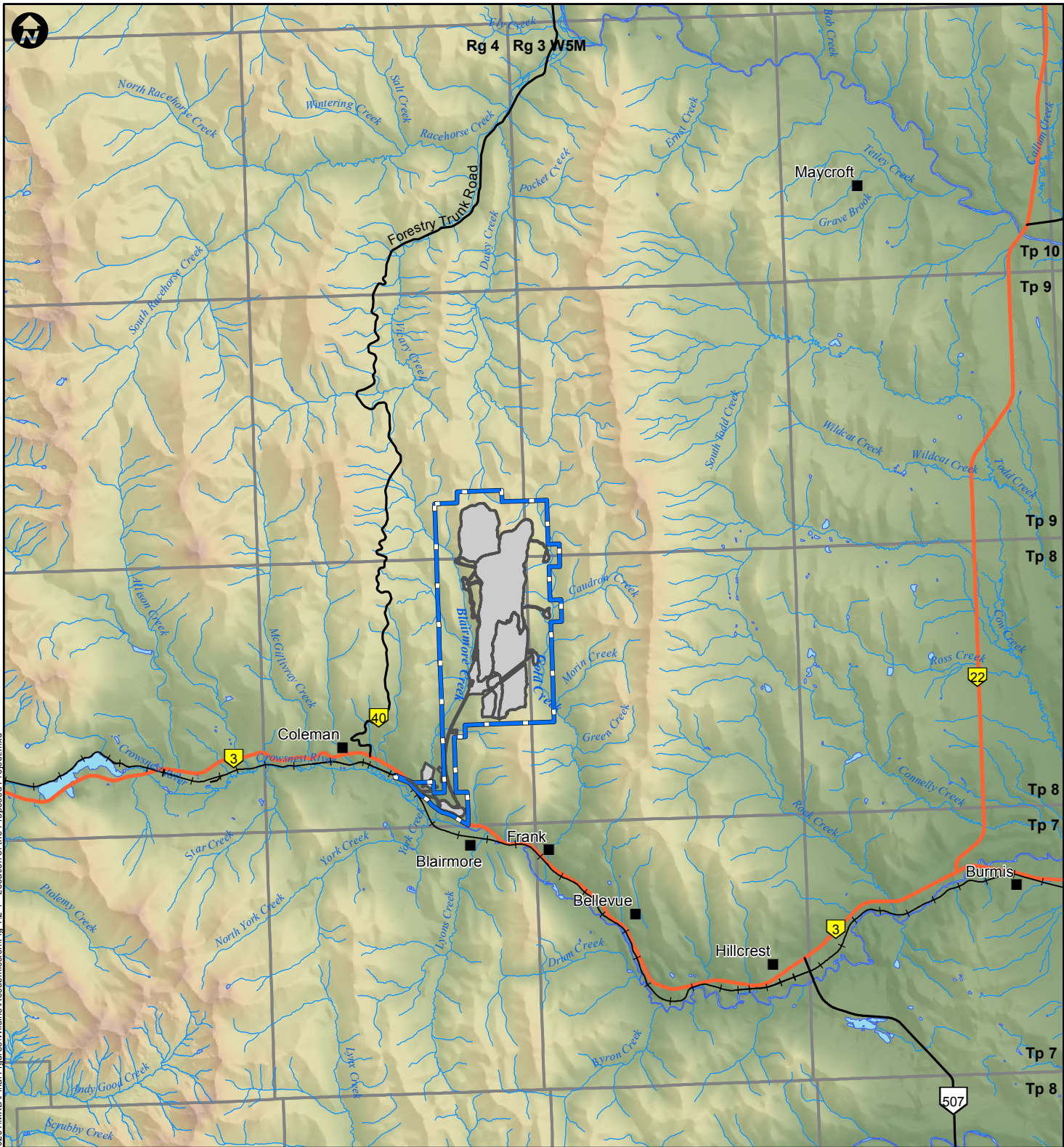




FIGURES



Document Path: K:\Active Projects\2014\AP_14-00201 to 14-00250\1\4-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig.1.2-1 - Location of the Proposed Project.mxd

- LEGEND**
- Primary Highway
 - Secondary Highway
 - Existing Railway
 - Surface Water Drainage
 - Waterbody
 - Proposed Mine Permit Boundary
 - Project Footprint



PROJECT

RIVERSDALE GRASSY MOUNTAIN COAL PROJECT

TITLE

LOCATION OF THE PROPOSED PROJECT

NOTES

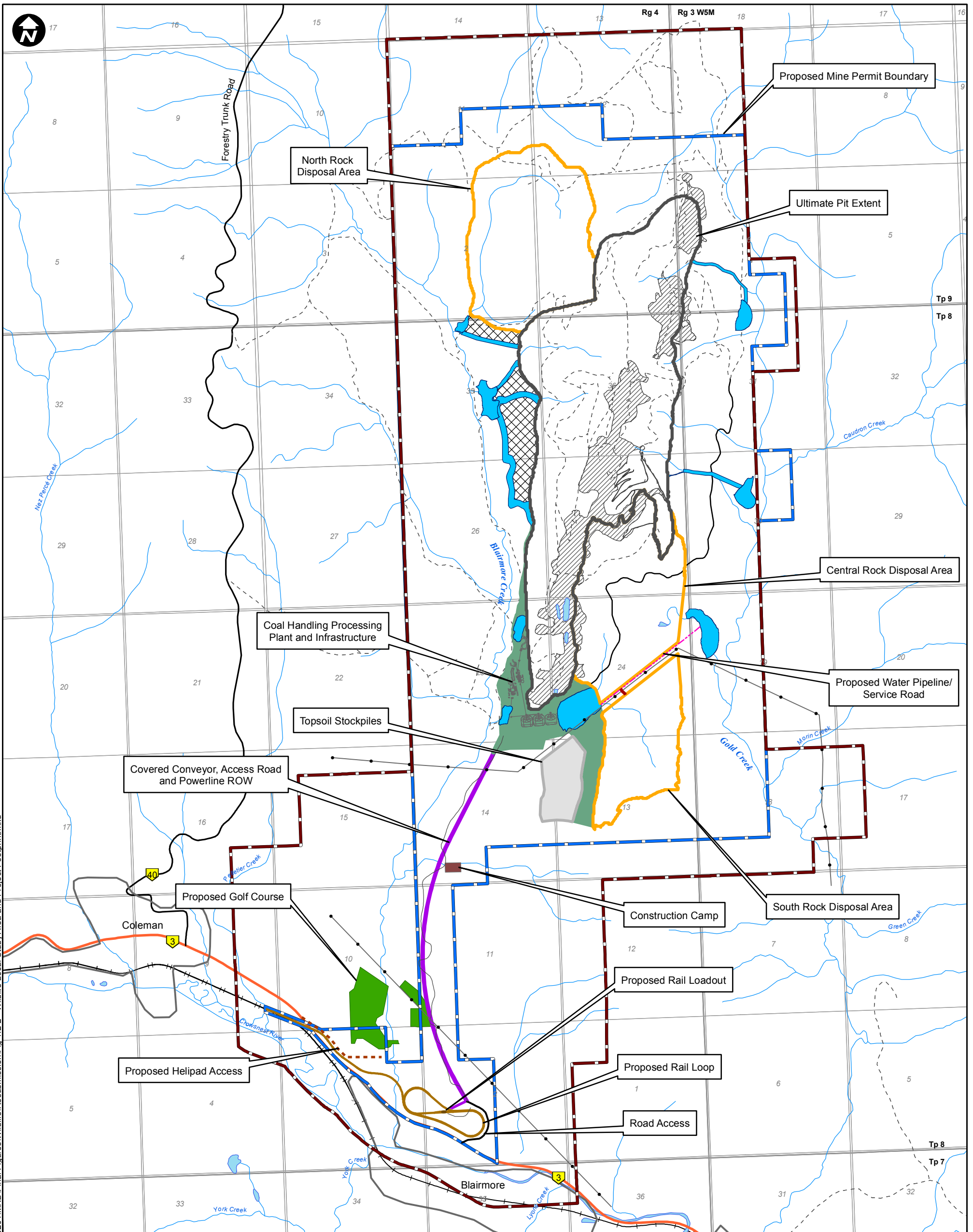
AltaLIS, 2016; GeoBase, 2016; NRCAN, 2016; Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
 DRAWN BY: SL/JDC
 CHECKED BY: MB
 DATE: JUNE 10, 2016



FIGURE

1.2-1



Document Path: K:\Active Projects 2014\AP_14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig. 1.2-2 - Wildlife Local Study Area and Project Footprint.mxd

LEGEND

- Primary Highway
- Secondary Highway
- - - Existing Trails
- Existing Railway
- Existing Access Road
- Existing Powerline
- CHPP Facilities
- Proposed Water Pipeline/Service Road
- Railway Loop
- - - Proposed Helipad Access
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area
- Proposed Mine Permit Boundary
- Ultimate Pit Extent
- Ultimate Rock Disposal Area Extent
- Topsoil Storage
- Construction Camp
- Ponds and Ditches
- Coal Handling Processing Plant and Infrastructure
- Covered Conveyor, Access Road and Powerline ROW
- Proposed Golf Course Area
- Undisturbed Area
- Legacy Mine Disturbance

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**



TITLE

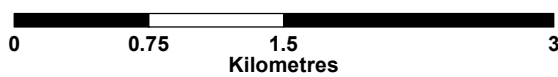
WILDLIFE LOCAL STUDY AREA AND PROJECT FOOTPRINT

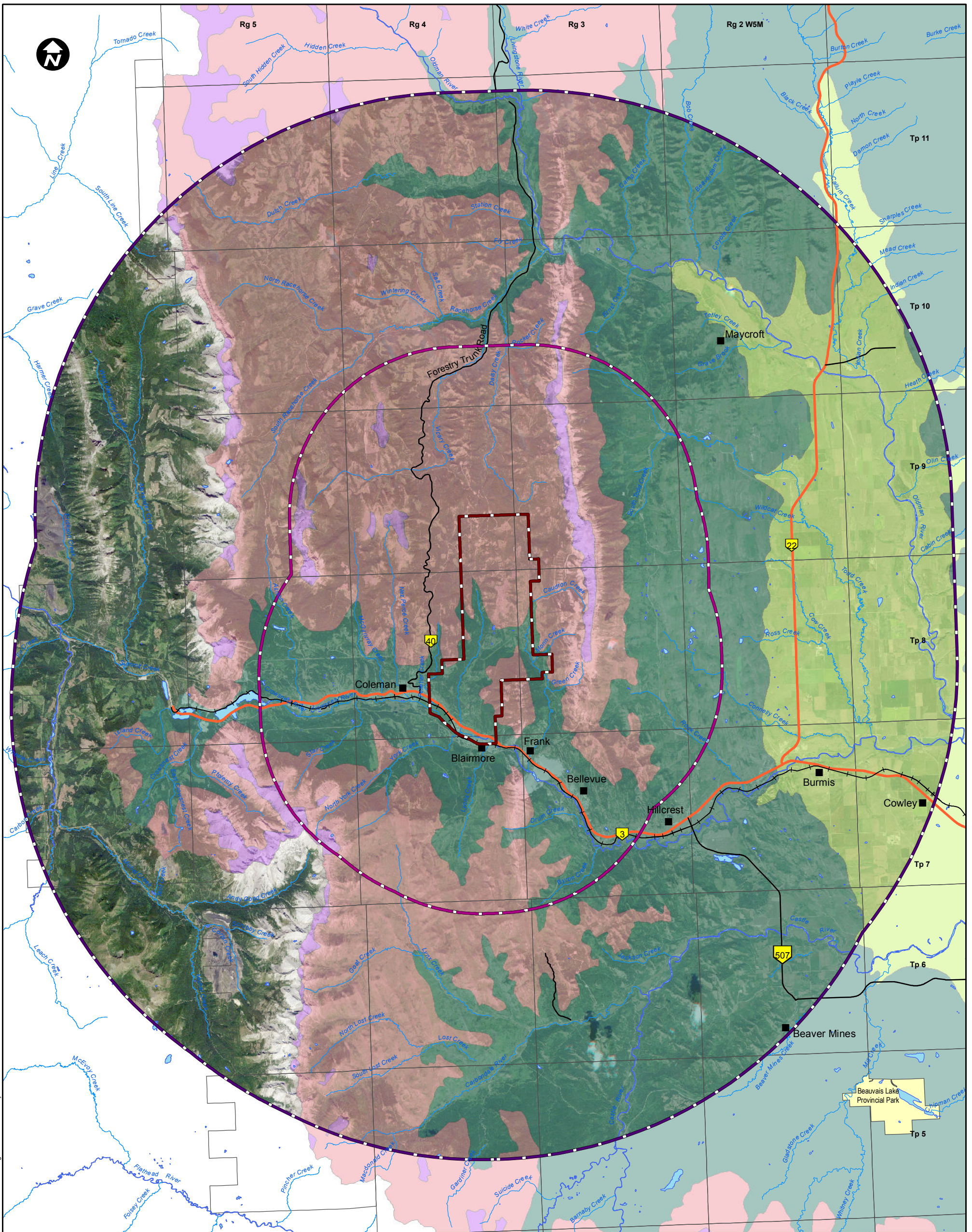
NOTES

AltaLIS, 2016; Geobase, 2016; MEMS, 2016; Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
DRAWN BY: SL/JDC
CHECKED BY: MB
DATE: JUNE 10, 2016

FIGURE 1.2-2





LEGEND

- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Provincial Park
- Grizzly Bear Regional Study Area
- Wildlife Regional Study Area
- Wildlife Local Study Area

- Natural Subregion**
- Foothills Fescue
 - Montane
 - Subalpine
 - Alpine

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

WILDLIFE STUDY AREAS

NOTES

Alberta Parks, 2005; AltaLIS, 2015; Geobase, 2015; MEMS, 2015; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2015
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: HS/SL

CHECKED BY: JP

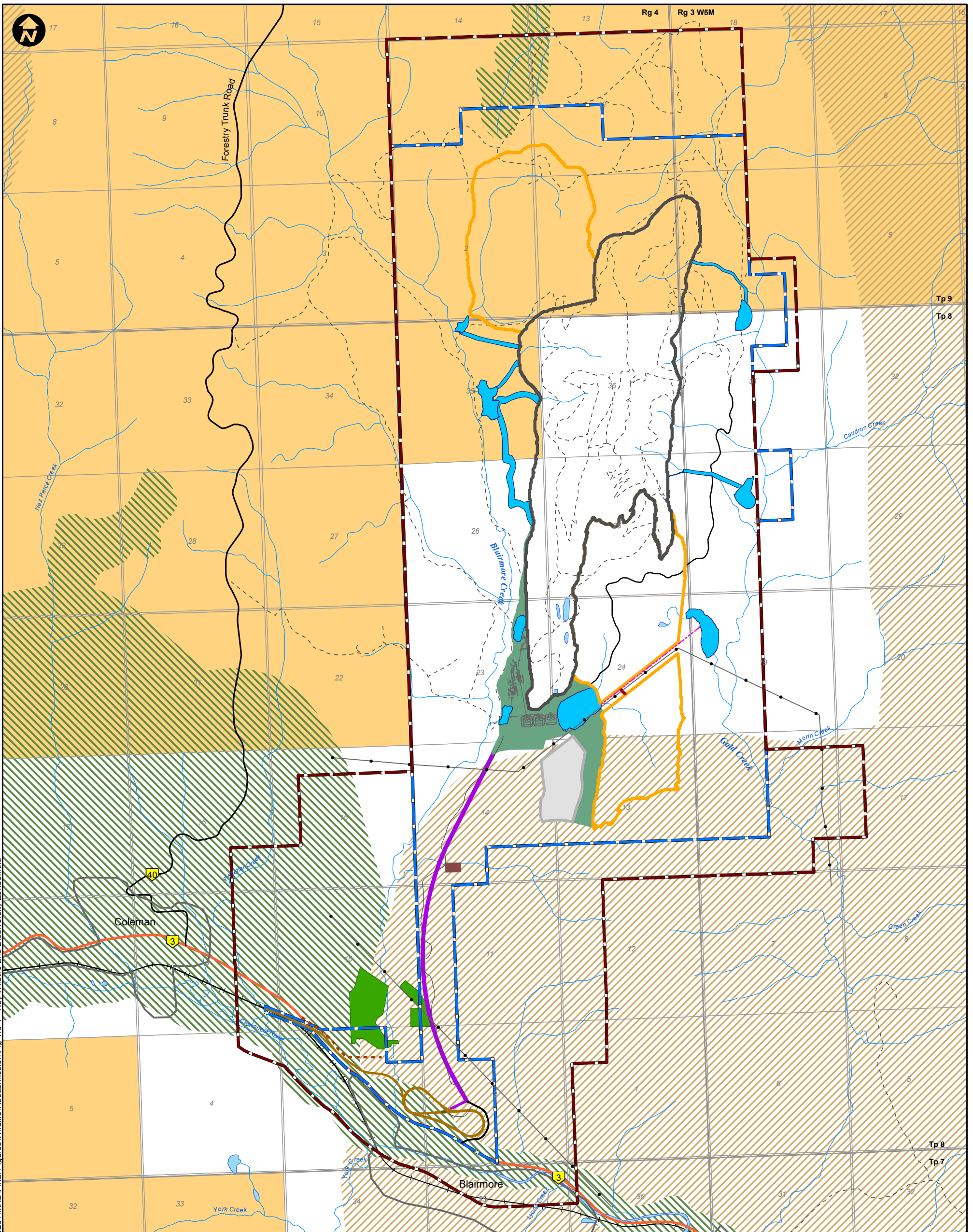
DATE: OCTOBER 21, 2015

FIGURE

1.2-3



Document Path: K:\Active Projects\2014\AP_14-00201\14-00201\Figures\Wildlife\Resubmission\Fig 1.2-3 - Wildlife Study Areas.mxd



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 1.3-1 - Key Wildlife and Biodiversity Zones.mxd

LEGEND

- Primary Highway
- Secondary Highway
- Existing Trails
- Existing Railway
- Existing Access Road
- Existing Powerline
- CHPP Facilities
- Proposed Water Pipeline/Service Road
- Railway Loop
- Proposed Helipad Access
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area
- Proposed Mine Permit Boundary
- Ultimate Pit Extent
- Ultimate Rock Disposal Area Extent
- Topsoil Storage
- Construction Camp
- Ponds and Ditches
- Coal Handling Processing Plant and Infrastructure
- Covered Conveyor, Access Road and Powerline ROW
- Proposed Golf Course Area
- Core Grizzly Bear Habitat
- Mountain Goat and Sheep Ranges
- Key Wildlife and Biodiversity Zones

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**

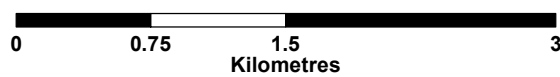


**TITLE
CORE GRIZZLY BEAR HABITAT, MOUNTAIN GOAT AND
SHEEP RANGES, AND KEY WILDLIFE AND BIODIVERSITY
ZONES IN RELATION TO THE PROJECT FOOTPRINT**

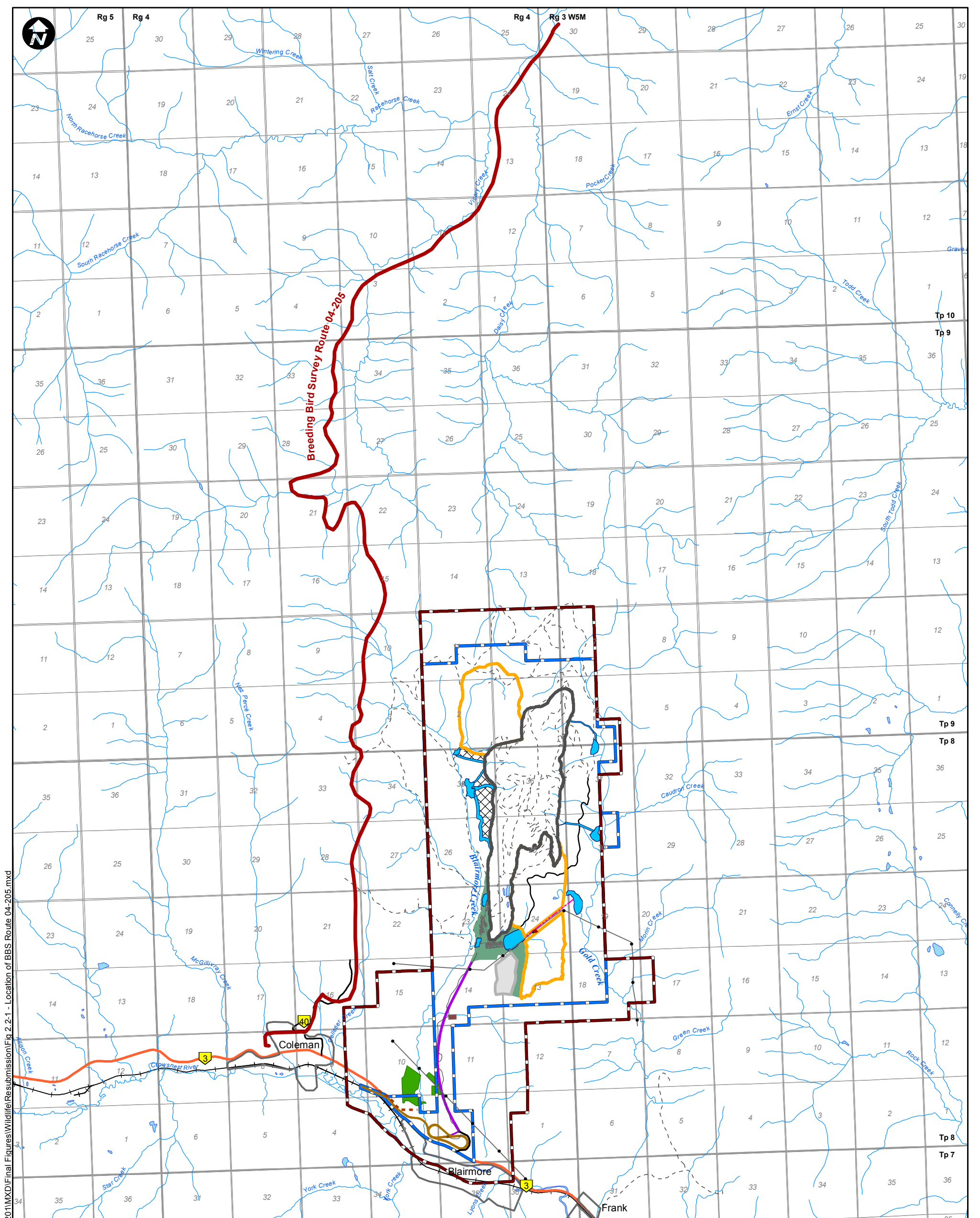
NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
DRAWN BY: SL/JDC
CHECKED BY: MB
DATE: JUNE 10, 2016



**FIGURE
1.3-1**



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.2-1 - Location of BBS Route 04-205.mxd

LEGEND

- Breeding Bird Survey Route 04-205
- Primary Highway
- Secondary Highway
- - - Existing Trails
- Existing Railway
- Surface Water Drainage
- Existing Access Road
- Existing Powerline
- CHPP Facilities
- Proposed Water Pipeline/Service Road
- Railway Loop
- - - Proposed Helipad Access
- Waterbody
- Wildlife Local Study Area
- Proposed Mine Permit Boundary
- Ultimate Pit Extent
- Ultimate Rock Disposal Area Extent
- Topsoil Storage
- Construction Camp
- Ponds and Ditches
- Coal Handling Processing Plant and Infrastructure
- Covered Conveyor, Access Road and Powerline ROW
- Proposed Golf Course Area
- Undisturbed Area

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**



TITLE

LOCATION OF BREEDING BIRD SURVEY ROUTE 04-205

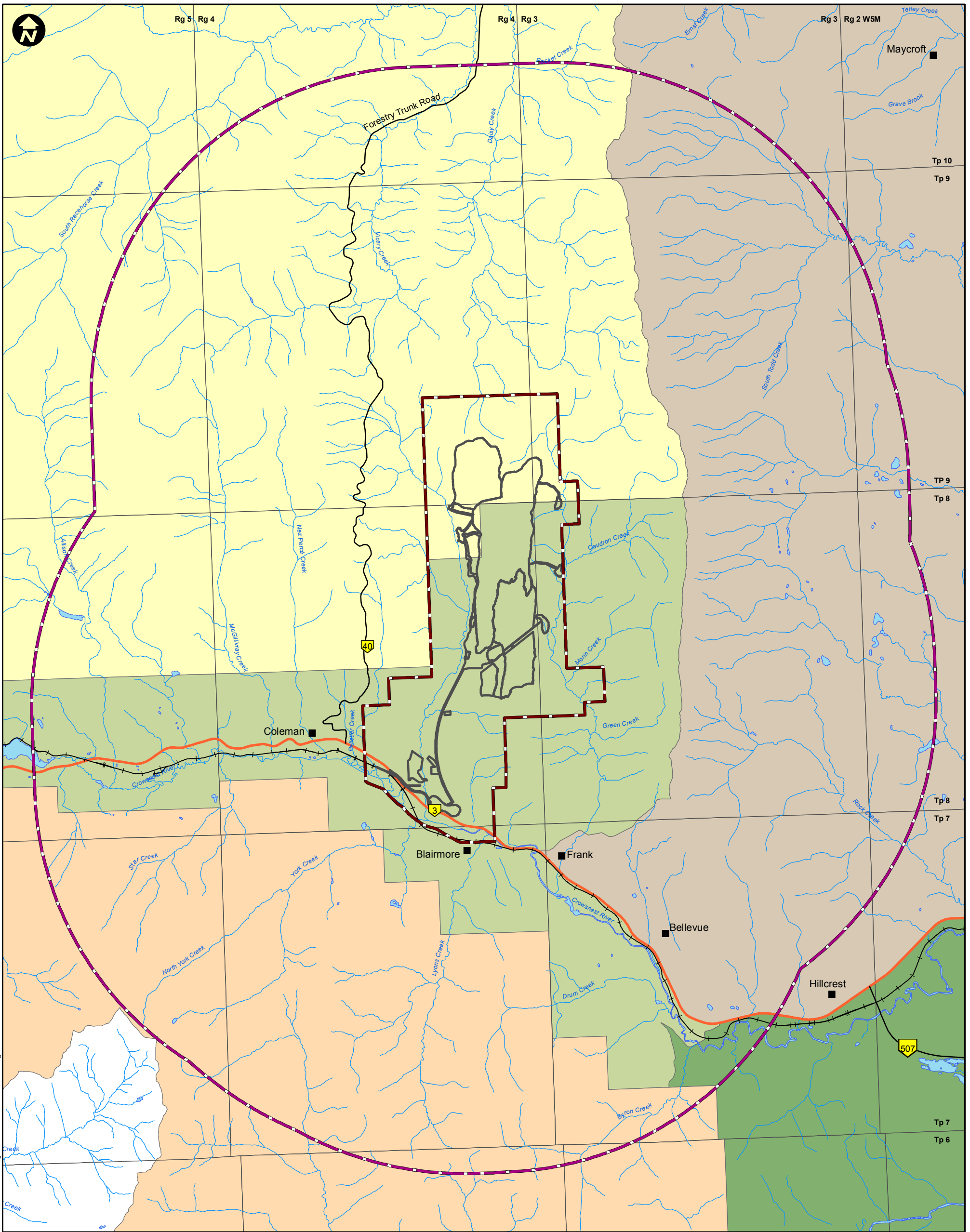
NOTES

AltaLIS, 2016; ESRD, 2016; Geobase, 2015; MEMS, 2016; Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
DRAWN BY: SL/JDC
CHECKED BY: MB
DATE: JUNE 10, 2016

FIGURE 2.2-1





LEGEND

- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Regional Study Area
- Wildlife Local Study Area
- Project Footprint

Wildlife Management Units

- 302
- 303
- 306
- 400
- 402

PROJECT

RIVERSDALE RESOURCES

GRASSY MOUNTAIN COAL PROJECT

TITLE LOCATIONS OF WILDLIFE MANAGEMENT UNITS (WMUs) IN THE WILDLIFE LOCAL STUDY AREA AND WILDLIFE REGIONAL STUDY AREA

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

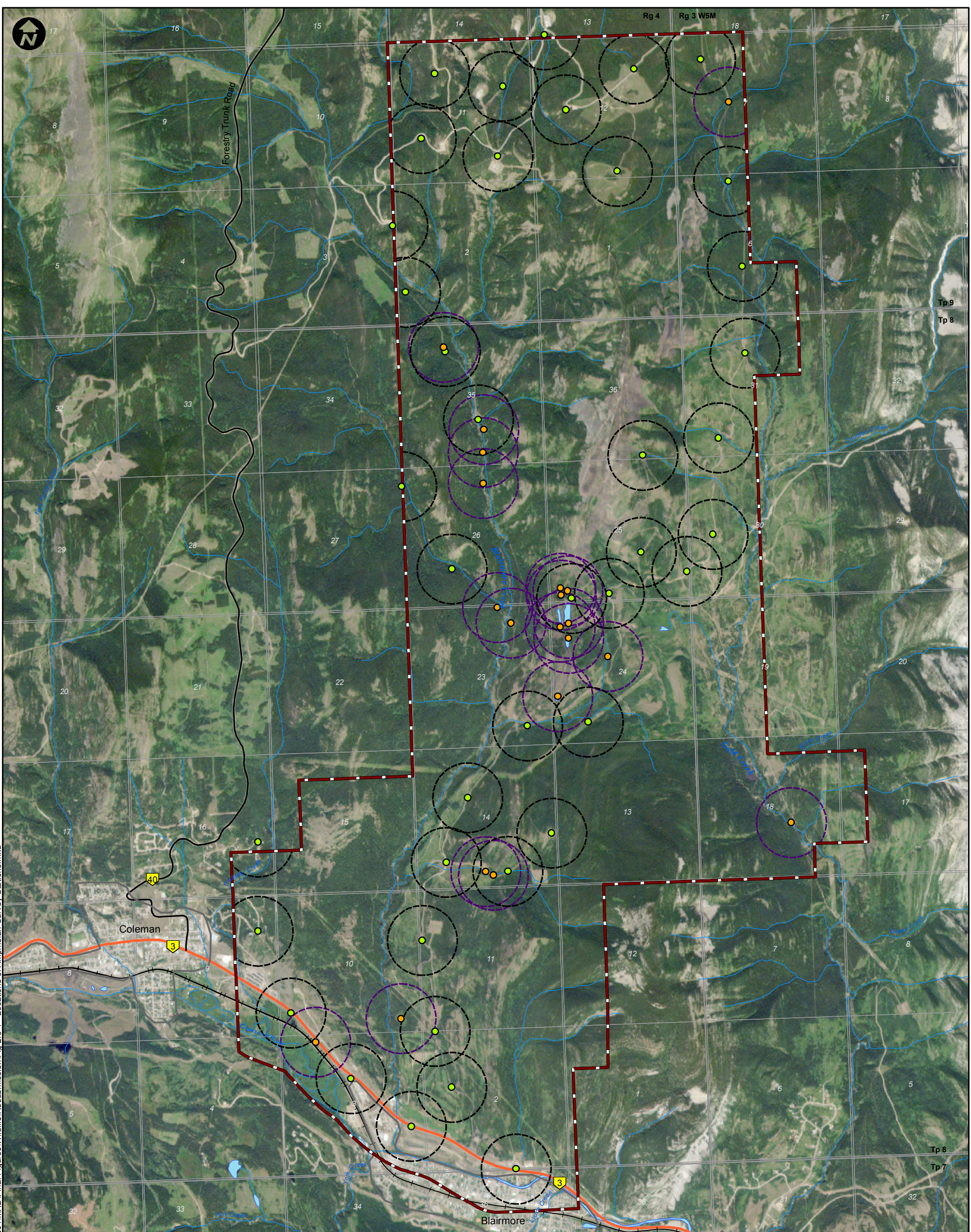
MILLENNIUM
EMS Solutions Ltd.

PROJECT: 14-00201-01
DRAWN BY: SL/JDC
CHECKED BY: MB
DATE: JUNE 10, 2016

FIGURE 2.2-2

Document Path: K:\Active Projects\2014\AP 14-00201-01\0201\MXD\Final\Figures\Wildlife\Management Units\WRSA.mxd

Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.3-1 - Locations of Amphibian Survey Stations.mxd



LEGEND

- Amphibian Survey Station (2014)
- Amphibian Survey Station (2016)
- Primary Highway
- Secondary Highway
- + Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area
- Amphibian Detection Zone (2014)
- Amphibian Detection Zone (2016)

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**LOCATIONS OF AMPHIBIAN SURVEY STATIONS
IN THE WILDLIFE LOCAL STUDY AREA**

NOTES

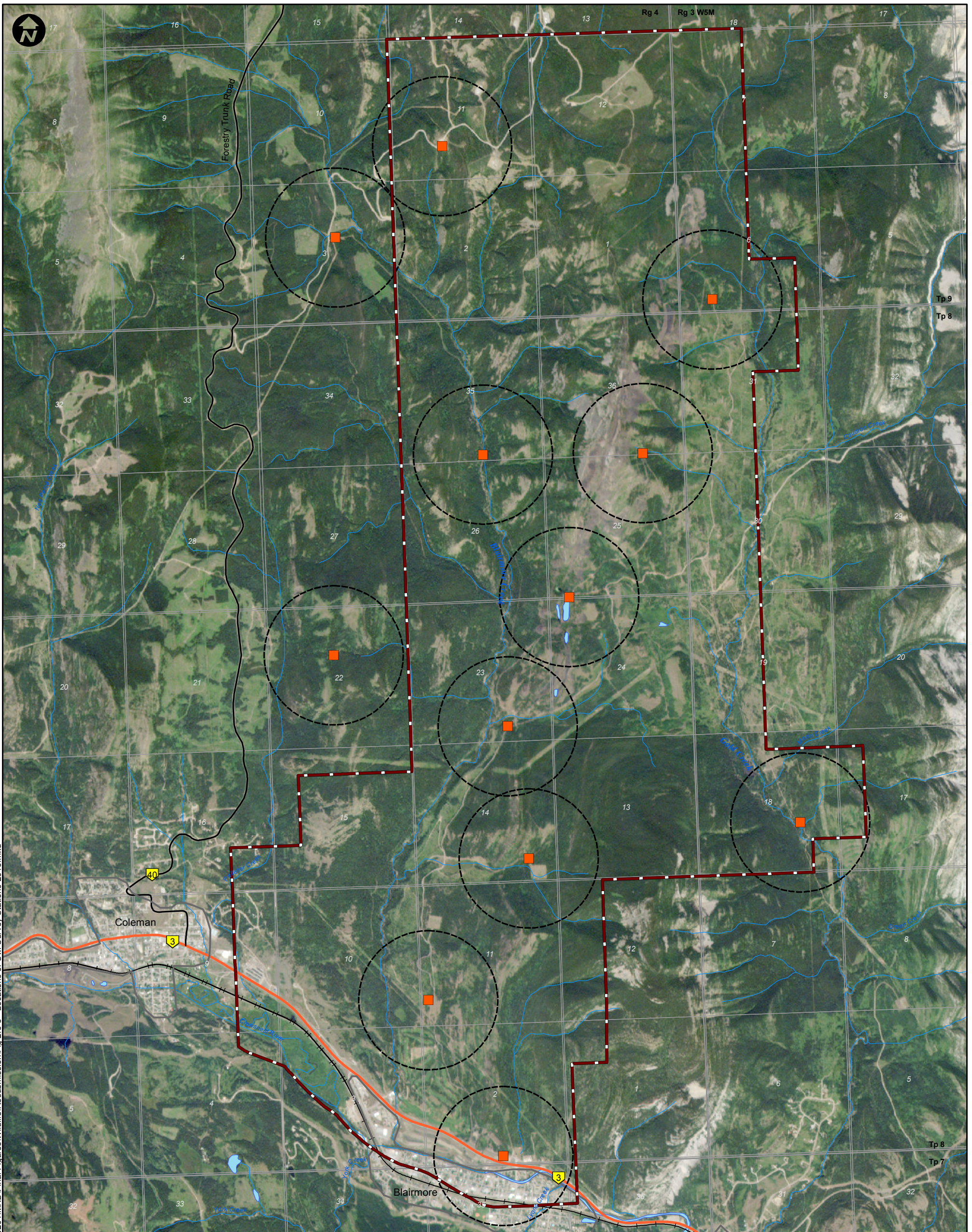
AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
DRAWN BY: SL
CHECKED BY: RM
DATE: JUNE 22, 2016











**FIGURE
2.3-1**

Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.3-3 - Locations of Owl Survey Stations-2015.mxd



LEGEND

-  Owl Survey Station
-  Primary Highway
-  Secondary Highway
-  Existing Railway
-  Surface Water Drainage
-  Waterbody
-  Wildlife Local Study Area
-  Owl Detection Zone

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

LOCATIONS OF NOCTURNAL OWL CALL PLAYBACK SURVEY STATIONS IN THE WILDLIFE LOCAL STUDY AREA - 2015

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

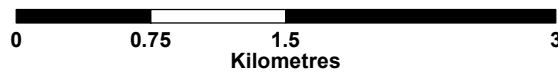
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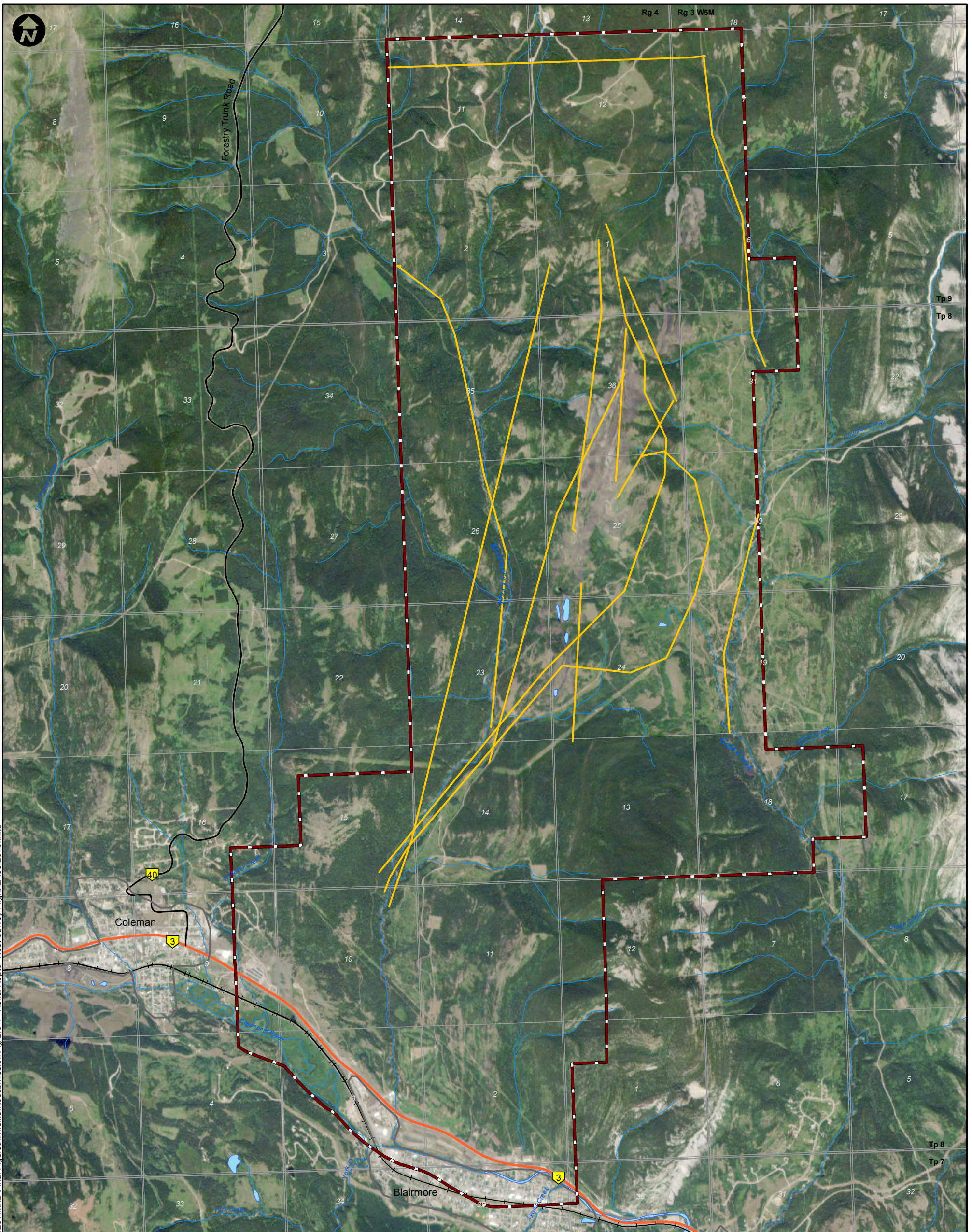
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.3-3





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.3-4 - Aerial Raptor Nest Survey Flight Lines-2016.mxd

LEGEND

- Aerial Raptor Nest Survey Flight Line
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**AERIAL RAPTOR NEST SURVEY FLIGHT LINES
IN THE WILDLIFE LOCAL STUDY AREA - 2016**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

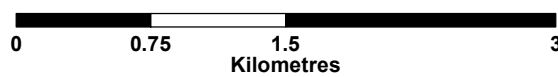
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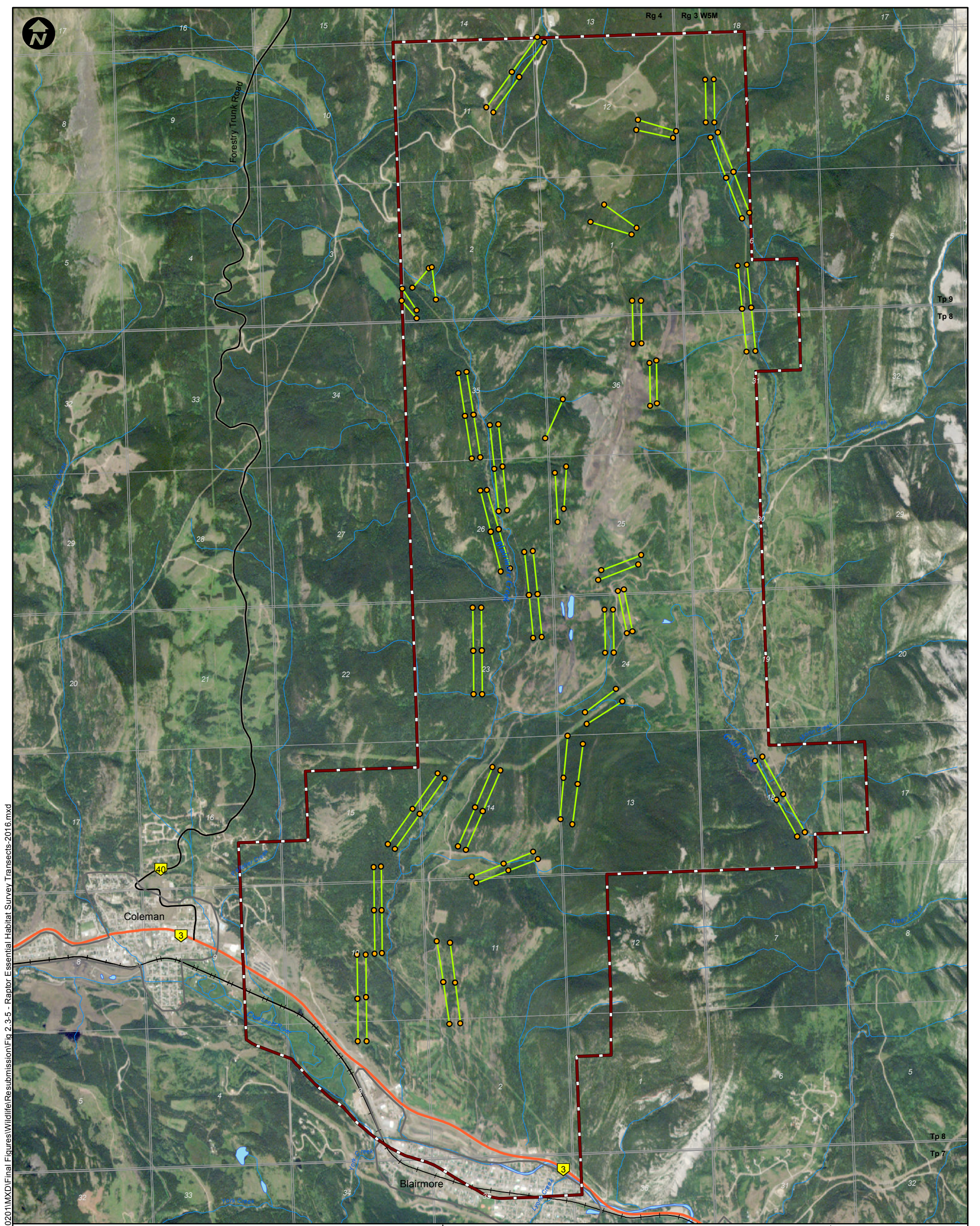
CHECKED BY: RM

DATE: JUNE 27, 2016

FIGURE

2.3-4





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.3-5 - Raptor Essential Habitat Survey Transects-2016.mxd

LEGEND

- Raptor Essential Habitat Survey Transect Point
- Raptor Essential Habitat Survey Transect
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**LOCATIONS OF RAPTOR ESSENTIAL HABITAT SURVEY
TRANSECTS IN THE WILDLIFE LOCAL STUDY AREA - 2016**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: SL

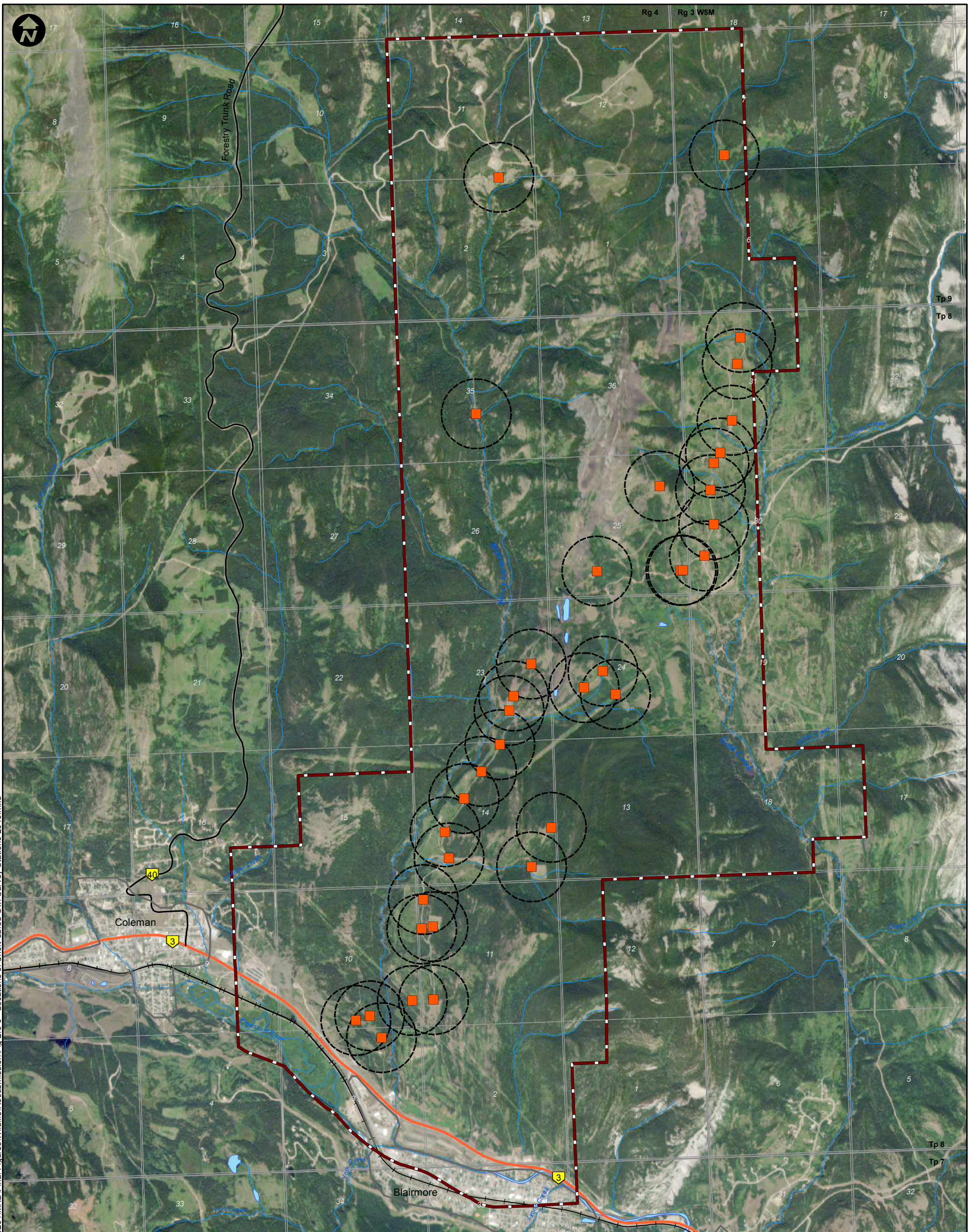
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.3-5





LEGEND

- Short-eared Owl Survey Station
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area
- Short-eared Owl Detection Zone

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**LOCATIONS OF SHORT-EARED OWL SURVEY STATIONS
IN THE WILDLIFE LOCAL STUDY AREA - 2016**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

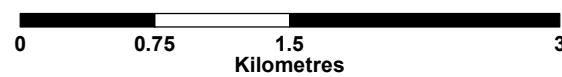
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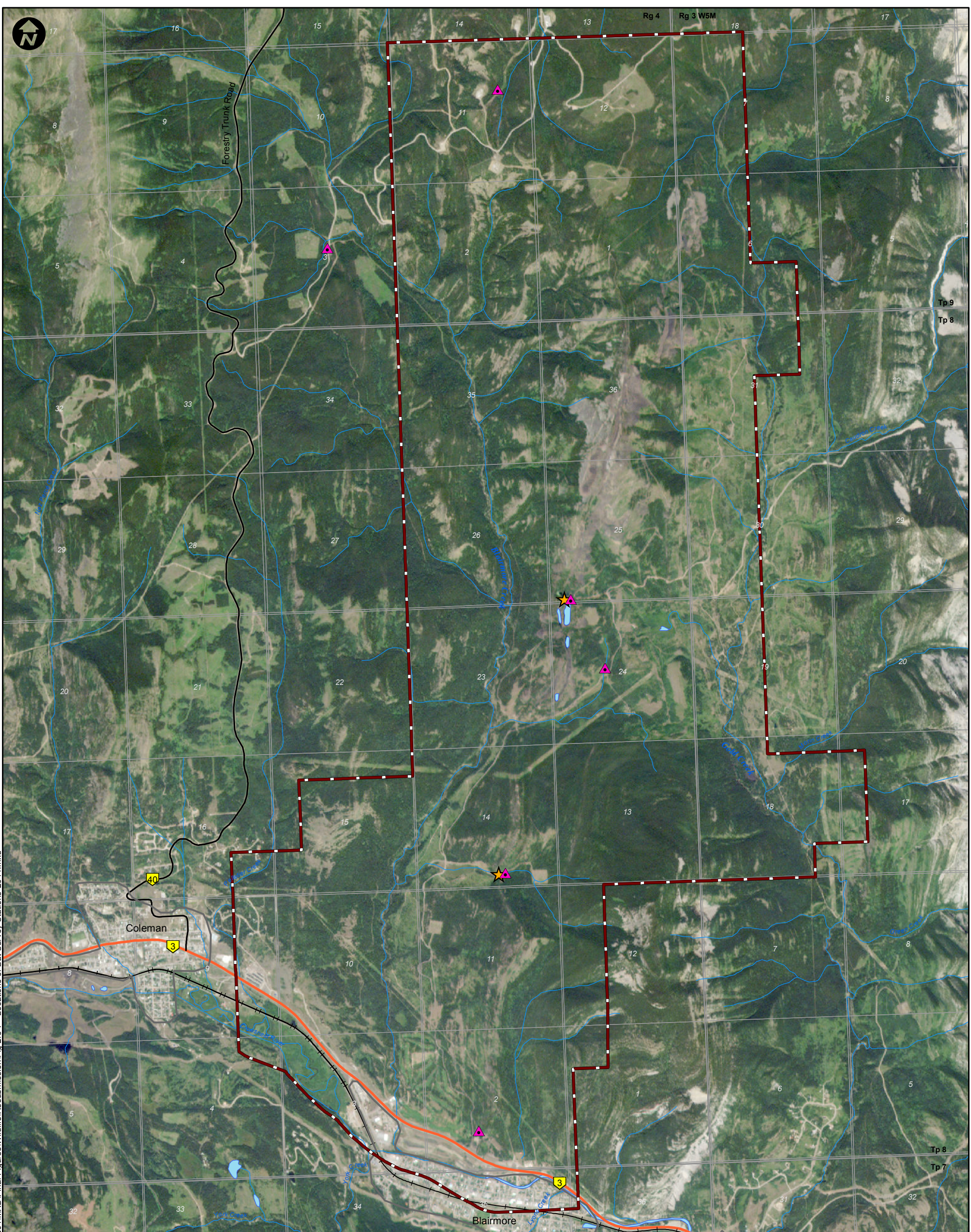
DATE: JUNE 22, 2016

FIGURE

2.3-6



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.3-7 - Locations of Bat Survey Stations-2014.mxd



LEGEND

-  Bat Acoustic Monitoring Station
-  Bat Mistnetting Station
-  Primary Highway
-  Secondary Highway
-  Existing Railway
-  Surface Water Drainage
-  Waterbody
-  Wildlife Local Study Area

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**LOCATIONS OF BAT SURVEY STATIONS
IN THE WILDLIFE LOCAL STUDY AREA - 2014**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

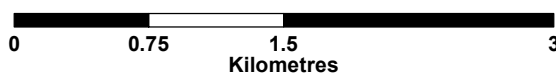
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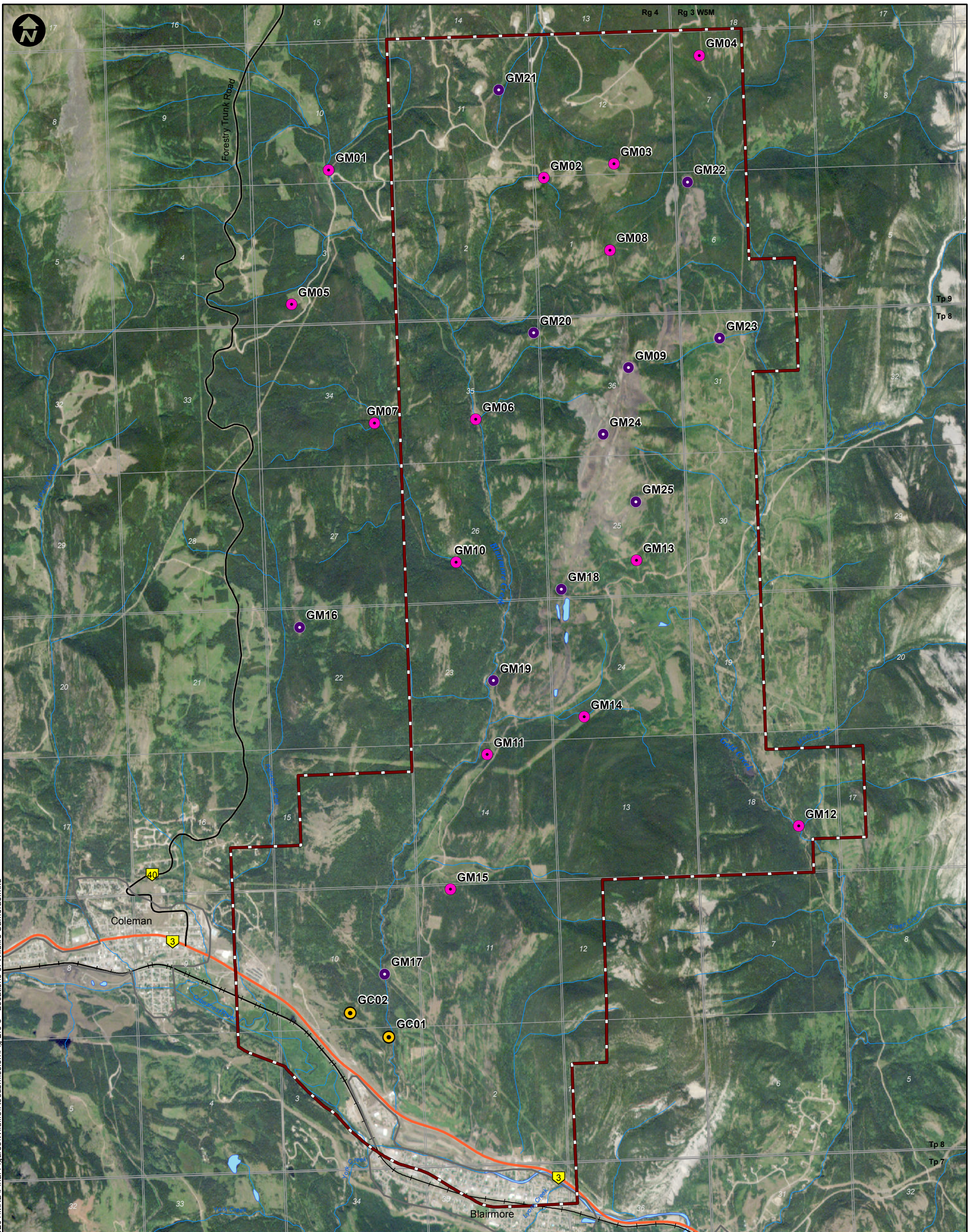
DATE: JUNE 22, 2016

FIGURE

2.3-7



DocumentPath: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.3-8 - Locations of Wildlife Cameras.mxd



LEGEND

Camera Location

- Deployed 2013
- Deployed 2014
- Deployed 2016
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**LOCATIONS OF WILDLIFE CAMERAS IN THE
WILDLIFE LOCAL STUDY AREA**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

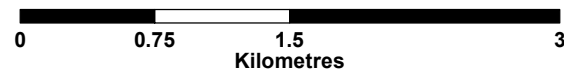
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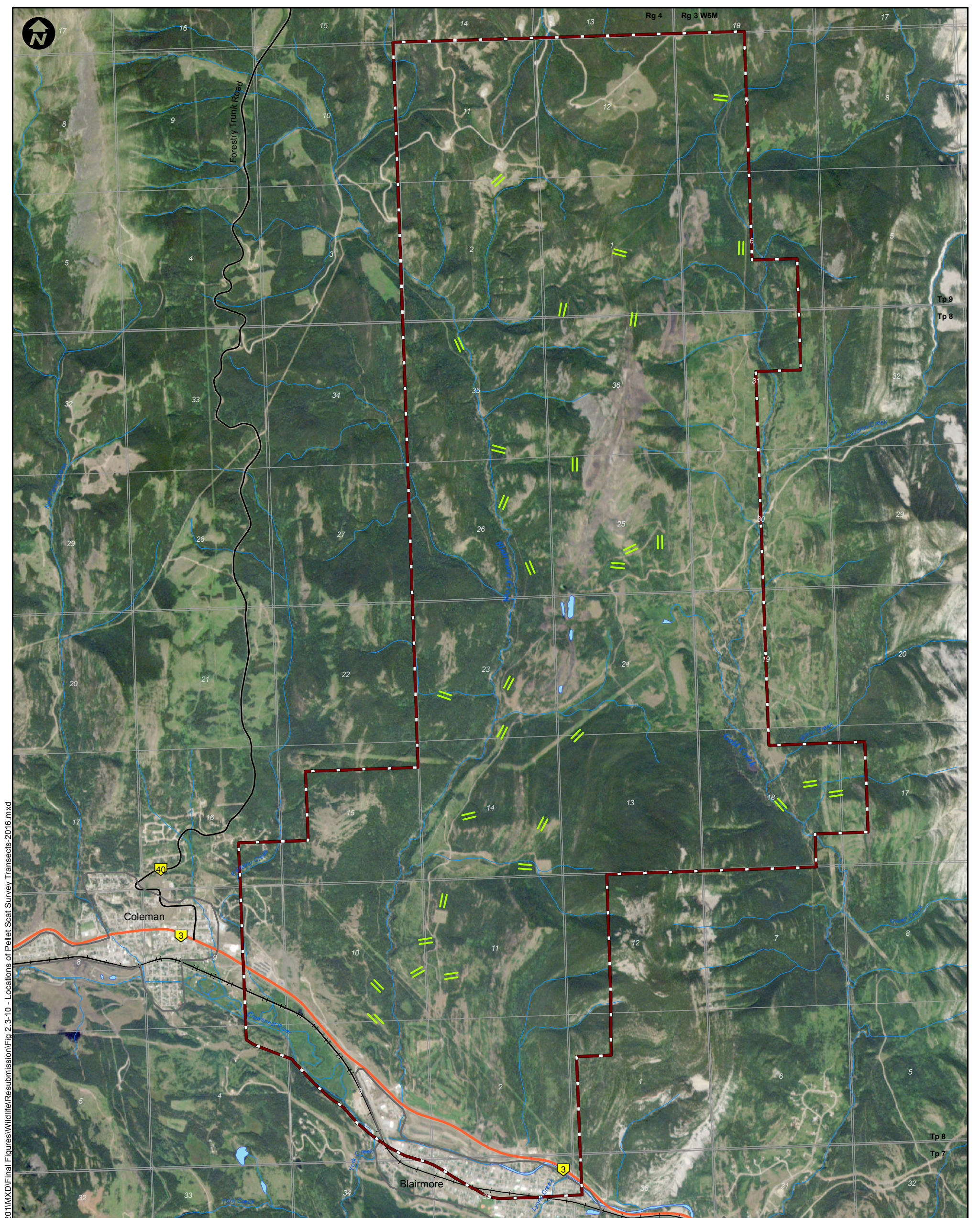
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.3-8





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.3-10 - Locations of Pellet/Scat Survey Transects-2016.mxd

LEGEND

- == Pellet/Scat Survey Transects
- Primary Highway
- Secondary Highway
- + Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**LOCATIONS OF PELLET/SCAT SURVEY TRANSECTS
IN THE WILDLIFE LOCAL STUDY AREA - 2016**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: SL

CHECKED BY: RM

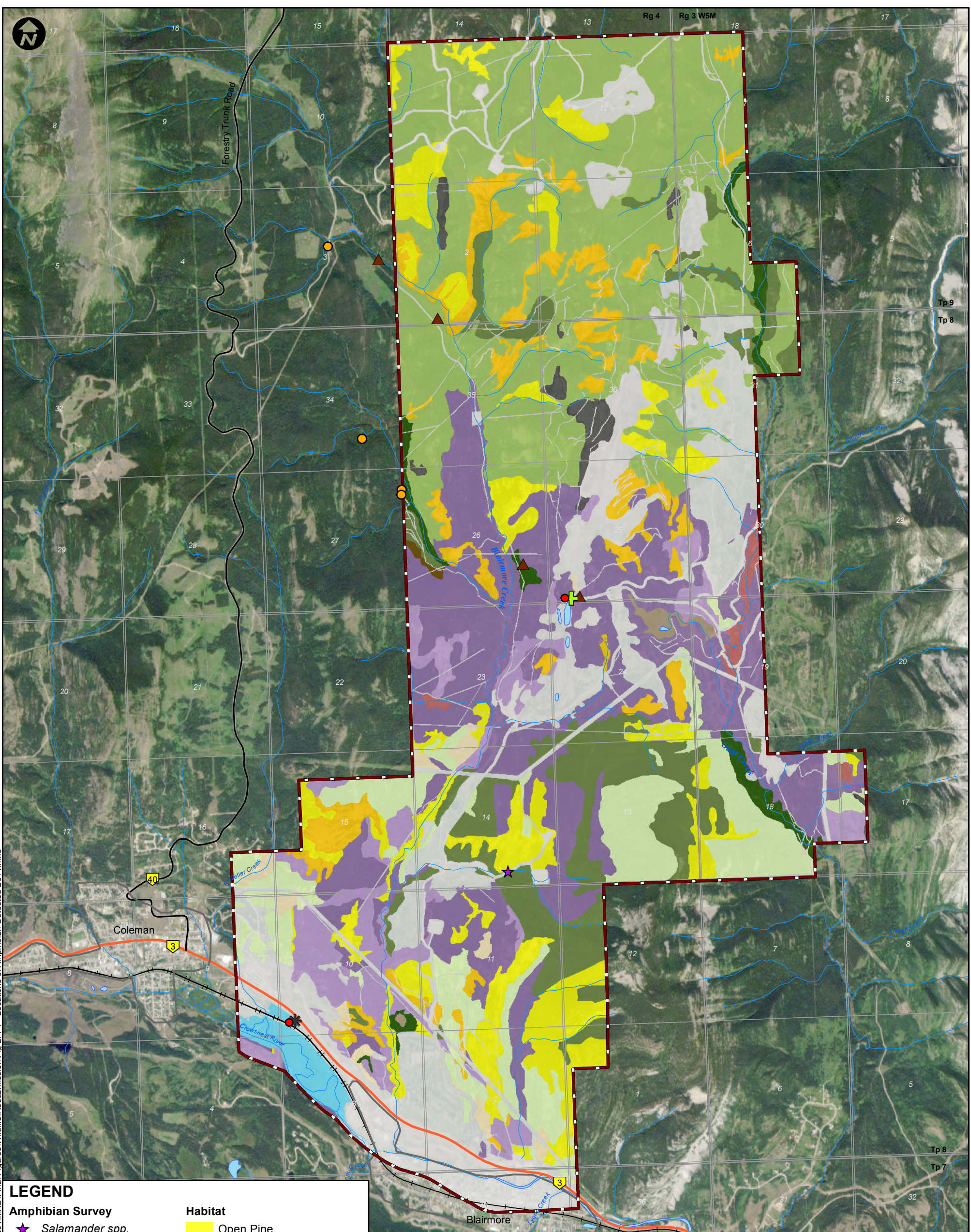
DATE: JUNE 22, 2016

FIGURE

2.3-10






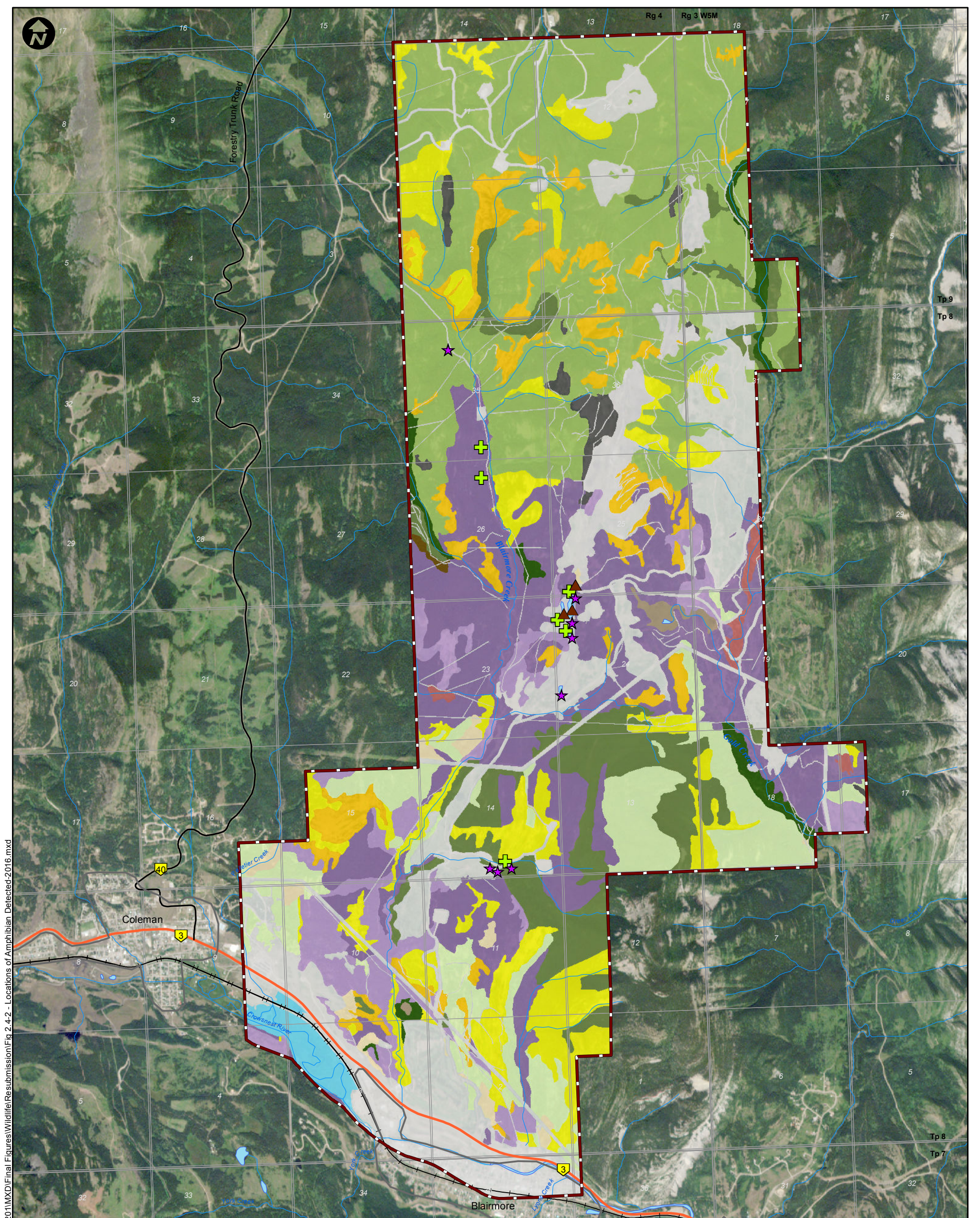
Document Path: K:\Active Projects\2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig_2.4-1 - Locations of Amphibian Detected-2014.mxd



LEGEND

Amphibian Survey	Habitat
★ Salamander spp.	Open Pine
✱ Boreal chorus frog	Open Deciduous
✚ Columbia spotted frog	Open Mixedwood
● Wood frog	Open Mixed Coniferous
▲ Western Toad	Moderate Mixed Coniferous
● Wood Frog	Closed Deciduous
— Primary Highway	Closed Mixedwood
— Secondary Highway	Closed Spruce
— Existing Railway	Closed Mixed Coniferous
— Surface Water Drainage	Grassland
— Waterbody	Upland Shrub
— Wildlife Local Study Area	Shrubby Wetland
	Treed Wetland
	Rock Barren
	Naturally Flooded Area
	Anthropogenic Disturbance

<p>PROJECT</p>  <p>GRASSY MOUNTAIN COAL PROJECT</p>		
<p>TITLE</p> <p>LOCATIONS OF AMPHIBIANS DETECTED IN THE WILDLIFE LOCAL STUDY AREA DURING THE AMPHIBIAN SURVEY - 2014</p>		
<p>NOTES</p> <p>AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015 (Image Date: Jul 26/13); Riversdale, 2016 Datum/Projection: UTM NAD 83 Zone 11</p>		<p>PROJECT: 14-00201-01 DRAWN BY: SL CHECKED BY: RM DATE: JUNE 22, 2016</p>
		<p>FIGURE</p> <p>2.4-1</p>



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-2 - Locations of Amphibian Detected-2016.mxd

LEGEND

Amphibian Survey

- + Columbia Spotted Frog
- ★ Long-toed Salamander
- ▲ Western Toad
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area

Habitat

- Open Pine
- Open Deciduous
- Open Mixedwood
- Open Mixed Coniferous
- Moderate Mixed Coniferous
- Closed Deciduous
- Closed Mixedwood
- Closed Spruce
- Closed Mixed Coniferous
- Grassland
- Upland Shrub
- Shrubby Wetland
- Treed Wetland
- Rock Barren
- Naturally Flooded Area
- Anthropogenic Disturbance

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**LOCATIONS OF AMPHIBIANS DETECTED IN THE WILDLIFE
LOCAL STUDY AREA DURING THE AMPHIBIAN SURVEY - 2016**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: SL

CHECKED BY: RM

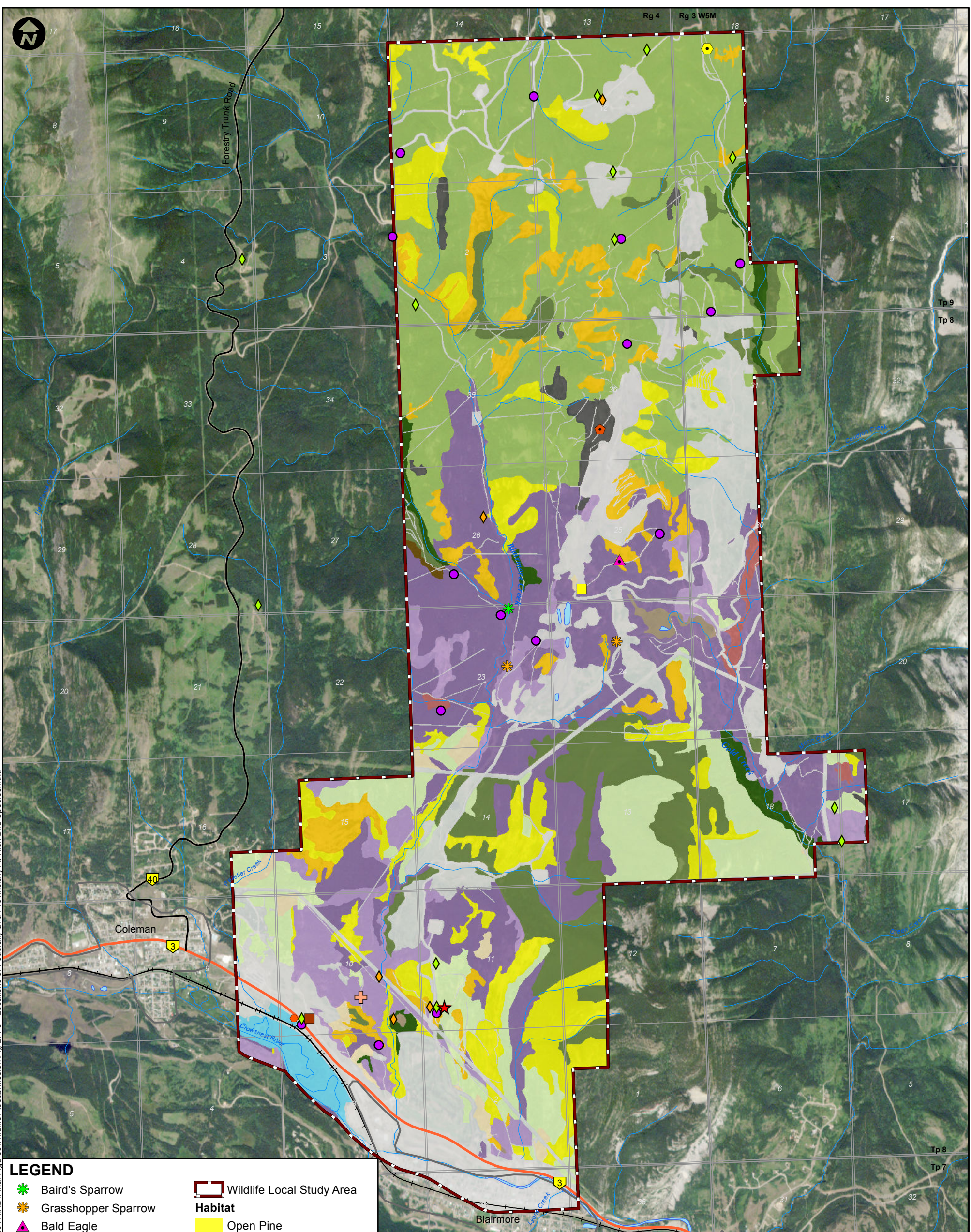
DATE: JUNE 22, 2016

FIGURE

2.4-2



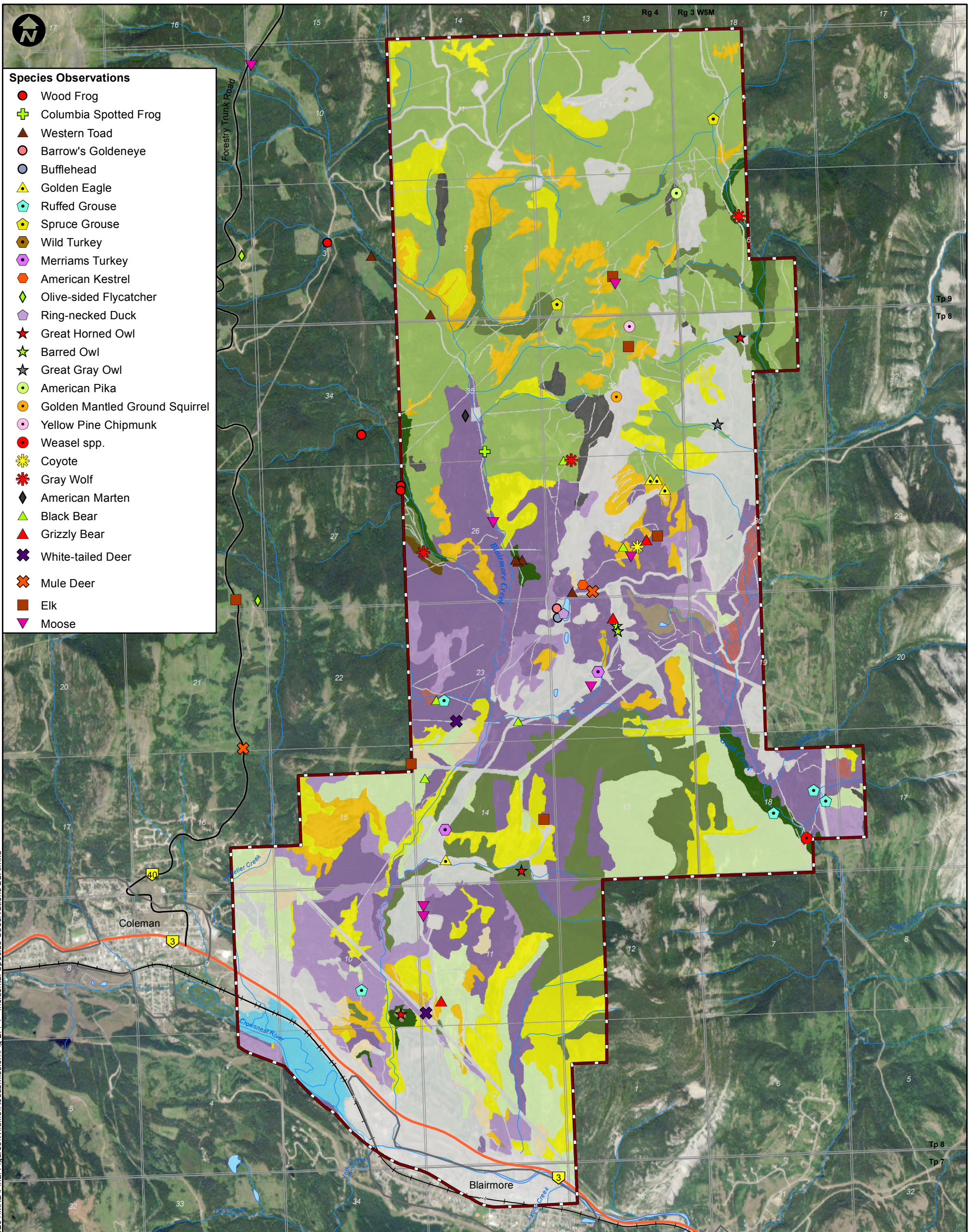
Document Path: K:\Active Projects\2014\AP_14-002\014-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-3 - Locations of Federally and Provincially At-Risk Bird Species.mxd



LEGEND

Baird's Sparrow	Wildlife Local Study Area
Grasshopper Sparrow	Habitat
Bald Eagle	Open Pine
Barn Swallow	Open Deciduous
Black-backed Woodpecker	Open Mixedwood
Clark's Nutcracker	Open Mixed Coniferous
Common Nighthawk	Moderate Mixed Coniferous
Two Common Nighthawks	Closed Deciduous
Common Yellowthroat	Closed Mixedwood
Least Flycatcher	Closed Spruce
Olive-sided Flycatcher	Closed Mixed Coniferous
Sora	Grassland
Western Wood-pewee	Upland Shrub
Primary Highway	Shrubby Wetland
Secondary Highway	Treed Wetland
Existing Railway	Rock Barren
Surface Water Drainage	Naturally Flooded Area
Waterbody	Anthropogenic Disturbance

<p>PROJECT</p> <p>RIVERSDALE RESOURCES</p>	<p>GRASSY MOUNTAIN COAL PROJECT</p>	<p>MILLENNIUM EMS Solutions Ltd.</p>
<p>NOTES</p> <p>AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015 (Image Date: Jul 26/13); Riversdale, 2016 Datum/Projection: UTM NAD 83 Zone 11</p>		
		<p>PROJECT: 14-00201-01 DRAWN BY: SL CHECKED BY: RM DATE: JUNE 23, 2016</p>
		<p>FIGURE</p> <p>2.4-3</p>



LEGEND

— Primary Highway	■ Closed Deciduous
— Secondary Highway	■ Closed Mixedwood
— Existing Railway	■ Closed Spruce
— Surface Water Drainage	■ Closed Mixed Coniferous
■ Waterbody	■ Grassland
■ Wildlife Local Study Area	■ Upland Shrub
Habitat	■ Shrubby Wetland
■ Open Pine	■ Treed Wetland
■ Open Deciduous	■ Rock Barren
■ Open Mixedwood	■ Naturally Flooded Area
■ Open Mixed Coniferous	■ Anthropogenic Disturbance
■ Moderate Mixed Coniferous	

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**

MILLENNIUM EMS Solutions Ltd.

TITLE
LOCATIONS OF INCIDENTAL SPECIES OBSERVATIONS IN THE WILDLIFE LOCAL STUDY AREA

NOTES
 AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
 (Image Date: Jul 26/13); Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
 DRAWN BY: SL
 CHECKED BY: RM
 DATE: JUNE 23, 2016

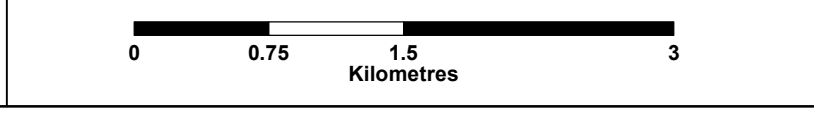
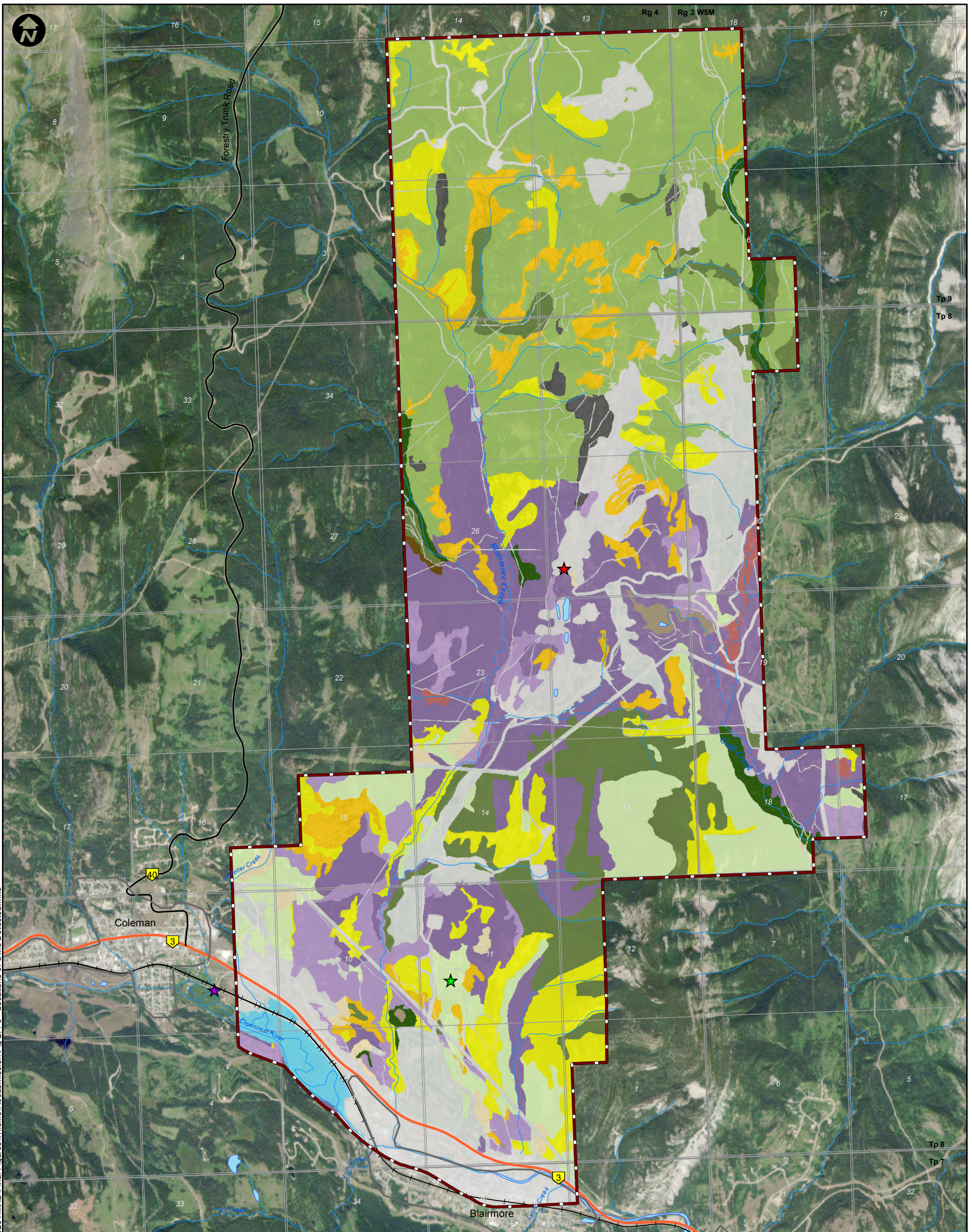


FIGURE
2.4-4

Document Path: K:\Active Projects\2014\AP_14-00201 to 14-00250\14-00201\Final\Figures\Wildlife\Resubmission\Fig 2.4-4 - Incidental Species Observations_LSA.mxd



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-5 - Locations of Owls Detected.mxd

LEGEND

- ★ Great Horned Owl
 - ★ Great Grey Owl (Incidental June 2014)
 - ★ Two Great Horned Owls
 - Primary Highway
 - Secondary Highway
 - Existing Railway
 - Surface Water Drainage
 - Waterbody
 - Wildlife Local Study Area
- Habitat**
- Open Pine
 - Open Deciduous
 - Open Mixedwood
 - Open Mixed Coniferous
 - Moderate Mixed Coniferous
 - Closed Deciduous
 - Closed Mixedwood
 - Closed Spruce
 - Closed Mixed Coniferous
 - Grassland
 - Upland Shrub
 - Shrubby Wetland
 - Treed Wetland
 - Rock Barren
 - Naturally Flooded Area
 - Anthropogenic Disturbance

PROJECT



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RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**LOCATIONS OF OWLS DETECTED DURING THE NOCTURNAL
OWL SURVEY IN THE WILDLIFE LOCAL STUDY AREA**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

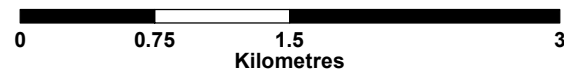
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CHECKED BY: RM

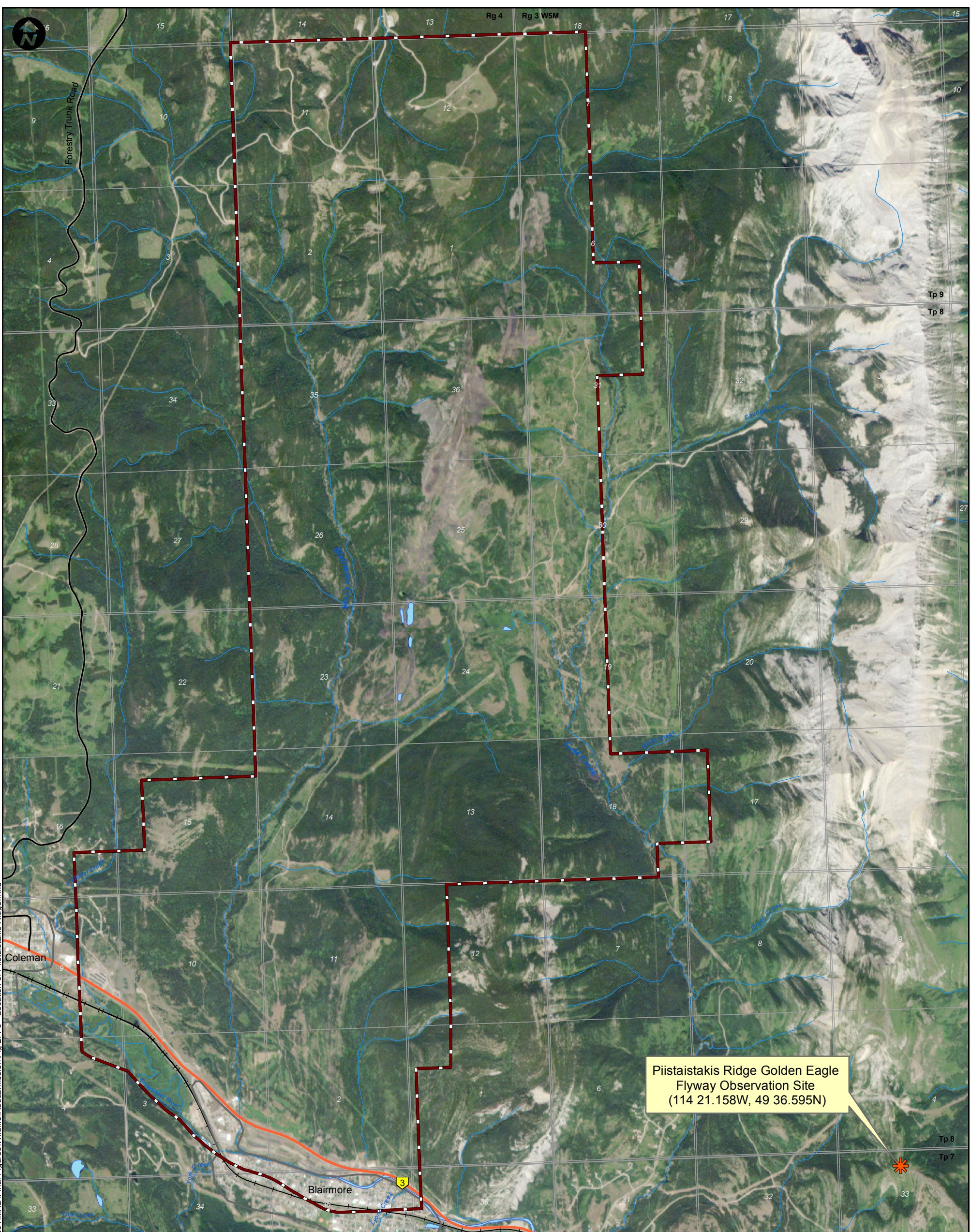
DATE: JUNE 22, 2016

FIGURE

2.4-5



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-6 - Location of Piistaistikis Ridge.mxd



LEGEND

- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area

PROJECT



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RESOURCES

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COAL PROJECT**



TITLE

LOCATION OF PIISTAISTAKIS RIDGE

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

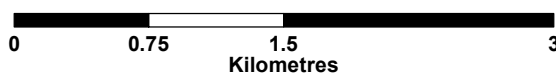
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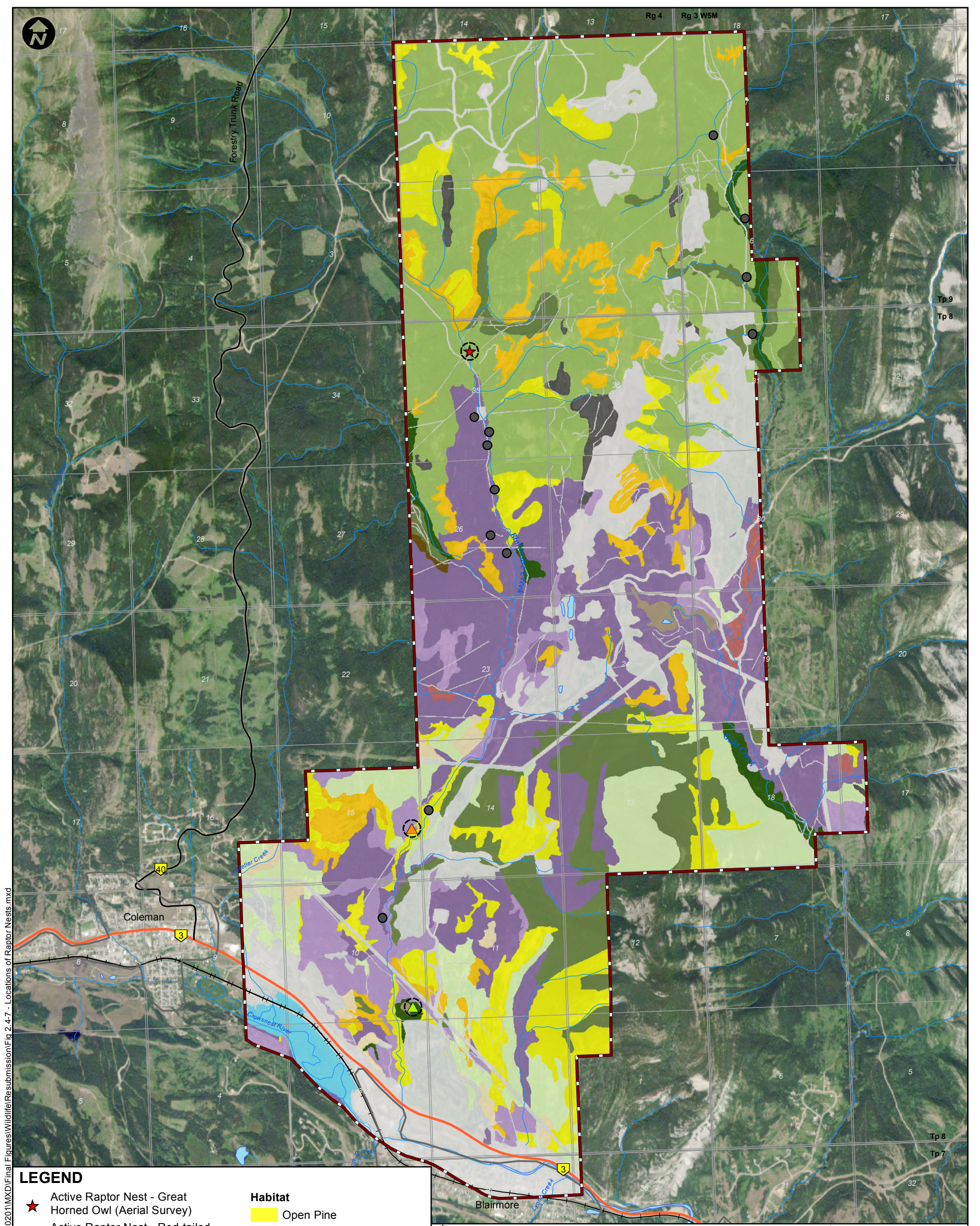
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.4-6



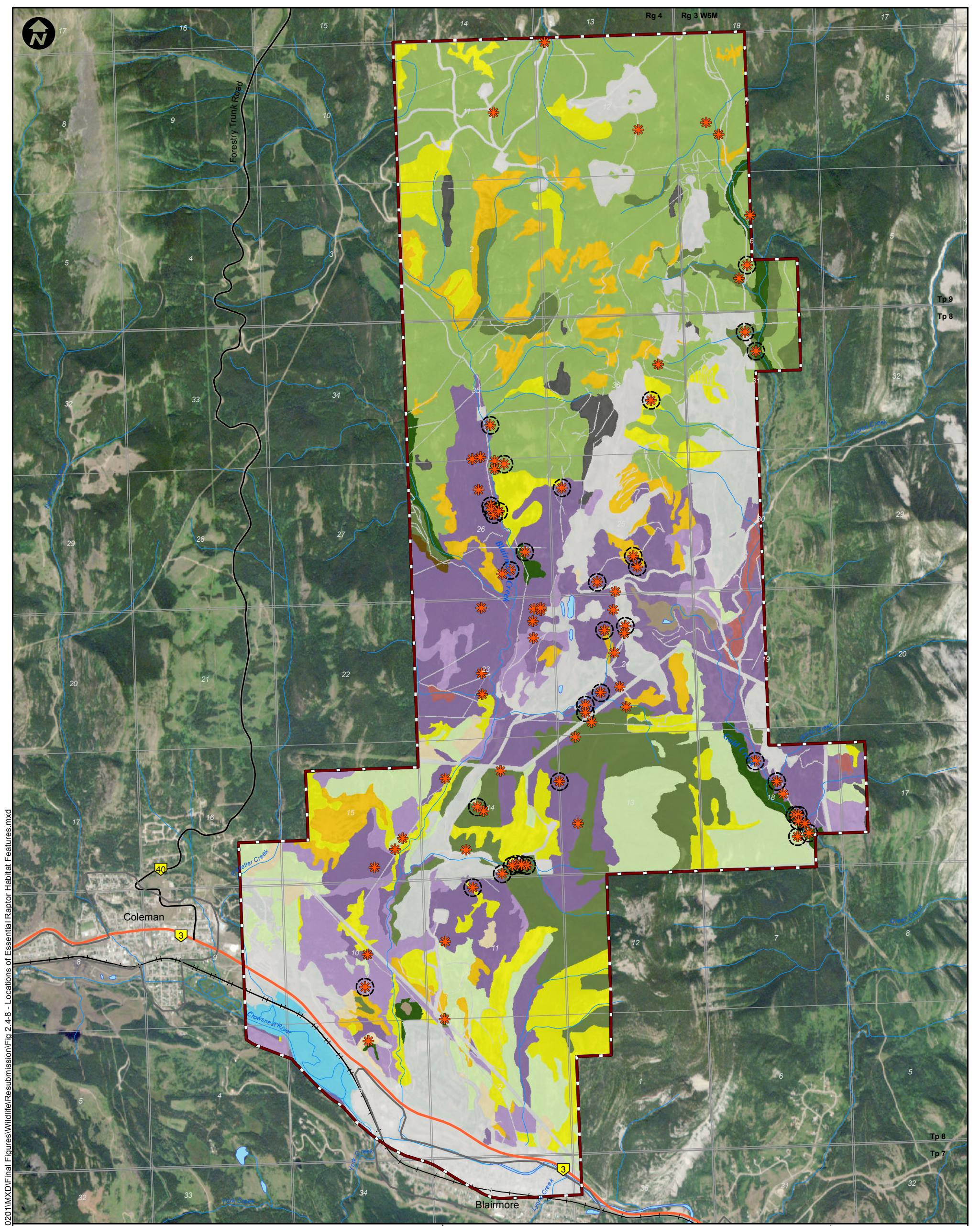


Document Path: K:\Active Projects\2014\AP_14-00201\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-7 - Locations of Raptor Nests.mxd

LEGEND

- | | |
|---|--|
| <ul style="list-style-type: none"> ★ Active Raptor Nest - Great Horned Owl (Aerial Survey) ▲ Active Raptor Nest - Red-tailed Hawk (Aerial Survey) ▲ Active Raptor Nest - Red-tailed Hawk (Songbird Survey) ● Inactive Raptor Nest (Aerial Survey) — Primary Highway — Secondary Highway — Existing Railway — Surface Water Drainage — Waterbody ▭ Wildlife Local Study Area ▭ Restricted Activity Zone | <p>Habitat</p> <ul style="list-style-type: none"> Open Pine Open Deciduous Open Mixedwood Open Mixed Coniferous Moderate Mixed Coniferous Closed Deciduous Closed Mixedwood Closed Spruce Closed Mixed Coniferous Grassland Upland Shrub Shrubby Wetland Treed Wetland Rock Barren Naturally Flooded Area Anthropogenic Disturbance |
|---|--|

<p>PROJECT</p> <p>RIVERSDALE RESOURCES</p>	<p>GRASSY MOUNTAIN COAL PROJECT</p>	<p>MILLENNIUM EMS Solutions Ltd.</p>
<p>TITLE LOCATIONS OF RAPTOR NESTS OBSERVED DURING THE AERIAL AND SONGBIRD SURVEYS IN THE WILDLIFE LOCAL STUDY AREA</p>		
<p>NOTES</p> <p>AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015 (Image Date: Jul 26/13); Riversdale, 2016 Datum/Projection: UTM NAD 83 Zone 11</p>		
		<p>PROJECT: 14-00201-01 DRAWN BY: SL CHECKED BY: RM DATE: JUNE 28, 2016</p>
		<p>FIGURE 2.4-7</p>



Document Path: K:\Active Projects\2014\AP_14-002\01\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-8 - Locations of Essential Raptor Nesting Habitat Features.mxd

LEGEND

- Essential Raptor Nesting Habitat Feature
 - Primary Highway
 - Secondary Highway
 - Existing Railway
 - Surface Water Drainage
 - Waterbody
 - Wildlife Local Study Area
 - Poplar Setback Distance (100m)
- Habitat**
- Open Pine
 - Open Deciduous
 - Open Mixedwood
 - Open Mixed Coniferous
 - Moderate Mixed Coniferous
 - Closed Deciduous
 - Closed Mixedwood
 - Closed Spruce
 - Closed Mixed Coniferous
 - Grassland
 - Upland Shrub
 - Shrubby Wetland
 - Treed Wetland
 - Rock Barren
 - Naturally Flooded Area
 - Anthropogenic Disturbance

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**

MILLENNIUM
EMS Solutions Ltd.

TITLE

LOCATIONS OF ESSENTIAL RAPTOR NESTING HABITAT FEATURES IN THE WILDLIFE LOCAL STUDY AREA

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
 (Image Date: Jul 26/13); Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: SL

CHECKED BY: RM

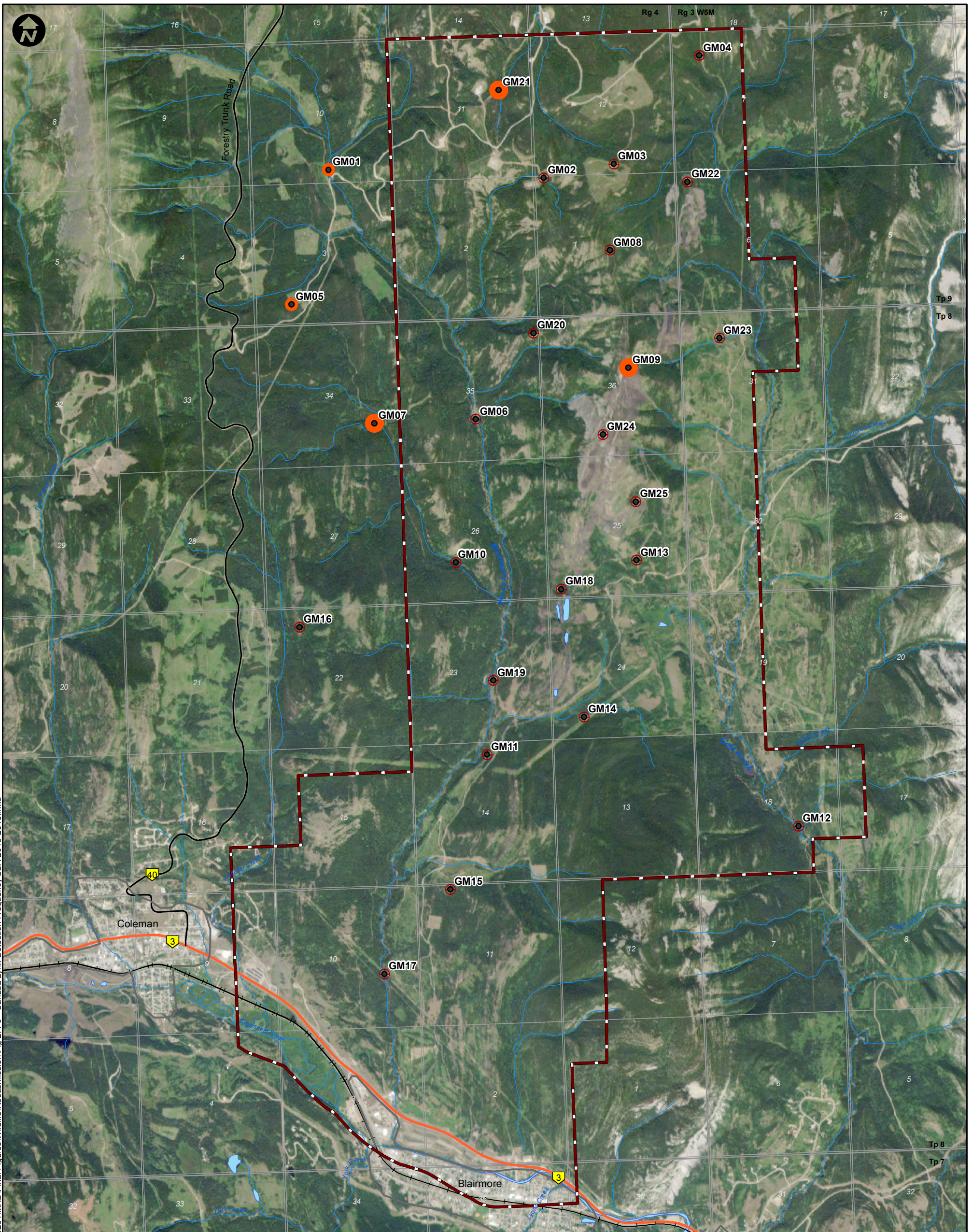
DATE: JUNE 28, 2016

FIGURE

2.4-8



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-9 - Canada Lynx Detection Frequency LSA-2013-2015.mxd



LEGEND

- Wildlife Camera Location
- Detection Frequency (No. Per 100 Camera Days)**
- ⊕ None
- Low
- Moderate
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area

PROJECT



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RESOURCES

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TITLE

**DETECTION FREQUENCIES OF CANADA LYNX
IN THE WILDLIFE LOCAL STUDY AREA – 2013-2015**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

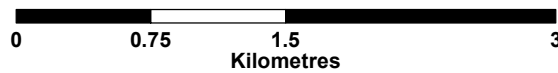
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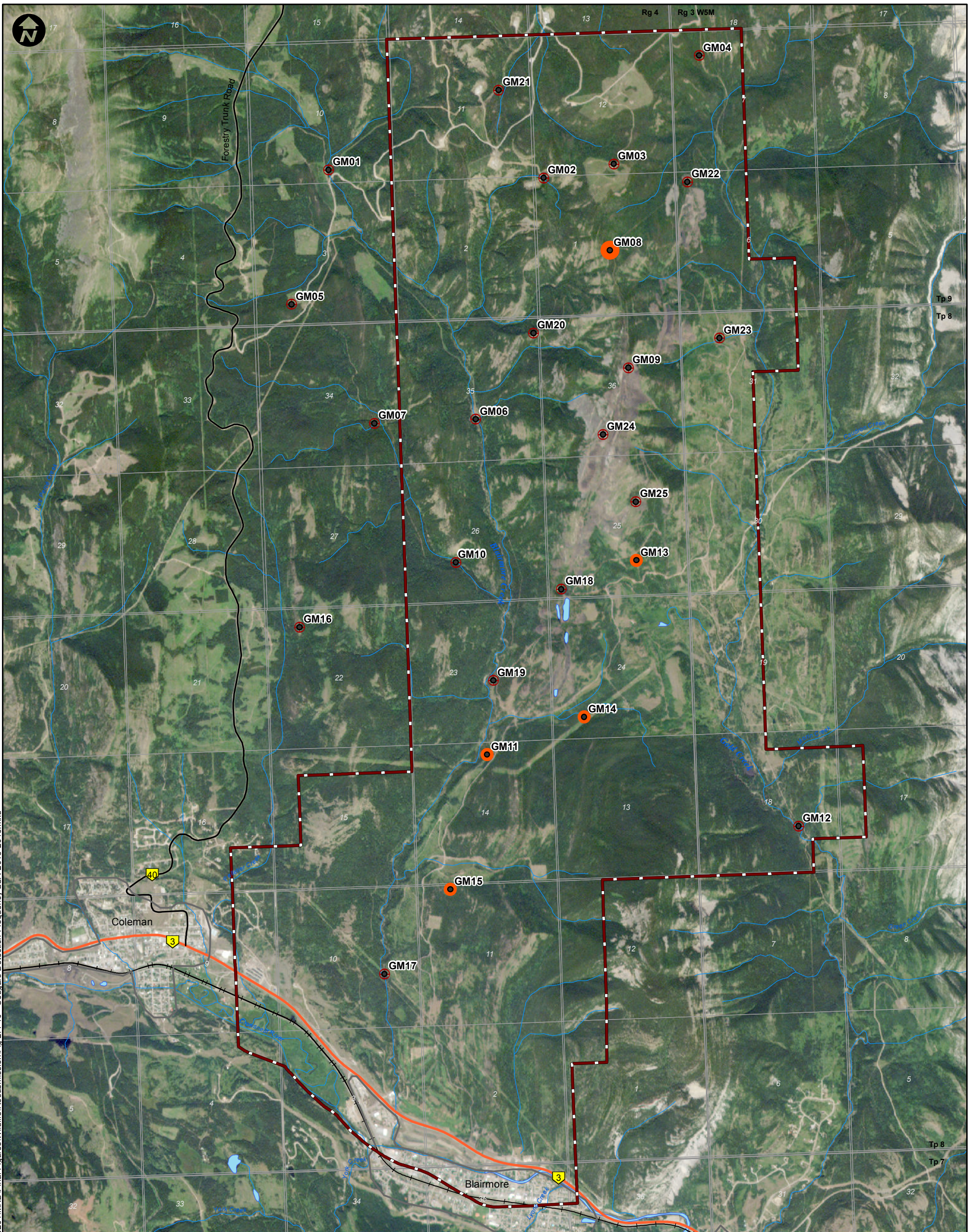
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.4-9





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-10 - Cougars Detection Frequency LSA-2013-2015.mxd

LEGEND

- Wildlife Camera Location
- Detection Frequency (No. Per 100 Camera Days)**
- None
- Low
- Moderate
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area

PROJECT



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RESOURCES

**GRASSY MOUNTAIN
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TITLE

**DETECTION FREQUENCIES OF COUGARS IN THE
WILDLIFE LOCAL STUDY AREA – 2013-2015**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

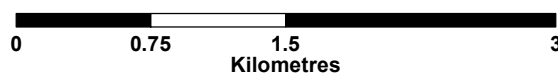
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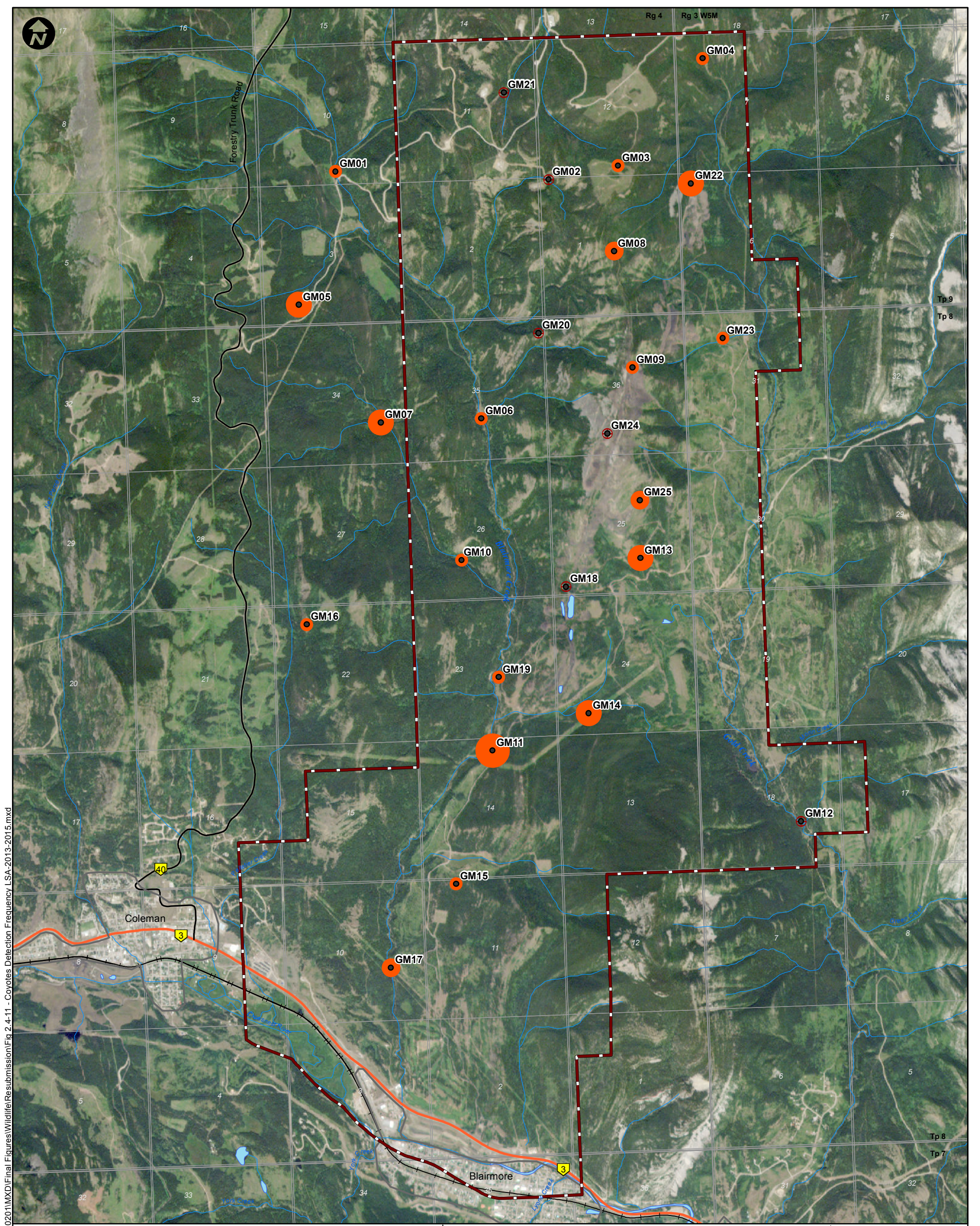
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.4-10





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-11 - Coyotes Detection Frequency_LSA-2013-2015.mxd

LEGEND

- Wildlife Camera Location
- None
- Low
- Moderate
- High
- Very High
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- ▭ Wildlife Local Study Area

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**

MILLENNIUM
EMS Solutions Ltd.

TITLE

DETECTION FREQUENCIES OF COYOTES IN THE WILDLIFE LOCAL STUDY AREA – 2013-2015

NOTES

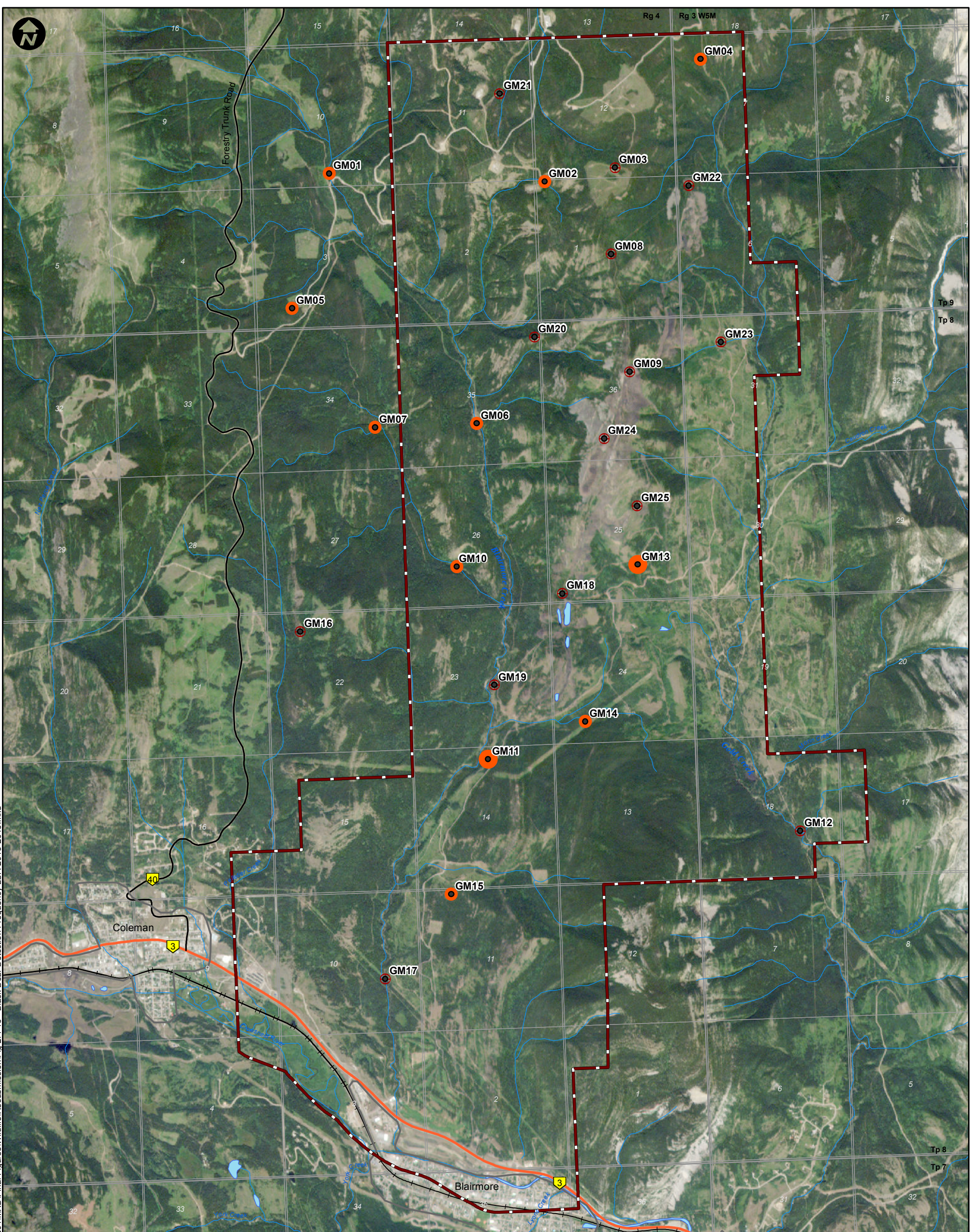
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(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
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DATE: JUNE 22, 2016



FIGURE
2.4-11

Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-13 - Black Bear Detection Frequency LSA-2013-2015.mxd



LEGEND

- Wildlife Camera Location
- Detection Frequency (No. Per 100 Camera Days)**
- ⊕ None
- Low
- Moderate
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- ▭ Wildlife Local Study Area

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**DETECTION FREQUENCIES OF BLACK BEARS IN THE
WILDLIFE LOCAL STUDY AREA – 2013-2015**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

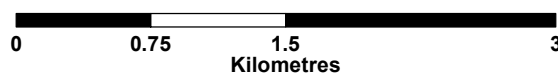
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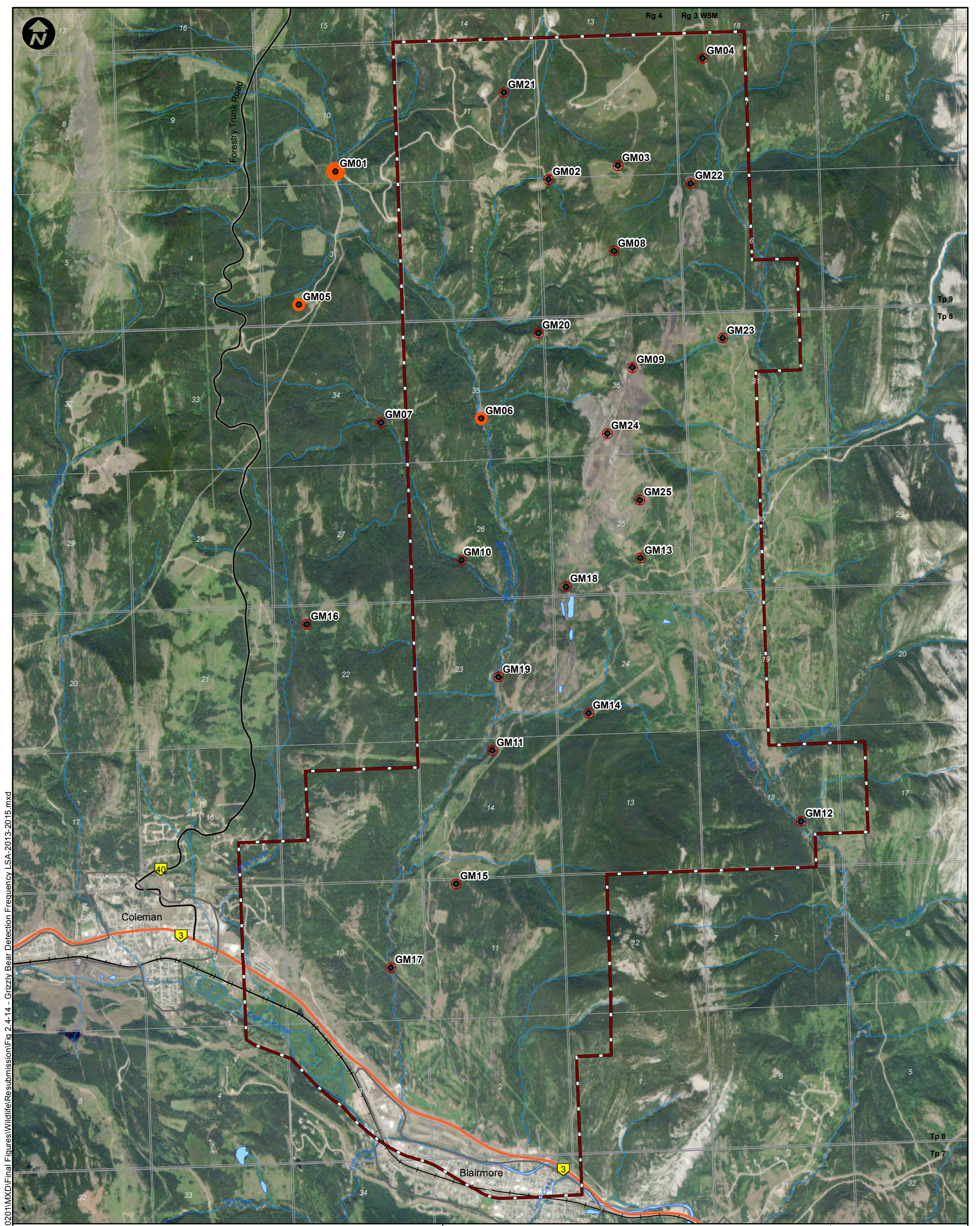
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.4-13





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-14 - Grizzly Bear Detection Frequency LSA-2013-2015.mxd

LEGEND

- Wildlife Camera Location
- Detection Frequency (No. Per 100 Camera Days)**
- ⊕ None
- Low
- Moderate
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- ▭ Wildlife Local Study Area

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**



TITLE

DETECTION FREQUENCIES OF GRIZZLY BEARS IN THE WILDLIFE LOCAL STUDY AREA – 2013-2015

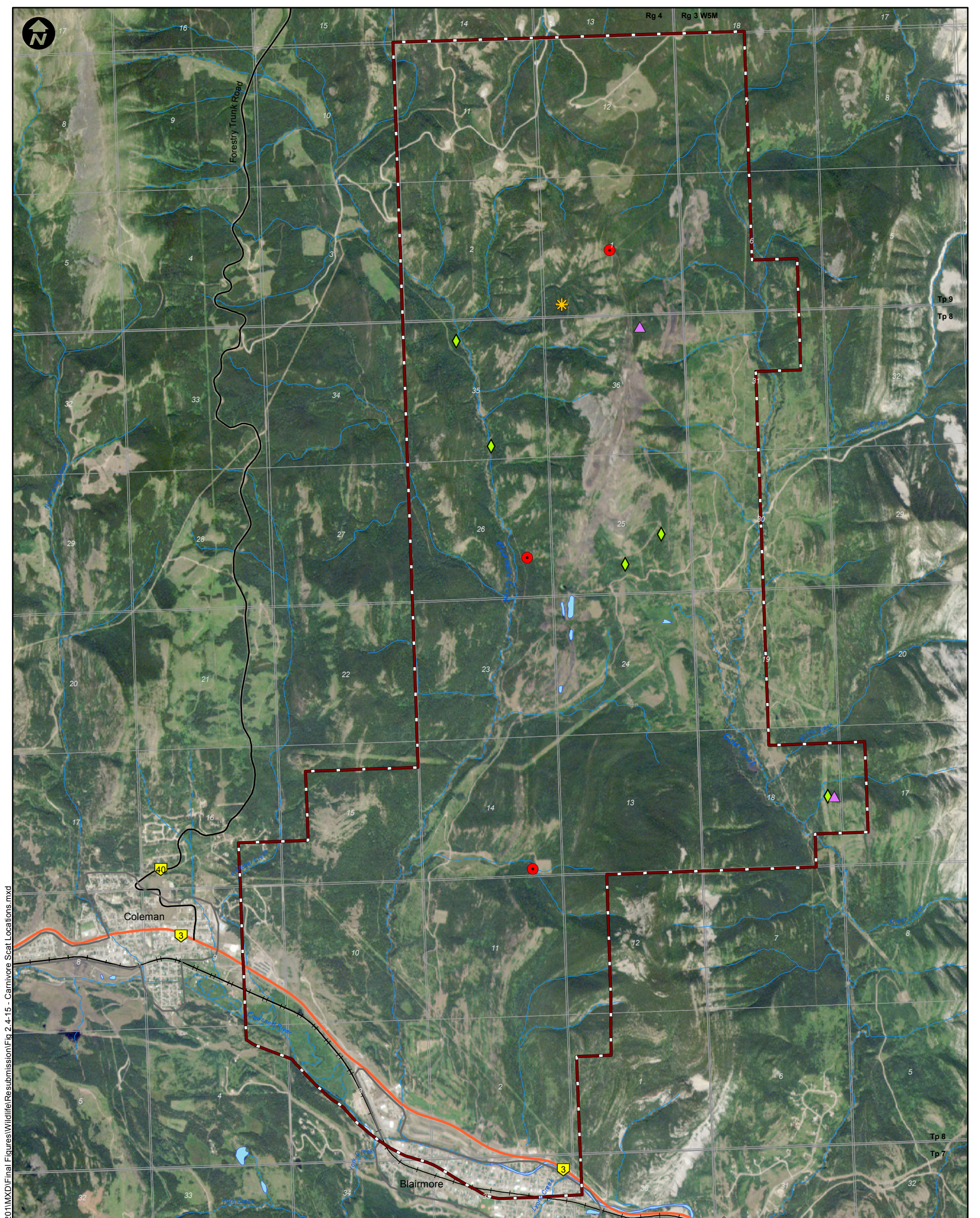
NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
 (Image Date: Jul 26/13); Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
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FIGURE
2.4-14



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-15 - Carnivore Scat Locations.mxd

LEGEND

- American Marten
- Canada Lynx
- Ermine
- Least Weasel
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area

PROJECT



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RESOURCES

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TITLE

**CARNIVORE SCAT LOCATIONS FROM THE PELLET/SCAT
SURVEY IN THE WILDLIFE LOCAL STUDY AREA**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: SL

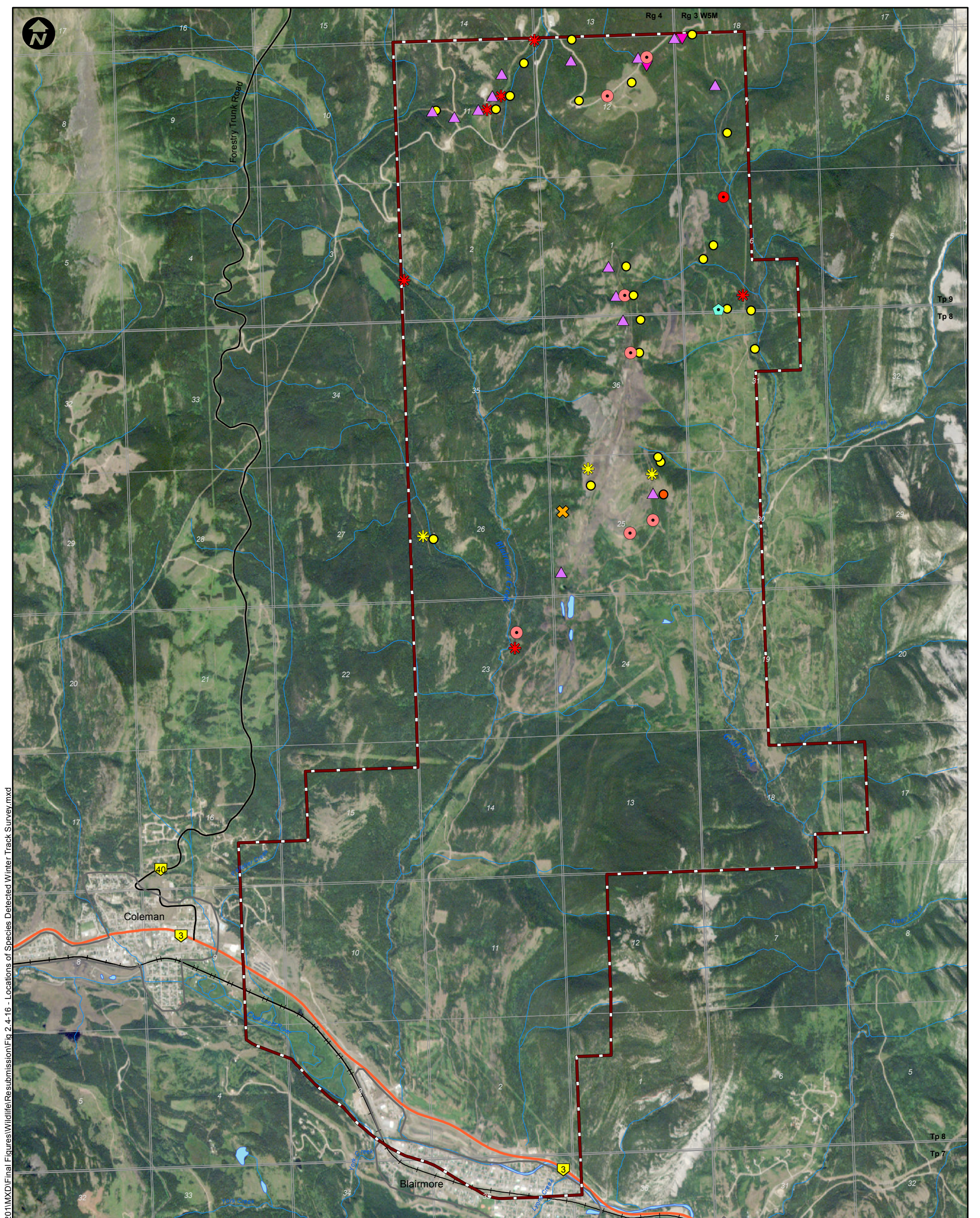
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.4-15





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-16 - Locations of Species Detected Winter Track Survey.mxd

LEGEND

- | | |
|-------------------------|---------------------------|
| Species Detected | — Primary Highway |
| Grouse spp. | — Secondary Highway |
| Red squirrel | — Existing Railway |
| Snowshoe hare | — Surface Water Drainage |
| Least Weasel | Waterbody |
| Red fox | Wildlife Local Study Area |
| Coyote | |
| Gray Wolf | |
| Canada Lynx | |
| Deer spp. | |
| Moose | |

PROJECT



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RESOURCES

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TITLE

**LOCATIONS OF SPECIES DETECTED DURING WINTER
TRACK SURVEY IN THE WILDLIFE LOCAL STUDY AREA**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

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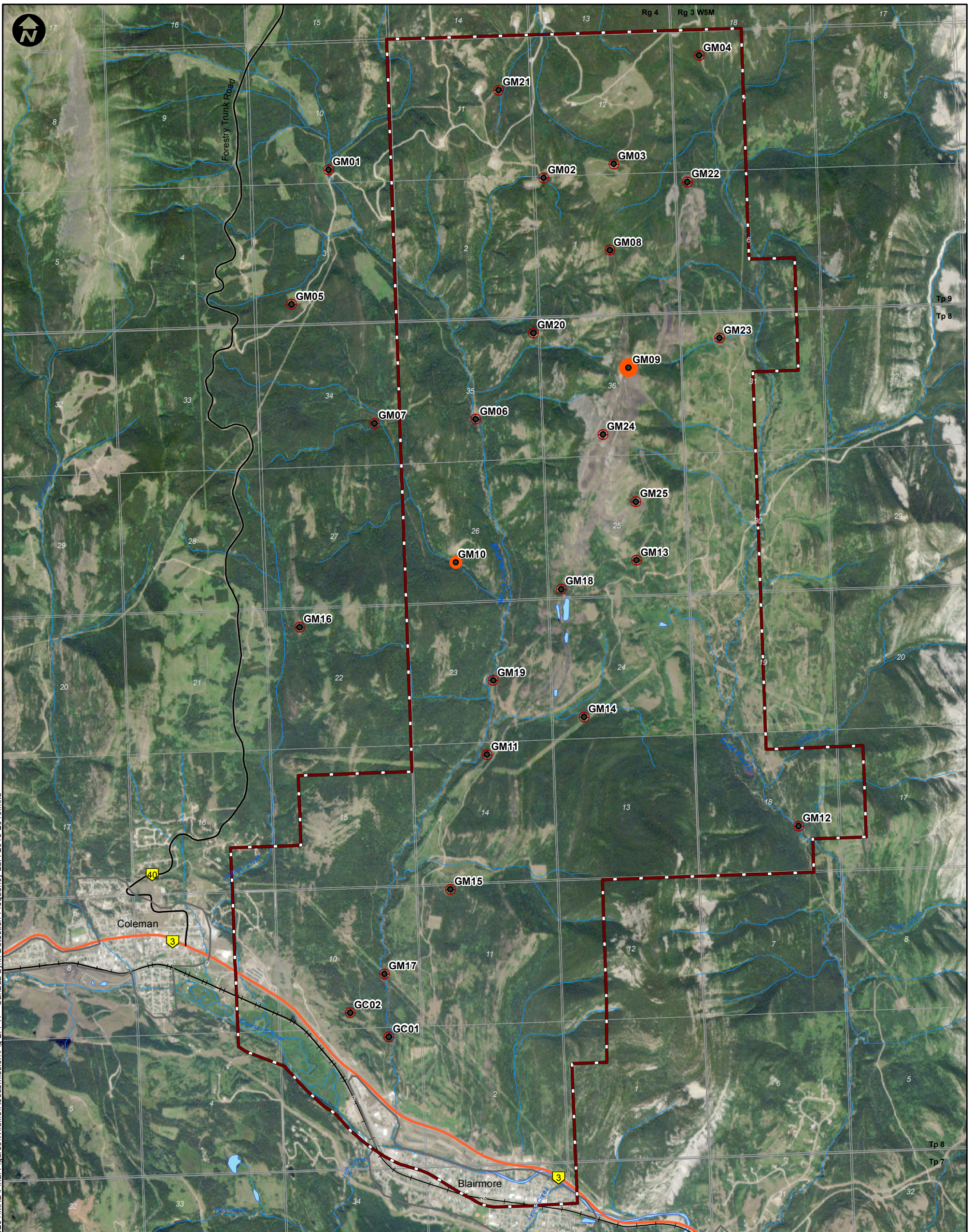
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.4-16





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-17 - Canada Lynx Detection Frequency LSA 2015-2016.mxd

LEGEND

- Wildlife Camera Location
- Detection Frequency (No. Per 100 Camera Days)**
- ⊕ None
- Low
- Moderate
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area

PROJECT



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COAL PROJECT**



TITLE

**DETECTION FREQUENCIES OF CANADA LYNX
IN THE WILDLIFE LOCAL STUDY AREA – 2015-2016**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

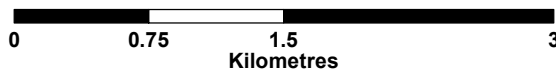
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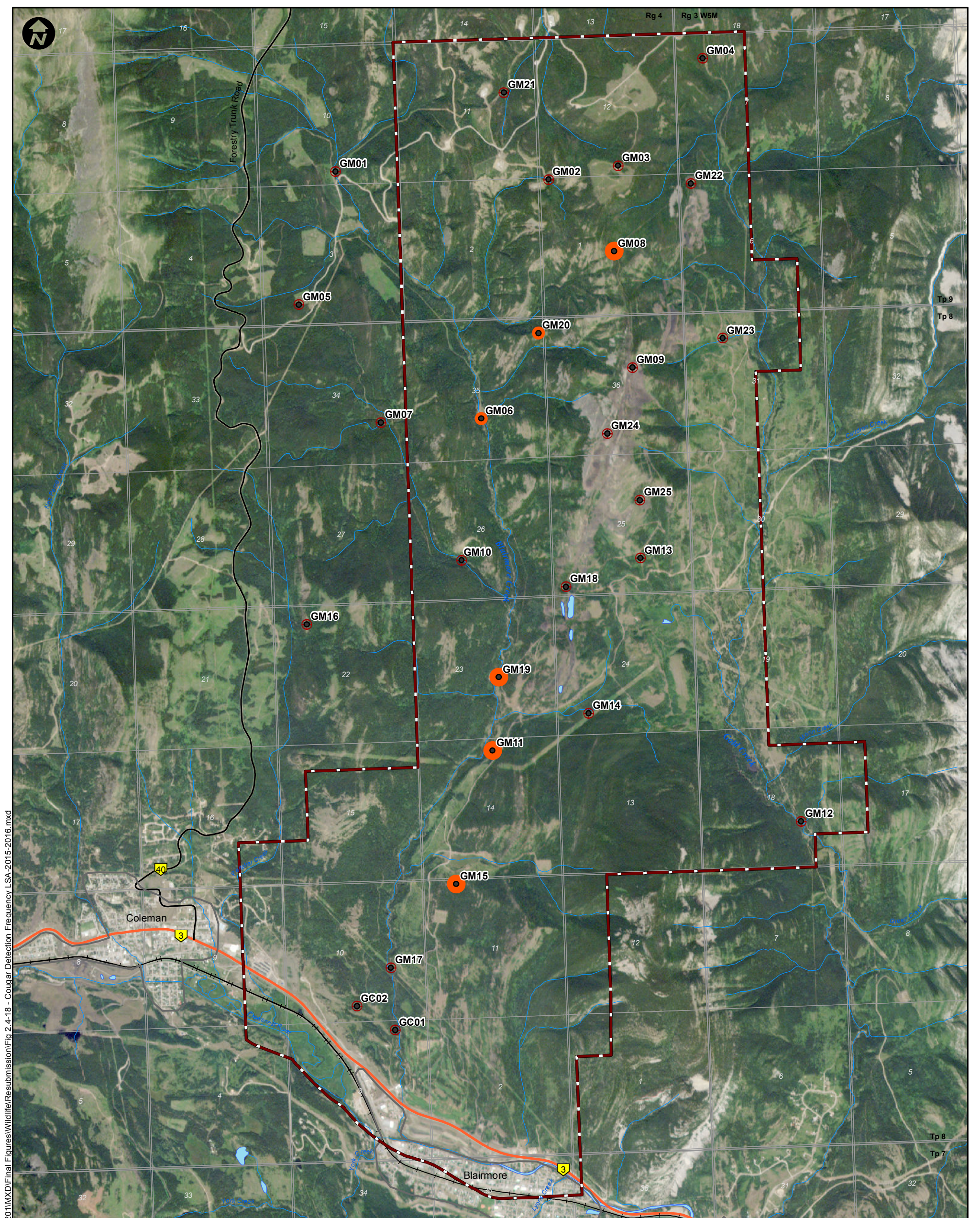
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.4-17





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-18 - Cougar Detection Frequency_LSA-2015-2016.mxd

LEGEND

- Wildlife Camera Location
- Detection Frequency (No. Per 100 Camera Days)**
- ⊕ None
- Low
- Moderate
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area

PROJECT

RIVERSDALE GRASSY MOUNTAIN
 RESOURCES COAL PROJECT

MILLENNIUM
 EMS Solutions Ltd.

TITLE

DETECTION FREQUENCIES OF COUGARS IN THE WILDLIFE LOCAL STUDY AREA – 2015-2016

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
 (Image Date: Jul 26/13); Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

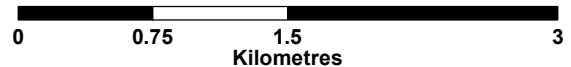
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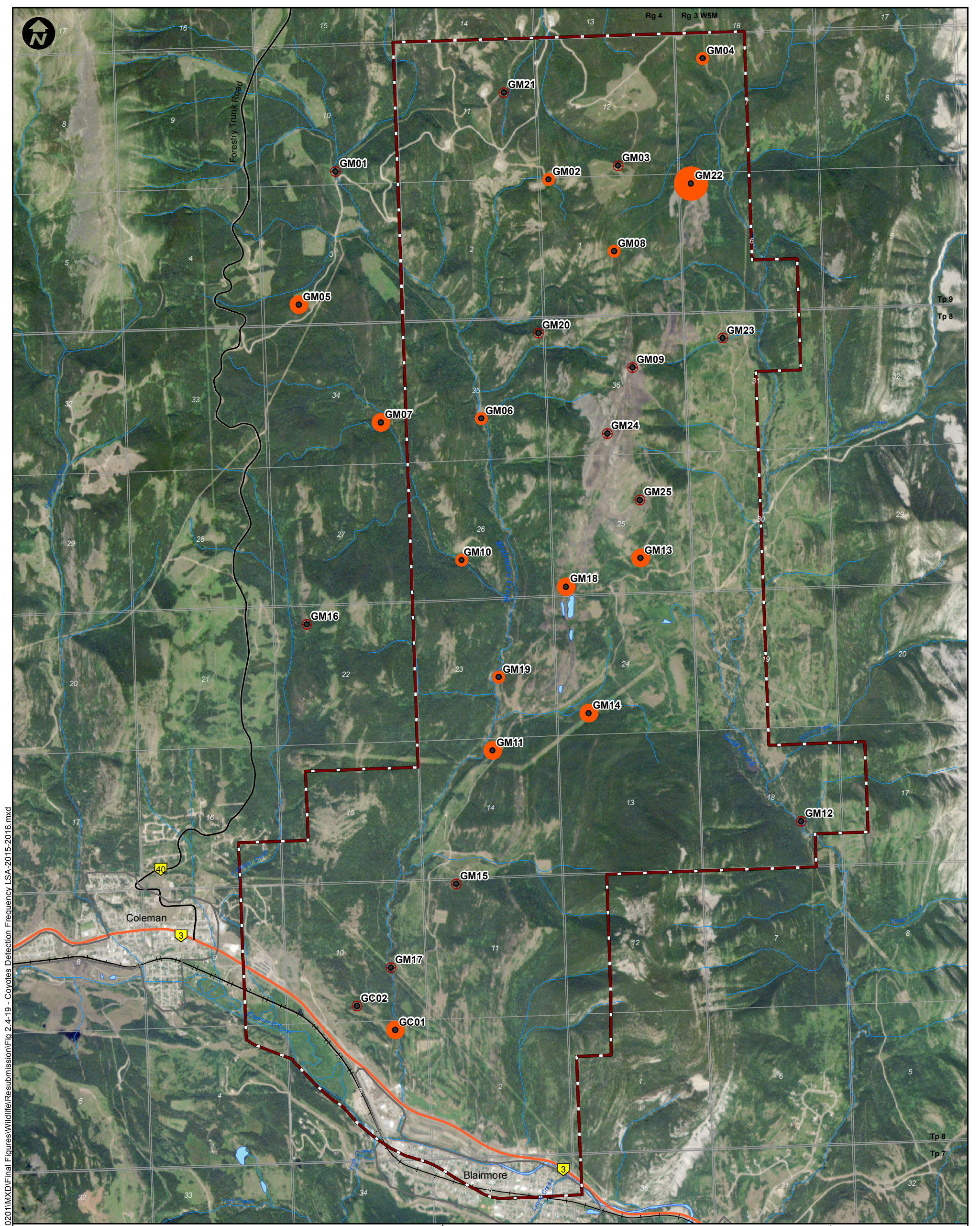
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.4-18





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-19 - Coyotes Detection Frequency LSA-2015-2016.mxd

LEGEND

- Wildlife Camera Location
- None
- Low
- Moderate
- Very High
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- ▭ Wildlife Local Study Area

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**

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EMS Solutions Ltd.

TITLE

DETECTION FREQUENCIES OF COYOTES IN THE WILDLIFE LOCAL STUDY AREA – 2015-2016

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: SL

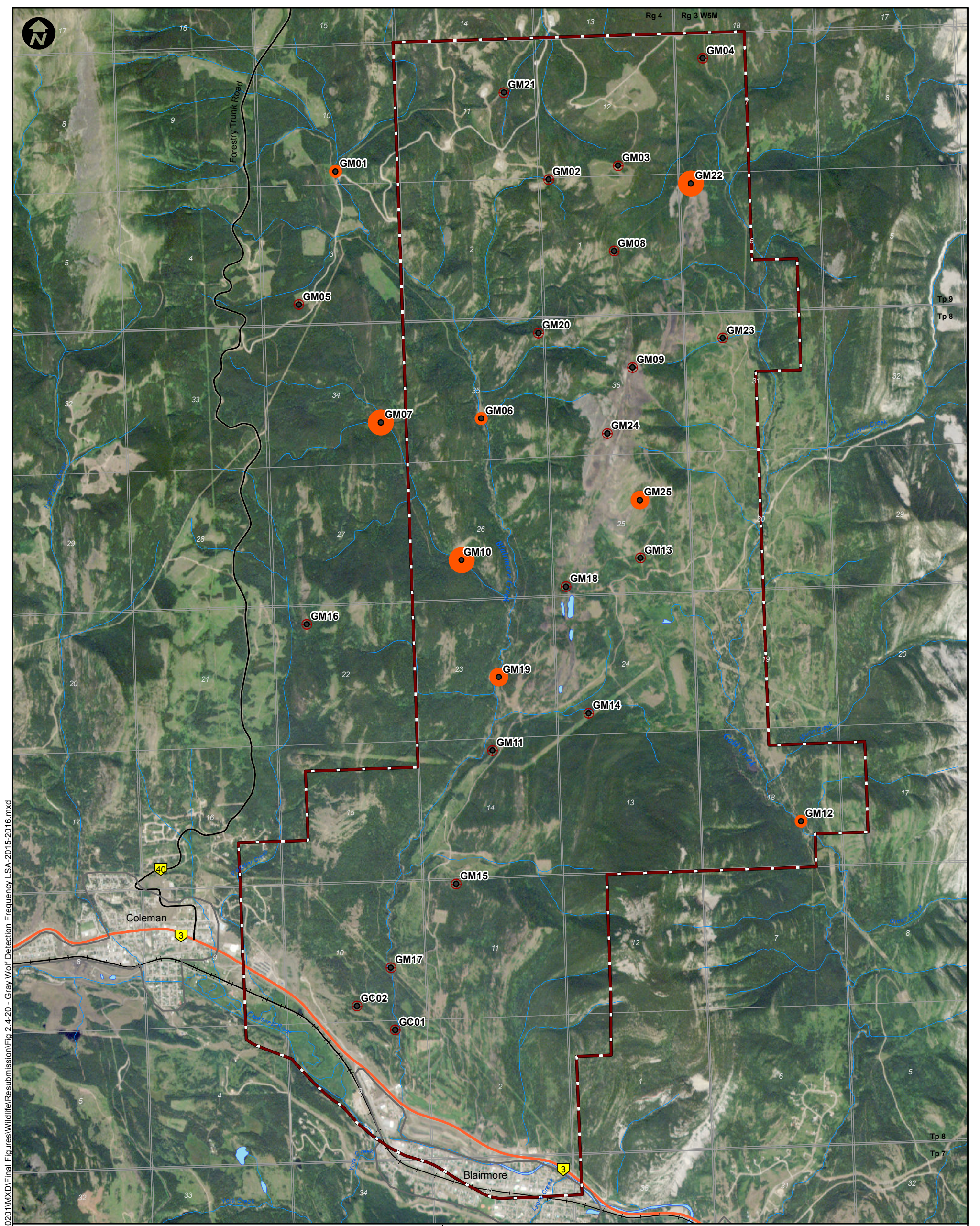
CHECKED BY: RM

DATE: JUNE 22, 2016

FIGURE

2.4-19





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-20 - Gray Wolf Detection Frequency LSA-2015-2016.mxd

LEGEND

- Wildlife Camera Location
- (with cross) None
- (small) Low
- (medium) Moderate
- (large) High
- (thick orange) Primary Highway
- (black) Secondary Highway
- (black with cross-ticks) Existing Railway
- (blue) Surface Water Drainage
- (light blue) Waterbody
- (red dashed) Wildlife Local Study Area

PROJECT

RIVERSDALE GRASSY MOUNTAIN
 RESOURCES COAL PROJECT

MILLENNIUM
 EMS Solutions Ltd.

TITLE

DETECTION FREQUENCIES OF GRAY WOLF IN THE WILDLIFE LOCAL STUDY AREA – 2015-2016

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
 (Image Date: Jul 26/13); Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: SL

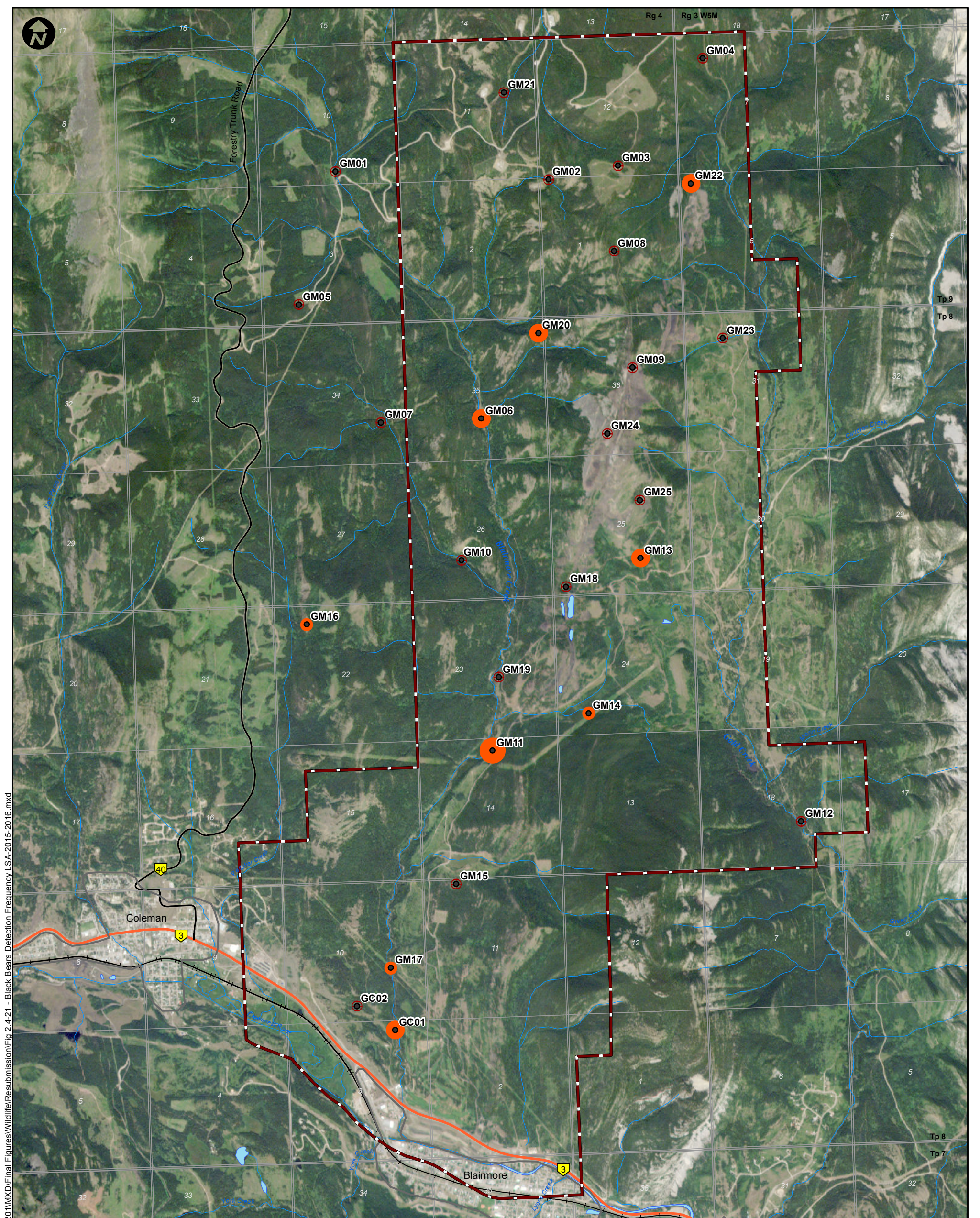
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DATE: JUNE 22, 2016

FIGURE

2.4-20





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-21 - Black Bears Detection Frequency LSA-2015-2016.mxd

LEGEND

- Wildlife Camera Location
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area
- ⊕ None
- Low
- Moderate
- High

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**



TITLE

DETECTION FREQUENCIES OF BLACK BEARS IN THE WILDLIFE LOCAL STUDY AREA – 2015-2016

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
 (Image Date: Jul 26/13); Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: SL

CHECKED BY: RM

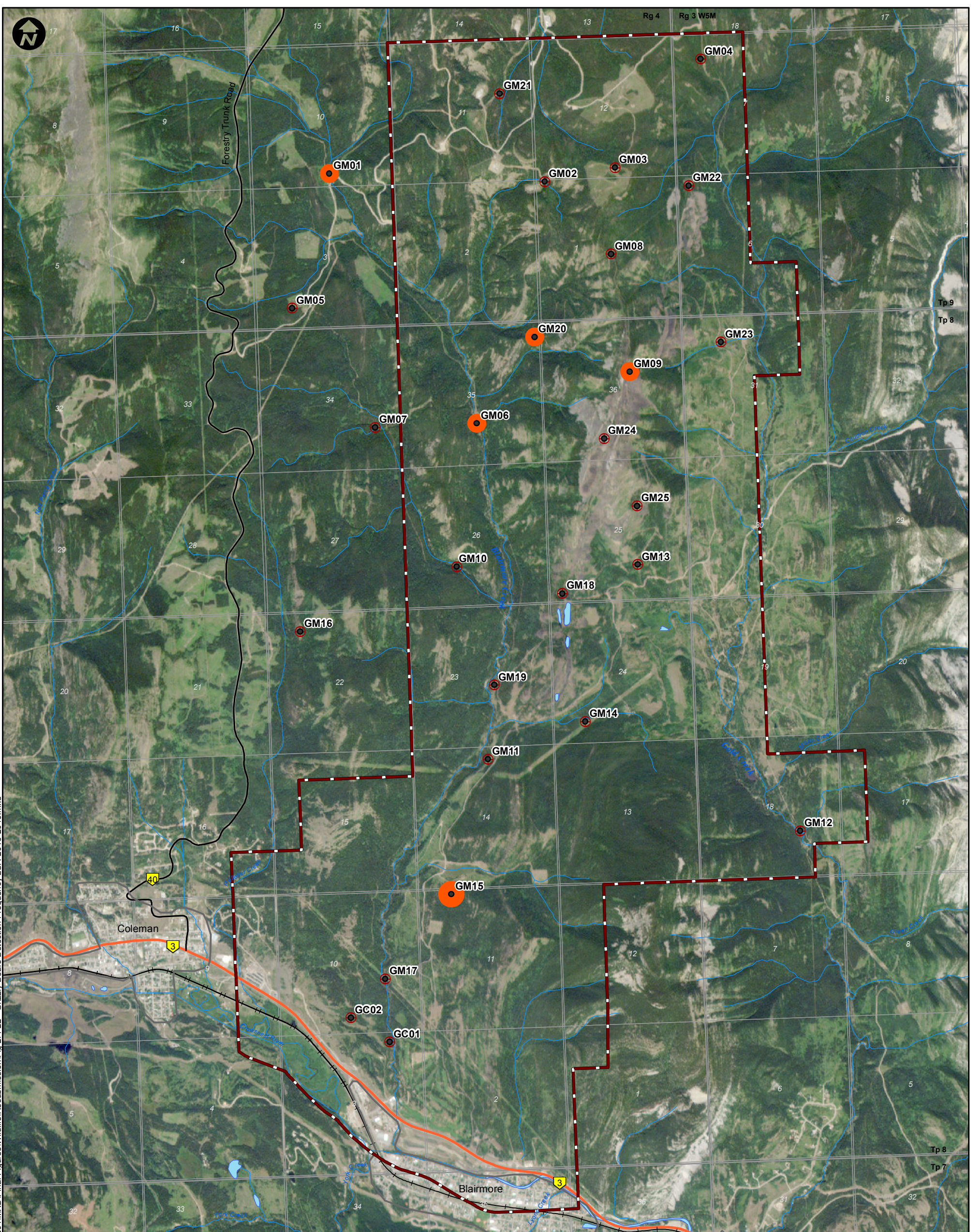
DATE: JUNE 23, 2016

FIGURE

2.4-21



Document Path: K:\Active Projects\2014\AP_14-00201-14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-22 - Grizzly Bears Detection Frequency LSA-2015-2016.mxd



LEGEND

- Wildlife Camera Location
- Detection Frequency (No. Per 100 Camera Days)**
- ⊕ None
- Moderate
- High
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- ▭ Wildlife Local Study Area

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**DETECTION FREQUENCIES OF GRIZZLY BEARS IN THE
WILDLIFE LOCAL STUDY AREA – 2015-2016**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

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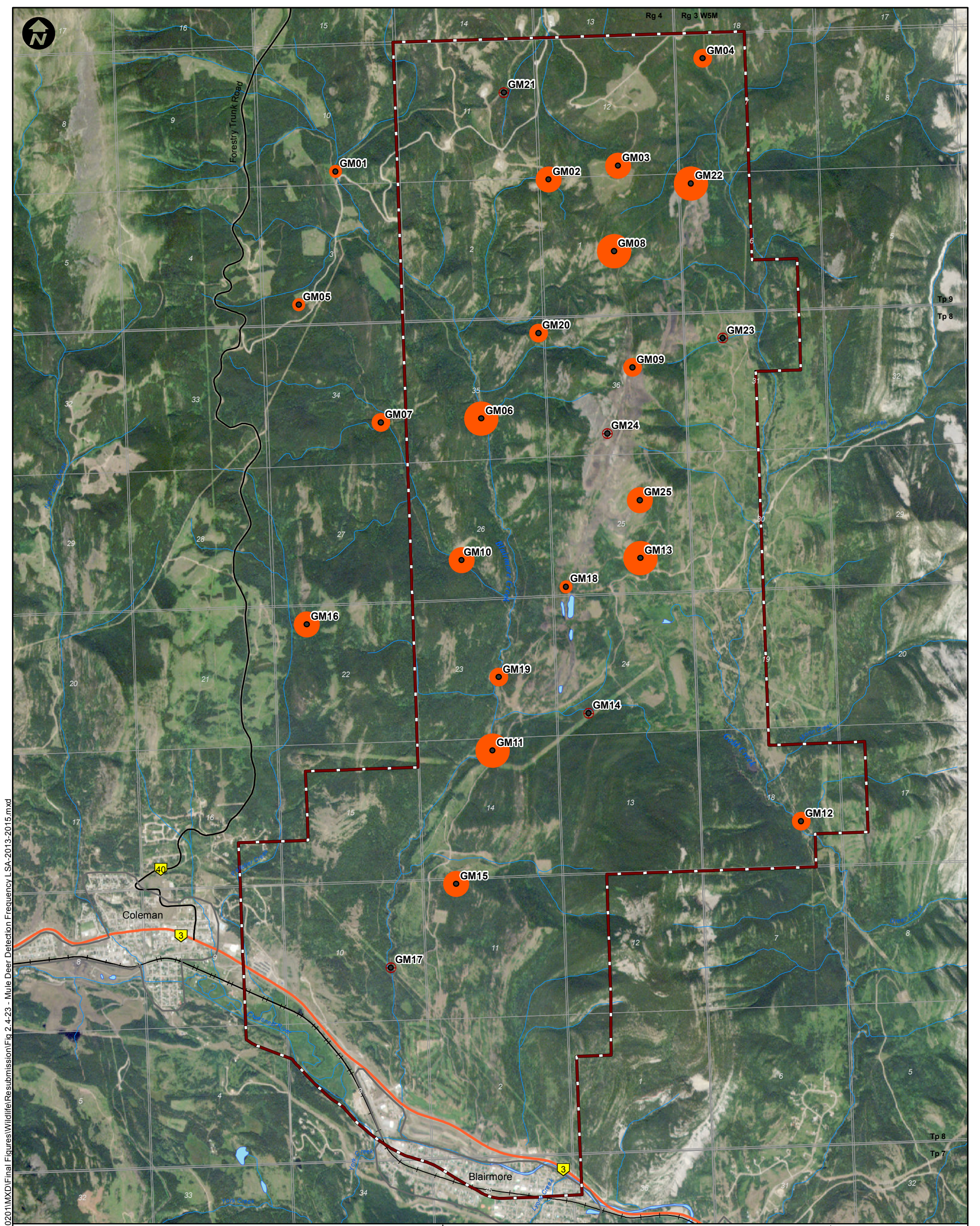
CHECKED BY: RM

DATE: JUNE 23, 2016

FIGURE

2.4-22





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-23 - Mule Deer Detection Frequency LSA-2013-2015.mxd

LEGEND

- Wildlife Camera Location
- (with cross) None
- (small) Low
- (medium) Moderate
- (large) High
- (very large) Very High
- (thick orange) Primary Highway
- (black) Secondary Highway
- (black with cross-ticks) Existing Railway
- (blue) Surface Water Drainage
- (light blue) Waterbody
- (red dashed) Wildlife Local Study Area

PROJECT

RIVERSDALE GRASSY MOUNTAIN
 RESOURCES COAL PROJECT

MILLENNIUM
 EMS Solutions Ltd.

TITLE

DETECTION FREQUENCIES OF MULE DEER IN THE WILDLIFE LOCAL STUDY AREA – 2013-2015

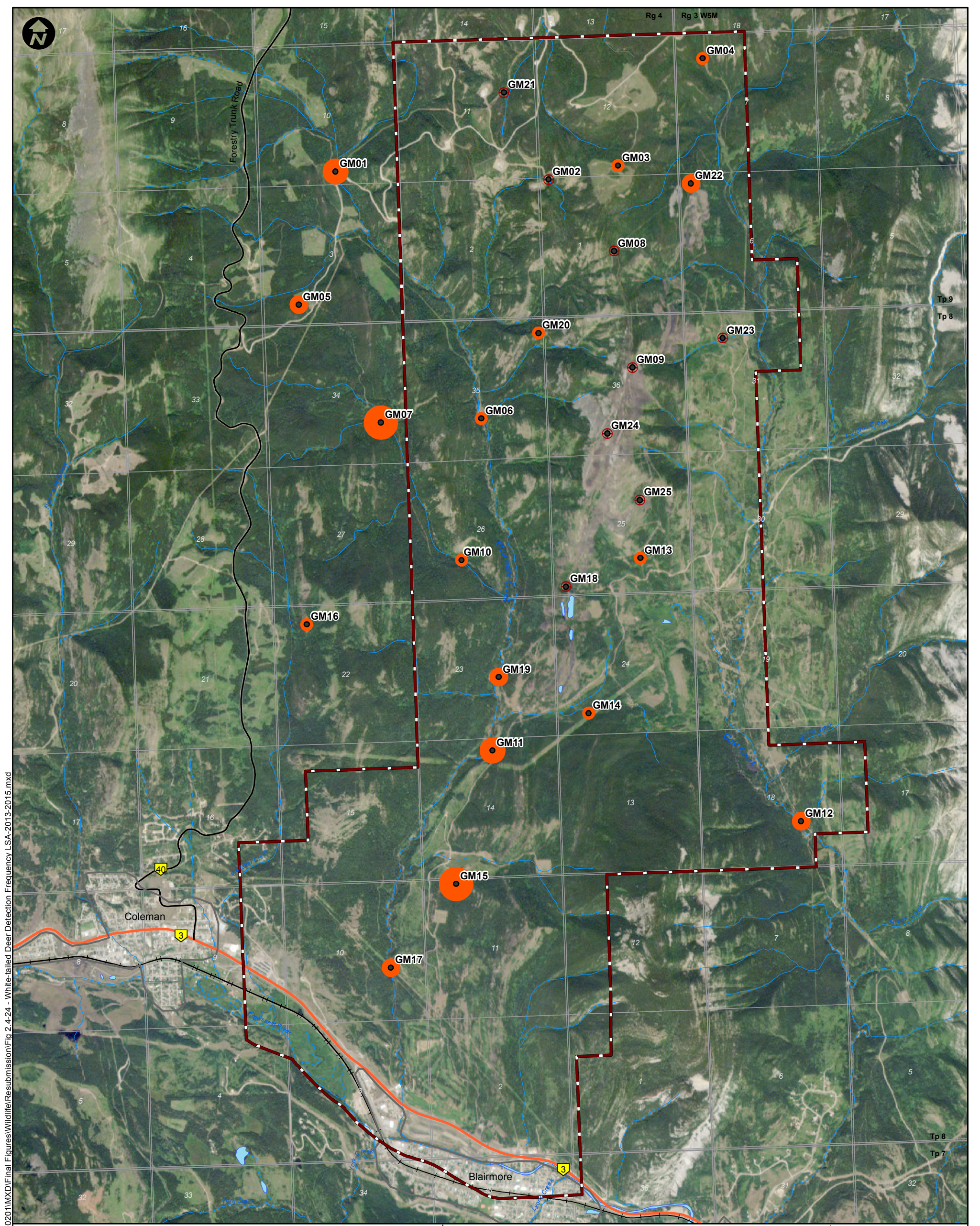
NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
 (Image Date: Jul 26/13); Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
 DRAWN BY: SL
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 DATE: JUNE 22, 2016



FIGURE
2.4-23



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-24 - White-tailed Deer Detection Frequency LSA-2013-2015.mxd

LEGEND

- Wildlife Camera Location
- None
- Low
- Moderate
- High
- Very High
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- ▭ Wildlife Local Study Area

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**



TITLE
DETECTION FREQUENCIES OF WHITE-TAILED DEER IN THE WILDLIFE LOCAL STUDY AREA – 2013-2015

NOTES
 AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
 (Image Date: Jul 26/13); Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
 DRAWN BY: SL
 CHECKED BY: RM
 DATE: JUNE 22, 2016

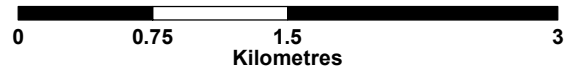
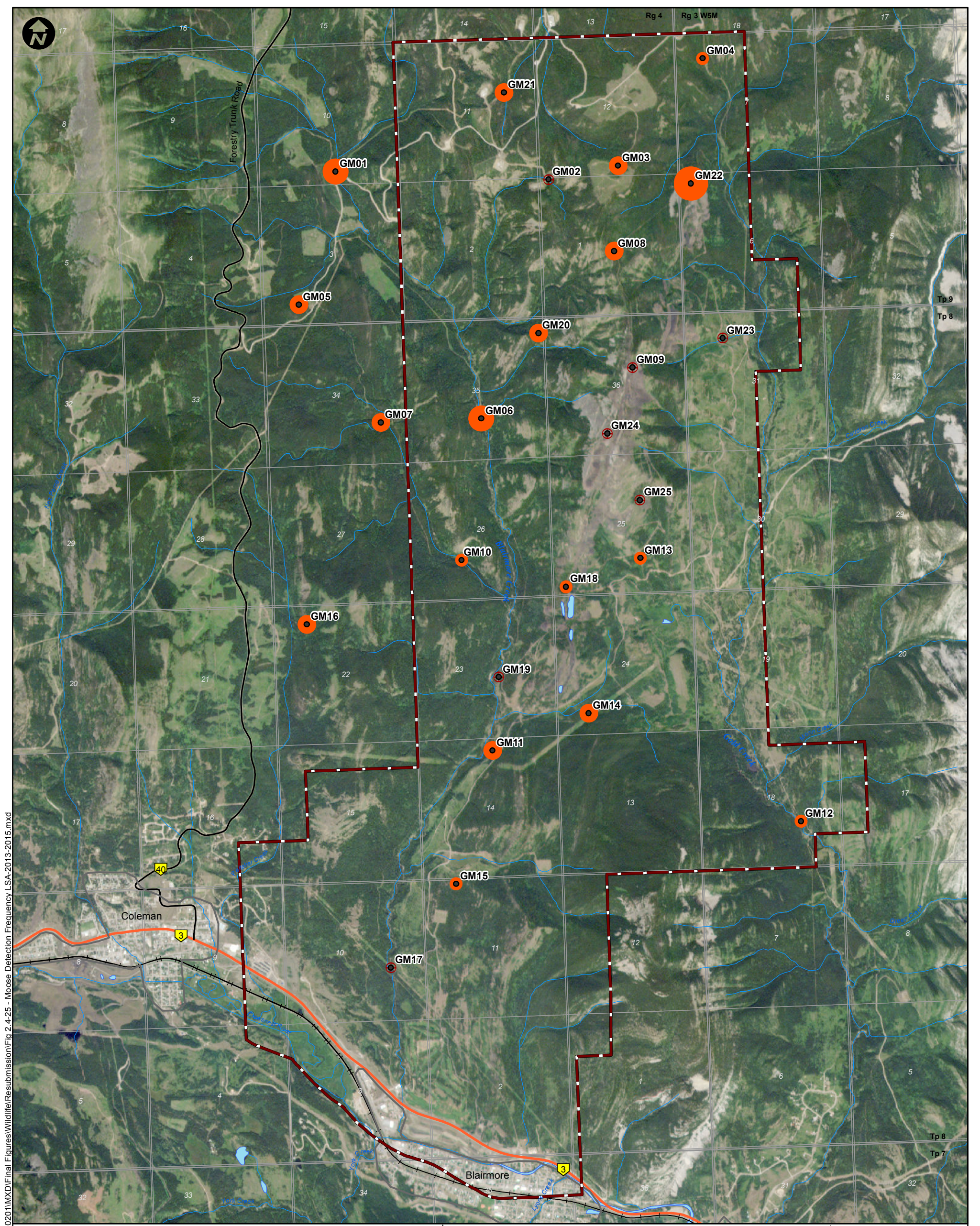


FIGURE
2.4-24



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-25 - Moose Detection Frequency LSA-2013-2015.mxd

LEGEND

- Wildlife Camera Location
- None
- Low
- Moderate
- High
- Very High
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- ▭ Wildlife Local Study Area

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**



TITLE

DETECTION FREQUENCIES OF MOOSE IN THE WILDLIFE LOCAL STUDY AREA – 2013-2015

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
 (Image Date: Jul 26/13); Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
 DRAWN BY: SL
 CHECKED BY: RM
 DATE: JUNE 22, 2016

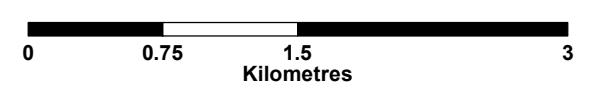
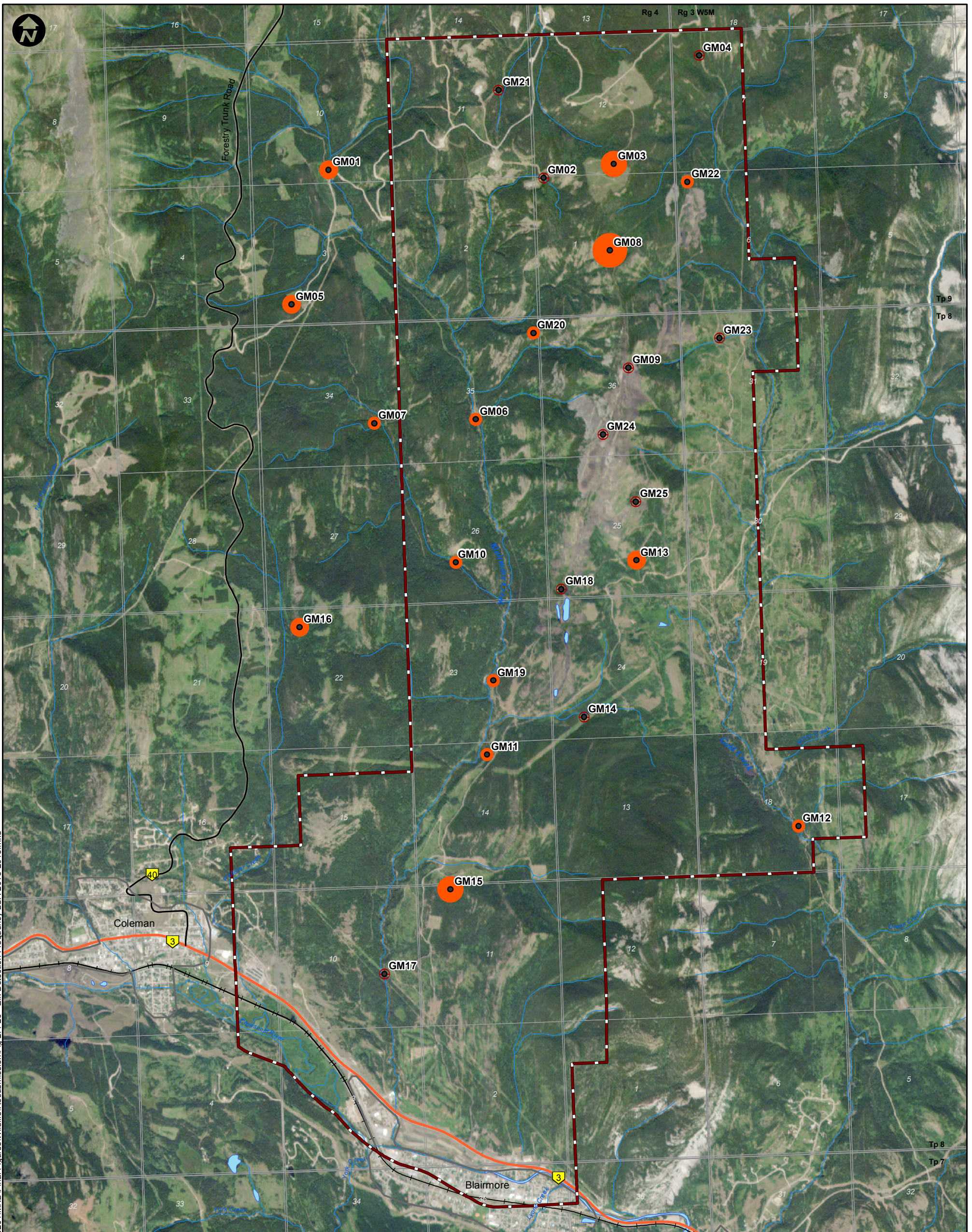


FIGURE
2.4-25



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-26 - Elk Detection Frequency_LSA-2013-2015.mxd

LEGEND

- Wildlife Camera Location
- (with cross) None
- (small) Low
- (medium) Moderate
- (large) High
- (very large) Very High
- (thick orange) Primary Highway
- (black) Secondary Highway
- (black with cross-ticks) Existing Railway
- (blue) Surface Water Drainage
- (light blue) Waterbody
- (red dashed) Wildlife Local Study Area

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**DETECTION FREQUENCIES OF ELK IN THE
WILDLIFE LOCAL STUDY AREA – 2013-2015**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

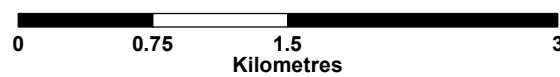
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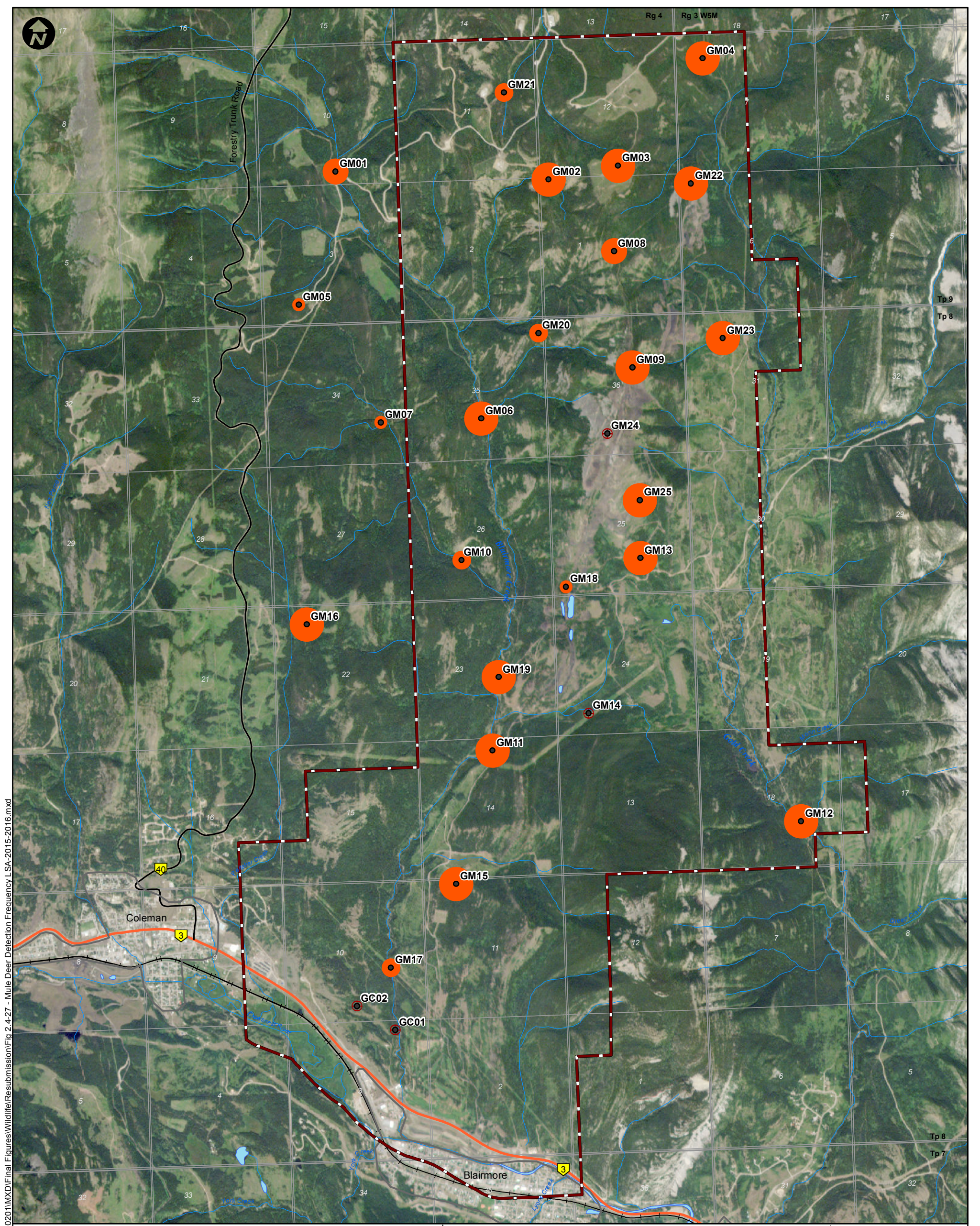
CHECKED BY: LB

DATE: JUNE 22, 2016

FIGURE

2.4-26





DocumentPath: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-27 - Mule Deer Detection Frequency LSA-2015-2016.mxd

LEGEND

- Wildlife Camera Location
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area
- ⊕ None
- Low
- Moderate
- High
- Very High

PROJECT

RIVERSDALE GRASSY MOUNTAIN
 RESOURCES COAL PROJECT

MILLENNIUM
 EMS Solutions Ltd.

TITLE

DETECTION FREQUENCIES OF MULE DEER IN THE WILDLIFE LOCAL STUDY AREA – 2015-2016

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
 (Image Date: Jul 26/13); Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
 DRAWN BY: SL
 CHECKED BY: RM
 DATE: JUNE 23, 2016

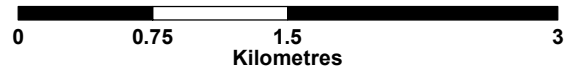
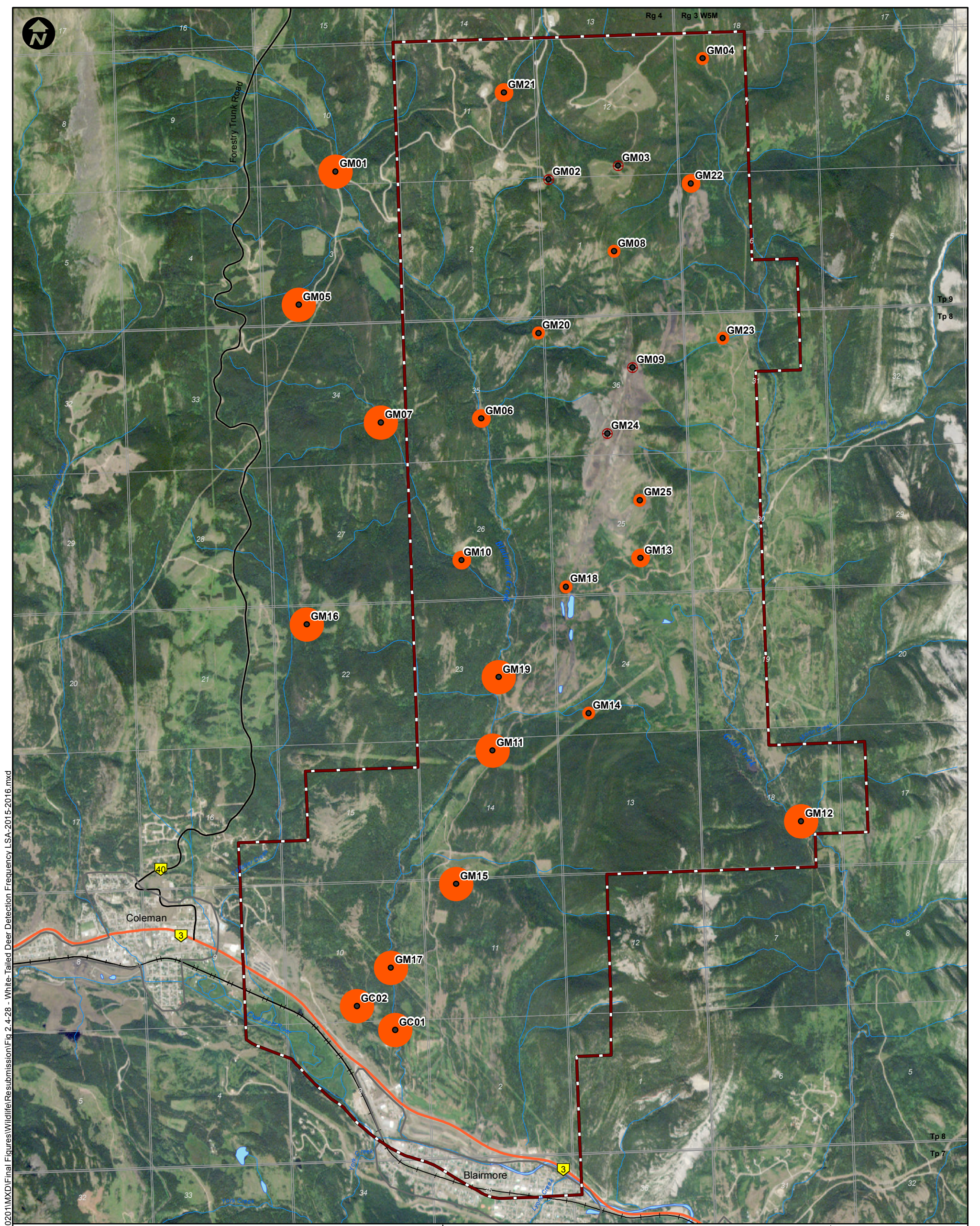


FIGURE
2.4-27



DocumentPath: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-28 - White-Tailed Deer Detection Frequency LSA-2015-2016.mxd

LEGEND

- Wildlife Camera Location
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- Wildlife Local Study Area
- ⊕ None
- Low
- Moderate
- Very High

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**

MILLENNIUM
EMS Solutions Ltd.

TITLE

DETECTION FREQUENCIES OF WHITE-TAILED DEER IN THE WILDLIFE LOCAL STUDY AREA – 2015-2016

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: SL

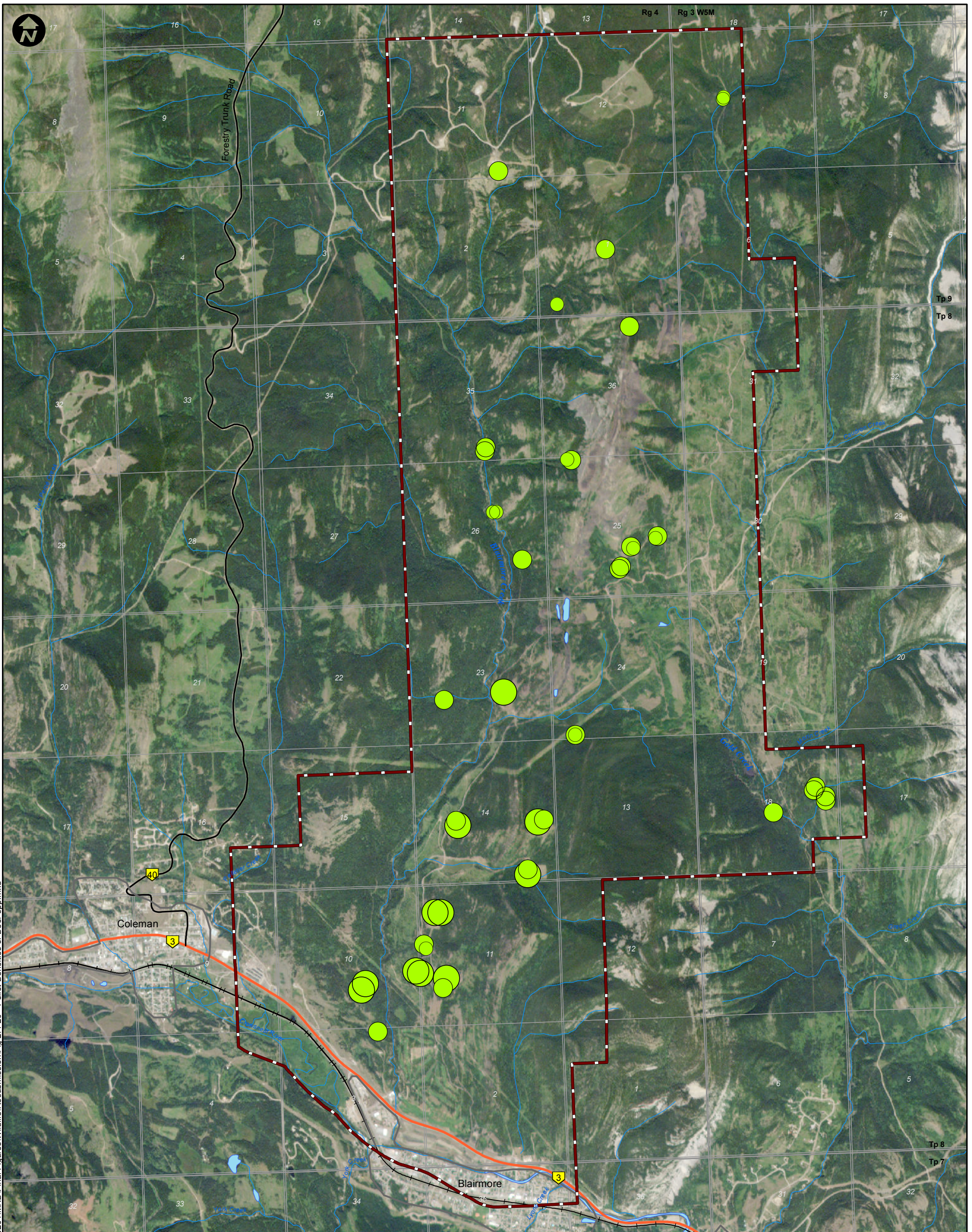
CHECKED BY: RM

DATE: JUNE 23, 2016

FIGURE

2.4-28





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-29 - Pellet Densities of Deer spp.mxd

LEGEND

- Pellet Groups/Hectare**
- 0 - 50
 - 51 - 200
 - >200
- Primary Highway
 - Secondary Highway
 - Existing Railway
 - Surface Water Drainage
 - Waterbody
 - Wildlife Local Study Area

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**PELLET DENSITIES OF DEER SPP. FROM THE PELLET/
SCAT SURVEY IN THE WILDLIFE LOCAL STUDY AREA**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

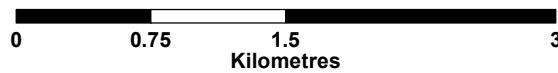
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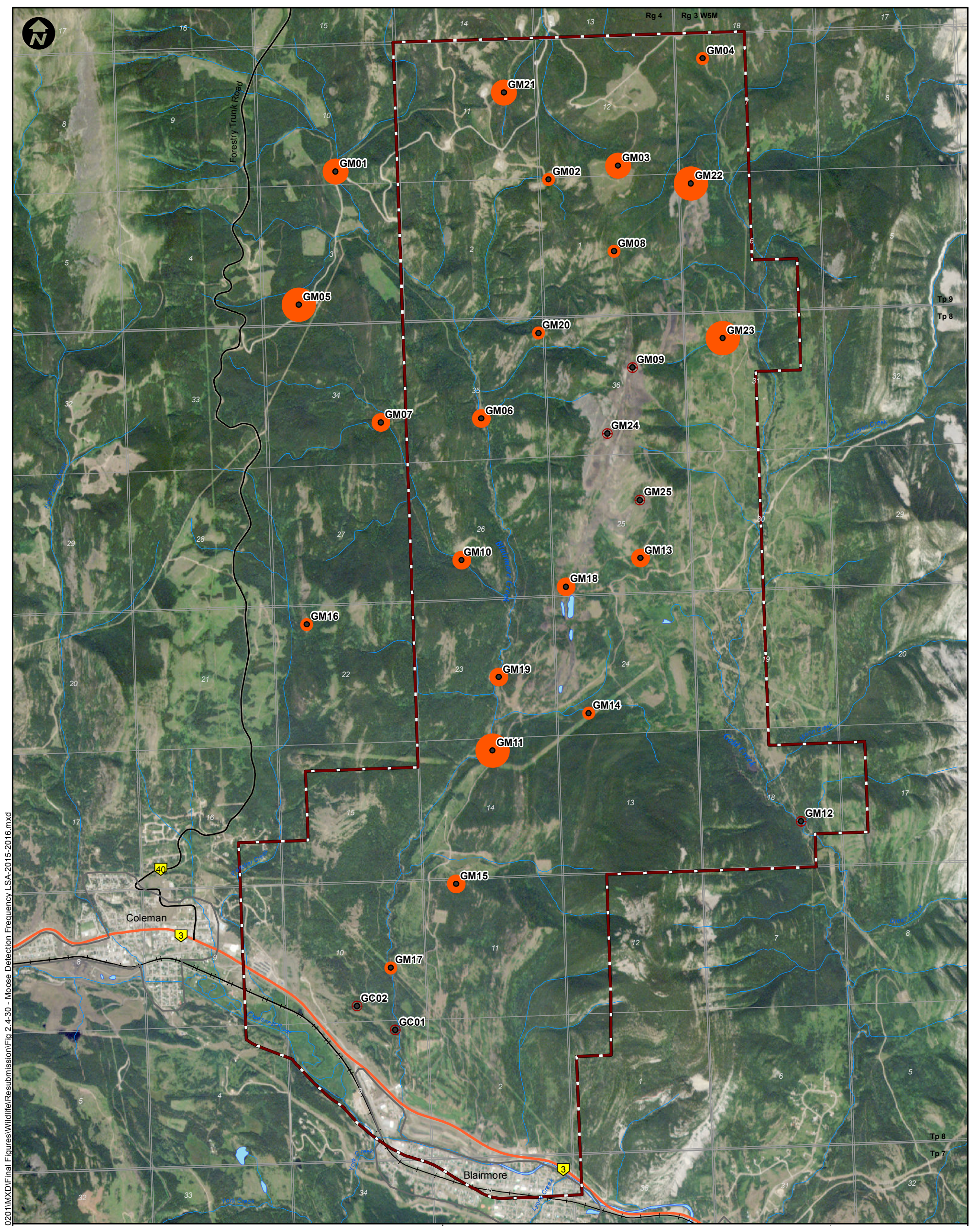
CHECKED BY: RM

DATE: JUNE 23, 2016

FIGURE

2.4-29





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-30 - Moose Detection Frequency LSA-2015-2016.mxd

LEGEND

- Wildlife Camera Location
 - Primary Highway
 - Secondary Highway
 - Existing Railway
 - Surface Water Drainage
 - Waterbody
 - ▭ Wildlife Local Study Area
- Detection Frequency (No. Per 100 Camera Days)**
- ⊕ None
 - Low
 - Moderate
 - High
 - Very High

PROJECT

RIVERSDALE GRASSY MOUNTAIN
RESOURCES COAL PROJECT

MILLENNIUM
EMS Solutions Ltd.

TITLE
DETECTION FREQUENCIES OF MOOSE IN THE WILDLIFE LOCAL STUDY AREA – 2015-2016

NOTES
AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01
DRAWN BY: SL
CHECKED BY: RM
DATE: JUNE 23, 2016

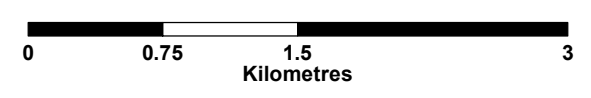
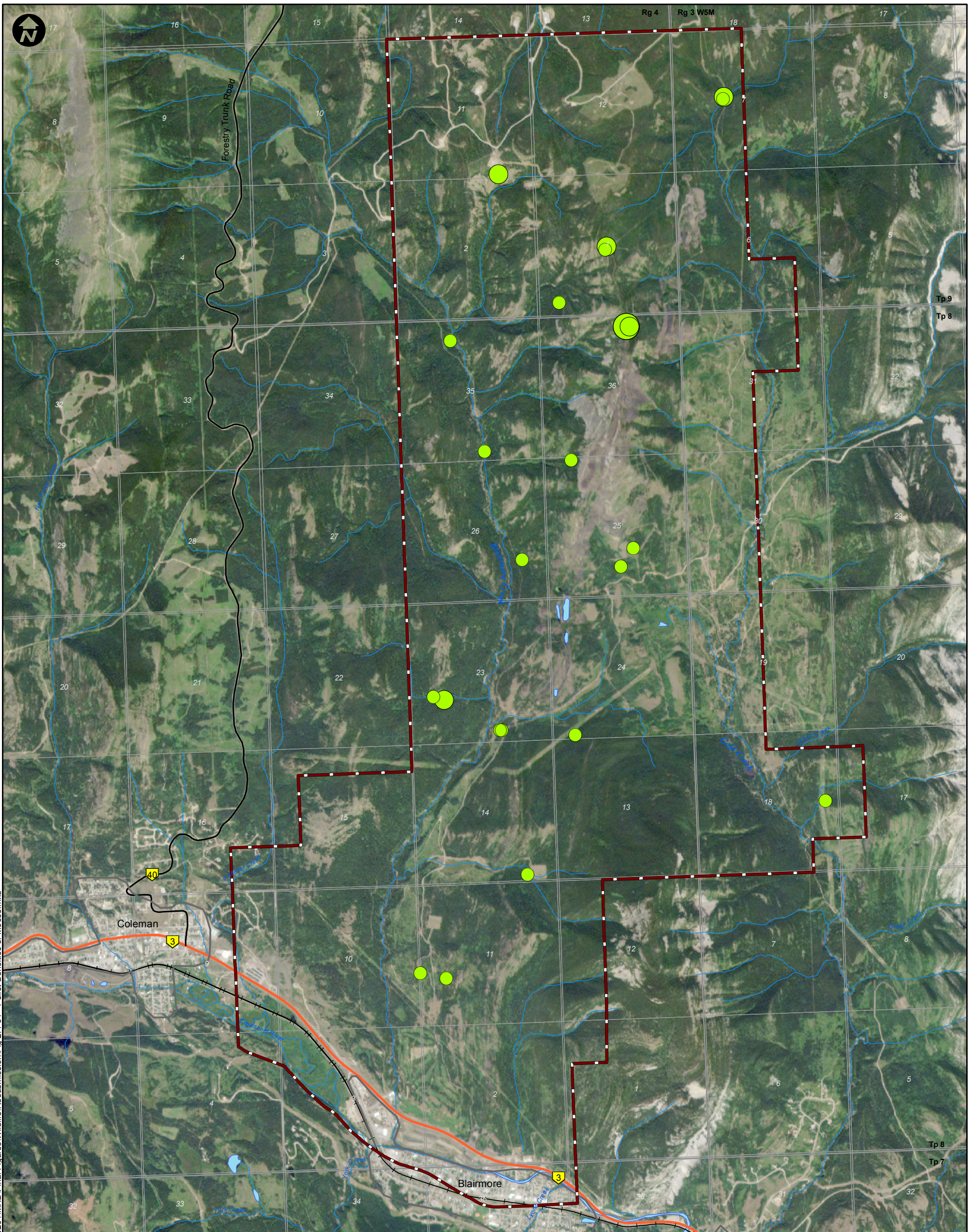


FIGURE
2.4-30



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-31 - Pellet Densities of Moose.mxd

LEGEND

- Pellet Groups/Hectare**
- 0 - 50
 - 51 - 200
 - >200
- Primary Highway
 - Secondary Highway
 - Existing Railway
 - Surface Water Drainage
 - Waterbody
 - Wildlife Local Study Area

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**PELLET DENSITIES OF MOOSE FROM THE PELLET/SCAT
SURVEY IN THE WILDLIFE LOCAL STUDY AREA**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

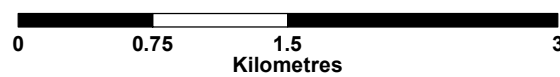
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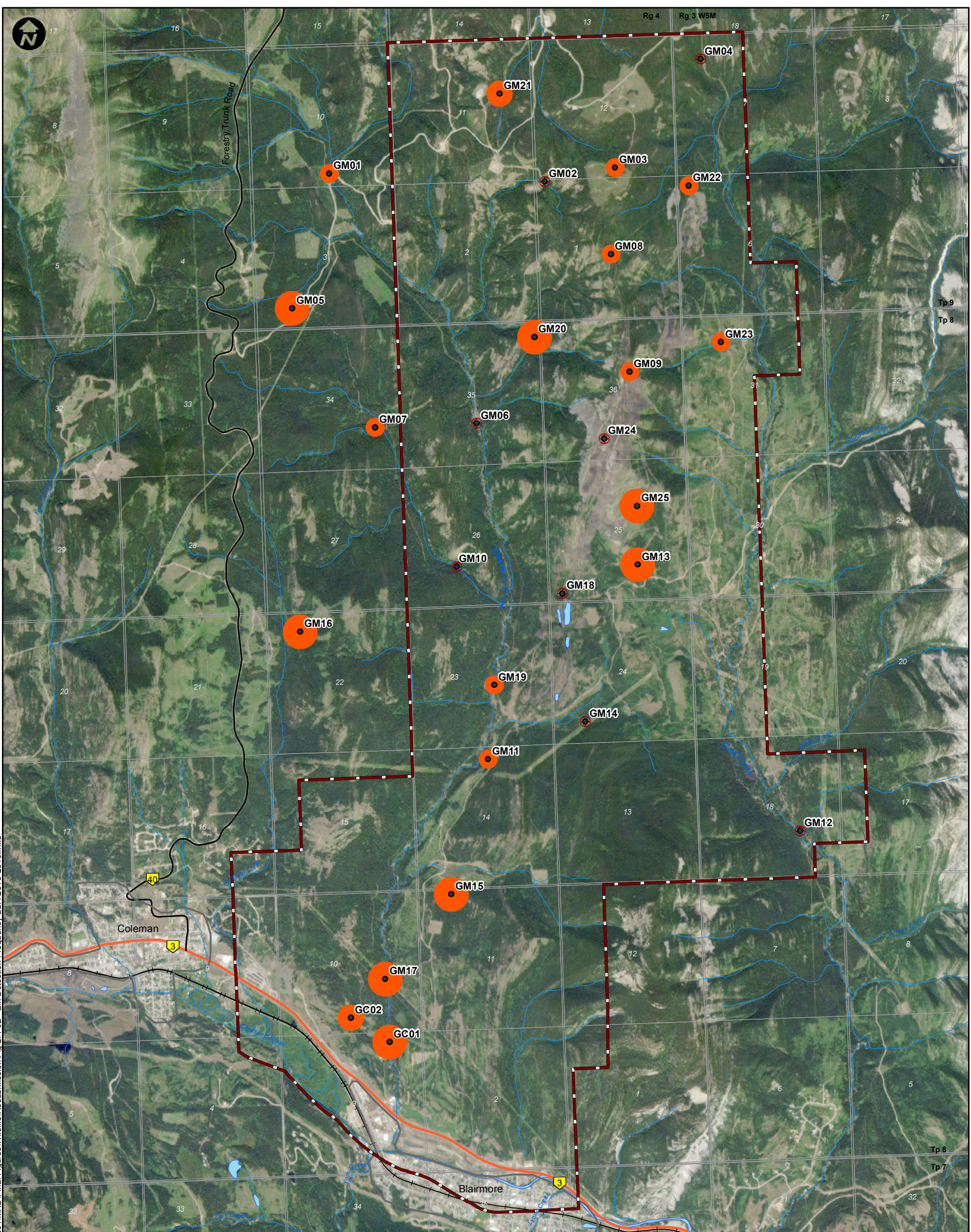
DATE: JUNE 23, 2016

FIGURE

2.4-31



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-32 - Elk Detection Frequency_LSA-2015-2016.mxd



LEGEND

- Wildlife Camera Location
- Detection Frequency (No. Per 100 Camera Days)
 - ⊕ None
 - Moderate
 - High
 - Very High
- Primary Highway
- Secondary Highway
- Existing Railway
- Surface Water Drainage
- Waterbody
- ▭ Wildlife Local Study Area

PROJECT

RIVERSDALE GRASSY MOUNTAIN
 RESOURCES COAL PROJECT

MILLENNIUM
 EMS Solutions Ltd.

TITLE

DETECTION FREQUENCIES OF ELK IN THE WILDLIFE LOCAL STUDY AREA – 2015-2016

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
 (Image Date: Jul 26/13); Riversdale, 2016
 Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: SL

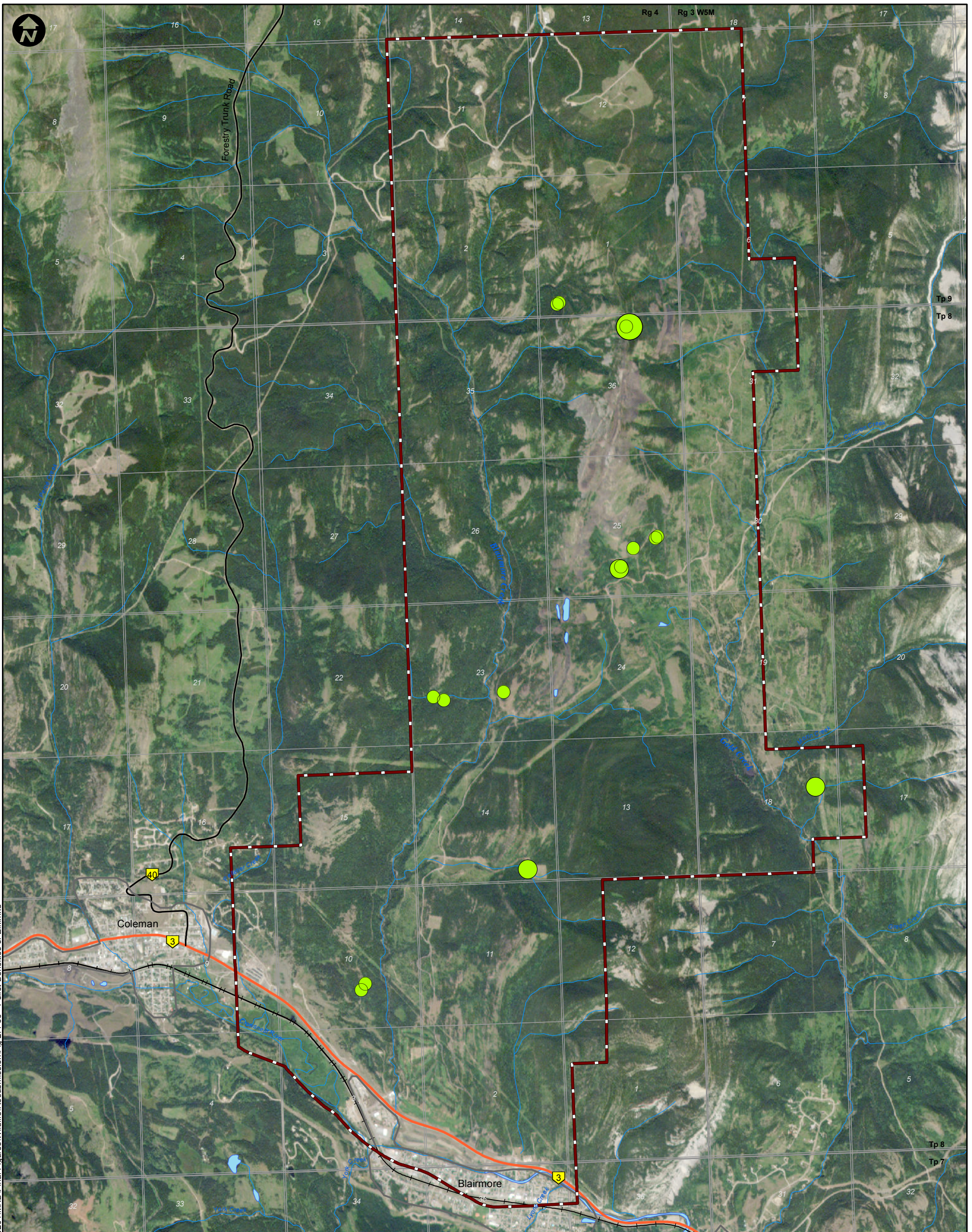
CHECKED BY: RM

DATE: JUNE 23, 2016

FIGURE

2.4-32





Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-33 - Pellet Densities of Elk.mxd

LEGEND

- Pellet Groups/Hectare**
- 0 - 50
 - 51 - 200
 - >200
- Primary Highway
 - Secondary Highway
 - Existing Railway
 - Surface Water Drainage
 - Waterbody
 - Wildlife Local Study Area

PROJECT



RIVERSDALE
RESOURCES

**GRASSY MOUNTAIN
COAL PROJECT**



TITLE

**PELLET DENSITIES OF ELK FROM THE PELLET/SCAT
SURVEY IN THE WILDLIFE LOCAL STUDY AREA**

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

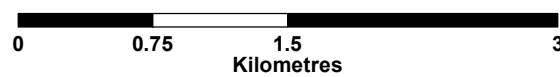
DRAWN BY: SL

CHECKED BY: RM

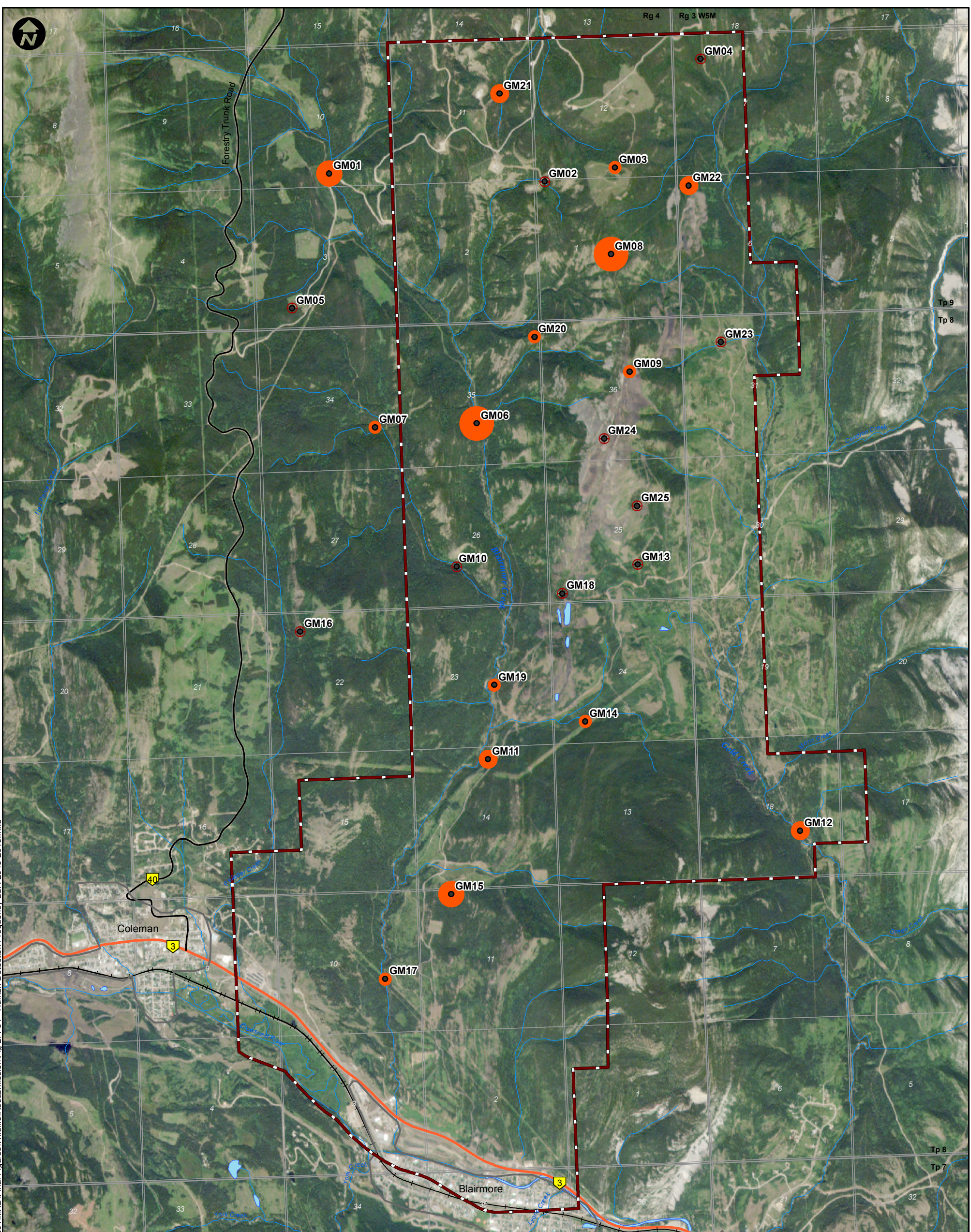
DATE: JUNE 23, 2016

FIGURE

2.4-33



Document Path: K:\Active Projects 2014\AP_14-00201 to 14-00250\14-00201\MXD\Final\Figures\Wildlife\Resubmission\Fig 2.4-34 - Human Detection Frequency LSA-2013-2015.mxd



LEGEND

- Wildlife Camera Location
 - Primary Highway
 - Secondary Highway
 - Existing Railway
 - Surface Water Drainage
 - Waterbody
 - ▭ Wildlife Local Study Area
- Detection Frequency (No. Per 100 Camera Days)**
- ⊕ 0
 - Low
 - Moderate
 - High
 - Very High

PROJECT

RIVERSDALE RESOURCES **GRASSY MOUNTAIN COAL PROJECT**

MILLENNIUM
EMS Solutions Ltd.

TITLE

DETECTION FREQUENCIES OF HUMANS IN THE WILDLIFE LOCAL STUDY AREA – 2013-2015

NOTES

AltaLIS, 2016; Geobase, 2015; MEMS, 2016; RapidEye, 2015
(Image Date: Jul 26/13); Riversdale, 2016
Datum/Projection: UTM NAD 83 Zone 11

PROJECT: 14-00201-01

DRAWN BY: SL

CHECKED BY: RM

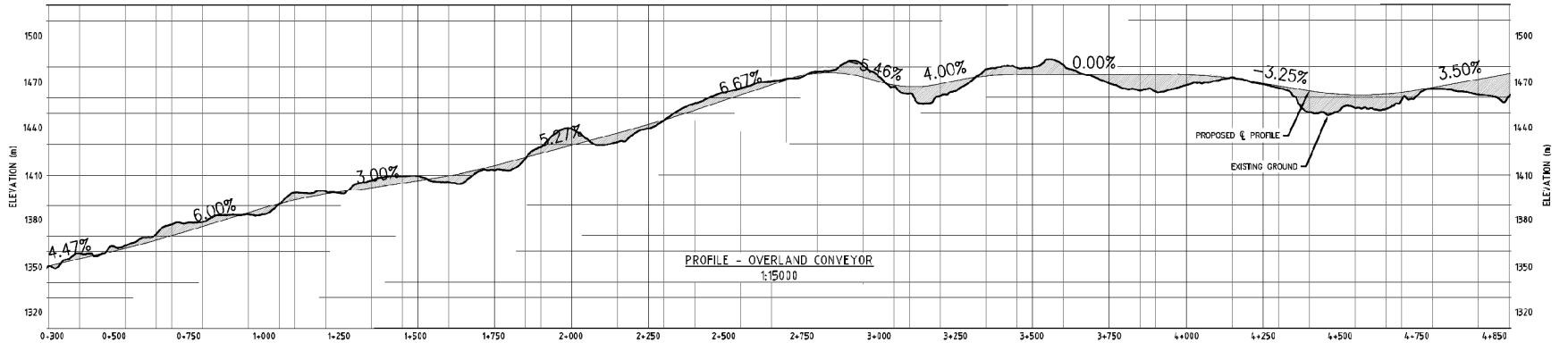
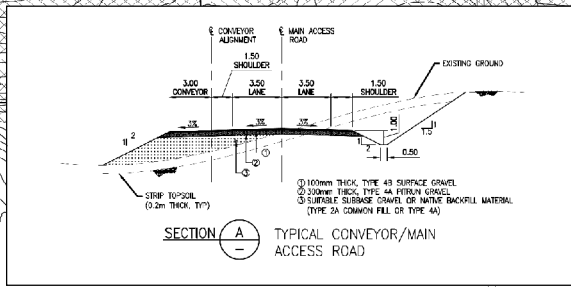
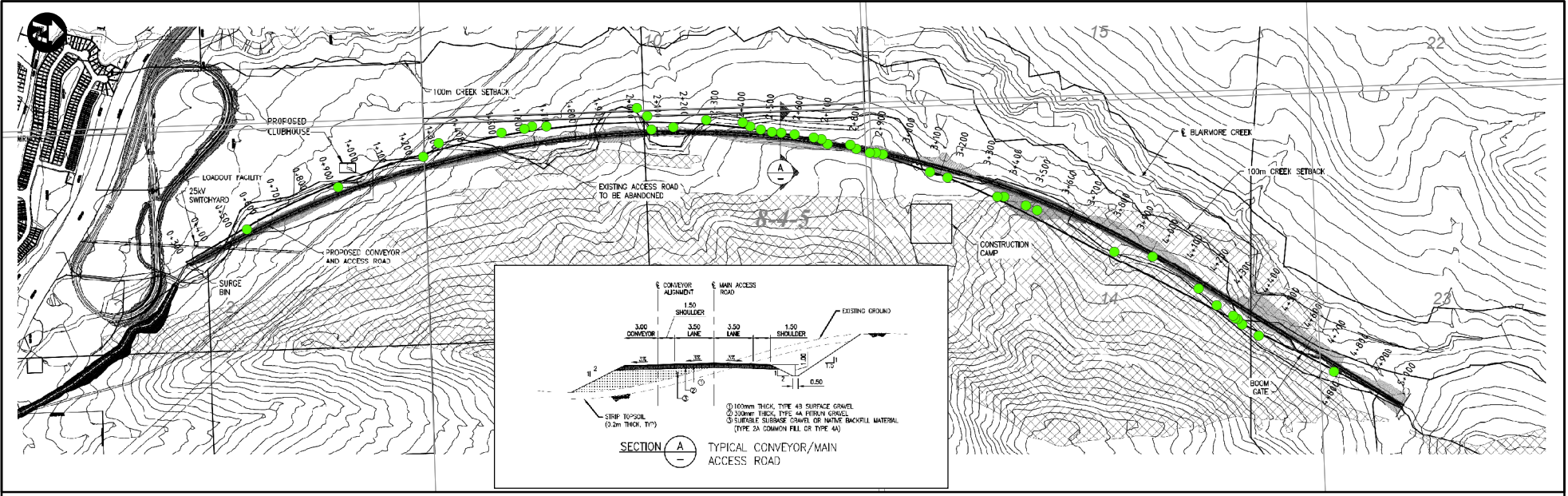
DATE: JUNE 22, 2016

FIGURE

2.4-34



Document Path: K:\Active Projects\2014\AP_14-00201 to 14-00250\14-00201\MXD\Final Figures\Wildlife\Resubmission\Fig 2.4-35 - Location of Ungulate Sign Along Conveyor Route.mxd



LEGEND

- Location of Ungulate Trail or Track

PROJECT
GRASSY MOUNTAIN COAL PROJECT

TITLE
LOCATIONS OF UNGULATE SIGN ALONG THE PROPOSED COAL CONVEYOR ROUTE

NOTES
 AltaLIS, 2016; MEMS, 2016
 Datum/Projection: UTM NAD 83 Zone 11

SCALE
 0 200 400 800 1,200 Metres

PROJECT: 14-00201
 DRAWN BY: JK/SL
 CHECKED BY: RM
 DATE: JUNE 22, 2016

FIGURE
2.4-35