

CARIBOU PROTECTION PLAN FOR THE GRAND RAPIDS PIPELINE GP LTD. GRAND RAPIDS PIPELINE PROJECT

**October 2015
8395**

Prepared for:

Prepared by:



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1.0 INTRODUCTION

Grand Rapids Pipeline GP Ltd. (Grand Rapids), in its capacity as general partner on behalf of Grand Rapids Pipeline Limited Partnership, applied to the Alberta Energy Regulator (AER) pursuant to Part 4 of the *Pipeline Act* to construct and operate pipelines and associated installations, collectively named the Grand Rapids Pipeline Project (the Project). The AER issued Decision 2014 ABAER 012 on October 9, 2014 granting approval for select Project applications, subject to the conditions outlined in Appendix 1 of the Decision. Construction of the Project commenced in October 2014, is scheduled to be completed by spring 2018, and will involve construction of the following components:

- one approximately 460.5 km pipeline, with an O.D. of 508 mm (NPS 20 inch), from the Grand Rapids MacKay Terminal to terminals in the Edmonton area (the 508 mm pipeline) to:
 - initially transport approximately 90,000 barrels per day (bbl/d) of blended crude bitumen from the Grand Rapids MacKay Terminal at SE 34-89-14 W4M, approximately 30 km northwest of Fort McMurray, to the Edmonton area at 8-5-53-23 W4M; and
 - subsequently, transport approximately 330,000 bbl/d of diluent from the Edmonton and Alberta Heartland areas to delivery points in the west Athabasca oil sands area;
- one approximately 460.5 km pipeline, with an O.D. of 914 mm (NPS 36 inch), from the Grand Rapids MacKay Terminal to terminals in the Edmonton area to transport approximately 900,000 bbl/d of blended crude bitumen from the west Athabasca oil sands area to the Edmonton and Heartland areas (the 914 mm pipeline);
- one 4.1 km, 610 mm O.D. pipeline to transport approximately 400,000 bbl/d of blended crude bitumen from the Grand Rapids MacKay Receipt Station to the Grand Rapids MacKay Terminal (the 610 mm lateral pipeline);
- one 4.1 km, 406 mm O.D. pipeline to transport approximately 200,000 bbl/d of diluent from the Grand Rapids MacKay Terminal to the Grand Rapids MacKay Receipt Station (the 406 mm lateral pipeline); and
- seven associated pipeline installations, which include two tank farms and five pump stations located at the following five pipeline installation sites:
 - Grand Rapids MacKay Terminal, located at NW 34-89-14 W4M, which includes a tank farm and pump station;
 - Grand Rapids Thornbury Terminal, located at NE 29-79-14 W4M, which includes a pump station;
 - Grand Rapids Wandering River Pump Station, located at NW 19-73-16 W4M;
 - Grand Rapids Grassland Pump Station, located at NE 15-67-18 W4M; and
 - Grand Rapids Heartland Terminal, located at SE 28-55-21 W4M, which includes a tank farm and pump station.

The pipeline route is located within the West Side of the Athabasca River (WSAR) and East Side of the Athabasca River (ESAR) caribou ranges for approximately 139.9 km. The Grand Rapids MacKay Terminal and Grand Rapids MacKay Receipt Station are located within the WSAR caribou range and the Grand Rapids Thornbury Terminal and Grand Rapids Wandering River Pump Station are located within the ESAR caribou range.

The WSAR and ESAR caribou are federally designated as Threatened on Schedule 1 of the *Species at Risk Act* and by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and are provincially designated as At Risk and Threatened under the *Wildlife Act* (Alberta Environment and

Sustainable Resource Development [AESRD] 2015, COSEWIC 2015, Environment Canada 2015). The ESAR is further divided into caribou herds, and the pipeline route crosses the Agnes, Algar, Egg-Pony, Wiau and Wandering caribou herds. Figures of the Project are provided in Appendix A, details related to the pipeline are provided in Table 1 and details related to the facilities are provided in Table 2.

TABLE 1
CARIBOU RANGES CROSSED BY THE PIPELINE PROJECT

| Caribou Range | Caribou Herd | Legal Location (W4M) | KP | Length in Caribou Range (km) | Length Paralleling Existing Disturbance (km) | Length of New Cut (km) |
|---------------|--------------|---------------------------|--|------------------------------|--|------------------------|
| WSAR | WSAR | 9-11-90-14 to 7-34-89-14 | 0.0 to 4.1 (610 mm and 406 mm lateral pipelines) | 4.1 | 4.1 | 0 |
| | | 7-34-89-14 to 14-35-88-15 | 0.0 to 12.5 | 12.5 | 12.5 | 0 |
| | | 13-1-88-16 to 10-19-86-18 | 24.3 to 54.9 | 30.6 | 30.6 | 0 |
| | | 3-6-86-18 to 1-10-84-18 | 61.4 to 82.0 | 20.5 | 17.7 | 2.8 |
| | | 2-2-84-18 to 9-28-82-17 | 84.4 to 99.4 | 15.0 | 15.0 | 0 |
| ESAR | Agnes | 11-14-82-17 to 8-30-81-16 | 104.1 to 113.2 | 9.1 | 9 | 0.1 |
| | Algar | 1-28-81-16 to 14-7-80-14 | 116.4 to 137.3 | 20.9 | 20.8 | 0.1 |
| | Egg-Pony | 6-5-80-14 to 13-11-78-15 | 140.4 to 159.0 | 18.6 | 16.5 | 2.1 |
| | Wiau | 5-20-76-15 to 13-17-76-15 | 178.5 to 179.1 | 0.6 | 0.6 | 0 |
| | Wandering | 4-30-73-16 to 6-19-72-16 | 210.4 to 222.8 | 12.4 | 11.7 | 0.7 |

Note: Lengths and KPs are approximate.

TABLE 2
FACILITIES WITHIN CARIBOU RANGES

| Facility | Caribou Range | Legal Location (W4M) | Facility Area (ha) | Access Road Requirements (m) |
|------------------------------|-----------------|----------------------|--------------------|------------------------------|
| MacKay Receipt Station | WSAR | NE 11-90-14 | 1.8 | 373 m |
| MacKay Terminal | | NW 34-89-14 | 37.0 | 4,555 m |
| | | NE 25-85-19 | 37.0 | 220 m |
| Thornbury Terminal | ESAR, Egg Pony | NE 29-79-14 | 15.7 | n/a (existing) |
| Wandering River Pump Station | ESAR, Wandering | NW 19-73-16 | 11.3 | 279 m |

Note: Areas are approximate.

TERA, a CH2M HILL Company (TERA) has prepared the following Caribou Protection Plan (CPP) in accordance with the *CPP Submission Requirements for Winter 2012/13* and the *CPP Guidelines and Caribou Calving Information* (Alberta Environment and Sustainable Resource Development [AESRD] 2012, 2013). The CPP provides a summary of the work to be completed, the proposed schedule of work, a map of the proposed Project and mitigation strategies that will be implemented to reduce potential Project effects on caribou and caribou habitat. The caribou protection measures are consistent with those recommended in the Alberta Woodland Caribou Recovery Plan, 2004/05 to 2013/14 (Alberta Woodland Caribou Recovery Team 2005) and considers the measures for caribou habitat in the *Integrated Standards and Guidelines – Enhanced Approval Process* (Government of Alberta 2013). Grand Rapids also recognizes the importance of caribou conservation as outlined in *A Woodland Caribou Policy for Alberta* (Government of Alberta 2011).

Construction activities conducted within designated caribou ranges during the 2014/2015 construction season were conducted in adherence with the Caribou Mitigation Plan submitted, and subsequently approved by the AER (AERCPP-Grand Rapids-2014-2015-89). This CPP outlines the Project activities, and associated mitigation measures, to be implemented during the 2015/2016 construction season.

2.0 SCHEDULE

2.1 Project Schedule

Clearing and construction of the pipeline commenced in October 2014 as soon as ground conditions permitted, with a target completion date in spring 2018. The pipeline will be constructed in eight spreads, generally to be completed in a north to south direction. Clean-up and post-construction reclamation of disturbed portions of the right-of-way will be conducted immediately following construction or as soon as weather, ground and seasonal conditions allow.

2.1.1 Pipeline Activity in Caribou Range

Table 3 provides the current clearing and construction schedule for the pipelines. The spreads located in caribou range are the lateral pipelines and Spreads 1, 2, 3 and 4.

TABLE 3

PIPELINE CLEARING AND CONSTRUCTION SCHEDULE IN CARIBOU RANGES

| Caribou Range | Caribou Herd | Legal Location (W4M) | KP | Pipeline Construction Spread | Clearing Timing | Construction Timing |
|---------------|--------------|---------------------------|-------------------------------------|------------------------------|--|---|
| WSAR | WSAR | 9-11-90-14 to 7-34-89-14 | 610 mm and 406 mm lateral pipelines | Lateral Pipelines | Complete | November 2015 to March 2016 |
| | | 7-34-89-14 to 14-35-88-15 | 0.0 to 12.5 | Spread 1 | Complete | 20 inch: November 2015 to March 2016 36 inch: November 2016 to April 2017 |
| | | 13-1-88-16 to 1-13-87-18 | 24.3 to 45.0 | Spread 1 | Initiated February to March 2015 Will be completed January to February 2016 | 20 inch: November 2015 to March 2016 36 inch: November 2016 to April 2017 |
| | | 1-13-87-18 to 10-19-86-18 | 45.0 to 54.9 | Spread 1 | January 2016 to February 2016 | 20 inch: November 2015 to March 2016 36 inch: November 2016 to April 2017 |
| | | 3-6-86-18 to 13-19-85-18 | 61.5 to 65.9 | Spread 1 | January 2016 to February 2016 | 20 inch: November 2015 to March 2016 36 inch: November 2016 to April 2017 |
| | | 13-19-85-18 to 1-10-84-18 | 65.9 to 82.0 | Spread 2 | Complete | 20 inch Complete 20 inch clean-up: November 2015 to January 2016 36 inch: November 2016 to April 2017 |
| | | 2-2-84-18 to 9-28-82-17 | 84.4 to 99.4 | Spread 2 | Complete | 20 inch Complete 20 inch clean-up: November 2015 to January 2016 36 inch: November 2016 to April 2017 |
| ESAR | Agnes | 11-14-82-17 to 8-30-81-16 | 104.1 to 113.2 | Spread 2 | Complete | 20 inch Complete 20 inch clean-up: November 2015 to January 2016 36 inch: November 2016 to April 2017 |
| | Algar | 1-28-81-16 to 3-26-80-15 | 116.4 to 132.4 | Spread 2 | Complete | 20 inch Complete 20 inch clean-up: November 2015 to January 2016 36 inch: November 2016 to April 2017 |
| | Algar | 3-26-80-15 to 14-7-80-14 | 132.4 to 137.3 | Spread 3 | Complete | 20 inch: November 2015 to March 2016 36 inch: November 2017 to April 2018 |
| | Egg-Pony | 6-5-80-14 to 13-11-78-15 | 140.4 to 159.0 | Spread 3 | Complete | 20 inch: November 2015 to March 2016 36 inch: November 2017 to March 2018 |
| | Wiau | 5-20-76-15 to 13-17-76-15 | 178.5 to 179.1 | Spread 3 | Complete | 20 inch: November 2015 to March 2016 36 inch: November 2017 to March 2018 |
| | Wandering | 3-30-73-16 to 6-19-72-16 | 210.4 to 222.8 | Spread 4 | Complete | 20 inch: November 2014 to March 2015 36 inch: November 2015 to April 2016 |

2.1.2 Facility Activity in Caribou Range

The facilities schedule is listed below.

Mackay Receipt Station (West Side of the Athabasca River Caribou Range)

- Site work: October 15, 2015 to December 1, 2015.
- Mechanical, pipe and electrical work: December 1, 2015 to November 2016.
- Commissioning: November 2016 to January 2017.

Mackay Terminal (West Side of the Athabasca River Caribou Range)

- Site work: November 2014 to September 2015 (Completed).
- Mechanical, pumps, pipe and electrical work: October 15, 2015 to July 2016.
- Commissioning: October 2016 to January 2017.

Thornbury Terminal (Egg-Pony Herd)

- Site work: October 15, 2015 to December 2015.
- Mechanical, pumps, pipe and electrical work: January 2016 to July 2016.
- Commissioning: October 2016 to February 2017.

Wandering River Pump Station (Wandering Herd)

- Valve site work is proposed from November 2015 to December 2015. A schedule for the remaining work at the Wandering River Pump Station will be provided prior to construction.

2.2 Timing Considerations

Grand Rapids understands the importance of Project scheduling in caribou range and has considered the following.

- AESRD (currently Alberta Environment and Parks [AEP]) recommends a timing restriction of February 15 to July 15 within caribou range to reduce impacts to pregnant cows and their calves (Government of Alberta 2013). Exceptions to this timing restriction include: site preparation/construction that was initiated prior to February 15; activities using Class V roads; and activities within 100 m of an all-weather road, providing ground conditions are favourable. Work can continue until adverse ground conditions are encountered (Government of Alberta 2013).
- In general, an early in/early out approach will be employed to reduce disturbance of caribou by initiating activities as early as possible in the winter and working expeditiously to limit late winter activities.
- The AER will be consulted in regards to any project activities within caribou range during the period of February 15 to July 15.
- Ongoing consultation will be maintained with AER related to Project scheduling.

3.0 CARIBOU PROTECTION MEASURES

Grand Rapids has incorporated caribou protection measures into Project planning to reduce impacts to caribou and caribou habitat. In order to reduce the overall footprint of the proposed Project, Grand Rapids plans to utilize existing rights-of-way and third-party disturbances, where feasible, as temporary workspace. The caribou protection measures outlined in Table 4 will be implemented, where feasible and upon further discussion with the AER, during construction and operation of the Project. The mitigation measures are consistent with best practices recommended in the following documents.

- *Alberta Woodland Caribou Recovery Plan, 2004/05 to 2013/14* (Alberta Woodland Caribou Recovery Team 2005).
- *A Woodland Caribou Policy for Alberta* (Government of Alberta 2011).
- Caribou Protection Plan Guidelines and Caribou Calving (AESRD 2012).
- *Integrated Standards and Guidelines Enhanced Approval Process* (Government of Alberta 2013).
- Recovery Strategy for the Woodland Caribou (*Rangifer tarandus caribou*), Boreal Population, in Canada (Environment Canada 2012).

TABLE 4

CARIBOU PROTECTION MEASURES

| Activity/Concern | Mitigation Measures |
|----------------------------------|--|
| <i>Education and Awareness</i> | <ol style="list-style-type: none"> 1. Controlled copies of this CPP and associated documents will be made available to all key Project construction and Contractor staff during construction. 2. All personnel working on-site will be made aware of Grand Rapids' commitment to caribou conservation and the requirements outlined in this CPP. Education and awareness will be conducted at various on-site meetings (<i>i.e.</i>, kick-off meeting, Project orientation and daily tailgate meetings, where appropriate). 3. Site-specific construction measures will be emphasized at on-site meetings and provided on the Project Environmental Alignment Sheets. 4. Signage and bulletins will be posted at the Project trailers, alerting workers to the sensitivities associated with entering and working in caribou range. 5. An Environmental Inspector will ensure that the caribou protection measures are implemented during Project clearing, construction and clean-up activities. |
| <i>Consultation with the AER</i> | <ol style="list-style-type: none"> 6. Grand Rapid representatives will maintain an open line of communication with the appropriate regulators prior to and for the duration of the Project (Appendix B). 7. If requested, Grand Rapids will submit an as-built map at the end of the construction season describing the work that has been completed on the Project. |

TABLE 4 Cont'd

| Activity/Concern | Mitigation Measures |
|--|---|
| <i>Caribou Timing Windows and Scheduling</i> | <p>8. AEP recommends a timing restriction of February 15 to July 15 within caribou range to reduce impacts to pregnant cows and their calves. Exceptions include site preparation/construction that is initiated prior to February 15, pipeline installations using Class V roads and activities within 100 m of an all-weather road. Work can continue until adverse ground conditions are encountered (Government of Alberta 2013). In general, employ an early in/early out approach to reduce disturbance of caribou by initiating activities as early as possible in the winter and working expeditiously to limit late winter activities.</p> <p>9. Consult with AER in regards to activity that may occur in caribou range during the period of February 15 to July 15.</p> <p>10. Contact AER if there are circumstances that lead to delays with the construction schedule.</p> |
| <i>Reduce Habitat Loss/Area of Project Footprint</i> | <p>11. Confine Project activities to the approved and surveyed right-of-way.</p> <p>12. Vegetation clearing will be limited to what is required within the right-of-way and temporary workspace.</p> <p>13. Clearly mark locations where clearing is to be narrowed or avoided to retain vegetation (e.g., for access control, line-of-sight block and material for felling/bending over the right-of-way to facilitate restoration after construction).</p> |
| <i>Project-Related Traffic Management</i> | <p>14. Share existing access with other industrial users, wherever feasible.</p> <p>15. Multi-passenger vehicles will be used to transport crews, where feasible.</p> <p>16. Speed limits will be established and enforced on all access used for the Project.</p> <p>17. If caribou are encountered, stop vehicles/equipment and allow the caribou to move through the area undisturbed. Advise others working nearby of the presence of caribou in the area.</p> <p>18. Restrict access to the Project area during construction to those specifically given authority (e.g., staff and contractors).</p> <p>19. When plowing snow, create breaks in snow berms by placing berms on alternate sides of any access routes at regular intervals.</p> |
| <i>Habitat Disturbance During Construction</i> | <p>20. Locate log decks in previously disturbed areas, where possible.</p> <p>21. Narrow the footprint to the extent feasible in sensitive areas (e.g., watercourse crossings, wetland and riparian areas) and where trenchless (e.g., bored) crossings are implemented. Consider extending narrowed segments beyond the immediate crossing, where feasible.</p> <p>22. Implement minimal disturbance techniques (e.g., limit grading and grubbing where feasible).</p> <p>23. Reduce disturbance to ground level vegetation and root systems by cutting or mowing shrubs and small diameter trees at ground level along portions of the right-of-way where grading is not required. Rapid regeneration of deciduous trees will be facilitated by keeping the root systems intact.</p> <p>24. When conditions are appropriate, take advantage of temperature and snow to pack down the right-of-way to protect ground level vegetation and surface soils.</p> |

TABLE 4 Cont'd

| Activity/Concern | Mitigation Measures |
|---|---|
| <i>Habitat Disturbance During Construction (cont'd)</i> | <p>25. Fell all timber onto the right-of-way during clearing to minimize damage to vegetation off right-of-way. Remove damaged or leaning trees only if necessary for safety concerns.</p> <p>26. Push slash and non-merchantable timber into piles along the centre line of the right-of-way or to a side of the right-of-way that has been previously cleared in a manner that does not drag soil into the pile. Consider using a brush rake attachment on a dozer to facilitate preservation of any strippings.</p> <p>27. Where segments of the right-of-way require rollback for access management or erosion control, ensure sufficient timber of appropriate size is available.</p> <p>28. Reduce the introduction of non-native species by ensuring all equipment arrives on-site clean of vegetation and debris.</p> |
| <i>Barriers to Caribou Movement During Construction</i> | <p>29. Ensure pipeline construction will not be a barrier to caribou movement. Periodic gaps will be left in association with terrain features (<i>i.e.</i>, slope changes), crossings (<i>i.e.</i>, watercourse, road and right-of-way), and bends. Breaks in set-up and welded pipe shall be coincident with gaps in strippings, spoil, snow and rollback windrows. Locations where gaps are appropriate will be determined in the field by the Environmental Inspector(s).</p> <p>30. The right-of-way, temporary workspace and access will be cleared of snow, only as required for construction. Ensure gaps in snow berms are retained at periodic intervals to allow wildlife movement.</p> <p>31. Minimize the amount of open trench at any time. Trenching will be conducted as close as possible to lowering-in and backfill operations.</p> <p>32. Ensure the open trench does not impede caribou movements. Provide a break in the open trench at regular intervals to allow wildlife to cross the trench.</p> <p>33. Welded pipe should not remain on the ground for extended periods of time if it is higher than 0.75 m above ground.</p> <p>34. Ensure any open excavations such as a sumps used for horizontal directional drill sites are fenced to prevent wildlife from becoming trapped or ingesting material.</p> |
| <i>Caribou Disturbance</i> | <p>35. Recreational use of all-terrain vehicles (ATVs) or snowmobiles by Project personnel on the right-of-way and Project access will be prohibited.</p> <p>36. Project personnel will be prohibited from having pets on the right-of-way.</p> <p>37. Continuously collect and dispose of all construction garbage at an approved facility to avoid attracting animals. Waste containers shall accompany each working unit. No waste material shall be disposed of on the right-of-way, on adjacent lands or in the trench at any time.</p> <p>38. Ensure construction materials such as cables, wires, fencing (etc.) are properly stored to avoid potential contact and harm with wildlife.</p> <p>39. Harassment or feeding of caribou or other wildlife by Project personnel will not be tolerated.</p> <p>40. Recreational hunting/shooting/firearms will not be permitted by Project personnel on the work site.</p> |

TABLE 4 Cont'd

| Activity/Concern | Mitigation Measures |
|---|--|
| <i>Caribou Disturbance (cont'd)</i> | 41. Any incidents with wildlife or collisions with wildlife will be reported to the AEP Fish and Wildlife Division. |
| <i>Revegetation</i> | <p>42. Where feasible, delimb some coniferous trees at the stump and retain limbs on-site to provide a seed source.</p> <p>43. Collect seed from cleared trees and shrubs during clearing, if needed to supplement restoration seed source for nursery stock.</p> <p>44. At identified locations, spread coarse, woody debris over the construction right-of-way to: conserve moisture; moderate soil temperatures; provide nutrients; reduce soil erosion; provide a seed source; provide micro-sites for seed germination and protection for regenerating seedlings; and prevent damage to regenerating vegetation from human use (e.g., off-road access).</p> |
| <i>Retention of Timber/Woody Debris</i> | <p>45. Retain salvaged timber and coarse, woody debris (slash) in locations identified for implementation of access control (rollback), line-of-sight blocks (berms), erosion control and creating microsite conditions that enhance seed germination and seedling survival.</p> <p>46. Salvage remaining merchantable timber in accordance with the applicable permits and approvals. Notify timber haulers and timber mills prior to commencing clearing to inform them of anticipated volumes and proposed schedule. Remove decked wood from the right-of-way as soon as possible to facilitate pipeline construction.</p> |
| <i>Access Management</i> | 47. Access control will be implemented using methods determined in consultation with AER and may include a variety of techniques such as line blocking with available timber/woody debris (rollback or berms), excavator mounding, signage, fencing or gates. |
| <i>Line-of-Sight</i> | <p>48. Retain coarse, woody debris during clearing for use as a line-of-sight measure (i.e., debris berm), in locations where this measure is identified as appropriate. Line-of-sight berms should be constructed to a minimum height of 2 m. Ensure sufficient material is retained to construct a berm to this height across the entire width of the construction right-of-way.</p> <p>49. Extend trenches (e.g., bored/drilled) crossings of third-party dispositions, where feasible and in accordance with crossing agreements, to retain vegetation screens. Avoid or minimize cleared access at trenchless crossings, to the extent feasible.</p> |
| <i>Soil and Slope Stability</i> | 50. Where seeding is warranted during initial or final clean-up to address soil erosion (e.g., slopes, riparian areas and watercourse banks), use an appropriate annual cover crop seed and/or native seed mix. Do not accept seed that contains any restricted or Noxious weeds. |
| <i>Mounding</i> | 51. Where mounding is to be implemented for access control, mounds should be excavated to approximately 0.75 m deep, with the excavated material placed adjacent to the hole. Where mounding is applied for the creation of microsites suitable for tree establishment, mounds should ideally be shallower than those for access control (e.g., approximately 0.3-0.5 m deep). |

TABLE 4 Cont'd

| Activity/Concern | Mitigation Measures |
|---------------------------------|--|
| <i>Clean-Up and Reclamation</i> | <p>52. Initial clean-up activities will commence as soon as possible following backfill operations. Final clean-up will be completed within 1 year of construction.</p> <p>53. Conduct final clean-up and reclamation work with the caribou range outside the timing window of February 15 to July 15.</p> <p>54. Natural recovery is the preferred method of reclamation on level terrain where erosion is not expected.</p> <p>55. Use a combination of natural recovery and reclamation methods that accelerate vegetation regeneration. Accelerated reclamation measures may include: site preparation (e.g., mounding) to enhance microsite conditions that promote seed germination and/or seedling growth; planting conifer seedlings; and willow/shrub staking at riparian areas.</p> <p>56. Use natural recovery in peatland and non-peatland wetlands.</p> <p>57. Install live willow stakes or salvaged willow/shrub plugs in the banks of all watercourses and where shrubs were present prior to construction.</p> <p>58. Avoid seeding of legume-based seed mixes that create competition for naturally regenerating native species.</p> <p>59. Where appropriate and in discussion with AER, use slash rollback. Rollback can conserve soil moisture, moderate soil temperatures and provide nutrients as it prevents soil erosion. Rollback provides a source of seed for natural revegetation and microsites for seed germination, and protection for introduced tree seedlings.</p> <p>60. Replace grade material to pre-construction contours, except if otherwise authorized by the Environmental Inspector(s) or designate.</p> |
| <i>Wildlife Sightings</i> | <p>61. Grand Rapids personnel and Contractors will record all wildlife/caribou sightings on wildlife sighting cards during construction and operation (cards are provided in Appendix C. This information will be provided to AEP.</p> |
| <i>Documentation</i> | <p>62. The Environmental Inspector will document construction methods, rationale, mitigation measures and issues encountered. This information will be communicated to resource specialists to support planning and selection of habitat restoration measures within caribou range.</p> |

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4.2 GIS Data and Mapping References

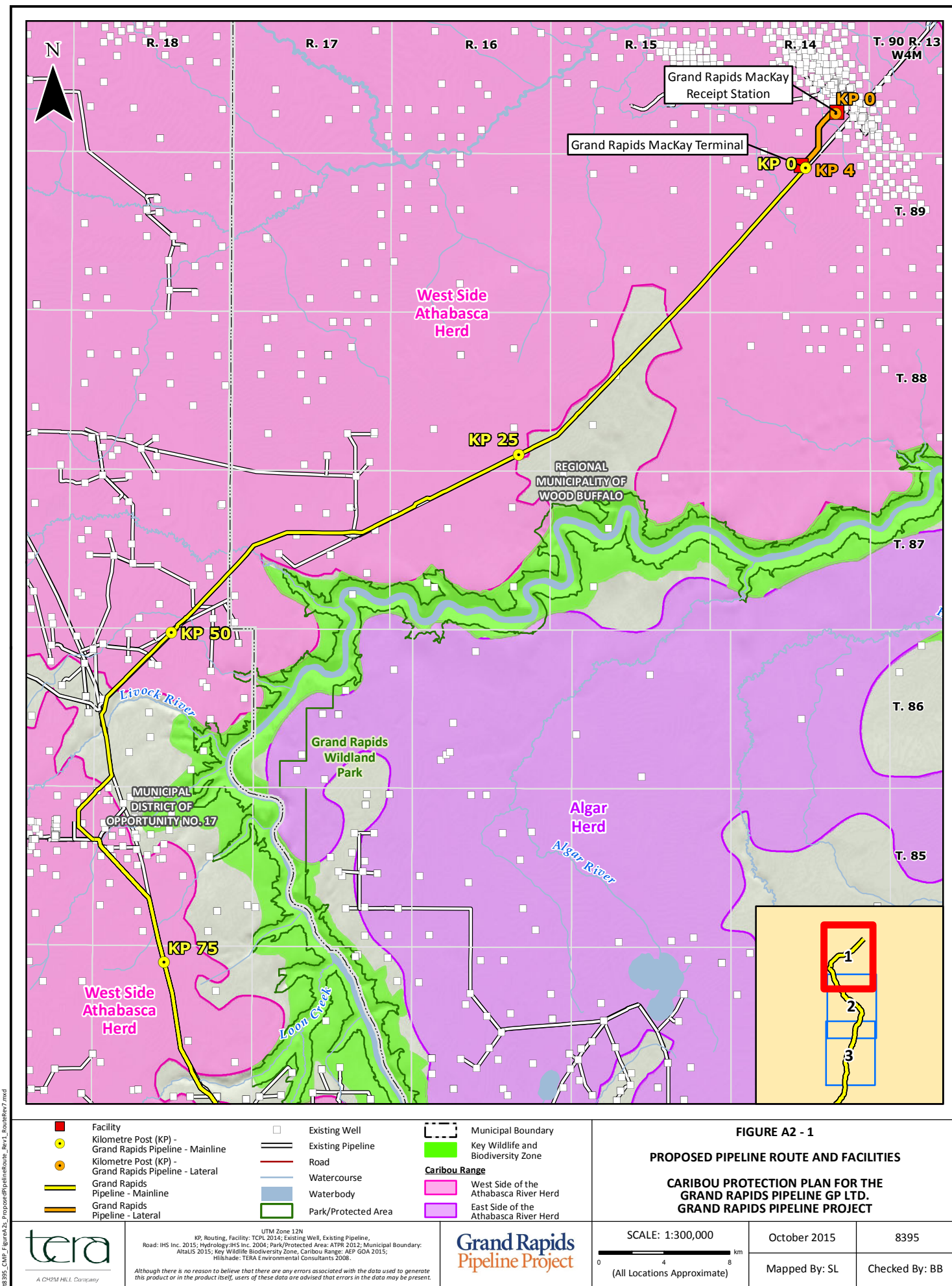
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APPENDIX A

FIGURES



18395_CMP_FigureA2_ProposedPipelineRoute_Rev1_RouteRev7.mxd

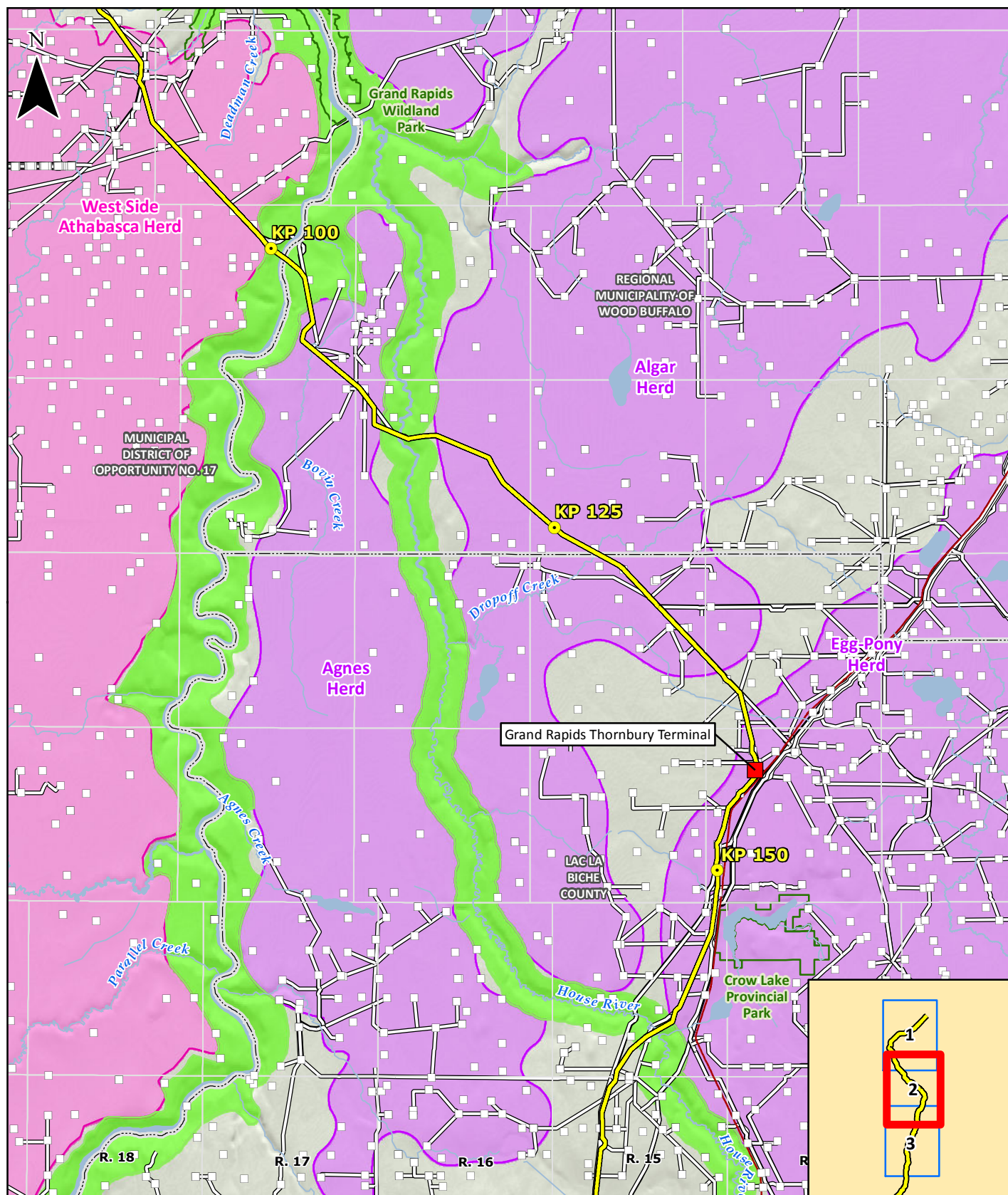


FIGURE A2 - 2

PROPOSED PIPELINE ROUTE AND FACILITIES

CARIBOU PROTECTION PLAN FOR THE
GRAND RAPIDS PIPELINE GP LTD.
GRAND RAPIDS PIPELINE PROJECT

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Facility Kilometre Post (KP) - Grand Rapids Pipeline - Mainline Kilometre Post (KP) - Grand Rapids Pipeline - Lateral Grand Rapids Pipeline - Mainline Grand Rapids Pipeline - Lateral | <ul style="list-style-type: none"> Existing Well Existing Pipeline Road Watercourse Waterbody Park/Protected Area | <ul style="list-style-type: none"> Municipal Boundary Key Wildlife and Biodiversity Zone Caribou Range <ul style="list-style-type: none"> West Side of the Athabasca River Herd East Side of the Athabasca River Herd |
|--|---|---|



UTM Zone 12N
KP, Routing, Facility: TCPL 2014; Existing Well, Existing Pipeline,
Road: IHS Inc. 2015; Hydrology/IHS Inc. 2004; Park/Protected Area: ATR 2012; Municipal Boundary:
AltaLIS 2015; Key Wildlife Biodiversity Zone, Caribou Range: AEP GOA 2015;
Hillshade: TERA Environmental Consultants 2008.

Although there is no reason to believe that there are any errors associated with the data used to generate this product or in the product itself, users of these data are advised that errors in the data may be present.

Grand Rapids
Pipeline Project

SCALE: 1:300,000

0 4 8 km
(All Locations Approximate)

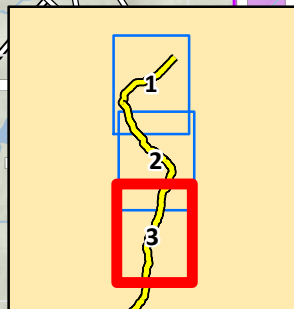
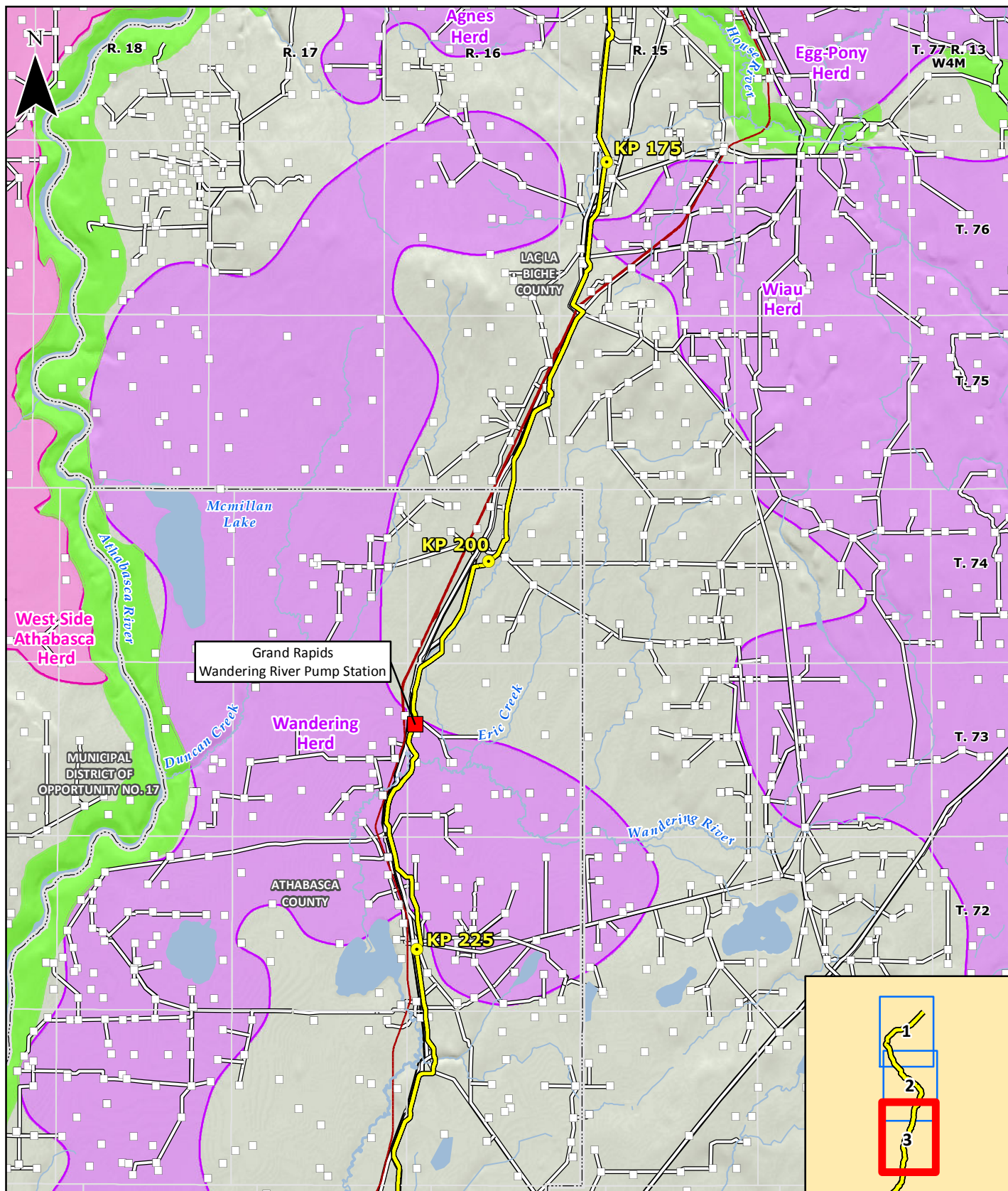
October 2015

Mapped By: SL

8395

Checked By: BB

18395_CMP_FigureA2_ProposedPipelineRoute_Rev1_RouteRev7.mxd



- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Facility Kilometre Post (KP) - Grand Rapids Pipeline - Mainline Kilometre Post (KP) - Grand Rapids Pipeline - Lateral Grand Rapids Pipeline - Mainline Grand Rapids Pipeline - Lateral | <ul style="list-style-type: none"> Existing Well Existing Pipeline Road Watercourse Waterbody Park/Protected Area | <ul style="list-style-type: none"> Municipal Boundary Key Wildlife and Biodiversity Zone Caribou Range <ul style="list-style-type: none"> West Side of the Athabasca River Herd East Side of the Athabasca River Herd |
|--|---|---|

FIGURE A2 - 3
PROPOSED PIPELINE ROUTE AND FACILITIES
CARIBOU PROTECTION PLAN FOR THE
GRAND RAPIDS PIPELINE GP LTD.
GRAND RAPIDS PIPELINE PROJECT

APPENDIX B

CONTACTS

Project Contact

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Contact

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Email: grant.chapman@gov.ab.ca

Wildlife Contact

APPENDIX C

WILDLIFE SIGHTING INFORMATION

Use this card to record caribou observations. If you observe other wildlife sightings that you feel are of interest, please fill in the card.

| | |
|---|--|
| Project: Grand Rapids Pipeline GP Ltd. Grand Rapids Pipeline Project | |
| Date | |
| Name of Observer | |
| Company | |
| Phone Number | |
| Location of Observation - General Description | |
| Location of Observation Legal (Sec. Twp. Rge. Mer.) | |
| Location of Observation (Latitude/Longitude) | |
| Caribou Observation Total Number Observed, Number of Males, Cows, Calves (if possible) | |
| Other Wildlife Species, total Number Observed | |
| Comments | |

Provide this information to Grand Rapids' Environmental Project Supervisor.