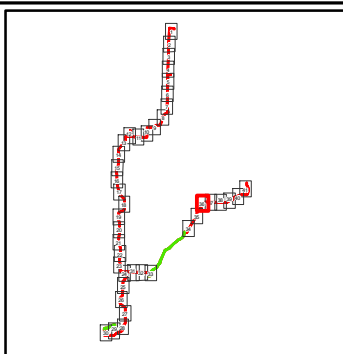
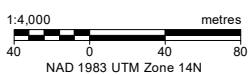




- Local Study Area (LSA)
- Road
- Well (Surface Hole)
- Watercourse
- ROW by Land Use**
- Cultivated
- Wetland Class**
- Class II - Temporary Wetland
- Class III - Seasonal Pond or Lake

Note: The land use is mapped to ROW

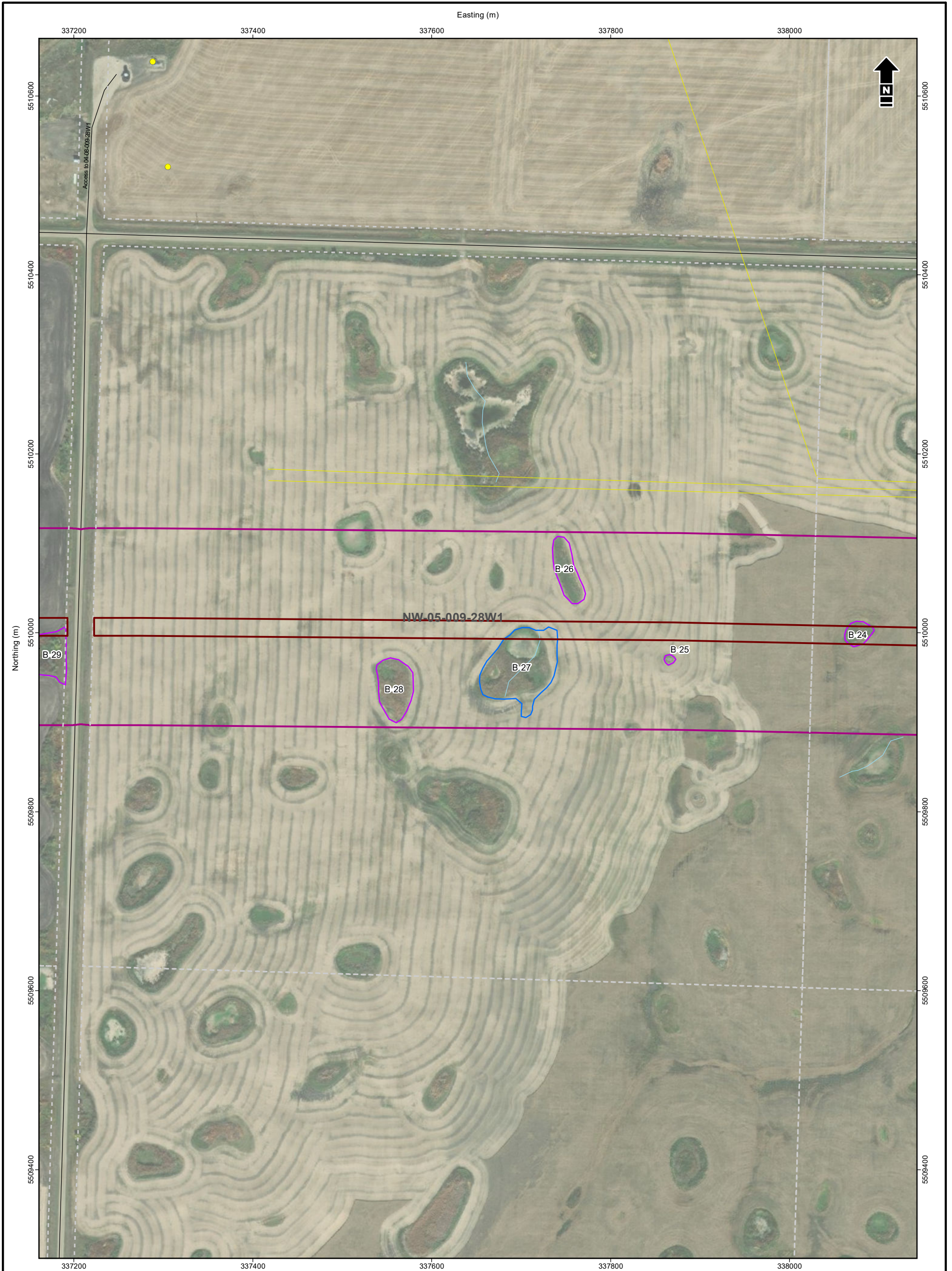


Tundra Oil & Gas Limited
46 km Flowline Gas Gathering System

Detailed Routing

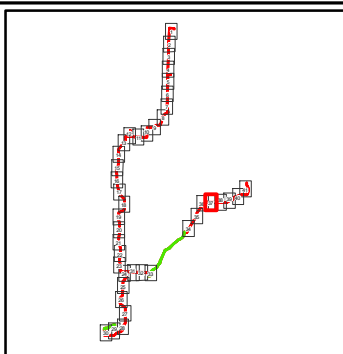
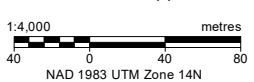
Date: November 2021 Project: 29047 Submitter: D. Chranowski Reviewer: L. May

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- Local Study Area (LSA)
- ROW by Land Use**
- ▬ Cultivated
- Wetland Class**
- Class II - Temporary Wetland
- Class III - Seasonal Pond or Lake
- ~ Watercourse
- Road
- Pipeline
- Well (Surface Hole)

Note: The land use is mapped to ROW

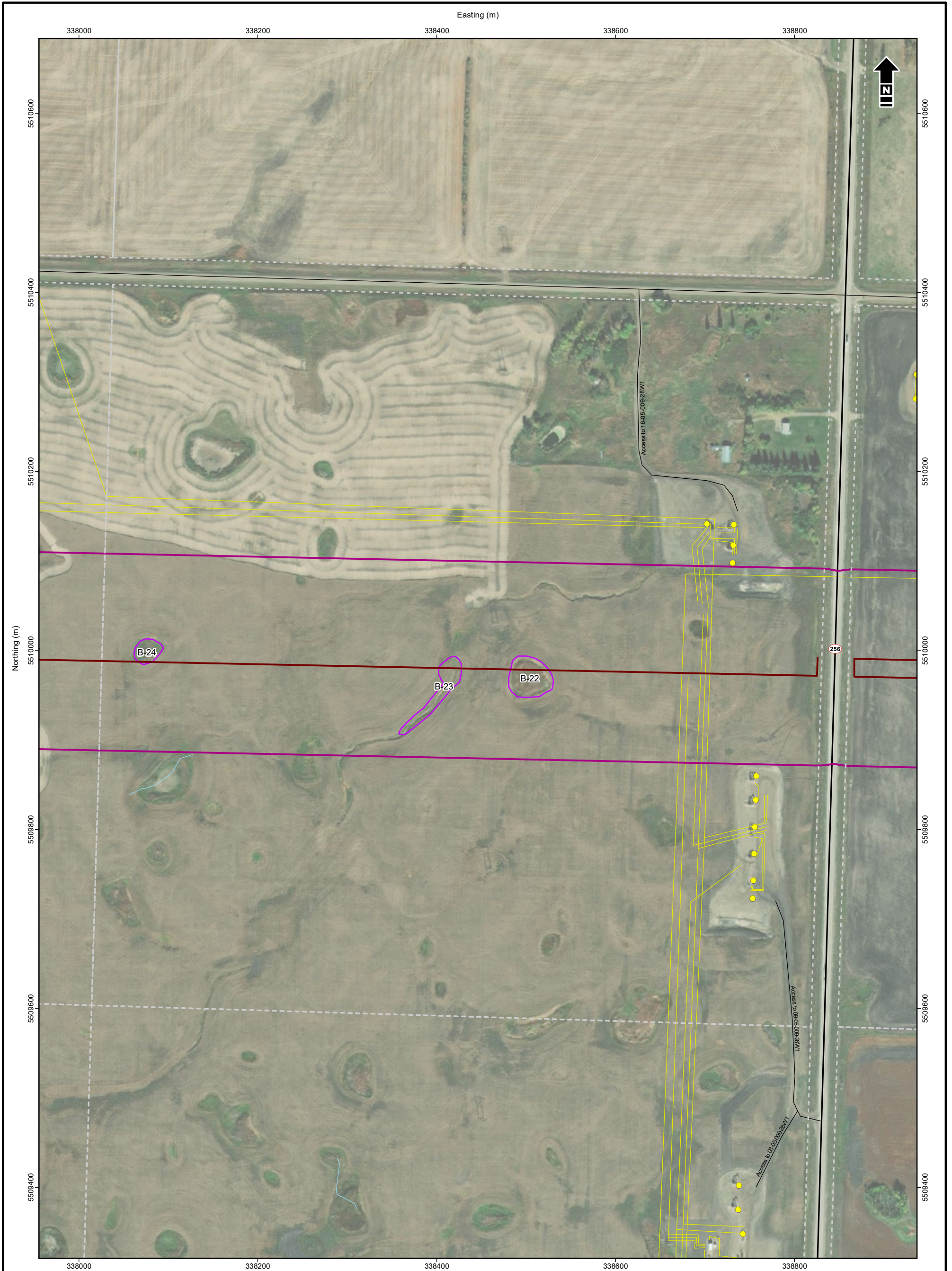


Tundra Oil & Gas Limited
46 km Flowline Gas Gathering System

Detailed Routing

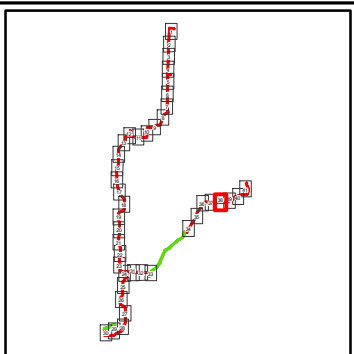
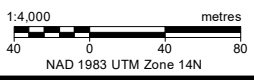
Date: November 2021	Project: 29047	Submitter: D. Chranowski	Reviewer: L. May
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- Local Study Area (LSA)
- ~ Watercourse
- ROW by Land Use**
- ▬ Cultivated
- ▬ Highway
- ▬ Road
- Wetland Class**
- Class II - Temporary Wetland
- Well (Surface Hole)
- ▬ Pipeline

Note: The land use is mapped to ROW

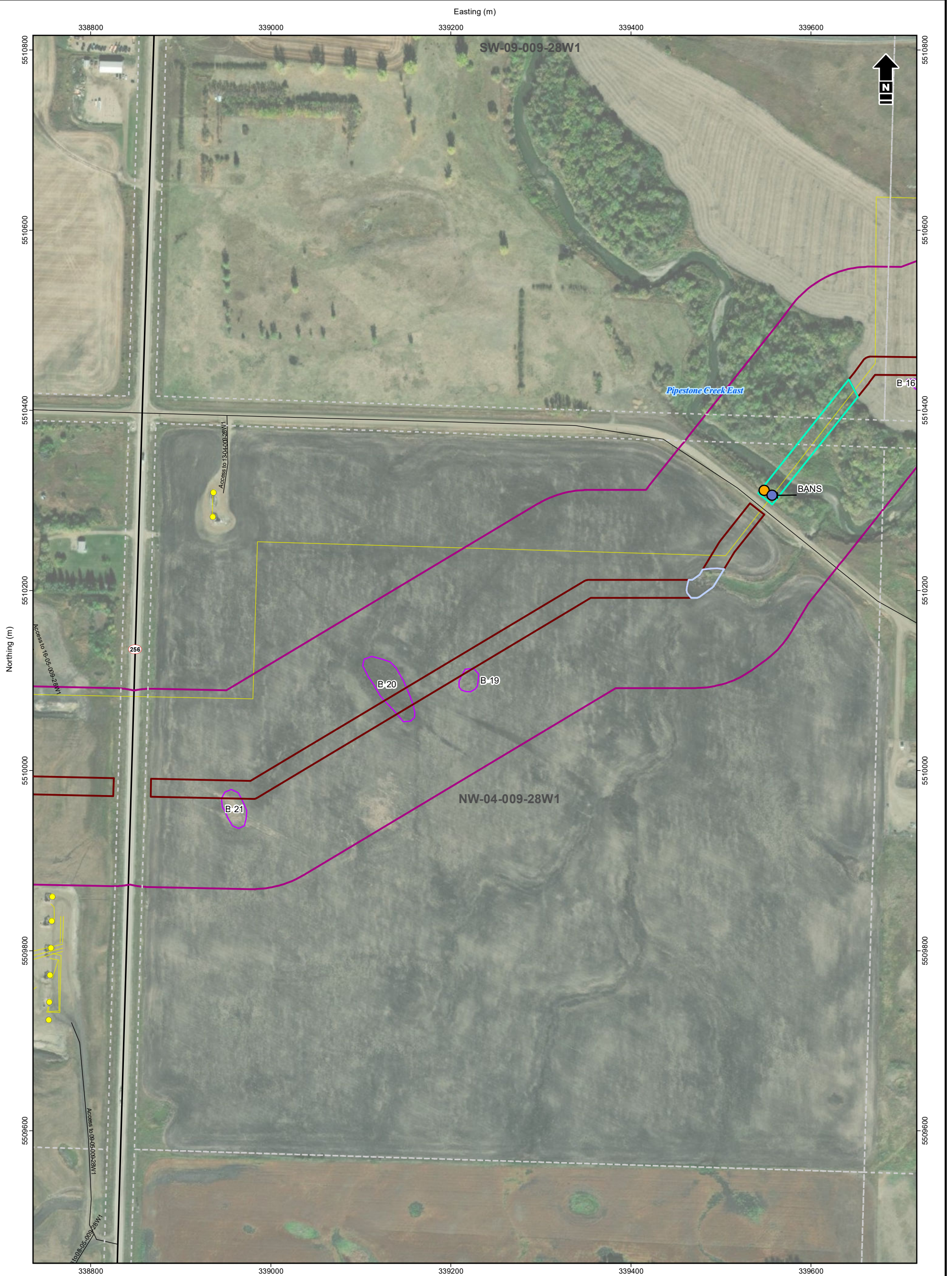


Tundra Oil & Gas Limited
46 km Flowline Gas Gathering System

Detailed Routing

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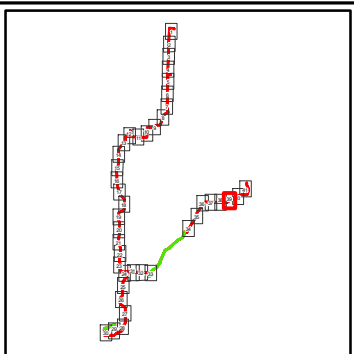
- ▭ Local Study Area (LSA)
- ROW by Land Use**
- ▭ Cultivated
- ▭ Riparian Zone
- ▭ Seasonal Waterway
- Wetland Class**
- Class II - Temporary Wetland
- ~ Watercourse
- Highway
- Road
- Pipeline
- Well (Surface Hole)
- Breeding Bird Survey
- BANS Bank Swallow
- Species at Risk Observations**
- BANS Bank Swallow

Note: The land use is mapped to ROW

1:4,000 metres

40 0 40 80

NAD 1983 UTM Zone 14N



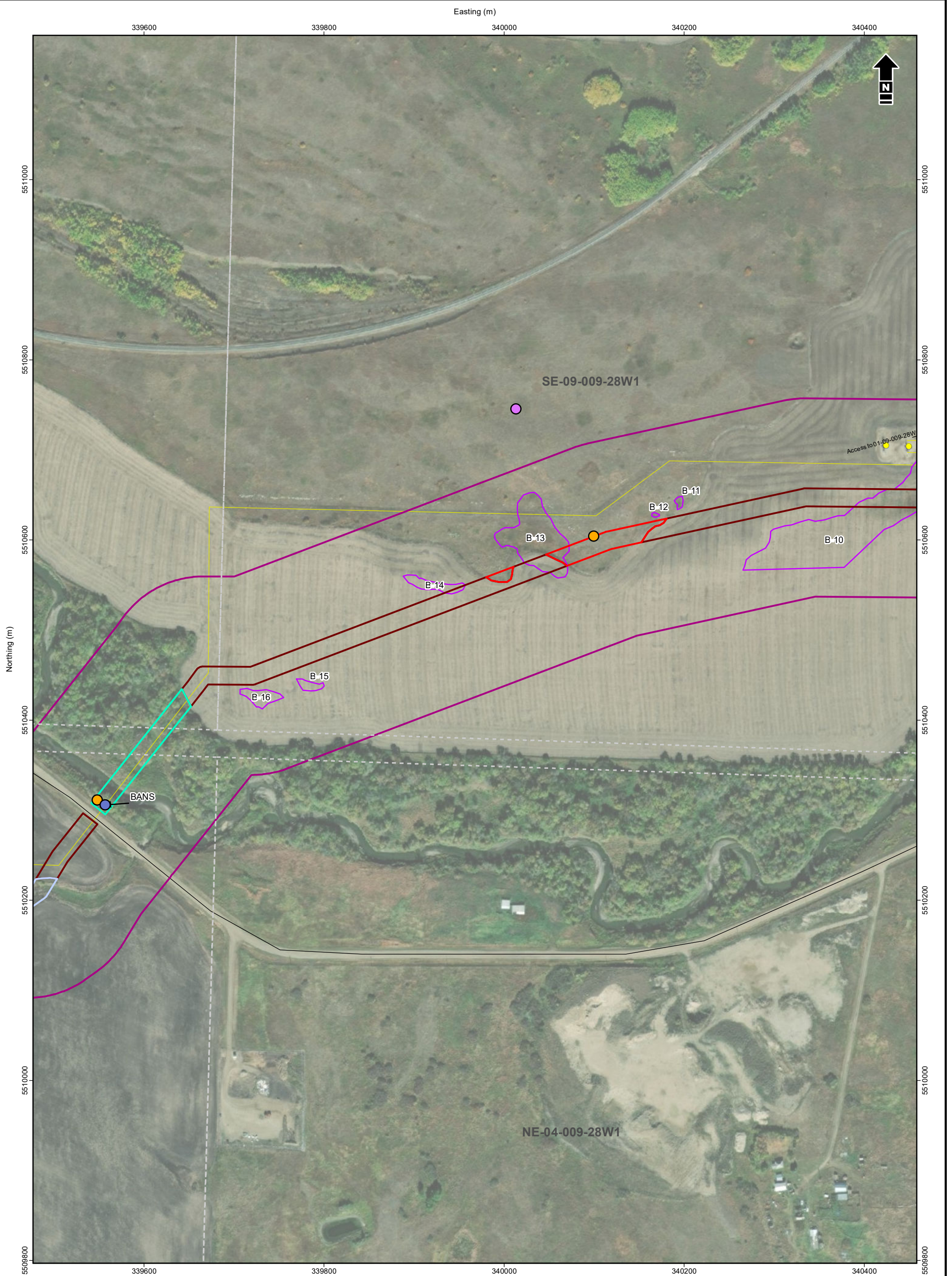
Tundra Oil & Gas Limited
46 km Flowline Gas Gathering System

Detailed Routing

Date: November 2021 Project: 29047 Submitter: D. Chranowski Reviewer: L. May

Reference: GDM midstream, transportation infrastructure data and IHS well data provided by IHS© 2021. Imagery (2018)
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User

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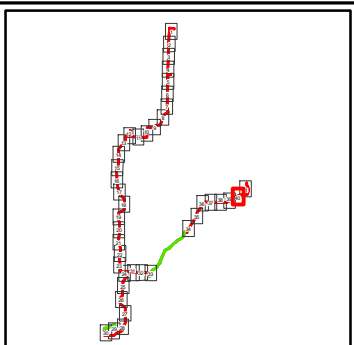
- Local Study Area (LSA)
- ROW by Land Use**
- ▬ Native Grassland
- ▬ Cultivated
- ▬ Riparian Zone
- ▬ Seasonal Waterway
- Wetland Class**
- ▭ Class II - Temporary Wetland
- ▬ Watercourse
- ▬ Road
- ▬ Pipeline
- Well (Surface Hole)
- Sharp-Tailed Grouse Survey
- Breeding Bird Survey
- Species at Risk Observations**
- BANS Bank Swallow

Note: The land use is mapped to ROW

1:4,000 metres

40 0 40 80

NAD 1983 UTM Zone 14N

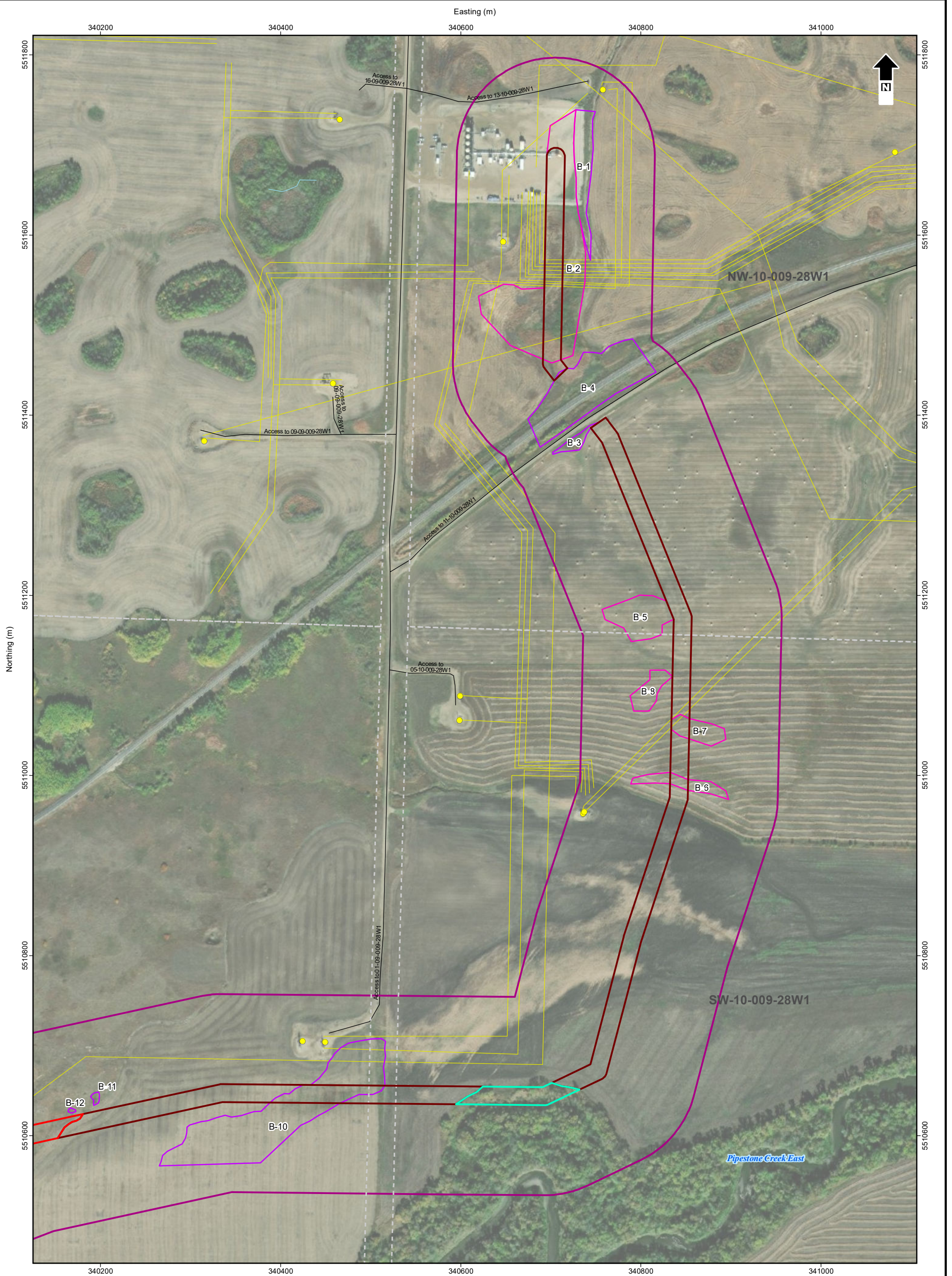


Tundra Oil & Gas Limited
46 km Flowline Gas Gathering System

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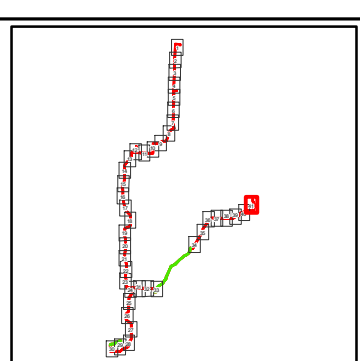
□ Local Study Area (LSA)
ROW by Land Use
▬ Native Grassland
▬ Cultivated
▬ Riparian Zone
Wetland Class
▭ Class I - Ephemeral Wetland
▭ Class II - Temporary Wetland
~ Watercourse
▬ Road
▬ Pipeline
● Well (Surface Hole)


Note: The land use is mapped to ROW

1:4,000 metres

40 0 40 80

NAD 1983 UTM Zone 14N





Matrix Solutions Inc.
ENVIRONMENT & ENGINEERING

Tundra Oil & Gas Limited
 46 km Flowline Gas Gathering System

Detailed Routing

Date: November 2021	Project: 29047	Submitter: D. Chranowski	Reviewer: L. May
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Reference: GDM midstream, transportation infrastructure data and IHS well data provided by IHS © 2021. Imagery (2018) Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User

Table 1
Wetland Information

Wetland ID	Wetland Class	Impacted (I)	Not Impacted (NI)	Mitigation Required
A-2	III	x		Construction under dry or frozen conditions or Horizontal Directional Drilling (HDD), if wet at time of construction
A-3	II	x		Construction under dry or frozen conditions
A-4	I	x		Construction under dry or frozen conditions
A-5	I		x	None
A-6	II	x		Construction under dry or frozen conditions
A-7	II	x		Construction under dry or frozen conditions
	Seasonal Waterway	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-8	I	x		Construction under dry or frozen conditions
A-10	I	x		Construction under dry or frozen conditions
A-11	II	x		Construction under dry or frozen conditions
A-12	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-13	II		x	None
A-14	I		x	None
A-15	I	x		Construction under dry or frozen conditions
A-16	I		x	None
A-17	I	x		Construction under dry or frozen conditions
A-18	I		x	None
A-19	II		x	None
A-20	I	x		Construction under dry or frozen conditions
A-21	II	x		Construction under dry or frozen conditions
A-22	II	x		Construction under dry or frozen conditions
A-23	I		x	None
A-24	I		x	None
A-25	I	x		Construction under dry or frozen conditions
A-26	I	x		Construction under dry or frozen conditions
A-27	I		x	None
A-28	I		x	None
A-29	I	x		Construction under dry or frozen conditions
A-30	I	x		Construction under dry or frozen conditions
A-31	I		x	None
A-32	I		x	None
A-33	I	x		Construction under dry or frozen conditions
A-34	I	x		Construction under dry or frozen conditions
A-35	I	x		Construction under dry or frozen conditions
A-36	I	x		Construction under dry or frozen conditions
A-37	I	x		Construction under dry or frozen conditions
A-38	II	x		Construction under dry or frozen conditions
A-39	I	x		Construction under dry or frozen conditions
A-40	II	x		Construction under dry or frozen conditions
A-41	II	x		Construction under dry or frozen conditions
A-42	II	x		Construction under dry or frozen conditions
A-43	IV		x	None
A-44	I	x		Construction under dry or frozen conditions
A-45	I		x	None
A-46	I		x	None
A-47	II		x	None
A-48	II	x		Construction under dry or frozen conditions
A-49	II	x		Construction under dry or frozen conditions
A-50	II		x	None
A-51	II	x		Construction under dry or frozen conditions
A-52	II	x		Construction under dry or frozen conditions
A-57	II	x		Construction under dry or frozen conditions
A-58	I		x	None
A-59	I	x		Construction under dry or frozen conditions
A-60	I		x	None
A-61	II		x	None
A-62	II		x	None
A-63	IV	x		HDD
A-64	III		x	None
A-65	II	x		Construction under dry or frozen conditions
A-66	I	x		Construction under dry or frozen conditions
A-67	II	x		Construction under dry or frozen conditions
A-68	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-69	I		x	None
A-70	II	x		Construction under dry or frozen conditions
A-71	I	x		Construction under dry or frozen conditions
A-72	I	x		Construction under dry or frozen conditions
A-73	II	x		Construction under dry or frozen conditions
A-74	II	x		Construction under dry or frozen conditions
A-75	III		x	None
A-76	II	x		Construction under dry or frozen conditions
A-77	II	x		Construction under dry or frozen conditions
A-78	II	x		Construction under dry or frozen conditions
A-80	II	x		Construction under dry or frozen conditions
A-81	II		x	None
A-82	I		x	None
A-83	I		x	None
A-84	I		x	None
A-85	II		x	None

Table 1
Wetland Information

Wetland ID	Wetland Class	Impacted (I)	Not Impacted (NI)	Mitigation Required
A-86	I	x		Construction under dry or frozen conditions
A-87	I	x		Construction under dry or frozen conditions
A-88	I	x		Construction under dry or frozen conditions
A-89	I		x	None
A-90	I	x		Construction under dry or frozen conditions
A-91	II		x	None
A-92	II	x		Construction under dry or frozen conditions
A-93	II		x	None
A-94	II	x		Construction under dry or frozen conditions
A-95	II	x		Construction under dry or frozen conditions
A-96	I	x		Construction under dry or frozen conditions
A-97	II		x	None
A-98	I		x	None
A-99	I		x	None
A-100	III		x	None
A-101	IV		x	None
A-102	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-103	II		x	None
A-104	II		x	None
A-105	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-106	III		x	None
A-107	IV		x	None
A-108	III		x	None
A-109	II		x	None
A-110	II		x	None
A-111	II		x	None
A-112	II		x	None
A-113	II		x	None
A-114	II	x		Construction under dry or frozen conditions
A-115	II		x	None
A-116	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-117	II	x		Construction under dry or frozen conditions
A-118	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-119	IV	x		HDD
A-120	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-121	II		x	None
A-122	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-123	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-124	I		x	None
A-125	II	x		Construction under dry or frozen conditions
A-126	III		x	None
A-127	III		x	None
A-128	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-131	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-132	I		x	None
A-133	II	x		Construction under dry or frozen conditions
A-134	II	x		Construction under dry or frozen conditions
A-135	IV		x	None
A-136	II	x		Construction under dry or frozen conditions
A-137	II	x		Construction under dry or frozen conditions
A-138	II		x	None
A-139	I	x		Construction under dry or frozen conditions
A-140	I	x		Construction under dry or frozen conditions
A-141	II	x		Construction under dry or frozen conditions
A-142	II		x	None
A-143	II		x	None
A-144	II	x		Construction under dry or frozen conditions
A-145	II		x	None
A-146	II		x	None
A-147	II		x	None
A-148	II		x	None
A-149	II		x	None
A-150	II		x	None
A-151	II		x	None
A-152	II	x		Construction under dry or frozen conditions
A-153	III		x	None
A-154	II		x	None
A-155	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-156	III		x	None
A-157	II	x		Construction under dry or frozen conditions
A-158	II	x		Construction under dry or frozen conditions
A-159	III		x	None
A-160	II		x	None
A-161	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
A-162	I		x	None
A-163	I	x		Construction under dry or frozen conditions
A-164	I		x	None
A-165	II	x		Construction under dry or frozen conditions
A-166	I	x		Construction under dry or frozen conditions

Table 1
Wetland Information

Wetland ID	Wetland Class	Impacted (I)	Not Impacted (NI)	Mitigation Required
A-167	III		x	None
A-168	II		x	None
A-169	I		x	None
A-170	III		x	None
A-171	II	x		Construction under dry or frozen conditions
A-172	II	x		Construction under dry or frozen conditions
A-173	II		x	None
A-174	I	x		Construction under dry or frozen conditions
A-175	II	x		Construction under dry or frozen conditions
A-176	II		x	None
A-177	I		x	None
A-178	I		x	None
A-179	I		x	None
A-180	I		x	None
A-181	II		x	None
A-182	I	x		Construction under dry or frozen conditions
A-183	I	x		Construction under dry or frozen conditions
A-184	II	x		Construction under dry or frozen conditions
A-185	II	x		Construction under dry or frozen conditions
A-186	I		x	None
A-187	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-1	II		x	None
B-2	I	x		Construction under dry or frozen conditions
B-3	II	x		Construction under dry or frozen conditions
B-4	II	x		Construction under dry or frozen conditions
B-5	I		x	None
B-6	I	x		Construction under dry or frozen conditions
B-7	I	x		Construction under dry or frozen conditions
B-8	I		x	None
B-9	Seasonal Waterway	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-10	I	x		Construction under dry or frozen conditions
B-11	I		x	None
B-12	I		x	None
B-13	II	x		Construction under dry or frozen conditions
B-14	II		x	None
B-15	I		x	None
B-16	I		x	None
B-18	Seasonal waterway	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-19	II		x	None
B-20	II	x		Construction under dry or frozen conditions
B-21	II	x		Construction under dry or frozen conditions
B-22	II	x		Construction under dry or frozen conditions
B-23	II	x		Construction under dry or frozen conditions
B-24	II	x		Construction under dry or frozen conditions
B-25	I		x	None
B-26	II		x	None
B-27	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-28	II		x	None
B-29	II		x	None
B-30	II	x		Construction under dry or frozen conditions
B-31	III		x	None
B-32	II	x		Construction under dry or frozen conditions
B-33	II	x		Construction under dry or frozen conditions
B-34	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-35	I		x	None
B-36	II	x		Construction under dry or frozen conditions
B-37	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-38	III		x	None
B-39	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-40	II	x		Construction under dry or frozen conditions
B-41	II	x		Construction under dry or frozen conditions
B-42	II	x		Construction under dry or frozen conditions
B-43	III		x	None
B-44	II		x	None
B-45	II	x		Construction under dry or frozen conditions
B-46	II	x		Construction under dry or frozen conditions
B-47	II	x		Construction under dry or frozen conditions
B-48	IV	x		HDD
B-49	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-50	II	x		Construction under dry or frozen conditions
B-51	II	x		Construction under dry or frozen conditions
B-52	II		x	None
B-53	II	x		Construction under dry or frozen conditions
B-54	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-55	II		x	None
B-56	II		x	None
B-57	III		x	None
B-59	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-60	II	x		Construction under dry or frozen conditions

Table 1
Wetland Information

Wetland ID	Wetland Class	Impacted (I)	Not Impacted (NI)	Mitigation Required
B-61	II	x		Construction under dry or frozen conditions
B-62	II		x	None
B-63	I		x	None
B-64	I		x	None
B-65	II		x	None
B-66	I		x	None
B-67	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-68	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-69	II	x		Construction under dry or frozen conditions
B-70	II	x		Construction under dry or frozen conditions
B-71	IV		x	None
B-72	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-73	II		x	Construction under dry or frozen conditions
B-74	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-75	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
B-76	II	x		Construction under dry or frozen conditions
B-77	II		x	None
C-1	II		x	None
C-2	II		x	None
C-3	II		x	None
C-4	II		x	None
C-5	II		x	None
C-6	IV		x	None
C-7	II		x	None
C-8	II		x	None
C-9	II		x	None
C-10	II		x	None
C-11	II	x		Construction under dry or frozen conditions
C-12	II		x	None
C-13	II		x	None
C-14	II	x		Construction under dry or frozen conditions
C-15	II	x		Construction under dry or frozen conditions
C-16	IV		x	None
C-17	III		x	None
C-18	III		x	None
C-19	II	x		Construction under dry or frozen conditions
C-20	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-21	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-22	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-23	III		x	None
C-24	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-25	II		x	None
C-26	IV		x	None
C-27	II	x		Construction under dry or frozen conditions
C-28	II	x		Construction under dry or frozen conditions
C-29	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-30	II		x	None
C-31	III		x	None
C-32	II	x		Construction under dry or frozen conditions
C-33	II		x	None
C-34	II	x		Construction under dry or frozen conditions
C-35	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-36	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-37	IV	x		HDD
C-38	II		x	None
C-39	IV		x	None
C-40	II	x		Construction under dry or frozen conditions
C-41	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-42	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-43	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-44	II		x	None
C-45	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-46	II		x	None
C-47	II		x	None
C-48	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-49	III		x	None
C-50	IV		x	None
C-51	III		x	None
C-52	II	x		Construction under dry or frozen conditions
C-53	III	x		Construction under dry or frozen conditions or HDD, if wet at time of construction
C-54	II	x		Construction under dry or frozen conditions
C-55	III		x	None
C-56	II		x	None
C-57	II		x	None