

**Level II Private Sewage Treatment
System Assessment for Commercial
& Industrial Subdivision
NE – 23 – 29 – 01W5
Mountain View County**

Prepared for:

Modus Holdings Inc.

March 30, 2026

File No: 2026 - 2542



Signatures

Prepared by:



March 30/26

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Executive Summary

Groundwater Resources Information Technologies 3.0 (GRIT3) was retained by Modus Holdings Inc. to complete a Level II Private Sewage Treatment System (PSTS) assessment on a proposed commercial/industrial subdivision located within NE – 23 – 29 – 01W5, Mountain View County, Alberta (the “Site”). The purpose of the investigation was to establish the soil texture and structure across Phase 1 of the subdivision to determine the feasibility of PSTS installations on the future lots. The PSTS assessment was completed following the 2021 Alberta Private Sewage Systems Standard of Practice (SOP) and the *Model Process for Subdivision Approval* (Alberta Association of Municipal District and Counties, 2011).

The Site is located approximately 4.9 kilometres (km) southeast of the Town of Carstairs within Mountain View County. The Site can be accessed from the west via Highway 2A. The development is in an area occupied by low-moderate density industrial/ commercial lots and sections of agricultural land. There are 11 existing commercial/industrial developments, including the Site, located within the Site quarter section.

Review of the drilling logs from the on Site water supply well and nearby wells indicate that the upper stratum consist of 5 – 7 metres of clay. Bedrock in the area consists of interbedded sandstone and shale.

Seven test pits were excavated across Phase 1 of the development on March 18, 2026, to assess and log the soil profile, collect soil samples for grain size analysis, and determine if any shallow water table or restrictive layers are present.

Soils consisted of well draining loam, clay loam and sandy clay loam with few coarse fragments. The water table was identified in TH-1 at 1.25 metres below ground, with the remaining six test hole locations (TH-2 to TH-7) encountering no water to the base of investigation (2.5 metres). TH-1 is located near a wetland, contributing to the shallow water table. A shallow water table is not expected to be a consideration for installing PSTS on the remaining upgradient lots.

Soil texture and structure within the areas investigated indicate that lots near TH-1 are suitable for installation of a septic mound while lots near the remaining test hole locations are suitable for treatment fields (below ground) or septic mounds. Primary or secondary treated effluent can be used with either system, with the final septic footprint minimized using secondary treated effluent.

Approximate PSTS field areas have been calculated based on the design limiting soil found in each test pit and are provided in the table below. Infiltration areas are based on an estimated peak effluent volume of 720 L/day.

Soil Texture	Effluent Type	Effluent Loading Rate (L/day/m ²)	Infiltration Area (m ²)	Hydraulic Linear Loading Rate (L/day/m)	Minimum Treatment Trench Length (m)	Number of Trenches	Approximate Total Field Area (m ²)
Clay Loam ¹	Primary	13.2	55	43.3	16.6	3	75
	Secondary	22.0	33			2	45



Loam ²	Primary	22.0	33	71.6	10.1	3	45
	Secondary	30.8	24			2	28
Sandy Clay Loam ³	Primary	13.2	55	58.2	12.4	4	78
	Secondary	22.0	33			3	56
¹ Locations near TH-1 ² Locations near TH-2, TH-3, TH-4 and TH-7 ³ Locations near TH-5 and TH-6							

The table above shows the range in septic field sizes that could be installed at the Site based on the soil textures found in the test pit investigation. Final siting of the PSTS should maintain the required setback distances from the treatment field to property lines, water wells, water courses, buildings and septic tanks as outlined in the SOP.



Table of Contents

Signatures..... ii

Disclaimer..... ii

Executive Summary..... iii

[1.0] Introduction..... 1

[2.0] Background..... 1

 [2.1] Site Description 1

 [2.2] Local Topography 2

 [2.3] Regional Geology..... 2

 [2.4] Surface Soil Conditions..... 2

 [2.5] Water Wells and Groundwater Under the Direct Influence of Surface Water (GWUDI) ... 2

[3.0] Soil Assessment 3

 [3.1] Restrictive Considerations..... 5

 [3.2] Grain Size Analysis..... 6

 [3.3] Septic Field Loading Rates..... 6

 [3.4] Shallow Water Table Assessment 7

[4.0] Site Suitability..... 8

[5.0] References 11

Appendix I: Site Figures..... 12

Appendix II: Grain Size Analysis 13

List of Tables

Table 1. Soil profile and observations..... 3

Table 2. Laboratory determination of grain size – finer component 6

Table 3. Laboratory determination of soil texture and corresponding effluent loading rates 6

Table 4. Infiltration area and approximate field area based on soil texture and effluent treatment type..... 8

Table 5. Minimum recommended setback requirements for septic treatment field 8

Table 6. suitability for Private Sewage Treatment System – TH-1 9

Table 7. Suitability for Private Sewage Treatment System – TH-2 through TH-7..... 9



[1.0] Introduction

Groundwater Resources Information Technologies 3.0 (GRIT3) was retained by Modus Holdings Inc. to complete a Level II Private Sewage Treatment System (PSTS) assessment on a proposed commercial/industrial subdivision located within NE – 23 – 29 – 01W5, Mountain View County, Alberta (the “Site”). The purpose of the investigation was to establish the soil texture and structure across Phase 1 of the subdivision to determine the feasibility of a PSTS installation on 10 future lots. Maps showing the Site land location and phased subdivision plan are provided in Appendix I.

The PSTS assessment was completed according to the *Alberta Private Sewage Systems Standard of Practice* (Safety Codes Council, 2021) or *SOP*. General reporting has been completed following *The Model Process for Subdivision Approval and Private Sewage* (2011).

[2.0] Background

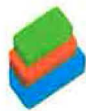
[2.1] Site Description

The Site is located approximately 4.9 kilometres (km) southeast of the Town of Carstairs within Mountain View County. The Site is currently used for Class 1 driver training with private gravel roadways and a cemented pad which is seasonally flooded and frozen as part of the training. An office building for staff is present near the centre of the Site and a storage area with Quonset near the northeast of the Site. A septic treatment field services the office with water trucked in to supply the office. A water supply well is located 82 metres northeast of the cemented pad and is piped to the pad area for flooding purposes. The Site is vegetated with grass and sparse gatherings of spruce trees.

There is a wetland located within the southwest corner of the Site within a local topographic low point. The area has cattails, characteristic of a permanent wetland, indicating this low lying area is saturated year-round and likely represents the water table elevation near the Site.

The Site can be accessed from the west via Highway 2A. The development is in an area occupied by low-moderate density industrial/ commercial lots and sections of agricultural land. There are 11 existing commercial/industrial developments, including the Site, located within the Site quarter section. Quarter sections to the north, south and southeast contain two, 13 and one commercial/industrial lots, respectively. The remaining adjacent quarter sections consist of agricultural land with individual farmsteads.

As per our understanding, the subdivision has been proposed as outlined in Appendix I, Figure 2, with Phase 1 of the subdivision plan the focus of the current assessment. The lots are sized appropriately to allow for an alternate area for septic fields and to meet applicable setback distances from structures, water wells and property boundaries as outlined in the *SOP* and summarized in Table 5.



[2.2] Local Topography

The Site area is located around 1,050 metres above sea level (masl) on land that dips gently towards the northeast. Surface relief ranges approximately 5 metres across the Site area. The closest major surface water body is Carstairs Creek, located 1.4 km northeast of the Site at an elevation of approximately 1,000 masl. Much of the Phase 1 subdivision area has slopes less than 5%, with large continuous areas with slopes less than 15% which are suitable for septic field placement. A man-made hill is located along the west centre of the Site, used for slope driving training, which will be removed during future lot development.

A topographic map of the Site area with surface elevation contours at 5 metre intervals is shown in Appendix I, Figure 3.

[2.3] Regional Geology

The surficial strata in the area are mapped in *Quaternary Geology, Southern Alberta* (Shetsen, 1983), with the Site underlain by fluted draped glacial moraine deposits consisting of an unsorted mixture of clay, silt, sand and gravel (till). The till unit is up to 5 metres thick.

Based on nearby Water Well Drillers Reports, the surficial deposits on Site consists of 5 – 7 metres of clay.

The underlying bedrock consists of the Paleogene aged Paskapoo Formation. The Paskapoo Formation is a fluvial deposit consisting of interbedded sandstone channels and overbank mudstone/shales. The priority target aquifers in the formation are the relatively permeable and porous sandstones, while the surrounding mud acts as a confining aquitard. Water Well Drilling Reports indicate bedrock in the area consists of sandstone and shale.

[2.4] Surface Soil Conditions

The Government of Alberta Soils Information Viewer indicates that the soils underlying Phase 1 of the Site are part of Soil Polygon 11227. Soils are composed of well drained Orthic Black Chernozem consisting of moderately fine textured sandy clay loam, clay loam and silty clay loam deposits. They belong to the Delacour soil series and are derived from medium textured (loam to clay loam till) parent material.

[2.5] Water Wells and Groundwater Under the Direct Influence of Surface Water (GWUDI)

An aerial photo showing well locations as listed on the Government of Alberta (GoA) water well database relative to the Site is provided in Appendix I, Figure 4.

There is an existing water supply well on Site, GIC Well ID 1240318, which provides water to the cement pad area on Site. The well was drilled in September 2006, produces from a confined sandstone bedrock aquifer and is screened from 15.2 – 22.9 metres below ground. The well is currently licensed by Schlumberger Canada Ltd. to supply 1,000 m³/year.

According to the database there are two additional well records within 150 metres of the Site. Well ID 10136063 is located ~120 metres east of the Site and produces from a confined bedrock sandstone aquifer present from 24.7 – 29.9 metres below ground. The second well, ID 1240281,

is located ~175 metres south of the Site and produces from a confined bedrock sandstone aquifer intersected 20.7 – 22.3 metres below ground.

All the wells listed within the Site quarter section and within 150 metres of the Site boundaries produce from confined bedrock aquifers that are not interpreted to be in connection with surface water.

[3.0] Soil Assessment

On March 18, 2026, seven test holes were excavated within Phase 1 of the subdivision (TH-1 to TH-7) to give an assessment of soil types present under the development. The test holes were completed on land slopes suitable for septic field placement, clear of underground lines and where there was reasonable access for excavation equipment. Underground lines present within the far southwest corner of the Site limited test holes within that area.

Soils were logged by personnel from GRIT3 on March 18, 2026, according to the *Canadian System of Soils Classification (1998)*. A summary of the test hole profiles and field observations is provided in **Table 1**. Test hole locations are illustrated in Appendix I, Figure 5, with the GPS locations of the test holes measured using a cellphone.

Table 1. Soil profile and observations

Horizon	Texture	Depth (m)	Colour	Gleying	Mottling	Structure	Grade	Consistency	Moisture	% Coarse	Lab Analysis	Notes
TH-1 – GPS Location: 51.4973251° N -114.0301935° E												
A	Clay Loam	0.0 – 0.10	Dark Brown 7.5YR 3/4	No	No	Blocky	Strong	Loose/ Plastic	Moist	0	No	Strongly rooted
B	Loam	0.10 – 0.30	Light Olive Brown 2.5Y 5/6	No	No	Blocky	Strong	Loose	Moist	0	Yes	Rooted
C ₁	Clay Loam	0.30 – 0.71	Light Olive Brown 2.5Y 5/4	Yes @ 60 cm	Yes @ 60 cm	Blocky	Strong	Loose/ Plastic	Moist	0	Yes	Rooted
C ₂	Loam	0.71 – 1.14	Dark Olive Brown 2.5Y 3/3	Yes	Yes	Blocky	Moderate	Loose/ Plastic	Wet	3	Yes	Iron Oxide/ Bentonite
C ₃	Clay Loam	1.14 – 2.44	Dark Olive Brown 2.5Y 3/3	Yes	Yes	Blocky	Moderate	Loose/ Plastic	Wet	0	No	Iron Oxide/ Sand Lenses/ Coal Fragments
TH-2 – GPS Location: 51.4995112° N -114.0295183° E												
A	Silty Clay Loam	0.0 – 0.03	Dark Brown 7.5YR 3/4	No	No	Blocky	Moderate	Loose	Moist	0	No	Rooted
B	Loam	0.03 – 0.13	Dark Brown 7.5YR 3/4	No	No	Blocky	Strong	Loose	Dry	0	Yes	--



Horizon	Texture	Depth (m)	Colour	Gleying	Mottling	Structure	Grade	Consistency	Moisture	% Coarse	Lab Analysis	Notes
C ₁	Loam	0.13 – 0.71	Olive Brown 2.5Y 4/4	No	No	Blocky	Strong	Loose	Dry	2	Yes	Iron Oxide/ White Precipitate/ Coal Fragments
C ₂	Loam	0.71 – 2.44	Olive Brown 2.5Y 4/4	No	No	Blocky	Moderate	Loose	Moist	2	No	Iron Oxide/ White Precipitate/ Coal Fragments
TH-3 – GPS Location: 51.4988657° N -114.0284789° E												
A	Silty Clay Loam	0.0 – 0.20	Very Dark Brown 10YR 2/2	No	No	Blocky	Moderate	Loose	Slightly Moist	0	No	Rooted
B	Loam	0.20 – 0.33	Dark Olive Brown 2.5Y 3/3	No	No	Blocky	Strong	Hard	Moist	5	Yes	--
C ₁	Loam	0.33 – 1.19	Light Olive Brown 2.5Y 5/3	No	No	Blocky	Strong	Hard	Moist	2	Yes	Iron Oxide/ White Precipitate/ Coal Fragments
C ₂	Loam	1.19 – 2.44	Olive Brown 2.5Y 4/3	No	No	Blocky	Strong	Firm	Moist	0	Yes	Iron Oxide/ White Precipitate/ Coal Fragments
TH-4 – GPS Location: 51.5002799° N -114.022930° E												
A	Silt Clay Loam	0.0 – 0.23	Black 10YR 2/1	No	No	Blocky	Moderate	Loose	Moist	2	No	Lightly Rooted
C ₁	Loam	0.23 – 0.69	Olive Brown 2.5Y 4/3	No	No	Blocky	Strong	Firm	Dry	10	No	Iron Oxide/ White Precipitate/ Coal Fragments/ Gravel to Cobble Fragments
C ₂	Loam	0.69 – 2.44	Olive Brown 2.5Y 4/3	No	No	Blocky	Strong	Firm	Moist	2	Yes	Iron Oxide/ White Precipitate/ Coal Fragments/ Gravel Fragments
TH-5 – GPS Location: 51.5013187° N -114.0290798° E												
A	Silty Clay	0.0 – 0.20	Black 10YR 2/1	No	No	Blocky	Strong	Loose	Moist	0	No	Rooted
B	Loam	0.20 – 0.30	Very Dark Brown 7.5YR 5/2	No	No	Blocky	Strong	Loose	Moist	0	Yes	Iron Oxide/ White Precipitate
C ₁	Sandy Clay Loam	0.30 – 2.44	Light Olive Brown 2.5Y 5/4	No	No	Blocky	Strong	Firm	Moist	2	Yes	Iron Oxide/ White Precipitate/ Coal Fragments/ Sand



Horizon	Texture	Depth (m)	Colour	Gleying	Mottling	Structure	Grade	Consistency	Moisture	% Coarse	Lab Analysis	Notes
												Lenses/ Gravel Fragments
TH-6 – GPS Location: 51.501514° N -114.0292501° E												
A	Clay Loam	0.0 – 0.28	Black 10YR 2/1	No	No	Blocky	Strong	Firm	Dry	0	No	Rooted
C ₁	Sandy Clay Loam	0.28 – 0.79	Light Olive Brown 2.5Y 5/4	No	No	Blocky	Strong	Firm	Dry	2	Yes	White Precipitates
C ₂	Loam	0.79 – 2.44	Olive Brown 2.5Y 4/3	No	No	Blocky	Strong	Firm	Moist	2	Yes	Iron Oxide/ White Precipitate
TH-7 – GPS Location: 51.5026016° N -114.297486° E												
A	Silt Clay Loam	0.0 – 0.18	Black 10YR 2/1	No	No	Blocky	Strong	Loose	Moist	0	No	Rooted
B	Loam	0.18 – 0.30	Dark Olive Brown 2.5Y 3/3	No	No	Blocky	Strong	Loose/ Plastic	Moist	0	No	Rooted/ White Precipitate
C ₁	Loam	0.30 – 0.89	Light Olive Brown 2.5Y 4/4	No	No	Blocky	Strong	Firm	Moist	2	Yes	White Precipitate/ Coal
C ₂	Loam	0.89 – 2.44	Olive Brown 2.5Y 4/3	No	No	Blocky	Strong	Firm	Moist	5	Yes	Iron Oxide/ White Precipitate/ Coal Fragments/ Coarse Fragments

[3.1] Restrictive Considerations

Typical below ground septic trenches are installed to 0.9 metres below ground and require a minimum additional 0.9 metres below the trench to treat septic effluent if secondary treated effluent is used (an additional 1.5 metres below the trench is required for primary treated septic effluent). A septic treatment mound only requires 0.3 metres of suitable native soil material on which to place the mound.

Restrictive soil conditions that would limit the type of future PSTS that could be installed were identified in TH-1 but were not found in remaining test holes 2 through 7. In TH-1, the gleyed and mottled soil encountered at a depth of 0.6 metres below ground level represents a limiting layer. As only 0.6 metres of native soil material is available for installation of a PSTS, a septic mound would be required for developments located at a similar elevation as TH-1.



[3.2] Grain Size Analysis

Soil samples were collected by personnel from GRIT3 during the excavation of soil pits on March 18, 2026, for laboratory determination of grain size. Sample depth, grain size distribution and texture are summarized in Table 2. Structure of the soil was determined during test hole logging by personnel from GRIT3. Grain size analysis results are attached in Appendix II.

Table 2. Laboratory determination of grain size – finer component

Sample ID	Sample Depth (m)	% Sand	% Silt	% Clay	Texture	Grade/Structure
TH-1	0.15	41	37	22	Loam	Strong/Blocky
TH-1	0.33	24	46	30	Clay Loam	Strong/Blocky
TH-1	0.74	34	40	26	Loam	Moderate/Blocky
TH-2	0.10	37	39	24	Loam	Strong/Blocky
TH-2	0.30	48	30	22	Loam	Strong/Blocky
TH-2	0.76	47	36	17	Loam	Moderate/Blocky
TH-3	0.25	43	36	21	Loam	Strong/Blocky
TH-3	0.51	46	31	23	Loam	Strong/Blocky
TH-3	1.27	46	32	22	Loam	Strong/Blocky
TH-4	0.38	47	30	23	Loam	Strong/Blocky
TH-4	0.76	47	30	23	Loam	Strong/Blocky
TH-5	0.25	42	32	26	Loam	Strong/Blocky
TH-5	0.51	45	28	27	Sandy Clay Loam	Strong/Blocky
TH-6	0.30	51	27	22	Sandy Clay Loam	Strong/Blocky
TH-6	0.81	40	35	25	Loam	Strong/Blocky
TH-7	0.36	40	33	27	Loam	Strong/Blocky
TH-7	0.91	42	35	23	Loam	Strong/Blocky

[3.3] Septic Field Loading Rates

The infiltration loading rates acceptable for the soil texture found at the Site for primary (five-day Biochemical Oxygen Demand [BOD] 30 – 150 mg/L) and secondary treated (BOD of less than 30 mg/L) effluent are summarized in Table 3. Loading rates are provided based on restrictive conditions for each test hole, if present, and soil texture that will be receiving the septic effluent.

Table 3. Laboratory determination of soil texture and corresponding effluent loading rates

Test Hole #	Design Limiting Soil Texture and Depth (m)	Design Soil Texture (No Limiting Layer)	Grade/Structure	Effluent Loading Rate (L/day/m ²)	
				Primary Treated	Secondary Treated
TH-1	Clay Loam at 0.6	--	Strong/Blocky	13.2	22.0
TH-2	--	Loam	Moderate/Blocky	22.0	30.8
TH-3	--	Loam	Strong/Blocky	22.0	30.8



Test Hole #	Design Limiting Soil Texture and Depth (m)	Design Soil Texture (No Limiting Layer)	Grade/Structure	Effluent Loading Rate (L/day/m ²)	
				Primary Treated	Secondary Treated
TH-4	---	Loam	Strong/Blocky	22.0	30.8
TH-5	---	Sandy Clay Loam	Strong/Blocky	13.2	22.0
TH-6	---	Sandy Clay Loam	Strong/Blocky	13.2	22.0
TH-7	---	Loam	Strong/Blocky	22.0	30.8

[3.4] Shallow Water Table Assessment

Prior to backfilling the test pits, a 1-inch PVC pipe was placed in each test pit to assess for shallow water table conditions. The water level in the standpipes was measured using an electronic dip tape on March 25, 2026 by personnel from GRIT3. The standpipe in TH-1 was found to be wet to a depth of 1.24 metres below ground. The remaining standpipes in TH-2 through TH-7 were found to be dry to the base of the pit.



[4.0] Site Suitability

Approximate PSTS field areas have been calculated based on the design limiting soil found in each test pit and are provided in Table 4. Infiltration areas are based on an estimated peak effluent volume of 720 L/day, accounting for up to 8 employees on each lot per day with access to toilets, sinks, showers and kitchen. Linear loading rates for the septic system are calculated based on land slopes of 0 – 4% and available infiltration distance of 0.3 < 0.6 metres for locations where a septic mound is required (TH-1) and an infiltration distance of 1.2 < 1.5 metres where a below ground treatment field could be installed (TH-2 to TH-7). Linear loading rates are taken from Table 8.1.1.10 of the *SOP*.

Table 4. Infiltration area and approximate field area based on soil texture and effluent treatment type

Soil Texture	Effluent Type	Effluent Loading Rate (L/day/m ²)	Infiltration Area (m ²)	Hydraulic Linear Loading Rate (L/day/m)	Minimum Treatment Trench Length (m)	Number of Trenches	Approximate Total Field Area (m ²)
Clay Loam ¹	Primary	13.2	55	43.3	16.6	3	75
	Secondary	22.0	33			2	45
Loam ²	Primary	22.0	33	71.6	10.1	3	45
	Secondary	30.8	24			2	28
Sandy Clay Loam ³	Primary	13.2	55	58.2	12.4	4	78
	Secondary	22.0	33			3	56
¹ Locations near TH-1 ² Locations near TH-2, TH-3, TH-4 and TH-7 ³ Locations near TH-5 and TH-6							

The table above shows the range in septic treatment field sizes that could be installed at the Site based on the soil textures found in the test pit investigation. To minimize the final area of the treatment field, secondary treated effluent can be used. Final siting of the treatment field should take into consideration the setback distances for a treatment field, as outlined in Table 5.

Table 5. Minimum recommended setback requirements for septic treatment field

Minimum Setback Distance (metres)	Setback From
15	Water Source or Water Well
100	Licensed Municipal Water Well
15	Water Course
1.5	Property Line
10	Basement, Cellar, or Crawl Space
1	Building without Permanent Foundation
5	Building with Permanent Foundation but no Basement
5	Septic Tank or Packaged Sewage Treatment Plant

A summary of the overall parcel suitability and limiting characteristics for the test holes are included in Table 6 (TH-1) and Table 7 (TH-2 through TH-7).

Table 6. Suitability for Private Sewage Treatment System – TH-1

Site Variable	Suitability	Description
Soil texture and structure	Moderate	Good structure and suitable permeability for receiving and treating septic field effluent up to a depth of at least 0.6 metres. No restrictive conditions present that would prevent the installation of any type of PSTS are present, location is suitable for a septic treatment mound
Depth of Suitable Soil	Moderate	Suitable soil extends to a depth of at least 0.6 metres
Hydraulic Capability	Low	Evidence of seasonally wet soil or perched water table (soil gleying or mottling) found at a depth of 0.6 metres.
Soil Horizons	High	Limiting soil characteristics that would prevent the installation of a PSTS were not found
Topography	Moderate	Sufficient continuous portions of the Site with slopes less than 15% and available for septic field installation
Flooding	Moderate	This location is near a developed wetland on the southwest corner of the Site, however Site surface is elevated at least 1 metre above the wetland. General Site topography reduces the likelihood of flooding due to a high water table
Density	High	In an area with few septic systems as all but one of the existing commercial/industrial developments are serviced by pump out tanks
Encumbrances	High	Parcel is of sufficient size for an alternate PSTS location.
Parcel Size	High	Parcel is of sufficient size for alternate PSTS location.
Surface Water	Moderate	Permanent wetland located in southwest corner of Site, proposed development land is located upgradient at a higher elevation.
Overall Suitability	Moderate	Good parcel size, suitable soil types, shallow water table conditions (gleyed and mottled soil), however no conditions that would preclude the installation of a PSTS
Recommendations	Suitable for a septic treatment mound with primary or secondary treated effluent	

Table 7. Suitability for Private Sewage Treatment System – TH-2 through TH-7

Site Variable	Suitability	Description
Soil texture and structure	High	Good structure and suitable permeability for receiving and treating septic field effluent up to a depth of 2.5 metres. No restrictive conditions present that would prevent the installation of a PSTS
Depth of Suitable Soil	High	Suitable soil extends to the depth of at least 2.5 metres, with no restrictive conditions that would limit vertical infiltration distances



Site Variable	Suitability	Description
Hydraulic Capability	High	No evidence of seasonally wet soil or perched water table (no soil gleying or mottling)
Soil Horizons	High	Limiting soil characteristics that would prevent the installation of a PSTS were not found
Topography	High	The Site has sufficient continuous portions of the Site with slopes less than 15% and available for septic field installation
Flooding	High	Issues with flooding are unlikely based on surface topography, lack of gleyed or mottled soil and proximity to surface water bodies.
Density	High	In an area with few septic systems as all but one of the existing commercial/industrial developments are serviced by pump out tanks
Encumbrances	High	Parcel is of sufficient size for an alternate PSTS location.
Parcel Size	High	Parcel is of sufficient size for alternate PSTS location.
Surface Water	High	Located upgradient of closest major surface water body
Overall Suitability	High	Good parcel size, suitable soil types, no shallow water table or bedrock, no conditions that would preclude the installation of a PSTS
Recommendations		Suitable for either a below ground treatment field or septic treatment mound using primary or secondary treated effluent.



[5.0] References

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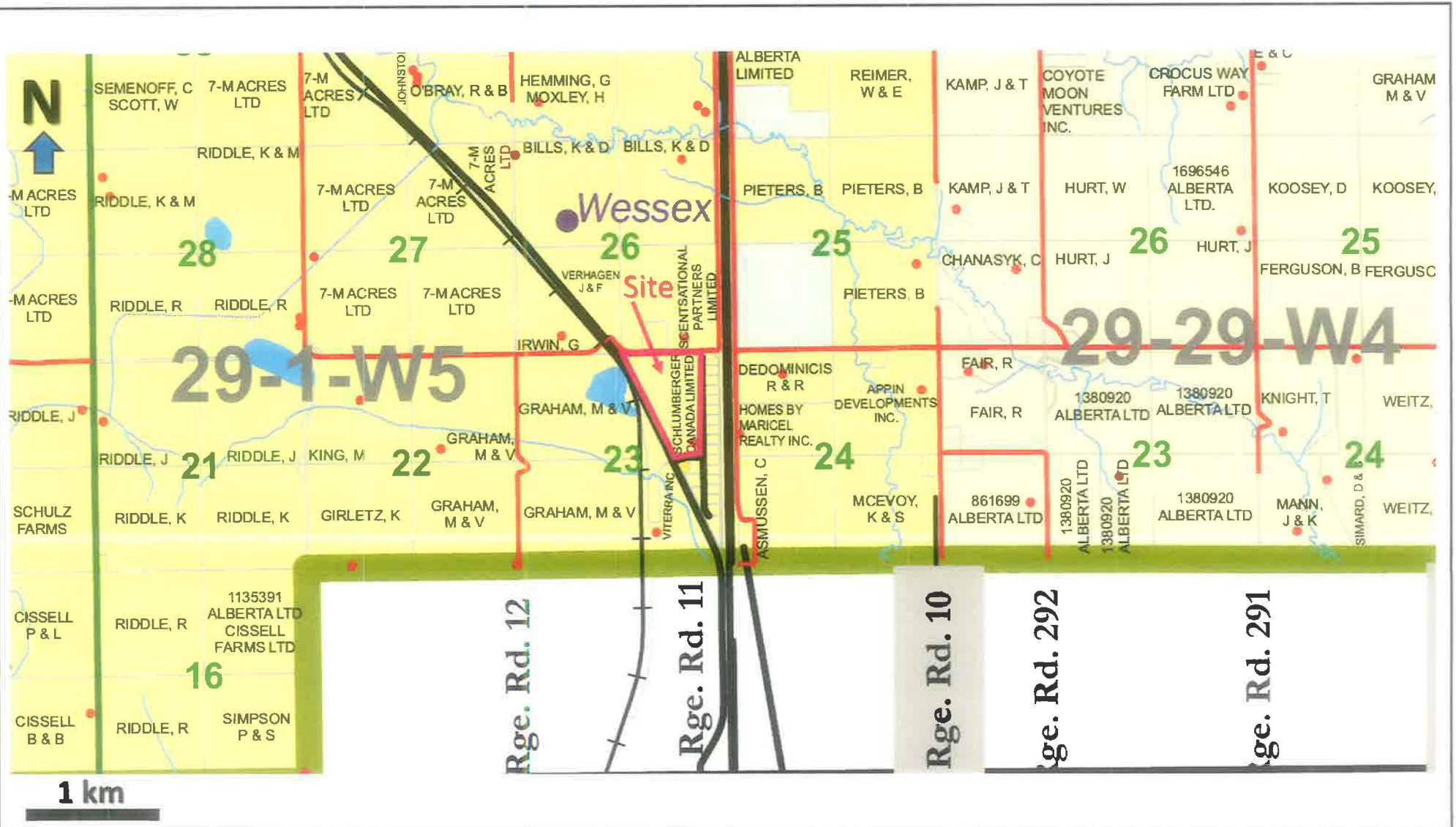
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Appendix I: Site Figures



LEGEND

Point Locations

- Community
- ⊙ Community/Services
- Properties over 40 ac Rural/Civic Address

Transportation

- Paved
- Chip-sealed
- Gravel
- Gravel Highway
- Railway

Ownership Data

- Electoral Districts
- Town/Village
- County Land
- Crown Land

Modus Holdings Inc.



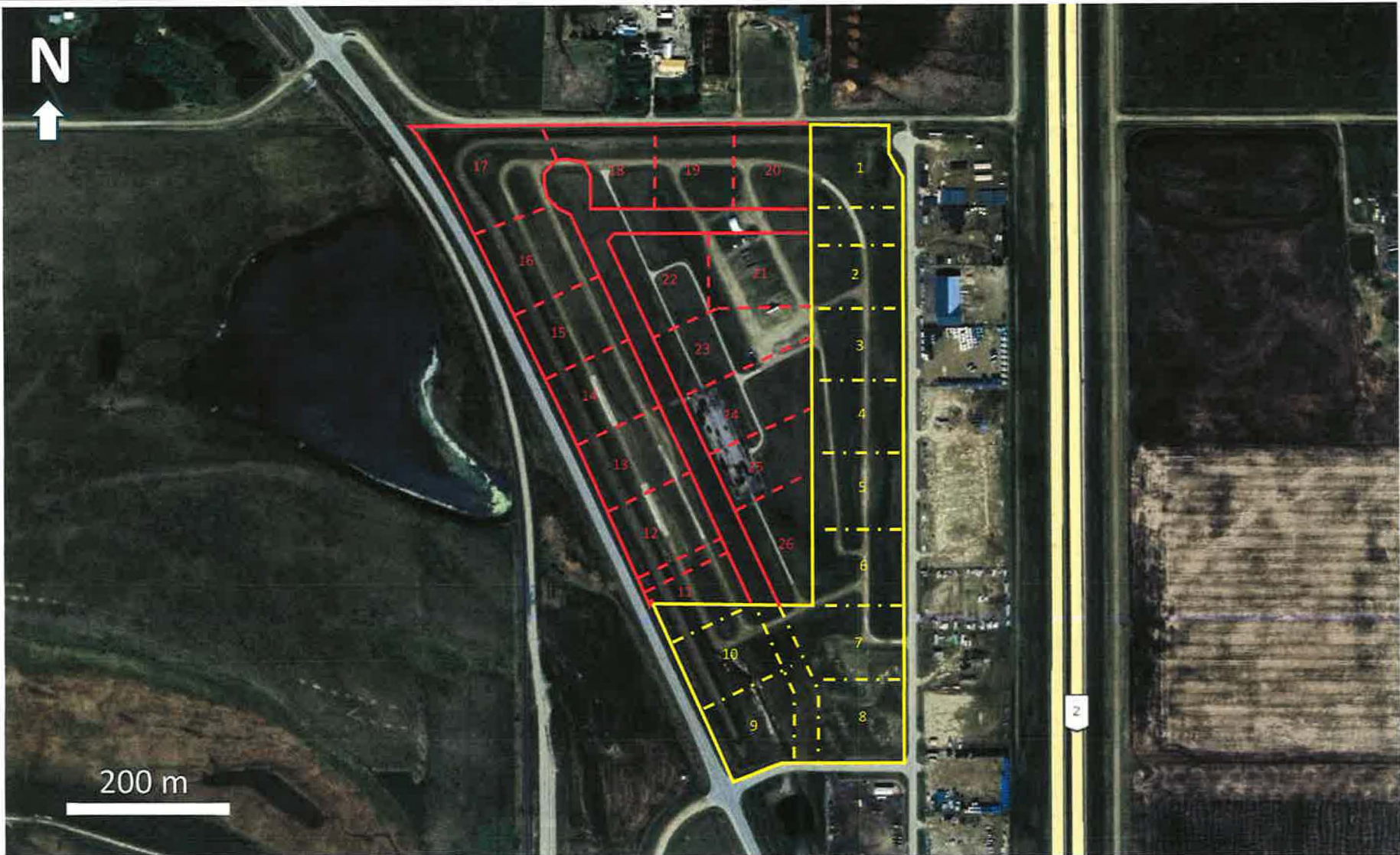
Groundwater Resources Information Technologies 3.0 Ltd.

Site Location
NE – 23 – 29 – 01W5
Mountain View County

Date: March 2026

Project: 2026-2542

Figure 1



LEGEND

- Phase 1
- Proposed Lot Boundaries
- Phase 2
- Proposed Lot Boundaries

Modus Holdings Inc.



Groundwater Resources
Information Technologies 3.0 Ltd.

Site Air Photo & Subdivision Plan
NE – 23 – 29 – 01W5
Mountain View County

Date: March 2026


Project: 2026-2542

Figure 2



LEGEND

 Subdivision Site

 ~ 150m radius

 Water Well Location (with listed well ID)

Modus Holdings Inc.



Groundwater Resources
Information Technologies 3.0 Ltd.

Water Wells within 150 m
NE – 23 – 29 – 01W5
Mountain View County




Date: March 2026

Project: 2026-2542

Figure 4



LEGEND

-  Test Hole Location
-  Site Boundary
-  Phase I Development Footprint

Modus Holdings Inc.



Groundwater Resources
Information Technologies 30.Ltd.

Test Hole Locations
NE – 23 – 29 – 01W5
Mountain View County

Date: March 2026

Project: 2026-2542

Figure 5



Appendix II: Grain Size Analysis

Report Transmission Cover Page

Bill To: Groundwater Information
Edmonton, AB, Canada
Attn: Alanna Felske
Sampled By: AF
Company: GRIT Ltd.

Project ID: 2026-2542
Project Name: Modus Septic
Project Location:
LSD: NE-23-29-01W5
P.O.:
Proj. Acct. code:

Lot ID: **1883308**
Control Number:
Date Received: Mar 19, 2026
Date Reported: Mar 23, 2026
Report Number: 3248983
Report Type: Final Report

Contact	Company	Address
Alanna Felske	Groundwater Information Technologies Ltd.	Edmonton, AB Phone: (780) 000-0000 Fax: Email: afelske@grittd.com

<u>Delivery</u>	<u>Format</u>	<u>Deliverables</u>
Email	PDF	COC / Test Report
Email	Standard Crosstab With Tabs	Test Report
Email - Merge	PDF	COA
Email - Merge	PDF	Invoice

Notes To Clients:

- All wet soil samples received in a soil bag will be disposed 30 days after receipt on 2026-04-18.

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Analytical Report

Bill To: Groundwater Information Edmonton, AB, Canada	Project ID: 2026-2542	Lot ID: 1883308
Attn: Alanna Felske	Project Name: Modus Septic	Control Number:
Sampled By: AF	Project Location:	Date Received: Mar 19, 2026
Company: GRIT Ltd.	LSD: NE-23-29-01W5	Date Reported: Mar 23, 2026
	P.O.:	Report Number: 3248983
	Proj. Acct. code:	Report Type: Final Report

	Reference Number	1883308-1	1883308-2	1883308-3	
	Sample Date	Mar 18, 2026	Mar 18, 2026	Mar 18, 2026	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	TH-1 / 6 / in	TH-1 / 13 / in	TH-1 / 29 / in	
	Matrix	Soil	Soil	Soil	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Physical and Aggregate Properties					
Texture		Loam	Clay Loam	Loam	
Sand	50 µm - 2 mm	% by weight 41	24	34	1
Silt	2 µm - 50 µm	% by weight 37	46	40	1
Clay	<2 µm	% by weight 22	30	26	1

Analytical Report

Bill To: Groundwater Information
Edmonton, AB, Canada
Attn: Alanna Felske
Sampled By: AF
Company: GRIT Ltd.

Project ID: 2026-2542
Project Name: Modus Septic
Project Location:
LSD: NE-23-29-01W5
P.O.:
Proj. Acct. code:

Lot ID: **1883308**
Control Number:
Date Received: Mar 19, 2026
Date Reported: Mar 23, 2026
Report Number: 3248983
Report Type: Final Report

	Reference Number	1883308-4	1883308-5	1883308-6	
	Sample Date	Mar 18, 2026	Mar 18, 2026	Mar 18, 2026	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	TH-2 / 4 / in	TH-2 / 12 / in	TH-2 / 30 / in	
	Matrix	Soil	Soil	Soil	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Physical and Aggregate Properties					
Texture		Loam	Loam	Loam	
Sand	50 µm - 2 mm	% by weight	37	48	47
Silt	2 µm - 50 µm	% by weight	39	30	36
Clay	<2 µm	% by weight	24	22	17

Analytical Report

Bill To: Groundwater Information Edmonton, AB, Canada	Project ID: 2026-2542	Lot ID: 1883308
Attn: Alanna Felske	Project Name: Modus Septic	Control Number:
Sampled By: AF	Project Location:	Date Received: Mar 19, 2026
Company: GRIT Ltd.	LSD: NE-23-29-01W5	Date Reported: Mar 23, 2026
	P.O.:	Report Number: 3248983
	Proj. Acct. code:	Report Type: Final Report

	Reference Number	1883308-7	1883308-8	1883308-9	
	Sample Date	Mar 18, 2026	Mar 18, 2026	Mar 18, 2026	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	TH-3 / 10 / in	TH-3 / 20 / in	TH-3 / 50 / in	
	Matrix	Soil	Soil	Soil	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Physical and Aggregate Properties					
Texture		Loam	Loam	Loam	
Sand	50 µm - 2 mm	% by weight	43	46	46
Silt	2 µm - 50 µm	% by weight	36	31	32
Clay	<2 µm	% by weight	21	23	22

Analytical Report

Bill To: Groundwater Information
Edmonton, AB, Canada
Attn: Alanna Felske
Sampled By: AF
Company: GRIT Ltd.

Project ID: 2026-2542
Project Name: Modus Septic
Project Location:
LSD: NE-23-29-01W5
P.O.:
Proj. Acct. code:

Lot ID: **1883308**
Control Number:
Date Received: Mar 19, 2026
Date Reported: Mar 23, 2026
Report Number: 3248983
Report Type: Final Report

	Reference Number	1883308-10	1883308-11	1883308-12	
	Sample Date	Mar 18, 2026	Mar 18, 2026	Mar 18, 2026	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	TH-4 / 15 / in	TH-4 / 30 / in	TH-5 / 10 / in	
	Matrix	Soil	Soil	Soil	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Physical and Aggregate Properties					
Texture		Loam	Loam	Loam	
Sand	50 µm - 2 mm	% by weight	47	47	42
Silt	2 µm - 50 µm	% by weight	30	30	32
Clay	<2 µm	% by weight	23	23	26

Analytical Report

Bill To: Groundwater Information Edmonton, AB, Canada	Project ID: 2026-2542	Lot ID: 1883308
Attn: Alanna Felske	Project Name: Modus Septic	Control Number:
Sampled By: AF	Project Location:	Date Received: Mar 19, 2026
Company: GRIT Ltd.	LSD: NE-23-29-01W5	Date Reported: Mar 23, 2026
	P.O.:	Report Number: 3248983
	Proj. Acct. code:	Report Type: Final Report

Reference Number	1883308-13	1883308-14	1883308-15
Sample Date	Mar 18, 2026	Mar 18, 2026	Mar 18, 2026
Sample Time	NA	NA	NA
Sample Location			
Sample Description	TH-5 / 20 / in	TH-6 / 12 / in	TH-6 / 32 / in
Matrix	Soil	Soil	Soil

Analyte	Units	Results	Results	Results	Nominal Detection Limit	
Physical and Aggregate Properties						
Texture		Sandy Clay Loam	Sandy Clay Loam	Loam		
Sand	50 µm - 2 mm	% by weight	45	51	40	1
Silt	2 µm - 50 µm	% by weight	28	27	35	1
Clay	<2 µm	% by weight	27	22	25	1

Analytical Report

Bill To: Groundwater Information
Edmonton, AB, Canada
Attn: Alanna Felske
Sampled By: AF
Company: GRIT Ltd.

Project ID: 2026-2542
Project Name: Modus Septic
Project Location:
LSD: NE-23-29-01W5
P.O.:
Proj. Acct. code:

Lot ID: **1883308**
Control Number:
Date Received: Mar 19, 2026
Date Reported: Mar 23, 2026
Report Number: 3248983
Report Type: Final Report

Reference Number	1883308-16	1883308-17
Sample Date	Mar 18, 2026	Mar 18, 2026
Sample Time	NA	NA
Sample Location		
Sample Description	TH-7 / 14 / in	TH-7 / 36 / in
Matrix	Soil	Soil

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Physical and Aggregate Properties					
Texture		Loam	Loam		
Sand	50 µm - 2 mm	% by weight	40	42	1
Silt	2 µm - 50 µm	% by weight	33	35	1
Clay	<2 µm	% by weight	27	23	1

Approved by: 
Anthony Neumann, MSc
General Manager

Data have been validated by Analytical Quality Control and Element's Integrated Data Validation System (IDVS).
Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Methodology and Notes

Bill To: Groundwater Information Edmonton, AB, Canada	Project ID: 2026-2542	Lot ID: 1883308
Attn: Alanna Felske	Project Name: Modus Septic	Control Number:
Sampled By: AF	Project Location:	Date Received: Mar 19, 2026
Company: GRIT Ltd.	LSD: NE-23-29-01W5	Date Reported: Mar 23, 2026
	P.O.:	Report Number: 3248983
	Proj. Acct. code:	Report Type: Final Report

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Particle Size Analysis - GS	Carter	* Hydrometer Method, 55.3	Mar 22, 2026	Element Edmonton - Roper Road

** Reference Method Modified*

References

Carter Soil Sampling and Methods of Analysis.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.