Assessment Report Guidelines

Ministry of Energy and Resources
Saskatchewan Geological Survey
11th Floor, 1945 Hamilton St, Regina, SK, S4P 2C7
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Fall 2018

Government of Saskatchewan

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SUMMARY

An assessment report is a regulatory requirement as per *The Mineral Tenure Registry Regulations, 2012*, to have work expenditures registered to a disposition. The assessment work submission is in two parts; the MARS portion which includes the certificates of expenditure including groupings and the mineral assessment report and data which outlines and provides proof of the exploration work carried out.

Reminders:

- All work being submitted for credit must be included in the assessment work report.
- If you are submitting or discussing work in the report that you are not claiming for credit, please note that in the body of the report.
- All assessment work submissions must be in digital format and mailed to:

Lands and Mineral Tenure
Ministry of Energy and Resources
610 - 1945 Hamilton Street
Regina, SK
S4P 2C7

For more details on submission requirements, please see Part VIII and Table 3, Evidence of Assessment Work in *The Mineral Tenure Registry Regulations, 2012* which can be viewed at the following link: http://www.qp.gov.sk.ca/documents/english/regulations/regulations/c50-2r27.pdf, or contact us directly.

For questions or inquiries please contact:

MARS and Mineral Tenure: MARS Administration / 306 787-0903 / MARS@gov.sk.ca
Assessment Report Content: Amanda Palaniuk / 306 787-2569 / Amanda.Palaniuk@gov.sk.ca
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1.0 ASSESSMENT REPORT REQUIREMENT CHECKLIST

1. **General:**
   - ☐ Report on field work carried out on a disposition and an interpretation of the results obtained.
   - ☐ Unlocked documents on writable CDs/DVDs or USBs.
   - ☐ Written PDF report, separate appendices folders (including all data, maps, figures and photos), and a MARS expenditures report including all dispositions.
   - ☐ Files and folders named and organized concisely and simply.
   - ☐ No expenditure details within the report.
   - ☐ Define all abbreviations and acronyms used in the report.
   - ☐ All locations must be provided in NAD 83 UTM coordinates with zone indicated in addition to grid coordinates.
   - ☐ Data formats should comply with the Table of Data Formats table.

2. **Sections to include in report:**
   - ☐ Title page
   - ☐ Summary
   - ☐ Table of contents
   - ☐ Introduction
   - ☐ Tenure and work related partnership information
   - ☐ Geology discussion, regional and property geology map
   - ☐ Exploration history
   - ☐ Current exploration work
   - ☐ Results
   - ☐ Conclusions and recommendations
   - ☐ List of figures and maps (may be embedded or as an appendices)
   - ☐ List of tables
   - ☐ References
   - ☐ Personnel list

3. **Title page should have:**
   - ☐ Name of project
   - ☐ Type of work
   - ☐ Disposition numbers
   - ☐ NTS map sheet
   - ☐ UTM coordinate zone and datum
   - ☐ Work dates of the field work (start and end)
   - ☐ Company name and address
   - ☐ Authors
   - ☐ Date of report

4. **Maps should have:**
   - ☐ Title
   - ☐ Legend
   - ☐ Relevant disposition numbers and boundaries
   - ☐ Pertinent topographical features
   - ☐ Descriptive labelling
   - ☐ Scale bar

- ☐ North arrow
- ☐ NTS map reference
- ☐ NAD 83 UTM coordinates and zone
- ☐ Author
- ☐ Date on which it was made or revised
- ☐ Formatted as not to exceed 36" X 60"

5. Figures should have:

- ☐ Title
- ☐ Legend
- ☐ Descriptive labelling
- ☐ Author
- ☐ Date on which it was made or revised

6. Evidence of Work:

a) Airborne Geophysical Survey:

- ☐ Full operational data, types and specifications of instruments used, type of aircraft, ground and altitude control used and terrain clearance.
- ☐ Position of all flight lines indicating direction of flight shown on a map.
- ☐ Presentation of data in profile or contour form or in a manner to demonstrate data's significance.
- ☐ Map including: indications of all anomalous instrument readings with a key to the symbols used.
- ☐ Complete digital data as received by the disposition holder from the contractor.
- ☐ Results from interpretive analysis including 3D models.

b) Ground Geophysical Survey:

- ☐ Full operational data including type of instruments, spacing of readings and ground control used.
- ☐ Map showing the value of each instrument reading, plotted and labelled at the observation point.
- ☐ Complete listing of final corrected topographic co-ordinates (UTM NAD83) and associated attributes.
- ☐ Presentation of data in profile or contour or any other form best suited to determine its significance.
- ☐ Complete digital data as received by the disposition holder from the contractor in either ASCII or Geosoft format.

c) Drilling and Logging:

- ☐ Maps showing location of drill holes with labels, relative to local topography and claim boundaries.
- ☐ Coordinates of collar locations in UTM NAD83 datum with zone indicated.
- ☐ Type of drilling and hole or core size.
- ☐ Total depth, bearing and dip of drill holes.
- ☐ Coordinates for location of core storage or physical address.
- ☐ Complete geological drill logs and name of person logging. All header information on logs. All data included in CSV.

- ☐ Assays or analyses clearly identified as to hole or core intervals in CSV format with results. If no assays reason for absence.
- ☐ Original documents as provided by the lab. In CSV and PDF signed and/or stamped laboratory certificates.
- ☐ Information on laboratory and equipment specifications used in core and hole analysis.
- ☐ Complete geophysical logs (LAS) and downhole surveys with type of equipment used.
- ☐ Any other technical info obtained from core, cuttings or logging including but not limited to: copies of sections, photos, oriented core, magnetic susceptibility, density, petrography, scintillometer and spectrometer readings.

d) Geological Survey/Prospecting/Trenching:

- ☐ Detailed geological description of rock types, structures and mineralized zones.
- ☐ Description of specialized equipment, nature and level of any readings taken.
- ☐ Location of outcrops, traverse or stations investigated and samples taken.
- ☐ Labelling of outcrop according to legend.
- ☐ Structural data: attitude, foliation, lineation, folding, faulting, shear zones and contacts.
- ☐ Location of mineral showings, zones of mineralization, trenches, drill holes and underground workings.
- ☐ Table of formations, list of rock types, list of symbols and name of person who carried out the survey.

e) Geochemical Survey:

- ☐ Detailed description of field sampling and analytical techniques.
- ☐ Relevant analytical values plotted at sample locations on a map and presented in a way best suited to determine their significance.
- ☐ Sample locations with corresponding sample identification numbers plotted on a map.
- ☐ Complete listing of final corrected topographic co-ordinates and associated attributes in a manner acceptable to the department (ASCII).
- ☐ Original documents as provided by the lab. In CSV and PDF signed and/or stamped laboratory certificates.

7. In a paper submission by a prospector claiming under $20,000:

- ☐ Maps and drill logs must be bound in a folder.
- ☐ Fold-out maps on 28 x 43 cm (ledger sized) paper may be included in report.
- ☐ Two copies of maps must be submitted.

8. MARS/Record of Expenditures must have:

- ☐ Unit costs for each expenditure type matches from one disposition to the next.
- ☐ Unit cost should be within industry standards for that type of work.
- ☐ Administration cost claimed does not exceeds 10%.
- ☐ Airborne geophysical survey can claim 0.5x cost in the additional field.
- ☐ Ensure the work was not completed more than two years before the beginning of the assessment work period.
- ☐ Ensure that report writing or other administrative costs are not claimed twice, included in 10% allowable.

2.0 TABLE OF DATA FORMATS

Data Type	Description	Format	File Extension
Tabular data	Geochemistry, drill log and surveying data	Delimited ASCII (prefer CSV delimited)	.txt .csv
Geo-referenced polygons and lines	Geology, geochemistry, geophysics, geography, etc. GIS datasets	Shapefile and delimited CSV file for header data	.shp .csv
Digital elevation models	DEM's from Lidar or other sources	Geosoft format (GRD) or GeoTIFF	.grd .tif
Geophysics	Raw and processed located data, gridded data, magnetics, radiometrics, and gravity data	Delimited ASCII (prefer CSV delimited) Geosoft format (GDB, GRD, GXF)	.csv .gdb .gxf
Geophysical images	Images derived from magnetics, electromagnetics, or gravity	GeoTIFF, TIFF JPEG PDF MAP 3D Models	.tif .jpg .pdf .map .vox .mesh .con
Petrophysical and geophysical log data	Raw and processed wireline and MWD (measurement while drilling) data	DLIS LIS LAS ASCII	.lis .lis .las .asc
Text	Log plots up to E or A0 in physical length at full scale	PDF	.pdf
	Includes documents, figures etc.	PDF	.pdf
Maps, plans and figures in appendices	Files of maps up to E or A0 format in physical length at full scale	PDF	.pdf
Photographs in appendices	Core and aerial photographs, etc.	JPEG	.jpg

3.0 SAMPLE/TEMPLATE

This sample gives an example of how an assessment report could look. The format is optional but the content is required.

Sample Title Page

PROJECT/PROPERTY NAME

Type of Work Conducted

Disposition Numbers

NTS Sheets
UTM coordinates/ Zone & Datum

Work Dates (Start and End)

Company Name
Company Address
Name of Person/People who wrote the report
Date of report

Sample Table of Contents

Sample of Report Content

SUMMARY

Summarize the contents of the report.

1.0 INTRODUCTION

1.1 Location and Access

State the location of the dispositions in relation to nearest communities or commonly known geographic points. State how access to the field area was achieved (float plane, helicopter, truck etc.). If the camp was re-supplied (food, fuel etc.) state how this was achieved.

Figure #. *Regional Location Map (show where in Saskatchewan the property is)*
Figure #. *Disposition Location Map*

1.2 Climate and Physiography *(optional)*

State the general climate of the field area. Outline the approximate timing of break- up/ice thaw and freeze-up.

Describe the landscape of the area. List any notable topographic features (lakes, rivers, mountains, eskers etc.). Estimate depth to permafrost, depth of till/overburden if applicable.

Include a brief description of the type of vegetation found in the area. Estimate the percentage of outcrop, vegetation and till covering the area.

1.3 Dispositions and Owners/Joint Ventures

Include all dispositions included in the submission. Disposition ownership and status can be included in table form.

Discuss any ventures that might be on this property.

Table #. *Dispositions and Owners/Joint Ventures*

2.0 GEOLOGY

2.1 Regional Geology

Summarize the types of rocks present, their ages, and outline the tectonic history (major events of regional deformation, if available). A regional geology map should be provided if available.

Be sure to reference all sources of information used in this section. These sources must also be listed at the end of the report under References.

Figure #. *Regional Geology map*

2.2 Property Geology

Describe the geology (rocks and structure) on your dispositions. Include a map of the property geology. Be sure to reference all sources of information used in this section. These sources must also be listed at the end of the report under References.

Figure #. *Property Geology map*

2.3 Stratigraphy *(optional; required if report is for a geological survey)*

Include a stratigraphic column if available. Provide information of the area's stratigraphy.

Figure #. *Stratigraphic column*

4.0 EXPLORATION HISTORY

Include an overview of the exploration history of the property including company name, when the work was done, type of work done, significant results and a reference to the report that details this work, if applicable (e.g. assessment report). A table could be used to present this information.

Table #. *Exploration History*

5.0 CURRENT EXPLORATION

5.1 Exploration Logistics and Methods

Discuss the exploration work that is the subject of the expenditures claimed in MARS. This includes grid work (line cutting, refurbishment), prospecting, geological mapping, sampling, petrography, trenching/stripping, geochemistry, geophysics (ground/airborne/borehole), drilling, other.

Ensure it is clear exactly what type of work was done and what steps were taken to conduct the work. State contractors, methods and instruments used.

Figures: Include all relevant figures that will aid in the discussion of the current work program. Examples include but are not limited to: location of grids, sample locations, drill hole locations, geophysical stations, and trench locations.

Tables: Include any information in table format that may aid in the discussion of the current work program. Examples include but are not limited to: work to claim allocation, drill holes (disposition number, drill hole identifiers, UTM coordinates, drilling dates, end depth, number of samples, analysis done on holes, dip, azimuth).

Please include information that would help in the review of the report (e.g. core storage location (UTMs and/or address), note if the costs of any work included in the report is not being claimed, etc.)

For more details, please refer to the following documents for specific requirements pertaining to your survey:

- *Table 3, Subsection 62(1) in The Mineral Tenure Registry Regulations, 2012 (http://www.qp.gov.sk.ca/documents/english/regulations/regulations/c50-2r27.pdf),*
- *The Requirements for Assessment Report Checklist (attached), and*
- *The Table of Data Formats (attached).*

5.2 Analytical Methods *(if applicable)*

Indicate the number of samples analyzed, name of the lab and what types of analytical tests were performed. The details of the analytical tests and procedures can be obtained from the lab and should be attached to the report as an Appendix.

6.0 RESULTS

A summary of the results must be included in the body of the report. This may be in the form of tables, maps, profiles, sections and/or drill logs.

Figure #. *Results*
Table #. *Results*

7.0 INTERPRETATION / DISCUSSION OF RESULTS

A comprehensive interpretation of the results must be included.

8.0 CONCLUSIONS AND RECOMMENDATIONS

9.0 REFERENCES

10.0 LIST OF FIGURES *(optional to embed in the report or submit in a separate folder)*

Figures are to be in PDF form and should be labelled as to content.

Figures could include but are not limited to:

Figure #. *Location Map (shows where in Saskatchewan the property is)*
Figure #. *Disposition Location Map*
Figure #. *Regional Geology Map*
Figure #. *Property Geology Map*
Figure #. *Survey Location (sample location including number, drill collar location and drill hole number, airborne survey outline and flight lines, ground geophysical survey grid)*
Figure #. *Results (map, gradient map, profile, contour, cross section, graph, plots, logs)*
Figure #. *Add as needed*

Maps must include title, legend, disposition boundaries and numbers, pertinent topographical features, scale bar, north arrow, UTM coordinates with NAD83 datum and zone specified, and NTS map reference, author, and date of production or revision.

Maps must be legible copies of final drafts, formatted as not to exceed 36" X 60". Maps with field data must be at a scale and of a quality to clearly depict all observations made.

11.0 LIST OF TABLES

Tables are to be in CSV form and should be labelled as to content.

Tables could include but are not limited to the following:

Table #. *Dispositions and Owners/Joint Ventures*
Table #. *Exploration History*
Table #. *Sample/Drill hole/Geophysical station coordinates*
Table #. *Results*
Table #. *Add as needed*

12.0 APPENDICES

Each appendix must be labelled as to content.

Appendix #. Personnel List

Attach a list of personnel, their position, company/contractor, and dates they worked.

Appendix #. Drill Core Logs *(if applicable)*

Ensure that the logs include the serial number of the disposition, collar locations in UTM coordinates with NAD83 datum and Zone specified, type of drilling and core size, total depth, bearing and dip of drill holes, name of person logging, location of samples taken for assay or other determinations.

All drill core data should be included in CSV format.

If re-sampling drill core, all header information is to be included as well as the sample lithology/description. If re-logging drill core, complete core logs must be provided as well as the header information.

Appendix #. Core Photos *(if applicable)*

Core photos should be in JPEG format and file should be labelled with hole number and the top and bottom meterage of the core in the photo.

Appendix #. Assay and Geochemical Certificates *(if applicable)*

Include a table with sample number, drill hole, from to, and results. Attach copies of the tabular and original signed and/or stamped laboratory certificates.

Appendix #. Data files

Provide geophysical and geochemical data as comma delimited ASCII files and or other standard industry format acceptable to the Ministry. Geophysical logs (LAS files for downhole probing).

Appendix #. Figures and Tables

All figures, maps and tables submitted are to be labelled as to content.

Appendix #. Contractors Reports and Data

All deliverables as listed in contractor reports.

Appendix #. Other

Include all other related files in appendices format.

4.0 REGULATION COMPARISON TABLE

COMMODITY	REGULATIONS	EXPENDITURE & TECHNICAL REPORTING DEADLINES	REPORT REQUIREMENTS	PERIOD OF WORK THE REPORT ENCOMPASSES	CONFIDENTIALITY PERIOD
Natural mineral salts and their compounds (more than 60 m below surface) SMTR, 2015 s 2	***The Subsurface Mineral Regulations, 1960*** (SMR, 1960) C-50.2 - SR541/67 ***The Subsurface Mineral Tenure Regulations, 2015*** (SMTR, 2015) C-50.2 Reg 30	**Work Report** **Legacy permits**, **Legacy leases** (not in production), **New permits**, **New leases** (not in production)- 90 days after the end of each calendar year (SMTR, 2015 s 43(1)) **Expenditures** **Legacy permits**- Annually, 90 days after the anniversary date (SMR, 1960 s 12(1)) **Legacy lease**- Annually, 90 days after the anniversary date until the $3,000,000 in first three years expenditure is met (SMR, 1960 s 23) **New permits**-interim expenditure report 90 days after the anniversary of the 5th year*, final expenditure report 90 days after expiry/lapse* (SMTR, 2015 s 13-14) **New leases**- none	Description of work (includes all exploration and development), analysis and interpretation of results, work location map, core description, analyses description (SMTR, 2015 s 2)	Previous years work	At the time of expiry/lapse (SMTR, 2015 s 46)
Coal and lignite CDR, 1988 s 2(1)	***The Coal Dispositions Regulations, 1988*** (CDR, 1988) C-50.2 Reg 3	**Work Report and Expenditures** **Permit**- 60 days following expiry/lapse (CDR, 1988 s 13(1)) **Coal Test Holes** **Permit**- 60 days following expiry/lapse (CDR, 1988 s 36(1)) **Lease**- 6 months after drill completion (CDR, 1988 s 36(2))	Permit reports- Outline exploration operations, analyses of samples taken, expenditures (CDR, 1988 s 13(1)) Test hole reports- May be required to log hole, maps with dispositions, hole locations, two copies of logs (CDR, 1988 s 35(1)-36(2))	Term of permit (CDR, 1988 s 13(1)) Applicable holes drilled (CDR, 1988 s 36)	Permit- at the time of expiry/lapse Lease- 1 year following expiry/lapse (CDR, 1988 s 55)
Natural soluble mineral salts and associated marls and brines occuring at surface (excluding Little Lake Manitou, except for sodium sulphate)	***The Alkali Mining Regulations*** (AMR) C-50.2 - SR444/67	**Work Report** As the Minister calls for (AMR s 30) **Expenditures** Annual itemized statement (AMR s 17)			
Quarriable substances (open pit excavation) (QR, 1957 s 3(5))	***The Quarrying Regulations, 1957*** (QR, 1957) C-50.2 - SR553/67	**Work Report and Expenditures** Permit- Proof of work program and expenditures done 60 days after expiry/lapse (QR, 1957 s 9(1))			
All Minerals that do not fall under the above regulations or *The Petroleum and Natural Gas Regulations, 1960* (C-50.2 Reg 31)	***The Mineral Tenure Registry Regulations, 2012*** (MTRR, 2012) C-50.2 Reg 27	**Work Report and Expenditures** Received 90 days after the end of the assessment work period (MTRR, 2012 s 61(2))	Requirements as laid out in section 62 and Table 3 of the regulations ((MTRR s 62(1); Table 3)	Work must be completed within the previous 2 years before the beginning of the assessment work period to be allocated to the current assessment work period. (MTRR, 2012 s 61(3))	3 years from submission date, written consent or when the dispositions lapse or are terminated (MTRR, 2012 s 68)

*not reviewed by SGS s=section of regulations

5.0 EXPENDITURE TYPE COMPARISON TABLE

Category	Type	Unit of Measurement	Additional Description Required	Work to Include in This Category
GEOLOGY	Geology: Prospecting	person days		Traversing, scintillometer/spectrometer survey (not gridded), collecting samples
	Geology: Geological Mapping/Petrography	person days	# of samples if taken	Traversing, outcrop investigation, collecting samples
	Geology: Trenching/Stripping	m^3	# of trenches	
	Geology: Petrography	#		Analysis of petrographic samples
GRID	Grid: Legal Survey	km		
	Grid: Line Cutting	km		In preparation for exploration survey to be conducted in the same assessment work period
	Grid: Picket Setting	km		In preparation for exploration survey to be conducted in the same assessment work period
GEOPHYSICS AIRBORNE	Geophysics: Airborne EM	km		
	Geophysics: Airborne Mag or Grad	km		
	Geophysics: Airborne Radiometric	km		
	Geophysics: Airborne Gravity	km		
	Geophysics: Airborne Combination	km	survey type	Only used if other choices don't adequately describe what was done
	Geophysics: Airborne Other	km	survey type	Only used if other choices don't adequately describe what was done
GEOPHYSICS GROUND	Geophysics: Ground Seismic	km		
	Geophysics: Ground VLF	km		
	Geophysics: Ground Ground Time Domain EM	km		ML-TEM, TDEM, SQUID, SML-TEM
	Geophysics: Ground EM Other	km	survey type	Only used if other choices don't adequately describe what was done
	Geophysics: Ground Magnetic	km		
	Geophysics: Ground IP/Resistivity	km		
	Geophysics: Ground Gravity	km		
	Geophysics: Ground Bore Hole	m (metres of hole surveyed)	# of holes, survey type	Downhole geophysics
	Geophysics: Ground Bathymetry/Soundings	km or #		
	Geophysics: Ground Combination	km	survey type	Only used if other choices don't adequately describe what was done
	Geophysics: Ground Other	km	survey type	Only used if other choices don't adequately describe what was done
GEOCHEMISTRY	Geochemistry: Lake/Stream Sediments	#	survey type	Analysis of samples
	Geochemistry: Water	#	survey type	Analysis of samples
	Geochemistry: Soil Gas	#	survey type	Analysis of samples
	Geochemistry: Core/Rock/Chip/Boulder	#	survey type	Lab analysis of samples
	Geochemistry: Biogeochemical	#	survey type	Lab analysis of samples
	Geochemistry: Bulk Sample	#	weight, survey type	Lab analysis of samples
	Geochemistry: Heavy Mineral/Indicator/Microdiamond	#	weight	Lab analysis of samples
	Geochemistry: Soil/Overburden/Till	#	survey type	Lab analysis of samples
	Geochemistry: Other	#	survey type	Only used if other choices don't adequately describe what was done
DRILLING	Drilling: Diamond	m	# of holes	
	Drilling: Percussion	m	# of holes	
	Drilling: Rotary	m	# of holes	
	Drilling: Reverse Circulation	m	# of holes	
	Drilling: Other	m	# of holes, drilling type	Only used if other choices don't adequately describe what was done
OTHER	Other Work	counts	survey type	Only used if other choices don't adequately describe what was done, specify units of measurements used
ADMIN	Administration			Includes report writing, administrative duties, up to 10% of eligible expenditures MTRR, 2012 s 65(1)(b)
EXTRA	Additional			Used for claiming the extra 50% credit for the cost of the airborne survey. *MTRR, 2012 s65(2)*

6.0 COST ALLOCATION EXAMPLE

This gives an example of how to allocate expenditures to dispositions. This is a suggested method and not mandatory.

Example Scenario

Exploration Program Completed: Prospecting with scintillometer, 10 outcrop grab samples collected and 10 lab analysis.

Time and People in the Field: 5 days with 5 people

Total Spent on the Program: $52,000

Total Cost of Field Work: $50,000

Cost from Lab Analysis: $2,000

Dispositions work was done on: Claim A and Claim B

	Prospecting	Lab Analysis
Claim A	10 person days	2 samples
Claim B	15 person days	8 samples

	Prospecting (Exp Type- Geology: Prospecting (persondays))		**Lab Analysis** (Exp Type- Geochemistry: Core/Rock/Chip/Boulder (Outcrop) (number of samples))	
Formula to Calculate Unit Cost	Total cost / Total unit (unit of measure for specific expenditure type)			
	Program cost / Person days in the field		Lab invoice / Number of samples analyzed	
Calculate Unit Cost	$50,000 / 25 person days = $2,000 per pday		$2,000 / 10 samples = $200 per sample	
Formula to Calculate Claim Allocation	Unit cost x Total units on the claim			
	$ per pday X total person days on claim		$ per sample X total samples on claim	
Claim	**Claim A**	**Claim B**	**Claim A**	**Claim B**
Calculate Allocation for Claim	$2,000 per pday X 10 pdays = $20,0000	$2,000 per pday X 15 pdays = $30,000	$200 per sample X 2 samples = $400	$200 per sample X 8 samples = $1,600

Total Amount Allotted to Each Claim	$20,000 + $400 = $20,400	$30,000 + $1,600 = $31,600
Total Expenditures	$20,400 + $31,600 = $52,000	