



Great South Land Minerals Limited

Great South Land Minerals Limited ABN 54 068 650 386

DRILLING OPERATIONS MANUAL

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1.1 DISTRIBUTION LIST

Controlled electronic copy held by Drilling manager

Uncontrolled hard copies of this document are distributed as follows:

Copy No.	Holder
1	Drilling Manager (GSLM office copy)
2	Drilling Supervisor (Rig copy)
3	Drilling Contractor (Office copy)
4	Contractors Rig Manager (Rig copy)
5	Mineral Resources Tasmania
6	

Table 1 Holders of Copies of GSLM's Drilling Operations Manual

1.2 PURPOSE

The purpose of the Drilling Operations Manual is to:

- Illustrate the policies, standards, guidelines, procedures and controls required during the drilling of wells.
- Provide a guide for relevant personnel on the procedures to be followed to ensure that a consistent, thorough and uniform approach is adopted to facilitate delivery of cost-effective wells.
- Provide sufficient information to allow the Drilling Supervisor to supervise, and monitor the drilling operation and control standards and reporting
- Provide sufficient information which can be used as a reference in planning and field drilling operations.

1.3 APPLICATION

The Drilling Operations Manual is the reference manual for GSLM, Drilling Supervisors and Drilling Managers controlling the drilling operations of land wells in Tasmania.

1.4 INTRODUCTION

It is acknowledged that this manual is based on the Drilling Operations Manual used by several operators in the Cooper Basin of South Australia. It is expected that these operations will be very similar to those in Tasmania.

Tasmania is largely unexplored and therefore all personnel have to be aware that unplanned events could occur at any time. All personnel need to be aware of this and trained to react correctly. In all circumstances the safety of the public and personnel on the rig is the prime concern and operations should be carried out with safety as the top priority.

1.5 SAFETY

GSLM is committed to providing a safe and healthy work environment and to protecting its employees from the possibility of injury and risk to health while they are at work.

The company will make available the appropriate resources to ensure that it complies in all respects to the relevant occupational health and safety legislation and to ensure that the workplace is safe and healthy. In order to achieve this GSLM will ensure that:

- A safe working environment and safe systems of work are provided and maintained at the wellsite.
- Equipment is "Fit for Purpose" and maintained in safe condition.
- People working on the rig will be provided with the information, instruction, training, equipment and supervision needed to ensure their health and safety.
- Occupational health and safety standards and procedures are continually reviewed and improved.
- Risk management procedures are in place to identify, assess and control/eliminate hazards. These will include, Work Permits, JSA's, safety meetings, incident reports, rig inspections etc.

All personnel must be trained, capable and certified (where applicable) for the job they are doing. It is the responsibility for the contractor to ensure their personnel are qualified and trained for the job. The DSV should check qualifications where possible prior to the job commencing.

In the event of an incident or emergency at the rig the priorities will be as follows:

- Safety to the Public
- Safety to personnel on the rig
- Environmental Protection
- Prevention of damage to equipment

The current workplace health and safety legislation in Tasmania is:



The Workplace Health and Safety Act 1995



The Workplace Health and Safety Regulations 1998



The Workers Rehabilitation and Compensation Act 1988

1.6 DEFINITIONS

This section contains the abbreviations and terminology used in this Manual. It is strongly recommended that all readers familiarise themselves with the abbreviations and terminology used, to avoid any misunderstanding arising from the use of the terms in the text.


1.6.1 Abbreviations

AC	Alternating Current	AHD	Along Hole Depth
API	American Petroleum Institute	BHA	Bottom Hole Assembly
Bbls	Barrels	bpm	Barrels per Minute
BOP	Blowout Preventer	CCL	Casing Collar Locator
BUR	Build-up Rate	cmt	Cement
CBL	Cement Bond Log	CET	Cement Evaluation Tool
Cu	Cubic		
DC	Drill Collar	DDE	Directional Drilling Engineer
DDR	Daily Drilling Report	DE	Drilling Engineer
DOM	Drilling Operations Manual	DP	Drill Pipe
DSV	Drilling Supervisor	DST	Drill Stem Test
E & D	Exploration and Development	ECD	Equivalent Circulating Density
EMW	Equivalent Mud Weight	EOB	End of Build-up
FIT	Formation Integrity Test	FPIT	Free Point Indicator Tool
ft	Feet	GSLM	Great South Land Minerals
gal	Gallon	GLG	Geologist
gpm	Gallons per Minute	GR	Gamma ray
HSWE	Health, Safety, Welfare and Environment	ht	Height
HTB	High Temperature Blend	HWDP	Heavy Weight Drill Pipe
IADC	International Association of Drilling Contractors	ID	Inside Diameter
IF	Internal Flush		
KOP	Kick-off Point	KB	Kelly Bushing
LCM	Lost Circulation Material	LGS	Low Gravity Solids
MAASP	Maximum Allowable Annular Test Surface Pressure	MBT	Methylene Blue
MDT	Modular Dynamic Tool	min	Minute
MMS	Magnetic Multi Shot	MSS	Magnetic Single Shot
MT	Metric Tonnes	MSDS	Materials Safety Data Sheet
MWD	Measurement While Drilling	MW	Mud Weight
N/A	Not Applicable	NBRR	Near Bit Roller Reamer
NDT	Non Destructive Testing	NMDC	Non Magnetic Drill Collar
		NRV	Non Return Valve System
OD	Outside Diameter	OE	Operations Engineer
OGL	Operations Geologist	OH	Open Hole System
P & A	Plug and Abandon	PE	Petroleum Engineer
Pfc	Final Circulating Pressure	Pic	Initial Circulating Pressure
ppg	Pounds per Gallon	POOH	Pull out of Hole
psi	Pounds per square inch	ppm	Parts per Million
PVT	Pressure Volume Temperature.	PV	Plastic Viscosity
QA/QC	Quality Assurance/ Quality Control		
RFT	Repeat Formation Tester	RIH	Run in Hole
ROP	Rate of Penetration	rpm	Revolutions per Minute
RT	Rotary Table		
SCR	Slow Circulating Rate	sec/ qt	Seconds per quart
SEO	Statement of Environmental Objectives	SF	Safety Factor
SICP	Shut-in Casing Pressure	SIDPP	Shut-in Drill Pipe Pressure
SITHP	Shut-in Tubing Head Pressure	spm	Strokes per Minute
sx	Sacks		
TOC	Top of Cement	TP	Tool Pusher
TVD	True Vertical Depth	TD	Total Depth
UHF	Ultra High Frequency	TLC	Tough Logging Conditions
USIT	Ultra sonic imaging tool)		
VDL	Variable Density Log		
WGL	Wellsite Geologist	WOB	Weight on Bit
WOC	Waiting on Cement		
wt	Weight		










1.6.2 Language

- **Shall** or **must** indicates a mandatory requirement.
- **Should** indicates a guideline which is strongly recommended.
- **May** indicates a guideline which is to be considered.

1.7 REFERENCES

All references applicable to a section of the text are identified at the foot of the text and prefixed by the  symbol.

This manual should be used in conjunction with the following references.

	GSLM's Policies and Procedure
	Dangerous Goods Act 1998
	Mineral Resources Development Act 1995
	Mineral Resources Regulations 2006
	Mineral Exploration Code Of Practice
	Schedule C of the Exploration License
	The Workplace Health and Safety Act 1995
	The Workplace Health and Safety Regulations 1998
	The Workers Rehabilitation and Compensation Act 1988

CHAPTER 2
QUICKLOOK DRILLING OPERATIONS GUIDE
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2.1 OBJECTIVES

The objective of the Quicklook Drilling Operations Guide is to provide a quick reference for a newly assigned Rig Supervisor to the drilling activities carried out by GSLM. The table in Section 2.2 summarises and outlines the sequential steps involved in planning, constructing, evaluating and abandoning a typical conventional well. The table incorporates references to procedures contained in this Manual, and where relevant, the applicable forms which must be completed.