

# Modification Notice - Regulation 22

<b>Interest Holder</b>	<b>Santos QNT Pty Ltd</b>		<b>EMP Title</b>	<b>McArthur Basin Drilling Program NT Exploration Permit (EP) 161</b>	<b>Unique EMP ID No.</b>	STO2-7	<b>Change/Mod No.</b>	1	<b>Date</b>	21/5/21.
<b>Brief Description</b>	The modification to the activity is the use of additional drilling chemicals during the activities. Further to the notification made on 7 May 2021, please find details below.									
<b>Geospatial Files Included?</b>	No									
<b>Does the proposed change result in a new, or increased, potential or actual environmental impact or risk?</b>	<b>If an INCREASE in an existing potential or actual environmental impact or risk is it provided for in the approved EMP?</b>	<b>Does the proposed change require additional mitigation measures to be included?</b>	<b>Has additional stakeholder engagement been conducted?</b>	<b>Does it require additional environmental performance standards and measurement criteria?</b>	<b>Does it affect compliance with Sacred Site Authority Certificates?</b>	<b>Does it affect current rehabilitation, weed, fire, wastewater, erosion and sediment control, spill or emergency response plans?</b>	<b>Will the environmental outcome continue to be achieved and will the impacts and risks be managed to ALARP and acceptable?</b>			
No	N/A	No	No	No	No	No	Yes			
<b>Current EMP Text</b>					<b>Amended EMP Text</b>					
See Appendix H: Spill Management Plan: MacArthur Basin Drilling Program NT Exploration Permit (EP) 161 Table 2-2: Proposed Drilling Chemicals					See additional Proposed Drilling Chemicals shaded in grey in updated Table 2-2: Proposed Drilling Chemicals below.					

Table 2.2: Proposed Drilling Chemicals

Material Name	Haz Mat No	Contains	CAS Number	Concentration	Hazardous	Storage Location*
<b>Drilling Fluid</b>						
ALDACIDE® G	HB003462	Glutaraldehyde	111-30-8	10 - 30%	Yes	Leasepad CSA
		Methanol	67-56-1	0.1 - 1%	Yes	Leasepad CSA
BARABUF®	HM003483	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
BARACARB® 5	HM003487	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
BARACARB® 25	HM003486	Crystalline silica, quartz.	14808-60-7	0.1 - 1%	Yes	Leasepad CSA
BARACARB® 50	HM003488	Crystalline silica, quartz.	14808-60-7	0.1 - 1%	Yes	Leasepad CSA
BARACARB® 150	HM003484	Crystalline silica, quartz.	14808-60-7	0.1 - 1%	Yes	Leasepad CSA
BARACARB® 600	HM003489	Crystalline silica, quartz.	14808-60-7	0.1 - 1%	Yes	Leasepad CSA
BARACOR® 100	HM003391	Ethanol, 2,2'-oxybis-, reaction products with ammonia, morpholine derivatives residues	68909-77-3	10 - 30%	Yes	Leasepad CSA
		Methanol	67-56-1	10 - 30%	Yes	Leasepad CSA
		Nitilotriacetic acid, trisodium salt monohydrate	5064-31-3	1 - 5%	Yes	Leasepad CSA
BaraDeFoam® HP	HM003504	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
BARAZAN® D PLUS	HM003535	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
BARAZAN® D	HM003534	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
BARITE	HM000105	Crystalline silica, quartz.	14808-60-7	1 - 5%	Yes	Leasepad CSA

Material Name	Haz Mat No	Contains	CAS Number	Concentration	Hazardous	Storage Location*
BAROFIBRE®	HM003539	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
BAROLIFT®	HM003552	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
BDF™-950	HM008609	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
BDF™-933	HM008419	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
Bentonite	HM000126	Crystalline silica, quartz Crystalline silica, cristobalite Crystalline silica, tridymite	14808-60-7 14464-46-1 15468-32-3	1 - 5% 0.1 - 1% 0.1 - 1%	Yes	Leasepad CSA
BORE-HIB®	HM005877	Silicic acid, potassium salt	1312-76-1	30 - 60%	Yes	Leasepad CSA
Caustic Soda (Sodium Hydroxide)	HM003599	Sodium hydroxide	1310-73-2	60 - 100%	Yes	Leasepad CSA
CITRIC ACID	HM004421	Citric Acid	77-92-9	60 - 100%	Yes	Leasepad CSA
CON DET®	HM003454	Amides, coco, N,N-bis (hydroxyethyl)	68603-42-9	5 - 10%	Yes	Leasepad CSA
		Benzenesulfonic acid, dimethyl-, sodium salt	1300-72-7	1 - 5%	Yes	Leasepad CSA
		Isopropanol	67-63-0	1 - 5%	Yes	Leasepad CSA
		Potassium pyrophosphate	7320-34-5	1 - 5%	Yes	Leasepad CSA
		Potassium hydroxide	1310-58-3	0.1 - 1%	Yes	Leasepad CSA
DEXTRID® LTE	HM003615	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
EZ-MUD® DP	HM003644	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
EZ-MUD®	HM003643	Hydrotreated light petroleum distillate	64742-47-8	10 - 30%	Yes	Leasepad CSA
		Ethoxylated alcohol	Proprietary	1 - 5%	Yes	Leasepad CSA

Material Name	Haz Mat No	Contains	CAS Number	Concentration	Hazardous	Storage Location*
GEM™ CP	HM003659	Methyloxirane polymer with oxirane, monbutyl ether	9038-95-3	60 - 100%	Yes	Leasepad CSA
GEM™ GP	HM003660	Polyethylene glycol butyl ether	9004-77-7	60 - 100%	Yes	Leasepad CSA
N-DRIL® HT PLUS	HM003699	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	NF	No information available	Leasepad CSA
OXYGON™	HM003723	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
PAC™-L	HM003724	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
PERFORMATROL	HM004998	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
Potassium Chloride	HM003741	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	NF	Not classified	Leasepad CSA
QUIK-FREE®	HM004906	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
SAPP	HM003755	Sodium acid pyrophosphate	7758-16-9	60 - 100%	Yes	Leasepad CSA
Soda Ash	HM003760	Sodium carbonate	497-19-8	60 - 100%	Yes	Leasepad CSA
Sodium Bicarbonate	HM001824	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
Sodium Chloride	HM001682	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	7647-14-5	60 - 100%	Not classified	Leasepad CSA
STEELSEAL® 100	HM006541	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
STEELSEAL® 50	HM006287	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
STEELSEAL® 400	HM006540	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA

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STOPPIT®	HM007395	Crystalline silica, quartz	14808-60-7	0.1 - 1%	Yes	Leasepad CSA
BaraCor® 95	HM003499	Monoethanolamine	141-43-5	60 - 100%	Yes	Leasepad CSA
BaraSure™ W-988	HM009037	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	60 - 100%	Not classified	Leasepad CSA
BDF™-971	HM008843	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA	NF	Not classified	Leasepad CSA

#### Cementing

D-Air 3000L	HM003191	Alkenes, C15-C18	93762-80-2	60 - 100%	Yes	Leasepad CSA
D-Air 3500L	HM008316	Hydrotreated distillate	Proprietary	60 - 100%	Yes	Leasepad CSA
Bentonite	HM000126	Crystalline silica, quartz Crystalline silica, cristobalite Crystalline silica, tridymite	14808-60-7 14464-46-1 15468-32-3	1 - 5% 0.1 - 1% 0.1 - 1%	Yes	Leasepad CSA
CFR-3	HM000209	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
Calcium Chloride	HM000142	Calcium chloride	10043-52-4	60 - 100%	Yes	Leasepad CSA
Tuned Spacer V Spacer	HM008251	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
Econolite Liquid	HM000478	Sodium silicate	1344-09-8	30 - 60%	Yes	Leasepad CSA
GasCon 469	HM000753	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
SA-1015	HM007221	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
Halad 344	HM000816	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
Halad 413	HM000817	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA

Material Name	Haz Mat No	Contains	CAS Number	Concentration	Hazardous	Storage Location*
Flocele	HM000709	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
Therma-Vis	HM003775	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
HGS 3000		Glass filaments. SODA LIME BOROSILICATE GLASS (SLBG)	65997-17-3	90 - 100%	Yes	Leasepad CSA
SCR-100	HM001253	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
Latex 4000	HM008963	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
Latex 3000	HM006737	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
Stabilizer 434B	HM001300	Alkyl phenoxy ether sulphate, sodium salt	9014-90-8	30 - 60%	Yes	Leasepad CSA
WellLife 1260 or FDP-C1260	HM009149	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
Tuned Defense Cement Spacer	HM009029	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
BridgeMaker II	HM008048	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
HR-5	HM000899	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
HTB Cement	HM004641	Portland cement Crystalline silica, quartz	65997-15-1 14808-60-7	60 - 100% 30 - 60%	Yes	Leasepad CSA
Class G Cement	HM001839	Portland cement Crystalline silica, quartz	65997-15-1 14808-60-8	60 - 100% 1 - 5%	Yes	Leasepad CSA
SilicaLite Liquid	HM001274	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA

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WellLife 1094	HM007634	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
Pol-E-Flake	HM004118	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
MicroBond HT	HM001065	Contains no hazardous substances in concentrations above cut-off values according to the competent authority	NA		Not classified	Leasepad CSA
<b>HR-25</b>	HM000892	Tartaric acid	87-69-4	61 - 100%	Yes	Leasepad CSA

\*CSA = Chemical Storage Area