



CHEMICAL INVENTORY

RE-EPRA-WNA-CI-008

Revision 5B

May 2025

WNA Permit Variation

DOCUMENT TITLE	DOCUMENT REFERENCE
KEY APPLICATION DOCUMENTS	
Chemical Inventory including:	RE-EPRA-WNA-CI-008
• Indicative Well Montage	RE-EPRA-WNA-CI-008A
• Water Based Mud Systems (Previously Approved)	RE-EPRA-WNA-CI-008B
• Oil Based Mud Systems (Previously Approved)	RE-EPRA-WNA-CI-008C
• Cement Additives (Previously Approved)	RE-EPRA-WNA-CI-008D
• Well Treatments (Previously Approved)	RE-EPRA-WNA-CI-008E
• Reservoir Stimulation – Oil Based Stimulation Fluids	RE-EPRA-WNA-CI-008F

REVISION HISTORY

Revision	Reason for Revision	Date of Revision
0	Initial submission for 2021 July variation which lead to EPR/B3001FT/V005	2021 July
1	Revised following Schedule 5 Number 1 of application July 2021 leading to EPR/B3001FT/V005	May 2022
2	Revised following Schedule 5 Number 2 of application July 2021 leading to EPR/B3001FT/V005	August 2022
3	Revised following Schedule 5 Number 3 of application July 2021 leading to EPR/B3001FT/V005	November 2022
4	Initial submission for 2024 variation application with inclusion of Well Stimulation Fluids	July 2024
5	Revised following Schedule 5 Number 2 – Removal of Halliburton products	March 2025
5A	Revised following Schedule 5 Number 3 - Inclusion of CAS numbers of all sub-components	May 2025
5B	Revised following update of Protekt 7 Plus, Protekt 15 Plus and Protekt 318 SDS's.	May 2025

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West Newton A Indicative Well Montage

Actual casing depths will vary. This schematic details the minimum and maximum depth each casing string may be set to. This schematic should be used in conjunction with the Chemical Inventory.

CF - Completion Fluid
LCM - Loss Circulation Material
OBM - Oil Based Mud
SS - Salt Saturated Mud
WBM - Water Based Mud

West Newton A Indicative Well Montage					Casing Size	Conductor	Surface	Intermediate	Production		Mud Type						
Actual casing depths will vary. This schematic details the minimum and maximum depth each casing string may be set to. This schematic should be used in conjunction with the Chemical Inventory.					Cement Top	Cement to surface	Cement to surface	Cement to >100m within surface casing	Cement to >100m within intermediate casing or top of liner.	Producing formation may be left uncemented	Air	Water Based Mud	Salt Saturated Mud	Oil Based Mud	Completion Fluid	Oil based stimulation fluid	
Age	Formation name	Depth (m) TVDSS		Mud system Conclusions													
Ground Level		12															
Qu	Boulder clay			Drill with air / auger or WBM system													
Upper Cretaceous	Chalk	-30		Drill with WBM with adequate filtercake & allow for use of non-hazardous LCM													
	Carstone Fm	-491		Use WBM / SS system													
Jurassic	Lias Group	-495															
		-612															
Upper Triassic	Mercia Mudstone			Use OBM system or reduce contact time with drilling mud to as low as possible													
Lower Triassic	Sherwood Sandstone	-918		OBM preferential for combatting differential sticking. OBM not to be used in geological zones with sufficient porosity & permeability under WMP3. Therefore use WBM / SS mud and design drilling programme accordingly													
Upper Permian (Zechstein)	Roxby Fm	-1492															
	Sherburn AN	-1537		Use OBM system or reduce time formation open to WBM system													
	Carnalitic Marl	-1543															
	Boulby Halite	-1572		Use SS or OBM system													
	Brotherton Fm	-1584		Allow for LCM													
	Fordon Evap	-1640		Use SS or OBM system													
	Kirkham Abbey Formation	-1690		Use higher weight mud system, OBM													
	Hayton Anhydrite	-1765															
	Cadeby Fm	-1905		Allow for LCM													
	Marl Slate	-1944		Use OBM or reduce contact time													
			-1946														
	Lower Permian	Rotliegendes	-1968		Allow for LCM												
Upper Carboniferous	Coal Measures																
	TD	-2010															

Product Name	UN No	Transport Class	Hazardous Chemical Composition (SDS Section 3)	Weight (%) If Classified	CAS Number	Product Hazard Statement	Results of PBT Assessment	Comments
Water Based Mud Systems (Includes Additives for Salt Saturated WBM)								
Calcium Chloride	N/A	N/A	Calcium Chloride	60-100	10043-52-4	H319	Not classified as PBT/vPvB by current EU criteria	Weighting agent
Calcium Chloride Brine	N/A	N/A	Calcium Chloride	30-60	10043-52-4	H319	Not classified as PBT/vPvB by current EU criteria	Completion Brine
Caustic Soda	1823	8	Sodium Hydroxide	60-100	1310-73-2	H290 H314	Not classified as PBT/vPvB by current EU criteria	pH modifier
Citric Acid	N/A	N/A	Citric Acid, Monohydrate	100	5949-29-1	H319	Not classified as PBT/vPvB by current EU criteria	pH modifier
Defoam Plus NS	N/A	N/A	No Hazardous Materials	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	De-Foamer
Drilling Starch	N/A	N/A	Cold Water Soluble Modified Potato Starch	-	9005-84-9	Not Classified	Not classified as PBT/vPvB by current EU criteria	Fluid Loss Mitigation
Duo-Vis*	N/A	N/A	Glyoxal	<1	107-22-2	Not Classified	Not classified as PBT/vPvB by current EU criteria	Viscosifier
Dynared (All Grades)	N/A	N/A	No Hazardous Materials	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
Form-A-Blok	N/A	N/A	Wollastonite (Ca(SiO3))	30-60	13983-17-0	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
			Cellulose	10-30	9004-34-6			
			Kaolin	5-10	1332-58-7			
			Polyvinyl Alcohol	5-10	9002-89-5			
G-Seal Plus	N/A	N/A	Graphite (Natural)	5-10	7782-42-5	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
			Crystalline Silica (Impurity)	<1	14808-60-7			
Kwik-Seal NS Regular	N/A	N/A	Wood, Wood Fibres, Ground Hulls or Shells	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
			Mica	-	12001-26-2			
Lime	N/A	N/A	Calcium Hydroxide	60-100	1305-62-0	H315, H318, H335	Not classified as PBT/vPvB by current EU criteria.	pH modifier
MB-5111	N/A	N/A	(Ethylenedioxy)dimethanol	60-100	3586-55-8	H302 H315 H318	Not classified as PBT/vPvB by current EU criteria	Preservative
M-I Gel	N/A	N/A	Bentonite	60-100	1302-78-9	Not Classified	Not classified as PBT/vPvB by current EU criteria	Viscosifier
			Crystalline Silica (Impurity)	1-5	14808-60-7			
M-I Pac (All Grades)	N/A	N/A	No Hazardous Materials - Poly Anionic Cellulose	60-100	9004-32-4	Not Classified	Not classified as PBT/vPvB by current EU criteria	Fluid Loss Mitigation & Viscosifier
M-I Wate (All Grades)	N/A	N/A	Crystalline Silica (Impurity)	1-5	14808-60-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Wiegthing Agent
Nuosept 78	2810	6.1	2,2',2''-(Hexahydro-1,3, 5-triazine-1,3,5-triyl) Triethanol	78	4719-04-4	H302, H317, H319, H330	Not classified as PBT/vPvB by current EU criteria	Preservative
Nut Shells	N/A	N/A	Crystalline Silica (Impurity)	<1	14808-60-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
PDV Salt	N/A	N/A	Sodium Chloride	100	007647-14-5	Not Classified	Not classified as PBT/vPvB by current EU criteria	Drilling/Completion Fluid Additive
Polypac(All Grades)	N/A	N/A	Polyanionic Cellulose	60-100	-	Not Classified	Not classified as PBT/vPvB by current EU criteria.	Fluid Loss Mitigation & Viscosifier
Potassium Chloride	N/A	N/A	Potassium Chloride	60-100	7447-40-7	Not Classified	Not classified as PBT/vPvB by current EU criteria.	Drilling/Completion Fluid Additive
Potassium Chloride Brine	N/A	N/A	Potassium Chloride	5-30	7447-40-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Drilling/Completion Fluid Additive
Pure Bore	N/A	N/A	Non classified proprietary polysaccharide.	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Biodegradable Drilling Fluid
Safe Carb (All Grades)	N/A	N/A	Calcium Carbonate	60-100	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Lost Circulation Material. Weighting agent. Bridging Material
			Crystalline Silica (Impurity)	<1	14808-60-7			
Safe-Cide	2810	6.1	2,2',2''-(Hexahydro-1,3, 5-triazine-1,3,5-triyl) Triethanol	60-100	4719-04-4	H302 H315 H317 H318 H330 H372	Not classified as PBT/vPvB by current EU criteria.	Biocide
			Tetrasodium Ethylenediaminetetraactiv	1-5	64-02-8			
			2-aminoethanol	1-5	141-43-5			
Safe Cor*	N/A	N/A	Ethanol, 2,2-oxybis-, Reaction Products with Ammonia, Morpholine Derivatives Residues	30-60	68909-77-3	H319, H412	Not classified as PBT/vPvB by current EU criteria	Corrosion inhibitor
Safe Scav* CA	N/A	N/A	No Hazardous Materials - Sodium Salt of Unsaturated Carbonyl Hexose	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Oxygen Scavenger
Safe Scav* HSN	2810	6.1	Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine	30-60	4719-04-4	H302, H317, H319, H330, H372	Not classified as PBT/vPvB by current EU criteria	Hydrogen Sulphide Scavenger
			Ethanolamine (Impurity)	<2	141-43-5			
			Formaldehyde (Impurity)	<1	50-00-0			
Safe Scav NA	N/A	N/A	Ammonium Bisulphate	30-60	10192-30-0	H319 EUH031	Not classified as PBT/vPvB by current EU criteria	Oxygen Scavenger
			Sulphur Dioxide	<1	7446-09-5			
SAPP	N/A	N/A	Disodium Dihydrogen Diphosphate	60-100	7758-16-9	H319	Not classified as PBT/vPvB by current EU criteria	SAPP dispersant. Thinner.
SI-414N	N/A	N/A	Sodium Allysulfonate Copolymer	60-100	68715-83-3	Not Classified	Not classified as PBT/vPvB by current EU criteria	Scale Inhibitor
Soda Ash	N/A	N/A	Sodium Carbonate	60-100	497-19-8	H319	Not classified as PBT/vPvB by current EU criteria	pH Modifier
Sodium Bicarbonate	N/A	N/A	Sodium Bicarbonate	60-100	144-55-8	Not Classified	Not classified as PBT/vPvB by current EU criteria	Drilling/Completion Fluid Additive
Sodium Chloride	N/A	N/A	Sodium Chloride	60-100	7647-14-5	Not Classified	Not classified as PBT/vPvB by current EU criteria	Drilling/Completion Fluid Additive
Sodium Chloride Brine	N/A	N/A	Sodium Chloride	30-60	7647-14-5	Not Classified	Not classified as PBT/vPvB by current EU criteria	Weighting agent. Completion brine
Sugar	N/A	N/A	Sucrose	60-100	57-50-1	Not Classified	Not classified as PBT/vPvB by current EU criteria	Additives
			Crystalline Silica (Impurity)	<1	14808-60-7			

* Duovis will not be used within the Upper Cretaceous Formation which includes the Boulder Clay, Chalk and Carstone Formation. Duovis will be used within the deeper sections of the wellbore at depths below 495m TVDSS.

Product Name	UN No	Transport Class	Hazardous Chemical Composition (SDS Section 3)	Weight (%) If Classified	CAS Number	Product Hazard Statement	Results of PBT Assessment	Comments
Oil Based Mud Systems								
Barite	N/A	N/A	Barium Sulphate	>93.5	7727-43-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Weighting agent
			Calcium Carbonate	1.5-2	471-34-1			
Calcium Chloride	N/A	N/A	Calcium Chloride	60-100	10043-52-4	H319	Not classified as PBT/vPvB by current EU criteria	Weighting agent
Caustic Soda	1823	8	Sodium Hydroxide	60-100	1310-73-2	H290 H314	Not classified as PBT/vPvB by current EU criteria	pH modifier
Citric Acid	N/A	N/A	Citric Acid, Monohydrate	100	5949-29-1	H319	Not classified as PBT/vPvB by current EU criteria	pH modifier
Conqor 404NS	N/A	N/A	Salts of Phosphate Esters in Water	60-100	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Corrosion Inhibitor
Defoam Plus NS	N/A	N/A	No Hazardous Materials	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	De-Foamer
Drilling Starch	N/A	N/A	Cold Water Soluble Modified Potato Starch	-	9005-84-9	Not Classified	Not classified as PBT/vPvB by current EU criteria	Fluid Loss Mitigation
Duo-Vis	N/A	N/A	Glyoxal	<1	107-22-2	Not Classified	Not classified as PBT/vPvB by current EU criteria	Viscosifier
Dynared (All Grades)	N/A	N/A	No Hazardous Materials	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
Form-A-Blok	N/A	N/A	Wollastonite (Ca(SiO3))	30-60	13983-17-0	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
			Cellulose	10-30	9004-34-6			
			Kaolin	5-10	1332-58-7			
			Polyvinyl Alcohol	5-10	9002-89-5			
G-Seal Plus	N/A	N/A	Graphite (Natural)	5-10	7782-42-5	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
			Crystalline Silica (Impurity)	<1	14808-60-7			
Kwik-Seal NS Fine & Regular	N/A	N/A	Wood, Wood Fibres, Ground Hulls or Shells	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
			Mica	-	12001-26-2			
Lime	N/A	N/A	Calcium Hydroxide	60-100	1305-62-0	H315, H318, H335	Not classified as PBT/vPvB by current EU criteria.	pH modifier
LT OBM EDC 95-11	N/A	N/A	Distillates (petroleum), hydrotreated middle (Hydrocarbons, C15-C20, nalkanes,	100	64742-46-7	H304	Not classified as PBT/vPvB by current EU criteria	Base Oil
MB-5111	N/A	N/A	(Ethylenedioxy)dimethanol	60-100	3586-55-8	H302 H315 H318	Not classified as PBT/vPvB by current EU criteria	Preservative
M-I Gel	N/A	N/A	Bentonite	60-100	1302-78-9	Not Classified	Not classified as PBT/vPvB by current EU criteria	Viscosifier
			Crystalline Silica (Impurity)	1-5	14808-60-7			
M-I Pac (All Grades)	N/A	N/A	No Hazardous Materials	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Fluid Loss Mitigation & Viscosifier
M-I Wate (All Grades)	N/A	N/A	Crystalline Silica (Impurity)	1-5	14808-60-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Wiegthing Agent
Nuosept 78	2810	6.1	2,2',2''-(Hexahydro-1,3, 5-triazine-1,3,5-triyl) Triethanol	78	4719-04-4	H302, H317, H319, H330	Not classified as PBT/vPvB by current EU criteria	Preservative
Nut Shells	N/A	N/A	Crystalline Silica (Impurity)	<1	14808-60-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Loss Circulation Material
Potassium Chloride (KCl)	N/A	N/A	Potassium Chloride	60-100	7447-40-7	Not Classified	Not classified as PBT/vPvB by current EU criteria.	Drilling/Completion Fluid Additive
Safe Carb (All Grades)	N/A	N/A	Calcium Carbonate	60-100	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Lost Circulation Material. Weighting agent. Bridging Material
			Crystalline Silica (Impurity)	<1	14808-60-7			
Safe-Cide	2810	6.1	2,2',2''-(Hexahydro-1,3, 5-triazine-1,3,5-triyl) Triethanol	60-100	4719-04-4	H302 H315 H317 H318 H330 H372	Not classified as PBT/vPvB by current EU criteria.	Biocide
			Tetrasodium Ethylenediaminetetraactiv	1-5	64-02-8			
			2-aminoethanol	1-5	141-43-5			
Safe Cor*	N/A	N/A	Ethanol, 2,2-oxybis-, Reaction Products with Ammonia,	30-60	68909-77-3	H319, H412	Not classified as PBT/vPvB by current EU criteria	Corrosion inhibitor
Safe Scav* CA	N/A	N/A	No Hazardous Materials	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Oxygen Scavenger
Safe Scav* HSN	2810	6.1	Hexahydro-1,3,5-tris(2-hydroxyethyl)-sym-triazine	30-60	4719-04-4	H302, H317, H319, H330, H372	Not classified as PBT/vPvB by current EU criteria	Hydrogen Sulphide Scavenger
			Ethanolamine (Impurity)	<2	141-43-5			
			Formaldehyde (Impurity)	<1	50-00-0			
Safe Scav NA	N/A	N/A	Ammonium Bisulphate	30-60	10192-30-0	H319 EUH031	Not classified as PBT/vPvB by current EU criteria	Oxygen Scavenger
			Sulphur Dioxide	<1	7446-09-5			
Safe Surf EU	N/A	N/A	2-butoxyethanol	30-60	111-76-2	H302 H312 H315 H318 H332	Not classified as PBT/vPvB by current EU criteria	Cleaning Spacer
			D-Glucopyranose, oligomeric, C8-10 glycosides	5-10	68515-73-1			
Saraline 185V	N/A	N/A	Distillates (Fischer-Tropsch), C8-26 - Branched and Linear	<=100	848301-67-7	H304 EUH066	Not classified as PBT/vPvB by current EU criteria	Base Oil.
SI-414N	N/A	N/A	Sodium Allysulfonate Copolymer	60-100	68715-83-3	Not Classified	Not classified as PBT/vPvB by current EU criteria	Scale Inhibitor
Soda Ash	N/A	N/A	Sodium Carbonate	60-100	497-19-8	H319	Not classified as PBT/vPvB by current EU criteria	pH Modifier
SMS-01	N/A	N/A	2-Butoxy ethanol	50-100	111-76-2	H332, H302, H312, H319, H316	No components within the mixture are identified as a PBT/vPvB substance.	Mutual Solvent
Sodium Bicarbonate	N/A	N/A	Sodium Bicarbonate	60-102	144-55-10	Not Classified	Not classified as PBT/vPvB by current EU criteria	Drilling/Completion Fluid Additive
Sugar	N/A	N/A	Sucrose	60-100	57-50-1	Not Classified	Not classified as PBT/vPvB by current EU criteria	Additives
			Crystalline Silica (Impurity)	<1	14808-60-7			
Truvis	N/A	N/A	Crystalline silica (impurity)	<3	14808-60-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Viscosifier
Versaclean CBE	N/A	N/A	Fatty acids, tall-oil, reaction products with diethylenetriamine, maleic anhydride, tetraethylenepentamine and triethylenetetramine	60-100	68990-47-6	H315 H317 H336 H412	Not classified as PBT/vPvB by current EU criteria	Emulsifier
			Distillates (petroleum), hydrotreated light	10-30	64742-47-8			
			(2-methoxymethylethoxy)propanol	5-10	34590-94-8			
Versatrol M	N/A	N/A	No Hazardous Componants	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Fluid Loss Mitigation
VG-Supreme	N/A	N/A	Crystalline silica (impurity)	<3	14808-60-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Viscosifier
Low Toxicity Oil based drilling mud (LTOBDM): Low Toxicity Oil based drilling fluids not be used in shallow aquifer units or in any formation where losses of drilling fluid are expected. In all other circumstances the impact of the use of LTOBM must be determined to be trivial to any groundwater. The base oil will consist of Group III: low/negligible-aromatic content fluids. This group includes fluids produced by chemical reactions and highly refined mineral oils which contain levels of total aromatics below 0.5% and polycyclic aromatic hydrocarbon (PAH) levels below 0.001%, according to the OGP definition. Additives may include barite, clays, calcium chloride, lignite, lime, brine, emulsifiers and gellants.								

Product Name	UN No	Transport Class	Hazardous Chemical Composition (SDS Section 3)	Weight (%) If Classified	CAS Number	Product Hazard Statement	Results of PBT Assessment	Comments
Cement Additives								
D020	-	-	Crystalline silica (impurity)	1-5	14808-60-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Bentonite Extender
D044	-	-	No Hazardous Components	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Granulated Salt
D081	-	-	No Hazardous Components	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Retarder
D153	-	-	Quartz	60-100	14808-60-7	H373	Not classified as PBT/vPvB by current EU criteria	Antisetting Agent
D168	-	-	No Hazardous Components	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Fluid Loss Control Agent
D197	-	-	Sodium silicate	10-30	1344-09-8	Not Classified	Not classified as PBT/vPvB by current EU criteria	Retarder
D240	-	-	No Hazardous Components	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Dispersant
D242	-	-	No Hazardous Components	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Antifoam
D243	-	-	Fumed silica	30-60	69012-64-2	Not Classified	Not classified as PBT/vPvB by current EU criteria	Gas Control Additive
D244	-	-	No Hazardous Components	-	-	Not Classified	Not classified as PBT/vPvB by current EU criteria	Spacer
D245	-	-	Sodium formate	<2	141-53-7	Not Classified	Not classified as PBT/vPvB by current EU criteria	Dispersant
D250	-	-	Hydrocarbons, C11-C14, n-alkanes, isoalkanes, cyclics, < 2% aromatics	30-60	64742-47-8	H304 H315 H318	Not classified as PBT/vPvB by current EU criteria	Surfactant ** D250 Surfactant is only to be used in deeper oil based mud sections of the well at depths greater than 1,492m TVDSS (Permian Age Formations and below).
			2-(2-Butoxyethoxy)ethanol	10-30	112-34-5			
			D-Glucopyranose, oligomeric, C8-10 glycosides	10-30	68515-73-1			
			2-ethylhexan-1-ol	5-10	104-76-7			
D907	-	-	Portland Cement Clinker	60-100	65997-15-1	H315 H318 H335	Not classified as PBT/vPvB by current EU criteria	Base Cement
S001	-	-	Calcium chloride	60-100	10043-52-4	H319	Not classified as PBT/vPvB by current EU criteria	Calcium Chloride
U066	-	-	2-Butoxyethanol	60-100	111-76-2	H302 H312 H315 H319 H332	Not classified as PBT/vPvB by current EU criteria	Solvent

Product Name	UN No	Transport Class	Hazardous Chemical Composition (SDS Section 3)	Weight (%) If Classified	CAS Number	Product Hazard Statement	Results of PBT Assessment	Comments
Well Treatments								
Acetic Acid	2790	8	Acetic Acid	60-100	64-19-7	H226 H314	The product is easily biodegradable. The product is not bioaccumulating. Acute Toxicity - Fish LC50 96 hours 75 mg/l Lepomis macrochirus (Bluegill) Acute Toxicity - Aquatic Invertebrates EC50 95 @ 24h mg/l Daphnia magna Acute Toxicity - Aquatic Plants	Acid alternative to HCl or as an admixture with HCl
Butanol	1120	3	n-Butanol	100	71-36-6	H226 H302 H315 H318 H335 H336	Not classified as PBT/vPvB by current EU criteria.	Solvent Treatment
Carbon Dioxide (Liquid)	2187	2	Carbon Dioxide	100	124-38-9	H281	Not classified as PBT/vPvB by current EU criteria	Liquid CO2 Application
Citric Acid	N/A	N/A	Citric Acid Monohydrate	60-100	5949-29-1	H319	This product does not contain any PBT or vPvB substances.	Acid alternative to HCl or as an admixture with HCl
Diesel	1202	3	Diesel	>90	68334-30-5	H 226 H304 H315 H332 H351 H373 H411	Anthracene is not present in this substance at greater than 0.1% (CONCAWE 2010). No other representative hydrocarbon structure were found to meet the PBT/vPvB criteria. This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).	Filter cake removal
Dissolvine StimWell DDH-P	3267	8	Diethylenetriaminepentaacetic acid, pentapotassium salt	40-50	7216-95-7	H290, H319, H332, H361d, H373	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.	Chelating Agent / Well Treatment
Formic Acid	1779	8	Formic Acid	>95	64-18-6	H314	Not classified as PBT/vPvB by current EU criteria	Acid Alternative
Hydrochloric Acid	1789	8	Hydrochloric Acid	<28	7647-01-0	H290 H315 H319 H335	Not classified as PBT/vPvB by current EU criteria	Acid Wash / Squeeze
LT OBM EDC 95-11	N/A	N/A	Distillates (petroleum), hydrotreated middle (Hydrocarbons, C15-C20, nalkanes,	100	64742-46-7	H304	Not classified as PBT/vPvB by current EU criteria	Filter cake removal
Methanol	1230	3	Methanol	100	67-56-1	H225 H301 H311 H331 H370	Not classified as PBT/vPvB by current EU criteria	Solvent Treatment
Nitrogen	1977	2	Nitrogen	100	7727-37-9	H281	Not classified as PBT/vPvB by current EU criteria	Nitrogen Lift
Potassium Chloride	N/A	N/A	Potassium Chloride	60-100	7447-40-7	Not Classified	Not classified as PBT/vPvB by current EU criteria.	Drilling/Completion Fluid Additive
PROTEKT 7 Plus	1789	8	Hydrogen Chloride	6.5-7.5	7647-01-0	H302 H314 H318 H371 H402	No specific data available. Product is not expected to rapidly degrade. No specific data available. Product is not expected to bioaccumulate in biological tissue. Product has not been tested. Product is not expected to have significant deleterious effects on aquatic organisms, due to the nature of MDI and its interaction with water.	Acid Wash / Squeeze * - See Note.
			Citric Acid	4-8	77-92-9			
			Acetic Acid	1.5-3	64-19-7			
			Tallowalkylamine Ethoxylates	0.8-1	68213-26-2			
			Formaldehyde reaction products, oleylamine	0.8-1	91728-72-3			
			Prop-2-yn-ol	0.7-1	107-19-7			
			Formaldehyde	0.02-0.05	50-00-0			
			Proprietary antifoam silicone	0.5-1	63148-62-0			
PROTEKT-14 Acetic Acid	2790	8	Proprietary Dispersants (Protekt 318)*	1-2	-	H226 H304 H314 H318	Not classified as PBT/vPvB by current EU criteria	Acid Wash / Squeeze
			Acetic Acid	10-18	64-19-7			
			Water	75-85	7732-18-5			
PROTEKT 15 Plus	1789	8	1H-Imidazole-1-ethanol, 4,5-dihydro-, 2-nortall-oil alkyl	2-4	61791-39-7	H302 H314 H318 H371 H402	No specific data available. Product is not expected to rapidly degrade. No specific data available. Product is not expected to bioaccumulate in biological tissue. Product has not been tested. Product is not expected to have significant deleterious effects on aquatic organisms, due to the nature of MDI and its interaction with water.	Acid Wash / Squeeze * - See Note.
			Hydrogen Chloride	14-16	7647-01-0			
			Citric Acid	7-9	77-92-9			
			Acetic Acid	2-4	64-19-7			
			Tallowalkylamine Ethoxylates	1-3	68213-26-3			
			Formaldehyde reaction products, oleylamine	1-3	91728-72-3			
			Proprietary Antifoam	0.5-1	63148-62-0			
Protekt 318	N/A	N/A	Proprietary Dispersants (Protekt 318)*	1-2	-	H319	No specific data available. Product is not expected to rapidly degrade. No specific data available. Product is not expected to bioaccumulate in biological tissue. Product has not been tested. Product is not expected to have significant deleterious effects on aquatic organisms, due to the nature of MDI and its interaction with water.	Acid Wash / Squeeze
			Lauryl alcohol alkoxylate	10 - 20	68154-97-2			
			Sodium toluene sulphonate	10 - 20	12068-03-0			
			Linear alcohol (c12-13) ethoxylate	10 - 20	160901-19-9			
			Citric acid	1 - 3	77-29-9			
SMS-01	N/A	N/A	D,Limonene type(turpene)	0 - 0.8		H332, H302, H312, H319, H316	No components within the mixture are identified as a PBT/vPvB substance.	Mutual Solvent
			2-Butoxy ethanol	50-100	111-76-2			
			Tetrapotassium pyrophosphate (tkpp)	1-5	7320-34-5			
Sobos Gold 08	N/A	N/A	Alkylpolyglucoside	5-10	132778-08-06	H318	Not classified as PBT/vPvB by current EU criteria	Cleaning additive (degreaser) at surface for the rig and casing.
			Xylene	60-100	1330-20-7			
Xylene	1307	3	Ethyl benzene	10-30	100-41-4	H226 H304 H312 H315 H319 H335 H336 H360 H373	Not classified as PBT/vPvB by current EU criteria.	Solvent Treatment
			Toluene	0.1-1	108-88-3			

Note: * For clarity, Proprietary Dispersants (Protekt 318) is the Weight (%) of Protekt 318 which has been included within the composition of the product.
For example: 1 - 2% of PROTEKT 318 is included within the PROTEKT 7 PLUS product. 1 - 2% of PROTEKT 318 is included within the PROTEKT 15 PLUS product.

Product Name	UN No	Transport Class	Hazardous Chemical Composition (SDS Section 3)	Weight %	CAS Number	Product Hazard Statements	Results of PBT/vPvB Assessment	Comments
Reservoir Stimulation -Oil Based Stimulation Fluids								
Diesel	1202	3	Fuels diesel	>90	68334-30-5	H2236, H304, H315, H332, H351, H373, H411	Anthracene is not present in this substance at greater than 0.1% (CONCAWE 2010). No other representative hydrocarbon structure were found to meet the PBT/vPvB criteria. This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).	
EDC 95-11	N/A	N/A	Hydrocarbons, C15-C20, nalkanes, isoalkanes, cyclics, < 0.03% aromatics	100	64742-46-7	H304	Not Classified.	
EDC 99-DW	N/A	N/A	Hydrocarbons, C13-C16, nalkanes, isoalkanes, cyclics, <0.03% aromatics	100	64742-46-7	H304	Not Classified.	
EDC 170 SE	N/A	N/A	Hydrocarbons, C11-C14, nalkanes, isoalkanes, cyclics, <2% aromatics	100	64742-47-8	H304, EUH066	Not Classified.	
ESCAID 110	9003	9	Hydrocarbons, C11-C14, nalkanes, isoalkanes, cyclics, <2% aromatics	100	N/A	H227, H304, EUH066	Material does not meet the Reach Annex XIII criteria for PBT or vPvB.	
J639	3265	8	Phosphoric Acid Alkyl Ester	60 - 100	98653-76-0	H290, H318	Not classified as PBT/vPvB by current EU criteria.	
			Triethyl phosphate	10 - 30	78-40-0	H302		
J640	3265	8	Sulfuric acid, iron(3+) salt	10 - <25	10028-22-5	H290, H302, H315, H317, H318	Not classified as PBT/vPvB by current EU criteria.	
			Diammonium hydrogen 2-hydroxypropane-1,2,3-tricarboxylate	10 - <20	3012-65-5	H319, H335		
			Isopropanolamine	5 - 10	78-96-6	H312, H314		
			Ammonium Salts	1 - 5	15763-76-5 32073-22-6	H319, H335		
			Salt of carboxylic acid	1 - 5	1185-57-5	H315, H319		
J641	N/A	N/A	Distillates, petroleum, hydrotreated light	60 - 100	64742-47-8	H304	Not classified as PBT/vPvB by current EU criteria.	
Sand 20 - 40	N/A	N/A	Quartz	60-100	14808-60-7	H373	Not classified as PBT/vPvB by current EU criteria.	
Sand S100	N/A	N/A	Quartz	60-100	14808-60-7	H373	Not classified as PBT/vPvB by current EU criteria.	

Product Name	UN No	Transport Class	Hazardous Chemical Composition (SDS Section 3)	Weight %	CAS Number	Product Hazard Statements	Results of PBT/vPvB Assessment	Comments
Reservoir Stimulation -Oil Based Stimulation Fluids								
SARALINE 185V	N/A	N/A	Distillates (Fischer-Tropsch), C8-26 - Branched and Linear	≤100	848301-67-7	H304, EUH066	The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.	
XP-07	N/A	N/A	Hydrocarbons, C11-C14, n-alkanes, <2% aromatics	60-100	N/A	H304, EUH066	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).	