

Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date:	January 03, 2013
Last Submission Date:	June 20, 2013
Province:	AB
AER Field Centre:	Red Deer
Surface location:	16-16-031-02W5
Well Licence Number:	0449454
Licensee Name:	Vaalco Energy Canada, Inc.
Unique Well Identifier:	00/09-15-031-02W5/0
Well Name:	TRANSGLOBE GARR 9-15-31-2
Number of Stages:	14
Bottom Hole Latitude:	51.659645
Bottom Hole Longitude:	-114.193303
Lat/Long Projection:	NAD 83
Production Fluid Type:	GAS
True Vertical Depth (TVD):	2,391.37
Total Water Volume (m3):	0

Hydraulic Fracturing Fluid Composition:

Fracture Start/End Date:	Component Type	Trade Name	Supplier	Purpose	Ingredient/Family Name	CAS # / HMIRC #	Concentration in Component (% by mass)	Concentration in HFF (% by mass)
Jan 3 2013 - Jan 3 2013	CARRIER FLUID				Hydrocarbon	8008-20-6	100.000000%	70.001528%
	PROPPANT	FRAC SAND 20/40 WHITE (OTTAWA TYPE)	Baker Hughes		Crystalline silica (Quartz)	14808-60-7	100.000000%	28.062678%
	ADDITIVE	RG-35SLR	Baker Hughes	Breaker	Fuels, diesel	68334-30-5	90.000000%	0.506432%
	ADDITIVE	RG-35SLR	Baker Hughes	Breaker	Magnesium oxide	1309-48-4	40.000000%	0.225081%
	ADDITIVE	XLO-5	Baker Hughes	Crosslinker	Ferric sulphate	10028-22-5	60.000000%	0.436163%
	ADDITIVE	XLO-5	Baker Hughes	Crosslinker	2-Dibutylaminoethanol	102-81-8	30.000000%	0.218082%
	ADDITIVE	XLO-5	Baker Hughes	Crosslinker	Ethoxylated oleyl amine	13127-82-7	10.000000%	0.072694%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	Isopropanol	67-63-0	100.000000%	0.077181%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	Oxyalkylated phenolic resin	63428-92-2	30.000000%	0.023154%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	1,2,4-Trimethyl benzene	95-63-6	5.000000%	0.003859%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	Ethoxylated alcohols, C6-C12	68439-45-2	5.000000%	0.003859%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	Light aromatic solvent naphtha	64742-95-6	5.000000%	0.003859%
	ADDITIVE	NE-118	Baker Hughes	Demulsifier	1,3,5-Trimethyl benzene	108-67-8	1.000000%	0.000772%
ADDITIVE	NE-118	Baker Hughes	Demulsifier	Xylene	1330-20-7	1.000000%	0.000772%	

Fracture Start/End Date:	Component Type	Trade Name	Supplier	Purpose	Ingredient/Family Name	CAS # / HMIRC #	Concentration in Component (% by mass)	Concentration in HFF (% by mass)
Jan 3 2013 - Jan 3 2013	ADDITIVE	F-100	Baker Hughes	Friction Reducer	Kerosene	8008-20-6	100.000000%	0.003575%
	ADDITIVE	F-100	Baker Hughes	Friction Reducer	Isopropanol	67-63-0	10.000000%	0.000357%
	ADDITIVE	F-100	Baker Hughes	Friction Reducer	Ethylene glycol	107-21-1	5.000000%	0.000179%
	ADDITIVE	GO-64	Baker Hughes	Gelling Agent	Phosphoric acid, mixed polyoxyalkylene, esters	Not Available	100.000000%	0.565397%

Comments:

*Information provided in this form is submitted in accordance with the requirements of AER Directive 59 Well Drilling and Completion Data Filing Requirements.

*Total Water Volume sources may include fresh water, produced water, recycled water, and/or other water types as listed in The "DDS Well Drilling Completion Data Submission System: A User Guide - Appendix D".

*CAS # - Chemical Abstract Service Number. Individual chemical ingredients have a unique CAS #. Specific ingredient names are shown for each CAS #. "Not Available" indicates the ingredient CAS # is not available.

*HMIRC # - Hazardous Material Information Review Commission (registry) number. The HMIRC # indicates the (hazardous) additive ingredient is considered to be confidential business information and is subject to a Hazardous Material Information Review Act claim exemption. General chemical family names are shown for each HMIRC #. "Not Available" indicates the ingredient HMIRC # is not available.

**"Trade Secret" indicates the (non-hazardous) additive ingredient is considered to be confidential business information. General chemical family names are reported for ingredients considered "Trade Secret".

*Any public concerns related to this information should be directed to the AER Field Centre shown on the report.

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