

Disclaimer

This Report, including the data and information contained in this Report, is provided to you on an “as is” and “as available” basis at the sole discretion of the Government of Alberta and subject to the terms and conditions of use below (the “Terms and Conditions”). The Government of Alberta has not verified this Report for accuracy and does not warrant the accuracy of, or make any other warranties or representations regarding, this Report. Furthermore, updates to this Report may not be made available. Your use of any of this Report is at your sole and absolute risk.

This Report is provided to the Government of Alberta, and the Government of Alberta has obtained a license or other authorization for use of the Reports, from:

Canadian Natural Upgrading Limited, Chevron Canada Limited and 1745844 Alberta Ltd., as owners, and Shell Canada Energy as operator, for the Quest Project

(collectively the “Project”)

Each member of the Project expressly disclaims any representation or warranty, express or implied, as to the accuracy or completeness of the material and information contained herein, and none of them shall have any liability, regardless of any negligence or fault, for any statements contained in, or for any omissions from, this Report. Under no circumstances shall the Government of Alberta or the Project be liable for any damages, claims, causes of action, losses, legal fees or expenses, or any other cost whatsoever arising out of the use of this Report or any part thereof or the use of any other data or information on this website.

Terms and Conditions of Use

Except as indicated in these Terms and Conditions, this Report and any part thereof shall not be copied, reproduced, distributed, republished, downloaded, displayed, posted or transmitted in any form or by any means, without the prior written consent of the Government of Alberta and the Project.

The Government of Alberta’s intent in posting this Report is to make them available to the public for personal and non-commercial (educational) use. You may not use this Report for any other purpose. You may reproduce data and information in this Report subject to the following conditions:

- any disclaimers that appear in this Report shall be retained in their original form and applied to the data and information reproduced from this Report
- the data and information shall not be modified from its original form
- the Project shall be identified as the original source of the data and information, while this website shall be identified as the reference source, and
- the reproduction shall not be represented as an official version of the materials reproduced, nor as having been made in affiliation with or with the endorsement of the Government of Alberta or the Project

By accessing and using this Report, you agree to indemnify and hold the Government of Alberta and the Project, and their respective employees and agents, harmless from and against any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) arising out of any breach by you of these Terms and Conditions or otherwise arising out of your use or reproduction of the data and information in this Report.

Your access to and use of this Report is subject exclusively to these Terms and Conditions and any terms and conditions contained within the Report itself, all of which you shall comply with. You will not use this Report for any purpose that is unlawful or prohibited by these Terms and Conditions. You agree that any other use of this Report means you agree to be bound by these Terms and Conditions. These Terms and Conditions are subject to modification, and you agree to review them periodically for changes. If you do not accept these Terms and Conditions you agree to immediately stop accessing this Report and destroy all copies in your possession or control.

These Terms and Conditions may change at any time, and your continued use and reproduction of this Report following any changes shall be deemed to be your acceptance of such change.

If any of these Terms and Conditions should be determined to be invalid, illegal or unenforceable for any reason by any court of competent jurisdiction then the applicable provision shall be severed and the remaining provisions of these Terms and Conditions shall survive and remain in full force and effect and continue to be binding and enforceable.

These Terms and Conditions shall: (i) be governed by and construed in accordance with the laws of the province of Alberta and you hereby submit to the exclusive jurisdiction of the Alberta courts, and (ii) ensure to the benefit of, and be binding upon, the Government of Alberta and your respective successors and assigns.



Controlled Document

Quest CCS Project

Quest Emissions to air, soil or water – Performance 2017

Project	Quest CCS Project
Document Title	Quest Emissions to air, soil or water – Performance 2017
Document Number	None
Document Revision	3
Document Status	Issue for Approved
Document Type	
Control ID	
Owner / Author	Celina Duong
Issue Date	2018-10-12
Expiry Date	None
ECCN	None
Security Classification	Unclassified
Disclosure	None

Revision History shown on next page

Revision History

REVISION STATUS			APPROVAL		
Rev.	Date	Description	Originator	Reviewer	Approver
0	2018-02-15	Updated for Annual Report	Celina Duong		
1	2018-07-13	Added new graphs in sec 1.5	Celina Duong		
2	2018-07-27	Added commentary on NOx Emission	Cathy Grant		
3	2018-10-12	Updated document security classification	Amy Congdon		

- All signed originals will be retained by the UA Document Control Center and an electronic copy will be stored in Livelink

Signatures for this revision

Date	Role	Name	Signature or electronic reference (email)
2018-02-15	Originator	Celina Duong	Celina Duong

Summary

All emissions (non-CO₂) to air, soil and water caused by the introduction of a CO₂ capture process should be identified and reported by its concentration measured. Concentration measured in the streams to the environment from the capture facilities.

Quest Emissions to air, soil or water – Performance 2017		1
Heavy Oil		

1. PURPOSE

The actual non-CO₂ emissions to air, soil and water reported by its concentration measured in ppm during operational period

1.1. Air Monitoring as per EPEA Approval 49785-01-05

The primary source of air emissions from the Quest Project is the CO₂ capture facility at Scotford, which increases NO_x from the Hydrogen Manufacturing Units (HMUs). As a result, the amendment to the Upgrader's Environmental Protection and Enhancement Act Approval No. 49785-01-05 (incorporated Quest Capture Facility) required the following non-CO₂ emissions monitoring:

- Increased NO_x emissions limits for three HMU Steam Reformer stacks.
- Requirement to monitor NO_x emissions continuously for each HMU stack and conduct two stack surveys per year.
- Shell is required to participate in the Fort Air Partnership ambient air monitoring program and was required to install a NO_x analyzer for the Scotford 2 monitoring station. Lamont station monitors for PM_{2.5} as required by the Upgrader's operating approval.
- Note: as part of the Quest CCS Project Environmental Impact Assessment, air quality dispersion modeling showed that the Quest Project will not increase PM_{2.5} emissions.

1.2. Soil and Groundwater Monitoring as per EPEA Approval 49785-01-05

The Quest capture facility is integrated with the Scotford Upgrader and therefore all water use and treatment follows the terms and conditions. As well, groundwater and soil monitoring are conducted as an ongoing part of the operating approval.

Quest Emissions to air, soil or water – Performance 2017		1
Heavy Oil		

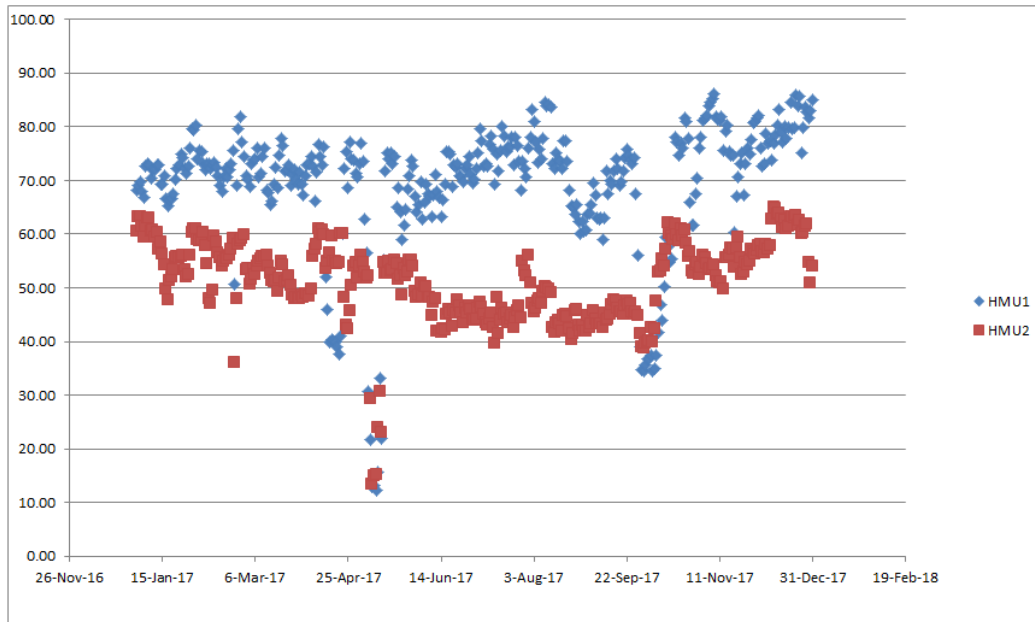
2017 Emissions Performance

1.3. Glycol Losses and Amine Losses

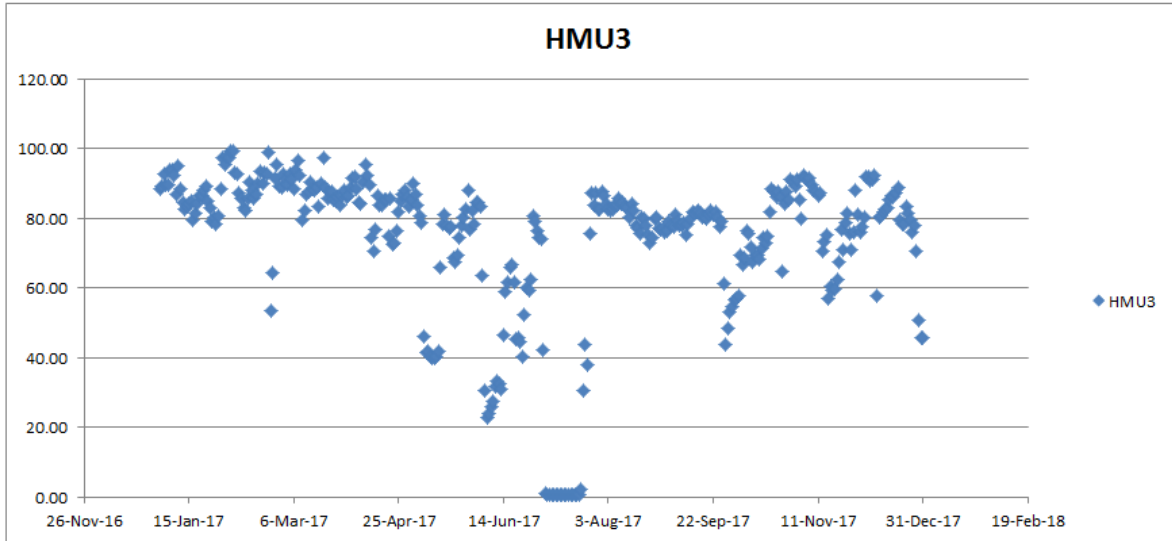
The total glycol volume is lost to a combination of sources including the glycol regenerator/stripper vent, glycol circulation pump seals, and lastly to the pipeline. The glycol circulation pump seals are a major source of glycol loss. ⁶

	Amine Make-up	TEG losses
	t/month	kg/month
Design/Reference	10	3833
Jan-17	0	823
Feb-17	0	700
Mar-17	0	700
Apr-17	0	493
May-17	0	520
Jun-17	0	483
Jul-17	8	682
Aug-17	0	683
Sep-17	0	586
Oct-17	0	538
Nov-17	0	401
Dec-17	0	553

1.4. 2017 NO_x Daily Average (ppm) for the Hydrogen Manufacturing Units

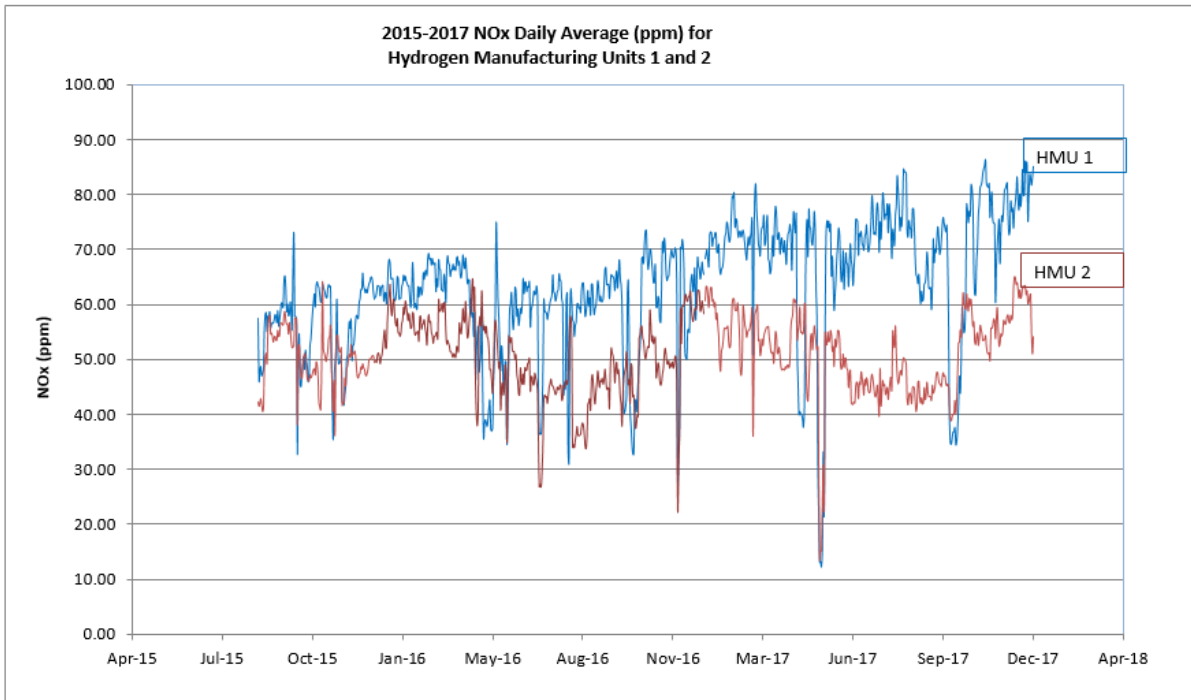


Quest Emissions to air, soil or water – Performance 2017		1
Heavy Oil		

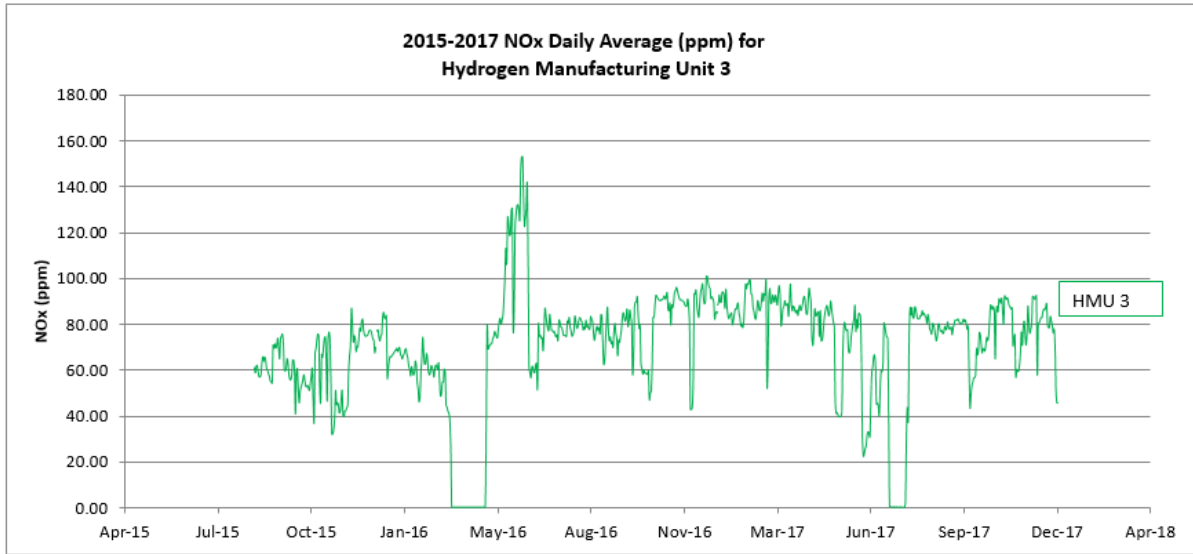


Note: From July 4 to July 22, HMU3 was offline for maintenance purposes.

1.5. 2015-2017 Summary of NOx Daily Average (ppm) for the Hydrogen Manufacturing Units



Quest Emissions to air, soil or water – Performance 2017		1
Heavy Oil		



We believe the NO_x emissions are trending up since the start-up of Quest partially due to the fouling of the burners, especially in the axial region. This would cause more gas hold-up which would result in more NO_x being produced. The amount of NO_x is also related to the heating value of the burner fuel gas source and the amount of CH₄ in that stream, which follow the same trend as the amount of NO_x emitted.

Quest Emissions to air, soil or water – Performance 2017		1
Heavy Oil		

APPENDIX 1. NOX DATA

		Hydrogen Manufacturing Unit (S-24103) Steam Reformer Stack	Hydrogen Manufacturing Unit (S-24203) Steam Reformer Stack	Hydrogen Manufacturing Unit (S-44103) Steam Reformer Stack
		241CEMSCP:AI241330.PNT	242CEMSCP:AI242330.PNT	AC441330.PIDA.PV
		NOx Daily Average ppm	NOx Daily Average ppm	NOx Daily Average ppm
1-Jan-17	2-Jan-17	68.27	60.62	88.23
2-Jan-17	3-Jan-17	69.18	63.25	89.06
3-Jan-17	4-Jan-17	69.82	63.20	92.66
4-Jan-17	5-Jan-17	67.90	61.45	89.50
5-Jan-17	6-Jan-17	66.80	59.43	89.38
6-Jan-17	7-Jan-17	72.56	61.47	93.79
7-Jan-17	8-Jan-17	73.12	63.03	93.85
8-Jan-17	9-Jan-17	72.95	63.06	92.45
9-Jan-17	10-Jan-17	70.48	60.52	86.75
10-Jan-17	11-Jan-17	71.94	60.83	95.15
11-Jan-17	12-Jan-17	72.01	59.50	88.23
12-Jan-17	13-Jan-17	72.97	60.26	84.48
13-Jan-17	14-Jan-17	72.89	57.27	82.38
14-Jan-17	15-Jan-17	69.34	58.42	83.28
15-Jan-17	16-Jan-17	69.38	56.25	84.17
16-Jan-17	17-Jan-17	70.83	54.15	84.82
17-Jan-17	18-Jan-17	66.71	49.88	79.62
18-Jan-17	19-Jan-17	65.35	47.79	81.59
19-Jan-17	20-Jan-17	66.30	51.39	84.05
20-Jan-17	21-Jan-17	66.57	52.04	86.60
21-Jan-17	22-Jan-17	67.54	53.40	86.35
22-Jan-17	23-Jan-17	70.29	55.53	87.92
23-Jan-17	24-Jan-17	72.29	55.73	89.11
24-Jan-17	25-Jan-17	72.86	55.52	84.77
25-Jan-17	26-Jan-17	74.92	55.73	82.86
26-Jan-17	27-Jan-17	74.14	56.03	79.09
27-Jan-17	28-Jan-17	72.16	53.30	80.27
28-Jan-17	29-Jan-17	71.22	52.05	78.34
29-Jan-17	30-Jan-17	72.57	52.44	80.59
30-Jan-17	31-Jan-17	75.94	56.09	88.23
31-Jan-17	1-Feb-17	79.60	60.26	97.17
1-Feb-17	2-Feb-17	79.34	61.05	95.21
2-Feb-17	3-Feb-17	80.21	60.94	97.56
3-Feb-17	4-Feb-17	74.04	59.07	97.16
4-Feb-17	5-Feb-17	75.49	58.82	99.15
5-Feb-17	6-Feb-17	75.35	58.92	99.10
6-Feb-17	7-Feb-17	73.13	60.27	93.09
7-Feb-17	8-Feb-17	72.07	57.90	92.69
8-Feb-17	9-Feb-17	73.21	54.38	87.26
9-Feb-17	10-Feb-17	73.17	47.92	85.58
10-Feb-17	11-Feb-17	72.13	47.04	82.92
11-Feb-17	12-Feb-17	72.94	49.53	82.08
12-Feb-17	13-Feb-17	73.42	59.75	85.71
13-Feb-17	14-Feb-17	72.48	58.46	90.27
14-Feb-17	15-Feb-17	70.78	56.39	88.19
15-Feb-17	16-Feb-17	69.19	55.49	85.75
16-Feb-17	17-Feb-17	68.05	53.95	86.68
17-Feb-17	18-Feb-17	70.75	54.83	89.92
18-Feb-17	19-Feb-17	72.21	55.28	93.49
19-Feb-17	20-Feb-17	70.63	55.32	89.87
20-Feb-17	21-Feb-17	72.07	56.14	93.24
21-Feb-17	22-Feb-17	73.08	57.15	92.63
22-Feb-17	23-Feb-17	75.48	59.22	98.89
23-Feb-17	24-Feb-17	50.58	36.17	53.31
24-Feb-17	25-Feb-17	69.16	47.90	64.41
25-Feb-17	26-Feb-17	79.64	58.03	91.36
26-Feb-17	27-Feb-17	81.88	58.67	95.43
27-Feb-17	28-Feb-17	77.24	59.15	89.14
28-Feb-17	1-Mar-17	74.52	59.86	88.95

Quest Emissions to air, soil or water – Performance 2017		1
Heavy Oil		

1-Mar-17	2-Mar-17	70.91	53.35	92.64
2-Mar-17	3-Mar-17	70.19	53.60	91.12
3-Mar-17	4-Mar-17	68.78	50.69	89.43
4-Mar-17	5-Mar-17	73.02	51.52	92.54
5-Mar-17	6-Mar-17	73.89	53.67	90.96
6-Mar-17	7-Mar-17	74.03	52.46	88.23
7-Mar-17	8-Mar-17	76.10	54.04	93.77
8-Mar-17	9-Mar-17	70.67	54.86	96.67
9-Mar-17	10-Mar-17	71.32	55.34	92.43
10-Mar-17	11-Mar-17	74.57	55.81	79.39
11-Mar-17	12-Mar-17	75.99	55.81	82.25
12-Mar-17	13-Mar-17	68.24	55.95	86.89
13-Mar-17	14-Mar-17	67.72	54.03	87.51
14-Mar-17	15-Mar-17	65.46	52.79	90.20
15-Mar-17	16-Mar-17	66.19	51.33	88.29
16-Mar-17	17-Mar-17	69.25	51.06	88.16
17-Mar-17	18-Mar-17	72.44	51.27	88.75
18-Mar-17	19-Mar-17	68.70	49.23	83.29
19-Mar-17	20-Mar-17	74.70	51.85	89.98
20-Mar-17	21-Mar-17	77.75	55.03	97.37
21-Mar-17	22-Mar-17	76.47	54.28	88.69
22-Mar-17	23-Mar-17	71.77	51.03	85.62
23-Mar-17	24-Mar-17	72.07	51.24	87.77
24-Mar-17	25-Mar-17	72.88	52.16	87.43
25-Mar-17	26-Mar-17	69.09	50.54	85.44
26-Mar-17	27-Mar-17	71.19	48.63	84.90
27-Mar-17	28-Mar-17	72.02	48.05	86.10
28-Mar-17	29-Mar-17	70.10	48.16	83.68
29-Mar-17	30-Mar-17	69.41	48.16	86.53
30-Mar-17	31-Mar-17	71.53	48.03	88.14
31-Mar-17	1-Apr-17	69.33	48.65	85.88
1-Apr-17	2-Apr-17	67.18	48.27	86.63
2-Apr-17	3-Apr-17	70.93	48.88	88.59
3-Apr-17	4-Apr-17	72.81	48.89	91.32
4-Apr-17	5-Apr-17	73.16	48.49	91.94
5-Apr-17	6-Apr-17	74.49	49.83	88.56
6-Apr-17	7-Apr-17	72.75	55.72	84.45
7-Apr-17	8-Apr-17	66.10	57.26	84.23
8-Apr-17	9-Apr-17	71.51	58.02	90.42
9-Apr-17	10-Apr-17	76.77	60.93	95.55
10-Apr-17	11-Apr-17	74.48	60.40	92.45
11-Apr-17	12-Apr-17	72.97	60.78	89.62
12-Apr-17	13-Apr-17	76.22	59.98	74.43
13-Apr-17	14-Apr-17	51.99	53.55	70.61
14-Apr-17	15-Apr-17	45.90	54.97	76.85
15-Apr-17	16-Apr-17	39.88	56.61	86.53
16-Apr-17	17-Apr-17	40.42	59.55	83.56
17-Apr-17	18-Apr-17	40.09	54.87	83.71
18-Apr-17	19-Apr-17	39.82	54.98	85.19
19-Apr-17	20-Apr-17	39.07	54.55	85.13
20-Apr-17	21-Apr-17	37.60	54.78	74.66
21-Apr-17	22-Apr-17	41.06	60.07	85.85
22-Apr-17	23-Apr-17	60.18	60.10	72.61
23-Apr-17	24-Apr-17	72.18	48.20	72.98
24-Apr-17	25-Apr-17	75.33	43.07	76.35
25-Apr-17	26-Apr-17	68.58	42.33	81.60
26-Apr-17	27-Apr-17	77.17	45.83	84.89
27-Apr-17	28-Apr-17	74.04	50.45	86.85
28-Apr-17	29-Apr-17	73.76	54.07	88.08
29-Apr-17	30-Apr-17	71.33	54.64	86.01
30-Apr-17	1-May-17	70.69	51.70	83.47

Quest Emissions to air, soil or water – Performance 2017		1
Heavy Oil		

1-May-17	2-May-17	73.09	53.93	85.20
2-May-17	3-May-17	76.86	56.07	89.99
3-May-17	4-May-17	73.48	54.70	86.96
4-May-17	5-May-17	62.90	52.98	83.65
5-May-17	6-May-17	56.54	51.68	80.75
6-May-17	7-May-17	30.64	52.26	78.82
7-May-17	8-May-17	21.68	29.34	45.89
8-May-17	9-May-17	13.03	13.37	41.25
9-May-17	10-May-17	13.17	15.00	41.60
10-May-17	11-May-17	12.30	15.11	40.35
11-May-17	12-May-17	15.71	23.86	39.79
12-May-17	13-May-17	33.11	30.72	39.73
13-May-17	14-May-17	21.84	23.00	40.10
14-May-17	15-May-17	55.09	54.74	41.67
15-May-17	16-May-17	71.87	52.66	65.86
16-May-17	17-May-17	75.09	52.64	78.26
17-May-17	18-May-17	73.90	54.97	80.91
18-May-17	19-May-17	75.09	53.16	78.06
19-May-17	20-May-17	73.14	53.41	77.05
20-May-17	21-May-17	74.46	55.26	77.61
21-May-17	22-May-17	65.14	54.50	68.72
22-May-17	23-May-17	68.70	51.45	67.41
23-May-17	24-May-17	64.22	52.22	69.37
24-May-17	25-May-17	58.87	48.67	74.47
25-May-17	26-May-17	61.63	53.56	77.73
26-May-17	27-May-17	64.55	52.18	80.19
27-May-17	28-May-17	68.32	52.98	82.73
28-May-17	29-May-17	70.79	55.23	88.11
29-May-17	30-May-17	73.85	55.20	76.71
30-May-17	31-May-17	72.75	54.00	82.06
31-May-17	1-Jun-17	66.95	49.31	78.23
1-Jun-17	2-Jun-17	64.06	48.15	84.59
2-Jun-17	3-Jun-17	65.44	48.72	84.32
3-Jun-17	4-Jun-17	69.69	50.97	83.19
4-Jun-17	5-Jun-17	62.75	48.46	63.55
5-Jun-17	6-Jun-17	65.92	50.11	30.49
6-Jun-17	7-Jun-17	69.30	50.23	22.69
7-Jun-17	8-Jun-17	67.45	48.29	23.74
8-Jun-17	9-Jun-17	67.13	48.10	25.88
9-Jun-17	10-Jun-17	63.14	44.82	27.23
10-Jun-17	11-Jun-17	67.30	47.32	31.79
11-Jun-17	12-Jun-17	70.98	47.97	33.31
12-Jun-17	13-Jun-17	67.98	42.01	32.60
13-Jun-17	14-Jun-17	66.78	41.82	31.06
14-Jun-17	15-Jun-17	63.32	41.74	46.43
15-Jun-17	16-Jun-17	66.48	42.26	58.77
16-Jun-17	17-Jun-17	69.37	42.03	61.44
17-Jun-17	18-Jun-17	75.40	45.13	65.81
18-Jun-17	19-Jun-17	75.43	45.86	66.62
19-Jun-17	20-Jun-17	74.98	45.26	61.64
20-Jun-17	21-Jun-17	68.87	42.79	45.24
21-Jun-17	22-Jun-17	72.81	45.82	45.71
22-Jun-17	23-Jun-17	72.33	45.32	44.41
23-Jun-17	24-Jun-17	73.18	47.68	40.23
24-Jun-17	25-Jun-17	70.94	46.61	52.14
25-Jun-17	26-Jun-17	70.65	45.26	59.98
26-Jun-17	27-Jun-17	69.81	43.44	59.33
27-Jun-17	28-Jun-17	72.23	46.29	62.35
28-Jun-17	29-Jun-17	72.83	45.20	80.46
29-Jun-17	30-Jun-17	74.38	46.62	79.03
30-Jun-17	1-Jul-17	71.06	45.90	76.48

Quest Emissions to air, soil or water – Performance 2017		1
Heavy Oil		

1-Jul-17	2-Jul-17	69.45	44.21	74.34
2-Jul-17	3-Jul-17	70.19	43.87	74.04
3-Jul-17	4-Jul-17	72.12	44.12	42.03
4-Jul-17	5-Jul-17	75.06	46.27	1.00
5-Jul-17	6-Jul-17	79.67	47.27	0.76
6-Jul-17	7-Jul-17	77.41	46.32	0.70
7-Jul-17	8-Jul-17	72.72	44.94	0.54
8-Jul-17	9-Jul-17	73.06	43.50	0.64
9-Jul-17	10-Jul-17	72.59	43.13	0.77
10-Jul-17	11-Jul-17	76.71	44.08	0.49
11-Jul-17	12-Jul-17	78.37	45.24	0.75
12-Jul-17	13-Jul-17	75.90	42.52	0.68
13-Jul-17	14-Jul-17	69.36	39.76	0.46
14-Jul-17	15-Jul-17	74.93	48.30	0.62
15-Jul-17	16-Jul-17	71.79	41.57	0.69
16-Jul-17	17-Jul-17	75.55	43.88	0.58
17-Jul-17	18-Jul-17	80.15	46.07	0.56
18-Jul-17	19-Jul-17	78.38	45.10	0.64
19-Jul-17	20-Jul-17	75.41	45.38	0.53
20-Jul-17	21-Jul-17	76.35	43.54	0.54
21-Jul-17	22-Jul-17	76.19	44.11	2.30
22-Jul-17	23-Jul-17	78.14	44.82	30.71
23-Jul-17	24-Jul-17	72.95	42.64	43.89
24-Jul-17	25-Jul-17	78.08	44.42	37.83
25-Jul-17	26-Jul-17	76.58	45.81	75.60
26-Jul-17	27-Jul-17	73.63	46.71	87.04
27-Jul-17	28-Jul-17	68.26	44.41	83.85
28-Jul-17	29-Jul-17	73.51	55.03	87.24
29-Jul-17	30-Jul-17	72.27	53.19	82.73
30-Jul-17	31-Jul-17	70.67	52.23	82.59
31-Jul-17	1-Aug-17	76.08	56.09	87.43
1-Aug-17	2-Aug-17	78.02	50.94	86.64
2-Aug-17	3-Aug-17	83.27	47.08	84.11
3-Aug-17	4-Aug-17	80.91	45.52	82.40
4-Aug-17	5-Aug-17	77.25	46.16	82.22
5-Aug-17	6-Aug-17	73.31	47.55	82.38
6-Aug-17	7-Aug-17	75.70	47.92	83.71
7-Aug-17	8-Aug-17	74.12	47.09	83.58
8-Aug-17	9-Aug-17	77.93	49.33	85.84
9-Aug-17	10-Aug-17	84.52	50.24	84.08
10-Aug-17	11-Aug-17	83.98	50.03	84.62
11-Aug-17	12-Aug-17	84.02	49.73	83.33
12-Aug-17	13-Aug-17	83.71	49.10	82.97
13-Aug-17	14-Aug-17	73.05	42.61	80.30
14-Aug-17	15-Aug-17	72.11	41.67	84.16
15-Aug-17	16-Aug-17	75.13	43.41	82.03
16-Aug-17	17-Aug-17	73.97	43.87	77.78
17-Aug-17	18-Aug-17	73.53	43.19	77.12
18-Aug-17	19-Aug-17	72.14	41.90	75.55
19-Aug-17	20-Aug-17	77.32	44.84	80.26
20-Aug-17	21-Aug-17	77.33	45.01	79.97
21-Aug-17	22-Aug-17	73.65	44.63	77.84
22-Aug-17	23-Aug-17	68.23	42.29	75.28
23-Aug-17	24-Aug-17	65.27	40.44	72.66
24-Aug-17	25-Aug-17	64.97	41.50	74.42
25-Aug-17	26-Aug-17	63.69	45.83	79.71
26-Aug-17	27-Aug-17	65.43	45.97	80.19
27-Aug-17	28-Aug-17	62.34	42.96	77.25
28-Aug-17	29-Aug-17	60.05	42.01	76.71
29-Aug-17	30-Aug-17	62.35	42.99	77.24
30-Aug-17	31-Aug-17	60.52	41.80	75.82
31-Aug-17	1-Sep-17	60.87	42.01	76.33

Quest Emissions to air, soil or water – Performance 2017		1
Heavy Oil		

1-Sep-17	2-Sep-17	63.63	44.81	79.01
2-Sep-17	3-Sep-17	63.82	42.62	77.92
3-Sep-17	4-Sep-17	65.41	43.35	77.60
4-Sep-17	5-Sep-17	69.42	45.84	80.97
5-Sep-17	6-Sep-17	67.38	44.16	78.98
6-Sep-17	7-Sep-17	62.94	43.25	77.86
7-Sep-17	8-Sep-17	62.75	43.17	77.87
8-Sep-17	9-Sep-17	63.01	43.15	78.75
9-Sep-17	10-Sep-17	58.95	42.49	75.33
10-Sep-17	11-Sep-17	63.05	45.28	78.39
11-Sep-17	12-Sep-17	71.81	43.83	79.66
12-Sep-17	13-Sep-17	67.49	44.23	81.71
13-Sep-17	14-Sep-17	70.04	45.01	81.53
14-Sep-17	15-Sep-17	69.37	46.78	81.61
15-Sep-17	16-Sep-17	71.79	47.67	82.29
16-Sep-17	17-Sep-17	74.06	47.46	81.58
17-Sep-17	18-Sep-17	72.25	46.09	80.40
18-Sep-17	19-Sep-17	69.09	45.52	80.30
19-Sep-17	20-Sep-17	69.66	45.44	79.86
20-Sep-17	21-Sep-17	71.69	45.02	80.95
21-Sep-17	22-Sep-17	74.27	46.61	82.17
22-Sep-17	23-Sep-17	75.75	47.56	81.04
23-Sep-17	24-Sep-17	74.67	46.86	81.79
24-Sep-17	25-Sep-17	73.82	46.99	80.05
25-Sep-17	26-Sep-17	73.08	45.55	77.71
26-Sep-17	27-Sep-17	74.25	45.12	79.07
27-Sep-17	28-Sep-17	67.48	45.52	61.31
28-Sep-17	29-Sep-17	56.02	44.84	43.85
29-Sep-17	30-Sep-17	38.98	41.38	48.55
30-Sep-17	1-Oct-17	34.63	39.10	53.16
1-Oct-17	2-Oct-17	34.51	38.75	54.64
2-Oct-17	3-Oct-17	35.62	39.57	56.66
3-Oct-17	4-Oct-17	36.78	39.99	56.78
4-Oct-17	5-Oct-17	36.76	40.07	57.76
5-Oct-17	6-Oct-17	37.50	42.50	69.31
6-Oct-17	7-Oct-17	34.42	39.97	66.53
7-Oct-17	8-Oct-17	34.91	42.43	68.50
8-Oct-17	9-Oct-17	37.51	47.50	76.32
9-Oct-17	10-Oct-17	41.67	52.95	75.51
10-Oct-17	11-Oct-17	46.90	53.04	71.55
11-Oct-17	12-Oct-17	43.82	55.35	67.38
12-Oct-17	13-Oct-17	50.16	53.97	69.27
13-Oct-17	14-Oct-17	59.32	57.13	69.26
14-Oct-17	15-Oct-17	57.69	62.05	68.27
15-Oct-17	16-Oct-17	54.74	60.14	71.19
16-Oct-17	17-Oct-17	55.31	59.63	74.29
17-Oct-17	18-Oct-17	62.10	59.07	72.77
18-Oct-17	19-Oct-17	78.15	61.94	74.92
19-Oct-17	20-Oct-17	77.06	59.94	81.87
20-Oct-17	21-Oct-17	74.77	58.75	88.28
21-Oct-17	22-Oct-17	76.90	61.09	87.61
22-Oct-17	23-Oct-17	76.02	59.74	86.20
23-Oct-17	24-Oct-17	81.70	60.87	87.61
24-Oct-17	25-Oct-17	80.90	58.22	86.16
25-Oct-17	26-Oct-17	77.86	55.94	64.85
26-Oct-17	27-Oct-17	66.03	56.77	84.29
27-Oct-17	28-Oct-17	61.70	53.12	87.78
28-Oct-17	29-Oct-17	61.62	52.66	85.25
29-Oct-17	30-Oct-17	67.55	54.18	90.96
30-Oct-17	31-Oct-17	70.40	54.75	90.37
31-Oct-17	1-Nov-17	75.99	52.48	89.00

Quest Emissions to air, soil or water – Performance 2017

1

Heavy Oil

1-Nov-17	2-Nov-17	78.08	53.72	91.22
2-Nov-17	3-Nov-17	81.21	56.13	85.24
3-Nov-17	4-Nov-17	81.55	55.53	79.96
4-Nov-17	5-Nov-17	82.18	54.57	92.27
5-Nov-17	6-Nov-17	83.79	53.38	91.51
6-Nov-17	7-Nov-17	84.58	53.47	90.67
7-Nov-17	8-Nov-17	85.21	53.58	91.42
8-Nov-17	9-Nov-17	86.17	54.29	89.66
9-Nov-17	10-Nov-17	81.79	52.28	87.91
10-Nov-17	11-Nov-17	81.44	51.21	87.46
11-Nov-17	12-Nov-17	81.24	50.94	86.43
12-Nov-17	13-Nov-17	81.88	51.12	87.15
13-Nov-17	14-Nov-17	75.68	49.78	70.69
14-Nov-17	15-Nov-17	79.18	55.67	73.43
15-Nov-17	16-Nov-17	80.27	55.59	75.38
16-Nov-17	17-Nov-17	75.30	56.09	57.10
17-Nov-17	18-Nov-17	74.68	57.36	60.35
18-Nov-17	19-Nov-17	74.60	57.08	59.41
19-Nov-17	20-Nov-17	60.38	53.72	59.53
20-Nov-17	21-Nov-17	66.95	57.45	62.42
21-Nov-17	22-Nov-17	70.73	59.41	67.40
22-Nov-17	23-Nov-17	73.17	55.66	76.57
23-Nov-17	24-Nov-17	75.22	52.36	70.72
24-Nov-17	25-Nov-17	67.30	52.89	78.78
25-Nov-17	26-Nov-17	73.15	54.60	81.35
26-Nov-17	27-Nov-17	76.06	54.18	75.62
27-Nov-17	28-Nov-17	74.99	54.86	70.86
28-Nov-17	29-Nov-17	77.50	57.09	76.15
29-Nov-17	30-Nov-17	80.67	56.75	87.84
30-Nov-17	1-Dec-17	80.94	56.29	81.12
1-Dec-17	2-Dec-17	81.60	56.87	76.01
2-Dec-17	3-Dec-17	82.04	57.91	77.69
3-Dec-17	4-Dec-17	76.02	58.04	80.06
4-Dec-17	5-Dec-17	72.56	56.80	91.90
5-Dec-17	6-Dec-17	73.20	56.59	91.99
6-Dec-17	7-Dec-17	78.68	58.00	90.82
7-Dec-17	8-Dec-17	76.82	57.14	91.07
8-Dec-17	9-Dec-17	77.37	57.79	92.35
9-Dec-17	10-Dec-17	73.77	62.87	57.88
10-Dec-17	11-Dec-17	76.89	65.00	80.35
11-Dec-17	12-Dec-17	78.42	64.92	80.49
12-Dec-17	13-Dec-17	80.24	63.61	81.76
13-Dec-17	14-Dec-17	83.12	63.97	82.74
14-Dec-17	15-Dec-17	78.94	62.68	82.86
15-Dec-17	16-Dec-17	77.08	61.13	85.30
16-Dec-17	17-Dec-17	80.01	62.62	86.58
17-Dec-17	18-Dec-17	77.72	61.09	86.12
18-Dec-17	19-Dec-17	79.79	61.54	87.33
19-Dec-17	20-Dec-17	84.49	63.23	88.89
20-Dec-17	21-Dec-17	79.69	63.33	79.58
21-Dec-17	22-Dec-17	79.81	62.97	78.39
22-Dec-17	23-Dec-17	85.90	63.42	78.42
23-Dec-17	24-Dec-17	83.93	61.73	83.34
24-Dec-17	25-Dec-17	85.65	62.45	81.24
25-Dec-17	26-Dec-17	75.11	60.07	79.55
26-Dec-17	27-Dec-17	79.75	60.33	76.14
27-Dec-17	28-Dec-17	83.60	61.53	77.75
28-Dec-17	29-Dec-17	82.79	61.87	70.41
29-Dec-17	30-Dec-17	81.56	54.64	50.53
30-Dec-17	31-Dec-17	83.04	50.95	45.80
31-Dec-17	1-Jan-18	85.02	54.09	45.82

Quest Emissions to air, soil or water – Performance 2017

1

Heavy Oil