Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
85-86	09-23-17	14:35	6.65	F-29	K.N	09-23-17	14:42	X	-	32	32	Full seam	O
7-72	09-23-17	15:40	2	F-30	K.N	09-23-17	15:59	X	-	31	31	Full seam	O
84-72	09-23-17	15:40	4.7	F-30	K.N	09-23-17	15:59	X	-	31	31	Full seam	O
84-73	09-23-17	15:40	2	F-30	K.N	09-23-17	15:59	X	-	31	31	Full seam	O
85-73	09-23-17	15:40	4.7	F-30	K.N	09-23-17	15:59	X	-	31	31	Full seam	O
85-74	09-23-17	15:40	2	F-30	K.N	09-23-17	15:59	X	-	31	31	Full seam	O
83-87	09-24-17	09:15	11.6	F-31	K.N	09-24-17	09:40	X	-	31.5	31.5	Full seam	O
76-87	09-24-17	09:15	6.65	F-31	K.N	09-24-17	09:40	X	-	31.5	31.5	Full seam	O
75-87	09-24-17	09:15	6.65	F-31	K.N	09-24-17	09:40	X	-	31.5	31.5	Full seam	O
74-87	09-24-17	09:15	4.7	F-31	K.N	09-24-17	09:40	X	-	31.5	31.5	Full seam	O
87-88	09-24-17	09:52	29.6	F-32	K.N	09-24-17	10:06	X	-	31.5	31	Full seam	O
88-89	09-24-17	10:15	30	F-32	K.N	09-24-17	10:38	X	-	27	26	Full seam	O
89-90	09-24-17	10:38	30.1	F-32	K.N	09-24-17	10:52	X	-	30.5	30.5	Full seam	O

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Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
90-91	09-24-17	12:09	29.9	F-33	K.N	09-24-17	12:28	X	-	30	30	Full seam	O
91-92	09-24-17	12:28	29.8	F-33	K.N	09-24-17	12:43	X	-	30	30	Full seam	O
92-93	09-24-17	13:01	29.4	F-33	K.N	09-24-17	13:15	X	-	34	34	Full seam	O
85-87	09-24-17	13:23	6.65	F-34	K.N	09-24-17	13:49	X	-	32	32	Full seam	O
85-88	09-24-17	13:23	6.65	F-34	K.N	09-24-17	13:49	X	-	32	32	From West 0m to 3.5m	O
"	"	"	"	"	"	09-24-17	14:00	X	-	33	33	3.5m to 6.65m	O
85-89	09-24-17	13:23	6.65	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
85-90	09-24-17	13:23	6.65	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
85-91	09-24-17	13:23	6.65	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
85-92	09-24-17	13:23	3.7	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
86-92	09-24-17	13:23	3	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
86-93	09-24-17	13:23	6.65	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
94-95	09-25-17	12:31	63.7	F-35	K.N	09-25-17	12:58	X	-	33	33	Full seam	O

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Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
96-97	09-25-17	12:52	1.8	F-37	K.N	09-25-17	13:02	X	-	32	31	Full seam	O
95-96	09-25-17	13:07	35.5	F-37	K.N	09-25-17	14:01	X	-	29	28	From North 0m to 12m	O
"	"	"	"	"	"	09-25-17	13:48	X	-	33	32	12m to 35.5m	O
95-97	09-25-17	13:07	27.3	F-36	K.N	09-25-17	13:48	X	-	33	32	Full seam	O
69-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
34-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
33-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
6-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
5-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
4-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
3-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
2-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
1-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:37	X	-	28	28	Full seam	O

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Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
41-94	09-25-17	11:35	4.4	F-37	K.N	09-25-17	12:40	X	-	31.5	31.5	Full seam	O
59-94	09-25-17	16:00	6.65	F-36	K.N	09-25-17	16:07	X	-	30.5	30	Full seam	O
59-95	09-25-17	16:00	6.1	F-36	K.N	09-25-17	16:07	X	-	30.5	30	Full seam	O
59-96	09-25-17	16:00	1.8	F-36	K.N	09-25-17	16:07	X	-	30.5	30	Full seam	O
16-96	09-25-17	14:17	2.2	F-37	K.N	09-25-17	14:27	X	-	31	30	Full seam	O
15-96	09-25-17	14:17	6.65	F-37	K.N	09-25-17	14:27	X	-	31	30	From North 0m to 5.8m	O
"	"	"	"	"	"	09-25-17	14:32	X	-	31	31	5.8m to 6.65m	O
14-96	09-25-17	14:17	6.65	F-37	K.N	09-25-17	14:32	X	-	31	31	From North 0m to 4.8m	O
"	"	"	"	"	"	09-25-17	14:49	X	-	34	34	4.8m to 6.65m	O
13-96	09-25-17	14:17	6.65	F-37	K.N	09-25-17	14:49	X	-	34	34	Full seam	O
12-96	09-25-17	14:17	6.65	F-37	K.N	09-25-17	14:49	X	-	34	34	From North 0m to 4m	O
"	"	"	"	"	"	09-25-17	14:45	X	-	30.5	30	4m to 6.65m	O
11-96	09-25-17	14:17	6.65	F-37	K.N	09-25-17	15:51	X	-	30.5	30.5	Full seam	O

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Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
8-97	09-25-17	14:17	6.65	F-37	K.N	09-25-17	15:51	X	-	30.5	30.5	Full seam	O
7-97	09-25-17	14:17	6.65	F-37	K.N	09-25-17	15:51	X	-	30.5	30.5	Full seam	O
84-97	09-25-17	14:17	6.65	F-37	K.N	09-25-17	15:51	X	-	30.5	30.5	Full seam	O
86-97	09-25-17	14:17	6.65	F-37	K.N	09-25-17	15:51	X	-	30.5	30.5	Full seam	O
93-98	09-27-17	12:16	28.7	F-38	K.N	09-27-17	12:55	X	-	29	29	From North 0m to 3.5m	O
"	"	"	"	"	"	09-27-17	12:55	X	-	31	30.5	3.5m to 28.7m	O
98-99	09-27-17	12:46	27.3	F-38	K.N	09-27-17	13:12	X	-	32	32	Full seam	O
99-100	09-27-17	13:00	26.5	F-38	K.N	09-27-17	13:16	X	-	31	31	Full seam	O
100-101	09-27-17	13:13	26.6	F-38	K.N	09-27-17	13:23	X	-	32	32	Full seam	O
101-102	09-27-17	13:24	26.4	F-38	K.N	09-27-17	13:36	X	-	33	32	Full seam	O
102-103	09-27-17	13:38	26.4	F-38	K.N	09-27-17	13:52	X	-	34	34	Full seam	O
103-104	09-27-17	13:51	26.7	F-38	K.N	09-27-17	14:04	X	-	32	31	Full seam	O
104-105	09-27-17	14:08	26.7	F-38	K.N	09-27-17	14:21	X	-	30	30	Full seam	O

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Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
105-106	09-27-17	14:21	26.7	F-38	K.N	09-27-17	14:32	X	-	31.5	30.5	Full seam	O
86-98	09-27-17	15:45	3	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
97-98	09-27-17	15:45	1.7	F-40	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
95-98	09-27-17	15:45	2.3	F-40	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
95-99	09-27-17	15:45	3.6	F-40	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
94-99	09-27-17	15:45	3.2	F-40	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
94-100	09-27-17	15:45	3	F-40	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-100	09-27-17	15:45	3.8	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-101	09-27-17	15:45	6.65	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-102	09-27-17	15:45	6.65	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-103	09-27-17	15:45	6.65	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-104	09-27-17	15:45	6.65	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-105	09-27-17	15:45	6.65	F-38	K.N	09-27-17	16:26	X	-	30	28	Full seam	O

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Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
69-106	09-27-17	15:45	5	F-38	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
106-107	09-27-17	16:30	12	F-38	K.N	09-27-17	16:35	X	-	31	30	Full seam	O
28-108	10-04-17	08:14	14.1	F-41	K.N	10-04-17	08:48	X	-	31	30	From West 0m to 4m	O
"	"	"	"	"	"	10-04-17	PM	-	X	-	-	4m to 8m	O
"	"	"	"	"	"	10-04-17	08:42	X	-	35	35	8m to 14.1m	O
69-108	10-04-17	08:35	5.9	F-41	K.N	10-04-17	08:50	X	-	34	3	From North 0m to 1.2m	O
"	"	"	"	"	"	10-04-17	08:52	X	-	33	33	1.2m to 5.9m	O
108-109	10-06-17	11:25	14.7	F-42	K.N	10-06-17	11:35	X	-	30	30	Full seam	O
109-110	10-06-17	11:40	14.7	F-42	K.N	10-06-17	11:45	X	-	32	32	Full seam	O
110-111	10-06-17	12:05	13.8	F-42	K.N	10-06-17	12:15	X	-	32	32	Full seam	O
111-106	10-06-17	12:36	2.2	F-42	K.N	10-06-17	12:45	X	-	32	31	Full seam	O
110-106	10-06-17	12:36	6.65	F-42	K.N	10-06-17	12:45	X	-	32	31	Full seam	O
109-106	10-06-17	12:36	5.2	F-42	K.N	10-06-17	12:45	X	-	32	31	Full seam	O

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Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
111-112	10-06-17	12:57	5.2	F-42	K.N	10-06-17	13:10	X	-	33	32	Full seam	O
112-113	10-06-17	13:05	4.1	F-42	K.N	10-06-17	13:15	X	-	30	30	Full seam	O
111-107	10-06-17	13:30	7.8	F-42	K.N	10-06-17	13:40	X	-	30	29	Full seam	O
112-107	10-06-17	13:30	2.3	F-42	K.N	10-06-17	13:40	X	-	30	29	Full seam	O
113-107	10-06-17	13:30	3.1	F-42	K.N	10-06-17	13:40	X	-	30	29	Full seam	O

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Destructive Testing
Essai Destructif

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Destructive Test No. No. Essai Destructif	Seam No. No. de Soudure	Date (mm/dd/yy)	Sample Location Localisation de l'échantillon	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Lab. Testing (P/F) Lab. Indép. (A/R)	Tensiometer No. No. Tensiomètre
DT-1	5-6	07-15-17	At 10m from WEOS	123	SE1	124	SE1	159	BRK	07-15-17	07-15-17	P	T-9709
"	"	"	"	115	SE1	120	SE1	N/A	N/A	"	"	"	"
"	"	"	"	120	SE1	120	SE1	N/A	N/A	"	"	"	"
"	"	"	"	120	SE1	120	SE1	N/A	N/A	"	"	"	"
DT-2	7-10	07-16-17	At 1,3m from EEOS	112	SE1	119	SE1	141	BRK	07-16-17	07-16-17	P	T-9709
"	"	"	"	108	SE1	107	SE1	N/A	N/A	"	"	"	"
"	"	"	"	108	SE1	107	SE1	N/A	N/A	"	"	"	"
"	"	"	"	109	SE1	116	SE1	N/A	N/A	"	"	"	"
DT-3	14-15	07-16-17	At 16,2m from WEOS	108	SE1	96	SE1	135	BRK	07-16-17	07-16-17	P	T-9709
"	"	"	"	105	SE1	103	SE1	N/A	N/A	"	"	"	"
"	"	"	"	101	SE1	99	SE1	N/A	N/A	"	"	"	"
"	"	"	"	105	SE1	98	SE1	N/A	N/A	"	"	"	"
DT-4	25-26	09-13-17	At 1m from WEOS	156	SE1	118	SE1	185	BRK	09-13-17	09-13-17	P	T-9709
"	"	"	"	138	SE1	108	SE1	N/A	N/A	"	"	"	"
"	"	"	"	140	SE1	113	SE1	N/A	N/A	"	"	"	"
"	"	"	"	140	SE1	111	SE1	N/A	N/A	"	"	"	"
DT-5	33-34	09-14-17	At 1m from WEOS	114	SE1	132	SE1	182	BRK	09-14-17	09-14-17	P	T-9709
"	"	"	"	123	SE1	133	SE1	N/A	N/A	"	"	"	"
"	"	"	"	115	SE1	118	SE1	N/A	N/A	"	"	"	"
"	"	"	"	121	SE1	135	SE1	N/A	N/A	"	"	"	"
DT-6	41-42	09-15-17	At 2m from EEOS	132	SE1	128	SE1	187	BRK	09-15-17	09-15-17	P	T-9709
"	"	"	"	125	SE1	142	SE1	N/A	N/A	"	"	"	"
"	"	"	"	124	SE1	125	SE1	N/A	N/A	"	"	"	"
"	"	"	"	132	SE1	133	SE1	N/A	N/A	"	"	"	"

Texel GEOSOL

Destructive Testing
Essai Destructif

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Destructive Test No. No. Essai Destructif	Seam No. No. de Soudure	Date (mm/dd/yy)	Sample Location Localisation de l'échantillon	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Lab. Testing (P/F) Lab. Indép. (A/R)	Tensiometer No. No. Tensiomètre
DT-7	56-57	09-19-17	At 0,2m from SEOS	147	SE1	142	SE1	209	BRK	09-20-17	09-20-17	P	T-9709
"	"	"	"	148	SE1	145	SE1	N/A	N/A	"	"	"	"
"	"	"	"	145	SE1	140	SE1	N/A	N/A	"	"	"	"
"	"	"	"	144	SE1	164	SE1	N/A	N/A	"	"	"	"
DT-8	61-62	09-19-17	At 1,5m from EEOS	135	SE1	128	SE1	178	BRK	09-20-17	09-20-17	P	T-9709
"	"	"	"	145	SE1	125	SE1	N/A	N/A	"	"	"	"
"	"	"	"	140	SE1	137	SE1	N/A	N/A	"	"	"	"
"	"	"	"	145	SE1	132	SE1	N/A	N/A	"	"	"	"
DT-9	65-66	09-19-17	At 3m from EEOS	143	SE1	125	SE1	186	BRK	09-20-17	09-20-17	P	T-9709
"	"	"	"	144	SE1	120	SE1	N/A	N/A	"	"	"	"
"	"	"	"	136	SE1	131	SE1	N/A	N/A	"	"	"	"
"	"	"	"	127	SE1	127	SE1	N/A	N/A	"	"	"	"
DT-10	67-68	09-19-17	At 12m from EEOS	139	SE1	125	SE1	182	BRK	09-20-17	09-20-17	P	T-9709
"	"	"	"	126	SE1	124	SE1	N/A	N/A	"	"	"	"
"	"	"	"	134	SE1	132	SE1	N/A	N/A	"	"	"	"
"	"	"	"	125	SE1	128	SE1	N/A	N/A	"	"	"	"
DT-11	72-73	09-23-17	At 4,5m from WEOS	155	SE1	144	SE1	200	BRK	09-23-17	09-23-17	P	T-9709
"	"	"	"	146	SE1	156	SE1	N/A	N/A	"	"	"	"
"	"	"	"	148	SE1	136	SE1	N/A	N/A	"	"	"	"
"	"	"	"	145	SE1	147	SE1	N/A	N/A	"	"	"	"
DT-12	78-80	09-23-17	At 2,7m from NEOS	134	SE1	134	SE1	194	BRK	09-23-17	09-23-17	P	T-9709
"	"	"	"	131	SE1	134	SE1	N/A	N/A	"	"	"	"
"	"	"	"	107	SE1	121	SE1	N/A	N/A	"	"	"	"
"	"	"	"	122	SE1	107	SE1	N/A	N/A	"	"	"	"

Texel GEOSOL

Destructive Testing
Essai Destructif

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

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Destructive Test No. No. Essai Destructif	Seam No. No. de Soudure	Date (mm/dd/yy)	Sample Location Localisation de l'échantillon	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Lab. Testing (P/F) Lab. Indép. (A/R)	Tensiometer No. No. Tensiomètre
DT-13	84-85	09-23-17	At 2m from WEOS	112	SE1	120	SE1	199	BRK	09-23-17	09-23-17	P	T-9709
"	"	"	"	119	SE1	105	SE1	N/A	N/A	"	"	"	"
"	"	"	"	116	SE1	121	SE1	N/A	N/A	"	"	"	"
"	"	"	"	106	SE1	119	SE1	N/A	N/A	"	"	"	"
DT-14	88-89	09-24-17	At 3m from NEOS	150	SE1	145	SE1	195	BRK	09-24-17	09-24-17	P	T-9709
"	"	"	"	156	SE1	146	SE1	N/A	N/A	"	"	"	"
"	"	"	"	136	SE1	146	SE1	N/A	N/A	"	"	"	"
"	"	"	"	151	SE1	149	SE1	N/A	N/A	"	"	"	"
DT-15	92-93	09-24-17	At 3m from NEOS	144	SE1	130	SE1	181	BRK	09-24-17	09-24-17	P	T-9709
"	"	"	"	140	SE1	131	SE1	N/A	N/A	"	"	"	"
"	"	"	"	128	SE1	130	SE1	N/A	N/A	"	"	"	"
"	"	"	"	142	SE1	143	SE1	N/A	N/A	"	"	"	"
DT-16	94-95	09-25-17	At 5m from SEOS	119	SE1	128	SE1	169	BRK	09-25-17	09-25-17	P	T-9709
"	"	"	"	118	SE1	128	SE1	N/A	N/A	"	"	"	"
"	"	"	"	125	SE1	121	SE1	N/A	N/A	"	"	"	"
"	"	"	"	131	SE1	133	SE1	N/A	N/A	"	"	"	"
DT-17	101-102	09-27-17	South trench	133	SE1	127	SE1	209	BRK	N/A	N/A	P	T-9709
"	"	"	"	139	SE1	137	SE1	N/A	N/A	"	"	"	"
"	"	"	"	142	SE1	157	SE1	N/A	N/A	"	"	"	"
"	"	"	"	144	SE1	146	SE1	N/A	N/A	"	"	"	"
DT-18	109-110	10-06-17	East trench	125	SE1	126	SE1	157	BRK	N/A	N/A	P	T-9709
"	"	"	"	122	SE1	123	SE1	N/A	N/A	"	"	"	"
"	"	"	"	119	SE1	113	SE1	N/A	N/A	"	"	"	"
"	"	"	"	117	SE1	114	SE1	N/A	N/A	"	"	"	"

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Repair Report
Rapport de Réparation

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

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Repair No. / No. Réparation	Type & Dimensions / Type et Dimensions			Location of Repair / Localisation de la Réparation				Date Repaired / Date Réparée (mm/dd/yy)	Date Repair Verified / Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) / Approuvé (Oui/Non)
	Patch / Empiècement	Extrusion Weld or Bead / Soudure Extrusion	Pipe Boot / Manchon d'étanchéité	On Panel No. / Sur Panneau No.	On Seam No. / Sur Soudure No.	Intersection of Panels / Intersection des Panneaux	Sample Location / Localisation de l'échantillon			
R-1	P2			1			At 2.3m of SEOP and 1.4m of EEOP	07-15-17	07-15-17	O
R-2	P2			1			At 2.3m of SEOP and 3.6m of EEOP	07-15-17	07-15-17	O
R-3	P2			1			At 2.3m of SEOP and 5.9m of EEOP	07-15-17	07-15-17	O
R-4	P1			1			At 4.2m of SEOP and 1.8m of EEOP	07-15-17	07-15-17	O
R-5	P1			1			At 4.2m of SEOP and 4.1m of EEOP	07-15-17	07-15-17	O
R-6	P1			1			At 4.2m of SEOP and 6.4m of EEOP	07-15-17	07-15-17	O
R-7		E				7-8-9		07-16-17	07-16-17	O
R-8		E				7-9-10		07-16-17	07-16-17	O
R-9		E				8-9-11		07-16-17	07-16-17	O
R-10		E				9-10-11		07-16-17	07-16-17	O
R-11	P1			14			At 2.8m of SEOS and 1.7m of EEOS	07-16-17	07-16-17	O
R-12		E				15-16-17		07-16-17	07-16-17	O
R-13		E				15-17-18		07-16-17	07-16-17	O
R-14	P1					1-20-21		09-13-17	09-13-17	O
R-15	P1					1-2-21		09-13-17	09-13-17	O
R-16	P1					2-21-22		09-13-17	09-13-17	O
R-17		E				2-3-22		09-13-17	09-13-17	O
R-18		E				3-22-23		09-13-17	09-13-17	O
R-19		E				3-4-23		09-13-17	09-13-17	O
R-20		E				4-23-24		09-13-17	09-13-17	O
R-21		E				4-5-24		09-13-17	09-13-17	O
R-22		E				5-24-25		09-13-17	09-13-17	O

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Repair No. / No. Réparation	Type & Dimensions / Type et Dimensions			Location of Repair / Localisation de la Réparation				Date Repaired / Date Réparée (mm/dd/yy)	Date Repair Verified / Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) / Approuvé (Oui/Non)
	Patch / Empiècement	Extrusion Weld or Bead / Soudure Extrusion	Pipe Boot / Manchon d'étanchéité	On Panel No. / Sur Panneau No.	On Seam No. / Sur Soudure No.	Intersection of Panels / Intersection des Panneaux	Sample Location / Localisation de l'échantillon			
R-23		E				5-6-25		09-13-17	09-13-17	O
R-24		E				6-25-26		09-13-17	09-13-17	O
R-25	P1				3-23		At 4m of NEOS	09-13-17	09-13-17	O
R-26		DB			1-20		Full seam	09-13-17	09-13-17	O
R-27		DB			2-21		Full seam	09-13-17	09-13-17	O
R-28	P2			28			At 1m of WEOP and 2,5m of SEOP	09-13-17	09-13-17	O
R-29	P2			28			At 2,8m of WEOP and 2,5m of SEOP	09-13-17	09-13-17	O
R-30	P2					19-29-30		09-13-17	09-13-17	O
R-31		E				29-30-31		09-13-17	09-13-17	O
R-32	P2					29-31-32		09-13-17	09-13-17	O
R-33	P2					6-26-33		09-14-17	09-14-17	O
R-34		E				26-27-33		09-14-17	09-14-17	O
R-35		E				27-33-34		09-14-17	09-14-17	O
R-36		E				27-28-34		09-14-17	09-14-17	O
R-37	P2			39			At 3m from P-38 and 2.6m from NEOP	09-14-17	09-14-17	O
R-38	P1			39			At 3m from P-38 and 1m from NEOP	09-14-17	09-14-17	O
R-40	P1					19-30-35		09-14-17	09-14-17	O
R-41	P2					1-20-41		09-15-17	09-15-17	O
R-42		E				19-20-41		09-15-17	09-15-17	O
R-43		E				19-41-42		09-15-17	09-15-17	O
R-44	P1					19-35-42		09-15-17	09-15-17	O
R-45		E				35-36-42		09-15-17	09-15-17	O

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Repair No. No. Réparation	Type & Dimensions Type et Dimensions			Location of Repair Localisation de la Réparation				Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) Approuvé (Oui/Non)
	Patch Empiècement	Extrusion Weld or Bead Soudure Extrusion	Pipe Boot Manchon d'étanchéité	On Panel No. Sur Panneau No.	On Seam No. Sur Soudure No.	Intersection of Panels Intersection des Panneaux	Sample Location Localisation de l'échantillon			
R-46		E				36-37-42		09-15-17	09-15-17	O
R-47		E				37-38-42		09-15-17	09-15-17	O
R-48		E				38-39-42		09-15-17	09-15-17	O
R-49		E				39-40-42		09-15-17	09-15-17	O
R-50	P1				1-41		At 8.4m from WEOS	09-15-17	09-15-17	O
R-51	P2					40-42-43		09-15-17	09-15-17	O
R-52	P1			48			At 1.2m from NEOS and 0.6m of P-47	09-15-17	09-15-17	O
R-53	P1			48			At 1.2m from NEOS and 5m of P-47	09-15-17	09-15-17	O
R-54	P1			48			At 3.2m from NEOS and 0.6m of P-47	09-15-17	09-15-17	O
R-55	P1					16-17-59-60		09-18-17	09-18-17	O
R-56		E				41-42-59		09-18-17	09-18-17	O
R-57	P2					42-43-59-Patch		09-18-17	09-18-17	O
R-58		E				Patch-43-44		09-18-17	09-18-17	O
R-59		E				Patch-44-45		09-18-17	09-18-17	O
R-60	P2					Patch-45-59		09-18-17	09-18-17	O
R-61	P3					45-46-59		09-18-17	09-18-17	O
R-62		E				46-47-59		09-18-17	09-18-17	O
R-63		E				47-48-59-60		09-18-17	09-18-17	O
R-64	P1					48-49-60		09-18-17	09-18-17	O
R-65		E				49-50-60		09-18-17	09-18-17	O
R-66	P1					50-51-60		09-18-17	09-18-17	O
R-67		E				51-52-60		09-18-17	09-18-17	O

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	Patch Empiècement	Extrusion Weld or Bead Soudure Extrusion	Pipe Boot Manchon d'étanchéité	On Panel No. Sur Panneau No.	On Seam No. Sur Soudure No.	Intersection of Panels Intersection des Panneaux	Sample Location Localisation de l'échantillon			
R-68		E				17-18-60		09-18-17	09-18-17	O
R-69	P1				47-59		At 2m from EEOS	09-18-17	09-18-17	O
R-70	P1					18-60-61-64		09-20-17	09-20-17	O
R-71	P2					52-53-60-61		09-20-17	09-20-17	O
R-72	P1					53-54-61		09-20-17	09-20-17	O
R-73		E				54-55-61		09-20-17	09-20-17	O
R-74		E				55-56-61		09-20-17	09-20-17	O
R-75	P1					56-57-61		09-20-17	09-20-17	O
R-76		E				57-61-62		09-20-17	09-20-17	O
R-77	P1					57-58-62		09-20-17	09-20-17	O
R-78	P1					58-62-63		09-20-17	09-20-17	O
R-79	P1			69			At 0.4m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-80	P1			69			At 2.7m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-81	P1			69			At 4.8m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-82	P1			69			At 7m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-83	P1			69			At 9.2m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-84	P1			69			At 11.4m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-85	P1			69			At 13.5m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-86	P1			69			At 15.7m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-87	P1			69			At 17.8m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-88	P1			69			At 20m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-89	P1			69			At 22m from East and 1.7m of P-34	09-20-17	09-20-17	O

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	Patch Empiècement	Extrusion Weld or Bead Soudure Extrusion	Pipe Boot Manchon d'étanchéité	On Panel No. Sur Panneau No.	On Seam No. Sur Soudure No.	Intersection of Panels Intersection des Panneaux	Sample Location Localisation de l'échantillon			
R-90	P1			69			At 24.2m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-91	P1			69			At 26.2m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-92	P1			69			At 28.3m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-93	P1			69			At 30.3m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-94	P1			69			At 32.3m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-95		DB			58-62		Full seam	09-20-17	09-20-17	O
R-96		E				76-82-83		09-23-17	09-23-17	O
R-97		E				76-81-82		09-23-17	09-23-17	O
R-98		E				76-80-81		09-23-17	09-23-17	O
R-99		E				76-78-80		09-23-17	09-23-17	O
R-100	P1					76-77-78		09-23-17	09-23-17	O
R-101		E				77-78-79		09-23-17	09-23-17	O
R-102	P1				77-79		At 4.5m from NEOS	09-23-17	09-23-17	O
R-103	P1					7-71-72		09-23-17	09-23-17	O
R-104		E				7-72-84		09-23-17	09-23-17	O
R-105		E				72-73-84		09-23-17	09-23-17	O
R-106		E				73-84-85		09-23-17	09-23-17	O
R-107		E				73-74-85		09-23-17	09-23-17	O
R-108		E				76-83-87		09-24-17	09-24-17	O
R-109		E				75-76-87		09-24-17	09-24-17	O
R-110		E				74-75-87		09-24-17	09-24-17	O
R-111	P3					74-85-87		09-24-17	09-24-17	O

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	Patch / Empiècement	Extrusion Weld or Bead / Soudure Extrusion	Pipe Boot / Manchon d'étanchéité	On Panel No. / Sur Panneau No.	On Seam No. / Sur Soudure No.	Intersection of Panels / Intersection des Panneaux	Sample Location / Localisation de l'échantillon			
R-112		E				85-87-88		09-24-17	09-24-17	O
R-113		E				85-88-89		09-24-17	09-24-17	O
R-114		E				85-89-90		09-24-17	09-24-17	O
R-115		E				85-90-91		09-24-17	09-24-17	O
R-116		E				85-91-92		09-24-17	09-24-17	O
R-117		E				85-86-92		09-24-17	09-24-17	O
R-118		E				86-92-93		09-24-17	09-24-17	O
R-119	P1				85-88		At 3.5m from WEOS	09-24-17	09-24-17	O
R-120		E				34-69-94		09-25-17	09-25-17	O
R-121		E				33-34-94		09-25-17	09-25-17	O
R-122		E				6-33-94		09-25-17	09-25-17	O
R-123		E				5-6-94		09-25-17	09-25-17	O
R-124		E				4-5-94		09-25-17	09-25-17	O
R-125		E				3-4-94		09-25-17	09-25-17	O
R-126		E				2-3-94		09-25-17	09-25-17	O
R-127	P1					1-2-94		09-25-17	09-25-17	O
R-128	P1					1-41-94		09-25-17	09-25-17	O
R-129	P2					41-59-94		09-25-17	09-25-17	O
R-130	P1				95-97		At 12m from NEOS	09-25-17	09-25-17	O
R-131	P2					16-59-96		09-25-17	09-25-17	O
R-132		E				15-16-96		09-25-17	09-25-17	O
R-133		E				14-15-96		09-25-17	09-25-17	O

Texel GEOSOL

Repair Report
Rapport de Réparation

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Repair No. / No. Réparation	Type & Dimensions / Type et Dimensions			Location of Repair / Localisation de la Réparation				Date Repaired / Date Réparée (mm/dd/yy)	Date Repair Verified / Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) / Approuvé (Oui/Non)
	Patch / Empiècement	Extrusion Weld or Bead / Soudure Extrusion	Pipe Boot / Manchon d'étanchéité	On Panel No. / Sur Panneau No.	On Seam No. / Sur Soudure No.	Intersection of Panels / Intersection des Panneaux	Sample Location / Localisation de l'échantillon			
R-134		E				13-14-96		09-25-17	09-25-17	O
R-135		E				12-13-96		09-25-17	09-25-17	O
R-136	P1					11-12-96		09-25-17	09-25-17	O
R-137	P1					8-11-96-97		09-25-17	09-25-17	O
R-138	P1					8-7-97		09-25-17	09-25-17	O
R-139	P1					7-84-97		09-25-17	09-25-17	O
R-140	P1					84-86-97		09-25-17	09-25-17	O
R-141	P1					59-94-95		09-25-17	09-25-17	O
R-142	P1					59-95-96		09-25-17	09-25-17	O
R-143	P1				15-96		At 5.8m from NEOS	09-25-17	09-25-17	O
R-144	P1				14-96		At 4.8m from NEOS	09-25-17	09-25-17	O
R-145	P1				12-96		At 4m from NEOS	09-25-17	09-25-17	O
R-146	P1				93-98		At 3.5m from NEOS	09-28-17	09-28-17	O
R-147	P2					86-93-98		09-28-17	09-28-17	O
R-148		E				86-97-98		09-28-17	09-28-17	O
R-149		E				95-97-98		09-28-17	09-28-17	O
R-150		E				95-98-99		09-28-17	09-28-17	O
R-151		E				94-95-99		09-28-17	09-28-17	O
R-152		E				94-99-100		09-28-17	09-28-17	O
R-153		E				69-94-100		09-28-17	09-28-17	O
R-154		E				69-100-101		09-28-17	09-28-17	O
R-155		E				69-101-102		09-28-17	09-28-17	O

Texel GEOSOL

Repair Report
Rapport de Réparation

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

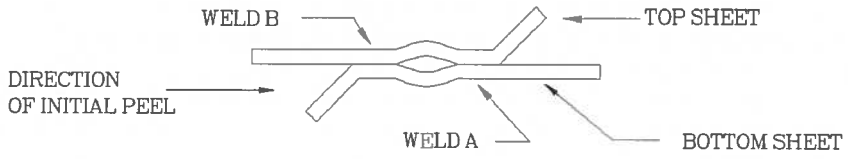
Repair No. / No. Réparation	Type & Dimensions / Type et Dimensions			Location of Repair / Localisation de la Réparation				Date Repaired / Date Réparée (mm/dd/yy)	Date Repair Verified / Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) / Approuvé (Oui/Non)
	Patch / Empiècement	Extrusion Weld or Bead / Soudure Extrusion	Pipe Boot / Manchon d'étanchéité	On Panel No. / Sur Panneau No.	On Seam No. / Sur Soudure No.	Intersection of Panels / Intersection des Panneaux	Sample Location / Localisation de l'échantillon			
R-156		E				69-102-103		09-28-17	09-28-17	O
R-157		E				69-103-104		09-28-17	09-28-17	O
R-158		E				69-104-105		09-28-17	09-28-17	O
R-159		E				69-105-106		09-28-17	09-28-17	O
R-160	P1				28-108		At 4m from WEOS	10-04-17	10-04-17	O
R-161	P1				28-108		At 8m from WEOS	10-04-17	10-04-17	O
R-162		DB			28-108		Between R-160 and R-161	10-04-17	10-04-17	O
R-163	P1				69-108		At 1.2m from NEOS	10-04-17	10-04-17	O
R-164	P3					106-107-111		10-06-17	10-06-17	O
R-165		E				106-110-111		10-06-17	10-06-17	O
R-166		E				106-109-110		10-06-17	10-06-17	O
R-167	P3					106-108-109		10-06-17	10-06-17	O
R-168	P2					69-106-108		10-06-17	10-06-17	O
R-169	P3				106-109		At 5.2m from int.106-109-110	10-06-17	10-06-17	O
R-170	P3			106			At 3m from int.69-106-108	10-06-17	10-06-17	O

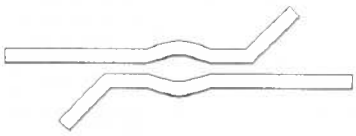
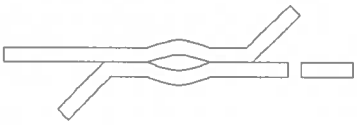
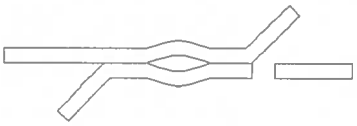
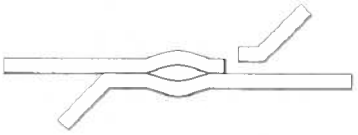
CHARTE/CHART : Empiècement/Patch (**P1** 0.3m à/to 0.6m; **P2** 0.6m à/to 1m; **P3** over 1m et plus), Extrusion (**E**), Embout/Pipe Boot (**B**), Cap strip (**CS**), Doublure/Reinforcement (**DB**) et/and Reconstruction

APPENDIX III

US-EPA CLASSIFICATION FOR TYPES OF BREAK

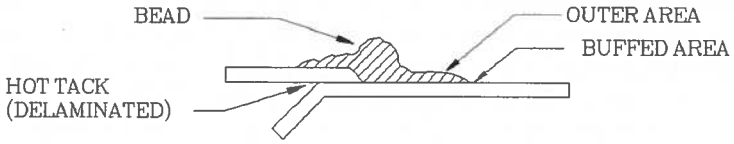
DOUBLE–TRACK GEOMEMBRANE WELD

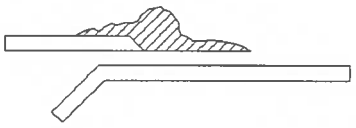
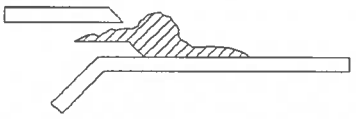
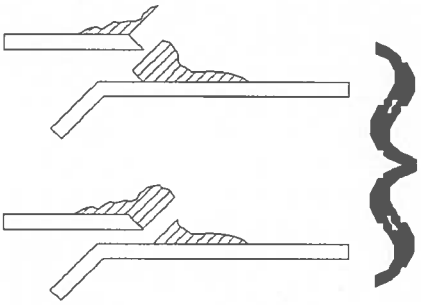
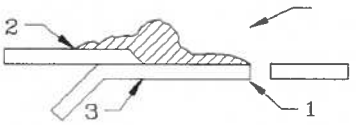
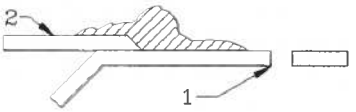
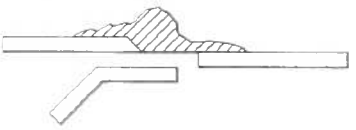
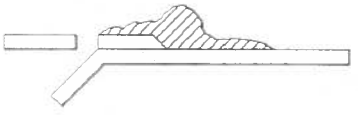


TYPES OF BREAK	CODE	BREAK DESCRIPTION	CLASSI–FICATION [a]
	AD	ADHESION FAILURE	NON–FTB
	BRK	BREAK IN SHEETING. BREAK CAN BE IN EITHER TOP OR BOTTOM SHEET.	FTB
	SE1	BREAK AT OUTHER EDGE OF SEAM. BREAK CAN BE IN EITHER TOP OR BOTTOM SHEET.	FTB
	SE2	BREAK AT INNER EDGE OF SEAM THROUGH BOTH SHEETS	FTB
	AD–BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE. BREAK CAN BE IN EITHER THE TOP OR BOTTOM SHEET.	FTB

[a] FTB="FILM–TEAR BOND."

FILLET–EXTRUDED GEOMEMBRANE WELD



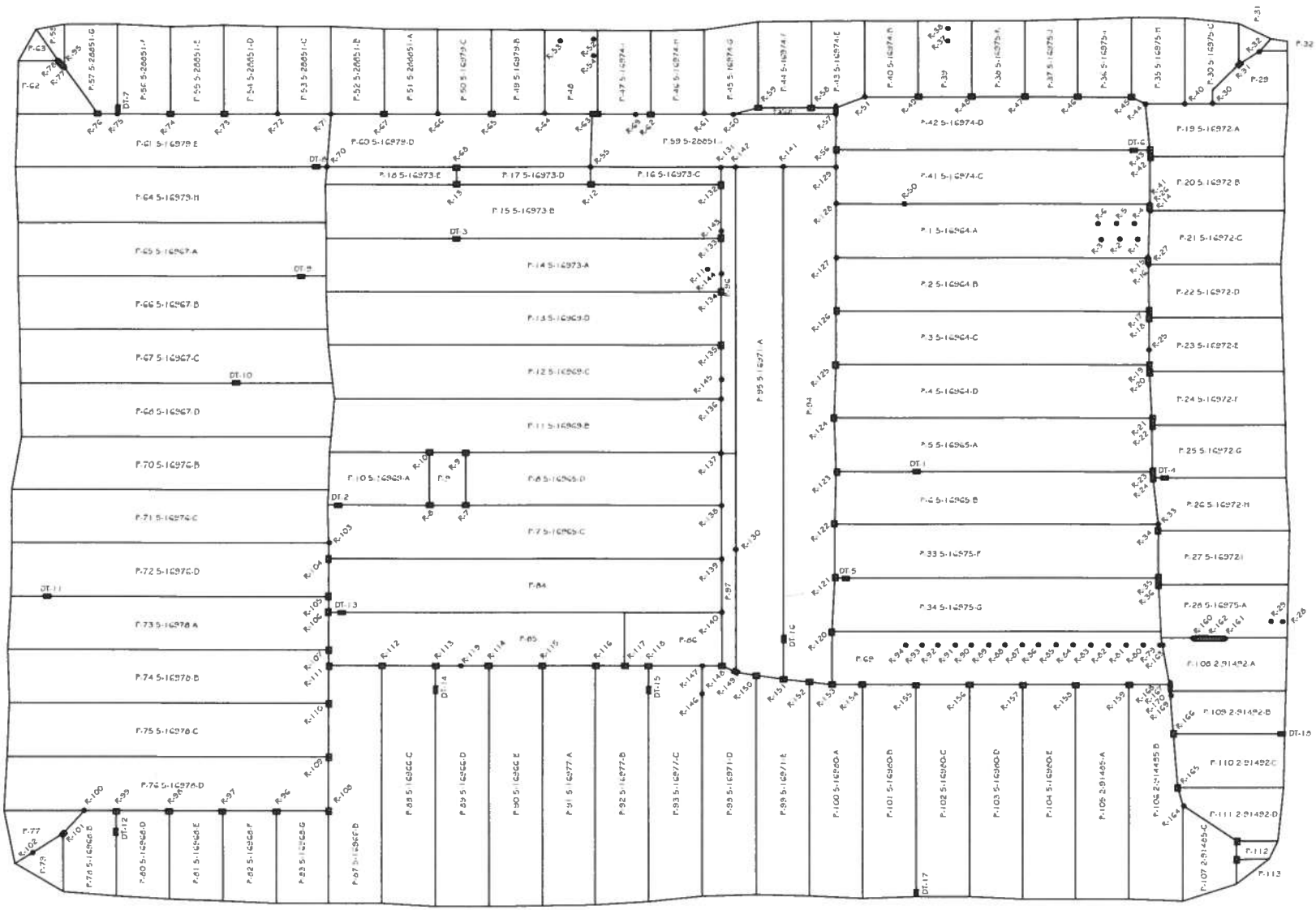
TYPES OF BREAKS	CODE	BREAK DESCRIPTION	CLASSIFICATION [a]
	AD1	FAILURE IN ADHESION. SPECIMENS MAY ALSO DELAMINATE UNDER THE BEAD AND BREAK THROUGH THE THIN EXTRUDED MATERIAL IN THE OUTER AREA.	NON–FTB
	AD2	FAILURE IN ADHESION.	NON–FTB
	AD–WLD	BREAK THROUGH THE FILLET. BREAKS THROUGH THE FILLET RANGE FROM BREAKS STARTING AT THE EDGE OF THE TOP SHEET TO BREAKS THROUGH THE FILLET AFTER SOME ADHESION FAILURE BETWEEN THE FILLET AND THE BOTTOM SHEET.	NON–FTB [b]
	SE	BREAK AT SEAM EDGE. INDICATE LOCATION BY 1,2 OR 3	FTB
	BRK	BREAK IN THE SHEET. USE 1 TO INDICATE BOTTOM SHEET AND 2 TO INDICATE TOP SHEET. IF BREAK IS IN BUFFED AREA, INDICATE WITH "(B)".	FTB
	AD–BRK	BREAK IN THE BOTTOM SHEETING AFTER SOME ADHESION FAILURE BETWEEN THE FILLET AND THE BOTTOM SHEET. (APPLICABLE TO PEEL ONLY).	FTB
	HT	BREAK AT THE EDGE OF THE HOT TACK FOR SPECIMENS WHICH COULD NOT BE DELAMINATED IN THE HOT TACK.	NO TEST

[a] FTB="FILM–TEAR BOND."

[b] ACCEPTANCE OF AD–WLD BREAKS MAY DEPEND ON WHETHER TEST VALUES MEET A MINIMUM SPECIFICATION VALUE AND NOT ON CLASSIFICATION AS A FTB OR NON–FTB BREAK.

APPENDIX IV

RECORD DRAWING



0 25 50m

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-9	5-16964	E
P-29	5-16975	B
P-31	5-16975	D

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-32	5-16975	E
P-39	5-16974	A
P-48	5-16978	A

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-58	5-28851	H
P-62	5-16979	F
P-63	5-16979	G

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-69	5-16976	A
P-77	5-16966	A
P-79	5-16966	C

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-86	5-16966	A
P-84	5-16977	D
P-96	5-16971	B

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-97	5-16971	C
P-112	2-91492	E
P-113	2-91492	F

INGÉNIEUR / ENGINEER:

AGNICO EAGLE CONSTRUCTION

LÉGENDE / LEGEND:

- EMPIÈCEMENT / PATCH
- MANCHON TUYAU / PIPE BOOT
- DESTRUCTIF / DESTRUCTIVE
- SOUDURE EXTRUSION / EXTRUSION WELD
- 1 PANNEAU NO. / PANEL NO.
- 1-30474 ROULEAU NO. / ROLL NO.
- ANCRAGE MECANIQUE / MECHANICAL ANCHORAGE
- SOUDURE EXISTANTE / EXISTING SEAM

CLIENT / CUSTOMER:

NUNA KIVALLIQ EARTHWORKS INC

TYPE DE PRODUIT INSTALLÉ / PRODUCT TYPE INSTALLED

GEOTEXTILE 160E - HDPE 60 MIL TEXTURED GEOTEXTILE 160E

TYPE DE PROJET / PROJECT TYPE

RANKIN INLET TANK FARM LINING AS-BUILT

NOM DU PROJET / PROJECT NAME

RANKIN INLET TANK FARM

Texel GEOSOL

1300, 2e Rue, Parc industriel
Sainte-Marie, QC, Canada
G1V 4T2

NO. PROJET / PROJECT NO:	C-15152
FICHIER AUTOCAD: AUTOCAD FILE:	C-15152rct.dwg
DATE (yy-mm-aa): DATE (dd-mm-yy):	17/11/17
DESSINÉ PAR / DRAWN BY:	E.B.
VÉRIFIÉ PAR / VERIFIED BY:	E.B.
APPROUVÉ PAR / APPROVED BY:	P.T.
ÉCHELLE / SCALE:	1/500
DESSIN NO / DRAWING NO:	1/1

APPENDIX S

Construction Summary of Rankin Inlet Itivia Laydown Area Culvert

Construction Summary – Rankin Laydown Culverts

- Construction management and quality assurance performed by Agnico Eagle Construction
- Contractors: Inukshuk Contracting Ltd.
- Drawing preparation by Hamel Arpentage – as-built drawings to be completed for submission of the final report (following completion of the 20 ML tank).

1. **Site Preparation (November 17)**

- Ice/snow removed from upstream and downstream of culvert location.
- Hauled appropriate bedding material to Rankin from Char River quarry.

2. **Excavation (November 18)**

- The laydown access road was excavated with a CAT 345 excavator.
- The temporary culverts previously installed in May 2017 were removed.
- Original ground was excavated underlying the road per design for installation of the bedding material and riprap.

3. **Culvert Placement and Backfill (November 19 to November 20)**

- Culvert bedding material consisted of 20 mm minus crushing reject material, which was placed in controlled lifts and compacted with either a 5-tonne vibratory drum roller (under culverts) or a small walk-behind tamper (beside and over culverts).
- Design specified two 900 mm diameter culverts were installed to design length of 30 m. The culverts were installed to the invert locations of the previously installed temporary culverts, as these positions were demonstrated to be effective during the 2017 freshet. Survey support was not available during the installation process and an as-built of the install will be completed once construction activities resume in 2018.
- The culvert sections were assembled near the installation location and placed with an excavator.
- 20 mm minus backfill material was placed on/near the installed culverts with an excavator, spread and placed by laborers with rakes, then compacted.
- Previously removed road material was then placed on top of the 20 mm minus bedding to reestablish a trafficable road surface. If required, additional cover material will be added once construction activities resume in the summer of 2018.

4. **Rip Rap Placement and Road Sloping (November 20)**

- Re-sloping of the laydown access road and placement of rip rap material on the upstream and downstream was completed with the CAT 345 Excavator.

Equipment Used for Construction:

- CAT 345 Excavator
- CAT 735 Haul Truck
- Tandem Trucks
- CAT 5-tonne Vibratory Drum Roller
- Walk-behind plate tamper

QA/QC

Particle size analysis conducted on three samples of the 20 mm minus material used as bedding material (attached). The results indicate that the material generally falls within specification (Technical Specifications for Civil Earthworks Rev 3 (6515-GNS-014, June 6, 2017)).

APPENDIX T

Particle Size Summary – 20 mm minus

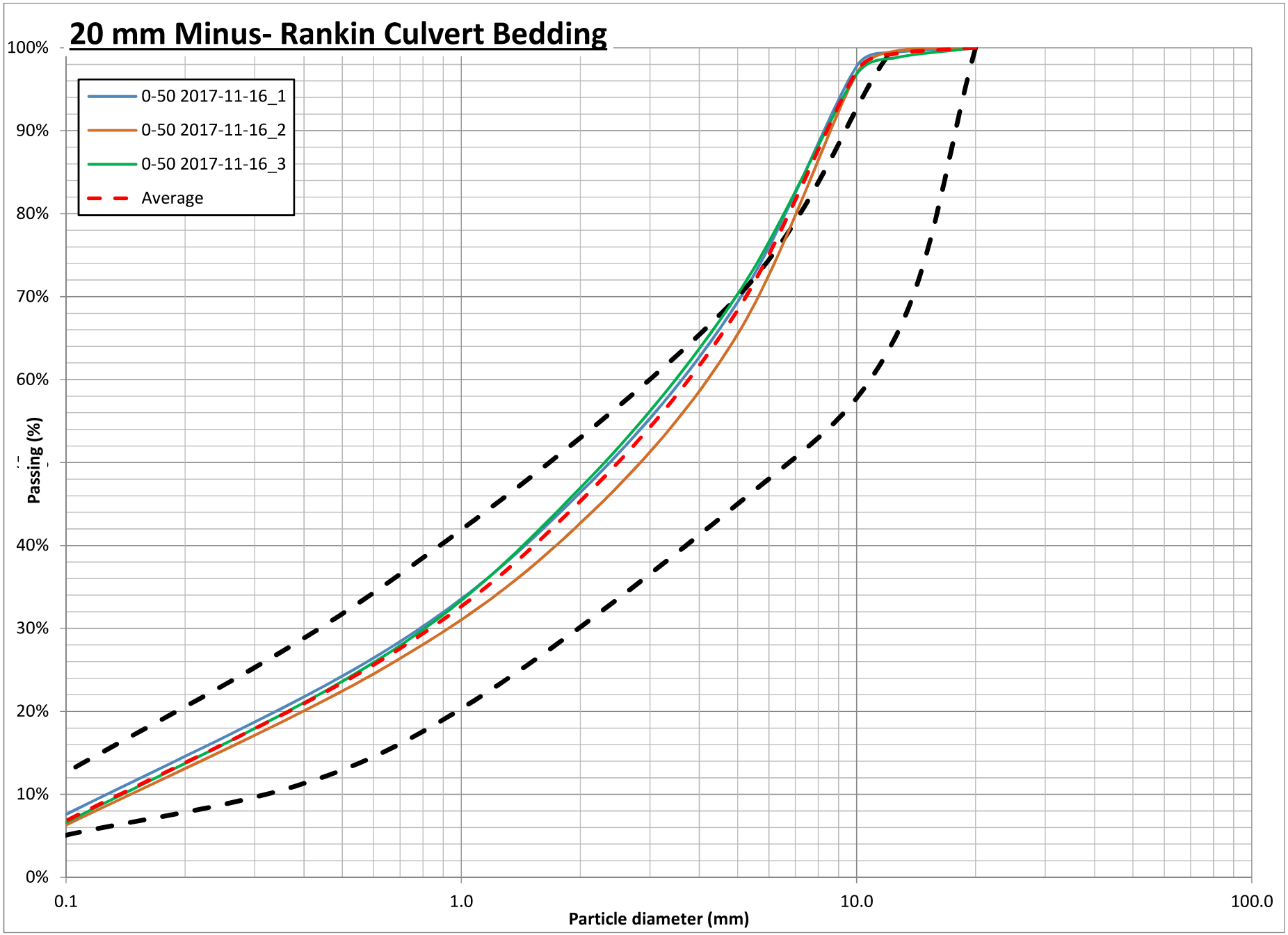

20 mm Minus- Rankin Culvert Bedding
0-50 2017-11-16_1
0-50 2017-11-16_2
0-50 2017-11-16_3
Average
100%
90%
80%
70%
60%
40%
30%
20%
10%
0%
Passing (%)
0.1
1.0
10.0
100.0
Particle diameter (mm)

Table 1: Summary of Particle Size Analysis Results - 20 mm minus Culvert Bedding Rankin

No.	Sample ID	Sieve Size (mm)							Moisture Content
		20.00	12.50	10.00	5.00	2.00	0.63	0.08	
1	0-50 2017-11-16_1	100.0%	99.4%	97.8%	69.3%	46.4%	27.1%	5.3%	3.0%
2	0-50 2017-11-16_2	100.0%	99.6%	96.9%	65.5%	42.7%	25.1%	4.0%	4.2%
3	0-50 2017-11-16_3	100.0%	98.8%	96.8%	70.3%	46.9%	26.5%	4.2%	4.1%
Average		**100.0%**	**99.3%**	**97.1%**	**68.4%**	**45.3%**	**26.2%**	**4.5%**	**3.8%**

APPENDIX U

Photographs of Corrective Measure for Double Wall Underground Pipe

Rankin Inlet Fuel Farm
Photographs of corrective measures on piping under road, between Fuel Farm and Melvin Bay Shore (Nov. 2018)

Photo 1a New double-wall elbow and vertical section on the East side of the road

Photo 1b New double-wall elbow and vertical section on the East side of the road

Rankin Inlet Fuel Farm
Photographs of corrective measures on piping under road, between Fuel Farm and Melvin Bay Shore (Nov. 2018)

Photo 1c New double-wall elbow and vertical section on the East side of the road

Rankin Inlet Fuel Farm
Photographs of corrective measures on piping under road, between Fuel Farm and Melvin Bay Shore (Nov. 2018)

Photo 2a Single-wall above-ground pipe in a corrugated steel (manhole 'regards') pipe to ensure pipe is visible on the edge of the 'Fuel Farm' side of road

Photo 2b Single-wall pipe and manhole pipe in a corrugated steel pipe to ensure pipe is visible on the edge of the 'Fuel Farm' side of road

APPENDIX V
Request for Information

AGNICO EAGLE

Request For Information

Project No: 6515 Contract No: C-005 RFI No: 6515-C-230-005_001 Rev: 0
Meliadine Project
Site RFI Initiator: Matt Gallant Date: Mar 19, 2017

1. REFERENCE DOCUMENTS :

Title(s):	Number:	Revision:
Rankin Fuel Farm and Laydown Area	65-131-230-201	H

2. DESCRIPTION , JUSTIFICATION OF THE RFI AND PROPOSED SOLUTION :

1. The typical HDPE liner specifies an above liner thickness of 200 mm for the Fuel Farm Floor, and 150mm for the dike slopes.
    a. Please clarify the minimum lift thickness for equipment operating over liner, our proposed methode of placement over the liner is with a Cat D5 dozer.
2. The Dike and Tank Pad Fill Detail specifies that 30mm minus granular fill material placed in lifts with a maximum thickness of 150mm nad compacted to 98%
    a. Please confirm. the overliner lift and compaction requirements. Can the overliner be placed in one lift?
3. We recommend that the 30mm Minus Above the liner be increased to > 300mm thick to facilitate constructability.

Prepared by: Matt Gallant Signature: Matt Gallant Date: Mar 19, 2017

3. TECHNICAL RESPONSE FROM ENGINEERING AND/OR VALIDATION OF PROPOSED SOLUTION :

The use of CAT D5 Dozer equipment for granular fill placement over the liner requires a minimum fill thickness of 300 mm to protect it. We recommend to increase the thickness of this layer and place 300 mm of 0-30 mm granular fill material over the liner in one lift and compact it by track packing only, with the CAT D5 Dozer in the entire fuel tank farm area. In addition, the remaining 0-30 mm granular fill layer for the tanks foundation will be placed in 200 mm thick lifts and compacted to 98% Standard Proctor Maximum Dry Density.

To avoid increasing the total required material quantities, the thickness of 0-30 mm granular fill material layer underneath the liner will be reduced accordingly and will be compacted to 98% Standard Proctor Maximum Dry Density. Under the liner system, the particle size of the top 300 mm of the 0-600 mm granular fill layer should not exceed Ø 200 mm.

For any equipment yielding heavier loads than a CAT D5 Dozer, the fill thickness above the liner shall be increased to allow for circulation. For a 10 ton packer, 500 mm is the minimum required fill thickness. For any other equipment, a specific request shall be submitted for the Engineer's approval.

Engineering : Rene Panazan Signature: Date: Mar 22, 2017

4. IF NOT TECHNICAL RFI VALIDATION OF PROPOSED SOLUTION BY SITE SUPERVISION

Deviation Request: ☐ No ☐ Yes

	Name	Signature	Date
Superintendent:			
c.c. Contract Administrator:			

AGNICO EAGLE

Request For Information

Project No: 6515 Meliadine Project Rankin Tank Farm	Contract No: C-230-005	RFI No: 007	Rev: 0
Site RFI Initiator: Mike Price		Date: May 31, 2017	

1. REFERENCE DOCUMENTS :

Title(s):	*Number:*	*Revision:*
Rankin Fuel Tank Farm and Laydown Area Cross-Sections and Details	65-131-230-201	1

2. DESCRIPTION , JUSTIFICATION OF THE RFI AND CONTRACTOR'S PROPOSED SOLUTION :

The Fuel Tank Farm design calls for 300mm of 200mm material placed above the CL.A / 0-600mm material and extending up the berms slopes. It has been noted in the weekly project meetings that this material may be removed from the design and replaced with CL.A / 0-600mm material.

Please confirm if there is a design change pending for the removal of the 200mm material outside of the pedestal fill under the tanks and associated updated quantities to allow for updated planning and contract changes.

Prepared by: Mike Price Signature *Mike Price* Date: May 31, 2017

3. TECHNICAL RESPONSE FROM ENGINEERING AND/OR VALIDATION OF PROPOSED SOLUTION :

Within the tank pedestal areas, placement/compaction of 200 mm minus material is to proceed as per design. Outside of the tank pedestal footprints, 200 mm minus has been removed from the design and is to be replaced with 0-600 mm minus material. Placement/compaction of 30 mm minus material is to proceed as per design specifications.

Engineering : Jennifer Pyliuk Signature: Date: 06/27/2017

4. IF NOT TECHNICAL RFI VALIDATION OF PROPOSED SOLUTION BY SITE SUPERVISION

Deviation Request: ☐ No ☐ Yes

	Name	Signature	Date
Superintendent:			
c.c. Contract Administrator:			

AGNICO EAGLE

Request For Information

Project No: 6515	Contract No: C-230-005	RFI No: 012	Rev: 0
Meliadine Project;			
Civil Works – Rankin Laydown			
Site RFI Initiator: Jennifer Pyliuk		Date: July 19, 2017	

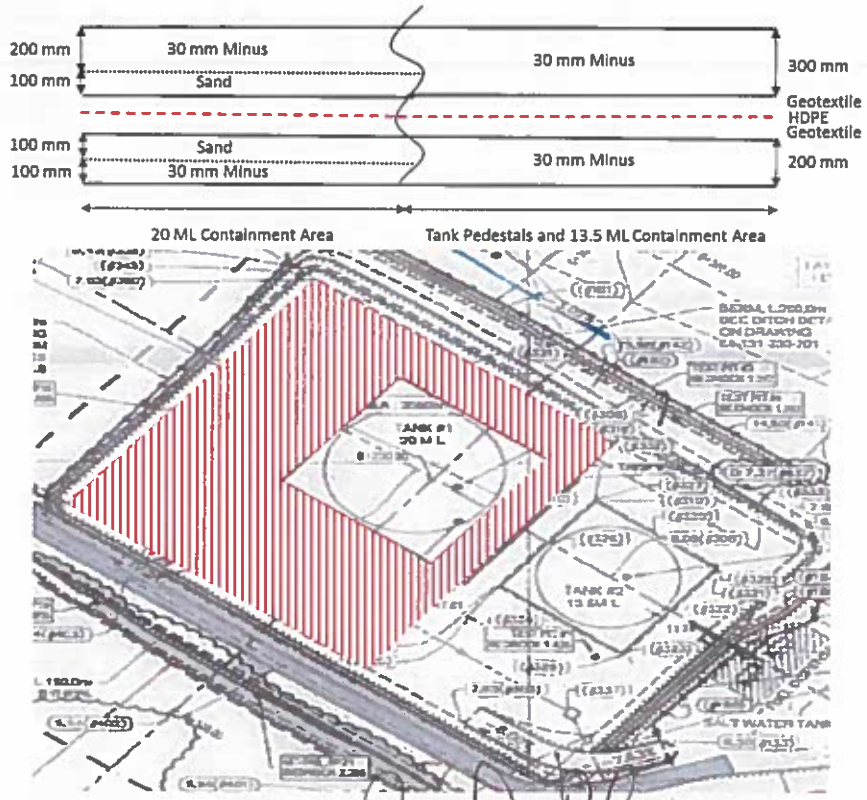
1. Reference Documents :

Title(s):	Number:	Revision:
Rankin Fuel Tank Farm and Laydown Area Finished Grade Elevation	65-131-230-200	1
Rankin Fuel Tank Farm and Laydown Area Cross Sections and Details	65-131-230-201	1
Rankin Fuel Tank Farm and Laydown Area Points Table	65-131-230-206	1

2. Description , Justification of the RFI and Contractor's Proposed Solution :

Currently, all under liner material has been placed to design grade throughout the entire containment area, including both tank pedestals. Due to contractor concerns regarding trafficking of the 50t crane to be used for tank erection on the liner system as currently designed and the potential for damage to occur, the liner system has presently been installed on the tank pedestals only, with the intent of completing the liner installation process following tank erection. However, time and schedule constraints have dictated that erection and filling of the 13.5 ML tank at the Rankin Inlet Fuel Farm will be completed in 2017, while erection and filling of the 20 ML tank will be completed in 2018. Therefore, in order to complete the containment facility to remain in regulatory compliance after the 13.5 ML tank is filled in 2017 and still be able to complete erection of the 20 ML tank in 2018, the following design revisions are requested:

1. Substitution of 30 mm minus with sand, 100 mm both under and over the liner system (see detail below)
2. The above substitution will apply only within the 20 ML tank containment area (excluding the 20 ML tank pedestal) (see detail below)



Prepared by: Jennifer Pyliuk Signature Jennifer Pyliuk Date: July 19, 2017

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Request For Information

3. TECHNICAL RESPONSE FROM ENGINEERING AND/OR VALIDATION OF PROPOSED SOLUTION :

The substitution is acceptable. However, to prevent migration of fine particles, the geotextile should be placed at the sand and 30mm Minus material interface both above and under the liner.

Engineering : JOSÉE ALARIE Signature: Josee Alarie Date: July, 20 2017

4. IF NOT TECHNICAL RFI VALIDATION OF PROPOSED SOLUTION BY SITE SUPERVISION

Deviation Request: ☐ No ☐ Yes

	Name	Signature	Date
Superintendent:			
c.c. Contract Administrator:			