Table B1: Analytical Results for Nutrients in Surface Water

		E292898 ANCILLARY DISCHARGE		E305365 SW-1
Laboratory ID	**BCAWWQG[2]**	**6120835-01**		**6120835-02**
Sample ID		**1-Weir**		**2-SW1**
Date Sampled/Time		**2016-12-11**		**2016-12-11**
Physical Tests				
Colour, True (Colour Units)	**15 [4] units absolute, or 5 units above background (30-day average)**	6		<5
Conductivity (uS/cm)	**-**	204		243
Hardness (as CaCO3)	**-**	62.9		86.9
pH	**-**	7.23		7.37
Total Suspended Solids (mg/L)	**25 mg/L above background (24-hr during clear flow)**	9		3
Total Dissolved Solids (mg/L)	**-**	115		146
Turbidity (NTU)	**8 NTU above background (24-hr during clear flow**			
	Change from background of 5 NTU at any time when background is 8 - 50 NTU during high flows or in turbid waters	**18.1**		**7.6**
	Change from background of 10% when background is > 50 NTU at any time during high flows or in turbid waters			
Anions and Nutrients mg/L				
Alkalinity Total (as CaCO3)	**<10 high sensitivity to acid inputs 10-20 moderate sensitivity to acid inputs >20 low sensitivity to acid inputs**	26		42
Acid Sensitivity		Low		Low
Chloride (Cl)	**600 (instant max) 150 (30-day average)**	18.4		16.1
Fluoride (F)	**1.5 (instant max) 1.0 (30-day average)**	<0.10		<0.10
	Hardness-Dependent BCAWWQG to protect AW [7]	**1.15**		**1.28**
Nitrate (as N)	**32.8 (instant maximum) 3.0 (30-day average)**	0.228		0.411
Nitrite (as N) [3] Cl <2 mg/L	**0.06 (max)** / **0.02 (30-day average)**			
Cl 2 - <4 mg/L	**0.12 (max)** / **0.04 (30-day average)**			
Cl 4 - <6 mg/L	**0.18 (max)** / **0.06 (30-day average)**			
Cl 6 - <8 mg/L	**0.24 (max)** / **0.08 (30-day average)**			
Cl 8 - <10 mg/L	**0.3 (max)** / **0.1 (30-day average)**			
Cl ≥ 10 mg/L	**0.6 (max)** / **0.2 (30-day average)**	<0.010		<0.010
Sulfate (SO4) H 0-30 mg/L	**128 (30-day average)**			
H 31 - 75 mg/L	**218 (30-day average)**	39.8		48
H 76 - 180 mg/L	**309 (30-day average)**			
H 181 - 250 mg/L	**429 (30-day average)**			
H > 250 mg/L	**TBD**			

Notes: Refer to Table Endnotes (attached)

Table B2: Analytical Results for Total and Dissolved Metals in Surface Water

	BCAWWQG[2]	E292898 ANCILLARY DISCHARGE	E305365 SW-1
Laboratory ID		**6120835-01**	**6120835-02**
Sample ID		**1-Weir**	**2-SW1**
Date Sampled/Time		**2016-12-11**	**2016-12-11**
Physical Tests			
Background Hardness (as CaCO3) (mg/L)	-		30
Hardness (as CaCO3) (mg/L)	-	62.9	86.9
pH	-	7.23	7.37
Total Metals (mg/L)			
Aluminum (Al)-Total	-	0.901	0.183
Antimony (Sb)-Total	**0.009**	0.0001	0.0001
Arsenic (As)-Total	**0.005**	<0.0005	<0.0005
Barium (Ba)-Total	**1.0**	0.009	0.006
Beryllium (Be)-Total	**0.00013**	<0.0001	<0.0001
Boron (B)-Total	**1.2**	0.017	0.017
Cadmium (Cd)-Total	-	0.00001	<0.00001
Calcium (Ca)-Total	-	22.4	30.3
Chromium (Cr)-Total Chromium	-	0.0021	<0.0005
Chromium (Cr(III))	**0.0089**	0.002	<0.001
Chromium (Cr(VI))	**0.001**	<0.001	<0.001
Cobalt (Co)-Total	**0.004**	0.0005	0.00021
Copper (Cu)-Total	**Hardness-Dependent[7]**	**0.003**	0.0018
	Hardness-Dependent BCAWWQG to protect AW [7] (instant max)	0.0079	0.0048
	Hardness-Dependent BCAWWQG to protect AW [7] (30-d average)	0.0025	0.0020
Iron (Fe)-Total	**1**	0.89	0.19
Lead (Pb)-Total	**Hardness-Dependent[7]**	0.0007	0.0003
	Hardness-Dependent BCAWWQG to protect AW [7] (instant max)	0.0452	0.0176
	Hardness-Dependent BCAWWQG to protect AW [7] (30-d average)	0.0051	0.0040
Magnesium (Mg)-Total	-	3.76	4.85
Manganese (Mn)-Total	**Hardness Dependent [7]**	0.015	0.0068
	Hardness-Dependent BCAWWQG to protect AW [7] (instant max)	1.2	0.9
	Hardness-Dependent BCAWWQG to protect AW [7] (30-d average)	0.9	0.7
Mercury (Hg)-Total	**0.00002**	<0.00002	<0.00002
Molybdenum (Mo)-Total	**≤1 (instant max) 2 (30-d average)**	0.0004	0.0006
Nickel (Ni)-Total	0.025 (Hardness-Dependent BCAWWQG to protect AW H<60mg/L)	0.0019	0.0008
	Calculated Hardness-Dependent BCAWWQG to protect AW 60≤H≤180 mg/L CaCO3	0.067	0.025
Potassium (K)-Total	-	0.8	0.7
Selenium (Se)-Total	**0.002**	<0.0005	<0.0005
Silver (Ag)-Total	**Hardness-Dependent[7]**	<0.00005	<0.00005
	Hardness-Dependent BCAWWQG to protect AW [7] (instant max)	0.0001	0.0001
	Hardness-Dependent BCAWWQG to protect AW [7] (30-d average)	0.00005	0.00005
Sodium (Na)-Total	-	11.7	9.95
Thallium (Tl)-Total	**0.0008 (30-day average, site-specific objective for lower Columbia River**	<0.00002	<0.00002
Uranium (U)-Total	**0.0085**	0.0002	0.00027
Zinc (Zn)-Total	**Hardness Dependent [7]**	0.005	<0.004
	Hardness-Dependent BCAWWQG to protect AW [7] (instant max)	0.033	0.033
	Hardness-Dependent BCAWWQG to protect AW [7] (30-d average)	0.008	0.008
Dissolved Metals (mg/L)			
Aluminum (Al)-Dissolved	**0.05 (30-day average where median pH > 6.5) 0.1 (maximum where instantaneous pH > 6.5) "*" indicates pH-dependent maximum where instant pH ≤ 6.5**	0.007	<0.005
Antimony (Sb)-Dissolved	-	0.0001	0.0001
Arsenic (As)-Dissolved	-	<0.0005	<0.0005
Barium (Ba)-Dissolved	-	<0.005	<0.005
Boron (B)-Dissolved	-	0.015	0.015
Cadmium (Cd)-Dissolved	**Hardness-Dependent[7]**	<0.00001	<0.00001
	Calculated Hardness-Dependent BCAWWQG to protect AW (short-term max) e[1.03 * ln(Hss) - 5.274] ug/L H<455mg/L	0.00036	0.00017
	Calculated Hardness-Dependent BCAWWQG to protect AW (long-term max) e[0.736 * ln(Hss) - 4.943] ug/L H<285mg/L	0.00015	0.00009
Calcium (Ca)-Dissolved	**up to 4, highly sensitive to acid inputs 4 to 8, moderately sensitive over 8 low sensitivity**	19.8 Low	27.2 Low
Chromium (Cr)-Dissolved [8]	-	<0.0005	0.0006
Copper (Cu)-Dissolved	-	0.0008	0.0009
Iron (Fe)-Dissolved	**0.35**	<0.010	<0.010
Lead (Pb)-Dissolved	-	<0.0001	<0.0001
Magnesium (Mg)-Dissolved	-	3.29	4.62
Manganese (Mn)-Dissolved	-	0.0016	0.002
Mercury (Hg)-Dissolved	-	<0.00002	<0.00002
Molybdenum	-	0.0005	0.0006
Potassium (K)-Dissolved	-	0.66	0.66
Selenium (Se)-Dissolved	-	<0.0005	<0.0005
Sodium (Na)-Dissolved	-	11.3	9.71
Uranium (U)-Dissolved	-	0.00014	0.00023
Zinc (Zn)-Dissolved	-	<0.004	<0.004

Notes: Refer to Table Endnotes (attached)

Table B3: Analytical Results for Volatile Organic Compounds (VOCs) in Surface Water		E292898 ANCILLARY DISCHARGE		E305365 SW-1
Laboratory ID	**BCAWWQG[2]**	**6120835-01**		**6120835-02**
Sample ID		**1-Weir**		**2-SW1**
Date Sampled/Time		**2016-12-11**		**2016-12-11**
Volatile Organic Compounds (ug/L)				
Benzene	**40**	<0.5		<0.5
Bromodichloromethane	**-**	<1.0		<1.0
Bromoform	**-**	<1.0		<1.0
Carbon Tetrachloride	**13.3**	<0.5		<0.5
Chlorobenzene	**1.3**	<1.0		<1.0
Chloroethane	**-**	<2.0		<2.0
Chloroform	**1.8**	<1.0		<1.0
Chloromethane	**-**	<2.0		<2.0
Dibromochloromethane	**-**	<1.0		<1.0
1,2-Dichlorobenzene	**0.7**	<0.5		<0.5
1,3-Dichlorobenzene	**150**	<1.0		<1.0
1,4-Dichlorobenzene	**26**	<1.0		<1.0
1,1-Dichloroethane	**-**	<1.0		<1.0
1,2-Dichloroethane	**100**	<1.0		<1.0
1,1-Dichloroethene	**-**	<1.0		<1.0
cis-1,2-Dichloroethene	**-**	<1.0		<1.0
trans-1,2-Dichloroethene	**-**	<1.0		<1.0
Methylene chloride	**98.1**	<3.0		<3.0
1,2-Dichloropropane	**-**	<1.0		<1.0
cis-1,3-Dichloropropene	**-**	<1.0		<1.0
trans-1,3-Dichloropropene	**-**	<1.0		<1.0
1,3-Dichloropropene (cis & trans)	**-**	-		-
Ethylbenzene	**200**	<1.0		<1.0
Methyl t-butyl ether (MTBE)	**3400**	<1.0		<1.0
Styrene	**72**	<1.0		<1.0
1,1,1,2-Tetrachloroethane	**-**	<1.0		<1.0
1,1,2,2-Tetrachloroethane	**-**	<0.5		<0.5
Tetrachloroethene	**110**	<1.0		<1.0
Toluene	**0.5**	**<1.0**		**<1.0**
1,1,1-Trichloroethane	**-**	<1.0		<1.0
1,1,2-Trichloroethane	**-**	<1.0		<1.0
Trichloroethene	**21**	<1.0		<1.0
Trichlorofluoromethane	**-**	<1.0		<1.0
Vinyl Chloride	**-**	<1.0		<1.0
Xylenes	**30**	<2.0		<2.0

Notes: Refer to Table Endnotes (attached)

Table B4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Surface Water		E292898 ANCILLARY DISCHARGE		E305365 SW-1
Laboratory ID	**BCAWWQG[2]**	**6120835-01**		**6120835-02**
Sample ID		**1-Weir**		**2-SW1**
Date Sampled/ Time		**2016-12-11**		**2016-12-11**
Hydrocarbons ug/L				
LEPH	**-**	<250		<250
HEPH	**-**	<250		<250
ug/l				
Acenaphthene	**6**	<0.05		<0.05
Acenaphthylene	**-**	<0.20		<0.20
Acridine	**3**	<0.05		<0.05
Anthracene	**4**	<0.01		<0.01
Benz(a)anthracene	**0.1**	<0.01		<0.01
Benzo(a)pyrene	**0.01**	<0.01		<0.01
Benzo(b)fluoranthene	**-**	<0.05		<0.05
Benzo(g,h,i)perylene	**-**	<0.05		<0.05
Benzo(k)fluoranthene	**-**	<0.05		<0.05
Chrysene	**-**	<0.05		<0.05
Dibenz(a,h)anthracene	**-**	<0.05		<0.05
Fluoranthene	**4**	<0.03		<0.03
Fluorene	**12**	<0.05		<0.05
Indeno(1,2,3-c,d)pyrene	**-**	<0.05		<0.05
Naphthalene	**1**	<0.20		<0.20
Phenanthrene	**0.3**	<0.10		<0.10
Pyrene	**0.02**	<0.02		<0.02
Quinoline	**3.4**	<0.05		<0.05
Glycols mg/l				
Diethylene Glycol	**-**	<5		<5
Ethylene Glycol	**192[6]**	<5		<5
1,2-Propylene Glycol	**500[6]**	<5		<5

Notes: Refer to Table Endnotes (attached)

Analytical Table Footnotes: Analytical Results for Surface Water

	All concentrations in mg/L, except pH or as indicated.
"<"	less than the laboratory detection limit indicated.
"-"	means not analyzed or no standard or guideline applies.
*	RPDs are not normally calculated where one or more concentrations are less than five times MDL.
(2)	A Compendium of Approved and Workling Water Quality Guidelines for BC (updated January 2010). Applicable water uses include Drinking Water (for toxicity, not odour/taste), and Freshwater Aquatic Life.
(3)	Nitrite BCAWWQG Guideline is Chloride dependent. Nitrite AW Standard is dissolved Chloride-dependent. The most conservative standard has been applied.
(4)	Guideline of 15 mg/L Pt for Drinking Water. Once background levels are established, colour should also not exceed 5 mg/L above background, to protect for Aquatic Life. This is considered a clearwater system (background less than 20 mg/L Pt.)
(6)	Working Water Quality Guidelines for Glycols
(7)	Standard is calculated based on the hardness dependent BCAWWQG formula, and has been calculated and shown for each individual result
(8)	Standards exist for Trivalent (III) and Hexavalent (VI) Chromium. As chromium results were not speciated, the most stringent standard has been applied.
(9)	Standard applies to all sites irrespective of water use.
(10)	pH-dependent maximum where instant pH < 6.5
**	No hardness value was reported for the WTP Outlet sample from March 10, 2014. The Hardness value from the previous sampling event (3 March 14) has been used for calculating hardness-dependend guidelines.

BOLD, UNDERLINE	Laboratory Detection Limit exceeds one or more applicable Standard
BOLD, BLUE SHADING	Concentration greater than BCAWWQG Guideline
BOLD, BEIGE SHADING	Concentration greater than BCAWWQG Chronic Guideline