

Pope, Rue MEM:EX

From: Dunkley, Jim R MEM:EX
Sent: Thursday, August 11, 2016 1:26 PM
To: Pope, Rue MEM:EX
Subject: FW: Annual Reporting for Q-8-94 460 Stebbings Rd
Attachments: Q-8-94 SIRM 2015 MEM annual reports.pdf

From: Tom Good [<mailto:tgood@sirm.ca>]
Sent: Thursday, March 31, 2016 10:45 AM
To: Dunkley, Jim R MEM:EX
Cc: Leuschen, Allan ENV:EX; Todd Mizuik; Doug Harlow
Subject: Annual Reporting for Q-8-94 460 Stebbings Rd

Hi Jim,

Attached are the annual reporting requirements under the Permit and the Health, Safety and Reclamation Code, including the Annual Reclamation Report, which is also being sent to the deputy Chief Inspector (Permitting).

If you have any questions, please let me know. My cell # is s.22

Sincerely,

Tom Good, M.Sc., P.Eng.
Engineering Supervisor
South Island Resource Management Ltd.
460 Stebbings Road,
Shawnigan Lake, BC V0R 2W3

Phone: 250.743.0811 Fax: 250.743.0812
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SOUTH ISLAND
RESOURCE MANAGEMENT

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RESOURCE MANAGEMENT

460 Stebbings Road,
Shawnigan Lake, BC, VOR 2W3
Phone: 240.743.0811 Fax: 250.743.0812
www.sirm.ca

March 31, 2016

Cobble Hill Holdings Ltd. (via email)

SUBJECT: Annual Reporting for Mine Permit No. Q-8-94, Mine No. 1610355

Dear Sir

This letter and attachments are submitted to satisfy annual reporting requirements in Ministry of Energy and Mines (MEM) Permit Q-8-094 and also in the Health, Safety and Reclamation Code.

The mine is located at 460 Stebbings Rd, on the property described as Lot 23, Blocks 156, 201 and 323, Malahat District, Plan V1P78459.

South Island Resource Management (SIRM) became the operator of record June 11, 2015. The previous operator was South Island Aggregates (SIA).

The property is owned by Cobble Hill Holdings Ltd (CHH). South Island Resource Management operates the Site through a long-term renewable agreement and is not connected by ownership or management to SIA or CHH.

Report information is provided following the relevant portion of the permit or Code. Permit and Code quotations are shown in italics.

Permit Q-8-94 Reporting

Conditions

16. Annual Report: Annual reports shall be submitted in a form and containing the information as and if required by the Inspector.

No information beyond required permit and Code reporting has been requested.

Site Specific Conditions

32. Geotechnical

3. Reporting

a) Annual inspections of the contaminated soil storage facility shall be undertaken by a qualified Professional Geotechnical Engineer with a

report submitted to the Inspector by March 31 of the year following the inspection. The report shall include a summary of observations, review of monitoring data including instrumentation, QA/QC procedures, testing results, and recommendations with respect to any necessary changes to operating procedures. Any recommendations relating to health and safety or geotechnical stability shall be followed unless a suitable alternative course of action is approved in writing by the professional undertaking the review, or by a third party qualified Professional Engineer, as may be determined by the Inspector.

The annual inspection report is attached. The professional geotechnical engineer for the mine is Brimmell Engineering Ltd. The annual inspection was carried out by Richard Brimmell on Feb 16, 2016. Brimmell Engineering carried out additional site visits and inspections in 2015 on the following dates:

- September 10;
- September 18;
- October 25;
- November 25;
- December 9;
- December 21.

33. h) The Manager shall, by March 31 of each year, provide the Inspector a report identifying the volume of water treated through the treatment plant, and shall include all operating costs associated with the operation and maintenance of the treatment plant.

The volume of water treated in 2015 was 5,089 m³. Operating and maintenance costs for 2015 SIRM operations are approximately \$113,000 including consumables, repairs, insurance, wages and utilities. An additional \$55,600 was spent on rental equipment, including treatment plant components and a generator.

37. Production from this quarry is limited to 240,000 tonnes annually.

Production records from South Island Aggregates were not available to South Island Resource Management; however it is our understanding that production between January and June 2015 was minimal. Total tonnage of rock blasted for 2015 is estimated at 65,000 tonnes. South Island Resource Management sold 10,420.71 tonnes in 2015.

Health, Safety and Reclamation Code Reporting

Part 2: Occupational Health

Worker Training 2.13.4

(4) The manager shall review at least annually, or more frequently if required by a change in work conditions or available hazard information, and in

consultation with the joint Occupational Health and Safety Committee, the instruction and training provided to employees concerning controlled products.

We began to use cement products for soil stabilization in November, 2015. We developed a safe work procedure for mixing cement and soil. For reference, this procedure was submitted electronically to MEM January 4, 2016.

Part 10: Reclamation and Closure

10.1.4

Annual Report (5) *the owner, agent or manager shall submit an annual report of reclamation and environmental monitoring work performed under section 10.1.4 (4) of this code, in a summary form specified by the chief inspector or by conditions of the permit, by March 31 of the following year,*

The Annual Reclamation Report is attached, in the format specified on the ministry website:
<http://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/mineral-exploration-mining/documents/reclamation-and-closure/formatrequirements2016.pdf>.

As required in the above format requirements, we sent the Annual Reclamation Report electronically and as a hard copy to the Deputy Chief Inspector – Permitting.

This concludes our 2015 annual reporting. This report has been submitted on behalf of the Permit Holder, Cobble Hill Holdings Ltd.

Sincerely,

South Island Resource Management Ltd.


per Doug Harlow
Mine Manager

DH/tg
Encl (2)

Cc: Jim Dunkley, MEM
Todd Mizuik, Allterra Construction
Al Leuschen, MOE

Brimmell Engineering Ltd
971 Bank Street
Victoria, BC
V8S 4B1
rbrimmell@shaw.ca

South Island Resource Management

March 14/16
File 15-139

Att: Tom Good

Re: SIRM Facility, 460 Stebbings Rd., Shawnigan Lake
MEM Permit Q-8-094 & MOE PR-105809
Annual Geotech Summary Report

This letter summarizes activities involving geotechnical input during 20015. A site plan, Field Review Rpt 1 and several photos are appended.

During 2015 the ground was prepared for Primary Encapsulation Area (PEA) Cell 1, the first stages of the cell liner system were constructed, and it was filled to a height of about 8 m. The first stage of Cell 1 (identified in reports as 1A) is shown on the attached plan. The area identified as Cell 1B is to the immediate west. Site preparation prior to filling, including drainage and perimeter berms, is in accordance with guidelines previously established by Active Earth Engineering. Density testing was done on each one metre lift as required by Mine Permit Q-8-094. These tests typically showed density below the specified 95% of Standard Proctor density because roller-compaction was not generally feasible due to the high moisture content of the fill as received. This problem has been (and is being) addressed by stabilizing the fill with cement powder, either in the SMA or during placement in the Encapsulation Cell 1.

A G-Slope analysis was done in December to confirm that the cement-treated stockpile is stable. In-place shear strength was established by shear vane testing done by a specialized drilling contractor, and the internal angle of friction (ϕ angle) was estimated. The analysis showed a satisfactory factor of safety against slope failure, even during a major seismic event. Based on the analysis it was recommended that Encapsulation Cell 1 fill slopes be developed at 1.5:1 (hor:vert). This recommendation has been followed.

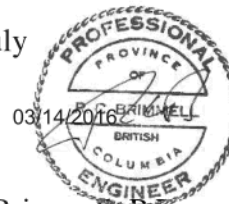
During the winter there was an opportunity (when there was no soil stored) to check the soundness of the SMA slab-on-grade. It was noted to be sound and therefore not prone to leakage. At the end of 2015 preparation was underway to put a roof over this facility. The roof was installed in February.

There is a section of fill slope adjacent to the west P/L (west of Encapsulation Cell 1) which is marginally too steep. It is understood that past blasting encroached into the buffer zone in this area. SIRM indicates that the blasting contractor is responsible for restoration of the encroached buffer zone and that this work is in progress. It is also understood that Stantec Consulting is addressing this issue as part of their site drainage plan.

Rock cuts tend to be sloping across the south and east sides of the quarry but near-vertical on the north side. There are no significant rock cuts on the west side of the quarry. Stability is a concern in one localized area, indicated on a photo. In that area workers are to keep back from the face, as discussed in Field Rvw Rpt 1 dated Sept 18/15. Otherwise the rock cuts are considered to be in good condition for a working quarry. In order to achieve permanent stability, scaling of loose rock and reconfiguration of overhangs or otherwise potentially unstable features will be needed as directed by a geotechnical engineer.

I trust that this information meets your present requirements. Please do not hesitate to contact the writer if there are questions.

Yours truly



Richard Brimmell, P.Eng.
for Brimmell Engineering Ltd.





Looking north at the west side of Encapsulation Cell 1B



Looking north across Encapsulation Cell 1A at the north side of the quarry. The unstable area discussed in Field Rvw Rpt 1 is behind the red rock crusher.

SIRM photos



Filling of Encapsulation Cell 1 in progress, looking south. The excavator on the right is mixing cement into the fill.



The SMA slab-on-grade, looking north

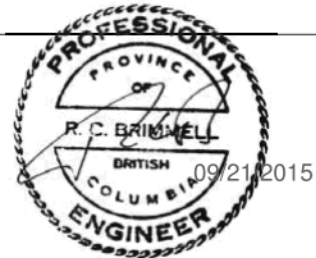
FIELD REVIEW REPORT

Brimmell Engineering Ltd.

971 Bank St., Victoria B.C. V8S 4B1

250-889-3080 rbrimmell@shaw.ca

PROJECT: SIRM Quarry LOCATION: 460 Stebbings Rd., Shawnigan Lake CONTRACTOR: SIRM CONTACT: Doug Harlow	No. 1	In Attendance: Richard Brimmell
	Date: Sept 18/15	Doug Harlow
	Project No: 15-139	
	Time: noon	
ASPECT OF PROJECT REVIEWED: Safety of a proposed rock excavation zone near the northeast corner of the quarry. Photos are attached.		
OBSERVATIONS: There is a dramatic overhang at the top of the cut slope; concern has been expressed that it may not be safe for the drillers to be working under or near this overhang. Fractures are evident within the south half of the overhang. The face to the immediate north of the overhang features potentially hazardous slabs.		
REMARKS/RECOMMENDATIONS: In its present condition the east face isn't safe to work under or immediately beside. Until the overhang is dealt with, as well as the potentially unstable slabs, workers should keep back from the face as described to Doug on site and as shown on one of the attached photos.		
DISTRIBUTION: Doug Harlow		





The east face of the quarry, near the north side.
The blue line is the recommended worker setback from the face.



The overhang from below

Annual Reclamation Report
Cover Letter Summary Table

The Annual Reclamation Report submission must be accompanied by a cover letter that includes the following data entered in the tabulated format shown below:

Company:	South Island Resource Management	
Mine Name:	460 Stebbings Rd	
Mines Act Permit #:	Q-8-94	
	Previous Report (e.g., 2014)	Current Report (e.g., 2015)
Total Disturbance Area (ha)	not available to SIRM	9.5 ha
Total Reclaimed Area (ha)	not available to SIRM	0 ha
Total Exempt Area (ha) (i.e., pit walls)	not available to SIRM	n/a
Total Liability Estimate	not available to SIRM	TBD*
Date for next Five Year Mine Plan and Reclamation Plan update (if required)	TBD	

*At time of writing Reclamation costs impacted by March 21, 2016 judgement RE Docket: 13-3547

Annual Reclamation Report for 2015

Mines Act Permit Number Q-8-94

Name of Property: 460 Stebbings Rd, Shawnigan Lake (Lot 23, Blocks 156, 201 and 323, Malahat District, Plan V1P78459)

Company Name: South Island Resource Management Ltd.

Mine Manager: Doug Harlow, tel 250-743-0811

Environmental Supervisor: Rahim Gaidhar

Date: March 31, 2015

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Appendix A: Groundwater Quality Data

Appendix B: Surface Water Quality Data

Executive Summary

The Site is a rock quarry, permitted to receive contaminated soil, under Ministry of Energy and Mines (MEM) permit # Q-8-94 and under Ministry of Environment (MOE) Waste Permit PR- 105809. South Island Resource Management Ltd (SIRM) took over operation of the site in June, 2015 from South Island Aggregates (SIA). The property is owned by Cobble Hill Holdings Ltd (CHH). South Island Resource Management is not connected by ownership or management to SIA or CHH.

South Island Resource Management has focused mainly on infrastructure improvements to the site and on encapsulation of contaminated soil. SIA carried out blasts in one area June 6 and June 11, 2015. SIRM carried out one blast on October 29, 2015. Total annual extraction is estimated at 65,000 tonnes and SIRM sold 10,000 tonnes in 2015, vs an annual allowable extraction of 240,000 tonnes.

We imported a yearly total (2015) of 46,924 tonnes of contaminated soil to the Site. 3,342 tonnes was imported in 2014 and held in the Soil Management Area until permanent encapsulation in 2015. The 2015 import total includes 2,167 tonnes of soil moved from a historic Ministry of Environment approved holding cell east of the Soil Management Area into the Permanent Encapsulation Area. This soil was routed over the scales and treated administratively as if it were from off-site. A total of 44,722 tonnes of soil was discharged to the encapsulation cell during all of 2015 (vs. an annual limit of 100,000 tonnes). The remaining soil was held temporarily in the Soil Management Area.

Incoming soil is used as reclamation fill. The final reclamation plan includes re-vegetation over the top of the encapsulated soil, however placement and elevation of encapsulated soil is not at a level for final planting in 2015.

The environmental protection program includes the regular sampling and testing of water treatment plant effluent, surface water on and off-site, and groundwater monitoring. Water treatment discharge met applicable standards. Groundwater met standards, except for ongoing exceedances likely due to background chemistry. Surface water downstream of the site met applicable standards, other than exceedances likely due to background chemistry and two exceedances of turbidity levels in settling pond discharge water. The Ministry of Environment found the site fully compliant with the MOE discharge permit.

1.0 Introduction

Lot 23 (the Site) has a long history of forestry, mining and industrial use and is heavily disturbed. Historically, the entire site was logged except for a buffer zone along Shawnigan Creek. The quarry began operating in 2006. In 2010 South Island Aggregates (SIA) began investigating the possibility of using contaminated soil for mine reclamation. After several technical assessments, The Ministry of the Environment (MOE) issued Waste Permit 105809 in August 2013. An environmental appeal board confirmed the permit in 2014. South Island Resource Management (SIRM) became the operator of record June 11, 2015. The property is owned by Cobble Hill Holdings Ltd (CHH). South Island Resource Management is not connected by ownership or management to SIA or CHH. SIRM operates the site under a long-term renewable lease agreement.

The Site is located at 460 Stebbings Road (Lot 23), in the unincorporated community of Shawnigan Lake, within the Cowichan Valley Regional District (CVRD) on southern Vancouver Island (Figure 1).

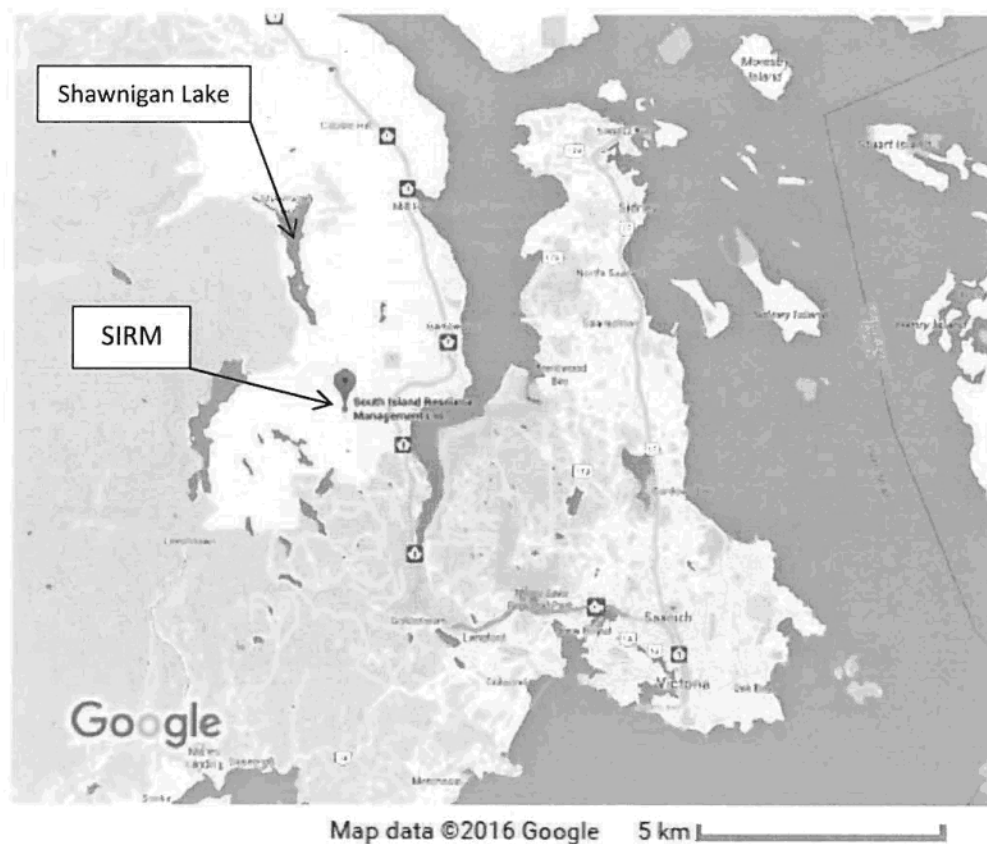


Figure 1. Location of SIRM at 460 Stebbings Road.

The biogeoclimatic zone for this area is classified as Coastal Western Hemlock. The climate in this zone is wet with mild temperatures moderated by the Pacific Ocean. On a smaller scale, the site falls entirely within the southern region of the Shawnigan Lake watershed.

The Site lies within an area principally zoned Primary Forestry and Secondary Forestry, F-1 and F-2 respectively. These zones are mainly used for management and harvesting of primary forestry products, silviculture / horticulture, in addition to the extraction of mineral resources. The zones also allow for two residential dwellings depending on parcel size and home based businesses, including the operation of a bed and breakfast. Secondary forestry allows for all Primary Forestry uses with the addition of: sawmilling, manufacturing, and all dry log sorting operations. The Stebbings Road area is regarded for its production of high grade construction aggregates. At least two quarries exist within a 1.0 km radius of the Site. Multiple BC Contaminated Site Regulation (CSR) Schedule 7 "clean" soil dumps are also in this area, some are registered as contaminated sites on the BC Contaminated Sites Registry.

The goal and objective of the reclamation program is to restore the quarry pit back to roughly original grade, with a self-sustaining vegetation cover, that allows for forestry/industrial land use.

During 2015, reclamation-related work included the construction of the first and second phases of the first Permanent Encapsulation Cell (PEA) and the discharge of 44,722 tonnes of soil into the PEA. As directed by the Ministry of Energy and Mines (MEM), MEM-Table 1 is included as a summary of areas disturbed and reclaimed during 2015. Soil has not been placed to an elevation such that final cover construction could occur. The reclamation plan is progressive and ongoing so that extraction and production operations can be carried out concurrently as soils are placed in previously mined areas.

2.0 Mining Program

The previous operators extracted material down to final pit floor elevation of 313.5 m and removal to a bench at elevation 330 m. During the past year, one blast as part of SIRM's operations, on October 29 disturbed roughly 0.15 Ha, and blasting in one area by SIA June 11 and June 16 disturbed roughly 0.1 Ha total. SIRM is reviewing the current mine plan. The existing mine plan allows for approximately 11 years of extraction at maximum annual rate. Permitted production from this quarry is 240,000 tonnes annually and the total allowable contaminated soil acceptance is 100,000 tonnes annually. It is likely this extraction will be below permitted maximum to allow reclamation to keep pace. Over the next five years, SIRM intends to remove rock by blasting to finish PEA Cell 1 in 2016 and then to extract material along the north face of the pit down to final floor design elevation. Extraction will be in sections, generally extending from existing face to the northern buffer zone, and moving from west to east. Over the next five years roughly 1,000,000 tonnes of material will be extracted and up to 500,000 tonnes of contaminated soil will be brought in as fill.

New disturbed areas in 2015 include a total of approximately 0.25 hectares within the current operational pit area. Temporary stockpiles of extracted surface materials (inorganic overburden) were typically located in upper working areas of the mine site, prior to use as fill for Site roads and lay-down

areas. No topsoil was removed by SIRM in 2015. Approximately 50 m³ of topsoil is stored in a trench in the southwest portion of the Site. This area was hydro-seeded in 2015, but growth was not significant and the area was re-graded and re-seeded in 2016.

3.0 Environmental Protection Program

In addition to the design of the facility, the Environmental Management system includes regular confirmation sampling of incoming contaminated soils, daily inspections of facilities related to contaminated soil handling and water management and regular effluent, groundwater and surface water monitoring. SIRM retained Stantec Consulting to conduct detailed water management planning and Aqua-Tex consulting to conduct an ecological assessment of aquatic and terrestrial areas surrounding the mine boundary. These consultants will complete their reports in 2016.

The Site is a rock quarry exporting extracted rock products. No waste rock, tailings, low grade ore, etc. and associated ML/ARD management programs are produced. Therefore, all quantities in MEM-Table 2 are zero.

The surface and groundwater environmental monitoring programs are described below.

Effluent Monitoring Program

Effluent water is treated water that has not left the mine boundary. Water which has left the mine boundary is monitored as part of the receiving environment and is described in the next section of this report. Water effluent encompasses both treated contact water (water that may have contacted contaminated soils) and active site non-contact water and is monitored as described in Table 1. Contact water is treated in the water treatment plant and active site non-contact water flows through the settling pond to remove fine particles prior to discharge off Site.

Table 1. Effluent Water Monitoring Program

Monitoring Location	Minimum Monitoring Frequency	Minimum Sampling Frequency
Catch Basins and Leak Detection Inspection Ports (SMA and encapsulation areas)	Visually inspected on at least a weekly basis. Cleaned out as needed.	N/A
Water Treatment System Holding Tanks (When Applicable) and/or Containment Pond	Weekly	Monthly (or as generated)
Water Treatment System Outlet (WTS)	Weekly	Monthly and Every 2,000m ³ of Effluent Treated Effluent
Settling Pond Outlet (SW-1)	Weekly	Monthly and Every 2,000m ³ of Effluent Treated Effluent
		Turbidity Assessed Bi-Weekly Nov to Apr & After >1:10 year storm events

A 1:10 Year Return Event (storm) is estimated based on 122mm of precipitation over a 24 hour period as measured at the on-Site rain gauge. Turbidity will be assessed using a *Hatch 2100Q Portable Turbidimeter* (or equivalent). Monitoring at the Water Treatment System discharge includes recording the flow meter value and pH, and making any observations about the physical properties of the discharge (colour, odour, turbidity, etc.).

Figure 2 shows hydrologic features of the site and sampling locations for effluent and for the receiving environment. Monitoring at the Settling Pond Outlet (SW-1) includes measuring turbidity and recording observations about the discharge (estimated flow, colour, odour, etc.). In addition, the Settling Pond includes regular visual inspection to ensure ongoing competency and function (rip-rap integrity, requisite freeboard, accumulated sediment, tension cracking or erosion of sidewalls, etc.).

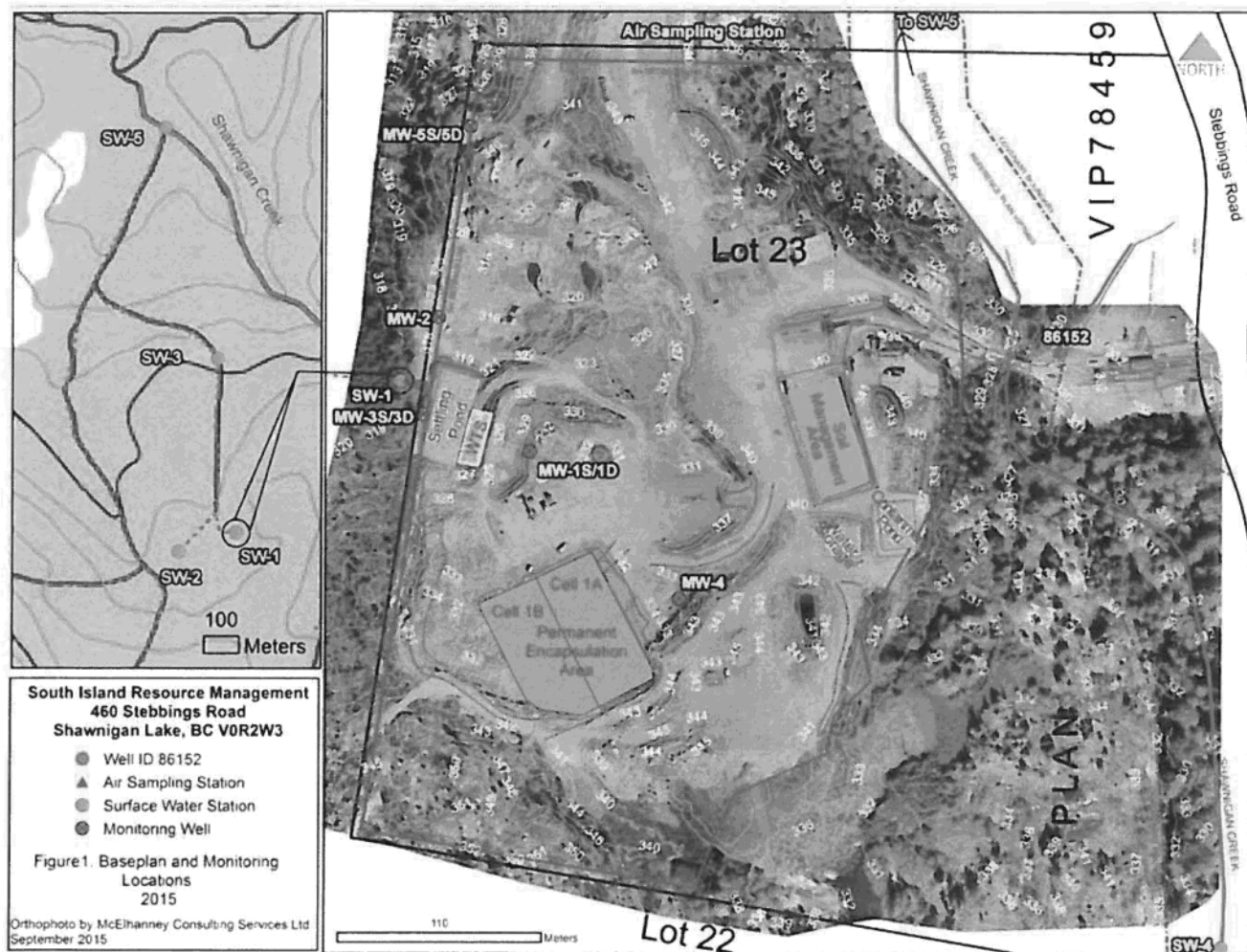


Figure 2. Monitoring locations for groundwater wells (MW) and surface sampling (SW).

Monitoring associated with Leak Detection and Leachate Collection Systems occurs at inline catch basins/inspection ports, noting presence/absence of liquid, estimated flow, colour, odour, etc.

Effluent samples are analyzed for all potential contaminants of concern as determined by a Qualified Professional based on soil contaminants received at the facility, monitoring results to date and input from MOE.

As per MOE Permit PR-105809 section 1.4.4, the characteristics of the discharged treated effluent from the Water Treatment System must be equivalent to or better than the most stringent of those *British Columbia Approved Water Quality Guidelines* (BCAWQG) and *A Compendium of Working Water Quality Guidelines for British Columbia* (BCWWQG) for Freshwater Aquatic Life (AL) protection and Drinking Water (DW) uses for the parameters of concern.

As per MOE Permit PR-105809, section 1.5.3 the characteristics of the discharged treated effluent from the Settling Pond must be equivalent to or better than the most stringent of BCAWQG and BCWWQG for AL. Total Suspended Solids (TSS) shall not exceed 25 mg/L for up to a 1:10 year storm event. Per MEMPR Permit Q-8-094, nitrate shall not exceed standards applicable to DW.

Per MOE Permit PR-105809, for flood events greater than the 1 in 10 year event (122 mm of precipitation over a 24 hour period), the characteristics of the settling pond discharge must not exceed background concentrations (i.e., SW-4).

Receiving Environment Monitoring – Groundwater and Surface Water

Settling Pond water, including Water Treatment System Effluent, is discharged to a pre-existing groundwater spring fed drainage course along the west side of the Site. The drainage course contributes to an intermittent tributary stream. The tributary flows generally north for about 150 m before joining another stream which is a tributary of Shawnigan Creek. The confluence of the tributary and Shawnigan Creek is located approximately 1 km north of the Site.

Receiving environment water monitoring includes surface water and groundwater monitoring locations. There are four long-term surface water monitoring locations within the intermittent tributary and Shawnigan Creek (SW-2 through SW-5). These have been surveyed and permanently marked. There are five on-site monitoring wells, including three with nested completions (shallow and deep) for a total of eight piezometers.

The receiving environment monitoring program for groundwater and surface water is summarized in Table 2 and locations shown on Figure 2.

Table 2. Receiving Environment Monitoring – Groundwater and Surface Water (S=shallow, D=deep)

Receptor	Monitoring Locations			Monitoring Schedule
Groundwater	Up-gradient	MW-4	On-Site, near southeast corner	Quarterly
	Down-gradient	MW-1(S,D)	On-Site, near centre	
		MW-2	On-Site, near west property boundary	
		MW-3(S,D)	On-Site, near west property boundary	
		MW-5 (S,D)	On-Site, north	
Surface Water	Up-stream	SW-4	Shawnigan Creek	5 in 30* (2 times/year, conducted during fall first flush event and during spring freshet); and after a 1:200 year storm event** at SW-2 and SW-3
	Down-stream	SW-2	Ephemeral Creek	
		SW-5	Shawnigan Creek	
		SW-3	Ephemeral Creek	

*5 in 30 refers to at least 5 weekly samples taken in a period of 30 days. Due to the ephemeral nature of some of the creeks, the first 5 in 30 samples should be collected when the ground has first been saturated.

** 156 mm of rain over 24 hours

Event-based monitoring is triggered immediately following a 1-in-200 year, 24-hour storm event. Locations SW-2 and SW-3 are monitored. A 1:200 year storm event is defined as 156mm of rain over a 24 hour period, as determined by the on-site rain gauge.

Samples are analyzed for all potential contaminants of concern as determined by a Qualified Professional based on soil contaminants received at the facility, monitoring results to date and input from MOE.

Where practical, water is diverted away from disturbed or working areas to minimize potential erosion of exposed soils. Temporary soil stockpiles (non-contaminated) are located within the working mine area such that any water associated with the stockpiles will be directed to the settling pond.

A vegetation management plan for the mine perimeter areas will be developed based on the Aqua-Tex perimeter ecological assessment report, due in final March, 2016.

Water Quality

No exceedances of groundwater standards were observed, aside from a subset of detections that reflect natural background. Background water chemistry is inferred from analysis of data collected prior to the encapsulation of contaminated soil to the Site. Non-contact surface water samples also met applicable standards, other than: (a) a subset of detections that reflect natural background chemistry, sample

contamination or natural variation due to, e.g., high storm flows; and (b) two exceedances of discharge quality standards related to sediment in storm water discharging from the Settling Pond. Treated contact water (Water Treatment System discharge) met applicable standards.

Results of monitoring are provided in Appendices A and B.

4.0 Reclamation Program

In general, the approved reclamation plan is backfill of the quarry using non-leachable, industrial contaminated soil (CSR IL+ or below) contained within Permanent Encapsulation Area (PEA) cells. The cells include multiple layers of protection, including:

- placement over low permeability bedrock (following bedrock integrity inspection & report by a Qualified Professional Geotechnical Engineer);
- a seepage blanket over bedrock to prevent groundwater contact of the liner system;
- a compacted clay liner over the seepage blanket;
- a leak detection system over the clay liner, to detect leaks from the LLDPE liner;
- a base synthetic LLDPE liner;
- a drainage blanket and collection system over the base liner;
- a top synthetic LLDPE liner to prevent infiltration of water into the cell;
- at least 1 m of low permeability soil over the top liner.

Above the top low permeability soil, at least 1 m of growing medium will be placed and the final cover surface will be revegetated.

During 2015, reclamation activities were limited to the construction of the first and second phases of PEA cell #1 and placement of soil in that cell. No portion of the PEA has been constructed at a location or to such an elevation that final cap and vegetation cover should be constructed. Over the next five years, the northern section of the mine will be blasted and excavated down to final pit floor grade. The next PEA will be constructed in this portion of the mine. As PEA cell #1 is not contiguous with the mine perimeter, final cover placement will not include vegetation for several more years. It is anticipated that final cover placement over the second PEA will begin in 2017.

5.0 Reclamation Cost Estimates

This will be filed as a separate, confidential report as allowed by the Format Requirements.

MEM Tables

TABLE 1

SUMMARY OF AREAS DISTURBED AND RECLAIMED TO DECEMBER 31, 2015

COMPANY: South Island Resource Management PERMIT NO.: Q-8-94

DISTURBANCE		MINING		RECLAMATION												LAND USE OBJECTIVE**
		AREA DISTURBED (ha)		AREA RECONTOURED (ha)		AREA SEEDED/PLANTED (ha)		AREA FERTILIZED (ha)		AREA REVEGETATED* (ha)		LAND USE OBJECTIVE**				
		2015	TOTAL***	2015	TOTAL***	2015	TOTAL***	2015	TOTAL***	2015	TOTAL***					
WASTE DUMPS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Industrial/forestry		
TAILINGS PONDS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Industrial/forestry		
PLANT SITE	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Industrial/forestry		
ROADS	0	0.5	0	0	0	0	0	0	0	0	0	0	0	Industrial/forestry		
ADMINISTRATION	0	5.5	0	0	0	0	0	0	0	0	0	0	0	Industrial/forestry		
PIT	0.25	3.5	0	0	0	0	0	0	0	0	0	0	0	Industrial/forestry		
STOCKPILES	0	0	0	0	0	0	0	0	0	0	0	0	0	Industrial/forestry		
LINEAR	0	0	0	0	0	0	0	0	0	0	0	0	0	Industrial/forestry		
OTHER	0	0	0	0	0	0	0	0	0	0	0	0	0	Industrial/forestry		
TOTAL	0.25	9.5	0	0	0	0	0	0	0	0	0	0	0	Industrial/forestry		
EXEMPT e.g., pit high walls	0	ha														

*** Total up to December 31, 2015.

TABLE 2
QUANTITIES OF WASTE ROCK, TAILINGS, LOW GRADE ORE, COARSE REJECT
AND OTHER MINE WASTE AS OF DECEMBER 31, 2015

COMPANY: South Island Resource Management

PERMIT NO.:Q-8-94

Use the space below to enter information for each waste dump, tailings pond or low grade ore pile. All quantities should be given in tonnes.

Name of Waste Pile or Pond	Acid Generating Waste		Potentially Acid Generating Waste		Non-Acid Generating Waste	
Waste Dumps	2015	Total	2015	Total	2015	Total
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
Total	0	0	0	0	0	0
Tailings Ponds						
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
Total	0	0	0	0	0	0
Low Grade Ore/Coarse Reject/Other Mine Waste						
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	0	0	0	0	0	0
5	0	0	0	0	0	0
Total	0	0	0	0	0	0

Appendix A: Groundwater Quality Data

Table A1: Analytical Results for Nutrients in Groundwater

Sample Location		CSF Standards ⁽¹⁾		MW-1S											
Sample ID														CARO Analytical	
Date Sampled	Aquatic Life	Drinking Water	17-Mar-11	03-Jul-12	06-May-13	02-Jun-13	18-Jun-13	11-Apr-14	19-Jun-14	19-Apr-15	26-Jun-15	21-Aug-15	5081451-01	5121562-01	28-Dec-15
Physical Tests	-	-													
Colour, True (TCU)	-	-	63	30.8	23.0	24.8	29.9	66.0	72.3	-	-	-	-	46	-
Conductivity (uS/cm)	-	-	539	2210	3120	2310	1080	860	864	1010	967	853	853	711	-
Hardness (as CaCO ₃)	-	-	43	109	371	289	51	31	30.1	22.5	28.3	53.5	53.5	53.3	-
pH	-	-	8.48	8.16	7.95	8.18	10.26	10.12	9.54	9.52	10.00	10.24	10.24	9.98	-
Total Dissolved Solids	-	-	3720	1530	2000	1950	854	644	636	572	564	704	704	498	-
Turbidity (NTU)	-	-	826	2.85	28.40	>4000	16.20	2.50	1.98	-	-	148	148	364	-
Anions and Nutrients															
Alkalinity, Total (as CaCO ₃)	-	-	204	161	143	146	280	194	195	194	279	265	265	230	-
Chloride (Cl)	1500	250	7.49	84	137	128	36	30.6	31.5	35.1	23.9	20.5	20.5	16	-
Fluoride (F)	3 (H ≥ 50)	1.5	0.369	<	0.45	0.55	0.8	0.82	0.83	0.96	0.57	0.32	0.32	0.28	-
Nitrate (as N)	400	10	0.402	<	<	0.76	1.07	<	<	0.392	0.302	0.118	0.118	0.053	-
Nitrite (as N) ⁽¹⁾	0.2														-
Cl 2 - <4 mg/L	0.4														-
Cl 4 - <6 mg/L	0.6														-
Cl 6 - <8 mg/L	0.8														-
Cl 8 - <10 mg/L	1														-
Cl ≥ 10 mg/L	2														-
Sulfate (SO ₄)	1000	500	68	863	1320	841	225	181	183	219	145	127	127	2.14	97.1

Notes: Refer to Table Endnotes (attached)

Table A1: Analytical Results for Nutrients in Groundwater

Sample Location		CSR Standards ⁽¹⁾		MW-ID											
Sample ID				CARO Analytical											
Date Sampled		Drinking Water													
Physical Tests	Aquatic Life														
Colour, True (TCU)	-	-	<												
Conductivity (uS/cm)	-	-	155												
Hardness (as CaCO ₃)	-	-	69.9												
pH	-	-	7.21												
Total Dissolved Solids	-	-	107												
Turbidity (NTU)	-	-	1.3												
Anions and Nutrients															
Alkalinity, Total (as CaCO ₃)	-	-	41.7												
Chloride (Cl)	1500	250	2.24												
Fluoride (F)	2 (H < 50)	1.5													
Nitrate (as N)	400	10	1.18												
Nitrite (as N) ⁽²⁾ Cl < 2 mg/L	0.2														
Cl 2 - < 4 mg/L	0.4														
Cl 4 - < 8 mg/L	0.6	3.2													
Cl 6 - < 8 mg/L	0.8														
Cl 8 - < 10 mg/L	1														
Cl ≥ 10 mg/L	2														
Sulfate (SO ₄)	1000	500	27.4												
			28.2												
			31.1												
			32.2												
			32.5												
			1%												
			32.3												
			19.8												
			19.4												
			23.2												
			22.3												
			4%												
			223												
			11.1												

Notes: Refer to Table Endnotes (attached)

Table A1: Analytical Results for Nutrients in Groundwater

CSR Standards ^(a)			MW-2										MW-3S										CARO Analytical	
Sample Location	Sample ID																							

Notes: Refer to Table Endnotes (attached)

Table A1: Analytical Results for Nutrients in Groundwater

Sample Location		MW-3D										MW-4									
Sample ID		CARO Analytical										CARO Analytical									
Date Sampled		5081451-03										5081411-02									
Physical Tests		21-Aug-15										20-Aug-15									
Aquatic Life		28-Dec-15										28-Dec-15									
Drinking Water		6										DUP									
</																					

Notes: Refer to Table Endnotes (attached)

Table A1: Analytical Results for Nutrients in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-5S										MW-5D									
	Aquatic Life	Drinking Water																				
Sample ID																						
Date Sampled																						
Physical Tests																						
Colour, True (TCU)	-	-	< 548	183	< 250	< 472	580	620	551	< 5	<	<	<	<	<	<	<	<	<	<	<	8
Conductivity (uS/cm)	-	-	223	80.2	234	205	254	470	297													
Hardness (as CaCO3)	-	-	8.18	7.2	7.36	6.71	6.62	7.01	6.92													
pH	-	-	336	127	178	252	306	401	332													
Total Dissolved Solids	-	-	22.6	43.5	17.2	-	-	751	826													
Turbidity (NTU)	-	-	213	70	99.4	190	243	293	248													
Alkalinity, Total (as CaCO3)	1500	250	22.3	9.12	11.3	13.2	18.7	23.1	15.1													
Chloride (Cl)																						
Fluoride (F)			0.124	0.034	0.028	0.04	0.09	0.17	<0.10													
Nitrate (as N)	400	10	<	0.145	<	<0.005	<0.005	<0.010	<0.010													
Nitrite (as N) Cl <2 mg/L	0.2																					
Cl2 - <4 mg/L	0.4																					
Cl4 - <6 mg/L	0.6																					
Cl6 - <8 mg/L	0.8																					
Cl8 - <10 mg/L	1		<	<	<	<0.005	<0.005	<0.010	<0.010													
Cl ≥ 10 mg/L	2		<	<	<	<0.005	<0.005	<0.010	<0.010													
Sulfate (SO4)	1000	500	56	11.9	17.6	33.6	36.3	41	32.9													
								</														

Notes: Refer to Table Endnotes (attached)

Table A1: Analytical Results for Nutrients in Groundwater

Sample Location		CSR Standards ⁽¹⁾		GW12-1 MOE WELL TAG 83527		Field Blanks	
Sample ID						CARO Analytical	
Date Sampled	Aquatic Life	Drinking Water		13-Feb-12	03-Jul-12	5081451-05	5121562-09
Physical Tests							
Colour, True (TCU)	-	-	-	<	<		<5
Conductivity (uS/cm)	-	-	-	238	227	<2	<2
Hardness (as CaCO ₃)	-	-	-	113	111	<5.0	<0.50
pH	-	-	-	8.12	8.14	6.18	6.27
Total Dissolved Solids	-	-	-	145	144	<10	<10
Turbidity (NTU)	-	-	-	0.66	0.18	<0.1	<0.1
Anions and Nutrients							
Alkalinity, Total (as CaCO ₃)	-	-	-	115	111	<1	1
Chloride (Cl)	1500	250		8.57	8.5	<0.10	<0.10
Fluoride (F)	2 (H < 50)	1.5				<0.10	<0.10
	3 (H ≥ 50)			0.036	0.039		
Nitrate (as N)	400	10		<	<	<0.010	<0.010
Nitrite (as N) ⁽¹⁾ Cl <2 mg/L	0.2						<0.010
Cl 2 - <4 mg/L	0.4					<0.010	
Cl 4 - <6 mg/L	0.6	3.2					
Cl 6 - <8 mg/L	0.8						
Cl 8 - <10 mg/L	1			<	<		
Cl ≥ 10 mg/L	2						
Sulfate (SO ₄)	1000	500		61.7	5.81	<1.0	<1.0

Notes: Refer to Table Endnotes (attached)

Table A2: Analytical Results for Total and Dissolved Metals in Groundwater

Sample Location	CSF Standards ⁽¹⁾		MW-15										CARO Analytical	9121562-01
	Aquatic Life	Drinking Water	17-Mar-11	03-Jul-12	06-May-13	02-Jun-13	18-Jun-13	11-Apr-14	19-Jun-14	26-Jun-15	21-Aug-15	28-Dec-15		
Physical Tests														
Total Metals	-	-	41.3	109	371	289	51	31.3	30.1	28.3	53.5	59.3		
Aluminum (Al)-Total	-	-	45.4	0.216	-	-	-	0.263	-	-	5.82	3.38		
Arsenic (As)-Total	-	-	-	-	-	-	-	0.00255	-	-	0.002	0.0016		
Barium (Ba)-Total	-	-	0.0116	0.00532	-	-	-	0.0567	-	-	0.034	0.0367		
Boron (B)-Total	-	-	1.41	0.178	-	-	-	0.026	-	-	0.21	0.115		
Cadmium (Cd)-Total	-	-	0.001	-	-	-	-	-	-	-	0.1	0.088		
Calcium (Ca)-Total	-	-	49.1	38.2	-	-	-	12.9	-	-	0.0001	0.00006		
Chromium (Cr)-Total	-	-	-	-	-	-	-	-	-	-	-	18.9		21.7
Copper (Cu)-Total	-	-	-	-	-	-	-	-	-	-	-	0.001		
Iron (Fe)-Total	-	-	0.0187	-	-	-	-	0.0074	-	-	-	0.0037		
Lithium (Li)-Total	-	-	15.5	0.256	-	-	-	0.15	-	-	-	1.37		
Manganese (Mn)-Total	-	-	0.0044	0.0044	-	-	-	0.13	-	-	0.006	0.007		
Magnesium (Mg)-Total	-	-	32.4	2.56	-	-	-	-	-	-	1.5	1.36		
Mercury (Hg)-Total	-	-	0.468	0.101	-	-	-	0.0087	-	-	0.078	0.0461		
Potassium (K)-Total	-	-	-	-	-	-	-	-	-	-	0.0003	<0.00002		
Selenium (Se)-Total	-	-	2.79	2.17	-	-	-	0.79	-	-	-	0.9		
Sodium (Na)-Total	-	-	0.0071	-	-	-	-	0.0055	-	-	-	<0.005		
Uranium (U)-Total	-	-	156	469	-	-	-	183	-	-	200	158		
Zinc (Zn)-Total	-	-	0.0548	0.00717	-	-	-	0.00197	-	-	0.0074	0.00497		
Dissolved Metals	-	-	0.063	-	-	-	-	-	-	-	-	0.008		
Aluminum (Al)-Dissolved	9.5	-	3.7	-	-	13.3	-	-	0.01	0.015	-	0.007		
Antimony (Sb)-Dissolved	0.2	-	0.003	-	0.0066	0.0008	-	0.0076	0.0025	0.0022	0.002	0.0017		
Arsenic (As)-Dissolved	0.01	-	0.0099	0.00583	0.0044	0.0043	0.0085	0.0086	0.0093	0.0025	0.003	0.008		
Barium (Ba)-Dissolved	10	-	0.275	0.193	0.128	0.194	-	-	-	0.005	0.005	0.005		
Beryllium (Be)-Dissolved	0.03	-	-	-	-	-	-	-	-	<0.0001	<0.001	<0.001		
Boron (B)-Dissolved	50	-	-	-	-	-	-	-	-	0.078	0.1	0.078		
Cadmium (Cd)-Dissolved	0.0001 (H=30)	-	-	-	-	-	-	-	-	0.0002	0.00002	-		
Cadmium (Cd)-Dissolved	0.0005 (H=30-490)	-	-	-	-	-	-	-	-	-	<0.0001	<0.00001		
Cadmium (Cd)-Dissolved	0.0005 (H=150-210)	-	-	-	-	-	-	-	-	-	-	-		
Calcium (Ca)-Dissolved	-	-	14.2	39.3	137	103	19.8	12.5	12	8.76	11.10	15.3		
Chromium (Cr)-Dissolved	0.05	-	-	-	-	-	-	-	-	-	0.0009	<0.0005		
Cobalt (Co)-Dissolved	0.04	-	0.0089	-	-	-	-	-	-	0.00044	0.00021	<0.0005		
Copper (Cu)-Dissolved	0.02 (H=30)	-	-	-	0.0036	-	-	0.0044	0.0041	0.0035	0.003	0.002		
Copper (Cu)-Dissolved	0.01 (H=30-120)	-	-	-	-	-	-	-	-	-	-	-		
Copper (Cu)-Dissolved	0.03 (H=30-120)	-	-	-	-	-	-	-	-	-	-	-		
Copper (Cu)-Dissolved	0.05 (H=100-120)	-	-	-	-	-	-	-	-	-	-	-		
Copper (Cu)-Dissolved	0.06 (H=120-150)	-	-	-	-	-	-	-	-	-	-	-		
Copper (Cu)-Dissolved	0.07 (H=150-175)	-	-	-	-	-	-	-	-	-	-	-		
Copper (Cu)-Dissolved	0.08 (H=175-200)	-	-	-	-	-	-	-	-	-	-	-		
Copper (Cu)-Dissolved	0.09 (H=200)	-	-	-	-	-	-	-	-	-	-	-		
Iron (Fe)-Dissolved	6.5	-	1.09	0.035	-	0.0041	-	-	-	0.02	<0.01	<0.010		
Lead (Pb)-Dissolved	0.01	-	0.0045	-	-	1.99	-	-	-	0.0006	0.0005	<0.001		
Lithium (Li)-Dissolved	0.18 (H=300)	-	-	-	-	0.00102	-	-	-	-	-	-		
Manganese (Mn)-Dissolved	100	-	1.9	2.67	7.64	7.48	0.32	-	-	-	<0.0005	0.0001		
Manganese (Mn)-Dissolved	0.55	-	0.121	0.045	0.002	0.301	-	-	-	0.16	0.15	0.39		
Mercury (Hg)-Dissolved	0.001	-	-	-	-	-	-	-	-	0.006	0.001	0.008		
Molybdenum (Mo)-Dissolved	10	-	-	-	-	-	-	-	-	0.0002	0.00002	<0.00002		
Nickel (Ni)-Dissolved	0.25 (H=60)	-	-	-	-	-	-	-	-	0.0478	0.0155	0.0153		
Nickel (Ni)-Dissolved	0.65 (H=60-120)	-	-	-	-	-	-	-	-	0.0036	0.0013	<0.002		
Nickel (Ni)-Dissolved	1.1 (H=120-180)	-	-	-	-	-	-	-	-	-	-	0.0008		
Potassium (K)-Dissolved	-	-	0.79	2.23	3.96	3.4	1.13	0.79	0.75	0.71	0.75	0.58		
Selenium (Se)-Dissolved	0.01	-	-	-	-	0.0029	0.0038	0.0059	0.006	0.0041	<0.005	0.0016		
Silver (Ag)-Dissolved	0.0005 (H=100)	-	-	-	-	-	-	-	-	-	0.00016	<0.0005		
Sodium (Na)-Dissolved	0.013 (H=100)	-	-	-	-	-	-	-	-	-	-	-		
Sodium (Na)-Dissolved	200	-	113	462	761	480	233	185	179	188	212	150		
Thallium (Tl)-Dissolved	0.003	-	-	-	-	-	-	-	-	<0.0001	<0.0002	<0.0002		
Uranium (U)-Dissolved	1	-	0.0103	0.00696	0.00368	0.00721	0.00154	0.0016	0.00177	0.00139	0.0013	0.00231		
Vanadium (V)-Dissolved	3	-	-	-	-	-	-	-	-	0.0789	0.0655	0.044		
Zinc (Zn)-Dissolved	0.075 (H=40)	-	-	-	-	-	-	-	-	-	0.005	<0.004		
Zinc (Zn)-Dissolved	0.150 (H=90-100)	-	-	-	-	-	-	-	-	-	-	-		
Zinc (Zn)-Dissolved	0.900 (H=100-200)	-	-	-	-	-	-	-	-	-	-	-		
Zinc (Zn)-Dissolved	1.650 (H=200-300)	-	-	-	-	-	-	-	-	-	-	-		
Zinc (Zn)-Dissolved	2.4 (H=300-400)	-	-	-	-	-	-	-	-	-	-	-		

Notes: Refer to Table Endnotes (attached)

Table A2: Analytical Results for Total and Dissolved Metals in Groundwater
Sample Location

Sample ID	Aquatic Life	Drinking Water	MW-10										CARO Analytical	
			17-Mar-11	03-Jul-12	06-May-13	11-Apr-14	RPP%	19-Jun-14	19-Apr-15	26-Jun-15	5001411-01	5001411-05	5001411-05	5121502-02
Physical Tests (for CaCO ₃)														
Total Metals	-	-	69.9	69.7	77.6	78.5	DUP	79.8	2%	80.7	250	149	189	DUP
Aluminum (Al)-Total	-	-	0.035	0.003	-	0.13	0.126	-	3%	-	-	-	0.7	0.77
Antimony (Sb)-Total	-	-	-	-	-	0.00372	0.00396	-	6%	-	-	-	<0.001	<0.001
Arsenic (As)-Total	-	-	<	<	-	0.00023	0.00026	-	12%	-	-	-	<0.005	<0.005
Barium (Ba)-Total	-	-	<	<	-	<	<	-	-	-	-	-	<0.05	<0.05
Boron (B)-Total	-	-	<	<	-	<	<	-	-	-	-	-	<0.04	<0.04
Cadmium (Cd)-Total	-	-	0.0028	0.00183	-	0.00198	0.00208	-	5%	-	-	-	0.0002	<0.0001
Calcium (Ca)-Total	-	-	23	24.5	-	26.9	27.6	-	3%	-	-	-	59.5	57.7
Chromium (Cr)-Total	-	-	<	<	-	<	<	-	-	-	-	-	<0.005	<0.005
Copper (Cu)-Total	-	-	0.0015	0.0013	-	<	<	-	-	-	-	-	0.007	0.007
Iron (Fe)-Total	-	-	0.047	0.116	-	0.159	0.161	-	1%	-	-	-	0.78	0.81
Lead (Pb)-Total	-	-	<	<	-	<	<	-	-	-	-	-	<0.001	<0.001
Manganese (Mn)-Total	-	-	3.11	3.16	-	3.58	3.59	-	0%	-	-	-	9.6	9.1
Manganese (Mn)-Total	-	-	0.0261	0.0068	-	0.0057	0.0061	-	7%	-	-	-	0.041	0.042
Mercury (Hg)-Total	-	-	<	<	-	<	<	-	-	-	-	-	0.00009	0.00011
Potassium (K)-Total	-	-	0.48	0.47	-	0.87	0.91	-	4%	-	-	-	-	-
Selenium (Se)-Total	-	-	<	<	-	<	<	-	-	-	-	-	<0.005	<0.005
Sodium (Na)-Total	-	-	4.2	4.1	-	8	8.1	-	-	-	-	-	8.1	6.9
Uranium (U)-Total	-	-	<	<	-	0.0001	<	-	-	-	-	-	0.013	0.013
Zinc (Zn)-Total	-	-	<	<	-	<	<	-	-	-	-	-	<0.04	<0.04
Dissolved Metals														
Aluminum (Al)-Dissolved	9.5	-	<	<	<	<	<	<	-	-	-	-	<0.05	<0.05
Antimony (Sb)-Dissolved	0.2	-	<	<	0.00583	0.0038	0.00447	4%	0.00125	<	<	<	<0.002	<0.001
Arsenic (As)-Dissolved	0.01	-	<	0.00019	0.00011	0.0002	0.00036	0%	0.00036	<	<	<	<0.005	<0.005
Barium (Ba)-Dissolved	10	-	<	<	<	<	<	<	<	0.0134	0.0097	<	<0.05	<0.05
Beryllium (Be)-Dissolved	0.03	-	<	<	<	<	<	<	<	<	<	<	<0.0001	<0.001
Boron (B)-Dissolved	50	-	<	<	<	<	<	<	<	0.022	0.018	<	<0.04	<0.04
Cadmium (Cd)-Dissolved	0.0001 (H=30)	-	0.00285	0.00188	0.0017	0.00193	0.00188	3%	-	<	<	<	<0.0001	<0.0001
Cadmium (Cd)-Dissolved	0.0002 (H=30-90)	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium (Cd)-Dissolved	0.0005 (H=90-150)	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium (Cd)-Dissolved	0.0006 (H=150-210)	-	-	-	-	-	-	-	-	-	-	-	-	-
Calcium (Ca)-Dissolved	-	-	23	23	25.6	25.8	26.2	2%	30	78.6	47.3	59.2	57.3	73.4
Chromium (Cr)-Dissolved	0.01	-	<	<	<	<	<	<	<	<	<	<	<	<
Cobalt (Co)-Dissolved	0.04	-	-	-	-	-	-	-	-	<	0.00015	<	<	<
Copper (Cu)-Dissolved	0.02 (H=30)	-	0.001	0.0011	0.003	0.0029	0.0023	15%	-	-	-	-	-	-
Copper (Cu)-Dissolved	0.04 (H=30-90)	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper (Cu)-Dissolved	0.05 (H=90-120)	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper (Cu)-Dissolved	0.06 (H=120-150)	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper (Cu)-Dissolved	0.07 (H=150-175)	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper (Cu)-Dissolved	0.08 (H=175-200)	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper (Cu)-Dissolved	0.09 (H=200)	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron (Fe)-Dissolved	6.5	-	<	<	<	<	<	<	-	0.0004	<	<	<	<
Lead (Pb)-Dissolved	0.01	-	<	<	<	<	<	<	-	-	<	<	<	<
Lead (Pb)-Dissolved	0.05 (H=50-100)	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead (Pb)-Dissolved	0.06 (H=100-200)	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead (Pb)-Dissolved	0.11 (H=200-300)	-	-	-	-	-	-	-	-	-	-	-	-	-
Lithium (Li)-Dissolved	-	-	3.06	2.97	3.33	3.41	3.48	2%	3.86	13.1	<	<	<	<
Magnesium (Mg)-Dissolved	-	-	0.0241	<	0.0051	<	<	<	0.046	0.034	0.043	0.027	0.026	0.034
Manganese (Mn)-Dissolved	0.001	-	<	<	<	<	<	<	<	<	<	<	<	<
Mercury (Hg)-Dissolved	10	-	-	-	-	-	-	-	-	0.00096	0.00081	<	<	<
Molybdenum (Mo)-Dissolved	0.25 (H=30)	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel (Ni)-Dissolved	0.65 (H=60-120)	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel (Ni)-Dissolved	1.1 (H=120-180)	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium (K)-Dissolved	-	-	0.41	0.54	0.84	0.89	0.81	0.54	0.27	0.27	<	<	<	<
Selenium (Se)-Dissolved	0.01	-	<	<	<	<	<	<	<	<	<	<	<	<
Silver (Ag)-Dissolved	0.0005 (H=100)	-	-	-	-	-	-	-	-	<	<	<	<	<
Silver (Ag)-Dissolved	0.015 (H=100)	-	-	-	-	-	-	-	-	<	<	<	<	<
Sodium (Na)-Dissolved	200	-	4.3	14.6	6.6	7.8	7.8	6%	10	7.16	6.00	<	<	<
Sodium (Na)-Dissolved	0.003	-	-	-	-	-	-	-	-	<	<	<	<	<
Titanium (Ti)-Dissolved	1	-	-	-	-	-	-	-	-	0.0011	0.0019	<	<	<
Uranium (U)-Dissolved	3	-	<	0.0002	<	<	<	<	0.00039	0.00054	0.0012	0.011	0.012	9%
Vanadium (V)-Dissolved	-	-	<	<	<	<	<	<	<	<	<	<	<	<
Zinc (Zn)-Dissolved	5	-	<	<	<	<	<	<	<	<	<	<	<	<
Zinc (Zn)-Dissolved	0.075 (H=30)	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc (Zn)-Dissolved	0.150 (H=90-100)	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc (Zn)-Dissolved	0.900 (H=100-200)	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc (Zn)-Dissolved	1.650 (H=200-300)	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc (Zn)-Dissolved	2.4 (H=300-400)	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes: Refer to Table Endnotes (attached)

Table A2: Analytical Results for Total and Dissolved Metals in Groundwater

Sample Location	CSR Standards ¹⁾		MW-3D										CARO Analytical										MW-4				CARO Analytical			
Sample ID	Aquatic Life	Drinking Water	17-Mar-11	09-Jul-12	06-May-13	11-Apr-14	19-Jun-14	19-Apr-15	RPD%	26-Jun-15	21-Aug-15	5081481-03	5121862-03	19-Sep-13	26-Jun-15	20-Aug-15	5081411-42	28-Dec-15	5121862-06	5121862-10										
Date Sampled								DUP																						
Physical Tests																			DUP											
Total Metals	-	-	112	104	111	55.8	65.8	35.9	0%	42.4	94.3	72	298	355	394	500	511	2%	2%											
Aluminum (Al) Total	-	-	0.205	-	-	0.181	-	-	-	-	1.48	2.94	-	-	4.78	7.28	9.37	25%	-											
Antimony (Sb) Total	-	-	<	-	-	0.0082	-	-	-	-	<0.001	0.0005	-	-	<0.001	0.0002	0.0001	25%	-											
Barium (Ba) Total	-	-	0.0054	0.00164	-	0.00225	-	-	-	-	<0.005	0.0007	-	-	<0.005	0.0002	0.0001	38%	-											
Boron (B) Total	-	-	9.49	0.034	-	-	-	-	-	-	<0.04	0.027	-	-	0.04	0.044	0.048	0%	-											
Cadmium (Cd) Total	-	-	<	<	<	0.00139	-	-	-	-	0.0007	0.00646	-	-	0.0001	0.00008	0.00014	55%	-											
Calcium (Ca) Total	-	-	36.1	32.8	-	21.1	-	-	-	-	30.2	23.3	-	-	122	156	156	4%	-											
Chromium (Cr) Total	-	-	<	<	<	0.0022	-	-	-	-	<0.005	0.0012	-	-	0.005	0.0054	0.0081	40%	-											
Copper (Cu) Total	-	-	0.0018	-	-	<	-	-	-	-	<0.002	0.0035	-	-	0.006	0.0121	0.0171	34%	-											
Iron (Fe) Total	-	-	0.227	0.384	-	0.21	-	-	-	-	0.64	1.16	-	-	2.24	4.98	7.13	38%	-											
Lead (Pb) Total	-	-	<	<	<	-	-	-	-	-	<0.001	0.0011	-	-	0.004	0.0062	0.0127	68%	-											
Magnesium (Mg) Total	-	-	5.94	5.62	-	1.37	-	-	-	-	4.6	3.35	-	-	21.5	30	29	3%	-											
Manganese (Mn) Total	-	-	0.0373	0.313	-	0.0055	-	-	-	-	<0.00002	<0.00002	-	-	<0.00002	<0.00002	<0.00002	<	-											
Mercury (Hg) Total	-	-	<	<	<	-	-	-	-	-	<0.005	1.27	-	-	<0.005	<0.005	22.3	4%	-											
Potassium (K) Total	-	-	1.89	0.87	-	1.77	-	-	-	-	<0.005	0.0005	-	-	<0.005	<0.005	10%	-	-											
Sodium (Na) Total	-	-	25.8	14	-	6.7	-	-	-	-	0.0011	0.00126	-	-	0.005	0.0053	0.0121	35%	-											
Sodium (Na) Total	-	-	0.0043	0.0057	-	0.00508	-	-	-	-	<0.04	0.009	-	-	<0.04	0.015	0.023	<	-											
Zinc (Zn) Total	-	-	<	<	<	0.135	0.125	0.112	0%	0.107	<0.05	0.006	-	-	0.012	<0.05	<0.05	<	-											
Antimony (As) Dissolved	9.5	-	<	<	<	0.00083	0.00083	0.0004	0%	0.0004	0.001	0.0003	-	-	<0.0002	<0.0001	<0.0001	<	-											
Antimony (Sb) Dissolved	0.2	0.006	<	<	<	0.00083	0.00083	0.0004	0%	0.0004	0.001	0.0003	-	-	<0.0002	<0.0001	<0.0001	<	-											
Arsenic (As) Dissolved	0.05	0.00149	<	0.00154	0.0014	0.00233	0.00233	0.0009	0.0011	0.001	<0.005	0.0017	-	-	0.0062	0.0012	0.0009	<	-											
Barium (Ba) Dissolved	10	1	0.042	0.037	0.03	-	-	0.0083	0%	0.0101	<0.05	0.017	-	-	0.06	0.042	0.041	2%	-											
Beryllium (Be) Dissolved	0.053	-	-	-	-	-	-	<	<	<0.00001	<0.00001	<0.0001	-	-	<0.00001	<0.0001	<0.0001	<	-											
Boron (B) Dissolved	5	-	<	<	<	-	-	0.009	0%	0.012	<0.04	0.022	-	-	0.025	0.034	0.036	6%	-											
Cadmium (Cd) Dissolved	0.0001 (H-30) 0.0002 (H-50) <90 0.0005 (H-50) <150 0.0005 (H-150) <150	0.005	0.00071	<	<	0.00036	0.00039	0.00293	0.00115	7%	0.00245	0.00327	-	-	-	-	-	-	-											
Calcium (Ca) Dissolved	-	-	35.2	32.8	35.2	20.2	23.4	13.0	13.0	0%	15.1	18.9	-	-	0.0002	0.0002	0.0002	<	-											
Chromium (Cr) Dissolved	0.05	-	<	<	<	-	-	0.0010	0.0010	0%	<0.0005	<0.005	<0.0005	0.00009	<0.0005	<0.0005	0.0007	<	-											
Cobalt (Co) Dissolved	0.01	-	-	-	-	-	-	<	<	33%	0.0029	0.001	-	-	0.0004	0.0018	0.0029	4%	-											
Copper (Cu) Dissolved	1	-	0.0013	<	<	-	0.0012	-	<	<	<0.002	-	-	-	-	-	-	-	-											
Iron (Fe) Dissolved	6.5	-	0.145	<	<	<	<	<	-	<0.01	<0.10	<0.10	<0.10	<	0.0016	<0.02	0.0004	0.0004	<											
Lead (Pb) Dissolved	0.01	-	<	<	<	<	<	<	<	<0.0005	<0.001	<0.001	<0.001	<	0.04	0.57	0.57	5%	-											
Lithium (Li) Dissolved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-											
Lithium (Li) Dissolved	-	-	-	-	-	-	-	<	<	<0.0005	<0.001	0.0002	-	-	0.0001	<0.001	<0.0001	<0.0001	<											
Magnesium (Mg) Dissolved	100	5.84	5.42	5.52	3.29	1.31	1.77	0.84	0.84	0%	1.14	4.4	2.51	14.8	0.061	0.003	0.0026	0.0023	12%											
Manganese (Mn) Dissolved	0.55	0.0277	0.289	0.289	0.329	-	-	<	<	0.023	0.215	0.052	0.34	0.151	18.9	18.4	23.2	23.2	4%											
Mercury (Hg) Dissolved	0.001	-	<	<	<	<	<	<	<	<0.00001	<0.00001	<0.00002	<	<0.00002	<0.00002	<0.00002	<0.00002	<	-											
Molybdenum (Mo) Dissolved	10	-	-	-	-	-	-	0.00164	0.00153	7%	0.00242	0.012	0.0077	-	0.0108	0.006	0.0034	0.0031	9%											
Nickel (Ni) Dissolved	-	-	-	-	-	-	-	<	<	-	0.0007	0.0008	-	-	-	-	-	-	-											
Potassium (K) Dissolved	-	-	1.53	0.83	0.74	1.84	2.02	1.13	1.13	1%	1.99	9.36	22.5	0.019	<0.002	<0.002	0.0026	0.0026	5%											
Selenium (Se) Dissolved	0.01	-	<	<	<	<	<	<	<	<0.0005	<0.005	<0.0005	<	<	<0.005	<0.005	<0.005	<0.005	8%											
Silver (Ag) Dissolved	-	-	-	-	-	-	-	<	<	<0.00002	<0.0005	<0.0005	<	-	<0.0002	<0.0005	<0.0005	<0.0005	<											
Sodium (Na) Dissolved	200	22.3	13.5	13.8	6.4	9.3	2.52	2.50	1%	3.9	14.3	9.36	36.9	53.5	54.3	34.3	<0.0005	<0.0005	<											
Titanium (Ti) Dissolved	0.003	-	-	-	-	-	-	<	<	<0.00001	<0.0002	0.00002	-	-	0.0004	<0.0002	<0.0002	<0.0002	<											
Thallium (Tl) Dissolved	1	-	-	-	-	-	<	<	-	0.0008	<0.05	<0.05	-	-	0.003	<0.05	<0.05	<0.05	<											
Uranium (U) Dissolved	3	0.0057	0.00049	0.00085	0.00085	0.00054	0.00017	0.00019	11%	0.0028	0.0047	0.0047	0.00233	0.00423	0.0047	0.0047	0.0047	0.0047	8%											
Vanadium (V) Dissolved	-	-	-	-	-	-	-	0.0008	0.0009	12%	0.001	<0.01	<	-	0.0007	<0.001	<0.001	<0.001	<											
Zinc (Zn) Dissolved	5	-	<	<	<	<	<	<	<	0.02	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-	-	<	<	<	<	<	<	<	-	<0.04	<0.04	-	-	<0.01	<0.01	<0.01	<0.01	<											
Zinc (Zn) Dissolved	-																													

Notes: Refer to Table Endnotes (attached)

Table A3: Analytical Results for Volatile Organic Compounds (VOCs) in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-1S										CARO Analytical	
	Aquatic Life	Drinking Water	17-Mar-11										5081451-01	5121562-01
Sample ID														
Date Sampled														
Volatile Organic Compounds														
Benzene	4	0.005	<	<	<	<	<	<	<	<	<	<	<	<
Bromodichloromethane	-	0.0016	<	<	<	<	<	<	<	<	<	<	<	<
Bromoform	-	0.1	<	<	<	<	<	<	<	<	<	<	<	<
Bromomethane	-	51	-	-	-	-	-	-	-	-	0.003	-	-	-
Carbon Tetrachloride	0.13	0.005	<	<	<	<	<	<	<	<	<	<	<	<
Chlorobenzene	0.013	0.03	<	<	<	<	<	<	<	<	<	<	<	<
Dibromochloromethane	-	0.1	<	<	<	<	<	<	<	<	<	<	<	<
Chloroethane	-	0.046	<	<	<	<	<	<	<	<	<	<	<	<
Chloroform	0.02	0.1	<	<	<	<	<	<	<	<	<	<	<	<
Chloromethane	-	0.95	<	<	<	<	<	<	<	<	<	<	<	<
1,2-Dichlorobenzene	0.007	0.003	<	<	<	<	<	<	<	<	0.001	<	<	<
1,3-Dichlorobenzene	1.5	-	<	<	<	<	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	0.26	0.001	<	<	<	<	<	<	<	<	<	<	<	<
1,1-Dichloroethane	-	0.0037	<	<	<	<	<	<	<	<	<	<	<	<
1,2-Dichloroethane	1	0.005	<	<	<	<	<	<	<	<	<	<	<	<
1,1-Dichloroethylene	-	0.014	<	<	<	<	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethylene	-	0.37	<	<	<	<	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethylene	-	0.73	<	<	<	<	<	<	<	<	<	<	<	<
Dichloromethane	0.98	0.05	<	<	<	<	<	<	<	<	<	<	<	<
1,2-Dichloropropane	-	0.0099	<	<	<	<	<	<	<	<	<	<	<	<
cis-1,3-Dichloropropylene	-	-	<	<	<	<	<	<	<	<	<	<	<	<
trans-1,3-Dichloropropylene	-	-	<	<	<	<	<	<	<	<	<	<	<	<
1,3-Dichloropropene (cis & trans)	-	0.0067	<	<	<	<	<	<	<	<	<	<	<	<
Ethylbenzene	2	0.0024	<	<	<	<	<	<	<	<	<	<	<	<
Methyl t-butyl ether (MTBE)	34	0.015	<	<	<	<	<	<	<	<	<	<	<	<
Styrene	0.72	-	<	<	<	<	<	<	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	-	0.026	<	<	<	<	<	<	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	-	0.0034	<	<	<	<	<	<	<	<	<	<	<	<
Tetrachloroethylene	1.1	0.03	<	<	<	<	<	<	<	<	<	<	<	<
Toluene	0.39	0.024	<	<	<	<	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	-	10	<	<	<	<	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	-	0.012	<	<	<	<	<	<	<	<	<	<	<	<
Trichloroethylene	0.2	0.005	<	<	<	<	<	<	<	<	<	<	<	<
Trichlorofluoromethane	-	11	<	<	<	<	<	<	<	<	<	<	<	<
Phenyl Chloride	-	0.002	<	<	<	<	<	<	<	<	<	<	<	<
ortho-Xylene	-	-	<	<	<	<	<	<	<	<	<	<	<	<
meta- & para-Xylene	-	-	<	<	<	<	<	<	<	<	<	<	<	<
Arenes	-	0.3	<	<	<	<	<	<	<	<	<	<	<	<

Notes: Refer to Table Endnotes (attached)

Table A3: Analytical Results for Volatile Organic Compounds (VOCs) in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-1D												CARO Analytical			
Sample ID																		
Date Sampled	Aquatic Life	Drinking Water	17-Mar-11	03-Jul-12	06-May-13	11-Apr-14	RPD%	19-Jun-14	19-Apr-15	26-Jun-15	5081411-01	5081411-05	RPD%	5121562-02				
Volatile Organic Compounds																		
Benzene	4	0.005	<	<	<	<	*	<	<	<	<	DUP	*	<				
Bromodichloromethane	-	0.0016	<	<	<	<	*	-	<	<	<	<	*	<				
Bromofom	-	0.1	<	<	<	<	*	<	<	<	<	<	*	<				
Bromomethane	-	51	-	-	-	-	-	-	-	<	-	-	-	-				
Carbon Tetrachloride	0.13	0.005	<	<	<	<	*	-	<	<	<	<	*	<				
Chlorobenzene	0.013	0.03	<	<	<	<	*	<	<	<	<	<	*	<				
Dibromochloromethane	-	0.1	<	<	<	<	*	-	<	<	<	<	*	<				
Chloroethane	-	0.046	<	<	<	<	*	-	<	<	<	<	*	<				
Chloroform	0.02	0.1	<	<	<	<	*	-	<	<	<	<	*	<				
Chloromethane	-	0.95	<	<	<	<	*	-	<	<	<	<	*	<				
1,2-Dichlorobenzene	0.007	0.003	<	<	<	<	*	-	<	<	<	<	*	<				
1,3-Dichlorobenzene	1.5	-	<	<	<	<	*	-	<	<	<	<	*	<				
1,4-Dichlorobenzene	0.26	0.001	<	<	<	<	*	-	<	<	<	<	*	<				
1,1-Dichloroethane	-	0.0037	<	<	<	<	*	-	<	<	<	<	*	<				
1,2-Dichloroethane	1	0.005	<	<	<	<	*	-	<	<	<	<	*	<				
1,1-Dichloroethylene	-	0.014	<	<	<	<	*	-	<	<	<	<	*	<				
cis-1,2-Dichloroethylene	-	0.37	<	<	<	<	*	-	<	<	<	<	*	<				
trans-1,2-Dichloroethylene	-	0.73	<	<	<	<	*	-	<	<	<	<	*	<				
Dichloromethane	0.98	0.05	<	<	<	<	*	-	<	<	-	-	-	<				
1,2-Dichloropropane	-	0.0099	<	<	<	<	*	-	<	<	<	<	*	<				
cis-1,3-Dichloropropylene	-	-	<	<	<	<	*	-	<	<	<	<	*	<				
trans-1,3-Dichloropropylene	-	-	<	<	<	<	*	-	<	<	<	<	*	<				
1,3-Dichloropropene (cis & trans)	-	-	<	<	<	<	*	-	<	<	<	<	*	<				
Ethylbenzene	2	0.0024	<	<	<	<	*	<	<	<	-	-	-	-				
Methyl t-butyl ether (MTBE)	34	0.015	<	<	<	<	*	<	<	<	<	<	*	<				
Styrene	0.72	-	<	<	<	<	*	-	<	<	<	<	*	<				
1,1,1,2-Tetrachloroethane	-	0.026	<	<	<	<	*	-	<	<	<	<	*	<				
1,1,2,2-Tetrachloroethane	-	0.0034	<	<	<	<	*	-	<	<	-	-	-	-				
Tetrachloroethylene	1.1	0.03	<	<	<	<	*	-	<	<	<	<	*	<				
Toluene	0.39	0.024	<	<	<	<	*	<	<	<	<	<	*	<				
1,1,1-Trichloroethane	-	10	<	<	<	<	*	-	<	<	<	<	*	<				
1,1,2-Trichloroethane	-	0.012	<	<	<	<	*	-	<	<	<	<	*	<				
Trichloroethylene	0.2	0.005	<	<	<	<	*	-	<	<	<	<	*	<				
Trichlorofluoromethane	-	11	<	<	<	<	*	-	<	<	<	<	*	<				
Vinyl Chloride	-	0.002	<	<	<	<	*	-	<	<	<	<	*	<				
ortho-Xylene	-	-	<	<	<	<	*	-	<	<	-	-	*	<				
meta- & para-Xylene	-	-	<	<	<	<	*	-	<	<	-	-	-	-				
o-Xylenes	-	0.3	<	<	<	<	*	<	<	<	<	<	*	<				

Notes: Refer to Table Endnotes (attached)

Table A3: Analytical Results for Volatile Organic Compounds (VOCs) in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-2									
	Aquatic Life	Drinking Water	17-Mar-11	03-Jul-12	06-May-13	11-Apr-14	19-Jun-14	19-Apr-15	26-Jun-15	CARO Analytical		
Sample ID										5081451-02	5121562-03	
Date Sampled										21-Aug-15	28-Dec-15	
Volatile Organic Compounds												
Benzene	4	0.005	<	<	<	<	<	<	<	<	<	
Bromodichloromethane	-	0.0016	<	<	<	<	<	<	<	<	<	
Bromoform	-	0.1	<	<	<	<	<	<	<	<	<	
Bromomethane	-	51	-	-	-	-	-	-	<	-	-	
Carbon Tetrachloride	0.13	0.005	<	<	<	<	<	<	<	<	<	
Chlorobenzene	0.013	0.03	<	<	<	<	<	<	<	<	<	
Dibromochloromethane	-	0.1	<	<	<	<	<	<	<	<	<	
Chloroethane	-	0.046	<	<	<	<	<	<	<	<	<	
Chloroform	0.02	0.1	<	<	<	<	<	<	<	<	<	
Chloromethane	-	0.95	<	<	<	<	<	<	<	<	<	
1,2-Dichlorobenzene	0.007	0.003	<	<	<	<	<	<	<	<	<	
1,3-Dichlorobenzene	1.5	-	<	<	<	<	<	<	<	<	<	
1,4-Dichlorobenzene	0.26	0.001	<	<	<	<	<	<	<	<	<	
1,1-Dichloroethane	-	0.0037	<	<	<	<	<	<	<	<	<	
1,2-Dichloroethane	1	0.005	<	<	<	<	<	<	<	<	<	
1,1-Dichloroethylene	-	0.014	<	<	<	<	<	<	<	<	<	
cis-1,2-Dichloroethylene	-	0.37	<	<	<	<	<	<	<	<	<	
trans-1,2-Dichloroethylene	-	0.73	<	<	<	<	<	<	<	<	<	
Dichloromethane	0.98	0.05	<	<	<	<	<	<	<	-	<	
1,2-Dichloropropane	-	0.0099	<	<	<	<	<	<	<	<	<	
cis-1,3-Dichloropropylene	-	-	<	<	<	<	<	<	<	<	<	
trans-1,3-Dichloropropylene	-	-	<	<	<	<	<	<	<	<	<	
1,3-Dichloropropene (cis & trans)	-	-	<	<	<	<	<	<	<	<	<	
Ethylbenzene	2	0.0024	<	<	<	<	<	<	<	-	-	
Methyl t-butyl ether (MTBE)	34	0.015	<	<	<	<	<	<	<	<	<	
Styrene	0.72	-	<	<	<	<	<	<	<	<	<	
1,1,1,2-Tetrachloroethane	-	0.026	<	<	<	<	<	<	<	<	<	
1,1,2,2-Tetrachloroethane	-	0.0034	<	<	<	<	<	<	<	-	-	
Tetrachloroethylene	1.1	0.03	<	<	<	<	<	<	<	<	<	
Toluene	0.39	0.024	<	<	<	<	<	<	<	<	<	
1,1,1-Trichloroethane	-	10	<	<	<	<	<	<	<	<	<	
1,1,2-Trichloroethane	-	0.012	<	<	<	<	<	<	<	<	<	
Trichloroethylene	0.2	0.005	<	<	<	<	<	<	<	<	<	
Trichlorofluoromethane	-	11	<	<	<	<	<	<	<	<	<	
Phenyl Chloride	-	0.002	<	<	<	<	<	<	<	<	<	
ortho-Xylene	-	-	<	<	<	<	<	<	<	-	<	
meta- & para-Xylene	-	-	<	<	<	<	<	<	<	-	-	
Monochlorobenzenes	-	0.3	<	<	<	<	<	<	<	<	<	

Notes: Refer to Table Endnotes (attached)

Table A3: Analytical Results for Volatile Organic Compounds (VOCs) in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-3S									
Sample ID	Date Sampled	Aquatic Life	Drinking Water	16-Mar-11	03-Jul-12	06-May-13	11-Apr-14	19-Jun-14	19-Apr-15	26-Jun-15	CARO Analytical	
											5081451-03	5121562-04
Volatile Organic Compounds												
Benzene		4	0.005	<	<	<	<	<	<	<	<	<
Bromodichloromethane		-	0.0016	<	<	<	<	-	<	<	<	<
Bromoform		-	0.1	<	<	<	<	<	<	<	<	<
Bromomethane		-	51	-	-	-	-	-	-	<	-	-
Carbon Tetrachloride		0.13	0.005	<	<	<	<	-	<	<	<	<
Chlorobenzene		0.013	0.03	<	<	<	<	-	<	<	<	<
Dibromochloromethane		-	0.1	<	<	<	<	-	<	<	<	<
Chloroethane		-	0.046	<	<	<	<	-	<	<	<	<
Chloroform		0.02	0.1	<	<	<	<	-	<	<	<	<
Chloromethane		-	0.95	<	<	<	<	-	<	<	<	<
1,2-Dichlorobenzene		0.007	0.003	<	<	<	<	-	<	<	<	<
1,3-Dichlorobenzene		1.5	-	<	<	<	<	-	<	<	<	<
1,4-Dichlorobenzene		0.26	0.001	<	<	<	<	-	<	<	<	<
1,1-Dichloroethane		-	0.0037	<	<	<	<	-	<	<	<	<
1,2-Dichloroethane		1	0.005	<	<	<	<	-	<	<	<	<
1,1-Dichloroethylene		-	0.014	<	<	<	<	-	<	<	<	<
cis-1,2-Dichloroethylene		-	0.37	<	<	<	<	-	<	<	<	<
trans-1,2-Dichloroethylene		-	0.73	<	<	<	<	-	<	<	<	<
Dichloromethane		0.98	0.05	<	<	<	<	-	<	<	<	<
1,2-Dichloropropane		-	0.0099	<	<	<	<	-	<	<	<	<
cis-1,3-Dichloropropylene		-	-	<	<	<	<	-	<	<	<	<
trans-1,3-Dichloropropylene		-	-	<	<	<	<	-	<	<	<	<
1,3-Dichloropropene (cis & trans)		-	-	<	<	<	<	-	<	<	<	<
Ethylbenzene		2	0.0024	<	<	<	<	<	<	<	<	<
Methyl t-butyl ether (MTBE)		34	0.015	<	<	<	<	<	<	<	<	<
Styrene		0.72	-	<	<	<	<	-	<	<	<	<
1,1,1,2-Tetrachloroethane		-	0.026	<	<	<	<	-	<	<	<	<
1,1,2,2-Tetrachloroethane		-	0.0034	<	<	<	<	-	<	<	<	<
Tetrachloroethylene		1.1	0.03	<	<	<	<	-	<	<	<	<
Toluene		0.39	0.024	<	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane		-	10	<	<	<	<	-	<	<	<	<
1,1,2-Trichloroethane		-	0.012	<	<	<	<	-	<	<	<	<
Trichloroethylene		0.2	0.005	<	<	<	<	-	<	<	<	<
Trichlorofluoromethane		-	11	<	<	<	<	-	<	<	<	<
Vinyl Chloride		-	0.002	<	<	<	<	-	<	<	<	<
ortho-Xylene		-	-	<	<	<	<	-	<	<	<	<
meta- & para-Xylene		-	-	<	<	<	<	-	<	<	<	<
Monocyclic Aromatics		-	0.3	<	<	<	<	<	<	<	<	<

Notes: Refer to Table Endnotes (attached)

Table A3: Analytical Results for Volatile Organic Compounds (VOCs) in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-3D										CARO Analytical	
Sample ID	Aquatic Life	Drinking Water	17-Mar-11	03-Jul-12	06-May-13	11-Apr-14	19-Jun-14	19-Apr-15	RPD%	26-Jun-15	21-Aug-15	5121562-05		
Date Sampled														
Volatile Organic Compounds								DUP						
Benzene	4	0.005	<	<	<	<	<	<	*	<	<	<		
Bromodichloromethane	-	0.0016	<	<	<	<	-	<	*	<	<	<		
Bromoform	-	0.1	<	<	<	<	<	<	*	<	<	<		
Bromomethane	-	51	-	-	-	-	-	-	-	<	-	-		
Carbon Tetrachloride	0.13	0.005	<	<	<	<	-	<	*	<	<	<		
Chlorobenzene	0.013	0.03	<	<	<	<	-	<	*	<	<	<		
Dibromochloromethane	-	0.1	<	<	<	<	-	<	*	<	<	<		
Chloroethane	-	0.046	<	<	<	<	-	<	*	<	<	<		
Chloroform	0.02	0.1	<	<	<	<	-	<	*	<	<	<		
Chloromethane	-	0.95	<	<	<	<	-	<	*	<	<	<		
1,2-Dichlorobenzene	0.007	0.003	<	<	<	<	-	<	*	<	<	<		
1,3-Dichlorobenzene	1.5	-	<	<	<	<	-	<	*	<	<	<		
1,4-Dichlorobenzene	0.26	0.001	<	<	<	<	-	<	*	<	<	<		
1,1-Dichloroethane	-	0.0037	<	<	<	<	-	<	*	<	<	<		
1,2-Dichloroethane	1	0.005	<	<	<	<	-	<	*	<	<	<		
1,1-Dichloroethylene	-	0.014	<	<	<	<	-	<	*	<	<	<		
cis-1,2-Dichloroethylene	-	0.37	<	<	<	<	-	<	*	<	<	<		
trans-1,2-Dichloroethylene	-	0.73	<	<	<	<	-	<	*	<	<	<		
Dichloromethane	0.98	0.05	<	<	<	<	-	<	*	<	-	<		
1,2-Dichloropropane	-	0.0099	<	<	<	<	-	<	*	<	<	<		
cis-1,3-Dichloropropylene	-	-	<	<	<	<	-	<	*	<	<	<		
trans-1,3-Dichloropropylene	-	-	<	<	<	<	-	<	*	<	<	<		
1,3-Dichloropropene (cis & trans)	-	-	<	<	<	<	-	<	*	<	-	-		
Ethylbenzene	2	0.0024	<	<	<	<	<	<	*	<	<	<		
Methyl t-butyl ether (MTBE)	34	0.015	<	<	<	<	<	<	*	<	<	<		
Styrene	0.72	-	<	<	<	<	-	<	*	<	<	<		
1,1,1,2-Tetrachloroethane	-	0.026	<	<	<	<	-	<	*	<	<	<		
1,1,2,2-Tetrachloroethane	-	0.0034	<	<	<	<	-	<	*	<	-	-		
Tetrachloroethylene	1.1	0.03	<	<	<	<	-	<	*	<	<	<		
Toluene	0.39	0.024	<	<	<	<	<	<	*	0.0041	<	<		
1,1,1-Trichloroethane	-	10	<	<	<	<	-	<	*	<	<	<		
1,1,2-Trichloroethane	-	0.012	<	<	<	<	-	<	*	<	<	<		
Trichloroethylene	0.2	0.005	<	<	<	<	-	<	*	<	<	<		
Trichlorofluoromethane	-	11	<	<	<	<	-	<	*	<	<	<		
Phenyl Chloride	-	0.002	<	<	<	<	-	<	*	<	<	<		
ortho-Xylene	-	-	<	<	<	<	-	<	*	<	-	-		
meta- & para-Xylene	-	-	<	<	<	<	-	<	*	<	-	-		
Phenol	-	0.3	<	<	<	<	<	<	*	<	<	<		

Notes: Refer to Table Endnotes (attached)

Table A3: Analytical Results for Volatile Organic Compounds (VOCs) in Groundwater

Sample Location		CSR Standards ⁽¹⁾		MW-4					
Sample ID		Aquatic Life	Drinking Water					CARO Analytical	
Date Sampled									
Volatile Organic Compounds									
Benzene	4	0.005	<	<	<	5081411-02	5121562-06	5121562-10	RPD
Bromodichloromethane	-	0.0016	<	<	<				*
Bromoform	-	0.1	<	<	<				*
Bromomethane	-	51	<	<	<				*
Carbon Tetrachloride	0.13	0.005	<	<	<				*
Chlorobenzene	0.013	0.03	<	<	<				*
Dibromochloromethane	-	0.1	<	<	<				*
Chloroethane	-	0.046	<	<	<				*
Chloroform	0.02	0.1	<	<	<				*
Chloromethane	-	0.95	<	<	<				*
1,2-Dichlorobenzene	0.007	0.003	<	<	<				*
1,3-Dichlorobenzene	1.5	-	<	<	<				*
1,4-Dichlorobenzene	0.26	0.001	<	<	<				*
1,1-Dichloroethane	-	0.0037	<	<	<				*
1,2-Dichloroethane	1	0.005	<	<	<				*
1,1-Dichloroethylene	-	0.014	<	<	<				*
cis-1,2-Dichloroethylene	-	0.37	<	<	<				*
trans-1,2-Dichloroethylene	-	0.73	<	<	<				*
Dichloromethane	0.98	0.05	<	<	<				*
1,2-Dichloropropane	-	0.0099	<	<	<				*
cis-1,3-Dichloropropylene	-	-	<	<	<				*
trans-1,3-Dichloropropylene	-	-	<	<	<				*
1,3-Dichloropropene (cis & trans)	-	-	<	<	<				*
Ethylbenzene	2	0.0024	<	<	<				*
Methyl t-butyl ether (MTBE)	34	0.015	<	<	<				*
Styrene	0.72	-	<	<	<				*
1,1,1,2-Tetrachloroethane	-	0.026	<	<	<				*
1,1,2,2-Tetrachloroethane	-	0.0034	<	<	<				*
Tetrachloroethylene	1.1	0.03	<	<	<				*
Toluene	0.39	0.024	<	<	0.0016				*
1,1,1-Trichloroethane	-	10	<	<	<				*
1,1,2-Trichloroethane	-	0.012	<	<	<				*
Trichloroethylene	0.2	0.005	<	<	<				*
Trichlorofluoromethane	-	11	<	<	<				*
Phenyl Chloride	-	0.002	<	<	<				*
Ortho-Xylene	-	-	<	<	<				-
Meta- & para-Xylene	-	-	<	<	<				-
Monochlorobenzenes	-	0.3	<	<	<				*

Notes: Refer to Table Endnotes (attached)

Table A3: Analytical Results for Volatile Organic Compounds (VOCs) in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-5S						
Sample ID	Aquatic Life	Drinking Water							CARO Analytical
Date Sampled									
Volatile Organic Compounds									
Benzene	4	0.005	<	<	<	<	<	<	<
Bromodichloromethane	-	0.0016	<	<	<	<	<	<	<
Bromoform	-	0.1	<	<	<	<	<	<	<
Bromomethane	-	51	-	-	-	-	-	-	-
Carbon Tetrachloride	0.13	0.005	<	<	<	<	<	<	<
Chlorobenzene	0.013	0.03	<	<	<	<	<	<	<
Dibromochloromethane	-	0.1	<	<	<	<	<	<	<
Chloroethane	-	0.046	<	<	<	<	<	<	<
Chloroform	0.02	0.1	<	<	<	<	<	<	<
Chloromethane	-	0.95	<	<	<	<	<	<	<
1,2-Dichlorobenzene	0.007	0.003	<	<	<	<	<	<	<
1,3-Dichlorobenzene	1.5	-	<	<	<	<	<	<	<
1,4-Dichlorobenzene	0.26	0.001	<	<	<	<	<	<	<
1,1-Dichloroethane	-	0.0037	<	<	<	<	<	<	<
1,2-Dichloroethane	1	0.005	<	<	<	<	<	<	<
1,1-Dichloroethylene	-	0.014	<	<	<	<	<	<	<
cis-1,2-Dichloroethylene	-	0.37	0.0013	<	<	<	<	<	<
trans-1,2-Dichloroethylene	-	0.73	<	<	<	<	<	<	<
Dichloromethane	0.98	0.05	<	<	<	<	<	<	<
1,2-Dichloropropane	-	0.0099	<	<	<	<	<	<	<
cis-1,3-Dichloropropylene	-	-	<	<	<	<	<	<	<
trans-1,3-Dichloropropylene	-	-	<	<	<	<	<	<	<
1,3-Dichloropropene (cis & trans)	-	-	<	<	<	<	<	<	<
Ethylbenzene	2	0.0024	<	<	<	<	<	<	<
Methyl t-butyl ether (MTBE)	34	0.015	<	<	<	<	<	<	<
Styrene	0.72	-	<	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	-	0.026	<	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	-	0.0034	<	<	<	<	<	<	<
Tetrachloroethylene	1.1	0.03	<	<	<	<	<	<	<
Toluene	0.39	0.024	<	<	<	<	<	<	<
1,1,1-Trichloroethane	-	10	<	<	<	<	<	<	<
1,1,2-Trichloroethane	-	0.012	<	<	<	<	<	<	<
Trichloroethylene	0.2	0.005	<	<	<	<	<	<	<
Trichlorofluoromethane	-	11	<	<	<	<	<	<	<
Phenyl Chloride	-	0.002	<	<	<	<	<	<	<
Ortho-Xylene	-	-	<	<	<	<	<	<	<
Meta- & para-Xylene	-	-	<	<	<	<	<	<	<
Xylenes	-	0.3	<	<	<	<	<	<	<

Notes: Refer to Table Endnotes (attached)

Table A3: Analytical Results for Volatile Organic Compounds (VOCs) in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-5D							GW12-1 MOE WELL TAG 83527		Field Blanks	
Sample ID	Aquatic Life	Drinking Water										CARO Analytical	
Date Sampled													
Volatile Organic Compounds													
Benzene	4	0.005	<	<	<	<	<	<	<	<	<	<	<
Bromodichloromethane	-	0.0016	<	<	<	<	<	<	<	<	<	<	<
Bromoform	-	0.1	<	<	<	<	<	<	<	<	<	<	<
Bromomethane	-	51	-	-	-	-	-	-	-	-	-	-	-
Carbon Tetrachloride	0.13	0.005	<	<	<	<	<	<	<	<	<	<	<
Chlorobenzene	0.013	0.03	<	<	<	<	<	<	<	<	<	<	<
Dibromochloromethane	-	0.1	<	<	<	<	<	<	<	<	<	<	<
Chloroethane	-	0.046	<	<	<	<	<	<	<	<	<	<	<
Chloroform	0.02	0.1	<	<	<	<	<	<	<	<	<	0.0088	<
Chloromethane	-	0.95	<	<	<	<	<	<	<	<	<	<	<
1,2-Dichlorobenzene	0.007	0.003	<	<	<	<	<	<	<	<	<	<	<
1,3-Dichlorobenzene	1.5	-	<	<	<	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	0.26	0.001	<	<	<	<	<	<	<	<	<	<	<
1,1-Dichloroethane	-	0.0037	<	<	<	<	<	<	<	<	<	<	<
1,2-Dichloroethane	1	0.005	<	<	<	<	<	<	<	<	<	<	<
1,1-Dichloroethylene	-	0.014	<	<	<	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethylene	-	0.37	<	<	<	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethylene	-	0.73	<	<	<	<	<	<	<	<	<	<	<
Dichloromethane	0.98	0.05	<	<	<	<	<	<	<	<	<	<	<
1,2-Dichloropropane	-	0.0099	<	<	<	<	<	<	<	<	<	<	<
cis-1,3-Dichloropropylene	-	-	<	<	<	<	<	<	<	<	<	<	<
trans-1,3-Dichloropropylene	-	-	<	<	<	<	<	<	<	<	<	<	<
1,3-Dichloropropene (cis & trans)	-	-	<	<	<	<	<	<	<	<	<	<	<
Ethylbenzene	2	0.0024	<	<	<	<	<	<	<	<	<	<	<
Methyl t-butyl ether (MTBE)	34	0.015	<	<	<	<	<	<	<	<	<	<	<
Styrene	0.72	-	<	<	<	<	<	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	-	0.026	<	<	<	<	<	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane	-	0.0034	<	<	<	<	<	<	<	<	<	<	<
Tetrachloroethylene	1.1	0.03	<	<	<	<	<	<	<	<	<	<	<
Toluene	0.39	0.024	<	<	<	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	-	10	<	<	<	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	-	0.012	<	<	<	<	<	<	<	<	<	<	<
Trichloroethylene	0.2	0.005	<	<	<	<	<	<	<	<	<	<	<
Trichlorofluoromethane	-	11	<	<	<	<	<	<	<	<	<	<	<
Phenyl Chloride	-	0.002	<	<	<	<	<	<	<	<	<	<	<
Ortho-Xylene	-	-	<	<	<	<	<	<	<	<	<	<	<
Meta- & para-Xylene	-	-	<	<	<	<	<	<	<	<	<	<	<
Unlabeled VOCs	-	0.3	<	<	<	<	<	<	<	<	<	<	<

Notes: Refer to Table Endnotes (attached)

Table A4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Groundwater

Sample Location		CSR Standards ⁽¹⁾		MW-1S											
Sample ID		Aquatic Life	Drinking Water												CARO Analytical
Date Sampled															
Hydrocarbons mg/L															
EPH10-19	5	5													
EPH10-19 (SG)	5	5													
EPH19-32	-	-													
EPH19-32 (SG)	-	-													
LEPH	0.5	-													
HEPH	-	-													
Polycyclic Aromatic Hydrocarbons															
Acenaphthene	0.06	-													
Acenaphthylene	-	-													
Acridine	0.0005	-													
Anthracene	0.001	-													
Benz(a)anthracene	0.001	-													
Benzo(a)pyrene	0.0001	0.00001													
Benzo(b)fluoranthene	-	-													
Benzo(g,h,i)perylene	-	-													
Benzo(k)fluoranthene	-	-													
Chrysene	0.001	-													
Dibenz(a,h)anthracene	-	-													
Fluoranthene	0.002	-													
Fluorene	0.12	-													
Indeno(1,2,3-c,d)pyrene	-	-													
Naphthalene	0.01	-													
Phenanthrene	0.003	-													
Pyrene	0.0002	-													
Quinoline	0.034	-													
Glycols															
Diethylene Glycol	-	-													
Ethylene Glycol	1,920	-													
1,2-Propylene Glycol	5,000	-													

Notes: Refer to Table Endnotes (attached)

Table A4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-ID										CARO Analytical			
Sample ID	Aquatic Life	Drinking Water											5081411-01	20-Aug-15	5081411-05	5121562-02
Date Sampled																
Hydrocarbons mg/L																
EPH10-19	5	5	<	<	<	<	<	<	<	<	<	<	<	<	*	0.275
EPH10-19 (SG)	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EPH19-32	-	-	<	<	<	<	<	<	<	<	<	<	<	<	*	-
EPH19-32 (SG)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LEPH	0.5	-	<	<	<	<	<	<	<	<	<	<	<	<	*	0.256
HEPH	-	-	<	<	<	<	<	<	<	<	<	<	<	<	*	0.275
Polycyclic Aromatic Hydrocarbons																
Acenaphthene	0.06	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Acenaphthylene	-	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Acridine	0.0005	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Anthracene	0.001	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Benz(a)anthracene	0.001	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Benz(a)pyrene	0.0001	0.00001	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Benz(b)fluoranthene	-	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Benz(g,h,i)perylene	-	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Benz(k)fluoranthene	-	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Chrysene	0.001	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Dibenz(a,h)anthracene	-	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Fluoranthene	0.002	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Fluorene	0.12	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Indeno(1,2,3-c,d)pyrene	-	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Naphthalene	0.01	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Phenanthrene	0.003	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Pyrene	0.0002	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Quinoline	0.034	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Glycols																
Diethylene Glycol	-	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
Ethylene Glycol	1,920	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<
1,2-Propylene Glycol	5,000	-	<	<	<	<	<	<	<	<	<	<	<	<	*	<

Notes: Refer to Table Endnotes (attached)

Table A4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-2											CARO Analytical	
Sample ID													5081451-02	5121562-03	
Date Sampled	Aquatic Life	Drinking Water	17-Mar-11	13-Feb-11	03-JUL-12	06-May-13	11-Apr-14	19-Jun-14	19-Apr-15	26-Jun-15			21-Aug-15	28-Dec-15	
Hydrocarbons mg/L															
EPH10-19	5	5	<	-	<	<	<	<	-	-			<	<	
EPH10-19 (SG)	5	5	-	-	-	-	-	-	-	-			-	-	
EPH19-32	-	-	<	-	<	<	<	<	-	-			0.175	-	
EPH19-32 (SG)	-	-	-	-	-	-	-	-	-	-			-	-	
LEPH	0.5	-	<	-	<	<	<	<	<	<			<	<	
HEPH	-	-	<	-	<	<	<	<	<	<			0.175	<	
Polycyclic Aromatic Hydrocarbons															
Acenaphthene	0.06	-	<	-	<	<	<	<	<	<			<	<	
Acenaphthylene	-	-	<	-	<	<	<	<	<	<			<	<	
Acridine	0.0005	-	<	-	<	<	<	<	<	<			<	<	
Anthracene	0.001	-	<	-	<	<	<	<	<	<			<	<	
Benz(a)anthracene	0.001	-	<	-	<	<	<	<	<	<			<	<	
Benzo(a)pyrene	0.0001	0.00001	<	-	<	<	<	<	<	<			<	<	
Benzo(b)fluoranthene	-	-	<	-	<	<	<	<	<	<			<	<	
Benzo(g,h,i)perylene	-	-	<	-	<	<	<	<	<	<			<	<	
Benzo(k)fluoranthene	-	-	<	-	<	<	<	<	<	<			<	<	
Chrysene	0.001	-	<	-	<	<	<	<	<	<			<	<	
Dibenz(a,h)anthracene	-	-	<	-	<	<	<	<	<	<			<	<	
Fluoranthene	0.002	-	<	-	<	<	<	<	<	<			<	<	
Fluorene	0.12	-	<	-	<	<	<	<	<	<			<	<	
Indeno(1,2,3-c,d)pyrene	-	-	<	-	<	<	<	<	<	<			<	<	
Naphthalene	0.01	-	<	-	<	<	<	<	<	<			<	<	
Phenanthrene	0.003	-	<	-	<	<	<	<	<	<			<	<	
Pyrene	0.0002	-	<	-	<	<	<	<	<	<			<	<	
Quinoline	0.034	-	<	-	<	<	<	<	<	<			<	<	
Glycols															
Diethylene Glycol	-	-	-	<	<	<	<	-	-	-			<	<	
Ethylene Glycol	1,920	-	-	<	<	<	<	-	-	-			<	<	
1,2-Propylene Glycol	5,000	-	-	<	<	<	<	-	-	-			<	<	

Notes: Refer to Table Endnotes (attached)

Table A4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-3S												
Sample ID														CARO Analytical	
	Aquatic Life	Drinking Water	16-Mar-11	13-Feb-11	03-Jul-12	06-May-13	11-Apr-14	19-Jun-14	19-Apr-15	26-Jun-15	21-Aug-15	5081451-03	5121562-04		
Date Sampled															
Hydrocarbons mg/L															
EPH10-19	5	5	<	-	<	<	<	<	-	-	<	<	<		
EPH10-19 (SG)	5	5	-	-	-	-	-	-	-	-	-	-	-		
EPH19-32	-	-	<	-	<	<	<	<	-	-	<	<	-		
EPH19-32 (SG)	-	-	-	-	-	-	-	-	-	-	-	-	-		
LEPH	0.5	-	<	-	<	<	<	<	<	<	<	<	<		
HEPH	-	-	<	-	<	<	<	<	<	<	<	<	<		
Polycyclic Aromatic Hydrocarbons															
Acenaphthene	0.06	-	<	-	<	<	<	<	<	<	<	<	<		
Acenaphthylene	-	-	<	-	<	<	<	<	<	<	<	<	<		
Acridine	0.0005	-	<	-	<	<	<	<	<	<	<	<	<		
Anthracene	0.001	-	<	-	<	<	<	<	<	<	<	<	<		
Benzo(a)anthracene	0.001	-	<	-	<	<	<	<	<	<	<	<	<		
Benzo(a)pyrene	0.0001	0.00001	<	-	<	<	<	<	<	<	<	<	<		
Benzo(b)fluoranthene	-	-	<	-	<	<	<	<	<	<	<	<	<		
Benzo(g,h,i)perylene	-	-	<	-	<	<	<	<	<	<	<	<	<		
Benzo(k)fluoranthene	-	-	<	-	<	<	<	<	<	<	<	<	<		
Chrysene	0.001	-	<	-	<	<	<	<	<	<	<	<	<		
Dibenz(a,h)anthracene	-	-	<	-	<	<	<	<	<	<	<	<	<		
Fluoranthene	0.002	-	<	-	<	<	<	<	<	<	<	<	<		
Fluorene	0.12	-	<	-	<	<	<	<	<	<	<	<	<		
Indeno(1,2,3-c,d)pyrene	-	-	<	-	<	<	<	<	<	<	<	<	<		
Naphthalene	0.01	-	<	-	<	<	<	<	<	0.00008	0.00031	<	<		
Phenanthrene	0.003	-	<	-	<	<	<	<	<	<	<	<	<		
Pyrene	0.0002	-	<	-	<	<	<	<	<	<	<	<	<		
Quinoline	0.034	-	<	-	<	<	<	<	<	<	<	<	<		
Glycols															
Diethylene Glycol	-	-	-	<	<	<	<	<	-	-	<	<	<		
Ethylene Glycol	1,920	-	-	<	<	<	<	<	-	-	<	<	<		
1,2-Propylene Glycol	5,000	-	-	<	<	<	<	<	-	-	<	<	<		

Notes: Refer to Table Endnotes (attached)

Table A4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Groundwater

Sample Location		CSR Standards ⁽¹⁾		MW-3D												CARO Analytical	
Sample ID		Aquatic Life	Drinking Water													5081451-03	5121562-05
Date Sampled	Hydrocarbons mg/L															21-Aug-15	28-Dec-15
EPH10-19	5	5	5	<	<	<	<	<	<	<	<	<	<	*	-	<	<
EPH10-19 (SG)	5	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EPH19-32	-	-	-	<	<	<	<	<	<	<	<	<	<	*	-	<	-
EPH19-32 (SG)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LEPH	0.5	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
HEPH	-	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Polycyclic Aromatic Hydrocarbons														*			
Acenaphthene	0.06	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Acenaphthylene	-	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Acridine	0.0005	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Anthracene	0.001	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Benz(a)anthracene	0.001	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Benzo(a)pyrene	0.0001	0.00001	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Benzo(b)fluoranthene	-	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Benzo(g,h,i)perylene	-	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Benzo(k)fluoranthene	-	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Chrysene	0.001	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Dibenz(a,h)anthracene	-	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Fluoranthene	0.002	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Fluorene	0.12	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Indeno(1,2,3-c,d)pyrene	-	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Naphthalene	0.01	-	-	<	<	<	<	<	<	<	<	<	<	*	0.00008	<	<
Phenanthrene	0.003	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Pyrene	0.0002	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Quinoline	0.034	-	-	<	<	<	<	<	<	<	<	<	<	*	<	<	<
Glycols														*			
Diethylene Glycol	-	-	-	<	<	<	<	<	<	<	<	<	<	*	-	<	<
Ethylene Glycol	1,920	-	-	<	<	<	<	<	<	<	<	<	<	*	-	<	<
1,2-Propylene Glycol	5,000	-	-	<	<	<	<	<	<	<	<	<	<	*	-	<	<

Notes: Refer to Table Endnotes (attached)

Table A4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-4						
Sample ID							CARO Analytical		
Date Sampled	Aquatic Life	Drinking Water	19-Sep-13	26-Jun-15	20-Aug-15	5081411-02	5121562-06	5121562-10	RPD
Hydrocarbons mg/L									
EPH10-19	5	5	<	-	<		<	<	*
EPH10-19 (SG)	5	5	-	-	-		-	-	-
EPH19-32	-	-	<	-	<		-	-	-
EPH19-32 (SG)	-	-	-	-	-		-	-	-
LEPH	0.5	-	<	<	<		<	<	*
HEPH	-	-	<	<	<		<	<	*
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	0.06	-	<	<	<		<	<	*
Acenaphthylene	-	-	<	<	<		<	<	*
Acridine	0.0005	-	<	<	<		<	<	*
Anthracene	0.001	-	<	<	<		<	<	*
Benz(a)anthracene	0.001	-	<	<	<		<	<	*
Benzo(a)pyrene	0.0001	0.00001	<	<	<		<	<	*
Benzo(b)fluoranthene	-	-	<	<	<		<	<	*
Benzo(g,h,i)perylene	-	-	<	<	<		<	<	*
Benzo(k)fluoranthene	-	-	<	<	<		<	<	*
Chrysene	0.001	-	<	<	<		<	<	*
Dibenz(a,h)anthracene	-	-	<	<	<		<	<	*
Fluoranthene	0.002	-	<	<	<		<	<	*
Fluorene	0.12	-	<	<	<		<	<	*
Indeno(1,2,3-c,d)pyrene	-	-	<	<	<		<	<	*
Naphthalene	0.01	-	<	0.00007	<		<	<	*
Phenanthrene	0.003	-	<	<	<		<	<	*
Pyrene	0.0002	-	<	<	<		<	<	*
Quinoline	0.034	-	<	<	<		<	<	*
Glycols									
Diethylene Glycol	-	-	<	-	<		<	<	*
Ethylene Glycol	1,920	-	<	-	<		<	<	*
1,2-Propylene Glycol	5,000	-	<	-	<		<	<	*

Notes: Refer to Table Endnotes (attached)

Table A4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Groundwater

Sample Location	CSR Standards ⁽¹⁾		MW-5S						
	Aquatic Life	Drinking Water							CARO Analytical
Sample ID									
Date Sampled									
Hydrocarbons mg/L			19-Sep-13	11-Apr-14	19-Jun-14	19-Apr-15	26-Jun-15	5081411-03	5121562-07
EPH10-19	5	5	<	<	<	-	-	<	<
EPH10-19 (SG)	5	5	-	-	-	-	-	-	-
EPH19-32	-	-	<	0.51	<	-	-	0.143	-
EPH19-32 (SG)	-	-	-	-	-	-	-	-	-
LEPH	0.5	-	<	<	<	<	<	<	<
HEPH	-	-	<	0.51	<	<	<	0.143	<
Polycyclic Aromatic Hydrocarbons									
Acenaphthene	0.06	-	<	<	<	<	<	<	<
Acenaphthylene	-	-	<	<	<	<	<	<	<
Acridine	0.0005	-	<	<	<	<	<	<	<
Anthracene	0.001	-	<	<	<	<	<	<	<
Benzo(a)anthracene	0.001	-	<	<	<	<	<	<	<
Benzo(a)pyrene	0.0001	0.00001	<	<	<	<	<	<	<
Benzo(b)fluoranthene	-	-	<	<	<	<	<	<	<
Benzo(g,h,i)perylene	-	-	<	<	<	<	<	<	<
Benzo(k)fluoranthene	-	-	<	<	<	<	<	<	<
Chrysene	0.001	-	<	<	<	<	<	<	<
Dibenz(a,h)anthracene	-	-	<	<	<	<	<	<	<
Fluoranthene	0.002	-	<	<	<	<	<	<	<
Fluorene	0.12	-	<	<	<	<	<	<	<
Indeno(1,2,3-c,d)pyrene	-	-	<	<	<	<	<	<	<
Naphthalene	0.01	-	<	<	<	<	<	<	<
Phenanthrene	0.003	-	<	<	<	<	<	<	<
Pyrene	0.0002	-	<	<	<	<	<	<	<
Quinoline	0.034	-	<	<	<	<	<	<	<
Glycols									
Diethylene Glycol	-	-	<	<	-	-	-	<	<
Ethylene Glycol	1,920	-	<	<	-	-	-	<	<
1,2-Propylene Glycol	5,000	-	<	<	-	-	-	<	<

Notes: Refer to Table Endnotes (attached)

Table A4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Groundwater

Sample Location		CSR Standards ⁽¹⁾		MW-5D							GW12-1 MOE WELL TAG 83527		Field Blanks	
Sample ID													5081451-05	5121562-09
Date Sampled		Aquatic Life	Drinking Water										21-Aug-15	28-Dec-15
Hydrocarbons mg/L														
EPH10-19	5	5	5	<	<	<	<	<	<	<	<	<	<	<
EPH10-19 (SG)	5	5	5	-	-	-	-	-	-	-	-	-	-	-
EPH19-32	-	-	-	<	<	<	<	<	<	<	<	<	<	<
EPH19-32 (SG)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LEPH	0.5	-	-	<	<	<	<	<	<	<	<	<	<	<
HEPH	-	-	-	<	<	<	<	<	<	<	<	<	<	<
Polycyclic Aromatic Hydrocarbons														
Acenaphthene	0.06	-	-	<	<	<	<	<	<	<	<	<	<	<
Acenaphthylene	-	-	-	<	<	<	<	<	<	<	<	<	<	<
Acridine	0.0005	-	-	<	<	<	<	<	<	<	<	<	<	<
Anthracene	0.001	-	-	<	<	<	<	<	<	<	<	<	<	<
Benz(a)anthracene	0.001	-	-	<	<	<	<	<	<	<	<	<	<	<
Benzo(a)pyrene	0.0001	0.00001	-	<	<	<	<	<	<	<	<	<	<	<
Benzo(b)fluoranthene	-	-	-	<	<	<	<	<	<	<	<	<	<	<
Benzo(g,h,i)perylene	-	-	-	<	<	<	<	<	<	<	<	<	<	<
Benzo(k)fluoranthene	-	-	-	<	<	<	<	<	<	<	<	<	<	<
Chrysene	0.001	-	-	<	<	<	<	<	<	<	<	<	<	<
Dibenz(a,h)anthracene	-	-	-	<	<	<	<	<	<	<	<	<	<	<
Fluoranthene	0.002	-	-	<	<	<	<	<	<	<	<	<	<	<
Fluorene	0.12	-	-	<	<	<	<	<	<	<	<	<	<	<
Indeno(1,2,3-c,d)pyrene	-	-	-	<	<	<	<	<	<	<	<	<	<	<
Naphthalene	0.01	-	-	<	<	<	<	<	<	<	<	<	<	<
Phenanthrene	0.003	-	-	<	<	<	<	<	<	<	<	<	<	<
Pyrene	0.0002	-	-	<	<	<	<	<	<	<	<	<	<	<
Quinoline	0.034	-	-	<	<	<	<	<	<	<	<	<	<	<
Glycols														
Diethylene Glycol	-	-	-	<	<	<	<	<	<	<	<	<	<	<
Ethylene Glycol	1,920	-	-	<	<	<	<	<	<	<	<	<	<	<
1,2-Propylene Glycol	5,000	-	-	<	<	<	<	<	<	<	<	<	<	<

Notes: Refer to Table Endnotes (attached)

Analytical Table Endnotes: Analytical Results for Groundwater

All concentrations in milligrams per litre (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 the laboratory detection limit.
- (1) A compendium of CSR Schedules 6 and 10 guidelines with respect to Drinking Water (DW) and Freshwater Aquatic Life (AW).
- (2) Standard is dissolved chloride-dependent.

<u>BOLD, UNDERLINE</u>	Laboratory Detection Limit exceeds one or more applicable Standards
BOLD, BLUE SHADING	Concentration greater than CSR Drinking Water (DW) Standard
BOLD, RED TEXT	Concentration greater than CSR Aquatic Life (AW) Standard

Appendix B: Surface Water Quality Data

Table B1: Analytical Results for Nutrients in Surface Water

Sample Location		SURFACE WATER ON SITE (WEST PROPERTY LINE)																CARO Analytical			
Sample ID		SW-1																			
Date Sampled																					
Physical Tests																					
Colour, True (Colour Units)		13-Feb-12	03-JUL-12	05-May-13	10-Mar-14	19-Mar-14	05-Jun-14	30-Jun-14	09-Apr-15	07-Jun-15	13-Jun-15	18-Jun-15	24-Jun-15	30-Jun-15	509213-02 01-Sep-15	509208-02 25-Sep-15	5101163-03 16-Oct-15	5110966-02 14-Nov-15	5111820-03 26-Nov-15	5120641-02 08-Dec-15	5121033-03 15-Dec-15
Conductivity		<5.0	<5	<5.0	<5.0	<5.0	<5.0	<5	<5	-	-	-	-	-	<5	<5	<5	<5	<5	5	<5
Hardness (as CaCO ₃)		257	504	333	577	550	547	605	380	606	612	625	630	647	715	763	869	514	355	355	430
pH		7.95	7.24	7.71	7.85	7.94	7.79	8.08	7.43	7.43	7.55	7.48	7.39	7.52	7.88	7.73	7.59	7.28	7.38	7.38	7.36
Total Suspended Solids		-	-	-	<3	11	50	<3	<2	-	-	-	-	-	<2	<3	<2	<2	15	15	<2
Total Dissolved Solids		171	488	212	340	316	379	410	223	359	364	363	372	373	-	518	560	432	318	237	279
Turbidity (NTU)		62.8	0.96	70.2	8.35	24.8	27.5	0.74	<0.5	-	-	-	-	-	1.4	0.8	0.3	1.3	0.5	32.5	1.8
Anions and Nutrients																					
Alkalinity Total (as CaCO ₃)		68.5	45.5	80.1	80.2	89.9	126	183	110	181	195	196	200	197	160	111	128	57	89	52	55
Acid Sensitivity		Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Chloride (Cl)		6.1	10.2	4.62	86.6	59.7	22.3	12.6	6.06	22.0	23.0	22.8	23.1	23.7	16.8	41.5	49	28.3	18.3	16.2	24.4
Fluoride (F)		0.042	<	0.034	0.054	0.055	0.056	0.062	0.07	0.07	0.09	0.06	0.05	0.08	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrate (as N)		1.4	1.7	1.5	-	1.6	1.7	1.8	1.6	1.8	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.7	1.7	1.5	1.6
Nitrite (as N)		2.3	34.9	1.4	3.3	7.84	10.6	9.83	0.753	1.680	1.550	1.570	1.840	2.120	2.47	5.98	5.26	5.5	6.02	2.46	1.15
Chlorate (as ClO ₃)																					
Chlorite (as ClO ₂)																					
Chloride (Cl)				0.0094					<0.0095												
Sulfate (SO ₄)			0.02		0.0315	0.201	0.24	0.222		0.032	0.045	0.059	0.076	0.098	0.072	0.047	0.014	0.512	0.098	0.048	0.084
Sulfate (SO ₄) H 0-30 mg/L					66.4																
Sulfate (SO ₄) H 31 - 75 mg/L																					
Sulfate (SO ₄) H 76 - 180 mg/L		49.2		75.9																92.2	113
Sulfate (SO ₄) H 181 - 250 mg/L			60.5			66.6			70.9									159			
Sulfate (SO ₄) H > 250 mg/L							87.9	97.8		94	93.8	94.8	97	96.9	156	199	217				
TBD																					

Notes: Refer to Table Footnotes (attached)

Table B1: Analytical Results for Nutrients in Surface Water

Sample Location		HEAD OF TRIBUTARY																		
		SW-2																		
Sample ID		CAPO																		
Date Sampled		51107-01																		
Physical Tests		511330-01																		
15 ⁽⁴⁾ units absolute, or 5 units above background		511510-01																		
Colour, True (Colour Units)		511820-01																		
Conductivity		10	25.4	6.8	12.7	18.5	22.8	26.4	25.6	3%	19.9	38.3	23	-	-	26	17	20	15	14
Hardness (as CaCO3)		21.9	35.6	22.6	19.8	35.6	29.8	31.6	29.8	6%	32	32	24	33	31	34	22	19	20	22
pH		7.16	15.6	8.81	7.22	11.9	10.9	8.87	10	12%	9.76	8.47	8.04	9.5	9	11.6	8.42	6.45	10.4	8.56
25 mg/L above background (24-hr during clear flow)		6.58	7.45	6.67	6.77	7.44	6.94	6.83	6.44	6%	6.38	6.85	6.13	6.02	6.33	6	6.47	6.45	6.35	6.48
Total Suspended Solids		-	-	-	<3	4.1	23.9	31.7	30.3	5%	369	6.4	8	-	-	<2	<2	<2	<2	<2
Total Dissolved Solids		22	35	22	23	34	34	39	36	8%	41	60	12	15	15	25	22	18	19	27
Turbidity (NTU)		3.73	4.71	0.17	0.25	1.86	4.31	8.63	6.99	21%	344	4.08	0.8	-	-	0.4	0.2	0.2	0.2	0.2
Anions and Nutrients																				
Alkalinity Total (as CaCO3)		4.4	15.6	7.9	5.9	14.8	13	14.9	13.4	11%	8.5	11.8	8	14	14	3	6	5	6	7
Acid Sensitivity		High	Moderate	High	High	Moderate	Moderate	Moderate	Moderate	-	High	Moderate	High	Moderate	Moderate	High	High	High	High	High
Chloride (Cl)		2.76	1.78	1.23	1.22	1.17	1.18	1.21	1.36	12%	1.38	1.27	0.99	1.05	0.99	2.43	1.22	1.05	0.98	1.05
Fluoride (F)		<	<	<	<0.02	<0.002	<0.02	<0.02	<0.02	*	<0.02	<0.02	0.03	<0.02	<0.02	<0.10	<0.10	<0.10	<0.10	<0.10
Hardness-Dependent BCANWQOG to protect AW ⁽⁶⁾		0.3	0.6	0.4	0.3	0.5	0.4	0.4	0.4	-	0.4	0.3	0.3	0.4	0.4	0.5	0.3	0.2	0.4	0.3
32.8 (instant maximum)																				
3.0 (30-day average)																				
0.06 (max)																				
0.12 (max)																				
0.18 (max)																				
0.24 (max)																				
0.3 (max)																				
0.6 (max)																				
128 (30-day average)																				
218 (30-day average)																				
309 (30-day average)																				
500 (instant max)																				
H 31 - 75 mg/L																				
H 76 - 180 mg/L																				
H 181 - 250 mg/L																				
H > 250 mg/L																				
TBD																				

Notes: Refer to Table Endnotes (attached)

Table B1: Analytical Results for Nutrients in Surface Water

Sample Location		TRIBUTARY TO THE NORTH																
Sample ID		SW-3																
Sample ID		BCAWWQG ^(d)																
Date Sampled		CARO																
Physical Tests																		
Colour, True (Colour Units)	15 ^(d) units absolute, or 5 units above background	13-Feb-12	03-JUL-12	05-May-13	19-Mar-14	05-Jun-14	12-Jun-14	19-Jun-14	24-Jun-14	30-Jun-14	09-Apr-15	07-Jun-15	13-Jun-15	5110489-01 05-Nov-15	5110781-02 10-Nov-15	5111330-02 18-Nov-15	5111510-02 23-Nov-15	5111820-02 26-Nov-15
Conductivity	-	142	151	157	242	307	340	339	356	364	339	389	394	320	348	273	346	339
Hardness (as CaCO3)	-	57.8	66.3	67.1	86.3	148	160	163	170	173	160	176	190	144	175	132	194	193
pH	-	7.46	7.56	7.46	7.68	7.46	7.79	7.62	7.56	7.67	7.19	6.85	7.03	7.31	7.46	7.31	7.39	7.76
25 mg/L above background (24-hr during clear flow)		-	-	-	<3	3020	7170	98.5	91.1	4.2	8	-	-	<3	<2	3	<2	<2
Total Suspended Solids		92	98	98	98	194	202	202	215	214	184	206	215	203	214	169	208	203
Total Dissolved Solids	-																	
1 NTU above background when background is <50 NTU (raw drinking water)		2.21	0.96	0.25	0.25	1160	1890	25.5	36.9	1.48	1.2	-	-	0.4	0.2	1.4	0.2	0.6
Turbidity (NTU)																		
Anions and Nutrients																		
Alkalinity Total (as CaCO3)	<10 high sensitivity to acid inputs 10-20 moderate sensitivity to acid inputs >20 low sensitivity to acid inputs	29.8	38.6	39.1	40.1	116	119	126	134	142	133	143	149	138	151	121	145	140
Acid Sensitivity		Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Chloride (Cl)	600 (instant max) 150 (30-day average)	6.32	5.96	4.32	23.3	16.8	18.4	20.4	21.3	21.3	8.8	19.90	20.40	7.31	6.89	4.37	7.54	8.69
Fluoride (F)	1.5 (instant max) 1.0 (30-day average)	<	<	<	<0.02	0.038	0.03	0.028	0.035	0.003	0.02	0.06	0.06	<0.10	<0.10	<0.10	<0.10	<0.10
Nitrate (as N)	Hardness-Dependent BCAWWQG to protect AW ⁽ⁿ⁾	1.1	1.2	1.2	1.3	1.5	1.5	1.5	1.5	1.6	1.5	1.6	1.6	1.5	1.6	1.4	1.6	1.6
Nitrite (as N)	32.8 (instant maximum) 3.0 (30-day average)	1.69	0.165	1.14	2.88	0.0114	0.0078	0.0135	0.0233	0.0277	<0.005	0.012	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrite (as N) <2 mg/L	0.06 (max)																	
Cl 2 - <4 mg/L	0.12 (max)																	
Cl 4 - <6 mg/L	0.18 (max)																	
Cl 6 - <8 mg/L	0.24 (max)																	
Cl 8 - <10 mg/L	0.3 (max)																	
Cl ≥ 10 mg/L	0.6 (max)																	
Sulfate (SO4) H 0-30 mg/L	128 (30-day average)				<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.005	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010
H 31 - 75 mg/L	218 (30-day average)	24.7	26.3	27.9														
H 76 - 180 mg/L	309 (30-day average)				31.6	27.3	27.6	24.4	24	22.9	25.6	25.9		30	29.7	18.2		
H 181 - 250 mg/L	500 (instant max)												25.1				25	25.3
H > 250 mg/L	429 (30-day average)																	
	TBD																	

Notes: Refer to Table Endnotes (attached)

Table B1: Analytical Results for Nutrients in Surface Water

Sample Location		SHAWNGAN CREEK (SOUTH PROPERTY LINE)																					
Sample ID	BCAWWQG ²⁰	SW-4																					
		UPSTREAM																					
Date Sampled		30-Aug-11	13-Feb-12	03-Jul-12	05-May-13	19-Mar-14	05-Jun-14	12-Jun-14	18-Jun-14	24-Jun-14	30-Jun-14	09-Apr-15	07-Jun-15	13-Jun-15	18-Jun-15	24-Jun-15	30-Jun-15	51107-02 02-Nov-15	511886-01 24-Nov-15	512039-01 20-Nov-15	511686-01 24-Nov-15	511682-01 27-Nov-15	5120412-01 04-Dec-15
Physical Tests		5	9.7	7.4	7.1	11.6	6.8	<5	<5	5.2	5.1	16	-	-	-	-	-	23	22	24	21	18	21
Colour, True Colour Units	15 th units absolute, or 5 units above background	54	29.9	41.6	35.4	28.2	42.8	44.2	45.9	44.9	45.6	37.0	46	47	47	48	49	37	38	31	32	32	31
Conductivity	-	21	10.7	17.9	13.7	10.4	17.6	18.1	17.5	18.4	18.2	13.2	18.2	18.1	17.7	18.2	18.2	15.5	14.5	11.7	11	14.3	13.3
Hardness (as CaCO3)	-	6.5	7.17	7.63	7.28	7.22	7.81	7.57	7.41	7.50	7.46	6.82	6.94	6.90	6.86	6.79	6.94	6.75	7.13	7.1	6.36	7.01	7.01
pH	-	-	-	-	-	<3	<3	<3	<3	<3	<3	<2	-	-	-	-	-	<2	<2	<2	<2	11	<2
25 mg/L above background (24-hr during clear flow)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Suspended Solids	-	39	30	27	28	25	35	35	40	31	40	17	24	28	25	25	25	22	17	60	<10	30	34
Total Dissolved Solids	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 NTU above background when background is <50 NTU (raw drinking water)	-	0.4	0.78	0.6	0.39	0.22	0.33	0.45	0.38	0.35	0.33	<0.5	-	-	-	-	-	0.7	0.4	0.4	0.3	0.6	0.4
Anions and Nutrients																							
Alkalinity Total (as CaCO3)	<10 high sensitivity to acid inputs 10-20 moderate sensitivity to acid inputs >20 low sensitivity to acid inputs	25	7.8	18.2	12.8	8.7	17.4	18.2	19.1	18.4	19.2	12	20	27	22	22	21	11	12	9	10	9	8
Acid Sensitivity	-	Low	High	Moderate	Moderate	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Low	Low	Low	Low	Low	High	Moderate	High	Moderate	High	High
Chloride (Cl)	600 (instant max) 150 (30-day average)	3.2	3.43	2.7	2.01	2.13	1.98	1.99	2	1.99	2.02	1.72	1.75	1.66	1.70	1.64	1.65	2.46	2.36	2.11	1.92	2.12	2.11
Fluoride (F)	1.5 (instant max) 1.0 (30-day average)	0.02	<	<	<	<	<	<	<	<	<	0.02	<	<	<	<	<	<	<	<	<	<	<
	Hardness-Dependent BCWWQ3 to protect AW ²⁰	0.7	0.4	0.8	0.5	0.4	0.6	0.6	0.6	0.7	0.6	0.5	0.6	0.6	0.6	0.6	0.6	0.6	<	0.3	0.4	0.6	0.5
Nitrate (as N)	32.8 (instant maximum) 3.0 (30-day average)	0.11	0.0287	0.05	23.4	0.0226	0.0596	0.0610	0.0515	0.0615	0.0715	0.052	0.058	0.051	0.056	0.045	0.068	0.162	0.073	0.031	0.043	0.051	0.046
Nitrite (as N)	0.06 (max) 0.02 (30-day average)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Cl ⁻ < 4 mg/L	0.12 (max) 0.04 (30-day average)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Cl ⁻ < 6 mg/L	0.18 (max) 0.06 (30-day average)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Cl ⁻ < 8 mg/L	0.24 (max) 0.08 (30-day average)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Cl ⁻ < 10 mg/L	0.3 (max) 0.1 (30-day average)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Cl ⁻ < 10 mg/L	0.4 (max) 0.2 (30-day average)	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Sulfate (SO ₄)	120 (30-day average)	1.8	1.28	0.9	1.33	1.44	1.06	1.09	1.12	1.13	0.97	1.5	1.2	1.2	1.2	1.3	1.5	1.6	1.6	1.6	1.6	1.7	1.5
H ₃₁ - 75 mg/L	218 (30-day average)																						
H ₇₆ - 180 mg/L	309 (30-day average)																						
H ₁₈₁ - 250 mg/L	500 (instant max) 429 (30-day average)																						
H ₁₈₁ - 250 mg/L	429 (30-day average)																						
H ₁₈₁ - 250 mg/L	TBD																						

Notes: Refer to Table Endnotes (attached)

Table B1: Analytical Results for Nutrients in Surface Water

Sample Location	Sample ID	TRIBUTARY AT SHANNON CREEK																							
		DOWNSTREAM												SW-5											
		30-Aug-11	13-Feb-12	03-JUL-12	05-May-13	11-Apr-14	RPD%	05-Jun-14	12-Jun-14	19-Jun-14	24-Jun-14	30-Jun-14	09-Apr-15	03-Jun-15	13-Jun-15	19-Jun-15	24-Jun-15	30-Jun-15	05-Nov-15	12-Nov-15	20-Nov-15	24-Nov-15	01-Dec-15	04-Dec-15	
BCAWOOD®																									
Date Sampled	15	16.5	16.3	16.3	16.2	16.5	16.3	16.3	16.5	16.5	16.3	16.3	16.5	16.3	16.5	16.3	16.5	16.3	16.5	16.3	16.5	16.3	16.5	16.3	
Physical Tests	59	33.1	58.1	44.8	48.3	47.6	56.8	69.9	72.6	68	70.7	47	70	66	68	69	70	53	50	42	49	48	44	53	
Conductivity	20.5	11.8	22	16.5	16.3	16.5	22	25.4	25.9	26.8	26.3	17.1	23.1	25.7	25.9	25.2	25.8	20	19.7	15.8	16.3	19.1	17		
Hardness (as CaCO3)	6.6	7.17	7.67	7.38	7.52	7.5	7.63	7.73	6.92	7.63	7.66	6.91	7.41	7.14	7.03	7.04	7.14	7.13	7.17	7.1	6.4	7.16	7.1		
pH	-	-	-	-	<3	<3	<3	<3	<3	<3	<3	<3	-	-	-	-	-	<3	<2	<2	<2	<2	<2		
25 mg/L above background (8-hr during clear flow)	32	32	40	34	43	47	44	53	74	47	61	24	33	34	39	37	38	41	24	52	21	35	48		
Total Suspended Solids	0.6	0.4	0.75	0.59	0.38	0.47	0.32	0.61	0.42	0.31	0.27	<0.5	-	-	-	-	-	0.8	0.9	1	1.4	0.6	2		
Total Dissolved Solids																									
Turbidity (NTU)																									
1 NTU above background when background is <0.9 NTU (raw drinking water)																									
Anions and Nutrients																									
Alkalinity Total (as CaCO3)	20	8.1	21	15.1	14.7	14.4	20.2	24.5	26.5	24	25	15	29	25	34	30	31	13	12	11	13	12	10		
Acid Sensitivity	Moderate	High	Low	Moderate	Moderate	Moderate	-	Low	Low	Low	Low	Moderate	Low	Low	Low	Low	Low	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate		
Chloride (Cl)	3.4	3.38	4.25	2.95	3.66	3.68	3.63	4.23	4.48	4.19	4.3	2.51	3.07	3.16	3.36	3.13	3.53	3.38	2.93	2.52	3.1	2.92	2.86		
Fluoride (F)	0.02	<	<	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		
Hardness (dependent on CAWQ25 to protect RW™)	0.7	0.5	0.7	1.5	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.6	0.6	0.7	0.6		
Nitrate (as N)	0.1	0.126	0.0928	0.0433	0.106	0.109	0.139	0.143	0.135	0.137	0.171	0.077	0.127	0.133	0.145	0.137	0.148	0.259	0.182	0.133	0.142	0.154	0.149		
Nitrite (as N) <25 mg/L	3.8 (30-day average)	<	<	<	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.009		
C12 - <4 mg/L	0.12 (max)	<	<	<	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.009		
C14 - <4 mg/L	0.12 (max)	<	<	<	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.009		
C16 - <8 mg/L	0.24 (max)	<	<	<	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.009		
C18 - <10 mg/L	0.3 (max)	<	<	<	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.009		
C20 - <10 mg/L	0.6 (max)	<	<	<	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.010	<0.010	<0.010	<0.009		
Sulfate (SO4) <10 mg/L	128 (30-day average)	3.4	2.56	2.16	2.83	2.81	2.47	2.82	3.18	2.98	3.08	2.9	<5.0	3.2	2.9	3.3	3.1	4.5	4.3	3.4	3.9	3.9	3.7		
H 75 - 180 mg/L	218 (30-day average)																								
H 31 - 75 mg/L	309 (30-day average)																								
H 181 - 250 mg/L	429 (30-day average)																								
H + 250 mg/L	TBD																								

Notes: Refer to Table E (Notes) attached

Table B1: Analytical Results for Nutrients in Surface Water

Sample Location	CONTAINMENT RESERVOIR															
	CONTACT WATER															
	BCAWWQG ⁽²⁾															
Sample ID																
Date Sampled																
Physical Tests																
Colour, True (Colour Units)	<5.0	19.2	6.9	44.8	10.9	2370	2210	3340	3980	7.2	110	1840	2320	3380	511229-01	5120576-01
Conductivity	-	30	3160	732	260	732	244	388	438	8.25	7.72	268	346	552	17-Nov-15	07-Dec-15
Hardness (as CaCO ₃)	-	7.61	8.16	7.97	7.86	7.77	7.77	8.64	8.25	6.6	7	7.72	7.79	8.35	6.73	7.19
pH	-	-	7530	1190	40.6	1310	18.4	9.6	2300	1310	-	7	-	90	893	116
Total Suspended Solids	-	60	1790	4790	1310	55	42.5	3.99	3.53	13	-	-	-	2030	362	1080
Total Dissolved Solids	-	104	>4000	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680
Turbidity (NTU)	-	104	>4000	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680
Anions and Nutrients																
Alkalinity Total (as CaCO ₃)	<10 high sensitivity to acid inputs 10-20 moderate sensitivity to acid inputs >20 low sensitivity to acid inputs	27.7	192	187	71.7	73.6	129	154	107	107	107	107	107	159	9	46
Acid Sensitivity	<10 high sensitivity to acid inputs 10-20 moderate sensitivity to acid inputs >20 low sensitivity to acid inputs	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	High	Low
Chloride (Cl)	600 (instant max) 150 (30-day average) 1.5 (instant max) 1.0 (30-day average)	2.43	900	2350	685	645	1030	1180	515	515	515	515	515	768	31.2	146
Fluoride (F)	Hardness-Dependent BCAWWQG to protect AW ⁽²⁾	0.029	0.85	1.3	<0.4	<0.4	<0.4	<0.4	0.13	0.13	0.13	0.13	0.13	0.27	0.13	<0.10
Nitrate (as N)	32.8 (instant maximum) 3.0 (30-day average)	0.9	2.2	2.1	1.7	1.7	1.9	1.9	1.7	1.7	1.7	1.7	1.8	2.0	1.7	2.0
Nitrite (as N) ⁽³⁾	0.06 (max) 0.12 (max) 0.18 (max) 0.24 (max) 0.3 (max) 0.6 (max)	0.121	<0.1	<0.25	<0.1	<0.1	<0.1	<0.1	0.012	0.012	0.012	0.012	<0.005	0.21	0.187	0.077
Cl 2 - <4 mg/L	0.02 (30-day average)	<0.001														
Cl 2 - <4 mg/L	0.04 (30-day average)															
Cl 4 - <6 mg/L	0.06 (30-day average)															
Cl 6 - <8 mg/L	0.08 (30-day average)															
Cl 8 - <10 mg/L	0.1 (30-day average)															
Cl ≥ 10 mg/L	0.2 (30-day average)															
Sulfate (SO ₄)	128 (30-day average)	6.87	93													
H 31 - 75 mg/L	218 (30-day average)															
H 76 - 180 mg/L	309 (30-day average)															
H 181 - 250 mg/L	429 (30-day average)						88									
H > 250 mg/L	TBD	81	313	133	142	236	282	363	207	386						

Refer to Table Endnotes (attached)

Table B1: Analytical Results for Nutrients in Surface Water

Sample Location		BCAWWQG ⁽²⁾	WATER TREATMENT PLANT		ANCILLARY DISCHARGE- SETTLING POND E292898		FIELD BLANKS	
Sample ID			PROCESS SAMPLE		(PAIRED TO MOE E292898)			
Date Sampled			CARO Analytical		CARO Analytical		CARO Analytical	
Physical Tests			5090499-02	5090499-01	5111290-02	5120641-01	5101163-02	5111862-03
Colour, True (Colour Units)	15 ⁽⁴⁾ units absolute, or 5 units above background	04-Sep-15	08-Sep-15	17-Nov-15	08-Dec-15	16-Oct-15	27-Nov-15	
Conductivity	-	<5	<5	7	7	-	<5	
Hardness (as CaCO3)	-	1880	1620	355	267	-	<2	
pH	-	303	350	157	129	-	<0.50	
Total Suspended Solids	25 mg/L above background (24-hr during clear flow)	7.98	7.61	7.41	7.67	-	5.9	
Total Dissolved Solids	-	1130	973	28	25	-	<2	
Turbidity (NTU)	1 NTU above background when background is <50 NTU (raw drinking water)	0.6	3.1	238	175	-	<10	
Anions and Nutrients								
Alkalinity Total (as CaCO3)	<10 high sensitivity to acid inputs 10-20 moderate sensitivity to acid inputs >20 low sensitivity to acid inputs	96	83	77	63	-	<1	
Acid Sensitivity		Low	Low	Low		-		
Chloride (Cl)	600 (instant max) 150 (30-day average)	367	333	9.07	7.16	-	<0.10	
Fluoride (F)	1.5 (instant max) 1.0 (30-day average)	<0.10	<0.10	<0.10	<0.10	-	<0.10	
Nitrate (as N)	Hardness-Dependent BCAWWQG to protect AW ⁽⁷⁾ 32.8 (instant maximum) 3.0 (30-day average)	1.8	1.8	1.5	1.4	-	-	
Nitrite (as N) ⁽⁸⁾	0.06 (max) 0.12 (max) 0.18 (max) 0.24 (max) 0.3 (max) 0.6 (max)	0.076	0.148	2.55	0.999	-	<0.010	
Sulfate (SO4) H 0-30 mg/L	128 (30-day average) 218 (30-day average) 309 (30-day average) 429 (30-day average)	<0.010	<0.010	<0.010	<0.010	-	<1.0	
H 31 - 75 mg/L				71.8		-		
H 76 - 180 mg/L	500 (instant max)				57.8	-		
H 181 - 250 mg/L						-		
H > 250 mg/L	TBD	198	198			-		

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N/A - Refer to Table Endnotes (attached)

Table B1: Analytical Results for Nutrients in Surface Water

Sample Location		SIRM SITE STORMWATER MOE PAIRED SAMPLES			
		(PAIRED TO MOE SAMPLE CHH1)	(PAIRED TO MOE SAMPLE SW1))	(PAIRED TO MOE SAMPLE CHH2)	(PAIRED TO MOE SAMPLE S1)
Sample ID		CARO Analytical			
Date Sampled		5110966-01 14-Nov-15	5110966-02 14-Nov-15	5110966-03 14-Nov-15	511290-01 17-Nov-15
Physical Tests					
Colour, True (Colour Units)	15 ⁽⁴⁾ units absolute, or 5 units above background	12	<5	13	15
Conductivity	-	310	558	282	18
Hardness (as CaCO ₃)	-	130	228	109	6.62
pH	-	6.68	7.29	6.74	5.94
Total Suspended Solids	25 mg/L above background (24-hr during clear flow)	<2	<2	7	13
Total Dissolved Solids	-	268	432	224	32
Turbidity (NTU)	1 NTU above background when background is <50 NTU (raw drinking water)	0.9	1.3	2.8	18.9
Anions and Nutrients					
Alkalinity Total (as CaCO ₃)	<10 high sensitivity to acid inputs 10-20 moderate sensitivity to acid inputs >20 low sensitivity to acid inputs	29	57	23	3
Acid Sensitivity		Low	Low	Low	High
Chloride (Cl)	600 (instant max) 150 (30-day average)	9.49	28.3	7.4	0.99
Fluoride (F)	1.5 (instant max) 1.0 (30-day average)	<0.10	<0.10	<0.10	<0.10
	Hardness-Dependent BCAWWQG to protect AW ⁽⁷⁾	1.4	1.7	1.4	0.2
Nitrate (as N)	32.8 (instant maximum) 3.0 (30-day average)	2.45	5.5	2.99	0.057
Nitrite (as N) ⁽⁸⁾	0.06 (max) 0.12 (max) 0.18 (max) 0.24 (max) 0.3 (max) 0.6 (max)				<0.010
Cl 2 - <4 mg/L	0.02 (30-day average)				
Cl 4 - <8 mg/L	0.06 (30-day average)				
Cl 6 - <8 mg/L	0.08 (30-day average)			<0.010	
Cl 8 - <10 mg/L	0.1 (30-day average)				
Cl ≥ 10 mg/L	0.2 (30-day average)		0.512		
Sulfate (SO ₄) H 0-30 mg/L	128 (30-day average)				1.7
H 31 - 75 mg/L	218 (30-day average)				
H 76 - 180 mg/L	309 (30-day average)	99.6		84.6	
H 181 - 250 mg/L	429 (30-day average)		159		
H > 250 mg/L	TBD				

N/A - Refer to Table Endnotes (attached)

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

Sample Location		HEAD OF TRIBUTARY														SW-2	
Sample ID		BCAWWQ ^{2b}														CARO	
Date Sampled		13-Feb-12	03-JUL-12	05-May-12	19-Mar-14	05-Jun-14	12-Jun-14	19-Jun-14	09-Apr-15	07-Jun-15	13-Jun-15	02-Nov-15	10-Nov-15	18-Nov-15	11-10-01	11-02-01	25-Nov-15
Physical Tests																	
pH		6.58	7.45	6.67	7.22	7.44	6.94	6.83	6.44	6%	6.33	6	6.47	6.45	6.35	6.48	
Hardness (as CaCO ₃)	-	072	15.6	8.81	7.22	11.9	10.9	8.87	10.0	12%	8.5	11.6	8.42	10.4	8.56		
Total Metals																	
Aluminum (Al)-Total		0.192	0.341	0.232	0.132	0.097	0.317	0.52	1.55	100%	0.289	0.147	0.12	0.144	0.123	0.106	
Antimony (Sb)-Total		<	<	<	<	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	
Arsenic (As)-Total		<	0.00025	0.00013	<	0.0002	0.00016	0.0002	0.00031	43%	0.0028	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	
Barium (Ba)-Total		<	<	<	<	<0.020	<0.02	<0.02	<0.02		0.06	0.0062	0.0062	<0.005	<0.005	<0.005	
Boron (B)-Total		<	<	<	<	<0.1	<0.1	<0.1	<0.1		<0.1	0.015	0.005	<0.004	0.006	0.007	
Cadmium (Cd)-Total		<	<	<	<	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Calcium (Ca)-Total		2.26	4.59	2.54	2.12	3.32	2.99	2.97	3.78	24%	3.65	2.68	3.4	2.5	1.9	2.8	2.5
Chromium (Cr)-Total		0.0011	0.0012	<	<	<0.001	<0.002	<0.002	<0.002		0.0115	<0.005	<0.005	<0.005	<0.005	<0.005	
Copper (Cu)-Total		0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	58%	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017
Copper (Cu)-Total		0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	58%	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017	0.0017
Iron (Fe)-Total		0.548	2.74	0.189	0.524	1.36	1.36	1.94	3.57	59%	10.6	4.08	0.04	0.05	0.04	0.05	0.05
Lead (Pb)-Total		<	<	<	<	<0.0005	<0.0005	<0.0005	0.00074		0.00371	0.00046	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Lead (Pb)-Total		<	<	<	<	<0.0005	<0.0005	<0.0005	0.00074		0.00371	0.00046	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Magnesium (Mg)-Total		0.52	1.02	0.6	0.47	0.84	0.77	0.73	0.99	30%	2.08	0.76	0.53	0.43	0.81	0.53	0.53
Manganese (Mn)-Total		0.0123	0.0514	0.018	0.0551	0.046	0.146	0.163	0.197	19%	0.334	0.198	0.014	0.0032	0.0026	0.003	0.0018
Manganese (Mn)-Total		0.0123	0.0514	0.018	0.0551	0.046	0.146	0.163	0.197	19%	0.334	0.198	0.014	0.0032	0.0026	0.003	0.0018
Mercury (Hg)-Total		<	<	<	<	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum		<	<	<	<	<	<	<	<		<	<	<	<	<	<	<
Potassium (K)-Total		<	0.18	0.11	<	0.11	0.14	0.19	0.24	23%	0.53	<	<	<	<	<	<
Selenium (Se)-Total		<	<	<	<	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Sodium (Na)-Total		<	<	<	<	2.10	2.10	<2	2.00	<	2.30	1.85	2	1.24	1.24	1.56	1.56
Uranium (U)-Total		<	<	<	<	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Zinc (Zn)-Total		0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033		0.033	0.033	0.033	0.033	0.033	0.033	0.033
Dissolved Metals																	
Aluminum (Al)-Dissolved		0.07	0.05	-	0.09	0.076	0.108	0.116	0.126	8%	0.484	0.145	0.118	0.122 ^{3b}	0.098 ^{3b}	0.104 ^{3b}	0.104 ^{3b}
Antimony (Sb)-Dissolved		<	<	<	<	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Arsenic (As)-Dissolved		<	0.00014	<	<	0.00015	0.00013	0.00017	0.00016	6%	0.00037	0.00019	0.0002	<0.0005	<0.0005	<0.0005	<0.0005
Barium (Ba)-Dissolved		<	<	<	<	<0.02	<0.02	<0.02	<0.02		0.01	<0.02	0.0048	<0.005	<0.005	<0.005	<0.005
Boron (B)-Dissolved		<	<	<	<	<0.1	<0.1	<0.1	<0.1		<0.1	0.003	0.004	<0.004	0.006	0.007	0.007
Cadmium (Cd)-Dissolved		<	<	<	<	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Cadmium (Cd)-Dissolved		<	<	<	<	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Calcium (Ca)-Dissolved		2.08	4.57	-	2.13	3.36	3.13	2.52	2.86	13%	2.86	2.44	2.79	2.66	3.4	2.2	2.3
Chromium (Cr)-Dissolved ^{3b}		<	<	<	<	<0.002	<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Copper (Cu)-Dissolved ^{3b}		<	<	<	<	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Iron (Fe)-Dissolved		0.123	0.399	-	0.132	<0.001	0.762	1.07	0.942	13%	4.08	1.66	1.18	2.03	0.033	0.041	0.039
Lead (Pb)-Dissolved		<	<	<	<	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Manganese (Mn)-Dissolved		0.48	1.01	-	0.46	0.86	0.76	0.63	0.7	11%	0.64	0.58	0.42	0.57	0.76	0.46	0.49
Manganese (Mn)-Dissolved		0.0073	0.0504	-	0.0316	0.433	0.137	0.16	0.156	3%	0.273	0.195	0.099	0.142	0.0027	0.0021	0.0012
Molybdenum		<	<	<	<	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Potassium (K)-Dissolved		<	<	<	<	<	<	<	<		<	<	<	<	<	<	<
Selenium (Se)-Dissolved		<	<	<	<	0.12	0.14	0.17	0.15	13%	0.34	0.26	0.2	0.29	<0.02	<0.02	<0.02
Sodium (Na)-Dissolved		<	<	<	<	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Sulfur (S)-Dissolved		<	<	<	<	2.2	2.1	2.1	2.1	5%	<2	<2	1.58	2.1	1.13	1.2	1.52
Uranium (U)-Dissolved		<	<	<	<	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Zinc (Zn)-Dissolved		<	<	<	<	<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	0.003	0.009	<0.004	<0.004	<0.004

Notes: Refer to Table Endnotes (attached)

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

Sample Location	Sample ID	Tributary at Shawngnan Creek												511682-02	512043-02							
		DOWNSTREAM						SW-5								CARO						
Date Sampled	30-Aug-11	13-Feb-12	09-JUL-12	11-Apr-14	RPD%	05-May-13	12-Jun-14	18-Jun-14	24-Jun-14	30-Jun-14	09-Apr-15	03-Jun-15	13-Jun-15	18-Jun-15	24-Jun-15	30-Jun-15	511488-02	511922-02	512030-02	511586-02	511686-02	512043-02
Physical Tests	6.6	7.17	7.67	7.52	7.5	7.58	7.63	7.73	7.82	7.63	7.66	7.41	7.14	7.03	7.04	7.14	7.13	7.17	7.1	7.1	7.16	7.1
Trace Metals	0.016	0.04	0.04	0.045	0%	0.047	0.025	0.031	0.022	0.016	0.042	0.019	0.02	0.017	0.015	0.015	0.083	0.099	0.121	0.115	0.074	0.152
Aluminum (Al) Total	<	<	<	<	0%	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Aluminum (Al) Dissolved	<	<	<	<	<	0.00013	0.00011	0.0001	0.0001	<	0.00008	0.0004	0.0001	0.0001	0.0001	0.0001	<	<	<	<	<	<
Boron (B) Total	0.004	<	<	<	<	<	<	<	<	<	<	<	0.047	0.048	0.061	0.064	<	<	<	<	<	<
Boron (B) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	0.0001	0.0001	0.0001	0.0001	<	<	<	<	<	<
Cadmium (Cd) Total	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Cadmium (Cd) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Chromium (Cr) Total	6.31	3.78	6.37	4.8	4.78	4.85	6.35	7.24	7.17	7.4	7.29	5.04	6.71	7.32	7.18	7.08	6	5.8	4.6	5.9	5.6	5
Chromium (Cr) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Copper (Cu) Total	0.0003	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Copper (Cu) Dissolved	0.0001	0.0001	0.0001	0.0001	<	0.0001	0.0001	0.0001	0.0001	<	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Lead (Pb) Total	0.0001	0.0001	0.0001	0.0001	0%	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Lead (Pb) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Magnesium (Mg) Total	0.005	0.0059	0.0053	0.0053	0%	0.0059	0.0046	0.0076	0.0052	0.005	0.006	0.006	0.005	0.005	0.006	0.005	0.006	0.006	0.006	0.006	0.006	0.006
Magnesium (Mg) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Manganese (Mn) Total	0.0001	0.0001	0.0001	0.0001	<	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Manganese (Mn) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Mercury (Hg) Total	0.0001	0.0001	0.0001	0.0001	<	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Mercury (Hg) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Potassium (K) Total	2.30	<	3.90	2.60	0%	2.50	0.90	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Potassium (K) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Selenium (Se) Total	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Selenium (Se) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Vanadium (V) Total	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Vanadium (V) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Zinc (Zn) Total	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003	0.003
Zinc (Zn) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Dissolved Metals	0.001 (30-day average where median pH > 4.5)																					
	0.1 (maximum where instantaneous pH > 4.5)																					
Antimony (Sb) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Antimony (Sb) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Asenic Acid Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Boron (B) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Boron (B) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Hardness Dependent ^(b)	0.001 (30-day average where median pH > 4.5)																					
	0.1 (maximum where instantaneous pH > 4.5)																					
Calcium (Ca) Dissolved	6.16	3.3	6.47	4.74	4.8	4.8	6.41	7.33	7.46	7.65	7.54	4.79	6.69	7.43	7.2	7.4	6.7	5.3	4.6	4.7	5.3	4.6
Chromium (Cr) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Copper (Cu) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Copper (Cu) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Iron (Fe) Dissolved	0.196	<	0.055	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Magnesium (Mg) Dissolved	1.23	0.75	1.42	1.09	1.1	1.45	1.73	1.86	1.78	1.86	1.82	1.62	1.56	1.81	1.79	1.79	1.26	1.13	1.01	1.13	1.01	1.04
Manganese (Mn) Dissolved	0.051	<	0.0026	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Mercury (Hg) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Selenium (Se) Dissolved	0.16	<	0.19	0.18	<	<	0.16	0.19	0.29	0.3	0.17	<	<	<	<	<	<	<	<	<	<	<
Selenium (Se) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Sodium (Na) Dissolved	2.12	<	3.2	2.7	2.8	<	3.2	4.1	4.3	4.2	4.1	2.71	3.62	3.61	3.7	3.67	2.91	2.73	2.7	2.95	2.99	2.69
Sodium (Na) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Sulfur (S) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Vanadium (V) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Vanadium (V) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Zinc (Zn) Dissolved	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<

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

Sample Location	CONTAMINANT RESERVOIR														CONTACT WATER			
	BCAWWGQ ⁽²⁾														CARO Analytical			
Sample ID																		
Date Sampled																		
Physical Tests																		
Hardness (as CaCO ₃)	7.61	8.16	7.97	7.86	7.77	8.64	8.25	7.72	7.79	8.35	268	237	195	6.73	7.19	569	5120576-01	07-Dec-15
pH	30	911	732	260	244	388	438	268	361	552	268	237	195	6.73	7.19	569	5120576-01	07-Dec-15
Total Metals	5.4	187	28.2	3.27	2.02	0.119	0.115	0.32	0.218	0.62	-	-	-	53.6	4.47	-	-	-
Aluminum (Al)-Total	0.00059	0.0043	0.00278	0.00118	0.00102	0.001	0.00089	<0.005	0.0006	<0.001	-	-	-	0.0014	0.0014	-	-	-
Antimony (Sb)-Total	0.00162	0.0125	0.0125	0.00118	0.00114	0.00152	0.00152	<0.001	0.0011	<0.005	-	-	-	0.0294	0.004	-	-	-
Arsenic (As)-Total	0.005	1.16	0.181	0.056	0.04	0.045	0.057	0.028	0.0348	<0.05	-	-	-	0.484	0.088	-	-	-
Barium (Ba)-Total	<0.1	0.86	0.57	0.22	0.19	0.36	0.42	0.51	0.408	0.68	-	-	-	0.057	0.058	-	-	-
Boron (B)-Total	<0.0002	0.0126	0.0065	<0.0002	<0.0002	<0.0002	<0.00025	<0.0002	0.00005	<0.0001	-	-	-	0.00046	0.00013	-	-	-
Cadmium (Cd)-Total	9.67	107	78.2	32	30	46.4	54.3	42.6	52.9	76.8	-	-	-	75.1	206	-	-	-
Calcium (Ca)-Total	High	Low	Low	Low	Low	Low	Low	Low	Low	Low	-	-	-	Low	Low	-	-	-
Chromium (Cr)-Total	0.0081	0.512	0.0569	0.0049	0.0038	<0.002	<0.002	<0.005	<0.005	<0.005	-	-	-	0.0566	0.0113	-	-	-
Copper (Cu)-Total	0.0121	1.91	0.123	0.0088	0.0088	0.0038	0.0045	0.005	0.005	0.008	-	-	-	0.187	0.0212	-	-	-
Hardness-Dependent BCAWWGQ to protect AW ⁽¹⁾ (instant max)	0.0048	0.0876	0.0708	0.0264	0.0249	0.0365	0.0432	0.0272	0.0359	0.053888	-	-	-	0.0564	0.0555	-	-	-
Hardness-Dependent BCAWWGQ to protect AW ⁽¹⁾ (30-d average)	0.0020	0.0364	0.0293	0.0104	0.0098	0.0155	0.0175	0.0197	0.0144	0.02208	-	-	-	0.0104	0.0228	-	-	-
Iron (Fe)-Total	5.67	289	40.5	2.94	2.25	0.133	0.094	0.26	0.24	0.63	-	-	-	53.8	5.89	-	-	-
Hardness-Dependent ⁽¹⁾	0.00248	0.0248	0.00321	0.00321	0.00273	<0.0005	<0.0005	0.0008	0.00046	0.002	-	-	-	0.0407	0.0098	-	-	-
Hardness-Dependent BCAWWGQ to protect AW ⁽¹⁾ (instant max)	0.0176	1.396	1.0291	0.2765	0.2541	0.4887	0.5352	0.2864	0.4184	0.7160	-	-	-	0.2765	0.7468	-	-	-
Hardness-Dependent BCAWWGQ to protect AW ⁽¹⁾ (30-d average)	0.0040	0.0953	0.0435	0.0181	0.0132	0.0212	0.0242	0.0145	0.0196	0.0313	-	-	-	0.0141	0.0324	-	-	-
Magnesium (Mg)-Total	3.22	156	140	44	39.3	63.8	74.3	42.1	55.7	87.4	-	-	-	17.5	12.9	-	-	-
Manganese (Mn)-Total	0.131	3.26	0.882	0.254	0.262	0.0923	0.018	0.016	0.037	0.219	-	-	-	1.97	0.442	-	-	-
Hardness-Dependent ⁽¹⁾	0.09	10.6	6.6	3.4	3.2	4.8	5.4	3.4	4.3	6.6	-	-	-	3.4	6.4	-	-	-
Hardness-Dependent BCAWWGQ to protect AW ⁽¹⁾ (instant max)	0.7	4.6	3.8	1.7	1.7	2.3	2.5	1.8	2.2	3.0	-	-	-	1.7	3.1	-	-	-
Hardness-Dependent BCAWWGQ to protect AW ⁽¹⁾ (30-d average)	<0.0002	0.0462	0.0079	<0.0002	<0.0002	<0.0002	<0.0002	0.00001	0.02	<0.0002	-	-	-	<0.0002	<0.0002	-	-	-
Mercury (Hg)-Total	-	-	-	-	-	-	-	-	-	0.008	-	-	-	-	0.007	-	-	-
Molybdenum	0.0054	-	0.00414	0.00111	0.00102	0.001	0.0074	0.0011	0.0006	<0.001	-	-	-	0.007	0.009	-	-	-
Potassium (K)-Total	0.0031	-	0.00326	0.00111	0.00093	0.00143	0.00136	0.0005	0.0008	<0.005	-	-	-	0.0006	0.0013	-	-	-
Selenium (Se)-Total	<0.01	<0.01	<0.005	<0.002	<0.002	<0.002	<0.005	15.5	15.5	<0.005	-	-	-	6.44	11.5	-	-	-
Sodium (Na)-Total	4.7	520	1070	387	338	550	651	257	331	547	-	-	-	28.1	150	-	-	-
Uranium (U)-Total	0.00013	0.0148	0.00386	0.00077	0.00067	0.00085	0.00096	0.0015	0.0018	0.0014	-	-	-	0.00124	0.00082	-	-	-
Zinc (Zn)-Total	<0.05	2.43	0.17	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.04	-	-	-	0.136	0.04	-	-	-
Hardness-Dependent ⁽¹⁾	0.0033	0.449	0.043	0.185	0.149	0.297	0.293	0.167	0.236	0.380	-	-	-	0.181	0.392	-	-	-
Hardness-Dependent BCAWWGQ to protect AW ⁽¹⁾ (instant max)	0.008	0.823	0.459	0.135	0.123	0.231	0.209	0.141	0.211	0.354	-	-	-	0.135	0.367	-	-	-
Hardness-Dependent BCAWWGQ to protect AW ⁽¹⁾ (30-d average)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Metals	0.038	-	0.04	<0.01	0.012	0.024	0.025	0.015	0.024	<0.05	-	-	-	0.007	0.067	-	-	-
Aluminum (Al)-Dissolved	0.00054	-	0.00414	0.00111	0.00102	0.001	0.0074	0.0011	0.0006	<0.001	-	-	-	0.007	0.009	-	-	-
Antimony (Sb)-Dissolved	0.0031	-	0.00326	0.00111	0.00093	0.00143	0.00136	0.0005	0.0008	<0.005	-	-	-	0.0006	0.0013	-	-	-
Arsenic (As)-Dissolved	<0.02	-	0.063	0.037	0.033	0.046	0.057	0.0271	0.0312	<0.05	-	-	-	0.046	0.05	-	-	-
Barium (Ba)-Dissolved	<0.1	-	0.57	0.23	0.19	0.36	0.42	0.408	0.454	0.68	-	-	-	0.053	0.049	-	-	-
Boron (B)-Dissolved	<0.0002	-	<0.00025	<0.0002	<0.0002	<0.0002	<0.00025	<0.0002	0.00002	0.00002	-	-	-	<0.0001	0.00003	-	-	-
Hardness-Dependent ⁽¹⁾	0.00017	Hardness exceeds 455mg/L	Hardness exceeds 455mg/L	0.00157	0.00147	0.00238	0.00269	0.00162	0.00221	Hardness exceeds 455mg/L	-	-	-	0.00157	Hardness exceeds 455mg/L	-	-	-
Hardness-Dependent BCAWWGQ to protect AW ⁽¹⁾ (short-term max)	0.00009	Hardness exceeds 285mg/L	Hardness exceeds 285mg/L	0.00043	0.00041	0.00041	Hardness exceeds 285mg/L	0.00044	Hardness exceeds 285mg/L	Hardness exceeds 285mg/L	-	-	-	0.00043	Hardness exceeds 285mg/L	-	-	-
Hardness-Dependent BCAWWGQ to protect AW ⁽¹⁾ (long-term max)	8.92	-	70.8	31.9	30.8	48.5	54.9	42.1	52.1	72.7	-	-	-	67	176	-	-	-
Calcium (Ca)-Dissolved	Low	-	Low	Low	Low	Low	Low	Low	Low	Low	-	-	-	Low	Low	-	-	-
Chromium (Cr)-Dissolved ⁽⁸⁾	<0.002	-	<0.0025	<0.002	<0.002	<0.002	<0.0025	<0.0005	<0.0005	<0.005	-	-	-	0.0008	0.0027	-	-	-
Copper (Cu)-Dissolved	0.0011	-	0.00038	0.00023	0.0035	0.0029	0.0034	0.0042	0.0042	0.0042	-	-	-	0.0002	0.0042	-	-	-
Iron (Fe)-Dissolved	0.039	-	0.186	0.03	<0.0005	<0.03	<0.03	<0.01	<0.01	<0.10	-	-	-	<0.10	<0.10	-	-	-
Lead (Pb)-Dissolved	<0.0005	-	0.00136	<0.0005	0.051	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	-	<0.0001	<0.0001	-	-	-
Manganese (Mn)-Dissolved	1.87	-	135	43.8	40.6	64.8	73.1	39.5	52.5	86	-	-	-	6.65	9.65	-	-	-
Magnesium (Mg)-Dissolved	0.0144	-	0.341	0.211	0.228	0.0147	0.0021	0.002	0.019	0.02	-	-	-	0.003	0.267	-	-	-
Mercury (Hg)-Dissolved	<0.0002	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.00002	<0.0002	-	-	-	<0.0002	<0.0002	-	-	-
Molybdenum	0.41	-	-	-	-	-	-	-	-	0.00697	-	-	-	0.0052	0.0687	-	-	-
Potassium (K)-Dissolved	<0.001	-	53.9	18.2	16.4	24.3	27	18.6	18.6	23.7	-	-	-	2.57	9.64	-	-	-
Selenium (Se)-Dissolved	4.6	-	<0.005	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	-	-	-	<0.005	<0.005	-	-	-
Sodium (Na)-Dissolved	<0.0001	-	1130	398	359	560	659	240	321	541	-	-	-	141	26.7	-	-	-
Uranium (U)-Dissolved	<0.0001	-	0.00351	0.00071	0.00065	0.00092	0.00101	0.00154	0.00121	0.0014	-	-	-	0.0003	0.0004	-	-	-
Zinc (Zn)-Dissolved	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	0.006	0.006	<0.04	-	-	-	<0.04	<0.04	-	-	-

Notes: Refer to Table Endnotes (attached)

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

Sample Location		TREATED WATER										WATER TREATMENT PLANT OUTLET																																																																																																																																																																																																																																																																																																																																																																
Sample ID		CARO Analytical										CARO Analytical																																																																																																																																																																																																																																																																																																																																																																
18-Feb-14	24-Mar-14	28-Mar-14	17-Apr-14	01-May-14	08-May-14	14-May-14	20-May-14	26-May-14	01-Jun-14	08-Jun-14	14-Jun-14	20-Jun-14	26-Jun-14	01-Jul-14	08-Jul-14	14-Jul-14	20-Jul-14	26-Jul-14	01-Aug-14	08-Aug-14	14-Aug-14	20-Aug-14	26-Aug-14	01-Sep-14	08-Sep-14	14-Sep-14	20-Sep-14	26-Sep-14	01-Oct-14	08-Oct-14	14-Oct-14	20-Oct-14	26-Oct-14	01-Nov-14	08-Nov-14	14-Nov-14	20-Nov-14	26-Nov-14	01-Dec-14	08-Dec-14	14-Dec-14	20-Dec-14	26-Dec-14	01-Jan-15	08-Jan-15	14-Jan-15	20-Jan-15	26-Jan-15	01-Feb-15	08-Feb-15	14-Feb-15	20-Feb-15	26-Feb-15	01-Mar-15	08-Mar-15	14-Mar-15	20-Mar-15	26-Mar-15	01-Apr-15	08-Apr-15	14-Apr-15	20-Apr-15	26-Apr-15	01-May-15	08-May-15	14-May-15	20-May-15	26-May-15	01-Jun-15	08-Jun-15	14-Jun-15	20-Jun-15	26-Jun-15	01-Jul-15	08-Jul-15	14-Jul-15	20-Jul-15	26-Jul-15	01-Aug-15	08-Aug-15	14-Aug-15	20-Aug-15	26-Aug-15	01-Sep-15	08-Sep-15	14-Sep-15	20-Sep-15	26-Sep-15	01-Oct-15	08-Oct-15	14-Oct-15	20-Oct-15	26-Oct-15	01-Nov-15	08-Nov-15	14-Nov-15	20-Nov-15	26-Nov-15	01-Dec-15	08-Dec-15	14-Dec-15	20-Dec-15	26-Dec-15	01-Jan-16	08-Jan-16	14-Jan-16	20-Jan-16	26-Jan-16	01-Feb-16	08-Feb-16	14-Feb-16	20-Feb-16	26-Feb-16	01-Mar-16	08-Mar-16	14-Mar-16	20-Mar-16	26-Mar-16	01-Apr-16	08-Apr-16	14-Apr-16	20-Apr-16	26-Apr-16	01-May-16	08-May-16	14-May-16	20-May-16	26-May-16	01-Jun-16	08-Jun-16	14-Jun-16	20-Jun-16	26-Jun-16	01-Jul-16	08-Jul-16	14-Jul-16	20-Jul-16	26-Jul-16	01-Aug-16	08-Aug-16	14-Aug-16	20-Aug-16	26-Aug-16	01-Sep-16	08-Sep-16	14-Sep-16	20-Sep-16	26-Sep-16	01-Oct-16	08-Oct-16	14-Oct-16	20-Oct-16	26-Oct-16	01-Nov-16	08-Nov-16	14-Nov-16	20-Nov-16	26-Nov-16	01-Dec-16	08-Dec-16	14-Dec-16	20-Dec-16	26-Dec-16	01-Jan-17	08-Jan-17	14-Jan-17	20-Jan-17	26-Jan-17	01-Feb-17	08-Feb-17	14-Feb-17	20-Feb-17	26-Feb-17	01-Mar-17	08-Mar-17	14-Mar-17	20-Mar-17	26-Mar-17	01-Apr-17	08-Apr-17	14-Apr-17	20-Apr-17	26-Apr-17	01-May-17	08-May-17	14-May-17	20-May-17	26-May-17	01-Jun-17	08-Jun-17	14-Jun-17	20-Jun-17	26-Jun-17	01-Jul-17	08-Jul-17	14-Jul-17	20-Jul-17	26-Jul-17	01-Aug-17	08-Aug-17	14-Aug-17	20-Aug-17	26-Aug-17	01-Sep-17	08-Sep-17	14-Sep-17	20-Sep-17	26-Sep-17	01-Oct-17	08-Oct-17	14-Oct-17	20-Oct-17	26-Oct-17	01-Nov-17	08-Nov-17	14-Nov-17	20-Nov-17	26-Nov-17	01-Dec-17	08-Dec-17	14-Dec-17	20-Dec-17	26-Dec-17	01-Jan-18	08-Jan-18	14-Jan-18	20-Jan-18	26-Jan-18	01-Feb-18	08-Feb-18	14-Feb-18	20-Feb-18	26-Feb-18	01-Mar-18	08-Mar-18	14-Mar-18	20-Mar-18	26-Mar-18	01-Apr-18	08-Apr-18	14-Apr-18	20-Apr-18	26-Apr-18	01-May-18	08-May-18	14-May-18	20-May-18	26-May-18	01-Jun-18	08-Jun-18	14-Jun-18	20-Jun-18	26-Jun-18	01-Jul-18	08-Jul-18	14-Jul-18	20-Jul-18	26-Jul-18	01-Aug-18	08-Aug-18	14-Aug-18	20-Aug-18	26-Aug-18	01-Sep-18	08-Sep-18	14-Sep-18	20-Sep-18	26-Sep-18	01-Oct-18	08-Oct-18	14-Oct-18	20-Oct-18	26-Oct-18	01-Nov-18	08-Nov-18	14-Nov-18	20-Nov-18	26-Nov-18	01-Dec-18	08-Dec-18	14-Dec-18	20-Dec-18	26-Dec-18	01-Jan-19	08-Jan-19	14-Jan-19	20-Jan-19	26-Jan-19	01-Feb-19	08-Feb-19	14-Feb-19	20-Feb-19	26-Feb-19	01-Mar-19	08-Mar-19	14-Mar-19	20-Mar-19	26-Mar-19	01-Apr-19	08-Apr-19	14-Apr-19	20-Apr-19	26-Apr-19	01-May-19	08-May-19	14-May-19	20-May-19	26-May-19	01-Jun-19	08-Jun-19	14-Jun-19	20-Jun-19	26-Jun-19	01-Jul-19	08-Jul-19	14-Jul-19	20-Jul-19	26-Jul-19	01-Aug-19	08-Aug-19	14-Aug-19	20-Aug-19	26-Aug-19	01-Sep-19	08-Sep-19	14-Sep-19	20-Sep-19	26-Sep-19	01-Oct-19	08-Oct-19	14-Oct-19	20-Oct-19	26-Oct-19	01-Nov-19	08-Nov-19	14-Nov-19	20-Nov-19	26-Nov-19	01-Dec-19	08-Dec-19	14-Dec-19	20-Dec-19	26-Dec-19	01-Jan-20	08-Jan-20	14-Jan-20	20-Jan-20	26-Jan-20	01-Feb-20	08-Feb-20	14-Feb-20	20-Feb-20	26-Feb-20	01-Mar-20	08-Mar-20	14-Mar-20	20-Mar-20	26-Mar-20	01-Apr-20	08-Apr-20	14-Apr-20	20-Apr-20	26-Apr-20	01

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

Sample Location		WATER TREATMENT PLANT										ANCILLARY DISCHARGE- SETTLING POND E292898		FIELD BLANKS		
		PROCESS SAMPLE										(PAIRED TO MOE E292898)				
Sample ID		CARO Analytical										CARO Analytical		CARO Analytical		
Date Sampled		5090499-02	5090499-01	5091415-02	5091415-03	5091819-02	511290-02	5120641-01	5091399-03	5101163-02	511862-03					
Physical Tests		04-Sep-15	08-Sep-15	17-Sep-15	17-Sep-15	23-Sep-15	17-Nov-15	08-Dec-15	17-Sep-15	16-Oct-15	27-Nov-15					
pH		7.98	7.61	-	-	-	7.41	7.67	-	-	5.9					
Hardness (as CaCO3)		303	350	191	188	196	157	129	-	-	<0.50					
Total Metals																
Aluminum (Al)-Total		-	-	-	-	-	3.24	2.47	-	-	<0.005					
Antimony (Sb)-Total		-	-	-	-	-	<0.0001	<0.001	-	-	<0.0001					
Arsenic (As)-Total		-	-	-	-	-	<0.0005	<0.005	-	-	<0.0005					
Barium (Ba)-Total		-	-	-	-	-	0.026	<0.05	-	-	<0.005					
Boron (B)-Total		-	-	-	-	-	0.019	<0.04	-	-	<0.004					
Cadmium (Cd)-Total		-	-	-	-	-	0.00002	<0.0001	-	-	<0.00001					
Calcium (Ca)-Total		-	-	-	-	-	50.5	41.7	-	-	<0.2					
Chromium (Cr)-Total		-	-	-	-	-	Low	Low	-	-	High					
Copper (Cu)-Total		-	-	-	-	-	0.0052	<0.005	-	-	<0.0005					
Iron (Fe)-Total		-	-	-	-	-	0.009	0.006	-	-	<0.0002					
Lead (Pb)-Total		-	-	-	-	-	0.0165	0.0141	-	-	-					
Magnesium (Mg)-Total		-	-	-	-	-	0.0053	0.0052	-	-	-					
Manganese (Mn)-Total		-	-	-	-	-	3.05	2.52	-	-	<0.01					
Mercury (Hg)-Total		-	-	-	-	-	0.0017	0.002	-	-	<0.0001					
Molybdenum		-	-	-	-	-	0.1450	0.1129	-	-	-					
Potassium (K)-Total		-	-	-	-	-	0.0090	0.0077	-	-	-					
Selenium (Se)-Total		-	-	-	-	-	7.36	5.9	-	-	<0.01					
Sodium (Na)-Total		-	-	-	-	-	0.0881	0.05	-	-	<0.0002					
Uranium (U)-Total		-	-	-	-	-	2.3	2.0	-	-	-					
Zinc (Zn)-Total		-	-	-	-	-	1.3	1.2	-	-	<0.00002					
Dissolved Metals																
Aluminum (Al)-Dissolved		<0.05	<0.05	<0.05	<0.05	<0.005	<0.00002	<0.00002	<0.05	<0.005	<0.005					
Antimony (Sb)-Dissolved		0.001	<0.001	0.001	0.001	0.0008	-	<0.001	<0.001	<0.001	<0.0001					
Arsenic (As)-Dissolved		<0.005	<0.005	<0.005	<0.005	<0.0005	-	<0.005	<0.005	<0.0005	<0.0001					
Barium (Ba)-Dissolved		<0.05	<0.05	<0.05	<0.05	0.027	-	<0.05	<0.05	<0.005	<0.005					
Boron (B)-Dissolved		0.24	0.53	0.23	0.12	0.161	-	<0.04	<0.04	0.014	<0.004					
Cadmium (Cd)-Dissolved		<0.0001	<0.0001	<0.0001	<0.0001	<0.00001	-	<0.0001	<0.0001	<0.00001	<0.00001					
Calcium (Ca)-Dissolved		0.0018	0.0021	0.0011	0.0011	0.0012	-	0.0008	-	-	-					
Chromium (Cr)-Dissolved		Hardness exceeds 285mg/L	Hardness exceeds 285mg/L	0.0003	0.0003	0.0003	-	0.0003	-	-	-					
Copper (Cu)-Dissolved		41.9	50.3	37.7	36.7	39.2	-	40.5	<2.0	<0.2	<0.2					
Iron (Fe)-Dissolved		Low	Low	Low	Low	Low	-	Low	-	-	High					
Lead (Pb)-Dissolved		<0.005	<0.005	<0.005	<0.005	<0.0005	-	<0.005	<0.005	<0.0005	<0.0005					
Manganese (Mn)-Dissolved		<0.002	<0.002	<0.002	<0.002	0.0004	-	<0.002	<0.002	0.0006	<0.0002					
Mercury (Hg)-Dissolved		0.21	<0.10	<0.10	<0.10	0.028	-	<0.10	<0.10	<0.010	<0.010					
Molybdenum		<0.001	<0.001	<0.001	<0.001	<0.0001	-	<0.001	<0.001	<0.0001	0.0003					
Potassium (K)-Dissolved		48.1	54.5	23.6	23.3	23.8	-	5.7	<0.1	<0.01	<0.01					
Selenium (Se)-Dissolved		0.063	0.029	0.046	0.052	0.0785	-	0.007	<0.002	<0.0002	<0.0002					
Sodium (Na)-Dissolved		0.003	0.005	0.004	0.003	0.0029	-	0.002	<0.001	<0.0001	<0.0001					
Uranium (U)-Dissolved		<0.005	<0.005	<0.005	<0.005	<0.0005	-	<0.005	<0.005	<0.0005	<0.0005					
Zinc (Zn)-Dissolved		294	280	137	135	139	-	7.1	<0.2	0.21	<0.02					
		<0.0002	<0.0002	0.0004	0.0004	0.00005	-	0.0008	<0.0002	<0.00002	<0.00002					
		0.11	<0.04	<0.04	0.06	0.08	-	<0.04	<0.04	<0.004	<0.004					

Notes: Refer to Table Endnotes (attached)

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

Sample Location	BCAWWQG ^(b)	SIRM SITE STORMWATER MOE PAIRED SAMPLES			
		(PAIRED TO MOE SAMPLE CHH1)	(PAIRED TO MOE SAMPLE SW11)	(PAIRED TO MOE SAMPLE CHH2)	(PAIRED TO MOE SAMPLE S1)
Sample ID		CARO Analytical			
		5110966-01	5110966-02	5110966-03	5111280-01
Date Sampled		14-Nov-15	14-Nov-15	14-Nov-15	17-Nov-15
Physical Tests					
Hardness (as CaCO ₃)	-	6.68	7.29	6.74	5.94
pH	-	130	228	109	6.62
Total Metals					
Aluminum (Al)-Total	-	0.094	0.072	0.183	1.19
Antimony (Sb)-Total	0.014	0.0003	0.0003	<0.0001	<0.0001
Arsenic (As)-Total	0.005	<0.0005	<0.0005	<0.0005	<0.0005
Barium (Ba)-Total	5 (Instant max) 1 (30-d average)	0.044	0.02	0.042	0.009
Boron (B)-Total	-	0.019	0.048	0.016	0.01
Cadmium (Cd)-Total	<10 high sensitivity to acid inputs 10-20 moderate sensitivity to acid inputs >20 low sensitivity to acid inputs	0.00002	0.00002	<0.00001	<0.00001
Calcium (Ca)-Total	-	41.6	72.3	34.9	1.7
Chromium (Cr)-Total	-	Low	Low	Low	High
Copper (Cu)-Total	Hardness-Dependent ^(c)	<0.0005	<0.0005	<0.0005	0.0019
Iron (Fe)-Total	Hardness-Dependent ^(c)	0.0012	0.0024	0.0013	0.009
Lead (Pb)-Total	Hardness-Dependent ^(c)	0.0152	0.0264	0.0152	0.0056
Magnesium (Mg)-Total	Hardness-Dependent ^(c)	0.0055	0.0061	0.0044	0.0090
Manganese (Mn)-Total	Hardness-Dependent ^(c)	0.04	0.08	0.12	1.01
Mercury (Hg)-Total	Hardness-Dependent ^(c)	<0.0001	0.0001	0.0001	0.0002
Molybdenum	Hardness-Dependent ^(c)	0.1340	0.2331	0.0971	0.0030
Potassium (K)-Total	Hardness-Dependent ^(c)	0.078	0.0124	0.0069	-
Selenium (Se)-Total	-	6.32	11.5	5.26	0.55
Sodium (Na)-Total	-	0.019	0.0333	0.0119	0.0192
Uranium (U)-Total	-	2.0	3.1	1.7	0.6
Zinc (Zn)-Total	-	1.2	1.6	1.1	0.6
Dissolved Metals					
Aluminum (Al)-Dissolved	0.05 (30-day average where median pH > 6.5) 0.1 (maximum where instantaneous pH > 6.5) pH-dependent maximum where instantaneous pH < 6.5 ^(a)	-	-	-	<0.00002
Antimony (Sb)-Dissolved	-	0.0004	0.002	0.0003	<0.0001
Arsenic (As)-Dissolved	-	1.23	2.02	1.25	0.23
Barium (Ba)-Dissolved	-	0.0006	0.0006	0.0006	<0.0005
Boron (B)-Dissolved	-	9.49	23	7.82	1.18
	-	0.00002	0.00054	0.00002	<0.00002
	-	<0.004	<0.004	<0.004	<0.004
	-	0.063	0.137	0.047	0.033
	-	0.038	0.111	0.022	0.008
Cadmium (Cd)-Dissolved	Calculated Hardness-Dependent BCAWWQG to protect AW ^(c) (short-term max) 4(1.03 * In(Hes)) - 0.274(ug/L H=455mg/L Calculated Hardness-Dependent BCAWWQG to protect AW ^(c) (long-term max) 4(0.736 * In(Hes)) - 4.943(ug/L H=285mg/L	-	-	-	-
Calcium (Ca)-Dissolved	up to 4, highly sensitive to acid inputs 4 to 8, moderately sensitive over 8 low sensitivity	-	-	-	-
Chromium (Cr)-Dissolved ^(d)	-	-	-	-	-
Copper (Cu)-Dissolved	-	-	-	-	-
Iron (Fe)-Dissolved	-	-	-	-	-
Lead (Pb)-Dissolved	0.35	-	-	-	-
Magnesium (Mg)-Dissolved	-	-	-	-	-
Manganese (Mn)-Dissolved	-	-	-	-	-
Mercury (Hg)-Dissolved	-	-	-	-	-
Molybdenum	-	-	-	-	-
Potassium (K)-Dissolved	-	-	-	-	-
Selenium (Se)-Dissolved	-	-	-	-	-
Sodium (Na)-Dissolved	-	-	-	-	-
Uranium (U)-Dissolved	-	-	-	-	-
Zinc (Zn)-Dissolved	-	-	-	-	-

Notes: Refer to Table Endnotes (attached)

Table B3: Analytical Results for Volatile Organic Compounds (VOCs) in Surface Water

Sample Location		SURFACE WATER ON SITE (WEST PROPERTY LINE)																		
Sample ID		SW-1																		
Date Sampled		13-Feb-12	03-JUL-12	03-May-13	19-Mar-14	05-Jun-14	30-Jun-14	09-Apr-15	07-Jun-15	13-Jun-15	18-Jun-15	24-Jun-15	30-Jun-15	5090213-02 01-Sep-15	5092036-02 25-Sep-15	5101163-03 16-Oct-15	5110966-02 14-Nov-15	5111820-03 28-Nov-15	5120041-02 08-Dec-15	5121033-03 15-Dec-15
Volatile Organic Compounds		CARO Analytical																		
Benzene	0.005	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Bromodichloromethane	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Bromoform	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Carbon Tetrachloride	0.0133	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Chlorobenzene	0.025	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Chloroethane	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Chloroform	0.0018	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Chloromethane	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Dibromochloromethane	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
1,2-Dichlorobenzene	0.042	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
1,3-Dichlorobenzene	0.15	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene	0.026	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1-Dichloroethane	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
1,2-Dichloroethane	0.1	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1-Dichloroethylene	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
cis-1,2-Dichloroethylene	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
trans-1,2-Dichloroethylene	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Dichloromethane	0.0981	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
1,2-Dichloropropane	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
cis-1,3-Dichloropropylene	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
trans-1,3-Dichloropropylene	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
1,3-Dichloropropene (cis & trans)	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Ethylbenzene	0.0024	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Methyl t-butyl ether (MTBE)	0.02	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Styrene	0.072	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,1,2-Tetrachloroethane	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,1,2,2-Tetrachloroethane	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Tetrachloroethylene	0.111	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Toluene	0.0005	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane	0.2	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Trichloroethylene	0.021	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Trichlorofluoromethane	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Vinyl Chloride	-	<	<	<	<	-	-	<	<	<	<	<	<	<	<	<	<	<	<	<
Xylenes	0.03	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<

Notes: Refer to Table Endnotes (attached)

Table B3: Analytical Results for Volatile Organic Compounds (VOCs) in Surface Water

Sample Location		HEAD OF TRIBUTARY																			
		BCAWWQC ⁽²⁾																			
		SW-2																			
		CARO Analytical																			
Sample ID																					
Date Sampled		13-Feb-12	03-JUL-12	03-May-13	19-Mar-14	05-Jun-14	12-Jun-14	19-Jun-14	18-Jun-14	RPD%	24-Jun-14	30-Jun-14	09-Apr-15	07-Jun-15	13-Jun-15	5110107-01 02-Nov-15	5110781-01 10-Nov-15	5111330-01 18-Nov-15	5111820-01 26-Nov-15	5111510-01 23-Nov-15	
Volatile Organic Compounds																					
Benzene	0.005	<	<	<	<	<	<	<	<	DUP	<	<	<	<	<	<	<	<	<	<	
Bromodichloromethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Bromodorm	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Carbon Tetrachloride	0.0133	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chlorobenzene	0.025	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chloroethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chloroform	0.0018	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chloromethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Dibromochloromethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,2-Dichlorobenzene	0.042	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,3-Dichlorobenzene	0.15	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,4-Dichlorobenzene	0.026	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1-Dichloroethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,2-Dichloroethane	0.1	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1-Dichloroethylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
cis-1,2-Dichloroethylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
trans-1,2-Dichloroethylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Dichloromethane	0.0981	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,2-Dichloropropane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
cis-1,3-Dichloropropylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
trans-1,3-Dichloropropylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,3-Dichloropropene (cis & trans)	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Ethylbenzene	0.0024	<	<	<	<	<	<	<	<	<	<	<	<	<	<	-	-	-	-	-	
Methyl t-butyl ether (MTBE)	0.02	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Styrene	0.072	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1,1,1,2-Tetrachloroethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1,1,2,2-Tetrachloroethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Tetrachloroethylene	0.111	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Toluene	0.0005	<	0.00167	<	<	<	<	<	<	<	<	<	<	0.0012	<	\$	\$	\$	\$	\$	
1,1,1,1-Trichloroethane	0.2	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1,1,2-Trichloroethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Trichloroethylene	0.021	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Trichlorofluoromethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Vinyl Chloride	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Xylenes	0.03	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	

Notes: Refer to Table Endnotes (attached)

Table B3: Analytical Results for Volatile Organic Compounds (VOCs) in Surface Water

Sample Location		TRIBUTARY TO THE NORTH																	
		SW-3																	
		BCAWWQG ^(B)																	
Sample ID		CARO Analytical																	
Date Sampled		13-Feb-12	03-JUL-12	03-May-13	19-Mar-14	05-Jun-14	12-Jun-14	19-Jun-14	24-Jun-14	30-Jun-14	09-Apr-15	07-Jun-15	13-Jun-15	5110489-01 05-Nov-15	5110781-02 10-Nov-15	5111330-02 18-Nov-15	5111820-02 26-Nov-15	5111510-02 23-Nov-15	
Volatile Organic Compounds																			
Benzene	0.005	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Bromodichloromethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Bromoform	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Carbon Tetrachloride	0.0133	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chlorobenzene	0.025	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chloroethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chloroform	0.0018	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chloromethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Dibromochloromethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,2-Dichlorobenzene	0.042	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,3-Dichlorobenzene	0.15	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,4-Dichlorobenzene	0.026	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1-Dichloroethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,2-Dichloroethane	0.1	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1-Dichloroethylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
cis-1,2-Dichloroethylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
trans-1,2-Dichloroethylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Dichloromethane	0.0981	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,2-Dichloropropane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
cis-1,3-Dichloropropylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
trans-1,3-Dichloropropylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,3-Dichloropropene (Cis & Trans)	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Ethylbenzene	0.0024	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Methyl t-butyl ether (MTBE)	0.02	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Styrene	0.072	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1,1,2-Tetrachloroethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1,2,2-Tetrachloroethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Tetrachloroethylene	0.111	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Toluene	0.0005	<	<	<	<	<	<	<	<	<	<	<	<	\$	\$	\$	\$	\$	
1,1,1-Trichloroethane	0.2	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1,2-Trichloroethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Trichloroethylene	0.021	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Trichlorofluoromethane	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Vinyl Chloride	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Xylenes	0.03	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	

Notes: Refer to Table Endnotes (attached)

Table B3: Analytical Results for Volatile Organic Compounds (VOCs) in Surface Water

Sample Location		TRIBUTARY AT SHANNING CREEK																						
Sample ID		SW-5																						
Date Sampled		CARO Analytical																						
Volatile Organic Compounds		15-Feb-12	03-JUL-12	03-May-13	11-Apr-14	RPD%	05-Jun-14	12-Jun-14	18-Jun-14	24-Jun-14	30-Jun-14	09-Apr-15	03-Jun-15	13-Jun-15	18-Jun-15	24-Jun-15	30-Jun-15	5110489-02 05-Nov-15	5110923-02 12-Nov-15	5120390-02 20-Nov-15	5111866-02 24-Nov-15	5111862-02 27-Nov-15	5120412-02 04-Dec-15	
Benzene		<	<	<	<	gap	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Bromochloromethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Bromod.		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Carbon Tetrachloride		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chlorobenzene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chloroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chloroform		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Chloromethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Dibromochloromethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Dibromodichloromethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1-Dichlorobenzene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,3-Dichlorobenzene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,4-Dichlorobenzene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1-Dichloroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,2-Dichloroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1-Dichloroethylene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
cis-1,2-Dichloroethylene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
trans-1,2-Dichloroethylene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Dichloromethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,2-Dichloropropane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
cis-1,3-Dichloropropene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
trans-1,3-Dichloropropene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,3-Dichloropropene (cis & trans)		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Ethylbenzene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
0.0024		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Methyl t-butyl ether (MTBE)		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Styrene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
0.072		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1,1,2-Tetrachloroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1,2,2-Tetrachloroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Tetrachloroethylene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
0.111		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Toluene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
0.0005		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
0.2		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
1,1,2-Trichloroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Trichloroethylene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
0.021		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Trichlorofluoromethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Vinyl Chloride		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
Xylenes		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	
0.03		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	

Notes: Refer to Table Endnotes (attached)

Table B3: Analytical Results for Volatile Organic Compounds (VOCs) in Surface Water

Sample Location		CONTAINMENT RESERVOIR												
Sample ID		Contact Water												
Date Sampled		CARO Analytical												
		13-Feb-14	03-Mar-14	19-Mar-14	05-Jun-14	30-Jun-14	17-Apr-15	03-Jun-15	5080012-02	5090499-04	5111229-01	5120576-01		
Volatile Organic Compounds														
Benzene	0.005	<	<	<	<	<	<	<	<	<	<	<	<	
Bromodichloromethane	-	<	<	<	-	-	<	<	<	<	<	<	<	
Bromoform	-	<	<	<	-	-	<	<	<	<	<	<	<	
Carbon Tetrachloride	0.0133	<	<	<	-	-	<	<	<	<	<	<	<	
Chlorobenzene	0.025	<	<	<	-	-	<	<	<	<	<	<	<	
Chloroethane	-	<	<	<	-	-	<	<	<	<	<	<	<	
Chloroform	0.0018	<	<	<	-	-	<	<	<	<	<	<	<	
Chloromethane	-	<	<	<	-	-	<	<	<	-	-	<	<	
Dibromochloromethane	-	<	<	<	-	-	<	<	<	<	<	<	<	
1,2-Dichlorobenzene	0.042	<	<	<	-	-	<	<	<	<	<	<	<	
1,3-Dichlorobenzene	0.15	<	<	<	-	-	<	<	<	<	<	<	<	
1,4-Dichlorobenzene	0.026	<	<	<	-	-	<	<	<	<	<	<	<	
1,1-Dichloroethane	-	<	<	<	-	-	<	<	<	<	<	<	<	
1,2-Dichloroethane	0.1	<	<	<	-	-	<	<	<	<	<	<	<	
1,1-Dichloroethylene	-	<	<	<	-	-	<	<	<	<	<	<	<	
cis-1,2-Dichloroethylene	-	<	<	<	-	-	<	<	<	<	<	<	<	
trans-1,2-Dichloroethylene	-	<	<	<	-	-	<	<	<	<	<	<	<	
Dichloromethane	0.0981	<	<	<	-	-	<	<	<	<	<	<	<	
1,2-Dichloropropane	-	<	<	<	-	-	<	<	<	<	<	<	<	
cis-1,3-Dichloropropylene	-	<	<	<	-	-	<	<	<	<	<	<	<	
trans-1,3-Dichloropropylene	-	<	<	<	-	-	<	<	<	<	<	<	<	
1,3-Dichloropropene (cis & trans)	-	<	<	<	-	-	<	<	<	-	-	<	<	
Ethylbenzene	0.0024	<	<	<	<	<	<	<	<	<	<	<	<	
Methyl t-butyl ether (MTBE)	0.02	<	<	<	<	<	<	<	<	<	<	<	<	
Styrene	0.072	<	<	<	-	-	<	<	<	<	<	<	<	
1,1,1,2-Tetrachloroethane	-	<	<	<	-	-	<	<	<	-	<	<	<	
1,1,2,2-Tetrachloroethane	-	<	<	<	-	-	<	<	<	<	<	<	<	
Tetrachloroethylene	0.111	<	<	<	-	-	<	<	<	<	<	<	<	
Toluene	0.0005	<	<	<	<	<	<	<	<	<	<	<	<	
1,1,1-Trichloroethane	0.2	<	<	<	-	-	<	<	<	<	<	<	<	
1,1,2-Trichloroethane	-	<	<	<	-	-	<	<	<	<	<	<	<	
Trichloroethylene	0.021	<	<	<	-	-	<	<	<	<	<	<	<	
Trichlorofluoromethane	-	<	<	<	-	-	<	<	<	<	<	<	<	
Vinyl Chloride	-	<	<	<	-	-	<	<	<	<	<	<	<	
Xylenes	0.03	<	<	<	<	<	<	<	<	<	<	<	<	

Notes: Refer to Table Endnotes (attached)

Table B5: Analytical Results for Volatile Organic Compounds (VOCs) in Surface Water

Sample Location		Water Treatment Plant Outlet															
		Treated Water															
Sample ID		CARO Analytical															
Date Sampled		500213-01	500153-01	500553-01	500060-01	500090-02	500139-01	500139-02	5001819-01	5002026-01	510182-01	511570-01	511570-02	512033-01	512033-02	512103-01	512103-02
Volatile Organic Compounds		17-Apr-15	01-Sep-15	08-Sep-15	14-Sep-15	DUP	17-Sep-15	DUP	25-Sep-15	25-Sep-15	16-Oct-15	24-Nov-15	24-Nov-15	15-Dec-15	DUP	15-Dec-15	17-Dec-15
Benzene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Bromochloromethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Bromodichloromethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Carbon Tetrachloride		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Chlorobenzene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Chloroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Chloroform		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Chloromethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Dibromodichloromethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,2-Dichlorobenzene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,3-Dichlorobenzene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,4-Dichlorobenzene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,1-Trichloroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,2-Trichloroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,2,2-Tetrachloroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,1,1-Tetrafluoroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,1,2-Tetrafluoroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,2,2-Tetrafluoroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,1,2-Tetrafluoroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,1,1,2,2-Pentafluoroethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Trichloroethylene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Trichlorofluoromethane		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Vinyl Chloride		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Xylenes		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<

Notes: Refer to Table Endnotes (attached)

Table B3: Analytical Results for Volatile Organic Compounds (VOCs) in Surface Water

Sample Location	Sample ID	Date Sampled	BCAWWQG ⁽²⁾	Water Treatment Plant		ANCILLARY DISCHARGE- SETTLING POND E292898		FIELD BLANKS	
				Process Sample		(PAIRED TO MOE E292898)			
				CARO Analytical					
				5090499-01		5111290-02	5120641-01	5101163-02	5111862-03
				08-Sep-15		17-Nov-15	08-Dec-15	16-Oct-15	27-Nov-15
Volatile Organic Compounds									
Benzene			0.005	<		<	<	-	<
Bromodichloromethane			-	<		<	<	-	<
Bromoform			-	<		<	<	-	<
Carbon Tetrachloride			0.0133	<		<	<	-	<
Chlorobenzene			0.025	<		<	<	-	<
Chloroethane			-	<		<	<	-	<
Chloroform			0.0018	<		<	<	-	0.0096
Chloromethane			-	<		<	<	-	<
Dibromochloromethane			-	<		<	<	-	<
1,2-Dichlorobenzene			0.042	<		<	<	-	<
1,3-Dichlorobenzene			0.15	<		<	<	-	<
1,4-Dichlorobenzene			0.026	<		<	<	-	<
1,1-Dichloroethane			-	<		<	<	-	<
1,2-Dichloroethane			0.1	<		<	<	-	<
1,1-Dichloroethylene			-	<		<	<	-	<
cis-1,2-Dichloroethylene			-	<		<	<	-	<
trans-1,2-Dichloroethylene			-	<		<	<	-	<
Dichloromethane			0.0981	<		<	<	-	<
1,2-Dichloropropane			-	<		<	<	-	<
cis-1,3-Dichloropropylene			-	<		<	<	-	<
trans-1,3-Dichloropropylene			-	<		<	<	-	<
1,3-Dichloropropene (cis & trans)			-	-		-	-	-	-
Ethylbenzene			0.0024	<		<	<	-	<
Methyl t-butyl ether (MTBE)			0.02	<		<	<	-	<
Styrene			0.072	<		<	<	-	<
1,1,1,2-Tetrachloroethane			-	<		<	<	-	<
1,1,2,2-Tetrachloroethane			-	<		<	<	-	<
Tetrachloroethylene			0.111	<		<	<	-	<
Toluene			0.0005	<		<	<	-	<
1,1,1-Trichloroethane			0.2	<		<	<	-	<
1,1,2-Trichloroethane			-	<		<	<	-	<
Trichloroethylene			0.021	<		<	<	-	<
Trichlorofluoromethane			-	<		<	<	-	<
Vinyl Chloride			-	<		<	<	-	<
Xylenes			0.03	<		<	<	-	<

Notes: Refer to Table Endnotes (attached)

Table B3: Analytical Results for Volatile Organic Compounds (VOCs) in Surface Water

Sample Location	BCA\WWQG ⁽²⁾	SIRM SITE STORMWATER MOE PAIRED SAMPLES			
		(PAIRED TO MOE SAMPLE CHH1)	(PAIRED TO MOE SAMPLE SW11)	(PAIRED TO MOE SAMPLE CHH2)	(PAIRED TO MOE SAMPLE S1)
Sample ID		CARO Analytical			
Date Sampled		5110966-01 14-Nov-15	5110966-02 14-Nov-15	5110966-03 14-Nov-15	5111290-01 17-Nov-15
Volatile Organic Compounds					
Benzene	0.005	<	<	<	<
Bromodichloromethane	-	<	<	<	<
Bromoform	-	<	<	<	<
Carbon Tetrachloride	0.0133	<	<	<	<
Chlorobenzene	0.025	<	<	<	<
Chloroethane	-	<	<	<	<
Chloroform	0.0018	<	<	<	<
Chloromethane	-	<	<	<	<
Dibromochloromethane	-	-	-	-	<
1,2-Dichlorobenzene	0.042	<	<	<	<
1,3-Dichlorobenzene	0.15	<	<	<	<
1,4-Dichlorobenzene	0.026	<	<	<	<
1,1-Dichloroethane	-	<	<	<	<
1,2-Dichloroethane	0.1	<	<	<	<
1,1-Dichloroethylene	-	<	<	<	<
cis-1,2-Dichloroethylene	-	-	-	-	<
trans-1,2-Dichloroethylene	-	<	<	<	<
Dichloromethane	0.0981	<	<	<	<
1,2-Dichloropropane	-	<	<	<	<
cis-1,3-Dichloropropylene	-	<	<	<	<
trans-1,3-Dichloropropylene	-	<	<	<	<
1,3-Dichloropropene (cis & trans)	-	-	-	-	-
Ethylbenzene	0.0024	<	<	<	<
Methyl t-butyl ether (MTBE)	0.02	<	<	<	<
Styrene	0.072	<	<	<	<
1,1,1,2-Tetrachloroethane	-	<	<	<	<
1,1,2,2-Tetrachloroethane	-	<	<	<	<
Tetrachloroethylene	0.111	<	<	<	<
Toluene	0.0005	<	<	<	<
1,1,1-Trichloroethane	0.2	<	<	<	<
1,1,2-Trichloroethane	-	<	<	<	<
Trichloroethylene	0.021	<	<	<	<
Trichlorofluoromethane	-	<	<	<	<
Vinyl Chloride	-	<	<	<	<
Xylenes	0.03	<	<	<	<

Notes: Refer to Table Endnotes (attached)

Table B4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Surface Water

Sample Location		SURFACE WATER ON SITE (WEST PROPERTY LINE)																			
Sample ID		SW-1																			
Date Sampled		CARO Analytical																			
Hydrocarbons		13-Feb-12	05-Jul-12	03-May-13	19-Mar-14	05-Jun-14	30-Jun-14	09-Apr-15	07-Jun-15	13-Jun-15	18-Jun-15	24-Jun-15	30-Jun-15	01-Sep-15	25-Sep-15	5092036-02	5101163-03	5110956-02	5111820-03	5120641-02	5121033-03
LEPH		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
HEPH		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	0.37	<	<	<
Polycyclic Aromatic Hydrocarbons																					
Acenaphthene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Acenaphthylene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Acridine		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Anthracene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benz(a)anthracene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benzo(a)pyrene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benzo(b)fluoranthene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benzo(g,h,i)perylene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benzo(k)fluoranthene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Chrysene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Dibenz(a,h)anthracene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Fluoranthene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Fluorene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Indeno(1,2,3-cd)pyrene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Naphthalene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Phenanthrene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Pyrene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Quinoline		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Glycols																					
Diethylene Glycol		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	11	<	<	<	<
Ethylene Glycol		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	16	<	<	<	<
1,2-Propylene Glycol		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<

Notes: Refer to Table Endnotes (attached)

Table B4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Surface Water

Sample Location		TRIBUTARY TO THE NORTH															
Sample ID		SW-3															
Date Sampled		CARO Analytical															
Hydrocarbons		13-Feb-12	03-Jul-12	03-May-13	19-Mar-14	05-Jun-14	30-Jun-14	09-Apr-15	07-Jun-15	13-Jun-15	5110489-01 05-Nov-15	5110781-02 10-Nov-15	5111330-02 18-Nov-15	5111820-02 26-Nov-15	5111510-02 23-Nov-15		
LEPH	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
HEPH	-	<	<	<	<	0.68	<	<	<	<	<	<	0.601	<	<		
Polycyclic Aromatic Hydrocarbons																	
Acenaphthene	0.006	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Acenaphthylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Acridine	0.00005	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Anthracene	0.0001	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Benz(a)anthracene	0.0001	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Benz(a)pyrene	0.00001	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Benz(b)fluoranthene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Benz(g,h,i)perylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Benz(k)fluoranthene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Chrysene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Dibenz(a,h)anthracene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Fluoranthene	0.0002	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Fluorene	0.012	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Indeno(1,2,3-c,d)pyrene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Naphthalene	0.001	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Phenanthrene	0.0003	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Pyrene	0.00002	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Quinoline	0.0034	<	<	<	<	<	<	<	<	<	<	<	<	<	<		
Glycols																	
Diethylene Glycol	-	<	<	<	<	-	-	-	-	-	<	<	<	<	<		
Ethylene Glycol	192 ^(a)	<	<	<	<	-	-	-	-	-	<	<	<	<	<		
1,2-Propylene Glycol	500 ^(a)	<	<	<	<	-	-	-	-	-	<	<	<	<	<		

Notes: Refer to Table Endnotes (attached)

Table B4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Surface Water

Sample Location		SHAWNIGAN CREEK (SOUTH PROPERTY LINE)															
Sample ID		SW-4															
Date Sampled		CARO Analytical															
Hydrocarbons		13-Feb-12	03-Jul-12	03-May-13	19-Mar-14	05-Jun-14	12-Jun-14	18-Jun-14	24-Jun-14	30-Jun-14	09-Apr-15	07-Jun-15	13-Jun-15	18-Jun-15	24-Jun-15	30-Jun-15	02-Nov-15
LEPH		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
HEPH		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Polycyclic Aromatic Hydrocarbons																	
Acenaphthene																	
Acenaphthylene																	
Acridine																	
Anthracene																	
Benz(a)anthracene																	
Benz(a)pyrene																	
Benz(b)fluoranthene																	
Benz(g,h,i)perylene																	
Benz(k)fluoranthene																	
Chrysene																	
Dibenz(a,h)anthracene																	
Fluoranthene																	
Fluorene																	
Indeno(1,2,3-c,d)pyrene																	
Naphthalene																	
Phenanthrene																	
Pyrene																	
Quinoline																	
Glycols																	
Diethylene Glycol																	
Ethylene Glycol																	
1,2-Propylene Glycol																	

Notes: Refer to Table Endnotes (attached)

Table B4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Surface Water

Sample Location		TRIBUTARY AT SHAWNIGAN CREEK																		
		SW-5																		
Sample ID		BCAWWQG ⁽²⁾																	CARO Analytical	
Date Sampled																				
Hydrocarbons																			5110489-02	5111686-02
LEPH	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	05-Nov-15	20-Nov-15
HEPH	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	05-Nov-15	20-Nov-15
Polycyclic Aromatic Hydrocarbons																				
Acenaphthene	0.006	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Acenaphthylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Acridine	0.00005	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Anthracene	0.0001	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benz[a]anthracene	0.0001	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benz[a]pyrene	0.00001	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benz[b]fluoranthene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benz[k]fluoranthene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benz[ghi]perylene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benzofluoranthene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Chrysene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Dibenz[a,h]anthracene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Fluoranthene	0.0002	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Fluorene	0.012	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	0.00011	<
Indeno[1,2,3-c,d]pyrene	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Naphthalene	0.001	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Phenanthrene	0.0003	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	0.00011	<
Pyrene	0.00002	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	0.00002	<
Quinoline	0.0034	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	0.00007	<
Glycols																				
Diethylene Glycol	-	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Ethylene Glycol	192 ⁽⁴⁾	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,2-Propylene Glycol	500 ⁽⁴⁾	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<

Notes: Refer to Table Endnotes (attached)

Table B4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Surface Water

Sample Location	Sample ID	Date Sampled	BCAWWQG ⁽²⁾	CONTAINMENT RESERVOIR													
				CONTACT WATER													
																CARO Analytical	
				13-Feb-14	03-Mar-14	19-Mar-14	28-Mar-14	05-Jun-14	30-Jun-14	17-Apr-15	03-Jun-15	31-Jul-15	5091415-01	17-Sep-15	17-Nov-15	5111229-01	5120576-01
Hydrocarbons																	
LEPH	-	<		<	1.47	0.39	0.32	<	<	<	<	-	<	<	0.56	<	<
HEPH	-	<		<	0.57	<	<	<	<	<	<	-	<	<	1.17	0.504	<
Polycyclic Aromatic Hydrocarbons																	
Acenaphthene	0.006	<		<	0.000608	0.000125	0.000076	<	<	<	<	-	<	<	0.00006	0.00005	0.00005
Acenaphthylene	-	<		<	<	<	<	<	<	<	<	-	<	<	<	<	<
Acridine	0.00005	<		<	<	<	<	<	<	<	<	-	<	<	0.00012	<	<
Anthracene	0.0001	<		<	<	<	<	<	<	<	<	-	<	<	0.00004	0.00002	0.00002
Benz(a)anthracene	0.0001	<		<	0.00019	<	<	<	<	<	<	-	<	<	0.00005	<	<
Benzo(a)pyrene	0.00001	0.000013		<	0.000139	<	<	<	<	<	<	-	<	<	0.00008	<	<
Benzo(b)fluoranthene	-	<		<	0.000202	<	<	<	<	<	<	-	<	<	<	<	<
Benzo(g,h,i)perylene	-	<		<	0.000082	<	<	<	<	<	<	-	<	<	<	<	<
Benzo(k)fluoranthene	-	<		<	0.00008	<	<	<	<	<	<	-	<	<	<	<	<
Chrysene	-	<		<	0.000197	<	<	<	<	<	<	-	<	<	0.00005	<	<
Dibenz(a,h)anthracene	-	<		<	<	<	<	<	<	<	<	-	<	<	<	<	<
Fluoranthene	0.0002	<		<	0.000748	0.000075	<	<	<	<	<	-	<	<	0.00012	0.00006	0.00006
Fluorene	0.012	<		<	0.000494	0.000093	0.000051	<	<	<	<	-	<	<	0.00006	<	<
Indeno(1,2,3-c,d)pyrene	-	<		<	0.000085	<	<	<	<	<	<	-	<	<	<	<	<
Naphthalene	0.001	<		<	0.002	0.000167	0.000071	<	<	<	<	-	<	<	0.00029	<	<
Phenanthrene	0.0003	<		<	0.00132	0.000127	0.000052	<	<	<	<	-	<	<	0.00046	0.0001	0.0001
Pyrene	0.00002	<		<	0.000748	0.000057	<	<	<	<	<	-	0.00003	<	0.00034	0.00006	0.00006
Quinoline	0.0034	<		<	<	<	<	<	<	<	<	-	<	<	<	<	<
Glycols																	
Diethylene Glycol	-	<		<	-	-	-	-	-	<	-	<	-	-	<	<	<
Ethylene Glycol	192 ^(a)	<		<	-	-	-	-	-	<	-	<	-	-	<	<	<
1,2-Propylene Glycol	500 ^(a)	<		<	-	-	-	-	-	<	-	<	-	-	<	<	<

Notes: Refer to Table Endnotes (attached)

Table B-1: Analytical Results for Hydrocarbons, PAHs, and Glycols in Surface Water

Sample Location		WATER TREATMENT PLANT OUTLET															
Sample ID		TREATED WATER															
Date Sampled		CARO Analytical															
Hydrocarbons		5090713-01 01-Sep-15	5090553-01 08-Sep-15	5090969-01 14-Sep-15	5090969-02 14-Sep-15	5091389-01 17-Sep-15	5091389-02 17-Sep-15	5091819-01 23-Sep-15	5092036-01 25-Sep-15	5101853-01 18-Oct-15	5111570-01 24-Nov-15	5111570-02 24-Nov-15	5121033-01 15-Dec-15	5121033-02 15-Dec-15	5121185-01 17-Dec-15	5121185-02 17-Dec-15	RPD
Phenols		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
LEPH		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
HEPH		0.29	0.57	1.39	1.37	1%	<	0.68	0.53	<	<	<	<	<	<	<	<
PAHs		0.28	0.99	<	<	<	<	<	1.23	<	<	<	<	<	<	<	<
Polycyclic Aromatic Hydrocarbons		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Acenaphthene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Acenaphthylene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Anthracene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benz[a]anthracene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benz[b]fluoranthene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benz[k]fluoranthene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Benzofluoranthene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Chrysene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Dibenz[a,h]anthracene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Fluoranthene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Indeno[1,2,3-cd]pyrene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Naphthalene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Phenanthrene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Pyrene		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Quinoline		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Glycols		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Diethylene Glycol		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
Ethylene Glycol		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<
1,2-Propylene Glycol		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<

Notes: Refer to Table Endnotes (attached)

Table B4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Surface Water

Sample Location		BCAWWQG ⁽²⁾	WATER TREATMENT PLANT		ANCILLARY DISCHARGE- SETTLING POND E292898		FIELD BLANKS			
			PROCESS SAMPLE		(PAIRED TO MOE E292898)					
			CARO Analytical		CARO Analytical		CARO Analytical			
Sample ID			5091415-02	5091415-03	5111290-02	5120641-01	5091399-03	5091819-03	5101163-02	5111862-03
Date Sampled			17-Sep-15	17-Sep-15	17-Nov-15	08-Dec-15	17-Sep-15	23-Sep-16	16-Oct-15	27-Nov-15
Hydrocarbons										
LEPH	-		<	<	<	<	<	<	<	<
HEPH	-		0.866	<	<	0.336	<	<	<	<
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	0.006		<	<	<	<	<	<	<	<
Acenaphthylene	-		<	<	<	<	<	<	<	<
Acridine	0.00005		<	<	<	<	<	<	<	<
Anthracene	0.0001		<	<	<	<	<	<	<	<
Benz(a)anthracene	0.0001		<	<	<	<	<	<	<	<
Benz(a)pyrene	0.00001		<	<	<	<	<	<	<	<
Benzo(b)fluoranthene	-		<	<	<	<	<	<	<	<
Benzo(g,h,i)perylene	-		<	<	<	<	<	<	<	<
Benzo(k)fluoranthene	-		<	<	<	<	<	<	<	<
Chrysene	-		<	<	<	<	<	<	<	<
Dibenz(a,h)anthracene	-		<	<	<	<	<	<	<	<
Fluoranthene	0.0002		<	<	<	<	<	<	<	<
Fluorene	0.012		<	<	<	<	<	<	<	<
Indeno(1,2,3-c,d)pyrene	-		<	<	<	<	<	<	<	<
Naphthalene	0.001		<	<	0.00022	<	<	<	<	<
Phenanthrene	0.0003		<	<	0.00024	<	<	<	<	<
Pyrene	0.00002		0.00004	<	0.00022	<	0.00004	<	<	<
Quinoline	0.0034		<	<	<	<	<	<	<	<
Glycols										
Diethylene Glycol	-		-	-	<	<	-	-	-	<
Ethylene Glycol	192 ^(a)		-	-	<	<	-	-	-	<
1,2-Propylene Glycol	500 ^(a)		-	-	<	<	-	-	-	<

Notes: Refer to Table Endnotes (attached)

Table B4: Analytical Results for Hydrocarbons, PAHs, and Glycols in Surface Water

Sample Location	Sample ID	BCAWWQG ⁽²⁾	SIRM SITE STORMWATER MOE PAIRED SAMPLES				
			(PAIRED TO MOE SAMPLE CHH1)	(PAIRED TO MOE SAMPLE SW1))	(PAIRED TO MOE SAMPLE CHH2)	(PAIRED TO MOE SAMPLE S1)	
			CARO Analytical				
Date Sampled	Hydrocarbons	LEPH	5110966-01	5110966-02	5110966-03	5111290-01	
			14-Nov-15	14-Nov-15	14-Nov-15	17-Nov-15	
		HEPH	<	<	<	<	
			<	0.27	<	<	
					</		

Notes: Refer to Table Endnotes (attached)

Analytical Table Endnotes: Analytical Results for Surface Water

- All concentrations in milligrams per litre (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 the laboratory detection limit.
- (1) pH-dependent maximum where instant pH < 6.5
- (2) A Compendium of Approved and Working 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.
- ** No hardness value was reported for the Water Treatment System Outlet sample from March 10, 2014. The hardness value from the previous sampling event (March 3, 2014)) has been used for calculating hardness-dependent guidelines.

BOLD, UNDERLINE

Laboratory Detection Limit exceeds one or more applicable standards

BOLD, BLUE SHADING

Concentration greater than BCAWWQG Guideline