



## WESTMORELAND COAL COMPANY – *Obed Mountain Mine*

<b>To:</b> Alberta Energy Regulator (AER) Suite 1000, 250 – 5 Street SW, Calgary, Alberta T2P 0R4	<b>Project Name:</b> EPEA 10119-02-01
<b>Attention:</b>	<b>Transmittal No.:</b> <b>OMM.15-004</b>
<b>Subject:</b> IWW-00010119-2015-01	<b>Date:</b> February 17, 2015
	<b>Issued By:</b> Amber Schram

As required under Section 4.2 of the above noted EPEA Approval, please find attached the Mine Wastewater Report for the month of January 2015 for the Obed Mountain Mine. Samples were taken from discharge points of major and minor ponds and analyzed weekly by an accredited independent laboratory.

Results of the monthly water analysis required under Section 4.2 of the EPEA Approval have been included for the month of January. A monthly detailed chemical analysis was completed on the Main Tailings Pond as per Section 4.2.19 of the EPEA Approval and is also included.

If you have any further questions or concerns please do not hesitate to contact the undersigned.

Sincerely,

**Amber Schram, B.Sc.**

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# COAL VALLEY RESOURCES INC. OBED MOUNTAIN MINE

## January 2015 – MONTHLY MINE WASTEWATER REPORT

### 1. INTRODUCTION

As per section 4.2.26 of CVRI's Obed Mountain Mine ("OMM") EPEA Approval No. 10119-02-01 (the "Approval"), the following report summarizes the performance of the Obed Mountain Mine wastewater system for the month of January 2015.

### 2. MONITORING RESULTS

Table 1 presents the results of all routine wastewater samples taken from major and minor ponds for the month of January 2015. During OMM's winter sampling schedule for major ponds, sampling requirements are as follows: TSS 3x/week and when NTU>50, turbidity and pH 1x/week and nitrate-nitrogen bi-weekly. The sampling requirements for minor ponds includes: TSS and pH 1x/week and nitrate-nitrogen 1x/month. While pumping activities are occurring at Pond 5 (commenced January 26, 2013), OMM has adopted a major pond sampling schedule to ensure that water quality remains within limits set out by the Approval.

As described in Section 4.2.10 of the Approval, releases from the mine wastewater handling facilities shall not exceed the limits specified in Table 4.2-A. The maximum daily allowable and maximum monthly average allowable concentrations for TSS are 350 mg/L and 50 mg/L respectively. Values that exceed these limits are highlighted grey and font bolded. Note that values of 0 are used when results are below detection limits (TSS<3.0 and Nitrates<0.10) and used in calculating the monthly average. The pH values must measure in the range of 6.0 – 9.5 for all samples.

In January 2015, there were no oil/grease sheens, floating solids or visible foam to report from the daily visual inspections.

### 3. APPROVAL CONTRAVENTIONS

There were no Approval contraventions in January 2015.

### 4. WAIVERS OF DAILY LIMIT FOR TOTAL SUSPENDED SOLIDS

There were no precipitation events in January 2015 to merit the exemption of the daily limit of 350 mg/L for TSS. Total Precipitation for the month was 10.6mm.

5. FLOCCULANT USE

Through the month of January no flocculant was used at OMM.

6. DETAILED ANALYSIS OF THE MAIN TAILING POND

A detailed water chemistry sample was taken January 20, 2015 as required under section 4.2.19 of the Approval. Results are shown in Table 7.

## Table 1 – January 2015 Routine Analysis of Major and Minor Ponds

Pond	Parameter	01-Jan	02-Jan	03-Jan	04-Jan	05-Jan	06-Jan	07-Jan	08-Jan	09-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	15-Jan	16-Jan
SPP1	TSS (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Turb. (NTU)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	pH	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Nitrates (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SPP2	TSS (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Turb. (NTU)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	pH	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Nitrates (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SPP3	TSS (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Turb. (NTU)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	pH	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Nitrates (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ELP2	TSS (mg/l)	5.0	0.0	5.0	5.0	65.9	5.0	0.0	5.0	3.6	5.0	5.0	4.5	5.0	3.1	5.0	4.2
	Turb. (NTU)	1.23	1.16	1.28	2.35	5.91	1.46	1.62	1.61	1.75	1.98	1.97	2.17	1.90	1.97	1.64	1.64
	pH	8.30	8.41	8.35	8.33	8.32	8.31	8.38	8.37	8.27	8.33	8.40	8.32	8.33	8.21	8.36	9.48
	Nitrates (mg/l)	-	-	-	-	-	-	0.446	-	-	-	-	-	-	-	-	-
Yellow Pit	TSS (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Turb. (NTU)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	pH	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Nitrates (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
LSP-2	TSS (mg/l)	-	-	-	-	-	17.5	-	-	-	-	-	-	3.3	-	-	-
	Turb. (NTU)	-	-	-	-	-	4.0	-	-	-	-	-	-	4.9	-	-	-
	pH	-	-	-	-	-	8.01	-	-	-	-	-	-	8.16	-	-	-
	Nitrates (mg/l)	-	-	-	-	-	0.293	-	-	-	-	-	-	-	-	-	-
LSP-3	TSS (mg/l)	-	-	-	-	-	ND	-	-	-	-	-	-	ND	-	-	-
	Turb. (NTU)	-	-	-	-	-	ND	-	-	-	-	-	-	ND	-	-	-
	pH	-	-	-	-	-	ND	-	-	-	-	-	-	ND	-	-	-
	Nitrates (mg/l)	-	-	-	-	-	ND	-	-	-	-	-	-	ND	-	-	-

**Limits:**

pH 6.0-9.5

TSS Max. Monthly Avg. Concentration = 50mg/L

TSS Max. Daily Concentration = 350mg/L

**Notes:**

ND: No Discharge

For TSS readings below detection limits (<3 mg/L), a zero is included in Table and in the average TSS calculations.

Results that exceed limits are outlined in grey and bolded.

TSS results from lab highlighted

## Table 1 – January 2015 Routine Analysis of Major and Minor Ponds Continued

Pond	Parameter	17-Jan	18-Jan	19-Jan	20-Jan	21-Jan	22-Jan	23-Jan	24-Jan	25-Jan	26-Jan	27-Jan	28-Jan	29-Jan	30-Jan	31-Jan	Average
SPP1	TSS (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	Turb. (NTU)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	pH	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	Nitrates (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
SPP2	TSS (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0	0.0	0.0	5.0	3.5	ND	1.7
	Turb. (NTU)	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.68	0.80	0.89	0.63	0.77	ND	0.75
	pH	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.02	8.64	7.88	7.97	8.00	ND	8.10
	Nitrates (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.034	-	-	-	-	ND	0.034
SPP3	TSS (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	Turb. (NTU)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	pH	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	Nitrates (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
ELP2	TSS (mg/l)	5.0	5.0	4.0	5.0	0.0	5.0	0.0	5.0	5.0	0.0	14.0	18.8	14.0	15.7	5.0	7.3
	Turb. (NTU)	1.79	1.45	1.41	1.19	1.11	1.11	1.26	1.06	1.04	2.17	13.50	14.20	13.10	11.06	9.87	3.45
	pH	8.31	8.48	8.35	8.39	8.46	8.41	8.49	8.50	8.49	8.37	8.38	8.38	8.31	8.48	8.36	8.41
	Nitrates (mg/l)	-	-	0.226	-	-	-	-	-	-	-	-	-	-	-	-	-
Yellow Pit	TSS (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	Turb. (NTU)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	pH	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
	Nitrates (mg/l)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA
LSP-2	TSS (mg/l)	-	-	-	0.0	-	-	-	-	-	-	0.0	-	-	-	-	5.2
	Turb. (NTU)	-	-	-	0.6	-	-	-	-	-	-	11.5	-	-	-	-	5.3
	pH	-	-	-	8.12	-	-	-	-	-	-	8.06	-	-	-	-	8.09
	Nitrates (mg/l)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.293
LSP-3	TSS (mg/l)	-	-	-	ND	-	-	-	-	-	-	ND	-	-	-	-	NA
	Turb. (NTU)	-	-	-	ND	-	-	-	-	-	-	ND	-	-	-	-	NA
	pH	-	-	-	ND	-	-	-	-	-	-	ND	-	-	-	-	NA
	Nitrates (mg/l)	-	-	-	ND	-	-	-	-	-	-	ND	-	-	-	-	NA

**Limits:**

pH 6.0-9.5

TSS Max. Monthly Avg. Concentration = 50mg/L

TSS Max. Daily Concentration = 350mg/L

**Notes:**

ND: No Discharge

For TSS readings below detection limits (<3 mg/L), a zero is included in Table and in the average TSS calculations.

Results that exceed limits are outlined in grey and bolded.

TSS results from lab highlighted

**Table 2 – January 2015 Routine Analysis of Main Tailings Pond  
to Baseline Creek Pump System**

<u>DATE</u>	<u>TIME</u>	<u>NTU</u>	<u>pH</u>	<u>PUMPING RATE (m<sup>3</sup>/min)</u>	<u>VOLUME (m<sup>3</sup>)</u>	<u>TSS</u>	<u>NO3</u>
Jan 1/15	9:48	-	-	0			
	15:43	-	-	0			
Jan 2/15	9:26	-	-	0			
	15:10	-	-	0			
Jan 3/15	9:57	-	-	0			
	15:16	-	-	0			
Jan 4/15	9:53	-	-	0			
	15:00	-	-	0			
Jan 5/15	10:39	-	-	0			
	15:20	-	-	0			
Jan 6/15	9:02	-	-	0			
	14:59	-	-	0			
Jan 7/15	8:55	-	-	0			
	14:52	-	-	0			
Jan 8/15	8:57	-	-	0			
	14:53	-	-	0			
Jan 9/15	8:56	-	-	0			
	14:57	-	-	0			
Jan 10/15	9:01	-	-	0			
	15:00	-	-	0			
Jan 11/15	9:10	-	-	0			
	15:07	-	-	0			
Jan 12/15	9:05	-	-	0			
	15:00	-	-	0			
Jan 13/15	8:44	-	-	0			
Jan 14/15	8:47	-	-	0			
	15:40	-	-	0			
Jan 15/15	10:27	-	-	0			
	15:52	-	-	0			
Jan 16/15	9:20	-	-	0			
	15:10	-	-	0			

**Table 2 – January 2015 Routine Analysis of Main Tailings Pond to Baseline Creek Pump System Continued**

<u>DATE</u>	<u>TIME</u>	<u>NTU</u>	<u>pH</u>	<u>PUMPING RATE (m<sup>3</sup>/min)</u>	<u>VOLUME (m<sup>3</sup>)</u>	<u>TSS</u>	<u>NO3</u>
Jan 17/15	8:55	-	-	0			
	15:10	-	-	0			
Jan 18/15	9:27	-	-	0			
	14:55	-	-	0			
Jan 19/15	9:13	-	-	0			
	15:18	-	-	0			
Jan 20/15	8:47	-	-	0			
	14:53	-	-	0			
Jan 21/15	9:01	-	-	0			
	14:52	-	-	0			
Jan 22/15	8:55	-	-	0			
	15:01	-	-	0			
Jan 23/15	9:24	-	-	0			
	15:00	-	-	0			
Jan 24/15	9:28	-	-	0			
	14:58	-	-	0			
Jan 25/15	9:08	-	-	0			
	14:59	-	-	0			
Jan 26/15	9:53	-	-	0			
	15:03	-	-	0			
Jan 27/15	10:30	-	-	0			
	15:02	-	-	0			
Jan 28/15	10:37	-	-	0			
	15:07	-	-	0			
Jan 29/15	10:03	-	-	0			
	15:00	-	-	0			
Jan 30/15	10:34	-	-	0			
	15:29	-	-	0			
Jan 31/15	10:51	-	-	0			
	16:58	-	-	0			

<b>Average TSS (mg/L):</b>	<b>NA</b>
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Notes: Cells hi-lighted green represent results received from ALS Laboratory  
 Results below detection limits = 0  
**Cells hi-lighted grey and bolded represent results over limits outlined in Table 4.2A**  
 Cells not hi-lighted use the converted TSS value outlined in Section 4.2.8a

**Table 3 – January 2015 Routine Analysis of Main Tailings Pond Spillway Discharge**

<u>DATE</u>	<u>TIME</u>	<u>NTU</u>	<u>pH</u>	<u>Flow (cm)</u>	<u>VOLUME (m<sup>3</sup>)</u>	<u>TSS</u>	<u>NO3</u>
Jan 1/15	9:58	1.72	7.76	1		5	
	15:54	1.14	7.75	1		5	
Jan 2/15	9:36	1.66	7.77	1		0	
	15:20	1.28	7.54	1		5	
Jan 3/15	10:07	1.22	7.17	1		5	
	15:27	1.13	7.8	1		5	
Jan 4/15	10:03	1.66	7.7	1		5	
	15:30	1.27	7.79	1		5	
Jan 5/15	10:54	1.29	7.64	3		0	
	15:31	1.92	7.66	3		5	
Jan 6/15	9:15	2.89	7.64	2		5	
	15:02	2.81	7.64	2		5	
Jan 7/15	9:13	2	7.64	2		16.1	0
	15:06	1.71	7.65	2		5	
Jan 8/15	9:10	1.56	7.67	2		5	
	15:06	1.54	7.66	2		5	
Jan 9/15	9:08	1.59	7.57	2		3.2	
	15:09	1.92	7.64	2		5	
Jan 10/15	9:12	3.57	7.62	2		5	
	15:10	3.88	7.69	2		5	
Jan 11/15	9:23	3.99	7.81	2		5	
	15:14	3.99	7.81	2		5	
Jan 12/15	9:18	4.11	7.74	2		9.2	
	15:12	4.22	7.74	2		5	
Jan 13/15	8:50	4.05	7.66	2		5	
Jan 14/15	8:42	4.38	7.92	2		10.1	
	15:38	5.32	7.73	2		5	
Jan 15/15	10:36	4.58	7.72	2		5	
	16:05	4.81	7.99	2		5	
Jan 16/15	9:35	4.47	7.82	2		10	
	15:24	4.31	7.93	2		5	



**Table 3 – January 2014 Routine Analysis of Main Tailings Pond  
Spillway Discharge Continued**

<u>DATE</u>	<u>TIME</u>	<u>NTU</u>	<u>pH</u>	<u>Flow (cm)</u>	<u>VOLUME (m<sup>3</sup>)</u>	<u>TSS</u>	<u>NO3</u>
Jan 17/15	9:08	4.04	7.93	2		5	
	15:24	4.08	7.89	2		5	
Jan 18/15	9:41	4.23	7.83	2		5	
	15:09	4.11	8.87	2		5	
Jan 19/15	9:27	3.74	8	2		9.5	0
	15:28	4.04	7.94	2		5	
Jan 20/15	8:58	3.11	7.95	2		5	
	15:03	3.94	7.93	2		5	
Jan 21/15	9:19	3.45	8.01	2		4.4	
	15:05	3.25	8.01	2		5	
Jan 22/15	9:08	3.4	8.06	1.5		5	
	15:11	3.52	7.94	1.5		5	
Jan 23/15	9:38	3.33	8.11	1.5		4.2	
	15:10	3.53	7.98	1.5		5	
Jan 24/15	9:40	2.97	8.08	2		5	
	15:08	3.16	8	2		5	
Jan 25/15	9:19	2.17	8.09	2.5		5	
	15:08	3.09	8.15	2.5		5	
Jan 26/15	10:10	4.5	8.15	3		7.0	
	15:15	4.45	8.16	3		5	
Jan 27/15	10:46	4.35	8.08	1.5		5	
	15:15	4.24	8.09	1.5		5	
Jan 28/15	10:50	4.58	7.95	3		10.3	
	15:21	3.94	8.03	3		5	
Jan 29/15	10:12	3.71	8.08	1.5		5	
	15:10	3.12	8.05	1.5		5	
Jan 30/15	10:53	3.3	7.9	1.5		8.8	
	15:40	3.78	8.08	1.5		5	
Jan 31/15	10:14	3.5	8.06	2		5	
	17:07	3.34	8.03	2		5	

<b>Average TSS (mg/L):</b>	<b>5.5</b>
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Notes: Cells hi-lighted green represent results received from ALS Laboratory  
Results below detection limits = 0

**Cells hi-lighted grey and bolded represent results over limits outlined in Table 4.2A**

Cells not hi-lighted use the converted TSS value outlined in Section 4.2.8a

**Table 4 – January 2015 Routine Analysis of East Conveyor Pond**

<u>DATE</u>	<u>TIME</u>	<u>NTU</u>	<u>pH</u>	<u>PUMPING RATE (m<sup>3</sup>/min)</u>	<u>VOLUME (m<sup>3</sup>)</u>	<u>TSS</u>	<u>NO3</u>
Jan 1/15	9:53	1.31	8.83	0		5	
	15:47	1.25	8.36	0		5	
Jan 2/15	9:30	1.43	8.2	0		23.4	
	15:28	1.02	8.32	0		5	
Jan 3/15	10:01	1.33	8.34	0		5	
	15:20	1.15	8.38	0		5	
Jan 4/15	9:56	2.19	8.34	0		5	
	15:15	1.16	8.38	0		5	
Jan 5/15	10:42	2.04	8.32	0		60.2	
	15:25	1.59	8.3	0		5	
Jan 6/15	9:05	1.56	8.3	0		5	
	14:54	1.59	8.34	0		5	
Jan 7/15	9:01	1.4	8.38	0		3.1	0
	14:55	1.27	8.34	0		5	
Jan 8/15	9:01	1.5	8.33	0		5	
	14:58	1.31	8.39	0		5	
Jan 9/15	9:01	1.57	8.32	0		4.6	
	15:03	1.26	8.38	0		5	
Jan 10/15	9:06	1.36	8.38	0		5	
	15:05	1.31	8.35	0		5	
Jan 11/15	9:13	1.33	8.43	0		5	
	15:09	1.32	8.41	0		5	
Jan 12/15	9:09	0.72	8.43	0		4.1	
	15:05	1.12	8.38	0		5	
Jan 13/15	8:46	1.3	8.39	0		5	
Jan 14/15	8:32	1.18	8.35	0		5.7	
	15:46	1.04	8.42	0		5	
Jan 15/15	10:32	0.98	8.29	0		5	
	15:58	0.97	8.33	0		5	
Jan 16/15	9:26	1.12	8.45	0		4.3	
	15:15	1.35	8.31	0		5	
Jan 17/15	9:02	0.86	8.41	0		5	
	15:13	0.9	8.43	0		5	

**Table 4 – January 2015 Routine Analysis of East Conveyor Pond  
Continued**

<u>DATE</u>	<u>TIME</u>	<u>NTU</u>	<u>pH</u>	<u>PUMPING RATE (m<sup>3</sup>/min)</u>	<u>VOLUME (m<sup>3</sup>)</u>	<u>TSS</u>	<u>NO3</u>
Jan 18/15	9:34	1.05	8.42	0		5	
	14:59	0.77	8.42	0		5	
Jan 19/15	9:18	1.06	8.38	0		4.4	0
	15:23	0.89	8.44	0		5	
Jan 20/15	8:50	0.96	8.48	0		5	
	14:56	0.86	8.43	0		5	
Jan 21/15	9:06	1.2	8.46	0		0	
	14:55	1.05	8.45	0		5	
Jan 22/15	8:58	1.42	8.48	0		5	
	15:04	1.38	8.41	0		5	
Jan 23/15	9:30	1.21	8.45	0		0	
	15:03	0.92	8.43	0		5	
Jan 24/15	9:32	1.22	8.45	0		5	
	15:01	1.11	8.43	0		5	
Jan 25/15	9:11	0.87	8.48	0		5	
	15:01	1.2	8.43	0		5	
Jan 26/15	9:59	0.88	8.42	0		0	
	15:07	0.89	8.45	0		5	
Jan 27/15	10:35	1.28	8.45	0		5	
	15:08	1.39	8.31	0		5	
Jan 28/15	10:43	2.36	8.44	0		15.8	
	15:12	1.61	8.45	0		5	
Jan 29/15	10:07	2.38	8.43	0		5	
	15:04	1.92	8.46	0		5	
Jan 30/15	10:40	1.47	8.42	0		9.4	
	15:35	1.78	8.35	0		5	
Jan 31/15	10:04	1.18	8.46	0		5	
	17:00	1.07	8.42	0		5	

**Average TSS (mg/L): 6.2**

Notes:

Cells hi-lighted green represent results received from ALS Laboratory  
Results below detection limits = 0

**Cells hi-lighted grey and bolded represent results over limits outlined in Table 4.2A**

Cells not hi-lighted use the converted TSS value outlined in Section 4.2.8a

**Table 5 – January 2015 Routine Analysis of East Limb Pond 1**

<u>DATE</u>	<u>TIME</u>	<u>NTU</u>	<u>pH</u>	<u>PUMPING RATE (m<sup>3</sup>/min)</u>	<u>Flow through Weir (L/s)</u>	<u>VOLUME (m<sup>3</sup>)</u>	<u>TSS</u>	<u>NO3</u>
Jan 1/15	10:16	-	-	0		No Flow		
	14:03	-	-	0		No Flow		
Jan 2/15	9:49	-	-	0		No Flow		
	15:30	-	-	0		No Flow		
Jan 3/15	10:17	-	-	0		No Flow		
	15:38	-	-	0		No Flow		
Jan 4/15	10:11	-	-	0		No Flow		
	15:41	-	-	0		No Flow		
Jan 5/15	9:53	-	-	0		No Flow		
	14:44	-	-	0		No Flow		
Jan 6/15	9:31	-	-	0		No Flow		
	15:14	-	-	0		No Flow		
Jan 7/15	9:29	-	-	0		No Flow		
	15:21	-	-	0		No Flow		
Jan 8/15	9:26	-	-	0		No Flow		
	14:21	-	-	0		No Flow		
Jan 9/15	9:20	-	-	0		No Flow		
	15:20	-	-	0		No Flow		
Jan 10/15	9:24	-	-	0		No Flow		
	15:23	-	-	0		No Flow		
Jan 11/15	9:35	-	-	0		No Flow		
	15:30	-	-	0		No Flow		
Jan 12/15	9:31	-	-	0		No Flow		
	15:24	-	-	0		No Flow		
Jan 13/15	9:04	-	-	0		No Flow		
Jan 14/15	11:00	-	-	0		No Flow		
	15:45	-	-	0		No Flow		
Jan 15/15	10:58	-	-	0		No Flow		
	16:16	-	-	0		No Flow		
Jan 16/15	9:46	-	-	0		No Flow		
	15:35	-	-	0		No Flow		

**Table 5 – January 2015 Routine Analysis of East Limb Pond 1  
Continued**

<u>DATE</u>	<u>TIME</u>	<u>NTU</u>	<u>pH</u>	<u>PUMPING RATE (m<sup>3</sup>/min)</u>	<u>Flow through Weir (L/s)</u>	<u>VOLUME (m<sup>3</sup>)</u>	<u>TSS</u>	<u>NO3</u>
Jan 17/15	9:20	-	-	0		No Flow		
	15:38	-	-	0		No Flow		
Jan 18/15	9:56	-	-	0		No Flow		
	15:23	-	-	0		No Flow		
Jan 19/15	9:35	-	-	0		No Flow		
	15:40	-	-	0		No Flow		
Jan 20/15	9:09	-	-	0		No Flow		
	15:10	-	-	0		No Flow		
Jan 21/15	9:29	-	-	0		No Flow		
	15:12	-	-	0		No Flow		
Jan 22/15	9:23	-	-	0		No Flow		
	15:22	-	-	0		No Flow		
Jan 23/15	8:46	-	-	0		No Flow		
	15:22	-	-	0		No Flow		
Jan 24/15	8:40	-	-	0		No Flow		
	15:18	-	-	0		No Flow		
Jan 25/15	9:29	-	-	0		No Flow		
	15:18	-	-	0		No Flow		
Jan 26/15	9:16	-	-	0		No Flow		
	14:30	-	-	0		No Flow		
Jan 27/15	9:40	-	-	0		No Flow		
	15:21	-	-	0		No Flow		
Jan 28/15	9:41	-	-	0		No Flow		
	15:30	-	-	0		No Flow		
Jan 29/15	9:30	4.21	8.29	0			5.5	
	15:22	3.13	-	0	4.26		5	
Jan 30/15	9:47	1.49	8.31	0	4.26		3.5	
	15:54	1.53	8.29	0	4.26		5	
Jan 31/15	10:28	2.76	8.34	0	0.47		5	
	17:15	2.74	8.35	0	0.47		5	

**Average TSS: 4.8**

Notes: Cells hi-lighted green represent results received from ALS Laboratory  
**Cells hi-lighted grey and bolded represent results over limits outlined in Table 4.2A**  
 Cells not hi-lighted use the converted TSS value outlined in Section 4.2.8a

**Table 6 – January 2015 Routine Analysis of Pond 5**

<u>DATE</u>	<u>TIME</u>	<u>NTU</u>	<u>pH</u>	<u>PUMPING RATE (m<sup>3</sup>/min)</u>	<u>Volume (m<sup>3</sup>)</u>	<u>TSS (mg/L)</u>	<u>NO3 (mg/L)</u>
Jan 1/14	11:03	-	-	No Flow			
	14:19	-	-	No Flow			
Jan 2/14	11:00	-	-	No Flow			
	15:55	-	-	No Flow			
Jan 3/14	11:18	-	-	No Flow			
	14:00	-	-	No Flow			
Jan 4/14	10:51	-	-	No Flow			
	15:59	-	-	No Flow			
Jan 5/14	11:10	-	-	No Flow			
	15:47	-	-	No Flow			
Jan 6/14	9:51	-	-	No Flow			
	15:28	-	-	No Flow			
Jan 7/14	9:55	-	-	No Flow			
	15:44	-	-	No Flow			
Jan 8/15	9:44	-	-	No Flow			
	15:22	-	-	No Flow			
Jan 9/15	9:48	-	-	No Flow			
	15:46	-	-	No Flow			
Jan 10/15	9:42	-	-	No Flow			
	15:44	-	-	No Flow			
Jan 11/15	9:53	-	-	No Flow			
	15:48	-	-	No Flow			
Jan 12/15	9:49	-	-	No Flow			
	15:39	-	-	No Flow			
Jan 13/15	9:21	-	-	No Flow			
Jan 14/15	13:31	-	-	No Flow			
	16:00	-	-	No Flow			
Jan 15/15	12:10	-	-	No Flow			
	16:31	-	-	No Flow			
Jan 16/15	10:55	-	-	No Flow			
	15:53	-	-	No Flow			
Jan 17/15	10:30	-	-	No Flow			
	15:55	-	-	No Flow			

**Table 6 – January 2015 Routine Analysis of Pond 5 Continued**

<u>DATE</u>	<u>TIME</u>	<u>NTU</u>	<u>pH</u>	<u>PUMPING RATE (m<sup>3</sup>/min)</u>	<u>Volume (m<sup>3</sup>)</u>	<u>TSS (mg/L)</u>	<u>NO3 (mg/L)</u>
Jan 18/15	12:15	-	-	No Flow			
	15:40	-	-	No Flow			
Jan 19/15	9:52	-	-	No Flow			
	15:57	-	-	No Flow			
Jan 20/15	9:28	-	-	No Flow			
	15:23	-	-	No Flow			
Jan 21/15	9:43	-	-	No Flow			
	15:30	-	-	No Flow			
Jan 22/15	9:39	-	-	No Flow			
	15:38	-	-	No Flow			
Jan 23/15	10:02	-	-	No Flow			
	15:35	-	-	No Flow			
Jan 24/15	9:55	-	-	No Flow			
	15:34	-	-	No Flow			
Jan 25/15	9:46	-	-	No Flow			
	15:37	-	-	No Flow			
Jan 26/15	10:24	-	-	No Flow			
	15:29	-	-	No Flow			
Jan 27/15	11:47	-	-	No Flow			
	15:40	-	-	No Flow			
Jan 28/15	11:07	-	-	No Flow			
	15:53	-	-	No Flow			
Jan 29/15	10:36	-	-	No Flow			
	15:40	-	-	No Flow			
Jan 30/15	11:08	-	-	No Flow			
	15:05	-	-	No Flow			
Jan 31/15	14:48	-	-	No Flow			
	17:30	-	-	No Flow			

**Average TSS (mg/L):**

**N/A**

Notes: Cells hi-lighted green represent results received from ALS Laboratory

Results below detection limits = 0

**Cells hi-lighted grey and bolded represent results over limits outlined in Table 4.2A**

Cells not hi-lighted use the converted TSS value outlined in Section 4.2.8a

**Table 7 – January 2014 Main Tailings Pond Detailed Analysis**

Obed Mountain Mine				
Monthly Detailed Sampling - Main Tailings Pond - January 20, 2015				
Parameter	CCME/Alberta Guidelines	CDWQ Aesthetic Objective (mg/L)	January Discharge mg/L	Comments
Aluminum	0.005-0.1 mg/L		<b>0.329</b>	
Arsenic	0.005 mg/L		0.00076	
Boron	1.5 mg/L		0.059	
Cadmium	0.00005-0.000097 mg/L		0.000011	
Chromium	0.0089 mg/L		0.0004	
Copper	0.002-0.004 mg/L		0.00062	
Iron	0.3 mg/L		0.291	
Lead	0.001 - 0.007 mg/L		0.000139	
Mercury	0.0001 mg/L		<0.00010	
Molybdenum	0.073 mg/L		0.00249	
Nickel	0.025 - 0.15 mg/L		0.00134	
Selenium	0.001 mg/L		0.00011	
Silver	0.0001 mg/L		<0.000010	
Thallium	0.0008 mg/L		<0.000010	
Zinc	0.03 mg/L		<0.0030	
Ammonia	1.37-2.2 mg/L		<0.050	
BOD			<2.0	No Numerical Guidelines
Colour, True	Background + 30 TCU		6.5	
Cyanide	0.005 mg/L		<0.0020	
Hardness			471	mg/L
Nitrate - N	*		<0.020	
Nitrite - N	0.06 mg/L		<0.010	
Oil and Grease			<1.0	No Numerical Guidelines
Oxygen, Dissolved	5.5 - 9.5 mg/L		7.6	
pH	6.5-9.0		7.9	
Phenols	0.004 mg/L		<0.0010	
Phosphorous, Total	0.05 mg/L		<0.020	
Sulfate		<500	221	
Sulfide, Total		<0.05	<0.0015	
Total Suspended Solids	Background + 10 mg/L		7.9	
Temperature	Degrees Celsius		0.6	
Total Dissolved Solids		<500	<b>848</b>	
Benzene	0.37 mg/L		<0.00050	
Ethylbenzene	0.09 mg/L		<0.00050	
Xylene		<0.3	<0.00071	
Toluene	0.002 mg/L		<0.00050	

Note: Results above CCME Guidelines are bold and highlighted