

Fred Bullen

June 5, 2017

Western Pacific Marine Ltd.

7721 Upper Balfour Rd

Balfour, BC. V0G 1C0

Re: Balfour Osprey 2000 Gear Oil Spill - Summary of SCAT Assessment – June 2, 2017

Survey Date: June 2, 2017. 12:00 – 15:00

Weather: Overcast, periods of light rain. No wind to light wind.

Crew: Allan Irvine, Bethany Arndt

Kootenay Lake Level (Queen's Bay): 533.67 m

Kootenay Lake level at time of incident (April 15, 2017): 531.97 m

Kootenay Lake forecast for June 9, 2017: 534.38 m

A 925 m length of shoreline, located on the West Arm of Kootenay Lake, was resurveyed on June 2nd, 2017, as a follow-up to Shoreline Cleanup Assessment Technique (SCAT) surveys completed on April 17th, April 20th and April 26th 2017 (Table 1, Figure 1, Photos 1 - 12).

Table 1. SCAT assessment summary from June 2nd, 2017.

Section ID	*Length (m)	Location	Comments
1	120	Upstream of Terminal - From second dock upstream of terminal piers to dock in front of Holly's Diner.	No oil detectable by sight, smell or feel. Grey foam on ~ 1 m of beach adjacent to water. Thought to be unrelated to gear oil spill. Sample taken.
2	95	Downstream of Terminal - From dock in front of Holly's Diner to Dock'n' Duck dock.	No oil detectable by sight, smell or feel. Grey foam on ~ 1 m of beach adjacent to water on upstream end of section. Thought to be unrelated to gear oil spill. Sample taken. Dock'n' Duck dock.
3	90	Downstream of Dock 'n' Duck - From Dock'n' Duck dock to small old docks.	No oil detectable by sight, smell or feel.
4	85	Upstream of First Marina Dock - From small old docks to first marina dock.	No oil detectable by sight, smell or feel.
5	70	Downstream of First Marina Dock - First marina dock to Graham Marine dock.	No oil detectable by sight, smell or feel.
6	150	Downstream of Graham Marine - Graham Marine dock to dock government boat launch.	No oil detectable by sight, smell or feel. Two small patches of grey foam on water surface adjacent to dock. Thought to be unrelated to gear oil spill.
7	315	Downstream of Government Boat Launch - Government boat launch to private dock 315 m downstream.	No oil detectable by sight, smell or feel.
	925	Results of April 17, 2017 SCAT survey indicate oil observed on 495 m of river bank shoreline	

*Bolded lengths indicate river bank shoreline sections where oil was observed during April 17, 2017 SCAT Survey.



Figure 1. Map of sections and assessment result summary.



Photo 1. Section 1 - Upstream view.



Photo 2. Section 1 - Downstream view



Photo 3. Section 2 - Downstream view.



Photo 4. Section 3 - Upstream view.



Photo 5. Section 3 - Downstream view.



Photo 6. Section 4 - Upstream view.



Photo 7. Section 5– Upstream view.



Photo 8. Section 5 – No film around docks.



Photo 9. Section 6 – Upstream view.



Photo 10. Section 7 – Upstream view.

Assessment Summary

- Water
 - No gear oil film on standing water in any section.

- Shoreline
 - No gear oil film visible on shoreline in any section. No oil detectable by feel in any section.
 - Washing the shoreline within 1 – 2 m of water level generates no gear oil film in any section.
 - Subsurface
 - No subsurface oil present in any section.
 - Odor
 - No oil detectable by smell in any section.

- Wildlife
 - No impacted wildlife observed.

Discussion

Kootenay Lake levels at the time of the June 2nd SCAT survey were 1.7 m higher than the levels on the date of the spill (April 15, 2017). Since the time of the incident, rising lake levels along with wave action, wind and precipitation appear to have flushed the spilled gear oil from the shoreline. As gear oil from the spill is no longer detectable by sight, smell or feel within the areas previously impacted no further actions are warranted.

A grey film was observed on small patches of water adjacent to the shoreline primarily within Section 1 and grey foam was noted on the shoreline upstream of the ferry terminal, from the Balfour Beach Inn to Section 1. The film and foam are thought to be unrelated to the gear oil spill as it is located upstream of the terminal where no product has been observed to date, and because it did not have a hydrocarbon odor. Current levels of Kootenay Lake are at their highest levels since the spring/summer of 2012, and this is expected to result in the mobilization of materials from shorelines throughout the lake. The grey film residue and foam is likely from a source other than the gear oil spill that has been mobilized by these extremely high water levels.

If you have any questions or comments please feel free to contact us.

Sincerely,

Al Irvine, RPBio Ico de Zwart, RPBio, PChem.

Masse Environmental Consultants

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