



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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August 23, 2007

Steven R. Hammer, P.E.  
Senior Engineer  
SLR International Corp.  
1800 Blankenship Road, Suite 440  
West Linn, OR 97068

Re: Columbia Marine Lines Site – Vancouver, WA (Crowley Maritime Corp.)

Dear Mr. Hammer:

Thank you for your August 22, 2007 e-mail to the Department of Ecology that attached a Draft Work Plan for sampling the Columbia Marine Lines Site. The work plan outlines a drilling program that will start on August 24, 2007. The sampling event is approved as described in your August 22, 2007 Draft Plan. The priority pollutant analysis (SVOC & VOC) should be taken from any one of the GP-6E – GP-8E wells. I also refer you to Table 830-1 “Required Testing for Petroleum Releases” in WAC 173-340-900 to answer any questions about analytes. Please call or e-mail if you have questions regarding the Washington State methods for determining petroleum cleanup levels as described in WAC 173-340-745 Soil cleanup standards for industrial properties.

In plotting up the data from the west lagoon treatment area it appears the dual phase treatment that occurred from 2002 – 2005 had an effect on the over all TPH levels found on that portion of the site. Where the treatment system was installed there was degradation of petroleum hydrocarbons. The TPH levels prior to treatment (1999 & 2002 sample events) were almost uniformly were in the 1 % to 3% range. After treatment the results were significantly lower but probably not below Model Toxics Control Act TPH cleanup levels. MTCA Method A table levels are 2000 mg/kg TPH for industrial properties. When you receive the complete analytical suite from the August 2007 sample event you can determine using the four phase petroleum faction method and the department EC fraction spreadsheet what the cleanup levels will be for the portion of the site where you sampled. When the contamination is easily accessible and not covered with physical structures the Department will require cleanup down to the appropriate cleanup levels.

In looking at the layout of the proposed drilling I noted that you have not placed any wells between existing monitoring wells MW-1, MW-4 and MW-10. I would suggest that you determine if one or two samples are needed in this area while you are drilling the east lagoon area. Without any current data from the east lagoon one can not determine how far and at what levels the contamination extends to the west. It appears that the 2005 round of samples limits the



west lagoon contamination but does not give one a sense where the east lagoon contamination ends. This can be determined in the field while you are drilling the eastern side of the lagoon.

As I said in my first review of the data, the dual phase extraction system as constructed was not effective in removing hydrocarbons at this site down to MTCA cleanup levels. After review of the data, it appears that the system would work if installed and operated in a systematic manor using a long enough time frame. The Department would like to review the next steps taken at the site once the current round of sampling is complete. Once the sampling is complete Crowley will know what areas at the site are above cleanup levels and can suggest what method is most practical for final cleanup.

If you have any questions regarding the sampling and cleanup please either call me or use e-mail (360) 407-6949 or [psk461@ecy.wa.gov](mailto:psk461@ecy.wa.gov)

Sincerely,



Paul Skillingstad  
Industrial Section

Cc: Stephen Wilson – Crowley  
M. Stiffler – Alcoa (electronic)  
L. McLellan – Evergreen (electronic)