



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

By Mail

August 10, 2011

Russell Becker  
Environmental Program Manager  
RGSteel Sparrows Point  
1430 Sparrows Point Boulevard, MD 21219

Subject: Baseline Ecological Risk Assessment for On-Site Areas dated August 2010  
Severstal Sparrows Point Facility

Dear Mr. Becker:

EPA has reviewed the subject report and hereby provides comments below:

1. Section 5.4.1, Soil Invertebrates Effects Characterization and Table 5-11, Soil Invertebrate Toxicity Reference Values  
(a) Table 5-11 makes extensive use of an older reference (Malecki et al., 1982) that was not selected by EPA for use in the EcoSSLs, and that provides a suspiciously wide range (spanning three orders of magnitude) of effect concentrations for the same species and endpoint. The difference is the many different forms of each inorganic tested. No doubt, some of these forms are unlikely to naturally occur in soils, while some are more likely to occur. The extensive use of this reference appears to be questionable. Please address.  
(b) Section 5.4.1 describes a comprehensive review of the available toxicological data for earthworms, so it is unclear why not all of this available growth or reproduction earthworm data was used for the cadmium TRV, which excluded two MATCs and a LOAEC (all van Gestel) available in the EPA cadmium EcoSSL document. Please explain.
2. Section 5.4.2, Effects Characterization Benthic Invertebrates and Tables 6-5, 6-7, and 6-8  
This section states that the  $K_p$  and water quality benchmark were used for those inorganics without a MacDonald PEC. Please revise Tables 6-5, 6-7, and 6-8 to show all values used for these calculations.
3. Section 5.4.4, Effects Characterization Birds and Mammals, Table 5-12 (Wildlife Toxicity Reference Values) and Appendix E  
This section states that derivations of the TRVs are provided in Appendix E. However, Appendix E contains no derivation for tin, and Table 5-12 shows a very high mammalian NOAEL and LOAEL for tin. Please revise to provide the rationale and derivation of these tin TRVs.
4. Section 6.1.1, Direct Contact Evaluation Soil Invertebrates  
The CL1B Parcel discussion in this section omits the copper HQ of 9.3. Please correct.
5. Section 6.1.1, Direct Contact Evaluation Benthic Invertebrates/Fish  
The Knobby's Ditch Head Pond discussion in this section has a typo regarding the PAH toxicity at KD-



FS-01 – “given that the ESG is < 1” should read “> 1.” Please correct.

6. Section 6.1.2, Food Chain Evaluation, Humphrey Impoundment

The American robin discussion in this section notes that the lack of a TRV for tin is a source of uncertainty. However, this discussion should also note that the total tin dose was the third highest dose estimated for the American robin, and could result in an elevated HQ, if a TRV was available.

7. Section 6.1.2, Food Chain Evaluation, CL1B Parcel and Tables 6-16, 6-17, and 6-18

(a) According to the 2009 SLERA, LMW PAHs were an uncertainty for all CL1B Parcel avian receptors that should have been carried into the BERA. Please revise accordingly.

(b) The mourning dove discussion in this section mistakenly refers to tin, which is not a BERA COPC for this receptor. Please correct.

8. Section 7, Conclusions

(a) This section states “Consequently, the ecological risk evaluation at the Sparrows Point Site, including this BERA, collectively represent a site-wide investigation that complies wholly with the provisions of the 1997 Consent Decree.” This is not an accurate statement, because the Consent Decree requires an off-site (aquatic sediment and surface water) investigation as well. Please revise accordingly.

(b) This section states that “Wildlife risks in the CL1B Parcel (including the two small ponds), Mud Reservoir, and Knobby’s Ditch Head Pond are acceptable; therefore, remediation based on ecological concerns in these areas is not necessary.” This statement ignores the direct contact risks previously discussed in this section. The CL1B Small Pond sediments exhibit substantially elevated hazard quotients for cadmium, cyanide and zinc, while the CL1B Parcel soils show elevated hazard quotients for copper and zinc. The Knobby’s Ditch Head Pond sediment sample with PAH detections shows an elevated equilibrium partitioning sediment benchmark summed toxic unit. Please revise accordingly.

(c) For the Humphrey Impoundment and Former East Pond, this section states that “. . .the unacceptable risks apply only to wildlife with small home ranges that could potentially reside or forage 100 percent of the time within the area of concern . . .” However, the hazard quotients are so elevated, even for the LOAEL-based HQs, that if residence of these receptors was halved, the HQs would still be unacceptable. Thus, the cited statement incorrectly minimizes the risk estimates. Please rectify.

(d) This section does not provide a scientific management decision point. The BERA conclusions are deficient without this information. Please revise accordingly.

Tables

9. Tables 5-7, Estimated Terrestrial Prey Concentrations in Mud Reservoir and 5-8, Estimated Terrestrial Prey Concentrations in the Former East Pond

These tables do not include copper, while Table 3-1 does include copper as both a Mud Reservoir and Former East Pond COPC. Please rectify.

10. Tables 6-26, Risk Estimates for the Red-Tailed Hawk – Former East Pond and 6-28, Risk Estimates for the Mourning Dove – Former East Pond

The dose estimates in these tables do not appear to have incorporated the AUF of 0.01. Please evaluate.

Appendix B

11. Table B-5, Humphrey Impoundment Surface Soil Data

Dibenzofuran was not listed in Table B-5. There were two Table B-5 samples in which dibenzofuran was detected in the laboratory reports, HI-SS-16 (120J ug/kg) and HI-SS-17 (41J ug/kg). Please correct Table B-5.

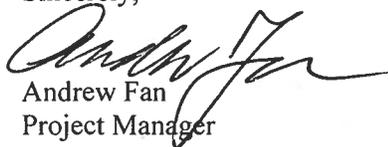
12. Table B-6, CL1B Parcel Surface Soil Data

There are omissions of analytes from Table B-6 that were detected in the semivolatile sections of the laboratory reports for those samples. Samples CL-SS-01 through CL-SS-20 do not list benzo(a)anthracene, bis(2-ethylhexyl)phthalate, butyl benzyl phthalate, phenanthrene, dibenzofuran, and diethyl phthalate. As a result, detected concentrations of these analytes are not included in the tables, as shown below. Please correct Table B-6.

Sample Number	Benzo(a)anthracene Conc/RL (ug/kg)	Bis(2-ethylhexyl)phthalate Conc/RL (ug/kg)	Butyl benzyl phthalate Conc/RL (ug/kg)	Dibenzofuran Conc/RL (ug/kg)	Phenanthrene Conc/RL (ug/kg)
CL-SS-01	120J/360				150J/360
CL-SS-02	120J/150	940/730			140J/150
CL-SS-03	110/73	41J/360	42J/360		57J/73
CL-SS-04					
CL-SS-05					
CL-SS-06	28J/73	67J/360			27J/73
CL-SS-07	60J/77	31J/380	31J/380		53J/77
CL-SS-08	73J/75	63J/370			51J/75
CL-SS-09					
CL-SS-10	170/76	54J/370	31J/380		53J/77
CL-SS-11	15,000/150				6,600/150
CL-SS-12	380/67	32J/330		28J/330	210/67
CL-SS-13	70J/83	40J/410			92/83
CL-SS-14	660/74	39J/370		320J/700	6,300/140
CL-SS-15	350/74	58J/360		36J/360	180/74
CL-SS-16	4400/140	100J/700		320J/700	6300/140
CL-SS-17	61J/75	44J/370			61J/75
CL-SS-18	230/75	100J/370	49J/370	28J/370	180/75
CL-SS-20	24J/78	82J/380		87/78	37J/380

Pursuant to Consent Decree, Docket Numbers JFM-97-558 and JFM-97-559, please revise the subject report within sixty (60) days of your receipt of this letter. If you have any questions, please call Ruth Prince, EPA's toxicologist, at 215-814-3118. For legal questions, please have your attorney contact Susan Hodges at 215-814-2643 or Charles Howland at 215-814-2645.

Sincerely,



Andrew Fan  
Project Manager

Cc: Barbara Brown, MDE

