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March 30, 2011

VIA OVERNIGHT MAIL

Galo Jackson
Remedial Project Manager
US EPA Region 4
61 Forsyth St. S.W.
Atlanta, Georgia 30303-8960

RE: Response to agency comments on the Draft Work Plan for Sampling in the Former Brunswick-Altamaha Canal

Dear Mr. Jackson:

We are in receipt of your letter dated March 9, 2011, providing comments on the Draft Work Plan for Sampling in the former Brunswick-Altamaha Canal submitted by Honeywell to the U.S. Environmental Protection Agency ("EPA") on December 30, 2010. Honeywell notes that the Draft Work Plan reflected our understanding of the general work scope and sampling approaches discussed with representatives of EPA and the Georgia Environmental Protection Division at a meeting on December 10, 2010. The purpose of this letter is to provide a response to each of the issues raised by EPA. To that end, please find below EPA's comments followed by our response. We have also enclosed a revised Draft Work Plan.

General Comment

The portion of the former canal owned by Glynn County is about 5,800 feet (ft) long, based on the Glynn County GIS maps available online. The length of the canal on the Brunswick Cellulose, Inc. property is about 1,000 ft. Please add sampling locations to the area between the northern limit of the Altamaha Canal on Glynn County property, shown on Figure 2 of the draft Work Plan, and the southern boundary LCP Site (parcel I.D. 03004612, ref. 007800000001). Recognizing that this will require sampling on Brunswick Cellulose, Inc. property, note that Section XI(B) of the AOC requires that Honeywell make efforts to obtain access. In the event that access is denied, EPA may then assist Honeywell in obtaining access.

Please specify the number of samples to be analyzed for the parameters listed on page 7. Given the approximate lengths of the canal mentioned above, our estimate of the number of composites to be analyzed is 21.

Honeywell Response to General Comment

Honeywell accepts EPA's determination that the portion of the former canal owned by Glynn County is about 5,800 linear feet. However, of this total linear footage, about 1,000 feet is across the City of Brunswick Publically Owned Treatment Works (POTW) and has been filled in, and another 600 feet is south of the POTW (which received discharge from the POTW) and hydraulically isolated from the northern segment of the canal. As a result, Honeywell proposes to sample across approximately 4,200 feet of the canal segment on the County property.

Regarding the Brunswick Cellulose owned portion of the canal, it was Honeywell's understanding that the agency had agreed on an approach where we would first sample the County portion of the canal and based on these results, we would discuss the need to sample on the Brunswick Cellulose portion. Honeywell will re-engage Brunswick Cellulose in order to gain access to the Brunswick Cellulose portion of the canal for the purpose of collecting samples. Honeywell will coordinate with EPA if Honeywell is not able to gain access.

Specific Comments

Section 2.1.1. page 5-6, Canal Sediment Sampling

For samples nearest the LCP Site property boundary (parcell.D. 03004612 and ref. 007800000001), please change the 1,000 ft canal segment length for each composite sample to every 300 ft. The figure on page 5 of the draft document shows the four sediment samples from the intertidal mudbank as corning from the each end of the 1,000 ft span. Please change the location of these four intertidal sediment samples so that they are collected away from the end and further towards the center of the span. This prevents the samples from being close to the next 300 ft span.

The Work Plan proposes to composite sediment samples collected from both the intertidal mudbank and from sediment below the low tide water level. Based on the recommendations of EPA Regional risk guidance, humans will have significant contact with, and incidentally ingest, only sediments that are not covered by water (EPA 2000). Following this guidance would exclude the samples from below the low tide water level, and would assess the mudbank sample data based on the times when the water is at low tide levels. In the interest of more fully characterizing the canal sediments, however, EPA concurs with compositing the samples, as proposed. The possible underestimation (could also be overestimated) of the "direct contact" concentration would be countered by the conservative approach of using a residential soil RSLs to screen the data.

Locations where nets or traps will be set up should be shown on the figure shown on page 5.

Honeywell Response

Honeywell and EPA previously agreed on sampling spacing (every 1,000 feet) and on the composite sampling approach. Changing the aerial dimension of the composite sample area from every 1,000 linear feet to every 300 linear feet defeats the purpose of a composite sampling approach. It would be more appropriate to employ a randomly-selected grab sampling approach if sampling is to be conducted for each 300 linear foot segment of the canal. In this manner, one has the advantage of utilizing the results for delineation of any contaminant issues if discovered while avoiding issues related to "disaggregation" of composited sample results as mentioned in a later Specific Comment from EPA on the draft plan. Thus, in response to EPA's comments above, Honeywell proposes to create a randomly-based grab sampling design by gridding the canal every 300 linear feet with an exclusion zone along the centerline portion of the channel (below the intertidal range), and use a random number generator within GIS to select one cell for each of 300-ft segment of the canal for sampling.

As to EPA's comment requesting a figure providing locations where nets/traps will be placed, the goal of the program is to attempt to obtain as many species and numbers of individuals within each desired species so as to obtain 3 replicate samples comprised of 5 individuals each. This is a long-standing protocol established years ago by the Georgia DNR for fish consumption guideline sampling in this area. It is often necessary to move locations of nets and traps throughout the course of tidal stage changes in order to achieve optimal fishing success, and pre-determining the locations would only limit our ability to collect enough samples for analysis.

Section 2.2, page 6, Fish Tissue Sampling

Several species of fish are targeted. The plan should focus on either the fish that are popular with local fishers or on species that were shown to accumulate the most contamination in the OUI (Estuary) baseline ecological risk assessment. Striped mullet were shown to accumulate the most PCBs. Silver perch and spotted seatrout were good bioaccumulators of mercury. The question that is being investigated by sampling the particular set of fishes should be clarified.

Honeywell Response

The plan does focus on fish that are popular with local fishers. It should be noted that management and staff with EPS were involved in past development of plans (approved by the Georgia DNR) for fish and shellfish sampling and analysis used in the development of the current fish consumptions guidelines for the Turtle River estuary. Striped mullet and spotted seatrout are on the list of species indicated in Section 2.2. Silver perch is not in the list of fish species designated for sampling, as these are small fish not desired by local fishers.

Honeywell understands that EPA's request to perform this sampling in the canal stems from a concern related to potential exposure to humans. Therefore, with respect to the proposed fish/shellfish sampling and analysis program, the basis for the sampling design mimics that of past

surveys conducted by the Georgia DNR, and more recently Honeywell, in the Turtle River where the data are evaluated with respect to human consumption.

Section 2.3, page 7, Analytical Methods table

Method 1631E is not an SW-846 method. Please use 7471B, "Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique)". In addition to the parameters listed on the Analytical Methods table, please add the analysis dioxin/furans analyses by the methods prescribed in EPA's Contract Laboratory Program Statement of Work.

Please add analysis of methylmercury, since the mercury in shrimps and crabs may be in its methylated form.

Honeywell Response

Method 1631E is an EPA method for the analysis of mercury and provides lower method detection limits compared to Method 7471B. Honeywell has been using Method 1631E on all recent work associated with the LCP site. In fact, this method was approved and used by Honeywell for the recent sampling in the former drive in theater portion of the site.

Honeywell will add dioxins/furans to the list of analytes for the sediment samples. Based on previous directives from EPA on dioxin/furan sampling, 20% of the sediment samples will be analyzed for dioxins and furans by EPA SW-846 Method 8290 (*Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/High Resolution Mass Spectrometry*).

Fish and shellfish will have the vast majority of the mercury present in the tissue in the form of methyl mercury. The analysis for total mercury (Method 1631E) proposed in the plan quantifies all mercury forms present in the media sample. Therefore it is unnecessary to test for methyl mercury.

Section 3.1.2 p.8, Fish Sampling Procedure

The text should explain how the data will be evaluated to determine whether there is a risk. There should be some explanation as to why three samples of each fish species will be sufficient to address the question, which has not been fully articulated.

The following are taken from the November 2000 Guidance for Assessing Chemical Contaminants Data for Use in Fish Advisories.

- *Place fish or crabs from the same station in a clean water proof bag before putting them on ice to prevent cross-contamination. Fish from multiple stations can be put in the same cooler as long as they are in their own bags;*
- *Make sure coolers, nets, filleting equipment, and bags are clean;*

- *Fish should be processed or frozen within 24-48 hrs of collection;*
- *The smallest size fish in a composite should equal 75% of the total length of the largest fish in a composite;*
- *Instrument should be washed with a detergent solution, rinsed with tap water, rinsed in isopropanol, and finally rinsed with organic free distilled water. Nitric Acid is not used for instrument preparation if stainless steel is being used; and*
- *Fish or crabs should stay frozen or partially frozen throughout the entire tissue preparation process.*

Honeywell Response

Fish and shellfish data will be evaluated in the context of the DNR's process for establishing fish consumption guidelines for the Turtle River estuary. EPS staff are well versed in this protocol and have previously interacted with the State toxicologist on past analysis of fish consumption guidelines in the Turtle River. The basis for proposing three samples (each sample is actually a replicate comprised of up to five individuals each) stems from a long-standing protocol of the Georgia DNR for fish consumption guideline surveys in coastal Georgia waters. This protocol is also consistent with past Sampling and Quality Assurance Plans (SQAP) prepared by EPS staff (on behalf of Honeywell) and approved by the Georgia DNR. This SQAP has been added as Appendix A to the Work Plan. The bullets provided in this comment are all addressed in the SQAP.

Section 3.3.2 p. 9, Sample Shipping

It is not necessary for field personnel to call the analytical laboratory to see if the samples have arrived. This can be done by tracking the shipments online or the laboratory usually will call the project leader if there are issues.

Honeywell Response

Honeywell has no specific response to this comment.

Section 3.4 p. 11, Sample Equipment Decontamination

Nitric acid should not be used in the field to decontaminate field equipment.

Honeywell Response

The use of nitric acid (10% strength) is consistent with EPA's Science and Ecosystem Support Division (SESD) standard operating procedures. However, Honeywell will substitute the use of reagent grade isopropyl alcohol in place of nitric acid for equipment decontamination.

Section 4.2, page 12, Field QC Samples table

The Field Duplicate section references "sediment" collection, and goes on to state that, "One duplicate will be collected for each matrix." Will a duplicate be taken of any tissue sample?

Equipment rinsate blanks: The section reads, " ...shall be analyzed for all laboratory analyses requested for water environmental samples collected on that day." Are sediment samples "water environmental" samples?

Please specify the method of labeling the QA/QC samples.

Honeywell Response

Field duplicates are proposed only for the sediment collection element of the sampling program. The protocol for fish and shellfish sampling involving grouping of multiple individuals of equivalent size class into single replicates (with a total of three groupings or replicates per species) does not lend itself to “field duplicate” sampling protocols.

The wording describing equipment rinsate blanks will be revised to clarify that a rinsate blank will be obtained for the sediment sampling apparatus (using deionized water).

Field duplicates will be labeled in a manner equivalent to other media samples and will have its own unique sample ID that does not identify the sample as a duplicate (this will be identified only in the field sampling log not provided to the laboratory).

Section 5.2.2, page 14, "Field Sampling Logs"

Why are examples of field activities that will not be conducted and parameters that will not be measured included? Specifically why are the following included:

- *"water level measurement logs"*
- *"water sampling logs"*
- *"field parameters (e.g., temperature and dissolved oxygen)"*

Honeywell Response

The proposed field sampling log form is a standard form used for multi-media investigations. Portions of the form that are not applicable to this particular work scope will be identified by “N/A” entry on the form.

Section 6.1, page 16, "Data Evaluation"

Given the large area over which the samples are collected for compositing, the investigation appears to be a screening level evaluation. This is the case, even given the reduced area over which samples are recommended for compositing by the Agency for Toxic Substance and Disease Registry (enclosed). In a screening level evaluation, the presence of contaminants at almost any level would require additional investigation to ascertain a more accurate assessment of the nature and extent of contamination. Please expand this section to explicitly state how the data will be disaggregated over the composited areas and how the data will be evaluated (i.e., at what contaminant level will additional investigation be required). Since it is likely that some level of contaminants will be found during this screening level evaluation, also include a brief discussion of the potential next phase of investigation.

Part of the section reads, " ... the fish travel the entire Turtle River estuary and are subject to other industrial sources, and therefore it cannot be assumed that their chemical uptake occurs in the Altamaha Canal." This definitive statement is not supported by data, thus please either include the supporting data or revise the text. The text could be revised to read, " ... the fish likely travel other sections of the Turtle River estuary and would thus be subject to other industrial sources; therefore their chemical uptake likely occurs from other portions of the estuary in addition to the Altamaha Canal. If contaminant levels in fish tissue exceed risk-based levels, the origins of the contamination may be further investigated. "

Honeywell Response

Honeywell has agreed to scale down the canal sampling from every 1,000 linear feet to every 300 linear feet. As a result, the investigation is no longer a "screening level evaluation". Honeywell also proposes that with the more discretely dimensional sampling, it is more appropriate to employ grab sampling methods (vs. composite methods) and, therefore, the comment regarding "disaggregation" does not apply.

Honeywell suggests that a decision regarding any follow-on work be tabled until the results are compiled and reviewed.

With respect to the comment in the second paragraph above, Honeywell is agreeable to modifying the wording as suggested in the first sentence beginning "*…the fish likely travel other sections of the Turtle River estuary…*" but Honeywell does not agree with adding the second sentence beginning "*If contaminant levels in fish tissue…*".

Section 6.2, page 17, last bullet

Given the issues that have arisen regarding detection limits in other operable units, we recommend using the detection limit as "Result" and "U" as the "Result Modifier"/data qualifier.

Honeywell Response

Honeywell does not agree with the recommendation to using the detection limit as "Result". Note that our methodology as proposed in Section 6.2 did propose to use "U" as the "Result Modifier" in the database.

Figure 1

Figure 1 is incomplete. The LCP Site and the canal are not identified and there is no legend.

Honeywell Response

Additional labeling has been applied to the figure.

Appendix A

The protocol for fish collection from the canal states that as target species are caught, they are to be transferred into a sample cooler with wet ice. Those specimens not needed for analysis are to be released on site. Please add detail on how appropriately-sized fish will be collected and placed in the cooler, as opposed to being released. For example, if the field staff selected smaller fish for analysis and released larger fish, this could bias the concentrations of contaminants to lower concentrations.

Please add a section to ensure that the field staff is trained in how to recognize various species and what to do if species are captured that are not on the list.

Please specify that photographs of each fish collected will be taken so that the species may be confirmed. This will allow confirmation of the field work in the lab as specimens are combined and will help to avoid mixing more than one species in a composite sample.

If baited traps are used and the fish or crabs will be ingesting the bait, please have a sample of the bait analyzed.

Honeywell Response

The sampling team members are all experienced in the collection and processing of fish and shellfish samples including protocols established by the Georgia DNR for surveys supporting the Turtle River fish consumption guidelines. The Sampling and Quality Assurance Plan (SQAP) prepared in support of these past Turtle River surveys (approved by the Georgia DNR) has been added as Appendix A to the Work Plan. This document provides extensive detail regarding how fish are obtained, grouped into size classes, field processed (e.g., scaled and filleted) and processed within the laboratory.

Detailed notes will be maintained logging the species, numbers, and dimensions of all fish and shellfish of target species caught. Field processing involves scaling and extracting the edible tissue (fillet) of finfish samples; shellfish are sent whole to the laboratory for the laboratory to extract the edible tissue portions from the individual specimens. Person(s) assigned to the field processing are

well versed in fish species identification (as are the personnel assigned to boats undertaking the fish collection). There is no need or use in photographing "each fish collected" given field personnel are adequately experienced and trained in species identification, and moreover that the entire replicate sample (up to five specimens per species for each replicate) are provided to the laboratory as a single sample – for example, Replicate 1 for Spotted Seatrout would be delivered to the laboratory as five full-body fillets contained in a single Ziplock bag with a unique Sample ID label on the bag, and so on. Each shellfish replicate is delivered whole but with all specimens of a given replicate in a single Ziplock bag with a unique Sample ID.

Bait traps may be used for blue crab (usually sufficient numbers are obtained on gill nets used for finfish collection). It would be appropriate to analyze bait if whole body analysis was to be performed on the crab, but it is not necessary for this project where edible tissue is sampled.

Appendix B

- *What is the basis for the Regional Screening Levels (RSL) shown for lead? Since lead is evaluated uniquely by EPA, there is no need to adjust the RSL. EPA's recommended screening level is 400 mg/kg;*
- *The non-cancer RSL for 2-methylnaphthalene should be adjusted downward by a factor of 10. This results in an RSL of 31,000 μg/kg, rather than 310,000 μg/kg;*
- *The fish tissue RSL for lead was not obtained from the fish ingestion table (Nov. 2010). A reference or basis for the proposed screening level should be provided;*
- *The adjusted fish tissue RSL for mercury is reported in μg/kg, but the concentration listed is actually mg/kg. Please report the method reporting limits (MRLs); method detection limits (MDLs) and RSLs in the same units. Since all fish tissue RSLs are reported in mg/kg, it is recommended that these units be used;*
- *What is the basis for the RSL shown for Mercury? (the RSL listed in this table for Mercury is 0.014 μg/kg; the current fish tissue RSL (adjusted to HQ = 0.1) for Methyl Mercury is 13.5 μg/kg [EPA 2010]);*
- *"NA" is not defined;*
- *For the Aroclors lacking RSLS, the RSLs for Aroclor 1254 can be used to screen the data; and*
- *For PAHs lacking RSLS, the RSLs for pyrene can be used to screen the data.*

<u>Honeywell Responses</u>

Bullet 1: The Appendix B sediment table has been revised to reflect an RSL value of 400 mg/kg for lead.

Bullet 2: The Appendix B sediment table has been revised to reflect a value of 31 mg/kg for 2-methyl naphthalene. Note that the units were also changed to mg/kg per EPA's comment in bullet 4.

Bullet 3: The RSL for lead was obtained from the Risk Assessment Information System (RAIS) online preliminary remediation goal (PRG) calculator. This value can be seen on the following website: http://rais.ornl.gov/cgi-bin/prg/PRG_search?select=chem.

Bullet 4: The Appendix B fish table has been revised to show the MRL, MDL, and RSL for mercury in units of mg/kg to mirror the units on the fish tissue RSL table. Note that the units for all parameters were changed to mg/kg.

Bullet 5: The November 2010 RSL Fish Ingestion Table shows a value of "0.14" mg/kg for methyl mercury. When adjusted to a HQ of 0.1, the value is 0.014 mg/kg. As indicated to the response to the comment in the previous bullet, the units in the Appendix B fish table have been revised to show the units in mg/kg.

Bullet 6: "NA" stands for not applicable. This definition has been added as a footnote to the Appendix B tables.

Bullet 7: The Appendix B sediment and fish tables have been revised to show a comparison of the MRLs and MDLs for Aroclor 1262 and Aroclor 1268 with the RSL values for Aroclor 1254 and a footnote has been added to the tables to indicate the use of this surrogate.

Bullet 8: The Appendix B sediment and fish tables have been revised to show a comparison of the MRLs and MDLs for acenaphthylene, benzo(g,h,i)perylene, and phenanthrene with the RSL values for pyrene and a footnote has been added to the tables to indicate the use of this surrogate..

We appreciate the opportunity to provide the above information and we hope that our responses address EPA's questions and comments on the Work Plan. As always, please feel free to call me at 678-336-8544.

Sincerely,

Kirk J. Kessler
Principal

Enclosure

cc: Jim McNamara, Georgia EPD
Prashant Gupta, Honeywell