UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

FEB 10 2012

Ref: 4WD-SRB

Via Delivery as Email-attachment to Prashant.gupta@honeywell.com and U.S. Mail

Mr. Prashant K. Gupta
Honeywell, Inc.
4101 Bermuda Hundred Road
Chester, VA 23836

Re: Draft Data Report: Results of July 2011 Sampling in the Former Brunswick-Altamaha Canal, South of the LCP Chemicals Superfund Site, Brunswick, Glynn County, GA

Dear Mr. Gupta:

The purpose of this letter is to notify Honeywell International, Inc. (Honeywell) that the U.S. Environmental Protection Agency is disapproving the company's October 2011 draft Data Report submitted for the Former Altamaha Canal (the canal), related to the LCP Chemicals Superfund Site. Pursuant to Section VIII of the Administrative Order by Consent for Remedial Investigation/Feasibility Study, Docket No. 95-17-C (RI/FS AOC), the EPA is directing Honeywell to cure the deficiencies, as described below, and resubmit the Data Report to the EPA for approval within 30 business days of receipt of this letter.

General Comment

Laboratory analytical data reports should be included as an appendix to the report.

Specific Comment

Section 1.1, Overview

a. Third paragraph, second sentence: This is not a complete sentence.
b. Third paragraph, second sentence: This incomplete sentence states that locations nearest the LCP Chemicals Site contained the highest concentrations of mercury and Aroclor 1268. Aroclor 1262 should also be included in this statement.
c. Third paragraph, third sentence: The sentence states that, "The average concentrations of these constituents within the canal were lower than the exposure point concentrations estimated for the marsh trespasser in [the] Human Health Baseline Risk Assessment (HHBRA)..."

    i. It is inappropriate to compare average concentrations of finfish and shellfish tissues from the canal to concentrations estimated for the marsh without

the support of statistical data for the canal. If any data comparisons are to be made, the finfish and shellfish concentrations of Aroclor 1268 and mercury should be compared to the remedial goal options (RGO) presented in Tables 23 a, b and c of the approved Human Health Risk Assessment (HHRA) for OU1. Enclosed Tables 1, 2 and 3 make that comparison for recreational and high-consumption fish consumption, as well as shellfish. The shaded canal tissue concentrations identify those tissue concentrations exceeding the OU1 HHRA's RGOs. Note that screening under the recreational fish consumer scenario (Table 1), one of the striped mullet mercury concentrations exceeded the hazard index (HI) of 1 for the adult and adolescent, and exceed the HI of 3 for the child. The Aroclor 1268 concentrations in the spotted seatrout and two of the striped mullet samples exceeded the 1.00E-05 excess life time cancer risks (ELCR) for the recreational fish consumer. Table 2 summarized the risks posed to the high quantity fish consumer. Aroclor 1268 and/or mercury in all the fish species sampled exceeded a HI of 1 for the adult, adolescent and child. The Aroclor 1268 concentrations in all the fish species sampled exceeded the 1.00E-05 ELCR for the high quantity fish consumer. Finally, Table 3 shows that only one of the crab or shrimp results exceeded the HI of 1 for mercury. The ELCR of 1.00E-05 was not exceeded in any of the shellfish sampled.

ii. In lieu of comparing the average concentrations for all the sediment samples taken in the canal to the limited number of exposure point concentrations (EPCs) calculated in the OU1 HHRA, the maximum canal sediment concentrations should be compared to the calculated exposure point concentrations (when available) for the marsh, the maximum concentrations detected in the marsh or one tenth the RSL concentration. If the maximum canal sediment concentrations do not exceed any these concentrations then they are likely not to be of concern. We have performed these comparisons and found that only mercury was detected twice (AL-A1-41 and AL-B1-89) above the marsh EPC and one tenth the residential screening level (RSL). Note that the maximum mercury concentration was well below the RSL. Note that the benzo(a) pyrene (B(a) P) toxic equivalent calculated for the sample with the highest B(a)P concentrations (AL-01-100) was well below the EPC calculated for the carcinogenic polynuclear aromatic hydrocarbons.

With regard to the canal sediment arsenic results, the mid-1990s EPA report entitled Characterization and Spatial Distribution of Contaminants in Surface Water, Sediment and Fish Within the Tidal Reaches Surrounding Brunswick,GA (February 1997), documents concentrations of arsenic and mercury in the area's river and marsh sediment. In this 1997 study, the average arsenic concentration of 87 marsh sediment samples was 13.2 parts per million (ppm). The average arsenic concentration of 89 river sediment samples was 7.7 ppm. Only one sample from the canal was found above the river sediment mean of 7.7 ppm and none were found above the marsh mean of 13.2 ppm. Results from the canal investigation should be used to put the arsenic concentrations in sediment in context.

d. Third paragraph, sixth sentence: The observation is made that the results are "in line with recent historical observations from the area of the Turtle River that hydraulically communicates with the Altamaha canal via Academy Creek."

   i. The reference to "recent historical" observations should be clarified, since "recent" and "historical" are terms that are inherently opposite.
   ii. The phrase "in line" has no statistical or scientific meaning. Casual and informal comparisons of data sets should be avoided.
   iii. There is no documentation included in this report to verify this claim. The "recent historical observations" must be identified, either as a table in the document or attached in an appendix.

e. Third paragraph, seventh sentence: The sentence states that the results of this study are not "unexpected" and "do not represent any special or unique concerns." All comparative analysis should be discussed relative to Site established background levels, published generic risk criteria, and/or the finfish and shellfish remedial goal options mentioned above.

Section 4.2, Sediment

a. Second paragraph: The report states that only three constituents were detected; however, five constituents are listed.
b. Third paragraph, first sentence: This statement is not supported by data, and should be removed.
c. Third paragraph, second and third sentences: Neither of these sentences is supported by any documentation. References should be cited.
d. Third paragraph, fourth sentence: Background conditions have not been established for the canal. Therefore, this statement should be removed.
e. Third paragraph, fourth sentence: This sentence, stating that there is no spatial relationship within the canal for constituent concentrations, conflicts with an earlier statement in Section 1.1, Overview, second paragraph, second sentence, which states that locations nearest the LCP Chemicals Site contained the highest concentrations of certain constituents. This discrepancy should be resolved.
f. Fourth paragraph, third sentence: See comment Section 1.1 c above.

Section 4.3, pg 11; Tables 4 and5- Arsenic Concentrations in Finfish, Shellfish

The text and tables conclude that the concentration of arsenic is irrelevant due the organic form of arsenic being "essentially nontoxic." While the majority of the arsenic in biota may in fact be in the nontoxic organic form, that still leaves some portion of the arsenic in the more toxic inorganic form. The EPA Office of Water *Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories* (EPA 2000) discusses the issue of arsenic in fish (organic vs. inorganic) and lists a screening value of 26 ug/kg for inorganic arsenic in fish (based on 1E-5 excess cancer risk and a consumption rate of 17.5 g/d for recreational fishing [equates to a little more than 2 half-pound meals per month]). Since the total arsenic levels reported for shellfish and finfish sampled from this canal exceed both the RSL and the EPA-OW screening level,

further evaluation is warranted. Note that the 1997 area-wide study reported on about 28 arsenic analyses of fish tissue. Though the detection limits were generally one part per million, of the 28 analyses, there were four detections greater than one part per million. Since background data are available, comparisons to background can be made to determine that the reported arsenic levels are not due to a release.

Section 4.3, pgs 11-12; Tables 4 and 5 Aroclor 1268 Concentrations in Finfish, Shellfish

The report text discusses the Aroclor 1268 concentrations in fish in comparison to those concentrations previously reported for the LCP marsh and the lower Turtle River area, and then concludes that the concentrations of Aroclor 1268 "are not unexpected in the context of the broader Turtle River estuary and do not represent any special or unique concerns." This conclusion does not, however, address the question of whether the concentrations in this canal pose unacceptable risks to consumers of these fish. Since fish consumption advisories are listed for the Turtle River area, and remedial actions are being considered for the LCP marsh based on human health risks, concluding that the concentrations in the fish in the canal are comparable to fish in nearby areas suggests that there could be unacceptable risks to those who consume these fish. The maximum reported concentrations for each species should be compared with the species-specific RGO ranges in the finalized OU1 Human Health Risk Assessment. The conclusions should then be revised with additional discussion as appropriate.

Section 5 Conclusions

a. Third paragraph: See comments Section 1.1 d and e above.
b. Fourth paragraph: This is not a complete sentence.

Table 2, Results of 2011 Sediment, Finfish, and Shellfish Sampling: Inorganics, PCBs, PAHs

a. Insert an additional footnote referencing those substances excluded from screening on the basis of being an essential nutrient.
b. Insert an additional footnote explaining that all forms of mercury in sediments and biota are being conservatively treated as methyl mercury, consistent with the approach adopted in the OU1 HHRA.

Table 4, Results of 2011 Finfish Sampling

A footnote was included for Table 2 sediment samples that indicated which constituents were screened against the soil RSL of a surrogate. Likewise, insert a footnote in Table 4 indicating which constituents were screened against the fish ingestion RSL of a surrogate.

In view of the fact that the fish tissue concentrations have been found to be above an HI of 1 and greater that an ELCR of 1.00E-05, the appropriate agency in the State of Georgia should be contacted regarding posting warnings against fish consumption along sampled portion of the former canal. At the conclusion of the feasibility study for the Estuary (OU1), the RGOs for the Estuary's sediment should be compared to the concentrations found in the canal. Should the

canal's sediment concentrations exceed the Estuary's RGOs, they should be included as part of the Estuary Remedial Action.

If you have questions regarding the preceding, please contact me at (404) 562-8937.

Sincerely,

Galo Jackson, P.G.
Remedial Project Manager
Superfund Remedial Branch

Enclosures

cc: J. McNamara, GaEPD

References:
EPA 2000. Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Third Edition, EPA 823-B-00-007, November 2000. [http://water.epa.gov/scitech/swguidance/fishshellfish/techguidance/risk/upload/2009_04_23_fish_advice_volume1_v1cover.pdf]
EPA 2011. Regional Screening Levels for Chemical Contaminants at Superfund Sites [http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm], updated May 2011.
EPA 2009b. National Recommended Water Quality Criteria: 2006. Office of Water/Office of Science and Technology. [http://water.epa.gov/ost/criteria/wqctable/]

TABLE 1

LCP Chemicals: Comparison of Canal Finfish Tissue Concentrations to RGOs from OU1 Human Health Risk Assessment
(all units in parts per million, wet weight)

Recreational Scenario

Fish Species	Adult Target HI			Adolescent Target HI			Child Target HI			ELCR Target CR		
	0.1	1	3	0.1	1	3	0.1	1	3	1.00E-06	1.00E-05	1.00E-04
Red Drum												
Aroclor 1268	0.005	0.054		0.005	0.052		0.003	0.035	0.1	0.001	0.013	0.129
Canal Concentration, Aroclor 1268	[redacted]	0.021		[redacted]	0.021		[redacted]	0.021	0.021	[redacted]	0.021	0.021
Mercury	0.013	0.13		0.012	0.12		0.008	0.082	0.24			
Canal Concentration, Mercury	[redacted]	0.088		[redacted]	0.088		[redacted]	0.088	0.088			
Spotted Seatrout												
Aroclor 1268	0.02	0.2		0.02	0.2		0.013	0.13	0.39	0.005	0.048	0.485
Canal Concentration, Aroclor 1268	[redacted]	0.081		[redacted]	0.081		[redacted]	0.081	0.081	[redacted]	[redacted]	0.081
Mercury	0.018	0.18		0.017	0.17		0.012	0.12	0.35			
Canal Concentration, Mercury	[redacted]	0.117		[redacted]	0.117		[redacted]	0.117	0.117			
Striped Mullet (1)												
Aroclor 1268	0.099	0.99		0.095	0.95		0.063	0.63	1.9	0.024	0.236	2.358
Canal Concentration, Aroclor 1268	[redacted]	0.29		[redacted]	0.29		[redacted]	0.29	0.29	[redacted]	[redacted]	0.29
Mercury	0.002	0.015		0.001	0.015		0.001	0.01	0.03			
Canal Concentration, Mercury	[redacted]	0.0123		[redacted]	0.0123		[redacted]	0.0123	0.0123			
Striped Mullet (2)												
Aroclor 1268	0.099	0.99		0.095	0.95		0.063	0.63	1.9	0.024	0.236	2.358
Canal Concentration, Aroclor 1268	[redacted]	0.26		[redacted]	0.26		[redacted]	0.26	0.26	[redacted]	[redacted]	0.26
Mercury	0.002	0.015		0.001	0.015		0.001	0.01	0.03			
Canal Concentration, Mercury	0.0149	0.0149		0.0149	0.0149		0.0149	0.0149	0.0149			
Striped Mullet (3)												
Aroclor 1268	0.099	0.99		0.095	0.95		0.063	0.63	1.9	0.024	0.236	2.358
Canal Concentration, Aroclor 1268	[redacted]	0.2		[redacted]	0.2		[redacted]	0.2	0.2	[redacted]	0.2	0.2
Mercury	0.002	0.015		0.001	0.015		0.001	0.01	0.03			
Canal Concentration, Mercury	[redacted]			[redacted]			[redacted]					

Shaded cells indicate exceedence of OU1 HHRA RGO for that species

TABLE 2

LCP Chemicals: Comparison of Canal Finfish Tissue Concentrations to RGOs from OU1 Human Health Risk Assessment
(all units in parts per million, wet weight)

High Quantity Consumer Scenario

Fish Species	Adult Target HI			Adolescent Target HI			Child Target HI			ELCR Target CR		
	0.1	1	3	0.1	1	3	0.1	1	3	1.00E-06	1.00E-05	1.00E-04
Red Drum												
Aroclor 1268	0.003	0.03	0.089	0.003	0.03	0.089	0.002	0.018	0.055	0.001	0.007	0.07
Canal Concentration, Aroclor 1268	[redacted]	0.021	0.021	[redacted]	0.021	0.021	[redacted]	0.021	0.021	[redacted]	[redacted]	0.021
Mercury	0.007	0.07	0.21	0.007	0.07	0.209	0.004	0.043	0.13			
Canal Concentration, Mercury	[redacted]	[redacted]	0.088	[redacted]	[redacted]	0.088	[redacted]	[redacted]	0.088			
Spotted Seatrout												
Aroclor 1268	0.011	0.11	0.33	0.011	0.111	0.334	0.007	0.069	0.21	0.003	0.028	0.28
Canal Concentration, Aroclor 1268	[redacted]	0.081	0.081	[redacted]	0.081	0.081	[redacted]	[redacted]	0.081	[redacted]	[redacted]	0.081
Mercury	0.01	0.099	0.297	0.01	0.099	0.297	0.006	0.062	0.185			
Canal Concentration, Mercury	[redacted]	[redacted]	0.117	[redacted]	[redacted]	0.117	[redacted]	[redacted]	0.117			
Striped Mullet (1)												
Aroclor 1268	0.054	0.54	1.6	0.054	0.54	1.6	0.034	0.34	1	0.013	0.135	1.35
Canal Concentration, Aroclor 1268	[redacted]	0.29	0.29	[redacted]	0.29	0.29	[redacted]	0.29	0.29	[redacted]	[redacted]	0.29
Mercury	0.001	0.008	0.025	0.001	0.008	0.025	0.001	0.005	0.016			
Canal Concentration, Mercury	[redacted]	[redacted]	0.0123	[redacted]	[redacted]	0.0123	[redacted]	[redacted]	0.0123			
Striped Mullet (2)												
Aroclor 1268	0.054	0.54	1.6	0.054	0.54	1.6	0.034	0.34	1	0.013	0.135	1.35
Canal Concentration, Aroclor 1268	[redacted]	0.26	0.26	[redacted]	0.26	0.26	[redacted]	0.26	0.26	[redacted]	0.26	0.26
Mercury	0.001	0.008	0.025	0.001	0.008	0.025	0.001	0.005	0.016			
Canal Concentration, Mercury	[redacted]	[redacted]	0.0149	[redacted]	[redacted]	0.0149	[redacted]	[redacted]	0.0149			
Striped Mullet (3)												
Aroclor 1268	0.054	0.54	1.6	0.054	0.54	1.6	0.034	0.34	1	0.013	0.135	1.35
Canal Concentration, Aroclor 1268	[redacted]	0.2	0.2	[redacted]	0.2	0.2	[redacted]	0.2	0.2	[redacted]	[redacted]	0.2
Mercury	0.001	0.008	0.025	0.001	0.008	0.025	0.001	0.005	0.016			
Canal Concentration, Mercury	[redacted]	[redacted]	0.0128	[redacted]	[redacted]	0.0128	[redacted]	[redacted]	0.0128			

Shaded cells indicate exceedence of OU1 HHRA RGO for that species

TABLE 3
LCP Chemicals: Comparison of Canal Shellfish Tissue Concentrations to RGOs from OU1 Human Health Risk Assessment
(all units in parts per million, wet weight)

Shellfish

Shellfish Species	Adult Target HI			Adolescent Target HI			Child Target HI			ELCR Target CR		
	0.1	1	3	0.1	1	3	0.1	1	3	1.00E-06	1.00E-05	1.00E-04
Blue Crab (1)												
Aroclor 1268	0.012	0.12		0.026			0.005	0.05	0.15	0.003	0.033	
Canal Concentration, Aroclor 1268	[redacted]	0.014		0.014			[redacted]	0.014	0.014	0.014	0.014	
Mercury	0.043	0.43		0.096			0.018	0.18	0.54			
Canal Concentration, Mercury	[redacted]	0.0672		0.0672			[redacted]	0.0672	0.0672			
Blue Crab (2)												
Aroclor 1268	0.012	0.12		0.026			0.005	0.05	0.15	0.003	0.033	
Canal Concentration, Aroclor 1268	[redacted]	0.021		0.021			[redacted]	0.021	0.021	[redacted]	0.021	
Mercury	0.043	0.43		0.096			0.018	0.18	0.54			
Canal Concentration, Mercury	[redacted]	0.0692		0.0692			[redacted]	0.0692	0.0692			
Blue Crab (3)												
Aroclor 1268	0.012	0.12		0.026	0.26		0.005	0.05	0.15	0.003	0.033	
Canal Concentration, Aroclor 1268	[redacted]	0.0094		[redacted]	0.0094		[redacted]	0.0094	0.0094	[redacted]	0.0094	
Mercury	0.043	0.43		0.096	0.96		0.018	0.18	0.54			
Canal Concentration, Mercury	[redacted]	0.107		[redacted]	0.107		[redacted]	0.107	0.107			
White Shrimp (1)												
Aroclor 1268	0.032	0.32		0.072	0.72		0.01	0.14	0.41	0.009	0.091	
Canal Concentration, Aroclor 1268	0.014	0.014		0.014	0.014		0.014	0.014	0.014	[redacted]	0.014	
Mercury	0.007	0.07		0.015	0.15		0.003	0.029	0.086			
Canal Concentration, Mercury	[redacted]	0.0187		[redacted]	0.0187		[redacted]	0.0187	0.0187			
White Shrimp (2)												
Aroclor 1268	0.032	0.32		0.072	0.72		0.01	0.14	0.41	0.009	0.091	
Canal Concentration, Aroclor 1268	0.016	0.016		0.016	0.016		0.016	0.016	0.016	[redacted]	0.016	
Mercury	0.007	0.07		0.015	0.15		0.003	0.029	0.086			
Canal Concentration, Mercury	[redacted]	0.0223		[redacted]	0.0223		[redacted]	0.0223	0.0223			
White Shrimp (3)												
Aroclor 1268	0.032	0.32		0.072	0.72		0.01	0.14	0.41	0.009	0.091	
Canal Concentration, Aroclor 1268	[redacted]	0.016		0.016	0.016		0.016	0.016	0.016	[redacted]	0.016	
Mercury	0.007	0.07		0.015	0.15		0.003	0.029	0.086			
Canal Concentration, Mercury	[redacted]	0.0212		[redacted]			[redacted]	0.0212	0.0212			

Shaded cells indicate exceedence of OU1 HHRA RGO for that species