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MEETING MINUTES 1 JULY 1997 REGARDING SITE 11 OLD CAMDEN COUNTY
LANDFILL NSB KINGS BAY GA
7/1/1997
ABB ENVIRONMENTAL SERVICES, INC



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Subject: final meeting minutes

**Meeting Minutes for King's Bay
Site 11- Old Camden County Landfill
July 1, 1997**

Attendees:

Rhonda Bath (Kingsbay)
Julie Cozzie (ABB-ES, Inc.)
Karen McCard (GEPD)
Cliff Opdyke (GEPD)
Anthony Robinson (SDIV)

The meeting opened at approximately 10:00 am with a discussion of the proposed agenda and the desired outcome and expectations of each participant. Kingsbay and the Navy stated that the goal of the meeting was defined as establishing the risk assessment methodology and approach. The meeting was to determine if possible the following items:

- establish what is an appropriate data set and data management approach for this site; determine if there are data gaps and/or if additional sample collection is necessary,
- establish what methodology will be used to select and identify chemicals of potential concern,
- define the method that will be used to calculate an exposure point concentration for each media including defining the groundwater plume,
- establish what exposure scenarios and receptors will be evaluated and determine whether groundwater volatilization model will be necessary,
- establish what exposure assumptions and parameters will be used, and
- identify a template report that GEPD would like the format to follow.

It was agreed that the July 1, 1997 meeting and meeting minutes would serve as a substitute for a risk assessment workplan required in the GEPD guidance. Julie Cozzie of ABB Environmental Services, Inc. then gave a review of relevant Kings Bay site history including investigative activities, delays and changes to original RFI schedule, and a discussion of the groundwater interim measure.

Julie Cozzie summarized the evaluations that had been performed as part of a Screening Risk Evaluation in 1993. This Screening Risk Evaluation evaluated groundwater risks to residents from nonpotable usage including swimming, baby pool and 'slip-n-slide scenarios, and inhalation of volatile organic compounds (VOCs) during irrigation of private lawns. The Screening Risk Evaluation identified unacceptable cancer risks due to vinyl chloride,

1,2-dichloroethene, and noncancer risks due to toluene. There were no unacceptable risks posed from the inhalation pathway.

Data Management Approach/Determination of Data Gaps

Ms. Cozzie then discussed the data that is available for each of the following media: groundwater, surface water, sediment, surface soils, subsurface soils, and air.

Groundwater

A table was presented that compared groundwater summary data (minimum, maximum, and mean) collected in the following time frames: September 1994, April 1995, and May through October 1996. This table was designed to illustrate any changes in the detected contaminants and/or contaminant concentrations at the site. ABB-ES proposed that the September 1994 comprehensive and validated sampling event be used. Cliff stated that GEPD did not require data validation and that therefore he felt all available data should be evaluated.

A discussion of what approach would be appropriate to manage the multiple sampling events of groundwater. Four options were discussed 1) use all data with equal weighting, 2) use the most recent sampling event from each well, 3) use the highest detected concentration of each analyte from each well, and 4) use the average analyte concentration from each well. Each option was evaluated for its merits.

- Option 1, the use of all available data using equal weighting, was discounted since some wells have been sampled with a higher frequency than others. Due to the phased sampling approach, groundwater monitoring wells that had either contamination detected or that were expected to have contamination were resampled. Therefore, option 1 would result in a biasing of the data set high.
- Option 2, use of the most recent sampling event from each well, was discarded since it would not necessarily capture all contaminants present in the groundwater (some contaminants that were present in one sample event and may have migrated to outside the monitoring well capture zone).
- Option 3, use of the highest detected concentration of each analyte from each well, was deemed conservative but acceptable to address all potential contaminants. The conservative assumptions and any migratory or degradation trends (i.e., if the contaminant has not been detected since 1994) would be discussed in the uncertainty section of the risk assessment.
- Option 4, use of the average analyte concentration from each well, was discounted as not conservative.

The groundwater data set will then be compiled using the maximum detected concentration of each analyte in each well that is defined in the 'plume' (the area of the plume is defined in the exposure point concentration calculation discussion below.) The maximum detected concentration from each well within the plume will then be averaged for each analyte to determine an exposure point concentration (EPC).

Surface Water and Sediment

Ms. Cozzie led a discussion of available surface water and sediment data for the risk assessment and presented comparison table of summary data to the risk based screening values. Ms. Cozzie pointed out that the surface water and sediment data available from 1994 did not exceed any human health screening criteria. Cliff Opdyke requested that additional surface water samples be collected from the pond in the subdivision to confirm that there is no contamination from Camden Landfill. This information would then be presented to the community at a public hearing. Ms. Cozzie clarified with Mr. Opdyke in a follow up phone conversation (July 10, 1997) that the number of necessary surface water samples is three. Additionally, Mr. Opdyke also clarified that additional sediment samples were not necessary. Mr. Opdyke also stated that the surface water analyses need only include contaminants that are suspected to be from the landfill, i.e., pesticide analyses would not be necessary.

Additionally, Mr. Opdyke clarified a question of what was acceptable to use as background screening values for sediment in the pond. ABB-ES had proposed that since the lake is manmade that it was acceptable to use subsurface soil background as a screening tool for sediments. As this is primarily an ecological risk assessment issue (none of the analytes exceed human risk based screening criteria), Mr. Opdyke referred this question to Rod Stafford, an ecological risk assessor at GEPD). Mr. Stafford responded that sediment samples should be collected from a nearby surface water body for use in background screening of pond sediments.

Surface Soil and Subsurface Soil

Ms. Cozzie led a discussion of available surface and subsurface soil data for the risk assessment and presented comparison tables of the surface soil summary data to the risk based screening values. Ms. Cozzie pointed out that only PAHs exceeded the surface soil risk based screening criteria and the PAHs are located in one sample. This sample is located along the perimeter of the landfill and is presumably associated with the perimeter road.

A comparison table of the subsurface soil trenching data summary and risk based screening criteria were not available at the time of the meeting; however, Ms. Cozzie stated that it would be unusual that a landfill would require an evaluation of an excavation worker scenario. Mr. Opdyke agreed.

The discussion progressed to whether more surface soils samples were necessary to 'fully' characterize the landfill. A discussion of whether a residential soil scenario was required followed. Ms. Cozzie stated that a recreational user of the site scenario should be used to address the surface soil not a residential scenario. Additionally, Ms. Cozzie pointed out that the landfill was closed and covered with 'clean fill'. Mr. Opdyke stated that he was not inclined to require a residential scenario risk evaluation of soils; however, that he would speak to Billy Hendrix (GEPD RCRA) to determine his opinions of land usage at the landfill. Mr. Opdyke stated in a follow-up phone conversation that a residential land usage scenario would not be required for the risk assessment.

In this phone conversation, Mr. Opdyke stated that Mr. Hendrix would like to see the subsurface soils characterized. The approach that GEPD would like to see was explained as the following: Samples would be collected from two depths. The first depth would be directly below the cover soil. The second depth would be collected between the first sample depth and the groundwater table. The sample would be collected at a frequency of one per acre or one per landfill cell assuming there are enough cells in the landfill to obtain a valid characterization or greater than 20 cells. Ms. Cozzie then asked for clarification of what this data would be used for since the assumption of subsurface soil exposure within a landfill is extremely conservative and that an excavation worker scenario at a landfill would be highly unlikely. Mr. Opdyke stated that the data was more for characterization of the site rather than for the risk assessment. A discussion of GEPD's proposed exposure scenarios for subsurface soil is presented below in the exposure scenario section.

Air

Ms. Cozzie led a discussion of available air monitoring data for the risk assessment. It was agreed that the eight air samples collected on-site would be used in the risk assessment (all nondetects). It was also agreed that an air volatilization model to predict concentrations of VOCs from groundwater in the air via the use of private irrigation systems is not necessary.

Selection and identification of chemicals of potential concern methodology

In accordance with the recent USEPA Region 4 guidelines, Ms. Cozzie selecting analytes as Chemicals of Potential Concern (COPCs) using the following screening criteria:

- the analyte is detected in at least one sample,
- the analyte is above background screening concentrations, and
- the analyte is above applicable screening values.

A chemical would not be selected if any of the following criteria are met:

- the analyte is less than background levels,
- the analyte is less than 5 percent frequency of detection when there are more than 10 samples,
- the analyte is less than risk-based screening concentrations, standards, and guidelines, and
- the analyte is less than essential nutrient screening values.

Background screening values are defined as the 2 times the mean of the detected analytes concentrations.

Exposure Point Concentration Calculation

In accordance with the recent USEPA Region 4 guidelines, Ms. Cozzie proposed using the lesser of the maximum detected value or the 95% upper confidence limit (UCL) of the mean analyte concentration for media with greater than 10 samples or the maximum analyte concentration for media with less than 10 samples as the EPC. For groundwater, the mean analyte concentration within the groundwater plume will be used as the EPC (the maximum analyte concentration will be used if the mean is greater than the maximum due to the inclusion of nondetected values). Maximum and minimum values will be selected after averaging duplicates. One half the Contract Required Detection Limit/Contract Required Quantitation Limit will be used as a surrogate value in determining the 95% UCL, the mean value, or the average of duplicate samples.

The mean concentration for each analyte within the plume will be used as the EPC. The groundwater plume will be defined as the vertical depth range and horizontal area of contaminated groundwater plume, i.e., if the plume is at 10 - 20 feet at one well and the well adjacent shows contamination at 15 - 30 feet then the groundwater plume would be defined as wells screened from 10 - 30 feet within the horizontal area of the plume. Groundwater wells that are not within the plume will be treated as background samples for selecting COPCs. An EPC will be determined for groundwater wells within the interim corrective measure area and outside this area as discussed below in bullet 1B.

Exposure Scenarios and Receptors

Ms. Cozzie led a discussion of how the human health exposure assessment should be conducted. ABB proposed the use of the following residential, recreational and industrial current and future exposure scenarios:

- A. Since groundwater is not used as a potable water source, ABB proposed that the groundwater assessment would include an evaluation of risk from current potential exposures via volatilization and dermal contact with groundwater via an irrigation or sprinkler system.
- A. An assessment of the risks to soils under a trespasser or recreational user (jogger) as well as a worker scenario would be addressed. A residential scenario on the landfill was not proposed since development of the landfill into a residential area is highly unlikely in the future.
- A. Subsurface soils would not be addressed under assumption that excavation of soils from the landfill for development is extremely unlikely and could be precluded using deed restrictions.
- A. Surface water and sediment in the off-site pond under a recreational user scenario would be addressed.
- A. Air exposure scenarios would include residential exposures off-site, occupational workers on-site, and recreational users on-site.

GEPCD agreed to or directed the following exposure scenarios be evaluated in the risk assessment.

- B. Groundwater should be evaluated under a residential potable water source. Residential

groundwater exposure scenarios will include ingestion, dermal contact, and inhalation of groundwater while showering. Two groundwater exposure scenarios will be evaluated: 1) exposure outside of the interim corrective measure zone, and 2) a hypothetical scenario evaluating the risks associated with exposure to all the groundwater within the plume. It was agreed that a volatilization model for evaluating the risks to the residential neighborhood off-site from a groundwater irrigation scenario was not necessary since a residential potable water scenario is to be evaluated.

B. GEPD agreed that an assessment of the risks from soils under a trespasser or recreational user (jogger) as well as a worker scenario was an adequate characterization of current and future risks and that a residential soil exposure scenario was not necessary.

B. The assumption of subsurface soil exposure within a landfill is extremely conservative and that characterization of the risks from this pathway is not common; however, GEPD suggested that if subsurface soils is collected from within the landfill that this data could be used to evaluate hypothetical risks to workers and excavation workers. The workers (presumably site maintenance or utility workers) would consider the soil directly below the landfill soil cover. The excavation worker exposure scenario would address subsurface soils that are between the first subsurface soil sample and the groundwater table.

B. GEPD agreed that an assessment of the risks from surface water and sediment in the off-site pond to a recreational user was an adequate characterization of current and future risks.

B. GEPD agreed that an assessment of the risks from air exposure to residents off-site, occupational workers on-site, and recreational users on-site was an adequate characterization of current and future risks.

The use of a central tendency exposure scenario will be performed for any exposure scenario that results in an unacceptable risk using reasonable maximum exposure (RME) default parameters.

Exposure Assumptions and Parameters

In accordance with the recent USEPA Region 4 guidelines, Ms. Cozzie proposed using standard RAGS supplemental guidance and Region 4 exposure defaults for the above listed residential, occupational, and industrial scenarios. The recreational exposure scenario parameters that were established are an exposure duration of 100 days per year for 10 years for an adolescent and 20 years for an adult.

The central tendency exposure parameters will differ from the RME parameters in exposure duration, frequency, and EPC. ABB will provide Mr. Opdyke with a proposed central tendency exposure parameter table and solicit comments on these parameters prior to completion of the risk assessment.

Identify a Template Report

Mr. Opdyke stated that ABB's recent Albany report formats were an appropriate template for this risk assessment.