

PSC 99



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Certified Mail
Return Receipt Requested

June 11, 1999

James Cochran
Philips Semiconductor
9201 Pan American Freeway NE
Albuquerque, NM 87113

Subject: Request for Supplemental Information (RSI): Technical Adequacy, RCRA Facility Investigation Work Plan for SWMU #8, Former Coronado Municipal Landfill, RCRA Permit # NMD000709782

Dear Mr. Cochran:

The Hazardous and Radioactive Materials Bureau (HRMB) has reviewed for technical adequacy the above-referenced work plan, dated June 1996, as required under the New Mexico Hazardous Waste Management Regulations.

After reviewing the work plan, HRMB requests additional information. HRMB recognizes that a significant fraction of the proposed work has been completed since the work plan was submitted in 1996. The request for additional information reflects the need to update the plan to incorporate these results and to modify the remainder of the proposal (Phases II and III) to adequately delineate the nature and extent of contamination.


The additional information which should be provided based on the HRMB request is described in detail in Attachment A. The comments are listed in the same order as the sections of the work plan; the numbering does not reflect the importance of a given comment. These comments reflect both information in the originally submitted RFI dated June 1996 and information that was discussed at the June 8, 1999 meeting at the Philips Semiconductor facility.

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Nancy Morlock with the Region 6 office of the United States Environmental Protection Agency has also reviewed this Work Plan. Her comments were forwarded to you in February of 1999; an additional copy of these comments is included in Attachment B. I have reviewed EPA's comments on the work plan and concur with them. Although the comments from EPA are titled with the heading for a Notice of Deficiency, they should be considered as part of this Request for Supplemental Information.

A response including a proposed schedule for submitting the additional information requested by both agencies must be submitted to HRMB within sixty (60) days of receipt of this RSI. Failure to respond within this designated time will result in the issuance of a Notice of Deficiency. If you have any questions, or wish to schedule a meeting to discuss the information requested, please contact Kirby Olson of my staff at (505) 827-1561 ext. 1034.

Sincerely,



Steve Pullen, Supervisor
Military and Private Sector (MAPS) Section
RCRA Corrective Action Program
Hazardous and Radioactive Materials Bureau.

Attachment A: HRMB request for Supplemental Information
Attachment B: USEPA Notice of Deficiency

cc: David Neleigh, EPA Region 6
Baird Swanson, GWQB
Kirby Olson, HRMB
James Bearzi, HRMB

File: HSW, PS, 99

Track: PS, 6/11/99, PS/Cochran, HRMB/KSO

ATTACHMENT A

REQUEST FOR SUPPLEMENTAL INFORMATION:

TECHNICAL ADEQUACY REVIEW OF RCRA FACILITY INVESTIGATION WORK PLAN FOR SWMU #8, FORMER CORONADO MUNICIPAL LANDFILL, SUBMITTED BY PHILIPS SEMICONDUCTOR, INC.

June 11, 1999

General Comments

1. The RFI Work Plan was submitted in June of 1996, and has therefore become dated prior to review. It needs to be updated to reflect the changes to well numbers, the additional wells constructed, and the quarterly monitoring and sampling results from all wells. The project time table in Annex V which serves as a proposed compliance schedule also needs revision since all the dates in it have passed.
2. The RFI Work Plan proposes submission of a Phase I report at the conclusion of Phase I sampling. All of the Phase I sampling, plus some of that proposed under Phase II has apparently been done prior to NMED review of the Work Plan. The facility should incorporate these results into the revised Work Plan.

Section 3, Nature and Extent of Contamination

Section 3.2

3. The elevated levels of metals in soil should be compared to levels from the background sample, not three times the background level as was done in the RFI. However, for this site, both methods result in the same list of contaminants.
4. The elevated levels of chromium, lead, mercury, SVOCs and pesticides in soil should be compared to the appropriate human health screening levels; the EPA Region 6 human health screening levels (*October 1998 or more recent*) are suggested. The levels of metals given on page 3-3 lie well below the screening levels for residential soil and therefore do not require further consideration from a human health standpoint. The levels of five (5) of the SVOCs in the sample exceed the EPA PRGs even for industrial use; this issue will need to be addressed in the RFI report if no additional soil sampling is done.

5. Ecological risk needs to be addressed for any contaminants in soil at this site. Contaminants concentrations greater than the site specific background can be compared to regional background values for inorganic constituents present in the same soils/geologic strata. Any contaminants not attributable to background should then be compared to available wildlife benchmarks for ecological risk or to risk levels calculated specifically for that site. Kirby Olson with HRMB may be of assistance in locating benchmarks for wildlife.

Section 3.4

6. The use of a municipal production well (the Coronado well field) to determine background for monitoring wells is unacceptable. The production well screen is far too long and the pumping rates too high to be representative of the portion of the aquifer penetrated by the monitoring wells. In addition, this well is down gradient of the source of contamination and, as of 1992, contained 2 ppb of PCE. Sampling results from the NCLF-5 well may be appropriate for determination of levels of inorganic constituents and water quality parameters, since samples from this well have shown no PCE and the well appears to lie outside the known extent of contamination. Table 4-1 of the RFI Work Plan lists several monitoring wells in the area, including some belonging to the City of Albuquerque (designated as 35 and 36 on the table). If results of sampling of these wells are available, they may help with delineation of the nature and extent of contamination.
7. Although the production well is not appropriate for use for background measurements, information on the well is valuable for assessing the potential for immediate threats to human health from PCE contamination. Information on the current PCE level in water from the production well, the depth at which the samples of the production well water were taken, the length of the screened interval in the production well, and whether the water is treated in a manner that would remove the PCE prior to use would be important in assessing the risks due to possible public exposure to PCE by contaminated groundwater.

Section 4, Potential Receptors and Pathways

Section 4.3

8. This section identifies approximately ten (10) drinking water wells within a mile downgradient of the the contamination plume. Assuming that the wells are not dry, the RFI Work Plan should include a proposal to sample at least some of these wells in an effort to help delineate the plume and determine if there is any immediate threat. Table 4-1 should be modified to include the completion details

of each well listed, if that information is available.

9. The revised RFI Work Plan should include information on the construction of each current and proposed monitoring well being used to characterize the site (both those constructed by Philips Semiconductor and those constructed by the City of Albuquerque).

Section 5, Contamination Characterization

Section 5.2

10. The proposed sampling under the work plan should be designed to first delineate the nature and extent of contamination at the site, then assist in determining the source of that contamination. The current wells are insufficient to delineate the horizontal and vertical extent of the plume. Based on information given to HRMB in the June 8, 1999 meeting, two additional wells are being drilled by the City of Albuquerque. One well will be south of the facility (well NCLF-7) and one well (well NCLF-8) is now proposed to be drilled next to NCLF-2, but to a deeper level of the aquifer, in order to help delineate the vertical extent of contamination and the vertical component of ground water movement. These wells will help delineate the rate and direction of movement of the contaminant plume in groundwater, but they may not be sufficient to fully delineate the horizontal and vertical extent of contamination. Characterization of the plume is necessary because the RFI report must (as a HSWA module permit condition) include the vertical and horizontal extent of the plume, an evaluation of factors influencing plume movement, and an extrapolation of future contaminant movement. The investigation must provide adequate information to support any proposed conceptual model of contamination that may be used to characterize the site in the RFI report to be submitted after sampling.
11. At the June 8, 1999 meeting additional information was presented to HRMB regarding ground water flow and contaminant levels at the site. This information should be incorporated into the RFI Work Plan, which should be revised to reflect the changes to the proposed sampling in response to this new information about the site.

ATTACHMENT B
Notice of Deficiency
Philips Semiconductors RFI Work Plan
SWMU #8
June 1996

General Comments

1. Philips has proposed a three-phased investigation. Phase I includes only a determination as to whether the PCE is originating from an off-site source. Phase II includes a characterization of the nature and extent of soil and groundwater contamination. However, Phase II will be completed only if the results of Phase I indicate that the PCE is originating from an on-site source. Finally, Phase III includes a soil-gas survey to identify any source areas.

EPA has several concerns with the phased-approach. First, phased-investigations generally take longer to complete than a single, comprehensive investigation. Secondly, EPA does not agree with the decision point between Phase I and Phase II. EPA believes that characterization of the nature and extent of contamination at the facility, even if some contamination may be originating from an off-site source, should be required. The possibility for an additional source area located on the facility must be investigated, regardless of the status of any off-site contamination. EPA therefore recommends that Phase I and Phase II be combined.

2. Since the time of Work Plan submittal, sampling at MW-3 was ceased due to the fact that the water table fell below the level of the pump. EPA recommends that the inoperable bladder pump of MW-3 be repaired and that the well be included in the upcoming fourth quarter sampling event.
3. In addition to the activities proposed in the RFI Work Plan, the RFI Report should include a complete description of any additional investigative activities undertaken at Philips Semiconductors. For example, the September 15, 1998 Quarterly Progress Report indicates that the Bernalillo County Environmental Health Department (BCEHD) will perform a three day soil gas survey of the northwestern cell of the Coronado Landfill (SWMU 8) that is located on Philips' property. The results of the BCEHD soil gas survey should be included in Philips' RFI Report, perhaps as an appendix.

Additionally, sampling results from the City of Albuquerque's new wells should be included as an appendix to the RFI Report, along with copies of the well construction logs and other pertinent information regarding these new monitoring wells.

4. The July 1998 Groundwater Monitoring Results indicate that groundwater samples were analyzed for volatile organic compounds by EPA method 524.2. What is the rationale for using this method and not SW-846 Method 8260?

5. There is no information on well construction included in the RFI Work Plan. It appears that only the upper portion of the aquifer is being sampled. Because of the thickness of the aquifer, contamination in the lower zones could be missed. Philips should include well construction information in the RFI Work Plan, and also discuss the portion of the aquifer being sampled.

Specific Comments

1. **Section 3.0, Nature and Extent of Contamination, Table 3-4, Composite Sample Identification for Landfill Material Collected During the 1980 Initial Site Investigation, Page 3-10**

The table identifies locations and depths of samples collected from the landfill. It does not appear that samples were collected below five feet in some parts of the landfill. It is not clear if these samples were collected at a depth where the landfill stopped, or if this was a random depth chosen for sampling. Thus, the vertical extent of the landfill may be undefined.

2. **Section 3.0, Nature and Extent of Contamination, Table 3-6, 1987 Baseline Analytical Results for Groundwater Samples, Page 3-14**

Philips provides EPA secondary drinking water standards on this table, and gives a value of 20 ppb for tetrachloroethene. However, the maximum concentration level (MCL) for drinking water for TCE is 5 ppb.

3. **Section 3.0, Nature and Extent of Contamination, Page 3-19, 1st Paragraph**

Philips states that "None of the detected constituents exceeded NMED water quality standards, and the results are consistent with past sampling of the Philips monitoring wells." However, PCE was detected at concentrations ranging from 6.6 to 7.1 ppb, which exceed the MCL of 5 ppb.

4. **Section 4.0, Potential Receptors and Pathways, Page 4-4, Paragraph 1**

EPA questions the validity of the statement "The ingestion of soil is not considered a viable exposure pathway for the wandering child, because there are no child-care facilities in the area." Residential land use is located near the facility.

5. **Section 4.0, Potential Receptors and Pathways, Figure 4-1, Location of Recorded Groundwater Wells within One-Mile Radius of SWMU #8, Former Coronado Municipal Landfill, Page 4-7**

Since the plume extends off-site, the closest residential wells should be sampled to

determine the extent of contamination.

6. Section 5.0, Contamination Characterization, Page 5-1, Paragraph 2

- a. Philips states that "The primary data need is to determine whether the former CML is the source for PCE detected in MW-1, MW-2 and MW-4 or if the PCE is originating from an off-site source (Phase I)." EPA recommends that this statement be rewritten to read "The primary data need is to determine the nature and extent of any contamination located at the facility, and to determine whether the former CML is a source of PCE..."
- b. The statement "If the former CML is determined to be the source of PCE, then data will be collected to establish the nature and extent of COCs in groundwater" should be rewritten to state that the nature and extent will be determined in groundwater *and soil*.
- c. Philips states that slug testing will be performed to obtain information on hydraulic conductivity. Philips should explain the rationale for completing a slug test instead of a constant rate pumping test or step-drawdown pumping test, which are generally considered to produce more valuable data.
- d. EPA recommends that the soil-gas survey, proposed as part of the "Phase III" investigation, be conducted during the "Phase I" investigation so that any potential source areas may be identified.

7. Section 5.0, Contamination Characterization, Table 5-1, HSWA Module Requirements Related to Contamination Characterization at SWMU #8, Former Coronado Municipal Landfill", Page 5-2,

See General Comment #2 concerning the use of a three-phased investigation. EPA recommends that this table be revised to combine the Phase I and Phase II activities into a single phase. For example, the upgradient and downgradient monitoring wells should be installed simultaneously.

8. Section 5.2.1, Phase 1 Sampling Activities, Page 5-3, Second Paragraph

Philips states that it will install a background monitoring well, MW-5, to assess upgradient groundwater conditions. Does Philips intend to use the new City of Albuquerque well, NCLF-5, to fulfill this proposed requirement? Philips goes on to state that the City will install two additional upgradient monitoring wells. NCLF-6 appears to be located upgradient. However, NCLF-2 appears to be located in the vicinity of the SWMU. Does Philips propose to install an additional, upgradient monitoring well? Since the closest upgradient monitoring well is impacted by contamination, additional upgradient wells should be installed to further delineate the plume.

It may be helpful for NMED to request that Philips submit a revised Figure 5-2, Proposed Sampling Locations for Phase I Field Activities at SMWU #8, Former Coronado Municipal Landfill". The revised figure should show existing wells and proposed wells.

9. Section 5.2.2, Phase II Sampling Activities, Page 5-6

- a. On Page 5-9, Philips states that soil samples will be taken if screening indicates contamination. However, EPA recommends that soil samples be taken at some regular interval, generally every 10 or 20 feet, regardless of the results of the field screening. EPA also recommends that the standard operating procedure for the flame ionization detector (FID) be submitted to NMED for review and approval. What is the detection limit for the FID?
- b. At the bottom of Page 5-9, Philips states that "...an assessment will be made to determine whether identified COCs pose a risk to human health or the environment. If there is no significant risk present, the RFI Report/NFA Proposal will be prepared." EPA has several concerns with this statement. First, it is not clear *who* (Philips or NMED) will determine whether there is a risk to human health or the environment. Secondly, the use of the word "significant" is vague. What type of risk is considered "significant"? EPA recommends that the decision logic between Phase II and Phase III be reevaluated. It may be appropriate to revise the logic to show that NMED will determine the need for a Phase III investigation, following NMED review and approval of a report at the conclusion of Phase I/II. The decision logic figures included in Section 5.0 should be revised accordingly.

10. Section 5.2.3, Phase III Sampling Activities, Page 5-10

Again, EPA recommends that a soil-gas survey above the known extent of the CML be conducted during the first phase of the investigation. The information obtained from the soil-gas survey will help guide future investigative activities aimed at defining the nature and extent of contamination.