{In Archive} KNC-DC Response to comments
Burke, Annie
to:
AndreaR Stone
11/23/2005 04:20 PM
Cc:
Wray Rohrman, KDunn, ESpellma, MKamal
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From: "Burke, Annie" <BURKEA@KOCHIND.COM>

To: AndreaR Stone/ARTD/R7/USEPA/US@EPA

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1 Attachment

Response to Comments 11-22-05.pdf

Hello, Andrea,

This is the third of three e-mail transmittals for the documents that we agreed during Monday's conference call to send to you today. This transmittal contains the revised responses to comments.

The first e-mail contained the Background Assessment WorkPlan, and the second contained the EPA guidance documents referenced in that WorkPlan. The transmittals have been sent separately due to the size of the files.

Please contact me if you have questions.

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Submitted via e-mail 11/23/05

Comment #1 FSP, Page 1, General Comment #8, Proposed KNC Response

EPA expressed concerns regarding the data collected from SWMU #26 because the samples were received by the laboratory at incorrect holding temperatures. EPA has discussed this issue with our internal laboratory personnel and quality assurance personnel. Since the constituent being tested for was Chromium, the holding temperature is not as important an issue, as it would have been with other constituents. However, this does raise the concern regarding overall handling practices for samples. Attention must be given to proper handling techniques and holding times and temperatures. KNC personnel should be properly instructed so that this does not occur in the future. Holding times and temperatures are very important for certain constituents and if they are not received at the proper holding time and temperatures, these samples will not be considered valid.

Since chromium was the constituent being sampled for at SWMU #26, EPA will accept the data as valid given that the incorrect holding temperature should not have affected the outcome of the sample

Response

Comment noted. No revisions to the document are necessary.

Agency Comment No. 2 Page 2 & 3, Specific Comment #2

In addition, on the October 17, 2005, conference call EPA and KDHE raised concerns regarding the disposal of the sludge from the Andco Unit (SWMU #14). EPA stated that in Farmland's Current Conditions Report on page 12, last full paragraph, last sentence it states, "The chrome sludge has been disposed of in the permitted Facility landfill. Also, on Page 17, East Lime Sludge Landfill, this paragraph states that the landfill is located on the eastern side of the Facility, south of the wastewater tank. It further states, "Material disposed of in the East Landfill consist primarily of lime sludge; however, KDHE records also document the disposal of MEA charcoal filter, spent high shift catalyst (2,160 ft^3), UAN tank sludge, demineralized water treatment sludge, pretreatment settling basin sludge." This information justifies extensive sampling at the lime sludge landfills. Given the nature of the material disposed into these landfills warrants a broader scan of constituents to be sampled for. Therefore, revise the sampling scheme for the lime sludge landfills to a broader parametric coverage as described for Trench #3.

Response

Tracking the disposal history of wastes placed in the lime landfills can be difficult because of the various names used for these landfills. Lime landfill Trenches 1, 2 and 3 are Solid Waste Management Unit (SWMU) No. 19, Trenches 4 and 5 are SWMU No. 17, Trench 6 East is SWMU No. 10 and Trench 6 West is SWMU No. 11. To help clarify the disposal history, KNC prepared the attached Lime Landfill Operational Summary (based largely on Appendix N of the RFI Work Plan). This summary is based on documentation located in facility files and describes the information in these records of which were placed in each lime landfill.

The operation of the lime landfills (e.g., SWMUs No. 10, 11, 17 and 19) is governed by Permit No. 375 from the Kansas Department of Health and Environment (KDHE) and K.A.R. Specifically, K.A.R. 28-29-23(r) requires that "*The operator shall maintain a log of commercial or industrial solid wastes received including sludges, liquids, or barreled wastes. The log shall indicate the source and quantity of waste and the disposal location.*" Many of the KDHE disposal authorizations (e.g., April 9, 1986; August 12, 1988; November 16, 1992; and December 23, 1992) also required that this landfill activity log be maintained. A landfill activity log has been maintained which includes that disposal date, a description of the waste, the quality of waste, and the location (i.e., trench number) were the waste was placed.

KNC used the landfill activity log (summarized on pages N-2 to N-3 of Appendix N of the RFI Work Plan) and other waste characterization information (see pages N-8 to 85 of Appendix N) to develop the scope of field sampling and laboratory analyses for SWMUs No. 10, 11, 17 and 19 (Refer to section 6.2.2.5, Tables 6-1, [Tables I-2-1 and I-2-3 of the SAP] and Figures 4-15, 4-16, and 4-17 RFI Work Plan [Figures I-2-12, I-2-13, and I-2-14 of the SAP]). The non-hazardous wastes placed into Trenches 1, 2, (SWMU 19) 4, 5 (SWMU 17) and 6 (SWMUs 10 and 11) were well-characterized and included specific disposal authorizations from KDHE. In contrast, some of the wastes placed in Trench 3 (SWMU 19) were not well-characterized and disposal authorizations from KDHE could not be located. Based on this prior characterization information, KNC proposed a more focused parametric coverage for samples collected from Trenches 1, 2, (SWMU 19) 4, 5 (SWMU 17) and 6 (SWMUs 10 and 11). Because some of the information on Trench 3 was incomplete, a substantially more extensive parametric coverage is proposed for the samples collected from Trench 3 (SWMU 19).

The Agencies are correct that settleable matter from the basin next to the Andco unit (SWMU 14) appears to have been disposed of in one of the on-site landfills. Records indicate that, on October 20, 1994, about 2,500 pounds of settleable matter from this basin was placed in Trench 3 (SWMU 19) (see page N-3 of Appendix N). Prior to disposal, this settleable matter was tested twice for inorganics using the Toxicity Characteristics Leaching Procedure (TCLP) (see pages N-45 and N-47). Using generator knowledge on how this process operated, there is no reason to believe that other constituents would be present at elevated levels. None of the leachable concentrations exceeded the regulatory threshold and this settleable matter should not be characterized as a hazardous wastes. More than 80 percent of the results were less than the detection limit and the other results were more than 100-times less than the regulatory limit. The chromium levels in this settleable matter ranged from 0.367 to < 0.4 milligrams per liter (mg/L) and the RCRA regulatory threshold is 5 mg/L.

The April 2001 Current Conditions Report (page 17) states that " . . . *MEA charcoal filter, spent high [temperature] shift catalyst, UAN tank sludge, demineralized water treatment sludge, [and] pretreatment settling basin sludge*" were placed in the East Lime Landfill (Trenches 4 and 5, SWMU 17). None of these waste streams are related to the Andco unit. The "pretreatment settling basin sludge" would have collected in the West Side Basin (SWMU 26).

The landfill activity log, maintained in accordance with K.A.R. 28-29-23(r), shows that MEA charcoal and high temperature shift catalyst were placed in Trenches 4 or 5 (SWMU 17). However, KNC is not able to locate any records indicating that UAN tank sludge, water treatment sludge, or pretreatment settling basin sludge were placed in SWMU 17 (Trenches 4 or 5). Records show that UAN tank sludge and wastewater sludge were disposed of in Trench 3 (SWMU 19), not Trenches 4 or 5 (SWMU 17).

Based on this assessment of disposal activities in the lime landfills, KNC believes a more focused parametric coverage for samples collected from Trenches 1, 2, (SWMU 19) 4, 5 (SWMU 17) and 6 (SWMUs 10 and 11) is appropriate. Because some of the information was incomplete, a substantially more extensive parametric coverage is appropriate for the samples collected from Trench 3 (SWMU 19). No revisions are proposed for the document.

Comment #3 FSP, Page 3, Specific Comment #11

KDHE expressed concern regarding the termination of the well boring at 450 feet below ground surface. Records indicate Farmland continued to use Disposal Well DP-1

for waste disposal despite a reduction in the wastewater injection rate. In addition, the casing was evidently corroded from 400 to 500 feet below ground surface. If an obstruction occurred at a deeper elevation, continued use of the well may have resulted in wastewater being forced into the formation adjacent to the lower portions of the corroded well casing. Therefore, vertically profile the Dakota Aquifer from the top of the aquifer and continue to a depth of no less than 500 feet below ground surface. Also, reference was made to "Weekly Reports." Please submit a copy of these documents that pertain to Disposal Well DP-1.

Response

The target depth for former Injection Well #1 (450' below land surface) was selected based on correspondence from Farmland Industries that indicated corrosion of the surface casing took place between 400 and 500 feet below ground surface. An excerpt from this office correspondence dated August 19, 1976, that documents this depth is provided below.

> "Monday afternoon work came to a stop when it was no longer possible to confine our efforts within the surface casing. Even the hefty 7" hollow core cutter with heavy 7" stem pipe could not break through. Evidently between 400' and 500' a side o the surface casing had corroded away and the plugged casing below forced the cutters out of the side where blue clay and iron pyrite was picked up. Work stopped at 502' level."

KNC agrees to drill the new Dakota Well to 500 feet below ground surface as requested by EPA and KDHE. The text in Section I-3.2.3 and Table I-2-2 have been revised to reflect this change.

Comment #4 FSP. Page 5, Specific Comment #38

See EPA's response above number 2. Please revise the text accordingly.

Response

See Response to Comment #2. No revisions are proposed for the document.

Comment #5 FSP, Specific Revisions to Table I-2-1, AOC #4, Analyses/Test Methods

Appendix IX metals is missing the appropriate EPA method. Please add after, "app IX metals (EPA6020/7471B).

Response

Comment noted, text has been added to Table I-2-1 to reflect comment.

BACKGROUND ASSESSMENT WORK PLAN:

Comment #1 Background Work Plan, Page 5, Section 2.3.1 Chromium Preliminary Evaluation, last sentence

The sentence states, KNC proposes to use the most commonly obtained detection limit (0.024 milligrams per liter [mg/L]) in the historical background chromium analytical database (Appendix A) as the background chromium concentration in unconsolidated groundwater." EPA has reviewed the data contained in KNC's 2005 Semi-Annual Ground Water Corrective Action Report. The private wells that are sampled quarterly show Chromium less than 0.010 mg/L. The value KNC is proposing is for wells that are located mostly on facility property to the North. Given that nothing was detected in those wells less than 0.024 mg/L, anything detected would be above that value. Therefore, since the private wells are showing 0.010 mg/L, and are located farther North and East of the background wells that KNC proposed, EPA feels these private wells are more representative of background levels for Chromium in groundwater. Therefore, EPA will use the 0.010 mg/L as the background concentration for Chromium in groundwater. Please revise the text accordingly.

Response

Comment noted. The last sentence of Section 2.3.1 has been revised as follows, "KNC proposes to use the detection limit (0.010 milligrams per liter [mg/L]) or the practical quantitation limit (PQL) reported by the laboratory for a specific sampling event as the background chromium concentration in unconsolidated groundwater." In addition, the first sentence of Section 4 has been revised as follows, "As discussed previously, KNC proposed to use the laboratory detection limit reported in the recent chromium database for the background wells (0.010 mg/L) or the PQL as the background value for the delineating groundwater chromium in the unconsolidated deposits."

Comment #2 Background Work Plan, Page 7, Section 3.1 Sample Location Identification

Sentence one states, "Background samples locations will be taken from the area surrounding the KNC Facility." KNC needs to provide an explanation on the criteria used to select the background soil sampling locations. Please add detail on the rationale for the background sampling locations.

Response

Section 3.1 provided the rationale and criteria for selecting background soil sampling locations. The following text will be added to the text as follows; "Grid sections located near roads or commercial properties were eliminated from consideration as background sampling locations. The grid sections were established in areas that are located well away from the facility in areas believed to be unimpacted by facility activities. The grid was established in the active agricultural areas since the land on which the Koch facility is located was used for agriculture prior to the construction of the facility. It is believed that the proposed background data set will be representative of the ongoing agricultural land use in the area."

Comment #3 Background Work Plan, Page 8, Section 3.3 Data Evaluation, fourth sentence

This sentence states, "As applicable, outliers will be eliminated from consideration as representative of background." Outliers should not be eliminated from consideration. Outliers can provide important information. The outliers could be an indication that the area being sampled has been impacted by facility contamination, or it could indicate that other background sample locations have been impacted by facility contamination. Outliers need to be investigated to determine if there is a problem with the data or if it is an indicator of contamination or lack of contamination. Outliers can be investigated by additional sampling. Modify the text accordingly.

Response

Comment noted. Due to the agricultural nature of the properties surrounding the Koch Nitrogen Facility, it is anticipated that nitrate/nitrite will be detected in the background soil samples at concentrations that are indicative of fertilized application.

As described in Section 3.3 of the document, statistical background tests will be conducted in accordance with USEPA guidance to identify any data points that should be evaluated as outliers. If statistical testing identifies any outliers, the data will be evaluated to determine if it is of sufficient quality to use for the background evaluation. In addition, the data will be evaluated to determine if there are reasons that the outlier should or should not be included in the data set. The text in Section 3.3 will be revised to read; "As applicable, outliers will be evaluated to determine if QA/QC problems exist or if there are reasons for the variation in concentration. If the data is of sufficient quality for use and no reason can be identified for the variable concentration, the outlier will be eliminated from consideration as representative of background."

Comment #4 Background Work Plan. Page 9, Section 3.4, 1st Paragraph

The text states that, "EPA guidance specifies the threshold value as twice the mean background concentration but no greater than the highest detected background sample (EPA 2002a)." In the reference list on page 11, the reference cited as EPA 2002a is "Role of Background in the CERCLA Cleanup Program", OSWER 9285.6-07P. In reviewing the referenced document, the EPA could not find any information relative to the above quoted statement discussing the threshold values of background concentrations.

Please point out where this issue is discussed in the referenced EPA document, or if the reference is in error please indicate the correct reference.

Response: Comment noted. The Background Assessment Work Plan contained an incorrect reference for use of twice the mean background concentration as the threshold value. The correct reference is: USEPA. 2000. Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins. EPA Region 4, originally published November 1995, Website version last updated May 2000. http://www.epa.gov/region4/waste/oftecser/healtbul.htm. The text has been revised to include the correct reference. We have also appended the current and previous versions of the document to these comment responses for your review.

Draft
For Discussion Purposes Only

Lime Landfill Operational Summary

Major Unit	Description	Components	[1]Period of Operation (Status)	Materials Approved for Disposal	Analytical or other Data Generated for Disposal Approval	Other materials - KDHE approval not found
SWMU 19 (West Lime Sludge Landfill)	The West Lime Sludge landfill consists of three trenches (Trench 1, 2, and 3)	Trench 1	1984 to 1988 (Inactive)	Primary - spent lime Secondary (waste-specific approval) - spent resin	Material Safety Data Sheet (MSDS)	NA
		Trench 2	1988 to 1992 (Inactive)	Primary - spent lime Secondary (waste-specific approval) - spent resin - used catalyst - MEA Charcoal	Material Safety Data Sheet (MSDS) and EP Toxicity testing for chromium	NA
		Trench 3	1992 to 2002 (Inactive)	Primary - spent lime Secondary (waste-specific approval) - spent resin - sandblasting sand - MEA Charcoal - Tank Sludge - Settleable material from waste water building pit - HTS catalyst - asphalt from demolition of Loadout area	Material Safety Data Sheet (MSDS), TCLP RCRA Metals and VOCs,	- Settleable material from Andco unit (analytical data - TCLP RCRA metals) - Spent iron ore converter catalyst (analytical data TCLP RCRA Metals) - Type 4A molecular sieve - DE39 Alumina balls - oil soaked soil - oil soaked soil from FES area
SWMU 17 (East Lime Sludge Landfill)	The East Lime Sludge landfill consists of two trenches (Trench 4 and 5)	Trench 4	1993 to 1994 (inactive)	Primary - spent lime Secondary (waste-specific approval) - MEA Charcoal - HTS Catalyst	TCLP RCRA Metals and VOCs	NA
		Trench 5	1995 to 1999 (inactive)	Spent Lime	NA	NA
Trench 6	Trench 6 consists of the west and east lime sludge ponds.	SWMU 10 (East Cell of Lime Sludge Pond)	1990s to 2001 (Inactive)	Primary - spent lime Secondary (waste-specific approval) - sludge from Ammonia Cooling Tower, - asphalt from demolition of Loadout area	TCLP RCRA Metals	NA
		SWMU 11 (West Cell of Lime Sludge Pond)	1990s to 2001 (Inactive)	Primary - spent lime Secondary (waste-specific approval)- - sludge from Ammonia Cooling Tower, - asphalt from demolition of Loadout area	TCLP RCRA Metals	NA

Notes:
NA - not applicable
ANDCO Unit came into operation in 1991
[1]Period of operation based on landfill log entries for disposed material generated by the former owner.