MEMORANDUM

Project No.: 110207-004-07

September 18, 2015

To: Andy Kallus, Washington State Department of Ecology

cc: Cindy Jernigan and Bryan Lust, Kimberly-Clark

From:

Carla Brock, LG
Senior Geologist

Steve Germiat, LHG
Principal Hydrogeologist

Re: **RI/FS Work Plan Addendum for Additional Focused Data Collection**
Kimberly-Clark Worldwide Site Upland Area RI/FS

This Addendum to the *Remedial Investigation/Feasibility Study (RI/FS) Work Plan for the Kimberly-Clark Worldwide Site Upland Area* (Aspect, 2013) prepared by Aspect Consulting, LLC (Aspect) presents additional data collection activities proposed to further refine contaminant nature and extent in support of the FS. This addendum is an outcome of discussion with Washington State Department of Ecology (Ecology) following review of the *Remedial Investigation Data Report for the Upland Area* (Aspect, 2014). The proposed additional sampling and analysis, by Unit, to be conducted in support of the FS is described below. The proposed work, which includes drilling, soil sampling and analysis, installation, development, and survey of new groundwater monitoring wells, and additional groundwater sampling and analysis, will be conducted in accordance with the Sampling and Analysis Plan (SAP) found in Appendix A of the *RI/FS Work Plan* (Aspect, 2013). Figure 1 depicts the proposed new explorations within the existing explorations. Data will be integrated into the RI/FS Report and uploaded to Ecology's Environmental Information Management (EIM) system once the new analytical data are validated.

Unit A

Resample Groundwater from REC1-MW-8 for TPH and PAHs

The reported groundwater diesel- plus oil-range total petroleum hydrocarbon (TPH D+O) concentration at well REC1-MW-8 exceeds the screening level in one of three groundwater samples (most recent sample collected). The groundwater exceedance only occurs if adding half the detection limit (1/2U) for non-detect oil-range TPH—the detected diesel-range TPH concentration (440 micrograms per liter [ug/L]) was less than the 500 ug/L screening level[1]. Well REC1-MW-8

[1] In the RI groundwater data set (including IA confirmation data; more than 275 samples), oil-range TPH is not detected except inconsistently at one well (UST71-MW-102). Therefore, we propose to not add 1/2U for non-detect oil-range TPH values to the diesel-range TPH values for groundwater in the RI/FS data set. In the two groundwater samples where oil-range TPH is detected, we will add it to diesel-range TPH concentrations to

will be resampled for diesel- and oil-range TPH, polycyclic aromatic hydrocarbons (PAHs), and total suspended solids (TSS).

Soil and Groundwater Sampling around OMS-B-3

Boring OMS-B-3 located near the shoreline (Figure 1) has soil concentrations exceeding screening levels, including lead (Pb) at 365 milligrams per kilogram (mg/kg), copper (Cu) at 265 mg/kg, polychlorinated biphenyls (PCBs) at 2 mg/kg, and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) at 0.48 mg/kg. Given the close proximity to the East Waterway, three additional borings (OMS-B-4, OMS-B-5, and OMS-MW-2) will be advanced around OMS-B-3 (Figure 1). At each boring, soil will be sampled from three depths. Consistent with the RI/FS SAP, if there is field screening evidence of contamination in a depth interval, soil in that depth interval will be sampled for chemical analysis; this applies to all soil borings conducted under this Addendum. In the absence of field screening evidence of contamination, soil samples will be collected from approximately 1-foot depth intervals in the middle of the unsaturated soil zone (beneath recycled material veneer if present), straddling the water table observed during drilling, and 2 to 3 feet below the water table. Each of the soil samples will be submitted for analysis of diesel- and oil-range TPH, PAHs, PCBs, and metals (arsenic [As], Cu, Pb, mercury [Hg], nickel [Ni], and zinc [Zn]). The boring on its south side will be completed as a shoreline monitoring well, with collection of a groundwater sample for the same constituents listed above plus TSS. Because this is a shoreline monitoring well, the groundwater sample will be collected within 1 hour before or after lower low tide.

Unit B

Sample Groundwater from DAST-MW-101 for PCBs

In accordance with the RI/FS Work Plan, a groundwater sample will be collected from well DAST-MW-101 and analyzed for PCBs and TSS because detected PCB soil concentrations in that immediate area exceed the Model Toxics Control Act (MTCA)-default leachability-based soil screening level. This well is located adjacent to the highest detected soil PCB concentrations in the Upland Area.

Sample Soil in Central Maintenance Shop Area and Archive for Potential PCB Analysis

Detected soil total PCB concentrations in the area of the Central Maintenance Shop are less than the industrial soil cleanup level of 10 mg/kg but, in some locations, they are greater than the unrestricted soil cleanup level of 1 mg/kg extending to a maximum depth of 5 feet. Kimberly-Clark has executed a purchase and sale agreement with a buyer who plans to develop the property as a paved marine terminal, which would meet MTCA's definition for an industrial property so that industrial cleanup standards would apply; the transaction closing is anticipated for early November 2015. In the event that the transaction does not close, the future land use would remain uncertain, and additional soil sampling could be warranted to better delineate the extent of PCBs in soil exceeding the unrestricted cleanup level. Therefore, soil samples will be collected from four additional borings in this area (CMS-B-7 through CMS-B-10; Figure 1), and they will be archived for analysis of PCBs if the transaction with the currently planned buyer does not close. At each boring, three soil samples will be collected from depths of approximately 1 foot, 3 feet, and 5 feet

generate TPH D+O concentrations. For soil data, we will continue to add 1/2U for non-detect diesel-range TPH and oil-range TPH to calculate TPH D+O concentrations because diesel and oil detections are both common in soil.

below the recycled material-soil interface. The soil samples will be archived by freezing within 48 hours of collection, pending PCB analysis as outlined here.

Sample Soil Around Boiler-Baghouse Excavation for Metals

As part of the interim action, lead concentrations in verification soil samples collected within the Boiler-Baghouse soil excavation (lead was target contaminant) meet the industrial direct contact soil cleanup level of 1,000 mg/kg but, in some locations, not the unrestricted direct contact soil cleanup level of 250 mg/kg. During the year of quarterly groundwater monitoring following the Boiler-Baghouse interim action excavation, an anomalously high dissolved lead concentration (102 ug/L) was detected at one of the four wells during the 4th quarter of sampling. The high concentration was not reproduced in the follow-up sample collected from that well (1.46 ug/L). Continued groundwater monitoring is recommended for this area, and evaluation of whether lead is a contaminant of concern in groundwater in this area will be completed as part of the RI/FS report. Detected soil mercury concentrations in the verification samples exceed the soil screening level based on groundwater protection, and mercury is a groundwater contaminant of concern at well BBH-MW103 adjacent to the excavation. Therefore, additional delineation of mercury in soil is warranted to allow refined soil volume estimates for evaluation of remedial alternatives as part of the FS. Six additional borings (PM-B-11 through PM-B-16; Figure 1), with four located south and two located north of the edge of the interim action excavation, will be completed. From each boring, three soil samples will be collected from depths above, at, and below the water table (consistent with the approach described above for the OMS-B-3 area) and submitted for analysis of metals (As, Cu, Hg, Pb, Ni, and Zn).

Re-Sample Groundwater from PM-MW-05 for SVOCs

Pentachlorophenol (PCP) was detected at a concentration of 2.9 ug/L, just below the 3 ug/L screening level, in one of two groundwater samples collected from well PM-MW-5. Well PM-MW-5 will be resampled for semi-volatile organic compounds (SVOCs) and TSS to confirm the presence or absence of PCP in groundwater.

Unit C

Install Well GF9-MW-04 and Sample Soil and Groundwater for TPH and PAHs

Given the recent change in groundwater screening levels based on vapor intrusion (VI), the naphthalene concentrations detected in both groundwater samples from well GF9-MW-3 exceed VI screening levels for unrestricted and industrial uses. Diesel-range TPH concentrations also exceed the 500 ug/L screening level in both groundwater samples from this well. Groundwater TPH and naphthalene concentrations at downgradient wells GF9-MW-1 and GF9-MW-2 meet unrestricted screening levels. A new monitoring well (GF9-MW-4; Figure 1) will be installed approximately 60 feet upgradient (east) of well GF9-MW-3 to delineate the eastern extent of naphthalene in groundwater exceeding the VI screening level. The three soil samples (collected from depths above, at, and below the water table) and the groundwater sample from the new well will be analyzed for diesel- and oil-range TPH, PAHs, and TSS.

Unit D

Sample Soil in Chip Dump Area North of Electrical Substation

The area north of the inactive Snohomish Public Utility District (PUD) electrical substation, located near the shoreline, has not been characterized. Groundwater from shoreline well REC7-MW-2 on the downgradient edge of that area has been sampled four times without any exceedances detected

(analyses for TPH, metals, SVOCs including PAHs, volatile organic compounds (VOCs), ammonia, and sulfide). Four soil borings (CD-B-1 through CD-B-4) will be advanced in this area (Figure 1). Three soil samples, collected from each boring at depths above, at, and below the water table will be analyzed for diesel-and oil-range TPH, PAHs, and metals (As, Cu, Hg, Pb, Ni, and Zn).

References

Aspect Consulting, 2013, Work Plan for Remedial Investigation/Feasibility Study, Kimberly-Clark Worldwide Site Upland Area, Everett, Washington, November 22, 2013, Final.

Aspect Consulting, 2014, Remedial Investigation Data Report, Kimberly-Clark Worldwide Site Upland Area, Everett, Washington, September 29, 2014.

Attachments

Figure 1—Proposed Sampling Locations

V:\110207 KC Everett Mill\Deliverables\Work Plan Addendum\Sept 2015\RIFS Work Plan Addendum - Final_091815.docx

GIS Path: T:\projects_8\KimberlyClark\Env_Support_110207\Delivered\RIFS_Workplan\RIFSWorkplanAddendumMay2015\ProposedSamplingLocations.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 9/15/2015 || User: npipin || Print Date: 9/15/2015

- Proposed Boring Location
- Proposed Monitoring Well Location
- Ambient (outdoor) Air Monitoring Location
- Indoor Air/Sub-Slab Air Sample Location
- IA Confirmational Monitoring Well
- Other Monitoring Well
- Phase 2/RI Soil Boring Location
- IA Excavation Confirmation Sample
- Intertidal Porewater Sample Location
- Surface Water Sample Location

EXISTING CLARIFIER
EXISTING SECONDARY AERATION BASINS
EXISTING PUD ELECTRICAL SUBSTATION
CONVERTING ADDITION
PARENT ROLL STORAGE
CONVERTING/FINISHING
TISSUE MANUFACTURING
PULP PREP
WOOD CHIPS PILE
WOOD CHIPS PILE
HYDRAULIC BARKER BUILDING
FORMER LOG POND AREA
CHIP SILOS
ACID PLANT
PRIMARY CLARIFIERS
FLY ASH CLARIFIER
NO. 14 BOILER
FILTER PLANT
COOLING TOWER
REPULPER STORAGE BUILDING
DIGESTER BUILDING
WASHER BUILDING
BLOW PIT BUILDING
PULP STORAGE BUILDING
PULP DRYING BUILDING
SCREEN AND BLEACH 1
SCREEN AND BLEACH 2
TRAIN SHED
OLD MACHINE SHOP
EXISTING DISTRIBUTION WAREHOUSE
EVERETT AVENUE EASEMENT

Unit E
Unit D
Unit C
Unit B
Unit A

CD-B-4
CD-B-3
CD-B-2
CD-B-1
REC7-MW-2
HB-MW-1R
GF9-MW-1
GF9-MW-2
GF9-MW-3
GF9-MW-4
PM-B-15
PM-B-16
PM-B-11
PM-B-12
PM-B-13
PM-B-14
PM-MW-2
PM-MW-5
PM-MW-4
CMS-B-8
CMS-B-7
CMS-B-9
CMS-B-10
DAST-MW-101
OMS-B-4
OMS-B-5
OMS-B-3
OMS-MW-2
REC1-MW-9
REC1-MW-8
REC1-MW-7

N

0 100 200
Feet

- Site Unit Dividers
- Former Log Pond Area
- Upland Area Boundary
- Interim Action Excavation Extent
- City of Everett CSO
- Historical Site Features
- Existing Structure/Feature

Proposed Sampling Locations

RI-FS Workplan Addendum
Everett, Washington

Aspect CONSULTING	SEP-2015	BY: AET / RAP	FIGURE NO. 1
	PROJECT NO. 110207	REVISED BY: RAP / CEB	