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NWS YORKTOWN
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VALIDATED DATA PACKAGE, A502501, NWS YORKTOWN VA
6/26/2015
CH2M HILL

MEMORANDUM

Corrections to File

TO: Datausers

COPIES: File
Data packages for 9 SDGs: A401929, A401930, A401957, A401958, A401959, A401966, A401978, A401980, A401981

FROM: Clairette Campbell
CH2M HILL Project Chemist

DATE: 8/24/2015

This memo is to document an irregularity in the quality of the data in 9 SDGs (A401929, A401930, A401957, A401958, A401959, A401966, A401978, A401980, A401981), and indicate where to find replacement data of known quality.

The data in these 9 SDGs contains VOC data that is invalid because inaccurate manual integrations were performed on the associated surrogates and/or LCSs. **Table 1** identifies which VOC data is invalid. Affected site locations were re-sampled in 2015 for VOCs only and reported in new SDGs, **Table 1** identifies which new SDG contains valid data that is to be used instead of the invalid data.

Please note that these 9 SDGs still contain some valid data. VOC samples omitted from **Table 1** are still valid. Also, all data for fractions other than VOCs are still valid.

TABLE 1

Correlation of invalid data with replacement data, organized by invalid SDG

	Invalid VOC (Method 8260) Data		**Replacement VOC (Method 8260) Data**	
Site Location (Station ID)	**SDG**	**Sample ID**	**SDG**	**Sample ID**
YS06-SWSD091	A401929	YS06-SD91-0414	A502406	YS06-SD91-0415
YS06-SWSD092	A401929	YS06-SD92-0414	A502406	YS06-SD92-0415
YS06-SWSD094	A401929	YS06-SD94-0414	A502406	YS06-SD94-0415
YS06-SWSD095	A401929	YS06-SD95-0414	A502406	YS06-SD95-0415
YS06-SWSD087	A401930	YS06-SD87-0414	A502501	YS06-SO87-0415
YS06-SWSD088	A401930	YS06-SD88-0414	A502501	YS06-SO88-0415
YS06-SWSD079	A401957	YS06-SD79-0414	A502309	YS06-SD79-0415
YS06-SWSD080	A401957	YS06-SD80-0414	A502309	YS06-SD80-0415
YS06-SWSD080	A401957	YS06-SD80P-0414	A502309	YS06-SD80P-0415
YS06-SWSD081	A401957	YS06-SD81-0414	A502309	YS06-SD81-0415
YS06-SWSD082	A401957	YS06-SD82-0414	A502501	YS06-SO82-0415
YS06-SWSD083	A401957	YS06-SD83-0414	A502309	YS06-SD83-0415
YS06-SWSD084	A401957	YS06-SD84-0414	A502309	YS06-SD84-0415
YS06-SWSD085	A401957	YS06-SD85-0414	A502309	YS06-SD85-0415
YS06-SWSD096	A401958	YS06-SD96-0414	A502406	YS06-SD96-0415
YS06-SWSD079	A401959	YS06-SW79-0414	A502309	YS06-SW79-0415
YS06-SWSD081	A401959	YS06-SW81-0414	A502309	YS06-SW81-0415
YS06-SWSD084	A401959	YS06-SW84-0414	A502309	YS06-SW84-0415

TABLE 1

Correlation of invalid data with replacement data, organized by invalid SDG

	Invalid VOC (Method 8260) Data		Replacement VOC (Method 8260) Data	
Site Location (Station ID)	**SDG**	**Sample ID**	**SDG**	**Sample ID**
YS06-SWSD085	A401959	YS06-SW85-0414	A502309	YS06-SW85-0415
YS06-SWSD080	A401966	YS06-SW80-0414	A502309	YS06-SW80-0415
YS06-SWSD080	A401966	YS06-SW80P-0414	A502309	YS06-SW80P-0415
YS06-SWSD097	A401978	YS06-SW97-0414	A502309	YS06-SW97-0415
YS06-SWSD097	A401978	YS06-SW97P-0414	no replacement	
YS06-SWSD086	A401980	YS06-SD86-0414	A502501	YS06-SD86-0415 and it's field duplicate YS06-SD86P-0415
YS06-SWSD097	A401980	YS06-SD97-0414	A502309	YS06-SD97-0415
YS06-SWSD097	A401980	YS06-SD97P-0414	no replacement	
YS06-SWSD089	A401981	YS06-SD89-0414	A502406	YS06-SD89-0415
YS06-SWSD090	A401981	YS06-SD90-0414	A502406	YS06-SD90-0415
YS06-SWSD093	A401981	YS06-SD93-0414	A502406	YS06-SD93-0415

Data Validation Summary

Yorktown CTO-WE35 Site 6, SW/SD

TO: Clairette Campbell/VBO

Anita Dodson/VBO

FROM: Tiffany McGlynn/GNV

CC: Herb Kelly/GNV

DATE: June 26, 2015

Introduction

The following data validation report discusses the data validation process and findings for ENCO Laboratories, for SDG A502501.

Samples were analyzed using the following analytical methods:

- SW8260B Volatiles

The samples included in this SDG are listed in the table below.

Sample Name	Matrix
YS06-SO88-0415	Soil
YS06-SO87-0415	Soil
YS06-SD86-0415	Soil
YS06-SD86P-0415	Soil
YS06-TB042215	Water
YS06-SO82-0415	Soil

Data Evaluation

Data was evaluated in accordance with the analytical methods and with the criteria found in the following guidance documents: Sampling and Analysis Plan Site 6 Data Gap Investigation, Naval Weapons Station Yorktown, Yorktown, Virginia Contract Task Order WE35 (March 2014) and Region III Modifications for Organic Data Review (EPA 1994), as applicable. The samples were evaluated based on the following criteria:

- Data Completeness

- Technical Holding Times
- Instrument Tuning
- Initial/Continuing Calibrations
- Blanks
- Internal Standards
- Laboratory Control Samples
- Matrix Spike Recoveries
- Surrogates
- Field Duplicates
- Identification/Quantitation
- Reporting Limits

Overall Evaluation of Data/Potential Usability Issues

Specific details regarding qualification of the data are addressed in the sections below. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte, the validator has chosen the qualifier that best indicates possible bias in the results and qualified these data accordingly.

Data Completeness

The SDG was received complete and intact.

Technical Holding Times

According to the chain of custody records, sampling was performed on 4/22/15. Samples were received at the laboratory on 4/23/15. All sample preparation analysis was performed within holding time requirements.

Blanks

Methylene chloride was detected in several method blanks as listed below. Affected data are summarized in **Attachment 1**.

Blank ID	Compound	Conc.	Units
5E02006-BL	Methylene chloride	15	UG_KG_WETWT
5E04016-BL	Methylene chloride	45	UG_KG_WETWT
5E05022-BL	Methylene chloride	13	UG_KG_WETWT
5E20024-BL	Methylene chloride	1.3	UG_KG_WETWT
5E22025-BL	Methylene chloride	4.6	UG_KG_WETWT

Surrogates

Surrogates for YS06-TB042215 and YS06-SO82-0415 exhibited low recoveries. Affected data are summarized in **Attachment 1**.

Calibration

Bromomethane, methylcyclohexane, 1,2,4-trichlorobenzene, and 1,2,3-trichlorobenzene exhibited low responses in the continuing calibration for sample YS06-TB042215. Acetone exhibited high responses in the continuing calibration associated with the soil samples. Affected data are summarized in **Attachment 1**.

Conclusion

These data can be used in the project decision-making process as qualified by the data quality evaluation process.

Please do not hesitate to contact us about this validation report.

Sincerely,

Tiffany McGlynn

Qualification Flags

Exclude	More appropriate data exist for this analyte.
R	Data were rejected for use.
UL	Analyte not detected, quantitation limit is potentially biased low.
UJ	Analyte not detected, estimated quantitation limit.
U	Analyte not detected.
B	Not detected substantially above the level reported in laboratory or field blanks.
L	Analyte present, estimated value potentially biased low.
K	Analyte present, estimated value potentially biased high.
N	Analyte identification presumptive; no second column analysis performed or GC/MS tentative identification.
J	Analyte present, estimated value.
NJ	Analysis indicates the presence of an analyte that was "tentatively identified" and the associated value represents its approximate concentration.
None	Placeholder for calculating quality control issues that do not require flagging.
=	Analyte was detected at a concentration greater than the quantitation limit.

Qualifier Code Reference

Value	Description
%SOL	High Moisture content
2C	Second Column – Poor Dual Column Reproducibility
2S	Second Source – Bad reproducibility between tandem detectors
BD	Blank Spike/Blank Spike Duplicate(LCS/LCSD) Precision
BRL	Below Reporting Limit
BSH	Blank Spike/LCS – High Recovery
BSL	Blank Spike/LCS – Low Recovery
CC	Continuing Calibration
CCBL	Continuing Calibration Blank Contamination
CCH	Continuing Calibration Verification – High Recovery
CCL	Continuing Calibration Verification – Low Recovery
DL	Redundant Result – due to Dilution
EBL	Equipment Blank Contamination
EMPC	Estimated Possible Maximum Concentration
ESH	Extraction Standard - High Recovery
ESL	Extraction Standard - Low Recovery
FBL	Field Blank Contamination
FD	Field Duplicate
HT	Holding Time
ICB	Initial Calibration – Bad Linearity or Curve Function
ICH	Initial Calibration – High Relative Response Factors
ICL	Initial Calibration – Low Relative Response Factors
IR15	Ion ratio exceeds +/- 15% difference
ISH	Internal Standard – High Recovery
ISL	Internal Standard – Low Recovery
LD	Lab Duplicate Reproducibility
LR	Concentration Exceeds Linear Range
MBL	Method Blank Contamination
MDP	Matrix Spike/Matrix Spike Duplicate Precision
MI	Matrix interference obscuring the raw data

MSH	Matrix Spike and/or Matrix Spike Duplicate – High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate – Low Recovery
OT	Other
PD	Pesticide Degradation
RE	Redundant Result - due to Reanalysis or Re-extraction
SD	Serial Dilution Reproducibility
SSH	Spiked Surrogate – High Recovery
SSL	Spiked Surrogate – Low Recovery
TBL	Trip Blank Contamination
TN	Tune

Yorktown WE35, Site 6 SW/SD
Attachment 1 Change Qual. Table
SDG A502501

Sample ID	Compound	Q Flag	Qual Code
YS06-SO88-0415	Acetone	J	CCH
YS06-SO88-0415	Methylene chloride	B	MBL
YS06-SO87-0415	Acetone	J	CCH
YS06-SO87-0415	Methylene chloride	B	MBL
YS06-SD86-0415	Acetone	J	CCH
YS06-SD86-0415	Methylene chloride	B	MBL
YS06-SD86P-0415	Methylene chloride	B	MBL
YS06-TB042215	Dichlorodifluoromethane (Freon-12)	UL	SSL
YS06-TB042215	Chloromethane	UL	SSL
YS06-TB042215	Vinyl chloride	UL	SSL
YS06-TB042215	Bromomethane	UJ	CCL
YS06-TB042215	Chloroethane	UL	SSL
YS06-TB042215	Trichlorofluoromethane (Freon-11)	UL	SSL
YS06-TB042215	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UL	SSL
YS06-TB042215	Acetone	UL	SSL
YS06-TB042215	1,1-Dichloroethene	UL	SSL
YS06-TB042215	Carbon disulfide	UL	SSL
YS06-TB042215	Methylene chloride	UL	SSL
YS06-TB042215	Methyl-tert-butyl ether (MTBE)	UL	SSL
YS06-TB042215	trans-1,2-Dichloroethene	UL	SSL
YS06-TB042215	cis-1,2-Dichloroethene	UL	SSL
YS06-TB042215	1,1-Dichloroethane	UL	SSL
YS06-TB042215	2-Butanone	UL	SSL
YS06-TB042215	Chloroform	UL	SSL
YS06-TB042215	Bromochloromethane	UL	SSL
YS06-TB042215	1,1,1-Trichloroethane	UL	SSL
YS06-TB042215	Methyl acetate	UL	SSL
YS06-TB042215	Cyclohexane	UL	SSL
YS06-TB042215	Methylcyclohexane	UJ	CCL
YS06-TB042215	Carbon tetrachloride	UL	SSL
YS06-TB042215	1,2-Dichloroethane	UL	SSL
YS06-TB042215	Benzene	UL	SSL
YS06-TB042215	Trichloroethene	UL	SSL
YS06-TB042215	1,2-Dichloropropane	UL	SSL
YS06-TB042215	Bromodichloromethane	UL	SSL
YS06-TB042215	4-Methyl-2-pentanone	UL	SSL
YS06-TB042215	2-Hexanone	UL	SSL
YS06-TB042215	cis-1,3-Dichloropropene	UL	SSL
YS06-TB042215	Toluene	UL	SSL
YS06-TB042215	trans-1,3-Dichloropropene	UL	SSL
YS06-TB042215	1,1,2-Trichloroethane	UL	SSL
YS06-TB042215	Tetrachloroethene	UL	SSL
YS06-TB042215	Dibromochloromethane	UL	SSL

Yorktown WE35, Site 6 SW/SD
Attachment 1 Change Qual. Table
SDG A502501

Sample ID	Compound	Q Flag	Qual Code
YS06-TB042215	1,2-Dibromoethane	UL	SSL
YS06-TB042215	Chlorobenzene	UL	SSL
YS06-TB042215	Ethylbenzene	UL	SSL
YS06-TB042215	m- and p-Xylene	UL	SSL
YS06-TB042215	o-Xylene	UL	SSL
YS06-TB042215	Bromoform	UL	SSL
YS06-TB042215	Styrene	UL	SSL
YS06-TB042215	Isopropylbenzene	UL	SSL
YS06-TB042215	1,1,2,2-Tetrachloroethane	UL	SSL
YS06-TB042215	1,2,4-Trichlorobenzene	UJ	CCL
YS06-TB042215	1,3-Dichlorobenzene	UL	SSL
YS06-TB042215	1,4-Dichlorobenzene	UL	SSL
YS06-TB042215	1,2-Dichlorobenzene	UL	SSL
YS06-TB042215	1,2-Dibromo-3-chloropropane	UL	SSL
YS06-TB042215	1,2,3-Trichlorobenzene	UJ	CCL
YS06-TB042215	Xylene, total	UL	SSL
YS06-SO82-0415	Dichlorodifluoromethane (Freon-12)	UL	SSL
YS06-SO82-0415	Chloromethane	UL	SSL
YS06-SO82-0415	Vinyl chloride	UL	SSL
YS06-SO82-0415	Bromomethane	UL	SSL
YS06-SO82-0415	Chloroethane	UL	SSL
YS06-SO82-0415	Trichlorofluoromethane (Freon-11)	UL	SSL
YS06-SO82-0415	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	UL	SSL
YS06-SO82-0415	Acetone	UL	SSL
YS06-SO82-0415	1,1-Dichloroethene	UL	SSL
YS06-SO82-0415	Carbon disulfide	UL	SSL
YS06-SO82-0415	Methylene chloride	B	MBL
YS06-SO82-0415	Methyl-tert-butyl ether (MTBE)	UL	SSL
YS06-SO82-0415	trans-1,2-Dichloroethene	UL	SSL
YS06-SO82-0415	cis-1,2-Dichloroethene	UL	SSL
YS06-SO82-0415	1,1-Dichloroethane	UL	SSL
YS06-SO82-0415	2-Butanone	UL	SSL
YS06-SO82-0415	Chloroform	UL	SSL
YS06-SO82-0415	Bromochloromethane	UL	SSL
YS06-SO82-0415	1,1,1-Trichloroethane	UL	SSL
YS06-SO82-0415	Methyl acetate	UL	SSL
YS06-SO82-0415	Cyclohexane	UL	SSL
YS06-SO82-0415	Methylcyclohexane	UL	SSL
YS06-SO82-0415	Carbon tetrachloride	UL	SSL
YS06-SO82-0415	1,2-Dichloroethane	UL	SSL
YS06-SO82-0415	Benzene	UL	SSL
YS06-SO82-0415	Trichloroethene	UL	SSL
YS06-SO82-0415	1,2-Dichloropropane	UL	SSL

Yorktown WE35, Site 6 SW/SD
Attachment 1 Change Qual. Table
SDG A502501

Sample ID	Compound	Q Flag	Qual Code
YS06-SO82-0415	Bromodichloromethane	UL	SSL
YS06-SO82-0415	4-Methyl-2-pentanone	UL	SSL
YS06-SO82-0415	2-Hexanone	UL	SSL
YS06-SO82-0415	cis-1,3-Dichloropropene	UL	SSL
YS06-SO82-0415	Toluene	UL	SSL
YS06-SO82-0415	trans-1,3-Dichloropropene	UL	SSL
YS06-SO82-0415	1,1,2-Trichloroethane	UL	SSL
YS06-SO82-0415	Tetrachloroethene	UL	SSL
YS06-SO82-0415	Dibromochloromethane	UL	SSL
YS06-SO82-0415	1,2-Dibromoethane	UL	SSL
YS06-SO82-0415	Chlorobenzene	UL	SSL
YS06-SO82-0415	Ethylbenzene	UL	SSL
YS06-SO82-0415	m- and p-Xylene	UL	SSL
YS06-SO82-0415	o-Xylene	UL	SSL
YS06-SO82-0415	Bromoform	UL	SSL
YS06-SO82-0415	Styrene	UL	SSL
YS06-SO82-0415	Isopropylbenzene	UL	SSL
YS06-SO82-0415	1,1,2,2-Tetrachloroethane	UL	SSL
YS06-SO82-0415	1,2,4-Trichlorobenzene	UL	SSL
YS06-SO82-0415	1,3-Dichlorobenzene	UL	SSL
YS06-SO82-0415	1,4-Dichlorobenzene	UL	SSL
YS06-SO82-0415	1,2-Dichlorobenzene	UL	SSL
YS06-SO82-0415	1,2-Dibromo-3-chloropropane	UL	SSL
YS06-SO82-0415	1,2,3-Trichlorobenzene	UL	SSL
YS06-SO82-0415	Xylene, total	UL	SSL