United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101

Date: MAY 24 2017

Subject: Transmittal of Sample Analysis Results for ASR #: 7425

Project ID: BG07HW

Project Description: Ogallala GW - OU #01 sampling

From: Margaret E.W. St. Germain, Chief
Laboratory Technology & Analysis Branch, Environmental Sciences & Technology Division
Latoscha Cadkins for

To: Bill Gresham
SUPR/REMB/FFPC

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the Online ASR Sample/Data Disposition and Customer Survey for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Online ASR Sample/Data Disposition and Customer Survey.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

30307792
Superfund

Project Manager: Bill Gresham **Org:** SUPR/REMB/FF PC **Phone:** 913-551-7804

Project ID: BG07HW

Project Desc: Ogallala GW - OU #01 sampling

Location: Ogallala **State:** Nebraska **Program:** Superfund

Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

GPRA PRC: 303DD2

Purpose: Site Characterization

SLERA sampling event.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FB = Field Blank
FD = Field Duplicate

Units: Specific units in which results are reported.

NTU = Nephelometric Turbidity Units
ug/L = Micrograms per Liter
% = Percent
umhos/cm = Micromhos per Centimeter
SU = Standard Units (pH)
ug/kg = Micrograms per Kilogram
Deg C = Degrees Celsius

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank)= Values have been reviewed and found acceptable for use.
J = The identification of the analyte is acceptable; the reported value is an estimate.
U = The analyte was not detected at or above the reporting limit.
UJ = The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

ASR Number: 7425 **Sample Information Summary** **05/24/2017**

Project ID: BG07HW **Project Desc:** Ogallala GW - OU #01 sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1	__	Water	EPA-11A		04/11/2017	08:31			04/13/2017
1	FD	Water	EPA-11A		04/11/2017	08:35			04/13/2017
3	__	Water	EPA-11B		04/11/2017	09:10			04/13/2017
4	__	Water	GW Rinsate sample		04/11/2017	10:00			04/13/2017
5	FB	Water	GW LDL VOA Trip Blank sample		04/11/2017	16:00			04/13/2017
6	__	Water	SW-1 (6-7')		04/11/2017	11:10			04/13/2017
7	__	Water	SW-1 (3-4')		04/11/2017	11:20			04/13/2017
7	FD	Water	SW-1 (3-4')		04/11/2017	11:20			04/13/2017
9	__	Water	SW-1 (0-1)		04/11/2017	11:30			04/13/2017
10	__	Water	SW-2 (4-5)		04/11/2017	13:30			04/13/2017
11	__	Water	SW-2 (2-3')		04/11/2017	13:40			04/13/2017
12	__	Water	SW-2 (0-1)		04/11/2017	13:50			04/13/2017
13	__	Water	SW-3 (6-7)		04/11/2017	14:30			04/13/2017
14	__	Water	SW-3 (3-4)		04/11/2017	14:40			04/13/2017
15	__	Water	SW-3 (0-1)		04/11/2017	14:50			04/13/2017
21	FB	Water	Surface water LDL VOA Trip Blank sample		04/11/2017	16:05			04/13/2017
101	__	Solid	SS-1 (7')		04/11/2017	11:40			04/13/2017
102	__	Solid	SS-2 (5')		04/11/2017	14:00			04/13/2017
102	FD	Solid	SS-2 (5')		04/11/2017	14:00			04/13/2017
104	__	Solid	SS-3 (7')		04/11/2017	15:00			04/13/2017

Analysis	Comments About Results For This Analysis

1 Particle Size Distribution in Soil Samples

Lab: RASP Contract Lab (Out-Source)

Method: Similar to ASTM Method D 422 (see comments)

Basis: N/A

Samples: 101-__ 102-__ 102-FD 104-__

Comments:
The typical amount of sample used for the hydrometer portion (50 g) could not be obtained with these samples. The lesser amounts used in the sample analysis are reflected on the preparation sheets.

1 Percent Solid

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3142.9H

Basis: N/A

Samples: 101-__ 102-__ 102-FD 104-__

Comments:

1 Semi-Volatile Organic Compounds in Soil

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Basis: Dry

Samples: 101-__ 102-__ 102-FD 104-__

Comments:
Samples -101, -102, -102FD and-104 were diluted 1:5 prior to analysis due to matrix (all extracts were black). Therefore, the reporting limits for these samples were raised by a factor of 5.

1,4-Dioxane was UJ-coded in samples -101, -102, -102FD and -104. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recovery of this analyte in the laboratory control sample. The actual reporting limit for this analyte may be higher than the reported value.

1,4-Dioxane was UJ-coded in sample -101. This analyte was not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recoveries of this analyte in the laboratory matrix spike/laboratory matrix spike duplicate. The actual reporting limit for this analyte may be higher than the reported value.

1 Total Organic Carbon in Solids

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3151.3A

Analysis **Comments About Results For This Analysis**

Basis: Dry

Samples: 101-__ 102-__ 102-FD 104-__

Comments:
(N/A)

1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3230.16E

Basis: Dry

Samples: 101-__ 102-__ 102-FD 104-__

Comments:
Dichlorodifluoromethane, cis-1,3-Dichloropropene, 4-Methyl-2-Pentanone, trans-1,3-Dichloropropene, 2-Hexanone, Bromoform, 1,2-Dibromo-3-chloropropane and 1,2,4-Trichlorobenzene were UJ-coded in samples 101, 102, 102-fd and 104. These analytes were not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the initial instrument calibration curve not meeting linearity specifications. The actual reporting limit may be higher than the reported value.

Acetone was J-coded in samples 101, 102, 102-fd and 104. Although the analyte in question has been positively identified in the samples, the quantitation is an estimate (J-coded) due to the initial instrument calibration curve not meeting linearity specifications.

Naphthalene and 1,1,2,2-Tetrachloroethane were was UJ-coded in samples 101, 102 and 102-fd. These analytes were not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to the continuing calibration check not meeting accuracy specifications. The actual reporting limits for these analytes may be higher than the reported values.

Trichlorofluoromethane was UJ-coded in sample 104. This analyte was not found in the sample at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to poor precision obtained for this analyte in the laboratory matrix spike and matrix spike duplicate. The actual reporting limit for this analyte may be higher than the reported value.

Sample 104 had poor recoveries for two of the internal standards. This was probably due to a high amount of carbon material in the sample matrix, which will bind with the analytes making them difficult to purge. Benzene, 1,2-Dichloroethane, Trichloroethene, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane, Toluene, 1,1,2-Trichloroethene, Tetrachloroethene, Dibromochloromethane, 1,2-Dibromoethane, Chlorobenzene, Ethyl Benzene, m/p-Xylene, o-Xylene, Styrene, Isopropylbenzene, 1,1,2,2-Tetrachloroethane, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2,4-Trichlorobenzene, Naphthalene and 1,2,3-Trichlorobenzene were UJ-coded in sample 104. These analytes were not found in the sample at or above the reporting limits, however, the reporting limits are estimates (UJ-coded) due to low internal standard response. The actual reporting limits for these analytes may be higher than the reported values.

Analysis	Comments About Results For This Analysis

1 1,4-Dioxane in Water by GC/MS SIM

Lab: Contract Lab Program (Out-Source)

Method: CLP Statement of Work

Samples: 1-__ 1-FD 3-__ 4-__ 6-__ 7-__ 7-FD
9-__ 10-__ 12-__ 13-__ 14-__ 15-__

Comments:
(N/A)

1 Conductivity by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 1-FD 3-__ 6-__ 7-__ 7-FD 9-__
10-__ 11-__ 12-__ 13-__ 14-__ 15-__

Comments:
(N/A)

1 pH of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 1-FD 3-__ 6-__ 7-__ 7-FD 9-__
10-__ 11-__ 12-__ 13-__ 14-__ 15-__

Comments:
(N/A)

1 Temperature of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 1-FD 3-__ 6-__ 7-__ 7-FD 9-__
10-__ 11-__ 12-__ 13-__ 14-__ 15-__

Comments:
(N/A)

1 Turbidity of Water by Field Measurement

Lab: (Field Measurement)

Method: Measurement of field parameter

Samples: 1-__ 1-FD 3-__ 6-__ 7-__ 7-FD 9-__
10-__ 11-__ 12-__ 13-__ 14-__ 15-__

Comments:

Analysis	Comments About Results For This Analysis
	(N/A)
1	VOCs in Water by GC/MS for Low Detection Limits

Lab: Region 7 EPA Laboratory - Kansas City, Ks.

Method: EPA Region 7 RLAB Method 3230.13E

Samples:						
1-__	1-FD	3-__	4-__	5-FB	6-__	7-__
7-FD	9-__	10-__	11-__	12-__	13-__	14-__
15-__	21-FB					

Comments:

Analysis/ Analyte	Units	1-__	1-FD	3-__	4-__
1 1,4-Dioxane in Water by GC/MS SIM					
1,4-Dioxane	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	1983	1983	648	
1 pH of Water by Field Measurement					
pH	SU	6.77	6.77	7.74	
1 Temperature of Water by Field Measurement					
Temperature	Deg C	13.11	13.11	14.11	
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	8.48	8.48	7.74	
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	6.1	6.7	5.8	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.7	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	3.8	4.1	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

ASR Number: 7425 **RLAB Approved Sample Analysis Results** **05/24/2017**

Project ID: BG07HW **Project Desc:** Ogallala GW - OU #01 sampling

Analysis/ Analyte	Units	1-__	1-FD	3-__	4-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	22	24	3.6	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	5-FB	6-__	7-__	7-FD
1 1,4-Dioxane in Water by GC/MS SIM					
1,4-Dioxane	ug/L		2.0 U	2.0 U	2.0 U
1 Conductivity by Field Measurement					
Conductivity	umhos/cm		1681	1643	1643
1 pH of Water by Field Measurement					
pH	SU		7.95	8.07	8.07
1 Temperature of Water by Field Measurement					
Temperature	Deg C		13.66	13.22	13.22
1 Turbidity of Water by Field Measurement					
Turbidity	NTU		6.23	8.23	8.23
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.0 U	1.2	1.2	1.2
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	5-FB	6-__	7-__	7-FD
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

ASR Number: 7425 **RLAB Approved Sample Analysis Results** **05/24/2017**

Project ID: BG07HW **Project Desc:** Ogallala GW - OU #01 sampling

Analysis/ Analyte	Units	9-__	10-__	11-__	12-__
1 1,4-Dioxane in Water by GC/MS SIM					
1,4-Dioxane	ug/L	2.0 U	2.0 U		2.0 U
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	1633	1686	1679	1617
1 pH of Water by Field Measurement					
pH	SU	8.15	7.43	8.21	8.05
1 Temperature of Water by Field Measurement					
Temperature	Deg C	12.38	16.77	15.61	14.88
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	8.81	7.86	8.06	8.07
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.2	1.2	1.4	1.7
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

ASR Number: 7425 **RLAB Approved Sample Analysis Results** **05/24/2017**

Project ID: BG07HW **Project Desc:** Ogallala GW - OU #01 sampling

Analysis/ Analyte	Units	9-__	10-__	11-__	12-__
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	13-__	14-__	15-__	21-FB
1 1,4-Dioxane in Water by GC/MS SIM					
1,4-Dioxane	ug/L	2.0 U	2.0 U	2.0 U	
1 Conductivity by Field Measurement					
Conductivity	umhos/cm	1559	1607	1674	
1 pH of Water by Field Measurement					
pH	SU	8.03	8.15	7.66	
1 Temperature of Water by Field Measurement					
Temperature	Deg C	14.66	14.33	16.33	
1 Turbidity of Water by Field Measurement					
Turbidity	NTU	8.33	7.78	8.51	
1 VOCs in Water by GC/MS for Low Detection Limits					
Acetone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Disulfide	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Dibromochloromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromoethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	1.4	1.4	1.7	1.0 U
trans-1,2-Dichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Isopropylbenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	13-__	14-__	15-__	21-FB
4-Methyl-2-Pentanone	ug/L	5.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
Styrene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	ug/L	1.0 U	1.0 U	1.0 U	1.0 U
m and/or p-Xylene	ug/L	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	ug/L	1.0 U	1.0 U	1.0 U	1.0 U

Analysis/ Analyte	Units	101-__	102-__	102-FD	104-__
1 Particle Size Distribution in Soil Samples					
No. 4 (4.75-mm)	%	100	100	100	100
No. 10 (2.00-mm)	%	100	100	100	100
No. 20 (850-um)	%	99.6	99.8	99.7	99.7
No. 40 (425-um)	%	98.8	98.9	99.1	99
No. 60 (250-um)	%	97.6	96.9	97.4	98.3
No. 140 (106-um)	%	91.8	86	88.1	96.2
No. 200 (75-um)	%	87	77.5	80.6	94.5
1 Percent Solid					
Solids, percent	%	22.4	28.1	29.6	22.8
1 Semi-Volatile Organic Compounds in Soil					
1,4-Dioxane	ug/kg	1500 UJ	1000 UJ	1000 UJ	1600 UJ
1 Total Organic Carbon in Solids					
Total Organic Carbon	%	2.99	2.02	2.16	2.93
1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap					
Acetone	ug/kg	380 J	310 J	210 J	390 J
Benzene	ug/kg	19 U	18 U	20 U	20 UJ
Bromodichloromethane	ug/kg	19 U	18 U	20 U	20 UJ
Bromoform	ug/kg	19 UJ	18 UJ	20 UJ	20 UJ
Bromomethane	ug/kg	19 U	18 U	20 U	20 U
2-Butanone	ug/kg	95	100	54	72
Carbon Disulfide	ug/kg	19 U	18 U	20 U	20 U
Carbon Tetrachloride	ug/kg	19 U	18 U	20 U	20 U
Chlorobenzene	ug/kg	19 U	18 U	20 U	20 UJ
Chloroethane	ug/kg	19 U	18 U	20 U	20 U
Chloroform	ug/kg	19 U	18 U	20 U	20 U
Chloromethane	ug/kg	19 U	18 U	20 U	20 U
Cyclohexane	ug/kg	19 U	18 U	20 U	20 U
1,2-Dibromo-3-Chloropropane	ug/kg	19 UJ	18 UJ	20 UJ	20 UJ
Dibromochloromethane	ug/kg	19 U	18 U	20 U	20 UJ
1,2-Dibromoethane	ug/kg	19 U	18 U	20 U	20 UJ
1,2-Dichlorobenzene	ug/kg	19 U	18 U	20 U	20 UJ
1,3-Dichlorobenzene	ug/kg	19 U	18 U	20 U	20 UJ
1,4-Dichlorobenzene	ug/kg	19 U	18 U	20 U	20 UJ
Dichlorodifluoromethane	ug/kg	19 UJ	18 UJ	20 UJ	20 UJ
1,1-Dichloroethane	ug/kg	19 U	18 U	20 U	20 U
1,2-Dichloroethane	ug/kg	19 U	18 U	20 U	20 UJ
1,1-Dichloroethene	ug/kg	19 U	18 U	20 U	20 U
cis-1,2-Dichloroethene	ug/kg	19 U	18 U	20 U	20 U
trans-1,2-Dichloroethene	ug/kg	19 U	18 U	20 U	20 U
1,2-Dichloropropane	ug/kg	19 U	18 U	20 U	20 UJ
cis-1,3-Dichloropropene	ug/kg	19 UJ	18 UJ	20 UJ	20 UJ
trans-1,3-Dichloropropene	ug/kg	19 UJ	18 UJ	20 UJ	20 UJ
Ethyl Benzene	ug/kg	19 U	18 U	20 U	20 UJ
2-Hexanone	ug/kg	19 UJ	18 UJ	20 UJ	20 UJ
Isopropylbenzene	ug/kg	19 U	18 U	20 U	20 UJ

Analysis/ Analyte	Units	101-__	102-__	102-FD	104-__
Methyl Acetate	ug/kg	19 UJ	18 UJ	20 UJ	20 UJ
Methyl tert-butyl ether	ug/kg	38 U	36 U	39 U	41 U
Methylcyclohexane	ug/kg	19 U	18 U	20 U	20 UJ
Methylene Chloride	ug/kg	19 U	18 U	20 U	20 U
4-Methyl-2-Pentanone	ug/kg	19 UJ	18 UJ	20 UJ	20 UJ
Naphthalene	ug/kg	38 UJ	36 UJ	39 UJ	41 UJ
Styrene	ug/kg	19 U	18 U	20 U	20 UJ
1,1,2,2-Tetrachloroethane	ug/kg	19 UJ	18 UJ	20 UJ	20 UJ
Tetrachloroethene	ug/kg	19 U	18 U	20 U	20 UJ
Toluene	ug/kg	19 U	18 U	20 U	20 UJ
1,2,3-Trichlorobenzene	ug/kg	19 U	18 U	20 U	20 UJ
1,2,4-Trichlorobenzene	ug/kg	19 UJ	18 UJ	20 UJ	20 UJ
1,1,1-Trichloroethane	ug/kg	19 U	18 U	20 U	20 U
1,1,2-Trichloroethane	ug/kg	19 U	18 U	20 U	20 UJ
Trichloroethene	ug/kg	19 U	18 U	20 U	20 UJ
Trichlorofluoromethane	ug/kg	19 U	18 U	20 U	20 UJ
1,1,2-Trichlorotrifluoroethane	ug/kg	19 U	18 U	20 U	20 U
Vinyl Chloride	ug/kg	19 U	18 U	20 U	20 U
m and/or p-Xylene	ug/kg	38 U	36 U	39 U	41 UJ
o-Xylene	ug/kg	19 U	18 U	20 U	20 UJ

7425-101

ARDL SAMPLE # 4106-01

GRAIN SIZE ANALYSIS - ASTM METHOD D422

PRELIMINARY SIEVE ANALYSIS

Sample Amount Sieved with # 4 and # 10 sieves (g):	52.88
Amt Retained on # 4 sieve	0
Percent retained on #4	0.00%
Amt retained on # 10 (g)	0
Percent retained on #10	0.00%
Amt passing # 10 sieve (g)	52.88
Percent passing #10	100.00%

HYGROSCOPIC MOISTURE

Tare Wt. (g)	1.28
Tare + Wet Wt. (g)	6.29
Tare + Dry Wt. (g)	6.13
Hygrosopic Moisture Correction Factor =	**0.968**

SPECIFIC GRAVITY

Sample Wt (Mo) (g)	4.85
Vol. Flask Tare (Mf) (g)	91.2563
Flask + H2O (Ma) (g)	191.1699
temp (C)	21
Flask + Sample + H2O (Mb)	194.038
Temp (Tb) (C)	22
G at Tb	2.4471
Correction factor for Tb from D854 Table 1	0.9996
G at 20 C	**2.4462**

HYDROMETER ANALYSIS

Hydrometer # 741958 Correction Factors: Slope = -0.2058, Intercept = 9.216

Air Dry Sample Wt. Dispersed (g)	47.6
Oven Dry Sample Wt Dispersed (g)	46.08
Total Sample Represented by Hydrometer Aliquot (g):	46.08

Factor a ASTM D422 Table 1 = 1.05

Manual Entry of Factor K ASTM D422 Table 3 = 0.01456

Hydrometer Readings at Temp T

Target Elapsed Time	Actual Elapsed Time	Actual Hydrometer Reading	Corrected Hydrometer Reading	Temp (C)	Percentage of Soil in Suspension	Diameter of Particles in Suspension (mm)
2 min	2	40.0	34.9	20.0	79.5%	0.0321
5 min	5	32.0	26.9	20.0	61.3%	0.0217
15 min	15	24.0	18.9	20.0	43.1%	0.0132
30 min	29	19.0	13.9	20.0	31.7%	0.0098
60 min	60	15.0	9.9	20.0	22.6%	0.0070
250 min	250	10.0	5.1	21.0	11.6%	0.0035
1440 min	1440	8.0	3.1	21.0	7.1%	0.0015

Ave temp (C) = 20.3

SIEVE ANALYSIS

Sieve Mesh #	Wt. (g) Retained
# 4	0.00
# 10	0.00
# 20	0.18
# 40	0.35
# 60	0.59
# 140	2.68
# 200	2.2

Sieve Mesh #	Sieve Diameter (mm)	Percent Passing
4	4.750	100.0%
10	2.000	100.0%
20	0.850	99.6%
40	0.425	98.8%
60	0.250	97.6%
140	0.106	91.8%
200	0.075	87.0%

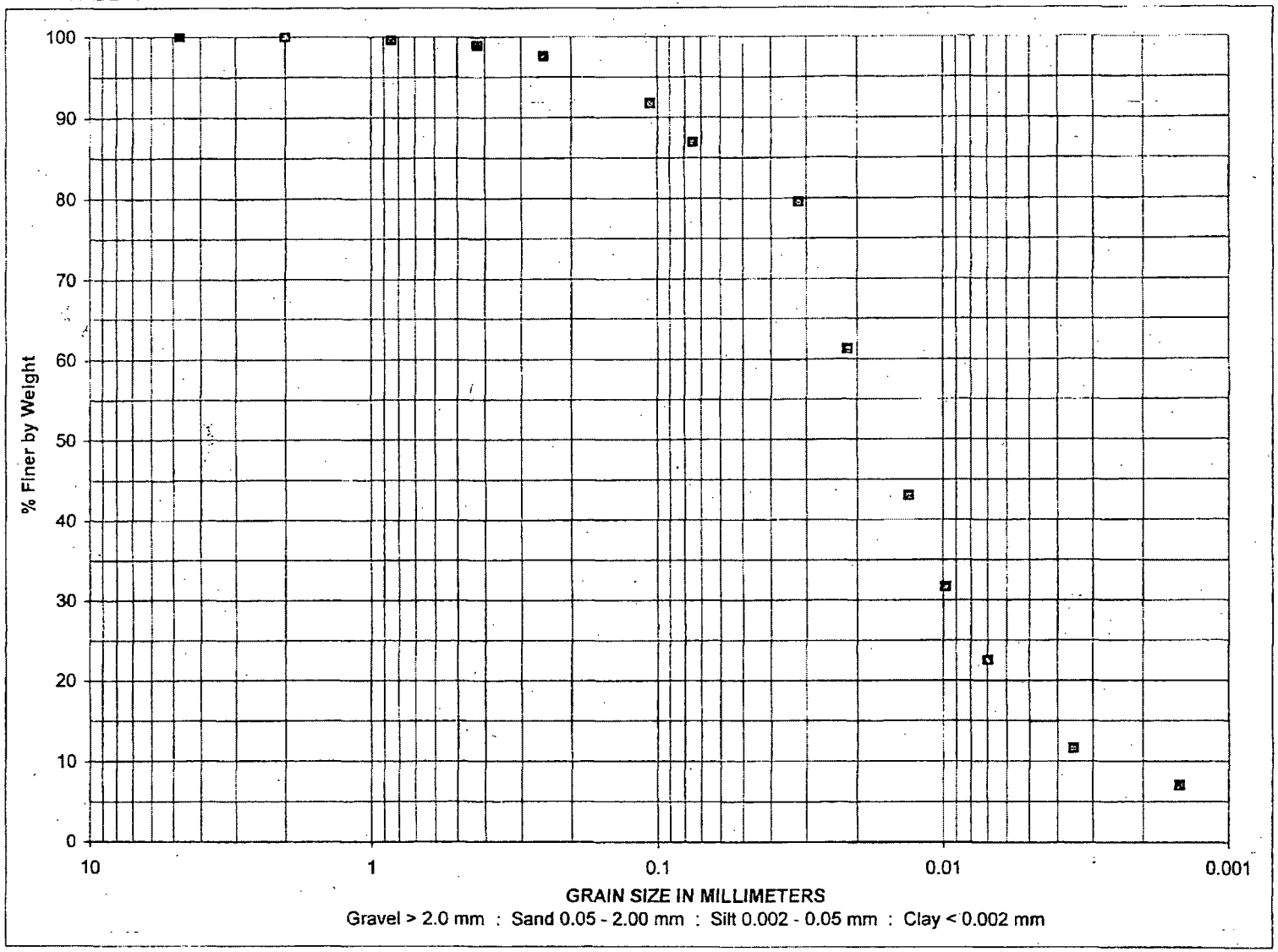
Gravel	0.0%
Sand	13.0%
Silt	79.9%
Clay	7.1%

[ ] = Requires manual entry of data.

Revision Date: 23 October, 2014

N/A should have been left blank. Copy of the Excel doc. was filled out incorrectly.

ARDL SAMPLE # 4106-01 GRAIN SIZE ANALYSIS - ASTM METHOD D422 7425-101



7425-102

ARDL SAMPLE # 4106-02

GRAIN SIZE ANALYSIS - ASTM METHOD D422

PRELIMINARY SIEVE ANALYSIS

Sample Amount Sieved with # 4 and # 10 sieves (g):	36.88
Amt Retained on # 4 sieve	0
Percent retained on #4	0.00%
Amt retained on # 10 (g)	0
Percent retained on #10	0.00%
Amt passing # 10 sieve (g)	36.88
Percent passing #10	100.00%

HYGROSCOPIC MOISTURE

Tare Wt. (g)	1.28
Tare + Wet Wt. (g)	6.21
Tare + Dry Wt. (g)	6.09
Hygrosopic Moisture Correction Factor =	**0.976**

SPECIFIC GRAVITY

Sample Wt (Mo) (g)	4.81
Vol. Flask Tare (Mf) (g)	81.7832
Flask + H2O (Ma) (g)	181.5369
temp (C)	21
Flask + Sample + H2O (Mb)	184.4967
Temp (Tb) (C)	22
G at Tb	2.5997
Correction factor for Tb from D854 Table 1	0.9996
G at 20 C	**2.5987**

HYDROMETER ANALYSIS

Hydrometer # 741958 Correction Factors: Slope = -0.2058, Intercept = 9.216

Air Dry Sample Wt. Dispersed (g): 31.69

Oven Dry Sample Wt Dispersed (g): 30.93

Total Sample Represented by Hydrometer Aliquot (g): 30.93

Factor a ASTM D422 Table 1 = 1.02

Manual Entry of Factor K ASTM D422 Table 3 = 0.01386

Hydrometer Readings at Temp T

Target Elapsed Time	Actual Elapsed Time	Actual Hydrometer Reading	Corrected Hydrometer Reading	Temp (C)	Percentage of Soil in Suspension	Diameter of Particles in Suspension (mm)
2 min	2	23.0	17.9	20.0	59.0%	0.0347
5 min	5	18.0	12.9	20.0	42.5%	0.0226
15 min	15	14.0	8.9	20.0	29.4%	0.0134
30 min	30	12.0	6.9	20.0	22.8%	0.0096
60 min	60	10.0	4.9	20.0	16.2%	0.0069
250 min	250	8.0	3.1	21.0	10.2%	0.0034
1440 min	1440	7.0	2.1	21.0	6.9%	0.0014
			Ave temp (C) =	20.3		

SIEVE ANALYSIS

Sieve Mesh #	Wt. (g) Retained
# 4	0.00
# 10	0.00
# 20	0.06
# 40	0.27
# 60	0.64
# 140	3.37
# 200	2.62

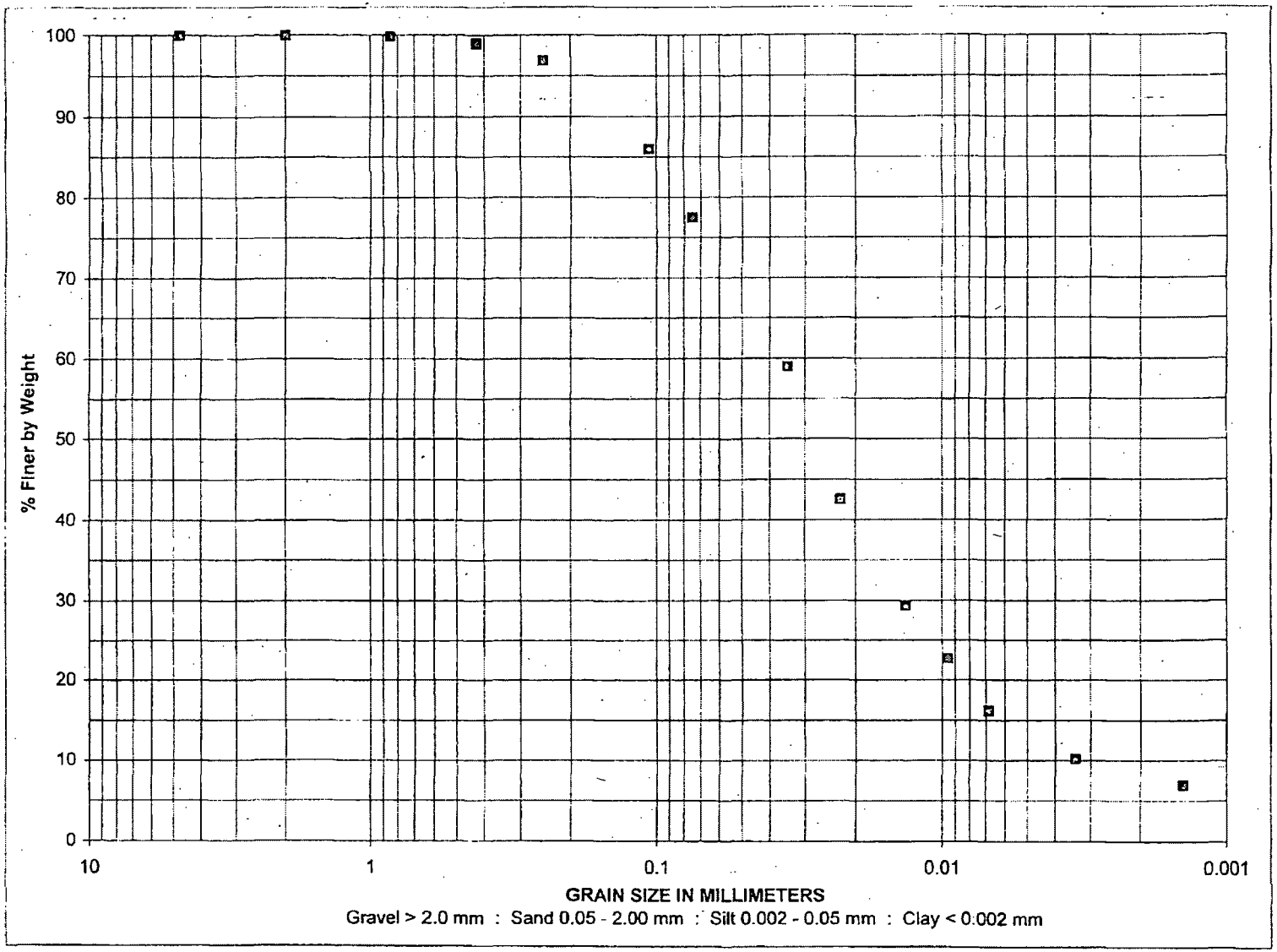
Sieve Mesh #	Sieve Diameter (mm)	Percent Passing
4	4.750	100.0%
10	2.000	100.0%
20	0.850	99.8%
40	0.425	98.9%
60	0.250	96.9%
140	0.106	86.0%
200	0.075	77.5%

Gravel	0.0%
Sand	22.5%
Silt	70.6%
Clay	6.9%

= Requires manual entry of data.

Revision Date: 23 October, 2014

ARDL SAMPLE # 4106-02 GRAIN SIZE ANALYSIS - ASTM METHOD D422 7425-102



7425-102FD

ARDL SAMPLE # 4106-03

GRAIN SIZE ANALYSIS - ASTM METHOD D422

PRELIMINARY SIEVE ANALYSIS

Sample Amount Sieved with # 4 and # 10 sieves (g):	37.94
Amt Retained on # 4 sieve	0
Percent retained on #4	0.00%
Amt retained on # 10 (g)	0
Percent retained on #10	0.00%
Amt passing # 10 sieve (g)	37.94
Percent passing #10	100.00%

HYGROSCOPIC MOISTURE

Tare Wt. (g)	1.29
Tare + Wet Wt. (g)	6.27
Tare + Dry Wt. (g)	6.14
Hygrosopic Moisture Correction Factor =	**0.974**

SPECIFIC GRAVITY

Sample Wt (Mo) (g)	4.85
Vol. Flask Tare (Mf) (g)	68.229
Flask + H2O (Ma) (g)	167.9803
temp (C)	21
Flask + Sample + H2O (Mb)	170.9366
Temp (Tb) (C)	22
G at Tb	2.5611
Correction factor for Tb from D854 Table 1	0.9996
G at 20 C	**2.5601**

HYDROMETER ANALYSIS

Hydrometer # 741958 Correction Factors: Slope = -0.2058, Intercept = 9.216

Air Dry Sample Wt. Dispersed (g)	32.69
Oven Dry Sample Wt Dispersed (g)	31.84
Total Sample Represented by Hydrometer Aliquot (g):	31.84

Factor a ASTM D422 Table 1 = 1.02

Manual Entry of Factor K ASTM D422 Table 3 = 0.01408

Hydrometer Readings at Temp T

Target Elapsed Time	Actual Elapsed Time	Actual Hydrometer Reading	Corrected Hydrometer Reading	Temp (C)	Percentage of Soil in Suspension	Diameter of Particles in Suspension (mm)
2 min	2	24.0	18.9	20.0	60.5%	0.0351
5 min	5	19.0	13.9	20.0	44.5%	0.0229
15 min	15	15.0	9.9	20.0	31.7%	0.0135
30 min	30	12.0	6.9	20.0	22.1%	0.0097
60 min	60	10.0	4.9	20.0	15.7%	0.0070
250 min	250	8.0	3.1	21.0	10.0%	0.0034
1440 min	1440	8.0	3.1	21.0	10.0%	0.0014

Ave temp (C) = 20.3

SIEVE ANALYSIS

Sieve Mesh #	Wt. (g) Retained
# 4	0.00
# 10	0.00
# 20	0.09
# 40	0.2
# 60	0.55
# 140	2.96
# 200	2.39

Sieve Mesh #	Sieve Diameter (mm)	Percent Passing
4	4.750	100.0%
10	2.000	100.0%
20	0.850	99.7%
40	0.425	99.1%
60	0.250	97.4%
140	0.106	88.1%
200	0.075	80.6%

Gravel	0.0%
Sand	19.4%
Silt	70.6%
Clay	10.0%

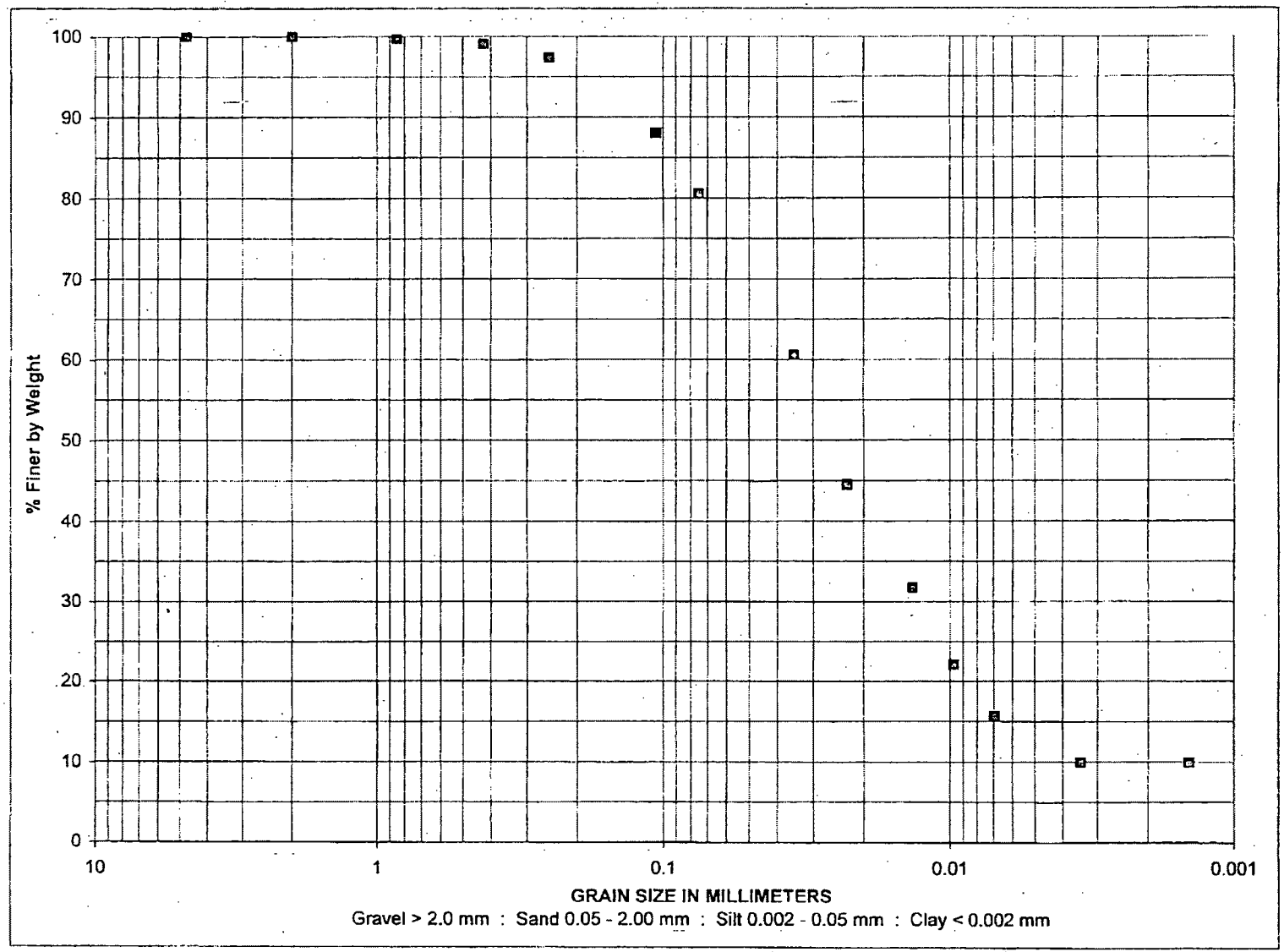
[ ] = Requires manual entry of data.

Revision Date: 23 October, 2014

ARDL SAMPLE # 4106-03

GRAIN SIZE ANALYSIS - ASTM METHOD D422

7425-102FD



7425-104

ARDL SAMPLE # 4106-04

GRAIN SIZE ANALYSIS - ASTM METHOD D422

PRELIMINARY SIEVE ANALYSIS

Sample Amount Sieved with # 4 and # 10 sieves (g):	42.27
Amt Retained on # 4 sieve	0
Percent retained on #4	0.00%
Amt retained on # 10 (g)	0
Percent retained on #10	0.00%
Amt passing # 10 sieve (g)	42.27
Percent passing #10	100.00%

HYGROSCOPIC MOISTURE

Tare Wt. (g)	1.29
Tare + Wet Wt. (g)	6.23
Tare + Dry Wt. (g)	6.07
Hygrosopic Moisture Correction Factor =	**0.968**

SPECIFIC GRAVITY

Sample Wt (Mo) (g)	4.78
Vol. Flask Tare (Mf) (g)	79.0373
Flask + H2O (Ma) (g)	178.7619
temp (C)	21
Flask + Sample + H2O (Mb)	181.748
Temp (Tb) (C)	22
G at Tb	2.6646
Correction factor for Tb from D854 Table 1	0.9996
G at 20 C	**2.6635**

HYDROMETER ANALYSIS

Hydrometer # 741958 Correction Factors: Slope = -0.2058, Intercept = 9.216

Air Dry Sample Wt. Dispersed (g): 37.11

Oven Dry Sample Wt Dispersed (g): 35.92

Total Sample Represented by Hydrometer Aliquot (g): 35.92

Factor a ASTM D422 Table 1 = **1.00**

Manual Entry of Factor K ASTM D422 Table 3 = 0.01365

Hydrometer Readings at Temp T

Target Elapsed Time	Actual Elapsed Time	Actual Hydrometer Reading	Corrected Hydrometer Reading	Temp (C)	Percentage of Soil in Suspension	Diameter of Particles in Suspension (mm)
2 min	2	35.0	29.9	20.0	83.2%	0.0314
5 min	5	26.0	20.9	20.0	58.2%	0.0211
15 min	15	18.0	12.9	20.0	35.9%	0.0129
30 min	30	15.0	9.9	20.0	27.6%	0.0093
60 min	60	13.0	7.9	20.0	22.0%	0.0066
250 min	250	9.0	4.1	21.0	11.4%	0.0033
1440 min	1440	8.0	3.1	21.0	8.6%	0.0014

Ave temp (C) = 20.3

SIEVE ANALYSIS

Sieve Mesh #	Wt. (g) Retained
# 4	0.00
# 10	0.00
# 20	0.09
# 40	0.27
# 60	0.25
# 140	0.75
# 200	0.61

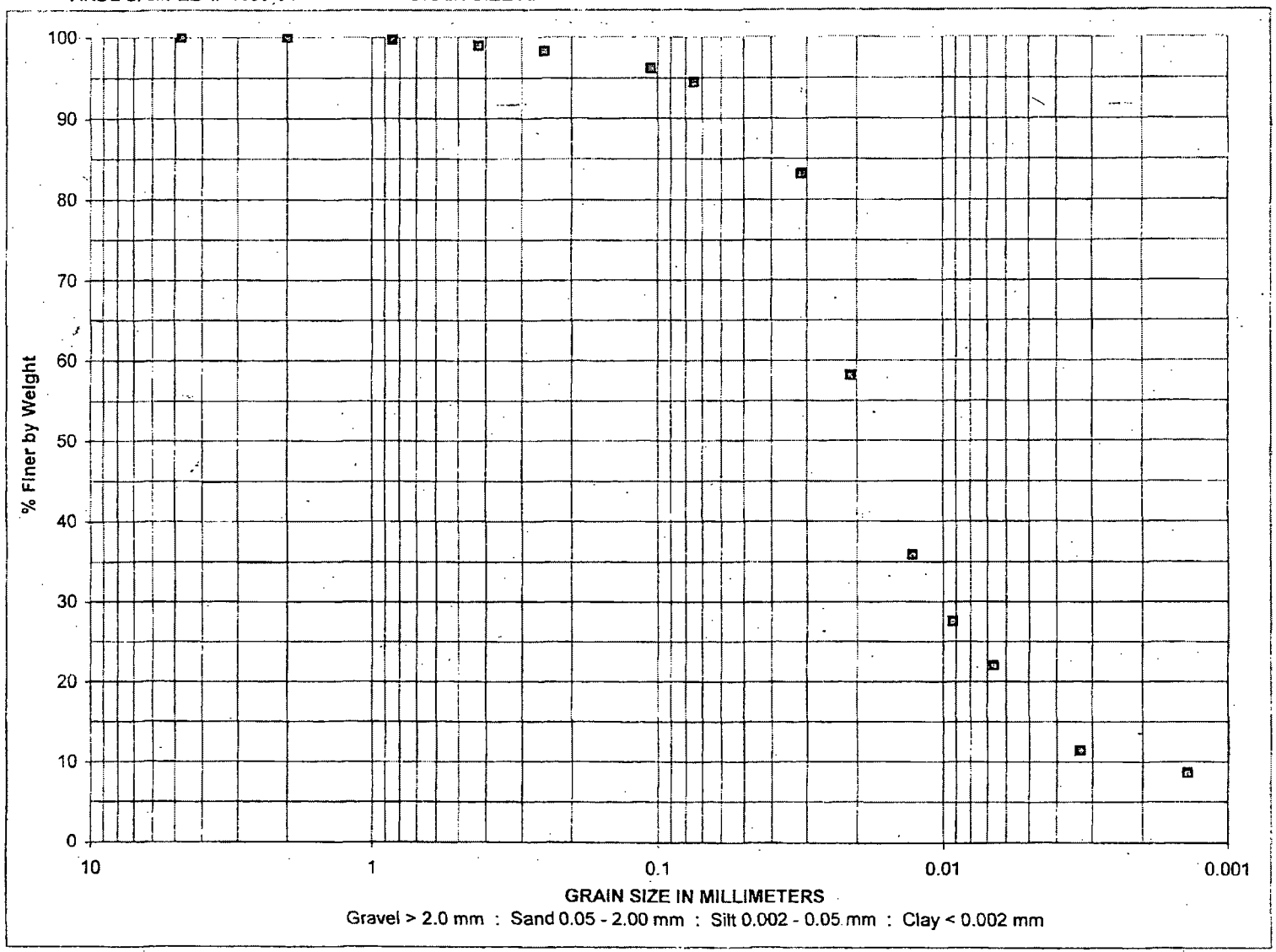
Sieve Mesh #	Sieve Diameter (mm)	Percent Passing
4	4.750	100.0%
10	2.000	100.0%
20	0.850	99.7%
40	0.425	99.0%
60	0.250	98.3%
140	0.106	96.2%
200	0.075	94.5%

Gravel	0.0%
Sand	5.5%
Silt	85.9%
Clay	8.6%

= Requires manual entry of data.

Revision Date: 23 October, 2014

ARDL SAMPLE # 4106-04 GRAIN SIZE ANALYSIS - ASTM METHOD D422 7425-104



CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print)	NAME OF SURVEY OR ACTIVITY	DATE OF COLLECTION (DAY / MONTH / YEAR)	SHEET
Brian Creighton	Ogallala OU1	11 / 4 / 17	1 of 1

CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS: 8 oz CUBITAINER	500 ml BOTTLE (4 bottles DAM preserved)	BOTTLE	8 oz BOTTLE	VOA SET (4 VIALS EA)	SAMPLED MEDIA: water	soil	sediment	dust	other	RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
7425-1				1	1	X					
7425-1FD				1	1	X					
7425-3				2	3	X					
7425-4				1	1	X					
7425-5FB					1	X					
7425-6				2	3	X					
7425-7				1	1	X					
7425-7FD				1	1	X					
7425-9				1	1	X					
7425-10				1	1	X					
7425-11				X	1	X					Rec'd broken @ STC. Discussed w/ sampler + emailed PM on 4/13/17.
7425-12				1	1	X					
7425-13				1	1	X					
7425-14				1	1	X					
7425-15				1	1	X					
7425-21FB					1	X					
7425-101	3	1					X				
7425-102	3	1					X				
7425-102FD	3	1					X				
7425-104	3	3					X				
											Clr. Temps. Rec'd Oct. 0-1°C

~~Complete~~ pm 4/13/17

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
54 PIECE(S) CONSISTING OF ____ BOX(ES)	✓ COMMERCIAL CARRIER ____
5 ICE CHEST(S); OTHER ____	____ COURIER
4/13/17	____ SAMPLER CONVEYED ____ (SHIPPING DOCUMENT NUMBER)
	4/13/17

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
[signature] SEALED ☐ UNSEALED ☐	4/12/17	1200	[signature] SEALED ☐ UNSEALED ☐	Analysis
RELINQUISHED BY	DATE	TIME	RECEIVED BY 900	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
SEALED ☐ UNSEALED ☐			SEALED ☐ UNSEALED ☐	

*U.S. GPO: 2002-756-917/40053

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 1 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-1-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: GW sample - EPA-11A

External Sample Number: W-001-~~EPA~~-11A-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** 4/11/17 __:__
Longitude: ___ ___ ___ **End:** 4/11/17 8:31

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1983	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~55.4~~ 13.11	Deg ~~F~~ C
Turbidity :	8.48	NTU
pH :	6.77	SU

Manual dented 4/12/17

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 80 oz amber glass	4 Deg C	7	Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

1 ✓ 4/13/14

ASR Number: 7425 **Sample Number:** ~~2~~ 1 **QC Code:** FM **Matrix:** Water **Tag ID:** 7425-~~2~~ 1 FM-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: GW sample -- EPA-11A

External Sample Number: W-001-EPA-11A-04-11-17

Expected Conc: (or Circle One: Low Medium High)

		Date	Time(24 hr)
Latitude: ___ ___ ___	**Sample Collection: Start:**	4/11/17	__:__
Longitude: ___ ___ ___	**End:**	4/11/17	8:35

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1983	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~55.6~~ 13.11	Deg ~~F~~ C
Turbidity :	8.48	NTU
pH :	6.77	SU

~~F~~ C or erroneous data values

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 80 oz amber glass	4 Deg C	7	Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 3 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-3-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

By email dated 4/24/17

Location Desc: GW sample - EPA-11-B

External Sample Number: W-OU1-GW-11B-041117

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 9:10

Field Measurement

Parameter	Value	Units
Conductance, Specific :	648	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~57.4~~ 14.11	Deg C
Turbidity :	7.79	NTU
pH :	7.79	SU

Missing @ SL. NR added from tass 4/13/17

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
12 ~~4~~ - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 ~~1~~ - 80 oz amber glass	4 Deg C	7	Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:
(N/A)

MS/MSD

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 4 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-4-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: GW Rinsate sample - RINSATE-

External Sample Number: IN-OU1- RINSATE-01-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 10:00

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 80 oz amber glass	4 Deg C	7 Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 5 **QC Code:** FB **Matrix:** Water **Tag ID:** 7425-5-FB

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: GW LDL VOA Trip Blank sample

External Sample Number: N-001-TB-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 16:00

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 6 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-6-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Surface water sample -SW-1 (6-7ft)

External Sample Number: W-001-SW-1-6-7-07-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 7/11/17 11:10

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1681	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~56.6~~ 13.6	~~Deg F~~ Deg C
Turbidity :	6.23	NTU
pH :	7.95	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
12 ~~1~~ - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
2 ~~1~~ - 80 oz amber glass	4 Deg C	7 Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:
(N/A)

MS/MSD

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 7 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-7-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Surface water sample - SW-1 (3-4')

External Sample Number: W-OU1-SW-1-3-4-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 11:20

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1643	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~55.8~~ 13.22	Deg C
Turbidity :	8.23	NTU
pH :	8.07	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 80 oz amber glass	4 Deg C	7 Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** ~~8~~ 7 04/13/17 **QC Code:** FD **Matrix:** Water **Tag ID:** 7425-~~8~~ 7FD

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Surface water sample SW-1-(3-4)

External Sample Number: W-001-SW-1-3-4-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 11:20

Field Measurement

Parameter	Value	Units
Conductance, Specific :	See 7	umhos/cm
Dissolved Oxygen :		mg/L
Temperature :	13.22	Deg C
Turbidity :		NTU
pH :		SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 80 oz amber glass	4 Deg C	7 Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 9 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-9-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Surface water sample SW-1-(0-1)

External Sample Number: W-001-SW-1-0-1-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 12:30

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1633	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~54.7~~ 12.388	Deg C
Turbidity :	8.81	NTU
pH :	8.15	SU

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 80 oz amber glass	4 Deg C	7	Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 10 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-10-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Surface water sample SW-2 (4-5)

External Sample Number: W-OU1-SW-2-4-5-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 13:30

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1686	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~42.2~~ 10.77	Deg C
Turbidity :	7.86	NTU
pH :	7.43	SU

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 80 oz amber glass	4 Deg C	7	Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 11 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-11-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Surface water sample SW-2-(2-3')

External Sample Number: W-001-SW-2-2-3-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 13:40

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1679	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~60.1~~ 15.61 ~ 4/24/17	Deg C
Turbidity :	8.06	NTU
pH :	8.21	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
~~1 - 80 oz amber glass~~	~~4 Deg C~~	~~7 Days~~	~~1 1,4-Dioxane in Water by GC/MS SIM~~

Sample Comments:

(N/A)

Deleted. No data to be provided since Rec'd at lab STC broken ✓ 4/13/17

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 12 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-12-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Surface water sample - Sw-2 (0-1)

External Sample Number: W-001-Sw-2-0-1-07-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 7/11/17 13:50

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1617	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~58.8~~ 14.88	Deg C
Turbidity :	8.07	NTU
pH :	8.05	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 80 oz amber glass	4 Deg C	7 Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 13 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-13-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Surface water sample SW-3 (G-7)

External Sample Number: W-OU1-SW-3-G-7-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 14:30

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1559	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~58.4~~ 14.4	~~Deg~~ C
Turbidity :	8.33	NTU
pH :	8.03	SU

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 80 oz amber glass	4 Deg C	7	Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 14 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-14-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Surface water sample SW-3 (3-4)

External Sample Number: W-001-SW-3-3-4-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 14:40

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1607	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~57.8~~ 14.33	Deg C
Turbidity :	7.78	NTU
pH :	8.15	SU

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 80 oz amber glass	4 Deg C	7	Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 15 **QC Code:** __ **Matrix:** Water **Tag ID:** 7425-15-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Surface water sample SW-3 (0-1)

External Sample Number: W-001-SW-3-0-1-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 14:50

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1674	umhos/cm
Dissolved Oxygen :	NA	mg/L
Temperature :	~~61.4~~ 16.33	Deg C
Turbidity :	8.51	NTU
pH :	7.64	SU

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14	Days	1 VOCs in Water by GC/MS for Low Detection Limits
1 - 80 oz amber glass	4 Deg C	7	Days	1 1,4-Dioxane in Water by GC/MS SIM

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 21 **QC Code:** FB **Matrix:** Water **Tag ID:** 7425-21-FB

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Surface water LDL VOA Trip Blank sample

External Sample Number: W-OU1-TB-2-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 16:05

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 101 **QC Code:** __ **Matrix:** Solid **Tag ID:** 7425-101-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Sediment sample - SS-1 (7')

External Sample Number: S-001-SS-1-7ft-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 11:40

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 4 oz glass	None	999	Days	1 Particle Size Distribution in Soil Samples
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, sodium bisulfate (2 vials), MeOH (1 vial)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28	Days	1 Total Organic Carbon in Solids
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 102 **QC Code:** __ **Matrix:** Solid **Tag ID:** 7425-102-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Sediment sample SS-2-(5')

External Sample Number: 6-OU1-SS-2-5'-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__

Longitude: ___ ___ ___ **End:** 4/11/17 14:00

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 4 oz glass	None	999	Days	1 Particle Size Distribution in Soil Samples
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, sodium bisulfate (2 vials), MeOH (1 vial)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28	Days	1 Total Organic Carbon in Solids
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

102 4/13/17

ASR Number: 7425 **Sample Number:** ~~103~~ **QC Code:** FD **Matrix:** Solid **Tag ID:** 7425-~~103~~-__ 102 FD

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Sediment sample SS-2 (5')

External Sample Number: S-OU1-SS-2-5'-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__
Longitude: ___ ___ ___ **End:** 4/11/17 14:0

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 8 oz glass	None	999	Days	1 Particle Size Distribution in Soil Samples
3 ~~1~~ - 40mL VOA vials (soil VOA 5035)	4 Deg C, sodium bisulfate (2 vials), MeOH (1 vial)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28	Days	1 Total Organic Carbon in Solids
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
1 ~~0~~ -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: B&V

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 7425 **Sample Number:** 104 **QC Code:** __ **Matrix:** Solid **Tag ID:** 7425-104-__

Project ID: BG07HW **Project Manager:** Bill Gresham
Project Desc: Ogallala GW - OU #01 sampling
City: Ogallala **State:** Nebraska
Program: Superfund
Site Name: OGALLALA GROUND WATER CONTAMINATION - OGALLALA TCE,CT & PCE **Site ID:** 07HW **Site OU:** 01

Location Desc: Sediment sample SS-3 (7')

External Sample Number: S-OU1-SS-3-7-04-11-17

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ___ ___ ___ **Sample Collection: Start:** __/__/__ __:__

Longitude: ___ ___ ___ **End:** 4/11/17 15:00

Laboratory Analyses:

Container	Preservative	Holding Time		Analysis
1 - 4 oz glass	None	999	Days	1 Particle Size Distribution in Soil Samples
4 - 40mL VOA vials (soil VOA 5035)	4 Deg C, sodium bisulfate (2 vials), MeOH (1 vial)	14	Days	1 VOC's in Soil at Low Levels by GC/MS Closed-System Purge-and-Trap
1 - 8 oz glass	4 Deg C	28	Days	1 Total Organic Carbon in Solids
1 - 8 oz glass	4 Deg C	14	Days	1 Semi-Volatile Organic Compounds in Soil
0 -	4 Deg C	0	Days	1 Percent Solid

Sample Comments:

(N/A)

Sample Collected By: B&V