TX INTERIM MEASURE PLANNING – SOIL SAMPLE DEPTH
MEETING MINUTES
FISCAL YEAR 2013

This package contains summary notes from the following meetings:

- July 18, 2013, TX Sample Selection Meeting for Locations C8810, C8812, and C8814
- August 15, 2013, TX Sample Selection Meeting for Locations C8806 and C8808
- August 29, 2013, TX Sample Selection Meeting for Location C8802

R Douglas Hildebrand		10-3-2013
DOE Project Manager (print)	DOE Project Manager (signature)	Date
Jeffery J Lyon		10-3-13
Ecology Project Manager (print)	Ecology Project Manager (signature)	Date

MEETING NOTES

TX Sample Selection Meeting for Locations C8810, C8812, and C8814

MEETING DATE: July 18, 2013

LOCATION: Washington River Protection Solutions, 2440 Stevens

ATTENDEES:

Chris Kemp (DOE-ORP)	
Mike Barnes (Ecology)	
Maria Skorska (Ecology)	
Becky Wiegman (WRPS)	
Kent Reynolds (Energy Solutions)	
Harold Sydnor (WRPS)	
Cindy Tabor (WRPS)	
Les Fort (WRPS)	

BACKGROUND: This meeting was part of the continuing effort to ensure communication between Ecology and DOE representatives regarding the field work associated with interim measures. Specifically RPP-PLAN-54376, *Sampling and Analysis Plan for Soil Samples in Support of Interim Measure Planning at the 241-TX Tank Farm* states that geophysical logging along with available quick turnaround analysis ("quick turn") of two mobile contaminants (^{99}Tc and nitrate) will be used to aid in determining sample depths" and that "after this information is obtained, meetings will be held with, or e-mails will be sent to, representatives from WRPS, DOE, ORP, DOE Richland Operations Office (RL), and Ecology, to gain a consensus on sample depths."

The purpose of this meeting was to discuss and reach agreement on the intervals to be sampled at locations C8810, C8812, and C8814.

DISCUSSION: Cindy Tabor discussed the available data from the current TX Tank Farm field campaign and the additional information from the previous TX Tank Farm vadose zone field activities.

Sample depths were recommended where there were higher moisture peaks and finer grained material (based on Draft Gamma and Moisture Plots). Depths were also within the range of where previous vadose zone field activities showed detectable nitrate and technetium-99 concentrations (60 – 100 feet below ground surface [ft bgs]).

CONCLUSIONS: The following depths were unanimously agreed upon by the group participants:

Location	C8810	C8812	C8814
Sample Depths in ft bgs (Geologic Area[a])	60-62 (H2) 87-89 (H2) 102-104 (CCu)	54-56 (H2) 70-72 (H2) 103-105 (CCu)	56-58 (H2) 70-72 (H2) 92-94 (H2)

[a]H2 = Hanford formation unit 2 and CCu = Cold Creek unit

Two sample intervals in the H2 were selected from each of the three locations. At two of the locations (C8810 and C8812), an additional deeper interval in the CCu was selected for sampling. At C8814, and additional H2 interval from 92-94 ft bgs was selected for sampling, as this interval had the highest moisture peak in the H2 formation.

MEETING NOTES

TX Sample Selection Meeting for Locations C8806 and C8808

MEETING DATE: August 15, 2013

LOCATION: Washington River Protection Solutions, 2440 Stevens

ATTENDEES:

Maria Skorska (Ecology)	Harold Sydnor (WRPS)
Mike Barnes (Ecology)	Kent Reynolds (Energy Solutions)
Jeff Lyons (Ecology)	
Cindy Tabor (WRPS)	
Susan Eberlein (WRPS)	
Chris Kemp (DOE-ORP)	
Les Fort (WRPS)	

BACKGROUND: This meeting was part of the continuing effort to ensure communication between Ecology and DOE representatives regarding the field work associated with interim measures. Specifically RPP-PLAN-54376, *Sampling and Analysis Plan for Soil Samples in Support of Interim Measure Planning at the 241-TX Tank Farm* states that geophysical logging along with available quick turnaround analysis ("quick turn") of two mobile contaminants (^{99}Tc and nitrate) will be used to aid in determining sample depths" and that "after this information is obtained, meetings will be held with, or e-mails will be sent to, representatives from WRPS, DOE, ORP, DOE Richland Operations Office (RL), and Ecology, to gain a consensus on sample depths."

The purpose of this meeting was to discuss and reach agreement on the intervals to be sampled at locations C8806 and C8808.

DISCUSSION: Cindy Tabor provided a field status summary and discussed the available data from the current TX Tank Farm field campaign. Additionally, information from the previous TX Tank Farm vadose zone field activities was discussed.

Cindy Tabor identified that five locations had been pushed and logged to an approximate depth of 110 feet below ground surface (ft bgs). Two of these locations had to be pushed twice since refusal was met around 65 ft bgs. It was also identified that two locations had been sampled, results had been received from these locations, and that a third location was currently being sampled. Two rigs were working in the farm and work was expected to occur during the upcoming weekend.

Mike Barnes and Les Fort briefly discussed the uranium plume located at the south side of Tank TX-104. It was identified that everyone should be aware of this as sampling was to occur in this area. Mike Barnes also asked about real-time monitoring versus laboratory analysis.

The following is a summary of information from the current TX Tank Farm direct push effort that was provided:

Location (surface elevation ft amsl)		**C8809/C8810** (672.8)		**C8811/C8812** (676.5)		**C8813/C8814** (671.5)
Sample Depth ft bgs (center depth ft amsl)		60-62 (611.8)		54-56 (620.5)		56-58 (614.5)
Nitrate µg/g	Tc-99 pCi/g	~10	ND	~11	ND	NA
Sample Depth ft bgs (center depth ft amsl)		87-89 (584.8)		70-72 (605.5)		70-72 (600.5)
Nitrate µg/g	Tc-99 pCi/g	~23	~1	~8	ND	NA
Sample Depth ft bgs (center depth ft amsl)		102-104 (569.8)		103-105 (572.5)		92-94 (578.5)
Nitrate µg/g	Tc-99 pCi/g	~4	~0.3	~152	~13	NA
Comment		-2 Intervals in H2 -1 Interval in Cold Creek Unit		-2 Intervals in H2 -1 Interval in Cold Creek Unit		-3 Intervals in H2

Notes: Red #s = preliminary quick-turn analytical concentrations, NA = Not available. Final data will be released in a data package generated by the laboratory.
ft bgs = feet below ground surface, ft amsl = feet above mean sea level

Sample depths were recommended where there were higher moisture peaks and finer grained material (based on Draft Gamma and Moisture Plots). Depths were also within the range of where previous vadose zone field activities showed detectable nitrate and technetium-99 concentrations (60 – 100 ft bgs).

CONCLUSIONS: The following depths were unanimously agreed upon by the group participants:

Location	C8806	C8808
Sample Depths in ft bgs (Geologic Area[a])	56-58 (H2) 85-87 (H2) 101-103 (CCu)	53-55 (H2) 84-86 (H2) 105-107 (CCu)

[a]H2 = Hanford formation unit 2 and CCu = Cold Creek unit

Two sample intervals in the H2 and one deeper sample interval in the CCu were selected from Locations C8806 and C8808.

MEETING NOTES

TX Sample Selection Meeting for Location C8802

MEETING DATE: August 29, 2013

LOCATION: Washington River Protection Solutions, 2440 Stevens

ATTENDEES:

Mike Barnes (Ecology)	Les Fort (WRPS)
Joe Caggiano (Ecology)	Harold Sydnor (WRPS)
Jacob Throolin (WRPS)	Cindy Tabor (WRPS)
Kent Reynolds (Energy Solutions)	Becky Wiegman (WRPS)
R.D. Hildebrand (DOE)	

BACKGROUND: This meeting was part of the continuing effort to ensure communication between Ecology and DOE representatives regarding the field work associated with interim measures. Specifically RPP-PLAN-54376, *Sampling and Analysis Plan for Soil Samples in Support of Interim Measure Planning at the 241-TX Tank Farm* states that geophysical logging along with available quick turnaround analysis ("quick turn") of two mobile contaminants (^{99}Tc and nitrate) will be used to aid in determining sample depths" and that "after this information is obtained, meetings will be held with, or e-mails will be sent to, representatives from WRPS, DOE, ORP, DOE Richland Operations Office (RL), and Ecology, to gain a consensus on sample depths."

The purpose of this meeting was to discuss and reach agreement on the intervals to be sampled at location C8802.

DISCUSSION: Cindy Tabor provided a field status summary and discussed the available data from the current TX Tank Farm field campaign. Additionally, information from the previous TX Tank Farm vadose zone field activities was discussed.

Cindy Tabor identified that six locations had been pushed and logged to approximately a depth of 110 feet below ground surface (ft bgs). It was also identified that five locations had been sampled and that results had been received from three of these locations.

The following is a summary of information from the current TX Tank Farm direct push effort that was provided:

Location (surface elevation ft amsl)		**C8805/C8806** (672.79)	**C8807/C8808** (672.46)	**C8809/C8810** (672.8)		**C8811/C8812** (676.5)		**C8813/C8814** (671.5)	
Sample Depth ft bgs (center depth ft amsl)		56-58 (615.79)	53-55 (618.46)	60-62 (611.8)		54-56 (620.5)		56-58* (614.5)	
Nitrate µg/g	Tc-99 pCi/g			~10	ND	~11	ND	~7	ND
Sample Depth ft bgs (center depth ft amsl)		85-87 (586.79)	84-86 (587.46)	87-89 (584.8)		70-72 (605.5)		70-72 (600.5)	
Nitrate µg/g	Tc-99 pCi/g			~23	~1	~8	ND	~5	ND
Sample Depth ft bgs (center depth ft amsl)		101-103 (570.79)	105-107 (566.46)	102-104 (569.8)		103-105 (572.5)		92-94 (578.5)	
Nitrate µg/g	Tc-99 pCi/g			~4	~0.3	~152	~13	~16	ND
Comment		-2 Intervals in H2 -1 Interval in Cold Creek Unit	-2 Intervals in H2 -1 Interval in Cold Creek Unit	-2 Intervals in H2 -1 Interval in Cold Creek Unit		-2 Intervals in H2 -1 Interval in Cold Creek Unit		-3 Intervals in H2	

Notes: Red #s = preliminary quick-turn analytical concentrations, NA = Not available. Final data will be released in a data package generated by the laboratory.
ft bgs = feet below ground surface, ft amsl = feet above mean sea level

Mike Barnes asked if there were thoughts on the reason for the higher technetium-99 and nitrate concentrations at Location C8812 (deeper interval of 103-105 ft bgs). A discussion followed that identified that the technetium in the Cold Creek unit could be from lateral and vertical migration of contaminants. It was noted that this information would be considered when developing the criteria for future direct push locations and sample depth selections.

CONCLUSIONS: The following depths were unanimously agreed upon by the group participants:

Location	C8802
Sample Depths in ft bgs (Geologic Area[a])	51-53 (H2) 59-61 (H2) 101-103 (CCu)

[a]H2 = Hanford formation unit 2 and CCu = Cold Creek unit

Two sample intervals in the H2 and one deeper sample interval in the CCu were selected from C8802. It was noted that the 59-61 ft bgs interval was not as deep as the sample interval from other locations (which were typically around 70 to 80 ft bgs); however, this interval exhibited the highest moisture peak in the H2. For this reason, it seemed reasonable to select this sample interval.