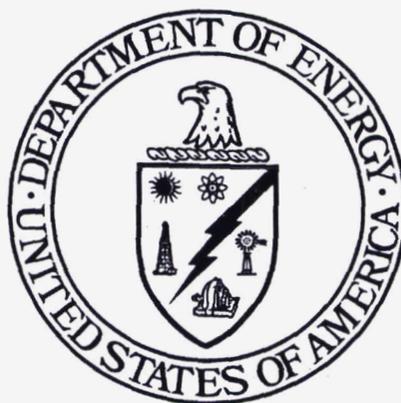


**CERTIFICATION REPORT FOR
AREA 6 GENERAL AREA EAST**

**FERNALD CLOSURE PROJECT
FERNALD, OHIO**



DECEMBER 2006

U.S. DEPARTMENT OF ENERGY

**20600-RP-0007
REVISION 0
PCN 1**

REVISION SUMMARY

<u>Revision</u>	<u>Date</u>	<u>Description of Revision</u>
Revision 0	11-22-06	Initial controlled issuance.
PCN 1	12-13-06	Revised Executive Summary, Section 3, Section 5 and Appendix D incorporate OEPA comment responses.

After certification sampling in the area had been completed, a tanker truck overturned and spilled potentially contaminated water into portions of two CUs. An Addendum to the CDL/Certification PSP (See Appendix E) was issued for sampling the area impacted by this occurrence. The CU created for this sampling event passed the certification criteria. Additional information is available in Section 3.2.

All samples related to this effort were collected in 2006 and analyzed at an off-site laboratory that is on the FCP Approved Laboratories List, per the Site-wide Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Quality Assurance Project Plan (SCQ, DOE 2003). The data were subjected to the required validation and verification process.

On the basis of this reported information and supporting project files, DOE has determined that no additional remedial actions are required in this portion of the site. The area will be considered certified when the U.S. Environmental Protection Agency and Ohio Environmental Protection Agency concur that certification criteria have been met.

DOE has restricted access to certified areas in order to maintain their integrity prior to final land use development. FCP procedure EP-0008 has been developed to implement the process that protects certified areas from becoming recontaminated.

3.0 OVERVIEW OF FIELD ACTIVITIES

In accordance with the SEP, prior to conducting precertification and certification activities, all soil demonstrated to contain contamination above the associated FRLs were evaluated for remedial actions. Based on the results of sampling and scanning activities summarized in Sections 3.1 and 3.2, it has been determined that no further remedial actions are necessary.

3.1 AREA PREPARATION AND PRECERTIFICATION

Percertification surveys were performed from February 9, 2006 through April 18, 2006 per the PSP Guidelines for General Characterization for Sitewide Soil Remediation, Sections 3.0 and 6.0 (DOE 2005a).

The total population of the data used to support the conclusion that the area is ready for certification consisted of predesign data for areas requiring no remedial action and precertification data from the excavated/remediated footprints.

Those utilities, which needed to be removed, were taken out after precertification had been completed. Once the utility had been removed, precertification real time scanning as well as physical sampling was performed on the trench bottom created by the removal of these utilities and then backfilled with the precertified overburden soil. These sampling events are described in variances 20600-PSP-0016-47 and 20810-PSP-0006-138 written to the PSP for Excavation Control and Precertification of the Area 6 Waste Pits and General Area (Supplement to 20300-PSP-0011) (DOE 2005b) and the PSP for Excavation Control of Areas 3B, 4B, and 5 (DOE 2004) respectively (see Appendix D).

3.2 CHANGES TO SCOPE OF WORK

The scope of work was documented in the final CDL and Certification PSPs.

The changes in the scope of work were documented by V/FCNs as required by Section 6.4 of the CDL/Certification PSP (see Appendix D). Additionally, an Addendum was written to the CDL/Certification PSP (See Appendix E). These changes are as follows.

Prior to beginning the certification process, it was thought that a portion of Area 6I would be needed to construct a load-out area for surrogate material from the Silos Project and sampling was done on the footprint of the proposed area in support of this activity. This sampling activity was done under V/FCN 20600-PSP-0016-69 (see Appendix D) which was written to the PSP for Excavation Control and Precertification of Area 6 Waste Pits and General Area. After sampling was completed, it was decided to locate the loadout area elsewhere. The sampling done under this V/FCN became CU 18.

This statistical evaluation indicated that the CUs associated with the utility sampling passed the certification criteria as outlined in Section 2.2.4. The data from these statistical evaluations are presented in Appendix C.

Final certification data are presented in Appendix A. Three of the CUs undergoing certification had several radiological data sets where all of the results received a "J" qualifier indicating that the data was estimated. The cited radiological data underwent further review by the Data Validation Section of the Quality Assurance Department to evaluate the applicability of the "J" qualifiers used for the indicated CUs in this certification report. This reassessment of the data identified one major condition under which the "J" qualifier was used – field/laboratory duplicate imprecision.

As a result of this condition, all data associated with the field or laboratory duplicate are required to be qualified with a "J". As each CU is analyzed as a single analytical batch, the entire CU for that parameter is then required to be qualified with a "J". This gives the undue impression that each individual analytical result had a unique quality issue. However, in these cases, a single duplicate imprecision caused the qualification of the entire dataset (CU).

It is important to note that the stated duplicate imprecision criterion is not matrix specific (i.e. the criterion used to evaluate soil matrices is the same criterion used for water). Methods of evaluation for other analytical fields (e.g. metals, VOAs, etc.) recognize the inherently greater imprecision to be found in soil versus water analyses and allowances of greater variability are given appropriate consideration. However, there is no such allowance for radiological data.

Of the 9 data sets where this occurred only 3 had 1 OR 2 above-FRL results included as part of the data set with *a posteriori* sample sizes of 4, 6, and 6 respectively for CUs 7, 11, and 15. . Also, taken independently of the duplicate information, the data sets are considered to be typical of the data seen in site soils from a data quality standpoint.

Based on these results and conclusions, DOE has determined that the remedial objectives of the OU5 ROD have been achieved in these areas and no further remedial actions are required.

5.2 CERTIFICATION CONCLUSIONS

Based on the sampling results and statistical analyses presented in this report, DOE has determined that the remedial objectives in the OU5 ROD have been achieved in the Area 6 General Area East. Therefore, upon EPA and Ohio Environmental Protection Agency (OEPA) concurrence, DOE has determined that no further soil remedial actions are required in these areas and that the certification activities are complete. The subject areas will be released for final land use.

APPENDIX D

**VARIANCE/FIELD CHANGE NOTICES FOR THE CDL AND
CERTIFICATION PSP FOR AREA 6 GENERAL AREA EAST**

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No): **NO**

V/F: 20600-PSP-0016-69

WBS NO.: PROJECT/DOCUMENT/ECDC # 20600-PSP-0016 Rev. 0

Page: 1 of 4

PROJECT TITLE: Project Specific Plan For Excavation Control And Precertification Of The Area 6 Waste Pits And General Area

Date: 02/14/06

VARIANCE / FIELD CHANGE NOTICE (Include justification):

EXCAVATION CONTROL SAMPLING

The V/FCN documents the collection of physical soil samples for the area in the southwest corner of Area 6I for precertification. This area is needed to build a pad with access to the rail line to load out TTA material. See Figure 1. Coordinate with the Construction Lead (Tim Hastings 476-3590).

The Sampling and Analytical Requirements and TALs are provided on Attachment 1 and the Sample Locations and Identifiers are provided on Attachment 2. The area specific constituents of concern (ASCOCs) for this sampling effort are the primary radionuclides (total uranium, radium-226, radium-228, thorium-228, and thorium-232 – TAL M), aroclor-1254 and aroclor-1260 (TAL T), cesium-137 (TAL F), and metals (antimony, beryllium, and cadmium – TAL B1).

Analysis will be conducted to Analytical Support Level (ASL) D or E, where all requirements for ASL E are the same as ASL D except the minimum detection level for the selected analytical method must be at least 10 percent of the FRL. A full analytical data package is to be provided and the data is to be validated to Validation Support Level (VSL) D. Any archive samples indicated on Figure 1 or Attachment 2 will not be collected at this time.

Surveying required: Yes, the surveyors will survey prior to sampling.
Field QC samples required: Yes See Attachment 1
Field data validation: Yes

Historical data for shipping of the samples to be collected is 16.2 mg/kg total uranium from boring A6-SA4-32.

Justification:

Sampling in this area is necessary so that the TTA load-out pad can be built in this area. Per Section 1.3 of the PSP, the collection of physical samples will be documented with a V/FCN.

REQUESTED BY: Debbie Brennan

Date: 02/14/06

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: R. Friske <i>R. Friske</i>	2/27/06	X	PROJECT MANAGER: J.D. Chiou <i>J.D. Chiou</i>	2/16/06
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller <i>F. Miller</i>	2/16/06
X	ANALYTICAL CUSTOMER SUPPORT: <i>Paul S. McWynn</i>	2/22/06		RTIMP Manager	
X	<i>Patrick Shamba</i>	2/2/06	X	SAMPLING MANAGER: T. Puffe <i>T. Puffe</i>	2/22/06
VARIANCE/FCN APPROVED [X] YES [] NO			REVISION REQUIRED: [] YES [x] NO		

DISTRIBUTION

PROJECT MANAGER:	DOCUMENT CONTROL: Jeannie Rosser	OTHER:
QUALITY ASSURANCE:	CHARACTERIZATION MANAGER: Frank Miller	OTHER:
FIELD MANAGER:	OTHER:	OTHER:

ATTACHMENT 1
V/FCN 20600-PSP-0016-69
Page 2 of 4

TAL	Method	Sample Matrix	ASL	Preservative	Hold Time	TAT	Container ^a	Minimum Mass/Volume
Rads, Metals, and PCBs	Gamma Spec and LSC or GPC	Solid	D/E ^a	Cool to 4°C	12 months	10-days preliminary 30-days final	Glass with Teflon-lined lid	700 g (2100 g) ^c
	ICP-AES or ICP-MS				6 months	10 days		
	GC				14 days	10 days		

^a Samples will be analyzed according to ASL D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^b Sample container types may be changed at the direction of the Field Sampling Lead, as long as the volume requirements, container compatibility requirements, and SCQ requirements are met.

^c At the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location in the CU in order for the contract laboratory to perform the required quality control analysis. The samples shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC".

TAL F

Component	FRL	MDL
Cs-137	1.4 pCi/g	0.14 pCi/g

TAL M

Component	FRL	MDL
Total Uranium	82 mg/kg	8.2 mg/kg
Ra-226	1.7 pCi/g	0.17 pCi/g
Ra-228	1.8 pCi/g	0.18 pCi/g
Th-228	1.7 pCi/g	0.17 pCi/g
Th-232	1.5 pCi/g	0.15 pCi/g

TAL T

Component	FRL	MDL
Aroclor-1254	0.13 mg/kg	0.013 mg/kg
Aroclor-1260	0.13 mg/kg	0.013 mg/kg

TAL B1

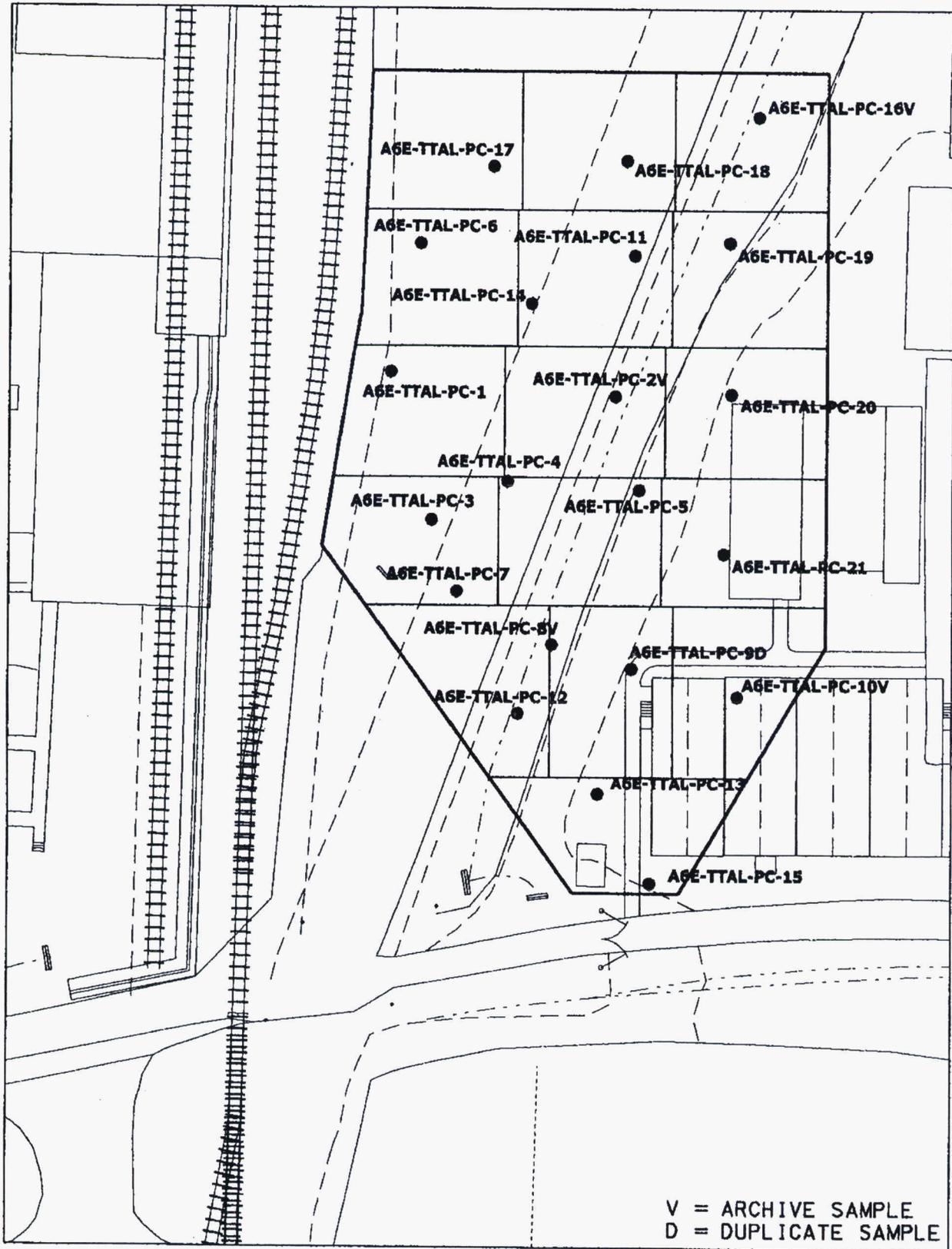
Component	FRL/BTV	MDL
Antimony	10.0 mg/kg	1.0 mg/kg
Beryllium	1.5 mg/kg	0.15 mg/kg
Cadmium	5.0 mg/kg	0.5 mg/kg

ATTACHMENT 2
V/FCN 20600-PSP-0016-69
 Page 3 of 4

SAMPLING TABLE

BORING	SAMPLE ID	Depth (in feet)	TALs	Northing	Easting
A6E-TTAL-PC-1	A6E-TTAL-PC-1^RMP	0.0-0.5'	F/M/T/B1	480983.12	1348089.01
A6E-TTAL-PC-2V	A6E-TTAL-PC-2^V	0.0-0.5'	Archive	480974.96	1348165.18
A6E-TTAL-PC-3	A6E-TTAL-PC-3^RMP	0.0-0.5'	F/M/T/B1	480933.05	1348103.15
A6E-TTAL-PC-4	A6E-TTAL-PC-4^RMP	0.0-0.5'	F/M/T/B1	480946.11	1348128.72
A6E-TTAL-PC-5	A6E-TTAL-PC-5^RMP	0.0-0.5'	F/M/T/B1	480943.39	1348173.34
A6E-TTAL-PC-6	A6E-TTAL-PC-6^RMP	0.0-0.5'	F/M/T/B1	481026.985	1348098.97
A6E-TTAL-PC-7	A6E-TTAL-PC-7^RMP	0.0-0.5'	F/M/T/B1	480908.72	1348111.66
A6E-TTAL-PC-8V	A6E-TTAL-PC-8^V	0.0-0.5'	Archive	480890.59	1348143.95
A6E-TTAL-PC-9D	A6E-TTAL-PC-9^RMP	0.0-0.5'	F/M/T/B1	480882.43	1348171.15
	A6E-TTAL-PC-9^RMP-D				
A6E-TTAL-PC-10V	A6E-TTAL-PC-10^V	0.0-0.5'	Archive	480873.1	1348206.6
A6E-TTAL-PC-11	A6E-TTAL-PC-11^RMP	0.0-0.5'	F/M/T/B1	481022.958	1348171.517
A6E-TTAL-PC-12	A6E-TTAL-PC-12^RMP	0.0-0.5'	F/M/T/B1	480867.2	1348132.52
A6E-TTAL-PC-13	A6E-TTAL-PC-13^RMP	0.0-0.5'	F/M/T/B1	480839.98	1348159.72
A6E-TTAL-PC-14	A6E-TTAL-PC-14^RMP	0.0-0.5'	F/M/T/B1	481006.527	1348136.654
A6E-TTAL-PC-15	A6E-TTAL-PC-15^RMP	0.0-0.5'	F/M/T/B1	480809.75	1348177.45
A6E-TTAL-PC-16V	A6E-TTAL-PC-16^V	0.0-0.5'	Archive	481070.3	1348212.8
A6E-TTAL-PC-17	A6E-TTAL-PC-17^RMP	0.0-0.5'	F/M/T/B1	481053.269	1348123.741
A6E-TTAL-PC-18	A6E-TTAL-PC-18^RMP	0.0-0.5'	F/M/T/B1	481055.193	1348168.677
A6E-TTAL-PC-19	A6E-TTAL-PC-19^RMP	0.0-0.5'	F/M/T/B1	481027.503	1348203.316
A6E-TTAL-PC-20	A6E-TTAL-PC-20^RMP	0.0-0.5'	F/M/T/B1	480975.892	1348204.101
A6E-TTAL-PC-21	A6E-TTAL-PC-21^RMP	0.0-0.5'	F/M/T/B1	480921.832	1348201.793

PAD



LEGEND:



SAMPLE LOCATION

DRAFT

FIGURE 1.

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No): **NO**

V/F: 20600-PSP-0016-47

WBS NO.: PROJECT/DOCUMENT/ECDC # 20600-PSP-0016 Rev.0

Page: 1 of 3

PROJECT TITLE: Project Specific Plan For Excavation Control And Precertification of the Area 6 Waste Pits and General Area

Date: 12/7/05

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of physical soil samples for precertification of the soil beneath the bedding of excavated utilities located in Area 6 Waste Pits and General Area. Construction will be excavating known utilities; however, the possibility exists that unknown utilities will be uncovered during excavation. All sampling locations will be field located approximately every fifty feet along the bottom of the excavation. All samples will be collected from the bottom of the excavation from the bucket of an excavator (if necessary) after the piping and bedding material has been removed or from paddys created to represent the sample locations. The goal will be to collect samples from the top six inches of soil from the bottom of the excavation. Additionally, if there is evidence of leakage from the piping (e.g. broken, cracked, or disjointed piping, stained or discolored soil), then a biased sample location will be flagged and samples will be collected from the floor and both sidewalls approximately one foot from the floor of the excavation.

The TALs area listed on Attachment 1 and the Sampling and Analytical Requirements are listed on Attachment 2.

The estimated number of sample locations is 50. The sample identifiers from the first location shall be A6GA-T-1^RMPS, A6GA-T-1^L, and A6GA-T-1^D and each additional sample ID will be sequentially numbered (e.g. second sample ID is A6GA-T-2^RMPS, A6GA-T-2^L, and A6GA-T-2^D). Additionally, trip blank samples will be collected for the VOC samples at a rate of 1 per 20 VOC samples collected, 1 per day, or 1 per cooler whichever is more frequent. The first sample identifier for the trip blanks shall be A6GA-T-L-TB1 and each sample ID will be sequentially numbered (e.g. A6GA-T-L-TB2).

Where:

- A6GA = Area 6 General Areas
- T = trench
- 1, 2, 3, etc. = Consecutive Sample Numbers (Locations)
- R = Radiological analysis; M=Metals; P=Pesticides/PCBs; S = Semi-Volatile Organic Compounds;
- L = Volatile Organic Compounds; and D = Dioxins
- TB = Trip Blank

Field Sketch Required: ~~No~~ **YES** REF 12/14/05

Surveying Required: Yes. ~~Samplers shall contact Surveying when locations are ready to be surveyed.~~ *Real-Time will Survey. REF 12/14/05*

Field QC samples required: Yes, trip blank samples are required for the VOC samples (see above).

Field validation required: Yes

Analytical data validation required: Yes, VSL D

Data package requirements: ASL D (E)

Data for shipping: Total Uranium = 3510 mg/kg from boring A6WP-B-61.

Justification:

Because the utilities in this area are so deep, it is necessary to backfill the trenches after the utilities have been removed in order to ensure the area is left in a safe condition. Therefore, samples will be collected from the bottom of the excavation prior to backfilling the trenches similarly to the sampling performed during the excavation of the Abandoned Outfall Line.

REQUESTED BY: Krista Flaugh

Date: 12/6/05

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE R. FISH <i>R. Fish</i>	12/12/05	X	PROJECT MANAGER: J.D. Chiou <i>J.D. Chiou</i>	12/9/05
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller <i>F. Miller</i>	12/7/05
X	ANALYTICAL CUSTOMER SUPPORT: <i>Amy Meyer</i>	12/8/05		RTIMP Manager	
<i>x dml</i>	<i>WAO</i> <i>12/9/05</i>		X	SAMPLING MANAGER: J. Buhrlage <i>Tom Buhrlage</i>	12/12/05
VARIANCE/FCN APPROVED [X] YES [] NO			REVISION REQUIRED: [] YES [x] NO		

DISTRIBUTION

PROJECT MANAGER:	DOCUMENT CONTROL: Jeannie Rosser	OTHER:
QUALITY ASSURANCE:	CHARACTERIZATION MANAGER: Frank Miller	OTHER:
FIELD MANAGER:	OTHER:	OTHER:

TAL D

Component	FRL	MDL
Technetium-99	30.0 pCi/g	2.9 pCi/g

TAL J

Component	FRL	MDL (Soil)
Heptachlorodibenzo-p-dioxin	880 ng/kg	88 ng/kg
Octachlorodibenzo-p-dioxin	8800 ng/kg	880 ng/kg

TAL M

Component	FRL	MDL
Total Uranium	82 mg/kg	8.2 mg/kg
Ra-226	1.7 pCi/g	0.17 pCi/g
Ra-228	1.8 pCi/g	0.18 pCi/g
Th-228	1.7 pCi/g	0.17 pCi/g
Th-232	1.5 pCi/g	0.15 pCi/g

TAL N

Component	FRL	MDL
Cs-137	1.4 pCi/g	0.14 pCi/g
Th-230	280 pCi/g	28 pCi/g

TAL O

Component	FRL	MDL
Antimony	10 mg/kg	1.0 mg/kg
Arsenic	12 mg/kg	1.2 mg/kg
Beryllium	1.5 mg/kg	0.15 mg/kg
Cadmium	5.0 mg/kg	0.5 mg/kg
Silver	10 mg/kg	1.0 mg/kg
Fluoride	78,000 mg/kg	7800 mg/kg

TAL P

Component	FRL	MDL
Benzo(a)pyrene	1.0 mg/kg	0.1 mg/kg
Benzo(b)fluoranthene	1.0 mg/kg	0.1 mg/kg
Dibenzo(a,h)anthracene	0.088 mg/kg	0.01 mg/kg
Indeno(1,2,3-cd)pyrene	1.0 mg/kg	0.1 mg/kg

TAL Q

Component	FRL	MDL
Aroclor-1254	0.13 mg/kg	0.013 mg/kg
Aroclor-1260	0.13 mg/kg	0.013 mg/kg
Dieldrin	0.015 mg/kg	0.0015 mg/kg

TAL R

Component	FRL	MDL
1,1-Dichloroethene	0.41 mg/kg	0.041 mg/kg
1,2-Dichloroethene	0.16 mg/kg	0.016 mg/kg
Bromodichloromethane	4.0 mg/kg	0.4 mg/kg
Tetrachloroethene	3.6 mg/kg	0.36 mg/kg
Trichloroethene	25 mg/kg	2.5 mg/kg

ATTACHMENT 2

SAMPLING AND ANALYTICAL REQUIREMENTS

TAL(s)	Method	ASL	Matrix	Preserve	Hold Time	TAT	Container ^a	Minimum Mass/Volume
Rads/Metals/PCBs/ SVOCs (TALs DMN/O/Q/P)	Gamma Spec, Alpha Spec, and LSC	D/E	Solid	Cool, 4° C	12 months	Prelim 10 days ^b Final 30 days	Glass with Teflon- lined Lid	600 g
	ICP or ICP/MS and IC				6 months (F is 28 days)	10 days		
	GC				14 days	10 days		
	GC				14 days	10 days		
Dioxins (TAL J)	GC	D	Solids	Cool, 4° C	14 days	14 days	Glass with Teflon- lined lids	50 g
VOCs (TAL R)	GC/MS	D	Solid	Cool, 4° C	48 hours	10 days	3 x 1-Encore Sampler plus 1 x 2-oz jar for % moisture	Each full Encore Sampler will hold approx. 5 g
VOCs (TAL R) ^g	GC/MS	D	Liquid (trip blank only)	H ₂ SO ₄ pH<2 Cool, 4° C	14 days	10 days	3 x 40-ml glass with teflon-lined septa	120 ml (no headspace)

^a Sample container types may be changed at the direction of the Field Sampling Lead, as long as the volume requirements, container compatibility requirements, and SCQ requirements are met.

^b The full data package for Technetium-99 and Thorium-230 is required in 10 days. Only an EDD and COAs are required for the preliminary gamma data. *15 Ref 12/8/05*

- GC/MS - gas chromatography mass spectroscopy
- GC - gas chromatography
- ICP/MS - inductively coupled plasma/mass spectroscopy
- LSC - liquid scintillation counting
- IC - Ion Chromatography

VARIANCE / FIELD CHANGE NOTICE

Significant?
(Yes or No): **NO**

V/F: 20810-PSP-0006-138

WBS NO.: PROJECT/DOCUMENT/ECDC # 20810-PSP-0006 Rev.1

Page: 1 of 3

PROJECT TITLE: Project Specific Plan For Excavation Control Of Areas 3B, 4B, And 5

Date: 12/05/05

VARIANCE / FIELD CHANGE NOTICE (Include justification):

This Variance/Field Change Notice (V/FCN) documents the collection of physical soil samples for precertification of the soil beneath the bedding of excavated utilities located in the western sections of Areas 3B and 4B (Figure 1). Construction will be excavating known utilities; however, the possibility exists that unknown utilities will be uncovered during excavation. All sampling locations will be field located approximately every fifty feet along the bottom of the excavation. All samples will be collected from the bottom of the excavation from the bucket of an excavator (if necessary) after the piping and bedding material has been removed. The goal will be to collect samples from the top six inches of soil from the bottom of the excavation. The estimated number of samples is 30.

Additionally, if there is evidence of leakage from the piping (e.g. broken, cracked, or disjointed piping), then a biased sample location will be flagged and samples will be collected from the floor and both sidewalls approximately one foot from the floor of the excavation.

The sampling and analytical requirements and TALs are listed on Attachment 1.

The first sample ID shall be A3B4B-T-1^RMP and each additional sample ID will be sequentially numbered (e.g. second sample ID is A3B4B-T-1^RMP).

Where:

A3B4B = Area 3B and 4B

T = trench

1, 2, 3, etc. = Consecutive Sample Numbers (Locations)

R = Radiological analysis; M=Metals; P=Aroclor-1254

Field sketch required: no

Surveying required: Yes. Surveying will survey these locations.

Field QC samples required: No

Field data validation: Yes

Analytical data validation: Yes 10%D, 90%B

Off-site data package requirements (if applicable): ASL D(E)

The highest total uranium result from this area is 35.4 ppm at location A5A-45.

Justification:

Because the utilities in this area are so deep, it is necessary to backfill the trenches after the utilities have been removed in order to ensure the area is left in a safe condition. Therefore, samples will be collected from the bottom of the excavation prior to backfilling the trenches similarly to the sampling performed during the excavation of the Abandoned Outfall Line.

REQUESTED BY: Greg Lupton

Date: 12/05/05

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE: <i>[Signature]</i>	12/2/05	X	PROJECT MANAGER: J.D. Chiou <i>[Signature]</i>	12/6/05
	DATA QUALITY MANAGEMENT		X	CHARACTERIZATION MANAGER: F. Miller <i>[Signature]</i>	12/6/05
X	ANALYTICAL CUSTOMER SUPPORT: <i>[Signature]</i>	12/8/05		RTIMP Manager	
	WAO		X	SAMPLING MANAGER: <i>[Signature]</i>	12/12/05
VARIANCE/FCN APPROVED [X] YES [] NO			REVISION REQUIRED: [] YES [x] NO		

DISTRIBUTION

PROJECT MANAGER:	DOCUMENT CONTROL: Jeannie Rosser	OTHER:
QUALITY ASSURANCE:	CHARACTERIZATION MANAGER: Frank Miller	OTHER:
FIELD MANAGER:	OTHER:	OTHER:

**ATTACHMENT 1
SAMPLING AND ANALYTICAL REQUIREMENTS**

Analyte ^a	Method ^a	Matrix	Preserve	Hold Time	TAT	Container ^b	Minimum Mass/Volume
Rads/Metals/ PCBs (TALs B, F, M, and Y)	Gamma Spec and LSC	Solid	Cool, 4° C	12 months	Prelim 10 days ^c Final 30 days	Glass with Teflon-lined lid	500 g (1500 g) ^d
	ICP or ICP/MS			6 months	10 days		
	GC			14 days	10 days		

^a Samples will be analyzed according to Analytical Support Level (ASL) D requirements but the minimum detection level may cause some analyses to be considered ASL E.

^b Sample container types may be changed at the direction of the Field Sampling Lead, as long as the volume requirements, container compatibility requirements, and SCQ requirements are met.

^c The full data package for Tc-99 is required in 10 days. Only an EDD and COAs are required for preliminary gamma data.

^d At the direction of the Field Sampling Lead, triple the specified volume must be collected for all samples at one location in the CU in order for the contract laboratory to perform the required quality control analysis. The samples shall be identified on the Chain of Custody/Request for Analysis forms as "designated for laboratory QC."

**TAL B
(Radiological - ASL D/E*)**

Analyte	On-Property FRL	MDL
Technetium-99	29.1 pCi/g	2.91 pCi/g

**TAL F
(Radiological - ASL D/E*)**

Analyte	On-Property FRL	MDL
Total Uranium	82 mg/kg	8.2 mg/kg
Radium-226	1.7 pCi/g	0.17 pCi/g
Radium-228	1.8 pCi/g	0.18 pCi/g
Thorium-228	1.7 pCi/g	0.17 pCi/g
Thorium-232	1.5 pCi/g	0.15 pCi/g

**20810-PSP-0010-M
(Metals - ASL D/E*)**

Analyte	On-Property FRL/(BTV)	MDL (soil)
Antimony	96 mg/kg (10 mg/kg)	1.0 mg/kg
Beryllium	1.5 mg/kg	0.15 mg/kg
Cadmium	82 mg/kg (5.0 mg/kg)	0.5 mg/kg
Molybdenum	2900 mg/kg (10 mg/kg)	1.0 mg/kg
Silver	29,000 mg/kg (10 mg/kg)	1.0 mg/kg

**TAL Y
(PCB - ASL D/E*)**

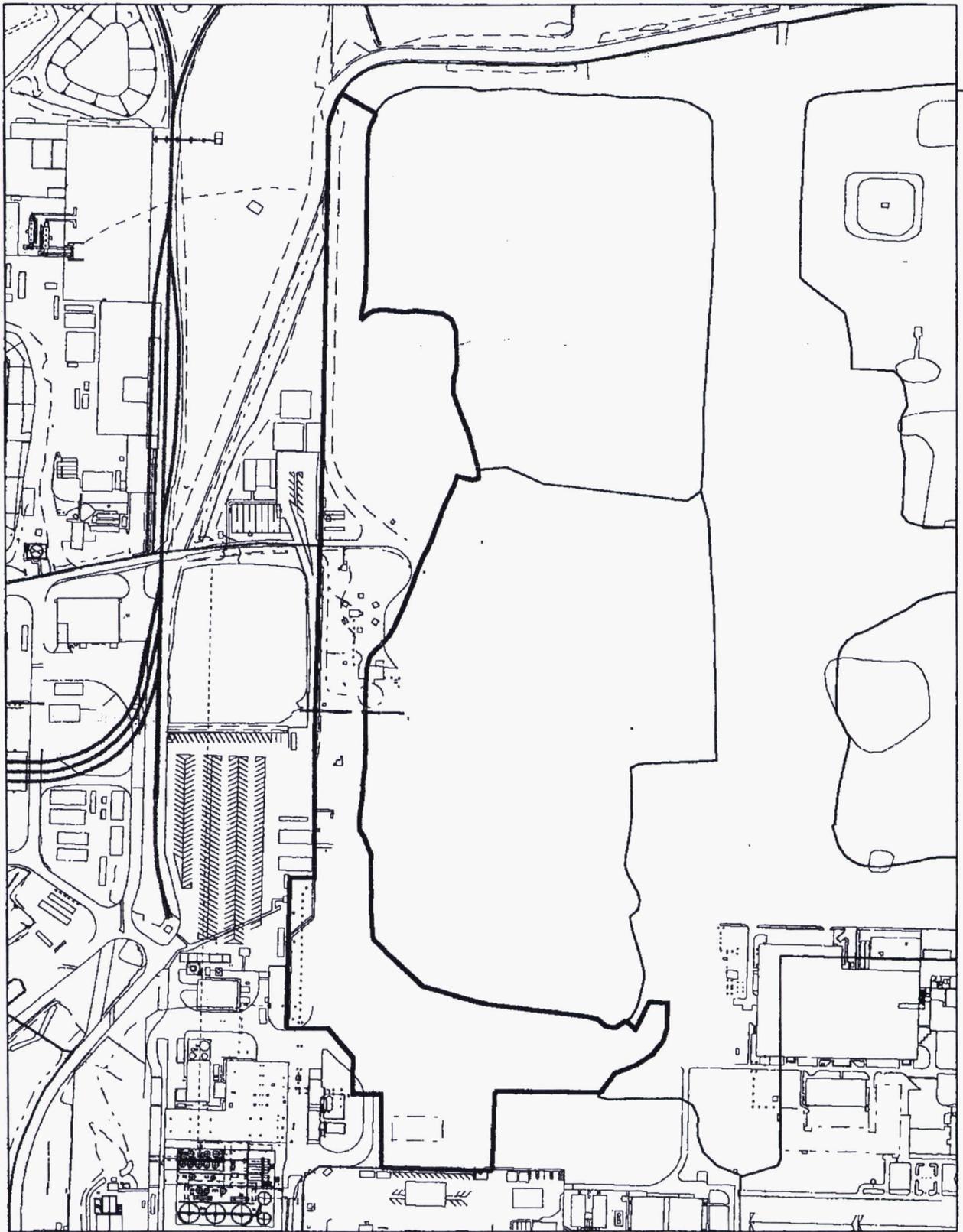
Analyte	On-Property FRL	MDL
Aroclor-1254	0.13 mg/kg	0.013 mg/kg

*Analytical requirements will meet ASL D but the MDL may cause some analyses to be considered ASL E.

MDL – minimum detection level

mg/kg – milligrams per kilogram

pCi/g – picoCuries per gram



LEGEND:

SCALE



DRAFT

FIGURE 1.