CORRES. CONTROL
OUTGOING LTR NO.

DOE ORDER #

05 RF 00254

DIST.	LTR	ENC
BERARDINI, J.	X	
BRAILSFORD, M.D		
FERRERA, D.W.	X	
FERRI, M.S.		
FULTON, J.C.		
GIACOMINI, J.		
HALL, L.		
MARTINEZ, L.A.		
PARKER, A.M.		
POWERS, K.		
SCOTT, G.K.		
SHELTON, D.C.	X	
SPEARS, M.S.		
TRICE, K.D.		
VOORHEIS, G.M.		
WIEMELT, K.L.	X	X
THORNBURG, AMY	X	
COR. CONTROL	X	X
ADMN. RECORD	x	x
WASTE REC. CTR.		
TRAFFIC		
PATS/130		
CLASSIFICATION:		
UCNI		
UNCLASSIFIED		
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE
Exemption – CEX-105-01

Date

IN REPLY TO RFP CC NO:

ACTION ITEM STATUS

☐ PARTIAL/OPEN

☐ CLOSED

LTR APPROVALS:

ORIG & TYPIST INITIALS

KAISER•HILL COMPANY

March 8, 2005

05-RF-00254

Mr. Joseph A. Legare, Director
Project Management Division
DOE, RFPO

Mr. Steve Gunderson
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1502

Mr. Mark Aguilar
U.S. Environmental Protection Agency
999 18th Street, Suite 300
Denver, CO 80202-2466

TRANSMITTAL OF THE FINAL ADDENDUM TO THE NO FURTHER ACCELERATED ACTION (NFAA) JUSTIFICATION FOR TRENCHES T-3 AND T-4 – KLW-023-05

Enclosed are copies of the Final Addendum to the NFAA Justification for Trenches T-3 and T-4 for your files. Previous comments have been incorporated and the document was approved by the EPA on March 7, 2005.

If you have any questions, please contact me at extension 9883.

Robert M. Davis for
Karen L. Wiemelt
Manager, Environmental Restoration Programs

KLW:dm

Orig and 1 cc – Joseph Legare
cc: Norma Castaneda

Enclosures:
As Stated

RECEIVED
MAR 10 2005
ADMIN RECORD

1/11

ADDENDUM
NO FURTHER ACCELERATED ACTION JUSTIFICATION FOR TRENCHES T-3 AND T-4

PAC REFERENCE NUMBERS: NE-110 and NE-111.1

Additional Characterization

A No Further Accelerated Action Justification (NFAA) was prepared for Trenches T-3 and T-4 in May 2003 (DOE 2003a). However, upon reviewing data associated with these trenches, there was uncertainty regarding levels of radioactivity within the material used to cover the trench debris. Therefore, additional characterization and accelerated action activities were conducted at these trenches and are documented in this NFAA Addendum.

Samples were collected on September 23, 2004, in accordance with Buffer Zone Sampling and Analysis Plan (BZSAP) Addendum 04-02 (DOE 2003b) and an Environmental Restoration (ER) Regulatory Contact Record dated September 2, 2004 (Appendix A). Samples were collected at three biased locations along the length of each trench from the A and B intervals (0.0-0.5 feet and 0.5-2.5 feet, respectively) and analyzed for radionuclides.

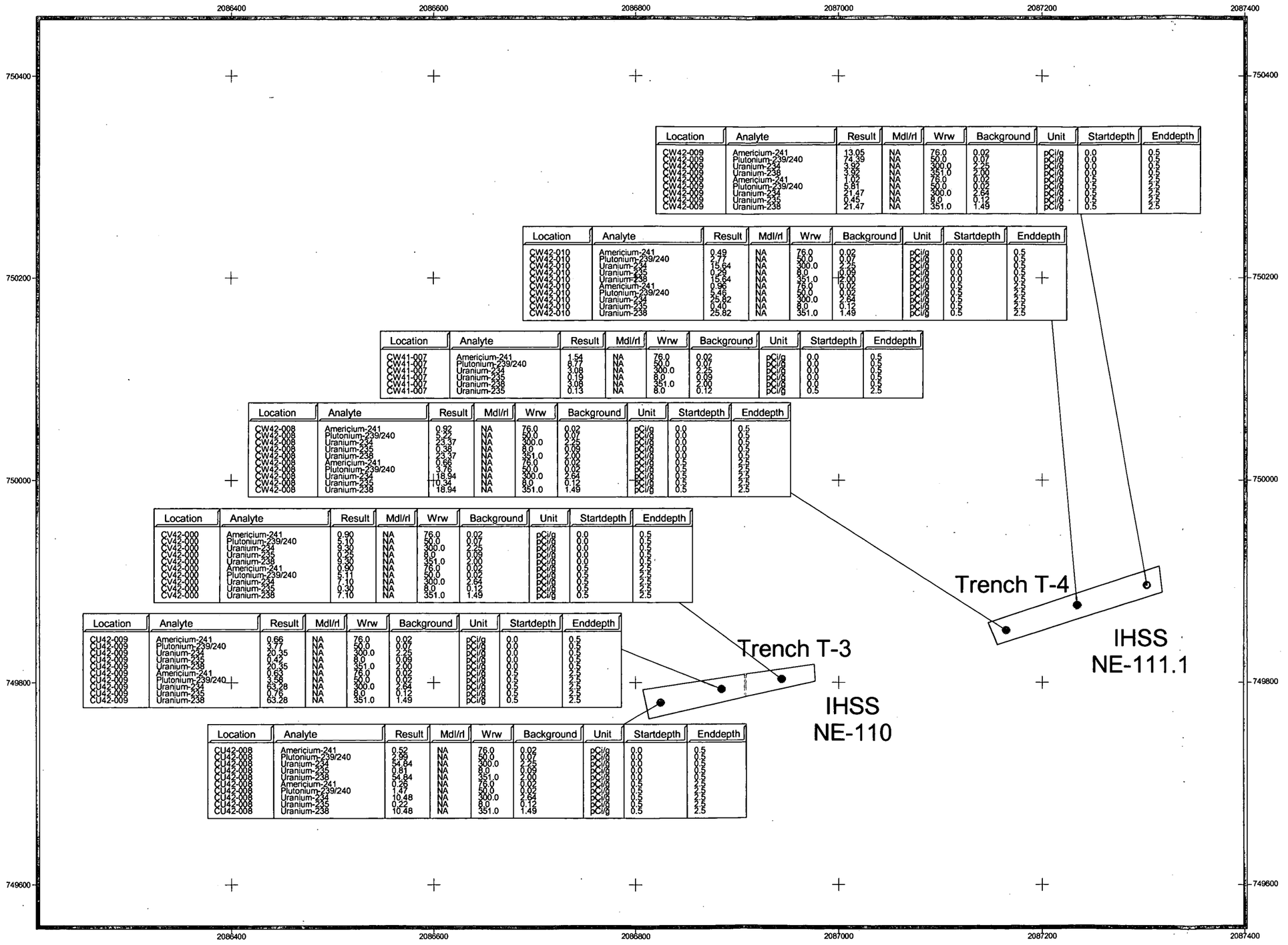
Analytical results indicated that radionuclides were present at activities less than Rocky Flats Cleanup Agreement (RFCA) Action Levels (ALs) for the Wildlife Refuge Worker (WRW), with one exception at Trench T-4. At Sampling Location CW42-009, the surface activity for plutonium-239/240 was 74.39 picoCuries per gram (pCi/g), greater than the WRW AL of 50 pCi/g. Results are shown on Figure 1. Only results greater than background means plus two standard deviations are shown.

T-4 Hot Spot Remediation and Confirmation Sampling

Based on the results from characterization of the cover material, the Trench T-4 surface hot spot was remediated during October 2004. This action was conducted in accordance with RFCA, the ER RFCA Standard Operating Protocol (RSOP) for Routine Soil Remediation (ER RSOP) (DOE 2003c), and an ER Regulatory Contact Record dated October 13, 2004 (Appendix A). Approximately 20.8 cubic feet (in-place volume; 42.5 cubic feet removed volume) of contaminated soil were removed from an area approximately 4 feet by 4 feet by 1.3 feet. Screening samples were collected from the bottom of the excavation and the side walls, and analyzed using gamma spectroscopy. Because screening results indicated plutonium-239/240 activities were less than the WRW AL, confirmation samples were sent to the off-site laboratory and analyzed using alpha spectroscopy. Results indicated that plutonium activities in all five samples were less than the WRW AL, and therefore, the excavation was backfilled. Confirmation results are presented on Figure 2. Only results greater than background means plus two standard deviations are shown.

The excavation was backfilled with clean fill from the area just north of the former Building 116. Straw matting was placed over the excavation to prevent erosion. The excavated soil was disposed of as low-level radioactive waste.

2



Location	Analyte	Result	Mdl/rl	Wrw	Background	Unit	Startdepth	Enddepth
CW42-009	Americium-241	13.05	NA	76.0	0.02	pCi/g	0.0	0.5
CW42-009	Plutonium-239/240	74.39	NA	50.0	0.07	pCi/g	0.0	0.5
CW42-009	Uranium-234	3.92	NA	300.0	2.25	pCi/g	0.0	0.5
CW42-009	Uranium-238	3.92	NA	351.0	2.00	pCi/g	0.0	0.5
CW42-009	Americium-241	1.02	NA	76.0	0.02	pCi/g	0.5	2.5
CW42-009	Plutonium-239/240	5.81	NA	50.0	0.02	pCi/g	0.5	2.5
CW42-009	Uranium-234	21.47	NA	300.0	2.64	pCi/g	0.5	2.5
CW42-009	Uranium-235	0.45	NA	8.0	0.12	pCi/g	0.5	2.5
CW42-009	Uranium-238	21.47	NA	351.0	1.49	pCi/g	0.5	2.5

Location	Analyte	Result	Mdl/rl	Wrw	Background	Unit	Startdepth	Enddepth
CW42-010	Americium-241	0.49	NA	76.0	0.02	pCi/g	0.0	0.5
CW42-010	Plutonium-239/240	2.77	NA	50.0	0.07	pCi/g	0.0	0.5
CW42-010	Uranium-234	15.64	NA	300.0	2.25	pCi/g	0.0	0.5
CW42-010	Uranium-235	0.29	NA	8.0	0.09	pCi/g	0.0	0.5
CW42-010	Uranium-238	15.64	NA	351.0	2.00	pCi/g	0.0	0.5
CW42-010	Americium-241	0.96	NA	76.0	0.02	pCi/g	0.5	2.5
CW42-010	Plutonium-239/240	5.46	NA	50.0	0.02	pCi/g	0.5	2.5
CW42-010	Uranium-234	25.82	NA	300.0	2.64	pCi/g	0.5	2.5
CW42-010	Uranium-235	0.40	NA	8.0	0.12	pCi/g	0.5	2.5
CW42-010	Uranium-238	25.82	NA	351.0	1.49	pCi/g	0.5	2.5

Location	Analyte	Result	Mdl/rl	Wrw	Background	Unit	Startdepth	Enddepth
CW41-007	Americium-241	1.54	NA	76.0	0.02	pCi/g	0.0	0.5
CW41-007	Plutonium-239/240	6.77	NA	50.0	0.07	pCi/g	0.0	0.5
CW41-007	Uranium-234	3.08	NA	300.0	2.25	pCi/g	0.0	0.5
CW41-007	Uranium-235	0.19	NA	8.0	0.09	pCi/g	0.0	0.5
CW41-007	Uranium-238	3.08	NA	351.0	2.00	pCi/g	0.0	0.5
CW41-007	Uranium-235	0.13	NA	8.0	0.12	pCi/g	0.5	2.5

Location	Analyte	Result	Mdl/rl	Wrw	Background	Unit	Startdepth	Enddepth
CW42-008	Americium-241	0.92	NA	76.0	0.02	pCi/g	0.0	0.5
CW42-008	Plutonium-239/240	5.22	NA	50.0	0.07	pCi/g	0.0	0.5
CW42-008	Uranium-234	23.37	NA	300.0	2.25	pCi/g	0.0	0.5
CW42-008	Uranium-235	0.38	NA	8.0	0.09	pCi/g	0.0	0.5
CW42-008	Uranium-238	23.37	NA	351.0	2.00	pCi/g	0.0	0.5
CW42-008	Americium-241	0.66	NA	76.0	0.02	pCi/g	0.5	2.5
CW42-008	Plutonium-239/240	3.76	NA	50.0	0.02	pCi/g	0.5	2.5
CW42-008	Uranium-234	18.94	NA	300.0	2.64	pCi/g	0.5	2.5
CW42-008	Uranium-235	10.34	NA	8.0	0.12	pCi/g	0.5	2.5
CW42-008	Uranium-238	18.94	NA	351.0	1.49	pCi/g	0.5	2.5

Location	Analyte	Result	Mdl/rl	Wrw	Background	Unit	Startdepth	Enddepth
CV42-000	Americium-241	0.90	NA	76.0	0.02	pCi/g	0.0	0.5
CV42-000	Plutonium-239/240	5.10	NA	50.0	0.07	pCi/g	0.0	0.5
CV42-000	Uranium-234	9.30	NA	300.0	2.25	pCi/g	0.0	0.5
CV42-000	Uranium-235	0.25	NA	8.0	0.09	pCi/g	0.0	0.5
CV42-000	Uranium-238	9.30	NA	351.0	2.00	pCi/g	0.0	0.5
CV42-000	Americium-241	0.90	NA	76.0	0.02	pCi/g	0.5	2.5
CV42-000	Plutonium-239/240	5.11	NA	50.0	0.02	pCi/g	0.5	2.5
CV42-000	Uranium-234	7.10	NA	300.0	2.64	pCi/g	0.5	2.5
CV42-000	Uranium-235	0.30	NA	8.0	0.12	pCi/g	0.5	2.5
CV42-000	Uranium-238	7.10	NA	351.0	1.49	pCi/g	0.5	2.5

Location	Analyte	Result	Mdl/rl	Wrw	Background	Unit	Startdepth	Enddepth
CU42-009	Americium-241	0.66	NA	76.0	0.02	pCi/g	0.0	0.5
CU42-009	Plutonium-239/240	4.77	NA	50.0	0.07	pCi/g	0.0	0.5
CU42-009	Uranium-234	20.35	NA	300.0	2.25	pCi/g	0.0	0.5
CU42-009	Uranium-235	0.42	NA	8.0	0.09	pCi/g	0.0	0.5
CU42-009	Uranium-238	20.35	NA	351.0	2.00	pCi/g	0.0	0.5
CU42-009	Americium-241	1.63	NA	76.0	0.02	pCi/g	0.5	2.5
CU42-009	Plutonium-239/240	3.58	NA	50.0	0.02	pCi/g	0.5	2.5
CU42-009	Uranium-234	63.28	NA	300.0	2.64	pCi/g	0.5	2.5
CU42-009	Uranium-235	0.76	NA	8.0	0.12	pCi/g	0.5	2.5
CU42-009	Uranium-238	63.28	NA	351.0	1.49	pCi/g	0.5	2.5

Location	Analyte	Result	Mdl/rl	Wrw	Background	Unit	Startdepth	Enddepth
CU42-008	Americium-241	0.52	NA	76.0	0.02	pCi/g	0.0	0.5
CU42-008	Plutonium-239/240	2.99	NA	50.0	0.07	pCi/g	0.0	0.5
CU42-008	Uranium-234	54.84	NA	300.0	2.25	pCi/g	0.0	0.5
CU42-008	Uranium-235	0.81	NA	8.0	0.09	pCi/g	0.0	0.5
CU42-008	Uranium-238	54.84	NA	351.0	2.00	pCi/g	0.0	0.5
CU42-008	Americium-241	0.26	NA	76.0	0.02	pCi/g	0.5	2.5
CU42-008	Plutonium-239/240	1.47	NA	50.0	0.02	pCi/g	0.5	2.5
CU42-008	Uranium-234	10.48	NA	300.0	2.64	pCi/g	0.5	2.5
CU42-008	Uranium-235	0.22	NA	8.0	0.12	pCi/g	0.5	2.5
CU42-008	Uranium-238	10.48	NA	351.0	1.49	pCi/g	0.5	2.5

Figure 1
Trenches T-3 and T-4
Characterization Sampling Results
Greater Than Background Means
Plus Two Standard Deviations

KEY

- ○ Sampling location with radionuclide activity greater than WRW AL
- ● Sampling location with radionuclide activities less than WRW ALs
- ▭ Trench

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50 0 50 Feet

Scale = 1:1,200

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Date: 12.02.2004

Prepared by: RADMS

Prepared for: KAISER•HILL COMPANY

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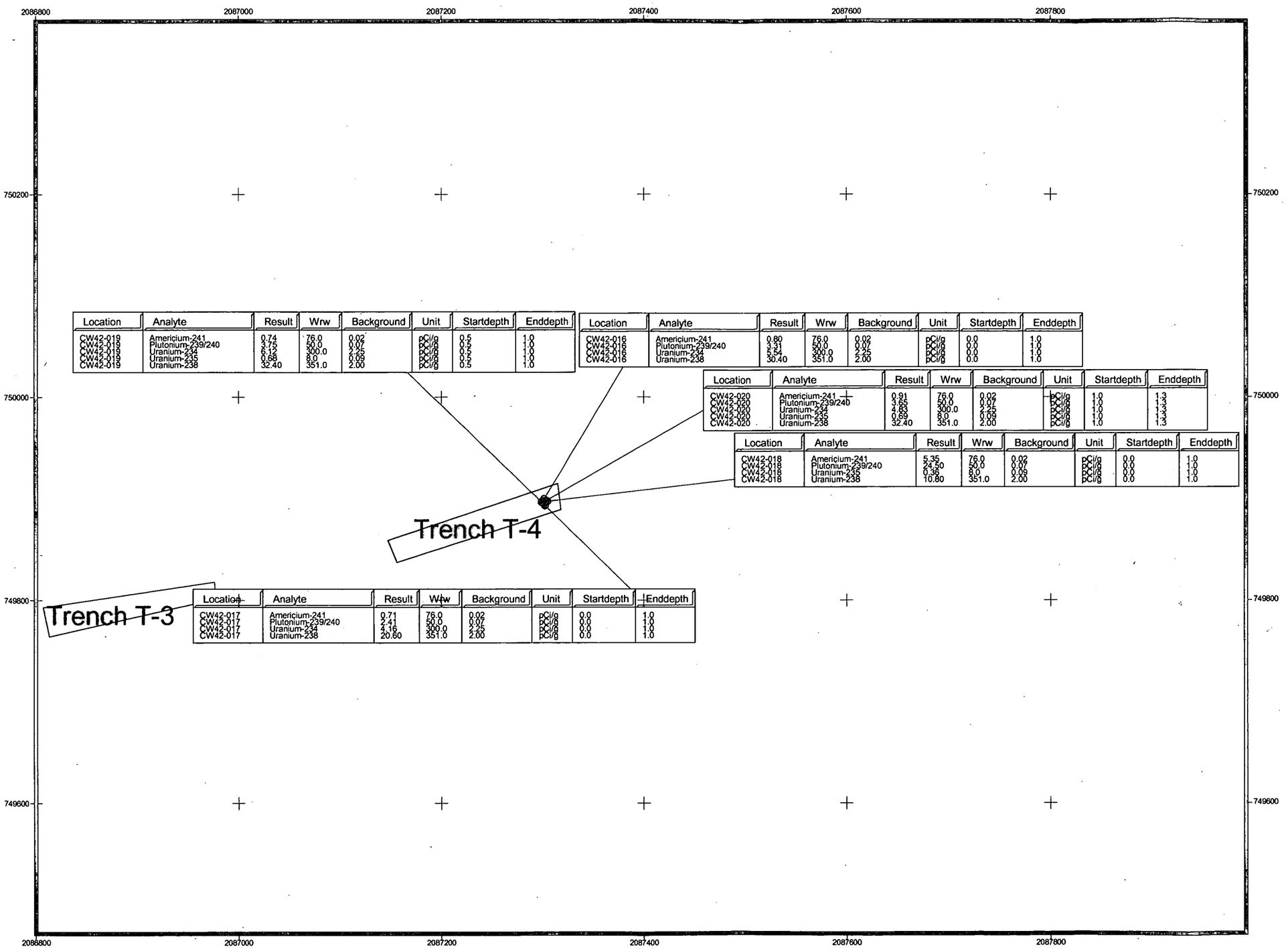

Location	Analyte	Result	Wrw	Background	Unit	Startdepth	Enddepth
CW42-019	Americium-241	0.74	76.0	0.02	pCi/g	0.5	1.0
CW42-019	Plutonium-239/240	3.75	50.0	0.07	pCi/g	0.5	1.0
CW42-019	Uranium-234	6.12	300.0	2.25	pCi/g	0.5	1.0
CW42-019	Uranium-235	0.68	8.0	0.09	pCi/g	0.5	1.0
CW42-019	Uranium-238	32.40	351.0	2.00	pCi/g	0.5	1.0

Location	Analyte	Result	Wrw	Background	Unit	Startdepth	Enddepth
CW42-016	Americium-241	0.80	76.0	0.02	pCi/g	0.0	1.0
CW42-016	Plutonium-239/240	3.31	50.0	0.07	pCi/g	0.0	1.0
CW42-016	Uranium-234	5.54	300.0	2.25	pCi/g	0.0	1.0
CW42-016	Uranium-238	30.40	351.0	2.00	pCi/g	0.0	1.0

Location	Analyte	Result	Wrw	Background	Unit	Startdepth	Enddepth
CW42-020	Americium-241	0.91	76.0	0.02	pCi/g	1.0	1.3
CW42-020	Plutonium-239/240	3.65	50.0	0.07	pCi/g	1.0	1.3
CW42-020	Uranium-234	4.83	300.0	2.25	pCi/g	1.0	1.3
CW42-020	Uranium-235	0.69	8.0	0.09	pCi/g	1.0	1.3
CW42-020	Uranium-238	32.40	351.0	2.00	pCi/g	1.0	1.3

Location	Analyte	Result	Wrw	Background	Unit	Startdepth	Enddepth
CW42-018	Americium-241	5.35	76.0	0.02	pCi/g	0.0	1.0
CW42-018	Plutonium-239/240	24.50	50.0	0.07	pCi/g	0.0	1.0
CW42-018	Uranium-235	0.36	8.0	0.09	pCi/g	0.0	1.0
CW42-018	Uranium-238	10.80	351.0	2.00	pCi/g	0.0	1.0

Location	Analyte	Result	Wrw	Background	Unit	Startdepth	Enddepth
CW42-017	Americium-241	0.71	76.0	0.02	pCi/g	0.0	1.0
CW42-017	Plutonium-239/240	2.41	50.0	0.07	pCi/g	0.0	1.0
CW42-017	Uranium-234	4.16	300.0	2.25	pCi/g	0.0	1.0
CW42-017	Uranium-238	20.60	351.0	2.00	pCi/g	0.0	1.0

Figure 2
Trenches T-3 and T-4
Confirmation Sampling Results
Greater Than Background Means
Plus Two Standard Deviations

KEY

- ○ Sampling location with radionuclide activity greater than WRW AL
- ● Sampling location with radionuclide activities less than WRW ALs
- ▭ Trench

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50 0 50 Feet

Scale = 1:1,200

State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD 27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Date: 12.02.2004

Prepared by: RADMS

Prepared for: KAISER•HILL COMPANY

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No Longer Representative Sampling Location

Sampling Location CW42-009 was removed during the hot spot remediation, and therefore, is no longer representative. Data for this sampling location have been marked as such in the Soil Water Database so that they will not be used in the Sitewide Comprehensive Risk Assessment (CRA) and other Site analyses.

Conclusion

As a result of the accelerated action activities, an NFAA is justified as follows:

- Residual surface soil radionuclide activities are less than RFCA WRW ALs (DOE et al 2003).
- Subsurface soil in the area is not subject to significant erosion (Figure 1 of RFCA), and residual subsurface soil radionuclide activities are less than RFCA WRW ALs (DOE et al 2003).

Residual contamination will be further evaluated in the Sitewide CRA and the Accelerated Action Ecological Screening Evaluation.

Approval of this NFAA Addendum constitutes regulatory agency concurrence that Trenches T-3 and T-4 are NFAA sites. This information and NFAA determination will be documented in the Fiscal Year 2005 Historical Release Report. This addendum will be submitted to the Comprehensive Environmental Response, Compensation, and Liability Act Administrative Record for permanent storage 30 days after being provided to the Colorado Department of Public Health and Environment and/or U.S. Environmental Protection Agency, Region VIII.

References

DOE, 2003a, No Further Accelerated Action Justification For Trenches T-3 And T-4, Rocky Flats Environmental Technology Site, Golden, Colorado, May.

DOE, 2003b, Buffer Zone Sampling and Analysis Plan FY04 Addendum #BZ-04-02, Rocky Flats Environmental Technology Site, Golden, Colorado, November.

DOE, 2003c, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology Site, Golden, Colorado. June.

DOE, CDPHE and EPA, 2003, Modifications to the Rocky Flats Cleanup Agreement Attachment, U.S. Department of Energy, Colorado Department of Public Health and Environment, and U.S. Environmental Protection Agency, Rocky Flats Environmental Technology Site, Golden, Colorado, June.

APPENDIX A

CORRRESPONDENCE

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
ER REGULATORY CONTACT RECORD

Date/Time: September 2, 2004

Site Contact(s): DOE: Norma Castaneda
K-H: Lee Norland
K-H Team: Susan Serreze

Phone: 303/966-5223

Regulatory Contact: CDPHE: Dave Kruchek, Harlan Ainscough, Elizabeth Pottorff
EPA: Sam Garcia, Larry Kimmel

Phone: 303/692-2035-CDPHE
303/

Purpose of Contact: IHSS Group 900-12 Sampling.

Discussion

Additional samples will be collected as follows in accordance with BZSAP Addendum 04-02:
Trench 3 – 3 biased samples along the length of the trench;
Trench 4 – 3 biased samples along the length of the trench;
Trench 5 – 2 biased samples along the length of the trench;
Trench 10 – 2 biased samples along the length of the trench; and
Trench 11 – 3 biased samples along the length of the trench.
Samples will be collected to 2.5 feet (A and B intervals) and will be analyzed for radionuclides.

Contact Record Prepared By: Susan Serreze

Required Distribution:

M. Aguilar, USEPA
S. Bell, DOE-RFFO
J. Berardini, K-H
B. Birk, DOE-RFFO
L. Brooks, K-H ESS
L. Butler, K-H RISS
G. Carnival, K-H RISS
N. Castaneda, DOE-RFFO
C. Deck, K-H Legal
S. Gunderson, CDPHE
R. McCallister, DOE-RFFO
J. Mead, K-H ESS
S. Nesta, K-H RISS
L. Norland, K-H RISS
K. North, K-H ESS
E. Pottorff, CDPHE
A. Primrose, K-H RISS
R. Schassburger, DOE-RFFO
S. Serreze, K-H RISS
D. Shelton, K-H ESS

Additional Distribution:

H. Ainscough, CDPHE
J. Walstrom, K-H RISS

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
ER REGULATORY CONTACT RECORD

Date/Time: 10/13/04

Site Contact(s): Mike Keating
Phone: 303.966.4815

Regulatory Contact: Larry Kimmel
Phone: Harlen Ainscough

Agency: US EPA/ CDPHE

Purpose of Contact: T-4 Hot Spot Remediation

Discussion
This contact record is to document approval to implement the excavation of the T-4 hot spot. Coordinates and field location of the hot spot will be verified prior to excavation. The excavation will be 5'x5'x6" centered on the hot spot. Confirmation samples will be collected from the bottom of the excavation (center) and from each of the four sides immediately outside of the excavation. Based on the gamma spec field screen results, the sample with the highest concentration will be sent to the gamma spec lab. If confirmation samples indicate soil concentrations greater than the AL, additional soil excavation will occur and the additional excavation will be sampled.

Contact Record Prepared By: Mike Keating, 903 Project Manager

---

Required Distribution:

M. Aguilar, USEPA
S. Bell, DOE-RFFO
J. Berardini, K-H
B. Birk, DOE-RFFO
L. Brooks, K-H ESS
M. Broussard, K-H RISS
L. Butler, K-H RISS
G. Carnival, K-H RISS
N. Castaneda, DOE-RFFO
C. Deck, K-H Legal
S. Gunderson, CDPHE
M. Keating, K-H RISS
L. Kimmel, USEPA
D. Kruchek, CDPHE
D. Mayo, K-H RISS
R. McCallister, DOE-RFFO
J. Mead, K-H ESS
S. Nesta, K-H RISS
L. Norland, K-H RISS
K. North, K-H ESS
E. Pottorff, CDPHE
A. Primrose, K-H RISS
R. Schassburger, DOE-RFFO
S. Serreze, K-H RISS
D. Shelton, K-H ESS
C. Spreng, CDPHE
S. Surovchak, DOE-RFFO
K. Wiemelt, K-H RISS
C. Zahm, K-H Legal

Additional Distribution:

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
ER REGULATORY CONTACT RECORD

Date/Time: 10/18/04

Site Contact(s): Mike Keating
Phone: 303.966.4815

Regulatory Contact: Sam Garcia
Phone: Harlen Ainscough

Agency: US EPA/ CDPHE

Purpose of Contact:

Discussion
Confirmation samples from T-4 hot spot were as follows:

CW42-016	0.0 pCi/g Am
CW42-017	0.0 pCi/g Am
CW42-018	3.5 pCi/g Am
CW42-019	0.0 pCi/g Am
CW42-020	0.0 pCi/g Am

All samples will be sent off site for alpha spec analysis.
We will backfill with clean on site soil.

Contact Record Prepared By: Mike Keating, PE, Project Manager

---

Required Distribution:

M. Aguilar, USEPA
S. Bell, DOE-RFFO
J. Berardini, K-H
B. Birk, DOE-RFFO
L. Brooks, K-H ESS
M. Broussard, K-H RISS
L. Butler, K-H RISS
G. Carnival, K-H RISS
N. Castaneda, DOE-RFFO
C. Deck, K-H Legal
S. Gunderson, CDPHE
M. Keating, K-H RISS
L. Kimmel, USEPA
D. Kruchek, CDPHE
D. Mayo, K-H RISS
R. McCallister, DOE-RFFO
J. Mead, K-H ESS
S. Nesta, K-H RISS
L. Norland, K-H RISS
K. North, K-H ESS
E. Pottorff, CDPHE
A. Primrose, K-H RISS
R. Schassburger, DOE-RFFO
S. Serreze, K-H RISS
D. Shelton, K-H ESS
C. Spreng, CDPHE
S. Surovchak, DOE-RFFO
K. Wiemelt, K-H RISS
C. Zahm, K-H Legal

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Colorado Department of Public Health and Environment
Hazardous Materials and Waste Management Division

INTEROFFICE COMMUNICATION

To: Steve Gunderson

From: Harlen Ainscough

Date: Revised, August 16, 2004

Subject: Preliminary Review and Recommendation, East Trenches (T3 –T13), Near-Surface Soil Sampling

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The recent discovery of high plutonium levels in near-surface soils (backfill) overlying waste in Trenches T6 and T8 prompted a review of available near-surface soils data. In general, data are insufficient for the near-surface intervals. To the limited extent the near surface intervals may have been evaluated, the adequacy of spatial coverage is questionable. Additional work by the facility, with concurrence from EPA and the Division, appears necessary to determine an acceptable sample frequency in response to T-6 and T-8. Listed below are trench specific considerations that provide a basis for further near-surface soil sampling:

Trench 3 and 4: The Proposed Action Memorandum (PAM) for the Source Removal at Trenches T-3 and T-4, IHSSs 110 and 111.1, dated 3/28/1996, indicates that boreholes drilled in T-3 and T-4 were for the purpose of characterizing subsurface contamination, not surface or near surface contamination. A comprehensive review for data on the cover soils is recommended.

Although previously excavated, the cover soils are believed to have been stockpiled then placed back in the same relative position above the treated trench wastes (C. Spreng). The PAM indicates that contaminated soil and debris would be removed and processed using thermal desorption. Restoration to a comparable undisturbed condition was also proposed. The Completion Report for the Source Removal at Trench T-3 and T-4, dated 9/23/96, neither conforms nor refutes this scenario.

Additionally the Field Sampling Plan for the Source Removal at Trenches T-3 and T-4, IHSSs 110 and 111.1, dated 4/9/96, indicated attempts would be made to segregate soil from clean debris in an attempt to minimize unnecessary treatment. The backfill soils apparently were not cored or analyzed and were considered clean for both volatile and radionuclide contamination. Consequently, if segregating soil from debris was intended, then separating clean backfill soil from contaminated soil would also be expected to avoid unnecessary treatment.

Thus, if the near-surface soils were in fact stockpiled, then placed back into the same relative position, data may not be available to confirm that the levels are below WRWs. However, if covers soils were not segregated, data in the Completion Report suggest that radionuclide levels met the WRWs.

Trench 5: Only two borings were actually completed within the physical limits of the trench. Given the sample numbering system in use at the time, and the sampling protocol for the other trenches, it is unlikely that either boring provided data for the 0.0-0.5', A-interval, or the 0.5.2.5', B-interval. (The facility can verify or refute the expectation.)

Trench 6: The final limits of recent soil excavation must be considered in determining whether further near-surface sampling may be warranted between the excavation limits and trench limits. (A sample collected approx. ten feet from the west end of the trench showed 9.0 pCi/g Pu239/240 in the A-interval, 2.3 in the B-interval and 0 in the C-interval. The hot spot sample near the center of the eastern half of the trench, where excavation began, showed 238 pCi/g plutonium for the A-interval, 196 for the B-interval and 123 for the C-interval.)

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Trench 7: Three boring were completed within the trench; neither covered the A or B intervals. Two of the three borings, however, showed 1486 and 2450 pCi/g plutonium from the 3-5 foot interval. The third boring showed a trace of plutonium from 3-8 feet. (Perhaps, the elevated values reflect contaminated backfill soils opposed to trench wastes.)

Trench 8: The final limits of recent soil excavation must be considered in determining whether further near-surface sampling may be warranted between the excavation limits and trench limits. (A sample collected approx. ten feet from the west end of the trench showed no plutonium in the A through D intervals. The hot spot sample near the center of the trench, where excavation began, showed 85 pCi/g plutonium for the A-interval, 756 for the B-interval and 695 for the C-interval.)

Trench 9A: Only one sample (CY40-002), approximately 50 feet from the west end of the pit has been sampled across the A and B intervals (10 pCi/g A-interval, 4 B-interval, 0 C interval). A second sample has been agreed upon for placement 50 feet from the east end. However, given the contamination over T-6 and T-8 the coverage may still be inadequate.

Trench 9B: Two samples (CX40-003 & 004) are within this trench boundary and cover the A and B intervals. The plutonium WRW value (50 pCi/G) was not exceeded. The highest value was 39 pCi/g from A-interval of westernmost location and non-detect for all intervals of the easternmost location. Additional sampling appears to be warranted, based on spatial coverage, but further work is necessary to support or refute the need.

Trench 10: Three borings were completed within the trench boundary. As with Trench 5, the A and B intervals probably were never analyzed.

Trench 11: Three borings were completed within the trench boundary. As with Trenches 5 and 10, the A and B intervals probably were never analyzed. Additionally, the spatial coverage is poor even if the A and B intervals were collected.

Trench 12: This trench has been addressed either partially or fully under the 903 Outer Lip Area activities. The east bound lane of the east access road was recently removed and underlying soils excavated. Confirmation samples taken immediately adjacent to the trench show less than the WRW for plutonium at depths of 0.9 and 1.3 feet respectively. Neither of the confirmation samples CV40-027 & 028 were within the trench boundary or for the entire B-interval. Additional boreholes, series CV40 and CW40 prior to September 2003, indicate good spatial coverage and should be checked for A & B interval data.

Trench 13: This trench is largely beneath the west bound lane of the eastern access road. Additional boreholes, series CV41 and CW41prior to September 2003, indicate good spatial coverage over the western half of the trench and should be checked for A & B interval data. Additional borings, through the pavement to sample the A and B intervals, may be appropriate for the eastern portion.

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