Hanford Facility RCRA Permit Modification Notification Forms

Part V, Closure Unit Group 34

Outside Storage Area-A

Index

Page 2 of 3: Description of Modification

Page 3 of 3 Revision Instructions

Submitted by Co-Operator:

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Hanford Facility RCRA Permit Modification Form	
Unit: ***Outside Storage Area-A***	Permit Part ***Part V, Closure Unit Group 34***

Description of Modification:

Addendum H Closure Plan

Updated Table HA-9 “Analytical and Performance Requirements” - added Barium, Cadmium, Lead, and Selenium under SW-846 Method 6020.

Revised Table HA-9 footnote: [1]*Method 6020 may be used in addition to method 6010 for barium, cadmium, lead, and selenium. However, both methods are not required.*

WAC 173-303-830 Modification Class	Class 1	Class [1]1	Class 2	Class 3
Please mark the Modification Class:		X		

Enter relevant WAC 173-303-830:

(4)(d)(ii)(A) Class 1 modifications apply to minor changes that keep the permit current with routine changes to the facility or its operation.

Modification Approved: ☒ Yes ☐ No

Reviewed by Ecology:

E. J. Holbrook 2026.06.16 15:00:28 -07'00'

E. J. Holbrook — Date

Revision Instructions:

Revise Addendum H to incorporate the redlined changes to:

Addendum H Table H-A9

Table HA-9 Analytical and Performance Requirements

CAS Number	Waste Code(s)	Analyte	Closure Performance Standard		PQL[a] (mg/kg)
			Value (mg/kg)	Basis	
SW-846 Method 6010			**Accuracy Requirement ±20% Recovery[b] Precision Requirement ≤35 RPD[c]**		
7440-38-2	D004	Arsenic[d]	2.00E+01	Ecology, 2013	1.00E+01
7440-39-3	D005	Barium	1.32E+02	Background	5.00E+00
7440-43-9	D006	Cadmium	6.90E-01	Groundwater protection	5.00E-01
7439-92-1	D008	Lead	5.00E+01	Ecological – Plants	5.00E+00
7782-49-2	D010	Selenium	1.00E+01	PQL	1.00E+01
7440-22-4	D011	Silver	2.00E+00	Ecological – Plants	1.00E+00
SW-846 Method 6020!			**Accuracy Requirement ±20% Recovery[b] Precision Requirement ≤35 RPD[c]**		
7440-38-2	D004	Arsenic[d]	2.00E+01	Ecology, 2013	1.00E+01
7440-39-3	D005	Barium	1.32E+02	Background	5.00E+00
7440-43-9	D006	Cadmium	6.90E-01	Groundwater protection	5.00E-01
7439-92-1	D008	Lead	5.00E+01	Ecological - Plants	5.00E+00
7782-49-2	D010	Selenium	1.00E+01	PQL	1.00E+01
SW-846 Method 7196			**Accuracy Requirement ±20% Recovery[b] Precision Requirement ≤35 RPD[c]**		
18540-29-9	D007	Chromium (hexavalent)	5.00E-01	PQL	5.00E-01
SW-846 Method 7471			**Accuracy Requirement ±20% Recovery[b] Precision Requirement ≤35 RPD[c]**		
7439-97-6	D009	Mercury[e]	2.00E-01	PQL	2.00E-01
SW-846 Method 8260			**Accuracy Requirement ±30% Recovery[b] Precision Requirement ≤20 RPD[c]**		
67-64-1	F003	Acetone	2.90E+01	Groundwater protection	2.00E-02
71-43-2	D018, F005	Benzene	3.00E-02	Groundwater protection	5.00E-03
71-36-3	F003	n-Butyl alcohol (I-Butanol)	3.30E+00	Groundwater protection	2.50E-01
75-15-0	F005, (P022)	Carbon disulfide	4.10E+00	Groundwater protection	5.00E-03
56-23-5	D019, F001, F002, (U211)	Carbon tetrachloride	4.10E-02	Groundwater protection	5.00E-03

Table HA-9 Analytical and Performance Requirements

CAS Number	Waste Code(s)	Analyte	Closure Performance Standard		PQL[a] (mg/kg)
			Value (mg/kg)	Basis	

Screening levels considered when developing closure performance standards were drawn from the following:

- MTCA (WAC 173-340-740); Ecology, 2019 (May 2019) data tables are most recent). MTCA Method B values represent both carcinogen and noncarcinogen human health risk values from direct soil contact. The most conservative value of the two Method B published values will be used. Method A values are substituted when MTCA Method B values are not provided in the CLARC tables.
- MTCA (WAC 173-340-750) Method B. Values are listed for carcinogen and noncarcinogen levels that represent human health risk due to inhalation of vapors and dust.
- MTCA (WAC 173-340-747). Section 4 describes the fixed parameter three-phase partitioning model. Where applicable, these values were used. Values selected were from the 25°C vadose zone. If values were not listed for 25°C, values from the 13°C vadose zone were used.
- MTCA (WAC 173-340-7493). Values were taken from Table 749-3, including plants, biota, and wildlife.
- Background levels as published in ECF-HANFORD-11-0038 and DOE/RL-92-24. Background values were used at the 90th percentile of calculated Hanford Facility background values.
- Values taken from the above resources that fell below background levels were not considered.

[a]Highest allowable PQL will be defined in the individual laboratory contract with the CPCCo. In practice, the laboratory PQL values have the potential to be lower.

[b]Accuracy criteria for associated batch matrix spike percent recoveries. Evaluation based on statistical control of laboratory control samples is also performed. Precision criteria for batch laboratory replicate matrix spike analyses or replicate sample analyses.

[c]Precision is determined by the laboratory based on historical data or statistically derived control limits. Limits are reported with the data. Where specific acceptance criteria are listed, those may be used in place of statistically derived acceptance criteria.

[d]Arsenic – The Hanford Facility closure performance standard is 20 mg/kg based on a letter (Ecology, 2013) indicating that the Method A soil closure performance standard of 20 mg/kg can be used to define natural background levels when developing Method B soil closure performance standards for the Hanford Facility. One of the two methods (SW-846 6010 or 6020) may be used.

[e]Mercury – Equations 740-1 and 740-2 from WAC 173-340-740(3)(b) are used to calculate the MTCA Direct Contact Human Health soil closure performance standards. The MTCA human health direct contact soil closure performance standard for mercury is calculated to be 24 mg/kg.

[f]Xylenes – m-xylene and p-xylene elute from the analytical instrument at times too close to discern the individual analytical peaks for the two constituents and are reported as a combined value - m+p-xylene. The combined m+p-xylene analytical result will be compared against the individual closure performance standard for both m-xylene and p-xylene.

[g]Cresols – m-Cresol and p-Cresol elute from the analytical instrument at the same time and must be reported as a combined value - m+p-Cresol. The combined m+p-Cresol analytical result will be compared against the individual closure performance standard for both m-Cresol and p-Cresol.

[h]2-Ethoxyethanol – Due to the extremely short half-life of 2-ethoxyethanol (between 168 and 672 hr), its presence in soil samples is highly unlikely; therefore, samples will not be analyzed for this constituent. Degradation rates from Howard et al., 1991, *Handbook of Environmental Degradation Rates*, p.420.

[i]Formaldehyde - The short half-life of formaldehyde (between 1.6 and 9 hours in air/sunlight) means its presence in soil samples is highly unlikely. Therefore samples will not be analyzed for this constituent. Department of Health and Human Services, 1999, *Toxicological Profile for Formaldehyde*, Table 3-2.

[j]Hydrazine has an atmospheric half-life of less than 2 hr, and degradation in soil of 1.5 hr to 8 day, depending on concentration. Its presence in soil is highly unlikely, therefore, samples will not be analyzed for this constituent. Department of Health and Human Services, 1997, *Toxicological Profile for Hydrazine,* p. 130.

[k]2-nitropropane is not listed in the CLARC tables and will not be analyzed.

[l]Method 6020 may be used in addition to method 6010 for barium, cadmium, lead, and selenium. However, both methods are not required.

CAS = Chemical Abstracts Service
CLARC = Cleanup Levels and Risk Calculation
MTCA = Model Toxics Control Act
PQL = practical quantitation limit
RPD = relative percent difference
WAC = Washington Administrative Code

1