



Stormwater Permitting at Contaminated Sites

Larry Hook, P.E. | October 2024

Typical Contaminated Sites Include

- Gasoline stations, fuel tank sites and closed petroleum facilities
- Agricultural cooperatives
- Drycleaners
- Historic mining sites and related areas of impact
- Ammunition manufacturing facilities
- Clean-up and Redevelopment of Brownfields such as
 - Sunflower and Kansas Army Ammunition Plants
 - Farmland Nitrogen Facility
 - Petroleum Refinery Sites

Uncontaminated Sites – Primary Contaminant of Concern

- Sediment

Contaminated Sites – Primary Contaminants of Concern

- Sediment
- Other contaminants known or reasonably believed to be present
 - Petroleum hydrocarbons
 - Nitrates and Ammonia
 - Volatile Organic Compounds (VOCs)
 - Lead and heavy metals
 - Ammunition and reactive components
 - Pesticides, herbicides, etc.

What defines a “Contaminated Site”?

A site is considered contaminated when the soil or groundwater is known or reasonably believed to contain contaminants at concentrations that exceed the Kansas Risk-Based Standards or other appropriate water quality based Maximum Contaminant Level (MCL) limits or EPA maximum toxicity levels.

KDHE Risk-Based Standards documents are:

- RISK-BASED STANDARDS FOR KANSAS - RSK MANUAL, 6TH VERSION
- TOTAL PETROLEUM HYDROCARBONS - BER POLICY RS-041
- NITRATE, NITRITE, AND AMMONIA - BER POLICY RS-047

Risk-Based Standards documents are available online at:

kdhe.ks.gov/remediation

Exposure Paths for Risk-Based Limits

Soils

Maximum allowable contaminant concentration typically based on residential or non-residential “Soil-to-Groundwater” pathway.

Groundwater

Maximum allowable contaminant concentration typically based on residential or non-residential “Groundwater” pathway.

When is a stormwater permit required?

For uncontaminated construction sites:

A construction stormwater permit is required if a project that will disturb one acre or more or is part of a common plan of development that will disturb one acre or more.

For contaminated sites:

- A construction stormwater permit is typically required for a contaminated site even if a project will disturb less than one acre.
- Project owners are encouraged to contact KDHE for a determination of whether a construction stormwater permit coverage is required.

Individual NPDES Permit Requirement:

If the project owner treats stormwater, groundwater or wastewater (e.g., wheel wash) for contaminants (other than sediment), an individual NPDES permit is required for the treatment facility.

Clean, Uncontaminated Groundwater and Stormwater:

Can be discharged under the construction stormwater permit.

Notice of Intent (NOI) for Contaminated Sites

NOI submittal needs to include the following information:

- Locations, depths and concentrations of each contaminant of concern (COC)
- Management practices to be implemented to minimize the potential to discharge the COCs
- Name of the treatment or disposal facility receiving contaminated soils or water

Non-hazardous solid wastes may be disposed of at a Municipal Solid Waste landfill with a Special Waste Authorization.

Contaminated stormwater or groundwater may be hauled to a permitted wastewater treatment plant or sanitary sewer after obtaining facility permission.

Wastewater or soils meeting the definition of Hazardous Waste must be handled and disposed of in accordance with applicable requirements.

Infiltration into excavations is allowed.

Typical Contaminated Site Management Practices

- Provide a wheel wash facility with containment for spent wash water if there is potential for track-out of contaminated soils.
- Require earthen berms or similar run-on and runoff control measures around contaminated soil stockpiles and contaminated excavations.
- Do not allow discharge of contaminated groundwater or stormwater that contacts contaminated soil unless confirmed by laboratory analysis to meet established water quality standards.
- For reuse* of nitrogen contaminated soils, stormwater controls not generally required at land application sites unless soils stockpiled beyond growing season.

*Soils must be incorporated at agronomic rates else land application would fall under Industrial Stormwater General Permit prohibiting contaminated runoff.

Stormwater Permitting at Contaminated Sites

Industrial Stormwater Individual Permit

- Includes a supplemental condition that the facility must obtain general stormwater permit for construction activity
- Lists contaminants of concern and discharge permit limits. Some permits have different outfalls with contaminants of concerns that vary by areas within each drainage basin.



Construction Activity Stormwater General Permit

Covers a smaller defined area within the individual permit site.



- Includes a condition that no impacted stormwater may be discharged from the construction area.
- If impacted stormwater is requested to be discharged, then the facility must meet the industrial permit limits and conditions.
- References/coordinates with KDHE bureau of Remediation Soil Management Plan for the site.

Stormwater Permitting at Contaminated Sites

Site Characterization Table in Individual Permit or in Construction SWPPP with Contaminants of Concern, Action Levels and Water Quality Criteria

Table 18 Monitoring Parameters and Action Levels Captain Creek - in-stream monitoring point for Drainage Sector 18 CC18is: Latitude 38.88571, Longitude -95.03080					
<u>Active SWMU/AOC</u>		<u>Closed SWMU/AOC</u>			
AOC 10 Storage Magazines (C404671078)		SWMU 42 Temporary Sanitary Landfill (C404671045, 07-11-2016 long term monitoring)			
SWMU 16 Temp Waste Storage Magazines (C404671019)		SWMU 41 CCC Landfill (C404671044, 07-11-2016 long term monitoring)			
Chemical_Name	CAS_RN	Action Level (mg/L)	Source	Criteria	
Aldrin	309-00-2	0.003	KSSWQS	Aquatic Life - Acute	
Arsenic	7440-38-2	0.34	KSSWQS	Aquatic Life - Acute	
Chlordane	57-74-9	0.0024	KSSWQS	Aquatic Life - Acute	
Dieldrin	60-57-1	0.00024	KSSWQS	Aquatic Life - Acute	
Heptachlor	76-44-8	0.00052	KSSWQS	Aquatic Life - Acute	
Heptachlor epoxide	1024-57-3	0.00052	KSSWQS	Aquatic Life - Acute	
Lead	7439-92-1	0.015	KSSWQS	Public Health - Domestic Water Supply	
Mercury	7439-97-6	0.0014	KSSWQS	Aquatic Life - Acute	
pH	n/a	6 - 9	Permit		
Total Suspended Solids	n/a	100			
Notes:					
Action Levels are defined as trigger concentrations above which reassessment of erosion control measures and best management practices				Date	3/7/2024
KSSWQS - Kansas Surface Water Quality Standards				Revision Date:	
Permit - Kansas NPDES Pccmit No. 1-KS12-P008				Revision Date:	
n/a - Not available				Revision Date:	
Note: Table data taken from Table 8-2 and Table 9-1 of SWPPP Amendment 6, Revision 2, prepared by Burns & McDonnell dated August 30, 2013				Revision Date:	
Note: Table 8-2 data notes soil COCs - metals, mercury, and pesticides					

Thank you/Questions



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