

Tank Battery Closure Checklist

COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):		Pit Closure		Wellhead Closure		Flowline Closure	X	Partially Buried Vault Closure	
Site Name & COGCC Facility Number: HSR Kirkham Tudor T4N-R65W-S31 L01 Facility ID: 327866		Date: 10/20/2023					Remediation Project #: 30378		
Associated Wells: HSR-Kirkham 12-31A HSR-Tudor 11-31A		Age of Site: 1991					Number of Photos Attached: 11 Photos		
Location: (GPS coordinates of southeaster berm) 40.266193, -104.710852							Estimated Facility Size (acres): ~1 Acre		

General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)
Good housekeeping. General condition for all the on-site equipment looked fine. Waste management well maintained.

USCS Soil Type: SW	Estimated Depth to Groundwater: N/A
---------------------------	--

Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)
None observed

Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)
None observed

Tanks

Tank Contents	Oil							
Size (barrels)	300 BBLs							
Age	1991							
Construction Material	Steel							
Tank type (AST/DRV, etc.)	AST							
Visual Integrity of Tank	No Damage							
Condition of tank footings	No Impacts Noted							
PID Readings	High @ 2.4ppm							
Soil impacts present at valves or hatches?	No Impacts Noted							
PID Readings	N/A							
Sample taken? Location/ Sample ID#	40.2660428, -104.7107449 AST01@6.0'							
Photo Number(s)	Photo 1A							

Other observations regarding tanks:
 Tank removed prior to sampling event. An exceedance in pH and Arsenic was discovered at the above ground storage tank (AST01@6.0'). Refer to the inorganic soil chemistry table (Table 3) and metals in soil chemistry table (Table 4) for reference. Additionally, exceedances and pH and Arsenic were found in local background samples as well. Thus, these exceedance should be contributed to native soil conditions.

Separators

Separator size	UNK	UNK						
Vertical or Horizontal	Horizontal	Horizontal						
Age	1991	1991						
Soil impacts present at valves or hatches?	No Impacts Noted	No Impacts Noted						
PID Readings	High @ 0.0ppm	High @ 0.0ppm						
Sample taken? Location/ Sample ID#	40.2663231, -104.7108927 SEP01@3.5'	40.2662922, -104.7108773 SEP02@3.5'						
Photo Number(s)	Photo 2A	Photo 3A						

Other observations regarding separators
 Separators in good condition and no damage. An exceedance in Arsenic was discovered at both separator sample locations (SEP01@3.5' & SEP02@3.5'). Refer to the metals in soil chemistry table (Table 4) for reference. Additionally, exceedances in Arsenic were found in all local background samples as well. Thus, these exceedance should be contributed to native soil conditions.

Third Party Equipment

Type	Meter Shed	Meter Shed						
Age	1991	1991						

<i>Third Party Owner</i>	Unknown	Unknown							
<i>Removal Date</i>	Still On-site	Still On-Site							
<i>Sample taken? Location/Depth</i>	MET01@6.0"	MET02@6.0"							
<i>PID Readings</i>	High @ 0.0ppm	High @ 0.0ppm							
<i>Photo Number(s)</i>	Photo 5A	Photo 6A							

Other Facility Equipment

<i>Equipment type</i>	Combustion Unit	Combustion Unit			
<i>Equipment Condition</i>	No Damage	No Damage			
<i>Age</i>	1991	1991			
<i>Soil impacts</i>	No Impacts Noted	No Impacts Noted			
<i>PID Readings</i>	High @ 0.0ppm	High @ 0.0ppm			
<i>Sample taken? Location/Depth</i>	ECD01@6.0"	ECD02@6.0"			
<i>Photo Number(s)</i>	Photo 7A	Photo 8A			

Other observations regarding other facility or third party equipment:

Combustion Units removed prior to sampling event

Summary

<i>Was impacted soil identified?</i>	
No	Yes - less than 10 cubic yards Yes - more than 10 cubic yards
<i>Total number of samples field screened:</i> 4 Samples	<i>Total number of samples collected:</i> 22 Samples
<i>Highest PID Reading:</i> High at 2.4ppm (AST01@6.0")	<i>Total number of samples submitted to lab for analysis:</i> 18 Samples
<i>If more than 10 cubic yards of impacted soil were observed:</i>	
<i>Vertical extent:</i> N/A	<i>Estimated spill volume:</i> N/A
<i>Lateral extent:</i> N/A	<i>Volume of soil removed:</i> N/A
<i>Is additional investigation required?</i> N/A	
<i>Was groundwater encountered during the investigation?</i>	
No	Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils
<i>Measured depth to groundwater:</i> N/A	<i>Was remedial groundwater removal conducted?</i> Yes No
<i>Date Groundwater was encountered:</i> N/A	<i>Commencement date of removal:</i> N/A
<i>Sheen on groundwater?</i> Yes No	<i>Volume of groundwater removed prior to sampling:</i> N/A
<i>Free product observed?</i> Yes No	<i>Volume of groundwater removed post sampling:</i> N/A
<i>Total number of samples collected:</i> N/A	<i>Total Volume of groundwater removed:</i> N/A
<i>Total number of samples submitted to lab for analysis:</i> N/A	

Buried or Partially Buried Vessel Closure Checklist

COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):		Pit Closure		Wellhead Closure		Flowline Closure	X	Tank Battery Closure	
Site Name & COGCC Facility Number: HSR Kirkham Tudor T4N-R65W-S31 L01 Facility ID: 327866		Date: 10/20/2023					Remediation Project #: 30378		
Associated Wells: HSR-Kirkham 12-31A HSR-Tudor 11-31A		Age of Site: 1991					Number of Photos Attached: 5 Photos		
Location: (GPS coordinates of vault or southeastern tank berm for multiple)							40.2660845, -104.7107764		Estimated Facility Size (acres): ~1 acre

General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)
Good housekeeping. General condition for all the on-site equipment looked fine. Waste management well maintained.

USCS Soil Type: **SW** Estimated Depth to Groundwater: **N/A**

Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)
None observed

Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)
None observed

Buried or Partially Buried Vessels

Tank Contents	Produced Water							
Size (barrels)	<100 BBLs							
Age	1991							
Construction Material	PBV Concrete							
Visual Integrity of Tank	No Damage							
Condition of tank	No Impacts Noted							
PID Readings	High @ 0.2ppm							
Condition of Duplex Line	No Damage							
PID Readings	N/A							
Sample taken? Location/Sample ID#	PWVB01 @ 6.0' PWVE01 @ 5.0'							
Photo Number(s)	Photo 4A-4E							

Other observations regarding partially buried vessels: Dumphines were not trenched. The dunpline tie-in for the separators was at sample location SEP01@3.5' and the dunpline tie-in point to the tanks was at the east sidewall of the produced water vault excavation. An exceedance in Arsenic was discovered at the floor and eastern sidewall of the PWV excavation, and an exceedance in barium was discovered at the eastern sidewall of the PWV excavation. Refer to the metals in soil chemistry table (Table 4) for reference. Additionally, exceedances in Arsenic were found in local background samples as well. Thus, these exceedance should be contributed to native soil conditions.

Summary

Was impacted soil identified?		No	Yes - less than 10 cubic yards	Yes - more than 10 cubic yards
Total number of samples field screened:		3 samples		Total number of samples collected: 5 samples
Highest PID Reading:		High @ 0.2ppm (PWVB01 @ 6.0')		Total number of samples submitted to lab for analysis: 2 samples
If more than 10 cubic yards of impacted soil were observed:				
Vertical extent:		N/A		Estimated spill volume: N/A
Lateral extent:		N/A		Volume of soil removed: N/A
Is additional investigation required? N/A				
Was groundwater encountered during the investigation?		No	Yes - not impacted or in contact with impacted soils	Yes - groundwater impacted and/or in contact with impacted soils
Measured depth to groundwater:		N/A		Was remedial groundwater removal conducted? Yes No
Date Groundwater was encountered:		N/A		Commencement date of removal: N/A
Sheen on groundwater?		Yes	No	Volume of groundwater removed prior to sampling: N/A
Free product observed?		Yes	No	Volume of groundwater removed post sampling: N/A
Total number of samples collected:		N/A		Total Volume of groundwater removed: N/A
Total number of samples submitted to lab for analysis:		N/A		