

Waste Analysis Plans with a focus on Safety-Kleen

Presented by:

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Waste Analysis is key to RCRA C success

Sound WA is necessary from cradle to grave...

- Accurate waste profiles by generators
- “Front-end” facilities (i.e., storage facilities) must know what they are accepting
- “Back-end” facilities (i.e., treatment/disposal facilities) must know what they are accepting

Presentation Overview

Vermont has two commercial HW storage facilities: Safety-Kleen (SK) and ENPRO Services of Vermont (ENPRO)

- ENPRO waste analysis plan (WAP) overview
- SK enforcement case related to “oil/water” mixtures
- Current SK WAP and what we anticipate changing
- Revisions to the Vermont Hazardous Waste Management Regulations (VHWMR) regarding used oil/water mixtures

ENPRO

- Permitted HW storage previously o/o by Heritage Environmental Services (HES)
- 2003 enforcement case (\$240K) against HES, primarily for WA violations; facility shuttered
- Facility purchased by ENPRO in 2007;
- HW facility permit transferred to ENPRO; WAP revised as condition of permit transfer

The ENPRO WAP – Key Elements

- All wastes received are subject to WAP requirements, including “non-hazardous” waste!
- WAP includes:
 - Waste acceptance and receiving procedures
 - A tiered approach to screening, sampling, and analysis
 - Recordkeeping requirements

The ENPRO WAP – Key Elements (cont.)

- All wastes received are opened, screened (Level 1 Analysis), and compared to their profiles
- Approximately every 500th container is subject to thorough analysis by an independent laboratory (Level 3 Analysis)
- Any waste that flunks Level 1 analysis is subject to Level 3 requirements (Level 2 Analysis)
- Specific records are required to document these activities

Profiles

- A profile is required for each waste stream received
- For consistency, a facility-specific profile form is used
- Each profile must be reviewed/approved by ENPRO personnel w/ proper training prior to initially accepting waste (i.e., acceptance)
- Waste profiles must be verified/certified by the generator annually

Profiles (cont.)

- The waste generating process and materials must be described
- Use of “generator knowledge” must be supported (e.g., product SDS information)

Required Level 3 Records

- The chain of custody for sample
- All applicable analysis/test results and lab reports, including the results of Level 1 screening
- Incoming manifest
- Waste profile
- If applicable, documentation of any waste profile discrepancies identified by Level 3 (or Level 2) analysis...

Required Level 3 Records (cont.)

- If applicable, correspondence with generator related to resolving a profile discrepancy
- If applicable, correspondence with generator and Vermont Waste Management Division related to resolving a manifest discrepancy
- If applicable, a copy of the revised profile
- The completed Level 2/Level 3 QA/QC checklist

The ENPRO WAP is working!

- 2009 inspection revealed that 31% of wastes subject to Level 3 analysis were not accurately described by their corresponding profiles (as documented by required records)
- Subsequent inspections have revealed varying percentages of profile accuracy
- 2020 inspection revealed that 34% of waste profiles required revision

Vermont “Used Oil” Case Study

Safety-Kleen’s Vacuum Services Program

*“Safety-Kleen's North American fleet of over 220 vacuum trucks will pump out liquid, sludge and solids at your facilities, while **ensuring proper disposal of your waste** through our industry leading service.”*

A two-part story...

- 2016 CEI of permitted Safety-Kleen HW storage facility
- 2017 shipment of **comingled** vacuum waste from the facility

Background

- Safety-Kleen's “non-hazardous” Vacuum Services Program operates nationwide
- In Vermont, collected waste is ***comingled twice***, first in the truck, then in an (unpermitted) “frac tank”



What we had thought..

The Vermont facility has been managing “vac waste” for many years; we had always been told:

- “It’s just **non-hazardous** oily water”
- It’s generated through maintenance of floor drains, sumps, and oil/water separators
- Non-hazardous sludge is also generated on occasion

Turns out...

- Vac waste is accepted from all business sectors
- Sectors (customers) divided into either “Automotive” *or* “Industrial” categories

- Examples:

Automotive	Industrial
<ul style="list-style-type: none">• Auto Maintenance, Retail• Marine Transportation• Airlines, Railroads• Utility – Electric Dist.• Colleges & Universities• Gas, Oil & Petroleum Dist.• Gov’t – Federal Defense	<ul style="list-style-type: none">• Chemical Manufacturing• MFG – Furniture, Machine• Mining & Minerals• Printing• Pharmaceuticals• Labs – Medical/Non-med• Dry Cleaners

Automotive vs. Industrial Waste

Automotive Waste

- All profiles based on “generator knowledge” and “historical analysis of oil/water separator waste”
- Profiles are created by Safety-Kleen, but “approved” by customers

Industrial Waste

- One-time “prequalification” sample required



Part 1: The Facility Inspection

- June 8, 2016, Compliance Evaluation Inspection
- During inspection, observed “Retains” storage cabinet...



Retain Samples

- Wastes varied in:
 - Color
 - Opaqueness
 - Number of phases
 - Viscosity

Retain Samples

- Requested waste profiles
- Facility manager segregated profiles into “Automotive” and “Industrial” customers
- Most samples “Automotive”
- 12 samples from “Industrial” customer – requested copies of prequalification results



Prequalification Sample Results

- 2 of 12 = HW
- 6 of 12 were 98% (or more) aqueous
- All results had DL for TC constituents above regulatory limits

Profile ID: 3187270
Lab ID: 2365217

General Electric
210 Columbian Ave
Rutland, VT 05701

PHASE DESCRIPTION

	Phase Description	% by Appearance
Phase 1	ORGANIC	3.00
Phase 2	AQUEOUS	94.00
Phase 3	SLUDGE	3.00

GENERAL INFORMATION

FLAMMABILITY AT 140 F	NO FLASH
FLAMMABILITY AT 200 F	NO FLASH
FLAMMABILITY AT 73 F	NO FLASH
PH	7.000
RESIDUE DESCRIPTION	OIL, WATER
Comments:	FLAMMABILITY AT 200 F: NO FLASH

HALOGENATED VOLATILE ORGANIC COMPOUNDS (HVOC)

TRICHLOROETHANE, 1,1,1- (CLASS I)	<40 MG/KG	
TRICHLOROETHANE, 1,1,2-	<40 MG/KG	
CARBON TETRACHLORIDE (CLASS I)	<20 MG/KG	0.5
TRICHLOROFLUOROMETHANE	<20 MG/KG	
TRICHLOROTRIFLUOROETHANE	<40 MG/KG	
TRICHLOROBENZENE, META-	<40 MG/KG	
METHYLENE CHLORIDE	<100 MG/KG	
DICHLOROBENZENE, ORTHO-	<40 MG/KG	
DICHLOROBENZENE, PARA-	<40 MG/KG	7.5
PERCHLOROETHYLENE	<40 MG/KG	0.7
TRICHLOROETHYLENE, 1,2,4-	<40 MG/KG	
TRICHLOROETHYLENE, 1,2,3-	<40 MG/KG	
TRICHLOROETHYLENE	<40 MG/KG	0.5

METALS ANALYSIS

SILVER (D011)	1.0	MG/KG	5
ALUMINUM	32	MG/KG	5
ARSENIC (D004)	<4.0	MG/KG	5
BARIUM (D005)	6.6	MG/KG	100
BERYLLIUM	<0.10	MG/KG	
CADMIUM (D006)	<0.40	MG/KG	1
COBALT	<1.2	MG/KG	
CHROMIUM (D007)	72	MG/KG	5
COPPER	4.1	MG/KG	
IRON	470	MG/KG	
MERCURY (D009)	<4.0	MG/KG	0.2
MAGNESIUM	59	MG/KG	
MANGANESE	3.1	MG/KG	
NICKEL	160	MG/KG	
PHOSPHORUS	190	MG/KG	
LEAD (D008)	210	MG/KG	5
ANTIMONY	24	MG/KG	
SELENIUM (D010)	<8.1	MG/KG	1
SILICON	74	MG/KG	
TITANIUM	21	MG/KG	
THALLIUM	<12	MG/KG	
VANADIUM	1.5	MG/KG	
ZINC	14	MG/KG	

other 8260 constituents?



PART 2: The Shipment

- 5,090-gallon shipment rejected by Environmental Recovery Corp. (PA)
- ERC screening revealed pH of 12.63...
- Shipped from ERC as HW (D002) to CT
- Then shipped as HW (D002 *and* **D008**) to Baltimore
- 4,250 gallons of waste remained *frozen* in unpermitted frac tank (VT)

DESIGNATED FACILITY Environ Recovery Corp of PA			SHIPPER Safety-Kleen Systems, Inc		
FACILITY EPA ID # PAD987266749			SHIPPER EPA ID # VT0000791699		
ADDRESS 1076 Old Manheim Pike			ADDRESS 23 West Second Street		
CITY Lancaster		STATE PA	ZIP 17601	CITY Barr	
				STATE VT	ZIP 05641
CONTAINERS NO. & SIZE	TYPE	HM	DESCRIPTION OF MATERIALS		TOTAL QUANTITY
	11		NON DOT REGULATED MATERIALS, (OIL, WATER)		05090
					UNIT WT/VOL G

9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
		No.	Type					
X	UN3266, WASTE CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S., (SODIUM HYDROXIDE), 8, PG III	001	TT	05090	G	0002	VT02	

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
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						0008		

Screening results

- Requested screening results for **103 shipments** from the Vermont facility in prior 12 months
- Received results for 13 most recent shipments to ERC
- 4 shipments of 13 (including pH 12.63 shipment) had pH over 11.5 (**comingled twice!**)
- 6 shipments of 13 had pH over 10 (**comingled twice!**)
- No ERC screening results for metals

2/11/19 Consent Order

Violations:

- Failure to make a proper HW determination
- Failure to develop and follow a written WAP for the vacuum services waste
- Failure to comply with the LDR
- Failure to prevent HW from freezing
- Failure to manage HW in a permitted tank system and comply w/ tank system requirements
- Failure to maintain and operate the facility in a manner to minimize the possibly of releases
- Storing HW that the facility is not permitted to accept
- Transporting HW without the use of a uniform HW manifest and using an unpermitted transporter

You can't make this stuff up...

- February 6, 2019, CEI at SQG (Printer)
- Inspector observed drums labeled/marked “Hazardous Waste”
- Generator: *“Safety-Kleen picks up using that big vac truck thing...”*
- Profiled by SK (“knowledge”) as non-hazardous waste
- Subsequent independent lab analysis results: pH = 13, Silver = 8.1 mg/L TCLP (and Lead = 3.2 mg/L TCLP)



WAP in Current SK Permit

- Permit renewal in process
- Existing WAP 346 pages!
- Lots of unnecessary redundancy w/ other parts of permit
- WAP only addresses annual recharacterization of “core waste”
- Identifies 11 waste streams subject to annual recharacterization

Annual Recharacterization

- Annual recharacterization evaluates samples of a “core waste” type from a variety of facilities across North America to create a profile (assign HW codes)
- Makes sense for “**closed-loop**” wastes from **specific processes**; does **not** make sense for other waste streams
- SK permit contact recently verified that only six waste streams are subject to AR...

Goals for Revised Permit and WAP

- Eliminate redundancy, use consistent terms
- Make permit clear, concise, and enforceable!
- “Core waste” = waste subject to annual recharacterization
- All other waste (non-core wastes) is either managed on a 10-day transfer basis, or subject to ENPRO-like WAP requirements

Planned revision of VT Used Oil Standards

Vermont proposed rule to require a hazardous waste determination be made on the aqueous phase of an oil/water mixture when the aqueous phase comprises over 50% of the overall waste volume

HW determination can be based on (supported) generator knowledge

Conclusions

- Pay attention to “non-hazardous” waste!
- When conducting inspections, look beyond what you’re “supposed” to look at
- WAPs for commercial TSDFs should address all waste received

QUESTIONS?

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