Application for a State Waste Discharge Permit to Discharge Industrial Wastewater to a Publicly-Owned Treatment Works (POTW)

DEPARTMENT OF ECOLOGY
State of Washington

This application is for a state waste discharge permit for a discharge of industrial wastewater to a publicly-owned treatment works (POTW) as required by Chapter 90.48 RCW and Chapter 173-216 WAC. It is designed to provide Ecology with information on pollutants in the waste stream, materials that may enter the waste stream, and the flow characteristics of the discharge.

Ecology may request additional information to clarify the conditions of this discharge. The applicant should reference information previously submitted to Ecology that applies to this application in the appropriate section.

SECTION A. GENERAL INFORMATION

1. Applicant Name: Stericycle Inc.

2. Facility Name: Stericycle - Morton
(if different from Applicant)

3. Applicant Mail Address: 20320 80th Ave S.
Street

Kent WA — 98032
City/State — Zip

4. Facility Location Address: 830 Westlake Ave
(if different from 3 above) Street

Morton WA — 98356
City/State — Zip

5. UBI No. 601-327 868

Sometimes called a registration, tax, "C," or resale number, the Unified Business Identifier (UBI) number is a nine-digit number used to identify persons engaging in business activities. The number is assigned when a person completes a Master Business Application to register with or obtain a license from state agencies. The Departments of Revenue, Licensing, Employment Security, Labor and Industries, and the Corporations Division of the Secretary of State are among the state agencies participating in the UBI program.

6. Latitude/longitude of the facility as decimal degrees (NAD83/WGS84):
46.555 N / 122.290 W

FOR OFFICE USE ONLY	**Check One:** New/Renewal ☐ Modification ☐		
Date Application Received _____	Date Fee Paid _____	Application/ Permit No. _____	Date Application Accepted _____

7. Person to contact who is familiar with the information contained in this application:

Jay Vance Name	Permitting Compliance Manager Title
801-971-2042 Telephone number	801 536-5891 Fax number

8. Check One:

☒ **Permit Renewal** (including renewal of temporary permits)

Does this application request a greater amount of wastewater discharge, a greater amount of pollutant discharge, or a discharge of different pollutants than specified in the last permit application for this facility? ☐ YES ☒ NO

For permit renewals, the current permit is an attachment, by reference, to this application.

☐ **Permit Modification**

☐ **Existing Unpermitted Discharge**

☐ **Proposed Discharge**

Anticipated date of discharge: _____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and/or imprisonment for knowing violations.

Signature*	11/12/2020 Date	Corporate Director of Compliance/Permitting Title

Al Burson
Printed Name

*Applications must be signed as follows: corporations, by a principal executive officer of at least the level of vice-president; partnership, by a general partner; sole proprietorship, by the proprietor. If these titles do not apply to your organization, the person who makes budget decisions for this facility must sign the application.

The application signatory may delegate signature authority for submittals required by the permit, such as monthly reports, to a suitable employee. You can delegate this authority to a qualified individual or to a position, which you expect to fill with a qualified individual. If you wish to delegate signature authority, please complete the following:

Jay Vance Signature of delegated employee	11/12/2020 Date	Permitting Compliance Manager Title or function at the facility

JAY VANCE
Printed name

SECTION B. PRODUCT INFORMATION

1. Briefly describe all manufacturing processes and products, and/or commercial activities, at this facility. Provide the applicable Standard Industrial Category (SIC) and the North American Industry Classification System (NAICS) Code(s) for each activity (see *North American Industrial Classification System*, 2007 ed.). You can find the 1997 NAICS codes and the corresponding 1987 Standard Industry Category (SIC) codes at (http://www.census.gov/epcd/naics/frames3.htm).

Description: Stericycle specializes in the collection, transportation, treatment and disposal of regulated medical waste. Stericycle collects regulated medical waste from generators that include hospitals, clinics, surgery centers, kidney centers, research centers and other such facilities. Medical waste consists of cultures and stocks, pathology waste, human blood and blood products, sharps, animal waste and spill material related to regulated medical waste.

The medical waste arrives at our Morton, WA facility for treatment via trailer in sealed/closed reusable containers or one-time use fiberboard boxes. The material is subjected to saturated steam sterilization (autoclave) technology to render the regulated medical waste non-infectious. The steam is generated on-site via a propane-fired boiler fed with softened water. Once the waste material is rendered non-infectious, it can then be disposed of in a sanitary landfill as solid waste. Re-usable containers, once emptied of their contents, are cleaned via automated tub washer and readied for reuse by our customers.

SIC 4212: Local trucking without storage
SIC 4953: Refuse systems

2. List raw materials and products used at his facility:

Type	RAW MATERIALS	Quantity
Grapes (Example)		*1,000 tons per year*
Water		200,000 gal/month (average)
Propane		14,000 gal/month (est. average)
Water softener salt, course		350 lbs/month (average)
Sodium bicarbonate		1000 lbs/month (average, est.)

Type	PRODUCTS	Quantity
Grape Juice(Example)		*300,000 gallons per year*
CESCO MG DEICER		125 lbs/month (average per year)
Clorox Bleach		30 gal/month (average)
ZEP X-111 - sodium hypochlorite sol		140 gal/month (average)
CESCO Protect 1043		50 gal/month (average, est.)

SECTION C. PLANT OPERATIONAL CHARACTERISTICS

1. For each process listed in B.1. that generates wastewater, list the process, assign the waste stream a name and an ID # and describe whether it is a batch or continuous flow.

Process	Waste Stream Name	Waste Stream ID#	Batch (B) or Continuous (C) Process
RMW washer	Tub wash waste water	TW1	/B/C
Autoclave (& assoc. process)	Autoclave waste water	AC1	B/C
Boiler	Boiler blow down (water)	BL1	C
Sharps washer	Tub wash waste water	TW2	B/C

2. On a separate sheet, produce a schematic drawing showing production processes, water flow through the facility, wastewater treatment devices and waste streams as named above. The drawing should indicate the source of intake water and show the operations contributing wastewater to the effluent. The treatment units should be labeled. Construct a water balance by showing average flows between intakes, operations, treatment units, and points of discharge to the POTW. (*See the example on page 16 of this application form.)*

3. What is the maximum daily wastewater discharge flow? 5500 gallons/day

   What is the maximum average monthly wastewater discharge flow (daily flows averaged over a month)? 115000 gallons/day

4. Describe any planned wastewater treatment improvements or changes in wastewater disposal methods, and the schedule for these improvements. *(Use additional sheets, if necessary and label as attachment C4.)*

   Stericycle is working toward approval to discharge WWTP effluent to Morton municipal POTW

5. If production processes are subject to seasonal variations, provide the following information. The combined value for each month should equal the estimated total monthly flow. Please indicate the proper flow unit by checking one of the following boxes:

☐ gallons per day ☐ gallons per month ☐ million gallons per month

Waste Stream ID#	MONTHS											
	J	F	M	A	M	J	J	A	S	O	N	D
No seasonal variation												
Estimated Total Monthly Flow (GPD)												

6. How many hours a day does this facility typically operate? 20

How many days a week does this facility typically operate? 5

How many weeks per year does this facility typically operate? 52

7. List all incidental materials, such as oil, paint, grease, solvents, and cleaners, that are used or stored on site (*list only those with quantities greater than 10 gallons for liquids and 50 pounds for solids).* For solvents and solvent-based cleaners, include a copy of the material safety data sheet and estimate the quantity used. (*Use additional sheets, if necessary, and label as attachment C.7.)*

Materials/Quantity Stored: Aluminum Sulfate 48% sol. – 55 gallons; Anionic Polymer – 380 gallons; Blue DEF (diesel exhaust fluid, urea, microbe nutrient) – 330 gallons; Calcium chloride – 100 lbs; Caustic soda (50%, sodium hydroxide, aq) – 320 gallons; CESCO Antifoam 1000 – 50 gallons; CESCO Clean Flow E2 – 110 gallons; CESCO De-icer – 1,500 lbs; CESCO M-35 (precipitant) – 55 gallons; CESCO PA75 (phosphoric acid, acidification) – 110 gallons; CESCO PF 852 (flocculant) – 25 gallons; CESCO Protect 1043 (ferric chloride) – 660 gallons; Clorox bleach – 50 gallons; Diatomaceous earth – 1250 lbs; Nalco Cascade Boiler Treatment - 75 gallons; Nalco Oxygen Scavenger - 100 gallons; Sodium bicarbonate (baking powder, pH adjustment) – 4250 lbs; Water softener salt, coarse (sodium chloride) – 2,000 lbs; ZEP X-111 – 150 gallons; Propane - 8,000 gallons.

SDSs are included as ATTACHMENT C.7.

		Yes	No
8.	Some types of facilities are required to have spill or waste control plans. Does this facility have:		
a.	A spill prevention, control, and countermeasure plan (40 CFR 112)?	☒	☐
b.	An Oil Spill Contingency Plan (chapter 173-182 WAC)?	☐	☒
c.	An emergency response plan (per WAC 173-303-350)?	☒	☐
d.	A runoff, spillage, or leak control plan (per WAC 173-216-110(f))?	☐	☒
e.	Any spill or pollution prevention plan required by local, state or federal authorities? If yes specify: SWPPP	☒	☐
f.	A solid waste control plan?	☒	☐
g.	A Slug Discharge Control Plan (40 CFR 403.8(f)(2)(v))?	☐	☒

SECTION D. WATER CONSUMPTION AND WATER LOSS

1. Potable water source(s):

☒ ☐ Public System (Specify) _____

☐ ☐ Private Well ☐ Surface Water

a. Water Right Permit Number: _____

b. Legal Description of Water Source

_____ ¼S, _____ ¼E, _____, Section, _____ TWN, _____ R

2. Potable water use

a. Indicate total water use____

Gallons per day (average) 6617

Gallons per day (maximum) 8400

b. Is water metered?

☒ YES ☐ NO

SECTION E. WASTEWATER INFORMATION

1. How are the water intake and effluent flows measured?

   Intake: Metered by City of Morton

   Effluent Software on WWT system

2. Describe the collection method for the samples analyzed below. (*i.e.*, grab, 24-hour composite). Applicants must collect grab samples (not composites) for analysis of pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, fecal coliform (including E. coli), and Enterococci (previously known as fecal streptococcus at § 122.26 (d)(2)(iii)(A)(3)),or volatile organics.

   Grab and Composite

3. Has the effluent been analyzed for any other parameters than those identified in question E.4.? ☐ YES ☒ NO
   If yes, attach results and label as attachment E.4. This data must clearly show the date, method and location of sampling.
   (Note: Ecology may require additional testing.)

4. Provide measurements or range of measurements for treated wastewater prior to discharge to the POTW for the parameters with an "X" in the left column. If you obtain the application from the internet, contact Ecology's regional office to see if testing for a subset of these parameters is permissible. All analyses (except pH) must be conducted by a laboratory registered or accredited by Ecology (WAC 173-216-125). If this is an application for permit renewal, provide data for the last year for those parameters that are routinely measured. For parameters measured only for this application, place the values under "Maximum." Report the values with units as specified in the parameter name or in the detection level.

   The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table unless Ecology approves an alternate method or the method used produces measurable results in the sample and EPA has listed it as an EPA approved method in 40 CFR Part 136. If the Permittee uses an alternative method as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

X	Parameter	Measurement Values			Number of Analyses	Analytical Method Std. Methods 19th,20th edition or EPA	Detection Limit/Quantitation Level
		Minimum	Maximum	Average			
	BOD (5 day)	15	760	216	49	SM 5210 B	/2 mg/l
	COD	328	1790	1062	48	SM 5220 D	/10 mg/l
	Total suspended solids	15	435	81	48	SM 2540 D	/5 mg/l
	Fixed Dissolved Solids		7280			SM 2540 E	
	Total dissolved solids		19.3			SM 2540 C	
	Conductivity (micromhos/cm)		13200			SM 2510 B	
	Ammonia-N as N		102			SM 4500-NH_3 C	/0.3 mg/L
	pH	6.7	8.6	7.8	48	SM 4500-H	0.1 standard units
	Fecal coliform (organisms/100 mL)		1100			SM 9221 E or 9222 D	
	Total coliform (organisms/100 mL)		>2419			SM 9221 B or 9222 B	
	Dissolved oxygen		5.9			SM 4500-O C/G	
	Nitrate + nitrite-N as N		0.028			SM 4500-NO_3 E	100 µg/L
	Total kjeldahl N as N		136			SM 4500-N_{org} C/E/FG	300 µg/l
	Ortho-phosphate-P as P		0.012			SM 4500-P E/F	10 µg/l
	Total-phosphorous-P as P		0.045			SM 4500-P E/P/F	10 µg/l
	Total Oil & grease	0	8.7	<5.0	48	EPA 1664A	1.4/5 mg/l
	NWTPH - Dx		710			Ecology NWTPH Dx	250/250 µg/l
	NWTPH - Gx		26			Ecology NWTPH Gx	250/250 µg/l
	Calcium		4710			EPA 200.7	10 µg/l
	Chloride		3800			SM 4500-Cl C	0.15 µg/l
	Fluoride		18.7			SM 4500-F E	.025/0.1 mg/l
	Magnesium		3280			EPA 200.7	10/50 µg/l
	Potassium		193000			EPA 200.7	700/ µg/l
	Sodium		241000			EPA 200.7	29/ µg/l
	Sulfate		303			SM 4500-SO_4 C/D	/200 µg/l
	Arsenic(total)		ND			EPA 200.8	0.1/0.5 µg/l

X	Parameter	Measurement Values			Number of Analyses	Analytical Method Std. Methods 19th,20th edition or EPA	Detection Limit/Quantitation Level
		Minimum	Maximum	Average			
	Barium (total)		107			EPA 200.8	0.5/2 µg/l
	Cadmium (total)		0.17			EPA 200.8	.05/.25 µg/l
	Chromium (total)		6.8			EPA 200.8	0.2/1 µg/l
	Copper (total)		97.7			EPA 200.8	0.4/2 µg/l
	Lead (total)		0.09			EPA 200.8	0.1/.5 µg/l
	Mercury (total) pg/L		140			EPA 1631E	0.2/0.5 pg/l
	Molybdenum(total)		11.5			EPA 200.8	0.1/0.5 µg/l
	Nickel(total)		38.1			EPA 200.8	0.1/0.5 µg/l
	Selenium (total)		ND			EPA 200.8	1/1 µg/l
	Silver (total)		2.24			EPA 200.8	.04/.2 µg/l
	Zinc (total)		40.7			EPA 200.8	0.5/2.5 µg/l

6. Does this facility use any of the following chemicals as raw materials or produce them as part of the manufacturing process, or are they present in the wastewater? ☒ YES ☐ NO

(*The number in the column next to the chemical name is the Chemical Abstract Service (CAS) reference number to aid in identifying the compound.*)

If yes, specify how the chemical is used and the quantity used or produced: Present in medical waste being autoclaved or chemical product used for cleaning/disinfecting containers. See Attachment E.8 for complete analytical testing.

METALS, CYANIDE & TOTAL PHENOLS			
Antimony, Total	7440-36-0	Nickel, Total	7440-02-0
Arsenic, Total	7440-38-2	Selenium, Total	7782-49-2
Beryllium, Total	7440-41-7	Silver, Total	7440-22-4
Cadmium, Total	7440-43-9	Thallium, Total	7440-28-0
Chromium (hex) dissolved	18540-29-9	Zinc, Total	7440-66-6
Chromium, Total	7440-47-3		
Copper, Total	7440-50-8	Cyanide, Total	57-12-5
Lead, Total	7439-92-1	Cyanide, Weak Acid Dissociable	
Mercury, Total	7439-97-6)	Phenols, Total	

PESTICIDES			
Aldrin	309-00-2	Endrin	72-20-8
alpha-BHC	319-84-6	Endrin Aldehyde	7421-93-4
beta-BHC	319-85-7	Heptachlor	76-44-8
gamma-BHC	58-89-9	Heptachlor Epoxide	1024-57-3
delta-BHC	319-86-8	PCB-1242	53469-21-9
Chlordane	57-74-9	PCB-1254	11097-69-1
4,4'-DDT	50-29-3	PCB-1221	11104-28-2
4,4'-DDE	72-55-9	PCB-1232	11141-16-5
4,4' DDD	72-54-8	PCB-1248	12672-29-6
Dieldrin	60-57-1	PCB-1260	11096-82-5
alpha-Endosulfan	959-98-8	PCB-1016	12674-11-2
beta-Endosulfan	33213-65-9	Toxaphene	8001-35-2
Endosulfan Sulfate	1031-07-8		

VOLATILE COMPOUNDS			
Acrolein	107-02-8		
Acrylonitrile	107-13-1	1,1-Dichloroethylene	75-35-4
Benzene	71-43-2	1,2-Dichloropropane	78-87-5
Bromoform	75-25-2	1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene)	542-75-6
Carbon tetrachloride	56-23-5	Ethylbenzene	100-41-4
Chlorobenzene	108-90-7	Methyl bromide (Bromomethane)	74-83-9
Chloroethane	75-00-3	Methyl chloride (Chloromethane)	74-87-3
2-Chloroethylvinyl Ether	110-75-8	Methylene chloride)	75-09-2
Chloroform	67-66-3	1,1,2,2-Tetrachloroethane	79-34-5
Dibromochloromethane	124-48-1	Tetrachloroethylene	127-18-4
1,2-Dichlorobenzene	95-50-1	Toluene (108-88-3)	
1,3-Dichlorobenzene	(541-73-1)	1,2-Trans-Dichloroethylene (Ethylene dichloride)	156-60-5
1,4-Dichlorobenzene	106-46-7	1,1,1-Trichloroethane	71-55-6
Dichlorobromomethane	75-27-4	1,1,2-Trichloroethane	79-00-5
1,1-Dichloroethane	75-34-3	Trichloroethylene	79-01-6
1,2-Dichloroethane	107-06-2	Vinyl chloride	75-01-4

ACID COMPOUNDS

2-Chlorophenol	95-57-8	4-nitrophenol	100-02-7
2,4-Dichlorophenol	120-83-2	Parachlorometa cresol (4-chloro-3-methylphenol)	59-50-7
2,4-Dimethylphenol	105-67-9	Pentachlorophenol	87-86-5
4,6-dinitro-o-cresol (2-methyl-4,6,-dinitrophenol)	534-52-1	Phenol	108-95-2
2,4 dinitrophenol	51-28-5	2,4,6-Trichlorophenol	88-06-2
2-Nitrophenol	88-75-5		

BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Acenaphthene	83-32-9	3,3-Dichlorobenzidine	91-94-1
Acenaphthylene	208-96-8	Diethyl phthalate	84-66-2
Anthracene	120-12-7	Dimethyl phthalate	131-11-3
Benzidine	92-87-5	Di-n-butyl phthalate)	84-74-2
Benzyl butyl phthalate	85-68-7	2,4-dinitrotoluene	121-14-2
Benzo(*a*)anthracene	56-55-3	2,6-dinitrotoluene	606-20-2
Benzo(b)fluoranthene (3,4-benzofluoranthene)	205-99-2	Di-n-octyl phthalate	117-84-0
Benzo(j)fluoranthene	**205-82-3**	1,2-Diphenylhydrazine (*as Azobenzene*)	122-66-7
Benzo(k)fluoranthene (11,12-benzofluoranthene)	207-08-9	Fluoranthene	206-44-0
Benzo(r,s,t)pentaphene	**189-55-9**	Fluorene	86-73-7
Benzo(*a*)pyrene	50-32-8	Hexachlorobenzene	118-74-1
Benzo(*ghi*)Perylene	191-24-2	Hexachlorobutadiene	87-68-3
Bis(*2-chloroethoxy)*methane	111-91-1	Hexachlorocyclopentadiene	77-47-4
Bis(*2-chloroethyl*)ether	111-44-4	Hexachloroethane	67-72-1
Bis(*2-chloroisopropyl*)ether	39638-32-9	Indeno(*1,2,3-cd*)Pyrene	193-39-5
Bis(*2-ethylhexyl*)phthalate	117-81-7	Isophorone	78-59-1
4-Bromophenyl phenyl ether	101-55-3	**3-Methyl cholanthrene**	**56-49-5**
2-Chloronaphthalene	91-58-7	Naphthalene	91-20-3
4-Chlorophenyl phenyl ether	7005-72-3	Nitrobenzene	98-95-3
Chrysene	218-01-9	N-Nitrosodimethylamine	62-75-9
Dibenzo (a,j)acridine	**224-42-0**	N-Nitrosodi-n-propylamine	621-64-7
Dibenzo (a,h)acridine	**226-36-8**	N-Nitrosodiphenylamine	86-30-6
Dibenzo(a-*h*)anthracene (1,2,5,6-dibenzanthracene)	53-70-3	**Perylene**	**198-55-0**
Dibenzo(a,e)pyrene	192-65-4	Phenanthrene	85-01-8
Dibenzo(a,h)pyrene	189-64-0	Pyrene	129-00-0
		1,2,4-Trichlorobenzene	120-82-1

7. Are any other pesticides, herbicides or fungicides used at this facility? ☐ YES ☒ NO

If yes, specify the material and quantity used:

8 Are there other pollutants that you know of or believe to be present? ☐ YES ☒ NO

If yes, specify the pollutants and their concentration if known
(attach laboratory analyses if available as Attachment E8):

9. Is the wastewater being discharged, or proposed for discharge, to the POTW designated as a dangerous waste according to the procedures in Chapter 173-303 WAC?

☒ YES ☐ NO ☐ DON'T KNOW

10. If the answer to question 9 above is yes, how did the waste designate as a dangerous waste *(check appropriate box)*?

For Listed and TCLP Characteristic Wastes only, also provide the Dangerous Waste Number(s).

Listed Waste ☐ Dangerous Waste Number(s) _____

Characteristic Wastes Dangerous Waste Number(s) _____

Ignitable ☐
Reactive ☐
Corrosive ☐
TCLP ☐

State Only Dangerous Wastes Dangerous Waste Number(s) WT02

Toxicity ☒
Persistent ☐

For questions about waste designation under the *Dangerous Waste Regulations*, Chapter 173-303 WAC, contact Ecology's Hazardous Waste and Toxics Program at:

Northwest Regional Office - Bellevue	(425) 649-7000
Southwest Regional Office - Lacey	(360) 407-6300
Central Regional Office - Yakima	(509) 575-2490
Eastern Regional Office - Spokane	(509) 329-3400

SECTION F. SEWER INFORMATION

1. Is an inspection and sampling manhole or similar structure available on-site? ☐ YES ☒ NO
   If yes, attach a map or hand drawing of the facility that shows the location of these structures (Label as attachment F1 or this may be combined with map in H8, if H8 is applicable to your facility.)

SECTION G. OTHER PERMITS

1. List all environmental control permits or approvals needed for this facility; for example, air emission permits.

SWCAA 05-2616

Lewis County - Class 2 Infectious Waste Site Permit 20-SW-STER

Dept of Ecology- ISGP WAR303002

SECTION H. STORMWATER

1. Do you have coverage under the Washington State Industrial Stormwater NPDES General Permit? ☒ YES ☐ NO
   If yes, please list the permit number here. WAR303002

   If no, have you applied for a Washington State Stormwater Industrial Stormwater General Permit? ☐ YES ☐ NO

   If you answered no to both questions above, complete the following questions 2 through 5.

2. Does your facility discharge stormwater: *(Check all that apply)*

   ☐ To storm sewer system *(provide name of storm sewer system operator:* _____

   ☐ Directly to any surface waters of Washington State *(e.g., river, lake, creek, estuary, ocean).*

   Specify waterbody name(s) _____

   ☐ Indirectly to surface waters of Washington State *(i.e., flows over adjacent properties first).*

   ☐ To a Sanitary Sewer

   ☐ Directly to ground waters of Washington State via:

   ☐ Dry well

   ☐ Drainfield

   ☐ Other

3. Areas with industrial activities at facility: *(check all that apply)*

   ☐ Manufacturing Building

   ☐ Material Handling

   ☐ Material Storage

   ☐ Hazardous Waste Treatment, Storage, or Disposal *(Refers to RCRA, Subtitle C Facilities Only)*

   ☐ Waste Treatment, Storage, or Disposal

   ☐ Application or Disposal of Wastewaters

   ☐ Storage and Maintenance of Material Handling Equipment

   ☐ Vehicle Maintenance

   ☐ Areas Where Significant Materials Remain

   ☐ Access Roads and Rail Lines for Shipping and Receiving

   ☐ Other (please specify): _____

4. Material handling/management practices

   a. Types of materials handled and/or stored outdoors: *(check all that apply)*

☐	Solvents	☐	Hazardous Wastes
☐	Scrap Metal	☐	Acids or Alkalies
☐	Petroleum or Petrochemical Products	☐	Paints/Coatings
☐	Plating Products	☐	Woodtreating Products
☐	Pesticides	☐	Other *(please list)*: _____

b. Identify existing management practices employed to reduce pollutants in industrial stormwater discharges: *(check all that apply)*

☐	Oil/Water Separator	☐	Detention Facilities
☐	Containment	☐	Infiltration Basins
☐	Spill Prevention	☐	Operational BMPs
☐	Surface Leachate Collection	☐	Vegetation Management
☐	Overhead Coverage	☐	Other *(please list)*: _____

5. Attach a facility site map showing stormwater drainage/collection areas, disposal areas and discharge points. This may be a hand-drawn map if no other site map is available *(See example on page 16 of this application)*. *Label this as attachment H.5.*

SECTION I. OTHER INFORMATION

1. Describe liquid wastes or sludges being generated by your facility that are not disposed of in the waste stream(s) and how they are being disposed of. For each type of waste, provide type of waste and the name, address, and phone number of the hauler.

   Filter Cake Special Waste, disposed of by Republic Services

   Note: Stericycle is the hauler. See phone numbers in Section A, above.

2. Describe storage areas for raw materials, products, and wastes.

   Cake is extruded into bin under filter press. Added to mixed autoclave waste in compactor, composited in compator trailer and transported to Republic Services Roosevelt Landfill under parent profile for disposal. Analytical and Fish Bioassay provided to Ecology. Does not designate as Dangerous Waste

3. Have you designated the wastes described above according to the applicable procedures of Dangerous Waste Regulations, Chapter 173-303 WAC? ☒ YES ☐ NO

SECTION J. CERTIFICATIONS

1. **Approval by Publicly-Owned Treatment Works [required by WAC 173-216-070(4)(b)]**

I approve of the discharge as described in this application. The applicant is:

(Please check the appropriate box below.)

☒ A Significant Industrial User (see Definitions at the end of this Section)

☐ A Categorical Industrial User

☐ Neither of the above

Name and location of sewer system to which this project will be tributary:

Treatment Works Owner: City of Morton Wash.

Street: 200 Sewer plant Rd

City/State: Morton WA. Zip: 98356

Signature of Treatment Works Authority — Date: 11-12-20 — Title: Operator in Charge

Printed Name: Joshua Holmes

2. **Application review by Intermediate Sewer Owner at point of discharge (if applicable)**

I hereby acknowledge that I have reviewed the application for discharge to this sewer system.

Name and location of sewer system to which this project will be tributary:

Sewer System Owner: City of Morton, Wash.

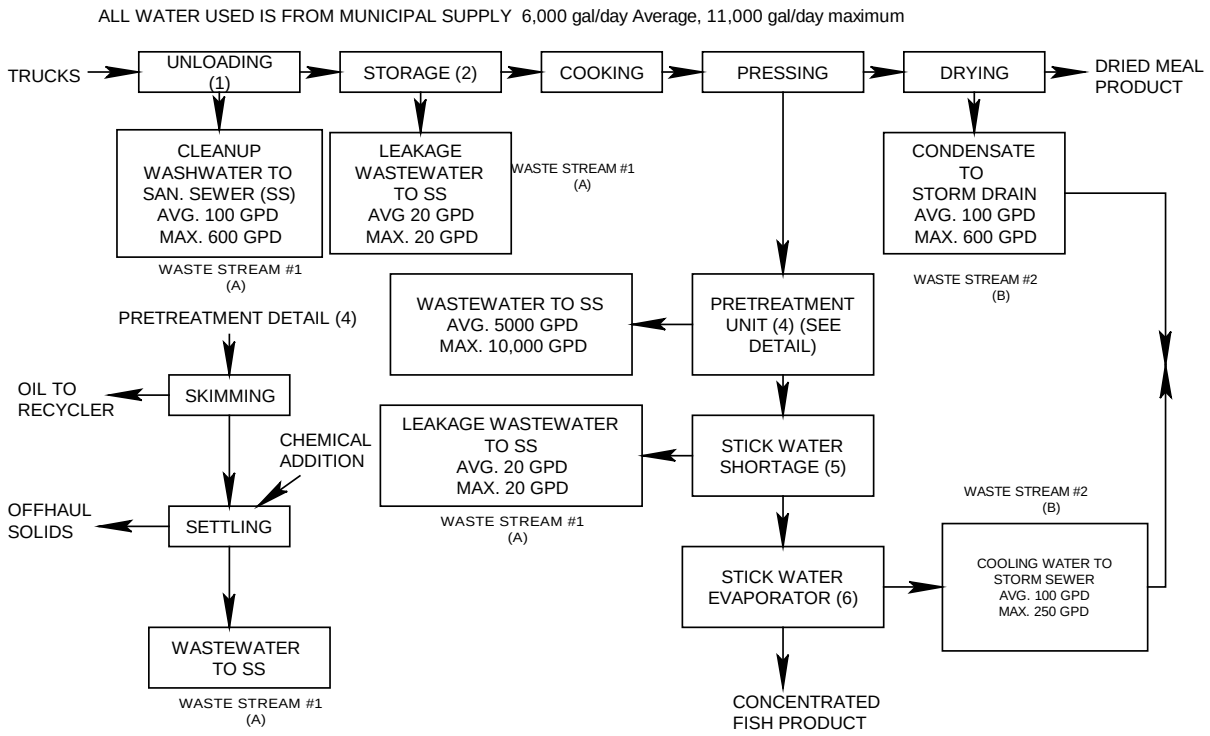
Street: 200 Sewer Plant Rd

City/State: Morton WA. Zip: 98356

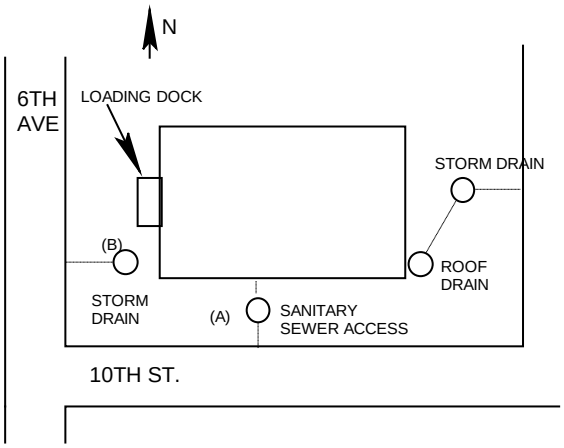
Signature of Sewer System Authority — Date: 11-12-20 — Title: Operator in Charge

Printed Name: Joshua Holmes

Example 1 for application section C.2. (SCHEMATIC DIAGRAM)



Example 2 for application section F1 or H8 (FACILITY SITE MAP)



DEFINITIONS

Significant Industrial User (SIU)--

1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N; and

2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

   Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

Control Authority - means the Washington State Department of Ecology in the case of non-delegated POTWs or means the POTW in the case of delegated POTWs.

Categoric Industrial User (CIU): An industrial user subject to national categorical pretreatment standards promulgated by EPA (40 CFR 403.6 and40 CFR parts 405-471).

Summary of Attachments That May be Required for This Application:

(Please check those attachments that are included)

☒☐ C.2. Production schematic flow diagram and water balance

☐☐ C.4. Wastewater treatment improvements

☒☐ C.7. Additional incidental materials

☒☐ E.8. Additional results of effluent testing

☒☐ F.1. Facility site map

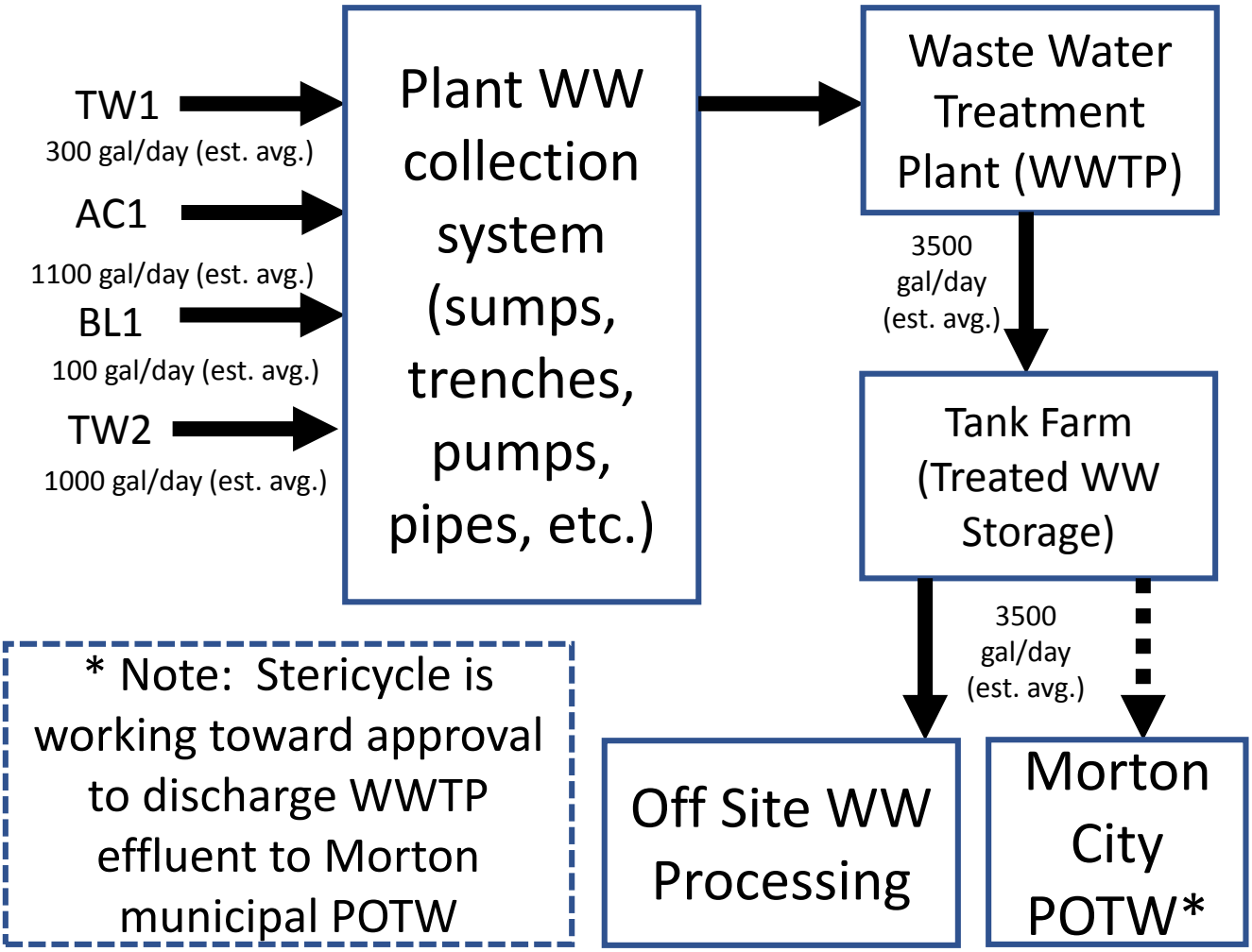
☒☐ H.5. Stormwater drainage map

If you need this document in a format for the visually impaired, call the Water Quality Program at 360-407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

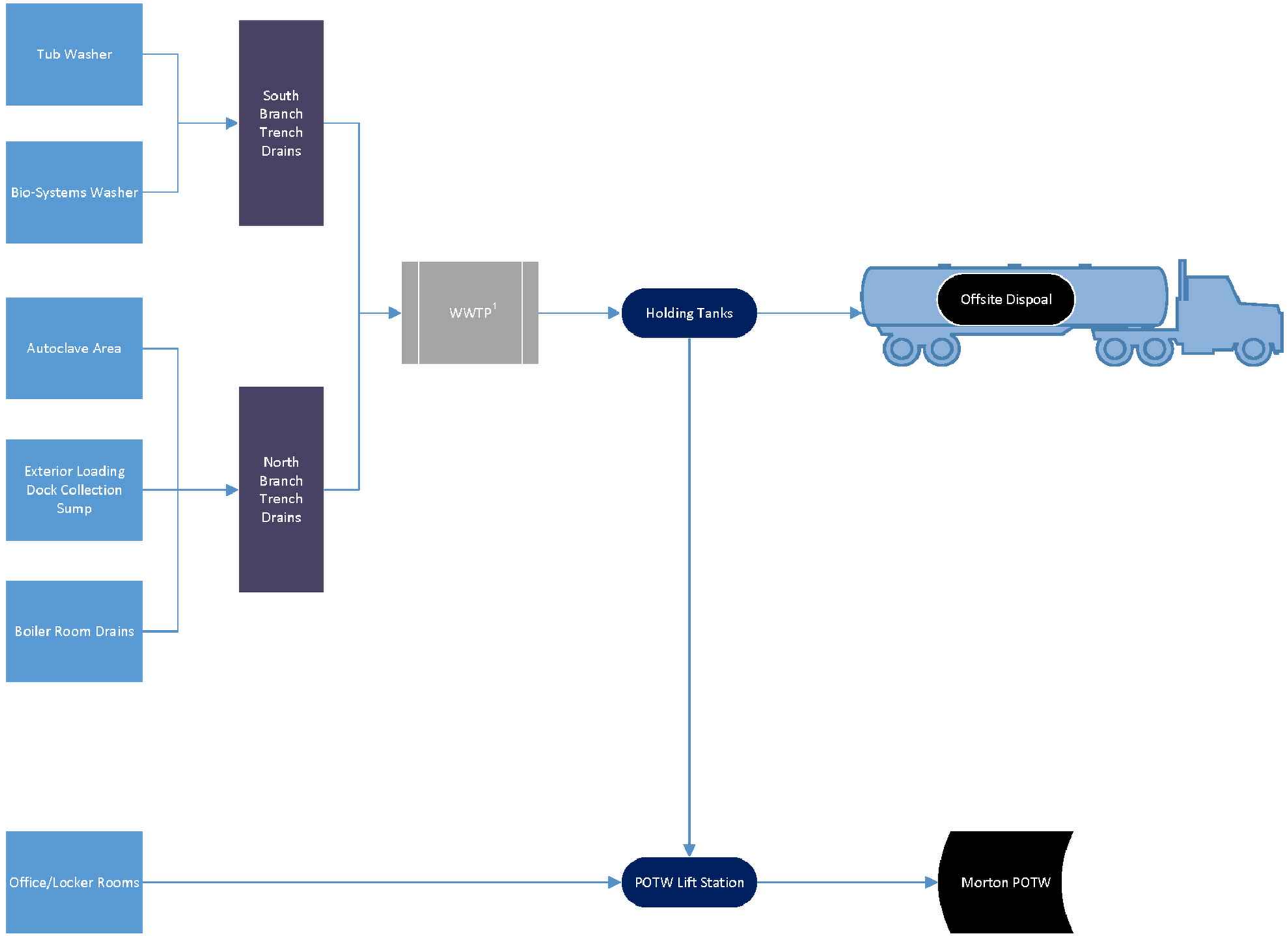
Attachment C.2

Production schematic flow diagram and water balance

Production Schematic Flow Diagram and Water Balance



* Note: Stericycle is working toward approval to discharge WWTP effluent to Morton municipal POTW



Note:
1. WWTP detail provided on Flow Schematic B.

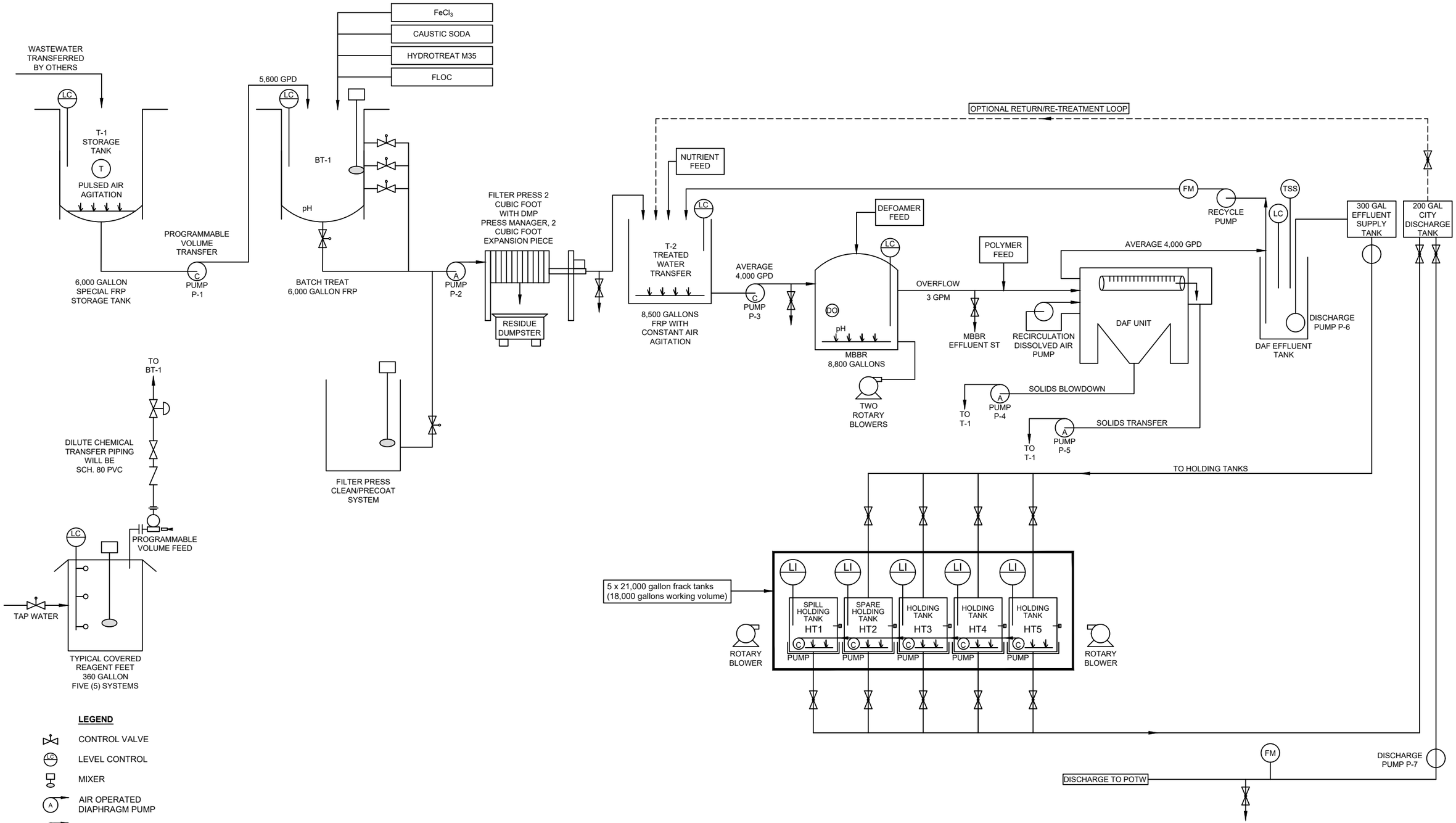
Stericycle Morton Facility
Morton, Washington

WASTEWATER PROCESS FLOW DIAGRAM

DALTON OLMSTED FUGLEVAND

Flow Schematic A

08/31/2020



DESCRIPTION OF THE WASTEWATER TREATMENT PROCESS
BT 6,000 (6,000 US GALLONS PER BATCH)
5,600 GALLONS PER DAY / 5 DAYS PER WEEK (28,000 GPW)
AUTOCLAVE MEDICAL WASTE

DMP E-CONTROLLER/10 USES
ALLEN BRADLEY PLC WITH
ALLEN BRADLEY COLOR GRAPHICS
A 15" TOUCHSCREEN WITH
TECHLINK SERVICE AND AIR CONDITIONER

400 Bryant Boulevard
Rock Hill, SC, USA 29732
Business: 803-324-2401
Fax: 803-324-5773

Dwg. No.11751R3D2

Drawing Revised 02/05/19, PRH

Stericycle Morton Facility
Morton, Washington

WASTEWATER TREATMENT PROCESS FLOW SCHEMATIC

DALTON OLMSTED FUGLEVAND

Flow Schematic B

08/19/2020

Attachment C.7

Additional Incidental Materials

(Safety Data Sheets)

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture
Product Name: Aluminum Sulfate – 48%
Formula: $Al_2(SO_4)_3 \bullet 14\ H_2O$ (Dry Equivalent)

Intended Use of the Product

Alum is used as a coagulating agent in municipal and industrial water and wastewater treatment and as an additive in papermaking.

Supplier Details

Northstar Chemical Inc.
14200 SW Tualatin Sherwood Road
Sherwood, OR 97140
For SDS Info: (503) 625-3770
www.northstarchemical.com

Emergency Number: US: CHEMTREC +1-800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Met. Corr. 1 H290
Skin Corr. 1A H314
Eye Dam. 1 H318
Aquatic Acute 3 H402
Full text of H-phrases: see section 16

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :

GHS05

Signal Word (GHS-US) : Danger

Hazard Statements (GHS-US) : H290 - May be corrosive to metals
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H402 - Harmful to aquatic life

Precautionary Statements (GHS-US) : P234 - Keep only in original container.
P260 - Do not breathe vapors, mist, or spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear eye protection, protective clothing, protective gloves.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 - Immediately call a doctor.
P321 - Specific treatment (see section 4 on this SDS). P363 - Wash contaminated clothing before reuse. P390 - Absorb spillage to prevent material damage. P405 - Store locked up.
P406 - Store in corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations.

Other Hazards

Other Hazards Not Contributing to the Classification: Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	Product identifier	% (w/w)	Classification (GHS-US)
Water	(CAS No) 7732-18-5	balance	Not classified
Aluminum Sulfate	(CAS No) 10043-01-3	~48.5 (dry basis)	Met. Corr. 1, H290 Eye Dam. 1, H318 Aquatic Acute 3, H402

*As $Al_2(SO_4)_3 \bullet 14\ H_2O$ (Dry Aluminum Sulfate).

The specific chemical identity and/or exact percentage of composition have been withheld as a trade secret [29 CFR 1910.1200]. A range of concentration as prescribed by the Controlled Products Regulations has been used where necessary, due to varying composition.

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible). **Inhalation:** Remove to fresh air and keep at rest in a position comfortable for breathing. Obtain medical attention if breathing difficulty persists.

Skin Contact: Rinse immediately with plenty of water. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Causes severe skin burns and eye damage.

Inhalation: May cause respiratory irritation.

Skin Contact: Redness. Pain. Serious skin burns. Blisters.

Eye Contact: Redness. Pain. Blurred vision. Severe burns. Causes permanent damage to the cornea, iris, or conjunctiva.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions. Aluminum Sulfate may react with some metals, to give flammable, potentially explosive hydrogen gas. Hydrogen gas can accumulate to explosive concentrations inside confined spaces.

Advice for Firefighters

Precautionary Measures Fire: Not available

Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. **Hazardous Combustion Products**: Forms aluminum oxide, sulfur dioxide and/or sulfur trioxide at temperatures above 760°C (1400°F) or when dry alum is encompassed in a fire involving other burning materials.

Other Information: Refer to Section 9 for flammability properties.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid breathing (dust, vapor, mist, gas).

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Stop leak if safe to do so. Eliminate ignition sources. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Collect spillage. Dispose in a safe manner in accordance with local/national regulations.

Reference to Other Sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Use good housekeeping practices during storage, transfer, handling, to avoid excessive dust accumulation. Protect from moisture.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong bases.

Special Rules on Packaging: Store in original container or corrosive resistant and/or lined container.

Specific End Use(s)

For professional use only.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Personal Protective Equipment: Protective goggles. Gloves. Protective clothing.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical goggles or safety glasses.
Skin and Body Protection: Wear suitable protective clothing.
Respiratory Protection: Use NIOSH-approved dust mask if dust has the potential to become airborne.
Environmental Exposure Controls: Do not allow the product to be released into the environment.
Consumer Exposure Controls: Do not eat, drink or smoke during use

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance	:	Clear
Odor	:	Odorless
Odor Threshold	:	Not available
pH	:	1.9 - 2.4
Melting Point	:	Not applicable
Freezing Point	:	-15.56 °C (4°F)
Boiling Point	:	101 °C (213.80 °F)
Flash Point	:	Not flammable
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not applicable
Lower Flammable Limit	:	Not available
Upper Flammable Limit	:	Not available
Vapor Pressure	:	Not available
Relative Vapor Density at 20 °C	:	Not available
Relative Density	:	Not available
Specific Gravity	:	1.335
Solubility	:	Water: Completely miscible in water.
Partition Coefficient: N-Octanol/Water	:	Not available
Viscosity	:	Not available
Explosion Data – Sensitivity to Mechanical Impact	:	Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	:	Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Hazardous reactions will not occur under normal conditions. Aluminum Sulfate may react with some metals, to give flammable, potentially explosive hydrogen gas. Hydrogen gas can accumulate to explosive concentrations inside confined spaces. **Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid: Direct sunlight. Extremely high or low temperatures. Ignition sources. Incompatible materials. Moisture.
Incompatible Materials: Strong bases. Metals.
Hazardous Decomposition Products: Oxides of aluminum. The decomposition products are corrosive and hazardous to health.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified
LD50 and LC50 Data: Not available
Skin Corrosion/Irritation: Causes severe skin burns and eye damage. **pH:** 1.9 - 2.4
Serious Eye Damage/Irritation: Causes serious eye damage. **pH:** 1.9 - 2.4
Respiratory or Skin Sensitization: Not classified **Germ Cell Mutagenicity:** Not classified **Teratogenicity:** Not available

Carcinogenicity: Not classified
Specific Target Organ Toxicity (Repeated Exposure): Not classified **Reproductive Toxicity:** Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified **Aspiration Hazard:** Not classified
Symptoms/Injuries After Inhalation: May cause respiratory irritation.
Symptoms/Injuries After Skin Contact: Redness. Pain. Serious skin burns. Blisters.
Symptoms/Injuries After Eye Contact: Redness. Pain. Blurred vision. Severe burns. Causes permanent damage to the cornea, iris, or conjunctiva.
Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects. **Chronic Symptoms:** None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Water (7732-18-5)	
LD50 Oral Rat	> 90000 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Toxicity **Not classified**

Persistence and Degradability Not available **Bioaccumulative Potential** Not available **Mobility in Soil** Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.
Ecology – Waste Materials: Avoid release to the environment.

SECTION 14: TRANSPORT INFORMATION

14.1 In Accordance with DOT

Proper Shipping Name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE)
Hazard Class : 8
Identification Number : UN3264
Label Codes : 8
Packing Group : III
ERG Number : 154

14.2 In Accordance with IMDG

Proper Shipping Name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE)
Hazard Class : 8
Identification Number : UN3264
Packing Group : III
Label Codes : 8
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B

14.3 In Accordance with IATA

Proper Shipping Name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE)
Packing Group : III
Identification Number : UN3264
Hazard Class : 8
Label Codes : 8
ERG Code (IATA) : 8L

14.4 In Accordance with TDG

Proper Shipping Name : CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS ALUMINUM SULFATE)
Packing Group : III
Hazard Class : 8
Identification Number : UN3264
Label Codes : 8

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Aluminum Sulfate – 48%	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

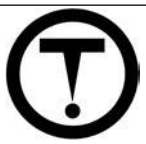
Sulfuric acid, aluminum salt (3:2) **(10043-01-3)**
Listed on the United States TSCA (Toxic Substances Control Act) inventory

US State Regulations

Aluminum Sulfate – 48%
Sulfuric acid, aluminum salt (3:2) **(10043-01-3)**
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List

Canadian Regulations

Aluminum Sulfate – 48%	
WHMIS Classification Class	D Division 2 Subdivision B - Toxic material causing other toxic effects Class E - Corrosive Material



Water (7732-18-5)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

Aluminum Sulfate – 48% (3:2) **(10043-01-3)**	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Class E - Corrosive Material

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

REVISION

Revision date : 05/01/15

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Met. Corr. 1	Corrosive to metals Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H402	Harmful to aquatic life

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Northstar Chemical Inc. and its affiliates assume no responsibility.

Safety Data Sheet

Complies with EC no. 1907/2006
Issue Date:07/23/2015

Section 1: Chemical Product and Company Identification

Cat#: BLI3945

Part Name: SDS ANIONIC SURFACTANT

Supplier: Polysciences, Inc.
400 Valley Road
Warrington, PA 18976 USA
MSDS Telephone #215-343-6484 Emergency only #215-378-4526

Identified uses: Laboratory use, manufacture of substances

Section 2: Hazards Identification

Hazard Overview

Causes skin, eye and respiratory tract irritation.

Harmful if inhaled or swallowed.

May cause allergic skin reaction.

May cause severe allergic respiratory reaction.

GHS Classification

Acute Toxicity Oral Cat 4 , Acute Toxicity Inhalation Cat 4

Skin Irritant Cat 2, Acute Inhalation Cat 4, Eye Irritation Cat 2B

Skin Sensitizer Category 1B

Signal word: **Warning**

Hazard and Precautionary Statements

H302 + H312	Harmful if swallowed or, in contact with skin or if inhaled
H302 + H332	Harmful if swallowed or if inhaled
H317	May cause an allergic skin reaction.
P280A	Wear protective gloves
P301A	IF SWALLOWED do not induce vomiting. Do not give anything to drink. Obtain medical attention without delay.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305B	IF IN EYES, Separate eyelids with finger tips.
P340	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P351	Rinse cautiously with water for several minutes.
P361	Remove/Take off immediately all contaminated clothing.
P501	Dispose of contents/container to proper waste area in accordance with institutional practices and local, state or federal regualtions.

NFPA Rating

Hazard Ratings:
These ratings are Polysciences' Inc. own assesments of the properties of the material using the ANSI/NFPA 704 Standard.
Additional information can be found by consulting in the NFPA published ratings lists (List 325 and List 49).

If no data is listed the information is not available.

Health	Flammability	Reactivity
1	0	1

Section 3: Composition/ Information on Ingredients

Note: Items listed with a CASRN... number have no CAS# available.

Item#	Name	EINECS	CAS#	% in product
1	Sodium dodecyl sulfate	205-788-1	0000151213	95-100

Section 4: First Aid Measures

Flush eyes with flowing water for at least 15 minutes.

If breathing is difficult, contact emergency personnel.

Remove contaminated clothing.

Remove to fresh air.

Separate eyelids with finger tips.

Wash skin with deluge of water for at least 15 minutes.

Section 5: Fire Fighting Measures

Flash point, deg F.: no data Method: no data

UEL: no data LEL: no data Autoignition temperature, deg. F.: no data

Flammability Classification: no data Flame Propagation Rate: no data

Hazardous Combustion Products: no data

Section 6: Accidental Release Measures

Any information listed below is to be considered in addition to internal guidelines for isolation of spill, containment of spill, removal of ignition sources from immediate area, and collection for disposal of spill by trained, properly protected clean up personnel.

Protect personnel from exposure.

Sweep up solids.

Section 7: Handling and Storage

Store at room temp

Section 8: Exposure Controls/ Personal Protection

OSHA (ACGIH) Exposure Limits

		TWA		STEL		CEILING	
		ppm	mg/	ppm	mg/m3	ppm	mg/m3
CAS#: 0000151213	IDLH: NE						
OSHA		NE	NE	NE	NE	NE	NE
ACGIH		NE	NE	NE	NE	NE	NE

The use of eye protection in the form of safety glasses with side shields and the use of skin protection for hands in the form of gloves are considered minimum and non-discretionary in work places and laboratories. Any recommended personal protection equipment or environmental equipment is to be considered as additional to safety glasses and gloves.

Use latex or equivalent gloves.

Chemical-resistant gloves should be worn whenever this material is handled. The glove material has to be impermeable and resistant to the product. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough.
Rinse and remove gloves immediately after use. Wash hands with soap and water. All glove recommendations presume that the risk of exposure is through splash and not intentional immersion of the hands into the product.
Since glove permeation data does not exist for this material, no recommendation for the glove material can be given for the product.
Permiation data must be obtained from the glove manufacturer to determine if the glove is suitable for the task.

Section 9: Physical and Chemical Properties

Formula:	C12H25O4SNa	vapor pressure:	no data
Formula Weight:	288.38	vapor density:	no data
boiling point:	no data	Specific gravity:	0
melting point:	no data	ph:	no data
solubility:	10g/100 water	appearance:	white powder

Section 10: Stability and Reactivity

Chemical Stability stable

Conditions to Avoid: excessive heat

Incompatibility with other materials: strong oxidizers, acids

Hazardous Decomposition Products: elemental oxides

Hazardous Polymerization: will not occur

Section 11:Toxicological Information

Acute Data: LD50 oral rat: 1288 mg/kg
Inhalation rat LC50: >3900 mg/kg
irritation data: skin human, standard Draize, 25 mg/24 hour , mild; eye rabbit, standard Draize, 250 ug, mild

Subchronic data: Has caused mutagenic and teratogenic effects on laboratory animals

Section 12: Ecological Information

no data

Section 13: Disposal Considerations

The following chart lists the status of the chemical and its components in reference to 40 CFR Part 261.33. If the product is listed by code number the substance may be subject to special federal and state disposal regulations. If no codes are listed the material must be disposed in compliance with all Federal, State and Local Regulations.

CAS#	Waste Code	Regulated Name

0000151213	not listed	not listed

Section 14: Transportation Data

Proper Shipping Name NOT REGULATED

Chemical Name

UN

Class

PG

Section 15: Regulatory Information

Prop 65 - Column A identifies those items which are known to the State of California to cause cancer. Column B identified items which are known to the State of California to cause reproductive toxicity.

CAS#	Column A	Column B
0000151213	no	no

State Regulatory Information :If a CAS# is listed below this material is subject to the listed state right-to-know requirements.

CAS#	
0000151213	not listed

SARA Toxic Release Chemicals(as defined in Section 313 of SARA Title III)
This list identifies the toxic chemicals, including their de minimis concentrations for which reporting is required under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA). The list is also referred to as the Toxics Release Inventory (TRI) List.

CAS#	Regulated name	de minimis conc. %	Rep. Thres.
0000151213	not listed	not listed	not listed

SARA Extremely Hazardous Substances and TPQs
This list includes hazardous chemicals as defined in 29 CFR 1910.1200(c); and extremely hazardous substances regulated under Section 302 of SARA Title III with their TPQs (in pounds), as listed in 40 CFR 355, Appendices A and B.

CAS#	Regulated name	TPQ (pounds)	EHS-RQ(pounds)
0000151213	not listed	not listed	not listed

CERCLA
The hazardous substances, and their reportable quantities (RQs) are listed in the federal regulations at 40 CFR Part 302, Table 302.4. Release of a CERCLA hazardous substance in an amount equal to or greater than its RQ, in any 24-hour period, must be reported to the National Response Center at (800) 424-8802.

CAS#	Regulated name	RQ (pounds)
0000151213	Not listed	Not listed

Section 16: Other Information

POLYSCIENCES, INC. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. POLYSCIENCES, INC. makes no representations or warranties, either expressed or implied of merchantability, fitness for particular purposes with respect to the information set forth herein or to which the information refers. Accordingly, POLYSCIENCES, INC. will not be responsible for damages resulting from the use of or reliance upon this information.

END OF MSDS

* UREA Solution in WWTP *

BlueDEF Diesel Exhaust Fluid

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : BlueDEF Diesel Exhaust Fluid

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Solution for NOx reduction in SCR systems

1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
4065 Commercial Ave.
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number : (800) 424-9300; (703) 527 3887 (International)
Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labelling

Signal word (GHS-US) : None

Hazard statements (GHS-US) : None

Precautionary statements (GHS-US) : None

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% by wt	GHS-US classification
water	(CAS No) 7732-18-5	67.5	Not classified
urea	(CAS No) 57-13-6	32.5	Not classified

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : The EPA has no established reportable quantity for spills for this material, secondary containment is not specified.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials. For minor spillages wash down with excess of water. Mop up small spills.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat sources. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

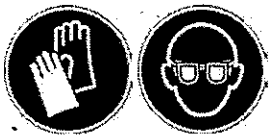
No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure. Gloves. Protective goggles.



Hand protection	: Wear protective gloves.
Eye protection	: Chemical goggles or safety glasses.
Respiratory protection	: Wear appropriate mask.
Other information	: Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Colorless
Odor	: characteristic ammonia odor
Odor threshold	: No data available
pH	: 9 - 10
Relative evaporation rate (butylacetate=1)	: < 1
Freezing point	: -11 °C (12 °F)
Boiling point	: > 100 °C (212 °F)
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: Not Applicable
Relative vapor density at 20 °C	: 0.6 H2O, >1
Specific Gravity	: 1.09
Solubility	: Soluble in water. Water: 100 %
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Strong acids. Strong bases. oxidizing agents (peroxides, chromates, dichromates).

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Fume.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified

urea (57-13-6)	
LD50 oral rat	8,471.00 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; 14300 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rat	> 3,200.00 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 21,000.00 mg/kg (Rabbit; Literature study)
ATE US (oral)	8,471.00 mg/kg bodyweight

Skin corrosion/irritation : Not classified
pH: 9 - 10

Serious eye damage/irritation : Not classified
pH: 9 - 10

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

urea (57-13-6)	
LC50 fish 1	> 6,810.00 mg/l (96 h; Leuciscus idus; Nominal concentration)
EC50 Daphnia 1	> 10,000.00 mg/l (48 h; Daphnia magna; Nominal concentration)
LC50 fish 2	17,500.00 mg/l (96 h; Poecilia reticulata)
EC50 Daphnia 2	> 10,000.00 mg/l (24 h; Daphnia magna)
TLM fish 1	17500 ppm (96 h; Poecilia reticulata)
Threshold limit other aquatic organisms 1	120000 mg/l (16 h; Bacteria; Toxicity test)
Threshold limit other aquatic organisms 2	> 10000 mg/l (Pseudomonas putida)
Threshold limit algae 1	> 10000 mg/l (168 h; Scenedesmus quadricauda; Growth rate)
Threshold limit algae 2	47 mg/l (192 h; Microcystis aeruginosa; Growth rate)

12.2. Persistence and degradability

urea (57-13-6)	
Persistence and degradability	Inherently biodegradable. Hydrolysis in water. Highly mobile in soil.
ThOD	0.27 g O_2/g substance

12.3. Bioaccumulative potential

urea (57-13-6)	
BCF fish 1	1.00 (72 h; Brachydanio rerio; Fresh water)
BCF other aquatic organisms 1	11,700.00 (Chlorella sp.)
Log Pow	< -1.73 (Experimental value; EU Method A.8: Partition Coefficient)
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

urea (57-13-6)	
Mobility in soil	Not applicable

12.5. Other adverse effects

Effect on ozone layer : No additional information available

Effect on global warming : No known ecological damage caused by this product.
No additional information available

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : As a non-hazardous liquid waste, it should be solidified with stabilizing agents such as sand, fly ash, or clay absorbent, so that no free liquid remains before disposal to an industrial waste landfill.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Not a dangerous good in sense of transport regulations

Other information : Not regulated by DOT.

ADR

UN-No. (ADR) : Not regulated by ADR

Transport by sea

UN-No. (IMDG) : Not regulated by IMDG

Air transport

UN-No. (IATA) : Not regulated by IATA

SECTION 15: Regulatory information

15.1. US Federal regulations

BlueDEF Diesel Exhaust Fluid	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed
RQ (Reportable quantity, section 304 of EPA's List of Lists)	None. This material is not classified as hazardous under U.S. EPA regulations.
SARA Section 302 Threshold Planning Quantity (TPQ)	No extremely hazardous substances are in this product.
SARA Section 311/312 Hazard Classes	Urea. No hazards resulting from the material as supplied.

urea (57-13-6)	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

15.2. International regulations

CANADA

WHMIS Classification

Uncontrolled product according to WHMIS classification criteria

urea (57-13-6)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]
Not classified

National regulations

BlueDEF Diesel Exhaust Fluid
DSL (Canada): The intentional ingredients of this product are listed

urea (57-13-6)
DSL (Canada): The intentional ingredients of this product are listed EINECS (Europe): The intentional ingredients of this product are listed

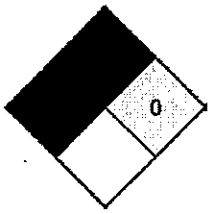
15.3. US State regulations

SECTION 16: Other information

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal Protection B - Safety glasses, Gloves

SDS GHS US (GHS HazCom 2012) OWI

Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

SAFETY DATA SHEET

M48009 - ANSI - EN

Occidental Chemical Corporation
A subsidiary of Occidental Petroleum Corporation

LIQUIDOW ™ TECHNICAL GRADE CALCIUM CHLORIDE SOLUTION

SDS No.: M48009 **SDS Revision Date:** 09-Feb-2015

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification:	Occidental Chemical Corporation 5005 LBJ Freeway P.O. Box 809050 Dallas, TX 75380-9050 1-800-752-5151
24 Hour Emergency Telephone Number:	1-800-733-3665 or 1-972-404-3228 (USA); CHEMTREC (within USA and Canada): 1-800-424-9300; CHEMTREC (outside USA and Canada): +1 703-527-3887; CHEMTREC Contract No: CCN16186
To Request an SDS:	MSDS@oxy.com or 1-972-404-3245
Customer Service:	1-800-752-5151 or 1-972-404-3700
Product Identifier:	**LIQUIDOW ™ TECHNICAL GRADE CALCIUM CHLORIDE SOLUTION**
Synonyms:	Calcium Dichloride, Calcium Chloride Aqueous Solution, Liquid Calcium Chloride, Calcium Chloride
Product Use:	Concrete Acceleration, Dust Control, Ice Melting, Refrigeration, Road Base Stabilization, Full Depth Reclamation, Tire Weighting, Water Treatment (Non-potable)
Uses Advised Against:	None identified.

2. HAZARDS IDENTIFICATION

OSHA REGULATORY STATUS: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

****

EMERGENCY OVERVIEW:

Color: Clear
Physical state Liquid
Odor: Odorless

Signal Word: **WARNING**

MAJOR HEALTH HAZARDS: CAUSES SERIOUS EYE IRRITATION. CAUSES SKIN IRRITATION.

PRECAUTIONARY STATEMENTS: Wash thoroughly after handling.

****

GHS CLASSIFICATION:

GHS: CONTACT HAZARD - SKIN:	Category 2 - Causes skin irritation
GHS: CONTACT HAZARD - EYE:	Category 2A - Causes serious eye irritation
GHS: ACUTE TOXICITY - INHALATION:	No data available. Not classified.
GHS: ACUTE TOXICITY - ORAL:	Not classified as acutely toxic for oral exposure
GHS: ACUTE TOXICITY - DERMAL:	Not classified as acutely toxic for dermal exposure
GHS: CARCINOGENICITY:	Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC, or OSHA.

UNKNOWN ACUTE TOXICITY:
A percentage of this product consists of ingredient(s) of unknown acute toxicity.

Unknown Acute Dermal Toxicity:
3% of this product consists of ingredient(s) of unknown acute dermal toxicity.

GHS SYMBOL:
Exclamation mark

GHS SIGNAL WORD: **WARNING**

GHS HAZARD STATEMENTS:

GHS - Health Hazard Statement(s)
Causes skin irritation
Causes serious eye irritation

GHS - Precautionary Statement(s) - Prevention
Wear eye and face protection
Wear protective gloves
Wash thoroughly after handling

GHS - Precautionary Statement(s) - Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of water
Take off contaminated clothing and wash it before reuse
If skin irritation occurs: Get medical advice/attention
Specific treatment (see First Aid information on product label and/or Section 4 of the SDS)

GHS - Precautionary Statement(s) - Storage
There are no Precautionary-Storage phrases assigned

GHS - Precautionary Statement(s) - Disposal
Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations

Hazards Not Otherwise Classified (HNOC)
None identified

See Section 11: TOXICOLOGICAL INFORMATION

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Calcium Dichloride, Calcium Chloride Aqueous Solution, Liquid Calcium Chloride, Calcium Chloride

Component	Percent [%]	CAS Number
Water	53 - 72	7732-18-5
Calcium chloride	28 - 42	10043-52-4
Potassium Chloride	< 3	7447-40-7
Sodium Chloride	< 2	7647-14-5

Notes: *Potassium chloride and sodium chloride are impurities from the naturally-occurring source material, brine solution.*

4. FIRST AID MEASURES

INHALATION: If inhalation of vapor, mist, or spray occurs and adverse effects result, move person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

SKIN CONTACT: If on skin, wash with plenty of water. If skin irritation occurs: Get medical advice/ attention. Take off contaminated clothing and wash before reuse. SPECIFIC TREATMENT: Wash with lots of water.

EYE CONTACT: If in eyes, immediately rinse eyes cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation occurs, get medical advice/attention.

INGESTION: If swallowed, rinse mouth. Contact a poison center or doctor/physician if you feel unwell.

Most Important Symptoms/Effects (Acute and Delayed) :.

Acute Symptoms/Effects: Listed below.
Inhalation (Breathing): Inhaling mist, spray, or vapor may cause irritation to upper respiratory tract (nose and throat). Nasal mucosal and oropharyngeal eythema.
Skin: Skin Irritation. Skin exposure may cause slight irritation, redness, itching, swelling. May cause more severe response if skin is damp, abraded (scratched or cut), or covered by clothing, gloves, or footwear. Prolonged contact may cause more severe symptoms. Damage is localized to contact areas.
Eye: Eye Irritation. Eye exposure may cause serious eye irritation and pain. May cause conjunctival swelling and cornea opacification from hypertonic solution. Corneal eye pain, redness, acute corneal thickening or whitening.
Ingestion (Swallowing): Consumption of solids or hypertonic solutions causes nausea, vomiting, and increased thirst.

Delayed Symptoms/Effects:
- Chronic exposures to skin and mucus membranes that cause irritation may cause a chronic dermatitis or mucosal membrane problem

Interaction with Other Chemicals Which Enhance Toxicity: None known.

Medical Conditions Aggravated by Exposure: Any skin condition that disrupts the skin, such as abrasions, cuts, psoriasis, fungal infections, etc. Any eye condition that compromises tear production, conjunctiva, or normal corneal homeostasis.

Protection of First-Aiders: At minimum, treating personnel should utilize PPE sufficient for prevention of bloodborne pathogen transmission. If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Notes to Physician: Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Fire Hazard: This material does not burn.

Extinguishing Media: Use extinguishing agents appropriate for surrounding fire.

Fire Fighting: Keep unnecessary people away, isolate hazard area and deny entry. This material does not burn. Fight fire for other material that is burning. Water should be applied in large quantities as fine spray. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Wear protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Hazardous Combustion Products:	Formed under fire conditions: hydrogen chloride gas, calcium oxide
Lower Flammability Level (air):	Not applicable
Upper Flammability Level (air):	Not applicable
Flash point:	Not applicable
Auto-ignition Temperature:	Not applicable

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:
Isolate area. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard on some surfaces. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

Methods and Materials for Containment and Cleaning Up:
Small and large spills: Contain spilled material if possible. Absorb with materials such as sand. Collect in suitable and properly labeled containers. Flush residue with plenty of water. See Section 13, Disposal considerations, for additional information.

Environmental Precautions:
Prevent large spills from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. HANDLING AND STORAGE

Precautions for Safe Handling:
Avoid contact with eyes, skin, and clothing. Do not swallow. Wash thoroughly after handling. Wear personal protective equipment as described in Exposure Controls/Personal Protection (Section 8) of the SDS.

Safe Storage Conditions:
Protect from atmospheric moisture. Keep containers closed when not in use. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

Incompatibilities/ Materials to Avoid:
Avoid contact with: bromide trifluoride, 2-furan percarboxylic acid because calcium chloride is incompatible with those substances. Contact with zinc forms flammable hydrogen gas, which can be explosive. Catalyzes exothermic polymerization of methyl vinyl ether. May release flammable hydrogen gas. Reaction of bromide impurity with oxidizing materials may generate trace levels of impurities such as bromates.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Regulatory Exposure Limit(s): Listed below for the product components that have regulatory occupational exposure limits (OEL's).

Component	OSHA Final PEL TWA	OSHA Final PEL STEL	OSHA Final PELCeiling
Particles Not Otherwise Regulated (PNOR) 00-00-001	15 mg/m^3 (Total) 5 mg/m^3 (Respirable)	-----	-----

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit

NON-REGULATORY EXPOSURE LIMIT(S): Listed below for the product components that have advisory (non-regulatory) occupational exposure limits (OEL's) established.

Component	CAS Number	ACGIH TWA	ACGIH STEL	ACGIH Ceiling	OSHA TWA (Vacated)	OSHA STEL (Vacated)	OSHA Ceiling (Vacated)
Particulates Not Otherwise Specified (PNOS)	Not Assigned	10 mg/m^3 (Inhalable) 3 mg/m^3 (Respirable)	-----	-----	-----	-----	-----

- *The Non-Regulatory United States Occupational Safety and Health Administration (OSHA) limits, if shown, are the Vacated 1989 PEL's (vacated by 58 FR 35338, June 30, 1993).*

- The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

Additional Advice: Use good personal hygiene. Do not consume or store food in the work area. Wash hands and affected skin immediately after handling, before smoking or eating, before breaks, and at the end of the workday.

ENGINEERING CONTROLS: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Wear safety glasses with side-shields. Wear chemical safety goggles and/or a face-shield to protect against skin and eye contact when appropriate.

Skin and Body Protection: Wear clean, body-covering clothing. Wear appropriate clothing to avoid skin contact.

Hand Protection: Use gloves chemically resistant to this material. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures. Examples of preferred glove barrier materials include: Neoprene, Polyvinyl chloride ("PVC" or "vinyl"), Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: High efficiency particulate air (HEPA) N95. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Color:	Clear
Odor:	Odorless
Odor Threshold [ppm]:	Not applicable.
Decomposition Temperature:	Not applicable
Boiling Point/Range:	110 - 122 °C (230 - 252 °F)
Freezing Point/Range:	-43 - +21°C (-46 - +69°F).
Melting Point/Range:	Not applicable
Vapor Pressure:	9 - 15 mm Hg @ 25 °C (77 °F)
Vapor Density (air=1):	No data available
Relative Density/Specific Gravity (water=1):	1.275 - 1.439 @ 25 °C (77 °F)
Density:	10.61 - 11.97 lbs/gal @ 25 °C (77 °F)
Bulk Density:	Not applicable
Water Solubility:	Completely miscible
pH:	9 - Estimated (undiluted)
Evaporation Rate (ether=1):	No data available

Partition Coefficient (n-octanol/water):	Not applicable
Flash point:	Not applicable
Lower Flammability Level (air):	Not applicable
Upper Flammability Level (air):	Not applicable
Auto-ignition Temperature:	Not applicable
Viscosity:	2 - 7 cp @ 25°C (77 °F)
Hygroscopic:	Yes

10. STABILITY AND REACTIVITY

Reactivity: Hygroscopic.

Chemical Stability: Stable at normal temperatures and pressures.

Possibility of Hazardous Reactions:
No data available.

Conditions to Avoid:
(e.g., static discharge, shock, or vibration) -. None known.

Incompatibilities/ Materials to Avoid:
Avoid contact with: bromide trifluoride, 2-furan percarboxylic acid because calcium chloride is incompatible with those substances. Contact with zinc forms flammable hydrogen gas, which can be explosive. Catalyzes exothermic polymerization of methyl vinyl ether. May release flammable hydrogen gas. Reaction of bromide impurity with oxidizing materials may generate trace levels of impurities such as bromates.

Hazardous Decomposition Products: Formed under fire conditions: hydrogen chloride gas, calcium oxide

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA:

PRODUCT TOXICITY DATA: LIQUIDOW® TECHNICAL GRADE CALCIUM CHLORIDE SOLUTION

LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
2282 mg/kg - Oral Acute Toxicity Estimate (ATE)	6013 mg/kg - Dermal Acute Toxicity Estimate (ATE)	No data is available

COMPONENT TOXICITY DATA:
Note: The component toxicity data is populated by the LOLI database and may differ from the product toxicity data given.

Component	LD50 Oral:	LD50 Dermal:	LC50 Inhalation:

Calcium chloride 10043-52-4	1000 mg/kg (Rat)	2630 mg/kg (Rat)	-----
Potassium Chloride 7447-40-7	2600 mg/kg (Rat)	-----	-----
Sodium Chloride 7647-14-5	3 g/kg (Rat)	10 g/kg (Rabbit)	42 g/m^3 (1 hr-Rat)

****

POTENTIAL HEALTH EFFECTS:

Eye contact: May cause serious eye irritation. May cause slight corneal injury. Effects may be slow to heal.

Skin contact: Brief contact is essentially nonirritating to skin. Prolonged contact may cause skin irritation, even a burn. May cause more severe response if skin is damp, abraded (scratched or cut), or covered by clothing, gloves, or footwear. Not classified as corrosive to the skin according to DOT guidelines.

Inhalation: Vapors are unlikely due to physical properties. Mist may cause irritation to upper respiratory tract (nose and throat).

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation or ulceration.

Chronic Effects: Chronic exposures to calcium chloride that cause irritation may cause a chronic dermatitis or mucosal membrane problem. For the minor component(s): POTASSIUM CHLORIDE: In animals, effects have been reported on the following organs after ingestion: Gastrointestinal tract, heart, and kidney. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use. SODIUM CHLORIDE: Medical experience with sodium chloride has shown a strong association between elevated blood pressure and prolonged dietary overuse. Related effects could occur in the kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE:
Solution and or solids may be visible on the skin and or eyes. Localized redness, warmth, and irritation consistent with mechanism of injury: abrasion, burn, hypertonic solution.

Inhalation (Breathing): Inhaling mist, spray, or vapor may cause irritation to upper respiratory tract (nose and throat). Nasal mucosal and oropharyngeal eythema.
Skin: Skin Irritation. Skin exposure may cause slight irritation, redness, itching, swelling. May cause more severe response if skin is damp, abraded (scratched or cut), or covered by clothing, gloves, or footwear. Prolonged contact may cause more severe symptoms. Damage is localized to contact areas.
Eye: Eye Irritation. Eye exposure may cause serious eye irritation and pain. May cause conjunctival swelling and cornea opacification from hypertonic solution. Corneal eye pain, redness, acute corneal thickening or whitening.
Ingestion (Swallowing): Consumption of solids or hypertonic solutions causes nausea, vomiting, and increased thirst.

Interaction with Other Chemicals Which Enhance Toxicity: None known.

****

GHS HEALTH HAZARDS:

GHS: ACUTE TOXICITY - ORAL: Not classified as acutely toxic for oral exposure.

GHS: ACUTE TOXICITY - DERMAL: Not classified as acutely toxic for dermal exposure.

GHS: ACUTE TOXICITY - INHALATION: No data available. Not classified.

GHS: CONTACT HAZARD - SKIN: Category 2 - Causes skin irritation

GHS: CONTACT HAZARD - EYE: Category 2A - Causes serious eye irritation

GHS: CARCINOGENICITY:
Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC, or OSHA.

MUTAGENIC DATA:
Not classified as a mutagen per GHS criteria. The data presented are for the following material: Calcium chloride ($CaCl_2$) - In vitro genetic toxicity studies were negative. The data presented are for the following material: Potassium chloride - In vitro genetic toxicity studies were positive. However, the relevance of this to humans is unknown. For the minor component(s): Sodium chloride - In vitro genetic toxicity studies were predominantly negative.

DEVELOPMENTAL TOXICITY:
Not classified as a developmental or reproductive toxin per GHS criteria. For the major component(s): Did not cause birth defects or any other fetal effects in laboratory animals.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

Aquatic Toxicity:
Material is practically non-toxic to aquatic organisms on an acute basis. (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

Freshwater Fish Toxicity:
Calcium Chloride: LC50, bluegill (Lepomis macrochirus): 8,350 - 10,650 mg/l
Potassium Chloride: LC50, rainbow trout (Oncorhynchus mykiss), 96 h: 4,236 mg/l
Sodium Chloride: LC50, fathead minnow (Pimephales promelas): 10,610 mg/l

Invertebrate Toxicity:
Calcium Chloride: LC50, water flea Daphnia magna: 759 - 3,005 mg/l
Potassium Chloride: EC50, water flea Daphnia magna, 24 h, immobilization: 590 mg/l
LC50, water flea Ceriodaphnia dubia, 96 h: 3,470 mg/l
Sodium Chloride: LC50, water flea Daphnia magna: 4,571 mg/l

Other Toxicity:
Sodium Chloride: IC50, OECD 209 Test; activated sludge, respiration inhibition: > 1,000 mg/l

FATE AND TRANSPORT:

BIODEGRADATION: This material is inorganic and not subject to biodegradation.

PERSISTENCE: Calcium chloride is believed not to persist in the environment because it is readily dissociated into calcium and chloride ions in water. Calcium chloride released into the environment is thus likely to be distributed into water in the form of calcium and chloride ions. Calcium ions may remain in soil by binding to soil particulate or by forming stable salts with other ions. Chloride ions are mobile and eventually drain into surface water. Both ions originally exist in nature, and their concentrations in surface water will depend on various factors, such as geological parameters, weathering, and human activities.

BIOCONCENTRATION: No bioconcentration is expected because of the relatively high water solubility. Potential for mobility in soil is very high (Koc between 0 and 50). Partitioning from water to n-octanol is not applicable.

BIOACCUMULATIVE POTENTIAL: Calcium chloride and its dissociated forms (calcium and chloride ions) are ubiquitous in the environment. Calcium and chloride ions can also be found as constituents in organisms. Considering its dissociation properties, calcium chloride is not expected to accumulate in living organisms.

MOBILITY IN SOIL: Calcium chloride is not expected to be absorbed in soil due to its dissociation properties and high water solubility. It is expected to dissociate into calcium and chloride free ions or it may form stable inorganic or organic salts with other counter ions, leading to different fates between calcium and chloride ions in soil and water components. Calcium ions may bind to soil particulate or may form stable inorganic salts with sulfate and carbonate ions. The chloride ion is mobile in soil and eventually drains into surface water because it is readily dissolved in water.

13. DISPOSAL CONSIDERATIONS

Waste from material:
Reuse or reprocess, if possible. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Report spills if applicable. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN SDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Landfill and waste water treatment system.

Container Management:
Dispose of container in accordance with applicable local, regional, national, and/or international regulations.

14. TRANSPORT INFORMATION

LAND TRANSPORT

U.S. DOT 49 CFR 172.101:

Status: Not regulated

*** NOTE:** This product is not classified as corrosive to the skin according to DOT guidelines.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

Status: Not regulated

MARITIME TRANSPORT (IMO / IMDG) Not regulated

Status - IMO / IMDG: Not Regulated

15. REGULATORY INFORMATION

U.S. REGULATIONS

OSHA REGULATORY STATUS:
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
Not regulated.

SARA EHS Chemical (40 CFR 355.30)
Not regulated

EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):
Acute Health Hazard

EPCRA SECTION 313 (40 CFR 372.65):
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):
Not regulated

NATIONAL INVENTORY STATUS

U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA): All components are listed or exempt.

TSCA 12(b): This product is not subject to export notification.

Canadian Chemical Inventory: All components of this product are listed on either the DSL or the NDSL.

STATE REGULATIONS

California Proposition 65:
This product is not listed, but it may contain impurities/trace elements known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. WARNING: This product (when used in aqueous formulations with a chemical oxidizer such as ozone) may react to form calcium bromate, a chemical known to the State of California to cause cancer.

CANADIAN REGULATIONS
• This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations

WHMIS - Classifications of Substances:
• D2B - Poisonous and Infectious Material; Materials causing other toxic effects - Toxic material

16. OTHER INFORMATION

Prepared by: OxyChem Corporate HESS - Product Stewardship

Rev. Date: 09-Feb-2015

Disclaimer:
We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

NOTE: This information is intended solely for the use of individuals trained in the NFPA and/or HMIS systems.

HMIS: (SCALE 0-4) (Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

Health Rating: 2 **Flammability Rating:** 0 **Reactivity Rating:** 0

NFPA 704 - Hazard Identification Ratings (SCALE 0-4)

LIQUIDOW ™ TECHNICAL GRADE CALCIUM CHLORIDE SOLUTION

SDS No.: M48009 **SDS Revision Date:** 09-Feb-2015

Health Rating: 1 **Flammability:** 0 **Reactivity Rating:** 0

Reason for Revision:
• Updated First Aid Measures: SEE SECTION 4
• Toxicological Information has been revised: SEE SECTION 11

IMPORTANT:
The information presented herein, while not guaranteed, was prepared by technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESSED OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, storage, disposal and other factors that may involve other or additional legal, environmental, safety or performance considerations, and OxyChem assumes no liability whatsoever for the use of or reliance upon this information. While our technical personnel will be happy to respond to questions, safe handling and use of the product remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or to violate any Federal, State, local or foreign laws

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees

End of Safety Data Sheet

PURITAN PRODUCTS

Effective Date: 01/11/16
Replaces Revision: 01/01/13, 07/26/10

NON-EMERGENCY TELEPHONE
610-866-4225

24-HOUR CHEMTREC EMERGENCY TELEPHONE
800-424-9300

SDS – SAFETY DATA SHEET

1. Identification

Product Identifier: SODIUM HYDROXIDE 10 - 60%
Synonyms: Caustic Soda Solution, Lye Solution, Sodium Hydroxide Liquid; Sodium Hydrate Solution, Sodium Hydroxide
Chemical Formula: NaOH in H2O
Recommended Use of the Chemical and Restrictions On Use: Laboratory Reagent
Manufacturer / Supplier: Puritan Products; 2290 Avenue A, Bethlehem, PA 18017 **Phone:** 610-866-4225
Emergency Phone Number: 24-Hour Chemtrec Emergency Telephone 800-424-9300

2. Hazard(s) Identification

Classification of the Substance or Mixture:
Skin corrosion (Category 1A)
Serious eye damage (Category 1)
Acute aquatic toxicity (Category 3)

Risk Phrases:
Symbol: C
R35: Causes severe burns.

Label Elements:

Trade Name: SODIUM HYDROXIDE 10 - 60%

Signal Word: Danger

Hazard Statements:
H314: Causes severe skin burns and eye damage.
H402: Harmful to aquatic life.

Precautionary Statements:
P280: Wear protective gloves / protective clothing / eye protection/ face protection.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER or doctor / physician.

3. Composition / Information on Ingredients

CAS Number: 1310-73-2
EC Number: 215-185-5
Index Number: 011-002-00-6
Molecular Weight: 40 g/mol

Ingredient	CAS Number	EC Number	Percent	Hazardous	Chemical Characterization
Sodium Hydroxide	1310-73-2	215-185-5	10 - 60%	Yes	Substance
Water	7732-18-5	231-791-2	40 - 90%	No	Mixture

4. First-aid Measures

In all cases, immediately call a POISON CENTER or doctor/ physician.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen. Call a physician immediately.

Ingestion: DO NOT INDUCE VOMITING! Give large quantities of water or milk, if available. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Call a physician immediately.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

Note to Physician:
Perform endoscopy in all cases of suspected sodium hydroxide ingestion. In cases of severe esophageal corrosion, the use of therapeutic doses of steroids should be considered. General supportive measures with continual monitoring of gas exchange, acid-base balance, electrolytes, and fluid intake are also required.

5. Fire-fighting Measures

Fire: Not considered to be a fire hazard. Hot or molten material can react violently with water. Can react with certain metals, such as aluminum, to generate flammable Hydrogen gas.

Explosion: May cause fire and explosions when in contact with incompatible materials.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire. CAUTION: Adding water to caustic solution generates large amounts of heat.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Environmental Precautions and Methods and Materials for Containment and Cleaning Up: Contain and recover liquid when possible. Do not let product enter drains. Residues from spills can be diluted with water, neutralized with dilute acid such as acetic, hydrochloric or sulfuric. Absorb neutralized caustic residue on clay, vermiculite or other inert substance and package in a suitable container for disposal. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Precautions for Safe Handling and Conditions for Safe Storage, Including Any Incompatibilities: Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Store above 16C (60F) to prevent freezing. Always add the caustic to water while stirring; never the reverse. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid.) Observe all warnings and precautions listed for the product. Do not store with aluminum or magnesium. Do not mix with acids or organic materials.

8. Exposure Controls / Personal Protection

Airborne Exposure Limits:
OSHA Permissible Exposure Limit (PEL) - 2 mg/m3 Ceiling
ACGIH Threshold Limit Value (TLV) - 2 mg/m3 Ceiling

Ventilation System: A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved): If the exposure limit is exceeded and engineering controls are not feasible, a half face piece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full face piece particulate respirator (NIOSH type N100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, Glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in Oxygen-deficient atmospheres.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety goggles and / or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Physical data is displayed for 10%, 30% and 50% aqueous sodium hydroxide solutions (Merck Index.)

Appearance: Clear, colorless solution
Odor: Odorless
Odor Threshold: Not determined
pH: 14.0 (10%, 30% and 50% solutions)
% Volatiles by volume @ 21C (70F): No information found
Melting Point:
For 10% solution = -10C (14 F); for 30% solution = 1C (34F); for 50% solution = 12C (53.6F)
Boiling Point / Boiling Range:
For 10% solution = 105C (221F); for 30% solution = 115C (239F); for 50% solution = 140C (284F)
Flash Point: Not applicable
Evaporation Rate (BuAC=1): Not determined
Flammability: Not applicable
Upper / Lower Flammability or Explosive Limits: Not applicable
Vapor Pressure (mm Hg): 13 @ 60C (140F) (50% solution)
Vapor Density (Air=1): 1.38 (50% solution)
Relative Density: 10% solution - 1.11, 30% solution - 1.33, 50% solution - 1.53
Solubility: Completely miscible with water
Partition Coefficient: n-octanol / water: No data available
Auto-ignition Temperature: No data available
Decomposition Temperature: No data available
Viscosity: No data available

10. Stability and Reactivity

Reactivity and / or Chemical Stability: Stable under ordinary conditions of use and storage.

Possibility of Hazardous Reactions and Conditions to Avoid: Heat, moisture, incompatibles.

Incompatible Materials: Sodium Hydroxide in contact with acids and organic halogen compounds, especially Trichloroethylene, may causes violent reactions. Contact with Nitromethane and other similar nitro compounds causes formation of shock-sensitive salts. Contact with metals such as Aluminum, Magnesium, Tin, and Zinc cause formation of flammable Hydrogen gas. Sodium Hydroxide, even in fairly dilute solution, reacts readily with various sugars to produce Carbon Monoxide. Precautions should be taken including monitoring the tank atmosphere for Carbon Monoxide to ensure safety of personnel before vessel entry.

Hazardous Decomposition Products: Sodium Oxide. Decomposition by reaction with certain metals releases flammable and explosive Hydrogen gas.

11. Toxicological Information

Emergency Overview: POISON! DANGER! CORROSIVE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. CAUSES BURNS TO ANY AREA OF CONTACT. REACTS WITH WATER, ACIDS AND OTHER MATERIALS.

Potential Health Effects:

Inhalation: Severe irritant. Effects from inhalation of mist vary from mild irritation to serious damage of the upper respiratory tract, depending on severity of exposure. Symptoms may include sneezing, sore throat or runny nose. Severe pneumonitis may occur.

Ingestion: Corrosive! Swallowing may cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may result. Symptoms may include bleeding, vomiting, diarrhea, fall in blood pressure. Damage may appears days after exposure

Skin Contact: Corrosive! Contact with skin can cause irritation or severe burns and scarring with greater exposures.

Eye Contact: Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness.

Chronic Exposure: Prolonged contact with dilute solutions or dust has a destructive effect upon tissue.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or eye disease may be more susceptible to the effects of this substance.

Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System:) No data available.

Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System:) No data available.

Numerical Measures of Toxicity: Cancer Lists: NTP Carcinogen

Ingredient	Known	Anticipated	IARC Category
Sodium Hydroxide (1310-73-2)	No	No	None
Water (7732-18-5)	No	No	None

Acute Toxicity:
Sodium Hydroxide: irritation data: skin, rabbit: 500 mg/24H severe; eye rabbit: 50 ug/24H severe
Investigated as a mutagen.

12. Ecological Information

Ecotoxicity: Harmful to aquatic life. The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.
EC50 Water flea (Ceriodaphnia dubia): 34.59 mg/l 48 hours
LC50 Western mosquitofish (Gambusia affinis): 125 mg/l 96 hours

Persistence and Degradability: Expected to readily biodegrade.

Bioaccumulative Potential: No further relevant information available.

Mobility in Soil: During movement through soil some ion exchange will occur. Also, some of the Hydroxide may remain in the aqueous phase and will move downward through soil in the direction of groundwater flow.

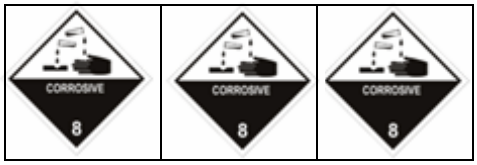
Other adverse effects:
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

UN Number: UN1824
UN Proper Shipping Name: SODIUM HYDROXIDE SOLUTION
Packing Group: II



DOT **IMDG** **IATA**

Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)
Transport Hazard Class(es): 8

Maritime Transport IMDG/GGVSea
Transport Hazard Class(es): 8
Marine Pollutant: No

Air Transport ICAO-TI and IATA-DGR
Transport Hazard Class(es): 8

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Special Precautions for User: Warning: Corrosive Substances

15. Regulatory Information

Chemical Inventory Status – Part 1

Ingredient	TSCA	EC	Japan	Australia
Sodium Hydroxide (1310-73-2)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

Chemical Inventory Status – Part 2

Ingredient	Korea	Canada		Phil.
		DSL	NDSL	
Sodium Hydroxide (1310-73-2)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

Federal, State & International Regulations - Part 1

	SARA 302		SARA 313	
Ingredient	RQ	TPQ	List Chemical	Catg.
Sodium Hydroxide (1310-73-2)	No	No	No	No
Water (7732-18-5)	No	No	No	No

Federal, State & International Regulations - Part 2

	RCRA		TSCA
Ingredient	CERCLA	261.33	8(d)
Sodium Hydroxide (1310-73-2)	1000	No	No
Water (7732-18-5)	No	No	No

Chemical Weapons Convention: No		**TSCA 12(b):** No		**CDTA:** Yes
SARA 311/312:	**Acute:** Yes	**Chronic:** No	**Fire:** No	**Pressure**: No
Reactivity: Yes		Mixture / Liquid		

Australian Hazchem Code: 2R

Poison Schedule: S6

16. Other Information

THE INFORMATION CONTAINED IN THIS DATA SHEET IS BASED ON THE DATA AVAILABLE TO PURITAN PRODUCTS AT THIS TIME. WHILE BELIEVED TO BE ACCURATE, PURITAN PRODUCTS DOES NOT CLAIM IT TO BE ALL INCLUSIVE. IT IS PROVIDED INDEPENDENT OF ANY SALE OF THE PRODUCT, FOR THE PURPOSE OF HAZARD COMMUNICATION, AND AS A GUIDE FOR THE APPROPRIATE PRECAUTIONARY HANDLING OF THE PRODUCT BY PROPERLY TRAINED INDIVIDUALS. IT IS NOT INTENDED TO PROVIDE PRODUCT PERFORMANCE OR APPLICABILITY INFORMATION, AND NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND IS MADE WITH RESPECT TO THE PRODUCT, THE UNDERLYING PRODUCT DATA, OR THE INFORMATION CONTAINED HEREIN.

YOU ARE URGED TO OBTAIN MATERIAL SAFETY DATA SHEETS FOR ALL PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE, AND ARE ENCOURAGED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED THEREIN.

TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, YOU SHOULD CONSULT WITH YOUR LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. WE WILL NOT PROVIDE ADVICE ON SUCH MATTERS, OR BE RESPONSIBLE FOR ANY INJURY OR DAMAGE RESULTING FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

CESCO SOLUTIONS INC
The Science of Success:
Custom Industrial Chemistries

Phone 360.733.7478
Toll Free 800.241.9110
Fax 360.733.7479

www.cescosolutions.com
2227 Midway Lane
Bellingham WA 98226

CESCO ANTIFOAM 1000

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : CESCO ANTIFOAM 1000
PRODUCT USE : Foam Control
PRODUCT DESCRIPTION : Milk white, opaque viscous liquid with slight organic odor.

WHMIS CLASSIFICATION: Not Classified

MANUFACTURER : CESCO SOLUTIONS, INC.
ADDRESS : 2227 Midway Lane, Bellingham, WA 98226

EMERGENCY PHONE : 1-800-424-9300
INFORMATION PHONE : (360) 733-7478

2. HAZARDS IDENTIFICATION

SIGNAL WORD: Warning

HAZARD STATEMENTS: May cause eye irritation.

POTENTIAL HEALTH EFFECTS

EYES:
Eye irritant, may cause redness, burning or tearing.

SKIN:
None Known.

INGESTION:
Ingestion may cause irritation, nausea and diarrhea.

INHALATION:
None Known

MEDICAL CONDITIONS AGGRAVATED:
N/AV

CHRONIC (CANCER) INFORMATION:
N/AV

TERATOLOGY (BIRTH DEFECT) INFORMATION:
N/AV

REPRODUCTION INFORMATION:
N/AV

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component/Exposure Limits	CAS#	WT%

********** NO REPORTABLE INGREDIENTS **********

4. FIRST AID MEASURES

EYES:
Wash eyes immediately with plenty of running water for 15-20 minutes, or until no evidence of chemical remains, including under eyelids. Remove any contact lenses at once. Speed in beginning the eye wash is essential if permanent injury is to be avoided. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN:
Flush contaminated skin with water for 15 minutes, or until no evidence of chemical remains. Remove contaminated clothing under the shower immediately. Prolong washing in serious cases until doctor arrives. GET MEDICAL CARE FOR EVIDENCE OF BURNING. If evidence of chemical burn exists, cover with sterile, dry dressing. Bandage securely, but not too tightly.

INGESTION:
Do not induce vomiting. Drink a large glass of water. Treat symptomatically and supportively. GET MEDICAL ATTENTION IMMEDIATELY. CAUTION: IF UNCONSCIOUS OR HAVING TROUBLE BREATHING OR IN CONVULSIONS, DO NOT INDUCE VOMITING OR GIVE WATER.

INHALATION:
Remove from exposure to mist. If breathing has stopped, provide artificial respiration. Keep the person warm and at rest. OBTAIN IMMEDIATE MEDICAL ATTENTION.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: Not Applicable. Method: Not Applicable
FLAMMABLE LIMITS: Lower: N/A Upper: N/A

HAZARD COMMUNICATION:

OSHA Standard 29CFR 1910.1200 requires that all information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this

SDS available to your employees.

HAZARDOUS COMBUSTION PRODUCTS:
N/AV

EXTINGUISHING MEDIA:
Dry chemical, carbon dioxide, water spray or foam.

FIREFIGHTING INSTRUCTIONS:
Move containers from fire if possible, cool containers exposed to flames with water from side until well after fire is out.

Do not use water directly on material. If large amounts of combustible material are involved, use water spray or fog in flooding amounts. Solid streams may be ineffective. Use water spray to absorb corrosive vapors. Cool containers with flooding amounts of water from as far a distance as possible, keep upwind. SCBA recommended with a full face piece operated in pressure-demand mode or other positive pressure mode. Wear full protective clothing. Run-off may cause pollution. Dike to contain run-off for proper handling as stated in Section VII.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
This material may produce a floating fire hazard.

SENSITIVE TO STATIC DISCHARGE:
N/AV

SENSITIVE TO IMPACT
N/AV

6. ACCIDENTAL RELEASE MEASURES
Do not touch spilled material. Stop leak if you can without risk. For SMALL SPILLS cover with sand or other absorbent material. With a clean shovel place all spilled material, contaminated soil and other contaminated material into a clean, dry container and cover for later disposal. Move containers from spill area. For LARGER SPILLS, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry. Do not touch spilled material. Stop leak if you can without risk. For SMALL SPILLS cover with sand or other absorbent material. With a clean shovel place all spilled material, contaminated soil and other contaminated material into a clean, dry container and cover for later disposal. Move containers from spill area. For LARGER SPILLS, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry.

Wash walking surfaces with detergent and water to reduce slipping hazard.

7. HANDLING AND STORAGE
Store in well sealed containers which are protected from physical damage. Avoid handling conditions that can lead to spills or mist formation. Have abundant running water available where material is stored, unloaded or handled. Store above the freezing point of water and no hotter than 100 degrees F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:
Provide natural or mechanical ventilation to minimize exposure, especially where possibility of mist formation exists. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult NFPA Standard 91 for design exhaust systems.

RESPIRATORY PROTECTION:
None needed for normal operating conditions.

SKIN PROTECTION:
Employee should wear protective clothing and equipment to prevent repeated contact with this substance.

EYE PROTECTION:
Employee must wear splash proof safety glasses or safety goggles to prevent eye contact with this substance. DO NOT WEAR CONTACT LENSES.

PROTECTIVE GLOVES:
Employee must wear appropriate protective gloves to prevent contact with this substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A
APPEARANCE & ODOR: Milk white, opaque viscous liquid with slight organic odor
VAPOR DENSITY: N/AV
VAPOR PRESSURE: N/AV
SPECIFIC GRAVITY: 1.
pH: 4.0-5.0 (1% solution)
SOLUBILITY IN WATER: Dispersible
VOC: N/AV

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID):
AVOID water - may cause extremely slippery conditions.

INCOMPATIBILITY:
None known.

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition products expected to produce carbon monoxide, carbon dioxide, silicon dioxide and formaldehyde.

HAZARDOUS POLYMERIZATION:
Has not been reported to occur.

11. TOXICOLOGICAL INFORMATION

CHRONIC/CARCINOGENICITY:
N/AV

TERATOLOGY:
N/AV

REPRODUCTION:
N/AV

MUTAGENICITY:
N/AV

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

May be toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:

Spilled material should be solidified with sand, soil or other absorbent material so that no free liquid remains before disposal. Incineration and/or disposal in chemical land-fill. Disposal must comply with all federal, state and local disposal and discharge laws.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:

Not a hazardous waste.

CLEAN WATER ACT REQUIREMENTS:

N/AV

14. TRANSPORT INFORMATION

DOT CLASSIFICATION (USA):

Not regulated. Antifoam, Liquid, Non-hazardous.

TDG REGULATIONS (CANADA):

Not regulated.

15. REGULATORY INFORMATION:

U.S. FEDERAL REGULATIONS:
SARA TITLE III (SUPERFUND AMENDMENTS & REAUTHORIZATION ACT):

302/304 EXTREMELY HAZARDOUS SUBSTANCES:

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, Section 302 requires notification of the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) of the presence of Extremely Hazardous Substances (EHS), 40 CFR 355 Appendix A, in amounts in excess of the threshold planning quantity (TPQ). Section 304 requires notification of SERC and LEPC of releases involving a RQ of an EHS or CERCLA Hazardous Substance. Extremely Hazardous Substances contained in this product are:

**********NONE**********

311/312 HAZARD CATEGORIES:
The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, Section 311 and 312 require reporting based on regulations promolgated in 40 CFR 372. Health Hazards are identified in Section VI. Other applicable classifications are: **********NONE**********

313 REPORTABLE INGREDIENTS:
The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all MSDS's that are copied or distributed for this material. Refer to Section II, HAZARDOUS INGREDIENTS/SARA III INFORMATION, the components that are subject to reporting are designated by an asterix (*).

TSCA (TOXIC SUBSTANCE CONTROL ACT) STATUS:
All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:
N/AV

INTERNATIONAL REGULATIONS:

CANADIAN WHMIS:
N/AV

STATE REGULATIONS:

16. OTHER INFORMATION

NFPA RATINGS:
HEALTH (H): 0 FIRE (F): 0 REACTIVITY (R): 0

HMIS CODES:
HEALTH (H): 0 FIRE (F): 0 PHYSICAL HAZARD (P): 0

MSDS REVISION DATE: November 3, 2016

NAME OF PREPARER: Environmental, Health & Safety Department.

CONTACT PHONE NUMBER: (360) 733-7478

MANUFACTURER DISCLAIMER:

IMPORTANT: The information and data herein is based on available data. Buyer assumes all risk of use, storage and handling of this product in compliance with applicable laws and regulations. CESCO SOLUTIONS, INC., MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, AND WILL NOT BE LIABLE FOR CLAIMS, RELATING TO THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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Phone 360.733.7478
Toll Free 800.241.9110
Fax 360.733.7479
www.cescosolutions.com
2227 Midway Lane
Bellingham WA 98226

CESCO CLEAN FLOW E2

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : CESCO CLEAN FLOW E2
PRODUCT USE : Enzymatic Cleaner & Deodorizer
PRODUCT DESCRIPTION : Opaque, non-viscous liquid with pleasant, clean scent.

WHMIS CLASSIFICATION: Not Classified

MANUFACTURER : CESCO SOLUTIONS, INC.
ADDRESS : 2227 Midway Lane, Bellingham, WA 98226

EMERGENCY PHONE : 1-800-424-9300
INFORMATION PHONE : (360) 733-7478

2. HAZARDS IDENTIFICATION

SIGNAL WORD: Warning

HAZARD STATEMENTS: Causes eye and skin irritation.

POTENTIAL HEALTH EFFECTS

EYES:
Moderate to severe eye irritant.

SKIN:
Mild to moderate skin irritant.

INGESTION:
Ingestion may cause irritation, nausea and diarrhea.

INHALATION:
None Known

MEDICAL CONDITIONS AGGRAVATED:
Individuals with known allergies, particularly to enzymes, as well as those individuals with chronic respiratory disease or particular susceptibility thereto and those with asthmatic conditions should avoid contact with dusty/misty conditions.

CHRONIC (CANCER) INFORMATION:
There is no data available on the chronic effects of ingestion of this material.

TERATOLOGY (BIRTH DEFECT) INFORMATION:
No Information.

REPRODUCTION INFORMATION:
No Information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component/Exposure Limits	CAS#	WT%
Naturally occuring microorganism, white rot and enzymes		20 - 30%

4. FIRST AID MEASURES

EYES:
Wash eyes immediately with plenty of running water for 15-20 minutes, or until no evidence of chemical remains, including under eyelids. Remove any contact lenses at once. Speed in beginning the eye wash is essential if permanent injury is to be avoided. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN:
Flush contaminated skin with water for 15 minutes, or until no evidence of chemical remains. Remove contaminated clothing under the shower immediately. Prolong washing in serious cases until doctor arrives. GET MEDICAL CARE FOR EVIDENCE OF BURNING. If evidence of chemical burn exists, cover with sterile, dry dressing. Bandage securely, but not too tightly.

INGESTION:
Do not induce vomiting. Drink two glasses of water. Treat symptomatically and supportively. GET MEDICAL ATTENTION IMMEDIATELY. CAUTION: IF UNCONSCIOUS OR HAVING TROUBLE BREATHING OR IN CONVULSIONS, DO NOT INDUCE VOMITING OR GIVE WATER.

INHALATION:
Remove from exposure to mist. If breathing has stopped, provide artificial respiration. Keep the person warm and at rest. OBTAIN IMMEDIATE MEDICAL ATTENTION. Symptoms of allergic reaction will occur within 0-48 hours.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: Not Established. Method: N/AV
FLAMMABLE LIMITS: Lower: N/A Upper: N/A

HAZARD COMMUNICATION:

OSHA Standard 29CFR 1910.1200 requires that all information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this MSDS available to your employees.

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition products expected to produce oxides of carbon and nitrogen.

EXTINGUISHING MEDIA:

Dry chemical, carbon dioxide, water spray or foam.

FIREFIGHTING INSTRUCTIONS:

Move containers from fire if possible, cool containers exposed to flames with water from side until well after fire is out.

Do not use water directly on material. If large amounts of combustible material are involved, use water spray or fog in flooding amounts. Solid streams may be ineffective. Use water spray to absorb corrosive vapors. Cool containers with flooding amounts of water from as far a distance as possible, keep upwind. SCBA recommended: smother to exclude air. Firefighters should wear self-contained breathing apparatus and bunker gear.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None Known

SENSITIVE TO STATIC DISCHARGE:

No Information

SENSITIVE TO IMPACT

None known.

6. ACCIDENTAL RELEASE MEASURES

Do not touch spilled material. Stop leak if you can without risk. For SMALL SPILLS cover with sand or other absorbent material. With a clean shovel place all spilled material, contaminated soil and other contaminated material into a clean, dry container and cover for later disposal. Move containers from spill area. For LARGER SPILLS, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry.

7. HANDLING AND STORAGE

Store in well sealed containers which are protected from physical damage. Avoid handling conditions that can lead to spills or mist formation. Drains must have retention basins for pH adjustment and neutralization of spilled materials and flushings prior to discharge. Have abundant running water available where material is stored, unloaded or handled. Store above the freezing point of water.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide natural or mechanical ventilation to minimize exposure, especially where possibility of mist formation exists. If practical, use local mechanical exhaust ventilation at sources of air contamination.

RESPIRATORY PROTECTION:
None needed for normal operating conditions.

SKIN PROTECTION:
Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated contact with this substance.

EYE PROTECTION:
Employee must wear splash proof safety glasses to prevent eye contact with this substance. DO NOT WEAR CONTACT LENSES.

PROTECTIVE GLOVES:
Employee must wear appropriate protective gloves to prevent contact with this substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 100°C
APPEARANCE & ODOR: Opaque, non-viscous liquid with pleasant, clean scent.
VAPOR DENSITY: Same as Water.
VAPOR PRESSURE: N/AV
SPECIFIC GRAVITY: 1.003
pH: 5-7.8 (1% Sol)
SOLUBILITY IN WATER: Moderate - cont. bacteria
VOC: N/AV

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID):
Under extreme temperatures, evaporation of water in formulation will occur, and may burn but does not ignite readily.

INCOMPATIBILITY:
Strong oxidizers, acids and alkalies.

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition products expected to produce oxides of carbon and nitrogen.

HAZARDOUS POLYMERIZATION:
Has not been reported to occur.

11. TOXICOLOGICAL INFORMATION

CHRONIC/CARCINOGENICITY:
N/AV

TERATOLOGY:
N/AV

REPRODUCTION:
N/AV

MUTAGENICITY:
N/AV

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:
Current data not available.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:
A non-hazardous liquid waste, it should be solidified with sand, soil or other absorbent material so that no free liquid remains before disposal. Incineration and/or disposal in chemical land-fill. Disposal must comply with all federal, state and local disposal and discharge laws.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:
Not a hazardous waste.

CLEAN WATER ACT REQUIREMENTS:
No information.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION (USA):
Non-hazardous Liquid

TDG REGULATIONS (CANADA):
Unclassified.

15. REGULATORY INFORMATION:

U.S. FEDERAL REGULATIONS:
SARA TITLE III (SUPERFUND AMENDMENTS & REAUTHORIZATION ACT):

302/304 EXTREMELY HAZARDOUS SUBSTANCES:
The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, Section 302 requires notification of the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) of the presence of Extremely Hazardous Substances (EHS), 40 CFR 355 Appendix A, in amounts in excess of the threshold planning quantity (TPQ). Extremely Hazardous Substances contained in this product are:

NONE. Section 304 requires notification of SERC and LEPC of releases involving a RQ of an EHS or CERCLA Hazardous Substance.

311/312 HAZARD CATEGORIES:

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:
**********NONE**********

313 REPORTABLE INGREDIENTS:

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all SDS's that are copied or distributed for this material. Refer to Section 3, COMPOSITION/ INFORMATION ON INGREDIENTS, the components that are subject to reporting are designated by an asterisk (*).

TSCA (TOXIC SUBSTANCE CONTROL ACT) STATUS:

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:

N/AV

INTERNATIONAL REGULATIONS:

CANADIAN WHMIS:

N/AV

16. OTHER INFORMATION

NFPA RATINGS:

HEALTH (H): 1 FIRE (F): 0 REACTIVITY (R): 0

HMIS CODES:

HEALTH (H): 1 FIRE (F): 0 PHYSICAL HAZARD (P): 0

SDS REVISION DATE: October 2, 2017

NAME OF PREPARER: Environmental, Health & Safety Department.

CONTACT PHONE NUMBER: (360) 733-7478

MANUFACTURER DISCLAIMER:

IMPORTANT: The information and data herein is based on available data. Buyer assumes all risk of use, storage and handling of this product in compliance with applicable laws and regulations. CESCO SOLUTIONS, INC., MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, AND WILL NOT BE LIABLE FOR CLAIMS, RELATING TO THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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Toll Free 800.241.9110
Fax 360.733.7479

www.cescosolutions.com
2227 Midway Lane
Bellingham WA 98226

CESCO MG DEICER

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : CESCO MG DEICER
PRODUCT USE : De-icing chemical
PRODUCT DESCRIPTION : Light amber with slight organic odor.
WHMIS CLASSIFICATION: Not Classified

MANUFACTURER : CESCO SOLUTIONS, INC.
ADDRESS : 2227 Midway Lane, Bellingham, WA 98226

EMERGENCY PHONE : 1-800-424-9300
INFORMATION PHONE : (360) 733-7478

2. HAZARDS IDENTIFICATION

SIGNAL WORD: Warning

HAZARD STATEMENT: Causes skin and eye irritation.

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS:
N/AV
N/AV

POTENTIAL HEALTH EFFECTS

EYES:
May cause irritation.

SKIN:
Mild to moderate skin irritant. May cause some dryness of skin with repeated contact. May cause irritation.

INGESTION:
May be irritating to mouth, throat and gastrointestinal system. May cause stomach distress, nausea or vomiting.

INHALATION:
Inhalation can cause nose, throat and respiratory tract irritation and coughing. Dust or vapors from this product may cause irritation of the nose, throat and respiratory tract.

MEDICAL CONDITIONS AGGRAVATED:
No information.

CHRONIC (CANCER) INFORMATION:

There is no data available on the chronic effects of ingestion of this material.

TERATOLOGY (BIRTH DEFECT) INFORMATION:
Not classified or listed by IARC, NTP, OSHA and ACGIH.

REPRODUCTION INFORMATION:
Not classified or listed by IARC, NTP, OSHA and ACGIH.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component/Exposure Limits	CAS#	WT%
MAGNESIUM CHLORIDE, HEXAHYDRATE	7791-18-6	50 - 60%
SODIUM HYDROXIDE, 50% SOLUTION	1310-73-2	0 - 3%
..... OSHA PEL-2MG/M3 ACGIH TLV-2MG/M3		

4. FIRST AID MEASURES

EYES:
Wash eyes immediately with plenty of running water for 15-20 minutes, or until no evidence of chemical remains, including under eyelids. Remove any contact lenses at once. Speed in beginning the eye wash is essential if permanent injury is to be avoided. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN:
Flush contaminated skin with water for 15 minutes, or until no evidence of chemical remains. Remove contaminated clothing under the shower immediately. Prolong washing in serious cases until doctor arrives. GET MEDICAL CARE FOR EVIDENCE OF BURNING. If evidence of chemical burn exists, cover with sterile, dry dressing. Bandage securely, but not too tightly.

INGESTION:
Do not induce vomiting. Rinse mouth with water, then drink 1 or 2 glasses of water. Obtain medical attention. NEVER GIVE ANYTHING BY MOUTH IF VICTIM IS UNCONSCIOUS OR CONVULSING.

INHALATION:
Remove from exposure to mist. If breathing has stopped, provide artificial respiration. Keep the person warm and at rest. OBTAIN IMMEDIATE MEDICAL ATTENTION.

NOTE TO PHYSICIAN:

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: None **Method: Not Applicable**

FLAMMABLE LIMITS: Lower: N/A **Upper: N/A**

AUTOIGNITION TEMPERATURE: N/AV

HAZARDOUS COMBUSTION PRODUCTS:

May include hydrogen chloride and chlorine gas.

EXTINGUISHING MEDIA:

Use media appropriate for surrounding material. Use water spray to cool containers exposed to fire from as far a distance as possible.

FIREFIGHTING INSTRUCTIONS:

Move containers from fire if possible, cool containers exposed to flames with water from side until well after fire is out.

Do not use water directly on material. If large amounts of combustible material are involved, use water spray or fog in flooding amounts. Solid streams may be ineffective. Use water spray to absorb corrosive vapors. Cool containers with flooding amounts of water from as far a distance as possible, keep upwind. SCBA recommended: smother to exclude air. Firefighters should wear self-contained breathing apparatus and bunker gear.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

None Known

SENSITIVE TO STATIC DISCHARGE:

None Known

SENSITIVE TO IMPACT

N/AV

6. ACCIDENTAL RELEASE MEASURES

Do not touch spilled material. Stop leak if you can without risk. For SMALL SPILLS cover with sand or other absorbent material. With a clean shovel place all spilled material, contaminated soil and other contaminated material into a clean, dry container and cover for later disposal. Move containers from spill area. For LARGER SPILLS, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry. Do not touch spilled material. Stop leak if you can without risk. For SMALL SPILLS pick up spill with vacuum equipment (acid resistant) for disposal, or flush to holding area with water.

For LARGER SPILLS, dike far ahead of spill for later disposal. Keep unnecessary people away from area. Isolate hazard area and deny entry.

7. HANDLING AND STORAGE

Avoid contact with incompatible chemicals listed in Section V. Store in well sealed containers which are protected from physical damage. Avoid handling conditions that can lead to spills or mist formation. Have abundant running water available where material is stored, unloaded or handled. Store above the freezing point of water and no hotter than 100 degrees F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide natural or mechanical ventilation to minimize exposure, especially where possibility of mist formation exists. If practical, use local mechanical exhaust ventilation at sources of air contamination such

as open process equipment. Consult NFPA Standard 91 for design exhaust systems.

RESPIRATORY PROTECTION:
Avoid breathing dust. Use NIOSH/MSHA approved respiratory protection and equipment when airborne exposure is excessive. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by the NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29CFR 1910.134.

SKIN PROTECTION:
N/AV

EYE PROTECTION:
N/AV

PROTECTIVE GLOVES:
Employee must wear appropriate protective gloves to prevent contact with this substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 293F
APPEARANCE & ODOR: N/AV
VAPOR DENSITY: N/AV
VAPOR PRESSURE: N/AV
SPECIFIC GRAVITY: 1.26
pH: 6.5-7.5 (Neat)
SOLUBILITY IN WATER: N/AV
VOC: N/AV

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID):
Avoid breathing dust or mist from this material.

INCOMPATIBILITY:
N/AV

HAZARDOUS DECOMPOSITION PRODUCTS:
May include hydrogen chloride and chlorine gas.

HAZARDOUS POLYMERIZATION:
Has not been reported to occur.

11. TOXICOLOGICAL INFORMATION

CHRONIC/CARCINOGENICITY:

TERATOLOGY:

REPRODUCTION:
N/AV

MUTAGENICITY:
N/AV

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

CHEMICAL FATE INFORMATION:

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:
Spilled material should be solidified with sand, soil or other absorbent material so that no free liquid remains before disposal. Incineration and/or disposal in chemical land-fill. Disposal must comply with all federal, state and local disposal and discharge laws. No special disposal method required except that which is required by current local regulations. In case of a spill, carefully collect and dilute with water before disposal.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:
Not a hazardous waste.

CLEAN WATER ACT REQUIREMENTS:
No information.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION (USA):
This product is not classified as a hazardous material by the U.S. Department of Transportation.

TDG REGULATIONS (CANADA):
NOT REGULATED

15. REGULATORY INFORMATION:

U.S. FEDERAL REGULATIONS:
SARA TITLE III (SUPERFUND AMENDMENTS & REAUTHORIZATION ACT):

302/304 EXTREMELY HAZARDOUS SUBSTANCES:
The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, Section 302 requires notification of the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC)

of the presence of Extremely Hazardous Substances (EHS), 40 CFR 355 Appendix A, in amounts in excess of the threshold planning quantity (TPQ). Section 304 requires notification of SERC and LEPC of releases involving a RQ of an EHS or CERCLA Hazardous Substance. Extremely Hazardous Substances contained in this product are:

311/312 HAZARD CATEGORIES:

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

**********NONE**********

313 REPORTABLE INGREDIENTS:

N/AV

TSCA (TOXIC SUBSTANCE CONTROL ACT) STATUS:

N/AV

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:

N/AV

INTERNATIONAL REGULATIONS:

CANADIAN WHMIS:

N/AV

STATE REGULATIONS:

16. OTHER INFORMATION

HMIS CODES:

HEALTH (H): 1 FIRE (F): 0 REACTIVITY (R): 0

SDS REVISION DATE: February 21, 2020

NAME OF PREPARER: Environmental, Health & Safety Department.

CONTACT PHONE NUMBER: (360) 733-7478

MANUFACTURER DISCLAIMER:

IMPORTANT: The information and data herein is based on available data. Buyer assumes all risk of use, storage and handling of this product in compliance with applicable laws and regulations. CESCO SOLUTIONS, INC., MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, AND WILL NOT BE LIABLE FOR CLAIMS, RELATING TO THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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Toll Free 800.241.9110
Fax 360.733.7479
www.cescosolutions.com
2227 Midway Lane
Bellingham WA 98226

CESCO HYDROTREAT M-35

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : CESCO HYDROTREAT M-35
PRODUCT USE : Processing aid for industrial applications.
PRODUCT DESCRIPTION : Red liquid with rotten-egg like odor.
WHMIS CLASSIFICATION: Not Classified

MANUFACTURER : CESCO SOLUTIONS, INC.
ADDRESS : 2227 Midway Lane, Bellingham, WA 98226

EMERGENCY PHONE : 1-800-424-9300
INFORMATION PHONE : (360) 733-7478

2. HAZARDS IDENTIFICATION

SIGNAL WORD: WARNING

HAZARD STATEMENTS: Not required

OTHER HAZARDS:

Spills produce extremely slippery surfaces.

POTENTIAL HEALTH EFFECTS

EYES:

Eye irritant, may cause redness, burning or tearing.

SKIN:

Mild to moderate skin irritant. May cause some dryness of skin with repeated contact.

INGESTION:

Ingestion may cause irritation, nausea, and diarrhea. May be irritating to mouth, throat, and Gastrointestinal system.

INHALATION:

Inhalation can cause nose, throat, and respiratory tract irritation and coughing.

MEDICAL CONDITIONS AGGRAVATED:

None known or reported.

CHRONIC (CANCER) INFORMATION:

There is no data available on the chronic effects of ingestion of this material.

TERATOLOGY (BIRTH DEFECT) INFORMATION:

N/AV

REPRODUCTION INFORMATION:

N/AV

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component/Exposure Limits	CAS#	WT%

**********no reportable ingredients**********

4. FIRST AID MEASURES

EYES:

Wash eyes immediately with plenty of running water for 15-20 minutes, or until no evidence of chemical remains, including under eyelids. Remove any contact lenses at once. Speed in beginning the eye wash is essential if permanent injury is to be avoided. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN:

Flush contaminated skin with water for 15 minutes, or until no evidence of chemical remains. Remove contaminated clothing under the shower immediately. Prolong washing in serious cases until doctor arrives. GET MEDICAL CARE FOR EVIDENCE OF BURNING. If evidence of chemical burn exists, cover with sterile, dry dressing. Bandage securely, but not too tightly.

INGESTION:

Induce vomiting immediately. Treat symptomatically and supportively. GET MEDICAL ATTENTION IMMEDIATELY. CAUTION: IF UNCONSCIOUS OR HAVING TROUBLE BREATHING OR IN CONVULSIONS, DO NOT INDUCE VOMITING OR GIVE WATER.

INHALATION:

Remove from exposure to mist. If breathing has stopped, provide artificial respiration. Keep the person warm and at rest. OBTAIN IMMEDIATE MEDICAL ATTENTION.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: N/AV Method: N/AV

FLAMMABLE LIMITS: Lower: N/A Upper: N/A

HAZARD COMMUNICATION:

OSHA Standard 29CFR 1910.1200 requires that all information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, material safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this SDS available to your employees.

HAZARDOUS COMBUSTION PRODUCTS:

N/AV

EXTINGUISHING MEDIA:

Use water spray, dry powder, foam, carbon dioxide (CO2)

FIREFIGHTING INSTRUCTIONS:

Move containers from fire if possible, cool containers exposed to flames with water from side until well after fire is out.

Do not use water directly on material. If large amounts of combustible material are involved, use water spray or fog in flooding amounts. Solid streams may be ineffective. Use water spray to absorb corrosive vapors. Cool containers with flooding amounts of water from as far a distance as possible, keep upwind. SCBA recommended: smother to exclude air. Firefighters should wear self-contained breathing apparatus and bunker gear.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

N/AV

SENSITIVE TO STATIC DISCHARGE:

N/AV

SENSITIVE TO IMPACT

N/AV

6. ACCIDENTAL RELEASE MEASURES

Do not touch spilled material. Stop leak if you can without risk. Cover small spills with sand or other absorbent material. With a clean shovel place all spilled material, contaminated soil, and other contaminated material into a clean, dry container and cover for later disposal. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry.

7. HANDLING AND STORAGE

Store in well sealed containers which are protected from physical damage. Avoid handling conditions that can lead to spills or mist formation. Drains must have retention basins for pH adjustment and neutralization of spilled materials and flushings prior to discharge. Have abundant running water available where material is stored, unloaded or handled. Store above the freezing point of water. Avoid contact with skin an eyes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide natural or mechanical ventilation to minimize exposure, especially where possibility of mist formation exists. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult NFPA Standard 91 for design exhaust systems.

RESPIRATORY PROTECTION:

None needed for normal operating conditions. If misty conditions are encountered, wear a NIOSH approved organic filter respirator.

SKIN PROTECTION:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated contact with this substance.

EYE PROTECTION:

Employee must wear splash proof and dust-resistant safety goggles or face-shield to prevent eye contact with this substance. DO NOT WEAR CONTACT LENSES.

PROTECTIVE GLOVES:
Employee must wear appropriate protective gloves to prevent contact with this substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/AV
APPEARANCE & ODOR: Red liquid with rotten-egg like odor.
VAPOR DENSITY: N/AV
VAPOR PRESSURE: N/AV
SPECIFIC GRAVITY: 1.05-1.15
pH: 10-11.5 (ten times dilution)
SOLUBILITY IN WATER: Complete.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID):
Stable at normal conditions including ambient temperature and pressure.

INCOMPATIBILITY:
Strong oxidizing agents and strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition may produce: nitrogen oxides, carbon oxides, sulfur oxides.

HAZARDOUS POLYMERIZATION:
Has not been reported to occur.

11. TOXICOLOGICAL INFORMATION

CHRONIC/CARCINOGENICITY:
N/AV

TERATOLOGY:
N/AV

REPRODUCTION:
N/AV

MUTAGENICITY:
N/AV

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:
Not readily biodegradable. The product is expected to bioaccumulate.

CHEMICAL FATE INFORMATION:
See ecotoxicological information.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:
Dispose in accordance with local, state, and national regulations. Recycling is preferred if practical.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:
N/AV

CLEAN WATER ACT REQUIREMENTS:
N/AV

14. TRANSPORT INFORMATION

DOT CLASSIFICATION (USA):
Not Classified

TDG REGULATIONS (CANADA):
Not Classified

15. REGULATORY INFORMATION:

U.S. FEDERAL REGULATIONS:

SARA TITLE III (SUPERFUND AMENDMENTS & REAUTHORIZATION ACT):

302/304 EXTREMELY HAZARDOUS SUBSTANCES:
The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, Section 302 requires notification Of the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) of the Presence of Extremely Hazardous Substances (EHS). Extremely Hazardous Substances contained in this product are: *********NONE**********

311/312 HAZARD CATEGORIES:
This product has been reviewed according to the EPA "Hazard Categories" promulgated under sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: None.

313 REPORTABLE INGREDIENTS:
The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all SDS's that are copied or distributed for this material. Refer to Section 3, COMPOSITION/ INFORMATION ON INGREDIENTS, the components that are subject to reporting are designated by an asterisk (*).

TSCA (TOXIC SUBSTANCE CONTROL ACT) STATUS:
All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:
N/AV

INTERNATIONAL REGULATIONS:

CANADIAN WHMIS:
N/AV

STATE REGULATIONS:

16. OTHER INFORMATION

NFPA RATINGS:
HEALTH (H): 1 FIRE (F): 0 REACTIVITY (R): 0

HMIS CODES:
HEALTH (H): 1 FIRE (F): 0 PHYSICAL HAZARD (P): 0

SDS REVISION DATE: February 21,2020

NAME OF PREPARER: Environmental, Health & Safety Department.

CONTACT PHONE NUMBER: (360) 733-7478

MANUFACTURER DISCLAIMER:

IMPORTANT: The information and data herein is based on available data. Buyer assumes all risk of use, storage and handling of this product in compliance with applicable laws and regulations. CESCO SOLUTIONS, INC., MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, AND WILL NOT BE LIABLE FOR CLAIMS, RELATING TO THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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The Science of Success:
Custom Industrial Chemistries

Phone 360.733.7478
Toll Free 800.241.9110
Fax 360.733.7479
www.cescosolutions.com
2227 Midway Lane
Bellingham WA 98226

CESCO PA-75

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : CESCO PA-75
PRODUCT USE : Acidification
PRODUCT DESCRIPTION : Clear, odorless liquid.
WHMIS CLASSIFICATION: E - Corrosive Material

MANUFACTURER : CESCO SOLUTIONS, INC.
ADDRESS : 2227 Midway Lane, Bellingham, WA 98226

EMERGENCY PHONE : 1-800-424-9300
INFORMATION PHONE : (360) 733-7478

2. HAZARDS IDENTIFICATION

SIGNAL WORD: Danger

HAZARD STATMENTS: Causes severe eye and skin burns and damage.
Harmful if swallowed.
May be corrosive to metals.

POTENTIAL HEALTH EFFECTS

EYES:
Causes severe burns to eyes. Eye damage may be permanent.

SKIN:
Causes severe burns to skin and all body tissues.

INGESTION:
Harmful if swallowed. Ingestion may cause burns to the mouth and esophagus.

INHALATION:
Inhalation can cause nose, throat and respiratory tract irritation and coughing.

MEDICAL CONDITIONS AGGRAVATED:
None known or reported.

CHRONIC (CANCER) INFORMATION:
There is no data available on the chronic effects of ingestion of this material.

TERATOLOGY (BIRTH DEFECT) INFORMATION:
No Information.

REPRODUCTION INFORMATION:
No Information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component/Exposure Limits	CAS#	WT%
*PHOSPHORIC ACID, 75-86%	7664-38-2	90 -100%
OSHA PEL-1MG/M3 OSHA STEL-3MG/M3 ACGIH TLV-1MG/M3 ACGIH STEL-3MG/M3		

4. FIRST AID MEASURES

EYES:
Wash eyes immediately with plenty of running water for 15-20 minutes, or until no evidence of chemical remains, including under eyelids. Remove any contact lenses at once. Speed in beginning the eyewash is essential if permanent injury is to be avoided. In case of chemical burns, apply sterile bandages loosely to eyes without medication. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN:
Flush contaminated skin with water for 15 minutes, or until no evidence of chemical remains. Remove contaminated clothing under the shower immediately. Prolong washing in serious cases until doctor arrives. GET MEDICAL CARE FOR EVIDENCE OF BURNING. If evidence of chemical burn exists, cover with sterile, dry dressing. Bandage securely, but not too tightly.

INGESTION:
Do not induce vomiting. Drink a large glass of water. Treat symptomatically and supportively. GET MEDICAL ATTENTION IMMEDIATELY. CAUTION: IF UNCONSCIOUS OR HAVING TROUBLE BREATHING OR IN CONVULSIONS, DO NOT INDUCE VOMITING OR GIVE WATER.

INHALATION:
Remove from exposure to mist. If breathing has stopped, provide artificial respiration. Keep the person warm and at rest. OBTAIN IMMEDIATE MEDICAL ATTENTION.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: No flash prior to reaching Boiling Method: N/A

FLAMMABLE LIMITS: Lower: N/A Upper: N/A

AUTOIGNITION TEMPERATURE: N/AV

HAZARDOUS COMBUSTION PRODUCTS:
Thermal decomposition products expected to produce oxides of phosphorous.

EXTINGUISHING MEDIA:

Use media appropriate for surrounding material. Use water spray to cool containers exposed to fire from as far a distance as possible. DO NOT get water inside containers. Generates heat upon addition of water, with possible spattering.

FIREFIGHTING INSTRUCTIONS:

SCBA recommended with a full face piece operated in pressure-demand mode or other positive pressure mode. Wear full protective clothing. Run-off may cause pollution. Dike to contain run-off for proper handling as stated in Section VII.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Negligible fire hazard when exposed to heat or flame.

SENSITIVE TO STATIC DISCHARGE:

No Information

SENSITIVE TO IMPACT

None known.

6. ACCIDENTAL RELEASE MEASURES

Do not touch spilled material. Stop leak if you can without risk. For SMALL SPILLS pick up spill with vacuum equipment (acid resistant) for disposal, or flush to holding area with water. Neutralize residues with lime or soda ash and rinse with water.

For LARGER SPILLS, dike far ahead of spill for later disposal. Keep unnecessary people away from area. Isolate hazard area and deny entry.

7. HANDLING AND STORAGE

Store in well sealed containers which are protected from physical damage. Avoid handling conditions that can lead to spills or mist formation. Drains must have retention basins for pH adjustment and neutralization of spilled materials and flushings prior to discharge. Have abundant running water available where material is stored, unloaded or handled. Store above the freezing point of water. Avoid contact with incompatible chemicals listed in Section V. DO NOT permit workers to handle ACID solutions without proper training and proper equipment. DO NOT store in ALUMINUM containers as flammable hydrogen gas can be generated. Do not use aluminum fittings or transfer lines. Avoid contact with alkalies.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide natural or mechanical ventilation to minimize exposure, especially where possibility of mist formation exists. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult NFPA Standard 91 for design exhaust systems.

RESPIRATORY PROTECTION:

None needed for normal operating conditions. Have available and wear as appropriate for exposure limits: NIOSH/MSHA approved respirator. Supplied-air respirator with a full face-piece, helmet or hood: self-contained breathing apparatus with a full face-piece.

SKIN PROTECTION:
Apron or protective clothing, and rubber boots (tops covered by apron or clothing to prevent entrance of material).

EYE PROTECTION:
Employee must wear splash proof and/or dust-resistant safety goggles with a full face-shield to prevent eye contact with this substance. DO NOT WEAR CONTACT LENSES.

PROTECTIVE GLOVES:
Employee must wear appropriate protective gloves to prevent contact with this substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 316°F
APPEARANCE & ODOR: Clear, odorless liquid.
VAPOR DENSITY: Non-volatile.
VAPOR PRESSURE: N/AV
SPECIFIC GRAVITY: 1.585
pH: Not determined.
SOLUBILITY IN WATER: Complete.
VOC: N/AV

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID):
Flammable hydrogen gas may be generated upon contact with metals such as aluminum, tin and zinc.

INCOMPATIBILITY:
This product is acidic - avoid contact with alkaline materials. Addition of water creates heat and may cause spattering. Prolonged contact with metals such as aluminum, tin, lead and zinc may product flammable hydrogen gas.

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition products expected to produce oxides of phosphorous.

HAZARDOUS POLYMERIZATION:
Has not been reported to occur.

11. TOXICOLOGICAL INFORMATION

CHRONIC/CARCINOGENICITY:
N/AV

TERATOLOGY:
N/AV

REPRODUCTION:
N/AV

MUTAGENICITY:
N/AV

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

Information not currently available.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:
Waste acid must never be discharged directly to sewers or surface waters. First convert to neutral salts by covering with soda ash or sodium carbonate. Scoop up slurry and dispose of in accordance with all local, state and federal disposal and discharge laws.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:
Product is a RCRA regulated hazardous waste upon disposal. The RCRA hazardous waste number D002 refers to this materials RCRA hazardous waste characteristics of corrosivity. Comply with all Federal, State and local laws and regulations upon disposal.

CLEAN WATER ACT REQUIREMENTS:
Phosphoric acid is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION (USA):
UN 1805, Phosphoric Acid Solution, Class 8, PGIII

TDG REGULATIONS (CANADA):
UN 1805, Phosphoric Acid Solution, Class 8, PGIII

15. REGULATORY INFORMATION:

U.S. FEDERAL REGULATIONS:
SARA TITLE III (SUPERFUND AMENDMENTS & REAUTHORIZATION ACT):

302/304 EXTREMELY HAZARDOUS SUBSTANCES:
The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, Section 302 requires

notification of the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) of the presence of Extremely Hazardous Substances (EHS), 40 CFR 355 Appendix A, in amounts in excess of the threshold planning quantity (TPQ). Section 304 requires notification of SERC and LEPC of releases involving a RQ of an EHS or CERCLA Hazardous Substance.
Phosphoric acid is considered a CERCLA Hazardous substance with a reportable quantity (RQ) of 6,666 lbs of CESCO PA-75. This product contains no EHS.

311/312 HAZARD CATEGORIES:
This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: An Immediate (Acute) Health Hazard.

313 REPORTABLE INGREDIENTS:
The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all SDS's that are copied or distributed for this material. Refer to Section 3, COMPOSITION/ INFORMATION ON INGREDIENTS, the components that are subject to reporting are designated by an asterisk (*).

TSCA (TOXIC SUBSTANCE CONTROL ACT) STATUS:
All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:

N/AV

INTERNATIONAL REGULATIONS:

CANADIAN WHMIS:

N/AV

STATE REGULATIONS:

16. OTHER INFORMATION

NFPA RATINGS:
HEALTH (H): 2 FIRE (F): 0 REACTIVITY (R): 0

HMIS CODES:
HEALTH (H): 2 FIRE (F): 0 PHYSICAL HAZARD (P): 0

MSDS REVISION DATE: November 3, 2016
NAME OF PREPARER: Environmental, Health & Safety Department.
CONTACT PHONE NUMBER: (360) 733-7478

MANUFACTURER DISCLAIMER:
IMPORTANT: The information and data herein is based on available data. Buyer assumes all risk of use, storage and handling of this product in compliance with applicable laws and regulations. CESCO SOLUTIONS, INC., MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, AND WILL NOT BE LIABLE FOR CLAIMS, RELATING TO THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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2227 Midway Lane
Bellingham WA 98226

CESCO PF 852AH

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : CESCO PF 852AH
PRODUCT USE : Flocculant
PRODUCT DESCRIPTION : Milk white, opaque viscous liquid with slight organic odor.

WHMIS CLASSIFICATION: Not Classified

MANUFACTURER : CESCO SOLUTIONS, INC.
ADDRESS : 2227 Midway Lane, Bellingham, WA 98226

EMERGENCY PHONE : 1-800-424-9300
INFORMATION PHONE : (360) 733-7478

. HAZARDS IDENTIFICATION

SIGNAL WORD: Warning

HAZARD STATEMENTS: May cause eye and skin irritation.
May cause nausea and diarrhea if ingested.
May cause respiratory tract irritation if inhaled.

POTENTIAL HEALTH EFFECTS

EYES:
Moderate to severe eye irritant.

SKIN:
Mild to moderate skin irritant. May cause some dryness of skin with repeated contact.

INGESTION:
Ingestion may cause irritation, nausea and diarrhea. May be irritating to mouth, throat and gastrointestinal system.

INHALATION:
Inhalation can cause nose, throat and respiratory tract irritation and coughing.

MEDICAL CONDITIONS AGGRAVATED:
N/AV

CHRONIC (CANCER) INFORMATION:
There is no data available on the chronic effects of ingestion of this material.

TERATOLOGY (BIRTH DEFECT) INFORMATION:
No Information.

REPRODUCTION INFORMATION:
No Information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component/Exposure Limits	CAS#	WT%

********** NO REPORTABLE INGREDIENTS **********

4. FIRST AID MEASURES

EYES:
Wash eyes immediately with plenty of running water for 15-20 minutes, or until no evidence of chemical remains, including under eyelids. Remove any contact lenses at once. Speed in beginning the eye wash is essential if permanent injury is to be avoided. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN:
Flush contaminated skin with water for 15 minutes, or until no evidence of chemical remains. Remove contaminated clothing under the shower immediately. Prolong washing in serious cases until doctor arrives. GET MEDICAL CARE FOR EVIDENCE OF BURNING.

INGESTION:
Do not induce vomiting. Drink a large glass of water. Treat symptomatically and supportively. GET MEDICAL ATTENTION IMMEDIATELY. CAUTION: IF UNCONSCIOUS OR HAVING TROUBLE BREATHING OR IN CONVULSIONS, DO NOT INDUCE VOMITING OR GIVE WATER.

INHALATION:
Remove from exposure to mist. If breathing has stopped, provide artificial respiration. Keep the person warm and at rest. OBTAIN IMMEDIATE MEDICAL ATTENTION.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: >200F Method: PMCC
FLAMMABLE LIMITS: Lower: N/A Upper: N/A
AUTOIGNITION TEMPERATURE: N/AV

HAZARDOUS COMBUSTION PRODUCTS:
Thermal decomposition products expected to produce carbon dioxides, various nitrous oxides and hydrochloric vapors.

EXTINGUISHING MEDIA:
Dry chemical, carbon dioxide or foam. AVOID water - may cause extremely slippery conditions.

FIREFIGHTING INSTRUCTIONS:
Move containers from fire if possible, cool containers exposed to flames with water from side until well after fire is out.

Do not use water directly on material. If large amounts of combustible material are involved, use water spray or fog in flooding amounts. Solid streams may be ineffective. Use water spray to absorb corrosive vapors. Cool containers with flooding amounts of water from as far a distance as possible, keep upwind. SCBA recommended: smother to exclude air. Firefighters should wear self-contained breathing apparatus and bunker gear.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Negligible fire hazard when exposed to heat or flame.

SENSITIVE TO STATIC DISCHARGE:
No Information

SENSITIVE TO IMPACT
None known.

6. ACCIDENTAL RELEASE MEASURES
Do not touch spilled material. Stop leak if you can without risk. For SMALL SPILLS cover with sand or other absorbent material. With a clean shovel place all spilled material, contaminated soil and other contaminated material into a clean, dry container and cover for later disposal. Move containers from spill area. For LARGER SPILLS, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry.

7. HANDLING AND STORAGE
Store in well sealed containers which are protected from physical damage. Avoid handling conditions that can lead to spills or mist formation. Drains must have retention basins for pH adjustment and neutralization of spilled materials and flushings prior to discharge. Have abundant running water available where material is stored, unloaded or handled. Store above the freezing point of water.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:
Provide natural or mechanical ventilation to minimize exposure, especially where possibility of mist formation exists. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult NFPA Standard 91 for design exhaust systems.

RESPIRATORY PROTECTION:
None needed for normal operating conditions. If misty conditions are encountered, wear a NIOSH approved organic filter respirator.

SKIN PROTECTION:
Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated contact with this substance.

EYE PROTECTION:
Employee must wear splash proof and dust-resistant safety goggles or face-shield to prevent eye contact with this substance. DO NOT WEAR CONTACT LENSES.

PROTECTIVE GLOVES:
Employee must wear appropriate protective gloves to prevent contact with this substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A
APPEARANCE & ODOR: Milk white, opaque viscous liquid with slight organic odor.
VAPOR DENSITY: N/AV
VAPOR PRESSURE: N/AV
SPECIFIC GRAVITY: 1.05
pH: 4.5
SOLUBILITY IN WATER: ~5%
VOC: 26% VOC's

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID):
Under extreme temperatures, evaporation of water in formulation will occur, and may burn but does not ignite readily. AVOID water - may cause extremely slippery conditions.

INCOMPATIBILITY:
Strong oxidizers, acids and alkalies.

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition products expected to produce carbon dioxides. Various nitrous oxides and hydrochloric vapors.

HAZARDOUS POLYMERIZATION:
Has not been reported to occur.

11. TOXICOLOGICAL INFORMATION

CHRONIC/CARCINOGENICITY:
N/AV

TERATOLOGY:
N/AV

REPRODUCTION:
N/AV

MUTAGENICITY:
N/AV

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

Data not available.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:

A non-hazardous liquid waste, it should be solidified with sand, soil or other absorbent material so that no free liquid remains before disposal. Incineration and/or disposal in chemical land-fill. Disposal must comply with all federal, state and local disposal and discharge laws.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:

Not a hazardous waste.

CLEAN WATER ACT REQUIREMENTS:

No information.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION (USA):

Synthetic Resin Compound

TDG REGULATIONS (CANADA):

Synthetic Resin Compound Non Hazardous

NOT REGULATED

15. REGULATORY INFORMATION:

U.S. FEDERAL REGULATIONS:
SARA TITLE III (SUPERFUND AMENDMENTS & REAUTHORIZATION ACT):

302/304 EXTREMELY HAZARDOUS SUBSTANCES:

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, Section 302 requires notification of the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) of the presence of Extremely Hazardous Substances (EHS), 40 CFR 355 Appendix A, in amounts in excess of the threshold planning quantity (TPQ). Section 304 requires notification of SERC and LEPC of releases involving a RQ of an EHS or CERCLA Hazardous Substance. Extremely Hazardous Substances contained in this product are:

**********NONE**********

311/312 HAZARD CATEGORIES:

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

**********NONE**********

313 REPORTABLE INGREDIENTS:

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all SDS's that are copied or distributed for this material. Refer to Section II, HAZARDOUS INGREDIENTS/SARA III INFORMATION, the components that are subject to reporting are designated by an asterix (*).

TSCA (TOXIC SUBSTANCE CONTROL ACT) STATUS:

N/AV

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:

N/AV

INTERNATIONAL REGULATIONS:

CANADIAN WHMIS:

N/AV

STATE REGULATIONS:

16. OTHER INFORMATION

NFPA RATINGS:

HEALTH (H): 1 FIRE (F): 1 REACTIVITY (R): 1

HMIS CODES:

HEALTH (H): 1 FIRE (F): 1 PHYSICAL HAZARD (P): 1

SDS REVISION DATE: April 27, 2015

NAME OF PREPARER: Environmental, Health & Safety Department.

CONTACT PHONE NUMBER: (360) 733-7478

MANUFACTURER DISCLAIMER:

IMPORTANT: The information and data herein is based on available data. Buyer assumes all risk of use, storage and handling of this product in compliance with applicable laws and regulations. CESCO SOLUTIONS, INC., MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, AND WILL NOT BE LIABLE FOR CLAIMS, RELATING TO THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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Toll Free 800.241.9110
Fax 360.733.7479

www.cescosolutions.com
2227 Midway Lane
Bellingham WA 98226

CESCO PROTECT 1043

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : CESCO PROTECT 1043
PRODUCT USE : Wastewater Treatment
PRODUCT DESCRIPTION : Red-brown liquid with slight acidic odor.
WHMIS CLASSIFICATION: E - Corrosive Material

MANUFACTURER : CESCO SOLUTIONS, INC.
ADDRESS : 2227 Midway Lane, Bellingham, WA 98226

EMERGENCY PHONE : 1-800-424-9300
INFORMATION PHONE : (360) 733-7478

2. HAZARDS IDENTIFICATION

SIGNAL WORD: Danger

HAZARD STATEMENTS: May cause eye & skin irritation.
Harmful if inhaled.
Harmful if swallowed.
Suspected of causing genetic defects.

POTENTIAL HEALTH EFFECTS

EYES:
Eye irritant, may cause redness, burning or tearing.

SKIN:
Mild to moderate skin irritant. May cause some dryness of skin with repeated contact.

INGESTION:
Harmful if swallowed.

INHALATION:
Inhalation can cause nose, throat and respiratory tract irritation and coughing.

MEDICAL CONDITIONS AGGRAVATED:
N/AV

CHRONIC (CANCER) INFORMATION:
There is no data available on the chronic effects of ingestion of this material.

TERATOLOGY (BIRTH DEFECT) INFORMATION:
No Information.

REPRODUCTION INFORMATION:

No Information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component/Exposure Limits	CAS#	WT%
FERRIC CHLORIDE (43% FeCl3)	7705-08-0	90 -100%

.....OSHA PEL-TWA 1 mg/m3 SOLUBLE IRON SALTS (as Fe)
.....ACGIH TLV-TWA 1mg/m3 SOLUBLE IRON SALTS (as Fe)
HYDROCHLORIC ACID CAS NO.7647-01-0 0.5% OSHAPEL 5ppm, 7.5 mg/m3 ceiling
.....ACGIH TLV 5 ppm, 7.5 mg/m3

4. FIRST AID MEASURES

EYES:
Wash eyes immediately with plenty of running water for 15-20 minutes, or until no evidence of chemical remains, including under eyelids. Remove any contact lenses at once. Speed in beginning the eye wash is essential if permanent injury is to be avoided. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN:
Flush contaminated skin with water for 15 minutes, or until no evidence of chemical remains. Remove contaminated clothing under the shower immediately. Prolong washing in serious cases until doctor arrives. GET MEDICAL CARE FOR EVIDENCE OF BURNING. If evidence of chemical burn exists, cover with sterile, dry dressing. Bandage securely, but not too tightly.

INGESTION:
Do not induce vomiting. Drink two glasses of water. Treat symptomatically and supportively. GET MEDICAL ATTENTION IMMEDIATELY. CAUTION: IF UNCONSCIOUS OR HAVING TROUBLE BREATHING OR IN CONVULSIONS, DO NOT INDUCE VOMITING OR GIVE WATER.

INHALATION:
Remove from exposure to mist. If breathing has stopped, provide artificial respiration. Keep the person warm and at rest. OBTAIN IMMEDIATE MEDICAL ATTENTION.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: Non-combustible. Method: Not Applicable

FLAMMABLE LIMITS: Lower: N/A Upper: N/A

AUTOIGNITION TEMPERATURE: N/A

HAZARDOUS COMBUSTION PRODUCTS:
Hydrogen chloride and phosgene.

EXTINGUISHING MEDIA:
Use media appropriate for surrounding material. Use water spray to cool containers exposed to fire from as far a distance as possible.

FIREFIGHTING INSTRUCTIONS:
SCBA recommended with a full face piece operated in pressure-demand mode or other positive pressure mode. Wear full protective clothing. Run-off may cause pollution. Dike to contain run-off for proper handling as stated in Section VII.

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Negligible fire hazard when exposed to heat or flame under normal conditions. Fire and explosion hazard may exist when product is in contact with metals due to evolution of hydrogen gas.

SENSITIVE TO STATIC DISCHARGE:
No Information

SENSITIVE TO IMPACT
None known.

6. ACCIDENTAL RELEASE MEASURES
Do not touch spilled material. Stop leak if you can without risk. For SMALL SPILLS pick up spill with vacuum equipment (acid resistant) for disposal, or flush to holding area with water.

For LARGER SPILLS, dike far ahead of spill for later disposal. Keep unnecessary people away from area. Isolate hazard area and deny entry.
Neutralize residues with lime or soda ash and rinse with water. According to 40 CFR 302 Table 302.4 (CERCLA), environmental releases that exceed the RQ must be reported to the National Response Center by calling 1-800-424-8802 (202-426-2675) and the State Emergency Response Commission and the Local Emergency Planning Committee (40 CFR 355.40) as appropriate. The RQ for Ferric Chloride is 1,000 lbs. The RQ for CESCO PROTECT 1043 is 2,325 lbs.

7. HANDLING AND STORAGE

Store in well sealed containers which are protected from physical damage. Avoid handling conditions that can lead to spills or mist formation. Drains must have retention basins for pH adjustment and neutralization of spilled materials and flushings prior to discharge. Have abundant running water available where material is stored, unloaded or handled. Store above the freezing point of water. Avoid contact with incompatible chemicals listed in Section V. DO NOT permit workers to handle ACID solutions without proper training and proper equipment. Bulk storage containers and ancillary fill and feed systems should be constructed out of appropriate materials such as polyethylene, ploypropylene and rubber-lined steel. Storage tanks should be vented to scrubber or atmosphere and should have secondary containment.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide natural or mechanical ventilation to minimize exposure, especially where possibility of mist formation exists. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult NFPA Standard 91 for design exhaust systems.

RESPIRATORY PROTECTION:

Have available and wear as appropriate for exposure limits: NIOSH/MSHA approved respirator. Supplied-air respirator with a full face-piece, helmet or hood: self-contained breathing apparatus with a full face-piece.

SKIN PROTECTION:

Apron or protective clothing, and rubber boots (tops covered by apron or clothing to prevent entrance of material).

EYE PROTECTION:

Employee must wear splash proof and/or dust-resistant safety goggles with a full face-shield to prevent eye contact with this substance. DO NOT WEAR CONTACT LENSES.

PROTECTIVE GLOVES:

Employee must wear appropriate protective gloves to prevent contact with this substance.

9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 223F
APPEARANCE & ODOR: Red-brown liquid with slight acidic odor.
VAPOR DENSITY: N/AV
VAPOR PRESSURE: N/AV
SPECIFIC GRAVITY: 1.417
pH: <2 (neat)
SOLUBILITY IN WATER: Complete.
VOC: N/AV

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY (CONDITIONS TO AVOID):
Keep away from metals and high heat.

INCOMPATIBILITY:
Alkalies. Aluminum, aluminum alloys, carbon steel, copper, copper alloys, alkaline materials and organic compounds including nylon. Material has a moderate oxidizing capability, avoid contact with strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS:
Hydrogen chloride and phosgene.

HAZARDOUS POLYMERIZATION:
Has not been reported to occur. Emits toxic hydrogen chloride fumes when heated to decomposition temperature.

11. TOXICOLOGICAL INFORMATION
TOXOLOGICAL/ECOLOGICAL INFORMATION
Based on Ferric Chloride Solid (anhydrous)

CHRONIC/CARCINOGENICITY:
Acute Toxicity:
Oral: LD50/oral/rat: = 450 mg/kg

TERATOLOGY:
N/AV

REPRODUCTION:
Reproductive Effects: TDLo Rat 1 day(s) intratesticular 12,976 ug/kg: TDLoRat 1 day(s) intravaginal 29 mg/kg pre pregnancy continuous

MUTAGENICITY:
Mutagenicity: Escherichia coli - 500 nmol/tube: Phage inhibition capacity: Escherichia coli - 41 ng/well

12. ECOLOGICAL INFORMATION
Harmful to aquatic life.

ECOTOXICOLOGICAL INFORMATION:
Ecotoxicity: TLm Daphnia 15 ppm/96 hour fresh water
Persistence/degradability: Data not available
Bio-accumulation: Data not available

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:
Waste acid must never be discharged directly to sewers or surface waters. First convert to neutral salts by covering with soda ash or sodium carbonate. Scoop up slurry and dispose of in accordance with all local, state and federal disposal and discharge laws.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:
May be a RCRA regulated hazardous waste upon disposal due to corrosive characteristic. Comply with all

Federal, State and local laws and regulations upon disposal.

CLEAN WATER ACT REQUIREMENTS:

Ferric chloride is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION (USA):

UN 2582, Ferric chloride, Solution, Class 8, PGIII.

TDG REGULATIONS (CANADA):

UN 2582, Ferric chloride, Solution, Class 8, PGIII.

15. REGULATORY INFORMATION:

U.S. FEDERAL REGULATIONS:
SARA TITLE III (SUPERFUND AMENDMENTS & REAUTHORIZATION ACT):

302/304 EXTREMELY HAZARDOUS SUBSTANCES:

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, Section 302 requires notification of the State Emergency Response Commission (SERC) and Local Emergency Planning Committee (LEPC) of the presence of Extremely Hazardous Substances (EHS), 40 CFR 355 Appendix A, in amounts in excess of the threshold planning quantity (TPQ). Extremely Hazardous Substances contained in this product are: ***NONE***. Section 304 requires notification of SERC and LEPC of releases involving a RQ of an EHS or CERCLA Hazardous Substance.
Ferric chloride is considered a CERCLA Hazardous substance with a reportable quantity (RQ) of 2,325 lbs of CESCO Protect 1043.

311/312 HAZARD CATEGORIES:

This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories: An Immediate (Acute) Health Hazard.

313 REPORTABLE INGREDIENTS:

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, requires submission of annual reports of release of toxic chemicals that appear in 40 CFR 372 (for SARA 313). This information must be included in all SDS's that are copied or distributed for this material. Refer to Section II, HAZARDOUS INGREDIENTS/SARA III INFORMATION, the components that are subject to reporting are designated by an asterix (*).

TSCA (TOXIC SUBSTANCE CONTROL ACT) STATUS:

All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

RCRA (RESOURCE CONSERVATION & RECOVERY ACT) REQUIREMENTS:

N/AV

INTERNATIONAL REGULATIONS:

CANADIAN WHMIS:
N/AV

STATE REGULATIONS:

16. OTHER INFORMATION

NFPA RATINGS:
HEALTH (H): 2 FIRE (F): 0 REACTIVITY (R): 1

HMIS CODES:
HEALTH (H): 2 FIRE (F): 0 PHYSICAL HAZARD (P): 1

SDS REVISION DATE: MARCH 16, 2015

NAME OF PREPARER: Environmental, Health & Safety Department.

CONTACT PHONE NUMBER: (360) 733-7478

MANUFACTURER DISCLAIMER:

IMPORTANT: The information and data herein is based on available data. Buyer assumes all risk of use, storage and handling of this product in compliance with applicable laws and regulations. CESCO SOLUTIONS, INC., MAKES NO WARRANTY OF ANY KIND, EXPRESSED OR IMPLIED, AND WILL NOT BE LIABLE FOR CLAIMS, RELATING TO THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name **Clorox® Germicidal Bleach3**

Other means of identification

Synonyms None

EPA Pesticide registration number 5813-114

Recommended use of the chemical and restrictions on use

Recommended Use Bleach

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier The Clorox Company

Supplier Address 1221 Broadway
Oakland
CA
94612
US

Telephone 1-510-271-7000

Emergency telephone number

Emergency Telephone Number For Medical Emergencies call: 1-800-446-1014. Transportation Emergencies, call Chemtrec: 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

This product is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1

GHS Label elements, including precautionary statements

Emergency Overview

Signal word **Danger**

Hazard Statements
Causes serious eye damage
Causes skin irritation

Appearance Clear Yellow **Physical state** Liquid **Odor** Bleach

Precautionary Statements - Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see supplemental first aid instructions on this label)

Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician

Skin
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician

Ingestion
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Hazards not otherwise classified (HNOC)
Not applicable

Unknown Toxicity
No information available

Other information
No information available

Interactions with Other Chemicals
No information available.

Interactions with Other Chemicals
May react with bleach-containing products or other household cleaners to produce hazardous gases.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight-%	Trade Secret
Sodium hypochlorite	7681-52-9	5-10	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Seek immediate medical attention/advice. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin contact Wash with soap and water. Get medical attention if symptoms occur. Take off contaminated clothing and wash before reuse.

Inhalation Remove to fresh air. If symptoms persist, call a physician. If breathing has stopped, give artificial respiration. Get medical attention immediately. If not breathing, give artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get medical attention immediately if symptoms occur.

Ingestion Do NOT induce vomiting. Rinse mouth immediately and drink plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Use personal protective equipment as required. Wear personal protective clothing (see section 8).

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Burning.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Unsuitable extinguishing media
CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical
The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products
Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with eyes. Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials.

Incompatible products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hypochlorite 7681-52-9	None	None	None

Appropriate engineering controls

Engineering Measures Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear protective gloves and protective clothing. Long sleeved clothing. Chemical resistant apron. Impervious gloves.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. For environmental protection, remove and wash all contaminated protective equipment before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical state	Liquid		
Appearance	Clear Yellow	**Odor**	Bleach
Color	Light yellow	**Odor Threshold**	No information available

Property	Values	Remarks Method
pH	12.1	None known
Melting / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	1.1	None known
Water Solubility	Soluble in water	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No data available	
Oxidizing properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available
Particle Size	No data available
Particle Size Distribution	No data available

10. STABILITY AND REACTIVITY

Reactivity
No data available

Chemical stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization
Hazardous polymerization does not occur.

Conditions to avoid
Exposure to air or moisture over prolonged periods.

Incompatible materials
Strong acids Strong bases Acids Bases Oxidizing agent Strong oxidizing agents

Hazardous Decomposition Products
Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information .

Inhalation May cause irritation of respiratory tract. May cause pulmonary edema.

Eye contact Corrosive to the eyes and may cause severe damage including blindness. Causes serious eye damage.

Skin contact Irritating to skin.

Ingestion Ingestion causes burns of the upper digestive and respiratory tracts. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	Inhalation LC50
Sodium hypochlorite 7681-52-9	= 8.91 g/kg (Rat)	>10000 mg/kg (Rabbit)	>2 mg/L

Information on toxicological effects

Symptoms Erythema (skin redness). Burning. May cause blindness. Coughing and/ or wheezing.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Mutagenic Effects No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH	IARC	NTP	OSHA
Sodium hypochlorite 7681-52-9 (5-10)	-	Group 3	-	-

IARC (International Agency for Research on Cancer)
Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Chronic Toxicity Carcinogenic potential is unknown.

Target Organ Effects Respiratory system. Eyes. Skin. Gastrointestinal tract (GI).

Aspiration Hazard No information available.

Numerical measures of toxicity Product Information
The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)
53,480.00 mg/kg
ATEmix (inhalation-dust/mist)
58.30 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Persistence and Degradability
No information available.

Bioaccumulation
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Disposal methods Dispose of in accordance with federal, state and local regulations.

Contaminated Packaging Do not reuse empty containers. Dispose of in accordance with federal, state and local regulations.

Chemical Name	California Hazardous Waste
Sodium hypochlorite 7681-52-9	Toxic

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not restricted for road or rail

ICAO Not restricted, as per Special Provision A197, Environmentally Hazardous Substance exception

IATA Not restricted, as per Special Provision A197, Environmentally Hazardous Substance exception

IMDG Not restricted, as per IMDG Code 2.10.2.7, Marine Pollutant exception

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium hypochlorite 7681-52-9	100 lb			X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Sodium hypochlorite 7681-52-9	100 lb	-	RQ 100 lb final RQRQ 45.4 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Rhode Island	Illinois
Sodium hypochlorite 7681-52-9	X	X	X	X	
Sodium hydroxide 1310-73-2	X	X	X	X	

EPA Statement

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

EPA Pesticide label
DANGER: CORROSIVE. Causes irreversible eye damage and skin burns. Harmful if swallowed. Do not get in eyes, on skin, or on clothing. Wear protective eyewear and rubber gloves when handling this product. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the restroom. Avoid breathing vapors and use only in a well-ventilated area.

International Regulations

Canada

WHMIS Hazard Class

Not determined

16. OTHER INFORMATION

NFPA	**Health Hazards**	3	**Flammability**	0	**Instability**	0	**Physical and Chemical Hazards**	-
HMIS	**Health Hazards**	3	**Flammability**	0	**Physical Hazard**	0	**Personal Protection**	X

Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Issuing Date	04-Jan-2017
Revision Date	17-Aug-2018
Revision Note	No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

ZEP MANUFACTURING COMPANY
Acuity Specialty Products Group, Inc.
P.O. BOX 2015
ATLANTA, GA 30301
1- 877- I - BUY- ZEP

Material Safety Data Sheet

and Safe Handling and Disposal Information

Issue Date	10/24/00
Supersedes	10/15/96
Product Name	**ZEP 30**
Product No.	**0003**

Aerosol Disinfectant Foaming Cleaner

Printing date: 09/10/03

SECTION I - EMERGENCY CONTACTS

For MSDS Information:
Acuity Specialy Products Group, Inc.
Compliance Services 1-877-I-BUY-ZEP

For Medical Emergency:
INFOTRAC
(877) 541-2016 Toll Free - All Calls Recorded

For a Transportation Emergency:
CHEMTREC
(800) 424-9300 - All Calls Recorded
In the District of Columbia (202) 483-7616

SECTION II - HAZARDOUS INGREDIENTS

@ ** ETHYLENE GLYCOL MONOBUTYL ETHER ** 2-butoxyethan_ ol; butyl cellosolve; CAS# 111-76-2; RTECS# KJ8575000; OSHA PEL (SKIN)- 25 ppm ; TLV - 20; EFFECTS - TOX IRR CBL; % IN PROD - < 10
@ -Reportable under the SARA 313 Toxic Release Inventory

SECTION III - HEALTH HAZARD DATA

SPECIAL NOTE: MSDS data pertains to the product as dispensed from the container. Adverse health effects would not be expected under recommended conditions of use (diluted) so long as prescribed safety precautions are practiced.
ACUTE EFFECTS OF OVEREXPOSURE:
Eye irritant. Eye contact may produce stinging, burning, inflammation, and in extreme cases injury to eye tissue may occur. Prolonged exposure to mists or vapors may be irritating to skin and upper respiratory tract. Overexposure can result in mild narcotic effects, including flushing, headache, dizziness and nausea. Inhalation of aerosol mist may produce chemical pneumonia. Existing skin, eye or respiratory disorders may be aggravated by exposure.
CHRONIC EFFECTS OF OVEREXPOSURE:
Repeated or prolonged skin contact may produce chronic inflammation or dermatitis, characterized by redness, scaling or itching. Animal studies indicate a potential for liver, kidney, or red blood cell damage. Relevance of these studies or exposure levels which might produce these effects in humans has not been established. None of the ingredients are listed as carcinogens by IARC, NTP, or OSHA.
EST'D PEL/TLV: Not established
PRIMARY ROUTES OF ENTRY: Inh, Skin.
HMIS CODES: HEALTH 2; FLAM 1; REACT 0; PERS. PROTECT B; CHRONIC HAZ YES
FIRST AID PROCEDURES:
SKIN: Flush contaminated skin with plenty of water. Consult a physician if irritation develops.
EYES: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting upper and lower lids. Get medical attention at once.
INHALE: If symptoms occur, move affected person to fresh air. If symptoms persist, get medical attention promptly.
INGEST: If this product is swallowed, do not induce vomiting. If individual is alert, give plenty of water to drink. Get medical attention at once.

SECTION IV - SPECIAL PRECAUTION INFORMATION

PROTECTIVE CLOTHING: Wear neoprene, nitrile, or natural rubber gloves or gloves with proven resistance to the ingredients listed.
EYE PROTECTION: Use of tight-fitting safety glasses or goggles is strongly recommended, especially when wearing contact lenses.
RESPIRATORY PROTECTION: Keep face away from spray mist and do not breathe vapors.
VENTILATION: Ventilation should be equivalent to outdoors. Use exhaust fans and open windows in enclosed spaces.

SECTION V - PHYSICAL DATA

BOILING POINT (F) - N/D
VAPOR PRESSURE(mmHg) - N/D
VAPOR DENSITY(AIR-1) - N/D
SOLUBILITY IN WATER - COMPLETE
pH(USE DILUTION OF) - N/A N/A
VOC CONTENT (CONCENTRATE) - 12.0%
SPECIFIC GRAVITY - 1.0
EVAPORATION RATE (WATER=1) - 1.0
pH(CONCENTRATE) - 12.5-13.0
APPERANCE AND ODOR - AEROSOL PACKAGED WHITE FOAMING LIQUID WITH A SWEET ODOR.

SECTION VI - FIRE AND EXPLOSION DATA

FLASH POINT(F) (METHOD USED): NOT FLAMMABLE CSMA
FLAMMABLE LIMITS:LEL: N/A UEL: N/A
EXTINGUISHING MEDIA: Carbon dioxide, dry chemical and foam.
SPECIAL FIRE FIGHTING: Wear self-contained positive pres. breathing apparatus.
UNUSUAL FIRE HAZARDS: Direct water onto intact containers to prevent bursting.

SECTION VII - REACTIVITY DATA

STABILITY: Stable
INCOMPATIBILITY(AVOID): Heat, flame, spark, strong acids and/or oxidizers.
POLYMERIZATION: Will not occur.
HAZARDOUS DECOMPOSITION: Carbon dioxide, carbon monoxide, and other unidentified organic compounds.

SECTION VIII - SPILL AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIALS IS RELEASED OR SPILLED:
Observe safety precautions in sections 4 & 9 during spill clean-up. Large spills are unlikely due to packaging. Spill may be absorbed on an inert absorbent material, and placed in a suitable container for disposal. Wash area thoroughly with a detergent solution and rinse well with water.
WASTE DISPOSAL METHOD:
Product is consumed in use. Do not crush, puncture or incinerate spent containers. Large numbers of aerosol containers may require handling as a hazardous waste, but in most states total hazardous waste quantities less than 220 lbs per month may allow disposal in a chemical or industrial waste landfill. Consult local, state and federal agencies for the proper disposal method in your area.
RCRA HAZ WASTE NOS: D002

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN WHEN HANDLING AND STORING
Do not store at temperatures above 120F (39C) or in direct sunlight. Do not puncture or incinerate container. Keep product away from skin and eyes. Do not breathe spray mists or vapors. Keep away from food and food products. Keep out of the reach of children.

SECTION X - REGULATORY INFORMATION

DOT PROPER SHIPPING NAME: CONSUMER COMMODITY,
NOTE: DOT information applies to larger package sizes of affected products. For some products, DOT may require alternate names and labeling in accordance with packaging group requirements.
DOT HAZARD CLASS: ORM-D DOT PACKING GROUP: N/A
DOT I.D. NUMBER: N/A DOT LABEL/PLACARD: ORM-D
EPA TSCA CHEMICAL INVENTORY - ALL INGREDIENTS ARE LISTED
EPA CWA 40CFR PART 117 SUBSTANCE(RQ IN A SINGLE CONTAINER): NONE
EPA CAA: N/A

SAFETY DATA SHEET

Issuing Date 24-Mar-2014 **Revision Date** 7-April-2016 **Revision Number** 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

GHS product identifier

Product Name NATURAL DIATOMACEOUS EARTH (DE)

Other means of identification

Synonyms Dicalite (All Natural DE Products) Dicalite, Natural Diatomaceous Earth 104,183,BP-3,BP-5,CA-3,CA-5,D4A, D4C,D4R,D4AFA,677,677S,SA3

Recommended use of the chemical and restrictions on use

Recommended Use Natural Filler

Supplier's details

Manufacturer Address
DICALITE MINERALS CORP
1 Bala Ave, Suite 310
Bala Cynwyd, PA 19004
TEL: (610)660-8840
(530)-335-5451

Emergency telephone number

Company Emergency Phone Number (610)660-8840, (530)-335-5451

2. HAZARDS IDENTIFICATION

Classification

This product may contain crystalline silica, which is considered hazardous by inhalation according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200)

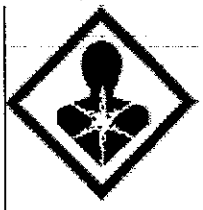
Carcinogenicity	Category 1A
Specific Target Organ Toxicity (Repeated Exposure)	Category 2

GHS Label elements, including precautionary statements

Emergency Overview

Signal Word **Danger**

Hazard Statements
- May cause cancer through prolonged or repeated exposure.
- May cause damage to organs through prolonged or repeated exposure



Appearance Off-White to Tan **Physical State** Powder. **Odor** Odorless

Precautionary Statements

Prevention

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Do not breathe dust/fume/gas/mist/vapors/spray.

General Advice

- If exposed or concerned: Get medical attention/advice

Storage

- Store locked up. Keep dry and away from odors.

Disposal

- Dispose of contents/container according to federal, state, and local regulations.

Hazard Not Otherwise Classified (HNOC)

Not applicable

Other information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms Dicalite (All Natural DE Products) Dicalite, Natural Diatomaceous Earth 104,183,BP-3,BP-5,CA-3,CA-5,D4A, D4C,D4R,D4AFA,677,677S,SA3

Chemical Name	CAS-No	Weight %
Natural Diatomaceous Earth	61790-53-2	Up to 100%
Quartz	14808-60-7	< 2%

4. FIRST AID MEASURES

Description of necessary first-aid measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. Do not rub affected area. If irritation persists, call a physician.

Skin Contact Use moisturizing lotions if dryness occurs.

Inhalation Move to fresh air. Drink water and blow nose to remove dust.

Ingestion Drink plenty of water.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects No information available

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Product is an inorganic mineral and uncontaminated is not flammable. **Not flammable as product only.**

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media None

Specific Hazards Arising from the Chemical

Not Applicable

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment. Avoid dust formation. Avoid inhalation of dust. Avoid contact with the skin and the eyes.

Environmental Precautions

Environmental Precautions See Section 12 for additional Ecological Information

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Avoid dust formation.

Methods for Cleaning Up (Recommended) Clean up material with vacuum equipped with HEPA filter. Use water as dust suppressant if necessary. Avoid dust formation.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Use only in area provided with appropriate exhaust ventilation. Do not breathe dust. Wear personal protective equipment. Avoid dust formation.

Conditions for safe storage, including any incompatibilities

Storage Keep dry and away from odors.

Incompatible Products Hydroflouric Acid

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Diatomaceous earth 61790-53-2	-	(vacated) TWA: 6 mg/m³ <1% Crystalline silica : (80)/(% SiO2) mg/m³ TWA TWA: 20 mppcf	TWA: 5 mg/m³ respirable dust TWA: 10 mg/m³ total dust
Quartz 14808-60-7	TWA: 0.025 mg/m³ respirable fraction	TWA: 0.05mg/m3 respirable dust	IDLH: 50 mg/m³ respirable dust TWA: 0.05 mg/m³ respirable dust

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992). OSHA New PEL (Quartz) 2016

Appropriate engineering controls

Engineering Measures
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection Tightly fitting safety goggles.
Skin and Body Protection Protective gloves.
Respiratory Protection Use NIOSH approved respirators to protect against silicosis producing dusts. For dust concentrations:<10x PEL, use an N95 quarter or half mask respirator; <50X PEL, use a full face respirator equipped with N95 filters; <200X PEL, use a powered air purifying respirator (positive pressure) with N95 filters; for dust concentrations >200X the PEL use a type C, supplied air respirator (continuous flow, positive pressure), with a full facepiece.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State Powder
Appearance Off-White to Tan
Odor Odorless
Odor Threshold None

Property	Values	Remarks/ - Method
pH	5-10 (10% solution)	Not Applicable
Melting Point/Range	>1300 °C / >2372 °F	ASTM or equivalent
Boiling Point/Boiling Range	No data available	Not Applicable
Flash Point	Not flammable.	None
Evaporation rate	Not applicable	None
Flammability (solid, gas)	Not applicable	Not applicable
Flammability Limits in Air		
upper flammability limit	Not flammable	Not applicable
lower flammability limit	Not flammable	Not applicable

Vapor Pressure	Not applicable	
Vapor Density	Not applicable	
Specific Gravity	2.3 (water = 1)	ASTM or equivalent
Water Solubility	Negligible	ASTM or equivalent
Solubility in other solvents	Negligible	
Partition coefficient: n-octanol/water	Not applicable	
Autoignition Temperature	Not applicable	
Decomposition Temperature	Not known	
Viscosity	Not applicable (solid)	
Flammable Properties	Not flammable	
Explosive Properties	Not applicable	
Oxidizing Properties	Not applicable	

Other information

VOC Content (%)	None

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Conditions to avoid

None known.

Incompatible materials

Hydrogen fluoride.

Hazardous decomposition products

Silica oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May cause irritation of respiratory tract. Inhalation overexposure to respirable crystalline silica may cause delayed lung injury including silicosis, a disabling and potentially fatal lung disease. Inhalation exposure to respirable levels of crystalline silica may cause respiratory impairment and lung damage.
Eye Contact	Dust contact with the eyes can lead to mechanical irritation.
Skin Contact	Prolonged or repeated contact may dry skin and cause irritation.

Ingestion May cause irritation

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Quartz	500 mg/kg (Rat)	-	-

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Difficulty in breathing.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization No information available.
Mutagenic Effects No information available.
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Quartz	A2	Group 1	Known	X

ACGIH: (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
NTP: (National Toxicity Program)
Known - Known Carcinogen
OSHA: (Occupational Safety & Health Administration)
X - Present

Reproductive Toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure Causes damage to lungs through prolonged or repeated exposure if inhaled
Chronic Toxicity Inhalation exposure to respirable levels of crystalline silica may cause respiratory impairment and lung damage.
Target Organ Effects Lungs.
Aspiration Hazard No information available.

Numerical measures of toxicity - Product
Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity.
The following values are calculated based on chapter 3.1 of the GHS document:
LD50 Oral 10000 mg/kg; Acute toxicity estimate

12. ECOLOGICAL INFORMATION

Ecotoxicity
The material is generally considered non-hazardous to the environment as a naturally occurring inorganic mineral.

Diatomaceous earth 61790-53-2				

Persistence and Degradability Product is not biodegradable.

Bioaccumulation Not likely to bioaccumulate.

Other Adverse Effects
None known

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.
Contaminated Packaging	Do not re-use empty containers. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

DOT Proper Shipping Name	Earth, Diatomaceous, crude or ground
DOT	Not regulated
DOT Hazard Classification	Not Classified
TDG	Not regulated
UN, NA Number	Not Applicable
MEX	Not regulated
IATA Classification	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65
This product contains Proposition 65 chemicals.

Chemical Name	CAS-No	California Prop. 65
Quartz	14808-60-7	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Quartz	X	X	X	-	X

U.S. EPA Label Information
EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard** 1	**Flammability** 0	**Instability** 0	**Physical and Chemical Hazards** -
HMIS	**Health Hazard** 1*	**Flammability** 0	**Physical Hazard** 0	**Personal Protection** X

**Indicates a chronic health hazard.*

Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Issuing Date	24-Mar-2014
Revision Date	24-Mar-2014
Revision Note	Initial Release.

General Disclaimer
The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet

MATERIAL SAFETY DATA SHEET

PRODUCT

NALCO 7211

EMERGENCY TELEPHONE NUMBER(S)
(800)463-3216 (24 Hours)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **NALCO 7211**

APPLICATION : BOILER TREATMENT

COMPANY IDENTIFICATION : Nalco Canada Co.
1055 Truman Street
Burlington, Ontario
L7R 3Y9

EMERGENCY TELEPHONE NUMBER(S) : (800)463-3216 (24 Hours)

NFPA 704M/HMIS RATING
HEALTH : 0 / 1 FLAMMABILITY : 1 / 1 INSTABILITY : 0 / 0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme

2. COMPOSITION/INFORMATION ON INGREDIENTS

Based on our hazard evaluation, none of the substances in this product are hazardous.

3. HAZARDS IDENTIFICATION

****EMERGENCY OVERVIEW****

WARNING
May cause irritation with prolonged contact.
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water.
Wear suitable protective clothing.
May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of nitrogen (NOx) under fire conditions. May evolve oxides of phosphorus (POx) under fire conditions.

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :
May cause irritation with prolonged contact.

SKIN CONTACT :
May cause irritation with prolonged contact.

INGESTION :
Not a likely route of exposure. May be harmful if swallowed.

INHALATION :
Not a likely route of exposure. No adverse effects expected.

HUMAN HEALTH HAZARDS - CHRONIC :
No adverse effects expected other than those mentioned above.

4. FIRST AID MEASURES

EYE CONTACT :
Flush affected area with water. If symptoms develop, seek medical advice.

SKIN CONTACT :
Flush affected area with water. If symptoms develop, seek medical advice.

INGESTION :
Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. If symptoms develop, seek medical advice.

INHALATION :
Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

NOTE TO PHYSICIAN :
Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

Flash Point :	Not flammable
LOWER EXPLOSION LIMIT :	Not flammable
UPPER EXPLOSION LIMIT :	Not flammable

EXTINGUISHING MEDIA :
This product would not be expected to burn unless all the water is boiled away. The remaining organics may be ignitable. Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD :
May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of nitrogen (NOx) under fire conditions. May evolve oxides of phosphorus (POx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :
In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

SENSITIVITY TO MECHANICAL IMPACT :
Not expected to be sensitive to mechanical impact.

SENSITIVITY TO STATIC DISCHARGE :
Not expected to be sensitive to static discharge.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :
Restrict access to area as appropriate until clean-up operations are complete. Stop or reduce any leaks if it is safe to do so. Do not touch spilled material. Ventilate spill area if possible. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection).

METHODS FOR CLEANING UP :
SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :
Do not contaminate surface water.

7. HANDLING AND STORAGE

HANDLING :
Avoid eye and skin contact. Do not take internally. Ensure all containers are labelled. Keep the containers closed when not in use.

STORAGE CONDITIONS :
Store the containers tightly closed.

SUITABLE CONSTRUCTION MATERIAL :
HDPE (high density polyethylene), Stainless Steel 304, Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :
This product does not contain any substance that has an established exposure limit.

ENGINEERING MEASURES :
General ventilation is recommended.

RESPIRATORY PROTECTION :
Respiratory protection is not normally needed.

HAND PROTECTION :
Neoprene gloves, Nitrile gloves, Butyl gloves, PVC gloves

SKIN PROTECTION :
Wear standard protective clothing.

EYE PROTECTION :
Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS :
Keep an eye wash fountain available. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

HUMAN EXPOSURE CHARACTERIZATION :
Based on our recommended product application and personal protective equipment, the potential human exposure is: Low

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Dark brown
ODOR	Ammoniacal

SPECIFIC GRAVITY	1.076 - 1.096 @ 25 °C
SOLUBILITY IN WATER	Complete
pH (1 %)	11.0 - 12.4 @ 25 °C
VISCOSITY	3.5 - 4.5 cps @ 25 °C
FREEZING POINT	-2.22 °C
_VAPOR PRESSURE	66 mm Hg @ 25 °C
VOC CONTENT	0 %

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :
Stable under normal conditions.

HAZARDOUS POLYMERIZATION :
Hazardous polymerization will not occur.

CONDITIONS TO AVOID :
Freezing temperatures.

MATERIALS TO AVOID :
None known

HAZARDOUS DECOMPOSITION PRODUCTS :
Under fire conditions: Oxides of carbon, Oxides of nitrogen, Oxides of phosphorus

11. TOXICOLOGICAL INFORMATION

No toxicity studies have been conducted on this product.

SENSITIZATION :
This product is not expected to be a sensitizer.

CARCINOGENICITY :
None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

HUMAN HAZARD CHARACTERIZATION :
Based on our hazard characterization, the potential human hazard is: Low

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The following results are for the product.

ACUTE FISH RESULTS :

Species	Exposure	LC50	Test Descriptor
Bluegill Sunfish	96 hrs	> 1,000 mg/l	Product
Rainbow Trout	96 hrs	> 1,000 mg/l	Product
Fathead Minnow	96 hrs	> 1,000 mg/l	Product

Rating : Essentially non-toxic

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	LC50	EC50	Test Descriptor
Daphnia magna	48 hrs	> 1,000 mg/l		Product

Rating : Essentially non-toxic

MOBILITY :
The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM , provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models. If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages;

Air	Water	Soil/Sediment
<5%	30 - 50%	50 - 70%

The portion in water is expected to be soluble or dispersible.

BIOACCUMULATION POTENTIAL
This preparation or material is not expected to bioaccumulate.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Low
Based on our recommended product application and the product's characteristics, the potential environmental exposure is: High

13. DISPOSAL CONSIDERATIONS

In Ontario, the waste class under Regulation 347 is: 148L

Dispose of wastes in an approved incinerator or waste treatment/disposal site, in accordance with all applicable regulations. Do not dispose of wastes in local sewer or with normal garbage.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

PRODUCT IS NOT REGULATED DURING TRANSPORTATION

15. REGULATORY INFORMATION

NATIONAL REGULATIONS, CANADA :

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) :
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS CLASSIFICATION :
Not considered a WHMIS controlled product.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :
The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

NATIONAL POLLUTANT RELEASE INVENTORY (NPRI) :
This product does not contain any substances listed in Schedule I of the NPRI at a concentration of one percent or more by weight.

CANADIAN FOOD INSPECTION AGENCY (CFIA) :
Authorized use is under category: : W1

NATIONAL REGULATIONS, USA :

TOXIC SUBSTANCES CONTROL ACT (TSCA) :
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FOOD AND DRUG ADMINISTRATION (FDA) Federal Food, Drug and Cosmetic Act :
When use situations necessitate compliance with FDA regulations, this product is acceptable under : 21 CFR 173.310 Boiler Water Additives

Limitations: no more than required to produce intended technical effect.

16. OTHER INFORMATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: Low

* The environmental risk is: Low

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

Prepared By : SHE Department
Date issued : 2004/09/15
Version Number : 2.0

SAFETY DATA SHEET

PRODUCT

NALCO® 2895 PLUS

EMERGENCY TELEPHONE NUMBER(S)

(800) 424-9300 (24 Hours) CHEMTREC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : **NALCO® 2895 PLUS**

APPLICATION : OXYGEN SCAVENGER

COMPANY IDENTIFICATION : Nalco Company
1601 W. Diehl Road
Naperville, Illinois
60563-1198

EMERGENCY TELEPHONE NUMBER(S) : (800) 424-9300 (24 Hours) CHEMTREC

NFPA 704M/HMIS RATING
HEALTH : 1 / 2 FLAMMABILITY : 0 / 0 INSTABILITY : 0 / 0 OTHER :
0 = Insignificant 1 = Slight 2 = Moderate 3 = High 4 = Extreme * = Chronic Health Hazard

2. COMPOSITION/INFORMATION ON INGREDIENTS

Our hazard evaluation has identified the following chemical substance(s) as hazardous. Consult Section 15 for the nature of the hazard(s).

Hazardous Substance(s)	CAS NO	% (w/w)
Sodium Sulfite	7757-83-7	10.0 - 30.0
Dipotassium Sulfite	10117-38-1	1.0 - 5.0
Sodium Bisulfite	7631-90-5	1.0 - 5.0

3. HAZARDS IDENTIFICATION

****EMERGENCY OVERVIEW****

WARNING
Contains Sulfite. Irritating to respiratory system. Causes asthmatic signs and symptoms in hyper-reactive individuals. Contact with acids liberates toxic gas.
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Avoid breathing vapor. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of water. Protect product from freezing.
Wear suitable protective clothing.
Not flammable or combustible. May evolve oxides of sulfur (SOx) under fire conditions.

PRIMARY ROUTES OF EXPOSURE :
Eye, Skin

HUMAN HEALTH HAZARDS - ACUTE :

EYE CONTACT :
May cause irritation with prolonged contact.

SKIN CONTACT :
May cause irritation with prolonged contact.

INGESTION :
Not a likely route of exposure. Contains Sulfite. May cause asthmatic-like attack.

INHALATION :
Can cause mild irritation. Causes asthmatic signs and symptoms in hyper-reactive individuals.

HUMAN HEALTH HAZARDS - CHRONIC :
Ingestion of sulfite can cause a severe allergic reaction in asthmatics and some sulfite sensitive individuals. The resulting symptoms can include difficulty in breathing, flushed skin and a rash. Chronic exposure to sulfites may cause symptoms of upper respiratory disease and affect sense of taste and smell.

4. FIRST AID MEASURES

EYE CONTACT :
Immediately flush with plenty of water for at least 15 minutes. If symptoms develop, seek medical advice.

SKIN CONTACT :
Flush with large amounts of water. Use soap if available. If symptoms develop, seek medical advice.

INGESTION :
Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. Get medical attention.

INHALATION :
Remove to fresh air, treat symptomatically. Get medical attention.

NOTE TO PHYSICIAN :
Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

5. FIRE FIGHTING MEASURES

FLASH POINT : None

LOWER EXPLOSION LIMIT : Not flammable

UPPER EXPLOSION LIMIT : Not flammable

EXTINGUISHING MEDIA :
Not expected to burn. Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD :
Not flammable or combustible. May evolve oxides of sulfur (SOx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING :
In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS :
Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is safe to do so. Keep people away from and upwind of spill/leak. Ventilate spill area if possible. Ensure clean-up is conducted by trained personnel only. Do not touch spilled material. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Notify appropriate government, occupational health and safety and environmental authorities.

METHODS FOR CLEANING UP :
SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS :
Do not contaminate surface water.

7. HANDLING AND STORAGE

HANDLING :
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Ensure all containers are labeled. Keep the containers closed when not in use. Avoid generating aerosols and mists.

STORAGE CONDITIONS :
Store in a cool well ventilated area away from direct sunlight. Store the containers tightly closed. Evolves sulfur dioxide (SO2) when open to atmosphere. The rate of SO2 evolution increases with temperature and/or transfer of product. Sulfur dioxide may react with vapors from neutralizing amines and may form a visible cloud of amine salt particles.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :
Exposure guidelines have not been established for this product. Available exposure limits for the substance(s) are shown below. Exposure limits are listed for sulfur dioxide (SO2) since this product evolves SO2 when open to the atmosphere.

Substance(s)	Category:	ppm	mg/m3	Non-Standard Unit
Sulfur Dioxide	ACGIH/STEL	0.25		
	OSHA Z1/PEL	5	13	
Sodium Bisulfite	ACGIH/TWA		5	

ENGINEERING MEASURES :
General ventilation is recommended. Local exhaust ventilation may be necessary when this material is heated or a mist is created.

RESPIRATORY PROTECTION :
If significant mists, vapors or aerosols are generated an approved full-face respirator is recommended. An approved respirator must be worn if the occupational exposure limit is likely to be exceeded. Consider the use of filter type: a combination acid gas/particulate cartridge or a combination multi-contaminant / particulate cartridge. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION :
When handling this product, the use of chemical gloves is recommended. The choice of work glove depends on work conditions and what chemicals are handled. Please contact the PPE manufacturer for advice on what type of glove material may be suitable. Gloves should be replaced immediately if signs of degradation are observed.

SKIN PROTECTION :
Wear standard protective clothing.

EYE PROTECTION :
Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS :
Use good work and personal hygiene practices to avoid exposure. Keep a safety shower available. Keep an eye wash fountain available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

HUMAN EXPOSURE CHARACTERIZATION :
Based on our recommended product application and personal protective equipment, the potential human exposure is: Moderate

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE	Liquid
APPEARANCE	Light yellow
ODOR	Sulfurous
SPECIFIC GRAVITY	1.16 - 1.20 @ 77 °F / 25 °C
DENSITY	9.7 - 10.0 lb/gal
SOLUBILITY IN WATER	Complete
pH (100 %)	6.5 - 7.0

Note: These physical properties are typical values for this product and are subject to change.

10. STABILITY AND REACTIVITY

STABILITY :
Stable under normal conditions.

HAZARDOUS POLYMERIZATION :
Hazardous polymerization will not occur.

CONDITIONS TO AVOID :
Avoid extremes of temperature.

MATERIALS TO AVOID :
Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Contact with strong acids (e.g. sulfuric, phosphoric, nitric, hydrochloric, chromic, sulfonic) may generate heat, splattering or boiling and toxic vapors. SO2 may react with vapors from neutralizing amines and may produce a visible cloud of amine salt particles.

HAZARDOUS DECOMPOSITION PRODUCTS :
Under fire conditions: Oxides of sulfur

11. TOXICOLOGICAL INFORMATION

No toxicity studies have been conducted on this product.

SENSITIZATION :
Sulfites can cause an allergic reaction in sensitive individuals.

CARCINOGENICITY :
None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

HUMAN HAZARD CHARACTERIZATION :
Based on our hazard characterization, the potential human hazard is: Low

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

The following results are for the product, unless otherwise indicated.

Acute Fish Results :

Species	Exposure	Test Type	Value	Test Descriptor
Fathead Minnow	96 hrs	LC50	382 mg/l	Similar Product
Fathead Minnow	96 hrs	LC50	3,873 mg/l	Product

ACUTE INVERTEBRATE RESULTS :

Species	Exposure	Test Type	Value	Test Descriptor
Daphnia magna	48 hrs	LC50	1,894 mg/l	Product

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Low
Based on our recommended product application and the product's characteristics, the potential environmental exposure is: Moderate

If released into the environment, see CERCLA/SUPERFUND in Section 15.

13. DISPOSAL CONSIDERATIONS

If this product becomes a waste, it is not a hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA) 40 CFR 261, since it does not have the characteristics of Subpart C, nor is it listed under Subpart D.

As a non-hazardous waste, it is not subject to federal regulation. Consult state or local regulation for any additional handling, treatment or disposal requirements. For disposal, contact a properly licensed waste treatment, storage, disposal or recycling facility.

14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

The presence of an RQ component (Reportable Quantity for U.S. EPA and DOT) in this product causes it to be regulated with an additional description of RQ for road, or as a class 9 for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

LAND TRANSPORT :

Proper Shipping Name :	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name(s) :	SODIUM BISULFITE
UN/ID No :	UN 3082
Hazard Class - Primary :	9
Packing Group :	III
Flash Point :	None
Reportable Quantity (per package) :	161,290 lbs
RQ Component :	SODIUM BISULFITE

AIR TRANSPORT (ICAO/IATA) :

The presence of an RQ component (Reportable Quantity for U.S. EPA and DOT) in this product causes it to be regulated with an additional description of RQ for road, or as a class 9 for road and air, ONLY when the net weight in the package exceeds the calculated RQ for the product.

Proper Shipping Name :	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name(s) :	SODIUM BISULFITE
UN/ID No :	UN 3082
Hazard Class - Primary :	9
Packing Group :	III
Reportable Quantity (per package) :	161,290 lbs
RQ Component :	SODIUM BISULFITE

MARINE TRANSPORT (IMDG/IMO) :

Proper Shipping Name :	PRODUCT IS NOT REGULATED DURING TRANSPORTATION

15. REGULATORY INFORMATION

This section contains additional information that may have relevance to regulatory compliance. The information in this section is for reference only. It is not exhaustive, and should not be relied upon to take the place of an individualized compliance or hazard assessment. Nalco accepts no liability for the use of this information.

NATIONAL REGULATIONS, USA :

OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200 :
Based on our hazard evaluation, the following substance(s) in this product is/are hazardous and the reason(s) is/are shown below.

Sodium Sulfite : Respiratory irritant
Dipotassium Sulfite : Eye irritant
Sodium Bisulfite : Respiratory irritant

CERCLA/SUPERFUND, 40 CFR 302 :
This product contains the following Reportable Quantity (RQ) Substance. Also listed is the RQ for the product. If a reportable quantity of product is released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D.C. (1-800-424-8802).

RQ Substance	RQ
Sodium Bisulfite	161,290 lbs

SARA/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (TITLE III) - SECTIONS 302, 311, 312, AND 313 :

SECTION 302 - EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355) :
This product does not contain substances listed in Appendix A and B as an Extremely Hazardous Substance.

SECTIONS 311 AND 312 - MATERIAL SAFETY DATA SHEET REQUIREMENTS (40 CFR 370) :
Our hazard evaluation has found this product to be hazardous. The product should be reported under the following indicated EPA hazard categories:

X Immediate (Acute) Health Hazard

- Delayed (Chronic) Health Hazard
- Fire Hazard
- Sudden Release of Pressure Hazard
- Reactive Hazard

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

SECTION 313 - LIST OF TOXIC CHEMICALS (40 CFR 372) :
This product does not contain substances on the List of Toxic Chemicals.

TOXIC SUBSTANCES CONTROL ACT (TSCA) :
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710)

FOOD AND DRUG ADMINISTRATION (FDA) Federal Food, Drug and Cosmetic Act :
When use situations necessitate compliance with FDA regulations, this product is acceptable under : 21 CFR 173.310 Boiler Water Additives

Limitations: no more than required to produce intended technical effect.

NSF NON-FOOD COMPOUNDS REGISTRATION PROGRAM (former USDA List of Proprietary Substances & Non-Food Compounds) :
NSF Registration number for this product is : 140964
This product is acceptable for treating boilers or steam lines where steam produced may contact edible products and/or cooling systems where the treated water may not contact edible products in and around food processing areas (G6).

This product has been certified as KOSHER/PAREVE for year-round use INCLUDING THE PASSOVER SEASON by the CHICAGO RABBINICAL COUNCIL.

FEDERAL WATER POLLUTION CONTROL ACT, CLEAN WATER ACT, 40 CFR 401.15 / formerly Sec. 307, 40 CFR 116.4 / formerly Sec. 311 :
This product contains the following substances listed in the regulation. Additional components may be unintentionally present at trace levels.

Substance(s)	Citations
• Sodium Bisulfite	Sec. 311

CLEAN AIR ACT, Sec. 112 (Hazardous Air Pollutants, as amended by 40 CFR 63), Sec. 602 (40 CFR 82, Class I and II Ozone Depleting Substances) :
Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

CALIFORNIA PROPOSITION 65 :
Substances listed under California Proposition 65 are not intentionally added or expected to be present in this product.

MICHIGAN CRITICAL MATERIALS :
Substances listed under this regulation are not intentionally added or expected to be present in this product. Listed components may be present at trace levels.

STATE RIGHT TO KNOW LAWS :
The following substances are disclosed for compliance with State Right to Know Laws:

Sodium Bisulfite	7631-90-5

INTERNATIONAL CHEMICAL CONTROL LAWS :

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) :
The substance(s) in this preparation are included in or exempted from the Domestic Substance List (DSL).

AUSTRALIA
All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

CHINA
All substances in this product comply with the Provisions on the Environmental Administration of New Chemical Substances and are listed on or exempt from the Inventory of Existing Chemical Substances China (IECSC).

JAPAN
All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Existing and New Chemical Substances list (ENCS).

KOREA
All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL)

PHILIPPINES
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippines Inventory of Chemicals & Chemical Substances (PICCS).

16. OTHER INFORMATION

Due to our commitment to Product Stewardship, we have evaluated the human and environmental hazards and exposures of this product. Based on our recommended use of this product, we have characterized the product's general risk. This information should provide assistance for your own risk management practices. We have evaluated our product's risk as follows:

* The human risk is: Low

* The environmental risk is: Low

Any use inconsistent with our recommendations may affect the risk characterization. Our sales representative will assist you to determine if your product application is consistent with our recommendations. Together we can implement an appropriate risk management process.

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS™ CD-ROM Version),
Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH,
(TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight™ (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight™ CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS™ CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By : Product Safety Department
Date issued : 04/10/2012

Version Number : 2.4

DUDA ENERGY LLC

Safety Data Sheet
Sodium Bicarbonate

SECTION 1: Identification

1.1 Product identifier

Product name	Sodium Bicarbonate
Brand	Unavailable
Substance name	SODIUM BICARBONATE
CAS no.	144-55-8

1.2 Other means of identification

Unavailable

1.3 Recommended use of the chemical and restrictions on use

This chemical is used in the manufacture of effervescent salts and beverages, artificial mineral water, baking powder, other sodium salts, pharmaceuticals, sponge rubber and gold and platinum plating. It is used in treating wool and silk, in fire extinguishers, in the prevention of timber mold, in cleaning preparations, as a lab reagent, as an antacid and as a mouthwash. It is a source of carbon dioxide. It is also used as a systemic and urinary alkalyzer for human and veterinary purposes. In veterinary medicine, it is also used locally for burns and erythema, and to dissolve mucus, exudates and scabs. It is used to soften and remove ear wax, as an eye lotion, to clean contact lenses, as a vaginal douche and to treat metabolic acidosis caused by cardiac arrest.

1.4 Supplier's details

Name	Duda Energy LLC
Address	1112 Brooks St. Decatur, AL 35601 USA
Telephone	256.340.4866
Fax	Unavailable
email	Unavailable

1.5 Emergency phone number(s)

800.255.3924

SECTION 2: Hazard identification

General hazard statement
Unavailable

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Other hazards which do not result in classification

None

Statement regarding ingredients of unknown toxicity
Unavailable

SECTION 3: Composition/information on ingredients

3.1 Substances

Substance name	SODIUM BICARBONATE
CAS no.	144-55-8
Formula	CHO3.Na
Molecular weight	84.01
Other names / synonyms	BAKING SODA
Impurities and stabilizing additives	Unavailable

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	Wear general PPE to prevent unwanted exposure.
If inhaled	Move to fresh air. If signs/symptoms develop/continue, call a physician.
In case of skin contact	Wash thoroughly with soap and water. If irritation develops or persists, call a physician.
In case of eye contact	Flush eyes thoroughly with water. If irritation develops/persists, call a physician.
If swallowed	Where victim is conscious and able, administer one to two glasses of water to dilute and call poison control center or an hospital immediately. If victim is not conscious, do NOT administer anything by mouth. DO NOT INDUCE VOMITING.

Personal protective equipment for first-aid responders
Unavailable

4.2 Most important symptoms/effects, acute and delayed
None other than listed.

4.3 Indication of immediate medical attention and special treatment needed, if necessary
Unavailable

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media
Use water spray, alcohol resistant foam, dry chemical, or carbon dioxide.

5.2 Specific hazards arising from the chemical
Carbon oxides, Sodium oxides

5.3 Special protective actions for fire-fighters
Wear SCBA when needed.

Further information
None.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
This product requires no specific PPE or procedures. Handle with care. Avoid creating dust clouds/inhalation of dust (mild irritant).

6.2 Environmental precautions
None required.

6.3 Methods and materials for containment and cleaning up
Keep stored in tightly sealed containers. Clean up spilled material with broom and dust-pan. Wash area with soap and water if needed.

Reference to other sections
None.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Use good ventilation when handling to prevent clouding of dust.

7.2 Conditions for safe storage, including any incompatibilities
Store in tightly closed container in dry places.

Specific end use(s)
None other than listed in Section 1.

SECTION 8: Exposure controls/personal protection

8.2 Appropriate engineering controls
General safe handling and good hygiene practices.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Use appropriate safety glasses/goggles.

Skin protection
Wear Nitrile gloves when handling.

Body protection
None

Respiratory protection
Should not require use of a respirator.

Thermal hazards
None

Environmental exposure controls
None needed.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance/form (physical state, color, etc.)	Solid
Odor	Unavailable
Odor threshold	Unavailable
pH	8.3 (1% solution) @ 25 °C
Melting point/freezing point	Unavailable
Initial boiling point and boiling range	Not applicable
Flash point	Unavailable
Evaporation rate	Unavailable
Flammability (solid, gas)	
Upper/lower flammability limits	Unavailable
Vapor pressure	Unavailable
Vapor density	Unavailable
Relative density	2.159 [062,275]
Solubility(ies)	Water (96 g/l @ 20 °C)
Partition coefficient: n-octanol/water	Unavailable
Auto-ignition temperature	Unavailable
Decomposition temperature	Unavailable
Viscosity	Unavailable
Explosive properties	Unavailable
Oxidizing properties	Non-oxidizing

Other safety information
None

SECTION 10: Stability and reactivity

10.1 Reactivity
Not reactive under normal conditions.

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
None under normal conditions.

10.4 Conditions to avoid
Heat, high humidity. Avoid contact with acids except under controlled conditions. Store away from strong odors (will absorb).

10.5 Incompatible materials
Acids

10.6 Hazardous decomposition products
Reacts to release carbon dioxide gas and heat.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
SODIUM BICARBONATE
LD50 Oral - Rat - 4220 mg/kg

Skin corrosion/irritation
Mild skin irritation possible.

Serious eye damage/irritation
Mild eye irritation possible.

Respiratory or skin sensitization
Unavailable

Germ cell mutagenicity
Unavailable

Carcinogenicity
Not considered a carcinogen by IARC, ACGIH, NTP, or OSHA.

Reproductive toxicity
Unavailable

Summary of evaluation of the CMR properties
Unavailable

STOT-single exposure
Unavailable

STOT-repeated exposure
Unavailable

Aspiration hazard
Unavailable

Additional information
Exposure to large quantities may cause gastrointestinal disturbance, while heavy or prolonged skin exposure may result in the absorption of harmful quantities. To the best of our knowledge: the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

Toxicity
Unavailable

Persistence and degradability
Unavailable

Bioaccumulative potential
Unavailable

Mobility in soil
Unavailable

Results of PBT and vPvB assessment
N/A

Other adverse effects
Unavailable

SECTION 13: Disposal considerations

Disposal of the product
No disposal restrictions apply.

Disposal of contaminated packaging
Treat as product.

Waste treatment
N/A

Sewage disposal
N/A

Other disposal recommendations
None

SECTION 14: Transport information

DOT (US)

Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Secton 302

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

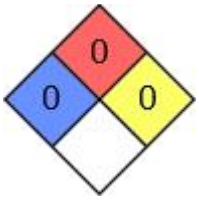
SARA 311/312 Hazards
No SARA Hazards

California Prop. 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

United States Right-to-Know Regulations
This product does not contain any substances regulated by state right-to-know regulations.

15.2 Chemical Safety Assessment
None

NFPA Rating



SECTION 16: Other information

Unavailable

16.1 Further information/disclaimer
The information provided in this Safety Data Sheet is correct to the best of Duda Energy LLC's knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. This Safety Data Sheet only contains information relating to safety and does not replace any product information or product specification. Please note, the content may be changed, corrected, or deleted at any time without notice and may not always necessarily reflect the most current data. Duda Energy LLC will assume

no responsiblity for any trouble or failure caused by the errors in the information provided, nor any damage associated with the usage of the information.

16.2 Preparation information

Version: 2
Revised: 04-10-2017

MORTON SALT, INC.

Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name • **Common Salt without Additives**

Synonyms

- All Purpose Natural Sea Salt
- All Purpose Purex Salt
- Bunny Spool (Plain Salt)
- California Pure Coarse Sea Salt
- California Pure Fine Sea Salt
- California Pure Medium Sea Salt
- Canning & Pickling Salt
- Commercial Grade, Water Softening Pellets
- Culinox 999 Chemical Grade Salt
- Culinox 999 Fine Salt
- Culinox 999 Food Grade Salt;
- Evaporated Granulated Salt
- Evaporated Salt Pellets
- Feed Mixing Salt
- Northern Rock, F & R
- Fine Mixing Salt
- Hi-Purity Super Soft Salt Extra Coarse Crystals
- H.G. Blending Salt
- Hay & Stock Salt, F&R
- Industrial Crude Solar Salt
- ISCO Crystals, Bulk
- ISCO Medium, Bulk
- ISCO Water Conditioning, Bulk
- KD Crude Solar Salt
- KD Industrial Salt
- Kleer Fine Salt
- Kleer Granulated Salt
- Mill Run Salt
- Natural Coarse Sea Salt
- Northern Fine +20 Rock Salt
- Plain Salt Block
- Plain Salt Brick
- Pool Salt
- Premium Salt Pellets
- Professional's Choice Pool Salt
- PureSun Culinary Crystals
- Purex Salt
- Purex Select Salt
- Reagent Grade Sodium Chloride
- Refined Sea Salt
- Rock Pretzel Salt
- Rock Salt for Making Ice Cream
- Safe-T-Salt (bagged w/o YPS)
- Sea Salt Grinder
- Sea Salt Grinder Refill
- Select Extra Coarse Rock Salt
- Service Pack Salt (all)
- Ship n' Shore Rock Salt
- Solar Salt Water Softening Crystals
- Stock Salt
- USP Sodium Chloride
- Valu-Soft Solar Salt
- Water Softening Salt (Undried) Coarse
- Water Softening Salt (Undried) Extra Coarse
- White Crystal Brine Block (50 lb.)
- White Crystal Rock Salt (all)
- White Crystal Solar Salt (all)
- White Crystal Water Softening Solar Salt (all)

CAS Number • 7647-14-5

Product Code • MSDS Code: 100

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified use(s) • Food, Chemical and Drug Processing; Pharmaceuticals; Water Conditioning; Ice Control; Chemical Feedstock – see product data sheets for more information

1.3 Details of the supplier of the safety data sheet

Manufacturer • Morton Salt, Inc.

123 N. Wacker Drive
Chicago, IL 60606
United States

saltinfo@mortonsalt.com

Telephone (General) • 312-807-2000

1.4 Emergency telephone number

Manufacturer • 312-807-2000

Section 2: Hazards Identification

EU/EEC

According to EU Directive 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

CLP • Classification criteria not met

DSD/DPD • Classification criteria not met

2.2 Label Elements

CLP

Hazard statements • No label element(s) specifically required

DSD/DPD

Risk phrases • No label element(s) specifically required

2.3 Other Hazards

CLP • According to Regulation (EC) No. 1272/2008 (CLP) this material is not considered hazardous.

DSD/DPD • This product is not considered dangerous under the European Directive 67/548/EEC

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012 • Classification criteria not met

2.2 Label elements

OSHA HCS 2012

Hazard statements • No label element(s) specifically required

2.3 Other hazards

OSHA HCS 2012 • This product is not considered hazardous under the U.S. OSHA 29 CFR 1910.1200 Hazard Communication Standard.

Canada

According to WHMIS

2.1 Classification of the substance or mixture

WHMIS • Classification criteria not met

2.2 Label elements

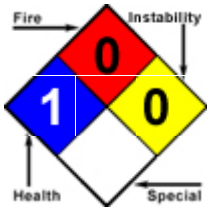
WHMIS • No label element(s) specifically required

2.3 Other hazards

WHMIS • In Canada, the product mentioned above is not considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

2.4 Other information

NFPA



See Section 12 for Ecological Information.

Section 3 - Composition/Information on Ingredients

3.1 Substances

Non-Hazardous Components					
Chemical Name	**Identifiers**	**%(weight)**	**LD50/LC50**	**Classifications According to Regulation/Directive**	**Comments**
Sodium chloride	**CAS:**7647-14-5 **EC Number:**231-598-3	> 99%	Ingestion/Oral-Rat LD50 • 3000 mg/kg	**EU DSD/DPD:** Not Classified - Criteria not met **EU CLP:** Not Classified - Criteria not met **OSHA HCS 2012:** Not Classified - Criteria not met	May contain small quantities of naturally occurring calcium and magnesium salts

3.2 Mixtures

- Material does not meet the criteria of a mixture in accordance with Regulation (EC) No 1272/2008.

See Section 11 for Toxicological Information.

Section 4 - First Aid Measures

4.1 Description of first aid measures

Inhalation • Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing.

Skin • IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

Eye • In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion • If large quantities are swallowed, call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

• Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician • All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media
- Material is non-combustible. In case of fire use media as appropriate for surrounding fire.

Unsuitable Extinguishing Media
- No data available.

5.2 Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards
- No unusual fire or explosion hazards known.

Hazardous Combustion Products
- No data available

5.3 Advice for firefighters

- Structural firefighters' protective clothing will only provide limited protection. Wear positive pressure self-contained breathing apparatus (SCBA).

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Precautions
- Wear suitable protective clothing, gloves, and eye/face protection.

Emergency Procedures
- Stop leak if you can do it without risk. Keep unauthorized personnel away. Use normal clean up procedures.

6.2 Environmental precautions

- None expected to be necessary if material is used under ordinary conditions and as recommended.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures
- Carefully shovel or sweep up spilled material and place in suitable container.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling
- Use good safety and industrial hygiene practices. Wash thoroughly after handling. Keep out of reach of children.

7.2 Conditions for safe storage, including any incompatibilities

Storage
- Avoid storage with strong acids and strong oxidizing agents.

Incompatible Materials or Ignition Sources
- Strong oxidizing agents, strong acids.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits/Guidelines
- No applicable exposure limits available for product or components.

8.2 Exposure controls

Engineering Measures/Controls
- Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values.

Personal Protective Equipment

Pictograms
- 

Respiratory
- In case of insufficient ventilation, wear suitable respiratory equipment.

Eye/Face
- Wear safety glasses.

Skin/Body
- Wear appropriate gloves.

General Industrial Hygiene Considerations
- Do not get in eyes or on skin or clothing. Handle in accordance with good industrial hygiene and safety practice.

Environmental Exposure Controls
- Follow best practice for site management and disposal of waste.

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Colorless to white crystalline or compressed block/pellet.
Color	Colorless to White.	Odor	Odorless
Particulate Type	Dust Crystalline	Particulate Size	Variable
Odor Threshold	Data lacking		
General Properties			
Boiling Point	1413 to 1461 C(2575.4 to 2661.8 F)	Melting Point	801 C(1473.8 F)
Decomposition Temperature	Data lacking	pH	7 Approximately
Specific Gravity/Relative Density	2.165 Water=1	Bulk Density	Variable
Water Solubility	Soluble 0.36 g/cc @ 20 C(68 F)	Viscosity	Not relevant
Explosive Properties	Not relevant.	Oxidizing Properties:	Not relevant.
Volatility			
Vapor Pressure	Not relevant	Vapor Density	Not relevant
Evaporation Rate	Not relevant		
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	Not relevant
Flammability (solid, gas)	Not flammable.		
Environmental			
Octanol/Water Partition coefficient	Not relevant		

9.2 Other Information

- No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable

10.3 Possibility of hazardous reactions

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Incompatible materials.

10.5 Incompatible materials

- Strong oxidizing agents, strong acids.

10.6 Hazardous decomposition products

- Will react with strong acids to generate hydrogen chloride and with strong oxidizing agents to generate chlorine gas.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Component Name	CAS	Data
Sodium chloride (> 99%)	7647-14-5	**Acute Toxicity:** orl-rat LD50:3000 mg/kg

GHS Properties	Classification
Acute toxicity	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Aspiration Hazard	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Carcinogenicity	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Germ Cell Mutagenicity	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Skin corrosion/Irritation	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Skin sensitization	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
STOT-RE	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
STOT-SE	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Toxicity for Reproduction	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Respiratory sensitization	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met
Serious eye damage/Irritation	**EU/CLP**•Classification criteria not met **OSHA HCS 2012**•Classification criteria not met

Potential Health Effects

Inhalation

Acute (Immediate)
- Under normal conditions of use, no health effects are expected. Inhalation of dust may cause mild irritation to mucous membranes, nose and throat. Symptoms may include coughing, dryness and sore throat.

Chronic (Delayed)
- No data available.

Skin

Acute
- Under normal conditions of use, no health effects are expected.

(Immediate)

Chronic (Delayed) • No data available.

Eye

Acute (Immediate) • Based upon practical use and experience using this product eye irritation is not expected to occur.

Chronic (Delayed) • No data available.

Ingestion

Acute (Immediate) • Ingestion may cause the following symptoms - diarrhea.

Chronic (Delayed) • No data available.

Key to abbreviations

LD = Lethal Dose

Section 12 - Ecological Information

12.1 Toxicity

- Material data lacking.

12.2 Persistence and degradability

- Material data lacking.

12.3 Bioaccumulative potential

- Material data lacking.

12.4 Mobility in Soil

- Material data lacking.

12.5 Results of PBT and vPvB assessment

- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	NDA	Not regulated	NDA	NDA	NDA
TDG	NDA	Not regulated	NDA	NDA	NDA
IMO/IMDG	NDA	Not regulated	NDA	NDA	NDA

IATA/ICAO	NDA	Not regulated	NDA	NDA	NDA

14.6 Special precautions for user • None known.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code • Not relevant.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA Hazard Classifications • None

State Right To Know				
Component	**CAS**	**MA**	**NJ**	**PA**
Sodium chloride	7647-14-5	No	No	No

Inventory						
Component	**CAS**	**Canada DSL**	**Canada NDSL**	**China**	**EU EINECS**	**EU ELNICS**
Sodium chloride	7647-14-5	Yes	No	Yes	Yes	No

Inventory (Con't.)				
Component	**CAS**	**Japan ENCS**	**Korea KECL**	**TSCA**
Sodium chloride	7647-14-5	Yes	Yes	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

•Sodium chloride 7647-14-5 > 99% Uncontrolled product according to WHMIS classification criteria

Canada - WHMIS - Ingredient Disclosure List

•Sodium chloride 7647-14-5 > 99% Not Listed

Environment

Canada - CEPA - Priority Substances List

•Sodium chloride 7647-14-5 > 99% Not Listed

Europe

Other

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification

•Sodium chloride 7647-14-5 > 99% Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits

•Sodium chloride 7647-14-5 > 99% Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling

•Sodium chloride 7647-14-5 > 99% Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations

•Sodium chloride 7647-14-5 > 99% Not Listed

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases

•Sodium chloride 7647-14-5 > 99% Not Listed

Mexico

Other

Mexico - Hazard Classifications

•Sodium chloride 7647-14-5 > 99% Not Listed

Mexico - Regulated Substances

•Sodium chloride 7647-14-5 > 99% Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

•Sodium chloride 7647-14-5 > 99% Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

•Sodium chloride 7647-14-5 > 99% Not Listed

United States - California

Environment

U.S. - California - Proposition 65 - Carcinogens List

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

•Sodium chloride 7647-14-5 > 99% Not Listed

United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

•Sodium chloride 7647-14-5 > 99% Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

•Sodium chloride 7647-14-5 > 99% Not Listed

United States - Rhode Island

Labor

U.S. - Rhode Island - Hazardous Substance List

•Sodium chloride 7647-14-5 > 99% Not Listed

15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

Section 16 - Other Information

Last Revision Date	• 17/November/2015
Preparation Date	• 17/November/2015
Disclaimer/Statement of Liability	• The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice

procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by use of this material. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations. Nothing contained herein is to be construed as a recommendation for use in violation of any patents or of applicable laws or regulations.

Key to abbreviations

NDA = No data available

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : X-111 55GL

Material number : L99385

Manufacturer or supplier's details

Company : Zep Inc.

Address : 350 Joe Frank Harris Parkway, SE
Emerson, GA 30137

Telephone : 404-352-1680

Emergency telephone numbers

For SDS Information	:	Compliance Services 1-877-428-9937
For a Medical Emergency	:	877-541-2016 Toll Free - All Calls Recorded
For a Transportation Emergency	:	CHEMTREC: 800-424-9300 - All Calls Recorded. In the District of Columbia 202-483-7616

Recommended use of the chemical and restrictions on use

Recommended use : Cleaner

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	liquid
Colour	light yellow, clear
Odour	mild

GHS Classification

Corrosive to metals : Category 1
Skin corrosion : Category 1
Serious eye damage : Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT

induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.
Disposal:
P501 Dispose of contents/container in accordance with local regulation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration [%]
potassium hydroxide	1310-58-3	>= 5 - < 10
sodium hypochlorite	7681-52-9	>= 3 - < 5

The exact percentages of disclosed substances are withheld as trade secrets.

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Get medical attention immediately.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
Wash off immediately with plenty of water for at least 15 minutes.
Remove contaminated clothing and shoes.
Wash contaminated clothing before reuse.
If skin irritation persists, call a physician.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.

		Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.
Most important symptoms and effects, both acute and delayed	:	Effects are dependent on exposure (dose, concentration, contact time). Effects are immediate and delayed. Symptoms may include blistering, irritation, burns, and pain. Causes severe skin burns and eye damage. Review section 2 of SDS to see all potential hazards.
Notes to physician	:	Treat symptomatically. Symptoms may be delayed.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Water spray jet Alcohol-resistant foam Carbon dioxide (CO2)
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon dioxide (CO2) Carbon monoxide Smoke Chlorine compounds No hazardous combustion products are known
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Standard procedure for chemical fires.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions,	:	Use personal protective equipment.

protective equipment and emergency procedures

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains, inform respective authorities.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.
Do not breathe vapours or spray mist.
Provide sufficient air exchange and/or exhaust in work rooms.
Avoid exposure - obtain special instructions before use.
Take precautionary measures against static discharges.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.
Keep in a dry, cool and well-ventilated place.
No smoking.

Materials to avoid : Do not store near acids.
Oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
potassium hydroxide	1310-58-3	C	2 mg/m3	ACGIH
		C	2 mg/m3	NIOSH REL
		C	2 mg/m3	OSHA P0
		C	2 mg/m3	CAL PEL
sodium hypochlorite	7681-52-9	STEL	2 mg/m3	US WEEL

Engineering measures : effective ventilation in all processing areas

Personal protective equipment

Respiratory protection	:	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Hand protection		
Material	:	Protective gloves
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Access to clean water to rinse eyes must be available, options include: eye wash stations or showers, or eye wash bottles with pure water. Safety glasses
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	light yellow, clear
Odour	:	mild
Odour Threshold	:	No data available
pH	:	13.5 - 14
Melting point/freezing point	:	No data available
Boiling point	:	104 °C
Flash point	:	Not applicable
Evaporation rate	:	1
Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Density	:	1.123 g/cm3
Solubility(ies)		
Water solubility	:	soluble
Partition coefficient: n-	:	No data available

octanol/water		
Auto-ignition temperature	:	not determined
Thermal decomposition	:	No data available
Viscosity		
Viscosity, kinematic	:	3.7 mm2/s (20.0 °C)

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable No decomposition if stored and applied as directed.
Chemical stability	:	Stable under normal conditions. No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed.
Conditions to avoid	:	Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatible materials	:	Acids Oxidizing agents
Hazardous decomposition products	:	Chlorine Carbon oxides Phosgene

SECTION 11. TOXICOLOGICAL INFORMATION

Potential Health Effects

Aggravated Medical Condition	:	None known.
Symptoms of Overexposure	:	Effects are dependent on exposure (dose, concentration, contact time). Effects are immediate and delayed. Symptoms may include blistering, irritation, burns, and pain.

Carcinogenicity:

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
OSHA	No component of this product present at levels greater than or

NTP	equal to 0.1% is on OSHA's list of regulated carcinogens. No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate : 1,853 mg/kg
Method: Calculation method

Skin corrosion/irritation

Product:

Remarks: Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation

Product:

Remarks: May cause irreversible eye damage.

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Aspiration toxicity

No data available

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water	:	Remarks: No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation	40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information	:	Not applicable An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Toxic to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of in accordance with local regulations.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

Transportation Regulation: 49 CFR (USA):

UN3266, Corrosive liquid, basic, inorganic, n.o.s., (POTASSIUM HYDROXIDE), 8, II

Transportation Regulation: IMDG (Vessel):
UN3266, CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S., (POTASSIUM HYDROXIDE), 8, II

Transportation Regulation: IATA (Cargo Air):
UN3266, Corrosive liquid, basic, inorganic, n.o.s., (POTASSIUM HYDROXIDE), 8, II

Transportation Regulation: IATA (Passenger Air):
UN3266, Corrosive liquid, basic, inorganic, n.o.s., (POTASSIUM HYDROXIDE), 8, II

Transportation Regulation: TDG (Canada):
UN3266, CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S., (POTASSIUM HYDROXIDE), 8, II

The product as delivered to the customer conforms to packaging requirements for shipment by road under US Department of Transportation (DOT) regulations. Additional transportation classifications noted above are for reference only, and not a certification or warranty of the suitability of the packaging for shipment under these alternative transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
sodium hypochlorite	7681-52-9	100	2308

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Corrosive to metals
Skin corrosion or irritation
Serious eye damage or eye irritation
Acute toxicity (any route of exposure)

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

DSL	All components of this product are on the Canadian DSL
TSCA	On TSCA Inventory

For information on the country notification status for other regions please contact the manufacturer's regulatory group.

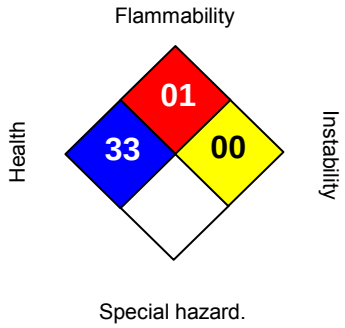
Inventory Acronym and Validity Area Legend:

TSCA (USA), DSL (Canada), NDSL (Canada)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

OSHA - GHS Label Information:

Hazard pictograms :

Signal word : **Danger:**
Hazard statements : Causes severe skin burns and eye damage.
Precautionary statements :

Prevention: Wash skin thoroughly after handling. Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several

minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Wash contaminated clothing before reuse.

Disposal: Dispose of contents/container in accordance with local regulation.

Version:	2.1
Revision Date:	01/09/2020
Print Date:	02/21/2020

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. Users should make their own investigations to determine the suitability and applicability of the information for their particular purposes. This SDS has been prepared by the Compliance Services organization supporting this manufacturer, supplier or distributor.

Zep Inc. markets products under well recognized and established brand names such as Zep®, Zep Commercial®,Zep Professional®, Enforcer®, National Chemical™, Selig™, Misty®, Next Dimension™, Petro®, i-Chem®, TimeMist®, TimeWick™, MicrobeMax®, Country Vet®, Konk®, Original Bike Spirits®, Blue Coral®, Black Magic®, Rain-X®, Niagara National™, FC Forward Chemicals®,Rexodan®, Mykal™, and a number of private labeled brands.

SAFETY DATA SHEET

Propane

Section 1. Identification

GHS product identifier : Propane

Chemical name : propane

Other means of identification : Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl
hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.

Product type : Liquefied gas

Product use : Synthetic/Analytical chemistry.

Synonym : Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl
hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.

SDS # : 001045

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE GASES - Category 1
GASES UNDER PRESSURE - Liquefied gas

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Extremely flammable gas.
Contains gas under pressure; may explode if heated.
May cause frostbite.
May displace oxygen and cause rapid suffocation.
May form explosive mixtures with air.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response : Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leakage, eliminate all ignition sources.

Storage : Protect from sunlight. Store in a well-ventilated place.

Section 2. Hazards identification

Disposal : Not applicable.

Hazards not otherwise classified : Liquid can cause burns similar to frostbite.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : propane

Other means of identification : Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.

Product code : 001045

CAS number/other identifiers

CAS number : 74-98-6

Ingredient name	%	CAS number
Propane	100	74-98-6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. As this product rapidly becomes a gas when released, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Liquid can cause burns similar to frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.

Section 4. First aid measures

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : Ingestion of liquid can cause burns similar to frostbite.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:, frostbite

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:, frostbite

Ingestion : Adverse symptoms may include the following:, frostbite

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Propane	**NIOSH REL (United States, 10/2016).** TWA: 1800 mg/m³ 10 hours. TWA: 1000 ppm 10 hours. **OSHA PEL (United States, 5/2018).** TWA: 1800 mg/m³ 8 hours. TWA: 1000 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 1800 mg/m³ 8 hours. TWA: 1000 ppm 8 hours. **ACGIH TLV (United States, 3/2019). Oxygen Depletion [Asphyxiant]. Explosive potential.**

Section 8. Exposure controls/personal protection

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Thermal hazards : If there is a risk of contact with the liquid, all protective equipment worn should be suitable for use with extremely low temperature materials.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Compressed gas.]

Color : Colorless.

Odor : Odorless.BUT MAY HAVE SKUNK ODOR ADDED.

Odor threshold : Not available.

pH : Not available.

Melting point : -187.6°C (-305.7°F)

Boiling point : -42.1°C (-43.8°F)

Section 9. Physical and chemical properties

Critical temperature	:	96.55°C (205.8°F)
Flash point	:	Closed cup: -104°C (-155.2°F) Open cup: -104°C (-155.2°F)
Evaporation rate	:	Not available.
Flammability (solid, gas)	:	Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.
Lower and upper explosive (flammable) limits	:	Lower: 1.8% Upper: 8.4%
Vapor pressure	:	109 (psig)
Vapor density	:	1.6 (Air = 1)
Specific Volume (ft ^{3}/lb)	:	8.6206
Gas Density (lb/ft ^{3})	:	0.116 (25°C / 77 to °F)
Relative density	:	Not applicable.
Solubility	:	Not available.
Solubility in water	:	0.0244 g/l
Partition coefficient: n-octanol/water	:	1.09
Auto-ignition temperature	:	287°C (548.6°F)
Decomposition temperature	:	Not available.
Viscosity	:	Not applicable.
Flow time (ISO 2431)	:	Not available.
Molecular weight	:	44.11 g/mole
Aerosol product		
Heat of combustion	:	-46012932 J/kg

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow gas to accumulate in low or confined areas.
Incompatible materials	:	Oxidizers
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Liquid can cause burns similar to frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.

Ingestion : Ingestion of liquid can cause burns similar to frostbite.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:, frostbite

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:, frostbite

Ingestion : Adverse symptoms may include the following:, frostbite

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Section 11. Toxicological information

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Propane	1.09	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1978	UN1978	UN1978	UN1978	UN1978
UN proper shipping name	PROPANE	PROPANE	PROPANE	PROPANE	PROPANE
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Additional information

DOT Classification : **Limited quantity**
Yes.

Packaging instruction
Passenger aircraft
Quantity limitation: Forbidden.

Cargo aircraft
Quantity limitation: 150 kg

Special provisions
19, T50

For domestic transportation only, UN1075 may be substituted for the UN number shown as long as the substitution is consistent on package markings, shipping papers, and emergency response information. See 49 CFR 172.102 Special Provision 19.
Containers of NON-ODORIZED liquefied petroleum gas must be marked either NON-ODORIZED or NOT ODORIZED as of September 30, 2006. [49 CFR 172.301(f), 326(d), 330(c) and 338(e)]

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).
Explosive Limit and Limited Quantity Index 0.125
ERAP Index 3000
Passenger Carrying Vessel Index 65
Passenger Carrying Road or Rail Index Forbidden
Special provisions 29, 42

IATA : **Quantity limitation** Passenger and Cargo Aircraft: Forbidden. Cargo Aircraft Only: 150 kg.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined
Clean Air Act (CAA) 112 regulated flammable substances: propane

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

State regulations

Massachusetts : This material is listed.
New York : This material is not listed.
New Jersey : This material is listed.
Pennsylvania : This material is listed.

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : This material is listed or exempted.
Canada : This material is listed or exempted.
China : This material is listed or exempted.
Europe : This material is listed or exempted.
Japan : **Japan inventory (ENCS)**: This material is listed or exempted.
Japan inventory (ISHL): This material is listed or exempted.
New Zealand : This material is listed or exempted.
Philippines : This material is listed or exempted.

Section 15. Regulatory information

Republic of Korea	:	This material is listed or exempted.
Taiwan	:	This material is listed or exempted.
Thailand	:	Not determined.
Turkey	:	This material is listed or exempted.
United States	:	This material is active or exempted.
Viet Nam	:	This material is listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	/	2
Flammability		4
Physical hazards		3

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas	Expert judgment Expert judgment

History

Date of printing	:	10/5/2020
Date of issue/Date of revision	:	10/5/2020
Date of previous issue	:	5/6/2018
Version	:	1.01
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient

Section 16. Other information

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Other special considerations : The information below is given to call attention to the issue of “Naturally occurring radioactive materials”. Although Radon-222 levels in the product represented by this MSDS do not present any direct Radon exposure hazard, customers should be aware of the potential for Radon daughter build up within their processing systems, whatever the source of their product streams. Radon-222 is a naturally occurring radioactive gas which can be a contaminant in natural gas. During subsequent processing , Radon tends to be concentrated in Liquefied Petroleum Gas streams and in product streams having a similar boiling point range. Industry experience has shown that this product may contain small amounts of Radon-222 and its radioactive decay products, called Radon “daughters”. The actual concentration of Radon-222 and radioactive daughters in the delivered product is dependent on the geographical source of the natural gas and storage time prior to delivery. Process equipment (i.e. lines, filters, pumps and reaction units) may accumulate significant levels of radioactive daughters and show a gamma radiation reading during operation. A potential external radiation hazard exists at or near any pipe valve or vessel containing a Radon enriched stream, or containing internal deposits of radioactive material due to the transmission of gamma radiation through its wall. Field studies reported in the literature have not shown any conditions that subject workers to cumulative exposures in excess of general population limits. Equipment emitting gamma radiation should be presumed to be internally contaminated with alpha emitting decay products which may be a hazard if inhaled or ingested. Protective equipment such as coveralls, gloves, and respirator (NIOSH/MHSA approved for high efficiency particulates and radionuclides, or supplied air) should be worn by personnel entering a vessel or working on contaminated process equipment to prevent skin contamination, ingestion, or inhalation of any residues containing alpha radiation. Airborne contamination may be minimized by handling scale and/or contaminated materials in a wet state.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Attachment E.8

Waste Water Treatment Plant Effluent Analytical Results

Table 1- Discharge Monitoring Summary Data 2019 and 2020							
Stericycle Morton Facility							
Date	**BOD**	**COD**	**O&G**	**pH**	**TSS**	**T1 COD**	**Hg**
	mg/L	**mg/L**	**mg/L**	**SU**	**mg/L**	**mg/L**	**µg/L**
1/3/2019	110	1640	6.5	6.58	90	5090	ND
1/11/2019	37	1840	7.7	6.49	98	3970	ND
1/17/2019	47	510	0	6.12	82	2700	ND
1/23/2019	45	720	10.5	6.92	71	2890	ND
2/7/2019	60	710	13.8	7.38	101	3220	ND
2/15/2019	17	630	10.1	6.47	38.5	790	ND
3/14/2019	77	440	8.1	6.26	107	4890	ND
3/21/2019	36	620	5.4	6.81	156	5470	ND
3/28/2019	23	520	6.6	6.77	50.5	3800	ND
4/4/2019	34	521	0	6.47	108	NA	ND
4/11/2019	32	480	0	7.23	84	4140	ND
4/18/2019	23	459	7.7	6.8	57	4810	ND
4/25/2019	13	420	6.9	7.09	46	7080	ND
5/2/2019	28	530	0	6.64	89	2350	ND
5/9/2019	12	388	0	6.61	34	3590	ND
5/16/2019	8	360	5.8	6.9	29	9250	ND
5/23/2019	26	513	5.7	7.03	36.5	9100	ND
5/30/2019	7.2	395	0	6.96	9.5	5570	ND
6/13/2019	5.4	420	0	7.35	17	6190	ND
6/20/2019	9.1	570	0	7.17	31.5	6550	ND
6/27/2019	20	590	5	6.96	58.5	4660	ND
7/3/2019	12	580	7.9	7.16	37	6580	ND
7/11/2019	5	560	6.5	7.61	20	5390	ND
7/18/2019	6.3	420	0	7.23	71	3370	ND
7/25/2019	7.2	450	0	7.6	20	970	ND
8/15/2019	0	440	0	7.29	13.5	12900	ND
8/22/2019	7	410	0	7.26	12	3100	ND
8/29/2019	12	400	0	7.7	16	4100	ND
9/5/2019	6.3	360	0	7.87	11.5	3300	ND
9/12/2019	22.8	410	0	7	36	8020	ND
9/19/2019	6.5	380	0	7.54	14	6260	ND
9/26/2019	6.6	370	0	7.67	22.5	6070	ND
10/10/2019	8.2	350	0	7.12	10.5	1030	ND
10/17/2019	8.9	430	0	7.37	26.5	4710	ND
10/24/2019	6.9	390	0	7.29	19	2930	ND
11/7/2019	10	360	0	6.92	22	6520	ND
11/13/2019	8.3	360	0	7.17	15.5	3460	ND
11/21/2019	7	420	0	6.95	11.5	4610	ND
11/27/2019	7.5	328	0	6.91	8	9840	ND
12/5/2019	7.5	340	0	6.7	8.5	9070	ND
12/12/2019	13	341	0	7.26	15	3090	ND
12/18/2019	15	400	0	6.99	19.5	5280	ND
12/26/2019	0	430	5.3	6.73	46	4260	ND

Table 1- Discharge Monitoring Summary Data 2019 and 2020							
Stericycle Morton Facility							
Date	**BOD**	**COD**	**O&G**	**pH**	**TSS**	**T1 COD**	**Hg**
	mg/L	**mg/L**	**mg/L**	**SU**	**mg/L**	**mg/L**	**µg/L**
12/31/2019	41	550	5.8	6.18	176	6860	ND
1/9/2020	17	656	0	6.82	40	6750	ND
1/16/2020	21	6290	6.7	6.9	51	4120	ND
1/23/2020	44	660	6.5	6.63	88	5650	ND
1/30/2020	13	650	0	7.06	27	1810	ND
2/6/2020	33	730	0	6.61	21	3750	ND
2/13/2020	0	330	5.6	7.16	12.5	4600	ND
2/20/2020	29	400	7.1	6.6	38	5630	ND
2/27/2020	20	400	6.9	6.94	32.5	4280	ND
3/12/2020	7.9	330	0	6.37	11.5	5700	ND
3/18/2020	18	500	0	5.97	43	6330	ND
3/23/2020	16	480	0	6.85	22	3840	ND
3/30/2020	35	420	0	6.8	65	4960	ND
4/2/2020	40.6	530	7.8	6.94	104	4640	ND
4/10/2020	20	350	4.9	6.83	66	5450	ND
4/20/2020	12.5	350	0	6.89	53	4870	ND
4/24/2020	17	370	6	6.44	70	4040	ND
5/8/2020	7.4	280	0	6.86	12	4910	ND
5/14/2020	0	230	0	6.84	19	2590	ND
5/22/2020	6.2	410	0	6.9	29	6710	ND
5/29/2020	0	164	0	7.47	34	7760	ND
6/4/2020	0	305	0	6.78	23	4230	ND
6/11/2020	6.2	348	0	6.36	25	3210	ND
6/19/2020	5.3	387	0	6.7	20	4810	ND
7/2/2020	15	446	0	6.97	55	4340	ND
7/9/2020	5.5	--	0	6.9	27	--	ND
7/15/2020	6	350	0	7.22	21	4020	ND
7/23/2020	12.3	363	0	7.09	39	9380	ND
7/30/2020	5.6	320	0	6.72	23	1510	ND
8/6/2020	6.4	499	0	6.76	14	8180	ND
8/13/2020	0	316	0	6.75	31	5250	ND
8/20/2020	0	229	0	6.48	18	889	ND
9/2/2020	7.6	300	5.4	6.7	22	4050	ND
9/9/2020	0	349	0	6.73	0	6060	ND
9/16/2020	10.9	340	6	6.83	31	4030	ND
9/24/2020	4	355	0	6.81	6.5	5680	ND
9/30/2020	0	363	6.8	6.56	16	7630	ND
10/8/2020	7.8	377	5.8	7.01	21.5	1990	ND
10/20/2020	0	350	0	7.01	58.5	8960	ND
10/30/2020	9.7	342	6.1	7.12	33	5470	ND
Effluent Limits Permit ST 6209	250	--	150	6 to 9.5	250	--	12

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

December 17, 2015

Analytical Report for Service Request No: K1513273

Bridget Kelly
Stericycle
830 Westlake Ave
P.O. Box 1229
Morton, WA 98356

RE: Priority Pollutants 2015 / MO PP 111815

Dear Bridget,

Enclosed are the results of the sample(s) submitted to our laboratory November 18, 2015
For your reference, these analyses have been assigned our service request number **K1513273.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes
Project Manager

ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

Table of Contents

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
Idaho DHW	http://www.healthandwelfare.idaho.gov/Health/Labs/CertificationDrinkingWaterLabs/tabid/1833/Default.aspx	-
ISO 17025	http://www.pjlabs.com/	L14-50
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPermitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Michigan DEQ	http://www.michigan.gov/deq/0,1607,7-135-3307_4131_4156---,00.html	9949
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS ENVIRONMENTAL

Client:	Stericycle - Morton, WA	**Service Request No.:**	K1513273
Project:	Priority Pollutants 2015/ MO PP 111815	**Date Received:**	11/18/15
Sample Matrix:	Water		

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt

One water sample was received for analysis at ALS Environmental on 11/18/15. The sample was received in good condition and consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4ºC upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of this sample were observed.

Total Metals

No anomalies associated with the analysis of this sample were observed.

Diesel Range Organics by Method NWTPH-Dx

Sample Notes and Discussion:
Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

No other anomalies associated with the analysis of this sample were observed.

Gasoline Range Organics by Method NWTPH-Gx

Relative Percent Difference Exceptions:
The Relative Percent Difference (RPD) criterion for the replicate analysis of Gasoline Range Organics in sample PP111815 was not applicable because the analyte concentration was not significantly greater than the Method Reporting Limit (MRL). Analytical values derived from measurements close to the detection limit are not subject to the same accuracy and precision criteria as results derived from measurements higher on the calibration range for the method.

No other anomalies associated with the analysis of this sample were observed.

Approved by_____

Organochlorine Pesticides and PCBs by EPA Method 608

Surrogate Exceptions:
The control criteria were exceeded for the Decachlorobiphenyl in the sample. The field sample was re-extracted and reanalyzed past the recommended hold time. The surrogate met control criteria for the reanalysis. Note the results for the field sample were comparable for both determinations, which indicates the problem with the initial analysis was restricted to the surrogate recovery. Therefore, the results from the original analysis are reported. The data is flagged to indicate the problem.

Elevated Detection Limits:
The detection limit was elevated for a few analytes in the sample. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compounds at the normal limit. The results were flagged to indicate the matrix interference.

Sample Notes and Discussion:
Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

No other anomalies associated with the analysis of this sample were observed.

Volatile Organic Compounds by EPA Method 624

Calibration Verification Exceptions:
The following analytes were flagged as outside the control criterion for Continuing Calibration Verification (CCV) J:\MS18\1124F009.D: Chloromethane. In accordance with the EPA Method, 80% or more of the CCV analytes must pass within 20% of the true value. The ALS SOP allows for 40% difference for the remaining analytes. The CCV met these criteria. The quality of the sample data was not significantly affected. No further corrective action was required.

No other anomalies associated with the analysis of this sample were observed.

Semivolatile Organic Compounds by EPA Method 625

Second Source Exceptions:
The upper control criterion was exceeded for the following analyte in the Initial Calibration Verification (ICV) for calibration CAL14462: Benzidine. The field sample analyzed in this sequence did not contain the analyte in question. Since the apparent problem equates to a potential high bias, the data quality is not affected. No further corrective action was required.

Surrogate Exceptions:
The upper control criterion was exceeded by 1% for the surrogate Phenol-d6 in sample PP111815. The error associated with elevated recovery equates to a potential slight bias. The result was flagged to indicate the issue. No further corrective action was taken.

The upper control criterion was exceeded by 11% for the surrogate 2-Fluorobiphenyl in the Method Blank (MB) KWG1511495-3. The error associated with elevated recovery equates to a potential slight bias. The result was flagged to indicate the issue. No further corrective action was taken.

Approved by_____

Lab Control Sample Exceptions:
The advisory criterion was exceeded for Benzidine and 3,3'-Dichlorobenzidine in the Laboratory Control Sample (LCS) KWG1511495-1. As per the ALS/Kelso Standard Operating Procedure (SOP) for this method, these compounds are not included in the subset of analytes used to control the analysis. The recovery information reported for these analytes is for advisory purposes only (i.e. to provide additional detail related to the performance of each individual compound). No further corrective action was required.

The advisory criterion was exceeded for Benzidine in the Duplicate Laboratory Control Sample (DLCS) KWG1511495-2. As per the ALS/Kelso Standard Operating Procedure (SOP) for this method, this compound is not included in the subset of analytes used to control the analysis. The recovery information reported for this analytes is for advisory purposes only (i.e. to provide additional detail related to the performance of each individual compound). No further corrective action was required.

Elevated Detection Limits:
The sample PP111815 required dilutions due to the matrix. The reporting limits were adjusted to reflect the dilutions.

Di-n-Butyl Phthalate for sample PP111815 was reported from a 50x dilution due to matrix interferences. The reporting limits were adjusted to reflect the dilution.

No other anomalies associated with the analysis of this sample were observed.

Dioxins and Furans by EPA Method 1613B

The analysis for Dioxins and Furans was performed at ALS Environmental in Houston, Texas. The data for this analysis is included in the corresponding section of this report.

Approved by_____

Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Environmental

CHAIN OF CUSTODY

SR# K1513213

1317 South 13th Ave., Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

PAGE ____ OF ____ COC# ____

PROJECT NAME: Stericycle Priority Pollutants 2015
PROJECT NUMBER: ~~A~~ mo PP 111815
PROJECT MANAGER: Bridget Kelly
COMPANY NAME: Stericycle Inc.
ADDRESS: 830 West Lake Ave / PO Box 1229
CITY/STATE/ZIP: Morton WA 98356
E-MAIL ADDRESS: bridget.kelly@stericycle.com
PHONE #: 206 510-0867 FAX #: 360 496-5479
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☒ 8270☐ 8270LL☐ SIM PAH☐	Volatile Organics 624☒ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Oil & Grease/TRPH 1664 HEM☒ 1664 SGT☐	PCBs Aroclors☒ Congeners☐	Pesticides/Herbicides 608☒ 8081☐ 8141☐ 8151☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	Metals, (Total or Dissolved) (See List below)	Cyanide☒ Hex-Chrom☒	(circle) pH, Cond, Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS, Turb.	(circle) NH3-N, COD, TKN, TOC, DOC, NO2+NO3, T-Phos	TOX 9020☐ AOX 1650☐ 506☐	Alkalinity ☐ CO3☐ HCO3☐	Dioxins/Furans 1613☒ 8290☐	Dissolved Gases RSK 175☐ Methane☐ Ethane☐ Ethene☐ CO2☐	Phenols	Fecal Coliform/Total Coliform	REMARKS
PP 111815	11/18/15	12:40pm		W	24	X	X		X	X	X		X	X	X	X			X	X	X	X	

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. # ____
Bill To: ____

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.
____ 5 day
____ Standard (15 working days)
____ Provide FAX Results

____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al (As) (Sb) (Ba) (Be) B (Ca) (Cd) Co (Cr) (Cu) Fe (Pb) (Mg) Mn (Mo) (Ni) (K) (Ag) (Na) (Se) Sr (Tl) Sn V (Zn) (Hg)

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: ____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:
see attached - 4 pages

Container Supply Number
63382

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Bridget Kelly 11/18/15 (Signature / Date/Time)	Howard Holmes 11/18/15 1605 (Signature / Date/Time)	(Signature / Date/Time)	11/18/15 1620 (Signature / Date/Time)
Bridget Kelly / Stericycle Inc. (Printed Name / Firm)	Howard Holmes / ALS (Printed Name / Firm)	(Printed Name / Firm)	ALS (Printed Name / Firm)

PC H2

Cooler Receipt and Preservation Form

Client / Project: Stericycle Service Request *K15* 13273

Received: 11/18/15 Opened: 11/18/15 By: [illegible] Unloaded: 11/18/15 By: [illegible]

1. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected. Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
3.2	3.3	7.3	7.4	+0.1	345			
7.7	7.9	5.0	5.2	+0.2	308			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: SHORT HOLD TIME

Page _____ ***of*** _____

X	Parameter	Measurement Values Minimum	Maximum	Average	Number of Analyses	Analytical Method Std. Methods 19th,20th edition or EPA	Detection Limit/Quantitation Level
✓	BOD (5 day)					SM 5210 B	/2 mg/l
✓	COD					SM 5220 D	/10 mg/l
✓	Total suspended solids					SM 2540 D	/5 mg/l
	Fixed Dissolved Solids					SM 2540 E	
✓	Total dissolved solids					SM 2540 C	
✓	Conductivity (micromhos/cm)					SM 2510 B	
	Ammonia-N as N					SM 4500-NH_3 C	/0.3 mg/L
	pH					SM 4500-H	0.1 standard units
✓	Fecal coliform (organisms/100 mL)					SM 9221 E or 9222 D	
✓	Total coliform (organisms/100 mL)					SM 9221 B or 9222 B	
	Dissolved oxygen					SM 4500-O C/G	
✓	Nitrate + nitrite-N as N					SM 4500-NO_3 E	100 µg/L
✓	Total kjeldahl N as N					SM 4500-N_{org} C/E/FG	300 µg/l
	Ortho-phosphate-P as P					SM 4500-P E/F	10 µg/l
	Total-phosphorous-P as P					SM 4500-P E/P/F	10 µg/l
	Total Oil & grease					EPA 1664A	1.4/5 mg/l
	NWTPH - Dx					Ecology NWTPH Dx	250/250 µg/l
	NWTPH - Gx					Ecology NWTPH Gx	250/250 µg/l
	Calcium					EPA 200.7	10 µg/l
	Chloride					SM 4500-Cl C	0.15 µg/l
	Fluoride					SM 4500-F E	.025/0.1 mg/l
	Magnesium					EPA 200.7	10/50 µg/l
	Potassium					EPA 200.7	700/ µg/l
	Sodium					EPA 200.7	29/ µg/l
	Sulfate					SM 4500-SO_4 C/D	/200 µg/l
	Arsenic(total)					EPA 200.8	0.1/0.5 µg/l

X	Parameter	Measurement Values			Number of Analyses	Analytical Method Std. Methods 19th,20th edition or EPA	Detection Limit/Quantitation Level
		Minimum	Maximum	Average			
	Barium (total)					EPA 200.8	0.5/2 µg/l
	Cadmium (total)					EPA 200.8	.05/.25 µg/l
	Chromium (total)					EPA 200.8	0.2/1 µg/l
	Copper (total)					EPA 200.8	0.4/2 µg/l
	Lead (total)					EPA 200.8	0.1/.5 µg/l
	Mercury (total) pg/L					EPA 1631E	0.2/0.5 pg/l
	Molybdenum(total)					EPA 200.8	0.1/0.5 µg/l
	Nickel(total)					EPA 200.8	0.1/0.5 µg/l
	Selenium (total)					EPA 200.8	1/1 µg/l
	Silver (total)					EPA 200.8	.04/.2 µg/l
	Zinc (total)					EPA 200.8	0.5/2.5 µg/l

6. Does this facility use any of the following chemicals as raw materials or produce them as part of the manufacturing process, or are they present in the wastewater? ☐ YES ☐ NO

(*The number in the column next to the chemical name is the Chemical Abstract Service (CAS) reference number to aid in identifying the compound.*)

If yes, specify how the chemical is used and the quantity used or produced:

METALS, CYANIDE & TOTAL PHENOLS			
Antimony, Total	7440-36-0	Nickel, Total	7440-02-0
Arsenic, Total	7440-38-2	Selenium, Total	7782-49-2
Beryllium, Total	7440-41-7	Silver, Total	7440-22-4
Cadmium, Total	7440-43-9	Thallium, Total	7440-28-0
Chromium (hex) dissolved	18540-29-9	Zinc, Total	7440-66-6
Chromium, Total	7440-47-3		
Copper, Total	7440-50-8	Cyanide, Total	57-12-5
Lead, Total	7439-92-1	Cyanide, Weak Acid Dissociable	
Mercury, Total	7439-97-6)	Phenols, Total	

PESTICIDES			
Aldrin	309-00-2	Endrin	72-20-8
alpha-BHC	319-84-6	Endrin Aldehyde	7421-93-4
beta-BHC	319-85-7	Heptachlor	76-44-8
gamma-BHC	58-89-9	Heptachlor Epoxide	1024-57-3
delta-BHC	319-86-8	PCB-1242	53469-21-9
Chlordane	57-74-9	PCB-1254	11097-69-1
4,4'-DDT	50-29-3	PCB-1221	11104-28-2
4,4'-DDE	72-55-9	PCB-1232	11141-16-5
4,4' DDD	72-54-8	PCB-1248	12672-29-6
Dieldrin	60-57-1	PCB-1260	11096-82-5
alpha-Endosulfan	959-98-8	PCB-1016	12674-11-2
beta-Endosulfan	33213-65-9	Toxaphene	8001-35-2
Endosulfan Sulfate	1031-07-8		

VOLATILE COMPOUNDS			
Acrolein	107-02-8		
Acrylonitrile	107-13-1	1,1-Dichloroethylene	75-35-4
Benzene	71-43-2	1,2-Dichloropropane	78-87-5
Bromoform	75-25-2	1,3-dichloropropene (mixed isomers) (1,2-dichloropropylene)	542-75-6
Carbon tetrachloride	56-23-5	Ethylbenzene	100-41-4
Chlorobenzene	108-90-7	Methyl bromide (Bromomethane)	74-83-9
Chloroethane	75-00-3	Methyl chloride (Chloromethane)	74-87-3
2-Chloroethylvinyl Ether	110-75-8	Methylene chloride)	75-09-2
Chloroform	67-66-3	1,1,2,2-Tetrachloroethane	79-34-5
Dibromochloromethane	124-48-1	Tetrachloroethylene	127-18-4
1,2-Dichlorobenzene	95-50-1	Toluene (108-88-3)	
1,3-Dichlorobenzene	(541-73-1)	1,2-Trans-Dichloroethylene (Ethylene dichloride)	156-60-5
1,4-Dichlorobenzene	106-46-7	1,1,1-Trichloroethane	71-55-6
Dichlorobromomethane	75-27-4	1,1,2-Trichloroethane	79-00-5
1,1-Dichloroethane	75-34-3	Trichloroethylene	79-01-6
1,2-Dichloroethane	107-06-2	Vinyl chloride	75-01-4

ACID COMPOUNDS			
2-Chlorophenol	95-57-8	4-nitrophenol	100-02-7
2,4-Dichlorophenol	120-83-2	Parachlorometa cresol (4-chloro-3-methylphenol)	59-50-7
2,4-Dimethylphenol	105-67-9	Pentachlorophenol	87-86-5
4,6-dinitro-o-cresol (2-methyl-4,6,-dinitrophenol)	534-52-1	Phenol	108-95-2
2,4 dinitrophenol	51-28-5	2,4,6-Trichlorophenol	88-06-2
2-Nitrophenol	88-75-5		

BASE/NEUTRAL COMPOUNDS (compounds in bold are Ecology PBTs)			
Acenaphthene	83-32-9	3,3-Dichlorobenzidine	91-94-1
Acenaphthylene	208-96-8	Diethyl phthalate	84-66-2
Anthracene	120-12-7	Dimethyl phthalate	131-11-3
Benzidine	92-87-5	Di-n-butyl phthalate)	84-74-2
Benzyl butyl phthalate	85-68-7	2,4-dinitrotoluene	121-14-2
Benzo(*a*)anthracene	56-55-3	2,6-dinitrotoluene	606-20-2
Benzo(b)fluoranthene (3,4-benzofluoranthene)	205-99-2	Di-n-octyl phthalate	117-84-0
Benzo(j)fluoranthene	**205-82-3**	1,2-Diphenylhydrazine (*as Azobenzene*)	122-66-7
Benzo(k)fluoranthene (11,12-benzofluoranthene)	207-08-9	Fluoranthene	206-44-0
Benzo(r,s,t)pentaphene	**189-55-9**	Fluorene	86-73-7
Benzo(*a*)pyrene	50-32-8	Hexachlorobenzene	118-74-1
Benzo(*ghi*)Perylene	191-24-2	Hexachlorobutadiene	87-68-3
Bis(*2-chloroethoxy)*methane	111-91-1	Hexachlorocyclopentadiene	77-47-4
Bis(*2-chloroethyl*)ether	111-44-4	Hexachloroethane	67-72-1
Bis(*2-chloroisopropyl*)ether	39638-32-9	Indeno(*1,2,3-cd*)Pyrene	193-39-5
Bis(*2-ethylhexyl*)phthalate	117-81-7	Isophorone	78-59-1
4-Bromophenyl phenyl ether	101-55-3	**3-Methyl cholanthrene**	**56-49-5**
2-Chloronaphthalene	91-58-7	Naphthalene	91-20-3
4-Chlorophenyl phenyl ether	7005-72-3	Nitrobenzene	98-95-3
Chrysene	218-01-9	N-Nitrosodimethylamine	62-75-9
Dibenzo (a,j)acridine	**224-42-0**	N-Nitrosodi-n-propylamine	621-64-7
Dibenzo (a,h)acridine	**226-36-8**	N-Nitrosodiphenylamine	86-30-6
Dibenzo(a-*h*)anthracene (1,2,5,6-dibenzanthracene)	53-70-3	**Perylene**	**198-55-0**
Dibenzo(a,e)pyrene	192-65-4	Phenanthrene	85-01-8
Dibenzo(a,h)pyrene	189-64-0	Pyrene	129-00-0
		1,2,4-Trichlorobenzene	120-82-1

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	120.1	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA

Conductivity at 25 Degrees Celsius

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	**13200**	2.0	0.4	1	12/01/15 10:38	
Method Blank	K1513273-MB1	**2.9**	2.0	0.4	1	12/01/15 10:38	
Method Blank	K1513273-MB2	**2.8**	2.0	0.4	1	12/01/15 10:38	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/01/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	uMHOS/cm
Lab Code:	K1513415-005	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1513415-005DUP Result	Average	RPD	RPD Limit
Conductivity at 25 Degrees Celsius	120.1	2.0	0.4	2.0 B	2.0	2.03	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	12/01/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Conductivity at 25 Degrees Celsius

Analysis Method:	120.1	**Units:**	uMHOS/cm
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	474380

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	280	289	97	86-113

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	160.4	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Ash

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	ND U	5.0	-	1	11/19/15 11:09	
Method Blank	K1513273-MB1	ND U	5.0	-	1	11/19/15 11:09	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
		Date Analyzed:	11/19/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	PP111815	**Units:**	mg/L
Lab Code:	K1513273-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1513273-001DUP Result	Average	RPD	RPD Limit
Ash	160.4	5.0	-	ND U	ND U	NC	NC	20

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	1664A	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Oil and Grease, Total (HEM)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
PP111815	K1513273-001	**3.4 J**	5.0	0.7	1	12/09/15 17:05	12/5/15	
Method Blank	K1513273-MB1	ND U	5.0	0.7	1	12/09/15 17:05	12/5/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	12/09/15
Sample Matrix:	Water	**Date Extracted:**	12/05/15

Duplicate Lab Control Sample Summary
General Chemistry Parameters

Analysis Method:	1664A	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	475638

	Lab Control Sample K1513273-LCS2			Duplicate Lab Control Sample K1513273-DLCS2					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Oil and Grease, Total (HEM)	57.0	60.0	95	54.0	60.0	90	78-114	5	20

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Chloride

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
PP111815	K1513273-001	**3800**	50	15	500	11/19/15 16:06	11/19/15	
Method Blank	K1513273-MB1	ND U	0.10	0.03	1	11/19/15 09:15	11/19/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Chloride

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	KQ1513813-03DUP	0.20	0.06	5.01	4.97	4.99	<1	20	11/19/15
Batch QC	KQ1513813-07DUP	0.20	0.06	4.45	4.41	4.43	<1	20	11/19/15

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/19/15
		Date Extracted:	11/19/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1513813-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1513813-03MS			Duplicate Matrix Spike KQ1513813-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	5.01	14.1	10.0	91	14.0	10.0	90	90-110	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/19/15
		Date Extracted:	11/19/15

Duplicate Matrix Spike Summary
Chloride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1513813-07	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1513813-07MS			Duplicate Matrix Spike KQ1513813-07DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloride	4.45	13.5	10.0	90	13.5	10.0	90	90-110	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/19/15
Sample Matrix:	Water	**Date Extracted:**	11/19/15

Lab Control Sample Summary
Chloride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	473184

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	4.71	5.00	94	90-110

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Fluoride

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
PP111815	K1513273-001	**18.7**	5.0	0.2	50	11/19/15 18:15	11/19/15	
Method Blank	K1513273-MB1	ND U	0.10	0.003	1	11/19/15 09:15	11/19/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Fluoride

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	KQ1513813-03DUP	0.20	0.006	ND U	ND U	NC	NC	20	11/19/15
Batch QC	KQ1513813-07DUP	0.20	0.006	ND U	ND U	NC	NC	20	11/19/15

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/19/15
		Date Extracted:	11/19/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1513813-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1513813-03MS				Duplicate Matrix Spike KQ1513813-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	ND U	9.83	10.0	98		9.94	10.0	99	90-110	1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/19/15
		Date Extracted:	11/19/15

Duplicate Matrix Spike Summary
Fluoride

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1513813-07	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1513813-07MS				Duplicate Matrix Spike KQ1513813-07DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Fluoride	ND U	9.82	10.0	98		9.95	10.0	99	90-110	1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/19/15
Sample Matrix:	Water	**Date Extracted:**	11/19/15

Lab Control Sample Summary
Fluoride

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	473184

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	5.19	5.00	104	90-110

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Sulfate

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
PP111815	K1513273-001	**303**	5.0	0.5	50	11/19/15 18:15	11/19/15	
Method Blank	K1513273-MB1	ND U	0.10	0.01	1	11/19/15 09:15	11/19/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Sulfate

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	KQ1513813-03DUP	0.20	0.02	9.41	9.26	9.34	2	20	11/19/15
Batch QC	KQ1513813-07DUP	0.20	0.02	8.13	8.04	8.09	1	20	11/19/15

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/19/15
		Date Extracted:	11/19/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1513813-03	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1513813-03MS				Duplicate Matrix Spike KQ1513813-03DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	9.41	18.8	10.0	94	18.7	10.0	93	90-110	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/19/15
		Date Extracted:	11/19/15

Duplicate Matrix Spike Summary
Sulfate

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1513813-07	**Basis:**	NA
Analysis Method:	300.0		
Prep Method:	Method		

		Matrix Spike KQ1513813-07MS			Duplicate Matrix Spike KQ1513813-07DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Sulfate	8.13	17.6	10.0	95	17.6	10.0	95	90-110	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/19/15
Sample Matrix:	Water	**Date Extracted:**	11/19/15

Lab Control Sample Summary
Sulfate

Analysis Method:	300.0	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	473184

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	4.92	5.00	98	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	353.2	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Nitrate+Nitrite as Nitrogen

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
PP111815	K1513273-001	**0.028 J**	0.050	0.020	1	11/21/15 11:11	11/21/15	
Method Blank	K1513273-MB1	ND U	0.050	0.020	1	11/21/15 11:11	11/21/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	11/21/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513141-004	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1513141-004DUP Result	Average	RPD	RPD Limit
Nitrate+Nitrite as Nitrogen	353.2	0.050	0.020	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/21/15
		Date Extracted:	11/21/15

Duplicate Matrix Spike Summary
Nitrate+Nitrite as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513141-004	**Basis:**	NA
Analysis Method:	353.2		
Prep Method:	Method		

		Matrix Spike K1513141-004MS				**Duplicate Matrix Spike** K1513141-004DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**		**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrate+Nitrite as Nitrogen	ND U	1.02	1.00	102		1.02	1.00	102	90-110	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/21/15
Sample Matrix:	Water	**Date Extracted:**	11/21/15

Lab Control Sample Summary
Nitrate+Nitrite as Nitrogen

Analysis Method:	353.2	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	473456

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	14.4	15.3	94	90-110

ALS Group USA, Corp.
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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	365.3	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Orthophosphate as Phosphorus

Sample Name	Lab Code	Result	MRL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	**0.012**	0.010	1	11/18/15 17:52	
Method Blank	K1513273-MB1	ND U	0.010	1	11/18/15 17:52	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	11/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513256-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	Sample Result	Duplicate Sample K1513256-001DUP Result	Average	RPD	RPD Limit
Orthophosphate as Phosphorus	365.3	0.010	0.071	0.072	0.0717	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/18/15
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Orthophosphate as Phosphorus

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513256-001	**Basis:**	NA
Analysis Method:	365.3		
Prep Method:	None		

		Matrix Spike K1513256-001MS			Duplicate Matrix Spike K1513256-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Orthophosphate as Phosphorus	0.071	0.470	0.400	100	0.473	0.400	100	60-130	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/18/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Orthophosphate as Phosphorus

Analysis Method:	365.3	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	472936

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	0.483	0.508	95	85-115

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	365.3	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Phosphorus, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
PP111815	K1513273-001	**0.045**	0.010	0.004	1	11/30/15 17:40	11/30/15	
Method Blank	K1513273-MB1	ND U	0.010	0.004	1	11/30/15 17:40	11/30/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	11/30/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513349-002	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1513349-002DUP Result	Average	RPD	RPD Limit
Phosphorus, Total	365.3	0.010	0.004	ND U	0.007 J	NC	NC	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/30/15
		Date Extracted:	11/30/15

Duplicate Matrix Spike Summary
Phosphorus, Total

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513349-002	**Basis:**	NA
Analysis Method:	365.3		
Prep Method:	Method		

		Matrix Spike K1513349-002MS			Duplicate Matrix Spike K1513349-002DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Phosphorus, Total	ND U	0.834	1.00	83	0.831	1.00	83	60-135	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/30/15
Sample Matrix:	Water	**Date Extracted:**	11/30/15

Lab Control Sample Summary
Phosphorus, Total

Analysis Method:	365.3	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	474308

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	3.09	3.13	99	85-115

ALS Group USA, Corp.
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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	420.1	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Phenolics, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
PP111815	K1513273-001	**0.776**	0.050	0.020	5	12/07/15 23:01	12/7/15	
Method Blank	K1513273-MB1	ND U	0.010	0.004	1	12/07/15 23:01	12/7/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/07/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513310-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1513310-001DUP Result	Average	RPD	RPD Limit
Phenolics, Total	420.1	0.010	0.004	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/7/15
		Date Extracted:	12/7/15

Duplicate Matrix Spike Summary
Phenolics, Total

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513310-001	**Basis:**	NA
Analysis Method:	420.1		
Prep Method:	Method		

		Matrix Spike K1513310-001MS				Duplicate Matrix Spike K1513310-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Phenolics, Total	ND U	0.383	0.400	96	0.386	0.400	96	75-118	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	12/07/15
Sample Matrix:	Water	**Date Extracted:**	12/07/15

Lab Control Sample Summary
Phenolics, Total

Analysis Method:	420.1	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	475287

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	0.455	0.500	91	86-112

ALS Group USA, Corp.
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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	ASTM D1426-08B	**Units:**	mg/L
Prep Method:	ASTM D3590-02(2006)(A)	**Basis:**	NA

Nitrogen, Total Kjeldahl (TKN)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
PP111815	K1513273-001	**136**	0.40	0.08	2	12/07/15 09:35	12/2/15	
Method Blank	K1513273-MB1	ND U	0.40	0.08	2	12/07/15 09:35	12/2/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/07/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514248-06	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1514248-06DUP Result	Average	RPD	RPD Limit
Nitrogen, Total Kjeldahl (TKN)	ASTM D1426-08B	0.40	0.08	0.54	0.51	0.522	5	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/7/15
		Date Extracted:	12/2/15

Duplicate Matrix Spike Summary
Nitrogen, Total Kjeldahl (TKN)

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514248-06	**Basis:**	NA
Analysis Method:	ASTM D1426-08B		
Prep Method:	ASTM D3590-02(2006)(A)		

		Matrix Spike KQ1514248-06MS			**Duplicate Matrix Spike** KQ1514248-06DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Nitrogen, Total Kjeldahl (TKN)	0.54	17.5	20.0	85	17.8	20.0	87	53-160	2	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	12/07/15
Sample Matrix:	Water	**Date Extracted:**	12/02/15

Lab Control Sample Summary
Nitrogen, Total Kjeldahl (TKN)

Analysis Method:	ASTM D1426-08B	**Units:**	mg/L
Prep Method:	ASTM D3590-89B-21.1 Mod	**Basis:**	NA
		Analysis Lot:	475214

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	5.28	6.45	82	72-129

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Dissolved

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	**7280**	40	-	1	11/24/15 18:16	
Method Blank	K1513273-MB1	ND U	10	-	1	11/24/15 18:16	
Method Blank	K1513273-MB2	ND U	10	-	1	11/24/15 18:16	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Solids, Total Dissolved

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1513286-002DUP	10	-	439	436	438	<1	10	11/24/15
Batch QC	K1513319-001DUP	10	-	424	438	431	3	10	11/24/15

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/24/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Dissolved

Analysis Method:	SM 2540 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	473802

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	894	897	100	85-115

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 2540 D	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Solids, Total Suspended (TSS)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	**19.3**	6.7	-	1	11/24/15 15:28	
Method Blank	K1513273-MB1	ND U	5.0	-	1	11/24/15 15:28	
Method Blank	K1513273-MB2	ND U	5.0	-	1	11/24/15 15:28	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Analysis Method:	SM 2540 D	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Solids, Total Suspended (TSS)

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1513231-002DUP	5.0	-	6.5	6.5	6.50	<1	10	11/24/15
Batch QC	K1513334-005DUP	5.0	-	32.0	31.0	31.5	3	10	11/24/15

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/24/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Suspended (TSS)

Analysis Method:	SM 2540 D	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	473799

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	188	191	98	85-115

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 4500-CN- E	**Units:**	mg/L
Prep Method:	SM 4500-CN-C	**Basis:**	NA

Cyanide, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
PP111815	K1513273-001	**0.047**	0.010	0.0009	1	12/01/15 13:37	12/1/15	
Method Blank	K1513273-MB1	ND U	0.010	0.0009	1	12/01/15 13:37	12/1/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/01/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514173-06	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1514173-06DUP Result	Average	RPD	RPD Limit
Cyanide, Total	SM 4500-CN- E	0.010	0.0009	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/1/15
		Date Extracted:	12/1/15

Duplicate Matrix Spike Summary
Cyanide, Total

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	KQ1514173-06	**Basis:**	NA
Analysis Method:	SM 4500-CN- E		
Prep Method:	SM 4500-CN-C		

		Matrix Spike KQ1514173-06MS			Duplicate Matrix Spike KQ1514173-06DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Total	ND U	0.084	0.100	84	0.085	0.100	84	23-148	1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	12/01/15
Sample Matrix:	Water	**Date Extracted:**	12/01/15

Lab Control Sample Summary
Cyanide, Total

Analysis Method:	SM 4500-CN- E	**Units:**	mg/L
Prep Method:	SM 4500-CN-C	**Basis:**	NA
		Analysis Lot:	474342

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	0.152	0.150	101	84-115

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 4500-CN- E	**Units:**	mg/L
Prep Method:	SM 4500-CN-I	**Basis:**	NA

Cyanide, Weak Acid Dissociable (WAD)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
PP111815	K1513273-001	**0.007 J**	0.010	0.0008	1	11/20/15 15:43	11/20/15	
Method Blank	K1513273-MB1	ND U	0.010	0.0008	1	11/20/15 15:43	11/20/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	11/20/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1512982-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1512982-001DUP Result	Average	RPD	RPD Limit
Cyanide, Weak Acid Dissociable (WAD)	SM 4500-CN- E	0.010	0.0008	ND U	ND U	NC	NC	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/20/15
		Date Extracted:	11/20/15

Duplicate Matrix Spike Summary
Cyanide, Weak Acid Dissociable (WAD)

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1512982-001	**Basis:**	NA
Analysis Method:	SM 4500-CN- E		
Prep Method:	SM 4500-CN-I		

		Matrix Spike K1512982-001MS			Duplicate Matrix Spike K1512982-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Cyanide, Weak Acid Dissociable (WAD)	ND U	0.105	0.100	105	0.106	0.100	106	64-136	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/20/15
Sample Matrix:	Water	**Date Extracted:**	11/20/15

Lab Control Sample Summary
Cyanide, Weak Acid Dissociable (WAD)

Analysis Method:	SM 4500-CN- E	**Units:**	mg/L
Prep Method:	SM 4500-CN-I	**Basis:**	NA
		Analysis Lot:	473302

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	0.147	0.150	98	70-141

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 4500-H+ B	**Units:**	pH Units
Prep Method:	None	**Basis:**	NA

pH

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	**8.05**	-	-	1	11/18/15 18:09	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	11/18/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	pH Units
Lab Code:	K1513221-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1513221-001DUP Result	Average	RPD	RPD Limit
pH	SM 4500-H+ B	-	-	5.45	5.47	5.46	<1	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/18/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
pH

Analysis Method:	SM 4500-H+ B	**Units:**	pH Units
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	472855

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	8.29	8.32	100	85-115

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Ammonia as Nitrogen

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
PP111815	K1513273-001	**102**	2.5	1.0	50	11/23/15 11:47	11/23/15	
Method Blank	K1513273-MB1	ND U	0.050	0.020	1	11/23/15 11:47	11/23/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA

Replicate Sample Summary
Ammonia as Nitrogen

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1513235-011DUP	0.050	0.020	ND U	0.025 J	NC	NC	20	11/23/15
Batch QC	K1513391-001DUP	0.050	0.020	ND U	0.024 J	NC	NC	20	11/23/15

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/23/15
		Date Extracted:	11/23/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513235-011	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1513235-011MS			Duplicate Matrix Spike K1513235-011DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	ND U	2.07	2.00	104	2.03	2.00	102	90-110	2	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	11/23/15
		Date Extracted:	11/23/15

Duplicate Matrix Spike Summary
Ammonia as Nitrogen

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513391-001	**Basis:**	NA
Analysis Method:	SM 4500-NH3 G		
Prep Method:	Method		

		Matrix Spike K1513391-001MS			**Duplicate Matrix Spike** K1513391-001DMS					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Ammonia as Nitrogen	ND U	2.04	2.00	102	1.99	2.00	99	90-110	3	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/23/15
Sample Matrix:	Water	**Date Extracted:**	11/23/15

Lab Control Sample Summary
Ammonia as Nitrogen

Analysis Method:	SM 4500-NH3 G	**Units:**	mg/L
Prep Method:	Method	**Basis:**	NA
		Analysis Lot:	473644

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	15.3	16.2	94	90-110

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 4500-O G	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Oxygen, Dissolved

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	**5.9**	1.0	-	1	11/18/15 17:05	

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 5210 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Biochemical Oxygen Demand (BOD)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	**620**	200	100	100	11/19/15 14:38	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Analysis Method:	SM 5210 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Replicate Sample Summary
Biochemical Oxygen Demand (BOD)

Sample Name:	Lab Code:	MRL	MDL	Sample Result	Duplicate Result	Average	RPD	RPD Limit	Date Analyzed
Batch QC	K1512420-027DUP	30	15	60	62	61.2	4	20	11/19/15
Batch QC	K1513257-001DUP	86	43	193	190	192	2	20	11/19/15

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/19/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Biochemical Oxygen Demand (BOD)

Analysis Method:	SM 5210 B	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	473687

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	169	198	85	85-115

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 5220 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA

Chemical Oxygen Demand (COD)

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	**1460**	100	60	2	12/03/15 09:40	
Method Blank	K1513273-MB1	ND U	50	30	1	12/03/15 09:40	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/03/15

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513543-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1513543-001DUP Result	Average	RPD	RPD Limit
Chemical Oxygen Demand (COD)	SM 5220 C	200	120	1570	1480	1530	6	20

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/3/15
		Date Extracted:	NA

Matrix Spike Summary
Chemical Oxygen Demand (COD)

Sample Name:	Batch QC	**Units:**	mg/L
Lab Code:	K1513543-001	**Basis:**	NA
Analysis Method:	SM 5220 C		
Prep Method:	None		

Matrix Spike
K1513543-001MS

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Chemical Oxygen Demand (COD)	1570	3400	2000	91	80-128

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	12/03/15
Sample Matrix:	Water	**Date Extracted:**	NA

Lab Control Sample Summary
Chemical Oxygen Demand (COD)

Analysis Method:	SM 5220 C	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	474738

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1513273-LCS1	210	200	105	83-117

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 9222 D	**Units:**	CFU/100mL
Prep Method:	None	**Basis:**	NA

Coliform, Fecal

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	**1100**	100	-	100	11/18/15 16:55	

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 9223 B	**Units:**	MPN/100mL
Prep Method:	None	**Basis:**	NA

Coliform, Total

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	**>2419**	1.0	-	1	11/18/15 16:50	

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15
Analysis Method:	SM 9223 B	**Units:**	MPN/100mL
Prep Method:	None	**Basis:**	NA

Escherichia coli

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Q
PP111815	K1513273-001	**1410**	1.0	-	1	11/18/15 16:50	

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15
Sample Matrix:	Water	**Date Received:**	11/18/15

Mercury, Total

Prep Method:	METHOD	Units:	ng/L
Analysis Method:	1631E	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
PP111815	K1513273-001	0.5	0.06	1	11/20/15	11/25/15	14.0	
Method Blank 1	K1513273-MB1	0.5	0.06	1	11/20/15	11/25/15	0.12	J
Method Blank 2	K1513273-MB2	0.5	0.06	1	11/20/15	11/25/15	ND	
Method Blank 3	K1513273-MB3	0.5	0.06	1	11/20/15	11/25/15	0.17	J

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Extracted:	11/20/15
		Date Analyzed:	11/25/15

Matrix Spike/Duplicate Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	Units:	ng/L
Lab Code:	K1513361-004MS, K1513361-004MSD	Basis:	NA
Test Notes:			

				Spike Level		Sample	Spike Result		Percent Recovery				
Analyte	**Prep Method**	**Analysis Method**	**MRL**	**MS**	**DMS**	**Result**	**MS**	**DMS**	**MS**	**DMS**	**ALS Acceptance Limits**	**Relative Percent Difference**	**Result Notes**
Mercury	METHOD	1631E	0.5	50	50	ND	47.3	49.8	95	100	71-125	5	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	11/25/15

Ongoing Precision and Recovery (OPR) Sample Summary
Total Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Mercury	METHOD	1631E	5.00	5.12	102	77-123	

ALS Group USA, Corp.
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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	11/25/15

Ongoing Precision and Recovery (OPR) Sample Summary
Total Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Mercury	METHOD	1631E	5.00	4.79	96	77-123	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
LCS Matrix:	Water	**Date Received:**	NA
		Date Extracted:	NA
		Date Analyzed:	11/25/15

Quality Control Sample (QCS) Summary
Total Metals

Sample Name: Quality Control Sample

Units: ng/L
Basis: NA

Test Notes:

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	ALS Percent Recovery Acceptance Limits	Result Notes
Mercury	METHOD	1631E	5.00	4.86	97	77-123	

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15 12:40
Sample Matrix:	Water	**Date Received:**	11/18/15 16:20
Sample Name:	PP111815	**Basis:**	NA
Lab Code:	K1513273-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	**0.67**	ug/L	0.25	0.03	5	11/30/15 05:58	11/23/15	
Arsenic	200.8	ND U	ug/L	2.5	1.0	5	11/30/15 05:58	11/23/15	
Barium	200.8	**107**	ug/L	0.25	0.03	5	11/30/15 05:58	11/23/15	
Beryllium	200.8	ND U	ug/L	0.10	0.03	5	11/30/15 05:58	11/23/15	
Cadmium	200.8	**0.17**	ug/L	0.10	0.04	5	11/30/15 05:58	11/23/15	
Calcium	200.7	**4710**	ug/L	20	0.6	1	12/01/15 03:54	11/20/15	
Chromium	200.8	**6.8**	ug/L	1.0	0.2	5	11/30/15 05:58	11/23/15	
Copper	200.8	**97.7**	ug/L	0.50	0.10	5	11/30/15 05:58	11/23/15	
Iron	200.7	**692**	ug/L	20	3	1	12/01/15 03:54	11/20/15	
Lead	200.8	**0.09 J**	ug/L	0.10	0.02	5	11/30/15 05:58	11/23/15	
Magnesium	200.7	**3280**	ug/L	5.0	0.2	1	12/01/15 03:54	11/20/15	
Molybdenum	200.8	**11.5**	ug/L	0.25	0.10	5	11/30/15 05:58	11/23/15	
Nickel	200.8	**38.1**	ug/L	1.0	0.1	5	11/30/15 05:58	11/23/15	
Potassium	200.7	**193000**	ug/L	200	50	1	12/01/15 03:54	11/20/15	
Selenium	200.8	ND U	ug/L	5.0	2.0	5	11/30/15 05:58	11/23/15	
Silver	200.8	**2.24**	ug/L	0.10	0.02	5	11/30/15 05:58	11/23/15	
Sodium	200.7	**2410000**	ug/L	4000	400	20	12/01/15 04:06	11/20/15	
Thallium	200.8	**0.03 J**	ug/L	0.10	0.01	5	11/30/15 05:58	11/23/15	
Zinc	200.8	**40.7**	ug/L	2.5	1.0	5	11/30/15 05:58	11/23/15	

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1513742-01		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Calcium	200.7	**4**	**J**	ug/L	20	0.6	1	12/01/15 03:03	11/20/15	
Iron	200.7	ND	U	ug/L	20	3	1	12/01/15 03:03	11/20/15	
Magnesium	200.7	**2.2**	**J**	ug/L	5.0	0.2	1	12/01/15 03:03	11/20/15	
Potassium	200.7	ND	U	ug/L	200	50	1	12/01/15 03:03	11/20/15	
Sodium	200.7	ND	U	ug/L	200	20	1	12/01/15 03:03	11/20/15	

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1513909-01		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Antimony	200.8	**0.015**	**J**	ug/L	0.050	0.006	1	11/24/15 03:53	11/23/15	
Arsenic	200.8	ND	U	ug/L	0.50	0.20	1	11/24/15 03:53	11/23/15	
Barium	200.8	ND	U	ug/L	0.050	0.006	1	11/24/15 03:53	11/23/15	
Beryllium	200.8	ND	U	ug/L	0.020	0.006	1	11/24/15 03:53	11/23/15	
Cadmium	200.8	ND	U	ug/L	0.020	0.007	1	11/24/15 03:53	11/23/15	
Chromium	200.8	ND	U	ug/L	0.20	0.03	1	11/24/15 03:53	11/23/15	
Copper	200.8	ND	U	ug/L	0.10	0.02	1	11/24/15 03:53	11/23/15	
Lead	200.8	ND	U	ug/L	0.020	0.004	1	11/24/15 03:53	11/23/15	
Molybdenum	200.8	ND	U	ug/L	0.050	0.020	1	11/24/15 03:53	11/23/15	
Nickel	200.8	ND	U	ug/L	0.20	0.02	1	11/24/15 03:53	11/23/15	
Selenium	200.8	ND	U	ug/L	1.0	0.4	1	11/24/15 03:53	11/23/15	
Silver	200.8	ND	U	ug/L	0.020	0.003	1	11/24/15 03:53	11/23/15	
Thallium	200.8	ND	U	ug/L	0.020	0.002	1	11/24/15 03:53	11/23/15	
Zinc	200.8	ND	U	ug/L	0.50	0.20	1	11/24/15 03:53	11/23/15	

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/01/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1513269-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1513742-04 Result	Average	RPD	RPD Limit
Calcium	200.7	20	0.6	29000	28500	28700	2	20
Iron	200.7	20	3	1180	1170	1170	1	20
Magnesium	200.7	5.0	0.2	6390	6320	6360	1	20
Potassium	200.7	200	50	3520	3580	3550	2	20
Sodium	200.7	200	20	9860	9880	9870	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Superset Reference:

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
		Date Analyzed:	12/01/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1513198-002	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1513742-07 Result	Average	RPD	RPD Limit
Calcium	200.7	20	0.6	ND U	ND U	ND	-	20
Iron	200.7	20	3	ND U	ND U	ND	-	20
Magnesium	200.7	5.0	0.2	ND U	ND U	ND	-	20
Potassium	200.7	200	50	ND U	ND U	ND	-	20
Sodium	200.7	200	20	ND U	ND U	ND	-	20

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Superset Reference:

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Ground Water	**Date Received:**	NA
		Date Analyzed:	11/24/15

Replicate Sample Summary
Total Metals

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1513151-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1513909-03 Result	Average	RPD	RPD Limit
Antimony	200.8	0.050	0.006	0.219	0.214	0.216	2	20
Arsenic	200.8	0.50	0.20	4.39	4.53	4.46	3	20
Barium	200.8	0.050	0.006	43.6	44.8	44.2	3	20
Beryllium	200.8	0.020	0.006	ND U	ND U	ND	-	20
Cadmium	200.8	0.020	0.007	ND U	ND U	ND	-	20
Chromium	200.8	0.20	0.03	1.66	1.70	1.68	2	20
Copper	200.8	0.10	0.02	0.92	0.96	0.94	4	20
Lead	200.8	0.020	0.004	0.035	0.037	0.036	4	20
Molybdenum	200.8	0.050	0.020	1.45	1.47	1.46	1	20
Nickel	200.8	0.20	0.02	3.43	3.51	3.47	2	20
Selenium	200.8	1.0	0.4	ND U	ND U	ND	-	20
Silver	200.8	0.020	0.003	ND U	ND U	ND	-	20
Thallium	200.8	0.020	0.002	ND U	ND U	ND	-	20
Zinc	200.8	0.50	0.20	2.21	3.13	2.67	34 #	20

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Superset Reference:

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/1/15
		Date Extracted:	11/20/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1513269-001	**Basis:**	NA
Analysis Method:	200.7		
Prep Method:	EPA CLP-METALS ILM04.0		

Matrix Spike
KQ1513742-05

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Calcium	29000	38700	10000	98	70-130
Iron	1180	2210	1000	103	70-130
Magnesium	6390	17500	10000	112	70-130
Potassium	3520	14000	10000	105	70-130
Sodium	9860	19900	10000	100	70-130

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Superset Reference:

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Water	**Date Received:**	N/A
		Date Analyzed:	12/1/15
		Date Extracted:	11/20/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1513198-002	**Basis:**	NA
Analysis Method:	200.7		
Prep Method:	EPA CLP-METALS ILM04.0		

Matrix Spike
KQ1513742-08

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Calcium	ND U	10200	10000	102	70-130
Iron	ND U	1040	1000	104	70-130
Magnesium	ND U	10200	10000	102	70-130
Potassium	ND U	10000	10000	100	70-130
Sodium	ND U	9620	10000	96	70-130

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Superset Reference:

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	N/A
Sample Matrix:	Ground Water	**Date Received:**	N/A
		Date Analyzed:	11/24/15
		Date Extracted:	11/23/15

Matrix Spike Summary
Total Metals

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1513151-001	**Basis:**	NA
Analysis Method:	200.8		
Prep Method:	EPA CLP-METALS ILM04.0		

Matrix Spike
KQ1513909-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Antimony	0.219	48.7	50.0	97	70-130
Arsenic	4.39	52.7	50.0	97	70-130
Barium	43.6	142	100	98	70-130
Beryllium	ND U	2.14	2.50	85	70-130
Cadmium	ND U	23.4	25.0	94	70-130
Chromium	1.66	10.6	10.0	89	70-130
Copper	0.92	11.7	12.5	86	70-130
Lead	0.035	46.5	50.0	93	70-130
Molybdenum	1.45	22.0	20.0	103	70-130
Nickel	3.43	24.9	25.0	86	70-130
Selenium	ND U	47.4	50.0	95	70-130
Silver	ND U	11.1	12.5	89	70-130
Thallium	ND U	48.1	50.0	96	70-130
Zinc	2.21	25.0	25.0	91	70-130

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Superset Reference:

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	12/01/15
Sample Matrix:	Water	**Date Extracted:**	11/20/15

Lab Control Sample Summary
Total Metals

Analysis Method:	200.7	**Units:**	ug/L
Prep Method:	EPA CLP-METALS ILM04.0	**Basis:**	NA
		Analysis Lot:	474383

Lab Control Sample
KQ1513742-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Calcium	12300	12500	99	85-115
Iron	2420	2500	97	85-115
Magnesium	12600	12500	101	85-115
Potassium	12300	12500	98	85-115
Sodium	12000	12500	96	85-115

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QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	11/24/15
Sample Matrix:	Water	**Date Extracted:**	11/23/15

Lab Control Sample Summary
Total Metals

Analysis Method:	200.8	**Units:**	ug/L
Prep Method:	EPA CLP-METALS ILM04.0	**Basis:**	NA
		Analysis Lot:	473664

Lab Control Sample
KQ1513909-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Antimony	48.0	50.0	96	85-115
Arsenic	46.7	50.0	93	85-115
Barium	94.6	100	95	85-115
Beryllium	2.44	2.50	98	85-115
Cadmium	24.0	25.0	96	85-115
Chromium	9.49	10.0	95	85-115
Copper	11.7	12.5	94	85-115
Lead	48.5	50.0	97	85-115
Molybdenum	19.3	20.0	97	85-115
Nickel	23.6	25.0	94	85-115
Selenium	46.7	50.0	93	85-115
Silver	11.7	12.5	94	85-115
Thallium	49.1	50.0	98	85-115
Zinc	23.8	25.0	95	85-115

Diesel and Residual Range Organics - Silica Gel Treated

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/2015
Sample Matrix:	Water	**Date Received:**	11/18/2015

Diesel and Residual Range Organics - Silica Gel Treated

Sample Name:	PP111815	**Units:**	ug/L
Lab Code:	K1513273-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**710**	Y	270	12	1	11/24/15	12/07/15	KWG1511546	
Residual Range Organics (RRO)	**92**	J	540	21	1	11/24/15	12/07/15	KWG1511546	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	104	50-150	12/07/15	Acceptable
n-Triacontane	115	50-150	12/07/15	Acceptable

Comments:

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Diesel and Residual Range Organics - Silica Gel Treated

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1511546-3	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	NWTPH-Dx		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Diesel Range Organics (DRO)	**19**	J	250	11	1	11/24/15	12/07/15	KWG1511546	
Residual Range Organics (RRO)	**64**	J	500	19	1	11/24/15	12/07/15	KWG1511546	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
o-Terphenyl	97	50-150	12/07/15	Acceptable
n-Triacontane	108	50-150	12/07/15	Acceptable

Comments:

Client: Stericycle - Morton, WA **Service Request:** K1513273
Project: Priority Pollutants 2015/MO PP 111815
Sample Matrix: Water

Surrogate Recovery Summary
Diesel and Residual Range Organics - Silica Gel Treated

Extraction Method: METHOD **Units:** Percent
Analysis Method: NWTPH-Dx **Level:** Low

Sample Name	Lab Code	Sur1	Sur2
PP111815	K1513273-001	104	115
Method Blank	KWG1511546-3	97	108
Lab Control Sample	KWG1511546-1	106	114
Duplicate Lab Control Sample	KWG1511546-2	135	150

Surrogate Recovery Control Limits (%)

Sur1	=	o-Terphenyl	50-150
Sur2	=	n-Triacontane	50-150

Results flagged with an asterisk (*) indicate values outside control criteria.

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Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Extracted:**	11/24/2015
Sample Matrix:	Water	**Date Analyzed:**	12/07/2015

Lab Control Spike/Duplicate Lab Control Spike Summary
Diesel and Residual Range Organics - Silica Gel Treated

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	NWTPH-Dx	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1511546

	Lab Control Sample KWG1511546-1 Lab Control Spike			Duplicate Lab Control Sample KWG1511546-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
Diesel Range Organics (DRO)	3210	3200	100	3940	3200	123	46-140	20	30
Residual Range Organics (RRO)	1920	1600	120	2430	1600	152	45-159	24	30

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Gasoline Range Organics

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/2015
Sample Matrix:	Water	**Date Received:**	11/18/2015

Gasoline Range Organics

Sample Name:	PP111815	**Units:**	ug/L
Lab Code:	K1513273-001	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	**26**	J	250	13	1	11/19/15	11/19/15	KWG1511367	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	83	50-150	11/19/15	Acceptable

Comments:

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Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Gasoline Range Organics

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1511367-3	**Basis:**	NA
Extraction Method:	EPA 5030B	**Level:**	Low
Analysis Method:	NWTPH-Gx		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Gasoline Range Organics-NWTPH	ND	U	250	13	1	11/19/15	11/19/15	KWG1511367	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
1,4-Difluorobenzene	90	50-150	11/19/15	Acceptable

Comments:

Organochlorine Pesticides and Polychlorinated Biphenyls

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/2015
Sample Matrix:	Water	**Date Received:**	11/18/2015

Organochlorine Pesticides and Polychlorinated Biphenyls

Sample Name:	PP111815	**Units:**	ug/L
Lab Code:	K1513273-001	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	608		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0097	0.00065	1	11/19/15	12/02/15	KWG1511354	
beta-BHC	ND	U	0.0097	0.00079	1	11/19/15	12/02/15	KWG1511354	
gamma-BHC (Lindane)	ND	U	0.0097	0.0020	1	11/19/15	12/02/15	KWG1511354	
delta-BHC	ND	Ui	0.0097	0.0068	1	11/19/15	12/02/15	KWG1511354	
Heptachlor	ND	U	0.0097	0.0010	1	11/19/15	12/02/15	KWG1511354	
Aldrin	ND	U	0.0097	0.0017	1	11/19/15	12/02/15	KWG1511354	
Heptachlor Epoxide	ND	U	0.0097	0.0010	1	11/19/15	12/02/15	KWG1511354	
Endosulfan I	ND	Ui	0.013	0.013	1	11/19/15	12/02/15	KWG1511354	
Dieldrin	ND	Ui	0.0097	0.0090	1	11/19/15	12/02/15	KWG1511354	
4,4'-DDE	ND	U	0.0097	0.0011	1	11/19/15	12/02/15	KWG1511354	
Endrin	ND	U	0.0097	0.0013	1	11/19/15	12/02/15	KWG1511354	
Endosulfan II	ND	U	0.0097	0.0010	1	11/19/15	12/02/15	KWG1511354	
4,4'-DDD	ND	Ui	0.0097	0.0045	1	11/19/15	12/02/15	KWG1511354	
Endrin Aldehyde	ND	U	0.0097	0.0017	1	11/19/15	12/02/15	KWG1511354	
Endosulfan Sulfate	ND	Ui	0.0097	0.0069	1	11/19/15	12/02/15	KWG1511354	
4,4'-DDT	ND	U	0.0097	0.0018	1	11/19/15	12/02/15	KWG1511354	
Toxaphene	ND	U	0.49	0.083	1	11/19/15	12/02/15	KWG1511354	
Chlordane	ND	Ui	0.20	0.039	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1016	ND	U	0.049	0.043	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1221	ND	U	0.097	0.058	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1232	ND	U	0.097	0.049	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1242	ND	U	0.097	0.018	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1248	ND	Ui	0.12	0.12	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1254	ND	U	0.097	0.029	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1260	ND	U	0.097	0.053	1	11/19/15	12/02/15	KWG1511354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	6	10-134	12/02/15	Outside Control Limits

Comments:

ALS Group USA, Corp. dba ALS Environmental

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Organochlorine Pesticides and Polychlorinated Biphenyls

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1511354-3	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	608		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
alpha-BHC	ND	U	0.0095	0.00065	1	11/19/15	12/02/15	KWG1511354	
beta-BHC	ND	U	0.0095	0.00079	1	11/19/15	12/02/15	KWG1511354	
gamma-BHC (Lindane)	ND	U	0.0095	0.0020	1	11/19/15	12/02/15	KWG1511354	
delta-BHC	ND	U	0.0095	0.0035	1	11/19/15	12/02/15	KWG1511354	
Heptachlor	ND	U	0.0095	0.0010	1	11/19/15	12/02/15	KWG1511354	
Aldrin	ND	U	0.0095	0.0017	1	11/19/15	12/02/15	KWG1511354	
Heptachlor Epoxide	ND	U	0.0095	0.0010	1	11/19/15	12/02/15	KWG1511354	
Endosulfan I	ND	U	0.0095	0.0013	1	11/19/15	12/02/15	KWG1511354	
Dieldrin	ND	U	0.0095	0.00085	1	11/19/15	12/02/15	KWG1511354	
4,4'-DDE	ND	U	0.0095	0.0011	1	11/19/15	12/02/15	KWG1511354	
Endrin	ND	U	0.0095	0.0013	1	11/19/15	12/02/15	KWG1511354	
Endosulfan II	ND	U	0.0095	0.0010	1	11/19/15	12/02/15	KWG1511354	
4,4'-DDD	ND	U	0.0095	0.0015	1	11/19/15	12/02/15	KWG1511354	
Endrin Aldehyde	ND	U	0.0095	0.0017	1	11/19/15	12/02/15	KWG1511354	
Endosulfan Sulfate	ND	U	0.0095	0.0012	1	11/19/15	12/02/15	KWG1511354	
4,4'-DDT	ND	U	0.0095	0.0018	1	11/19/15	12/02/15	KWG1511354	
Toxaphene	ND	U	0.48	0.083	1	11/19/15	12/02/15	KWG1511354	
Chlordane	ND	U	0.19	0.021	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1016	ND	U	0.048	0.043	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1221	ND	U	0.095	0.058	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1232	ND	U	0.095	0.049	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1242	ND	U	0.095	0.018	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1248	ND	U	0.095	0.035	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1254	ND	U	0.095	0.029	1	11/19/15	12/02/15	KWG1511354	
Aroclor 1260	ND	U	0.095	0.053	1	11/19/15	12/02/15	KWG1511354	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Decachlorobiphenyl	78	10-134	12/02/15	Acceptable

Comments:

Client: Stericycle - Morton, WA
Project: Priority Pollutants 2015/MO PP 111815
Sample Matrix: Water

Service Request: K1513273

Surrogate Recovery Summary
Organochlorine Pesticides and Polychlorinated Biphenyls

Extraction Method: EPA 3520C
Analysis Method: 608

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	
PP111815	K1513273-001	6	*
Method Blank	KWG1511354-3	78	
Lab Control Sample	KWG1511354-1	69	
Duplicate Lab Control Sample	KWG1511354-2	74	

Surrogate Recovery Control Limits (%)

Sur1 = Decachlorobiphenyl 10-134

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Stericycle - Morton, WA
Project: Priority Pollutants 2015/MO PP 111815
Sample Matrix: Water

Service Request: K1513273
Date Extracted: 11/19/2015
Date Analyzed: 12/02/2015

Lab Control Spike/Duplicate Lab Control Spike Summary
Organochlorine Pesticides and Polychlorinated Biphenyls

Extraction Method: EPA 3520C
Analysis Method: 608

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1511354

	Lab Control Sample KWG1511354-1 Lab Control Spike			Duplicate Lab Control Sample KWG1511354-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
alpha-BHC	0.0803	0.100	80	0.0808	0.100	81	37-134	1	30
beta-BHC	0.0834	0.100	83	0.0829	0.100	83	17-147	1	30
gamma-BHC (Lindane)	0.0830	0.100	83	0.0826	0.100	83	32-127	1	30
delta-BHC	0.0882	0.100	88	0.0882	0.100	88	19-140	0	30
Heptachlor	0.0755	0.100	75	0.0753	0.100	75	34-111	0	30
Aldrin	0.0823	0.100	82	0.0803	0.100	80	42-122	2	30
Heptachlor Epoxide	0.0874	0.100	87	0.0875	0.100	87	37-142	0	30
Endosulfan I	0.0803	0.100	80	0.0802	0.100	80	45-153	0	30
Dieldrin	0.0908	0.100	91	0.0911	0.100	91	36-146	0	30
4,4'-DDE	0.0914	0.100	91	0.0916	0.100	92	30-145	0	30
Endrin	0.0831	0.100	83	0.0829	0.100	83	30-147	0	30
Endosulfan II	0.0871	0.100	87	0.0883	0.100	88	10-202	1	30
4,4'-DDD	0.0884	0.100	88	0.0906	0.100	91	31-141	2	30
Endrin Aldehyde	0.0792	0.100	79	0.0818	0.100	82	43-125	3	30
Endosulfan Sulfate	0.0898	0.100	90	0.0913	0.100	91	26-144	2	30
4,4'-DDT	0.0955	0.100	96	0.0972	0.100	97	25-160	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Volatile Organic Compounds

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/2015
Sample Matrix:	Water	**Date Received:**	11/18/2015

Volatile Organic Compounds

Sample Name:	PP111815	**Units:**	ug/L
Lab Code:	K1513273-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	**0.30**	JD	5.0	0.30	10	12/01/15	12/01/15	KWG1511715	
Vinyl Chloride	ND	U	5.0	0.31	10	12/01/15	12/01/15	KWG1511715	
Bromomethane	ND	U	5.0	0.72	10	12/01/15	12/01/15	KWG1511715	
Chloroethane	ND	U	5.0	1.4	10	12/01/15	12/01/15	KWG1511715	
1,1-Dichloroethene	ND	U	5.0	0.39	10	12/01/15	12/01/15	KWG1511715	
Methylene Chloride	**3.4**	JD	5.0	1.4	10	12/01/15	12/01/15	KWG1511715	
trans-1,2-Dichloroethene	ND	U	5.0	0.32	10	12/01/15	12/01/15	KWG1511715	
1,1-Dichloroethane	ND	U	5.0	0.25	10	12/01/15	12/01/15	KWG1511715	
Chloroform	**0.90**	JD	5.0	0.62	10	12/01/15	12/01/15	KWG1511715	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.57	10	12/01/15	12/01/15	KWG1511715	
Carbon Tetrachloride	ND	U	5.0	1.2	10	12/01/15	12/01/15	KWG1511715	
Benzene	ND	U	5.0	0.31	10	12/01/15	12/01/15	KWG1511715	
1,2-Dichloroethane (EDC)	**1.2**	JD	5.0	0.36	10	12/01/15	12/01/15	KWG1511715	
Trichloroethene (TCE)	ND	U	5.0	0.44	10	12/01/15	12/01/15	KWG1511715	
1,2-Dichloropropane	ND	U	5.0	0.44	10	12/01/15	12/01/15	KWG1511715	
Bromodichloromethane	ND	U	5.0	0.86	10	12/01/15	12/01/15	KWG1511715	
2-Chloroethyl Vinyl Ether	ND	U	5.0	1.2	10	12/01/15	12/01/15	KWG1511715	
trans-1,3-Dichloropropene	ND	U	5.0	0.45	10	12/01/15	12/01/15	KWG1511715	
Toluene	**0.40**	JD	5.0	0.32	10	12/01/15	12/01/15	KWG1511715	
cis-1,3-Dichloropropene	ND	U	5.0	0.35	10	12/01/15	12/01/15	KWG1511715	
1,1,2-Trichloroethane	ND	U	5.0	0.45	10	12/01/15	12/01/15	KWG1511715	
Tetrachloroethene (PCE)	ND	U	5.0	0.32	10	12/01/15	12/01/15	KWG1511715	
Dibromochloromethane	ND	U	5.0	0.81	10	12/01/15	12/01/15	KWG1511715	
Chlorobenzene	ND	U	5.0	0.31	10	12/01/15	12/01/15	KWG1511715	
Ethylbenzene	ND	U	5.0	0.30	10	12/01/15	12/01/15	KWG1511715	
Bromoform	ND	U	5.0	1.7	10	12/01/15	12/01/15	KWG1511715	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.92	10	12/01/15	12/01/15	KWG1511715	
1,3-Dichlorobenzene	ND	U	5.0	0.71	10	12/01/15	12/01/15	KWG1511715	
1,4-Dichlorobenzene	ND	U	5.0	0.73	10	12/01/15	12/01/15	KWG1511715	
1,2-Dichlorobenzene	ND	U	5.0	0.86	10	12/01/15	12/01/15	KWG1511715	
Acrolein†	ND	U	50	37	10	12/01/15	12/01/15	KWG1511715	
Acrylonitrile†	ND	U	5.0	1.4	10	12/01/15	12/01/15	KWG1511715	

Comments:

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/2015
Sample Matrix:	Water	**Date Received:**	11/18/2015

Volatile Organic Compounds

Sample Name:	PP111815	**Units:**	ug/L
Lab Code:	K1513273-001	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	109	80-120	12/01/15	Acceptable
4-Bromofluorobenzene	92	68-120	12/01/15	Acceptable
Dibromofluoromethane	100	76-132	12/01/15	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1511715-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	ND	U	0.50	0.030	1	12/01/15	12/01/15	KWG1511715	
Vinyl Chloride	ND	U	0.50	0.031	1	12/01/15	12/01/15	KWG1511715	
Bromomethane	ND	U	0.50	0.072	1	12/01/15	12/01/15	KWG1511715	
Chloroethane	ND	U	0.50	0.14	1	12/01/15	12/01/15	KWG1511715	
1,1-Dichloroethene	ND	U	0.50	0.039	1	12/01/15	12/01/15	KWG1511715	
Methylene Chloride	**0.20**	J	0.50	0.14	1	12/01/15	12/01/15	KWG1511715	
trans-1,2-Dichloroethene	ND	U	0.50	0.032	1	12/01/15	12/01/15	KWG1511715	
1,1-Dichloroethane	ND	U	0.50	0.025	1	12/01/15	12/01/15	KWG1511715	
Chloroform	ND	U	0.50	0.062	1	12/01/15	12/01/15	KWG1511715	
1,1,1-Trichloroethane (TCA)	ND	U	0.50	0.057	1	12/01/15	12/01/15	KWG1511715	
Carbon Tetrachloride	ND	U	0.50	0.12	1	12/01/15	12/01/15	KWG1511715	
Benzene	ND	U	0.50	0.031	1	12/01/15	12/01/15	KWG1511715	
1,2-Dichloroethane (EDC)	ND	U	0.50	0.036	1	12/01/15	12/01/15	KWG1511715	
Trichloroethene (TCE)	ND	U	0.50	0.044	1	12/01/15	12/01/15	KWG1511715	
1,2-Dichloropropane	ND	U	0.50	0.044	1	12/01/15	12/01/15	KWG1511715	
Bromodichloromethane	ND	U	0.50	0.086	1	12/01/15	12/01/15	KWG1511715	
2-Chloroethyl Vinyl Ether	ND	U	0.50	0.12	1	12/01/15	12/01/15	KWG1511715	
trans-1,3-Dichloropropene	ND	U	0.50	0.045	1	12/01/15	12/01/15	KWG1511715	
Toluene	ND	U	0.50	0.032	1	12/01/15	12/01/15	KWG1511715	
cis-1,3-Dichloropropene	ND	U	0.50	0.035	1	12/01/15	12/01/15	KWG1511715	
1,1,2-Trichloroethane	ND	U	0.50	0.045	1	12/01/15	12/01/15	KWG1511715	
Tetrachloroethene (PCE)	ND	U	0.50	0.032	1	12/01/15	12/01/15	KWG1511715	
Dibromochloromethane	ND	U	0.50	0.081	1	12/01/15	12/01/15	KWG1511715	
Chlorobenzene	ND	U	0.50	0.031	1	12/01/15	12/01/15	KWG1511715	
Ethylbenzene	ND	U	0.50	0.030	1	12/01/15	12/01/15	KWG1511715	
Bromoform	ND	U	0.50	0.17	1	12/01/15	12/01/15	KWG1511715	
1,1,2,2-Tetrachloroethane	ND	U	0.50	0.092	1	12/01/15	12/01/15	KWG1511715	
1,3-Dichlorobenzene	ND	U	0.50	0.071	1	12/01/15	12/01/15	KWG1511715	
1,4-Dichlorobenzene	ND	U	0.50	0.073	1	12/01/15	12/01/15	KWG1511715	
1,2-Dichlorobenzene	ND	U	0.50	0.086	1	12/01/15	12/01/15	KWG1511715	
Acrolein†	ND	U	5.0	3.7	1	12/01/15	12/01/15	KWG1511715	
Acrylonitrile†	ND	U	0.50	0.14	1	12/01/15	12/01/15	KWG1511715	

Comments:

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1511715-4	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	110	80-120	12/01/15	Acceptable
4-Bromofluorobenzene	87	68-120	12/01/15	Acceptable
Dibromofluoromethane	102	76-132	12/01/15	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

Client: Stericycle - Morton, WA **Service Request:** K1513273
Project: Priority Pollutants 2015/MO PP 111815
Sample Matrix: Water

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD **Units:** Percent
Analysis Method: 624 **Level:** Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
PP111815	K1513273-001	109	92	100
Batch QC	K1513528-060	109	87	105
Method Blank	KWG1511715-4	110	87	102
Batch QCMS	KWG1511715-1	110	89	102
Batch QCDMS	KWG1511715-2	113	91	108
Lab Control Sample	KWG1511715-3	112	95	102

Surrogate Recovery Control Limits (%)

Sur1	=	Toluene-d8	80-120
Sur2	=	4-Bromofluorobenzene	68-120
Sur3	=	Dibromofluoromethane	76-132

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Extracted:**	12/01/2015
Sample Matrix:	Water	**Date Analyzed:**	12/01/2015

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1513528-060	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624	**Extraction Lot:**	KWG1511715

		Batch QCMS KWG1511715-1 Matrix Spike			Batch QCDMS KWG1511715-2 Duplicate Matrix Spike					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
1,1-Dichloroethene	0.080	11.2	10.0	112	10.9	10.0	108	10-234	4	30
Benzene	ND	12.1	10.0	121	11.7	10.0	117	37-151	3	30
Trichloroethene (TCE)	ND	11.8	10.0	118	11.4	10.0	114	71-157	4	30
Toluene	0.070	11.8	10.0	118	11.3	10.0	112	47-150	5	30
Chlorobenzene	ND	10.4	10.0	104	9.97	10.0	100	37-160	4	30
1,2-Dichlorobenzene	ND	11.7	10.0	117	10.8	10.0	108	18-190	9	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Extracted:**	12/01/2015
Sample Matrix:	Water	**Date Analyzed:**	12/01/2015

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	624	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1511715

	Lab Control Sample KWG1511715-3 Lab Control Spike			
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**
Chloromethane	9.55	10.0	96	10-273
Vinyl Chloride	9.67	10.0	97	10-251
Bromomethane	8.87	10.0	89	10-242
Chloroethane	11.2	10.0	112	14-230
1,1-Dichloroethene	9.64	10.0	96	10-234
Methylene Chloride	10.2	10.0	102	10-221
trans-1,2-Dichloroethene	10.0	10.0	100	54-156
1,1-Dichloroethane	11.3	10.0	113	59-155
Chloroform	11.5	10.0	115	51-138
1,1,1-Trichloroethane (TCA)	9.91	10.0	99	52-162
Carbon Tetrachloride	9.75	10.0	98	70-140
Benzene	10.6	10.0	106	37-151
1,2-Dichloroethane (EDC)	12.1	10.0	121	49-155
Trichloroethene (TCE)	10.8	10.0	108	71-157
1,2-Dichloropropane	10.2	10.0	102	10-210
Bromodichloromethane	11.0	10.0	110	35-155
2-Chloroethyl Vinyl Ether	10.0	10.0	100	10-305
trans-1,3-Dichloropropene	9.09	10.0	91	17-183
Toluene	10.1	10.0	101	47-150
cis-1,3-Dichloropropene	9.45	10.0	95	10-227
1,1,2-Trichloroethane	9.65	10.0	97	52-150
Tetrachloroethene (PCE)	9.48	10.0	95	64-148
Dibromochloromethane	8.41	10.0	84	53-149
Chlorobenzene	9.56	10.0	96	37-160
Ethylbenzene	9.70	10.0	97	37-162
Bromoform	7.96	10.0	80	45-169
1,1,2,2-Tetrachloroethane	11.0	10.0	110	46-157
1,3-Dichlorobenzene	10.5	10.0	105	59-156
1,4-Dichlorobenzene	10.5	10.0	105	18-190
1,2-Dichlorobenzene	10.4	10.0	104	18-190
Acrolein	62.7	100	63	27-200
Acrylonitrile	46.5	40.0	116	61-141

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Semi-Volatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/2015
Sample Matrix:	Water	**Date Received:**	11/18/2015

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	PP111815	**Units:**	ug/L
Lab Code:	K1513273-001	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	625		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	**16**	D	9.8	2.1	5	11/23/15	12/11/15	KWG1511495	
Bis(2-chloroethyl) Ether	ND	U	0.98	0.18	5	11/23/15	12/11/15	KWG1511495	
Phenol	**630**	D	25	3.2	50	11/23/15	12/11/15	KWG1511495	
2-Chlorophenol	**4.4**	D	2.5	0.27	5	11/23/15	12/11/15	KWG1511495	
Bis(2-chloroisopropyl) Ether	ND	U	0.98	0.13	5	11/23/15	12/11/15	KWG1511495	
Hexachloroethane	ND	U	0.98	0.12	5	11/23/15	12/11/15	KWG1511495	
N-Nitrosodi-n-propylamine	ND	U	0.98	0.19	5	11/23/15	12/11/15	KWG1511495	
Nitrobenzene	ND	U	0.98	0.14	5	11/23/15	12/11/15	KWG1511495	
Isophorone	**7.3**	D	0.98	0.080	5	11/23/15	12/11/15	KWG1511495	
2-Nitrophenol	ND	U	2.5	0.32	5	11/23/15	12/11/15	KWG1511495	
2,4-Dimethylphenol	ND	U	20	11	5	11/23/15	12/11/15	KWG1511495	
Bis(2-chloroethoxy)methane	ND	U	0.98	0.12	5	11/23/15	12/11/15	KWG1511495	
2,4-Dichlorophenol	**1.1**	JD	2.5	0.24	5	11/23/15	12/11/15	KWG1511495	
1,2,4-Trichlorobenzene	ND	U	0.98	0.080	5	11/23/15	12/11/15	KWG1511495	
Naphthalene	**1.2**	D	0.98	0.11	5	11/23/15	12/11/15	KWG1511495	
Hexachlorobutadiene	ND	U	0.98	0.14	5	11/23/15	12/11/15	KWG1511495	
4-Chloro-3-methylphenol	ND	U	2.5	0.19	5	11/23/15	12/11/15	KWG1511495	
Hexachlorocyclopentadiene	ND	U	4.9	0.95	5	11/23/15	12/11/15	KWG1511495	
2,4,6-Trichlorophenol	ND	U	2.5	0.29	5	11/23/15	12/11/15	KWG1511495	
2-Chloronaphthalene	ND	U	0.98	0.21	5	11/23/15	12/11/15	KWG1511495	
Acenaphthylene	ND	U	0.98	0.075	5	11/23/15	12/11/15	KWG1511495	
Dimethyl Phthalate	**0.54**	JD	0.98	0.11	5	11/23/15	12/11/15	KWG1511495	
2,6-Dinitrotoluene	ND	U	0.98	0.17	5	11/23/15	12/11/15	KWG1511495	
Acenaphthene	ND	U	0.98	0.13	5	11/23/15	12/11/15	KWG1511495	
2,4-Dinitrophenol	ND	U	20	0.85	5	11/23/15	12/11/15	KWG1511495	
4-Nitrophenol	ND	U	9.8	1.4	5	11/23/15	12/11/15	KWG1511495	
2,4-Dinitrotoluene	ND	U	0.98	0.090	5	11/23/15	12/11/15	KWG1511495	
Fluorene	ND	U	0.98	0.14	5	11/23/15	12/11/15	KWG1511495	
4-Chlorophenyl Phenyl Ether	ND	U	0.98	0.14	5	11/23/15	12/11/15	KWG1511495	
Diethyl Phthalate	**42**	D	0.98	0.060	5	11/23/15	12/11/15	KWG1511495	
2-Methyl-4,6-dinitrophenol	ND	U	9.8	0.13	5	11/23/15	12/11/15	KWG1511495	
N-Nitrosodiphenylamine	ND	U	0.98	0.24	5	11/23/15	12/11/15	KWG1511495	
Azobenzene†	ND	U	0.98	0.11	5	11/23/15	12/11/15	KWG1511495	
4-Bromophenyl Phenyl Ether	ND	U	0.98	0.13	5	11/23/15	12/11/15	KWG1511495	

Comments:

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/2015
Sample Matrix:	Water	**Date Received:**	11/18/2015

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	PP111815	**Units:**	ug/L
Lab Code:	K1513273-001	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	625		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorobenzene	ND	U	0.98	0.11	5	11/23/15	12/11/15	KWG1511495	
Pentachlorophenol	ND	U	4.9	1.7	5	11/23/15	12/11/15	KWG1511495	
Phenanthrene	ND	U	0.98	0.11	5	11/23/15	12/11/15	KWG1511495	
Anthracene	ND	U	0.98	0.12	5	11/23/15	12/11/15	KWG1511495	
Benzidine	ND	U	49	29	1	11/23/15	12/03/15	KWG1511495	*
Di-n-butyl Phthalate	ND	U	9.8	1.2	50	11/23/15	12/11/15	KWG1511495	
Fluoranthene	ND	U	0.98	0.10	5	11/23/15	12/11/15	KWG1511495	
Pyrene	ND	U	0.98	0.095	5	11/23/15	12/11/15	KWG1511495	
Butyl Benzyl Phthalate	ND	U	0.98	0.090	5	11/23/15	12/11/15	KWG1511495	
3,3'-Dichlorobenzidine	ND	U	9.8	2.2	5	11/23/15	12/11/15	KWG1511495	*
Benz(a)anthracene	ND	U	0.98	0.090	5	11/23/15	12/11/15	KWG1511495	
Chrysene	ND	U	0.98	0.14	5	11/23/15	12/11/15	KWG1511495	
Bis(2-ethylhexyl) Phthalate	ND	U	4.9	0.65	5	11/23/15	12/11/15	KWG1511495	
Di-n-octyl Phthalate	ND	U	0.98	0.090	5	11/23/15	12/11/15	KWG1511495	
Benzo(b)fluoranthene	ND	U	0.98	0.085	5	11/23/15	12/11/15	KWG1511495	
Benzo(k)fluoranthene	ND	U	0.98	0.12	5	11/23/15	12/11/15	KWG1511495	
Benzo(a)pyrene	ND	U	0.98	0.16	5	11/23/15	12/11/15	KWG1511495	
Perylene†	ND	U	0.98	0.98	5	11/23/15	12/11/15	KWG1511495	
3-Methylcholanthrene†	ND	U	2.5	2.5	5	11/23/15	12/11/15	KWG1511495	
Indeno(1,2,3-cd)pyrene	ND	U	0.98	0.11	5	11/23/15	12/11/15	KWG1511495	
Dibenz(a,h)anthracene	ND	U	0.98	0.085	5	11/23/15	12/11/15	KWG1511495	
Benzo(g,h,i)perylene	ND	U	0.98	0.095	5	11/23/15	12/14/15	KWG1511495	
Dibenzo(a,i)pyrene†	ND	U	2.5	2.5	5	11/23/15	12/11/15	KWG1511495	
Dibenzo(a,e)pyrene†	ND	U	2.5	2.5	5	11/23/15	12/11/15	KWG1511495	
Dibenz(a,h)acridine†	ND	U	2.5	2.5	5	11/23/15	12/11/15	KWG1511495	
Dibenzo(a,h)pyrene†	ND	U	2.5	2.5	5	11/23/15	12/11/15	KWG1511495	
Dibenz(a,j)acridine†	ND	U	2.5	2.5	5	11/23/15	12/11/15	KWG1511495	

* See Case Narrative

Comments:

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/2015
Sample Matrix:	Water	**Date Received:**	11/18/2015

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	PP111815	**Units:**	ug/L
Lab Code:	K1513273-001	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	74	23-121	12/11/15	Acceptable
Phenol-d6	123	31-122	12/11/15	Outside Control Limits
Nitrobenzene-d5	104	38-124	12/11/15	Acceptable
2-Fluorobiphenyl	59	38-102	12/11/15	Acceptable
2,4,6-Tribromophenol	101	27-128	12/11/15	Acceptable
Terphenyl-d14	63	56-138	12/11/15	Acceptable

† Analyte Comments

Azobenzene	1,2-Diphenylhydrazine is reported as Azobenzene.
Perylene	This compound is searched for as a tentatively identified compound.
3-Methylcholanthrene	This compound is searched for as a tentatively identified compound.
Dibenzo(a,i)pyrene	This compound is searched for as a tentatively identified compound.
Dibenzo(a,e)pyrene	This compound is searched for as a tentatively identified compound.
Dibenz(a,h)acridine	This compound is searched for as a tentatively identified compound.
Dibenzo(a,h)pyrene	This compound is searched for as a tentatively identified compound.
Dibenz(a,j)acridine	This compound is searched for as a tentatively identified compound.

Comments:

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1511495-3	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	625		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
N-Nitrosodimethylamine	ND	U	2.0	0.42	1	11/23/15	12/11/15	KWG1511495	
Bis(2-chloroethyl) Ether	ND	U	0.20	0.035	1	11/23/15	12/11/15	KWG1511495	
Phenol	ND	U	0.49	0.063	1	11/23/15	12/11/15	KWG1511495	
2-Chlorophenol	ND	U	0.49	0.054	1	11/23/15	12/11/15	KWG1511495	
Bis(2-chloroisopropyl) Ether	ND	U	0.20	0.026	1	11/23/15	12/11/15	KWG1511495	
Hexachloroethane	ND	U	0.20	0.024	1	11/23/15	12/11/15	KWG1511495	
N-Nitrosodi-n-propylamine	ND	U	0.20	0.037	1	11/23/15	12/11/15	KWG1511495	
Nitrobenzene	ND	U	0.20	0.028	1	11/23/15	12/11/15	KWG1511495	
Isophorone	ND	U	0.20	0.016	1	11/23/15	12/11/15	KWG1511495	
2-Nitrophenol	ND	U	0.49	0.063	1	11/23/15	12/11/15	KWG1511495	
2,4-Dimethylphenol	ND	U	3.9	2.2	1	11/23/15	12/11/15	KWG1511495	
Bis(2-chloroethoxy)methane	ND	U	0.20	0.024	1	11/23/15	12/11/15	KWG1511495	
2,4-Dichlorophenol	ND	U	0.49	0.047	1	11/23/15	12/11/15	KWG1511495	
1,2,4-Trichlorobenzene	ND	U	0.20	0.016	1	11/23/15	12/11/15	KWG1511495	
Naphthalene	ND	U	0.20	0.022	1	11/23/15	12/11/15	KWG1511495	
Hexachlorobutadiene	ND	U	0.20	0.027	1	11/23/15	12/11/15	KWG1511495	
4-Chloro-3-methylphenol	ND	U	0.49	0.037	1	11/23/15	12/11/15	KWG1511495	
Hexachlorocyclopentadiene	ND	U	0.98	0.19	1	11/23/15	12/11/15	KWG1511495	
2,4,6-Trichlorophenol	ND	U	0.49	0.058	1	11/23/15	12/11/15	KWG1511495	
2-Chloronaphthalene	ND	U	0.20	0.041	1	11/23/15	12/11/15	KWG1511495	
Acenaphthylene	ND	U	0.20	0.015	1	11/23/15	12/11/15	KWG1511495	
Dimethyl Phthalate	ND	U	0.20	0.021	1	11/23/15	12/11/15	KWG1511495	
2,6-Dinitrotoluene	ND	U	0.20	0.033	1	11/23/15	12/11/15	KWG1511495	
Acenaphthene	ND	U	0.20	0.026	1	11/23/15	12/11/15	KWG1511495	
2,4-Dinitrophenol	ND	U	3.9	0.17	1	11/23/15	12/11/15	KWG1511495	
4-Nitrophenol	ND	U	2.0	0.28	1	11/23/15	12/11/15	KWG1511495	
2,4-Dinitrotoluene	ND	U	0.20	0.018	1	11/23/15	12/11/15	KWG1511495	
Fluorene	ND	U	0.20	0.027	1	11/23/15	12/11/15	KWG1511495	
4-Chlorophenyl Phenyl Ether	ND	U	0.20	0.027	1	11/23/15	12/11/15	KWG1511495	
Diethyl Phthalate	**0.045**	J	0.20	0.012	1	11/23/15	12/11/15	KWG1511495	
2-Methyl-4,6-dinitrophenol	ND	U	2.0	0.025	1	11/23/15	12/11/15	KWG1511495	
N-Nitrosodiphenylamine	ND	U	0.20	0.048	1	11/23/15	12/11/15	KWG1511495	
Azobenzene†	ND	U	0.20	0.021	1	11/23/15	12/11/15	KWG1511495	
4-Bromophenyl Phenyl Ether	ND	U	0.20	0.026	1	11/23/15	12/11/15	KWG1511495	

Comments:

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1511495-3	**Basis:**	NA
Extraction Method:	EPA 3520C	**Level:**	Low
Analysis Method:	625		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Hexachlorobenzene	ND	U	0.20	0.022	1	11/23/15	12/11/15	KWG1511495	
Pentachlorophenol	ND	U	0.98	0.34	1	11/23/15	12/11/15	KWG1511495	
Phenanthrene	ND	U	0.20	0.022	1	11/23/15	12/11/15	KWG1511495	
Anthracene	ND	U	0.20	0.024	1	11/23/15	12/11/15	KWG1511495	
Benzidine	ND	U	49	29	1	11/23/15	12/03/15	KWG1511495	*
Di-n-butyl Phthalate	**0.090**	J	0.20	0.023	1	11/23/15	12/11/15	KWG1511495	
Fluoranthene	ND	U	0.20	0.020	1	11/23/15	12/11/15	KWG1511495	
Pyrene	ND	U	0.20	0.019	1	11/23/15	12/11/15	KWG1511495	
Butyl Benzyl Phthalate	**0.043**	J	0.20	0.018	1	11/23/15	12/11/15	KWG1511495	
3,3'-Dichlorobenzidine	ND	U	2.0	0.43	1	11/23/15	12/11/15	KWG1511495	*
Benz(a)anthracene	ND	U	0.20	0.018	1	11/23/15	12/11/15	KWG1511495	
Chrysene	ND	U	0.20	0.028	1	11/23/15	12/11/15	KWG1511495	
Bis(2-ethylhexyl) Phthalate	**0.15**	J	0.98	0.13	1	11/23/15	12/11/15	KWG1511495	
Di-n-octyl Phthalate	ND	U	0.20	0.018	1	11/23/15	12/11/15	KWG1511495	
Benzo(b)fluoranthene	ND	U	0.20	0.017	1	11/23/15	12/11/15	KWG1511495	
Benzo(k)fluoranthene	ND	U	0.20	0.024	1	11/23/15	12/11/15	KWG1511495	
Benzo(a)pyrene	ND	U	0.20	0.031	1	11/23/15	12/11/15	KWG1511495	
Perylene†	ND	U	0.20	0.20	1	11/23/15	12/11/15	KWG1511495	
3-Methylcholanthrene†	ND	U	0.49	0.49	1	11/23/15	12/11/15	KWG1511495	
Indeno(1,2,3-cd)pyrene	ND	U	0.20	0.021	1	11/23/15	12/11/15	KWG1511495	
Dibenz(a,h)anthracene	ND	U	0.20	0.017	1	11/23/15	12/11/15	KWG1511495	
Benzo(g,h,i)perylene	ND	U	0.20	0.019	1	11/23/15	12/14/15	KWG1511495	
Dibenzo(a,i)pyrene†	ND	U	0.49	0.49	1	11/23/15	12/11/15	KWG1511495	
Dibenzo(a,e)pyrene†	ND	U	0.49	0.49	1	11/23/15	12/11/15	KWG1511495	
Dibenz(a,h)acridine†	ND	U	0.49	0.49	1	11/23/15	12/11/15	KWG1511495	
Dibenzo(a,h)pyrene†	ND	U	0.49	0.49	1	11/23/15	12/11/15	KWG1511495	
Dibenz(a,j)acridine†	ND	U	0.49	0.49	1	11/23/15	12/11/15	KWG1511495	

* See Case Narrative

Comments:

Analytical Results

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Semi-Volatile Organic Compounds by GC/MS

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1511495-3	**Basis:**	NA

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
2-Fluorophenol	119	23-121	12/11/15	Acceptable
Phenol-d6	118	31-122	12/11/15	Acceptable
Nitrobenzene-d5	116	38-124	12/11/15	Acceptable
2-Fluorobiphenyl	113	38-102	12/11/15	Outside Control Limits
2,4,6-Tribromophenol	109	27-128	12/11/15	Acceptable
Terphenyl-d14	116	56-138	12/11/15	Acceptable

† Analyte Comments

Azobenzene	1,2-Diphenylhydrazine is reported as Azobenzene.
Perylene	This compound is searched for as a tentatively identified compound.
3-Methylcholanthrene	This compound is searched for as a tentatively identified compound.
Dibenzo(a,i)pyrene	This compound is searched for as a tentatively identified compound.
Dibenzo(a,e)pyrene	This compound is searched for as a tentatively identified compound.
Dibenz(a,h)acridine	This compound is searched for as a tentatively identified compound.
Dibenzo(a,h)pyrene	This compound is searched for as a tentatively identified compound.
Dibenz(a,j)acridine	This compound is searched for as a tentatively identified compound.

Comments:

ALS Group USA, Corp. dba ALS Environmental

QA/QC Report

Client: Stericycle - Morton, WA
Project: Priority Pollutants 2015/MO PP 111815
Sample Matrix: Water

Service Request: K1513273

Surrogate Recovery Summary
Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3520C
Analysis Method: 625

Units: Percent
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3	Sur4	Sur5	Sur6
PP111815	K1513273-001	74 D	123 D *	104 D	59 D	101 D	63 D
Method Blank	KWG1511495-3	119	118	116	113 *	109	116
Lab Control Sample	KWG1511495-1	67	68	68	64	75	68
Duplicate Lab Control Sample	KWG1511495-2	68	69	69	63	73	66

Surrogate Recovery Control Limits (%)

Sur1 =	2-Fluorophenol	23-121	Sur5 =	2,4,6-Tribromophenol	27-128
Sur2 =	Phenol-d6	31-122	Sur6 =	Terphenyl-d14	56-138
Sur3 =	Nitrobenzene-d5	38-124			
Sur4 =	2-Fluorobiphenyl	38-102			

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

QA/QC Report

Client: Stericycle - Morton, WA
Project: Priority Pollutants 2015/MO PP 111815
Sample Matrix: Water

Service Request: K1513273
Date Extracted: 11/23/2015
Date Analyzed: 12/03/2015 - 12/14/2015

Lab Control Spike/Duplicate Lab Control Spike Summary
Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3520C
Analysis Method: 625

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1511495

	Lab Control Sample KWG1511495-1 Lab Control Spike			Duplicate Lab Control Sample KWG1511495-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Spike Amount**	**%Rec**	**Result**	**Spike Amount**	**%Rec**	**%Rec Limits**	**RPD**	**RPD Limit**
N-Nitrosodimethylamine	4.02	5.00	80	3.51	5.00	70	46-122	13	30
Bis(2-chloroethyl) Ether	3.14	5.00	63	3.05	5.00	61	12-158	3	30
Phenol	3.54	5.00	71	3.21	5.00	64	5-112	10	30
2-Chlorophenol	3.36	5.00	67	3.23	5.00	65	23-134	4	30
Bis(2-chloroisopropyl) Ether	3.35	5.00	67	3.17	5.00	63	36-166	6	30
Hexachloroethane	2.86	5.00	57	2.86	5.00	57	40-113	0	30
N-Nitrosodi-n-propylamine	3.35	5.00	67	3.13	5.00	63	0.01-230	7	30
Nitrobenzene	3.38	5.00	68	3.29	5.00	66	35-180	3	30
Isophorone	3.26	5.00	65	3.10	5.00	62	21-196	5	30
2-Nitrophenol	3.44	5.00	69	3.25	5.00	65	29-182	6	30
2,4-Dimethylphenol	11.6	15.0	77	10.0	15.0	67	32-119	15	30
Bis(2-chloroethoxy)methane	3.26	5.00	65	3.14	5.00	63	33-184	4	30
2,4-Dichlorophenol	3.39	5.00	68	3.19	5.00	64	39-135	6	30
1,2,4-Trichlorobenzene	2.97	5.00	59	2.87	5.00	57	44-142	3	30
Naphthalene	3.12	5.00	62	3.01	5.00	60	21-133	4	30
Hexachlorobutadiene	2.74	5.00	55	2.75	5.00	55	24-116	0	30
4-Chloro-3-methylphenol	3.38	5.00	68	3.13	5.00	63	22-147	8	30
Hexachlorocyclopentadiene	1.56	5.00	31	1.48	5.00	30	10-47	5	30
2,4,6-Trichlorophenol	3.63	5.00	73	3.25	5.00	65	37-144	11	30
2-Chloronaphthalene	3.15	5.00	63	3.00	5.00	60	60-118	5	30
Acenaphthylene	3.20	5.00	64	3.06	5.00	61	33-145	4	30
Dimethyl Phthalate	3.46	5.00	69	3.15	5.00	63	0.01-112	9	30
2,6-Dinitrotoluene	3.64	5.00	73	3.32	5.00	66	50-158	9	30
Acenaphthene	3.17	5.00	63	3.03	5.00	61	47-145	5	30
2,4-Dinitrophenol	3.73	5.00	75	3.51	5.00	70	0.01-191	6	30
4-Nitrophenol	3.59	5.00	72	3.38	5.00	68	0.01-132	6	30
2,4-Dinitrotoluene	3.77	5.00	75	3.51	5.00	70	39-139	7	30
Fluorene	3.28	5.00	66	3.07	5.00	61	59-121	7	30
4-Chlorophenyl Phenyl Ether	3.22	5.00	64	3.05	5.00	61	25-158	6	30
Diethyl Phthalate	3.56	5.00	71	3.18	5.00	64	0.01-114	11	30
2-Methyl-4,6-dinitrophenol	3.70	5.00	74	3.34	5.00	67	0.01-181	10	30
N-Nitrosodiphenylamine	2.65	5.00	53	3.03	5.00	61	44-111	14	30
Azobenzene	2.58	5.00	52	3.03	5.00	61	43-116	16	30
4-Bromophenyl Phenyl Ether	3.36	5.00	67	3.17	5.00	63	53-127	6	30
Hexachlorobenzene	3.34	5.00	67	3.15	5.00	63	0.01-152	6	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

QA/QC Report

Client: Stericycle - Morton, WA
Project: Priority Pollutants 2015/MO PP 111815
Sample Matrix: Water

Service Request: K1513273
Date Extracted: 11/23/2015
Date Analyzed: 12/03/2015 - 12/14/2015

Lab Control Spike/Duplicate Lab Control Spike Summary
Semi-Volatile Organic Compounds by GC/MS

Extraction Method: EPA 3520C
Analysis Method: 625

Units: ug/L
Basis: NA
Level: Low
Extraction Lot: KWG1511495

	Lab Control Sample KWG1511495-1 Lab Control Spike				Duplicate Lab Control Sample KWG1511495-2 Duplicate Lab Control Spike					
Analyte Name	**Result**	**Spike Amount**	**%Rec**		**Result**	**Spike Amount**	**%Rec**		**%Rec Limits**	**RPD**	**RPD Limit**
Pentachlorophenol	4.34	5.00	87		3.68	5.00	74		14-176	16	30
Phenanthrene	3.37	5.00	67		3.16	5.00	63		54-120	7	30
Anthracene	3.20	5.00	64		3.12	5.00	62		27-133	3	30
Benzidine	ND	105	0	*	42.8	105	41	*	70-130	NC	30
Di-n-butyl Phthalate	3.77	5.00	75		3.33	5.00	67		1-118	12	30
Fluoranthene	3.63	5.00	73		3.31	5.00	66		26-137	9	30
Pyrene	3.36	5.00	67		3.04	5.00	61		52-115	10	30
Butyl Benzyl Phthalate	3.36	5.00	67		3.14	5.00	63		0.01-152	7	30
3,3'-Dichlorobenzidine	ND	5.00	0	*	0.860	5.00	17		0.01-262	NC	30
Benz(a)anthracene	3.37	5.00	67		3.21	5.00	64		33-143	5	30
Chrysene	3.49	5.00	70		3.23	5.00	65		17-168	8	30
Bis(2-ethylhexyl) Phthalate	3.70	5.00	74		3.33	5.00	67		8-158	10	30
Di-n-octyl Phthalate	3.62	5.00	72		3.31	5.00	66		4-146	9	30
Benzo(b)fluoranthene	3.58	5.00	72		3.20	5.00	64		24-159	11	30
Benzo(k)fluoranthene	3.54	5.00	71		3.25	5.00	65		11-162	9	30
Benzo(a)pyrene	3.25	5.00	65		3.00	5.00	60		17-163	8	30
Indeno(1,2,3-cd)pyrene	3.09	5.00	62		2.81	5.00	56		0.01-171	9	30
Dibenz(a,h)anthracene	3.32	5.00	66		3.03	5.00	61		0.01-227	9	30
Benzo(g,h,i)perylene	3.38	5.00	68		3.09	5.00	62		0.01-219	9	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Subcontract Lab Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

December 11, 2015. Service Request No: K1513273

Howard Holmes.

ALS Environmental
1317 South 13th Avenue
Kelso, WA 98626

Laboratory Result for: Stericycle.
Dear Howard:

Enclosed are the results of the sample(s) submitted to our laboratory on November 20, 2015. For Your reference, these analyses have been assigned our service request number: **K1513273.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current TNI standards, where applicable, and considered in their entirety, and ALS Environmental is not responsible for use of less than the final complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. In accordance to the TNI 2009 Standard, a statement on the estimated uncertainty of measurement of any quantitative analysis will be supplied upon request.

Please contact me if you have any questions. My direct line is 281-575-2279. You may also contact me via email at Arthi.Kodur@alsglobal.com

Respectfully submitted,

ALS Group USA Corp., dba ALS Environmental

Arthi Kodur
Project Manager

Page 1 of _____

Certificate of Analysis

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS ENVIRONMENTAL

Client:	Stericycle - Morton, WA	**Service Request No.:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Received:**	11/20/15
Sample Matrix:	Water		

ALS ENVIRONMENTAL NARRATIVE

All analyses were performed in adherence to the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

One water sample was received for analysis at ALS Environmental – Houston HRMS on 11/20/15.

The date of receipt currently references the date ALS Environmental-Kelso received the samples (11/18/15) and not the date ALS Environmental-Houston HRMS received the samples (11/20/15).

The sample was received at 2.6°C in good condition and is consistent with the accompanying chain of custody form. The sample was stored in a refrigerator at 4°C upon receipt at the laboratory.

Data Validation Notes and Discussion

Precision and Accuracy

EQ1500688: Laboratory Control Spike/Duplicate Laboratory Control Spike (LCS/DLCS) samples were analyzed and reported in lieu of an MS/DMS for this extraction batch. The batch quality control criteria were met.

Detection Limits

Detection limits are calculated for each analyte in each sample by measuring the height of the noise level for each quantitation ion for the associated labeled standard. The concentration equivalent to 2.5 times the height of the noise is then calculated using the appropriate response factor and the weight of the sample. The calculated concentration equals the detection limit.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS group USA Corp dba ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.

Client: Stericycle - Morton, WA **Service Request:**K1513273
Pro ect: Priority Pollutants 2015/MO PP 111815

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K1513273-001	PP111815	11/18/2015	1240

Service Request Summary

Folder : **K1513273**
Client Name: Stericycle - Morton, WA
Project Name: Priority Pollutants 2015
Project Number: MO PP 111815

Report To: Bridget Kelly
Stericycle
830 Westlake Ave
P.O. Box 1229
Morton, WA 98356
USA

Phone Number:
Cell Number:
Fax Number:
E-mail: bridget.kelly@stericycle.com

Project Chemist: Howard Holmes
Originating Lab: KELSO
Logged By: SWOLF
Date Received: 11/18/15
Internal Due Date: 12/4/2015
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y

Report to MDL?: Y
P.O. Number:
EDD: No EDD Specified

5	1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserved
3	100 ml-Plastic Cup Sterile Na2S2O3
3	40 ml-Glass Vial VOA CLEAR Tef/Silicone Septa HCL
3	40 mL-Glass Vial GRO CLEAR Tef/Silicone Septa HCL
2	1000 mL-Plastic Bottle NM CLEAR Unpreserved
1	500 mL-Plastic Bottle NM CLEAR NaOH
1	500 mL-Plastic Bottle NM CLEAR H2SO4
1	500 mL-Glass Bottle NM AMBER Teflon Liner HCL
1	500 mL-Glass Bottle NM AMBER Teflon Liner H2SO4
1	300 mL-Plastic Bottle NM CLEAR Unpreserved
1	250 ml-Plastic Bottle WM CLEAR HNO3
1	250 mL-Fluoropoly Blue Label WM HCL
1	1000 mL-Glass Bottle NM AMBER Teflon Liner HCL

Location: K-Disposed, K-AUTOCLAVE, In Lab, K-Delilah-57, K-Misty-9, K-HERK-E1, E-Disposed

Pressure Gas:

				KELSO															
Lab Samp No.	**Client Samp No**	**Matrix**	**Collected**	Ammonia/SM 4500-NH3 G	BOD 5 Day/SM 5210 B	Chloride/300.0	CN T/SM 4500-CN- E	CN WAD/SM 4500-CN- E	COD T/SM 5220 C	Cond Spec/120.1	F/300.0	Fec Coli MF/SM 9222 D	NO2 NO3 T/353.2	O Phos T/365.3	OG HEM/1664A	Oxygen/SM 4500-O G	pH/SM 4500-H+ B	Phenolics/420.1	Phos T/365.3
K1513273-001	PP111815	Water	11/18/15 1240	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V

Folder Comments:

Tier II

							KELSO			KELSO		KELSO	HOUSTON	KELSO	
Qntray EC/SM 9223 B	Qntray Tot C/SM 9223 B	SO4/300.0	TDS/SM 2540 C	TKN/ASTM D1426-08B	TS Fixed/160.4	TSS/SM 2540 D	Hg LL T/1631E	Metals T/200.7	Metals T/200.8	NW TPH SGT/NWTPH-Dx	PEST_PCB/608	SVO LL/625	Dioxins Furans/1613B	NW_GAS/NWTPH-Gx	VOC_FP/624
V	V	V	V	V	V	V	V	V	V	V	V	V	II	V	V

Service Request Summary

Folder : **K1513273**
Client Name: Stericycle - Morton, WA
Project Name: Priority Pollutants 2015
Project Number: MO PP 111815

Report To: Bridget Kelly
Stericycle
830 Westlake Ave
P.O. Box 1229
Morton, WA 98356
USA

Phone Number:
Cell Number:
Fax Number:
E-mail: bridget.kelly@stericycle.com

Project Chemist: Howard Holmes
Originating Lab: KELSO
Logged By: SWOLF
Date Received: 11/18/15
Internal Due Date: 12/4/2015
QAP: LAB QAP
Qualifier Set: Lab Standard
Formset: Lab Standard
Merged?: Y

Report to MDL?: Y
P.O. Number:
EDD: No EDD Specified

5	1000 ml-Glass Bottle NM AMBER Teflon Liner Unpreserved
3	100 ml-Plastic Cup Sterile Na2S2O3
3	40 ml-Glass Vial VOA CLEAR Tef/Silicone Septa HCL
3	40 mL-Glass Vial GRO CLEAR Tef/Silicone Septa HCL
2	1000 mL-Plastic Bottle NM CLEAR Unpreserved
1	500 mL-Plastic Bottle NM CLEAR NaOH
1	500 mL-Plastic Bottle NM CLEAR H2SO4
1	500 mL-Glass Bottle NM AMBER Teflon Liner HCL
1	500 mL-Glass Bottle NM AMBER Teflon Liner H2SO4
1	300 mL-Plastic Bottle NM CLEAR Unpreserved
1	250 ml-Plastic Bottle WM CLEAR HNO3
1	250 mL-Fluoropoly Blue Label WM HCL
1	1000 mL-Glass Bottle NM AMBER Teflon Liner HCL

Location: K-Disposed, K-AUTOCLAVE, In Lab, K-Delilah-57, K-Misty-9, K-HERK-E1, E-Disposed

Pressure Gas:

Test Comments:

Group	Test/Method	Samples	Comments
GenChem	BOD 5 Day/SM 5210 B	1	Investigation sample: BOD Range unknown
Metals	Metals T/200.8	2	Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Mo,Ni,Se,Ag,Tl,Zn
Metals	Metals T/200.7	1	Ca,Fe,Mg,K,Na
Semivoa GCMS	Dioxins Furans/1613B	1	2,3,7,8-TCDD
VOA GCMS	VOC_FP/624	2	MRL: 0.5ug/L

Data Qualifiers

HRMS Qualifier Set

B Indicates the associated analyte was found in the method blank at >1/10th the reported value.

E Estimated value. The reported concentration is above the calibration range of the instrument.

H Sample extracted and/or analyzed out of suggested holding time.

J Estimated value. The reported concentration is below the MRL.

K The ion abundance ratio between the primary and secondary ions were outside of theoretical acceptance limits. Reported concentration is a conservative estimate, however EMPC correction was not applied.

P Chlorodiphenyl ether interference was present at the retention time of the target analyte. Reported result should be considered an estimate.

Q Monitored lock-mass indicates matrix-interference. Reported result is estimated.

S Signal saturated detector. Result reported from dilution.

U Compound was analyzed for, but was not detected (ND).

X See Case Narrative.

Y Isotopically Labeled Standard recovery outside of acceptance limits. In all cases, the signal-to-nois ratios are greater than 10:1, making the recoveries acceptable.

i The MDL/MRL have been elevated due to a matrix interference.

ALS Laboratory Group

Acronyms

Cal	Calibration
Conc	CONCentration
Dioxin(s)	Polychlorinated dibenzo-p-dioxin(s)
EDL	Estimated Detection Limit
EMPC	Estimated Maximum Possible Concentration
Flags	Data qualifiers
Furan(s)	Polychlorinated dibenzofuran(s)
g	Grams
ICAL	Initial CALibration
ID	IDentifier
Ions	Masses monitored for the analyte during data acquisition
L	Liter (s)
LCS	Laboratory Control Sample
DLCS	Duplicate Laboratory Control Sample
MB	Method Blank
MCL	Method Calibration Limit
MDL	Method Detection Limit
mL	Milliliters
MS	Matrix Spiked sample
DMS	Duplicate Matrix Spiked sample
NO	Number of peaks meeting all identification criteria
PCDD(s)	Polychlorinated dibenzo-p-dioxin(s)
PCDF(s)	Polychlorinated dibenzofuran(s)
ppb	Parts per billion
ppm	Parts per million
ppq	Parts per quadrillion
ppt	Parts per trillion
QA	Quality Assurance
QC	Quality Control
Ratio	Ratio of areas from monitored ions for an analyte
% Rec.	Percent recovery
RPD	Relative Percent Difference
RRF	Relative Response Factor
RT	Retention Time
SDG	Sample Delivery Group
S/N	Signal-to-noise ratio
TEF	Toxicity Equivalence Factor
TEQ	Toxicity Equivalence Quotient

State Certifications, Accreditations, and Licenses

Agency	Number	Expire Date
Arizona Department of Health Services	AZ0793	5/27/2016
Arkansas Department of Environmental Quality	14-038-0	6/16/2016
California Department of Health Services	2452	2/28/2017
Florida Department of Health	E87611	6/30/2016
Kansas Department of Health and Environment	E-10406	1/31/2016
Louisiana Department of Environmental Quality	03048	6/30/2016
Louisiana Department of Health and Hospitals	LA150026	12/31/2015
Maine Center for Disease Control and Prevention	2014019	6/5/2016
Maryland Department of the Environment	343	6/30/2016
Michigan Depratment of Environmental Quality	9971	6/30/2016
Minnesota Department of Health	840911	12/31/2015
Nebraska Department of Health and Human Services	NE-OS-25-13	6/30/2016
New Mexico Environment Department	TX02694	6/30/2016
New York Department of Health	11707	4/1/2016
Oregon Environmental Laboratory Accreditation Program	TX200002	3/24/2016
Pennsylvania Department of Environmental Protection	68-03441	6/30/2016
Texas Commision on Environmental Quality	TX104704216-14-5	6/30/2016
United States Department of Agriculture	P330-14-00067	2/21/2017
West Virginia Department of Environmental Protection	347	6/30/2016

ALS ENVIRONMENTAL – Houston
Data Processing/Form Production and Peer Review Signatures

SR# Unique ID K1513273 DB-5MSUI SPB-Octyl

First Level - Data Processing - to be filled by person generating the forms

Date: 12/10/15 Analyst: JC Samples: 001

Second Level - Data Review – to be filled by person doing peer review

Date: 12/10/15 Analyst: JP Samples: 001

Chain of Custody

ALS Environmental - Houston HRMS
10450 Stancliff Rd, Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Intra-Network Chain of Custody

1317 South 13th Avenue • Kelso, WA 98626 • 1-360-577-7222 • FAX 1-360-636-1068

ALS Contact: Howard Holmes

Project Name: Priority Pollutants 2015
Project Number: MO PP 111815
Project Manager: Randy Beaty
Company: Stericycle
QAP: LAB QAP

Lab Code	Client Sample ID	# of Cont.	Matrix	Sample Date	Sample Time	Date Received	Send To	Dioxins Furans 1613B
K1513273-001	PP111815	1	Water	11/18/15	1240	11/18/15	HOUSTON	I

K1513273 5
Stericycle
Priority Pollutants 2015

Test Comments

Dioxins Furans - 1613B K1513273-001 2,3,7,8 TCDD only

Special Instructions/Comments	Turnaround Requirements	Report Requirements	Invoice Information
Please provide the electronic (PDF and EDD) report to the following e-mail address: ALKLS.Data@alsglobal.com. pH Checked _____	____RUSH (Surcharges Apply) PLEASE CIRCLE WORK DAYS 1 2 3 4 5 ____ STANDARD Requested FAX Date: _____ Requested Report Date: 12/04/15	X I. Results Only ____ II. Results + QC Summaries ____ III. Results + QC and Calibration Summaries ____ IV. Data Validation Report with Raw Data PQL/MDL/J N EDD N	PO# 51K1513273 Bill to

Relinquished By: 11/19/15 Received By: 11/20/15 Airbill Number:

ALS Environmental

Cooler Receipt Form

Project Chemist AK

Client/Project Stericycle

Thermometer ID SMO 4

Date/Time Received: 11/20/15 8:45 Initials: AL

Date/Time Logged in: 11/20/15 Initials AL

1. Method of delivery: ○ US Mail ✓ Fed Ex ○ UPS ○ DHL ○ Courier ○ Client
2. Samples received in: ✓ Cooler ○ Box ○ Envelope ○ Other
3. Were custody seals on coolers? ✓ Yes ○ No
   Were they intact? ✓ Yes ○ No ○ N/A
   Were they signed and dated? ✓ Yes ○ No ○ N/A
   If yes, how many and where? 1 Seal
4. Packing Material: ○ Inserts ○ Baggies ✓ Bubble Wrap ✓ Gel Packs ○ Wet Ice ○ Sleeves ○ Other
5. Foreign or Regulated Soil? ○ Yes ✓ No Location of Sampling:

Cooler Tracking Number	COC ID	Date Opened	Time Opened	Opened By	Temp °C	Temp Blank?
6447 9268 4130		11/20/15	~~10~~ AL 11/20/15 9:45	AL	1.6/2.6	☑
						☐
						☐
						☐

6. Were custody papers properly filled out (ink, signed, dated, etc)? ✓ Yes ○ No
7. Did all bottles arrive in good condition (not broken, no signs of leakage)? ✓ Yes ○ No
8. Were all sample labels complete (i.e., sample ID, analysis, preservation, etc)? ✓ Yes ○ No
9. Were appropriate bottles/containers and volumes received for the requested tests? ✓ Yes ○ No
10. Did sample labels and tags agree with custody documents? ✓ Yes ○ No

Notes, Discrepancies, & Resolutions:

Service request Label: K1513273 5
Stericycle
Priority Pollutants 2015

10450 Stancliff Rd., Suite 210
Houston, TX 77099
T: +1 713 266 1599
F: +1 713 266 1599
www.alsglobal.com

SAMPLE ACCEPTANCE POLICY

This policy outlines the criteria samples must meet to be accepted by ALS Environmental – Houston HRMS.

Cooler Custody Seals (desirable, mandatory if specified in SAP):

- ✓ Intact on outside of cooler, signed and dated

Chain-of-Custody (COC) documentation (mandatory):

The following is required on each COC:

- ✓ Sample ID, the location, date and time of collection, collector's name, preservation type, sample type, and any other special remarks concerning the sampleThe COC must be completed in ink.
- ✓ Signature and date of relinquishing party.

In the absence of a COC at sample receipt, the COC will be requested from the client.

Sample Integrity (mandatory):

Samples are inspected upon arrival to ensure that sample integrity was not compromised during transfer to the laboratory.

- ✓ Sample containers must arrive in good condition (not broken or leaking).
- ✓ Samples must be labeled appropriately, including Sample IDs, and requested test using durable labels and indelible ink.
- ✓ The correct type of sample bottle must be used for the method requested.
- ✓ An appropriate sample volume, or weight, must be received.
- ✓ Sample IDs and number of containers must reconcile with the COC.
- ✓ Samples must be received within the method defined holding time.

Temperature Requirement (varies by sample matrix):

- ✓ Aqueous and Non-aqueous samples must be shipped and stored cold, at 0 to 6ºC.
- ✓ Tissue samples must be shipped and stored frozen, at -20 to -10ºC.
- ✓ Air samples are shipped and stored cold, at 0 to 6ºC
- ✓ The sample temperature must be recorded on the COC

All cooler inspections are documented on the Cooler Receipt Form (CRF). A separate CRF is completed for each service request. Any samples not meeting the above criteria are noted on the CRF and the Project Manager notified. The Project Manager must resolve any sample integrity issues with the client prior to proceeding with the analysis. Such resolutions are documented in writing and filed with the project folder. Data associated with samples received outside of this acceptance policy will be qualified on the case narrative of the final report

Preparation Information Benchsheets

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

Preparation Information Benchsheet

Prep Run#: 251206 **Prep WorkFlow:** OrgExtAq(365) **Status:** Prepped
Team: Semivoa GCMS/JPHAN **Prep Method:** Method Sep Funnel/Jar **Prep Date/Time:** 12/3/15 11:15 AM

#	Lab Code	Client ID	B#	Method /Test	pH	Cl	Matrix	Amt. Ext.	Sample Description
1	E1501113-004	L799750-04	.01	1613B/Dioxins Furans	7	x	Ground Water	1061mL	Clear Colorless Liquid
2	E1501116-001	A Line dioxin	.01	1613B/Dioxins Furans	2	x	Water	1081mL	Turbid Orange Liquid
3	E1501116-002	B Line dioxin	.01	1613B/Dioxins Furans	2	x	Water	1087mL	Chunky Turbid Orange Liquid
4	E1501121-001	L800461-01	.01	1613B/Dioxins Furans	7	x	Ground Water	974mL	Turbid Tan Liquid
5	E1501121-002	L800461-02	.01	1613B/Dioxins Furans	7	x	Ground Water	952mL	Turbid Tan Liquid. Sample contained alot of solid.
6	E1501121-003	L800461-03	.01	1613B/Dioxins Furans	10/8	x	Ground Water	796mL	Clear Colorless Liquid. Needed 8 drops of sulfuric acid to bring down
7	E1501123-001	1K50817-02	.01	1613B/Dioxins Furans	6	x	Water	962mL	Orange grainy particles colorless Liquid
8	E1501124-001	HS15110565-01 / Mop Water	.01	1613B/Dioxins Furans	6	x	Water	705mL	Thick Milky Liquid
9	E1501125-001	OUTFALL 004	.01	1613B/Dioxins Furans	4	x	Wastewater	980mL	Turbid Gold Liquid
10	E1501125-002	OUTFALL 005	.01	1613B/Dioxins Furans	4	x	Wastewater	1014mL	Turbid Gold Liquid
11	E1501127-001	2107990 001	.01	1613B/Dioxins Furans	7	x	Drinking Water	1037mL	Clear Colorless Liquid
12	EQ1500688-01	MB		1613B/Dioxins Furans	5	x	Liquid	1000mL	
13	EQ1500688-02	LCS		1613B/Dioxins Furans	5	x	Liquid	1000mL	
14	EQ1500688-03	DLCS		1613B/Dioxins Furans	5	x	Liquid	1000mL	
15	EQ1500688-04	MB		1613B/Dioxins Furans	5	x	Drinking Water	1000mL	
16	EQ1500688-05	LCS		1613B/Dioxins Furans	5	x	Drinking Water	1000mL	
17	EQ1500688-06	DLCS		1613B/Dioxins Furans	5	x	Drinking Water	1000mL	
18	J1509051-001	Mill Discharge (EFF-1)	.01	1613B/Dioxins Furans	7	x	Water	990mL	Thick Muddy Brown Liquid
19	J1509177-001	MWB- 32	.03	1613B/Dioxins Furans	7	x	Water	988mL	Cloudy Orange Liquid
20	J1509177-002	GP-34B	.03	1613B/Dioxins Furans	7	x	Water	957mL	Cloudy Tan Liquid
21	J1509177-003	GP-34A	.03	1613B/Dioxins Furans	7	x	Water	963mL	Cloudy Colorless Liquid
22	K1513046-001	BP Effluent	.01	1613B/Dioxins Furans	2	x	Water	964mL	Cloudy Orange Liquid
23	K1513265-001	WA093-BE-102615 K5 Acid	.01	1613B/Dioxins Furans	2	x	Water	1019mL	Cloudy Orange Liquid
24	K1513265-002	WA093-BE-102615 K5 Caustic	.01	1613B/Dioxins Furans	7	x	Water	1049mL	Cloudy Amber Brown Liquid
25	K1513273-001	PP111815	.06	1613B/Dioxins Furans	7	x	Water	1042mL	Cloudy Tan Liquid

Preparation Information Benchsheet

Prep Run#: 251206 **Prep WorkFlow:** OrgExtAq(365) **Status:** Prepped
Team: Semivoa GCMS/JPHAN **Prep Method:** Method Sep Funnel/Jar **Prep Date/Time:** 12/3/15 11:15 AM

Spiking Solutions

Name:	1613B Labeled Working Standard	Inventory ID	86083	Logbook Ref:	86083 DE 11/24/15 2-4ng/mL	Expires On:	04/23/2016

J1509177-001	1,000.00µL	J1509177-002	1,000.00µL	J1509177-003	1,000.00µL	K1513046-001	1,000.00µL	K1513265-001	1,000.00µL	K1513265-002	1,000.00µL
K1513273-001	1,000.00µL										

Name:	1613B Matrix Working Standard	Inventory ID	86089	Logbook Ref:	86089 DE 11/20/15 2-20ng/mL	Expires On:	05/18/2016

EQ1500688-02	100.00µL	EQ1500688-03	100.00µL	EQ1500688-05	100.00µL	EQ1500688-06	100.00µL

Name:	8290/1613B Cleanup Working Standard	Inventory ID	86166	Logbook Ref:	86166 11/25/2015 CID 8.0 ng/ml	Expires On:	05/23/2016

E1501113-004	100.00µL	E1501116-001	100.00µL	E1501116-002	100.00µL	E1501121-001	100.00µL	E1501121-002	100.00µL	E1501121-003	100.00µL
E1501123-001	100.00µL	E1501124-001	100.00µL	E1501125-001	100.00µL	E1501125-002	100.00µL	E1501127-001	100.00µL	EQ1500688-01	100.00µL
EQ1500688-02	100.00µL	EQ1500688-03	100.00µL	J1509051-001	100.00µL	J1509177-001	100.00µL	J1509177-002	100.00µL	J1509177-003	100.00µL
K1513046-001	100.00µL	K1513265-001	100.00µL	K1513265-002	100.00µL	K1513273-001	100.00µL				

Name:	1613B Labeled Working Standard	Inventory ID	86169	Logbook Ref:	JP 86169 11-25-15 2-4 ng/mL	Expires On:	04/23/2016

E1501113-004	1,000.00µL	E1501116-001	1,000.00µL	E1501116-002	1,000.00µL	E1501121-001	1,000.00µL	E1501121-002	1,000.00µL	E1501121-003	1,000.00µL
E1501123-001	1,000.00µL	E1501124-001	1,000.00µL	E1501125-001	1,000.00µL	E1501125-002	1,000.00µL	E1501127-001	1,000.00µL	EQ1500688-01	1,000.00µL
EQ1500688-02	1,000.00µL	EQ1500688-03	1,000.00µL	EQ1500688-04	1,000.00µL	EQ1500688-05	1,000.00µL	EQ1500688-06	1,000.00µL	J1509051-001	1,000.00µL
J1509177-002	1,000.00µL	J1509177-003	1,000.00µL	K1513046-001	1,000.00µL	K1513265-001	1,000.00µL	K1513265-002	1,000.00µL	K1513273-001	1,000.00µL

Preparation Materials

Sensafe Free Chlorine WTR CHK	LM 3/19/15 (79756)	Carbon, High Purity	CID 11/26/2015 (86176)	Ethyl Acetate 99.9% Minimum EtOAc	LM 10/8/15 (84814)
Glass Wool	CID 11/12/2015 (85842)	Hexanes 95%	CID 11/12/2015 (85840)	Dichloromethane (Methylene Chloride) 99.9% MeCl2	DE 11/2/15 (85540)
Sodium Chloride Reagent Grade NaCl	C2-65-5 (38670)	Sodium Hydroxide Reagent Grade NaOH	LM 09/02/14 (74232)	Sodium Sulfate Anhydrous Reagent Grade Na2SO4	LM 9/24/15 (84454)
Tridecane (n-Tridecane)	JP 11-24-15 (86139)	ColorpHast pH-Indicator Strips	DE 11/11/15 (85766)	Silica Gel	11/19/2015 CID (86009)
sulfuric acid	CID 11/06/15 (85764)	Toluene 99.9% Minimum	DE 11/24/15 (86153)		

Preparation Steps

Step:	Extraction	Step:	Acid Clean	Step:	Silica Gel Clean	Step:	Final Volume
Started:	12/3/15 11:15	Started:	12/4/15 13:00	Started:	12/7/15 09:00	Started:	12/7/15 14:00
Finished:	12/3/15 18:00	Finished:	12/4/15 13:05	Finished:	12/7/15 10:40	Finished:	12/7/15 14:55
By:	JPHAN	By:	CDIAZ	By:	CDIAZ	By:	CDIAZ
Comments		Comments		Comments		Comments	

Preparation Information Benchsheet

Prep Run#: 251206 **Prep WorkFlow:** OrgExtAq(365) **Status:** Prepped
Team: Semivoa GCMS/JPHAN **Prep Method:** Method Sep Funnel/Jar **Prep Date/Time:** 12/3/15 11:15 AM

Comments:

Reviewed By: ak Date: 12/8/15

Chain of Custody

Relinquished By: Date:

Received By: Date:

Extracts Examined

Yes No

Analytical Results

ALS Environmental - Houston HRMS
10450 Stancliff Rd., Suite 210, Houston, TX 77099
Phone (713)266-1599 Fax (713)266-0130
www.alsglobal.com

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15 12:40
Sample Matrix:	Water	**Date Received:**	11/18/15 16:20
Sample Name:	PP111815	**Units:**	pg/L
Lab Code:	K1513273-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/09/15 09:56
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	12/3/15
Sample Amount:	1042mL	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P502502	**Blank File Name:**	P502478
ICAL Date:	06/30/15	**Cal Ver. File Name:**	P502490

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	0.999	4.80			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	11/18/15 12:40
Sample Matrix:	Water	**Date Received:**	11/18/15 16:20
Sample Name:	PP111815	**Units:**	Percent
Lab Code:	K1513273-001	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/09/15 09:56
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	12/3/15
Sample Amount:	1042mL	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P502502	**Blank File Name:**	P502478
ICAL Date:	06/30/15	**Cal Ver. File Name:**	P502490

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	756.538	38		25-164	0.79	1.018
37Cl-2,3,7,8-TCDD	800	464.751	58		35-197	NA	1.020

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	pg/L
Lab Code:	EQ1500688-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/08/15 13:58
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	12/3/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P502478	**Blank File Name:**	P502478
ICAL Date:	06/30/15	**Cal Ver. File Name:**	P502475

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	ND	U	2.89	5.00			1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	Percent
Lab Code:	EQ1500688-01	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/08/15 13:58
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	12/3/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P502478	**Blank File Name:**	P502478
ICAL Date:	06/30/15	**Cal Ver. File Name:**	P502475

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	902.276	45		25-164	0.81	1.018
37Cl-2,3,7,8-TCDD	800	450.418	56		35-197	NA	1.020

Accuracy & Precision

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10450 Stancliff Rd., Suite 210, Houston TX 77099
Phone (713)266-1599 Fax (713)266-0130
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dba ALS Environmental

QA/QC Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Analyzed:**	12/09/15
Sample Matrix:	Water	**Date Extracted:**	12/03/15

Duplicate Lab Control Sample Summary
Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Units:**	pg/L
Prep Method:	Method Sep Funnel/Jar	**Basis:**	NA
		Analysis Lot:	475937

	Lab Control Sample EQ1500688-02			Duplicate Lab Control Sample EQ1500688-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
2,3,7,8-TCDD	206	200	103	214	200	107	67-158	4	50

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1500688-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/09/15 20:17
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	12/3/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P502513	**Blank File Name:**	P502478
ICAL Date:	06/30/15	**Cal Ver. File Name:**	P502506

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	206		0.971	5.00	0.72	1.001	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1500688-02	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/09/15 20:17
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	12/3/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P502513	**Blank File Name:**	P502478
ICAL Date:	06/30/15	**Cal Ver. File Name:**	P502506

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	1056.588	53		25-164	0.78	1.018
37Cl-2,3,7,8-TCDD	800	464.538	58		35-197	NA	1.020

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	pg/L
Lab Code:	EQ1500688-03	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/09/15 21:06
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	12/3/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P502514	**Blank File Name:**	P502478
ICAL Date:	06/30/15	**Cal Ver. File Name:**	P502506

Native Analyte Results

Analyte Name	Result	Q	EDL	MRL	Ion Ratio	RRT	Dilution Factor
2,3,7,8-TCDD	214		1.47	5.00	0.75	1.001	1

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1513273
Project:	Priority Pollutants 2015/MO PP 111815	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Duplicate Lab Control Sample	**Units:**	Percent
Lab Code:	EQ1500688-03	**Basis:**	NA

Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans by HRGC/HRMS

Analysis Method:	1613B	**Date Analyzed:**	12/09/15 21:06
Prep Method:	Method Sep Funnel/Jar	**Date Extracted:**	12/3/15
Sample Amount:	1000mL	**Instrument Name:**	E-HRMS-07
		GC Column:	DB-5MSUI
Data File Name:	P502514	**Blank File Name:**	P502478
ICAL Date:	06/30/15	**Cal Ver. File Name:**	P502506

Labeled Standard Results

Labeled Compounds	Spike Conc.(pg)	Conc. Found (pg)	% Rec	Q	Control Limits	Ion Ratio	RRT
13C-2,3,7,8-TCDD	2000	997.161	50		25-164	0.79	1.018
37Cl-2,3,7,8-TCDD	800	442.146	55		35-197	NA	1.019

May 24, 2018 Service Request No:K1804431

Randy Beaty
Stericycle
830 Westlake Ave
P.O. Box 1229
Morton, WA 98356

Laboratory Results for: Stericycle - Waste Water R&D

Dear Randy,

Enclosed are the results of the sample(s) submitted to our laboratory May 11, 2018
For your reference, these analyses have been assigned our service request number **K1804431.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 FA +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: Stericycle - Morton, WA
Project: Stericycle - Waste Water R&D
Sample Matrix: Water

Service Request: K1804431
Date Received: 05/11/2018

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier I data deliverables. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt:

One water sample was received for analysis at ALS Environmental on 05/11/2018. The sample was received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by _____ Date 05/24/2018

SAMPLE DETECTION SUMMARY

CLIENT ID: Profile 050918			Lab ID: K1804431-001			
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Halides, Total Organic (TOX)	14100			250	ug/L	9020B
Solids, Total Suspended (TSS)	480			200	mg/L	SM 2540 D
Arsenic	3.3			2.0	ug/L	6020A
Barium	4930			0.20	ug/L	6020A
Cadmium	0.756			0.080	ug/L	6020A
Chromium	26.7			0.80	ug/L	6020A
Lead	2.81			0.080	ug/L	6020A
Selenium	8.6			4.0	ug/L	6020A
Silver	30.2			0.80	ug/L	6020A

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Stericycle - Morton, WA **Service Request:**K1804431
Pro ect: Stericycle - Waste Water R D/050918

SAMPLE CROSS-REFERENCE

SAMPLE	CLIENT SAMPLE ID	DATE	TIME
K1804431-001	Profile 050918	5/9/2018	1200

CHAIN OF CUSTODY

ALS Environmental

1317 South 13th Ave., Kelso, WA 98626 | +1 360 577 7222 | +1 800 695 7222 | +1 360 636 1068 (fax)

SR# K1804431

PAGE 1 OF 1 COC#

PROJECT NAME: Stericycle Waste Water R&D
PROJECT NUMBER: 050918
PROJECT MANAGER: Randy Beaty
COMPANY NAME: Stericycle INC
ADDRESS: 830 Westlake AVE
CITY/STATE/ZIP: Morton WA 98356
E-MAIL ADDRESS: rbeaty@stericycle.com
PHONE #: 360-496-5988 FAX #: 360-496-5479
SAMPLER'S SIGNATURE:

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐ SIM PAH☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCBs Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081☐ 8141☐ 8151☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	Metals (Total or Dissolved) (See List below)	Cyanide☐ Hex-Chrom☐	(circle) pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS, Turb.	(circle) NH3-N, COD, TKN, TOC, DOC, NO2+NO3, T-Phos	TOX 9020	Alkalinity ☐ CO3☐ HCO3☐ AOX 1650☐ 506☐	Dioxins/Furans 1613☐ 8290☐	Dissolved Gases RSK 175☐ Methane☐ Ethane☐ Ethene☐ CO2☐				REMARKS
Profile 050918	5-9-18	12:00															X								
													X												
															X										

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

INVOICE INFORMATION

P.O. #
Bill To:

TURNAROUND REQUIREMENTS

___ 24 hr. ___ 48 hr.
___ 5 day
___ Standard (15 working days)
___ Provide FAX Results

Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al (As) Sb (Ba) Be B Ca (Cd) Co (Cr) Cu Fe (Pb) Mg Mn Mo Ni K (Ag) Na (Se) Sr Tl Sn V Zn (Hg)

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

***INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: ___ (CIRCLE ONE)**

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature	Date/Time 5-9-18 12:00 pm	Signature	Date/Time 5/11/18 0855	Signature	Date/Time	Signature	Date/Time
Printed Name Randy Beaty	Firm Stericycle	Printed Name SWOLF	Firm ALS	Printed Name	Firm	Printed Name	Firm

ALS

PC #2

Cooler Receipt and Preservation Form

Client: Stericycle Service Request K18: 04431

Received: 5-11-18 Opened: 5-11-18 By: DSP Unloaded: 5-11-18 By: DSP

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? 1 Top Front
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
0.4	0.4	1.8	1.8	0.0	379			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time
Profile 050918	1x 250mL Poly				2	HNO_3	0.5mL	RE1-1to-M	DSP	0915

Notes, Discrepancies, & Resolutions: _____

Miscellaneous Forms

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Analyst Summary report

Client: Stericycle - Morton, WA
Project: Stericycle - Waste Water R&D/050918
Service Request: K1804431

Sample Name: Profile 050918
Lab Code: K1804431-001
Sample Matrix: Water
Date Collected: 05/9/18
Date Received: 05/11/18

Analysis Method	Extracted/Digested By	Analyzed By
6020A	JHINSON	GJASPER
7470A	AMCKORNEY	AMCKORNEY
9020B		ESCHLOSS
SM 2540 D		SSPAIN

Sample Results

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Metals

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1804431
Project:	Stericycle - Waste Water R&D/050918	**Date Collected:**	05/09/18 12:00
Sample Matrix:	Water	**Date Received:**	05/11/18 08:55
Sample Name:	Profile 050918	**Basis:**	NA
Lab Code:	K1804431-001		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**3.3**	ug/L	2.0	1	05/17/18 07:14	05/14/18	
Barium	6020A	**4930**	ug/L	0.20	1	05/17/18 07:14	05/14/18	
Cadmium	6020A	**0.756**	ug/L	0.080	1	05/17/18 07:14	05/14/18	
Chromium	6020A	**26.7**	ug/L	0.80	1	05/17/18 07:14	05/14/18	
Lead	6020A	**2.81**	ug/L	0.080	1	05/17/18 07:14	05/14/18	
Mercury	7470A	ND U	ug/L	4.0	5	05/18/18 12:31	05/17/18	
Selenium	6020A	**8.6**	ug/L	4.0	1	05/17/18 07:14	05/14/18	
Silver	6020A	**30.2**	ug/L	0.80	10	05/17/18 07:38	05/14/18	

General Chemistry

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Client:	Stericycle - Morton, WA	**Service Request:**	K1804431
Project:	Stericycle - Waste Water R&D/050918	**Date Collected:**	05/09/18 12:00
Sample Matrix:	Water	**Date Received:**	05/11/18 08:55
Sample Name:	Profile 050918	**Basis:**	NA
Lab Code:	K1804431-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Halides, Total Organic (TOX)	9020B	**14100**	ug/L	250	25	05/21/18 10:43	
Solids, Total Suspended (TSS)	SM 2540 D	**480**	mg/L	200	1	05/14/18 13:16	

QC Summary Forms

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Metals

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1804431
Project:	Stericycle - Waste Water R&D/050918	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1806219-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	ND U	ug/L	0.50	1	05/17/18 07:10	05/14/18	
Barium	6020A	ND U	ug/L	0.050	1	05/17/18 07:10	05/14/18	
Cadmium	6020A	ND U	ug/L	0.020	1	05/17/18 07:10	05/14/18	
Chromium	6020A	ND U	ug/L	0.20	1	05/17/18 07:10	05/14/18	
Lead	6020A	ND U	ug/L	0.020	1	05/17/18 07:10	05/14/18	
Selenium	6020A	ND U	ug/L	1.0	1	05/17/18 07:10	05/14/18	
Silver	6020A	ND U	ug/L	0.020	1	05/17/18 07:10	05/14/18	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1804431
Project:	Stericycle - Waste Water R&D/050918	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1806296-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7470A	ND U	ug/L	0.20	1	05/18/18 11:46	05/17/18	

General Chemistry

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Analytical Report

Client:	Stericycle - Morton, WA	**Service Request:**	K1804431
Project:	Stericycle - Waste Water R&D/050918	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K1804431-MB1		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Halides, Total Organic (TOX)	9020B	ND U	ug/L	10	1	05/21/18 10:43	
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	1	05/14/18 13:16	

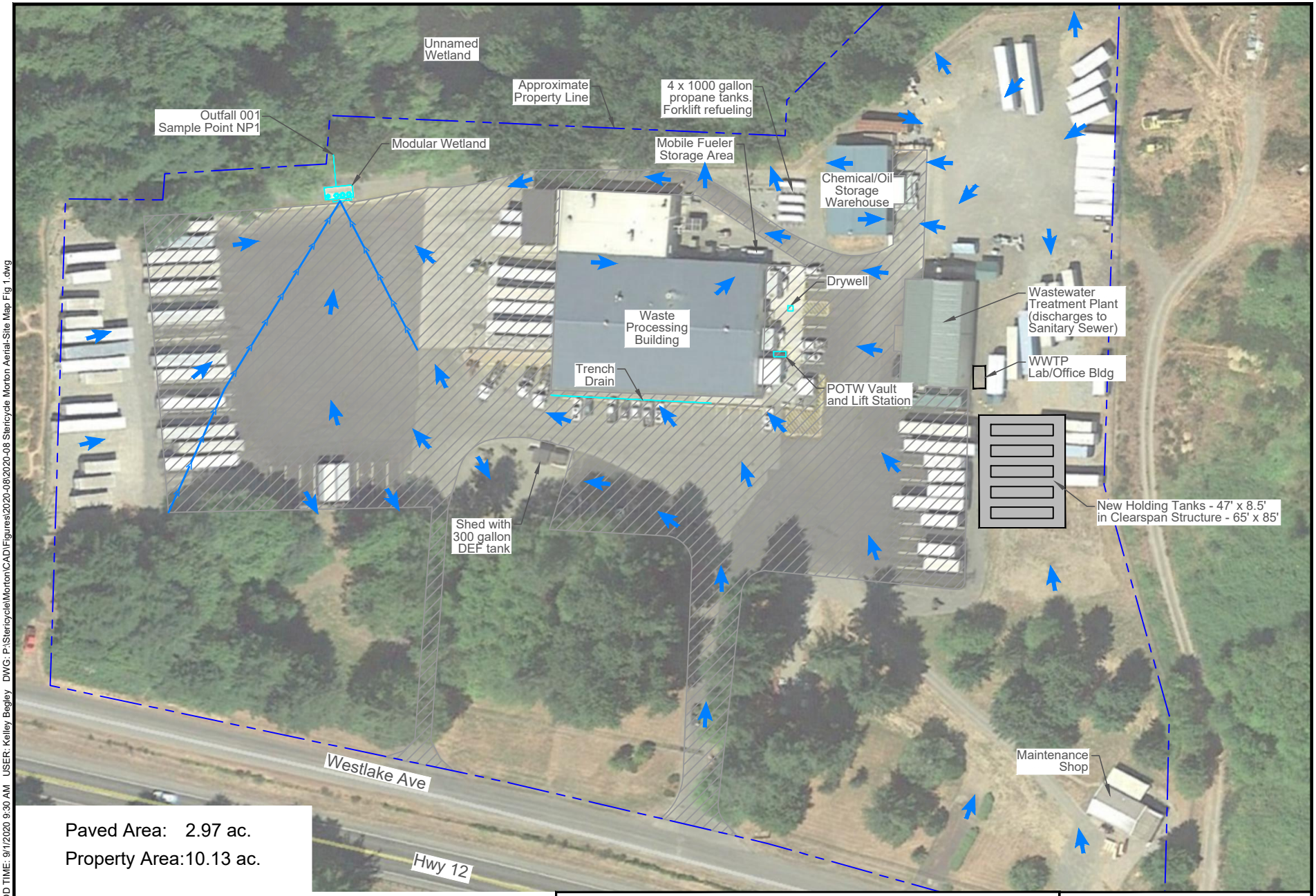
Client:	Stericycle - Morton, WA	**Service Request:**	K1804431
Project:	Stericycle - Waste Water R&D/050918	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K1804431-MB2		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	1	05/14/18 13:16	

Attachment F.1

Facility Site Map



Paved Area: 2.97 ac.
Property Area: 10.13 ac.

Legend
- Flow Direction Line
- Property Line
- Flow Direction
- Paved Surface

N

0 100
Scale in Feet

Stericycle Morton Facility
Morton, Washington

Site Map

DALTON OLMSTED FUGLEVAND

FIGURE 1

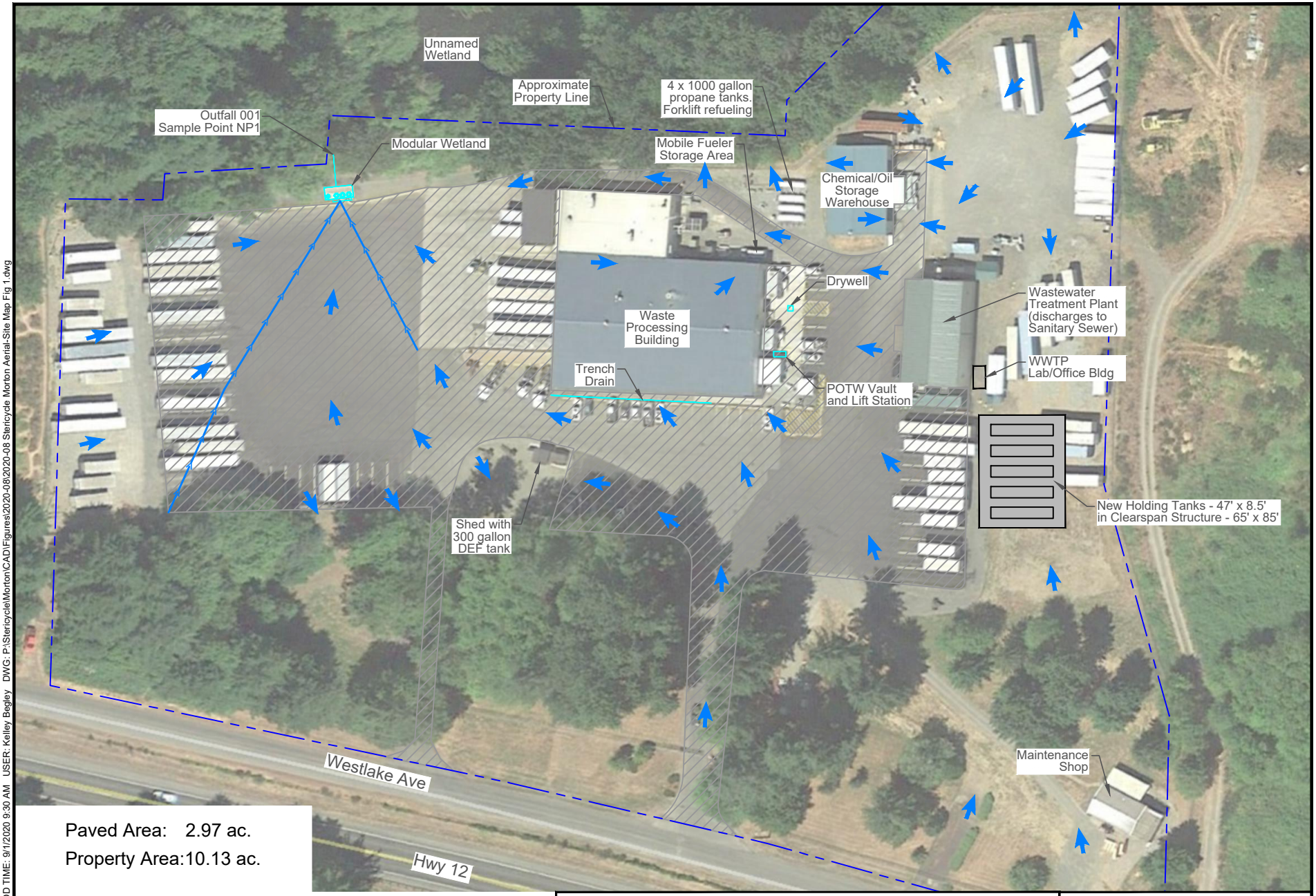
08/19/2020

PLOT TIME: 9/1/2020 9:30 AM MOD TIME: 9/1/2020 9:30 AM USER: Kelley Begley DWG: P:\Stericycle\Morton\CAD\Figures\2020-08\2020-08 Stericycle Morton Aerial-Site Map Fig 1.dwg

Attachment H.5

Facility Site Map

Showing Stormwater Drainage



Paved Area: 2.97 ac.
Property Area: 10.13 ac.

Legend
- Flow Direction Line
- Property Line
- Flow Direction
- Paved Surface

N

0 100
Scale in Feet

Stericycle Morton Facility
Morton, Washington

Site Map

DALTON OLMSTED FUGLEVAND

FIGURE 1

08/19/2020

PLOT TIME: 9/1/2020 9:30 AM MOD TIME: 9/1/2020 9:30 AM USER: Kelley Begley DWG: P:\Stericycle\Morton\CAD\Figures\2020-08\2020-08 Stericycle Morton Aerial-Site Map Fig 1.dwg