CERTIFICATE OF ANALYSIS



CLIENT Sears Ecological Applications Company, LLC

1914 Black River Blvd.

Rome, NY TEL 1-8888-4-SEACO 13440 FAX (315) 337-0117

ATTENTION David N. Wood

DATE RECEIVED Mar-20-09 WORK ORDER # R903207

DATE REPORTED Apr-09-09 **PROJECT FILE** Analysis of Anti-Icer

PROJECT NAME [none]

General Comments:

CARO Analytical Services employs methods which are based on those found in "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, published by the American Public Health Association (APHA); US EPA protocols found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846", 3rd Edition; and protocols published by the British Columbia Ministry of Environment (BCMOE).

Methods not described in these publications are conducted according to procedures accepted by appropriate regulatory agencies, and/or are done in accordance with recognized professional standards using accepted testing methodologies and quality control efforts except where otherwise agreed to by the client.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirity. CARO Analytical Services is not responsible for any loss or damage resulting directly or indirectly from error or omission in the conduct of testing. Liability is limited to the cost of analysis. Samples will be disposed of 30 days after the test report has been issued unless otherwise agreed to in writing.

- All solids results are reported on a dry weight basis unless otherwise noted
- Units: mg/kg = milligrams per kilogram, equivalent to parts per million (ppm)

mg/L = milligrams per Litre, equivalent to parts per million (ppm)

ug/L = micrograms per Litre, equivalent to parts per billion (ppb)

ug/g = micrograms per gram, equivalent to parts per million (ppm)

- "RDL" = reported detection limit
- \bullet "<" = less than reported detection limit

• "-" = not analyzed

CARO Analytical Services

Final Review Per: Patrick Novak, B.Sc.

Business Manager



R903207 WORK ORDER # **DATE REPORTED** Apr-09-09

Client ID : Sampled: Lab Number:	IceB' Gone II Mar-19-09 R903207-01				Pacific Northwest Snowfighters Specifications (2006)
Analyte		RDL	Units	Result	Value No
reeze Testing,	as per PNS				
Solids Passing Thr	ough #10 Sieve	1.0	%	100	> 99.0
Solids, Total Settle	eable	1.0	"	1.5	1.0
General Parame	eters				
BOD, 5-day		10	mg/kg	89000	n/a
Chemical Oxygen I	Demand	2000	"	210000	n/a
Chloride		0.01	% Weight	20.3	n/a
Cyanide (total)			mg/kg	< 0.1	0.2
Nitrogen, Ammoni	a as N	2	"	240	n/a
Nitrogen, Nitrate+	Nitrite as N	1	"	9	n/a
Nitrogen, Total Kje	eldahl	5	"	2220	n/a
pH (1:4 Solution)		0.1	pH	4.6	n/a
Phosphorus, Total		1	mg/kg	130	2500
Specific Gravity		0.001	g/mL	1.327	n/a
Total Metals, as	s per PNS				
Arsenic		0.3	mg/kg	2.0	5
Barium		1.0	"	1.2	100
Cadmium		0.01	"	< 0.01	0.2
Calcium		20	"	1750	n/a
Chromium		0.1	"	1.0	1
Copper		0.2	II .	1.6	1
Lead		0.1	II .	0.3	1
Magnesium		100	II .	58700	n/a
Mercury		0.03	II .	< 0.03	0.05
Potassium		10	II .	7130	n/a
Selenium		1.0	II .	< 1.0	5
Sodium		10	II .	1290	n/a
Zinc		0.5	"	3.0	10



WORK ORDER # R903207 DATE REPORTED Apr-09-09

Client ID :3% IceB'Gone IIPacific NorthwestSampled:Mar-19-09Snowfighters

Lab Number: R903207-02 **Specifications (2006)**

Analyte RDL Units Result Value Notes

Corrosion Rate Testing as per PNS

Effectiveness -40.0 % 9.9 30

QUALITY CONTROL DATA



Perpandi: Mari-24-09 Analyzed: Mer-24-09 Calcride	WORK ORDER # R903207			DATE	REPORTE)	Apr-09-09				
Perpandi: Mari-24-09 Analyzed: Mer-24-09 Calcride	Analyte			Units			%REC				Notes
Change (R900716-BS1)	General Parameters , Batch R900716										
## Prepared: Hen 2-1-09 Analyzed: Mar-2-09 **Token	Method Blank (R900716-BLK1)				Prepared: M	ar-21-09 Ana	alyzed: Mar-	24-09			
Chindred 10,00 10,01 10,000	Chloride	<	0.01	% Weight							
Duplicate (R900716-DUP1) Source: R903207-10* Prepared: Mar 24: 09 Analyzed: Mar-24: 09 3 20 General Parameters , Batch R900746 Source: R903207-10* Prepared: Ran-24: 09	Blank Spike (R900716-BS1)				Prepared: M	ar-21-09 Ana	alyzed: Mar-	24-09			
Chindie	Chloride	0.96	0.01	% Weight	1.00		96	90-110			
Secretal Parameters	Duplicate (R900716-DUP1)	Sourc	e: R90320	7-01	Prepared: M	ar-21-09 Ana	alyzed: Mar-	24-09			
Publicate (R900746-DUP1) Source: R90320-1-10 Propared & Analyzed: Mar-34-09 Source: R903046	Chloride	20.9	0.01	% Weight		20.3			3	20	
Specific Grinvity 1.323 0.01 g/mL 1.327 0.3 20	General Parameters , Batch R900746										
Method Blank (R900766-BLK1)	Duplicate (R900746-DUP1)	Sourc	e: R90320	7-01	Prepared & /	Analyzed: Ma	ar-24-09				
Method Blank (R900766-BLK1) Blonk 5-day	Specific Gravity	1.323	0.001	g/mL		1.327			0.3	20	
Bilank Spike (R900766-BS1) Prepared: Mar-25-09 Analyzed: Mar-30-09 Bilank Spike (R900766-BS1) Prepared: Mar-25-09 Analyzed: Mar-30-09 BOD, 5-day 190 10 mg/kg 198 96 80-120 BOD, 5-day 101000 10 mg/kg 88900 12 20 BOD, 5-day 101000 10 mg/kg 88900 12 20 BOD, 5-day 213 10 mg/kg 198 108 80-120 BOD, 5-day 213 10 mg/kg 198 108 80-120 BOD, 5-day 213 20 mg/kg 198 108 80-120 BOD, 5-day 2000 mg/kg 2000 200 mg/kg 2000 200 BOD, 5-day 2000 mg/kg 2000 200 200 BOD, 5-day 2000 mg/kg 2000 200 200 BOD, 5-day 2000 mg/kg 2000 200 200 BOD, 5-day 2000 2000 mg/kg 2000 200 200 BOD, 5-day 2000 2000 mg/kg 20000 200 200 BOD, 5-day 2000 2000 mg/kg 20000 200 200 BOD, 5-day 20000 200 mg/kg 20000 200 200 BOD, 5-day 20000 200 200 200 200 BOD, 5-day 20000 200 200 200 200 BOD, 5-day 20000 200 200 200 200 200 BOD, 5-day 20000 2000 200	General Parameters , Batch R900766										
Blank Spike (R900766-BS1) 190 10 190	Method Blank (R900766-BLK1)				Prepared: M	ar-25-09 Ana	alyzed: Mar-	30-09			
Prepared: Mar-25-09 Analyzed: Mar-30-09 May 190 190	BOD, 5-day	<	10	mg/kg			-				
Duplicate (R900766-DUP1) Source: R903207-b1 Prepared: Mar-25-09 Analyzed: Mar-30-09 12 20 80D, 5-day 101000 10 mg/kg 89500 12 20 Reference (R900766-SRM1) 213 10 mg/kg 198 108 80-120 × V BOD, 5-day 213 10 mg/kg 198 108 80-120 × V Wethod Blank (R900767-BLK1) Prepared & Analyzed: Mar-25-09 Wethod Blank (R900767-BLK1) Prepared & Analyzed: Mar-25-09 Chemical Oxygen Demand < 2000 mg/kg	Blank Spike (R900766-BS1)				Prepared: M	ar-25-09 Ana	alyzed: Mar-	30-09			
Publicate (R900766-DUP1) Sour-Reference (R900766-SRM1) 101000 101 101000 101 101000 101 101000 101 101000 101 101000 101 101000 101 101000 101000 1010000 1010000 1010000 1010000 1010000 1010000 10100000 101000000 1010000000 10100000000	BOD, 5-day	190	10	mg/kg	*		-				
Prepared: Mar-25-09 Analyzed: Mar-30-09 BOD, 5-day 213 10 mg/kg 198 108 80-120 BOD, 5-day 198 108 108 108	Duplicate (R900766-DUP1)	Sourc	e: R90320	7-01	Prepared: M	ar-25-09 Ana	alyzed: Mar-	30-09			
Prepared: Mar-25-09 Analyzed: Mar-30-09	BOD, 5-day	101000	10	mg/kg		89500	-		12	20	
Bolo, 5-day 213 10 mg/kg 198 108 80-120	Reference (R900766-SRM1)				Prepared: M	ar-25-09 Ana	alyzed: Mar-	30-09			
Method Blank (R900767-BLK1) Prepared & Analyzed: Mar-25-09 Method Blank (R900767-BS1) Prepared & Analyzed: Mar-25-09 Prep	BOD, 5-day	213	10	mg/kg			-				
Name	General Parameters , Batch R900767										
Prepared & Analyzed: Mar-25-09 Chemical Oxygen Demand	Method Blank (R900767-BLK1)				Prepared & A	Analyzed: Ma	ar-25-09				
Chemical Oxygen Demand	Chemical Oxygen Demand	<	2000	mg/kg							
Duplicate (R900767-DUP1) Source: R903207-01 Prepared & Analyzed: Mar-25-09 Chemical Oxygen Demand 209000 2000 mg/kg 209000 0 20 Arsenic < 0.3	Blank Spike (R900767-BS1)				Prepared & A	Analyzed: Ma	ar-25-09				
Chemical Oxygen Demand 209000 2000 mg/kg 209000 0 20	Chemical Oxygen Demand	<	2000	mg/kg	500		104	80-120			
Chemical Oxygen Demand 209000 2000 mg/kg 209000 0 20	Duplicate (R900767-DUP1)	Sourc	e: R90320	7-01	Prepared & A	Analyzed: Ma	ar-25-09				
Prepared: Mar-31-09 Analyzed: Apr-01-09 Arsenic < 0.3 mg/kg	Chemical Oxygen Demand	209000	2000	mg/kg					0	20	
Arsenic	Total Metals, as per PNS, Batch R90081	3									
Barium	Method Blank (R900813-BLK1)				Prepared: M	ar-31-09 Ana	alyzed: Apr-(01-09			
Cadmium											
Calcium Calcium Copper Copper Copper Condum Copper Copper Condum Cond											
Chromium <				"							
Lead < 0.1 " Magnesium < 10 " Mercury < 0.03 " Potassium < 10 " Selenium < 1.0 " Sodium < 10 " Zinc 0.5 " Duplicate (R900813-DUP1) Source: R903207-01 Prepared: Mar-31-09 Analyzed: Apr-01-09 Arsenic 2.0 0.3 mg/kg 2.0 2 20		<		"							
Magnesium											
Mercury 0.03 " Potassium 10 " Selenium 1.0 " Sodium 10 " Zinc 0.5 " Duplicate (R900813-DUP1) Source: R903207-01 Prepared: Mar-31-09 Analyzed: Apr-01-09 Arsenic 2.0 0.3 mg/kg 2.0 2 20				"							
Potassium < 10 "	•			"							
Sodium zinc < 10 " " Duplicate (R900813-DUP1) Source: R903207-01 * Prepared: Mar-31-09 Analyzed: Apr-01-09 Arsenic 2.0 0.3 mg/kg 2.0 2 20				"							
Zinc < 0.5 " Duplicate (R900813-DUP1) Source: R903207-01 Prepared: Mar-31-09 Analyzed: Apr-01-09 Arsenic 2.0 0.3 mg/kg 2.0 2 20	Selenium	<	1.0	"							
Duplicate (R900813-DUP1) Source: R903207-01 Prepared: Mar-31-09 Analyzed: Apr-01-09 Arsenic 2.0 0.3 mg/kg 2.0 2 20											
Arsenic 2.0 0.3 mg/kg 2.0 2 20					Dropared: M	ar_21 00 4~-	alvzodi Ameri	n1_00			
					гтератеа: М		aiyzeu: Apr-l	71-03	2	20	
	Arsenic Barium		1.0						2	20 20	

QUALITY CONTROL DATA



WORK ORDER # R903207			DAT	E REPORTEI)	Apr-09-09				
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	Rel % Diff(RPD)	RPD Limit	Notes
Total Metals, as per PNS, Batch R900813	(Continued)									
Duplicate (R900813-DUP1)	Sou	ırce: R90320	7-01	Prepared: M	ar-31-09 An	alyzed: Apr-()1-09			
Cadmium	<	0.01	mg/kg		<				20	
Calcium	1790	20	"		1750			2	20	
Chromium	1.0	0.1	"		1.0			6	20	
Copper	1.5	0.2			1.6			0.7	20	
Lead	0.3 55900	0.1 100			0.3 58700			5	20 20	
Magnesium Mercury	33300	0.03			<			3	20	
Potassium	7170	10	"		7130			0.6	20	
Selenium	<	1.0			<			0.0	20	
Sodium	1310	10	"		1290			2	20	
Zinc	3.4	0.5	"		3.0			11	20	
General Parameters, Batch K900977										
Method Blank (K900977-BLK1)				Prepared: M	ar-24-09 An	alyzed: Mar-	27-09			
Nitrogen, Total Kjeldahl	<	5	mg/kg							
Duplicate (K900977-DUP1)	Sou	ırce: R90320	7-01	Prepared: M	ar-24-09 An	alyzed: Mar-	27-09			
Nitrogen, Total Kjeldahl	2210	5	mg/kg		2220			0.8	20	
General Parameters, Batch K900982										
Method Blank (K900982-BLK1)				Prepared: M	ar-24-09 An	alyzed: Mar-	27-09			
Phosphorus, Total	<	1	mg/kg							
Duplicate (K900982-DUP1)	Soi	ırce: R90320	7-01	Prepared: M	ar-24-09 An	alyzed: Mar-	27-09			
Phosphorus, Total	130	1	mg/kg		130			2	20	
General Parameters, Batch K900999										
Method Blank (K900999-BLK1)				Prepared: M	ar-25-09 An	alyzed: Mar-	30-09			
Nitrogen, Ammonia as N	<	2	mg/kg							
Ouplicate (K900999-DUP1)	Sou	ırce: R90320	7-01	Prepared: M	ar-25-09 An	alyzed: Mar-	30-09			
Nitrogen, Ammonia as N	250	2	mg/kg		240			2	20	
General Parameters, Batch K901001										
Method Blank (K901001-BLK1)				Prepared: M	ar-25-09 An	alyzed: Mar-	30-09			
Nitrogen, Nitrate+Nitrite as N	<	1	mg/kg							
Duplicate (K901001-DUP1)	Sou	ırce: R90320	7-01	Prepared: M	ar-25-09 An	alyzed: Mar-	30-09			
Nitrogen, Nitrate+Nitrite as N	8	1	mg/kg		9			6	20	
General Parameters, Batch K901162										
Method Blank (K901162-BLK1)				Prepared & A	Analyzed: Ap	or-06-09				
Cyanide (total)	<	0.1	mg/kg							
Blank Spike (K901162-BS1)			3, 3	Prepared & A	Analyzed: Ar	or-06-09				
Cyanide (total)	<	25.0	mg/kg	10.0		90	80-120			
					A ! •		00-120			
Duplicate (K901162-DUP1)		ırce: R90320		Prepared & /		or-u6-09				
Cyanide (total)	<	0.1	mg/kg		<				20	

CERTIFICATE OF ANALYSIS



CLIENT Sears Ecological Applications Company, LLC

1914 Black River Blvd.

Rome, NY TEL 1-8888-4-SEACO 13440 FAX (315) 337-0117

ATTENTION David N. Wood

DATE RECEIVED Jul-15-09 WORK ORDER # R907147

DATE REPORTED Jul-31-09 **PROJECT FILE** Analysis of Anti-Icer

PROJECT NAME IBG

General Comments:

CARO Analytical Services employs methods which are based on those found in "Standard Methods for the Examination of Water and Wastewater", 21st Edition, 2005, published by the American Public Health Association (APHA); US EPA protocols found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846", 3rd Edition; and protocols published by the British Columbia Ministry of Environment (BCMOE).

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ug/L = micrograms per Litre, equivalent to parts per billion (ppb)

ug/g = micrograms per gram, equivalent to parts per million (ppm)

- "RDL" = reported detection limit
- "<" = less than reported detection limit

• "-" = not analyzed

CARO Analytical Services

Final Review Per:

Patrick Novak, B.Sc.

Business Manager



WORK ORDER # R907147 DATE REPORTED Jul-31-09

Corrosion Rate Testing as per PNS

Analyte	RDL Units	Result	PNS Specification (2006)	Notes

20% Concentrate IBG II (3% Solution) (R907147-15) Matrix: Brine

Effectiveness -40.0 % 48.2 30



WORK ORDER # R907147 DATE REPORTED Jul-31-09

Analyte	RDL	Units	Result	PNS Specification (2006)	Notes
IBG II (100%) (R907147-01)) Matrix: Brine)			
Freezing Point	-42	°C	< -45 -42	n/a	
pH (1:4 Solution)	0.1	pH	4.8	6.0 - 10.0	
IBG II (92%) (R907147-02)	Matrix: Brine				
Freezing Point	-42	°C	< -45 -42	n/a	
pH (1:4 Solution)	0.1	pH	4.9	6.0 - 10.0	
IBG II (84%) (R907147-03)	Matrix: Brine				
Freezing Point	-42	°C	< -45 -42	n/a	
pH (1:4 Solution)	0.1	pH	4.9	6.0 - 10.0	
IBG II (76%) (R907147-04)	Matrix: Brine				
Freezing Point	-42	°C	-41	n/a	
pH (1:4 Solution)	0.1	pH	5.0	6.0 - 10.0	
IBG II (68%) (R907147-05)	Matrix: Brine				
Freezing Point	-42	°C	-39	n/a	
pH (1:4 Solution)	0.1	pH	5.0	6.0 - 10.0	
IBG II (60%) (R907147-06)	Matrix: Brine				
Freezing Point	-42	°C	-30	n/a	
pH (1:4 Solution)	0.1	pH	5.1	6.0 - 10.0	
IBG II (52%) (R907147-07)	Matrix: Brine				
Freezing Point	-42	°C	-25	n/a	
pH (1:4 Solution)	0.1	pH	5.1	6.0 - 10.0	
IBG II (44%) (R907147-08)	Matrix: Brine				
Freezing Point	-42	°C	-17	n/a	
pH (1:4 Solution)	0.1	pH	5.1	6.0 - 10.0	
IBG II (36%) (R907147-09)	Matrix: Brine				
Freezing Point	-42	°C	-14	n/a	
pH (1:4 Solution)	0.1	pH	5.2	6.0 - 10.0	
IBG II (28%) (R907147-10)	Matrix: Brine				
Freezing Point	-42	°C	-9	n/a	
pH (1:4 Solution)	0.1	pH	5.3	6.0 - 10.0	
IBG II (20%) (R907147-11)	Matrix: Brine				
Freezing Point	-42	°C	-7	n/a	
pH (1:4 Solution)	0.1	pH	5.3	6.0 - 10.0	
IBG II (12%) (R907147-12)	Matrix: Brine				



WORK ORDER # R907147 DATE REPORTED Jul-31-09

General P	arameters
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Analyte	RDL Units	Result	PNS Specification (2006)	Notes	
IBG II (12%) (R907147	'-12) Matrix: Brine				
pH (1:4 Solution)	0.1 pH	5.5	6.0 - 10.0		
IBG II (4%) (R907147-13) Matrix: Brine					
Freezing Point	-42 °C	-3	n/a		
Freezing Point pH (1:4 Solution)	-42 °C 0.1 pH	-3 5.6	n/a 6.0 - 10.0		
pH (1:4 Solution)		5.6	•		

QUALITY CONTROL DATA



WORK ORDER # R907147 DATE REPORTED Jul-31-09

Analyte Result Limit Units Level Result %REC Limits	Units Level Result %REC Limits Diff(RPD)	Limit Notes

General Parameters, Batch R901897

Duplicate (R901897-DUP1)	Source: R907147-04		Prepared: Jul-15-09 Analyzed: Jul-16-09			
pH (1:4 Solution)	5.6	0.1	pН	5.0	11	20
Duplicate (R901897-DUP2)	Sourc	e: R907147	-11	Prepared: Jul-15-09 Analyzed: Jul-16-09		
pH (1:4 Solution)	5.3	0.1	pН	5.3	0	20