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## SUGGESTED TEST PROTOCOL FOR ASSESSING IMPACTS TO WATER QUALITY FROM RUBBERIZED PLAY SURFACES

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February 2002

### *Introduction and Background*

Rubberized play surfaces (RPS) provide many benefits including, fall protection, a high slip resistance, and a high permeability that facilitates rapid draining. It is comprised primarily of composite rubber and polyurethane. Depending on the application, RPS is often constructed with a base coat of about two inches and a top coat of about an inch or less in thickness. The base coat provides the majority of the fall protection. The top coat is highly porous, and pigments can be added for aesthetic purposes.

The properties of RPS means that it is often used in attractions that contain interactive water feature elements. It is unknown if this material can leach into water. Thus, the purpose of this document is to propose a standardized protocol for evaluating the impacts (if any) of RPS on water quality. This document should be considered as a basis for dialogue.

The objective of this test protocol will be to evaluate the potential leaching from RPS, in conditions similar to the environment where it may be installed. This includes hydraulics, water quality, and environmental conditions, such as temperature and ultraviolet light.

### *RPS Recirculating Test System*

To model an actual installation, we recommend that a recirculating system be constructed. Therefore, the recommended design will include a small pump, which will continuously pump water through the RPS. After passing through the RPS, the water will collect in a catch basin that contains the pump. The flow rate is still to be determined, but it will simulate the flow rate and turnover rate of a typical interactive water attraction. The size of the RPS and the catch basin will also be determined, based on: 1) the amount of water anticipated to be removed for testing; and, 2) the typical ratio of RPS to catch basins. We strongly suggest that a pilot test be conducted to evaluate the experimental setup.

### *Operational Parameters of RPS Test System*

Potable water will be used as the source water. Chlorine must be maintained at 5 mg/L free active chlorine; a dosing pump to maintain these concentrations. The

test will be conducted outside in Central Florida. This will insure that environmental conditions, namely temperature and ultraviolet light, will be the same as other interactive water attractions in this area of Florida.

#### *Sample Collection*

Water samples will be collected at various times throughout the test period. An initial sample will be collected from the catch basin. This will be considered the reference sample. Samples will then be collected from the pump outflow at 7, 14, 21, and 30 days. Water samples will be analyzed for the parameters listed in Table 1.

#### *Experimental Design*

The experiment will consist of one treatment per test material with three replicates per treatment. In other words, each manufacturer's sample will be replicated three times, and there will be three separate catch basin/pump systems per material type.

#### *Evaluation*

Since there are no standards for interactive water attractions, various we suggest that standards based on the Toxicity Characterization Leaching Procedure (TCLP), adopted by the U.S. Environmental Protection Agency in 1990. The TCLP contains 40 constituents that are considered a hazardous waste because they represent a health threat if consumed in drinking water. Standards based on TCLP levels are also appropriate because they are based on leaching from solid materials.

We recommend the use of TCLP standards (Table 1), not drinking water standards, for a number of reasons. The first is that drinking water standards are overly conservative since they are based on high-level exposure (long-term (years) ingestion of large quantities (1-2 L/day)), whereas exposure in interactive water features will be sporadic and of short duration. Secondly, swimming pool standards do not contain any drinking water standards, but instead focus primarily on chlorine and pH. Furthermore, the exposure at an interactive water feature would most likely be less than exposure in swimming pools. Thus, based on these reasons, TCLP standards should be used to provide a more meaningful assessment for this protocol.

The samples taken from each installation at each prescribed time should be tested by a qualified Testing Facility and a detailed report should be prepared for each review.

Table 1. TCLP standards.

<i>Toxic Constituent</i>	<i>Regulatory Level (mg/L)</i>
Arsenic	5.0
Barium	100.0
Benzene	0.5
Cadmium	1.0
Carbon Tetrachloride	0.5
Chlordane	0.3
Chlorobenzene	100.0
Chloroform	6.0
Chromium	5.0
o-Cresol	200.0
m-Cresol	200.0
p-Total Cresol	200.0
Total Cresol	200.0
2,4-D	10.0
1,4-Dichlorobenzene	7.5
1,2-Dichloroethane	0.5
1,1-Dichloroethylene	0.7
2,4-Dinitrotoluene	0.13
Endrin	0.02
Heptachlor	0.008
Hexachlorobenzene	0.13
Hexachloro-1,3-Butadiene	0.5
Hexachloroethane	3.0
Lead	5.0
Lindane	0.4
Mercury	0.2
Methoxychlor	10.0
Methyl Ethyl Ketone	200.0
Nitrobenzene	2.0
Pentachlorophenol	100.0
Pyridine	5.0
Selenium	1.0
Silver	5.0
Tetrachloroethylene	0.7
Toxaphene	0.5
Trichloroethylene	0.5
2,4,5-Trichlorophenol	400.0
2,4,6-Trichlorophenol	2.0
2,4,5-TP (Silvex)	1.0
Vinyl Chloride	0.2

### ***Methods***

1. Place square (12 x 12 inch) of RPS on an impervious screen.
2. Suspend the RPS sample approximately 1 foot above a large (approximately 2 ft wide, 2 ft long, and 1 ft deep\*) plastic basin.
3. Place pump in this basin.
4. Fill basin with 6 inches (56.6 L)\* of water
5. Place pump with approximately 3-foot hose in basin.
6. Measure flow rate in basin. Flow rate will be determined, based on measurements from actual installations.
7. Collect "reference sample" from basin.
8. After correct flow rates are determined, begin pumping over RPS.
9. Collect "first flush": This initial composite sample should be collected in a large, laboratory-clean sample bottle. (Capacity of bottle should be large enough to provide enough sample for water quality analyses).
10. System should be allowed to continuously recirculate.
11. Samples should again be collected at 7, 14, 21, and 30 days\*\*.

Entire setup should be replicated three times. Thus there will be five sets of water samples for each sampling period.

\* Actual dimensions will be based on a number of factors including:

- 1) Field measurements of field sites to obtain ratios of RPS volume to volume of water collection area, flow rates;
- 2) Total amount of water needed for water quality analyses.

\*\* To be discussed; decisions must entail the incorporation of laboratory costs.

Upon receipt of the complete set of test results, they are to be submitted to the Florida State Toxicologist for review and comment



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET

ST. CLOUD

FL 34769-

Saturday, April 15, 2006

Lab Number 88576-2006-W      Sample ID SW#1

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
TCLP			EPA 1311	3/20/2006 9:00	L. Lee		
TCLP Solids	<0.5	%	EPA 1311	3/20/2006 9:00	L. Lee		
Particle Size	-0.375	Inches	EPA 1311	3/20/2006 9:00	L. Lee		
Total Arsenic**	ND	mg/l**	EPA 6010	4/3/2006 12:09	L. Lee	0.01	5.0
Total Barium**	0.01	mg/l**	EPA 6010	4/3/2006 12:09	L. Lee	0.01	100.0
Total Cadmium**	ND	mg/l**	EPA 6010	4/3/2006 12:09	L. Lee	0.002	1.0
Total Chromium**	ND	mg/l**	EPA 6010	4/3/2006 12:09	L. Lee	0.006	5.0
Total Lead**	ND	mg/l**	EPA 6010	4/3/2006 12:09	L. Lee	0.01	5.0
Total Mercury**	ND	mg/l**	EPA 7470	3/17/2006 10:16	A. Ash	0.0001	0.2
Total Selenium**	ND	mg/l**	EPA 6010	4/3/2006 12:09	L. Lee	0.005	1.0
Total Silver**	ND	mg/l**	EPA 6010	4/3/2006 12:09	L. Lee	0.002	5.0

### Remarks:

Date Sample Collected	3/8/2006	13:15	
Sample Submitted By	D. HOAD		
Date Sample Received	3/13/2006	10:00	

PRELIMINARY REPORT: EMAIL COPY

ND = Not Detected

MDL = Minimum Detectable Limit

MCL = Maximum Contaminant Level, USEPA Regulated

PQL = Practical Quantifiable Limit

[MCL] = Maximum Contaminant Level, Non-Regulated

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. B; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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**PLAY SPACE SERVICES, INC.**

109 E. 17TH STREET  
ST. CLOUD FL. 34769-

Saturday, April 15, 2006

**Lab Number 88576-2006-W      Sample ID SW#1**

Parameter	Value	MDL	MCL	Units	Method
Hexachlorobutadiene	ND	0.1	0.5	mg/l**	8270C
Hexachlorobenzene	ND	0.1	0.13	mg/l**	8270C
o-Cresol	ND	0.25	200.0	mg/l**	8270C
m/p-Cresol	ND	0.25	200.0	mg/l**	8270C
Total Cresol	ND	0.25	200.0	mg/l**	8270C
2,4,5-Trichlorophenol	ND	0.25	400.0	mg/l**	8270C
2,4,6-Trichlorophenol	ND	0.25	2.0	mg/l**	8270C
Pentachlorophenol	ND	0.25	100.0	mg/l**	8270C

**Surrogate**

**% Recovery**

1,2-Dichloroethane-d4	107%
Toluene-d8	89.2%
4-Bromofluorobenzene	105

8270C Surrogate Recoveries: Nitrobenzene-d5=101%; 2-Fluorobiphenyl=108%; Terphenyl-d14=94%; 2-Fluorophenol=96%; Phenol-d5=100%

**Remarks:**

Date Sample Analyzed:	3/15/2006	16:22
Analyst:	T. Miller	
Sample Submitted By	D. HOAD	
Date Sample Collected	3/8/2006	13:15
Date Sample Received	3/13/2006	10:00

**PRELIMINARY REPORT: EMAIL COPY**

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

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NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET

ST. CLOUD

FL 34769-

Saturday, April 15, 2006

Lab Number 88576-2006-W      Sample ID SW#1

Parameter	Value	MDL	MCL	Units	Method
1,1-Dichloroethylene**	ND	0.002	0.7	mg/l**	8260B
1,2-Dichloroethane**	ND	0.002	0.5	mg/l**	8260B
1,4-Dichlorobenzene**	ND	0.002	7.5	mg/l**	8260B
2-Butanone**	ND	0.003	200	mg/l**	8260B
Benzene**	ND	0.001	0.5	mg/l**	8260B
Carbon Tetrachloride**	ND	0.001	0.5	mg/l**	8260B
Chlorobenzene**	ND	0.001	100	mg/l**	8260B
Chloroform**	ND	0.001	6.0	mg/l**	8260B
Hexachlorobutadiene**	ND	0.003	0.5	mg/l**	8260B
Tetrachloroethylene**	ND	0.001	0.7	mg/l**	8260B
Trichloroethylene**	ND	0.002	0.5	mg/l**	8260B
Vinyl Chloride**	ND	0.001	0.2	mg/l**	8260B
Pyrinone	ND	0.25	5.0	mg/l**	8270C
1,4-Dichlorobenzene	ND	0.2	7.5	mg/l**	8270C
Hexachloroethane	ND	0.2	3.0	mg/l**	8270C
Nitrobenzene	ND	0.2	2.0	mg/l**	8270C
2,4-Dinitrotoluene	ND	0.1	0.13	mg/l**	8270C

### Remarks:

Date Sample Analyzed: 3/15/2006 16:22  
Analyst: T. Miller

Sample Submitted By D. HOAD  
Date Sample Collected 3/8/2006 13:15  
Date Sample Received 3/13/2006 10:00

PRELIMINARY REPORT: EMAIL COPY

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994;  
TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in bracket

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by ACAS, Inc.



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PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Saturday, April 15, 2006

Lab Number 88578-2006-W      Sample ID SW#2

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
TCLP			EPA 1311	3/20/2006 9:00	L. Lee		
TCLP Solids	<0.5	%	EPA 1311	3/20/2006 9:00	L. Lee		
Particle Size	-0.375	Inches	EPA 1311	3/20/2006 9:00	L. Lee		
Total Arsenic**	ND	mg/l**	EPA 6010	4/3/2006 13:25	L. Lee	0.01	5.0
Total Barium**	0.01	mg/l**	EPA 6010	4/3/2006 13:25	L. Lee	0.01	100.0
Total Cadmium**	ND	mg/l**	EPA 6010	4/3/2006 13:25	L. Lee	0.002	1.0
Total Chromium**	ND	mg/l**	EPA 6010	4/3/2006 13:25	L. Lee	0.006	5.0
Total Lead**	ND	mg/l**	EPA 6010	4/3/2006 13:25	L. Lee	0.01	5.0
Total Mercury**	ND	mg/l**	EPA 7470	3/17/2006 10:16	A. Ash	0.0001	0.2
Total Selenium**	ND	mg/l**	EPA 6010	4/3/2006 13:25	L. Lee	0.005	1.0
Total Silver**	ND	mg/l**	EPA 6010	4/3/2006 13:25	L. Lee	0.002	5.0

**Remarks:**

Date Sample Collected	3/13/2006	13:15	
Sample Submitted By	D. HOAD		
Date Sample Received	3/13/2006	10:00	

PRELIMINARY REPORT: EMAIL COPY

ND = Not Detected

MDL = Minimum Detectable Limit

MCL = Maximum Contaminant Level, USEPA Regulated

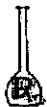
PQL = Practical Quantifiable Limit

[MCL] = Maximum Contaminant Level, Non-Regulated

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NOTE: \*\*mg/l in leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Saturday, April 15, 2006

Lab Number 88578-2006-W Sample ID SW#2

Parameter	Value	MDL	MCL	Units	Method
1,1-Dichloroethylene**	ND	0.002	0.7	mg/l**	8260B
1,2-Dichloroethane**	ND	0.002	0.5	mg/l**	8260B
1,4-Dichlorobenzene**	ND	0.002	7.5	mg/l**	8260B
2-Butanone**	ND	0.003	200	mg/l**	8260B
Benzene**	ND	0.001	0.5	mg/l**	8260B
Carbon Tetrachloride**	ND	0.001	0.5	mg/l**	8260B
Chlorobenzene**	ND	0.001	100	mg/l**	8260B
Chloroform**	ND	0.001	6.0	mg/l**	8260B
Hexachlorobutadiene**	ND	0.003	0.5	mg/l**	8260B
Tetrachloroethylene**	ND	0.001	0.7	mg/l**	8260B
Trichloroethylene**	ND	0.002	0.5	mg/l**	8260B
Vinyl Chloride**	ND	0.001	0.2	mg/l**	8260B
Pyrine	ND	0.25	5.0	mg/l**	8270C
1,4-Dichlorobenzene	ND	0.2	7.5	mg/l**	8270C
Hexachloroethane	ND	0.2	3.0	mg/l**	8270C
Nitrobenzene	ND	0.2	2.0	mg/l**	8270C
2,4-Dinitrotoluene	ND	0.1	0.13	mg/l**	8270C

### Remarks:

Date Sample Analyzed:	3/15/2006	17:11
Analyst:	T. Miller	
Sample Submitted By	D. HOAD	
Date Sample Collected	3/8/2006	13:15
Date Sample Received	3/19/2006	10:00

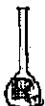
PRELIMINARY REPORT: EMAIL COPY

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. B3; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*mg/l in tochloric acid

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Saturday, April 15, 2006

Lab Number 88578-2006-WV Sample ID SW#2

Parameter	Value	MDL	MCL	Units	Method
Hexachlorobutadiene	ND	0.1	0.5	mg/l**	8270C
Hexachlorobenzene	ND	0.1	0.13	mg/l**	8270C
o-Cresol	ND	0.25	200.0	mg/l**	8270C
m/p-Cresol	ND	0.25	200.0	mg/l**	8270C
Total Cresol	ND	0.25	200.0	mg/l**	8270C
2,4,5-Trichlorophenol	ND	0.25	400.0	mg/l**	8270C
2,4,6-Trichlorophenol	ND	0.25	2.0	mg/l**	8270C
Pentachlorophenol	ND	0.25	100.0	mg/l**	8270C

Surrogate	% Recovery
1,2-Dichloroethane-d4	118%
Toluene-d8	102%
4-Bromofluorobenzene	103%

8270C Surrogate Recoveries: Nitrobenzene-d5=90%; 2-Fluorobiphenyl=90%; Terphenyl-d14=77%; 2-Fluorophenol=87%; Phenol-d5=89%

### Remarks:

Date Sample Analyzed:	3/15/2006	17:11
Analyst:	T. Miller	
Sample Submitted By	D ROAD	
Date Sample Collected	3/8/2006	13:15
Date Sample Received	3/13/2006	10:00

PRELIMINARY REPORT: EMAIL COPY

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NOTE: \*\*mg/l in brackets

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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**PLAY SPACE SERVICES, INC.**

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Saturday, April 15, 2006

Lab Number 88579-2006-W      Sample ID SW #3

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
TCLP			EPA 1311	3/20/2006 9:00	L. Lee		
TCLP Solids	<0.5%	%	EPA 1311	3/20/2006 9:00	L. Lee		
Particle Size	-0.375	Inches	EPA 1311	3/20/2006 9:00	L. Lee		
Total Arsenic**	ND	mg/l**	EPA 6010	4/3/2006 13:50	L. Lee	0.01	5.0
Total Barium**	0.01	mg/l**	EPA 6010	4/3/2006 13:50	L. Lee	0.01	100.0
Total Cadmium**	ND	mg/l**	EPA 6010	4/3/2006 13:50	L. Lee	0.002	1.0
Total Chromium**	ND	mg/l**	EPA 6010	4/3/2006 13:50	L. Lee	0.006	5.0
Total Lead**	ND	mg/l**	EPA 6010	4/3/2006 13:50	L. Lee	0.01	5.0
Total Mercury**	ND	mg/l**	EPA 7470	3/17/2006 10:16	A. Ash	0.0001	0.2
Total Selenium**	ND	mg/l**	EPA 6010	4/3/2006 13:50	L. Lee	0.005	1.0
Total Silver**	ND	mg/l**	EPA 6010	4/3/2006 13:50	L. Lee	0.002	5.0

**Remarks:**

Date Sample Collected	3/8/2006	13:15	
Sample Submitted By	D ROAD		
Date Sample Received	3/13/2006	16:02	PRELIMINARY REPORT: EMAIL COPY

ND = Not Detected

MDL = Minimum Detectable Limit

MCL = Maximum Contaminant Level, USEPA Regulated

PQL = Practical Quantifiable Limit

[MCL] = Maximum Contaminant Level, Non-Regulated

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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25 CRIMSON CIRCLE  
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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD FL 34769-

Saturday, April 15, 2006

Lab Number 88579-2006-W Sample ID SW#3

Parameter	Value	MDL	MCL	Units	Method
1,1-Dichloroethylene**	ND	0.002	0.7	mg/l**	8260B
1,2-Dichloroethane**	ND	0.002	0.5	mg/l**	8260B
1,4-Dichlorobenzene**	ND	0.002	7.5	mg/l**	8260B
2-Butanone**	ND	0.003	200	mg/l**	8260B
Benzene**	ND	0.001	0.5	mg/l**	8260B
Carbon Tetrachloride**	ND	0.001	0.5	mg/l**	8260B
Chlorobenzene**	ND	0.001	100	mg/l**	8260B
Chloroform**	ND	0.001	6.0	mg/l**	8260B
Hexachlorobutadiene**	ND	0.003	0.5	mg/l**	8260B
Tetrachloroethylene**	ND	0.001	0.7	mg/l**	8260B
Trichloroethylene**	ND	0.002	0.5	mg/l**	8260B
Vinyl Chloride**	ND	0.001	0.2	mg/l**	8260B
Pyrinine	ND	0.25	5.0	mg/l**	8270C
1,4-Dichlorobenzene	ND	0.2	7.5	mg/l**	8270C
Hexachloroethane	ND	0.2	3.0	mg/l**	8270C
Nitrobenzene	ND	0.2	2.0	mg/l**	8270C
2,4-Dinitrotoluene	ND	0.1	0.13	mg/l**	8270C

### Remarks:

Date Sample Analyzed: 3/15/2006 18:29  
Analyst: T. Miller

Sample Submitted By D HOAD

Date Sample Collected 3/8/2006 13:15

Date Sample Received 3/13/2006 16:02

PRELIMINARY REPORT: EMAIL COPY

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 10TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. B3; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1998; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l In Isobutane

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by ACAS, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD FL 34769-

Saturday, April 15, 2006

Lab Number 88579-2006-W Sample ID SW #3

Parameter	Value	MDL	MCL	Units	Method
Hexachlorobutadiene	ND	0.1	0.5	mg/l**	8270C
Hexachlorobenzene	ND	0.1	0.13	mg/l**	8270C
o-Cresol	ND	0.25	200.0	mg/l**	8270C
m/p-Cresol	ND	0.25	200.0	mg/l**	8270C
Total Cresol	ND	0.25	200.0	mg/l**	8270C
2,4,5-Trichlorophenol	ND	0.25	400.0	mg/l**	8270C
2,4,6-Trichlorophenol	ND	0.25	2.0	mg/l**	8270C
Pentachlorophenol	ND	0.25	100.0	mg/l**	8270C

<u>Surrogate</u>	<u>% Recovery</u>
1,2-Dichloroethane-d4	106%
Toluene-d8	103%
4-Bromofluorobenzene	109%

B270C Surrogate Recoveries: Nitrobenzene-d5=74%; 2-Fluorobiphenyl=82%; Terphanyl-d14=78%; 2-Fluorophenol=78%; Phenol-d5=80%

### Remarks:

Date Sample Analyzed:	3/15/2006	18:29	
Analyst:	T. Miller		
Sample Submitted By	D HOAD		PRELIMINARY REPORT: EMAIL COPY
Date Sample Collected	3/8/2006	13:15	
Date Sample Received	3/13/2006	16:02	

ND: Not Detected. If present, the result is less than the MDL = Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. B3; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: "mg/l" is shorthand for milligrams per liter.

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by ACS, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET

ST. CLOUD

FL 34769-

Saturday, April 15, 2006

Lab Number 88768-2006-W Sample ID SW#1

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
TCLP			EPA 1311	3/27/2006 10:00	L. Lee		
TCLP Solids	<0.50	%	EPA 1311	3/27/2006 10:00	L. Lee		
Particle Size	-0.375	Inches	EPA 1311	3/27/2006 10:00	L. Lee		
Total Arsenic**	ND	mg/l**	EPA 6010	4/9/2006 11:16	L. Lee	0.01	5.0
Total Barium**	0.14	mg/l**	EPA 6010	4/9/2006 11:16	L. Lee	0.01	100.0
Total Cadmium**	ND	mg/l**	EPA 6010	4/9/2006 11:16	L. Lee	0.002	1.0
Total Chromium**	ND	mg/l**	EPA 6010	4/9/2006 11:16	L. Lee	0.006	5.0
Total Lead**	ND	mg/l**	EPA 6010	4/9/2006 11:16	L. Lee	0.01	5.0
Total Mercury**	ND	mg/l**	EPA 7470	4/5/2006 14:13	A. Ash	0.0001	0.2
Total Selenium**	ND	mg/l**	EPA 6010	4/9/2006 11:16	L. Lee	0.005	1.0
Total Silver**	ND	mg/l**	EPA 6010	4/9/2006 11:16	L. Lee	0.002	5.0

### Remarks:

Date Sample Collected	3/13/2006	14:40	
Sample Submitted By	D ROAD		
Date Sample Received	3/20/2006	10:00	

PRELIMINARY REPORT: EMAIL COPY

ND = Not Detected

MDL = Minimum Detectable Limit

MCL = Maximum Contaminant Level, USEPA Regulated

PQL = Practical Quantifiable Limit

[MCL] = Maximum Contaminant Level, Non-Regulated

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTERS, Rev. B3; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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## PLAY SPACE SERVICES, INC.

Saturday, April 15, 2006

109 E. 17TH STREET

ST. CLOUD

FL 34769-

Lab Number 89006-2006-W Sample ID SW#1

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
TCLP			EPA 1311	4/9/2006 11:00	L. Lee		
TCLP Solids	<0.50	%	EPA 1311	4/9/2006 11:00	L. Lee		
Particle Size	-0.375	Inches	EPA 1311	4/9/2006 11:00	L. Lee		
Total Arsenic**	ND	mg/l**	EPA 6010	4/12/2006 16:09	L. Lee	0.01	5.0
Total Barium**	ND	mg/l**	EPA 6010	4/12/2006 16:09	L. Lee	0.01	100.0
Total Cadmium**	ND	mg/l**	EPA 6010	4/12/2006 16:09	L. Lee	0.002	1.0
Total Chromium**	0.02	mg/l**	EPA 6010	4/12/2006 16:09	L. Lee	0.006	5.0
Total Lead**	ND	mg/l**	EPA 6010	4/12/2006 16:09	L. Lee	0.01	5.0
Total Mercury**	ND	mg/l**	EPA 7470	4/5/2006 14:13	A. Ash	0.0001	0.2
Total Selenium**	ND	mg/l**	EPA 6010	4/12/2006 16:09	L. Lee	0.005	1.0
Total Silver**	ND	mg/l**	EPA 6010	4/12/2006 16:09	L. Lee	0.002	5.0

### Remarks:

Date Sample Collected 3/22/2006 11:00  
Sample Submitted By DHOAD

PRELIMINARY REPORT: EMAIL COPY

Date Sample Received 3/27/2006 0:30

ND = Not Detected

MDL = Minimum Detectable Limit

MCL = Maximum Contaminant Level, USEPA Regulated

PQL = Practical Quantifiable Limit

[MCL] = Maximum Contaminant Level, Non-Regulated

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 85; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Saturday, April 15, 2006

Lab Number 89006-2006-W Sample ID SW#1

Parameter	Value	MDL	MCL	Units	Method
1,1-Dichloroethylene**	ND	0.002	0.7	mg/l**	8260B
1,2-Dichloroethane**	ND	0.002	0.5	mg/l**	8260B
1,4-Dichlorobenzene**	ND	0.002	7.5	mg/l**	8260B
2-Butanone**	ND	0.003	200	mg/l**	8260B
Benzene**	ND	0.001	0.5	mg/l**	8260B
Carbon Tetrachloride**	ND	0.001	0.5	mg/l**	8260B
Chlorobenzene**	ND	0.001	100	mg/l**	8260B
Chloroform**	ND	0.001	6.0	mg/l**	8260B
Hexachlorobutadiene**	ND	0.003	0.5	mg/l**	8260B
Tetrachloroethylene**	ND	0.001	0.7	mg/l**	8260B
Trichloroethylene**	ND	0.002	0.5	mg/l**	8260B
Vinyl Chloride**	ND	0.001	0.2	mg/l**	8260B
Pyrine	ND	0.25	5.0	mg/l**	8270C
1,4-Dichlorobenzene	ND	0.2	7.5	mg/l**	8270C
Hexachloroethane	ND	0.2	3.0	mg/l**	8270C
Nitrobenzene	ND	0.2	2.0	mg/l**	8270C
2,4-Dinitrotoluene	ND	0.1	0.13	mg/l**	8270C

### Remarks:

Date Sample Analyzed: 3/31/2006 17:59  
Analyst: T. Miller

PRELIMINARY REPORT: EMAIL COPY

Sample Submitted By: DILLOAD  
Date Sample Collected: 3/22/2006 11:00  
Date Sample Received: 3/27/2006 9:30

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 63; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in Isopropyl Alcohol

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by ACAS, Inc.



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**PLAY SPACE SERVICES, INC.**

109 E. 17TH STREET  
ST. CLOUD FL 34769-

Saturday, April 15, 2006

**Lab Number 89006-2006-W      Sample ID SW#1**

Parameter	Value	MDL	MCL	Units	Method
Hexachlorobutadiene	ND	0.1	0.5	mg/l**	8270C
Hexachlorobenzene	ND	0.1	0.13	mg/l**	8270C
o-Cresol	ND	0.25	200.0	mg/l**	8270C
m/p-Cresol	ND	0.25	200.0	mg/l**	8270C
Total Cresol	ND	0.25	200.0	mg/l**	8270C
2,4,5-Trichlorophenol	ND	0.25	400.0	mg/l**	8270C
2,4,6-Trichlorophenol	ND	0.25	2.0	mg/l**	8270C
Pentachlorophenol	ND	0.25	100.0	mg/l**	8270C

<u>Surrogate</u>	<u>% Recovery</u>
1,2-Dichloroethane-d4	91.2%
Toluene-d8	101%
4-Bromo fluorebenzene	99.4%

8270C Surrogate Recoveries: Nitrobenzene-d5=112%; 2-Fluorobiphenyl=d106%; Terphenyl-d14=104%; 2-Fluorophenol=d106%; Phenol-d5=92%

**Remarks:**

Date Sample Analyzed:	3/31/2006	17:59
Analyst:	T. Miller	
Sample Submitted By	D HOAD	
Date Sample Collected	3/22/2006	11:00
Date Sample Received	3/27/2006	9:30

**PRELIMINARY REPORT: EMAIL COPY**

ND: Not Detected. If present, the result is less than the MDL = Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*mg/l In leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Saturday, April 15, 2006

Lab Number 89007-2006-W Sample ID SW #2

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
TCLP			EPA 1311	4/9/2006 11:00	L. Lee		
TCLP Solids	<0.50	%	EPA 1311	4/9/2006 11:00	L. Lee		
Particle Size	-0.375	Inches	EPA 1311	4/9/2006 11:00	L. Lee		
Total Arsenic**	ND	mg/l**	EPA 6010	4/12/2006 16:13	L. Lee	0.01	5.0
Total Barium**	0.04	mg/l**	EPA 6010	4/12/2006 16:13	L. Lee	0.01	100.0
Total Cadmium**	ND	mg/l**	EPA 6010	4/12/2006 16:13	L. Lee	0.002	1.0
Total Chromium**	ND	mg/l**	EPA 6010	4/12/2006 16:13	L. Lee	0.006	5.0
Total Lead**	ND	mg/l**	EPA 6010	4/12/2006 16:13	L. Lee	0.01	5.0
Total Mercury**	ND	mg/l**	EPA 7470	4/5/2006 14:13	A. Ash	0.0001	0.2
Total Selenium**	ND	mg/l**	EPA 6010	4/12/2006 16:13	L. Lee	0.005	1.0
Total Silver**	ND	mg/l**	EPA 6010	4/12/2006 16:13	L. Lee	0.002	5.0

### Remarks:

Date Sample Collected 3/23/2006 11:05  
Sample Submitted By D. HOAD  
Date Sample Received 3/27/2006 9:30  
ND = Not Detected

PRELIMINARY REPORT: EMAIL COPY

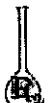
MDL - Minimum Detectable Limit  
MCL - Maximum Contaminant Level, USEPA Regulated

PQL - Practical Quantifiable Limit  
(MCL) = Maximum Contaminant Level, Non-Regulated

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. B9; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994;  
TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l In leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by ACS, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Saturday, April 15, 2006

Lab Number 89007-2006-W      Sample ID SW #2

Parameter	Value	MDL	MCL	Units	Method
1,1-Dichloroethylene**	ND	0.002	0.7	mg/l**	8260B
1,2-Dichloroethane**	ND	0.002	0.5	mg/l**	8260B
1,4-Dichlorobenzene**	ND	0.002	7.5	mg/l**	8260B
2-Butanone**	ND	0.003	200	mg/l**	8260B
Benzene**	ND	0.001	0.5	mg/l**	8260B
Carbon Tetrachloride**	ND	0.001	0.5	mg/l**	8260B
Chlorobenzene**	ND	0.001	100	mg/l**	8260B
Chloroform**	ND	0.001	6.0	mg/l**	8260B
Hexachlorobutadiene**	ND	0.003	0.5	mg/l**	8260B
Tetrachloroethylene**	ND	0.001	0.7	mg/l**	8260B
Trichloroethylene**	ND	0.002	0.5	mg/l**	8260B
Vinyl Chloride**	ND	0.001	0.2	mg/l**	8260B
Pyrine	ND	0.25	5.0	mg/l**	8270C
1,4-Dichlorobenzene	ND	0.2	7.5	mg/l**	8270C
Hexachloroethane	ND	0.2	3.0	mg/l**	8270C
Nitrobenzene	ND	0.2	2.0	mg/l**	8270C
2,4-Dinitrotoluene	ND	0.1	0.13	mg/l**	8270C

### Remarks:

Date Sample Analyzed:	3/31/2006	19:20
Analyst:	T. Miller	
Sample Submitted By	D HOAD	PRELIMINARY REPORT: EMAIL COPY
Date Sample Collected	3/22/2006	11:05
Date Sample Received	3/27/2006	9:30

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. B3; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in bracketed

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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## PLAY SPACE SERVICES, INC.

109 E 17TH STREET  
ST. CLOUD FL 34769-

Saturday, April 15, 2006

Lab Number 89007-2006-W Sample ID SW#2

Parameter	Value	MDL	MCL	Units	Method
Hexachlorobutadiene	ND	0.1	0.5	mg/l**	8270C
Hexachlorobenzene	ND	0.1	0.13	mg/l**	8270C
o-Cresol	ND	0.25	200.0	mg/l**	8270C
m/p-Cresol	ND	0.25	200.0	mg/l**	8270C
Total Cresol	ND	0.25	200.0	mg/l**	8270C
2,4,5-Trichloropheno!	ND	0.25	400.0	mg/l**	8270C
2,4,6-Trichloropheno!	ND	0.25	2.0	mg/l**	8270C
Pentachloropheno!	ND	0.25	100.0	mg/l**	8270C

Surrogate	% Recovery
1,2-Dichloroethane-d4	111%
Toluene-d8	107%
4-Bromofluorobenzene	104%

8270C Surrogate Recoveries: Nitrobenzene-d5=112%; 2-Fluorobiphenyl=113%; Terphenyl-d14=99%; 2-Fluorophenol=97%; Phenol-d5=104%

### Remarks:

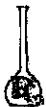
Date Sample Analyzed:	3/31/2006	19:20	
Analyst:	T. Miller		
Sample Submitted By	D HOAD		PRELIMINARY REPORT: EMAIL COPY
Date Sample Collected	3/22/2006	11:05	
Date Sample Received	3/27/2006	9:30	

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. B3; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l In Isobutane

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



# RELIANCE LABORATORIES, INC.

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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Saturday, April 15, 2006

**Lab Number 89008-2006-W      Sample ID SW #3**

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
TCLP			EPA 1311	4/9/2006 11:00	L. Lee		
TCLP Solids	<0.50	%	EPA 1311	4/9/2006 11:00	L. Lee		
Particle Size	-0.375	Inches	EPA 1311	4/9/2006 11:00	L. Lee		
Total Arsenic**	ND	mg/l**	EPA 6010	4/12/2006 16:22	L. Lee	0.01	5.0
Total Barium**	0.04	mg/l**	EPA 6010	4/12/2006 16:22	L. Lee	0.01	100.0
Total Cadmium**	ND	mg/l**	EPA 6010	4/12/2006 16:22	L. Lee	0.002	1.0
Total Chromium**	0.02	mg/l**	EPA 6010	4/12/2006 16:22	L. Lee	0.006	5.0
Total Lead**	ND	mg/l**	EPA 6010	4/12/2006 16:22	L. Lee	0.01	5.0
Total Mercury**	ND	mg/l**	EPA 7470	4/5/2006 14:13	A. Ash	0.0001	0.2
Total Selenium**	ND	mg/l**	EPA 6010	4/12/2006 16:22	L. Lee	0.005	1.0
Total Silver**	ND	mg/l**	EPA 6010	4/12/2006 16:22	L. Lee	0.002	5.0

8270

### Remarks:

Date Sample Collected	3/22/2006	11:10	
Sample Submitted By	D1LOAD		
Date Sample Received	3/27/2006	9:30	

PRELIMINARY REPORT: EMAIL COPY

ND = Not Detected

MDL - Minimum Detectable Limit

MCL - Maximum Contaminant Level, USEPA Regulated

PQL - Practical Quantifiable Limit

[MCL] = Maximum Contaminant Level, Non-Regulated

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 89; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l In leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by ACAS, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Saturday, April 15, 2006

**Lab Number 89008-2006-W      Sample ID SW #3**

Parameter	Value	MDL	MCL	Units	Method
1,1-Dichloroethylene**	ND	0.002	0.7	mg/l**	8260B
1,2-Dichloroethane**	ND	0.002	0.5	mg/l**	8260B
1,4-Dichlorobenzene**	ND	0.002	7.5	mg/l**	8260B
2-Butanone**	ND	0.003	200	mg/l**	8260B
Benzene**	ND	0.001	0.5	mg/l**	8260B
Carbon Tetrachloride**	ND	0.001	0.5	mg/l**	8260B
Chlorobenzene**	ND	0.001	100	mg/l**	8260B
Chloroform**	ND	0.001	6.0	mg/l**	8260B
Hexachlorobutadiene**	ND	0.003	0.5	mg/l**	8260B
Tetrachloroethylene**	ND	0.001	0.7	mg/l**	8260B
Trichloroethylene**	ND	0.002	0.5	mg/l**	8260B
Vinyl Chloride**	ND	0.001	0.2	mg/l**	8260B
Pyridine	ND	0.25	5.0	mg/l**	8270C
1,4-Dichlorobenzene	ND	0.2	7.5	mg/l**	8270C
Hexachloroethane	ND	0.2	3.0	mg/l**	8270C
Nitrobenzene	ND	0.2	2.0	mg/l**	8270C
2,4-Dinitrotoluene	ND	0.1	0.13	mg/l**	8270C

### Remarks:

Date Sample Analyzed:	3/31/2006	20:40
Analyst:	T. Miller	
Sample Submitted By	D HOAD	
Date Sample Collected	3/22/2006	11:10
Date Sample Received	3/27/2006	9:30

PRELIMINARY REPORT: EMAIL COPY

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Saturday, April 15, 2006

**Lab Number 89008-2006-W      Sample ID SW#3**

Parameter	Value	MDL	MCL	Units	Method
Hexachlorobutadiene	ND	0.1	0.5	mg/l**	8270C
Hexachlorobenzene	ND	0.1	0.13	mg/l**	8270C
<i>o</i> -Cresol	ND	0.25	200.0	mg/l**	8270C
m/p-Cresol	ND	0.25	200.0	mg/l**	8270C
Total Cresol	ND	0.25	200.0	mg/l**	8270C
2,4,5-Trichlorophenol	ND	0.25	400.0	mg/l**	8270C
2,4,6-Trichlorophenol	ND	0.25	2.0	mg/l**	8270C
Pentachlorophenol	ND	0.25	100.0	mg/l**	8270C

<u>Surrogate</u>	<u>% Recovery</u>
1,2-Dichloroethane-d4	100%
Toluene-d8	108%
4-Bromo Fluorobenzene	104%

8270C Surrogate Recoveries: Nitrobenzene-d5=110%; 2-Fluorobiphenyl=105%; Terphenyl-d14=109%; 2-Fluorophenol=100%; Phenol-d5=108%

### Remarks:

Date Sample Analyzed:	3/31/2006	20:40
Analyst:	T. Miller	
Sample Submitted By	D HOAD	
Date Sample Collected	3/22/2006	11:10
Date Sample Received	3/27/2006	9:30

PRELIMINARY REPORT: EMAIL COPY

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. B3; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET

ST. CLOUD

FL. 34769-

Monday, May 22, 2006

Lab Number 89513-2006-W Sample ID SW-1

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
TCLP			EPA 1311	4/25/2006 10:00	L. Lee		
TCLP Solids	<0.5	%	EPA 1311	4/25/2006 10:00	L. Lee		
Particle Size	-0.375	Inches	EPA 1311	4/25/2006 10:00	L. Lee		
Total Arsenic <sup>***</sup>	ND	mg/l <sup>***</sup>	EPA 6010	4/26/2006 16:35	L. Lee	0.01	5.0
Total Barium <sup>***</sup>	0.03	mg/l <sup>***</sup>	EPA 6010	4/26/2006 16:35	L. Lee	0.01	100.0
Total Cadmium <sup>***</sup>	ND	mg/l <sup>***</sup>	EPA 6010	4/26/2006 16:35	L. Lee	0.002	1.0
Total Chromium <sup>***</sup>	ND	mg/l <sup>***</sup>	EPA 6010	4/26/2006 16:35	L. Lee	0.006	5.0
Total Lead <sup>***</sup>	ND	mg/l <sup>***</sup>	EPA 6010	4/26/2006 16:35	L. Lee	0.01	5.0
Total Mercury <sup>***</sup>	ND	mg/l <sup>***</sup>	EPA 7470	4/20/2006 15:05	A. Ash	0.0001	0.2
Total Selenium <sup>***</sup>	ND	mg/l <sup>***</sup>	EPA 6010	4/26/2006 16:35	L. Lee	0.005	1.0
Total Silver <sup>***</sup>	ND	mg/l <sup>***</sup>	EPA 6010	4/26/2006 16:35	L. Lee	0.002	5.0

### Remarks:

Date Sample Collected 4/7/2006

Sample Submitted By L. HEDD

Date Sample Received 4/13/2006 10:30

ND = Not Detected

MDL = Minimum Detectable Limit

MCL = Maximum Contaminant Level, USEPA Regulated

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*mg/l in leachate

PRELIMINARY REPORT: EMAIL COPY

PQL - Practical Quantifiable Limit

[MCL] = Maximum Contaminant Level, Non-Regulated



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Monday, May 22, 2006

Lab Number	Sample ID	SW-1	Parameter	Value	PQL	MCL	Units	Method
89513-2006-W			1,1-Dichloroethylene**	ND		0.7	mg/l**	8260B
			1,2-Dichloroethane**	ND		0.5	mg/l**	8260B
			1,4-Dichlorobenzene**	ND		7.5	mg/l**	8260B
			2-Butanone**	ND		200	mg/l**	8260B
			Benzene**	ND		0.5	mg/l**	8260B
			Carbon Tetrachloride**	ND		0.5	mg/l**	8260B
			Chlorobenzene**	ND		100	mg/l**	8260B
			Chloroform**	ND		6.0	mg/l**	8260B
			Hexachlorobutadiene**	ND		0.5	mg/l**	8260B
			Tetrachloroethylene**	ND		0.7	mg/l**	8260B
			Trichloroethylene**	ND		0.5	mg/l**	8260B
			Vinyl Chloride**	ND		0.2	mg/l**	8260B
			Pyridine	ND		5.0	mg/l**	8270C
			1,4-Dichlorobenzene	ND		7.5	mg/l**	8270C
			Hexachlorocyclohexane	ND		3.0	mg/l**	8270C
			Nitrobenzene	ND		2.0	mg/l**	8270C
			2,4-Dinitrotoluene	ND		0.13	mg/l**	8270C
			Hexachlorobutadiene	ND		0.5	mg/l**	8270C
			Hexachlorobenzene	ND		0.13	mg/l**	8270C
			o-Cresol	ND		200.0	mg/l**	8270C

### Remarks:

Sample Submitted By	D HOAD
Date Sample Collected	4/7/2006
Date Sample Received	4/13/2006 10:30
Date Sample Analyzed:	4/19/2006 17:08
Analyst:	T. Miller

PRELIMINARY REPORT: EMAIL COPY

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 16TH ED; USEPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. B3; USEPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*mg/l in leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by ACAS, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769

Monday, May 22, 2006

Lab Number 89513-2006-W      Sample ID SW-1

Parameter	Value	PQL	MCL	Units	Method
m/p-Cresol	ND		200.0	mg/l**	8270C
Total Cresol	ND		200.0	mg/l**	8270C
2,4,5-Trichlorophenol	ND		400.0	mg/l**	8270C
2,4,6-Trichlorophenol	ND		2.0	mg/l**	8270C
Pentachlorophenol	ND		100.0	mg/l**	8270C
Surrogate	Percent Recovery				
1,2-Dichloroethane-d4	89.1%				
Toluene-d8	105%				
4-Bromofluroorobenzene	105%				

8270C Surrogate Recoveries: Nitrobenzene-d5=87%; 2-Fluorobiphenyl=91%; Terphenyl-d14=93%; 2-Fluorophenol=87%; Phenol-d5=90%

### Remarks:

Sample Submitted By	D HOAD	
Date Sample Collected	4/7/2006	
Date Sample Received	4/12/2006	10:30
Date Sample Analyzed:	4/19/2006	17:08
Analyst:	T. Miller	

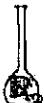
PRELIMINARY REPORT: EMAIL COPY

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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**PLAY SPACE SERVICES, INC.**

109 E. 17TH STREET  
ST. CLOUD FL 34769-

Monday, May 22, 2006

**Lab Number 89514-2006-W      Sample ID SW-2**

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
TCLP			EPA 1311	4/25/2006 10:00	L. Lee		
TCLP Solids	<0.5	%	EPA 1311	4/25/2006 10:00	L. Lee		
Particle Size	-0.375	Inches	EPA 1311	4/25/2006 10:00	L. Lee		
Total Arsenic**	ND	mg/l**	EPA 6010	4/26/2006 16:43	L. Lee	0.01	5.0
Total Barium**	0.03	mg/l**	EPA 6010	4/26/2006 16:43	L. Lee	0.01	100.0
Total Cadmium**	ND	mg/l**	EPA 6010	4/26/2006 16:43	L. Lee	0.002	1.0
Total Chromium**	ND	mg/l**	EPA 6010	4/26/2006 16:43	L. Lee	0.006	5.0
Total Lead**	ND	mg/l**	EPA 6010	4/26/2006 16:43	L. Lee	0.01	5.0
Total Mercury**	ND	mg/l**	EPA 7470	4/20/2006 15:05	A. Ash	0.0001	0.2
Total Selenium**	ND	mg/l**	EPA 6010	4/26/2006 16:43	L. Lee	0.005	1.0
Total Silver**	ND	mg/l**	EPA 6010	4/26/2006 16:43	L. Lee	0.002	5.0

**Remarks:**

Date Sample Collected 4/7/2006  
Sample Submitted By D ROAD  
Date Sample Received 4/12/2006 10:30  
ND = Not Detected

PRELIMINARY REPORT: EMAIL COPY

PQL - Practical Quantifiable Limit

[MCL] = Maximum Contaminant Level, Non-Regulated

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 8; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l In Leachate



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## PLAY SPACE SERVICES, INC.

109 E 17TH STREET  
ST. CLOUD

FL 34769-

Monday, May 22, 2006

Lab Number 89514-2006-W Sample ID SW-2

Parameter	Value	PQL	MCL	Units	Method
1,1-Dichloroethylene**	ND		0.7	mg/l**	8260B
1,2-Dichloroethane**	ND		0.5	mg/l**	8260B
1,4-Dichlorobenzene**	ND		7.5	mg/l**	8260B
2-Butanone**	ND		200	mg/l**	8260B
Benzene**	ND		0.5	mg/l**	8260B
Carbon Tetrachloride**	ND		0.5	mg/l**	8260B
Chlorobenzene**	ND		100	mg/l**	8260B
Chloroform**	ND		6.0	mg/l**	8260B
Hexachlorobutadiene**	ND		0.5	mg/l**	8260B
Tetrachloroethylene**	ND		0.7	mg/l**	8260B
Trichloroethylene**	ND		0.5	mg/l**	8260B
Vinyl Chloride**	ND		0.2	mg/l**	8260B
Pyrine	ND		5.0	mg/l**	8270C
1,4-Dichlorobenzene	ND		7.5	mg/l**	8270C
Hexachloroethane	ND		3.0	mg/l**	8270C
Nitrobenzene	ND		2.0	mg/l**	8270C
2,4-Dinitrotoluene	ND		0.13	mg/l**	8270C
Hexachlorobutadiene	ND		0.5	mg/l**	8270C
Hexachlorobenzene	ND		0.13	mg/l**	8270C
o-Cresol	ND		200.0	mg/l**	8270C

### Remarks:

Sample Submitted By	D HOAD
Date Sample Collected	4/7/2006
Date Sample Received	4/13/2006 10:30
Date Sample Analyzed:	4/19/2006 11:29
Analyst:	T Miller

PRELIMINARY REPORT: EMAIL COPY

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 10TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. B3; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l In leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by ACAS, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Monday, May 22, 2006

Lab Number	Sample ID	SW-2				
Parameter	Value	PQL	MCL	Units	Method	
m/p-Cresol	ND		200.0	mg/l**	8270C	
Total Cresol	ND		200.0	mg/l**	8270C	
2,4,5-Trichlorophenol	ND		400.0	mg/l**	8270C	
2,4,6-Trichlorophenol	ND		2.0	mg/l**	8270C	
Pentachlorophenol	ND		100.0	mg/l**	8270C	
<u>Surrogate</u>	<u>Percent Recovery</u>					
1,2-Dichloroethane-d4	110%					
Toluene-d8	111%					
4-Bromofluororobenzene	104%					

8270C Surrogate Recoveries: Nitrobenzene-d5=87%; 2-Fluorobiphenyl=91%; Terphenyl-d14=91%; 2-Fluorophenol=86%; Phenol-d5=87%

### Remarks:

Sample Submitted By	DICAD		
Date Sample Collected	4/7/2006		
Date Sample Received	4/12/2006	10:30	PRELIMINARY REPORT: EMAIL COPY
Date Sample Analyzed:	4/19/2006	18:29	
Analyst:	T Miller		

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l In leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by ACAS, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET

ST. CLOUD

FL 34769-

Monday, May 22, 2006

Lab Number 89515-2006-W Sample ID SW-3

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MCL
TCLP			EPA 1311	4/25/2006 10:00	L. Lee		
TCLP Solids	<0.5	%	EPA 1311	4/25/2006 10:00	L. Lee		
Particle Size	-0.375	Inches	EPA 1311	4/25/2006 10:00	L. Lee		
Total Arsenic**	ND	mg/l**	EPA 6010	4/26/2006 16:50	L. Lee	0.01	5.0
Total Barium**	0.03	mg/l**	EPA 6010	4/26/2006 16:50	L. Lee	0.01	100.0
Total Cadmium**	ND	mg/l**	EPA 6010	4/26/2006 16:50	L. Lee	0.002	1.0
Total Chromium**	ND	mg/l**	EPA 6010	4/26/2006 16:50	L. Lee	0.006	5.0
Total Lead**	ND	mg/l**	EPA 6010	4/26/2006 16:50	L. Lee	0.01	5.0
Total Mercury**	ND	mg/l**	EPA 7470	4/20/2006 15:05	A. Ash	0.0001	0.2
Total Selenium**	ND	mg/l**	EPA 6010	4/26/2006 16:50	L. Lee	0.005	1.0
Total Silver**	ND	mg/l**	EPA 6010	4/26/2006 16:50	L. Lee	0.002	5.0

### Remarks:

Date Sample Collected 4/7/2006  
Sample Submitted By D ROAD  
Date Sample Received 4/13/2006

10:30

PRELIMINARY REPORT: EMAIL COPY

ND = Not Detected

MDL - Minimum Detectable Limit

MCL - Maximum Contaminant Level, USEPA Regulated

PQL - Practical Quantifiable Limit

[MCL] = Maximum Contaminant Level, Non-Regulated

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 8B; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in leachate



# RELIANCE LABORATORIES, INC.

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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET  
ST. CLOUD

FL 34769-

Monday, May 22, 2006

Lab Number 89515-2006-W Sample ID SW-3

Parameter	Value	PQL	MCL	Units	Method
1,1-Dichloroethylene**	ND		0.7	mg/l**	8260B
1,2-Dichloroethane**	ND		0.5	mg/l**	8260B
1,4-Dichlorobenzene**	ND		7.5	mg/l**	8260B
2-Butanone**	ND		200	mg/l**	8260B
Benzene**	ND		0.5	mg/l**	8260B
Carbon Tetrachloride**	ND		0.5	mg/l**	8260B
Chlorobenzene**	ND		100	mg/l**	8260B
Chloroform**	ND		6.0	mg/l**	8260B
Hexachlorobutadiene**	ND		0.5	mg/l**	8260B
Tetrachloroethylene**	ND		0.7	mg/l**	8260B
Trichloroethylene**	ND		0.5	mg/l**	8260B
Vinyl Chloride**	ND		0.2	mg/l**	8260B
Pyrimine	ND		5.0	mg/l**	8270C
1,4-Dichlorobenzene	ND		7.5	mg/l**	8270C
Hexachloroethane	ND		3.0	mg/l**	8270C
Nitrobenzene	ND		2.0	mg/l**	8270C
2,4-Dinitrotoluene	ND		0.13	mg/l**	8270C
Hexachlorobutadiene	ND		0.5	mg/l**	8270C
Hexachlorobenzene	ND		0.13	mg/l**	8270C
o-Cresol	ND		200.0	mg/l**	8270C

### Remarks:

Sample Submitted By	DILWOOD
Date Sample Collected	4/7/2006
Date Sample Received	4/12/2006
Date Sample Analyzed:	4/19/2006
Analyst:	T Miller

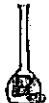
PRELIMINARY REPORT: EMAIL COPY

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 16TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. B3; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l in leachate

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by AC&S, Inc.



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## PLAY SPACE SERVICES, INC.

109 E. 17TH STREET

ST. CLOUD

FL 34769-

Monday, May 22, 2006

Lab Number 89515-2006-W Sample ID SW-3

Parameter	Value	PQL	MCL	Units	Method
m/p-Cresol	ND		200.0	mg/l**	8270C
Total Cresol	ND		200.0	mg/l**	8270C
2,4,5-Trichlorophenol	ND		400.0	mg/l**	8270C
2,4,6-Trichlorophenol	ND		2.0	mg/l**	8270C
Pentachlorophenol	ND		100.0	mg/l**	8270C
Surrogate	Percent Recovery				
1,2-Dichloroethane-d4	114%				
Toluene-d8	119%				
4-Bromofluorobenzene	106%				

8270C Surrogate Recoveries: Nitrobenzene-d5=89%; 2-Fluorobiphenyl=79%; Terphenyl-d14=93%; 2-Fluorophenol=88%; Phenol-d5=90%

### Remarks:

Sample Submitted By	D ROAD		
Date Sample Collected	4/7/2006		
Date Sample Received	4/13/2006	10:30	PRELIMINARY REPORT: EMAIL COPY
Date Sample Analyzed:	4/19/2006	19:52	
Analyst:	T Miller		

ND: Not Detected. If present, the result is less than the MDL - Minimum Detectable Limit.

\* Method Code: STANDARD METHODS 18TH ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd Edition

NOTE: \*\*mg/l In bracket

NOTE: Analysis of Semi-Volatile Organics by Method 8270C performed by ACAS, Inc.