TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

99-193 Aiea Heights Drive, Suite 121 Aiea, HI 96701 * 808-486-5227 * Fax 808-486-2456

EnviroServices & Training Center
505 Ward Avenue, Suite 202
Honolulu, HI 96814
Kylie Luke

Work Order: HQJ0156
Project: Emulsion Plant
Project Number: 02-6011

Received: 10/26/07
Reported: 11/08/07 13:33

ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Rpt Limit	Dilution	Date Analyzed	Prep Date	Seq/ Batch	Method
Sample ID: HQJ0156-01 (TP6.2.30 - Solid/Soil)					**Sampled: 10/26/07 08:03**		**Recvd: 10/26/07 17:00**		
Volatile Organic Compounds by EPA 8260B									
1,2-Dichloropropane	ND		mg/kg	0.00977	1	10/31/07 14:50	10/31/07	7K01002	SW8260B
Surr: 1,2-Dichloroethane-d4 (75.6-128%)	*110 %*					"	"	"	"
Surr: 4-Bromofluorobenzene (85.5-115%)	*115 %*					"	"	"	"
Surr: Dibromofluoromethane (81-121%)	*96 %*					"	"	"	"
Surr: Toluene-d8 (88.2-117%)	*102 %*					"	"	"	"

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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Rpt Limit	Dilution	Date Analyzed	Prep Date	Seq/ Batch	Method
Sample ID: HQJ0156-02 (TP6.2.40 - Solid/Soil)					**Sampled: 10/26/07 09:11**		**Recvd: 10/26/07 17:00**		
Volatile Organic Compounds by EPA 8260B									
1,2-Dichloropropane	ND		mg/kg	0.00977	1	10/31/07 15:17	10/31/07	7K01002	SW8260B
Surr: 1,2-Dichloroethane-d4 (75.6-128%)	*105 %*					"	"	"	"
Surr: 4-Bromofluorobenzene (85.5-115%)	*115 %*					"	"	"	"
Surr: Dibromofluoromethane (81-121%)	*96 %*					"	"	"	"
Surr: Toluene-d8 (88.2-117%)	*105 %*					"	"	"	"

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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Rpt Limit	Dilution	Date Analyzed	Prep Date	Seq/ Batch	Method
Sample ID: HQJ0156-03 (TP6.2.50 - Solid/Soil)					**Sampled: 10/26/07 09:51**		**Recvd: 10/26/07 17:00**		
Volatile Organic Compounds by EPA 8260B									
1,2-Dichloropropane	0.108	1	mg/kg	0.00967	1	10/31/07 15:44	10/31/07	7K01002	SW8260B
Surr: 1,2-Dichloroethane-d4 (75.6-128%)	*97 %*	*1*				"	"	"	"
Surr: 4-Bromofluorobenzene (85.5-115%)	*169 %*	*1,ZX*				"	"	"	"
Surr: Dibromofluoromethane (81-121%)	*93 %*	*1*				"	"	"	"
Surr: Toluene-d8 (88.2-117%)	*118 %*	*1,ZX*				"	"	"	"

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ANALYTICAL REPORT

Analyte	Sample Result	Data Qualifiers	Units	Rpt Limit	Dilution	Date Analyzed	Prep Date	Seq/ Batch	Method
Sample ID: HQJ0156-04 (TP6.2.59 - Solid/Soil)					**Sampled: 10/26/07 11:21**		**Recvd: 10/26/07 17:00**		
Volatile Organic Compounds by EPA 8260B									
1,2-Dichloropropane	0.0499	1	mg/kg	0.0100	1	10/31/07 16:10	10/31/07	7K01002	SW8260B
Surr: 1,2-Dichloroethane-d4 (75.6-128%)	*97 %*	*1*				"	"	"	"
Surr: 4-Bromofluorobenzene (85.5-115%)	*126 %*	*1,ZX*				"	"	"	"
Surr: Dibromofluoromethane (81-121%)	*92 %*	*1*				"	"	"	"
Surr: Toluene-d8 (88.2-117%)	*109 %*	*1*				"	"	"	"

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LABORATORY BLANK QC DATA

Analyte	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds by EPA 8260B													
Batch\Seq: 7K01002 Extracted: 10/31/07													
Blank Analyzed: 10/31/2007 (7K01002-BLK1)													
1,1,1,2-Tetrachloroethane			mg/kg	N/A	0.0100	ND							
1,1,1-Trichloroethane			mg/kg	N/A	0.0100	ND							
1,1,2,2-Tetrachloroethane			mg/kg	N/A	0.0100	ND							
1,1,2-Trichloroethane			mg/kg	N/A	0.0100	ND							
1,1-Dichloroethane			mg/kg	N/A	0.0500	ND							
1,1-Dichloroethene			mg/kg	N/A	0.0100	ND							
1,1-Dichloropropene			mg/kg	N/A	0.0100	ND							
1,2,3-Trichlorobenzene			mg/kg	N/A	0.0100	ND							
1,2,3-Trichloropropane			mg/kg	N/A	0.0100	ND							
1,2,4-Trichlorobenzene			mg/kg	N/A	0.0500	ND							
1,2,4-Trimethylbenzene			mg/kg	N/A	0.0100	ND							
1,2-Dibromo-3-chloropropane			mg/kg	N/A	0.0100	ND							
1,2-Dibromoethane (EDB)			mg/kg	N/A	0.0100	ND							
1,2-Dichlorobenzene			mg/kg	N/A	0.0500	ND							
1,2-Dichloroethane			mg/kg	N/A	0.0100	ND							
1,2-Dichloropropane			mg/kg	N/A	0.0100	ND							
1,3,5-Trimethylbenzene			mg/kg	N/A	0.0100	ND							
1,3-Dichlorobenzene			mg/kg	N/A	0.0500	ND							
1,3-Dichloropropane			mg/kg	N/A	0.0100	ND							
1,4-Dichlorobenzene			mg/kg	N/A	0.0500	ND							
2,2-Dichloropropane			mg/kg	N/A	0.0100	ND							
2-Butanone (MEK)			mg/kg	N/A	0.0500	ND							
2-Chlorotoluene			mg/kg	N/A	0.0100	ND							
2-Hexanone			mg/kg	N/A	0.0500	ND							
4-Chlorotoluene			mg/kg	N/A	0.0100	ND							
4-Methyl-2-pentanone (MIBK)			mg/kg	N/A	0.0500	ND							
Acetone			mg/kg	N/A	0.0500	ND							
Acrylonitrile			mg/kg	N/A	0.0500	ND							
Benzene			mg/kg	N/A	0.0100	ND							
Bromobenzene			mg/kg	N/A	0.0100	ND							
Bromochloromethane			mg/kg	N/A	0.0500	ND							
Bromodichloromethane			mg/kg	N/A	0.0100	ND							
Bromoform			mg/kg	N/A	0.0100	ND							
Bromomethane			mg/kg	N/A	0.100	ND							
Carbon disulfide			mg/kg	N/A	0.0100	ND							
Carbon Tetrachloride			mg/kg	N/A	0.0100	ND							
Chlorobenzene			mg/kg	N/A	0.0100	ND							
Chlorodibromomethane			mg/kg	N/A	0.0100	ND							
Chloroethane			mg/kg	N/A	0.0500	ND							
Chloroform			mg/kg	N/A	0.0100	ND							
Chloromethane			mg/kg	N/A	0.0500	ND							
cis-1,2-Dichloroethene			mg/kg	N/A	0.0100	ND							
cis-1,3-Dichloropropene			mg/kg	N/A	0.0100	ND							
Dibromomethane			mg/kg	N/A	0.0100	ND							
Dichlorodifluoromethane			mg/kg	N/A	0.0500	ND							
Ethylbenzene			mg/kg	N/A	0.0100	ND							

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LABORATORY BLANK QC DATA

Analyte	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds by EPA 8260B													
Batch\Seq: 7K01002 Extracted: 10/31/07													
Blank Analyzed: 10/31/2007 (7K01002-BLK1)													
Hexachlorobutadiene			mg/kg	N/A	0.0500	ND							
Iodomethane			mg/kg	N/A	0.0500	ND							
Isopropylbenzene			mg/kg	N/A	0.0100	ND							
m,p-Xylene			mg/kg	N/A	0.0100	ND							
Methyl tert-Butyl Ether			mg/kg	N/A	0.00500	ND							
Methylene Chloride			mg/kg	N/A	0.0500	ND							
Naphthalene			mg/kg	N/A	0.0500	ND							
n-Butylbenzene			mg/kg	N/A	0.0100	ND							
n-Propylbenzene			mg/kg	N/A	0.0100	ND							
o-Xylene			mg/kg	N/A	0.0100	ND							
p-Isopropyltoluene			mg/kg	N/A	0.0100	ND							
sec-Butylbenzene			mg/kg	N/A	0.0100	ND							
Styrene			mg/kg	N/A	0.0100	ND							
tert-Butylbenzene			mg/kg	N/A	0.0100	ND							
Tetrachloroethene			mg/kg	N/A	0.0100	ND							
Toluene			mg/kg	N/A	0.0100	ND							
trans-1,2-Dichloroethene			mg/kg	N/A	0.0100	ND							
trans-1,3-Dichloropropene			mg/kg	N/A	0.0100	ND							
trans-1,4-Dichloro-2-butene			mg/kg	N/A	0.0500	ND							
Trichloroethene			mg/kg	N/A	0.0100	ND							
Trichlorofluoromethane			mg/kg	N/A	0.0100	ND							
Vinyl Acetate			mg/kg	N/A	0.0500	ND							
Vinyl chloride			mg/kg	N/A	0.0500	ND							
Surrogate: 1,2-Dichloroethane-d4			mg/kg					*105*		*75.6-128*			
Surrogate: 4-Bromofluorobenzene			mg/kg					*113*		*85.5-115*			
Surrogate: Dibromofluoromethane			mg/kg					*98*		*81-121*			
Surrogate: Toluene-d8			mg/kg					*101*		*88.2-117*			

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LCS/LCS DUPLICATE QC DATA

Analyte	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds by EPA 8260B													
Batch\Seq: 7K01002 Extracted: 10/31/07													
LCS Analyzed: 10/31/2007 (7K01002-BS1)													
1,1,1,2-Tetrachloroethane		0.100	mg/kg	N/A	0.0100	0.0884	0.0854	88	85	76.8-120	3	30	
1,1,1-Trichloroethane		0.100	mg/kg	N/A	0.0100	0.0922	0.0932	92	93	76.9-125	1	30	
1,1,2,2-Tetrachloroethane		0.100	mg/kg	N/A	0.0100	0.0989	0.0991	99	99	73.3-126	0	30	
1,1,2-Trichloroethane		0.100	mg/kg	N/A	0.0100	0.0876	0.0870	88	87	70.4-121	1	30	
1,1-Dichloroethane		0.100	mg/kg	N/A	0.0500	0.101	0.102	101	102	75.8-123	1	30	
1,1-Dichloroethene		0.100	mg/kg	N/A	0.0100	0.0859	0.0896	86	90	70.3-140	4	30	
1,1-Dichloropropene		0.100	mg/kg	N/A	0.0100	0.0956	0.0993	96	99	69.9-124	4	30	
1,2,3-Trichlorobenzene		0.100	mg/kg	N/A	0.0100	0.102	0.103	102	103	72.8-117	1	30	
1,2,3-Trichloropropane		0.100	mg/kg	N/A	0.0100	0.100	0.100	100	100	80.4-118	0	30	
1,2,4-Trichlorobenzene		0.100	mg/kg	N/A	0.0500	0.102	0.103	102	103	71.7-120	1	30	
1,2,4-Trimethylbenzene		0.100	mg/kg	N/A	0.0100	0.103	0.102	103	102	76.4-122	0	30	
1,2-Dibromo-3-chloropropane		0.100	mg/kg	N/A	0.0100	0.0991	0.102	99	102	70-130	2	200	
1,2-Dibromoethane (EDB)		0.100	mg/kg	N/A	0.0100	0.0903	0.0893	90	89	70-130	1	200	
1,2-Dichlorobenzene		0.100	mg/kg	N/A	0.0500	0.0965	0.0970	96	97	74.4-119	1	30	
1,2-Dichloroethane		0.100	mg/kg	N/A	0.0100	0.0997	0.0992	100	99	76.4-122	1	30	
1,2-Dichloropropane		0.100	mg/kg	N/A	0.0100	0.0837	0.0883	84	88	81.2-120	5	30	
1,3,5-Trimethylbenzene		0.100	mg/kg	N/A	0.0100	0.102	0.103	102	103	74.3-125	1	30	
1,3-Dichlorobenzene		0.100	mg/kg	N/A	0.0500	0.0943	0.0938	94	94	72.4-119	1	30	
1,3-Dichloropropane		0.100	mg/kg	N/A	0.0100	0.0918	0.0892	92	89	74.4-126	3	30	
1,4-Dichlorobenzene		0.100	mg/kg	N/A	0.0500	0.0997	0.0997	100	100	74.4-126	0	30	
2,2-Dichloropropane		0.100	mg/kg	N/A	0.0100	0.103	0.102	103	102	65.4-129	1	30	
2-Butanone (MEK)		0.500	mg/kg	N/A	0.0500	0.468	0.466	94	93	38.3-107	0	30	
2-Chlorotoluene		0.100	mg/kg	N/A	0.0100	0.0965	0.0973	96	97	70.1-125	1	30	
2-Hexanone		0.500	mg/kg	N/A	0.0500	0.526	0.517	105	103	48-103	2	30	L5
4-Chlorotoluene		0.100	mg/kg	N/A	0.0100	0.0964	0.0964	96	96	72-125	0	30	
4-Methyl-2-pentanone (MIBK)		0.500	mg/kg	N/A	0.0500	0.471	0.462	94	92	46.6-107	2	30	
Acetone		0.500	mg/kg	N/A	0.0500	0.453	0.450	91	90	17.8-136	1	30	
Acrylonitrile		0.500	mg/kg	N/A	0.0500	0.0497	0.340	10	68	-90.8-155	149	30	R2
Benzene		0.100	mg/kg	N/A	0.0100	0.0884	0.0888	88	89	77.9-124	1	30	
Bromobenzene		0.100	mg/kg	N/A	0.0100	0.102	0.103	102	103	78.2-119	1	30	
Bromochloromethane		0.100	mg/kg	N/A	0.0500	0.0885	0.0865	88	86	78.2-119	2	30	
Bromodichloromethane		0.100	mg/kg	N/A	0.0100	0.0946	0.0939	95	94	63.4-144	1	30	
Bromoform		0.100	mg/kg	N/A	0.0100	0.104	0.104	104	104	71.1-116	0	30	
Bromomethane		0.100	mg/kg	N/A	0.100	0.0937	0.0960	94	96	71.1-116	2	30	
Carbon disulfide		0.100	mg/kg	N/A	0.0100	0.0771	0.0784	77	78	19.6-156	2	30	
Carbon Tetrachloride		0.100	mg/kg	N/A	0.0100	0.0909	0.0924	91	92	73.1-123	2	30	
Chlorobenzene		0.100	mg/kg	N/A	0.0100	0.0866	0.0854	87	85	71.3-128	1	30	
Chlorodibromomethane		0.100	mg/kg	N/A	0.0100	0.0939	0.0920	94	92	69.2-124	2	30	
Chloroethane		0.100	mg/kg	N/A	0.0500	0.105	0.108	105	108	55.2-146	2	30	
Chloroform		0.100	mg/kg	N/A	0.0100	0.0918	0.0922	92	92	76.6-117	1	30	
Chloromethane		0.100	mg/kg	N/A	0.0500	0.0930	0.0960	93	96	26.4-169	3	30	
cis-1,2-Dichloroethene		0.100	mg/kg	N/A	0.0100	0.0921	0.0912	92	91	79.4-122	1	30	
cis-1,3-Dichloropropene		0.100	mg/kg	N/A	0.0100	0.0889	0.0878	89	88	73.1-124	1	30	
Dibromomethane		0.100	mg/kg	N/A	0.0100	0.0888	0.0894	89	89	76-119	1	30	
Dichlorodifluoromethane		0.100	mg/kg	N/A	0.0500	0.0726	0.0736	73	74	5.34-236	1	30	
Ethylbenzene		0.100	mg/kg	N/A	0.0100	0.108	0.106	108	106	77.1-129	2	30	

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LCS/LCS DUPLICATE QC DATA

Analyte	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds by EPA 8260B													
Batch\Seq: 7K01002 Extracted: 10/31/07													
LCS Analyzed: 10/31/2007 (7K01002-BS1)													
Hexachlorobutadiene		0.100	mg/kg	N/A	0.0500	0.112	0.111	112	111	66.5-120	0	30	
Isopropylbenzene		0.100	mg/kg	N/A	0.0100	0.100	0.101	100	101	72.8-125	0	30	
m,p-Xylene		0.200	mg/kg	N/A	0.0100	0.180	0.178	90	89	69.7-126	1	30	
Methyl tert-Butyl Ether		0.100	mg/kg	N/A	0.00500	0.0940	0.0931	94	93	81.8-135	1	30	
Methylene Chloride		0.100	mg/kg	N/A	0.0500	0.0957	0.0961	96	96	79.1-125	0	30	
Naphthalene		0.100	mg/kg	N/A	0.0500	0.0987	0.102	99	102	69.2-121	3	30	
n-Butylbenzene		0.100	mg/kg	N/A	0.0100	0.100	0.100	100	100	71-128	0	30	
n-Propylbenzene		0.100	mg/kg	N/A	0.0100	0.104	0.104	104	104	77.4-129	0	30	
o-Xylene		0.100	mg/kg	N/A	0.0100	0.0851	0.0830	85	83	70.3-124	3	30	
p-Isopropyltoluene		0.100	mg/kg	N/A	0.0100	0.101	0.101	101	101	68.9-121	1	30	
sec-Butylbenzene		0.100	mg/kg	N/A	0.0100	0.101	0.102	101	102	70.7-126	1	30	
Styrene		0.100	mg/kg	N/A	0.0100	0.0946	0.0927	95	93	72.7-131	2	30	
tert-Butylbenzene		0.100	mg/kg	N/A	0.0100	0.0979	0.0992	98	99	71.9-126	1	30	
Tetrachloroethene		0.100	mg/kg	N/A	0.0100	0.0815	0.0803	81	80	63.1-119	2	30	
Toluene		0.100	mg/kg	N/A	0.0100	0.0884	0.0872	88	87	77.8-125	1	30	
trans-1,2-Dichloroethene		0.100	mg/kg	N/A	0.0100	0.0859	0.0896	86	90	73.7-130	4	30	
trans-1,3-Dichloropropene		0.100	mg/kg	N/A	0.0100	0.0868	0.0839	87	84	67.8-113	3	30	
trans-1,4-Dichloro-2-butene		0.200	mg/kg	N/A	0.0500	0.203	0.201	102	101	55.3-115	1	30	
Trichloroethene		0.100	mg/kg	N/A	0.0100	0.0865	0.0864	86	86	75.3-121	0	30	
Trichlorofluoromethane		0.100	mg/kg	N/A	0.0100	0.0975	0.100	97	100	59-150	3	30	
Vinyl Acetate		0.100	mg/kg	N/A	0.0500	0.114	0.112	114	112	-16.7-408	1	30	
Vinyl chloride		0.100	mg/kg	N/A	0.0500	0.0841	0.0850	84	85	31.1-157	1	30	
Surrogate: 1,2-Dichloroethane-d4			mg/kg					*103*	*103*	*75.6-128*			
Surrogate: 4-Bromofluorobenzene			mg/kg					*96*	*97*	*83.5-115*			
Surrogate: Dibromofluoromethane			mg/kg					*102*	*101*	*81-121*			
Surrogate: Toluene-d8			mg/kg					*100*	*98*	*88.2-117*			

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EnviroServices & Training Center
505 Ward Avenue, Suite 202
Honolulu, HI 96814
Kylie Luke

Work Order: HQJ0156
Project: Emulsion Plant
Project Number: 02-6011

Received: 10/26/07
Reported: 11/08/07 13:33

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds by EPA 8260B													
Batch\Seq: 7K01002 Extracted: 10/31/07													
Matrix Spike Analyzed: 10/31/2007 (7K01002-MS1)				QC Source Sample: HQJ0155-01									I
1,1,1,2-Tetrachloroethane	ND	0.0986	mg/kg	N/A	0.00986	0.0843		85		76.8-120			
1,1,1-Trichloroethane	ND	0.0986	mg/kg	N/A	0.00986	0.120		121		76.9-125			
1,1,2,2-Tetrachloroethane	ND	0.0986	mg/kg	N/A	0.00986	0.107		108		73.3-126			
1,1,2-Trichloroethane	ND	0.0986	mg/kg	N/A	0.00986	0.0804		82		70.4-121			
1,1-Dichloroethane	ND	0.0986	mg/kg	N/A	0.0493	0.101		102		75.8-123			
1,1-Dichloroethene	ND	0.0986	mg/kg	N/A	0.00986	0.119		121		70.3-140			
1,1-Dichloropropene	ND	0.0986	mg/kg	N/A	0.00986	0.132		134		69.9-124			M1
1,2,3-Trichlorobenzene	ND	0.0986	mg/kg	N/A	0.00986	0.0861		87		72.8-117			
1,2,3-Trichloropropane	ND	0.0986	mg/kg	N/A	0.00986	0.115		116		80.4-118			
1,2,4-Trichlorobenzene	ND	0.0986	mg/kg	N/A	0.0493	0.0896		91		71.7-120			
1,2,4-Trimethylbenzene	ND	0.0986	mg/kg	N/A	0.00986	0.123		125		76.4-122			M1
1,2-Dibromo-3-chloropropane	ND	0.0986	mg/kg	N/A	0.00986	0.128		130		70-130			
1,2-Dibromoethane (EDB)	ND	0.0986	mg/kg	N/A	0.00986	0.0841		85		70-130			
1,2-Dichlorobenzene	ND	0.0986	mg/kg	N/A	0.0493	0.0936		95		74.4-119			
1,2-Dichloroethane	ND	0.0986	mg/kg	N/A	0.00986	0.0801		81		76.4-122			
1,2-Dichloropropane	ND	0.0986	mg/kg	N/A	0.00986	0.0731		74		81.2-120			M1
1,3,5-Trimethylbenzene	ND	0.0986	mg/kg	N/A	0.00986	0.136		138		74.3-125			M1
1,3-Dichlorobenzene	ND	0.0986	mg/kg	N/A	0.0493	0.0909		92		72.4-119			
1,3-Dichloropropane	0.00241	0.0986	mg/kg	N/A	0.00986	0.0821		81		74.4-126			
1,4-Dichlorobenzene	ND	0.0986	mg/kg	N/A	0.0493	0.0945		96		74.4-126			
2,2-Dichloropropane	ND	0.0986	mg/kg	N/A	0.00986	0.137		138		65.4-129			M1
2-Butanone (MEK)	ND	0.493	mg/kg	N/A	0.0493	0.454		92		38.3-107			
2-Chlorotoluene	ND	0.0986	mg/kg	N/A	0.00986	0.117		119		70.1-125			
2-Hexanone	ND	0.493	mg/kg	N/A	0.0493	0.574		116		48-103			M1
4-Chlorotoluene	ND	0.0986	mg/kg	N/A	0.00986	0.110		112		72-125			
4-Methyl-2-pentanone (MIBK)	ND	0.493	mg/kg	N/A	0.0493	0.490		99		46.6-107			
Acetone	ND	0.493	mg/kg	N/A	0.0493	0.434		88		17.8-136			
Acrylonitrile	ND	0.493	mg/kg	N/A	0.0493	0.321		65		-90.8-155			
Benzene	ND	0.0986	mg/kg	N/A	0.00986	0.0842		85		77.9-124			
Bromobenzene	ND	0.0986	mg/kg	N/A	0.00986	0.103		105		78.2-119			
Bromochloromethane	ND	0.0986	mg/kg	N/A	0.0493	0.0679		69		78.2-119			M1
Bromodichloromethane	ND	0.0986	mg/kg	N/A	0.00986	0.0768		78		63.4-144			
Bromoform	ND	0.0986	mg/kg	N/A	0.00986	0.110		112		71.1-116			
Bromomethane	ND	0.0986	mg/kg	N/A	0.0986	0.0984		100		71.1-116			
Carbon disulfide	ND	0.0986	mg/kg	N/A	0.00986	0.0984		100		19.6-156			
Carbon Tetrachloride	ND	0.0986	mg/kg	N/A	0.00986	0.128		129		73.1-123			M1
Chlorobenzene	ND	0.0986	mg/kg	N/A	0.00986	0.0848		86		71.3-128			
Chlorodibromomethane	ND	0.0986	mg/kg	N/A	0.00986	0.0826		84		69.2-124			
Chloroethane	ND	0.0986	mg/kg	N/A	0.0493	0.129		130		55.2-146			
Chloroform	ND	0.0986	mg/kg	N/A	0.00986	0.0829		84		76.6-117			
Chloromethane	ND	0.0986	mg/kg	N/A	0.0493	0.109		110		26.4-169			
cis-1,2-Dichloroethene	ND	0.0986	mg/kg	N/A	0.00986	0.0823		83		79.4-122			
cis-1,3-Dichloropropene	ND	0.0986	mg/kg	N/A	0.00986	0.0803		81		73.1-124			
Dibromomethane	ND	0.0986	mg/kg	N/A	0.00986	0.0693		70		76-119			M1
Dichlorodifluoromethane	ND	0.0986	mg/kg	N/A	0.0493	0.122		124		5.34-236			
Ethylbenzene	ND	0.0986	mg/kg	N/A	0.00986	0.128		130		77.1-129			M1

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EnviroServices & Training Center
505 Ward Avenue, Suite 202
Honolulu, HI 96814
Kylie Luke

Work Order: HQJ0156
Project: Emulsion Plant
Project Number: 02-6011

Received: 10/26/07
Reported: 11/08/07 13:33

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC DATA

Analyte	Source Result	Spike Level	Units	MDL	MRL	Result	Dup Result	% REC	Dup %REC	% REC Limits	RPD	RPD Limit	Q
Volatile Organic Compounds by EPA 8260B													
Batch\Seq: 7K01002 Extracted: 10/31/07													
Matrix Spike Analyzed: 10/31/2007 (7K01002-MS1)				QC Source Sample: HQJ0155-01									I
Hexachlorobutadiene	ND	0.0986	mg/kg	N/A	0.0493	0.164		166		66.5-120			M1
Isopropylbenzene	ND	0.0986	mg/kg	N/A	0.00986	0.153		155		72.8-125			M1
m,p-Xylene	ND	0.197	mg/kg	N/A	0.00986	0.204		103		69.7-126			
Methyl tert-Butyl Ether	ND	0.0986	mg/kg	N/A	0.00493	0.0713		72		81.8-135			M1
Methylene Chloride	ND	0.0986	mg/kg	N/A	0.0493	0.0795		81		79.1-125			
Naphthalene	ND	0.0986	mg/kg	N/A	0.0493	0.0924		94		69.2-121			
n-Butylbenzene	ND	0.0986	mg/kg	N/A	0.00986	0.151		153		71-128			M1
n-Propylbenzene	ND	0.0986	mg/kg	N/A	0.00986	0.154		156		77.4-129			M1
o-Xylene	ND	0.0986	mg/kg	N/A	0.00986	0.0875		89		70.3-124			
p-Isopropyltoluene	ND	0.0986	mg/kg	N/A	0.00986	0.147		149		68.9-121			M1
sec-Butylbenzene	ND	0.0986	mg/kg	N/A	0.00986	0.164		166		70.7-126			M1
Styrene	ND	0.0986	mg/kg	N/A	0.00986	0.0866		88		72.7-131			
tert-Butylbenzene	ND	0.0986	mg/kg	N/A	0.00986	0.156		158		71.9-126			M1
Tetrachloroethene	ND	0.0986	mg/kg	N/A	0.00986	0.119		121		63.1-119			M1
Toluene	ND	0.0986	mg/kg	N/A	0.00986	0.102		103		77.8-125			
trans-1,2-Dichloroethene	ND	0.0986	mg/kg	N/A	0.00986	0.119		121		73.7-130			
trans-1,3-Dichloropropene	ND	0.0986	mg/kg	N/A	0.00986	0.0801		81		67.8-113			
trans-1,4-Dichloro-2-butene	ND	0.197	mg/kg	N/A	0.0493	0.244		124		55.3-115			M1
Trichloroethene	ND	0.0986	mg/kg	N/A	0.00986	0.0853		87		75.3-121			
Trichlorofluoromethane	ND	0.0986	mg/kg	N/A	0.00986	0.150		152		59-150			M1
Vinyl Acetate	ND	0.0986	mg/kg	N/A	0.0493	0.0938		95		-16.7-408			
Vinyl chloride	ND	0.0986	mg/kg	N/A	0.0493	0.162		165		31.1-157			M1
Surrogate: 1,2-Dichloroethane-d4			mg/kg					*91*		*75.6-128*			
Surrogate: 4-Bromofluorobenzene			mg/kg					*104*		*85.5-115*			
Surrogate: Dibromofluoromethane			mg/kg					*87*		*81-121*			
Surrogate: Toluene-d8			mg/kg					*114*		*88.2-117*			

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LABORATORY USE ONLY
LAB JOB NO. HQ 10156
LOCATION
CONTAINERS

Chain of Custody / Analysis Request Form

Report to: KYLIE LUKE
Company name: ETC
Address: 505 WARD AVE SUITE 202
City: HONOLULU State: HI ZIP: 96814
Phone: 839 7222 Fax: 839-4455
Sampler: KL # samples in shipment: 4

Project identification
Job name: EMULSION PLANT
Job number: 02-6011
P.O. number:
Contact email address: kylie@gobetc.com
Date results needed: STD

Indicate analyses requested: 1,2-Dichloroethane (DCE)

Item no.	Client sample ID	COMP	GRAB	Matrix: Water	Soil	Wastewater	Drinking water	Sludge	Liquid	Solid	Oil	Other	Preservation method	Sampling: Date	Time	No. of containers		Laboratory ID no.
1	TP6.2.30		X	X										10/24/07	803	1	X	HQ10156-01
2	TP6.2.40		X	X											911	1	X	-02
3	TP6.2.50		X	X											951	1	X	-03
4	TP6.2.59		X	X										10/24/07	1121	1	X	-04
5	— LAST ENTRY —																	
6																		
7																		
8																		
9																		
10																		

Released by (print / sign)	Date / time released	Delivery method	Received by (print / sign)	Company / Agency affiliation	Date / time received	Condition noted
Kylie Luke Kylie Luke	10/25/07 1100		Jim Sun Can	TA Hon	10/26/07 1700	Rec'd 4-7°C
	/				/	WCR
	/				/	

Comments:

Please check one:
- ☐ Dispose by lab
- ☐ Return to client
- ☐ Archive

CDC REV 06/2006 Distribution: White - TestAmerica Yellow - TestAmerica Pink - Client

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EnviroServices & Training Center 505 Ward Avenue, Suite 202 Honolulu, HI 96814 Kylie Luke	Work Order: HQJ0156 Project: Emulsion Plant Project Number: 02-6011	Received: 10/26/07 Reported: 11/08/07 13:33	

CERTIFICATION SUMMARY

TestAmerica - Honolulu, HI

Method	Matrix	Nelac	Hawaii
SW8260B	Solid/Soil	X	

For information concerning certifications of this facility or another TestAmerica facility, please visit our website at www.TestAmericaInc.com

DATA QUALIFIERS AND DEFINITIONS

I	Internal Standard recovery was outside of method limits. Matrix interference was confirmed by reanalysis.
L5	Analyte recovery outside of specified criteria. Individual analyte criteria exceedences allowed for multi-component analyses without disqualification of data per NELAC Standard, DOD QSM and/or AFCEE QAPP.
M1	The MS and/or MSD were outside the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
R2	The RPD exceeded the acceptance limit.
ZX	Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.
ND	Not detected at the reporting limit (or method detection limit if shown)

ADDITIONAL COMMENTS

TIER II: SITE-SPECIFIC LEACHATE DILUTION ATTENUATION FACTOR (DAF)

DAF Version: November 1995
State of Hawai'i
Department of Health
Environmental Management Division

Calculates dilution attenuation factor for dilution of leachate in groundwater.

Applies to basal, unconfined groundwater (aquifer) systems only (refer to Mink and Lau, 1990).
For high-level aquifers, input a groundwater gradient of 0.001 unless available data suggest otherwise.

STEPS.
1. Check with DOH to ensure that this is an up-to-date version of the spreadsheet.
2. *Input site data. Use default values where site-specific data are not available.
3. Spreadsheet generates leachate Dilution Attenuation Factor for site.
4. Complete information at bottom of this page.

*Site-specific input data must be supported in text of site investigation report(s).

SITE VARIABLES		DEFAULT	INPUT
[1]Hydraulic Conductivity (m/d):	K	see table	0.1
Aquifer Thickness (m):	d_a	10	10
Effective Porosity (fraction):	n_{eff}	0.30	0.30
[2]Average site groundwater elevation (m)	E_{gw}	site-specific	N/A
[3]Distance to ocean (m)	D	site-specific	N/A
[4]Source Length (m):	L	site-specific	20
[5]Precipitation (cm/yr):	p	200	200
[6]Fraction groundwater recharge:	gw_r	0.36	0.36

Default hydraulic conductivities (m/d)	
basalt (all types):	10
sandy/coralline sediments:	10
saprolite/silty sediments:	2.0
clayey sediments or soils:	0.1

[7]CALCULATIONS:		
[8]Infiltration Rate (m/y)	I	0.72
[9]Regional Hydraulic Gradient (m/m):	h	0.001
[10]Groundwater Velocity (m/y)	V_a	0.12
[11]Mixing Zone Depth (m)	d_M	10.0
[12]Dilution Attenuation Factor:	DAF:	1.0

SITE NAME: Former Emulsion Plant
SITE ADDRESS: 750 Fraser Avenue, Lanai City, Hawaii

DOH ID NO. 9-402424

SPREADSHEET PREPARED BY: Damon Hamura

DATE: _____

SIGNATURE: _____

SUPPORTING SITE INVESTIGATION REPORT(S) (Note report title, date, and preparer's name and address):
July 13, 1993, Further Phase II Site Characterization Report, prepared by Brewer Environmental Services
April 16, 2003, Soil Sampling Report, Former Emulsion Plant, prepared by EnviroServices & Training Center, LLC
December 5, 2007, Subsurface Soil Sampling Report, Former Emulsion Plant, prepared by EnviroServices & Training Center, LLC

NOTES:
1. Hydraulic conductivity of formation carrying groundwater.
2. Approximate, average groundwater elevation at release site. Input N/A for high-level groundwater systems or if no information is available. (See also note 8.)
3. Distance from release site to coastline as measured from a point representative of the average groundwater elevation for the release site. Input N/A for high-level groundwater systems or if N/A was input for groundwater elevation (See also note 8.)
4. Length of contaminated soil source as measured parallel to groundwater flow.
5. Refer to annual rainfall maps included in Tier 2 report. Input rainfall as meters per year. Reference map used in report.
6. Default recharge is 36% of total rainfall (average for Oahu; refer to Atlas of Hawai'i, 1983, for other islands).
7. Equations modified after ASTM RBCA guidance (ES-38, 1994). See text.
8. Infiltration rate = annual precipitation x fraction groundwater recharge.
9. Groundwater gradient at site. Use approximate regional gradient unless otherwise directed or approved by DOH. Spreadsheet generates default regional gradient based in input average groundwater elevation at site and distance to ocean. For high-level groundwater systems or sites where the information needed to approximate groundwater gradient is uncertain or not available, input a gradient of 0.001 unless demonstrated by other data.
10. Groundwater velocity calculated as seepage velocity.
11. Mixing zone depth. Spreadsheet limits maximum mixing depth to input aquifer thickness.
12. DAF = ratio of contaminant concentration in soil leachate to concentration after mixing of leachate in groundwater. To generate a Tier 2 soil action levels for groundwater impact concerns, multiply the Tier 1 or Tier 2, SESOIL-generated soil action level by the DAF calculated for the site. DAF most sensitive to hydraulic conductivity, hydraulic gradient, and rainfall/infiltration rate.

References:

ASTM. 1994. Emergency Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites (July, 1994): American Association for Testing and Materials (ASTM), Designation ES 38-94.
HIDOH. 1995. *Risk-Based Corrective Action And Decision Making At Sites With Contaminated Soil And Groundwater* : Hawai'i Department of Health, Environmental Management Division.
Mink, J.F. and Lau, S.L. 1990. Aquifer Identification and Classification for Oahu: Groundwater Protection Strategy for Hawai'i: Water Resources Research Center, University of Hawai'i at Manoa, Technical Report No. 179.