Client: Cardno - Hawaii Address: 737 Bishop St., Ste. 3050 Honolulu, HI 96813 Benjamin Berridge Attn:

Work Order: Project: Reported:

WBK0734 ADC Water Quality Monitoring 12/30/2021 14:47

Analytical Results Report

Sample Location:	DW-2						
Lab/Sample Number:	WBK0734-01	Collect Date:	11/15/21 09:15				
Date Received:	11/18/21 10:00	Collected By:					
Matrix:	Water						
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics							
TSS	11.0	mg/L	0.333	11/19/21 11:31	KAS	EPA 160.2	
Metals by ICP-MS							
Arsenic	0.00101	mg/L	0.00100	12/14/21 17:21	JLG	EPA 200.8	
Mercury							
Mercury	<0.0850	ug/L	0.100	11/24/21 14:27	JLG	EPA 245.1	
Semivolatiles							
Diesel	<0.052	mg/L	0.0800	11/22/21 19:20	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.400	11/22/21 19:20	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0800	11/22/21 19:20	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.400	11/22/21 19:20	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	86	.9%	50-150	11/22/21 19:20	ARC	NWTPH-HCID	



Analytical Results Report									
			(Continued)						
Sample Location:	DW-3 WBK0734-02	Collect Date:	11/15/21 09:45						
Date Received:	11/18/21 10:00	Collected By:	11,10,21 00.10						
Matrix:	Water	Collected by.							
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier		
Inorganics									
TSS	13.0	mg/L	0.333	11/19/21 11:31	KAS	EPA 160.2			
Metals by ICP-MS									
Arsenic	0.000856	mg/L	0.00100	12/14/21 17:24	JLG	EPA 200.8	J		
Mercury									
Mercury	0.167	ug/L	0.100	11/24/21 14:34	JLG	EPA 245.1			
Semivolatiles									
Diesel	<0.052	mg/L	0.0800	11/22/21 20:15	ARC	NWTPH-HCID			
Gasoline	<0.16	mg/L	0.400	11/22/21 20:15	ARC	NWTPH-HCID			
Lube Oil	<0.046	mg/L	0.0800	11/22/21 20:15	ARC	NWTPH-HCID			
Mineral Oil	<0.16	mg/L	0.400	11/22/21 20:15	ARC	NWTPH-HCID			
Surrogate: n-Hexacosane	86.	.8%	50-150	11/22/21 20:15	ARC	NWTPH-HCID			



Analytical Results Report									
			(Continued)						
Sample Location: Lab/Sample Number: Date Received: Matrix:	D-2 WBK0734-03 11/18/21 10:00 Water	Collect Date: Collected By:	11/15/21 10:20						
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier		
Inorganics									
TSS	11.5	mg/L	0.500	11/19/21 11:31	KAS	EPA 160.2			
Metals by ICP-MS									
Arsenic	0.0116	mg/L	0.00100	12/14/21 17:33	JLG	EPA 200.8			
Mercury									
Mercury	ND	ug/L	0.100	11/24/21 14:36	JLG	EPA 245.1			
Semivolatiles									
Diesel	<0.052	mg/L	0.0800	11/22/21 22:04	ARC	NWTPH-HCID			
Gasoline	<0.16	mg/L	0.400	11/22/21 22:04	ARC	NWTPH-HCID			
Lube Oil	<0.046	mg/L	0.0800	11/22/21 22:04	ARC	NWTPH-HCID			
Mineral Oil	<0.16	mg/L	0.400	11/22/21 22:04	ARC	NWTPH-HCID			
Surrogate: n-Hexacosane	85	.4%	50-150	11/22/21 22:04	ARC	NWTPH-HCID			



Analytical Results Report									
			(Continued)						
Sample Location: Lab/Sample Number: Date Received: Matrix:	D-3 WBK0734-04 11/18/21 10:00 Water	Collect Date: Collected By:	11/15/21 09:35						
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier		
Inorganics									
TSS	16.6	mg/L	0.333	11/19/21 11:31	KAS	EPA 160.2			
Metals by ICP-MS									
Arsenic	0.00105	mg/L	0.00100	12/14/21 17:37	JLG	EPA 200.8			
Mercury									
Mercury	<0.0850	ug/L	0.100	11/24/21 14:38	JLG	EPA 245.1			
Semivolatiles									
Diesel	<0.052	mg/L	0.0800	11/22/21 22:59	ARC	NWTPH-HCID			
Gasoline	<0.16	mg/L	0.400	11/22/21 22:59	ARC	NWTPH-HCID			
Lube Oil	<0.046	mg/L	0.0800	11/22/21 22:59	ARC	NWTPH-HCID			
Mineral Oil	<0.16	mg/L	0.400	11/22/21 22:59	ARC	NWTPH-HCID			
Surrogate: n-Hexacosane	88	.7%	50-150	11/22/21 22:59	ARC	NWTPH-HCID			



Analytical Results Report									
			(Continued)						
Sample Location: Lab/Sample Number:	D-4 WBK0734-05	Collect Date:	11/15/21 09:10						
Date Received: Matrix:	11/18/21 10:00 Water	Collected By:							
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier		
Inorganics									
TSS	12.5	mg/L	0.500	11/19/21 11:31	KAS	EPA 160.2			
Metals by ICP-MS									
Arsenic	0.00188	mg/L	0.00100	12/14/21 17:40	JLG	EPA 200.8			
Mercury									
Mercury	<0.0850	ug/L	0.100	11/24/21 14:41	JLG	EPA 245.1			
Semivolatiles									
Diesel	<0.052	mg/L	0.0800	11/22/21 23:53	ARC	NWTPH-HCID			
Gasoline	<0.16	mg/L	0.400	11/22/21 23:53	ARC	NWTPH-HCID			
Lube Oil	<0.046	mg/L	0.0800	11/22/21 23:53	ARC	NWTPH-HCID			
Mineral Oil	<0.16	mg/L	0.400	11/22/21 23:53	ARC	NWTPH-HCID			
Surrogate: n-Hexacosane	93	.9%	50-150	11/22/21 23:53	ARC	NWTPH-HCID			



Analytical Results Report									
			(Continued)						
Sample Location: Lab/Sample Number: Date Received: Matrix:	D-5 WBK0734-06 11/18/21 10:00 Water	Collect Date: Collected By:	11/15/21 09:25						
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier		
Inorganics									
TSS	33.0	mg/L	0.500	11/19/21 11:31	KAS	EPA 160.2			
Metals by ICP-MS									
Arsenic	0.00164	mg/L	0.00100	12/14/21 17:43	JLG	EPA 200.8			
Mercury									
Mercury	ND	ug/L	0.100	11/24/21 14:43	JLG	EPA 245.1			
Semivolatiles									
Diesel	<0.052	mg/L	0.0800	11/23/21 0:48	ARC	NWTPH-HCID			
Gasoline	<0.16	mg/L	0.400	11/23/21 0:48	ARC	NWTPH-HCID			
Lube Oil	<0.046	mg/L	0.0800	11/23/21 0:48	ARC	NWTPH-HCID			
Mineral Oil	<0.16	mg/L	0.400	11/23/21 0:48	ARC	NWTPH-HCID			
Surrogate: n-Hexacosane	90	.5%	50-150	11/23/21 0:48	ARC	NWTPH-HCID			



Analytical Results Report									
			(Continued)						
Sample Location: Lab/Sample Number:	D-6 WBK0734-07	Collect Date:	11/15/21 10:30						
Date Received: Matrix:	11/18/21 10:00 Water	Collected By:							
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier		
Inorganics									
TSS	67.0	mg/L	0.500	11/19/21 11:31	KAS	EPA 160.2			
Metals by ICP-MS									
Arsenic	0.00666	mg/L	0.00100	12/14/21 17:46	JLG	EPA 200.8			
Mercury									
Mercury	1.29	ug/L	0.100	11/24/21 14:45	JLG	EPA 245.1			
Semivolatiles									
Diesel	<0.052	mg/L	0.0800	11/23/21 1:43	ARC	NWTPH-HCID			
Gasoline	<0.16	mg/L	0.400	11/23/21 1:43	ARC	NWTPH-HCID			
Lube Oil	<0.046	mg/L	0.0800	11/23/21 1:43	ARC	NWTPH-HCID			
Mineral Oil	<0.16	mg/L	0.400	11/23/21 1:43	ARC	NWTPH-HCID			
Surrogate: n-Hexacosane	93	.8%	50-150	11/23/21 1:43	ARC	NWTPH-HCID			



Analytical Results Report									
			(Continued)						
Sample Location: Lab/Sample Number: Date Received: Matrix:	D-7 WBK0734-08 11/18/21 10:00 Water	Collect Date: Collected By:	11/15/21 10:45						
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier		
Inorganics									
TSS	256	mg/L	0.500	11/19/21 11:31	KAS	EPA 160.2			
Metals by ICP-MS									
Arsenic	0.00125	mg/L	0.00100	12/14/21 17:49	JLG	EPA 200.8			
Mercury									
Mercury	0.161	ug/L	0.100	11/24/21 14:47	JLG	EPA 245.1			
Semivolatiles									
Diesel	<0.052	mg/L	0.0800	11/23/21 2:37	ARC	NWTPH-HCID			
Gasoline	<0.16	mg/L	0.400	11/23/21 2:37	ARC	NWTPH-HCID			
Lube Oil	<0.046	mg/L	0.0800	11/23/21 2:37	ARC	NWTPH-HCID			
Mineral Oil	<0.16	mg/L	0.400	11/23/21 2:37	ARC	NWTPH-HCID			
Surrogate: n-Hexacosane	90	.0%	50-150	11/23/21 2:37	ARC	NWTPH-HCID			



Analytical Results Report									
			(Continued)						
Sample Location:	D-8								
Lab/Sample Number:	WBK0734-09	Collect Date:	11/15/21 11:05						
Date Received:	11/18/21 10:00	Collected By:							
Matrix:	Water								
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier		
Inorganics									
TSS	5.60	mg/L	0.500	11/19/21 11:31	KAS	EPA 160.2			
Metals by ICP-MS									
Arsenic	0.00330	mg/L	0.00100	12/14/21 17:52	JLG	EPA 200.8			
Mercury									
Mercury	<0.0850	ug/L	0.100	11/24/21 14:50	JLG	EPA 245.1			
Semivolatiles									
Diesel	<0.052	mg/L	0.0800	11/23/21 3:32	ARC	NWTPH-HCID			
Gasoline	<0.16	mg/L	0.400	11/23/21 3:32	ARC	NWTPH-HCID			
Lube Oil	<0.046	mg/L	0.0800	11/23/21 3:32	ARC	NWTPH-HCID			
Mineral Oil	<0.16	mg/L	0.400	11/23/21 3:32	ARC	NWTPH-HCID			
Surrogate: n-Hexacosane	90	.0%	50-150	11/23/21 3:32	ARC	NWTPH-HCID			



Analytical Results Report								
			(Continued)					
Sample Location:	U-3/WW-4							
Lab/Sample Number:	WBK0734-10	Collect Date:	11/15/21 09:20					
Date Received:	11/18/21 10:00	Collected By:						
Matrix:	Water							
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier	
Inorganics								
TSS	9.00	mg/L	0.500	11/19/21 11:31	KAS	EPA 160.2		
Metals by ICP-MS								
Arsenic	0.000242	mg/L	0.00100	12/14/21 18:08	JLG	EPA 200.8	J	
Mercury								
Mercury	0.238	ug/L	0.100	11/24/21 14:52	JLG	EPA 245.1		
Semivolatiles								
Diesel	<0.052	mg/L	0.0800	11/23/21 4:26	ARC	NWTPH-HCID		
Gasoline	<0.16	mg/L	0.400	11/23/21 4:26	ARC	NWTPH-HCID		
Lube Oil	<0.046	mg/L	0.0800	11/23/21 4:26	ARC	NWTPH-HCID		
Mineral Oil	<0.16	mg/L	0.400	11/23/21 4:26	ARC	NWTPH-HCID		
Surrogate: n-Hexacosane	90.	7%	50-150	11/23/21 4:26	ARC	NWTPH-HCID		



	Analytical Results Report									
			(Continued)							
Sample Location:	DW-1/WW-1		44/45/04 44:00							
Lab/Sample Number:	WBK0734-11	Collect Date:	11/15/21 11:30							
Date Received:	11/18/21 10:00	Collected By:								
Matrix:	Water									
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier			
Inorganics										
TSS	4.00	mg/L	0.500	11/19/21 11:31	KAS	EPA 160.2				
Metals by ICP-MS										
Arsenic	0.00252	mg/L	0.00100	12/14/21 18:12	JLG	EPA 200.8				
Mercury										
Mercury	0.239	ug/L	0.100	11/24/21 15:03	JLG	EPA 245.1				
Semivolatiles										
Diesel	<0.052	mg/L	0.0800	11/23/21 10:49	ARC	NWTPH-HCID				
Gasoline	<0.16	mg/L	0.400	11/23/21 10:49	ARC	NWTPH-HCID				
Lube Oil	<0.046	mg/L	0.0800	11/23/21 10:49	ARC	NWTPH-HCID				
Mineral Oil	<0.16	mg/L	0.400	11/23/21 10:49	ARC	NWTPH-HCID				
Surrogate: n-Hexacosane	92	.6%	50-150	11/23/21 10:49	ARC	NWTPH-HCID				



Analytical Results Report									
			(Continued)						
Sample Location:	WW-6								
Lab/Sample Number:	WBK0734-12	Collect Date:	11/15/21 08:45						
Date Received:	11/18/21 10:00	Collected By:							
Matrix:	Water								
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier		
Inorganics									
TSS	4.00	mg/L	0.500	11/19/21 11:31	KAS	EPA 160.2			
Metals by ICP-MS									
Arsenic	0.000111	mg/L	0.00100	12/14/21 18:15	JLG	EPA 200.8	J		
Mercury									
Mercury	0.163	ug/L	0.100	11/24/21 15:06	JLG	EPA 245.1			
Semivolatiles									
Diesel	<0.052	mg/L	0.0800	11/23/21 11:44	ARC	NWTPH-HCID			
Gasoline	<0.16	mg/L	0.400	11/23/21 11:44	ARC	NWTPH-HCID			
Lube Oil	<0.046	mg/L	0.0800	11/23/21 11:44	ARC	NWTPH-HCID			
Mineral Oil	<0.16	mg/L	0.400	11/23/21 11:44	ARC	NWTPH-HCID			
Surrogate: n-Hexacosane	88.	.9%	50-150	11/23/21 11:44	ARC	NWTPH-HCID			



		Analy	tical Results Rep	ort			
			(Continued)				
Sample Location:	WW-2 WBK0734-13	Collect Date:	11/15/21 09:40				
Date Received:	11/18/21 10:00	Collected By:					
Matrix:	Water	Conected By.					
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics							
TSS	25.6	mg/L	0.400	11/19/21 11:31	KAS	EPA 160.2	
Metals by ICP-MS							
Arsenic	0.00703	mg/L	0.00100	12/21/21 21:08	JLG	EPA 200.8	
Mercury							
Mercury	<0.0850	ug/L	0.100	11/24/21 15:08	JLG	EPA 245.1	
Semivolatiles							
Diesel	<0.052	mg/L	0.0800	11/23/21 12:39	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.400	11/23/21 12:39	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0800	11/23/21 12:39	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.400	11/23/21 12:39	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	87.	.3%	50-150	11/23/21 12:39	ARC	NWTPH-HCID	



		Analy	tical Results Repo	rt			
			(Continued)				
Sample Location: Lab/Sample Number: Date Received: Matrix:	WW-3 WBK0734-14 11/18/21 10:00 Water	Collect Date: Collected By:	11/15/21 09:55				
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics							
TSS	8.99	mg/L	0.333	11/19/21 11:31	KAS	EPA 160.2	
Metals by ICP-MS							
Arsenic	0.00155	mg/L	0.00100	12/14/21 18:21	JLG	EPA 200.8	
Mercury							
Mercury	<0.0850	ug/L	0.100	11/24/21 15:10	JLG	EPA 245.1	
Semivolatiles							
AMPA	<2	ug/L	10.0	11/24/21 12:00	MER	EPA 547	* M1
Glyphosate	<5	ug/L	5.00	11/24/21 12:00	MER	EPA 547	*
Atrazine	<0.05	ug/L	0.100	12/15/21 15:41	MAH	EPA 625.1	*
Chlorpyrifos	<0.05	ug/L	0.100	12/15/21 15:41	MAH	EPA 625.1	*
Metolachlor	<0.05	ug/L	0.100	12/15/21 15:41	MAH	EPA 625.1	*
Surrogate: Terphenyl-d14	71	.9%	25-135	12/15/21 15:41	МАН	EPA 625.1	
Diesel	<0.052	mg/L	0.0800	11/23/21 13:34	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.400	11/23/21 13:34	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0800	11/23/21 13:34	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.400	11/23/21 13:34	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane		.9%	50-150	11/23/21 13:34	ARC	NWTPH-HCID	



	Analytical Results Report										
			(Continued)								
Sample Location:	E-2										
Lab/Sample Number:	WBK0734-15	Collect Date:	11/15/21 10:00								
Date Received:	11/18/21 10:00	Collected By:									
Matrix:	Water	,									
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier				
Inorganics											
TSS	22.5	mg/L	0.500	11/19/21 11:31	KAS	EPA 160.2					
Metals by ICP-MS											
Arsenic	0.00597	mg/L	0.00100	12/14/21 18:24	JLG	EPA 200.8					
Mercury											
Mercury	<0.0850	ug/L	0.100	11/24/21 15:12	JLG	EPA 245.1					
Semivolatiles											
AMPA	<2	ug/L	10.0	11/24/21 12:14	MER	EPA 547	* M1				
Glyphosate	<5	ug/L	5.00	11/24/21 12:14	MER	EPA 547	*				
Atrazine	<0.05	ug/L	0.100	12/15/21 16:09	MAH	EPA 625.1	*				
Chlorpyrifos	<0.05	ug/L	0.100	12/15/21 16:09	MAH	EPA 625.1	*				
Metolachlor	<0.05	ug/L	0.100	12/15/21 16:09	MAH	EPA 625.1	*				
Surrogate: Terphenyl-d14	61	.7%	25-135	12/15/21 16:09	MAH	EPA 625.1					
Diesel	<0.052	mg/L	0.0800	11/23/21 14:29	ARC	NWTPH-HCID					
Gasoline	<0.16	mg/L	0.400	11/23/21 14:29	ARC	NWTPH-HCID					
Lube Oil	<0.046	mg/L	0.0800	11/23/21 14:29	ARC	NWTPH-HCID					
Mineral Oil	<0.16	mg/L	0.400	11/23/21 14:29	ARC	NWTPH-HCID					
Surrogate: n-Hexacosane	91	.3%	50-150	11/23/21 14:29	ARC	NWTPH-HCID					



	Analytical Results Report (Continued)										
			(continueu)								
Sample Location:	E-1										
Lab/Sample Number:	WBK0734-16	Collect Date:	11/15/21 10:00								
Date Received:	11/18/21 10:00	Collected By:									
Matrix:	Water										
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier				
Inorganics											
TSS	20.6	mg/L	0.333	11/19/21 11:31	KAS	EPA 160.2					
Metals by ICP-MS											
Arsenic	0.00134	mg/L	0.00100	12/14/21 18:28	JLG	EPA 200.8					
Mercury											
Mercury	ND	ug/L	0.100	11/24/21 15:15	JLG	EPA 245.1					
Semivolatiles											
AMPA	<2	ug/L	10.0	11/24/21 11:53	MER	EPA 547	* M1				
Glyphosate	<5	ug/L	5.00	11/24/21 11:53	MER	EPA 547	*				
Atrazine	<0.05	ug/L	0.100	12/15/21 16:38	MAH	EPA 625.1	*				
Chlorpyrifos	<0.05	ug/L	0.100	12/15/21 16:38	MAH	EPA 625.1	*				
Metolachlor	<0.05	ug/L	0.100	12/15/21 16:38	MAH	EPA 625.1	*				
Surrogate: Terphenyl-d14	72	.7%	25-135	12/15/21 16:38	MAH	EPA 625.1					
Diesel	<0.052	mg/L	0.0800	11/23/21 15:24	ARC	NWTPH-HCID					
Gasoline	<0.16	mg/L	0.400	11/23/21 15:24	ARC	NWTPH-HCID					
Lube Oil	<0.046	mg/L	0.0800	11/23/21 15:24	ARC	NWTPH-HCID					
Mineral Oil	<0.16	mg/L	0.400	11/23/21 15:24	ARC	NWTPH-HCID					
Surrogate: n-Hexacosane	76	.3%	50-150	11/23/21 15:24	ARC	NWTPH-HCID					



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		Analy	tical Results Rep	ort			
			(Continued)				
Sample Location:	E-1 DUP	Collect Date:	11/15/21 10:05				
Data Dagaiyadı	11/10/01 10:00	Collected Duty	11/10/21 10:00				
Date Received:	11/18/21 10:00	Collected By:					
Matrix:	vvater						
Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Inorganics							
TSS	11.7	mg/L	0.333	11/19/21 11:31	KAS	EPA 160.2	
Metals by ICP-MS							
Arsenic	0.0490	mg/L	0.00100	12/14/21 18:31	JLG	EPA 200.8	
Mercury							
Mercury	<0.0850	ug/L	0.100	11/24/21 15:22	JLG	EPA 245.1	
Semivolatiles							
AMPA	<2	ug/L	10.0	11/24/21 12:21	MER	EPA 547	* M1
Glyphosate	<5	ug/L	5.00	11/24/21 12:21	MER	EPA 547	*
Atrazine	<0.05	ug/L	0.100	12/15/21 17:06	MAH	EPA 625.1	*
Chlorpyrifos	<0.05	ug/L	0.100	12/15/21 17:06	MAH	EPA 625.1	*
Metolachlor	<0.05	ug/L	0.100	12/15/21 17:06	MAH	EPA 625.1	*
Surrogate: Terphenyl-d14	74.	.4%	25-135	12/15/21 17:06	MAH	EPA 625.1	
Diesel	<0.052	mg/L	0.0800	11/23/21 18:08	ARC	NWTPH-HCID	
Gasoline	<0.16	mg/L	0.400	11/23/21 18:08	ARC	NWTPH-HCID	
Lube Oil	<0.046	mg/L	0.0800	11/23/21 18:08	ARC	NWTPH-HCID	
Mineral Oil	<0.16	mg/L	0.400	11/23/21 18:08	ARC	NWTPH-HCID	
Surrogate: n-Hexacosane	88.	.7%	50-150	11/23/21 18:08	ARC	NWTPH-HCID	

Authorized Signature,

Kathleen a. Sattle

Kathleen Sattler, Laboratory Manager

1	The reported value is between the laborate	ny mothed detection limit on	d the leheratory prestie	al auantitation limit
J		i v method detection innit and		ai quantitation innit.

M1 Matrix spike recovery was high; the associated blank spike recovery was acceptable. Potential matrix effect

- PQL **Practical Quantitation Limit**
- ND Not Detected
- MCL EPA's Maximum Contaminant Level
- Sample results reported on a dry weight basis Dry
- Not a state-certified analyte
- RPD **Relative Percent Difference** %REC Percent Recovery
- Source Sample that was spiked or duplicated.

This report shall not be reproduced except in full, without the written approval of the laboratory The results reported related only to the samples indicated.

Certifications

Code	Description	Facility	Number
w wa doe	Washington Department of Ecology	Anatek-Spokane, WA	C585
w fldoh	Florida Department of Health (NELAC)	Anatek-Spokane, WA	E871099

Quality Control Data

Inorganics

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBK0662 - W Filtration										
Blank (BBK0662-BLK1)					Prepared &	Analyzed: 11	/19/2021			
TSS	ND		1.00	mg/L						
Blank (BBK0662-BLK2)					Prepared &	Analyzed: 11	/19/2021			
TSS	ND		1.00	mg/L						
Blank (BBK0662-BLK3)					Prepared &	Analyzed: 11	/19/2021			
TSS	ND		1.00	mg/L						
LCS (BBK0662-BS1)					Prepared &	Analyzed: 11	/19/2021			
TSS	104			mg/L	100		104	90-110		
LCS (BBK0662-BS2)					Prepared 8	Analyzed: 11	/19/2021			
TSS	99.0			mg/L	100		99.0	90-110		
LCS Dup (BBK0662-BSD1)					Prepared 8	Analyzed: 11	/19/2021			
TSS	97.0			mg/L	100		97.0	90-110	6.97	10
LCS Dup (BBK0662-BSD2)					Prepared 8	Analyzed: 11	/19/2021			
TSS	100			mg/L	100		100	90-110	1.01	10
Duplicate (BBK0662-DUP1)		Source: W	BK0615-01		Prepared 8	Analyzed: 11	/19/2021			
TSS	152		4.00	mg/L		152			0.00	20
Duplicate (BBK0662-DUP2)		Source: MI	3K0479-01		Prepared &	Analyzed: 11	/19/2021			
TSS	18.0		4.00	mg/L	·	18.0			0.00	20
Matrix Spike (BBK0662-MS1)		Source: W	BK0677-02		Prepared 8	Analyzed: 11	/19/2021			
TSS	19.0		0.333	mg/L	16.7	2.33	100	80-120		

Quality Control Data

(Continued)

Inorganics (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBK0662 - W Filtration (C	Continued))								
Matrix Spike Dup (BBK0662-MSD1)		Source: V	VBK0677-02		Prepared &	Analyzed: 11	/19/2021			
TSS	18.0		0.333	mg/L	16.7	2.33	94.0	80-120	5.41	20

Quality Control Data

(Continued)

Metals by ICP-MS

Analyte	Result	Repo	orting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBK0889 - W 3010 Digest										
Blank (BBK0889-BLK1)				Prep	ared: 11/30/	2021 Analyzed	d: 12/14/202	21		
Arsenic	ND	0.0	0100	mg/L						
LCS (BBK0889-BS1)				Prep	ared: 11/30/	2021 Analyzed	d: 12/14/202	21		
Arsenic	0.0525	0.0	0100	mg/L	0.0500		105	85-115		
Matrix Spike (BBK0889-MS1)		Source: WBK0734	-02	Prep	ared: 11/30/	2021 Analyzed	d: 12/14/202	21		
Arsenic	0.0558	0.0	0100	mg/L	0.0500	0.000856	110	70-130		
Matrix Spike (BBK0889-MS2)		Source: WBK0734	-16	Prep	ared: 11/30/	2021 Analyzed	d: 12/14/202	21		
Arsenic	0.0531	0.0	0100	mg/L	0.0500	0.00134	104	70-130		
Matrix Spike Dup (BBK0889-MSD1)		Source: WBK0734	-02	Prep	ared: 11/30/	2021 Analyzed	d: 12/14/202	21		
Arsenic	0.0573	0.0	0100	mg/L	0.0500	0.000856	113	70-130	2.64	20

Quality Control Data (Continued)

Mercury

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBK0744 - W 245.1 Digest										
Blank (BBK0744-BLK1)				Pre	epared: 11/23/	2021 Analyze	d: 11/24/20	21		
Mercury	ND		0.100	ug/L						
LCS (BBK0744-BS1)				Pre	epared: 11/23/	2021 Analyze	d: 11/24/20	21		
Mercury	2.07		0.100	ug/L	2.00		103	85-115		
Matrix Spike (BBK0744-MS1)		Source: W	BK0734-01	Pre	epared: 11/23/	2021 Analyze	d: 11/24/20	21		
Mercury	2.33		0.100	ug/L	2.00	<0.0850	117	70-130		
Matrix Spike (BBK0744-MS2)		Source: W	BK0734-16	Pre	epared: 11/23/	2021 Analyze	d: 11/24/20	21		
Mercury	2.59		0.100	ug/L	2.00	ND	129	70-130		
Matrix Spike Dup (BBK0744-MSD1)		Source: W	BK0734-01	Pre	epared: 11/23/	2021 Analyze	d: 11/24/20	21		
Mercury	2.28		0.100	ug/L	2.00	<0.0850	114	70-130	2.17	20
Matrix Spike Dup (BBK0744-MSD2)		Source: W	BK0734-16	Pre	epared: 11/23/	2021 Analyze	d: 11/24/20	21		
Mercury	2.59		0.100	ug/L	2.00	ND	130	70-130	0.193	20

Quality Control Data

(Continued)

Semivolatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBK0643 - W TPH-Dx										
Blank (BBK0643-BLK1)				Pre	pared: 11/19	/2021 Analyze	d: 11/22/20	21		
Lube Oil	ND		0.0800	mg/L						
Mineral Oil	ND		0.400	mg/L						
Gasoline	ND		0.400	mg/L						
Diesel	ND		0.0800	mg/L						
Surrogate: n-Hexacosane			44.6	mg/L	50.1		<i>89.1</i>	50-150		
LCS (BBK0643-BS1)				Pre	pared: 11/19	/2021 Analyze	d: 11/22/20	21		
Diesel	0.865		0.0800	mg/L	1.00		86.0	70-130		
Surrogate: n-Hexacosane			40.2	mg/L	50.1		80.3	50-150		
LCS Dup (BBK0643-BSD1)				Pre	pared: 11/19	/2021 Analyze	d: 11/22/20	21		
Diesel	0.845		0.0800	mg/L	1.00		84.1	70-130	2.25	20
Surrogate: n-Hexacosane			42.9	mg/L	50.1		85.6	50-150		
Duplicate (BBK0643-DUP1)		Source: W	/BK0734-02	Pre	pared: 11/19	/2021 Analyze	d: 11/22/20	21		
Lube Oil	ND		0.0800	mg/L		<0.046				200
Mineral Oil	ND		0.400	mg/L		<0.16				200
Gasoline	ND		0.400	mg/L		<0.16				200
Diesel	ND		0.0800	mg/L		<0.052				200
Surrogate: n-Hexacosane			43.8	mg/L	50.1		87.3	50-150		
Matrix Spike (BBK0643-MS1)		Source: W	/BK0734-16	Pre	pared: 11/19	/2021 Analyze	d: 11/23/20	21		
Diesel	1.01		0.0800	mg/L	1.00	<0.052	100	70-130		
Surrogate: n-Hexacosane			45.4	mg/L	50.1		90.7	50-150		
Matrix Spike Dup (BBK0643-MSD1)		Source: W	/BK0734-16	Pre	pared: 11/19	/2021 Analyze	d: 11/23/20	21		
Diesel	0.894		0.0800	mg/L	1.00	<0.052	89.0	70-130	11.8	20
Surrogate: n-Hexacosane			43.9	mg/L	50.1		87.7	50-150		

Quality Control Data

(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBK0773 - Glvphosate										
Blank (BBK0773-BLK1)				Pre	pared: 11/23	/2021 Analyz	ed: 11/24/20	21		
Glyphosate	ND		5.00	ug/L		,				
AMPA	ND		10.0	ug/L						
LCS (BBK0773-BS1)				Pre	pared: 11/23	/2021 Analyz	ed: 11/24/20	21		
Glyphosate	47.0		5.00	ug/L	50.0		94.0	70-130		
AMPA	113		10.0	ug/L	100		113	70-130		
Matrix Spike (BBK0773-MS1)		Source: W	/BK0734-16	Pre	pared: 11/23	/2021 Analyz	ed: 11/24/20	21		
Glyphosate	47.0		5.00	ug/L	50.0	<5	94.0	70-130		
AMPA	330	M1	10.0	ug/L	100	<2	330	70-130		
Matrix Spike Dup (BBK0773-MSD1)		Source: W	/BK0734-16	Pre	pared: 11/23	/2021 Analyz	ed: 11/24/20	21		
Glyphosate	52.8		5.00	ug/L	50.0	<5	106	70-130	11.6	25
AMPA	334	M1	10.0	ug/L	100	<2	334	70-130	1.20	25
Ratch: RRI 0471 - SVOC Water										
Blank (BBI 0471-BI K1)				Pre	nared: 11/18	/2021 Analyz	ed: 12/15/20	21		
Chlorpyrifos	ND		0.100	ua/L	pulou: 11/10	, _ 0 _ 1 ,	00. 12, 10, 20			
Metolachlor	ND		0.100	ua/L						
Atrazine	ND		0.100	ug/L						
Surrogate: Terphenyl-d14			21.4	ug/L	25.8		83.1	25-135		
LCS (BBL0471-BS1)				Pre	pared: 11/18	/2021 Analyz	ed: 12/15/20	21		
Chlorpyrifos	2.37		0.100	ug/L	2.50		94.8	50-125		
Metolachlor	2.49		0.100	ug/L	2.50		99.6	60-125		
Atrazine	2.68		0.100	ug/L	2.50		107	60-125		
Surrogate: Terphenyl-d14			20.5	ug/L	25.8		79.7	25-135		

Quality Control Data

(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBL0471 - SVOC Water (Con	tinued)						24		
LCS Dup (BBL04/1-BSD1)				Pre	epared: 11/18/.	2021 Analyze	a: 12/15/20	21		
Metolachlor	2.45		0.100	ug/L	2.50		98.0	60-125	1.62	20
Chlorpyrifos	2.37		0.100	ug/L	2.50		94.8	50-125	0.00	20
Atrazine	2.77		0.100	ug/L	2.50		111	60-125	3.30	20
Surrogate: Terphenyl-d14			18.6	ug/L	25.8		72.3	25-135		

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Form COC01.00 - Eff 1 Mar 2015

Page 2 of 2

Samples submitted to Anatek Labs may be subcontracted to other accredited labs if necessary. This message serves as notice of this possibility. Sub-contracted analyses will be clearly noted on the analytical report.

Anatek Labs Inc.	Sample Receipt and Press	ervation Form
	Sample Necelpt and Frese	WBK0734
Client Name: Cardno	Project:	
TAT: Normal RUSH:d	ays	Due 12/06/21
Samples Received From: FedEx L	IPS USPS Client Co	urier Other:
Custody Seal on Cooler/Box: Yes	No Custody Seals In	ntact: Yes No N/A
Number of Coolers/Boxes:5	Type of Ice:	ce/Ice Packs Blue Ice Dry Ice None
Packing Material: Bubble Wrap Ba	ags Foam/Peanuts Nor	ne Other:
Cooler Temp As Read (°C): 3.5	Cooler Temp Corrected (°C): 3.24 Thermometer Used: $12^{+}1$
1.4		1.3 1.2 Comments
Samples Received Intact? 2.7	Yes No N/A	2.b
Chain of Custody Present? 2.8	Yes No N/A	2.7
Samples Received Within Hold Time?	Yes No N/A	5. million (1997)
Samples Properly Preserved?	Yes No N/A	
OC Vials Free of Headspace (<6mm)?	Yes No N/A	
OC Trip Blanks Present?	Yes No N/A	
abels and Chains Agree?	Ves No N/A	
Total Number of Sample Bottles Receive	ed:6	
Chain of Custody Fully Completed?	Yes No N/A	
Correct Containers Received?	Yes No N/A	
Anatek Bottles Used?	Yes No Unknown	
Record preservatives (and lot numbers,	if known) for containers below:	
HC1 20027217 12 Amber		
HNO3 2002260 Z50mL Poly		
HCI 2101657 44mL Amber		
Nathio 2001177 44ml Amber		
takes reacting the state of an	C. The Contract of Street of St	
votes, comments, etc. (also use this sp	ace if contacting the client - rec	cord names and date/time)

Received/Inspected By: Kithlen Settler ____ Date/Time: 11-18-21 1000

Form F06.00 - Eff. 10 Nov. 2021

Page 1 of 1

Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10008.D Vial: 7 Acq On : 22 Nov 2021 16:36 Sample : BBK0643-BLK1 Operator: ARC Inst : HP G1530A Multiplr: 1.00 1.2 Misc IntFile : EVENTS1.E Quant Time: Nov 23 08:11:00 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound Internal Standards 24.89 82056006 50.000 ppm m 1) I Pentacosane System Monitoring Compounds 2) SHexacosane25.597227676044.646 ppm mSpiked Amount50.000Range50 - 150Recovery = 89.29% Target Compounds

 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00

 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 6) hHCID Gas (C7-C12)0.007) hHCID Diesel (C12-C14)0.008) hHCID Oil (>C14)0.00 6) h HCID Gas (C7-C12) 0 N.D. ppm 0 N.D. ppm

8) h HCID Oil (>C14)

Page 26 of 176

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Quantitation Report (QT Reviewed)
             Data File : W:\HPCHEM\1\2021DATA\112221\SIG10008.D
                                                                                                                                                                                                                                                                                                                         Vial: 7
            Acq On : 22 Nov 2021 16:36
Sample : BBK0643-BLK1
                                                                                                                                                                                                                                                                                                                    Operator: ARC
                                                                                                                                                                                                                                                                                                                    Inst : HP G1530A
                                                                                                                                                                                                                                                                                                                    Multiplr: 1.00
            Misc
             IntFile : EVENTS1.E
             Quant Time: Nov 23 8:11 2021 Quant Results File: 211119DHTLOW.RES
            Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
            Title
             Last Update : Mon Nov 22 08:17:51 2021
             Response via : Multiple Level Calibration
             DataAcq Meth : DXHCID5.M
            Volume Inj. :
             Signal Phase :
             Signal Info :
                                                                                                                                                                          Signal: SIG10008.D\FID1A.CH
 Response_
       9500000
       9000000
       8500000
       8000000
       7500000
       7000000
       6500000
       6000000
       5500000
       5000000
                                                                                                                                                                                                                                                 24.89
.59
       4500000
                                                                                                                                                                                                                                                       25.
       4000000
       3500000
       3000000
       2500000
      2000000
       1500000
       1000000
          500000
                           0
       -500000
    -1000000
                                                                                                                                                                                                                                                 Pentacosan
Hexacosane
                                          2.00 \quad 4.00 \quad 6.00 \quad 8.00 \quad 10.00 \quad 12.00 \quad 14.00 \quad 16.00 \quad 18.00 \quad 20.00 \quad 22.00 \quad 24.00 \quad 26.00 \quad 28.00 \quad 30.00 \quad 32.00 \quad 34.00 \quad 36.00 \quad 38.00 \quad 40.00 \quad 
Time
```

Quantitation Report (QT Reviewed)

Vial: 8 Data File : W:\HPCHEM\1\2021DATA\112221\SIG10009.D Acq On : 22 Nov 2021 17:31 Sample : BBK0643-BS1 Operator: ARC Inst : HP G1530A : Multiplr: 1.00 Misc IntFile : EVENTS1.E Quant Time: Nov 23 08:11:02 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound Internal Standards 24.88 81745956 50.000 ppm m 1) I Pentacosane System Monitoring Compounds

 2) S
 Hexacosane
 25.59
 64859581
 40.217 ppm m

 Spiked Amount
 50.000
 Range
 50 - 150
 Recovery = 80.43%

 Target Compounds 0 N.D. ppm

 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00

 5) H
 Mineral (12)
 0.00

 6) h
 HCID Gas (C7-C12)
 0.00

 7) h
 HCID Diesel (C12-C14)
 21.97

 0.00

 229887433 216.170 ppm 0 N.D. ppm



Quantitation Report (QT Reviewed) Vial: 9 Data File : W:\HPCHEM\1\2021DATA\112221\SIG10010.D Acq On : 22 Nov 2021 18:26 Sample : BBK0643-BSD1 Operator: ARC Inst : HP G1530A Multiplr: 1.00 Misc : IntFile : EVENTS1.E Quant Time: Nov 23 08:11:03 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound Internal Standards 24.88 74559296 50.000 ppm m 1) I Pentacosane System Monitoring Compounds 2) S Hexacosane 25.59 63088808 42.889 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 85.78% Target Compounds
 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00
 0 N.D. ppm 0.00 5) H Mineral Oil 6) h HCID Gas (C7-C12) 0.00

 6) h
 HCID Gas (C/-C12)
 0.00

 7) h
 HCID Diesel (C12-C14)
 21.97

 0) h
 HCID Oil (>C14)
 0.00

 205013536 211.362 ppm 0 N.D. ppm



Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10011.D Via1: 10 Acq On : 22 Nov 2021 19:20 Sample : WBK0734-01 Operator: ARC Inst : HP G1530A Misc : Multiplr: 1.00 IntFile : EVENTS1.E Quant Time: Nov 23 08:11:04 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Title Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound _____ Internal Standards 1) I Pentacosane 80578303 50.000 ppm m 24.88 System Monitoring Compounds2) S Hexacosane25.606921005843.536 ppm mSpiked Amount50.000Range50 - 150Recovery=87.07% System Monitoring Compounds Target Compounds

 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00

 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 6) hHCID Gas (C7-C12)0.007) hHCID Diesel (C12-C14)0.008) hHCID Oil (>C14)0.00 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm

```
Quantitation Report (QT Reviewed)
   Data File : W:\HPCHEM\1\2021DATA\112221\SIG10011.D
                                                                           Vial: 10
   Acq On : 22 Nov 2021 19:20
Sample : WBK0734-01
                                                                       Operator: ARC
                                                                       Inst : HP G1530A
                                                                       Multiplr: 1.00
   Misc
   IntFile : EVENTS1.E
   Quant Time: Nov 23 8:13 2021 Quant Results File: 211119DHTLOW.RES
   Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
   Title
                   :
   Last Update : Mon Nov 22 08:17:51 2021
   Response via : Multiple Level Calibration
   DataAcq Meth : DXHCID5.M
   Volume Inj. :
Signal Phase :
   Signal Info
                   4
Response_
                                       Signal: SIG10011.D\FID1A.CH
  9500000
 9000000
  8500000
  8000000
 7500000
 7000000
 6500000
 6000000
 5500000
 5000000
                                                        24.88
25.60
 4500000
 4000000
 3500000
 3000000
 2500000
 2000000
 1500000
 1000000
  500000
      0
 -500000
 -1000000
                                                       Pentacosan
Hexacosane
          2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 26.00 28.00 30.00 32.00 34.00 36.00 38.00 40.00
Time
```

Quantitation Report (QT Reviewed) Vial: 11 Data File : W:\HPCHEM\1\2021DATA\112221\SIG10012.D Acq On : 22 Nov 2021 20:15 Sample : WBK0734-02 Operator: ARC Inst : HP G1530A Multiplr: 1.00 Misc 2 IntFile : EVENTS1.E Quant Time: Nov 23 08:11:05 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Title Volume Inj. : Signal Phase : Signal Info : Compound Response Conc Units R.T. _____ Internal Standards 1) I Pentacosane 24.89 85931811 50.000 ppm m System Monitoring Compounds 2) S Hexacosane 25.60 73708734 43.477 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 86.95% Target Compounds 0 N.D. ppm

 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00

 6) hHCID Gas (C7-C12)0.007) hHCID Diesel (C12-C14)0.008) hHCID Oil (>C14)0.00

```
Quantitation Report (QT Reviewed)
   Data File : W:\HPCHEM\1\2021DATA\112221\SIG10012.D
                                                                      Vial: 11
  Acq On : 22 Nov 2021 20:15
Sample : WBK0734-02
                                                                     Operator: ARC
                                                                     Inst : HP G1530A
                                                                     Multiplr: 1.00
  Misc
               :
   IntFile : EVENTS1.E
   Quant Time: Nov 23 8:14 2021 Quant Results File: 211119DHTLOW.RES
  Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
  Title
                   1
  Last Update : Mon Nov 22 08:17:51 2021
  Response via : Multiple Level Calibration
  DataAcq Meth : DXHCID5.M
  Volume Inj. :
   Signal Phase :
   Signal Info
                  .
Response_
                                      Signal: SIG10012.D\FID1A.CH
 9500000
 9000000
 8500000
 8000000
 7500000
 7000000
 6500000
 6000000
 5500000
 5000000
                                                      24.89
 4500000
                                                        60
                                                        25.
 4000000
 3500000
 3000000
 2500000
 2000000
 1500000
 1000000
  500000
      0
 -500000
 -1000000
                                                      Pentacosan
Hexacosane
         2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 26.00 28.00 30.00 32.00 34.00 36.00 38.00 40.00
Time
```

Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10013.D Vial: 12 Acq On : 22 Nov 2021 21:09 Sample : BBK0643-DUP1 Operator: ARC Inst : HP G1530A Misc : IntFile : EVENTS1.E Multiplr: 1.00 Quant Time: Nov 23 08:11:07 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound _____ Internal Standards 1) I Pentacosane 24.89 101869731 50.000 ppm m System Monitoring Compounds 2) S Hexacosane 25.60 87935572 43.754 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 87.51% Target Compounds 0 N.D. ppm 0 N.D. ppm 3) H TPH Diesel (C12-C14) 0.00 0.00 TPHDX-Lube Oil (>C14) 4) H 5) H Mineral Oil 0.00 0 N.D. ppm 6) h HCID Gas (C7-C12) 7) h HCID Diesel (C12-C14) 8) h HCID Oil (>C14) 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 0.00 0.00


Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10014.D Vial: 13 Acq On : 22 Nov 2021 22:04 Sample : WBK0734-03 Operator: ARC Inst : HP G1530A Misc : Multiplr: 1.00 IntFile : EVENTS1.E Quant Time: Nov 23 08:11:08 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound _____ Internal Standards 1) I Pentacosane 24.89 101516091 50.000 ppm m System Monitoring Compounds 2) S Hexacosane 25.60 85675405 42.778 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 85.56% Target Compounds
 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00
 0 N.D. ppm

 6) h
 HCID Gas (C7-C12)
 0.00

 7) h
 HCID Diesel (C12-C14)
 0.00

 8) h
 HCID Oil (>C14)
 0.00

```
Quantitation Report
                                                     (QT Reviewed)
  Data File : W:\HPCHEM\1\2021DATA\112221\SIG10014.D
                                                                            Vial: 13
  Acq On : 22 Nov 2021 22:04
Sample : WBK0734-03
                                                                         Operator: ARC
                                                                         Inst : HP G1530A
                                                                         Multiplr: 1.00
  Misc
  IntFile : EVENTS1.E
  Quant Time: Nov 23 8:15 2021 Quant Results File: 211119DHTLOW.RES
  Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
  Title
                    . .
  Last Update : Mon Nov 22 08:17:51 2021
Response via : Multiple Level Calibration
  DataAcq Meth : DXHCID5.M
  Volume Inj. :
  Signal Phase :
  Signal Info :
                                        Signal: SIG10014.D\FID1A.CH
Response_
 9500000
 9000000
 8500000
 8000000
 7500000
 7000000
 6500000
 6000000
 5500000
                                                         89
                                                         24.8
                                                          25.60
 5000000
 4500000
 4000000
 3500000
 3000000
 2500000
 2000000
 1500000
 1000000
  500000
      0
 -500000
-1000000
                                                         Pentacosane
         2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 26.00 28.00 30.00 32.00 34.00 36.00 38.00 40.00
Time
```

Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10015.D Vial: 14 Acq On : 22 Nov 2021 22:59 Sample : WBK0734-04 Operator: ARC Inst : HP G1530A Misc : IntFile : EVENTS1.E Multiplr: 1.00 Misc Quant Time: Nov 23 08:11:09 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : Response Conc Units R.T. Compound Internal Standards 1) I Pentacosane 24.88 78636811 50.000 ppm m System Monitoring Compounds 2) S Hexacosane 25.59 68925782 44.428 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 88.86% Target Compounds
 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Minoral Oil
 0.00
 0 N.D. ppm 0 N.D. ppm 0.00 0 N.D. ppm 5) H Mineral Oil 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 6) h HCID Gas (C7-C12) 7) h HCID Diesel (C12-C14) 8) h HCID Oil (>C14) 0.00 0.00 0.00

```
Quantitation Report (QT Reviewed)
```



Quantitation Report (QT Reviewed) Vial: 15 Data File : W:\HPCHEM\1\2021DATA\112221\SIG10016.D Acq On : 22 Nov 2021 23:53 Sample : WBK0734-05 Operator: ARC Inst : HP G1530A Multiplr: 1.00 Misc 1 IntFile : EVENTS1.E Quant Time: Nov 23 08:11:11 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound Internal Standards 24.89 85965090 50.000 ppm m 1) I Pentacosane System Monitoring Compounds 2) S Hexacosane 25.60 81620565 47.051 ppm Spiked Amount 50.000 Range 50 - 150 Recovery = 94.10% Target Compounds

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00

 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm
 6)
 h
 HCID Gas (C7-C12)
 0.00

 7)
 h
 HCID Diesel (C12-C14)
 0.00

 8)
 h
 HCID Oil (>C14)
 0.00
 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm

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```
Quantitation Report (QT Reviewed)
                                                                       Vial: 15
   Data File : W:\HPCHEM\1\2021DATA\112221\SIG10016.D
   Acq On : 22 Nov 2021 23:53
Sample : WBK0734-05
                                                                      Operator: ARC
                                                                      Inst : HP G1530A
                                                                      Multiplr: 1.00
  Misc
               1
   IntFile : EVENTS1.E
  Quant Time: Nov 23 8:16 2021 Quant Results File: 211119DHTLOW.RES
   Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
   Title
                   1
   Last Update : Mon Nov 22 08:17:51 2021
   Response via : Multiple Level Calibration
   DataAcq Meth : DXHCID5.M
  Volume Inj. :
   Signal Phase :
   Signal Info :
                                      Signal: SIG10016.D\FID1A.CH
Response_
  9500000
 9000000
 8500000
 8000000
 7500000
 7000000
 6500000
 6000000
 5500000
                                                     - 24.89
25.60
 5000000
 4500000
 4000000
 3500000
 3000000
 2500000
 2000000
 1500000
 1000000
  500000
      0
 -500000
 -1000000
                                                      Pentacosan
Hexacosane
         2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 26.00 28.00 30.00 32.00 34.00 36.00 38.00 40.00
Time
```

Data File : W:\HPCHEM\1\2021DATA\112221\SIG10017.D Vial: 16 Acq On : 23 Nov 2021 00:48 Sample : WBK0734-06 Operator: ARC Inst : HP G1530A : Multiplr: 1.00 Misc IntFile : EVENTS1.E Quant Time: Nov 23 08:11:12 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound Internal Standards 24.89 88388616 50.000 ppm m 1) I Pentacosane System Monitoring Compounds
 2) S
 Hexacosane
 25.60
 79039483
 45.326 ppm
 m

 Spiked Amount
 50.000
 Range
 50 - 150
 Recovery
 =
 90.65%
 Target Compounds
 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00
 0 N.D. ppm 5) H Mineral Oil 0.00

 5) H
 Mineral 011
 0.00

 6) h
 HCID Gas (C7-C12)
 0.00

 7) h
 HCID Diesel (C12-C14)
 0.00

 8) h
 HCID Oil (>C14)
 0.00

 0 N.D. ppm

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```
Quantitation Report (QT Reviewed)
                                                                           Vial: 16
   Data File : W:\HPCHEM\1\2021DATA\112221\SIG10017.D
  Acq On : 23 Nov 2021 00:48
Sample : WBK0734-06
                                                                        Operator: ARC
                                                                        Inst : HP G1530A
                                                                        Multiplr: 1.00
  Misc
   IntFile : EVENTS1.E
  Quant Time: Nov 23 8:17 2021 Quant Results File: 211119DHTLOW.RES
   Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
   Title
  Last Update : Mon Nov 22 08:17:51 2021
  Response via : Multiple Level Calibration DataAcq Meth : DXHCID5.M
  Volume Inj. :
  Signal Phase :
   Signal Info :
                                        Signal: SIG10017.D\FID1A.CH
Response_
 9500000
 9000000
 8500000
 8000000
 7500000
 7000000
 6500000
 6000000
 5500000
 5000000
                                                        24.89
25.60
 4500000
 4000000
 3500000
 3000000
 2500000
 2000000
 1500000
 1000000
  500000
      0
 -500000
 -1000000
                                                        Pentacosan
Hexacosane
          2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 26.00 28.00 30.00 32.00 34.00 36.00 38.00 40.00
Time
```

Data File : W:\HPCHEM\1\2021DATA\112221\SIG10018.D Vial: 17 Acq On : 23 Nov 2021 1:43 Sample : WBK0734-07 Misc : Operator: ARC Inst : HP G1530A Multiplr: 1.00 IntFile : EVENTS1.E Quant Time: Nov 23 08:11:13 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound _____ Internal Standards 24.89 80731271 50.000 ppm m 1) I Pentacosane System Monitoring Compounds
 2) S
 Hexacosane
 25.60
 74882453
 47.015 ppm m

 Spiked Amount
 50.000
 Range
 50 - 150
 Recovery = 94.03%
 Target Compounds

 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00

 0 N.D. ppm 6) h HCID Gas (C7-C12) 0.00 0.00 0.00 7) h HCID Diesel (C12-C14) 8) h HCID Oil (>C14)

```
Quantitation Report (QT Reviewed)
                                                                                Vial: 17
   Data File : W:\HPCHEM\1\2021DATA\112221\SIG10018.D
   Acq On : 23 Nov 2021 1:43
Sample : WBK0734-07
                                                                            Operator: ARC
                                                                            Inst : HP G1530A
                :
                                                                            Multiplr: 1.00
   Misc
   IntFile : EVENTS1.E
   Quant Time: Nov 23 8:17 2021 Quant Results File: 211119DHTLOW.RES
   Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
   Title
                     2
   Last Update : Mon Nov 22 08:17:51 2021
Response via : Multiple Level Calibration
DataAcq Meth : DXHCID5.M
   Volume Inj. :
   Signal Phase :
   Signal Info :
                                          Signal: SIG10018.D\FID1A.CH
Response_
  9500000
  9000000
  8500000
  8000000
  7500000
  7000000
 6500000
 6000000
  5500000
 5000000
                                                           24.89
 4500000
 4000000
 3500000
 3000000
 2500000
 2000000
 1500000
 1000000
  500000
      0
  -500000
 -1000000
                                                            Hexacosane
                                                           Pentacosan
          2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 26.00 28.00 30.00 32.00 34.00 36.00 38.00 40.00
Time
```

Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10019.D Vial: 18 Acq On : 23 Nov 2021 2:37 Sample : WBK0734-08 Operator: ARC Sample Inst : HP G1530A Multiplr: 1.00 Misc IntFile : EVENTS1.E Ouant Time: Nov 23 08:11:15 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound Internal Standards 24.88 83218688 50.000 ppm m 1) I Pentacosane System Monitoring Compounds

 2) S
 Hexacosane
 25.60
 74036437
 45.094 ppm m

 Spiked Amount
 50.000
 Range
 50 - 150
 Recovery
 = 90.19%

 Target Compounds 0 N.D. ppm 0 N.D. ppm

 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 0 N.D. ppm 5) H Mineral Oil 0.00 0.00 6) h HCID Gas (C7-C12) 0 N.D. ppm 0 N.D. ppm 0.00 7) h HCID Diesel (C12-C14) 0 N.D. ppm 8) h HCID Oil (>C14)

(m) = manual in Page 48 of 176

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Quantitation Report (QT Reviewed)
   Data File : W:\HPCHEM\1\2021DATA\112221\SIG10019.D
                                                                         Vial: 18
   Acq On : 23 Nov 2021
Sample : WBK0734-08
                                                                      Operator: ARC
                                 2:37
                                                                      Inst : HP G1530A
                                                                      Multiplr: 1.00
   Misc
   IntFile : EVENTS1.E
   Quant Time: Nov 23 8:18 2021 Quant Results File: 211119DHTLOW.RES
   Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
  Title
   Last Update : Mon Nov 22 08:17:51 2021
   Response via : Multiple Level Calibration
   DataAcq Meth : DXHCID5.M
  Volume Inj. :
   Signal Phase :
   Signal Info :
Response_
                                      Signal: SIG10019.D\FID1A.CH
  9500000
 9000000
  8500000
 8000000
 7500000
 7000000
 6500000
 6000000
 5500000
                                                      24.88
 5000000
 4500000
                                                        25.60
 4000000
 3500000
 3000000
 2500000
 2000000
 1500000
 1000000
  500000
      0
  -500000
 -1000000
                                                        Hexacosane
                                                      Pentacosan
         2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 26.00 28.00 30.00 32.00 34.00 36.00 38.00 40.00
Time
```

Data File : W:\HPCHEM\1\2021DATA\112221\SIG10020.D Vial: 19 Acq On : 23 Nov 2021 3:32 Sample : WBK0734-09 Misc : Operator: ARC Inst : HP G1530A Multiplr: 1.00 IntFile : EVENTS1.E Quant Time: Nov 23 08:11:16 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound Internal Standards 1) I Pentacosane 24.89 86079790 50.000 ppm m System Monitoring Compounds 2) S Hexacosane 25.60 76573082 45.089 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 90.18% Target Compounds

 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00

 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 6) h HCID Gas (C7-C12) 6) hHCID Gas (C7-C12)0.007) hHCID Diesel (C12-C14)0.008) hHCID Oil (>C14)0.00 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 8) h HCID Oil (>C14)



Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10021.D Vial: 20 Acq On : 23 Nov 2021 4:26 Sample : WBK0734-10 Operator: ARC Inst : HP G1530A Multiplr: 1.00 Misc IntFile : EVENTS1.E Quant Time: Nov 23 08:11:17 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound Internal Standards 24.89 87976587 50.000 ppm m 1) I Pentacosane System Monitoring Compounds
 2) S
 Hexacosane
 25.60
 78865171
 45.438 ppm m

 Spiked Amount
 50.000
 Range
 50 - 150
 Recovery = 90.88%
 Target Compounds

 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00

 0 N.D. ppm 3) H TPH Diesel (C12-C14) 5) H Mineral Oil 6) h HCID Gas (C7-C12) 0.00 7) h HCID Diesel (C12-C14) 0 N.D. ppm 0 N.D. ppm 8) h HCID Oil (>C14) 0.00

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```
Quantitation Report (QT Reviewed)
  Data File : W:\HPCHEM\1\2021DATA\112221\SIG10021.D
Acq On : 23 Nov 2021 4:26
Sample : WBK0734-10
                                                                            Vial: 20
                                                                        Operator: ARC
                                                                         Inst : HP G1530A
                                                                         Multiplr: 1.00
  Misc
   IntFile : EVENTS1.E
   Quant Time: Nov 23 8:19 2021 Quant Results File: 211119DHTLOW.RES
   Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
  Title
                   :
   Last Update : Mon Nov 22 08:17:51 2021
   Response via : Multiple Level Calibration
   DataAcq Meth : DXHCID5.M
   Volume Inj. :
   Signal Phase :
   Signal Info
                  :
Response_
                                        Signal: SIG10021.D\FID1A.CH
 9500000
 9000000
 8500000
 8000000
 7500000
 7000000
 6500000
 6000000
 5500000
 5000000
                                                         24.89
25.60
 4500000
 4000000
 3500000
 3000000
 2500000
 2000000
 1500000
 1000000
  500000
      0
 -500000
 -1000000
                                                          Hexacosane
                                                         Pentacosan
Time
          2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 26.00 28.00 30.00 32.00 34.00 36.00 38.00 40.00
```

Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10028.D Vial: 21 Acq On : 23 Nov 2021 10:49 Sample : WBK0734-11 Operator: ARC Inst : HP G1530A Multiplr: 1.00 Misc IntFile : EVENTS1.E Quant Time: Nov 23 11:39:24 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Title Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound Internal Standards 24.89 84996800 50.000 ppm m 1) I Pentacosane System Monitoring Compounds
 2) S
 Hexacosane
 25.60
 77766778
 46.375 ppm
 m

 Spiked Amount
 50.000
 Range
 50 - 150
 Recovery
 =
 92.75%
 Target Compounds 0 N.D. ppm

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00

 6) h HCID Gas (C7-C12) 0.00 0.00 7) h HCID Diesel (C12-C14) 8) h HCID Oil (>C14)

(m)=manual in

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Quantitation Report (QT Reviewed)
                                                                              Vial: 21
   Data File : W:\HPCHEM\1\2021DATA\112221\SIG10028.D
   Acq On : 23 Nov 2021 10:49
Sample : WBK0734-11
                                                                          Operator: ARC
                                                                           Inst : HP G1530A
               :
                                                                          Multiplr: 1.00
   Misc
   IntFile : EVENTS1.E
   Quant Time: Nov 23 11:39 2021 Quant Results File: 211119DHTLOW.RES
   Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
   Title
   Last Update : Mon Nov 22 08:17:51 2021
Response via : Multiple Level Calibration
   DataAcq Meth : DXHCID5.M
   Volume Inj. :
   Signal Phase :
   Signal Info :
                                         Signal: SIG10028.D\FID1A.CH
Response_
  9500000
  9000000
  8500000
  8000000
  7500000
  7000000
  6500000
  6000000
  5500000
                                                         _____24.89
`5.60
  5000000
                                                            25
  4500000
 4000000
 3500000
 3000000
 2500000
 2000000
 1500000
 1000000
  500000
      0
  -500000
 -1000000
                                                          Pentacosan
Hexacosane
          2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 26.00 28.00 30.00 32.00 34.00 36.00 38.00 40.00
Time
```

Data File : W:\HPCHEM\1\2021DATA\112221\SIG10029.D Vial: 22 Acq On : 23 Nov 2021 11:44 Sample : WBK0734-12 Operator: ARC Inst : HP G1530A . Multiplr: 1.00 Misc IntFile : EVENTS1.E Quant Time: Nov 23 12:43:15 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Title Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound _____ Internal Standards 24.88 75167790 50.000 ppm m 1) I Pentacosane System Monitoring Compounds 2) SHexacosane25.596608522944.563 ppmmSpiked Amount50.000Range50 - 150Recovery=89.13% Target Compounds 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm

 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00

 3) H TPH Diesel (C12-C14) 0 N.D. ppm 6) h HCID Gas (C7-C12) 0.00 0.00 0.00 7) h HCID Diesel (C12-C14) 0 N.D. ppm 0 N.D. ppm 8) h HCID Oil (>C14)



Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10030.D Vial: 23 Operator: ARC Acq On : 23 Nov 2021 12:39 Sample : WBK0734-13 Inst : HP G1530A 1 Multiplr: 1.00 Misc IntFile : EVENTS1.E Quant Time: Nov 23 13:46:27 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title . Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : Compound R.T. Response Conc Units Internal Standards 99000142 50.000 ppm m 24.89 1) I Pentacosane System Monitoring Compounds 2) S Hexacosane 25.60 85470783 43.760 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 87.52% Target Compounds 3) H TPH Diesel (C12-C14) 0.00 0 N.D. ppm 0 N.D. ppm 4) H TPHDX-Lube Oil (>C14) 0 N.D. ppm 0 N.D. ppm 5) H Mineral Oil 0.00 6) h HCID Gas (C7-C12) 0.00
 0) h
 HCID Diesel (C12-C14)
 0.00

 8) h
 HCID Oil (>C14)
 0.00
 0 N.D. ppm 0 N.D. ppm

(m)=manual in

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Quantitation Report (QT Reviewed) Vial: 24 Data File : W:\HPCHEM\1\2021DATA\112221\SIG10031.D Acq On : 23 Nov 2021 13:34 Sample : WBK0734-14 Operator: ARC Inst : HP G1530A : Multiplr: 1.00 Misc IntFile : EVENTS1.E Quant Time: Nov 23 14:17:37 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Title Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound _____ Internal Standards 1) I Pentacosane 24.89 76045311 50.000 ppm m System Monitoring Compounds 2) S Hexacosane 25.60 67570712 45.038 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 90.08% Target Compounds 0.00 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 3) H TPH Diesel (C12-C14) 4) H TPHDX-Lube Oil (>C14) 5) H Misser 1 art 5) H Mineral Oil 0.00

 6) h
 HCID Gas (C7-C12)
 0.00

 7) h
 HCID Diesel (C12-C14)
 0.00

 8) h
 HCID Oil (>C14)
 0.00

 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 8) h HCID Oil (>C14)

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Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10031.D Vial: 24 Acq On : 23 Nov 2021 13:34 Sample : WBK0734-14 Operator: ARC : WBK0734-14 Inst : HP G1530A Sample Multiplr: 1.00 Misc IntFile : EVENTS1.E Quant Time: Nov 23 14:18 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title 12 Last Update : Mon Nov 22 08:17:51 2021 Response via : Multiple Level Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : Signal: SIG10031.D\FID1A.CH Response_ 9500000 9000000 8500000 8000000 7500000 7000000 6500000 6000000 5500000 5000000 4500000 24.89 4000000





Data File : W:\HPCHEM\1\2021DATA\112221\SIG10032.D Vial: 25 Acq On : 23 Nov 2021 14:29 Sample : WBK0734-15 Operator: ARC Inst : HP G1530A Misc . Multiplr: 1.00 IntFile : EVENTS1.E Quant Time: Nov 23 15:26:56 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title . . Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound _____ Internal Standards 1) I Pentacosane 24.89 85089301 50.000 ppm m System Monitoring Compounds 2) S Hexacosane 25.60 76777764 45.736 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 91.47% Target Compounds
 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00
 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 6) h HCID Gas (C7-C12) 6) hHCID Gas (C7-C12)0.007) hHCID Diesel (C12-C14)0.008) hHCID Oil (>C14)0.00 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm

```
Quantitation Report (QT Reviewed)
                                                                       Vial: 25
   Data File : W:\HPCHEM\1\2021DATA\112221\SIG10032.D
   Acq On : 23 Nov 2021 14:29
Sample : WBK0734-15
                                                                      Operator: ARC
                                                                      Inst : HP G1530A
                                                                      Multiplr: 1.00
   Misc
   IntFile : EVENTS1.E
   Quant Time: Nov 23 15:27 2021 Quant Results File: 211119DHTLOW.RES
   Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
   Title
   Last Update : Mon Nov 22 08:17:51 2021
   Response via : Multiple Level Calibration
   DataAcq Meth : DXHCID5.M
  Volume Inj. :
   Signal Phase :
   Signal Info :
Response_
                                      Signal: SIG10032.D\FID1A.CH
 9500000
 9000000
 8500000
 8000000
 7500000
 7000000
 6500000
 6000000
 5500000
 5000000
                                                      24.89
 4500000
                                                        60
                                                        25.
 4000000
 3500000
 3000000
 2500000
 2000000
 1500000
 1000000
  500000
      0
 -500000
-1000000
                                                      Pentacosan
Hexacosane
         2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 26.00 28.00 30.00 32.00 34.00 36.00 38.00 40.00
Time
```

Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10033.D Vial: 26 Acq On : 23 Nov 2021 15:24 Sample : WBK0734-16 Operator: ARC Inst : HP G1530A : Multiplr: 1.00 Misc IntFile : EVENTS1.E Quant Time: Nov 23 16:07:09 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound _____ Internal Standards 24.89 94401728 50.000 ppm m 1) I Pentacosane System Monitoring Compounds 2) S Hexacosane 25.59 71208527 38.234 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 76.47% Target Compounds 0 N.D. ppm
 э)
 п
 TPH Diesel (C12-C14)
 0.00

 4)
 H
 TPHDX-Lube Oil (>C14)
 0.00

 5)
 H
 Minoral Oil
 0.11
 0.00 5) H Mineral Oil

 6) h
 HCID Gas (C7-C12)
 0.00

 7) h
 HCID Diesel (C12-C14)
 0.00

 8) h
 HCID Oil (>C14)
 0.00

 0 N.D. ppm 0 N.D. ppm 8) h HCID Oil (>C14)

```
Quantitation Report (QT Reviewed)
                                                                           Vial: 26
   Data File : W:\HPCHEM\1\2021DATA\112221\SIG10033.D
  Acq On : 23 Nov 2021 15:24
Sample : WBK0734-16
                                                                         Operator: ARC
                                                                         Inst : HP G1530A
                                                                         Multiplr: 1.00
  Misc
   IntFile : EVENTS1.E
  Quant Time: Nov 23 16:10 2021 Quant Results File: 211119DHTLOW.RES
  Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator)
  Title
                   - 2
  Last Update : Mon Nov 22 08:17:51 2021
Response via : Multiple Level Calibration
  DataAcq Meth : DXHCID5.M
  Volume Inj. :
  Signal Phase :
   Signal Info :
                                        Signal: SIG10033.D\FID1A.CH
Response_
 9500000
 9000000
 8500000
 8000000
 7500000
 7000000
 6500000
 6000000
 5500000
                                                         89
                                                         24.
 5000000
 4500000
                                                          25.59
 4000000
 3500000
 3000000
 2500000
 2000000
 1500000
 1000000
  500000
      0
 -500000
-1000000
                                                         Pentacosane
         2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00 24.00 26.00 28.00 30.00 32.00 34.00 36.00 38.00 40.00
Time
```

Vial: 27 Data File : W:\HPCHEM\1\2021DATA\112221\SIG10034.D Acq On : 23 Nov 2021 16:19 Sample : BBK0643-MS1 Operator: ARC Inst : HP G1530A : Multiplr: 1.00 Misc IntFile : EVENTS1.E Quant Time: Nov 24 08:06:26 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound _____ Internal Standards 24.89 92139078 50.000 ppm m 1) I Pentacosane System Monitoring Compounds 2) S Hexacosane 25.60 82569722 45.423 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 90.85% Target Compounds 3) H TPH Diesel (C12-C14) 4) H TPHDX-Lube Oil (>C14) 0.00 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm 5) H Mineral Oil 0.00 6) h HCID Gas (C7-C12) 0.00 21.97 0.00 7) h HCID Diesel (C12-C14) 301542061 251.565 ppm 8) h HCID Oil (>C14) 0 N.D. ppm

(m)=manual in

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Quantitation Report (QT Reviewed)
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Quantitation Report (QT Reviewed) Data File : W:\HPCHEM\1\2021DATA\112221\SIG10035.D Vial: 28 Acq On : 23 Nov 2021 17:13 Sample : BBK0643-MSD1 Operator: ARC Inst : HP G1530A Multiplr: 1.00 Misc 2 IntFile : EVENTS1.E Quant Time: Nov 24 08:06:27 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound _____ Internal Standards 1) I Pentacosane 24.89 98274366 50.000 ppm m System Monitoring Compounds 2) S Hexacosane 25.60 85204654 43.946 ppm m Spiked Amount 50.000 Range 50 - 150 Recovery = 87.89% Target Compounds 0 N.D. ppm 0 N.D. ppm 0 N.D. ppm

 3) H
 TPH Diesel (C12-C14)
 0.00

 4) H
 TPHDX-Lube Oil (>C14)
 0.00

 5) H
 Mineral Oil
 0.00

 5) H
 Mineral 011
 0.00

 6) h
 HCID Gas (C7-C12)
 0.00

 7) h
 HCID Diesel (C12-C14)
 21.97

 8) h
 HCID Oil (>C14)
 0.00

 0 N.D. ppm 285791836 223.540 ppm 0 N.D. ppm



Vial: 29 Data File : W:\HPCHEM\1\2021DATA\112221\SIG10036.D Acq On : 23 Nov 2021 18:08 Sample : WBK0734-17 Operator: ARC Inst : HP G1530A Multiplr: 1.00 Misc 1 IntFile : EVENTS1.E Quant Time: Nov 24 08:06:29 2021 Quant Results File: 211119DHTLOW.RES Quant Method : W:\HPCHEM\1...\211119DHTLOW.M (Chemstation Integrator) Title : Last Update : Mon Nov 22 08:17:51 2021 Response via : Initial Calibration DataAcq Meth : DXHCID5.M Volume Inj. : Signal Phase : Signal Info : R.T. Response Conc Units Compound Internal Standards 78552799 50.000 ppm m 1) I Pentacosane 24.88 System Monitoring Compounds 25.59 68884041 44.448 ppm m 2) S Hexacosane 25.59 68884041 44.448 pp Spiked Amount 50.000 Range 50 - 150 Recovery = 88.90% 2) S Hexacosane Target Compounds 0 N.D. ppm 0.00 3) H TPH Diesel (C12-C14) 4) H TPHDX-Lube Oil (>C14) 5) H Mineral Oil 0.00 6) h HCID Gas (C7-C12) 0.00 0.00 7) h HCID Diesel (C12-C14)

8) h HCID Oil (>C14)

(m)=manual in+



Wed Nov 24 09:11:52 2021

Quantitation Report (QT Reviewed) Data Path : C:\Users\markh\Desktop\data files\DEC15CD\ Data File : 01701014.D Acq On : 15 Dec 2021 Operator : MAH 5:06 pm Sample : MBK0734-17 Misc : ALS Vial : 17 Sample Multiplier: 1 Quant Time: Dec 16 10:10:03 2021 Quant Method : C:\Users\markh\Desktop\2021methods\Cardno1215.M Quant Title : EPA 8270D - GC MSD4 QLast Update : Wed Dec 15 14:13:07 2021 Response via : Initial Calibration Compound R.T. QIon Response Conc Units Dev(Min) Internal Standards 1) Dichlorobenzene-d55.8851501955282620.00ug/mL0.003) Acenaphthene-d109.4961642622433820.00ug/mL#0.005) Phenanthrene-d1011.3101884218797620.00ug/mL#0.008) Chrysene-d1214.5452402493824020.00ug/mL#0.00 System Monitoring Compounds 2) 2-Fluorobiphenyl8.6991723840728922.07ug/mL-0.019) Terphenyl-d1413.2982443183151719.15ug/mL0.00Spiked Amount25.000Recovery=76.60% Recovery = 76.60% Target Compounds Qvalue _____ (#) = qualifier out of range (m) = manual integration (+) = signals summed


Quantitation Report (QT Reviewed) Data Path : C:\Users\markh\Desktop\data files\DEC15CD\ Data File : 01601013.D Acq On : 15 Dec 2021 Operator : MAH 4:38 pm Sample : MBK0734-16 Misc : ALS Vial : 16 Sample Multiplier: 1 Quant Time: Dec 16 10:09:01 2021 Quant Method : C:\Users\markh\Desktop\2021methods\Cardno1215.M Quant Title : EPA 8270D - GC MSD4 QLast Update : Wed Dec 15 14:13:07 2021 Response via : Initial Calibration Compound R.T. QION Response Conc Units Dev(Min) Internal Standards 1) Dichlorobenzene-d55.8861502209921320.00ug/mL0.003) Acenaphthene-d109.4961642897255620.00ug/mL#0.005) Phenanthrene-d1011.3101884470181920.00ug/mL#0.008) Chrysene-d1214.5472402430673820.00ug/mL#0.00 System Monitoring Compounds 2) 2-Fluorobiphenyl8.7001724250259021.61 ug/mL-0.019) Terphenyl-d1413.2972443034460518.73 ug/mL0.00Spiked Amount25.000Recovery=74.92% Recovery = 74.92% Target Compounds Qvalue (#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed) Data Path : C:\Users\markh\Desktop\data files\DEC15CD\ Data File : 01501012.D Acq On : 15 Dec 2021 4:09 pm Operator : MAH Sample : MBK0734-15 Misc : ALS Vial : 15 Sample Multiplier: 1 Quant Time: Dec 15 16:49:35 2021 Quant Method : C:\Users\markh\Desktop\2021methods\Cardno1215.M Quant Title : EPA 8270D - GC MSD4 QLast Update : Wed Dec 15 14:15:09 2021 Response via : Initial Calibration Compound R.T. QION Response Conc Units Dev(Min) Internal Standards 1) Dichlorobenzene-d55.8841501987148320.00ug/mL0.003) Acenaphthene-d109.4961642599536720.00ug/mL#0.005) Phenanthrene-d1011.3111883974304120.00ug/mL#0.008) Chrysene-d1214.5442401919826820.00ug/mL#0.00 System Monitoring Compounds 2) 2-Fluorobiphenyl8.6991723784704921.40 ug/mL-0.019) Terphenyl-d1413.2972442031268215.88 ug/mL0.00Spiked Amount25.000Recovery=63.52% Recovery = 63.52% Target Compounds Qvalue (#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed) Data Path : C:\Users\markh\Desktop\data files\DEC15CD\ Data File : 01401011.D Acq On : 15 Dec 2021 3:41 pm Operator : MAH Sample : MBK0734-14 Misc : ALS Vial : 14 Sample Multiplier: 1 Quant Time: Dec 15 16:30:15 2021 Quant Method : C:\Users\markh\Desktop\2021methods\Cardno1215.M Quant Title : EPA 8270D - GC MSD4 QLast Update : Wed Dec 15 14:15:09 2021 Response via : Initial Calibration Compound R.T. QIon Response Conc Units Dev(Min) _____ Internal Standards 1) Dichlorobenzene-d55.8861502056342020.00ug/mL0.003) Acenaphthene-d109.4961642748754820.00ug/mL#0.005) Phenanthrene-d1011.3101884498008120.00ug/mL#0.008) Chrysene-d1214.5452402688915820.00ug/mL#0.00 System Monitoring Compounds 2) 2-Fluorobiphenyl8.6991723972989421.71ug/mL-0.019) Terphenyl-d1413.2972443315929718.51ug/mL0.00Spiked Amount25.000Recovery=74.04% Target Compounds Qvalue (#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed) Data Path : C:\Users\markh\Desktop\data files\DEC15CD\ Data File : 01301010.D Acq On : 15 Dec 2021 3:12 pm Operator : MAH Sample : BLK Misc : ALS Vial : 13 Sample Multiplier: 1 Quant Time: Dec 15 16:29:23 2021 Quant Method : C:\Users\markh\Desktop\2021methods\Cardno1215.M Quant Title : EPA 8270D - GC MSD4 QLast Update : Wed Dec 15 14:15:09 2021 Response via : Initial Calibration Compound R.T. QIon Response Conc Units Dev(Min) Internal Standards 1) Dichlorobenzene-d55.8851502383640720.00ug/mL0.003) Acenaphthene-d109.4961643090972720.00ug/mL#0.005) Phenanthrene-d1011.3111884734033920.00ug/mL#0.008) Chrysene-d1214.5452402301431220.00ug/mL#0.00 System Monitoring Compounds

 2) 2-Fluorobiphenyl
 8.700
 172
 42656623
 20.11
 ug/mL
 -0.01

 9) Terphenyl-d14
 13.298
 244
 32831174
 21.41
 ug/mL
 0.00

 Spiked Amount
 25.000
 Recovery
 =
 85.64%

 Target Compounds Qvalue (#) = qualifier out of range (m) = manual integration (+) = signals summed



Acute Toxicity Test Results for ADC Wet Weather Water Quality Monitoring

Monitoring Period: November 2021

Prepared for:

- red for: Cardno GS, Inc. 737 Bishop St., Suite 3050 Honolulu, HI 96734
- Testing Lab: Enthalpy Analytical 4340 Vandever Avenue San Diego, CA 92120
- Submitted: December 23, 2021

Data Quality Assurance:

Data Verified by:

- Enthalpy Analytical (formerly Nautilus Environmental) is accredited in accordance with NELAP by the State of Oregon Environmental Laboratory Accreditation Program (Certificate No. 4053). It is also certified by the State of California Department of Health Services Environmental Laboratory Accreditation Program (Certificate No. 1802) and the State of Washington Department of Ecology (Lab ID C552).
- All data have been reviewed and verified.
- All test results have met minimum test acceptability criteria under their respective EPA protocols, unless otherwise noted in this report.
- All results have met internal Quality Assurance Program requirements, unless otherwise noted in this report.

4340 Vandever Ave San Diego, CA 92120 858.587.7333

California

advienne libor

Introduction

Three samples were collected during a storm event for the ADC Kekaha Water Quality Monitoring. Samples were submitted for bioassay testing to the Enthalpy Analytical Laboratory in San Diego, California by Cardno-GS. The salinity of all three samples was above 1 part per thousand (ppt), therefore testing was conducted with the marine species, including Pacific topsmelt (*Atherinops affinis*), inland silverside (*Menidia beryllina*), and mysid shrimp (*Americamysis bahia*) 96-hour acute survival.

Materials and Methods

Sample Information

Client:	Cardno-GS, Inc.
Project Name:	ADC Kekaha Water Quality Monitoring 1. DW-1/WW-1
Sample IDs:	2. WW-2 3. WW-3
Sample Collection Dates, Times ^a :	 1. 11/15/2021, 13:30 2. 11/15/2021, 11:40 3. 11/15/2021, 11:55
Sample Receipt Dates, Times:	11/17/2021, 10:10
Sample Material:	Stormwater
Sampling Method:	Grab

^a Collection times adjusted to Pacific Standard Time from Hawaii Standard Time.

Water Quality Parameters Measured upon Sample Receipt

Sample ID	рН	DO (mg/L)	Temp. (ºC)	Conductivity (µS/cm)	Salinity (ppt)	Alkalinity (mg/L as CaCO₃)	Total Chlorine (mg/L)
DW-1/WW-1	7.53	9.0	1.0	6,350	3.5	138	<0.02
WW-2	7.43	9.6	1.0	NM	30.9	156	<0.02
WW-3	7.79	9.6	1.0	9,700	5.4	167	<0.02

nm = not measured; salinity greater than 10ppt

Acute Toxicity Test Methods

Testing was conducted in accordance with methods published in US Environmental Protection Agency (USEPA) guidance (2002). Test specifications for all marine tests are summarized in Table 1.

Pacific topsmelt test: 11/17/21, 16:10 to 11/21/21, 15:35	Species: <i>Atherinops affinis.</i> Source & Age: Aquatic Biosystems (Ft. Collins, CO), 14 days
Inland silverside test: 11/17/21, 16:18 to 11/21/21, 15:15	Species: <i>Menidia beryllina.</i> Source & Age: Aquatic Biosystems (Ft. Collins, CO), 10 days
Mysid shrimp test: 11/17/21, 17:08 to 11/21/21, 15:20	Species: <i>Americamysis bahia.</i> Source & Age: Aquatic Biosystems (Ft. Collins, CO), 5 days
Protocol Used:	Acute Manual (EPA/821/R-02/012), EPA 2002
Test Acceptability Criteria:	Control mean survival ≥ 90%
Test Concentration:	100% sample (DW-1/WW-1, WW-2, WW-3)
Sample Manipulation:	Artificial salts (Instant Ocean®) were added to bring the salinity of the DW-1/WW-1 and WW-3 samples to 30±1 parts per thousand (ppt)
Lab Control Water:	20-µm filtered seawater (Source: Scripps Institution of Oceanography [SIO] Intake); diluted to 30 ppt with deionized water
Salt Control:	Salt Control – 30 ppt artificial saltwater (Instant Ocean®)

Table 1.	96-hr	Acute	Survival	Test S	Specific	cations -	Marine	Organisms

Statistical Analyses

Statistical analyses were conducted using flowchart specifications as outlined in the test guidance manual (USEPA 2002). Organism performance in the sample was compared to that observed in the concurrent artificial salt control. Results were used to calculate whether a statistically significant effect was observed between the control and sample result. Comprehensive Environmental Toxicity Information System[™] (CETIS) software by Tidepool Scientific Software, version 1.8.7.20.

Results

No statistically significant effects were observed to any of the marine species exposed to the DW-1/WW-1, WW-2, or WW-3 samples compared to the respective artificial salt controls. A summary of results for the marine species tests is presented in Table 2.

Raw datasheets and complete statistical summaries for all tests are provided in Appendix A. Sample receipt information is provided in Appendix B, and a copy of the chain of custody form is presented in Appendix C.

Sample ID	Test Organism	Salt Control Result	100% Sample Result	Statistically Significant Effect? (Yes/No)	Percent Effect
	Pacific topsmelt	100	100	No	0.0
DW-1/WW-1	Inland silverside	95.0	95.0	No	0.0
	Mysid shrimp	95.0	100	No	-5.3
	Pacific topsmelt	100	100	No	0.0
WW-2	Inland silverside	95.0	100	No	-5.3
	Mysid shrimp	95.0	95.0	No	0.0
	Pacific topsmelt	100	100	No	0.0
WW-3	Inland silverside	95.0	100	No	-5.3
	Mysid shrimp	95.0	90.0	No	5.3

Table 2.	Summar	y of Marine 96 [,]	hr Acute Survival F	Results
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Percent effect from control is calculated as: ((mean response in salt control - mean response in undiluted sample)/mean response in salt control) *100. A negative value results when organism performance in the sample is greater than that in the salt control.

Quality Assurance

The samples were received via overnight delivery service two days after collection and within the appropriate temperature range. All tests were initiated within the maximum allowable holding time of 72 hours.

Mean control responses met minimum acceptability criteria for all tests. Minor QA issues that were unlikely to have any bearing on the final test data, such as slight temperature deviations, are noted on the datasheets and a list of laboratory qualifier codes can be found in Appendix D.

Reference Toxicant Testing

Results for reference toxicant testing used to monitor laboratory performance and test organism sensitivity are summarized in Table 3. The reference toxicant tests for all species tested met all acceptability criteria. Additionally, the median effect concentration value for these tests was within two standard deviations of the historical mean for all species tested, indicating typical organism sensitivity to copper. The control chart for the previous 20 reference toxicant tests is presented in Appendix E.

Species	NOEC (µg/L copper)	LC₅₀ (µg/L copper)	Historical LC ₅₀ ± 2 SD (μg/L copper)	CV (%)
Pacific Topsmelt	100	174	164 ± 106	32.1
Inland Silverside	100	211	187 ± 92.9	24.9
Mysid Shrimp	100	164	223 ± 79.6	17.8

NOEC = the highest concentration tested that results in no observed effect

 LC_{50} = concentration expected to cause a lethal effect to 50 percent of the test organisms

Historical $LC_{50} \pm 2$ SD = the mean LC_{50} from the previous 20 tests performed by Enthalpy, plus or minus two standard deviations CV = Coefficient of Variation

References

Tidepool Scientific Software. 2000-2013. CETIS Comprehensive Environmental Toxicity Information System Software, Version 1.8.7.20.

USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition (EPA/821/R-02/012). US EPA Office of Water, Washington, DC.

Appendix A

Raw Data and Statistical Summaries

Pacific Topsmelt

CETIS Sun	nmary Report			Report Dat Test Code:	e:
Pacific Topsm	nelt 96-h Acute Surv	vival Test			
Batch ID:	02-0454-3171	Test Type:	Survival (96h)	Analyst:	٨
Start Date:	17 Nov-21 16:10	Protocol:	EPA/821/R-02-012 (2002)	Diluent: 🚯)-E
Ending Date:	21 Nov-21 15:35	Species:	Atherinops affinis	Brine:	N
Duration:	95h	Source:	Aquatic Biosystems, CO	Age:	1
Sample ID:	07-5962-2319	Code:	21-1247	Client:	С
Sample Date	15 Nov-21 13:30	Matorial	Stormwater	Project:	Δ

Sample Date: Receive Date:	15 Nov-21 13:3 17 Nov-21 10:1	0 Ma 0 So	terial: urce:	Stormwater Cardno Hawaii			Pr	oject: ADO	C Kekaha W	Q Monitori	ng
Sample Age:	51h (1 °C)	Sta	tion:	DW-1/WW-1							
Comparison S	Summary										
Analysis ID	Endpoint		NOEL	LOEL	TOEL	PMSD	TU	Method			
10-1401-3934	96h Survival Ra	ate	100	>100	NA	NA	1	Wilcoxon	Rank Sum ⁻	Two-Samp	le Test
96h Survival F	Rate Summary										
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Мах	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%
96h Survival F	Rate Detail										
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	1	1	1						
100		1	1	1	1						

@ Q18ATS 10/8/21

Not Appl: in ble Diluted Natural Seawater

Not Applicable

Cardno Hawaii

14d

Nautilus Environmental (CA)

Analyst: JL QA: 915 12/8/21

CETIS Analytical Report						Report Date: Test Code:			24 Nov-21 13:09 (p 1 of 1) 2111-S283 09-8883-9512		
Pacific Tops	melt 96-h Acute	Survival To	est		-		-		Nautilu	s Environ	mental (CA)
Analysis ID: Analyzed:	Analysis ID: 10-1401-3934 Endpoint: 96h Survival Rate Analyzed: 24 Nov-21 13:09 Analysis: Nonparametric-Two Sample						CET	IS Version: al Results	CETISv1 : Yes	1.8.7	
Data Transfo	rm	Zeta	Alt Hyp	Trials	Seed			Test Res	ult		
Angular (Corr	ected)	NA	C > T	NA	NA			Passes 9	6h survival ı	rate	
Wilcoxon Ra	nk Sum Two-Sa	mple Test					·····				<u> </u>
Control	vs C-%		Test Stat	Critical	Ties DF	P-Value	P-Type	Decision	(α:5%)		
Salt Control	100		18	NA	1 6	1.0000	Exact	Non-Signi	ficant Effec	t	
ANOVA Table)										
Source	Sum Squ	lares	Mean Squ	are	DF	F Stat	P-Value	Decision	(α:5%)		
Between	0		0		1	65540	<0.0001	Significan	t Effect		
Error	0		0		6						
Total	0				1		1976-1-1-		······		
96h Survival	Rate Summary										
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Мах	Std Err	CV%	%Effect
0	Salt Control	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	0.0%
Angular (Cor	rected) Transfo	rmed Sumr	nary								
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
Graphics											
10	٩		۰		Centered	1.06+00					
a3	0 SC	I	100		L	2.5E-01 0.0E+00 -1.5	-1.0	e.5 0.0 Rankita	• • • • • • • • • • • • • • • • • • •	1.0] 1.5

Analyst: An QA: Ars 12/1/21

CETIS Sun	CETIS Summary Report								Report Date: 24 Nov-21 13:16		
								Test Code:	21	11-S286	02-3532-9933
Pacific Topsn	nelt 96-h Acute S	Surviv	al Test						Nautilu	s Environ	mental (CA)
Batch ID: Start Date: Ending Date: Duration:	21-4257-7416 17 Nov-21 16:1 21 Nov-21 15:3 95h	0 5	Test Type: Protocol: Species: Source:	Survival (96h) EPA/821/R-02- Atherinops affir Aquatic Biosys	012 (2002) nis tems, CO			Analyst: Diluent: A Brine: Age:	Not Applicable 14d	ℓ Seawater	
Sample ID: Sample Date: Receive Date: Sample Age:	16-6204-6634 15 Nov-21 11:4 17 Nov-21 10:1 52h (1 °C)	0	Code: Material: Source: Station:	21-1248 Stormwater Cardno Hawaii WW-2				Client: Project:	Cardno Hawaii ADC Kekaha W	/Q Monitor	ing
Comparison Summary Analysis ID Endpoint NOEL				LOEL	TOEL	PMSD	TU	Meth	nod		
09-9936-7999	96h Survival Ra	ite	100	>100	NA	NA	1	Wilc	oxon Rank Sum	Two-Samp	ole Test
96h Survival I	Rate Summary										
C-%	Control Type	Cour	nt Mean	95% LCL	95% UCL	Min	Мах	Std	Err Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
100		4	1	1	1	1	1	0	0	0.0%	0.0%
96h Survival I	Rate Detail							· ···•. #16.78			
C-%	Control Type	Rep	1 Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	1	1	1						
100		1	1	1	1						

Dary ACS 1218/4

Analyst: FN QA: MS 12/4/21

CETIS Ana	alytical Rep	ort					Repo Test	ort Date: Code:	24 211	Nov-21 13 1-S286 (:16 (p 1 of 1)2-3532-993;
Pacific Tops	melt 96-h Acute	Survival Te	est	·					Nautilu	s Environ	mental (CA)
Analysis ID: Analyzed:	09-9936-7999 24 Nov-21 13:	En 13 An	dpoint: 96h alysis: Nor	Survival Ra	ate Two Sample	9	CET Offic	IS Version: cial Results	CETISv1 Yes	.8.7	
Data Transfo	rm	Zeta	Alt Hyp	Trials	Seed			Test Res	ult		
Angular (Corr	ected)	NA	C > T	NA	NA			Passes 96	Sh survival r	ate	
Wilcoxon Ra	nk Sum Two-Sa	mple Test									
Control	vs C-%		Test Stat	Critical	Ties DF	P-Value	P-Type	Decision	α:5%)		
Salt Control	100		18	NA	1 6	1.0000	Exact	Non-Signi	ficant Effec	t	
ANOVA Table	9										
Source	Sum Squ	ares	Mean Squ	lare	DF	F Stat	P-Value	Decision	α:5%)		
Between	0		0		1	65540	<0.0001	Significan	t Effect		
Error	0		0		6	_					
Total	0				/						
96h Survival	Rate Summary										
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Мах	Std Err	CV%	%Effect
0	Salt Control	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	0.0%
Angular (Cor	rected) Transfor	med Summ	nary								
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Мах	Std Err	CV%	%Effect
0	Salt Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
Graphics											
1.0	٥		٥		Centered	1.0E+00					
	050	L	120		L	5.0E-01	<u>t</u> -1.0	-0.5 £0 Pantik	QJ QJ	• 1 1.0	–●J 1.5

CETIS Sun	nmary Repo	rt					F	Report Date:	24	Nov-21 13	:15 (p 1 of 1)
Pacific Tops	nelt 96-h Acute S	Surviva	l Test				I	est Code:	Nautilu	s Environ	mental (CA)
Batch ID: Start Date: Ending Date: Duration:	13-1676-1400 17 Nov-21 16:1 21 Nov-21 15:3 95h	0 5	Test Type: Protocol: Species: Source:	Survival (96h) EPA/821/R-02- Atherinops affi Aquatic Biosys	-012 (2002) nis tems, CO		A E A	Analyst: Diluent: @-E Brine: N Age: 1	V of Applic کار کناریا کار اot Applicable 4d	Seawater	
Sample ID: Sample Date: Receive Date Sample Age:	03-7053-1191 15 Nov-21 11:5 : 17 Nov-21 10:1 52h (1 °C)	5 0	Code: Material: Source: Station:	21-1249 Stormwater Cardno Hawaii WW-3			C F	Client: C Project: A	ardno Hawaii DC Kekaha W	/Q Monitor	ing
Comparison S Analysis ID 09-8814-0846	Summary Endpoint 96h Survival Ra	ite	NOEL 100	. LOEL >100	TOEL	PMSD NA	TU 1	Metho Wilcox	d on Rank Sum ⁻	Two-Samp	le Test
96h Survival I C-%	Rate Summary Control Type	Coun	t Mean	95% LCL	95% UCL	Min	Max	Std En	r Std Dev	CV%	%Effect
0 0 100	Lab Control Salt Control	4 4 4	1 1 1	1 1 1	1 1 1	1 1 1	1 1 1	0 0 0	0 0 0	0.0% 0.0% 0.0%	0.0% 0.0% 0.0%
96h Survival	Rate Detail										<u></u>
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0 0 100	Lab Control Salt Control	1 1 1	1 1 1	1 1 1	1 1 1						

(B) (214/4C) 12/8/21

Analyst:_____ QA*15 12/8/21

CETIS Ana	alytical Rep	ort					Repo Test	ort Date: Code:	24 21 ⁻	Nov-21 13 11-S289 1	:15 (p 1 of 1) 18-0951-7923
Pacific Tops	melt 96-h Acute	Survival T	est						Nautilu	s Environ	mental (CA)
Analysis ID: Analyzed:	09-8814-0846 24 Nov-21 13:	En 15 An	i dpoint: 96h alysis: Nor	Survival Ra	ate Two Sample	9	CET	IS Version: cial Results	CETISv1 : Yes	1.8.7	
Data Transfo	rm	Zeta	Alt Hyp	Trials	Seed			Test Res	ult		
Angular (Corr	ected)	NA	C > T	NA	NA			Passes 9	6h survival ı	rate	
Wilcoxon Ra	nk Sum Two-Sa	mple Test								· · · · · · · · · · · · · · · · · · ·	
Control	vs C-%		Test Stat	Critical	Ties DF	P-Value	P-Type	Decision	(α:5%)		
Salt Control	100		18	NA	1 6	1.0000	Exact	Non-Sign	ificant Effec	t	
ANOVA Table)										
Source	Sum Squ	ares	Mean Squ	iare	DF	F Stat	P-Value	Decision	(α:5%)		
Between	0		0		1	65540	<0.0001	Significan	t Effect		
Error	0		0		6	_					
	0				/						
96h Survival	Rate Summary										
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1	1	1	1	1	1	0	0.0%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	0.0%
Angular (Cor	rected) Transfor	med Sum	mary								
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	0.0%
Graphics											
	0		9		Contrard	1.0E+60					
0.2	0 SC	I	500		L	2.3C-91	-1.0	-0.5 0.0 Rankits	0.5	1.0	J 1.5

Analyst: ML QA: HS 12/9/21

Marine Acute Bioassay Static-Renewal Conditions

Water Quality Measurements & Test Organism Survival

		-					
Client: Cardno HI	Test Species: A. affinis			Те	ch init	ials	
Sample ID: <u>WW-1, WW-2, WW-3</u>	Start Date/Time: 11/17/2021 +610		0	24	48	72	96
Sample Log-in No.: 21-1247, -1248, -1249	End Date/Time: 11/21/2021 1535	Counts:	ŚP	RT	sP	SP	(-11)
Test No.: 2111-5283, 5286, 5289		Readings:	Я	SP	SP	SP	GM
		Dilutions made by:	R		RT	3	

$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		Concentration (%)			Num Or	iber o ganis	f Live ms	9		5	Salinit (ppt)	у			Ter Q	npera (°C)	ture			Disso	lved ((mg/L))	n			pH (units)	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Lab Control	A	5	5	5	5	5	29.4	24.3	30.0	29.8	299	20.1	19.4	20)	20.7	2.0.4	7.6	1.0	120	6.9	6.7	7.96	7.78	8.05	7.81	7.8
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			в	5	5	5	5	5		1	29.2				1.5	20.8				(6.2	Į.				1.74	1	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			c	5	5	5	5	5							-					1			3			(**)		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			D	5	5	5	5	5	1			1.					F			1								
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Salt Control	A	5	5	5	5	5	29.9	30,1	30.5	30.6	30.7	102	19.2	20.0	20.7	20.4	7.6	6.9	6.9	6.2	6.7	817	8.03	8.15	812	8.07
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			в	5	5	5	5	5			30.1					20.9	135				4.0					\$10		1
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	ſ	1.1	С	5	5	5	5	5																13				
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Ī		D	5	5	5	5	5				11										-	191					
$\frac{1}{ \mathcal{W} } = \frac{1}{ \mathcal{W} } = \frac{1}$	t	100%	A	5	5	5	5	5	29.4	19.5	29.2	19.6	295	714	19:3	20.1	20,7	20.3	7.4	68	4.2	6.5	6.9	294	8.00	1.43	8 04	819
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	W.	1/ww-1	в	5	5	5	5	5			295		1			120.0					5.7			1.1 4	1.50%	1 02	0.01	0=1
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Ī		С	5	5	5	5	5					1	1			-			1.41						0.00		100
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	t		D	5	5	5	5	5														1.4					1	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	t	100%	A	6	5	5	5	5	312	313	312	313	31.4	21.5	191	20.3	106	20.3	13	7.1	7.6	6.9	6.8	194	725	154	700	80
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	ł	WW-2	в	5	3	5	5	5			31.2		133	1.1.	114	10.8	20.0		7.2		65	0.1	0-0	1.1	1.05	105	1.1)	0.0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	t		С	6	5	5	5	5	-	120	1.	12	NV-4			6										4.75		1
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	t		D	5	5	5	5	5			3		-		-	-												
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	t	1001	A	C	5	5	5	5	746	20 1	1996	994	207	101	10.7	1.5	124	10.2	\$D	69	47	65	1.7	162	106	2 01	det	819
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	t	11110-3	в	5	5	5	5	5	11	61.1	294	01.0		60.	1-1:0	108			0.0		56		324.1	1.15	1.10	80	0.00	0.11
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	t	000	С	5	5	5	6	5			1500				1	6.4	1						No Ta			V		
A Image: Constraint of the second secon	t		D	5	5	5	5	K											1 - 1	200		-	100					-
B Image: Constraint of the second secon	t		A								I	10000			-	I			10000		i	R	-	255		1		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	t		в		-					101	f	1027				f	100		2	17-3	f	1933	1721	3.35		f		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	ł		c									1.22				1											-	
A B Image: A and a bit of the second s	t		D	-														-				1		-				
B Image: Constraint of the second secon	ł		A								1					1					i					i		
C D	t		в								f					f			100	1.53	f			1	133	f		
D D Initial Counts QC'd by: Mark Environmental Chamber: Initiated by: SP Environmental Chamber: Imitiated by: SP Environmental Chamber: Imitiation: Imitiated by: SP Environmental Chamber: Imitiation:	ł		c								-					12.2									-	-1-73		
Initial Counts QC'd by: Initiation: II d and Feeding Times Animal Source/Date Received: ABS 11/16/21 Age at Initiation: II d and II d and<	t		D							2		-		1									100					-
Initiated by: \underline{SP} Environmental Chamber: \underline{III} Animal Source/Date Received: \underline{ABS} , $\underline{IIIIb}2I$ Age at Initiation: \underline{III} \underline{Age} at Initiation: \underline{III} \underline{III} \underline{Age} at Initiation: \underline{IIII} \underline{IIII} $IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII$	5	Initial Counts QC'd by:	V	UI	NT									12 - 24	1		1			1.20		-			-	-18		12.
Animal Source/Date Received: ABS $11/16/21$ Age at Initiation: $I4/da/1$ Animal Acclimation Qualifiers (circle all that apply): $22/1/223$ $22/1/1$ none Comments: $i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal Organisms fed prior to initiation, circle one (y)/1/nA(S + 12/8/21)$		Initiated by:	Ś	P	-						En	viron	menta	l Char	nber:		-	-										
Animal Acclimation Qualifiers (circle all that apply): Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal Organisms fed prior to initiation, circle one $(y)/n$) AM: M:	A	Animal Source/Date	Rece	ived:		Ar	35	,11	116	21		~	Age a	it Initia	tion:		140	dar							Feed	ling Ti	mes	
Comments: $i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal Organisms fed prior to initiation, circle one (f)/ n) AM: AM: OBS US30 OS30 OS30 OS30 OS30 OS30 OS30 OS30 O$	P	nimal Acclimation	Quali	fiers	(circle	e all ti	hat aı	pply):				6	22) 1	Q23	1	224)	/ no	ne						0	24	48	72	96
Comments: i = initial reading in fresh test solution, f = final reading in test chamber prior to renewal PM: INO Organisms fed prior to initiation, circle one \sqrt{y}/r n A/(5) $12/8/21$ A/(5) $12/8/21$												C			C								AM:	-	0815	0830	0830	040
Organisms fed prior to initiation, circle one $(\sqrt{y})/(n)$ A(S) $(\frac{1}{y}/2)$	C	Comments:		i = in	itial re	eading	j in fre	esh te	st solu	tion, f	= final	readi	ng in t	est cha	mber	prior t	o rene	wal					PM:	1740				
$\frac{A(S)[2/8/2]}{2}$				Orga	nisms	s fed p	prior to	o initia	ation, c	ircle o	ne (<i>)</i> / n)													,	1	
	_	0. Oh a shu					1.																	A(S	_ 1	2/8	121	

Enthalpy Analytical. 4340 Vandever Avenue. San Diego, CA 92120.

Inland Silverside

CETIS Sur	nmary Repo	ort						Report Date: Test Code:	24 211	Nov-21 12:4 1-S284 10	47 (p 1 of 1) 0-8517-1994
Inland Silvers	side 96-h Acute	Survival 1	ſest						Nautilu	s Environn	nental (CA)
Batch ID: Start Date: Ending Date: Duration:	02-4964-6863 17 Nov-21 16: 21 Nov-21 15: 95h	Te 18 Pr 15 Sj Se	est Type: rotocol: pecies: purce:	Survival (96h) EPA/821/R-02 Menidia berylli Aquatic Biosys	1-012 (2002) ina stems, CO			Analyst: //o+/ Diluent: @ Dilu Brine: Not Age: 10d	Applicable Applicable	Seawater	
Sample ID: Sample Date: Receive Date Sample Age:	19-5182-4514 15 Nov-21 13:: 17 Nov-21 10: ⁻ 51h (1 °C)	Co 30 M 10 So St	ode: aterial: ource: ation:	21-1247 Stormwater Cardno Hawai DW-1/WW-1	i			Client: Car Project: ADC	dno Hawaii C Kekaha W	/Q Monitorir	ıg
Comparison Analysis ID	Summary Endpoint		NOEL	LOEL	TOEL	PMSD	τu	Method			
04-3998-8424	96h Survival R	ate	100	>100	NA	14.5%	1	Wilcoxon	Rank Sum	Two-Sample	e Test
Test Accepta	bility										
Analysis ID	Endpoint		Attrib	ute	Test Stat	TAC Lim	its	Overlap	Decision		
04-3998-8424	96h Survival R	ate	Contr	ol Resp	0.95	0.9 - NL		Yes	Passes A	cceptability	Criteria
96h Survival	Rate Summary										,
C-%	Control Type	Count	Mean	95% LCL	. 95% UCL	Min	Max	x Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
100		4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
96h Survival	Rate Detail										
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	0.8	1	1						
100		0.8	1	1	1						

(A) ALS 214 12/4/1

Analyst: Ju QA: 45 12/8/21

CETIS Ana	alytical Repo	ort					Repo Test	ort Date: Code:	24 211	Nov-21 12:4	¥7 (p 1 of 1))-8517-1994
Inland Silvers	side 96-h Acute	Survival Te	st						Nautilu	s Environr	nental (CA)
Analysis ID: Analyzed:	04-3998-8424 24 Nov-21 12:4	End 46 Ana	l point: 96h Iysis: Nor	Survival Ra	ate Two Sample	e	CET	IS Version: ial Results	CETISv1 : Yes	.8.7	<u> </u>
Data Transfor	rm	Zeta	Alt Hyp	Trials	Seed		PMSD	Test Res	ult		
Angular (Corre	ected)	NA	C > T	NA	NA		14.5%	Passes 9	6h survival r	ate	
Wilcoxon Rai	nk Sum Two-Sai	mple Test									
Control	vs C-%		Test Stat	Critical	Ties DF	P-Value	P-Type	Decision	(α:5%)		
Salt Control	100		18	NA	2 6	0.7857	Exact	Non-Signi	ificant Effect	1	
ANOVA Table	•										
Source	Sum Squ	ares	Mean Squ	lare	DF	F Stat	P-Value	Decision	(α:5%)		
Between	0		0		1	0	1.0000	Non-Signi	ficant Effect	-	
Error	0.0850618	35	0.0141769	8	6						
Total	0.0850618	35			7						
Distributional	l Tests										
Attribute	Test			Test Stat	Critical	P-Value	Decision	(α:1%)			
Variances	Variance	Ratio F		1	47.47	1.0000	Equal Var	iances			
Distribution	Shapiro-\	Wilk W Norn	nality	0.5659	0.6451	<0.0001	Non-norm	al Distributio	on		
96h Survival	Rate Summary							···· · · · · · · · · · · · · · · · · ·			
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
100		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
Angular (Corr	rected) Transfor	med Summ	ary								
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
100		4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
Graphics											
10 F	•		•			8.9E-02 - 4.5E-02 -		•••	••/	•	•
17 10 40 10 10 10 10 10 10 10 10 10 10 10 10 10					Contreed	4.9E-62			/		_
0.1	0.5C	1 C-%	300		L	-1.3E-01 -1.8E-01 -1.5	-1.0	-0.5 0.0 Rankits	1 D.5] 1.5

Analyst: QA: ALS 12/4/21

CETIS Sur	nmary Repo	ort							Report Da Test Code	ate: e:	24 I 211	Nov-21 12:4 1-S287 11	19 (p 1 of 1) 1-7794-6193
Inland Silvers	side 96-h Acute	Surviva	l Test	_							Nautilu	s Environn	nental (CA)
Batch ID: Start Date: Ending Date: Duration:	20-2090-4179 17 Nov-21 16: 21 Nov-21 15: 95h	18 15	Test Type: Protocol: Species: Source:	Sun EPA Mer Aqu	vival (96h) \/821/R-02- hidia beryllin atic Biosyst	012 (2002) ia :ems, CO			Analyst: Diluent: (Brine: Age:	ہے ہر Dilu⊉ Not 10d	Applicable	s Seawater	
Sample ID: Sample Date: Receive Date Sample Age:	02-3021-0748 15 Nov-21 11:4 : 17 Nov-21 10: 53h (1 °C)	40 10	Code: Material: Source: Station:	21-1 Stor Caro WW	1248 rmwater dno Hawaii /-2				Client: Project:	Caro ADC	dno Hawaii C Kekaha W	Q Monitorir	ıg
Comparison Analysis ID	Summary Endpoint		NOE	-	LOEL	TOEL	PMSD	TU	Me	thod			
01-4001-1928	96h Survival R	ate	100		>100	NA	10.8%	1	Wi	coxon	Rank Sum 7	rwo-Sample	e Test
Test Accepta	bility												
Analysis ID	Endpoint		Attrik	oute		Test Stat	TAC Lim	its	Ov	erlap	Decision		
01-4001-1928	96h Survival R	ate	Contr	ol Re	sp	0.95	0.9 - NL		Ye	S	Passes A	cceptability	Criteria
96h Survival	Rate Summary												
C-%	Control Type	Coun	t Mear	I	95% LCL	95% UCL	Min	Max	c Sto	l Err	Std Dev	CV%	%Effect
0	Lab Control	4	1		1	1	1	1	0		0	0.0%	0.0%
0	Salt Control	4	0.95		0.7909	1	0.8	1	0.0	5	0.1	10.53%	5.0%
100		4	1		1	1	1	1	0		0	0.0%	0.0%
96h Survival	Rate Detail												
C-%	Control Type	Rep 1	Rep 2	2	Rep 3	Rep 4							
0	Lab Control	1	1		1	1							
0	Salt Control	1	0.8		1	1							
100		1	1		1	1							

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Analyst: M QA: A(S12-18/4

CETIS Ana	alytical Rep	ort					Repo Test	ort Date: Code:	24 211	Nov-21 12:4	49 (p 1 of 1) 1-7794-6193
Inland Silver	side 96-h Acute	Survival Te	st						Nautilu	s Environr	mental (CA)
Analysis ID: Analyzed:	01-4001-1928 24 Nov-21 12:	Enc 49 Ana	lpoint: 96h Ilysis: Nor	Survival Ra	ate Two Sampl	e	CET	IS Version: al Results:	CETISv1 Yes	.8.7	
Data Transfo	rm	Zeta	Alt Hyp	Trials	Seed		PMSD	Test Resu	ılt		
Angular (Corre	ected)	NA	C > T	NA	NA		10.8%	Passes 96	Sh survival i	ate	
Wilcoxon Ra	nk Sum Two-Sa	mple Test									
Control	vs C-%		Test Stat	Critical	Ties DF	P-Value	P-Type	Decision(α:5%)		
Salt Control	100		20	NA	1 6	1.0000	Exact	Non-Signif	ficant Effec	t	
ANOVA Table)										
Source	Sum Squ	ares	Mean Squ	lare	DF	F Stat	P-Value	Decision(α:5%)		
Between	0.007088	488	0.0070884	88	1	1	0.3559	Non-Signif	ficant Effec	t	
Error	0.042530	92	0.0070884	88	6						
Total	0.0496194	41			1	••••					
Distributiona	I Tests										
Attribute	Test			Test Stat	Critical	P-Value	Decision((α:1%)			
Variances	Mod Lev	ene Equality	of Variance	1	13.75	0.3559	Equal Var	iances			
Variances	Levene E	Equality of V	ariance	9	13.75	0.0240	Equal Var	iances	-		
Distribution	Shapito-			0.7065	0.0451	0.0027	Non-norm		ori		
96h Survival	Rate Summary										
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	0.95 1	0.7909 1	1	1	0.8 1	1	0.05	10.53%	0.0%
					1	1			0	0.0 %	-5.20%
Angular (Cor	rected) Transfor	med Summ	lary								
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	<u>CV%</u>	%Effect
100	Salt Control	4 4	1.280	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
		•				1.040	1.040	1.040		0.070	-4.0070
Graphics											
10 E	///////	3				8.9E-02		1		/	
0.9	٥					Ē		5	•		0
0.8						4.5E-02					
물 0.7 -						Ē					
a la					thered	0.0E+00		•••	•		
35					ð	3					
0.5						-4.5E-02					
0.4						Ę					
0.3						-8.9E-02					
0.2						-					
a.1						-1.3€-01					
					L				1		
	0.5C	C-%	100			-1.5	-1.0	-0.5 0.0	0.5	1.0	1.5
		w-70						PERMITS			

Analyst: ON QA: MIS 12/8/14

CETIS Sur							Report Dat Test Code:	:e: :	24 N 211	√ov-21 12:5 1-S290 10	i1 (p 1 of 1))-5543-4287		
Inland Silvers	side 96-h Acute	Surviva	al Test			-					Nautilus	s Environm	iental (CA)
Batch ID: Start Date: Ending Date: Duration:	18-8988-8352 17 Nov-21 16:1 21 Nov-21 15:1 95h	8 5	Test Type: Protocol: Species: Source:	Survi EPA/ Meni Aqua	ival (96h) /821/R-02-(dia beryllin atic Biosyst	012 (2002) a ems, CO			Analyst: Diluent: (A Brine: Age:	µ∍{ Dilut) Not≀ 10d	Applicable	Seawater	
Sample ID: Sample Date: Receive Date Sample Age:	10-5143-6858 15 Nov-21 11:5 : 17 Nov-21 10:1 52h (1 °C)	i5 0	Code: Material: Source: Station:	21-12 Storn Cardi WW-	249 nwater no Hawaii ·3				Client: Project:	Card ADC	no Hawaii Kekaha We	Q Monitorin	g
Comparison Analysis ID	Summary Endpoint		NOEI	-	LOEL	TOEL	PMSD	TU	Meth	nod			
21-0041-7958	96h Survival Ra	ate	100		>100	NA	10.8%	1	Wilc	oxon F	Rank Sum T	wo-Sample	e Test
Test Accepta	bility												
Analysis ID	Endpoint		Attrib	ute		Test Stat	TAC Limi	its	Over	rlap	Decision		
21-0041-7958	96h Survival Ra	ate	Contr	ol Res	р	0.95	0.9 - NL		Yes		Passes Ac	ceptability	Criteria
96h Survival	Rate Summary												
C-%	Control Type	Coun	ıt Mean		95% LCL	95% UCL	Min	Max	c Std I	Err	Std Dev	CV%	%Effect
0	Lab Control	4	1		1	1	1	1	0		0	0.0%	0.0%
0	Salt Control	4	0.95	(0.7909	1	0.8	1	0.05		0.1	10.53%	5.0%
100		4	1		1	1	1	1	0		0	0.0%	0.0%
96h Survival	Rate Detail												
C-%	Control Type	Rep 1	I Rep 2	: 1	Rep 3	Rep 4							
0	Lab Control	1	1		1	1							
0	Salt Control	1	0.8		1	1							
100		1	1		1	1							

@QUYA(S 12/8/21

Analyst: The QA: AIS 12/4/4

CETIS Ana	alytical Rep	ort					Repo Test	ort Date: Code:	24 211	Nov-21 12: 11-S290 1	51 (p 1 of 1) 0-5543-4287
Inland Silver	side 96-h Acute	Survival Te	est						Nautilu	s Environr	nental (CA)
Analysis ID: Analyzed:	21-0041-7958 24 Nov-21 12:	En 51 An	dpoint: 96h alysis: Nor	Survival Ra	ate •Two Sampl	e	CET	IS Version: ial Results:	CETISv1 Yes	.8.7	
Data Transfo	rm	Zeta	Alt Hyp	Trials	Seed		PMSD	Test Resu	ılt		
Angular (Corre	ected)	NA	C > T	NA	NA		10.8%	Passes 96	ih survival r	ate	
Wilcoxon Ra	nk Sum Two-Sa	mple Test									
Control	vs C-%		Test Stat	Critical	Ties DF	P-Value	P-Type	Decision(α:5%)		
Salt Control	100		20	NA	1 6	1.0000	Exact	Non-Signif	icant Effec	t	
ANOVA Table)										
Source	Sum Squ	ares	Mean Squ	iare	DF	F Stat	P-Value	Decision(α:5%)		
Between	0.0070884	488	0.0070884	88	1	1	0.3559	Non-Signif	icant Effect	t	
Error Total	0.0425309	92 41	0.0070884	88	6						
	1 7 4 -	T I									
Distributiona	l lests				• • • •						
Variances	Iest	ono Equalita	. of Vorience	lest Stat	Critical	P-Value	Decision	α:1%)			
Variances		ene Equality	y of variance	0	13.75	0.3559	Equal Var	iances			
Distribution	Shapiro-\	Wilk W Nor	mality	9 0.7065	0.6451	0.0240	Non-norm	al Distributio	n		
96h Survival	Rate Summary							<u>.</u>		· · · · · · · · · · · · · · · · · · ·	
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	-5.26%
Angular (Cori	rected) Transfor	med Sumn	nary								
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Мах	Std Err	CV%	%Effect
0	Salt Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	-4.63%
Graphics											
10	850		•		Contered	8.8F-92 4.3E-92 4.3E-92 4.3E-92 4.3E-92 -1.3E-91 -1.5	-1.0		• • •	I	•
		C-%						Rankits			

Analyst: An QA: 4/5 12/8/15

Marine Acute Bioassay Static-Renewal Conditions DM-001

Water Quality Measurements & Test Organism Survival

Client: Cardno HI	Test Species: <u>M. beryllina</u>			Те	ch Init	ials	
Sample ID: $\frac{W-1}{WW-1}$, $WW-2$, $WW-3$	Start Date/Time: 11/17/2021 1618			24	48	72	96
Sample Log-in No.: 21-1247, -1248, -1249	End Date/Time: 11/21/2021 1515	Counts:	FL	RT	P	Sp	GM
Test No.: 2111-5284, 5287, 5290		Readings:	1	PSP	SP	59	GM
,		Dilutions made by:	RT		RT	•	

	Concentration (%)	Rep	Rep Organisms					Salinity (ppt)						Temperature Disso (°C)				lved ((mg/L	Oxyge .)	n			pH (units)			
	()		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96
	Lab Control	A	5	5	5	5	5	29.6	29.9	29.9	300	30.4	24.4	24.6	24.4	15.5	25:1	6.9	5.7	61	5.7	60	7.97	7.86	4.92	7.84	7.0
		в	5	5	5	5	5			30.0					5.2					\$5.5					7.83		
1		C	5	5	5	5	5	-			1												2	1			
		D	5	5	5	5	5																				
	Salt Control	A	5	5	5	5	5	30.2	30.5	30.4	30.6	30.8	24.1	24.9	24.5	25.9	25.6	6.8	5.7	5.8	5.7	6.0	8.19	810	8.14	811	8.6
		в	5	4	4	4	4			30.8					125.4					\$.5					8.07	1	
		С	5	5	5	5	5																				
		D	5	5	5	5	5							11.1								12-1					
	100%	A	5	5	5	4	4	29.6	24.6	29.5	29.7	29.7	256	25.6	24.5	260	25.3	7.0	5.6	6.8	5.5	5,9	7.8	8.01	7.41	8.06	8.2
1 -	1/ww-1	в	5	5	5	5	5			29.9					155	1				5.3		4			\$.09		
		С	5	5	5	5	5																				
		D	5	5	5	5	5															1		-			
	100%	A	5	5	5	5	5	31.2	કા.ય	31.2	313	31.5	24.3	25.0	24.3	26.6	256	6.9	5.3	6.9	5.0	5,9	7.37	7.75	7.42	7.88	7.84
	WW-2	в	5	5	5	5	5			\$1.3					15.5					5.1				1.	7.90		
		С	5	5	5	5	3			•													3				11
		D	5	5	5	5	5			19	-	1										1		1			
	100%-	A	5	5	5	5	5	29.5	29.8	29.7	30.1	30.6	24.1	24.9	244	25.7	25.3	7.2	5.3	6.8	5.3	5.9	7.89	7.97	7.94	812	8.2
	WW-3	в	5	5	5	5	5			30.1					125.3					5.4				2-	8.17	1	
		С	5	5	5	5	5							1	1												
		D	5	5	5	5	5												51				1				
		A								i	1				I					i					I		
		в								f					f					f					f		
		С						11			-												1			14.	
		D																1					5-1				
		A								1					1					1					1		
		в								f					f					f			13		f		
		С																									
		D						11																			
	Initial Counts QC'd by: Initiated by:	HH	L							En	viron	menta	l Char	nber:		A											
	Animal Source/Date	Recei	ived:		Ą	BS	0)	NA	21			Age a	t Initia	ation:	10	19	dau	15						Feed	ling Ti	mes	
	Animal Acclimation	Qualif	fiers	(circl	e all t	hat a	pply):	(Δ)			(a	22 /	Q23		24	A.	ne	J					0	24	48	72	96
												\mathcal{J}		J		C	×Ŧ	3		•		AM:		SK	0830	0870	as
,	Comments:		i = in	itial re	eading	g in fr	esh te	st solu	tion, f	= fina	readi	ng in te	est cha	amber	prior t	to rene	ewal				Net -	PM:	THO				
			Orga	nisms	s fed	prior t	o initia	ition, c	ircle o	ine ()	<u>,</u>)		QYON	111	17/2	<u>_\</u>	_							e . t		
										\subseteq			\sim										Als	12/	8/21		
1	QC Check:	σu	- 1	1/2	41	2														Fin	ial Re	view:					

Enthalpy Analytical. 4340 Vandever Avenue. San Diego, CA 92120.

Mysid Shrimp

CETIS Sur	nmary Repo	ort							Report Date: Test Code:	24 21 ⁻	Nov-21 12: 1-S285 00	58 (p 1 of 1) 6-0860-5733
Mysid 96-h A	cute Survival Te	st								Nautilu	s Environn	nental (CA)
Batch ID: Start Date: Ending Date: Duration:	10-4969-9229 17 Nov-21 17:0 21 Nov-21 15:2 94h	-)8 20 1	Test Type: Protocol: Species: Source:	Surv EPA Ame Aqu	vival (96h) \/821/R-02- ericamysis t atic Biosyst	012 (2002) bahia ems, CO			Analyst: No Diluent: (b) Dilu Brine: Not Age: (b) 10d	ted Natural Applicable	Seawato r	
Sample ID: Sample Date: Receive Date Sample Age:	00-7992-8413 15 Nov-21 13:3 : 17 Nov-21 10:1 52h (1 °C)	30 I 10 1	Code: Material: Source: Station:	21-1 Efflu Caro DW-	247 Jent Sample dno Hawaii -1/WW-1) Starmwa	ater		Client: Card Project: ADC	dno Hawaii C Kekaha W	'Q Monitorir	ng
Comparison Analysis ID	Summary Endpoint		NOEL		LOEL	TOEL	PMSD	TU	Method			
16-3493-0437	96h Survival R		100		>100	NA	10.8%	1	VVIICOXON	Rank Sum	wo-Sample	e lest
Test Acceptal	Endpoint		Attrib	oute		Test Stat	TAC Lim	its	Overlap	Decision		
16-3493-0437	96h Survival R	ate	Contr	ol Res	sp	0.95	0.9 - NL		Yes	Passes A	cceptability	Criteria
96h Survival i	Rate Summary											
C-%	Control Type	Count	Mean		95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0 0 100	Lab Control Salt Control	4 4 4	1 0.95 1		1 0.7909 1	1 1 1	1 0.8 1	1 1 1	0 0.05 0	0 0.1 0	0.0% 10.53% 0.0%	0.0% 5.0% 0.0%
96h Survival	Rate Detail						0 · ·					
C-%	Control Type	Rep 1	Rep 2	2	Rep 3	Rep 4						
0 0	Lab Control Salt Control	1 1	1 1		1	1 0.8			·			
100		1	1		1	1						

() Q18 Ja 11/24/21

(B) Que A(S 12/4/2)

CETIS Ana	alytical Repo	ort					Repo Test	ort Date: Code:	24 211	Nov-21 12:	58 (p 1 of 1) 5-0860-5733
Mysid 96-h A	cute Survival Te	st							Nautilu	s Environn	nental (CA)
Analysis ID: Analyzed:	16-3493-0437 24 Nov-21 12:5	Enc 58 Ana	l point : 96h Iysis: N or	Survival Ra	ate Two Sample	9	CET	S Version:	CETISv1 Yes	.8.7	
Data Transfo	rm	Zeta	Alt Hyp	Trials	Seed		PMSD	Test Resu	lit		
Angular (Corre	ected)	NA	C > T	NA	NA		10.8%	Passes 96	ih survival r	ate	
Wilcoxon Rai	nk Sum Two-Sar	nple Test									
Control	vs C-%		Test Stat	Critical	Ties DF	P-Value	P-Type	Decision(α:5%)		
Salt Control	100		20	NA	1 6	1.0000	Exact	Non-Signi	ficant Effect	:	
ANOVA Table)										
Source	Sum Squ	ares	Mean Squ	are	DF	F Stat	P-Value	Decision(α:5%)		
Between	0.0070884	188	0.0070884	88	1	1	0.3559	Non-Signif	icant Effect		
Error	0.0425309	92	0.0070884	88	6						
TOLAI	0.0496194	+1	·····		/						
Distributional	l Tests										
Attribute	Test			Test Stat	Critical	P-Value	Decision(α:1%)			
Variances	Mod Leve	ene Equality	of Variance	1	13.75	0.3559	Equal Vari	iances			
Distribution	Shapiro-V	Vilk W Norn	nalitv	9 0.7065	0.6451	0.0240	Equal Vari	ances al Distributic	'n		
96h Survival	Pato Summany					0.0021					
C-%		Count	Mean	95% Cl	95% UCI	Modian	Min	Max	Std Err	CV/9/	9/Effect
0	Salt Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
100		4	1	1	1	1	1	1	0	0.0%	-5.26%
Angular (Corr	rected) Transfori	med Summ	ary								
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
100		4	1.345	1.345	1.346	1.345	1.345	1.345	0	0.0%	-4.63%
Graphics											
1.0 0.9 1.0 0.9 1.0 0.9 1.0 0.9 1.0 0.9 1.0 0.9 1.0 0.9 1.0 0.9 1.0 0.9 1.0 0.9 1.0 0.9 1.0 0.0 0	055				Contrared	8.5E-02 4.5E-02 	-14				-
		C-%	-					Rankits	80-08		

Analyst: _____ QA: #(1 12/1/2)



CETIS Sur	nmary Repo	ort						Report Date: Test Code:	24 21 ⁻	Nov-21 13: 11-S288 0	02 (p 1 of 1) 2-5897-0798
Mysid 96-h A	cute Survival Te	est							Nautilu	s Environn	nental (CA)
Batch ID: Start Date: Ending Date: Duration:	20-6418-7665 17 Nov-21 17: 21 Nov-21 15: 94h	Te: 08 Pro 20 Sp So	st Type: otocol: ecies: urce:	Survival (96h) EPA/821/R-02- Americamysis Aquatic Biosys	012 (2002) bahia tems, CO			Analyst: _{Vot} Diluent: B- Dilu Brine: Not Age: (5400	Appl	Seawater	<u>, , , , , , , , , , , , , , , , , , , </u>
Sample ID: Sample Date: Receive Date Sample Age:	11-7158-7422 15 Nov-21 13: 17 Nov-21 10: 53 (4) 52h (1 °C)	⊛ Co 3 0− ॥ःसठMa 10 So Sta	de: terial: - urce: ition:	21-1248 Effluent Sampl Cardno Hawaii WW-2	Storm	water		Client: Car Project: ADC	dno Hawaii C Kekaha W	/Q Monitoriı	ng
Comparison	Summary Endpoint		NOEL	LOEL	TOEL	PMSD	TU	Method			
05-7240-4121	96h Survival R		100	>100	NA	14.5%	1	Wilcoxon	Rank Sum	Two-Sample	e Test
Analysis ID	Endpoint 96h Survival R	ate	Attribu	te Resp	Test Stat	TAC Lim	its	Overlap Yes	Decision		Criteria
96b Survival	Pate Summany										
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Min	Мах	Std Err	Std Dev	CV%	%Effect
0 0 100	Lab Control Salt Control	4 4 4	1 0.95 0.95	1 0.7909 0.7909	1 1 1	1 0.8 0.8	1 1 1	0 0.05 0.05	0 0.1 0.1	0.0% 10.53% 10.53%	0.0% 5.0% 5.0%
96h Survival	Rate Detail										
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0 0 100	Lab Control Salt Control	1 1 1	1 1 1	1 1 0.8	1 0.8 1						

(D Q18 JU 11/24/21 (B) Q1((M) (2/9/2)

Analyst: On QA: MS 12/8/21

CETIS Ana	alytical Repo	ort					Rep Test	ort Date: Code:	24 211	Nov-21 13: 1-S288 0	02 (p 1 of 1) 2-5897-0798
Mysid 96-h A	cute Survival Te	st							Nautilu	s Environr	nental (CA)
Analysis ID: Analyzed:	05-7240-4121 24 Nov-21 13:(End 02 Ana	l point: 96h I ysis: N or	Survival Ra	ate -Two Samp	ble	CET	IS Version: cial Results	CETISv1 : Yes	.8.7	
Data Transfo	rm	Zeta	Alt Hyp	Trials	Seed		PMSD	Test Resi	ult		
Angular (Corre	ected)	NA	C > T	NA	NA		14.5%	Passes 96	6h survival i	ate	
Wilcoxon Ra	nk Sum Two-Sai	mple Test									
Control	vs C-%		Test Stat	Critical	Ties D	F P-Value	Р-Туре	Decision	α:5%)		
Salt Control	100		18	NA	2 6	0.7857	Exact	Non-Signi	ficant Effec	t	
ANOVA Table)		····	<u></u>							
Source	Sum Squ	ares	Mean Squ	lare	DF	F Stat	P-Value	Decision(α:5%)		
Between	0	· ·	0		1	0	1.0000	Non-Signi	ficant Effec	t	
Error	0.0850618	35	0.0141769	8	6						
Total	0.0850618	35			7						
Distributiona	l Tests										
Attribute	Test			Test Stat	Critical	P-Value	Decision	(α:1%)			
Variances	Variance	Ratio F		1	47.47	1.0000	Equal Var	iances			
Distribution	Shapiro-\	Wilk W Norn	nality	0.5659	0.6451	<0.0001	Non-norm	al Distributio	on		
96h Survival	Rate Summary										
C-%	Control Type	Count	Mean	95% LCL	95% UCL	. Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
100		4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
Angular (Cor	rected) Transfor	med Summ	ary								
C-%	Control Type	Count	Mean	95% LCL	95% UCL	. Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
100		4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
Graphics											
1		1		\mathbb{Z}		8.9E-02				/	
0.9			Ū					• •	• •/	•	•
0.8		J	L			1.3E-02			/		
4 0.7 -						R # 005400			/		
						Centers					
5 - 0.5 -						-4.5E-02					
						Ę	/				
						-6.9E-02					
0.3						Ē					
0.2 <u>-</u>						-1.3E-01					
a1 -						Ę					
a.0 E	0 SC	I				-1.8E-01	-1.0	-0.5 20	1	1.0	 1.5
		C-%	20			-1-2		Rankits	0.3	4.W	

Analyst: M QA: Ar S 12/8/21

CETIS Sur	nmary Repo	ort						Report Date: Test Code:	24 21 ⁻	Nov-21 13:0)4 (p 1 of 1))-4205-5524
Mysid 96-h A	cute Survival Te	st							Nautilu	s Environn	nental (CA)
Batch ID: Start Date: Ending Date: Duration:	11-7096-1554 17 Nov-21 17:0 21 Nov-21 15:2 94h	18 20	Test Type: Protocol: Species: Source:	Survival (96h) EPA/821/R-02 Americamysis Aquatic Biosys	2-012 (2002) bahia stems, CO			Analyst: No Diluent: D-Dilu Brine: Not Age: Age: Age:	t Applicable ted Natural Applicable SJ	د <u>Seawater</u>	
Sample ID: Sample Date: Receive Date Sample Age:	10-4404-2597 15 Nov-21 11:5 17 Nov-21 10:1 53h (1 °C)	5 0	Code: Material: Source: Station:	21-1249 -Effluent Samp Cardno Hawai WW-3	0 1 e Stormu 1i	vater		Client: Car Project: ADO	dno Hawaii C Kekaha W	/Q Monitorir	ıg
Comparison	Summary										
Analysis ID	Endpoint		NOEL	LOEL	TOEL	PMSD	ΤU	Method			
07-6921-1622	96h Survival Ra	ate	100	>100	NA	15.6%	1	Equal Va	iance t Two	-Sample Te	st
Test Accepta	bility										<u>.</u>
Analysis ID	Endpoint		Attrib	ute	Test Stat	TAC Lim	nits	Overlap	Decision		
07-6921-1622	96h Survival Ra	ate	Contr	ol Resp	0.95	0.9 - NL		Yes	Passes A	cceptability	Criteria
96h Survival	Rate Summary										
C-%	Control Type	Coun	t Mean	95% LCL	. 95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	Lab Control	4	1	1	1	1	1	0	0	0.0%	0.0%
0	Salt Control	4	0.95	0.7909	1	0.8	1	0.05	0.1	10.53%	5.0%
100		4	0.9	0.7163	1	0.8	1	0.05774	0.1155	12.83%	10.0%
96h Survival	Rate Detail										
C-%	Control Type	Rep 1	Rep 2	Rep 3	Rep 4						
0	Lab Control	1	1	1	1						
0	Salt Control	1	1	1	0.8						
100		1	0.8	1	0.8						

(D) Q18 JU 11/24/2

10 Q19 14/5 12/9/21

CETIS Ana	alytical Rep	ort					Repo	ort Date: Code:	24 211	Nov-21 13:0	04 (p 1 of 1) 0-4205-5524
Mysid 96-h A	cute Survival Te	est							Nautilu	s Environr	nental (CA)
Analysis ID: Analyzed:	07-6921-1622 24 Nov-21 13:	Enc 04 Ana	d point: 96h alysis: Par	n Survival Ra ametric-Two	ate o Sample		CET	S Version: al Results:	CETISv1 Yes	.8.7	
Data Transfo	rm	Zeta	Alt Hyp	Trials	Seed		PMSD	Test Resu	lt		
Angular (Corre	ected)	NA	C > T	NA	NA		15.6%	Passes 96	h survival r	ate	
Equal Varian	ce t Two-Sampl	e Test									
Control	vs C-%		Test Stat	Critical	MSD DF	P-Value	P-Type	Decision(a:5%)		
Salt Control	100		0.6547	1.943	0.177 6	0.2685	CDF	Non-Signif	icant Effect	1	(38)
ANOVA Table											
Source	Sum Squ	ares	Mean Squ	lare	DF	F Stat	P-Value	Decision(a:5%)		
Between	0.007088	488	0.0070884	188	1	0.4286	0.5370	Non-Signif	icant Effect	-	
Error	0.099238	82	0.0165398	3	6						
Total	0.106327	3			7						
Distributiona	I Tests										
Attribute	Test			Test Stat	Critical	P-Value	Decision(α:1%)			
Variances	Variance	Ratio F		1.333	47.47	0.8187	Equal Var	iances			
Distribution	Shapiro-	Wilk W Norr	nality	0.8283	0.6451	0.0570	Normal Di	stribution			
96h Survival	Rate Summary										
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	Salt Control	4	0.95	0.7909	1	1	0.8	1	0.05	10.53%	0.0%
100		4	0.9	0.7163	1	0.9	0.8	1	0.05774	12.83%	5.26%
Angular (Cor	rected) Transfor	med Summ	nary								
C-%	Control Type	Count	Mean	95% LCL	95% UCL	Median	Min	Мах	Std Err	CV%	%Effect
0	Salt Control	4	1.286	1.096	1.475	1.345	1.107	1.345	0.05953	9.26%	0.0%
100		4	1.226	1.007	1.445	1.226	1.107	1.345	0.06874	11.21%	4.63%
Graphics											
10 -		-				135.01					
Ē		1								•/	•
0.9			٥			8.9E-02					
0.6		J		Reject Null		-		•	• •/		
48 0.7 22						4.5E-02					
					Center						
φ - α.s -						-					
						-1.5E-02					
						Ē	/				
0.3						-8.9E-02					
0.2						1 25.01		•			
0.1						·					
a.o E	0 SC		500		Ĺ	-1.8E-01			l		
	u 1962	C-%	0			-1.3	-1.4	Rankits	0.5	1.0	1.3

Analyst: M QA: MS 12/8/21

Marine Acute Bioassay Static-Renewal Conditions DM-001

Water Quality Measurements & Test Organism Survival

Client: Cardņo Hl	Test Species: A. bahia				Те	ch Init	ials	
Sample ID: $WW-1$, $WW-2$, $WW-3$	Start Date/Time: 11/17/2021	1708		0	24	48	72	96
Sample Log-in No.: 21-1247, -1248, -1249	End Date/Time: 11/21/2021	1520	Counts:	A	RT	58	SP	Gm
Test No.: 2111-5285, 5288, 5291			Readings:	KL	SP	SP	SP	GM
			Dilutions made by:	RT		RT		

(70)	Rep	ep Number of Live Organisms						Salinity (ppt)					Temperature (°C)					Disso	lved C (mg/L	Oxyge .)	n			pH (units)	
		0	24	48	72	96	0	24	48	72	96,	Ó	24	48	72	96	0	24	48	72	96	0	24	48	72	9
Lab Control	A	5	5	5	5	5	19.6	29.9	29.6	1.02	30.8	2414	245	24.4	25.2	25.2	6.9	6.1	8.2	5.7	6.0	7.95	7.87	4.96	7.80	7:
	В	5	5	5	5	5	-		303		1			254					5.3	Ĩ				7.78		
	С	5	5	5	5	5								-												
	D	5	5	5	5	5												· · · ·				1				
Salt Control	A	5	5	5	5	5	30.3	.30.5	30.2	30.8	30.9	pil.1	24.8	24.4	25.2	25.2	6.8	6.0	6.1	5.4	6,0	8.18	8.11	\$17	8.09	8.
	в	5	5	5	5	5	- 1		30.7					25.7					5.2					5.04		
	С	5	5	5	5	5	-								2	Š.					6					
	D	5	5	5	И	4				-		-		1955												
, 100%	A	5	5	5	5	5	29.5	29.7	29.6	29.9	30.6	25.9	24.8	246	253	25.2	7.0	5.9	6.4	5.6	6.0	7.0	8.01	7-12	80	8.
1/ww-1	в	5	5	5	5	5			29.7					25.7					5.2					8.11		
/	C	5	5	5	5	5																-				
	D	5	5	5	5	5		2																		
100%	A	5	5	5	5	5	31.7	31.3	31.2	31.6	31.9	24.0	24.8	295	25.2	25.2	7.0	5.4	6.6	5.6	5.3	7.39	7.74	7.41	7.96	7.
WW-2	В	5	S	5	5	5			31.2					25.6					5.0					4.77		
	С	5	S	5	9	4										- 2						-				-0
	D	5	5	5	5	5				1						-					-					
100%	A	5	5	5	3	5	29.6	29.9	29.8	30.4	39.7	24.1	24.7	24.7	25.3	25.3	7.2	5.8	6.6	5.3	5.9	7.91	8.02	1.89	8.10	8.2
WW-3	в	5	5	5	5	4	1.4		300					255		2			5.0					8.18		
	С	5	5	5	5	5	2																			-
	D	5	5	5	5	4		5																		
	A					20		-	'					1					ì					í.		
	В								f	-				f		2			ſ					f	-	
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	в						1	- 1					0	1					f					f		
	101	1.000			_								i - 1							1						
	1	-		-	-				- marine													-				

Appendix B

Sample Check-In Information

Enthalpy Analytical 4340 Vandever Avenue

San Diego, CA 92120						DC-006
client: Cardno HI	Tests Performed	Acute top	met menidia	A Sample Descriptions		
Project: ADC WATEr Qualic	Test ID No.(s)	2111-5283+	oS291 + mysi,		an ada C	
mountaring	w-17ww-1				100,000,000	· ecores
Sample ID: 170)	2) 2/2-1-2-	3 2010/-3	4)	21 Light yellow, cieci	100 000, 1	1. 1.2
Log-in No. (21-xxxx):) 2 4	7 1248	1249			· · · · · · · · · · · · · · · · · · ·	0 1201.)
Sample Collection Date & Time: 1)// 2)</td <td>1330 PST 11/15/2 114075T</td> <td>1115121 1155</td> <td></td> <td></td> <td></td> <td></td>	1330 PST 11/15/2 114075T	1115121 1155				
Sample Receipt Date & Time: 11/121	0101111111 0101	11/17/21 1018		COC Complete?		
Number of Containers & Container Type: 2×4L	Wb. 9 2×42 mb: 5	224Leubis				
Approx. Total Volume Received (L): ~	28	~8		Filtration? Y	3	
Check-in Temp (°C)	6.1	1.0		Initials: 1) 2)	3) 4	n
Temperature OK? 1	N (P) N	(V) N	Y N	Pore Size:		/
DO (mg/L)	ATT-89.6	9.6		Organisms	or [Debris
pH (units) 7.53	3 7.43	7.79		0		
Conductivity (µS/cm)	0 -	9700				
Salinity (ppt) 3.5	30.9	5.4		nH Adjustment? V	N	
Alkalinity (mg/L) ²	156	167		4		5 6
Hardness (mg/L) ^{2,3}		-			2 3 4	5 6
Total Chlorine (mg/L)	2. 10.02	10.07		Amount of HCL addadu		
Technician Initials	6-40	1-110		Amount of HCI added:		
Enclosed a Testa		01-1		Final pH:		
Freshwater Tests:	Others	A 15 - 12 - 14				
Control/Dilution water Source: 8:2 Coast	Otner:	Alkalinity:	Hardness:	Cl ₂ Adjustment?	Y N	
Additional Control? Y N =		Alkalinity:	Hardness:	1	2 3 4	5 6
Marine Tests:		0.0	20- 3	Initial Free Cl _{2:}		
Control/Dilution Water Source: (AB SW) ART SW	Other:	Alkalinity: <u>18</u>	_ Salinity: 30 m	STS added:		
Additional Control?	520	Alkalinity: 150	Salinity: <u>30pp</u>	Final Free Cl ₂ :		
Sample Salted w/ artificial salt? <u>()</u> N If yes, targe	t ppt and source? <u>3011+</u>	- Lastant Ocean		Sample Aeration?	Y (N)	
Sample salted w/brine? Y (N) If yes, targe	t ppt?	ww-le ww	-3 only	1	2 3 4	56
				Initial D.O.		
Notes ¹ Temperature for sample must be 0-6°C if rec	eived >24 hours past collection ti	me.		Duration & Rate		
² mg/L as CaCO3, ³ Measured for fresh	water samples only, NA = No	t Applicable		Final D.O.		
				Measure NH3 via test strip (cir	cle one)?	N
				NH3 Strip Populity N. D-5	2,0.5 0	05
				*(if 6 or more, notify PM)	E C	
Additional Comments: (DQ)& (-M) 112121	DRUGAL MISH			Cubecomics For Additional Ob		in v
	Jaiones intopi			Subsamples For Additional Ch	emistry Required	
				ипэ О		—
	1-2-774-20			Tech Inidiates		
OC Check: The unlaw to				rechimitals:	re in Isla 1	
WO UNBOK. JAL 11/29/24				Final Review: <u>M</u>	0 12/0/21	
Appendix C

Chain-of-Custody Form

Enthalpy Analytical - Environmental Toxicology

4340 Vandever Avenue San Diego, CA 92120 Phone 858.587.7333 infoSD@enthalpv.com

e Collection B	Зу:											ANAL	YSES	REQUIE	RED	T
port to:		auto:				Invoice To:		Same as Report to				T	1		Enthalpy Matrix	1
Company		Cardno-GS				Company									Codes:	- 8
Address		737 Bishon S	t Suite 3050	#r	-	Address			_						= Grab	
city/State/Zi	ip	Honolulu, HI	96734		-	City/State	/Zip		rviva	<u>a</u>	a l	a	vival	FV	– composite	
Contact		Benjamin Bei	rridge			Contact			e Su	Urviv	Survi	urvi	Sur	IN SV	V = Seawater	
hone		808-476-006	7		_	Phone			Acut	te Si	ute	lte S	Acute	Se Se	<u>d</u> = Sediment	
imail		benjamin.ber	ridge@cardno-c	<u>is.com</u>	-	Email			96-hr	hr Acu	i-hr Ac	-hr Acu	96-hr A	In Acut	 <u>RM</u> = Stormwater	
			SAMPLE		MATRIX CODE	Contain	er	estenine have a menior providence and a set of the set	melas	<i>ia</i> 96-	<i>eca</i> 96	<i>nis</i> 96-	rylina 9	1-96-1 S	\underline{v} = Groundwater N = Wastewater	1
SAMPL	LE ID	Date	Time	Type (G or C)	(FW, SW, Sed, STRM, GW, WW, O)	Туре	Qty	COMMENTS	P. pro	C. dul	H. azt	A. affi	M. be	4. bat	= Other (specify)	
DW-1/W	/W-1	11/15/21	11:30 HST	G	STRM	2 5 Gal Plastic	2	Marine Species				X	X	X	Carlos (op Con //	1.
WW-2		11/15/21	09:40 HST	G	STRM	2.5 Gal Plastic	2	Marine Species				x	X	x		7.
WW-3		11/15/21	09:55 HST	G	STRM	2.5 Gal Plastic	218 2	Marine Species				x	X	x		1
						laal	AC 11/17	12								1
						Plati.										
				1		FIGURE										F
					1											F
									-					-		H
				-			-		-			-		-		\vdash
		1									-	-				-
PROJEC	CT INFORMATIC)N		SAI	MPLE RECEIPT		1	1) RELINQUISHED BY (CLIENT)			2) REC	EIVE	D BY (C	OURIER)	_
ct Name:	ADC Water Qua Monitoring	lity	Tot	al No. of C	Containers	6	(Signature)	3-BA (Time) 14:00	(Signatu	ire)					(Time)	
D No.:			Rece	ived Good	Condition?	V	(Printed Nan	Ben Deraidae Illicha	(Printed	Name)					(Date)	-
ped Via:	Fedex	- 1	Mat	ches Test	Schedule?	V.	(Company)	Canduro Canduro	(Compar	ny)		-				
AL INSTRUCT	TIONS/COMME	NTS:			101	Ĵ,			-		4) F				00470030	_
							(Signature)	(Time)	(Signaty	(P) .	4)1	AECEI	LVED	DT (LAD	(Time)	
							(Printed Nam	e) (Date)	(Printed	Name)	N	L	-)010 (Date)	
								FedFx	16	1018	200 H	t m	1220		11/17/2)
							(Company)	· CALA	(Company	W) N	- 2T	1 10	13 66	-	(Log-in #s)	2
							(Printed Nam (Printed Nam (Company)	e) Fed EX (Date)	(Signatu (Printed (Compan	Name)	Maret -C	E m D	1520	2)-)2	24	$\frac{(1 \text{ Ime})}{(0 \text{ ate})}$ $\frac{(1 \text{ Jme})}{(0 \text{ ate})}$ $\frac{(1 \text{ Jme})}{(1 \text{ ate})}$ $\frac{(1 \text{ Jme})}{(1 \text{ ate})}$ $\frac{(1 \text{ me})}{(1 \text{ ate})}$

Additional costs may be required for sample disposal or storage. Payment net 30 unless otherwise contracted. Shaded areas are for lab use only

Report turn-around-time varies depending on length of test; please inquire with your project manager.

http://enthalpy.com/environmental-toxicology-2/

Appendix D

Qualifier Code Glossary

Glossary of Qualifier Codes

- Q1 Temperature out of recommended range; corrective action taken and recorded in Test Temperature Correction Log
- Q2 Temperature out of recommended range; no action taken, test terminated same day
- Q3 Sample pH adjusted to within range of 6-9 with reagent grade NaOH or HCl, as needed
- Q4 Test aerated; D.O. levels dropped below 4.0 mg/L
- Q5 Test initiated with continuous aeration due to an anticipated drop in D.O.
- Q6 Airline obstructed or fell out of replicate and replaced; drop in D.O. occurred
- Q7 Salinity out of recommended range
- Q8 Spilled test chamber/ Unable to recover test organism(s)
- Q9 Inadequate sample volume remaining, partial renewal performed
- Q10 Inadequate sample volume remaining, no renewal performed
- Q11 Sample out of holding time; refer to QA section of report
- Q12 Replicate(s) not initiated; excluded from data analysis
- Q13 Survival counts not recorded due to poor visibility or heavy debris
- Q14 D.O. percent saturation was checked and was ≤ 110%
- Q15 Did not meet minimum test acceptability criteria. Refer to QA section of report.
- Q16 Percent minimum significant difference (PMSD) was <u>below</u> the lower bound limit for acceptability. This indicates that statistics may be over-sensitive in detecting a difference from the control due to low variability in the data set. Test results were reviewed and reported in accordance with guidance found in EPA-833-R-00-003, 2000 unless otherwise specified.
- Q17 Percent minimum significant difference (PMSD) was <u>above</u> the upper bound limit for acceptability. This indicates that statistics may be under-sensitive in detecting a difference from the control due to high variability in the data set. Test results were reviewed and reported in accordance with EPA-833-R-00-003, 2000 guidance unless otherwise specified.
- Q18 Incorrect or illegible Entry
- Q19 Miscalculation
- Q20 PMSD criteria do not apply to the test of significant toxicity (TST) analysis
- Q21 Other (provide reason in comments section)
- Q22 Greater than 10% batch <u>mortality</u> observed upon receipt and/or in holding prior to test initiation. Organisms acclimated to test conditions at Enthalpy and ultimately deemed fit to use for testing.
- Q23 Test organisms experienced a <u>temperature</u> shift greater than 3°C within 1 day or were received at a temperature greater than 3°C outside the recommended test temperature range and had minimal time to acclimate prior to test initiation. However, due to age-specific protocol requirements and/or sample holding time constraints, the organisms were used to initiate test(s). Organisms were ultimately deemed fit to use for testing.
- Q24 Test organisms experienced a <u>salinity</u> shift greater than 3 ppt within 1 day or were received at a salinity greater than 3 ppt outside the recommended test salinity range and had minimal time to acclimate prior to test initiation. However, due to age-specific protocol requirements and/or sample holding time constraints, the organisms were used to initiate test(s). Organisms were ultimately deemed fit to use for testing.



Appendix E

Reference Toxicant Test Control Charts

Pacific Top	osmelt 96-h Acute Survival Te	est	Nautilus Environmental (CA)
Test Type: Protocol:	Survival (96h) EPA/821/R-02-012 (2002)	Organism: Atherinops affinis (Topsmelt) Endpoint: 96h Survival Rate	Material: Copper chloride Source: Reference Toxicant-REF
		Pacific Topsmelt 96-h Acute Survival Test	
ECS0-Hg/L Copper chloride			+3s +2s Mean -2s -3s
	11-br(72 31-br(15 11-4 Aug-18 11-2 Sep-18	09 Jan-19 15 Feb-19 17 Apr-19 23 May-19 24 Jul-19 12 Aug-19 19 Aug-19 19 Aug-19	10 Sep-19 09 Oct-19 04 Mar-20 17 Sep-20 17 Sep-20 17 Sep-21 17 Sep-21

Mean:	164.2	Count:	20	-2s Warning Limit:	58.69	-3s Action Limit:	5.93
Sigma:	52.76	CV:	32.10%	+2s Warning Limit:	269.7	+3s Action Limit:	322.5

Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID
1	2018	Jui	27	15:45	263.9	99.7	1.89			14-8822-7369	11-4350-5971
2			31	16:30	209.6	45.39	0.8603			19-5107-0005	20-6864-5330
3		Aug	14	16:00	196.4	32.18	0.61			15-6494-9229	17-8173-7294
4		Sep	12	14:00	105.6	-58.58	-1.11			16-1211-7168	05-2683-6884
5		Oct	10	16:55	168.2	3.979	0.07542			03-4460-7421	02-8297-4115
6	2019	Jan	9	16:00	146.4	-17.79	-0.3372			16-8541-8400	01-0716-9806
7		Feb	15	16:10	134	-30.2	-0.5724			08-0425-5661	18-0762-3864
8		Apr	17	17:50	253.5	89.35	1.693			05-1475-1452	18-1058-7085
9		May	23	15:30	106.6	-57.57	-1.091			03-2154-6851	19-3512-2662
10		Jul	24	16:25	150.4	-13.79	-0.2614			02-4547-9337	03-4444-2456
11		Aug	12	16:15	176.5	12.27	0.2326			05-6999-0080	19-2452-0933
12			19	19:30	158.7	-5.46	-0.1035			00-1616-6988	16-4823-3084
13			22	16:45	232	67.83	1.286			14-6253-4066	09-6589-6472
14		Sep	10	11:15	246.2	82.03	1.555			01-3190-7470	00-5901-5932
15		Oct	9	15:40	149.6	-14.6	-0.2768			12-2483-9958	16-7314-6828
16	2020	Feb	26	15:20	129.7	-34.52	-0.6542			04-4275-3329	19-1366-8841
17		Mar	4	17:15	134.1	-30.12	-0.5709			09-0186-0501	09-2347-5750
18		May	19	17:20	96.59	-67.61	-1.281			09-8977-8612	01-6220-7123
19		Sep	17	14:25	118.9	-45.28	-0.8582			07-7701-0607	03-4458-7869
20	2021	Feb	23	16:10	107.2	-57.02	-1.081			15-2183-5128	00-7227-8818
21		Nov	17	17:00	174.1	9.91	0.1878			10-0193-2387	14-5680-1838

Analyst: JL QA: #C11/24/21

CETIS QC Plot

Quality Control Data

Inland Silv	erside 96-h Acute Survival Test				Nautilus Environmental (CA)
Test Type:	Survival (96h)	Organism:	Menidia beryllina (Inland Silverside)	Material:	Copper chloride
Protocol:	EPA/821/R-02-012 (2002)	Endpoint:	96h Survival Rate	Source:	Reference Toxicant-REF



Mean:	186.6	Count:	20	-2s Warning Limit:	93.67	-3s Action Limit:	47.2
Sigma:	46.47	CV:	24.90%	+2s Warning Limit:	279.6	+3s Action Limit:	326

Point Year Month Day Time QC Data Delta Sigma Warning Action Test ID Analysis ID 14:35 200 00-3575-1747 1 2018 Jun 14 13.4 0.2884 01-9952-0614 2 27.75 Jul 17 14:30 214.4 0.5973 11-1445-3115 12-3693-5336 3 Aug 22 16:25 237.8 51.24 1.103 08-6172-7555 12-4329-0617 4 2019 Jan 3 16:50 207.9 21.25 0.4573 16-0506-4055 11-1190-1934 08-7111-9529 5 Feb 21 16:05 143.5 -43.12 -0.9279 10-4228-2556 6 27 16:25 135.8 -50.83 -1.094 14-0947-0420 00-4247-8099 7 May 9 19:10 263.9 77.3 1.663 03-9779-6453 09-3747-7536 8 Jun 4 14:50 177.8 -8.845 -0.1903 00-2136-1210 01-4264-5145 17-4098-1084 9 Jul 1 15:55 223.6 37.02 0.7965 04-4319-5710 10 Oct 30 14:45 114.9 -71.73 -1.544 05-0159-0485 07-6888-5964 11 Dec 11 16:30 156.9 -29.68 -0.6388 11-0566-6524 14-4935-0865 12 2020 Feb 27 17:15 136.4 -50.24 -1.081 00-2639-4829 10-5059-8408 254.9 13 16:00 68.31 1.47 13-3377-6823 09-5433-0150 Aug 6 15:20 -38.24 -0.8229 02-5307-3356 14 12 148.4 11-5066-6205 15 Sep 2 15:25 141.4 -45.18 -0.9722 09-8373-9144 18-7650-2455 16 17 14:45 172 -14.64 -0.3151 07-8442-4358 02-9347-5784 17 Oct 28 16:35 136.6 -50 -1.076 10-9446-3954 10-4215-8111 18 2021 Feb 24 17:30 218.2 31.59 0.6798 11-4316-4077 02-1492-4727 19 Jun 30 16:05 254.9 68.31 1.47 01-4075-9626 19-2668-9340 6.587 20 Aug 14:30 193.2 0.1418 20-1130-3481 09-5748-8802 10 21 Nov 17:15 211.2 24.65 0.5304 01-2577-3416 13-6085-8539 3

Copper chloride

Reference Toxicant-REF

Material:

Source:

CETIS QC Plot

Mysid 96-h Acute Survival Test

 Test Type:
 Survival (96h)

 Protocol:
 EPA/821/R-02-012 (2002)

Nautilus Environmental (CA)



Organism: Americamysis bahia (Opossum Shri

Endpoint: 96h Survival Rate

		M	ean:	223	C	Count:	20	-2s Warr	ning Limit	t: 143.4	-3s Action Limit:	103.6
		Si	gma:	39.78	C	CV:	17.80%	+2s Warr	ing Limit	: 302.5	+3s Action Limit:	342.3
Quali	ty Con	trol Dat	a									
Point	Year	Month	Day	Time	QC Data	Delta	Sigma	Warning	Action	Test ID	Analysis ID	
1	2020	Aug	6	16:45	229.7	6.74	0.1694			12-3621-4083	04-5216-6972	
2			12	15:00	266.7	43.71	1.099			09-6865-4747	15-4661-4894	
3			20	15:10	246.2	23.23	0.5839			11-8933-3936	07-7149-7380	
4		Sep	1	17:40	280.9	57.91	1.456			15-1725-8445	02-3217-4494	
5		Oct	7	16:50	233.3	10.31	0.2591			10-9302-4751	10-8015-5811	
6			28	17:30	254.9	31.91	0.8022			05-5138-7579	10-2662-3199	
7		Nov	10	16:15	193.2	-29.81	-0.7494			18-2802-6809	21-3845-2247	
8		Dec	2	16:15	238.4	15.45	0.3883			05-6239-9486	13-2389-5949	
9	2021	Jan	6	15:40	219.1	-3.902	-0.09808			03-0517-8333	01-7272-9774	
10		Feb	9	16:35	282.8	59.84	1.504			18-0066-8687	07-5637-1896	
11			24	17:00	279.3	56.33	1.416			12-7982-0378	10-2127-5639	
12		Mar	3	16:20	192.2	-30.76	-0.7734			19-5823-8705	16-3495-3098	
13		Apr	14	16:15	201	-21.97	-0.5523			12-9280-6414	13-7392-7597	
14		May	12	17:30	176	-46.97	-1.181			12-7732-0164	05-0673-2773	
15		Jun	9	16:00	227.2	4.239	0.1066			17-2171-6769	11-3085-8431	
16		Jul	8	16:10	134.1	-88.92	-2.235	(-)		11-1635-1099	02-4153-3890	
17		Aug	4	17:20	178.2	-44.82	-1.127			12-8033-5320	14-9454-0803	
18			10	17:15	184.6	-38.37	-0.9646			01-4163-2041	16-5453-9162	
19		Sep	9	16:50	212.2	-10.77	-0.2707			19-9503-3728	00-7298-1641	

21-3339-5883

03-0676-2868

18-5433-4447

02-4632-6423

Analyst: OL QA: Hes 11/10/21

6.396

-59.36

0.1608

-1.492

20

21

Oct

Nov

6

3

17:00

17:40

229.4

163.6



CLIENT:	Cardno-GS
	737 Bishop Street, Suite 3050
	Honolulu HI 96813
ATTENTION:	Benjamin Berridge
	Benjamin.Berridge@cardno-gs.com

1494
11/16/2021
1 of 1

AECOS REPORT OF RESULTS

SAMPLE TYPE: DATE SAMPLED:	stormwater 11/15/2021	AECC DATE/TI	DS LOG No.: 4 IME RECEIVED: 1 SAMPLER: B	4085 1/15/2021 @15 . Berridge	528
TEMP. CONTROL:	1.8 °C		MATRIX: W	vater	
DATE/TIME ANALY	ZED: 11/15/202	21@1553-1618	ANALYST: R	. Knapstein	
	ANALYTE (UNITS)	Enterococcus (MPN/100ml)	Dilution Factor (10 ml / 100 ml)	Number of large positive wells	Number of small positive wells
	METHOD →	ASTM D650399			
SAMPLE ID &	TIME SAMPLED				
DW-2	0915	840	10	38	8
D-3	0935	1300	10	44	12
DW-3	0945	1600	10	46	13
D-2	1020	11,000	10	49	40
E-2	1000	4600	10	49	25
D-7	1045	1100	10	43	8
D-4	0910	780	10	36	9
D-5	0925	690	10	37	3
WW-2	0940	320	10	24	0
WW-3	0955	200	10	15	2
D-6	1030	420	10	27	3
U-3/WW-4	0920	710	10	34	9
D-8	1105	2500	10	47	22
WW-6	0845	8200	10	49	35
E-1	1000	63	10	6	0
E-1 Dup	1005	63	10	6	0
DW-1	1150	74	10	6	1

J. Mello, Laboratory Director

S		1			CHAIN	DF CUSTODY FOR	Z
A Stan	LCUS 39 Kamehameh 160he, Oahu, E) , InC. la Highway Suite II 96744	104		PROJECT FILE No.		[
Tel:	(808) 234-7770	Fax: 234-7775			LOG NUMBE	к [044085]	
					s. •		
CLIENT: Cardno		CONTA	.CT:	Ben Bu	r.dep	D RUSH	
ADDRESS: 737 Bishop	. У .	PHONE	I No.:	908 [2 000- 924-1	SEE REVERSE	
SVIK ZOSO HANG INIU	£1896	Purchase	Order]	No.:		SPECIAL INSTRUCTIONS	
AMPLE IN	DATE TIM	E SAMPLE TYPE	CON	TAINER(S)	REQUESTED ANALYSES	PRESERVATION	
$1 \int \mathcal{D}W^{-2}$	11/15/2021) 09:1	is water	~	Idexx	LNKITO		
2 1 2-3	1 04:3	5 1			-		
3 / DW-3	00:10	۲.					
4 J D-2	2:01	0					
5 / E-2	10:01	0					
6-7 r 3	10:4	S					1
H-Q L	0:1	0					- <u></u>
8 J D-5	8	25					
⁹ J NW-2	00:1	01	7				_
E-MM / OI	06:1	2			PANDA STONAT AND DATED STONAT	TTRE OF PERSON COLLECTING THE	
CLIENTS PROVIDING SAMPLES TO THE I SAMPLE MITST RE ENTERED BELOW ↓ 1	LABORATORY SHOULD INFORMATION REQUE	COMPLETE AS MUCH OF '	THE ABOV BOVE TO	E FORM AS POS BE FILLED IN	SSIBLE, NOTE: NAME AND DALED SLEAVED BY THE LABORATORY.		
SAMPLED BY:	DATE	RECEIVED BY:		DAT	RECEIVED FOR LA	BORATOBY: 11/15 2021	
FRINT NAME BEN BELLICELY	1700/21/11	SIGNATURE		IMIT	STORIATORE.	DATE 1528	
RELINQUISHED:	DATE 11/15	RELINQUISHEI	· 	LIAU	E RELINQUISHE	0:	
SIGNATURE A SIGNATURE	TIME 1:28	PRECAUTIONS:		TIME	DISPOSAL:	TIME	
- AT LATENTATION			97				
USE (BLACK) INK	Q. 1	11.1 Inthes under	1 Files			KELOKN SAMFLAD 10 CLARKIN -	1
	E S	wyles Wico	t-17	, vv			

CUSTODY FORM	☐ RUSH □ SEE REVERSE special instructions	PERSON COLLECTING THE TIME 152.8 DATE DATE DATE DATE DATE DATE DATE	furn sample to client 🔲
CHAIN OF PROJECT FILE No. LOG NUMBER	Cale 7	ALCID ANALLISUS ALCOR LANAL ANALLISUS COTE: NAME AND DATED SIGNATURE OF ABORATORY. RELLINQUISHED FOR LABORA' RELLINQUISHED: SIGNATURE OR DATED FOR LABORA' DISPOSAL:	R.B.
[DC. ighway Suite 104 6744 234-7775	CONTACT: Bun Buriator PHONE No.: 🖀 009 476 Purchase Order No.:	Idex Image I	· · · · · · · · · · · · · · · · · · ·
AECOS, I 45-939 Kamehameha Hi Kaneohe, Oahu, HI 96 Tel: (808) 234-7770 Fax: 3	IENT: Cardro DRESS: 737 Bishop St Suite 3056 Monolulu HI96217	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	E (BLACK) INK