APPENDIX C. DATA VALIDATION REPORTS





LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

LDC #14326 January 16, 2006

Windward Environmental, LLC 200 West Mercer Street, Suite 401 Seattle, WA 98119 ATTN: Ms. Marina Mitchell

SUBJECT: Lower Duwamish Waterway Group Tissue Sample Data Validation

Dear Ms. Mitchell,

This report details the revised findings of an EPA Level III and Level IV data validation review of analytical chemistry results generated in support of the Lower Duwamish Waterway Group project. The analyses were performed by Analytical Resources, Inc. Samples were analyzed for GC Polychlorinated Biphenyls by EPA SW 846 Method 8082, Percent Lipids by Bligh-Dyer Method, and Total Solids by EPA Method 160.3. Samples are referenced under the following Sample Delivery Groups: IQ22, IQ23, IQ24, IQ25, and IQ30. See the Sample Analysis Table (Attachment 1) for the number of samples reviewed.

Please feel free to contact us if you have any questions.

Sincerely,

Stella S. Cuenco

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Project Manager/Senior Chemist

	Attachment
LDC #14326 (Windward Environmental, L	LC - Seat

		LDC #	#14326	(V	Vinc	dwa	ırd	Enν	/iro	nm	ent	al,	LLC) - S	Sea	ttle	W	4 / I	LOV	ver	Du	war	nis	h W	/ate	rwa	ay (Gro	up))					
LDC	SDG#	DATE REC'D	(3) DATE DUE	P0 (80	CBs 082)	% L (B	ipids &D)	So	otal lids 50.3)													_													
Matri	x: Tissue/Sediment			Т	s	Т	s	Т	s	Т	s	Т	s	Т	s	Т	s	w	s	W	s	W	s	W	s	w	s	W	s	W	s	w	s	W	s
Α	IQ22	11/22/05	12/15/05	8	0	8	0	8	0																										
В	IQ23	11/22/05	12/15/05	20	0	20	0	20	0																										
С	IQ24	11/22/05	12/15/05	20	0	20	0	20	0																										
Б	IQ25		12/15/05				_	7	0																										
E	IQ30		12/15/05			10	0	10	0																										
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Total	B/SC			65	0	65	0	65	0	0	0	0	0	0	0	0	0	0	0_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	195

CHEMICAL DATA QUALITY REVIEW FOR FISH AND CRAB TISSUE SAMPLES

Lower Duwamish Waterway Group LDC# 14326

This report details the findings of an EPA Level III and Level IV data validation review of analytical chemistry results generated in support of the Lower Duwamish Waterway Group project. The analyses were performed by Analytical Resources, Inc. Samples were analyzed for GC Polychlorinated Biphenyls by EPA SW 846 Method 8082, Percent Lipids by Bligh-Dyer Method, and Total Solids by EPA Method 160.3. Samples are referenced under the following Sample Delivery Groups: IQ22, IQ23, IQ24, IQ25, and IQ30. See the Sample Analysis Table (Attachment 1) for the number of samples reviewed and the Sample Validation Table (Attachment 2) for the sample identifications and analyses. Sample IDs ending in "**" underwent Level IV review.

The QC guidelines used for data qualification are those specified in the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (July 2002). Specific QC criteria used follows the Fish and Crab Collection and Chemical Analyses Quality Assurance Project Plan (August 27, 2004) and Addendum (August 31, 2005). Where specific guidance is not available, the data has been evaluated in a conservative manner using professional experience.

The following items were evaluated during the review:

- Holding Times
- Sample Preservation
- Cooler Temperatures
- Instrument Calibration
- Blanks
- Matrix Spike/Matrix Spike Duplicates
- Internal Standards
- Laboratory Control Samples
- Target Compound Identifications*
- Compound Quantitation and CRQLs*
- System Performance*
- Field Duplicates

^{*}Data were not reviewed for Level III.

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Sample or con-				//w//			*****		war and a second						mer			24741.982.983		None of the		2400000											-		
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LDC	SDG#	DATE REC'D	(3) DATE DUE	PC (80	CBs (82)	% L (B	ipids &D)	So	tal lids 0.3)																										
Matr	ix: Tissue/Sediment	1		Т	s	Т	s		s	Т	s	Τ	S	Т	S	T	S	W	S	w	s	w	s	W	s	W	s	w	s	W	s	W	s	W	s
Α	IQ22		12/15/05		0	8	0		0																				Ш	oxdot	igsqcup				
В	IQ23	11/22/05	12/15/05	20	0	20	0	20	0																				Ш	igsqcup			Ш		
С	IQ24	11/22/05	12/15/05	20	0	20	0	20	0																						Ш		Ш		
D	IQ25	11/22/05	12/15/05	7	0	7	0	7	0																				Ш	igsqcup					
E	1Q30	11/22/05	12/15/05	10	0	10	0	10	0																				\square		Ш		\square		
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SDG#: IQ22			VALIDA	TION S	AMPLE	TABLE						L	DC#: 14	1326A
Project Name: Lower Duwamish Waterway	Group		Parame	ters/An	alytical	Method						Project	#04-08	-06-22
Client ID #	Lab ID#	Matrix	Date Collected	PCBs (8082)	% Lipids (B&D)	Total Solids (160.3)								
LDW-05-T4-M-DC-EM-COMP1	IQ22A	tissue	09/02/05	х	x	х								
LDW-05-T4-M-DC-HP-COMP1	IQ22B	tissue	09/02/05	x	х	X					_			
LDW-05-T1-M-DC-EM-COMP1	IQ22C	tissue	08/30/05	х	х	x								
LDW-05-T1-M-DC-HP-COMP1	IQ22D	tissue	08/30/05	х	X	х	_	 						
LDW-05-T3-M-DC-EM-COMP1	IQ22E	tissue	08/30/05	Х	X	X			T I					
LDW-05-T3-M-DC-HP-COMP1	IQ22F	tissue	08/30/05	х	х	х						_		
LDW-05-T2-M-SC-EM-COMP1	IQ22G	tissue	08/30/05	х	х	X		 			_			
LDW-05-T2-M-SC-HP-COMP1	IQ22H	tissue	08/30/05	х	X	х								
LDW-05-T3-M-DC-EM-COMP1MS	IQ22EMS	tissue	08/30/05	х				 _						
LDW-05-T3-M-DC-EM-COMP1MSD	IQ22EMSD	tissue	08/30/05	х						-				
LDW-05-T3-M-DC-EM-COMP1DUP	IQ22EDUP	tissue	08/30/05		<u> x</u>									
LDW-05-T3-M-DC-EM-COMP1TRP	IQ22ETRP	tissue	08/30/05		х									
LDW-05-T2-M-SC-HP-COMP1MS	IQ22HMS	tissue	08/30/05	х				 						
LDW-05-T2-M-SC-HP-COMP1MSD	IQ22HMSD	tissue	08/30/05	x				 					_	
LDW-05-T2-M-SC-HP-COMP1DUP	IQ22HDUP	tissue	08/30/05		х									
LDW-05-T2-M-SC-HP-COMP1TRP	IQ22HTRP	tissue	08/30/05		x									
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SDG#; IQ23			VALIDA	TION S	AMPLE	TABLE						L	DC#: 1	4326B
Project Name: Lower Duwamish Waterw	ay Group		Parame	ters/An	alytical	Method			-T			Projec	t #04-08	-06-22
Client ID #	Lab ID #	Matrix	Date Collected	PCBs (8082)	% Lipids (B&D)	Total Solids (160.3)								
LDW-05-T1-C-PS-WB-COMP1	IQ23A	tissue	08/29/05	x	х	Х	 							
LDW-05-T2-E-PS-WB-COMP1	IQ23B	tissue	09/01/05	x	х	Х	 							<u> </u>
LDW-05-T3-F-PS-WB-COMP1	IQ23C	tissue	08/31/05	x	х	х								<u> </u>
LDW-05-T4-C-PS-WB-COMP1	IQ23D	tissue	08/30/05	х	х	X							<u> </u>	
LDW-05-T1-M-ES-FL-COMP1	IQ23E	tissue	08/29/05	X	Х	х								<u></u>
LDW-05-T1-M-ES-FL-COMP2	IQ23F	tissue	08/30/05	X	Х	Х								
LDW-05-T1-M-ES-FL-COMP3	IQ23G	tissue	08/29/05	х	х	X				_				
LDW-05-T2-M-ES-FL-COMP1	IQ23H	tissue	09/01/05	х	Х	Х				_				
LDW-05-T2-M-ES-FL-COMP2	IQ23I	tissu <u>e</u>	09/01/05	x	х	х								
LDW-05-T2-M-ES-FL-COMP2DL	IQ23IDL	tissue	09/01/05	х		ļ <u></u>	 	_			<u> </u>			
LDW-05-T2-M-ES-FL-COMP3	IQ23J	tissue	09/01/05	х	х	х	 	<u> </u>		_				
LDW-05-T3-M-ES-FL-COMP1	IQ23K	tissue	09/01/05	x	х	X					ļ			
LDW-05-T3-M-ES-FL-COMP2	IQ23L	tissue	09/01/05	х	х	X								<u> </u>
LDW-05-T3-M-ES-FL-COMP3	IQ23M	tissue	09/01/05	х	х	х								<u> </u>
LDW-05-T4-M-ES-FL-COMP1	IQ23N	tissue	09/06/05	x	х	х								<u> </u>
LDW-05-T1-A-SS-WB-COMP1	IQ23O	tissue	08/30/05	х	х	Х								<u> </u>
LDW-05-T1-B-SS-WB-COMP1	IQ23P	tissue	08/30/05	x	X	х								
LDW-05-T1-C-SS-WB-COMP1	IQ23Q	tissue	08/29/05	x	х	х								<u> </u>
LDW-05-T1-D-SS-WB-COMP1	IQ23R	tissue	08/29/05	х	х	х	 							
LDW-05-T1-E-SS-WB-COMP1	IQ23S	tissue	08/29/05	х	х	х			<u> </u>	<u> </u>				<u> </u>
LDW-05-T1-F-SS-WB-COMP1	IQ23T	tissue	08/29/05	х	х	х			<u> </u>					<u> </u>
LDW-05-T1-C-PS-WB-COMP1MS	IQ23AMS	tissue	08/29/05	х										<u> </u>
LDW-05-T1-C-PS-WB-COMP1MSD	IQ23AMSD	tissue	08/29/05	х										<u> </u>
LDW-05-T1-C-PS-WB-COMP1DUP	IQ23ADUP	tissue	08/29/05		х									<u> </u>
LDW-05-T1-C-PS-WB-COMP1TRP	IQ23ATRP	tissue	08/29/05		Х									<u> </u>

SDG#: IQ23	3) &		VALIDA:	TION S	AMPLE	TABLE	^ <u>.</u>	2.				L	DC#: 14	1326B
Project Name: Lower Duwamish Wa	terway Group		Parame	ters/An	alytical	Method			\$ *	5 T		Project	#04-08	-06-22
Client ID #	Lab ID#	Matrix	Date Collected	PCBs (8082)	% Lipids (B&D)	Total Solids (160.3)						_		
LDW-05-T2-M-ES-FL-COMP1DUP	IQ23HDUP	tissue	09/01/05			X	 							
LDW-05-T2-M-ES-FL-COMP1TRP	IQ23HTRP	tissue	09/01/05			Х								<u> </u>
LDW-05-T4-M-ES-FL-COMP1MS	IQ23NMS	tissue	09/06/05	Х										
LDW-05-T4-M-ES-FL-COMP1MSD	IQ23NMSD	tissue	09/06/05	Х			 							
LDW-05-T4-M-ES-FL-COMP1DUP	IQ23NDUP	tissue	09/06/05		Х						_			
LDW-05-T4-M-ES-FL-COMP1TRP	IQ23NTRP	tissue	09/06/05		х					<u></u>				
LDW-05-T1-A-SS-WB-COMP1DUP	IQ23ODUP	tissue	08/30/05			Х								
LDW-05-T1-A-SS-WB-COMP1TRP	IQ23OTRP	tissue	08/30/05			Х								
LDW-05-T1-D-SS-WB-COMP1MS	IQ23RMS	tissue	08/29/05	Х										
LDW-05-T1-D-SS-WB-COMP1MSD	IQ23RMSD	tissue	08/29/05	Х										
LDW-05-T1-D-SS-WB-COMP1DUP	IQ23RDUP	tissue	08/29/05		х									
LDW-05-T1-D-SS-WB-COMP1TRP	IQ23RTRP	fissue	08/29/05		x									

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SDG#: IQ24			VALIDA	TION S	AMPLE	TABLE							L	DC#: 14	326C
Project Name: Lower Duwamish Waterway	Group		Parame	ters/An	alytical	Method		_		7		· · · · · · · · · · · · · · · · · · ·	Project	#04-08	-06-22
Client ID #	Lab ID #_	Matrix	Date Collected	PCBs (8082)	% Lipids (B&D)	Total Solids (160.3)								_	
LDW-05-T2-A-SS-WB-COMP1	IQ24A	tissue	09/01/05	x	х	х									
LDW-05-T2-B-SS-WB-COMP1	IQ24B	tissue	09/01/05		х	x									
LDW-05-T2-C-SS-WB-COMP1	IQ24C	tissue	09/01/05	x	х	х									
LDW-05-T2-D-SS-WB-COMP1	IQ24D	tissue	09/01/05	х	х	х									
LDW-05-T2-E-SS-WB-COMP1	IQ24E	tissue	09/01/05	X	х	X			_						
LDW-05-T2-E-SS-WB-COMP1DL	IQ24EDL	tissue	09/01/05	x		_									
LDW-05-T2-F-SS-WB-COMP1	IQ24F	tissue	09/01/05	X	X	х								_	
LDW-05-T3-A-SS-WB-COMP1	IQ24G	tissue	08/31/05	x	х	х									
LDW-05-T3-B-SS-WB-COMP1	IQ24H_	tissue	08/30/05	x	х	х									
LDW-05-T3-C-SS-WB-COMP1	IQ24I	tissue	08/31/05	х	X	x					_				
LDW-05-T3-D-SS-WB-COMP1	IQ24J	tissue	08/31/05	х	X	Х									
LDW-05-T3-E-SS-WB-COMP1	IQ24K	tissue	08/30/05_	<u>x</u>	<u>x</u>	х				<u> </u>		_	<u> </u>		
LDW-05-T3-F-SS-WB-COMP1	IQ24L	tissue	08/30/05	X	X	X						<u> </u>	<u> </u>		
LDW-05-T3-F-SS-WB-COMP1DL	IQ24LDL	tissue	08/30/05	X					<u> </u>						
LDW-05-T1-M-ES-WB-COMP1	IQ24M	tissue	08/29/05	X	X	Х			_			ļ			
LDW-05-T1-M-ES-WB-COMP1DL	IQ24MDL	tissue	08/29/05	х									<u> </u>		
LDW-05-T1-M-ES-WB-COMP2	IQ24N	tissue	08/29/05	х	Х	x	_		ļ		<u> </u>	<u> </u>	<u> </u>		
LDW-05-T1-M-ES-WB-COMP2DL	IQ24NDL	tissue	08/29/05	х								ļ			
LDW-05-T1-M-ES-WB-COMP3	IQ24O	tissue	08/29/05	<u>x</u>	X	х								_	
LDW-05-T1-M-ES-WB-COMP3DL	IQ24ODL	tissue	08/29/05	X											
LDW-05-T2-M-ES-WB-COMP1	IQ24P	tissue	09/01/05	X	x	×									
LDW-05-T2-M-ES-WB-COMP1DL	IQ24PDL	tissue	09/01/05	X			•								
LDW-05-T2-M-ES-WB-COMP2	IQ24Q	tissue	09/01/05	x	X	x			<u> </u>						
LDW-05-T2-M-ES-WB-COMP2DL	IQ24QDL	tissue	09/01/05	x					<u> </u>						
LDW-05-T2-M-ES-WB-COMP3	IQ24R	tissue	09/01/05	х	x	х			<u> </u>						

SDG#: IQ24	The second secon	One Control of the Co	VALIDA	TION S	AMPLE	TABLE	* 4	AAT TO	<u> </u>		 	DC#: 14	1326C
Project Name: Lower Duwamish Wa	terway Group		Parame	ters/An	alytical	Method	 	. 6~	£ 1	~	Project	#04-08	-06-22
Client ID#	Lab ID#	Matrix	Date Collected	PCBs (8082)	% Lipids (B&D)	Total Solids (160.3)							
LDW-05-T2-M-ES-WB-COMP3DL	IQ24RDL	tissue	09/01/05	X									
LDW-05-T4-M-ES-WB-COMP1	IQ24S	tissue	09/06/05	Х	х	Х							
LDW-05-T4-M-ES-WB-COMP1DL	IQ24SDL	tissue	09/06/05	Х									
LDW-05-T4-M-ES-WB-COMP2	IQ24T	tissue	09/06/05	Х	Х	Х							
LDW-05-T2-B-SS-WB-COMP1DUP	IQ24BDUP	tissue	09/01/05			Х							
LDW-05-T2-B-SS-WB-COMP1TRP	IQ24BTRP	tissue	09/01/05			Х							
LDW-05-T4-M-ES-WB-COMP1MS	IQ24SMS	tissue	09/06/05	Х									
LDW-05-T4-M-ES-WB-COMP1MSD	IQ24SMSD	tissue	09/06/05	х									
LDW-05-T4-M-ES-WB-COMP1DUP	IQ24SDUP	tissue	09/06/05		Х								
LDW-05-T4-M-ES-WB-COMP1TRP	IQ24STRP	tissue	09/06/05		x								

Attachment 2

SDG#: IQ25			VALIDA	TION S	AMPLE	TABLE						L	DC#: 14	4326D
Project Name: Lower Duwamish Waterway	Group		Parame	ters/An	alytical	Method		1227		7 70 30		Project	#04-08	-06-22
Client ID #	Lab ID #	Matrix	Date Collected	PCBs (8082)	% Lipids (B&D)	Total Solids (160.3)			_					
LDW-05-T3-M-ES-WB-COMP1	IQ25A	tissue	09/01/05	х	x	х								ļ
LDW-05-T3-M-ES-WB-COMP1DL	IQ25ADL	tissue	09/01/05	x										
LDW-05-T3-M-ES-WB-COMP2	IQ25B	tissue	09/01/05	x	х	Х								L
LDW-05-T3-M-ES-WB-COMP2DL	IQ25BDL	tissue	09/01/05	х										
LDW-05-T3-M-ES-WB-COMP3	IQ25C	tissue	08/31/05	х	х	X	 			ļ				
LDW-05-T4-A-SS-WB-COMP1	IQ25D	tissue	08/30/05	х	X	х	 						-	
LDW-05-T4-B-SS-WB-COMP1	IQ25E	tissue	08/30/05	х	X	Х								
LDW-05-T4-C-SS-WB-COMP1	IQ25F	tissue	08/30/05	х	х	x	 							
LDW-05-T4-D-SS-WB-COMP1	IQ25G	tissue	08/30/05	х	х	х	<u> </u>							
LDW-05-T3-M-ES-WB-COMP3MS	IQ25CMS	tissue	08/31/05	х			 							'
LDW-05-T3-M-ES-WB-COMP3MSD	IQ25CMSD	tissue	08/31/05	X										
LDW-05-T3-M-ES-WB-COMP3DUP	IQ25CDUP	tissue	08/31/05		х									ļ'
LDW-05-T3-M-ES-WB-COMP3TRP	IQ25CTRP	tissue	08/31/05		х						ļ			L
RINSATE BLANK #1 BLENDER	IQ25H	water	10/14/05	х										
RINSATE BLANK #1 GRINDER	IQ25I	wate <u>r</u>	10/14/05	х										
RINSATE BLANK #2 GRINDER	IQ25J	water	10/14/05	х							_			
RINSATE BLANK #2 BLENDER	IQ25K	water	10/14/05	X			 			ļ				
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SDG#: IQ30			VALIDA	TION S	AMPLE	TABLE		 	<u>, , , , , , , , , , , , , , , , , , , </u>			L	DC#: 14	1326E
Project Name: Lower Duwamish Wa	terway Group		Parame	eters/An	alytical	Method	, k	 ~	···			Project	#0 <u>4-08</u>	-06-22
Client ID #	Lab ID #	Matrix	Date Collected	PCBs (8082)	% Lipids (B&D)	Total Solids (160.3)								
LDW-05-T1-M-ES-RM-COMP1	IQ30A	tissue	08/29/05	х	Х	х	_					_		
LDW-05-T1-M-ES-RM-COMP1DL	IQ30ADL	tissue	08/29/05	х										
LDW-05-T1-M-ES-RM-COMP2	IQ30B	tissue	08/29/05	Х	Х	х								<u> </u>
LDW-05-T1-M-ES-RM-COMP2DL	IQ30BDL	tissue	08/29/05	X										
LDW-05-T1-M-ES-RM-COMP3	IQ30C	tissue	08/29/05	Х	Х	Х								<u> </u>
LDW-05-T2-M-ES-RM-COMP1	1Q30D	tissue	09/01/05	Х	Х	х								
LDW-05-T2-M-ES-RM-COMP1DL	IQ30DDL	tissue	09/01/05	Х				 <u> </u>	<u> </u>					
LDW-05-T2-M-ES-RM-COMP2	IQ30E	tissue	09/01/05	х	х	<u>x</u>								<u> </u>
LDW-05-T2-M-ES-RM-COMP2DL	IQ30EDL	tissue	09/01/05	х			_							
LDW-05-T2-M-ES-RM-COMP3	IQ30F	tissue	09/01/05	х	Х	Х								
LDW-05-T2-M-ES-RM-COMP3DL	IQ30FDL	tissue	09/01/05	Х										
LDW-05-T3-M-ES-RM-COMP1	IQ30G	tissue	09/01/05	Х	x	x								<u></u>
LDW-05-T3-M-ES-RM-COMP2	IQ30H	tissue	09/01/05	Х	X	X								
LDW-05-T3-M-ES-RM-COMP3	IQ30I	tissue	09/01/05	х	x	Х								
LDW-05-T4-M-ES-RM-COMP1	IQ30J	tissue	09/06/05	Х	X	х								
LDW-05-T4-M-ES-RM-COMP1DL	IQ30JDL	tissue	09/06/05	Х			,,							
LDW-05-T1-M-ES-RM-COMP1MS	IQ30AMS	tissue	08/29/05	Х										
LDW-05-T1-M-ES-RM-COMP1MSD	IQ30AMSD	tissue	08/29/05	Х										
LDW-05-T1-M-ES-RM-COMP1DUP	IQ30ADUP	tissue	08/29/05		X									<u> </u>
LDW-05-T1-M-ES-RM-COMP1TRP	IQ30ATRP	tissue	08/29/05		Х							_		
LDW-05-T3-M-ES-RM-COMP1DUP	IQ30GDUP	tissue	09/01/05			х								
LDW-05-T3-M-ES-RM-COMP1TRP	IQ30GTRP	tissue	09/01/05			X				-	_			<u> </u>
			_			_								<u> </u>
				<u></u>	<u></u>			 						

Only issues which require comment or action are discussed in this report. Data deficiencies are arranged by method. Potential effects of data anomalies have been described where possible.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.

Overall Data Assessment

*I. Usability

Several samples required reanalysis at dilutions in the PCB analyses due to analytes found above the calibrated range of the instrument.

The pattern of peaks on detected samples were possibly weathered aroclors. The results were reported on the best possible match.

Compound quantitation problems have warranted the qualification of Aroclor-1254 detected results as estimated (J) for several samples in the PCB analyses.

Precision exceedances for duplicate and triplicate sample analyses have warranted the qualification of lipid detected results as estimated (J) for several samples.

Field duplicates were not collected for this sampling event.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

*Removed duplicate text for total solids, added 3rd and 4th paragraph and revised last paragraph.

GC Polychlorinated Biphenyls by EPA SW 846 Method 8082

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

*VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

All internal standard areas and retention times were within QC limits.

*Added internal standard text

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits in SDGs IQ24 and IQ25.

Percent recoveries (%R) and relative percent differences (RPD) were not within the QC limits in LDW-05-T2-M-SC-HP-COMP1MS/MSD in SDG IQ22, LDW-05-T1-C-PS-WB-COMP1MS/MSD in SDG IQ23, and LDW-05-T1-M-ES-RM-COMP1MS/MSD in SDG IQ30. Since the samples were diluted out, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. The percent recoveries (%R) were within the QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

Although GPC cleanup was not required by the method, silica gel cleanup was performed by the laboratory for SDGs IQ22, IQ24, and IQ30.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

Target compound identification data were not reviewed for Level III.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria with the following exceptions:

Associated SDG	Sample	Compound	Finding	Criteria	Flag	A or P
IQ24 IQ25 IQ26	LDW-05-T2-E-SS-WB-COMP1 LDW-05-T3-F-SS-WB-COMP1 LDW-05-T1-M-ES-WB-COMP1 LDW-05-T1-M-ES-WB-COMP2 LDW-05-T1-M-ES-WB-COMP3 LDW-05-T2-M-ES-WB-COMP2 LDW-05-T2-M-ES-WB-COMP1 LDW-05-T2-M-ES-WB-COMP1 LDW-05-T3-M-ES-WB-COMP1 LDW-05-T3-M-ES-WB-COMP1 LDW-05-T1-M-ES-RM-COMP1 LDW-05-T1-M-ES-RM-COMP1 LDW-05-T1-M-ES-RM-COMP1 LDW-05-T2-M-ES-RM-COMP1 LDW-05-T2-M-ES-RM-COMP1 LDW-05-T2-M-ES-RM-COMP1 LDW-05-T2-M-ES-RM-COMP1 LDW-05-T2-M-ES-RM-COMP1	Aroclor-1254	Sample result exceeded calibration range.	Reported result should be within calibration range.	N/A*	
IQ23	LDW-05-T2-M-ES-FL-COMP2**	Aroclor-1254	Sample result exceeded calibration range.	Reported result should be within calibration range.	N/A*	•

^{*}N/A = Not applicable

For the results above flagged "Not applicable", the affected compound results in the associated samples were deemed unusable and did not warrant qualification of the data.

The sample results for detected compounds from the two columns were within 40.0% relative percent differences (RPD) with the following exceptions:

Associated SDG	Sample	Compound	RPD	Flag	A or P
IQ23	LDW-05-T1-C-PS-WB-COMP1**	Aroclor-1254	44	J (all detects)	А
IQ23	LDW-05-T1-D-SS-WB-COMP1**	Arocior-1254	58	J (all detects)	А
IQ23	LDW-05-T1-E-SS-WB-COMP1**	Aroclor-1254	47	J (all detects)	A

Several samples required reanalysis at dilutions due to analytes found above the calibrated range of the instrument.

The pattern of peaks on detected samples were possibly weathered aroclors. The results were reported on the best possible match.

Compound quantitation and CRQLs data were not reviewed for Level III.

XIII. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Associated SDG	Sample	Compound	Flag	A or P
IQ23 IQ24 IQ30	LDW-05-T2-M-ES-FL-COMP2** LDW-05-T2-E-SS-WB-COMP1 LDW-05-T3-F-SS-WB-COMP1 LDW-05-T1-M-ES-WB-COMP1 LDW-05-T1-M-ES-WB-COMP2 LDW-05-T1-M-ES-WB-COMP3 LDW-05-T2-M-ES-WB-COMP1 LDW-05-T2-M-ES-WB-COMP2 LDW-05-T2-M-ES-WB-COMP3 LDW-05-T2-M-ES-WB-COMP3 LDW-05-T4-M-ES-WB-COMP1 LDW-05-T1-M-ES-WB-COMP1 LDW-05-T1-M-ES-RM-COMP1 LDW-05-T1-M-ES-RM-COMP1 LDW-05-T2-M-ES-RM-COMP1 LDW-05-T2-M-ES-RM-COMP1 LDW-05-T2-M-ES-RM-COMP1 LDW-05-T2-M-ES-RM-COMP1	Aroclor-1254	R	A
IQ23 IQ24 IQ30	LDW-05-T2-M-ES-FL-COMP2DL** LDW-05-T2-E-SS-WB-COMP1DL LDW-05-T3-F-SS-WB-COMP1DL LDW-05-T1-M-ES-WB-COMP1DL LDW-05-T1-M-ES-WB-COMP2DL LDW-05-T1-M-ES-WB-COMP3DL LDW-05-T2-M-ES-WB-COMP1DL LDW-05-T2-M-ES-WB-COMP2DL LDW-05-T2-M-ES-WB-COMP3DL LDW-05-T2-M-ES-WB-COMP3DL LDW-05-T4-M-ES-WB-COMP1DL LDW-05-T4-M-ES-RM-COMP1DL LDW-05-T1-M-ES-RM-COMP1DL LDW-05-T1-M-ES-RM-COMP2DL LDW-05-T2-M-ES-RM-COMP1DL LDW-05-T2-M-ES-RM-COMP1DL LDW-05-T2-M-ES-RM-COMP2DL LDW-05-T2-M-ES-RM-COMP2DL LDW-05-T4-M-ES-RM-COMP2DL LDW-05-T4-M-ES-RM-COMP1DL	All TCL compounds except Aroclor-1254	R	A
IQ25 IQ30	LDW-05-T3-M-ES-WB-COMP1 LDW-05-T3-M-ES-WB-COMP2 LDW-05-T2-M-ES-RM-COMP3	Aroclor-1254	R	А
IQ25 IQ30	LDW-05-T3-M-ES-WB-COMP1DL LDW-05-T3-M-ES-WB-COMP2DL LDW-05-T2-M-ES-RM-COMP3DL	All TCL compounds except Aroclor-1254	R	A

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

Samples RINSATE BLANK #1 BLENDER, RINSATE BLANK #2 BLENDER, RINSATE BLANK #1 GRINDER, and RINSATE BLANK #2 GRINDER were identified as rinsate blanks. No polychlorinated biphenyl contaminants were found in these blanks.

Percent Lipids By Bligh-Dyer Method Total Solids By EPA Method 160.3

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

Initial calibration data were not reviewed for Level III.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

Continuing calibration data were not reviewed for Level III.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks with the following exceptions:

Associated SDG	Method Blank ID	Analyte	Concentration	Associated Samples
IQ22	Method Blank	Lipids	0.0080 %	LDW-05-T4-M-DC-EM-COMP1 LDW-05-T4-M-DC-HP-COMP1 LDW-05-T1-M-DC-EM-COMP1 LDW-05-T1-M-DC-HP-COMP1 LDW-05-T3-M-DC-EM-COMP1 LDW-05-T3-M-DC-HP-COMP1 LDW-05-T2-M-SC-EM-COMP1 LDW-05-T2-M-SC-HP-COMP1

Associated SDG	Method Blank ID	Analyte	Concentration	Associated Samples
IQ23	Method Blank	Lipids	0.010 %	LDW-05-T1-C-PS-WB-COMP1** LDW-05-T2-E-PS-WB-COMP1** LDW-05-T3-F-PS-WB-COMP1** LDW-05-T4-C-PS-WB-COMP1** LDW-05-T1-M-ES-FL-COMP1** LDW-05-T1-M-ES-FL-COMP2** LDW-05-T1-M-ES-FL-COMP2** LDW-05-T2-M-ES-FL-COMP2** LDW-05-T2-M-ES-FL-COMP2** LDW-05-T2-M-ES-FL-COMP2** LDW-05-T3-M-ES-FL-COMP2** LDW-05-T3-M-ES-FL-COMP2** LDW-05-T3-M-ES-FL-COMP1** LDW-05-T3-M-ES-FL-COMP1** LDW-05-T1-A-SS-WB-COMP1** LDW-05-T1-B-SS-WB-COMP1** LDW-05-T1-C-SS-WB-COMP1** LDW-05-T1-E-SS-WB-COMP1** LDW-05-T1-E-SS-WB-COMP1** LDW-05-T1-E-SS-WB-COMP1** LDW-05-T1-E-SS-WB-COMP1** LDW-05-T1-E-SS-WB-COMP1** LDW-05-T1-F-SS-WB-COMP1**
IQ24 IQ30	Method Blank	Lipids	0.020 %	LDW-05-T2-A-SS-WB-COMP1 LDW-05-T2-B-SS-WB-COMP1 LDW-05-T2-C-SS-WB-COMP1 LDW-05-T2-C-SS-WB-COMP1 LDW-05-T2-E-SS-WB-COMP1 LDW-05-T2-E-SS-WB-COMP1 LDW-05-T3-A-SS-WB-COMP1 LDW-05-T3-B-SS-WB-COMP1 LDW-05-T3-C-SS-WB-COMP1 LDW-05-T3-D-SS-WB-COMP1 LDW-05-T3-D-SS-WB-COMP1 LDW-05-T3-E-SS-WB-COMP1 LDW-05-T3-F-SS-WB-COMP1 LDW-05-T1-M-ES-WB-COMP2 LDW-05-T1-M-ES-WB-COMP2 LDW-05-T1-M-ES-WB-COMP2 LDW-05-T2-M-ES-WB-COMP1 LDW-05-T2-M-ES-WB-COMP1 LDW-05-T2-M-ES-WB-COMP1 LDW-05-T1-M-ES-WB-COMP2 LDW-05-T1-M-ES-WB-COMP2 LDW-05-T1-M-ES-WB-COMP1 LDW-05-T1-M-ES-WB-COMP1 LDW-05-T1-M-ES-RM-COMP1 LDW-05-T1-M-ES-RM-COMP1 LDW-05-T1-M-ES-RM-COMP1 LDW-05-T1-M-ES-RM-COMP1 LDW-05-T1-M-ES-RM-COMP1 LDW-05-T2-M-ES-RM-COMP1 LDW-05-T2-M-ES-RM-COMP1 LDW-05-T3-M-ES-RM-COMP1 LDW-05-T3-M-ES-RM-COMP1 LDW-05-T3-M-ES-RM-COMP1 LDW-05-T3-M-ES-RM-COMP1 LDW-05-T3-M-ES-RM-COMP1 LDW-05-T3-M-ES-RM-COMP1 LDW-05-T3-M-ES-RM-COMP1
IQ25	Method Blank	Lipids	0.0040 %	LDW-05-T3-M-ES-WB-COMP1 LDW-05-T3-M-ES-WB-COMP2 LDW-05-T3-M-ES-WB-COMP3 LDW-05-T4-A-SS-WB-COMP1 LDW-05-T4-B-SS-WB-COMP1 LDW-05-T4-C-SS-WB-COMP1 LDW-05-T4-D-SS-WB-COMP1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

*V. Duplicates/Triplicates

Duplicate (DUP) and triplicate (TRP) sample analyses were reviewed for each matrix as applicable. Relative percent differences (RPD) were within QC limits with the following exceptions:

Associated SDG	DUP ID (Associated Samples)	<u>Ana</u> lyte	RPD (Limits)	Flag	A or P
IQ22	LDW-05-T3-M-DC-EM-COMP1DUP (LDW-05-T4-M-DC-EM-COMP1 LDW-05-T4-M-DC-HP-COMP1 LDW-05-T1-M-DC-EM-COMP1 LDW-05-T1-M-DC-HP-COMP1 LDW-05-T3-M-DC-HP-COMP1 LDW-05-T3-M-DC-HP-COMP1 LDW-05-T2-M-SC-EM-COMP1 LDW-05-T2-M-SC-EM-COMP1 LDW-05-T2-M-SC-HP-COMP1 LDW-05-T3-M-DC-EM-COMP1DUP)	Lipids	42.8 (≤30)	J (all detects) UJ (all non-detects)	А

Associated SDG	TRP ID (Associated Samples)	<u> Analyte</u>	RPD (Limits)	Flag	A or P
IQ22	LDW-05-T3-M-DC-EM-COMP1TRP (LDW-05-T4-M-DC-EM-COMP1 LDW-05-T4-M-DC-HP-COMP1 LDW-05-T1-M-DC-EM-COMP1 LDW-05-T1-M-DC-HP-COMP1 LDW-05-T3-M-DC-EM-COMP1 LDW-05-T3-M-DC-HP-COMP1 LDW-05-T3-M-DC-HP-COMP1 LDW-05-T3-M-DC-HP-COMP1 LDW-05-T3-M-DC-EM-COMP1 LDW-05-T3-M-DC-EM-COMP1 LDW-05-T3-M-DC-EM-COMP1	Lipids	49.7 (≤30)	J (all detects) UJ (all non-detects)	А

^{*}Removed duplicate text for total solids.

VI. Laboratory Control Samples

Laboratory control samples were not required by the method.

VII. Sample Result Verification

All sample result verifications met validation criteria.

Sample result verification data were not reviewed for Level III.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Field Blanks

No field blanks were identified in this SDG.

LDC #:_	14326A3	VALIDATION COMPLETENESS WORKSHEET	Date: <u>/</u> 2 ^	1-05
SDG #:_	IQ22	Level III	Page:_/_of	
Laborato	ory: Analytical Resour	rces, Inc.	Reviewer:	P7
	•		2nd Reviewer:	

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	Δ	Sampling dates: 8/30 - 9/2/05
II.	GC/ECD Instrument Performance Check	NA	7.7
111.	Initial calibration	Δ	
IV.	Continuing calibration		
V	Blanks	Δ	
VI.	Surrogate spikes	<u>A</u>	
VII.	Matrix spike/Matrix spike duplicates	رىسى	
VIII.	Laboratory control samples	A	LC5
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	Silica Clean-up performed
XI.	Target compound identification	N	,] 1
XII.	Compound quantitation and reported CRQLs	N	
XIII.	Overall assessment of data	SW	Silica clean-up performed
XIV.	Field duplicates	N	1 1 3
XV.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
N = Not provided/applicable R = Rinsate TB = Trip blank
SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

	v anua	teu Gampies.				
		Tissuc				
	11	LDW-05-T4-M-DC-EM-COMP1		LDW-05-T2-M-SC-HP-COMP1MS	21	
574	1 2	LDW-05-T4-M-DC-HP-COMP1		LDW-05-T2-M-SC-HP-COMP1MSD	22	
	- 3	LDW-05-T1-M-DC-EM-COMP1	13	I QL2 MBST	23	
5	+ 4	شر بر ده LDW-05-T1-M-DC-HP-COMP1	14	MB - 102405	24	
	- 5	LDW-05-T3-M-DC-EM-COMP1	15		25	
6	↑ 6	LDW-05-T3-M-DC-HP-COMP1	16	٠	26	
¥	† 7	LDW-05-T2-M-SC-EM-COMP1	17		27	
6	≯ 8	LDW-05-T2-M-SC-HP-COMP1	18		28	
	9	LDW-05-T3-M-DC-EM-COMP1MS	19		29	
	10	LDW-05-T3-M-DC-EM-COMP1MSD	20		30	

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	1. Dieldrin	Q. Endrin ketone	Y. Arocior-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aidehyde	Z. Aroclor-1248	нн.
C. delta-BHC	K. Endrin	S. alpha-Chiordane	AA. Aroclor-1254	II.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Arocior-1016	DD. DB 1701	ш.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	мм.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:_	-		

LDC #: 14326 A3 SDG #: 1922

VALIDATION FINDINGS WORKSHEET Matrix Spike/Matrix Spike Duplicates

	Page:_	<u>/</u> of_	/
	Reviewer:	F	3
2nd	Reviewer:	K	,

GC HPLC METHOD:

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N N/A

Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SD.

Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Ý N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed? YN WA Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

) #	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	11+12	V	153 (38-159	()	. ()	8	13/Ade
			()	()	()		BOUNT Y, W, X
			()	()	()		
			()	()	()		NO OUAL
			()	()	()		5× DIV
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LDC #:<u>| | 4 32</u>6 ム3 SDG #:<u>| I Q カ</u>ン

VALIDATION FINDINGS WORKSHEET <u>Overall Assessment of Data</u>

<u>/</u> of_/_
F
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METHOD: VGC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N/A Was the overall quality and usability of the data acceptable?

				
#	Compound Name	Finding	Associated Samples	Qualifications
	The pattern of	peaks on detected samples	were possibly	Text
	weathered Aroc	lors. The results use v	eported on the	
		sible anoclar pattern.	3	
)	3		
	Due to the	level of target analytes,	Samples	text
	#2 4, 6, 8	were diluted 5x		
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	·			

Comments:		 			
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LDC #:_	14326B3	VALIDATION COMPLETENESS WORKSHEET	Date: 12/2/05
SDG #:_	IQ23	Level IV	Page: <u>/</u> of <u>/</u>
Laborato	ry: Analytical	Resources, Inc.	Reviewer:
	•		2nd Reviewer:_/

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
l.	Technical holding times	Δ	Sampling dates: 8 29 - 9 1 05
II.	GC/ECD Instrument Performance Check	NΔ	
111.	Initial calibration	Δ	
IV.	Continuing calibration	. >	
V.	Blanks	Δ	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	Α	205
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	Д	
XII.	Compound quantitation and reported CRQLs	ふん	
XIII.	Overall assessment of data	5M	
XIV.	Field duplicates	N	
XV.	Field blanks	N	

Note:

A = Acceptable N = Not provided/applicable SW = See worksheet

ND = No compounds detected

R = Rinsate FB = Field blank D = Duplicate TB = Trip blank EB = Equipment blank

Validated Samples:

	ateu Samples.						
	issul						
1	LDW-05-T1-C-PS-WB-COMP1 X	5	11	LDW-05-T2-M-ES-FL-COMP3 /	6	21	LDW-05-T1-F-SS-WB-COMP1
2	LDW-05-T2-E-PS-WB-COMP1 🗸	6	12	LDW-05-T3-M-ES-FL-COMP1	5	22	LDW-05-T1-C-PS-WB-COMP1MS
3	LDW-05-T3-F-PS-WB-COMP1 ✓	ź	13	LDW-05-T3-M-ES-FL-COMP2 /	5	23	LDW-05-T1-C-PS-WB-COMP1MSD
4	LDW-05-T4-C-PS-WB-COMP1 ✓	6	14	LDW-05-T3-M-ES-FL-COMP3	ν.	24	LDW-05-T4-M-ES-FL-COMP1MS
5	LDW-05-T1-M-ES-FL-COMP1	ź	15	LDW-05-T4-M-ES-FL-COMP1	ς.	25	LDW-05-T4-M-ES-FL-COMP1MSD
6	LDW-05-T1-M-ES-FL-COMP2 /	5	16	LDW-05-T1-A-SS-WB-COMP1	5	26	LDW-05-T1-D-SS-WB-COMP1MS
7	LDW-05-T1-M-ES-FL-COMP3 /	5	17	LDW-05-T1-B-SS-WB-COMP1	5	27	LDW-05-T1-D-SS-WB-COMP1MSD
8	LDW-05-T2-M-ES-FL-COMP1	5	18	LDW-05-T1-C-SS-WB-COMP1	5	28	MB-102405
9	LDW-05-T2-M-ES-FL-COMP2 /	5	19	LDW-05-T1-D-SS-WB-COMP1 X		29	
10	LDW-05-T2-M-ES-FL-COMP2DL	,0	20	LDW-05-T1-E-SS-WB-COMP1 X	5	30	

LDC#: 1432633 SDG#: エロンフ Page: lof 2
Reviewer: Revi

Method: _____ GC _____ HPLC

Method: GC HPLC			_	
Validation Area	Yes	No	NA	Findings/Comments
Technical holding times			· · · · · · · · · · · · · · · · · · ·	
All technical holding times were met.	/			
Cooler temperature criteria was met.		Denti Securit		
IL Initial calibration	T	<u> </u>		
Did the laboratory perform a 5 point calibration prior to sample analysis?	-			
Was a linear fit used for evaluation? If yes, were all percent relative standard deviations (%RSD) ≤ 20%?	/			
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?		/		
Did the initial calibration meet the curve fit acceptance criteria?	_	-		
Were the RT windows properly established?				
IV. Continuing calibration	T		 	
What type of continuing calibration calculation was performed?%D or%R	_			
Was a continuing calibration analyzed daily?				
Were all percent differences (%D) ≤ 15%.0 or percent recoveries 85-115%?				
Were all the retention times within the acceptance windows?	99.4529990hdd	1005 Mark 1915 Side	577000	
V. Blanks				
Was a method blank associated with every sample in this SDG?				
Was a method blank analyzed for each matrix and concentration?	V			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<u></u>	1		
VI. Surrogate spikes		<u> </u>	1.7	Control of the second s
Were all surrogate %R within the QC limits?	r			
If the percent recovery (%R) of one or more surrogates was outside QC limits, was a reanalysis performed to confirm %R?	~	1		
If any %R was less than 10 percent, was a reanalysis performed to confirm %R?	OF SUCCESSION FOR	184 F 188110	words to W.L.	
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	V	·K		
Was a MS/MSD analyzed every 20 samples of each matrix?	V	•		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		~	_	
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	_			
Was an LCS analyzed per extraction batch?				

LDC#: 14326737 SDG#: IQ23

VALIDATION FINDINGS CHECKLIST

Validation Area	Yes	No	NA	Findings/Comments
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?				
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?				
Were the performance evaluation (PE) samples within the acceptance limits?				
X Target compound identification	T T	· · · · ·	J	
Were the retention times of reported detects within the RT windows?				
XI: Compound quantitation/CRQLs		l		
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?				
XII. System performance		**		ed en
System performance was found to be acceptable.	1	<i>Y</i>		
XIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XIV. Field duplicates				FIG. 1
Were field duplicate pairs identified in this SDG?		٧		
Were target compounds idetected in the field duplicates?				
XV. Field blanks				
Were field blanks identified in this SDG?				
Were target compounds detected in the field blanks?				

LDC #:	14326B3
SDG #:_	I 023

VALIDATION FINDINGS WORKSHEET Matrix Spike/Matrix Spike Duplicates

	Page:_	<u>/</u> of
	Reviewer:_	7
2nd	Reviewer:	/

METHOD: VGC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

YN N/A

Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SD

Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed? Y /N/A

Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	22+2-3	ВВ	167 (38-154)	()	()	# 1	NO OUAL
	·		()	()	()		'sx piv
			()	()	()		
			()	()	()		
			()	()	()		•
			()	()	()		
		-	()	()	()		
		 	()	()	()		
			()	()	()		
			()	()	()		
			()	()	()		
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		_	()	()	()		
			()	()	()		
			()	()	()		-
			()	()	()		
			()	()	()		
			()	()	()		
		-	 				
	<u>-</u>				()		
	_	 	()	()	()		
			()	()			
-	<u> </u>		()				

LDC #:	1432683
SDG #:	T 923

VALIDATION FINDINGS WORKSHEET <u>Compound Quantitation and Reported CRQLs</u>

Page: _	
Reviewer:	\mathcal{A}
2nd Reviewer:	

METHOD: GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only

N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Old the reported results for detected target compounds agree within 10.0% of the recalculated results?

		1000 Bit 1000		
		% RPD Between column Finding =40		
#	Compound Name	Finding = 40	Associated Samples	Qualifications
	BBAA	44	1	J/A J/A dets duti
	·			/
	ĄΔ	58	19	1
				<u> </u>
	AA	47	20	()
		•		
		,		

Comments:	ments: See sample calculation verification worksheet for recalculations											
										,	_	
		_		_								

LDC #:_	14326 B3
SDG #:	I 023

VALIDATION FINDINGS WORKSHEET Compound Quantitation and Reported CRQLs

Page: _	_/of_/
Reviewer:	<u> 19</u>
2nd Reviewer:	

METHOD:

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only Y N N/A

Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Did the reported results for detected target compounds agree within 10.0% of the recalculated results? Y/N N/A

#	Compound Name	Finding	Associated Samples	Qualifications
	AA	exceeded and range	9	J/Adut NA
		0		
	Due To the	level of target analy	Jes,	Text
	all samples me	4 - 1	· · ·	
1	sample # 10 ;+	was dithere 10x		-
			·	

Comments:	See sample calculation verification worksheet for recalculations	
		

LDC#: 14326B3 SDG#: TQ23

VALIDATION FINDINGS WORKSHEET Overall Assessment of Data

•	/
Page: _	of
Reviewer:	17
2nd Reviewer:	<i></i>

METHOD: _GC _ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

YN N/A Was the overall quality and usability of the data acceptable?

				
#	Compound Name	Finding	Associated Samples	Qualifications
	AA	exceeded cd ange	9	R/A
	-38	house resource	J.	1
	All except AALBB	a diluted	lΩ	R/A
	The pattern on	peaks on detected san	ples were	text
J.		red arroclars. The results	were	
	reported on the	best justed possible an	octor pattern	
				Should be of
			<u>.</u>	an amp
				Quant

Comments:		

LDC #: 14326133 SDG #: TQ 23

VALIDATION FINDINGS WORKSHEET Initial Calibration Calculation Verification

	/ /
Page:_	of
Reviewer:	<u> 17</u>
2nd Reviewer:	

METHOD: GC	HPLC	

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C

average CF = sum of the CF/number of standards

%RSD = 100 * (S/X)

A = Area of compound,

C = Concentration of compound,

S = Standard deviation of the CF

X = Mean of the CFs

		Calibration		Reported	Recalculated CE pb	Reported Average CF	Recalculated Average CF	Reported	Recalculated
#	Standard ID	Date	Compound	(250) std)	(750) std)	(initial)	(initial)	%RSD	%RSD
1	DB5	10/17/05	1260-1	0.0516	0.0516	0.0534	0.0534	7.4	7.4
2	2835	10/17/05	1260-1	0.0879	0.0879	0.0877	0.0877	5.9	5.9
3									
4									

Comments: _	Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.09	<u>% of the recalculated</u>
results.		

LDC #: 1432683 SDG #: T Q23

VALIDATION FINDINGS WORKSHEET <u>Continuing Calibration Results Verification</u>

Page:_	<u>/</u> of_	_
Reviewer:_	19	·
2nd Reviewer:	,	

METHOD: GC_	 _HPLC	

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF - CF)/ave. CF CF = A/C

Where: ave. CF = initial calibration average CF

CF = continuing calibration CF

A = Area of compound

C = Concentration of compound

					Reported	Recalculated	Reported	Recalculated
#	Standard ID	Calibration Date	Compound	Average CF(Ical)/ CCV Conc.	CF/Conc. CCV	CF/Conc. CCV	% D	%D
1	ceV	10/28/05	Arodor 1260	500	498.1	498.	0.4	0.4
	ZB 35	1255	_					
	DB 5		V	↓	480.9	480.9	3-8	3.8
2	1	10/28/05	1/	V	487.1	487-1	7.6	2.6
		1929	<u> </u>		<u> </u>			
	V		<u>\</u>		504.2	504.2	0-8	0-8
3		10/21/05	U	V	ط. ط48	486.6	2.7	2-7
		2237	•					
			V	<u> </u>	428.1	428.1	14.4	14.4
4	-							

Comments:	Refer to Con	tinuing Calib	ration findings	s worksheet f	or list of	qualifications	and associate	d samples w	hen reported	results do not	agree within	10.0% of the
<u>recalculated</u>	results.											

LOCT	1432683
SDG #:	1923

Surrogate Results Verification

pag /	9
Reviewer:	FI
2nd reviewer:	•

METHOD: VGC __ HPLC

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found

Sample ID: # 1

SS = Surrogate Spiked

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
DCB	2835	33	32.47	99	99	0
TCMX	DB-5	4D	45	113	้า	1

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	
	,					

Sample ID:

Surrogate	Column/Detector	Surrogate Spiked	Surrogate Found	Percent Recovery	Percent Recovery	Percent Difference
				Reported	Recalculated	

LDC #:	14	324	BZ
SDG #:			

VALIDATION FINDINGS WORKSHEET <u>Matrix Spike/Matrix Spike Duplicates Results Verification</u>

Page:_	
Reviewer:	19
2nd Rev	

METHOD: GC _HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below

using the following calculation: %Recovery = 100 * (SSC - SC)/SA

Where

SSC = Spiked sample concentration

SC = Sample concentration

RPD =(({SSCMS - SSCMSD} * 2) / (SSCMS + SSCMSD))*100

SA = Spike added

MS = Matrix spike

MSD = Matrix spike duplicate

MS/MSD samples: 22+23

		Spi	ke	Sample	Spike S	Sample	Matrix	spike	Matrix Spike	Duplicate	MS/N	ISD
Comp	ound	Add (NG)	K9)	Conc.	Concer (wy	ntration	Percent F	Recovery	Percent Recovery		RPD	
		MS .	MSD) [MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recaic.
Gasoline	(8015)											
Diesel	(8015)								y			
Benzene	(8021B)											
Methane	(RSK-175)											
2,4-D	(8151)											
Dinoseb	(8151)											
Naphthalene	(8310)											
Anthracene	(8310)											
НМХ	(8330)				·							
2,4,6-Trinitrot	oluene (8330)											
Aroclor	1260	100	100	343	510	461	167	167	118	118	10-1	10.
						·						
							<u> </u>					
												1.

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #:_	14326 B3
SDG #:_	I Q 23

VALIDATION FINDINGS WORKSHEET

Page: <u>/</u> of <u>/</u>	
Reviewer:	
2nd Reviewer:	

Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

М	ETHOD:	GC	HPLC

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

Recovery = 100 * (SSC - SC)/SA

Where

SSC = Spiked sample concentration

SC = Sample concentration

RPD =(({SSCLCS - SSCLCSD} * 2) / (SSCLCS + SSCLCSD))*100

SA = Spike added LCS = Laboratory Control Sample

LCSD = Laboratory Control Sample duplicate

LCS/LCSD samples: LCS - 102405

		Spi	ike	Sample	Spike \$	Sample	LC	s	LCS	D	LCS/L	.CSD
Comp	ound	(ualky (uarl		Conc.	Concentration (Mg) Ky		Percent Recovery		Percent Recovery		RPD	
		LCS	LCSD	- 91 8	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
Gasoline	(8015)											
Diesel	(8015)		_									
Benzene	(8021B)											
Methane	(RSK-175)											
2,4-D	(8151)											
Dinoseb	(8151)											
Naphthalene	(8310)											
Anthracene	(8310)											
нмх	(8330)											
2,4,6-Trinitrot	oluene (8330)											
Arodor	1240	100	NA.	<u>ی</u>	100	NA	100	100	WA -			
		<u> </u>	1									

Comments:	Refer to Laboratory Co	ontrol Sample/Laboratory	Control Sample Duplicate	findings worksheet for li	st of qualifications and	associated sample	<u>es when reported</u>
results do no	ot agree within 10.0% o	of the recalculated results.					

LDC #: 14326 B3
SDG #: FQ 23

VALIDATION FINDINGS WORKSHEET Sample Calculation Verification

Page: __/of___ Reviewer: __/5__ 2nd Reviewer:

METHOD: __GC __ HPLO

Y N N/A Y N N/A

Were all reported results recalculated and verified for all level IV samples?
Were all recalculated results for detected target compounds agree within 10% of the reported results?

Concentration= (A)(Fv)(Df)
(RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured

Fv= Final Volume of extract

Df= Dilution Factor

RF= Average response factor of the compound

In the initial calibration

Vs= Initial volume of the sample Ws= Initial weight of the sample

%S= Percent Solid

Example:

Sample ID. # Compound Name 1260

finalConcentration = 343.9 \times 2 \times 5

= 343.9 ng | kg

#	Sample ID	Compound	Reported Concentrations	Recalculated Results Concentrations ()	Qualifications
		1260-1 = 229643	4 (80) =	299.1	
		115039	14 (0.0534)		
		1260-1 = 299-1			
		-2 = 76.8	-		
		-3 = 495,5	•		
		-4 = 439.	7		
		-5 = 408.) Aue = =	343.9	

Comments:	_		

LDC #: 14326C3	VALIDATION COMPLETENESS WORKSHEET	Date: 12/01/09
SDG #: IQ24	Level III	Page: <u>/</u> of <u>/</u>
Laboratory: Analytical Resource	es, Inc.	Reviewer:
		2nd Reviewer:

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
l.	Technical holding times	A	Sampling dates: 8 29 05 - 9 6 05
II.	GC/ECD Instrument Performance Check	NA	, , , , , , , , , , , , , , , , , , ,
111.	Initial calibration	A	
IV.	Continuing calibration	A	
V.	Blanks	A	
VI.	Surrogate spikes	Α	
VII.	Matrix spike/Matrix spike duplicates	Α	
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	Silica Gel clean - up performed
XI.	Target compound identification	N	, , , , ,
XII.	Compound quantitation and reported CRQLs	5W	
XIII.	Overall assessment of data	SW	
XIV.	Field duplicates	N	
XV.	Field blanks	N	

Note: A = Acc

A = Acceptable
N = Not provided/applicable
SW = See worksheet

ND = No compounds detected

R = Rinsate FB = Field blank D = Duplicate
TB = Trip blank
EB = Equipment blank

Validated Samples:

Tisque LDW-05-T2-A-SS-WB-COMP1 LDW-05-T3-D-SS-WB-COMP1 LDW-05-T2-M-ES-WB-COMP1 21 10 LDW-05-T2-B-SS-WB-COMP1 LDW-05-T3-E-SS-WB-COMP1 ۶x 12 7 22 LDW-05-T2-M-ES-WB-COMP1DL 3 LDW-05-T2-C-SS-WB-COMP1 , 0 13 LDW-05-T3-F-SS-WB-COMP1 4 23 LDW-05-T2-M-ES-WB-COMP2 LDW-05-T2-D-SS-WB-COMP1 LDW-05-T3-F-SS-WB-COMP1DL 10 24 LDW-05-T2-M-ES-WB-COMP2DL LDW-05-T2-E-SS-WB-COMP1 5 15 LDW-05-T1-M-ES-WB-COMP1 25 LDW-05-T2-M-ES-WB-COMP3 LDW-05-T2-E-SS-WB-COMP1DL 16 LDW-05-T1-M-ES-WB-COMP1DL > 6 26 LDW-05-T2-M-ES-WB-COMP3DL 'n 10 LDW-05-T2-F-SS-WB-COMP1 17 7 LDW-05-T1-M-ES-WB-COMP2 ś 27 LDW-05-T4-M-ES-WB-COMP1 LDW-05-T3-A-SS-WB-COMP1 18 LDW-05-T1-M-ES-WB-COMP2DL 28 LDW-05-T4-M-ES-WB-COMP1DL 10 LDW-05-T3-B-SS-WB-COMP1 LDW-05-T1-M-ES-WB-COMP3 9 19 ś 29 LDW-05-T4-M-ES-WB-COMP2 LDW-05-T3-C-SS-WB-COMP1 🗸 20 10 LDW-05-T1-M-ES-WB-COMP3DL 30 LDW-05-T4-M-ES-WB-COMP1MS ĺà MB- 102605 31 LDW-05-T4-M-ES-WB-COMP1MSD

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Arocior-1248	нн.
C. delta-BHC	K. Endrin	S. aipha-Chiordane	AA. Aracior-1254	11.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	KK.
F. Aldrin	N. Endosulfan sulfate	V. Arocior-1016	DD. DB 1701	LL.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	MM.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:	<u> </u>	 	_	

SDG#: 16 개

VALIDATION FINDINGS WORKSHEET Compound Quantitation and Reported CRQLs

Page: _	øf
Reviewer:	
2nd Reviewer:	d

METHOD: __GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only
Y N N/A Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
\mathcal{Q}	AA	exceeded cal range	5, 13, 15, 17, 19, 21,	S/Adet NA
		0	23, 25, 27	
			· /	
3	Due to the Le	ref a farget analytes all diluted 3 to 10 time	samples vere	Text
ļ		diluted 3 to 10 tim	es	
	· ·			
				<u> </u>
(<u>3</u>	the paller of	peaks on defected sample ors. The results were necessible aroclar pattern	s were possibly	Text
	weathered Arock	ors. The results were re	ported on the	
<u> </u>	best match	possible aroclor pattern		
	, , , , , , , , , , , , , , , , , , ,			

Comments:	See sample calculation verif	ication worksheet for rec	alculations		 	

LDC#: 1432603 SDG#: 1624

VALIDATION FINDINGS WORKSHEET Overall Assessment of Data

Page:	of	_
Reviewer:		
2nd Reviewer:	_ k_	

METHOD: LEC __HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

YN N/A Was the overall quality and usability of the data acceptable?

_#	Compound Name	Finding	Associated Samples	Qualifications
	AA	exceeded cal range	5, 13, 15, 19, 19, 21, 23, 25, 27	R/A
<u> </u>	-BB	lower Result is	1	
	All except AA, BBE	diluted	6,14,16,18, 20, 22,	R/A
			24. 26, 28	1
<u> </u>	,	·		
	:			
	·			
		·		

Comments:		 			

₋abora METH The sa	t: 14326D3 VALIDATIO t: 1Q25 atory: Analytical Resources, Inc. IOD: GC Polychlorinated Biphenyls (EPA) amples listed below were reviewed for eation findings worksheets.	SW 846 N					Pa Revie Ind Revie	wer:
	Validation Area			omr	nenf	s		
l.	Technical holding times	SW	Sampling dates: 8 30 05		9	105		10/14/07
II.	GC/ECD Instrument Performance Check	AN						
III.	Initial calibration	Δ						
IV.	Continuing calibration	A						
V.	Blanks	A						
VI.	Surrogate spikes	<u> </u>						
VII.	Matrix spike/Matrix spike duplicates	A						
VIII.	Laboratory control samples	A	L c9					
IX.	Regional quality assurance and quality control	N						
Xa.	Florisil cartridge check	N						
Xb.	GPC Calibration	N						
XI.	Target compound identification	N		_				
XII.	Compound quantitation and reported CRQLs	S₩						
XIII.	Overall assessment of data	SW						
XIV.	Field duplicates	N						
XV.	Field blanks	ND	RB= Rinsate BI	ank		# 4	+ #2 °	Blender
Note:	N = Not provided/applicable R = Rin SW = See worksheet FB = F	lo compound nsate ield blank	= Rin Satt P D = Duplicate TB = Trip blar EB = Equipme	ık		+1 +	+2	Grindur
/alidate	ed Samples: Tissue							
1	LDW-05-T3-M-ES-WB-COMP1 5 11 L	.DW-05-T3-M	I-ÉS-WB-COMP3MSD	21	ME	5 - 10	02505	
2	LDW-05-T3-M-ES-WB-COMP1DL W 12	Rinsale	Blank # Blender	22				
		Binsata	Blank # 1 Gitner	23				

1	LDW-05-T3-M-ES-WB-COMP1	5	11	LDW-05-T3-M-ES-WB-COMP3MSD	21	MB -102505
2	LDW-05-T3-M-ES-WB-COMP1DL	w	 12_	Rinsale Blank H Blender	22	
3	LDW-05-T3-M-ES-WB-COMP2	3	13_	Pinsate Blank # 1 Gitner	23	
4	LDW-05-T3-M-ES-WB-COMP2DL	0 ا	14.	Rinsate Blank # 2 Grinder	24	
5	LDW-05-T3-M-ES-WB-COMP3	5	_ 15 -	Rinsate Blank # 2 Blender	25	
6	LDW-05-T4-A-SS-WB-COMP1	3	16		26	
7	LDW-05-T4-B-SS-WB-COMP1	3	17		27	
8	LDW-05-T4-C-SS-WB-COMP1	3	18		28	
9	LDW-05-T4-D-SS-WB-COMP1	3	19		29	
10_	LDW-05-T3-M-ES-WB-COMP3MS		20		30	

LDC #: 1432603 SDG #: IQX

VALIDATION FINDINGS WORKSHEET Compound Quantitation and Reported CRQLs

Page: _	<u>/</u> of <u>/</u>
Reviewer:	K
2nd Reviewer:	12

METHOD: __GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A". Level IV/D Only

Y N M/A Y N N/A

Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

#	Compound Name	Finding	Associated Samples	Qualifications
	AA	exceeded cal range	1,3	A/A dut NA
				-
		A-11		-
	Du to the had	of fargel analytes As	samples	Test
	West of with	<u> </u>		
	the pattern of	zeaky on detected som		
			gles were were	TexT
	reported on the			
		<u> </u>	1	

Comments: _	See sample calcul	lation verification	worksheet for reca	<u>lcul</u> ations			
				_	-		
				_			

LDC#: 1432603 SDG#: ± 425

VALIDATION FINDINGS WORKSHEET Overall Assessment of Data

Page: _	/of
Reviewer:	— 为
2nd Reviewer:	R

METHOD: __GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Was the overall quality and usability of the data acceptable?

#_	Compound Name	Finding	Associated Samples	Qualifications
	AA	exceeded cal renge	1, 3	P/A
	All except AA	diluted	2,4	R/A
				,

Comments:					
		 _			

LDC #:	14326E3	VALIDATION COMPLETENESS WORKSHEET	Date: <u>12 / 1 /</u> o ∫
SDG #:_	IQ30	Level III	Page:/of/_
Laborato	ry: Analytical Resour	ces, Inc.	Reviewer: ' 🎢
	•		2nd Reviewer: /

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: \$19 -> 9 6 05
II.	GC/ECD Instrument Performance Check	NA	
III.	Initial calibration	Δ	
IV.	Continuing calibration	Δ	
V.	Blanks	A	
VI.	Surrogate spikes	Δ	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	Ą	LCS
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	Silica gel clean up performed
XI.	Target compound identification	N	7 1 1
XII.	Compound quantitation and reported CRQLs	SW	
XIII.	Overall assessment of data	we	
XIV.	Field duplicates	N	
XV.	Field blanks	W	

A = Acceptable N = Not provided/applicable Note:

ND = No compounds detected

D = Duplicate

SW = See worksheet

R = Rinsate FB = Field blank TB = Trip blank
EB = Equipment blank

Validated Samples:

	Time						
1	LDW-05-T1-M-ES-RM-COMP1	54	11	LDW-05-T2-M-ES-RM-COMP3DL I	,	21	MB-102705
2	LDW-05-T1-M-ES-RM-COMP1DL	10	12	LDW-05-T3-M-ES-RM-COMP1	0	22	
3	LDW-05-T1-M-ES-RM-COMP2	_ <u> </u>	13	ĹDW-05-T3-M-ES-RM-COMP2	,	23	
4	LDW-05-T1-M-ES-RM-COMP2DL	10	14	LDW-05-T3-M-ES-RM-COMP3	0	24	
5	LDW-05-T1-M-ES-RM-COMP3	5	15	LDW-05-T4-M-ES-RM-COMP1	3	25	
6	LDW-05-T2-M-ES-RM-COMP1	5	16	LDW-05-T4-M-ES-RM-COMP1DL	3	26	
7	LDW-05-T2-M-ES-RM-COMP1DL	10	17	LDW-05-T1-M-ES-RM-COMP1MS		27	
8	LDW-05-T2-M-ES-RM-COMP2	۶	18	LDW-05-T1-M-ES-RM-COMP1MSD		28	
9	LDW-05-T2-M-ES-RM-COMP2DL	l ₉	19			29	
10	LDW-05-T2-M-ES-RM-COMP3	5	20			30	

VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG.
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	нн.
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Arocior-1254	и.
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Arocior-1260	JJ.
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. DB 608	кк.
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. DB 1701	ш.
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE.	мм.
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF.	NN.

Notes:				
	-	·		

LDC #:				ろ
SDG #:_	工	43	\mathcal{O}	

VALIDATION FINDINGS WORKSHEET Matrix Spike/Matrix Spike Duplicates

	Page:_	<u>/</u> _of	_
	Reviewer:	A	
2nd	Reviewer:	ď	

METHOD: __GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? Y N N/A

Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed? Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits? Y N N/A Y MON/A

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	17418	√	249 (38-159)	260 38-150	()_	1, 2	NO OUAL
			()	()	()		5x Dilution
			(_)	()	()		
			()	()	()		
			()	()	()		
			()	()	()		
			()	()	()_		
			()	()	()		
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 			()	()	()		
		I	<u> </u>				<u> </u>

LDC#: 14326E3 SDG #: 1030

VALIDATION FINDINGS WORKSHEET Compound Quantitation and Reported CRQLs

Page:	of
Reviewer:	<u></u>
2nd Reviewer:	6C

METHOD:

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Level IV/D Only
Y N N/A V

Were CRQLs adjusted for sample dilutions, dry weight factors, etc.?

Did the reported results for detected target compounds agree within 10.0% of the recalculated results?

	<u> </u>			
#	Compound Name	Finding	Associated Samples	<u>Qualifications</u>
D	AA	exceeded cal range	1,3,6,8,10	J/A dut NA
		0	15	
(2)	Du to the	hul of target analys	fes	Tert
		were diluted from		
	3 to 10x	,		
(3)	The pattern of	peaks on detected san	ples were	Tex
	possybly wealt	hered anodors. The re	suts	
ļ	were reported	hered arrodor. The re on the best month	arodor	
	puter.			
			·	

Comments:	See sample calculation	verification workshe	eet for recalculatio	ns		
				_		

LDC #: 14326 E 3 SDG #: IQ30

VALIDATION FINDINGS WORKSHEET Overall Assessment of Data

	Page: _	/of_/_
	Reviewer:	<u> 19</u>
2nd	Reviewer:	K'

METHOD: GC __ HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

YN N/A Was the overall quality and usability of the data acceptable?

				
#_	Compound Name	Finding	Associated Samples	Qualifications
	AA	esceeded cal range	1.3.6.8.15	R/A
	-28-r	result is	1	1
	·			•
	All except AA BBA	diluted	2,479,16	2/A
	AA	exceeded cal range	. 10	R/A
ļ		3		
	All except AA	di luted	1/	R/A
<u></u>				
	;			
II				
ļ				

Comments:		 	 	

LDC #: 14326A6	VALIDATION COMPLETENESS WORKSHEET	Date: () -
SDG #: IQ22	Level III	Page: <u></u> of_
Laboratory: Analytical Resor	urces, Inc.	Reviewer: 🎢
,		2nd Reviewer: K

METHOD: Percent Lipids (Bligh-Dyer Method), Total Solids (EPA 160.3)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area	Comments	
ı.	Technical holding times	A	Sampling dates: 8-30-05 through 9-2-05
IIa.	Initial calibration	Α	<i>U</i>
llb.	Calibration verification	Α	
111.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	7	Not required
V	Duplicates	SW	DUP/TRIP
VI.	Laboratory control samples	N	Not required
VII.	Sample result verification	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
x	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
N = Not provided/applicable R = Rinsate TB = Trip blank
SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples:

_	all 71550C					
1	LDW-05-T4-M-DC-EM-COMP1	11	LDW-05-T2-M-SC-HP-COMP1DUP	21	31	
2	LDW-05-T4-M-DC-HP-COMP1	12	LDW-05-T2-M-SC-HP-COMP1TRP	22	32	
3	LDW-05-T1-M-DC-EM-COMP1	13	PB	23	33	
4	LDW-05-T1-M-DC-HP-COMP1	14		24	34	
5	LDW-05-T3-M-DC-EM-COMP1	15		25	35	
6	LDW-05-T3-M-DC-HP-COMP1	16		26	36	
7	LDW-05-T2-M-SC-EM-COMP1	17		27	37	
8	LDW-05-T2-M-SC-HP-COMP1	18		28	38	
9	LDW-05-T3-M-DC-EM-COMP1DUP	19		29	39	
10	LDW-05-T3-M-DC-EM-COMP1TRP	20		30	40	

Notes:			
	·		
_			

LDC#: 14326A6 SDG#: <u>TQ22</u>

VALIDATION FINDINGS WORKSHEET Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MG
2nd reviewer: R

All circled methods are applicable to each sample.

Sample ID	<u> Matrix</u>	Parameter Parameter
1-78	tissue	PH TDS CIF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR CO4 BE ligid Salid
QC9-712	1	PH TDS CI F NO, NO, SO, PO, ALK CN NH, TKN TOC CR CIO, B
		PH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
		pH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
	_	pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		PH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
		pH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO₃ NO₂ SO₄ PO₄ ALK CN¹ NH₃ TKN TOC CR⁵⁺ CIO₄ Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR5+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR CO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS_CLF_NO_NO_SO_PO_ALK_CN*_NH_TKN_TOC_CR ⁶⁺ _ClO_Br

Comments:_						
	<u> </u>	=				

LDC	#:_	14326A6
SDG	#.	T022

VALIDATION FINDINGS WORKSHEET <u>Blanks</u>

Page:_	of
Reviewer:	MG
2nd Reviewer:_	K

METHOD: Inorganics, Method	see	cover	
METHOD, INCIDANCS, MEDICO	3		

67		_ 1 1	
Conc. units: [/] ♣	Associated Samples:	911	

Analyte	Blank ID	Maximum	Blank	Sample Identification							
	Method	ICB/CCB	Action Limit	No	Samp	les v	vere	qual:	fied		
	0.0080							<i>'</i>			
		3									
		, pur		 							
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:									<u> </u>	l.—	L

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".

VALIDATION FINDINGS WORKSHEET Duplicate Analysis

	Page:	of
	Reviewer:	MG
2nd	Reviewer:	

METHOD: Inorganics, Method	'ee	cover
----------------------------	-----	-------

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N N/A Y N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications	
L	No Dup	tissue	Tot. Solids		-all	Hove /Ptof]^
							4
2	9		lipid	42.8 (430)		J/UJ/A	\parallel
3	10	1	V	49.7 ()			1
							4
				<u>-</u> .			1
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Comme	nts:	 											
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LDC #: 14326B6	VALIDATION COMPLETENESS WORKSHEET	
SDG #: 1Q23	Level IV	
Laboratory: Analytical Resource	ces, Inc.	Re

Date: 12-1-05 Page: 1 of 1 eviewer: MG 2nd Reviewer: 1/

METHOD: Percent Lipids (Bligh-Dyer Method), Total Solids (EPA 160.3)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
l.	Technical holding times	Α	Sampling dates: 8-29-05 through 9-6-05
IIa.	Initial calibration	A	
llb.	Calibration verification	A	
IH.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	N	Not required
v	Duplicates	SAJA	·
VI.	Laboratory control samples	N	Not required
VII.	Sample result verification	Α	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	12	
х	Eield blanks	7	

Note:

ND = No compounds detected R = Rinsate

A = Acceptable N = Not provided/applicable SW = See worksheet

FB = Field blank

D = Duplicate TB = Trip blank EB = Equipment blank

Validated Samples:

	all tissue		****			a
1	LDW-05-T1-C-PS-WB-COMP1	11	LDW-05-T3-M-ES-FL-COMP1	21	LDW-05-T1-C-PS-WB-COMP1DUP	
2	LDW-05-T2-E-PS-WB-COMP1	12	LDW-05-T3-M-ES-FL-COMP2	22	LDW-05-T1-C-PS-WB-COMP1TRP	
3	LDW-05-T3-F-PS-WB-COMP1	13	LDW-05-T3-M-ES-FL-COMP3	23	LDW-05-T4-M-ES-FL-COMP1DUP	
4	LDW-05-T4-C-PS-WB-COMP1	14	LDW-05-T4-M-ES-FL-COMP1	24	LDW-05-T4-M-ES-FL-COMP1TRP	
5	LDW-05-T1-M-ES-FL-COMP1	15	LDW-05-T1-A-SS-WB-COMP1	25	LDW-05-T1-D-SS-WB-COMP1DUP	
6	LDW-05-T1-M-ES-FL-COMP2	16	LDW-05-T1-B-SS-WB-COMP1	26	LDW-05-T1-D-SS-WB-COMP1TRP	
7	LDW-05-T1-M-ES-FL-COMP3	17	LDW-05-T1-C-SS-WB-COMP1	27	P8	
8	LDW-05-T2-M-ES-FL-COMP1	18	LDW-05-T1-D-SS-WB-COMP1	28	LOW-05-TS-M-ZS-FL-1	omblished had
9	LDW-05-T2-M-ES-FL-COMP2	19	LDW-05-T1-E-SS-WB-COMP1	29	.V	TRP'
10	LDW-05-T2-M-ES-FL-COMP3	20	LDW-05-T1-F-SS-WB-COMP1	30	4N-05-TI-A-SS-WB-	COMPIDUO
	_			21		. /
				7	4	TRP

VALIDATION FINDINGS CHECKLIST

Page: [of 2 Reviewer: MG 2nd Reviewer: TE

Method: Inorganics (EPA Method See Caver)

Metriod.morganics (EFA Metriod See Cova)			T	
Validation Area	Yes	No	NA.	Findings/Comments
1. Technical holding times	1 7		¥16:	
All technical holding times were met.	1/			,
Cooler temperature criteria was met.	V	,		
It Calibration:				
Were all instruments calibrated daily, each set-up time?	V			<u>'</u>
Were the proper number of standards used?	\ <u>'</u>	. ,		
Were all initial calibration correlation coefficients ≥ 0.995?			/	
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	<u>'</u>		<u>/</u>	
Were titrant checks performed as required?(Level IV only)	<u> </u>		1	
Were balance checks performed as required? (Level IV only)		,		
III. Blanks Nati				The supplies of the supplies o
Was a method blank associated with every sample in this SDG?	/	,		
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	V			
IV. Matrix spike/Matrix spike duplicates and Duplicates		4 - 1		
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water. († 1500)		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			/	
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL.		,		,
V. Laboratory control samples				# The state of the
Was an LCS anaylzed for this SDG?		\checkmark		
Was an LCS analyzed per extraction batch?		/		
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	20241		<u> </u>	
VI. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		<u> </u>		
Were the performance evaluation (PF) samples within the acceptance limits?			V	

LDC #: 1432686 SDG #: IQ23

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: MG
2nd Reviewer: K

Validation Area	Yes	No	NA	Findings/Comments
VII. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
Were detection limits < RL?	V			, ,
VIII. Overall assessment of data				
Overall assessment of data was found to be acceptable.	1			
IX, Field duplicates				
Field duplicate pairs were identified in this SDG.		1		
Target analytes were detected in the field duplicates.				
X. Field blanks				
Field blanks were identified in this SDG.		V		,
Target analytes were detected in the field blanks.			/	

LDC#: 14326 B6 SDG#: <u>TQ23</u>

VALIDATION FINDINGS WORKSHEET Sample Specific Analysis Reference

Page: 1 of 1

Reviewer: MG

2nd reviewer: **C

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter Trans
1720	tissúe	PH TDS CI F NO3 NO2 SO4 PO4 ALK CNT NH3 TKN TOC CR8+ CIO4 BK 12 pid (Salid)
OC 21-726		pH TDS CI F NO, NO, SO, PO, ALK CN NH, TKN TOC CR CIO, Bripid
128-3	<u> </u>	PH TDS CI F NO3 NO, SO4 PO4 ALK CN" NH3 TKN TOC CR CIO4 Br (TS)
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CNT NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR5+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN" NH3 TKN TOC CR6+ CIO4 Br
·		PH TDS CI F NO, NO, SO, PO, ALK CN NH, TKN TOC CR CIO, Br
<u>.</u>		ph tds ci f No3 No2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
·		PH TDS CLF NO3 NO2 SO4 PO4 ALK CN' NH3 TKN TOC CR64 CIO4 Br
		ph TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
		pH TDS CLF NO3 NO2 SO4 PO4 ALK CN" NH3 TKN TOC CR6+ ClO4 Br
		ph tds ci f no ₃ no ₂ so ₄ po ₄ alk cn ⁻ nh ₃ tkn toc cr ⁶⁺ cio ₄ br
· .		ph tds ci f NO3 NO2 SO4 PO4 ALK CN" NH3 TKN TOC CR8+ CIO4 Br
·		ph TDS CI F NO, NO, SO, PO, ALK CN NH, TKN TOC CR6+ CIO, Br
		PH TDS CLIF NO, NO, SO, PO, ALK CN NH, TKN TOC CR CLO, Br
		PH TDS CI F NO3 NO2 SO4 PO4 ALK CN" NH3 TKN TOC CR6+ CIO4 Br
		PH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
· .		PH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN" NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR5+ CIO4 Br
		ph TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR64 ClO4 Br
		ph TDS CI F NO, NO, SO, PO, ALK CN NH, TKN TOC CR6+ CIO, Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
.,		PH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CRS+ CIO4 Br
<u> </u>		PH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CRS+ CIO4 Br
		pH TDS CLF NO. NO. SO, PO, ALK CN' NH. TKN TOC CR6+ CIO, Br

Comments:	•			 	

LDC #:_	1432686			
SDG #:	IQ23			

VALIDATION FINDINGS WORKSHEET <u>Blanks</u>

	Page:_	of
	Reviewer:	MG
2nd	Reviewer:	K

METHOD: Inorganics, Method	see	cover
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Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

\(\frac{\text{V} \ N \ N/A}{\text{V} \ N \ N/A} \)

Were all samples associated with a given method blank?

\(\frac{\text{V} \ N \ N/A}{\text{V} \ N \ N/A} \)

Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

a11Conc. units: % Associated Samples:___

Analyte	Blank ID	Maximum ICB/CCB	Blank	Sample Identification							
	Method Blank	ICB/CCB	Action Limit	No	sample	es we	re qu	al:fi	ed -		
lipids	0.010		0.05								
		,									
		,y ²									

				 				,			
							_			<u> </u>	
									1		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #:	14326B6
SDG #:	IQ23

VALIDATION FINDINGS WORKSHEET <u>Duplicate Analysis</u>

	Page:	1 of [
	Reviewer:	MG
2nd	Reviewer:	مر

METHOD: Inorganics,	Method	see	cover	

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y(N)N/A

Was a duplicate sample analyzed for each matrix in this SDG?

Y) N N/A

Were all duplicate sample relative percent differences (RPD) \leq 20% for water and \leq 35% for soil samples (\leq 10% for Method 300.0)? If no, see qualification below. A control limit of \pm CRDL (\pm 2X CRDL for soil) was used for samples that were \leq 5X the CRDL, including when only one of the duplicate sample values were \leq 5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
	No Dup	tissue	Tot. Solids		all	None /P text
						
				<u> </u>		
					·	

\vdash						
		Marie Company				
					1000,000	

Comments:		

LDC #:	1432686
SDG #:	IQ23

VALIDATION FINDINGS WORKSHEET Level IV Recalculation Worksheet

	Page:_	of
	Reviewer:	MG
2nd	Reviewer:	R

METHOD: Inorganics	, Method S	ee cover	
Percent recoveries (%	6R) for a laborate	ory control samp	ole and a matrix spike sample were recalculated using the following formula:
%R = <u>Found</u> x 100 True	Where,	Found =	concentration of each analyte <u>measured</u> in the analysis of the sample. For the matrix spike calculation Found = SSR (spiked sample result) - SR (sample result).

Found = SSR (spiked sample result) - SR (sample result).

True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated %R / RPD	Reported %R / RPD	Acceptable (Y/N)
	Laboratory control sample		_	_	_	_	_
~.	Matrix spike sample	~	(SSR-SR)	-		_	_
21	Duplicate sample	% lipids	2.10 (%)	2.32 (%)	10.0	10.0	Y

Comments: results	Refer to appropriate	worksheet for lis	st of qualifications a	and associated s	amples when reporte	ed results do not ag	ree within 10.0% o	f the recalculated
	·							

TOTCLC.6

LDC #: 1432686 SDG #: IQ23

VALIDATION FINDINGS WORKSHEET

Sample Calculation Verification

Page: | of |
Reviewer: MG

2nd reviewer: MG

METHOD: Ino	rganics, Method _	see co	ver_		
Please see qui N N/A N N/A Y N N/A	alifications below f Have results bee Are results within Are all detection	en reported a n the calibrate	nd calculate ed range of	d correctly?	licable questions are identified as "N/A".
Compound (ar recalculated a	nalyte) results for _ nd verified using th	# 1 he following e	Total equation:	solids	reported with a positive detect wer

Concentration =

 $\frac{(2.90g - 0.80g)}{(10.70g - 0.80g)} \times 100 = \frac{2.1g}{9.9g} \times 100 = 21.21\%$

#	Sample ID	Analyte	Reported Concentration (%)	Calculated Concentration	Acceptable (Y/N)
	(% lipids	2.10	2.10	Y
<u> </u>		Total Solids	21.21	21.21	
2	11	% lipids	4.12	4.13	
		% lipids Total Solids	24.90	24.90	↓
<u></u>					
<u> </u>					-
	7				
1					

Note:		

LDC #: 14326C6	VALIDATION COMPLETENESS WORKSHEET	Date: 12-1-05
SDG #: Q24	Level III	Page: <u>I_of_I_</u> Reviewer:_ <i>MG</i> _
Laboratory: <u>Analytical Resour</u>	285, IIIG.	2nd Reviewer:
, <u>, , , , , , , , , , , , , , , , , , </u>	2111 (50, 1/2 2)	

METHOD: Percent Lipids (Bligh-Dyer Method) , Total Solids (EPA 160.3) The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached

	Validation Area		Comments
l.	Technical holding times	A	Sampling dates: 8-29-05 through 9-6-05
lla.	Initial calibration	A	
IIb.	Calibration verification	A	
III.	Blanks	Sw	
١٧	Matrix Spike/Matrix Spike Duplicates	N	Not required
V	Duplicates	ASW	DUP/TRIP
VI.	Laboratory control samples	N	Not required
VII.	Sample result verification	N _.	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
х	Field blanks	N_	<u></u>

Note: A = Acceptable ND = No compounds detected

N = Not provided/applicable SW = See worksheet

R = Rinsate FB = Field blank D = Duplicate TB = Trip blank EB = Equipment blank

Validated Samples:

validation findings worksheets.

	<u> an 7,550e </u>				
1	LDW-05-T2-A-SS-WB-COMP1	11	LDW-05-T3-E-SS-WB-COMP1	21	LDW-05-T4-M-ES-WB-COMP1DUP
2	LDW-05-T2-B-SS-WB-COMP1	12	LDW-05-T3-F-SS-WB-COMP1	22	LDW-05-T4-M-ES-WB-COMP1TRP
3	LDW-05-T2-C-SS-WB-COMP1	13	LDW-05-T1-M-ES-WB-COMP1	23	PB
4	LDW-05-T2-D-SS-WB-COMP1	14	LDW-05-T1-M-ES-WB-COMP2	24	LON-04-72-13-55-WB-1
5	LDW-05-T2-E-SS-WB-COMP1	15	LDW-05-T1-M-ES-WB-COMP3	25	V
6	LDW-05-T2-F-SS-WB-COMP1	16	LDW-05-T2-M-ES-WB-COMP1	26	
7	LDW-05-T3-A-SS-WB-COMP1	17	LDW-05-T2-M-ES-WB-COMP2	27	
8	LDW-05-T3-B-SS-WB-COMP1	18	LDW-05-T2-M-ES-WB-COMP3	28	
9	LDW-05-T3-C-SS-WB-COMP1	19	LDW-05-T4-M-ES-WB-COMP1	29	
10	LDW-05-T3-D-SS-WB-COMP1	20	LDW-05-T4-M-ES-WB-COMP2	30	

LDC#: 14326C6 SDG#: <u>TQ24</u>

VALIDATION FINDINGS WORKSHEET Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MG
2nd reviewer: M

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
1770	+15506	pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR CIO4 BK lipid Solid
ac _{21,22}	1	PH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR CIO4 BILLIAID
124.75	5	pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br (TS)
1040		ph TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁵ NH ₃ TKN TOC CR ⁶⁺ ClO ₄ Br
		ph tds ci f No3 No2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		ph tds ci f NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ ClO ₄ Br
		ph tds ci f No3 No2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
		pH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR5+ ClO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR8+ CIO4 Br
·		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR8+ CIO4 Br
	. <u> </u>	ph TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		ph TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		ph TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
		ph TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR5+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR8+ CIO4 Br
		PH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CRS+ CIO4 Br
	· .	PH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN" NH3 TKN TOC CRS CIO4 Br
		ph tds ci f No3 NO2 SO4 PO4 ALK CN" NH3 TKN TOC CR6+ ClO4 Br
·		PH TDS CI F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR8+ CIO4 Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		PH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CRS CIO4 Br
	L	pH TDS CLF NO, NO, SO, PO, ALK CN NH, TKN TOC CR8+ CIO, Br

Comments:_	•			
		*		

LDC #:_	14326C6
SDG #	TARU

VALIDATION FINDINGS WORKSHEET <u>Blanks</u>

	Page:_	
	Reviewer:	MG
2nd	Reviewer:	K

METHOD: Inorganics,	Method	see	cover	

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

| N | N/A | Were all samples associated with a given method blank?
| N | N/A | Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: $\sqrt[6]{g}$ Associated Samples:	a11
--	-----

Conc. uma	onc. units: 9/0 Associated Samples: 9/1										
Analyte	Blank ID	Maximum ICB/CCB	Blank Action Limit					mple identificat			
	Method blank	ICB/CCB	Action Ellin		- N	o samp	les w	ere qu	ual; fie	d -	
lipids	0.020		0.100					,			
,			,								1
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		,yr'						<u> </u>		<u> </u>	
											<u> </u>
								0			
							19.115				
						l					

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the methoc blank concentration were qualified as not detected, "U".

LDC #: 14326C6 SDG #: IQ24

VALIDATION FINDINGS WORKSHEET <u>Duplicate Analysis</u>

	Page:_	of1_
	Reviewer:	MG
2nd	Reviewer:	M

THOD: Inorganics, Method	see	cover	

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (DN/A

Was a duplicate sample analyzed for each matrix in this SDG?

Y N N/A

Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
	No Dup	tissue	Tot. Solids		all	None/P text
		 				
		<u> </u>				
		 	 			
		<u>. </u>				
		L				

Comments:	 	 	- Colonia	 	
					

on &	SDG #: IQ25 Laboratory: Analytical Resources, Inc. METHOD: Percent Lipids (Bligh-Dyer Method)			PLETENESS WORKSHEET Level III Page: 1 of 1 Reviewer: MG 2nd Reviewer: MG
		Validation Area		Comments
	l.	Technical holding times	Α	Sampling dates: 8-30-05 through 9-1-05
	lla.	Initial calibration	Α	
	IIb.	Calibration verification	Α	
	III.	Blanks	SW	
	IV	Matrix Spike/Matrix Spike Duplicates	7	Not required
	V	Duplicates	SW	Not required Dup/Trip
	VI.	Laboratory control samples	N	Not required
	VII.	Sample result verification	N	
	VIII.	Overall assessment of data	Α	
	IX.	Field duplicates	N	
	L _X	Field blanks	N	

Note:

A = Acceptable N = Not provided/applicable SW = See worksheet

ND = No compounds detected R = Rinsate FB = Field blank

D = Duplicate TB = Trip blank EB = Equipment blank

Validated Samples:

	<u> </u>		
1	LDW-05-T3-M-ES-WB-COMP1	11	21
2	LDW-05-T3-M-ES-WB-COMP2	12	22
3	LDW-05-T3-M-ES-WB-COMP3	13	23
4	LDW-05-T4-A-SS-WB-COMP1	14	24
5	LDW-05-T4-B-SS-WB-COMP1	15	25
6	LDW-05-T4-C-SS-WB-COMP1	16	
7	LDW-05-T4-D-SS-WB-COMP1	17	27
88	LDW-05-T3-M-ES-WB-COMP3DUP	18	
9	LDW-05-T3-M-ES-WB-COMP3TRP	19	29
10	PB	20	30

LDC #: 14326 D6 SDG #: TQ25

VALIDATION FINDINGS WORKSHEET Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MG
2nd reviewer: A

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter Parameter
1-77	tissue	pH TDS CI F NO3 NO2 SO4 PO4 ALK CN' NH3 TKN TOC CR6+ CIO4 BK lipid Solid
QC 8,9	7	PH TDS CI F NO3 NO2 SO4 PO4 ALK CN" NH3 TKN TOC CR6+ CIO4 B
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ ClO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
	,	pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ ClO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		PH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁻ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CLF NO. NO. SO. PO. ALK CN. NH. TKN TOC CR6+ CIO. Br

Comments:			

LDC #:_	14326D6
SDG #	TROS

VALIDATION FINDINGS WORKSHEET Blanks

Page:_	1 of
Reviewer:	MG
2nd Reviewer:	W.

METHOD: Inorganics, Method	see	cover	
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Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

YN N/A Were all samples associated with a given method blank?

YN N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Conc. units: 70 Associated Samples: all

Analyte	Blank ID	Maximum ICB/CCB	Blank	Sample Identification						
	Method blank	ICB/CCB	Action Limit	No	sampl	es we	re qu	alifie.	d	
% lipid	0.0040									
		, ger								
						<u> </u>				
						_				
								<u> </u>		

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".

cover	<u>-</u> _
	cover

VALIDATION FINDINGS WORKSHEET <u>Duplicate Analysis</u>

Page:_	1_of
Reviewer:	
2nd Reviewer:	W_

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y/N N/A Was a duplicate sample analyzed for each matrix in this SDG?

Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

(Y) N N/A

Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
I	No Dup	tissue	Tot. Solids		all	None / text
 		 				
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∥—∔						
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	144,000	 				
				N/2		
-			L			
\vdash						

Comments:		

LDC #:_14326E6 SDG #:IQ30 Laboratory: Analytical Resour	VALIDATION COMPLETENESS WORKSHEET Level III ces, Inc.	Date: 12-1-05 Page: 1 of 1 Reviewer: MG 2nd Reviewer:
m 링 METHOD: Percent Lipids (Bli	gh-Dyer Method) , Total Solids (EPA 160.3)	

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
1.	Technical holding times	Α	Sampling dates: 8-29-05 through 9-6-05
ila.	Initial calibration	Α	0
IIb.	Calibration verification	A	
III.	Blanks	SW	
IV	Matrix Spike/Matrix Spike Duplicates	N	Not required
v	Duplicates	SWA	Not required DUP/TRIP
VI.	Laboratory control samples	7	Not required
VII.	Sample result verification	N	•
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
×	Field blanks	N	

Note: A = Acceptable N = Not provided/applicable ND = No compounds detected

SW = See worksheet

R = Rinsate FB = Field blank

D = Duplicate TB = Trip blank EB = Equipment blank

Validated Samples:

	an Tissue				
1	LDW-05-T1-M-ES-RM-COMP1	11	LDW-05-T1-M-ES-RM-COMP1DUP	21	
2	LDW-05-T1-M-ES-RM-COMP2	.12	LDW-05-T1-M-ES-RM-COMP1TRP	22	
3	LDW-05-T1-M-ES-RM-COMP3	13	PB	23	
4	LDW-05-T2-M-ES-RM-COMP1	14	LON-05- T3-M-25-RM-U	124	ap
5	LDW-05-T2-M-ES-RM-COMP2	15	J TRP	25	
6	LDW-05-T2-M-ES-RM-COMP3	16	, , ,	26	
7	LDW-05-T3-M-ES-RM-COMP1	17		27	
8	LDW-05-T3-M-ES-RM-COMP2	18		28	
9	LDW-05-T3-M-ES-RM-COMP3	19		29	
10	LDW-05-T4-M-ES-RM-COMP1	20		30	

LDC#: 14326E6 SDG#: IQ30

VALIDATION FINDINGS WORKSHEET Sample Specific Analysis Reference

Page: 1 of 1
Reviewer: MG
2nd reviewer: R

All circled methods are applicable to each sample.

·		
Sample ID	<u>Matrix</u>	
1-710	tissue	pH TDS CI F NO, NO, SO, PO, ALK CN NH, TKN TOC CR CIO, BE Find Solid
QC 11, 12		pH TDS CI F NO, NO, SO, PO, ALK CN NH, TKN TOC CR CIO, B(I: A'd)
b 14.15	<u></u>	pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR CO4 Br (T)
		pH TDS CI F NO ₃ NO ₂ SO ₄ PO ₄ ALK CN ⁵ NH ₃ TKN TOC CR ⁶⁺ CIO ₄ Br
	•	pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
	,	pH TDS CI F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ CIO4 Br
		ph TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR5+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		pH_TDS_CI_F_NO3_NO2_SO4_PO4_ALK_CN_NH3_TKN_TOC_CR6+_CIO4_Br
		pH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
		pH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
	,	pH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ ClO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		ph tds ci f no3 no2 so4 po4 alk cn nh3 tkn toc cretcio4 br
		pH TDS CLF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR8+ ClO4 Br
		pH 'TDS CI F NO3 NO2 SO4 PO4 ALK CN" NH3 TKN TOC CR6+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR5+ CIO4 Br
		pH TDS CI F NO3 NO2 SO4 PO4 ALK CN° NH3 TKN TOC CR6+ CIO4 Br
		ph tds ci f NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR6+ CIO4 Br
		ph TDS CI F NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CR® CIO4 Br
		PH TDS CIF NO3 NO2 SO4 PO4 ALK CN NH3 TKN TOC CRS CIO4 Br
		pH TDS CLE NO. NO. SO, PO, ALK CN. NH. TKN TOC CR®+ CIO, Br

Comments:		

LDC #:_	14326E6
SDG #:	I030

VALIDATION FINDINGS WORKSHEET <u>Blanks</u>

Page:_	1_of
Reviewer:	MG
2nd Reviewer:	N.

METHOD: Inorganics, Method See Cov	ver
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Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Conc. units: 70 Associated Samples:_

Analyte	Blank ID	Maximum	Blank		Sample Identification							
	Method blank	ICB/CCB	Action Limit		N	o sam	oles we	re qu	alifie	d		
lipids			0.10	·								
											<u> </u>	
		,p/					<u> </u>					
										<u> </u>		
						<u>P</u>						
						-						

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the method blank concentration were qualified as not detected, "U".

LDC #:_	14326E6
SDG #:	IQ30

VALIDATION FINDINGS WORKSHEET <u>Duplicate Analysis</u>

	Page:_	of
	Reviewer:	MG
2nd	Reviewer:	×

METHOD: Inorganics,	Method	sec	cover	

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

 $\frac{Y(N)N/A}{(N)N/A}$ Was a duplicate sample analyzed for each matrix in this SDG? Were all duplicate sample relative percent differences (RPD) ≤ 2

Were all duplicate sample relative percent differences (RPD) ≤ 20% for water and ≤ 35% for soil samples (≤ 10% for Method 300.0)? If no, see qualification below. A control limit of ±CRDL (±2X CRDL for soil) was used for samples that were ≤5X the CRDL, including when only one of the duplicate sample values were ≤5X the CRDL. If field blanks were used for laboratory duplicates, see overall assessment.

LEVEL IV ONLY:

Y N N/A Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

#_	Duplicate ID	Matrix	Analyte	RPD (Limits)	Associated Samples	Qualifications
	No Dup	tissue	Tot Solids		all	None /P
		1				
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Comments:	 	 	
	 	 are we	
DUP.6			